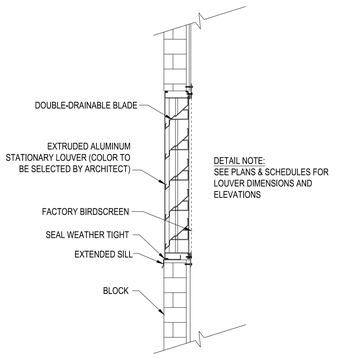
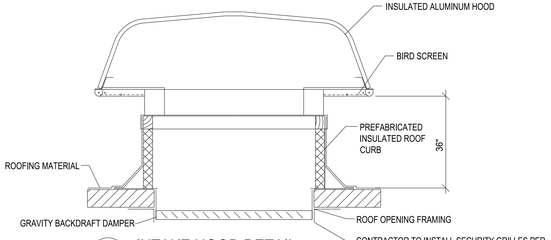
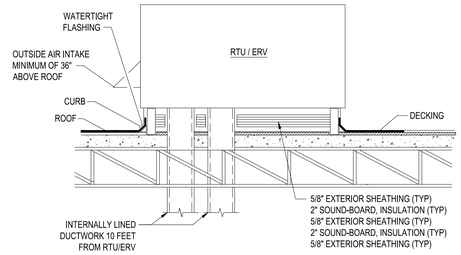


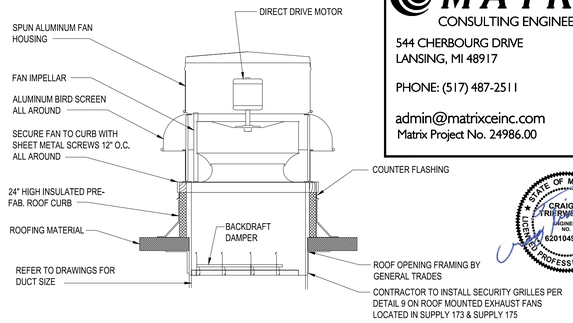
13 LOUVER DETAIL
SCALE: NTS



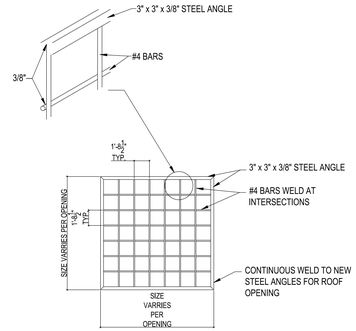
12 INTAKE HOOD DETAIL
SCALE: NTS



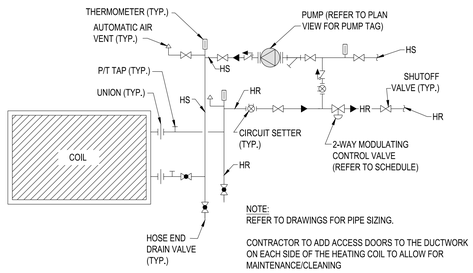
11 DOWNFLOW ROOF TOP UNIT/ ENERGY RECOVERY UNIT DETAIL
SCALE: NTS



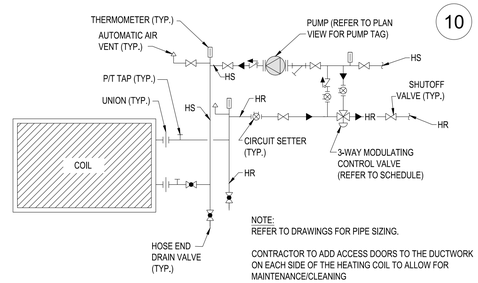
10 ROOF MOUNTED EXHAUST FAN DETAIL
SCALE: NTS



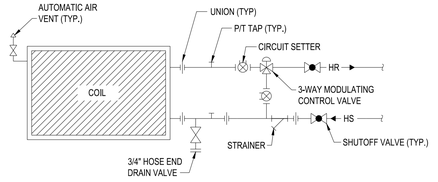
9 SECURITY GRILLE DETAIL
SCALE: NTS



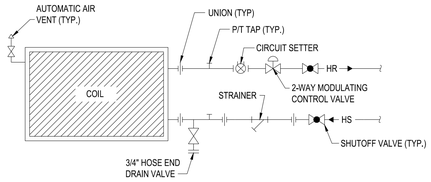
8 RTU, & ERV HEATING COIL 2-WAY CONTROL VALVE PIPING DIAGRAM - NEW
SCALE: NTS



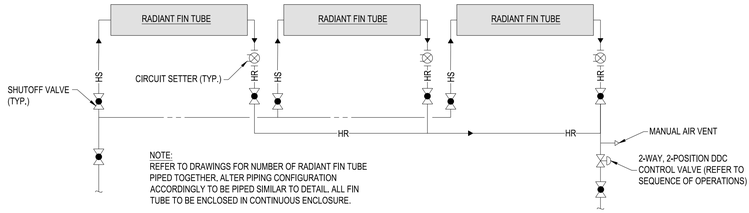
7 AIR HANDLING UNIT/MAKEUP AIR UNIT HEATING COIL 3-WAY CONTROL VALVE PIPING DIAGRAM - NEW
SCALE: NTS



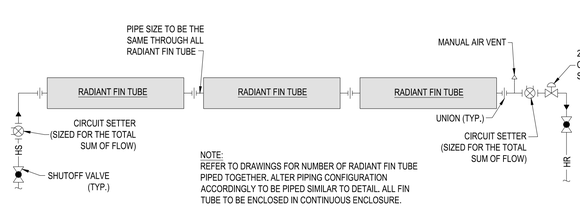
6 CABINET UNIT HEATER/UNIT HEATER 3-WAY CONTROL VALVE HYDRONIC PIPING DIAGRAM
SCALE: NTS



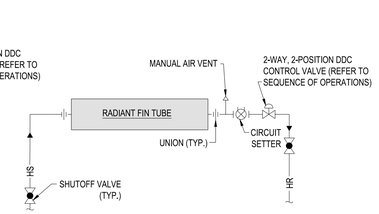
5 CABINET UNIT HEATER/UNIT HEATER 2-WAY CONTROL VALVE HYDRONIC PIPING DIAGRAM
SCALE: NTS



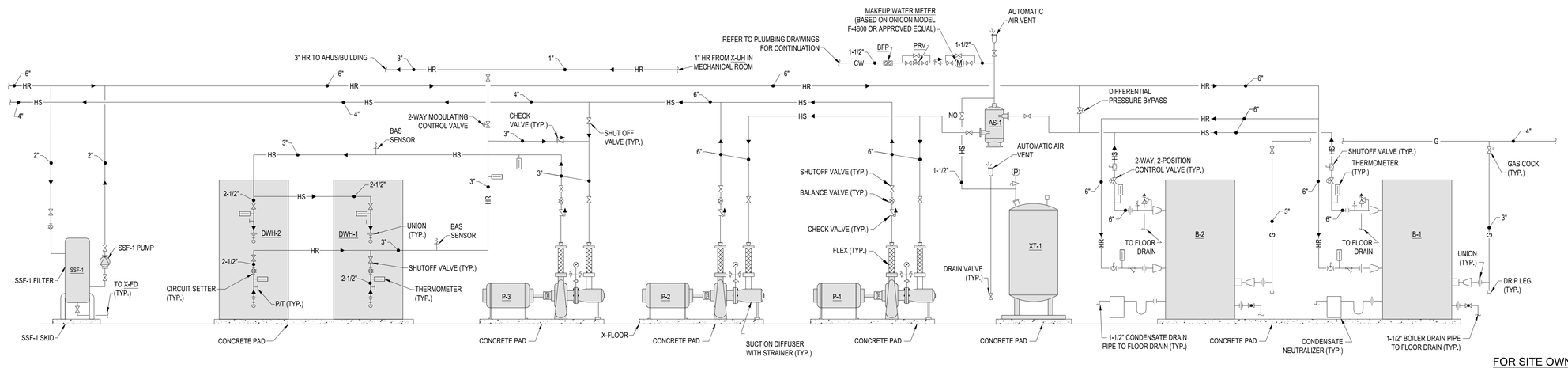
4 MULTI-RADIANT FIN TUBE IN PARRELL PIPING DETAIL
SCALE: NTS



3 MULTI-RADIANT FIN TUBE IN SERIES PIPING DETAIL
SCALE: NTS



2 RADIANT FIN TUBE PIPING DETAIL
SCALE: NTS



1 SOUTH MECHANICAL ROOM BOILER PIPING DIAGRAM - MECHANICAL NEW
SCALE: NTS

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIPP WEILER
ENGINEER
NO. 6201049255
REGISTERED PROFESSIONAL ENGINEER

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT	ISSUED FOR:	DATE
DRAWN	TAT	☐ PRELIMINARY	
CHECKED	CAT	☒ CONSTRUCTION	1/15/2026
APPROVED	CAT	☐ FINAL RECORD	

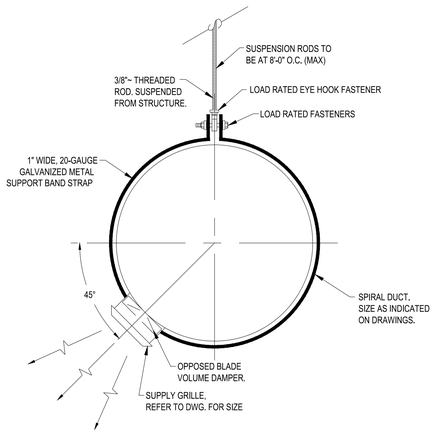
SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-805
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

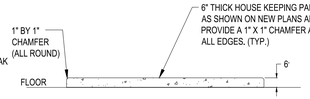
STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

CONCRETE

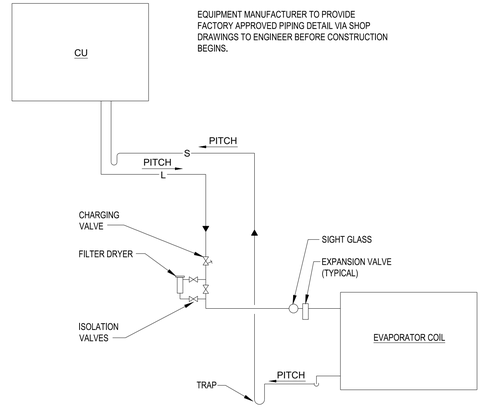
1. CONCRETE MATERIAL SHALL BE:
   - 1.1. ASTM C150 - TYPE 1 PORTLAND, COLOR SHALL MATCH EXISTING.
   - 1.2. FINE AND COARSE AGGREGATES: ASTM C33, FINE MDOT DESIGNATED 2NS, COARSE MDOT DESIGNATED 6AA.
   - 1.3. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE.
   - 1.4. MIX CONCRETE IN ACCORDANCE WITH ASTM C94. MIXTURE SHALL BE HIGH-EARLY IN ACCORDANCE WITH MDOT CONCRETE P-NC PER MDOT STANDARD SPECIFCATIONS FOR CONSTRUCTION 2012, SECTION 603 AND 801.
2. THE CONCRETE DEPTH IS INDICATED ON THE DETAILS.
3. ADMIXTURES:
   - 3.1. AIR ENTRAINMENT ASTM C260
   - 3.2. CHEMICAL ASTM C494, TYPE B AND D ONLY, TYPE B - RETARDING TYPE D - WATER REDUCING AND TESTING.
4. PSI OF THE CONCRETE SHALL BE A MINIMUM OF 4,000 W/6-8% AIR INTRADEMENT LIMESTONE MIX 4.5 TO 6.5 SLUMP FIBER MESH CONCRETE.
5. PLACING CONCRETE:
   - 5.1. IN ACCORDANCE WITH ACI 301
   - 5.2. ENSURE REINFORCEMENT, INSERTS, EMBEDDED PARTS AND FORMED JOINTS ARE NOT DISTURBED DURING CONCRETE PLACEMENT.
   - 5.3. POOR CONTINUOUSLY BETWEEN PREDETERMINED CONSTRUCTION JOINTS. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR.
6. SEALER:
   - 6.1. PROVIDE AND INSTALL A PENETRATING SEALING COMPOUND ON BASES EQUAL TO PENTREAT 244-100.
     - 6.1.1. DESIGN TO LIMIT THE INTRUSION OF MOISTURE AND CHLORIDES INTO THE SUBSTRATE.
     - 6.1.2. REDUCES SPALLING.
     - 6.1.3. PENETRATES DEEPLY FOR MAXIMUM PROTECTION.
     - 6.1.4. MINIMIZES PENETRATION FROM DE-ICING CHEMICALS, SALT, WATER THAT MIGHT DAMAGE CONCRETE SURFACES.
     - 6.1.5. SEALS PORES AND CAPILLARIES OF SUBSTRATE, PREVENTING LIQUID ABSORPTION WHILE ALLOWING EXCELLENT VAPOR TRANSMISSION.
7. LEAVES NO RESIDUE AND REQUIRES NO CLEANING AFTER APPLICATION.



12 EXPOSED SUPPLY SPIRAL DUCT DETAIL
SCALE: NTS

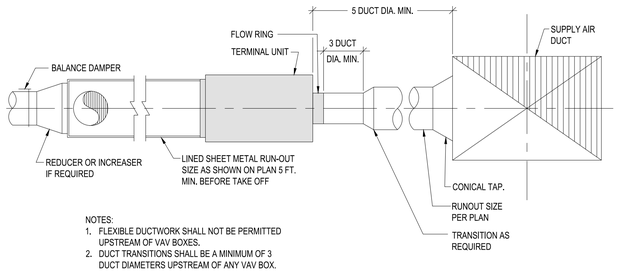


11 INDOOR CONCRETE PAD DETAIL
SCALE: NTS



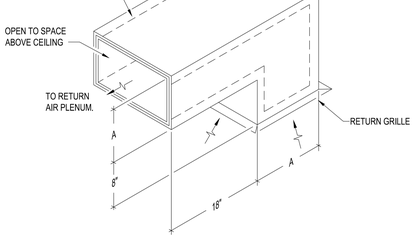
10 CONDENSING UNIT PIPING DIAGRAM
SCALE: NTS

9 DUCT TRANSITION DETAIL
SCALE: NTS

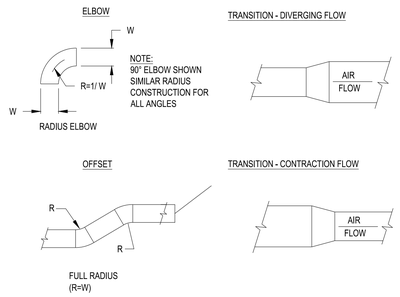


NOTES:
1. FLEXIBLE DUCTWORK SHALL NOT BE PERMITTED UPSTREAM OF VAV BOXES.
2. DUCT TRANSITIONS SHALL BE A MINIMUM OF 3 DUCT DIAMETERS UPSTREAM OF ANY VAV BOX.

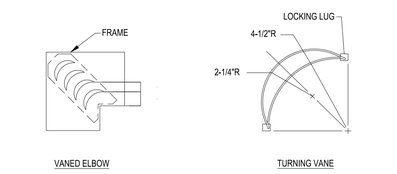
8 VAV TERMINAL UNIT DETAIL
SCALE: NTS



7 RETURN BOOT DETAIL
SCALE: NTS

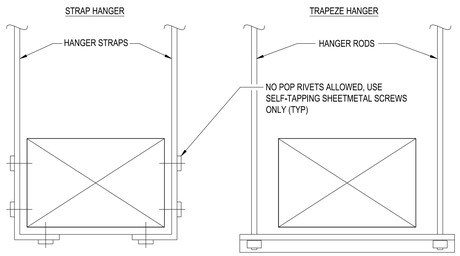


6 RECTANGULAR TRANSITIONS, OFFSETS, AND ELBOWS
SCALE: NTS

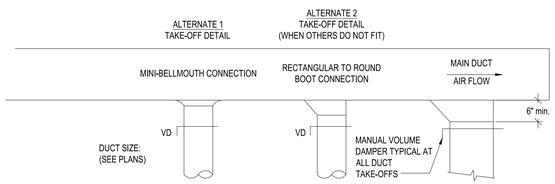


NOTES:
1. LOCKING LUGS INTEGRAL WITH VANE
2. MAXIMUM UNSUPPORTED VANE LENGTH 48"
3. FRAMES - BOLTED OR RIVETED TO ELBOW
4. VANES AND FRAMES - SAME GAUGE AS ELBOW

5 TURNING VANES FORSQUARE ELBOW DETAIL
SCALE: NTS

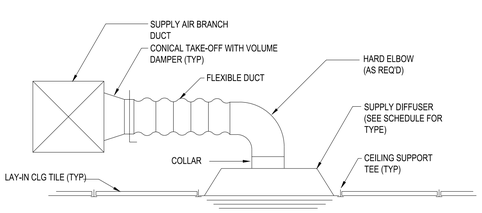


4 DUCT HANGER DETAIL
SCALE: NTS

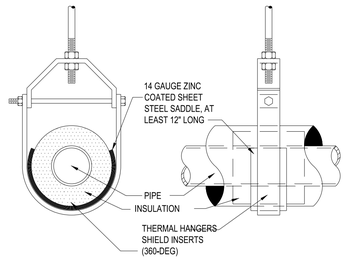


NOTES:
1. "ALTERNATE" FITTINGS SHALL BE ACCEPTABLE ONLY WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF "PERMITTED" FULL SIZE BELLMOUTH CONNECTION
2. THIS DETAIL APPLIES TO SINGLE TAKEOFFS TO DIFFUSER AS WELL AS BRANCH TAKEOFFS. IT ALSO APPLIES TO TAKEOFFS IN THE HORIZONTAL AS WELL AS THE VERTICAL DIRECTION.

3 DUCT TRANSITION DETAIL
SCALE: NTS



2 SUPPLY AIR DIFFUSER DETAIL
SCALE: NTS



1 INSULATION HANGER DETAIL
SCALE: NTS

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

ISSUED FOR: ☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD
DATE: 1/15/2026

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-806

FOR QUESTIONS, CALL THE
Detroit Mechanical
REGION 123
PHONE: (248) 658 - 0509
EMAIL: reg123@captiveaire.com

PATENT NUMBERS

EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

HOOD INFORMATION - JOB#7578422

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	HOOD CONFIG ROW
1		6024 ND-2	CAPTIVEAIRE	9' 6"	600 DEG	I	HEAVY	200	1900			4"	14"	1900	1777	-0.743"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1		CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	LEFT	12"x60"x24"	TANK FS	4.0/4.0	SC-E01101MA	1 LIGHT 1 FAN	YES	1011 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.
		BACKSPLASH 80.00" HIGH X 150.00" LONG 430 SS VERTICAL.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.

③ GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	×CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	18"

- ×0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

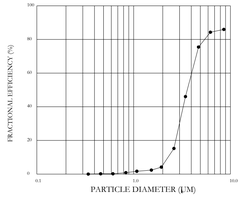
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

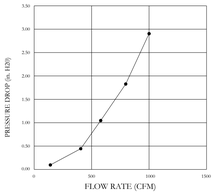
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 10 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER

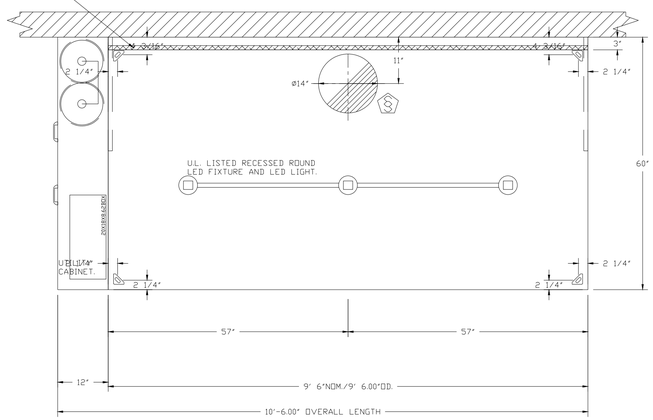


PRESSURE DROP VS. FLOW RATE



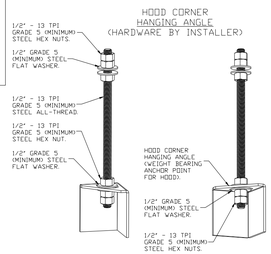
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

1" LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDOFF. MEETS 0 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACES.



PLAN VIEW - HOOD #1
9' 6.00" LONG 6024ND-2

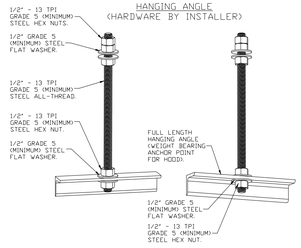
HOOD CORNER HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

FULL LENGTH HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN CRAIG A. TRIEPMEIER ENGINEER NO. 6201049255 PROFESSIONAL ENGINEER

REVISIONS

DESCRIPTION	DATE:

CAPTIVEAIRE
www.captiveaire.com
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
Detroit Mechanical

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

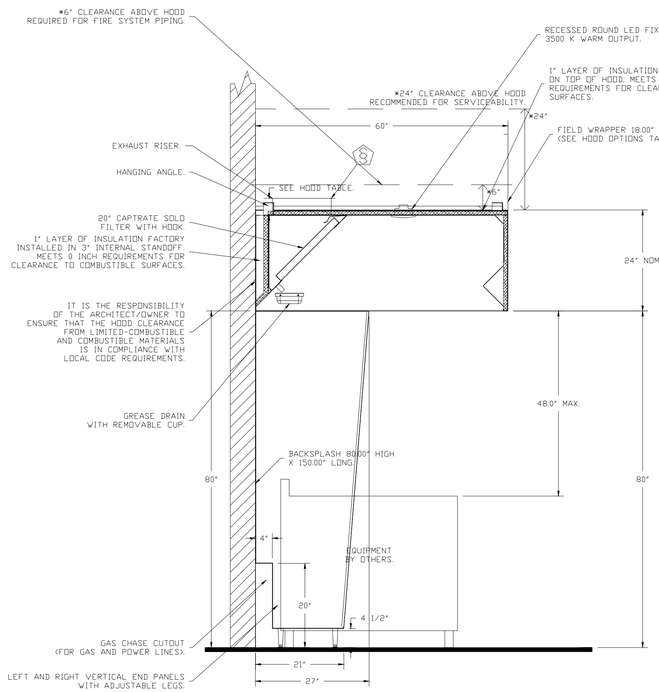
DESIGNED TAT
DRAWN TAT
CHECKED CAT
APPROVED CAT

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-807

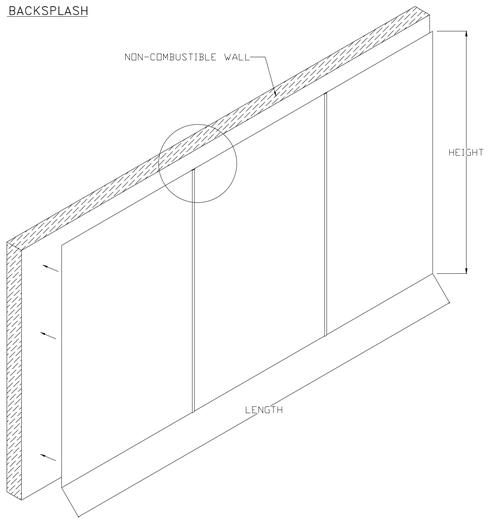
FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

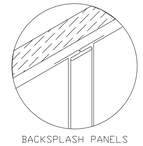
Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS



SECTION VIEW – MODEL 6024ND-2 HOOD – #1

BACKSPLASH





- BACKSPLASH IS NOT INSULATED AND IS UNSUITABLE FOR INSTALL AGAINST COMBUSTIBLE WALLS

FIRE SYSTEM INFORMATION – JOB#7578422

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	28	FIRE CABINET LEFT	LEFT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-DT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	1	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	1	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2"NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2"NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300033-001 DIN CONNECTOR, CANFIELD PART #5J560-201-EU0A, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	6	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	5	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	1	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	2	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	6	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	6	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	6	0
		34 - 34 - A0034331 RED COLOR - 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT.	1	0

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEMSMEIER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		
5		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 2

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

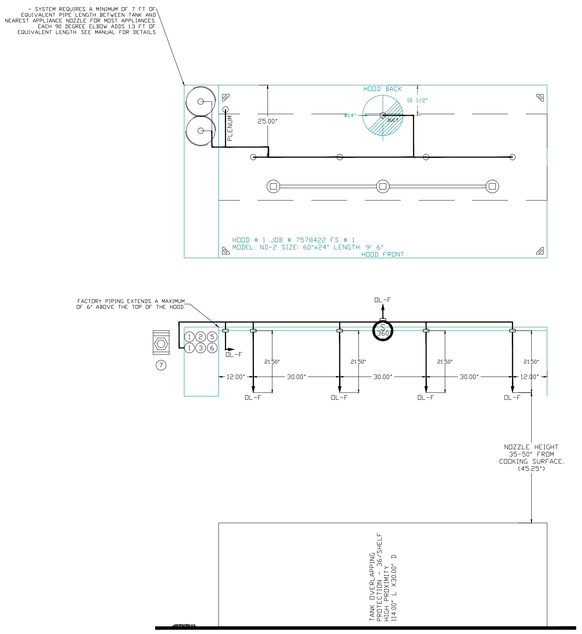
ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-808
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES

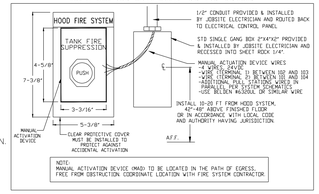
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS



SECTION VIEW - MODEL 6024ND-2 HOOD - #1

TANK MANUAL ACTIVATION DEVICE DETAIL



NOTES
- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 7578422
JOB NAME: JACKSON (WEST) ARMORY.

SYSTEM SIZE: TANK-SP-2 DESIGN FP: 28. MAXIMUM FP: 40.
HOOD # 1 9' 6.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 1.4" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX. SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND - FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

EXHAUST FAN INFORMATION - JOB#7578422

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-1	1	DUBSHFA	CAPTIVEAIRE	1900	1.000	1413	TEAO-ECM	1.000	0.4940	1	115	11.6	601 FPM	94	14.5

DOAS/RTU FAN SCHEDULE - JOB#7578422

FAN INFORMATION										ELECTRICAL INFORMATION				COOLING INFORMATION								REHEAT INFORMATION				A2L MINIMUM ROOM VOLUME			NOTES
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	TOTAL CFM	MAX OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP	OUTSIDE AIR		MIXED AIR		LEAVING AIR		CAPACITY			ICEE	ISMRE2	DISCHARGE		CAPACITY		MOISTURE REMOVAL RATE	ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	
																DB	WB	DB	WB	DB	WB	DP	TOTAL	SENS.			DB	WB	DESIRED	MAX					
2	MAU-1	1	CAS-HVAC2-18-13T	CAPTIVEAIRE	IBMF-2-RTU	2095	2095	0	2003	1.250	2.00	3	208	73.4A	80A	84.7°F	76.1°F	84.7°F	76.1°F	54.8°F	54.6°F	54.5°F	155.7 MBH	68.2 MBH	14.2	5.8	70.0°F	60.4°F	34.6 MBH	103.2 MBH	75.7 LBS/HR	411.2	740	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17

NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
11. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
12. FULLY MODULATING HOT GAS REHEAT
13. 15 DEGREE LOW AMBIENT OPERATION
14. FACTORY INSTALLED COMPRESSOR SOUND BLANKET
15. DOWN DISCHARGE/DOWN RETURN
16. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.
17. SCCR RATING OF 10kAMP

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF-1	YES						

CURB ASSEMBLIES

NO	ON FAN	TAG	R-VALUE	WEIGHT	ITEM	SIZE
1	# 1	KEF-1		37 LBS	CURB	23.000"W X 23.000"L X 24.000"H VENTED HINGED.
2	# 2	MAU-1	4.3	111 LBS	CURB	49.500"W X 75.000"L X 20.000"H INSULATED.

1" R4.3 FOIL FACED FIBERGLASS INSULATION. COMPLIES WITH UL/ULC,ASTM, & ASHRAE STANDARDS.

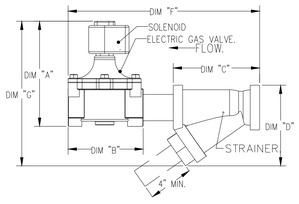
GAS VALVES AND STRAINERS

	GAS VALVE SIZING						GAS VALVE DIMENSIONS						INSTALLATION	PART NUMBERS		
	TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "F"	DIM "G"	PIPE ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1→	ELECTRICAL	2"	120 VAC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	2,940,500 BTU/HR	1,908,048 BTU/HR	7-5/8"	6-3/8"	7-1/4"	7-13-16"	15-5/8"	13-15/16"	HORIZONTAL/VERTICAL	8214280	4417668	(SC)ECSV42

ELECTRIC GAS VALVES ONLY SOLENOID ORIENTATION
3/4"-2" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITON AT OR ABOVE HORIZONTAL.
2 1/2"-3" 120VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
240VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP$^{0.5}$
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)$^{0.5}$.



FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG TRIEPMEIER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS	
DESCRIPTION	DATE:

CAPTIVEAIRE
Detroit Mechanical
38256 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 919516873 6 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 3

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

ISSUED FOR: PRELIMINARY ☐ CONSTRUCTION ☒ 1/15/2026 FINAL RECORD ☐
DATE

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-809

DOAS/RTU BACNet Points List – JOB#7578422

BACNET POINTS AVAILABLE FOR FAN #2 (MAU-1)					BACNET POINTS AVAILABLE FOR FAN #2 (MAU-1)				
BACNet Object	BACNet Type	BACNet ID	LON SNVT Name	Function	BACNet Object	BACNet Type	BACNet ID	LON SNVT Name	Function
DDCHeatCommand	BV	1	nviDDCHeat	Control/Monitor	LiquidLineTemp	AI	157	nvoLiqLineTemp	Monitor Only
DDCCoolCommand	BV	2	nviDDCCool	Control/Monitor	EvapIndoorCoilTemp	AI	158	nvoEvapCoilTemp	Monitor Only
DDCBlowerCommand	BV	3	nviDDCBlow	Control/Monitor	CondOutdoorCoilTemp	AI	159	nvoOutCoilTemp	Monitor Only
DDCModulation	AV	4	nviDDCModHeat	Control/Monitor	CompressorDischargeTemp	AI	160	nvoCompDisTemp	Monitor Only
DDCOccupiedOverride	BV	5	nviDDCOccOvrrd	Control/Monitor	IntakeRh	AI	161	nvoIntakeRh	Monitor Only
MinDischargeHeatOccSP	AV	10	nviMinDHeatOccSP	Control/Monitor	SpaceRh	AI	162	nvoSpaceRh	Monitor Only
MinDischargeHeatUnoccSP	AV	11	nviMinDHeatUnoSP	Control/Monitor	OutdoorRh	AI	163	nvoOutdoorRh	Monitor Only
MaxDischargeHeatOccSP	AV	14	nviMaxDHeatOccSP	Control/Monitor	DischargeRh	AI	164	nvoDischargeRh	Monitor Only
MaxDischargeHeatUnoccSP	AV	15	nviMaxDHeatUnoSP	Control/Monitor	ReturnRh	AI	165	nvoReturnRh	Monitor Only
MinDischargeCoolOccSP	AV	20	nviMinDCoolOccSP	Control/Monitor	SuctionLinePs	AI	166	nvoSucLinePs	Monitor Only
MinDischargeCoolUnoccSP	AV	21	nviMinDCoolUnoSP	Control/Monitor	DischargeLinePs	AI	167	nvoDisLinePs	Monitor Only
MaxDischargeCoolOccSP	AV	24	nviMaxDCoolOccSP	Control/Monitor	LiquidLinePs	AI	168	nvoLiqLinePs	Monitor Only
MaxDischargeCoolUnoccSP	AV	25	nviMaxDCoolUnoSP	Control/Monitor	HMI1Rh	AI	169	nvoHmi0Rh	Monitor Only
ScheduleSundayAStart	AV	46	nviSundayAStart	Control/Monitor	CondFan1PwmRate	AI	176	nvoCond1PwmRate	Monitor Only
ScheduleSundayAEnd	AV	47	nviSundayAEnd	Control/Monitor	CondFan2PwmRate	AI	177	nvoCond2PwmRate	Monitor Only
ScheduleSundayBStart	AV	48	nviSundayBStart	Control/Monitor	AdjustableDamperOutput	AI	180	nvoDampOutput	Monitor Only
ScheduleSundayBEnd	AV	49	nviSundayBEnd	Control/Monitor	OilBoostActiveFlag	BI	182	nvoOilBoostON	Monitor Only
ScheduleSundayCStart	AV	50	nviSundayCStart	Control/Monitor	ReheatActiveFlag	BI	183	nvoReheatON	Monitor Only
ScheduleSundayCEnd	AV	51	nviSundayCEnd	Control/Monitor	DefrostActiveFlag	BI	184	nvoDefrostON	Monitor Only
ScheduleMondayAStart	AV	52	nviMondayAStart	Control/Monitor	PumpdownOffActiveFlag	BI	185	nvoPumpOFFOn	Monitor Only
ScheduleMondayAEnd	AV	53	nviMondayAEnd	Control/Monitor	PumpdownOnActiveFlag	BI	186	nvoPumpONOn	Monitor Only
ScheduleMondayBStart	AV	54	nviMondayBStart	Control/Monitor	ReheatValvePosition	AI	187	nvoReheatPos	Monitor Only
ScheduleMondayBEnd	AV	55	nviMondayBEnd	Control/Monitor	EevValvePosition	AI	188	nvoEevValvePos	Monitor Only
ScheduleMondayCStart	AV	56	nviMondayCStart	Control/Monitor	IntakeDpActual	AI	189	nvoInDpActual	Monitor Only
ScheduleMondayCEnd	AV	57	nviMondayCEnd	Control/Monitor	SpaceDpActual	AI	190	nvoSpDpActual	Monitor Only
ScheduleTuesdayAStart	AV	58	nviTuesdayAStart	Control/Monitor	CompressorPower	AI	191	nvoCompPower	Monitor Only
ScheduleTuesdayAEnd	AV	59	nviTuesdayAEnd	Control/Monitor	CompressorFrequency	AI	192	nvoCompFreq	Monitor Only
ScheduleTuesdayBStart	AV	60	nviTuesdayBStart	Control/Monitor	CompressorCurrent	AI	193	nvoCompAmps	Monitor Only
ScheduleTuesdayBEnd	AV	61	nviTuesdayBEnd	Control/Monitor	Subcool	AI	208	nvoSubcool	Monitor Only
ScheduleTuesdayCStart	AV	62	nviTuesdayCStart	Control/Monitor	Superheat	AI	209	nvoSuperheat	Monitor Only
ScheduleTuesdayCEnd	AV	63	nviTuesdayCEnd	Control/Monitor	ActiveFault1	AI	210	nvoActiveFault1	Monitor Only
ScheduleWednesdayAStart	AV	64	nviWedAStart	Control/Monitor	ActiveFault2	AI	211	nvoActiveFault2	Monitor Only
ScheduleWednesdayAEnd	AV	65	nviWedAEnd	Control/Monitor	ActiveFault3	AI	212	nvoActiveFault3	Monitor Only
ScheduleWednesdayBStart	AV	66	nviWedBStart	Control/Monitor	ActiveFault4	AI	213	nvoActiveFault4	Monitor Only
ScheduleWednesdayBEnd	AV	67	nviWedBEnd	Control/Monitor	ActiveFault5	AI	214	nvoActiveFault5	Monitor Only
ScheduleWednesdayCStart	AV	68	nviWedCStart	Control/Monitor	ActiveFault6	AI	215	nvoActiveFault6	Monitor Only
ScheduleWednesdayCEnd	AV	69	nviWedCEnd	Control/Monitor	SchedulingEnabledFlag	BV	216	nvoSchedEnabled	Control/Monitor
ScheduleThursdayAStart	AV	70	nviThursAStart	Control/Monitor	HeatTemperModeOcc	AV	217	nvoHeatModeOcc	Control/Monitor
ScheduleThursdayAEnd	AV	71	nviThursAEnd	Control/Monitor	HeatTemperModeUnocc	AV	218	nvoHeatModeUnocc	Control/Monitor
ScheduleThursdayBStart	AV	72	nviThursBStart	Control/Monitor	CoolTemperModeOcc	AV	219	nvoCoolModeOcc	Control/Monitor
ScheduleThursdayBEnd	AV	73	nviThursBEnd	Control/Monitor	CoolTemperModeUnocc	AV	220	nvoCoolModeUnocc	Control/Monitor
ScheduleThursdayCStart	AV	74	nviThursCStart	Control/Monitor	ActivateOnOcc	AV	221	nvoActivateOcc	Control/Monitor
ScheduleThursdayCEnd	AV	75	nviThursCEnd	Control/Monitor	ActivateOnUnocc	AV	222	nvoActivateUnocc	Control/Monitor
ScheduleFridayAStart	AV	76	nviFridayAStart	Control/Monitor	BlowerModeOcc	AV	223	nvoBlowModeOcc	Control/Monitor
ScheduleFridayAEnd	AV	77	nviFridayAEnd	Control/Monitor	BlowerModeUnocc	AV	224	nvoBlowModeUnocc	Control/Monitor
ScheduleFridayBStart	AV	78	nviFridayBStart	Control/Monitor	MixingBoxMode	AV	225	nvoMBMode	Control/Monitor
ScheduleFridayBEnd	AV	79	nviFridayBEnd	Control/Monitor	Reheat DP Adj Occ	AV	226	nvoDPAdjOcc	Control/Monitor
ScheduleFridayCStart	AV	80	nviFridayCStart	Control/Monitor	Reheat DP Adj Unocc	AV	227	nvoDPAdjUnocc	Control/Monitor
ScheduleFridayCEnd	AV	81	nviFridayCEnd	Control/Monitor	BlowerVfdMinFreqOcc	AV	228	nvoVFDMinFreqOcc	Control/Monitor
ScheduleSaturdayAStart	AV	82	nviSatAStart	Control/Monitor	BlowerVfdMinFreqUnocc	AV	229	nvoVFDMinFUnocc	Control/Monitor
ScheduleSaturdayAEnd	AV	83	nviSatAEnd	Control/Monitor	BlowerVfdMaxFreqOcc	AV	230	nvoVFDMaxFreqOcc	Control/Monitor
ScheduleSaturdayBStart	AV	84	nviSatBStart	Control/Monitor	BlowerVfdMaxFreqUnocc	AV	231	nvoVFDMaxFUnocc	Control/Monitor
ScheduleSaturdayBEnd	AV	85	nviSatBEnd	Control/Monitor	MixingBoxMinOAPercentOcc	AV	236	nvoMBMinOAPerOcc	Control/Monitor
ScheduleSaturdayCStart	AV	86	nviSatCStart	Control/Monitor	MixingBoxMinOAPercentUnocc	AV	237	nvoMBMinOAPerUn	Control/Monitor
ScheduleSaturdayCEnd	AV	87	nviSatCEnd	Control/Monitor	MixingBoxMaxOAPercentOcc	AV	238	nvoMBMaxOAPerOcc	Control/Monitor
BlowerManualFreqOcc	AV	88	nviBlowManFreqOc	Control/Monitor	MixingBoxMaxOAPercentUnocc	AV	239	nvoMBMaxOAPerUn	Control/Monitor
BlowerManualFreqUnocc	AV	89	nviBlowManFreqUn	Control/Monitor	MixingBoxMinVoltsOcc	AV	240	nvoMBMinVoltsOcc	Control/Monitor
MixingBoxManualVoltsOcc	AV	102	nviMixBoxManVOc	Control/Monitor	MixingBoxMinVoltsUnocc	AV	241	nvoMBMinVoltsUn	Control/Monitor
MixingBoxManualVoltsUnocc	AV	103	nviMixBoxManVUn	Control/Monitor	MixingBoxMaxVoltsOcc	AV	242	nvoMBMaxVoltsOcc	Control/Monitor
DynamicSpDiff	AV	120	nviDynSpDiff	Control/Monitor	MixingBoxMaxVoltsUnocc	AV	243	nvoMBMaxVoltsUn	Control/Monitor
DynamicSpOffset	AV	121	nviDynSpOffset	Control/Monitor	CFMReading	AI	244	nvoCFMReading	Read Only
DynamicSpHeatOa	AV	122	nviDynSpHeatOa	Control/Monitor	StaticPressure	AI	245	nvoStaticPress	Read Only
DynamicSpCoolOa	AV	123	nviDynSpCoolOa	Control/Monitor					
UnitStatus	AI	139	nvoCurrentState	Monitor Only					
CurrentOccupiedStatus	AI	140	nvoOccStatus	Monitor Only					
AverageSpaceTemp	AI	141	nvoAvgSpaceTemp	Monitor Only					
BlowerFrequency	AI	142	nvoBlowVFDFreq	Monitor Only					
BlowerCurrent	AI	143	nvoBlowVFDAmps	Monitor Only					
BlowerPower	AI	144	nvoBlowVFDPower	Monitor Only					
AverageRH	AI	145	nvoAvgRh	Monitor Only					
OutdoorTemp	AI	146	nvoOutdoorTemp	Monitor Only					
ReturnTemp	AI	147	nvoReturnTemp	Monitor Only					
DischargeTemp	AI	148	nvoDischargeTemp	Monitor Only					
IntakeTemp	AI	149	nvoIntakeTemp	Monitor Only					
SpaceTemp	AI	150	nvoSpaceTemp	Monitor Only					
HMI1Temp	AI	151	nvoHmi0Temp	Monitor Only					
SuctionLineTemp	AI	156	nvoSucLineTemp	Monitor Only					

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2	MAU-1	1	COOLING OVERRIDE
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	RTU BLOWER DOOR SWITCH
		1	RTU2 DOWN DISCHARGE
		1	2" MERV 13 FILTERS FOR RTU2 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU2 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	2" METAL MESH FILTERS FOR RTU2 OUTDOOR INTAKE
		1	13 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	13 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	RTUVZH088 COMPRESSOR SOUND BLANKET 230V - FACTORY INSTALLED
		1	24VAC FIRE INPUT
		1	RTU HOT WATER ACTIVATION AND 0-10V OUTPUT TO THIRD PARTY CONTROLS
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	VAV PACKAGE W/ 0-10VDC INPUT CONTROL (571 VFD INCLUDED)
		1	BLOWER STOP DELAY. ALLOWS RESIDUAL HEAT TO BE TRANSFERRED INTO THE SUPPLY AIR AFTER HEATING HAS STOPPED. FACTORY SET AT: 90 SECS FOR IBT, 30 SECS FOR DF
		1	DDC LONWORKS REMOTE UNIT MONITORING
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEMWEILER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 4

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED TAT
DRAWN TAT
CHECKED CAT
APPROVED CAT

ISSUED FOR: DATE
PRELIMINARY ☐
CONSTRUCTION ☒ 1/15/2026
FINAL RECORD ☐

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-810
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

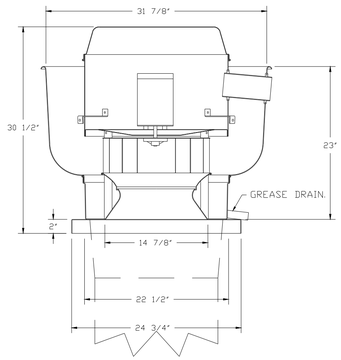
DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD
Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

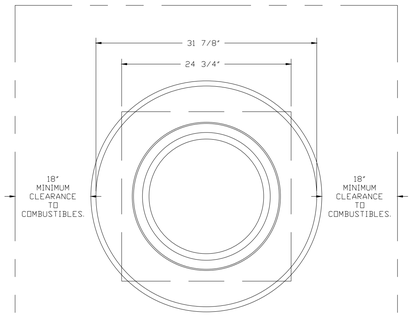
CONNECTED COMMISSIONING SERVICES(CCX)

IF ORDERED, THE CCX ENGINEER WILL PERFORM REMOTE ENGINEERING ANALYSIS OF CAPTIVEAIRE EQUIPMENT OVER CASLINK, A CLOUD - BASED REMOTE MONITORING SYSTEM.TYPICALLY, THE ANALYSIS WILL BE PERFORMED AFTER SERVICE DESIGN VERIFICATION(SDV) HAS BEEN COMPLETED ON-SITE. ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE ANALYSIS WILL BE DOCUMENTED AND BROUGHT TO THE ATTENTION OF THE SALES OFFICE. IF THE CCX ENGINEER DISCOVERS A DISCREPANCY THAT CAN BE RESOLVED REMOTELY, THE DISCREPANCY WILL BE RESOLVED AND THE SALES OFFICE WILL BE NOTIFIED.SHOULD A RETURN TRIP FROM CAS SERVICE BE REQUIRED TO RESOLVE FIELD RELATED DISCREPANCIES, THERE WILL BE ADDITIONAL TRIP CHARGES.SHOULD THE CCX ENGINEER DISCOVER A DISCREPANCY DURING THE ANALYSIS THAT IS THE FAULT OF THE MANUFACTURER AND THAT CANNOT BE RESOLVED REMOTELY, THE ISSUE WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE AND CAS SERVICE REGION. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

HMI SCHEDULE.				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #2	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55

FAN #1 DUBSHFA - EXHAUST FAN (KEF-1)





TOP VIEW

FEATURES:

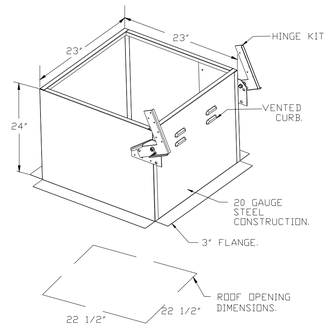
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

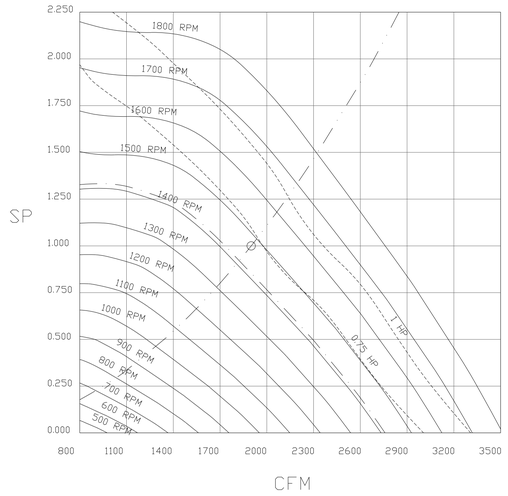
OPTIONS

- GREASE BOX.
- FAN BASE CERAMIC SEAL - DU/DRBSHFA
- INSTALLED AT PLANT - FOR GREASE DUCTS.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.



FAN#1 (KEF-1) - EXHAUST PERFORMANCE CURVES.

1900 CFM, 1 SP @ 1413 RPM AND 0.494 BHP AT 932 FEET AND 120 DEG F.
* PLEASE NOTE THAT THESE CURVES WERE ADJUSTED FOR JOB SPECIFIC TEMPERATURE AND ALTITUDE.



MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG TRIEMWEILER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE
△		
△		
△		
△		

CAPTIVEAIRE
www.captiveaire.com
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 5

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-811
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

DESIGNED TAT
DRAWN TAT
CHECKED CAT
APPROVED CAT

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS)
BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

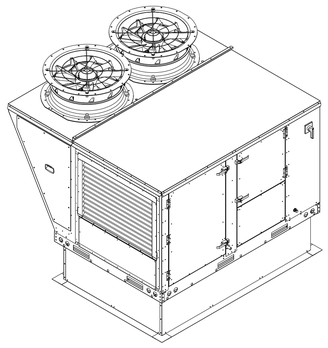
FAN #2 CAS-HVAC2-18MF-13T - SUPPLY FAN (MAU-1)

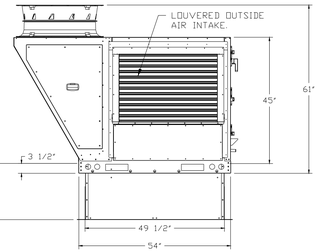
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.

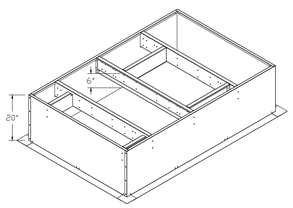
*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

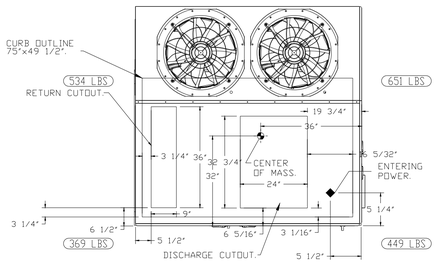
***NOTE: THIS UNIT IS INTENDED TO SERVE IN PLACE OF THE KITCHEN HVAC ROOF TOP UNIT (RTU) IN ADDITION TO PROVIDING APPROPRIATE MAKE-UP AIR FOR THE KITCHEN HOOD(S). RTU AND ASSOCIATED DUCTWORK SHALL BE REMOVED FROM SCOPE UNLESS REQUIRED FOR INTERNAL LOAD ESTIMATES. FINAL DESIGN SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.**

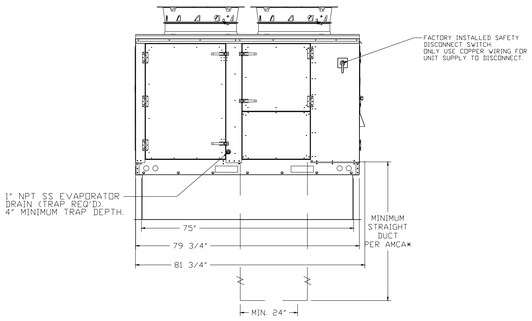
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED SUPPLY STRAIGHT DUCT SIZE IS 24" x 30-1/4".
SUGGESTED RETURN STRAIGHT DUCT SIZE IS 36" x 9".

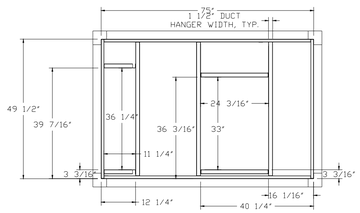




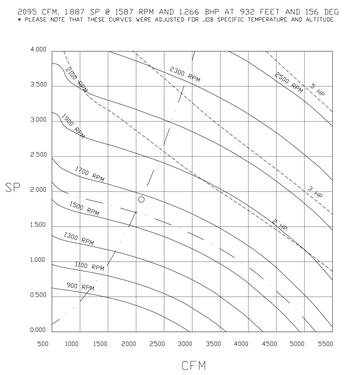


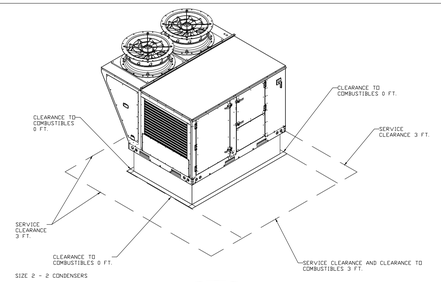


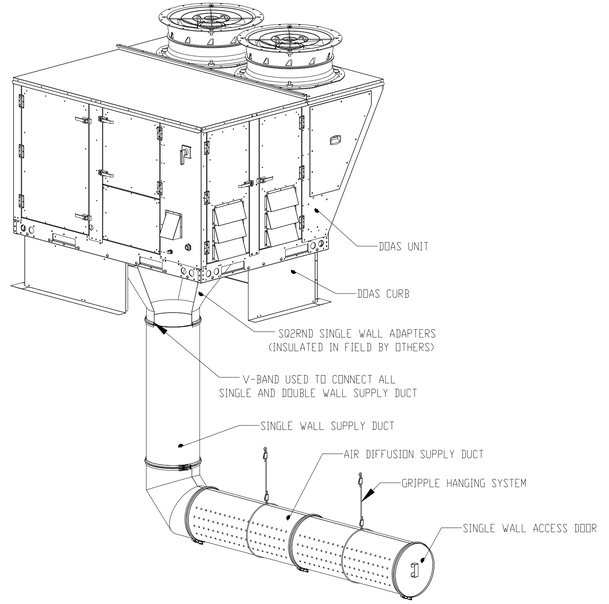




FAN#2 (MAU-1) - SUPPLY PERFORMANCE CURVES.







MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEMWEILER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE
△		
△		
△		
△		

CAPTIVE AIRE
www.captivealre.com
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: regl23@captivealre.com

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 6

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

ISSUED FOR: DATE
☐ PRELIMINARY
☐ CONSTRUCTION
☒ FINAL RECORD 11/15/2026

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-812

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

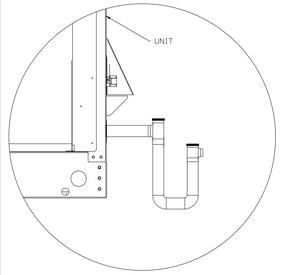
8

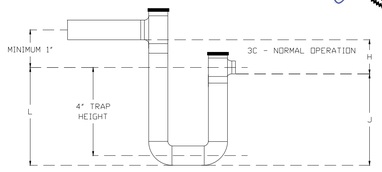
AIR DIFFUSION SUPPLY DUCT SPECIFICATIONS:
PROVIDE AIR DIFFUSION SUPPLY DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-S0(HC), DW-S90(HC), & DW-S180(HC).
THREE DISTINCT HOLE PATTERN OPTIONS TO COVER A VARIETY OF CEILING HEIGHTS.
NO ADDITIONAL DIFFUSERS REQUIRED, AS THE DUCT ITSELF PROVIDES AIR DIFFUSION.
MADE OF HIGH QUALITY STAINLESS STEEL DESIGNED TO LAST 20+ YEARS.
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 24 GAUGE, 430 SS - 5" THRU 24".
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 20 GAUGE, 430 SS - 26" THRU 36".
QUICK ONSITE ASSEMBLY USING EPDM GASKETS & UNIVERSAL V-BANDS.
DOUBLE WALL SUPPLY DUCT AVAILABLE FOR INTERIOR AND EXTERIOR SPACES, EITHER CONDITIONED OR UNCONDITIONED.
DOUBLE WALL SUPPLY DUCT AVAILABLE IN DW-1S, DW-2S, & DW-3S TO MEET SPECIFIC REGIONAL "R" VALUE REQUIREMENTS.

Insulation R-Value Recommendations		
Supply Duct Type	Minimum R-value	Space Type
Single Wall - S & -HC	N/A	Conditioned Space Only
Double Wall - 1S	R-4	Unconditioned Interior Space Only
Double Wall - 2S	R-8	Unconditioned Space Climate Zones 1-4
Double Wall - 3S	R-12	Unconditioned Space Climate Zones 5-8

DOUBLE WALL SUPPLY DUCT IS INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.
AIR DIFFUSION SUPPLY DUCT COMPLIES WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS) BEST PRACTICES.
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE, SEE NFPA 13, TABLE 8.12.5.1.1.

RTU CONDENSATE DRAIN TRAP DETAIL



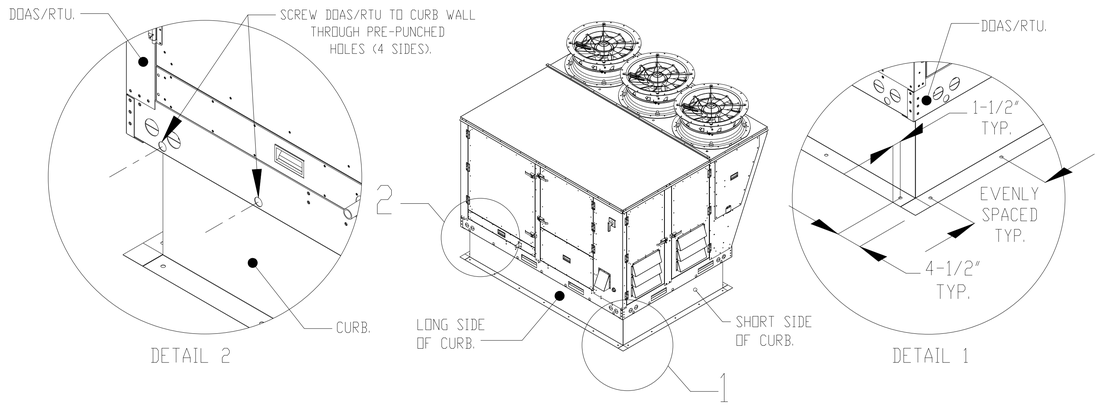


H = (1" FOR EACH 1" OF MAXIMUM NEGATIVE STATIC PRESSURE) + 1"
J = HALF OF H
L = H + J + PIPE DIAMETER + INSULATION

TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW. USING 3/8" X 2" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.

2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.



MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEPMEIER
ENGINEER
NO. 6201049255
LICENSED PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 7

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED TAT
DRAWN TAT
CHECKED CAT
APPROVED CAT

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 11/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-813

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD
Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW"
ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW"
IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING
CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW"
DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER
THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER.
PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE
SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE
ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE
UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY
EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE
430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

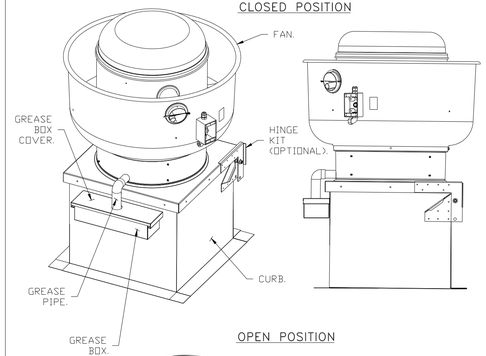
CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

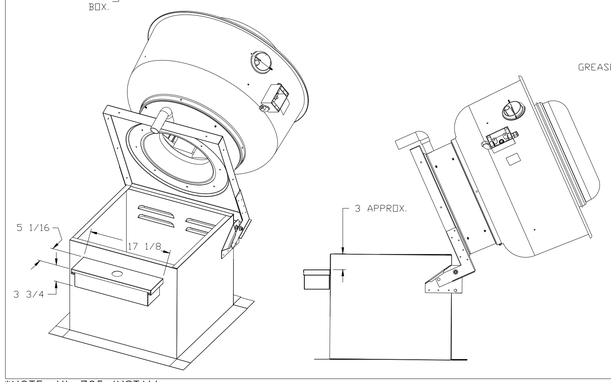
GREASE BOX
REV.#2 08/19/02

GREASE BOX INSTALLATION

CLOSED POSITION



OPEN POSITION



PARTS INCLUDED

GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.

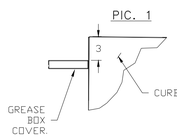
SHEET METAL SCREWS
3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION

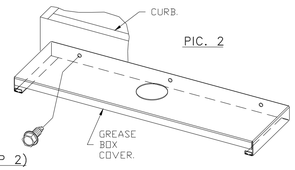
STEP 1)

ATTACH GREASE BOX COVER TO THE CURB, HOLD 3" DIMENSION AS SHOWN ON PIC. 1. SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.) SCREWS AS SHOWN ON PIC. 2.

PIC. 1



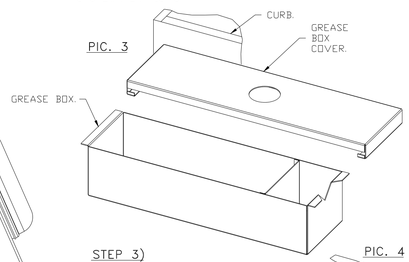
PIC. 2



STEP 2)

ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP. AS SHOWN ON PIC. 3.

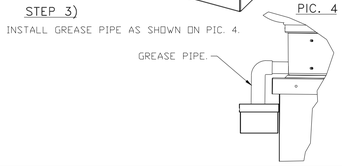
PIC. 3



STEP 3)

INSTALL GREASE PIPE AS SHOWN ON PIC. 4.

PIC. 4



*NOTE: UL 705 INSTALL.

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEMWEILER
ENGINEER
NO. 6201049255
LICENSED PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 8

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

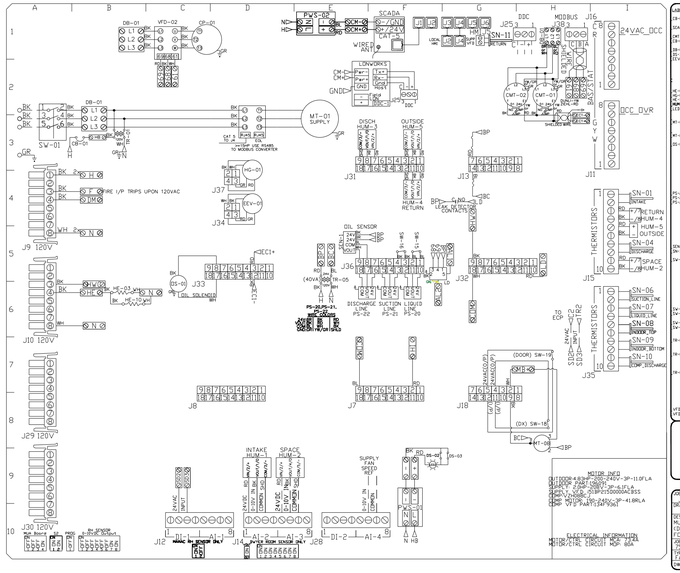
DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

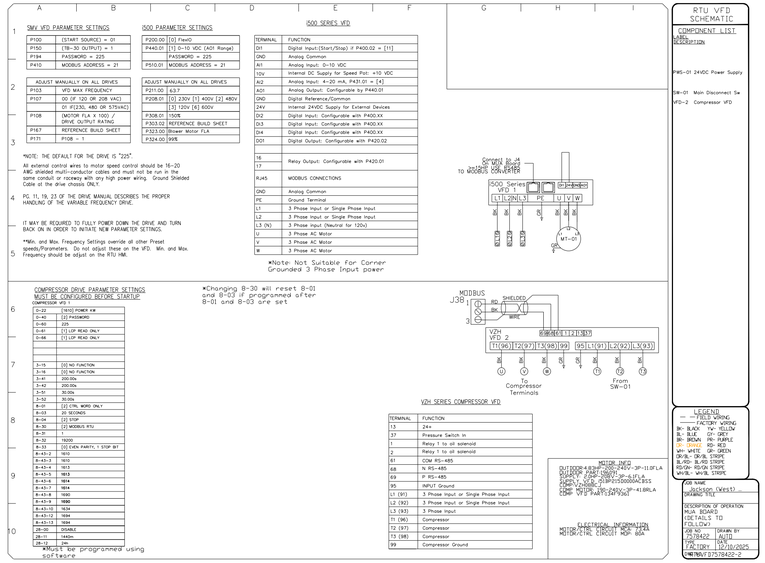
ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-814
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS





MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN — CRAIG A. TRIFILEWILER — ENGINEER NO. 6201049255 — PROFESSIONAL ENGINEER

REVISIONS

DESCRIPTION	DATE:

CAPTIVE-AIRE

www.captiveaire.com

Detroit Mechanical

38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 888 - 0509 FAX: 919516187351 EMAIL: reg123@captiveaire.com

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: Jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 9

DESIGNED	TAT	DATE	
DRAWN	TAT	☐	PRELIMINARY
CHECKED	CAT	☒	1/15/2026 CONSTRUCTION
APPROVED	JAT	☐	FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-815
PROJECT NO.: 24986.00
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES

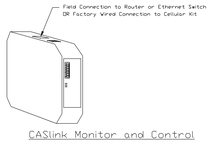
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget — MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

ELECTRICAL PACKAGE – JOB#7578422

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-E011011MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL w/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	1	1.000	115	11.6
				HOOD # 1	1 FAN		MAU-1	SUPPLY	3	2.000	208	6.1



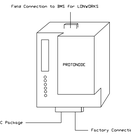
CASlink Monitor and Control

- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood control panel to allow remote changes to system setting such as: VFD frequencies, ECM speeds, temperature set points, fan and wash schedules, etc.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL



LONWORKS Interface for DCV and SC Packages

LONWORKS Interface for Hood Control Panel Specifications:

- Captive-Aire's microprocessor-based Hood Controls support communications to an external Building Management System through a LonMark certified gateway.
- The Hood Control Panel communicates real time data from sensors and equipment status to the Building Management System. The Hood Control Panel also allows the Building Management System to control fans, lights and wash cycles.
- The monitoring and controlling points for Hood Smart Controls and Demand Control Ventilation Systems are listed below:

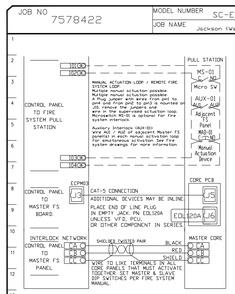
MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR & CONTROL
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

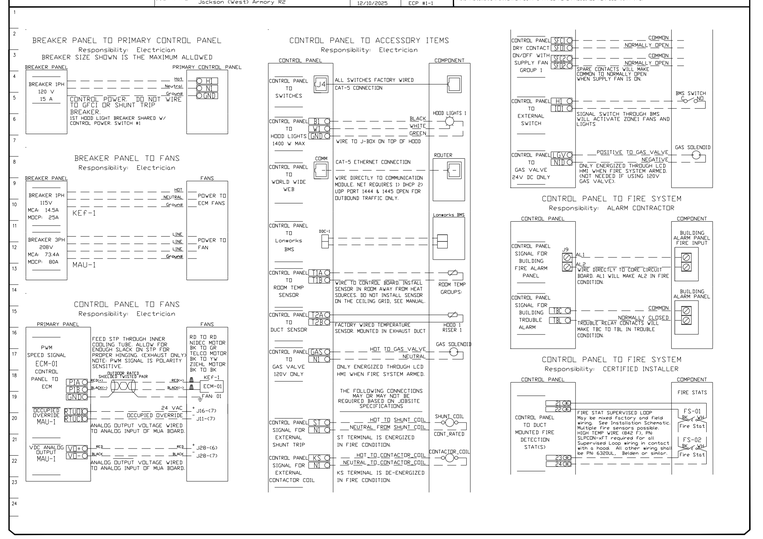
JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2

DESCRIPTION OF OPERATION:
Make Voltage w/ control for 1 3Ph - Supply Fan, 1 120V 1Ph - Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Exhaust On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.



JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System w/ 1 New FS-1 - 40x40 Twin-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood preamp panel.



JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System w/ 1 New FS-1 - 40x40 Twin-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood preamp panel.

TANK PROTECTION ELECTRICAL DETAIL

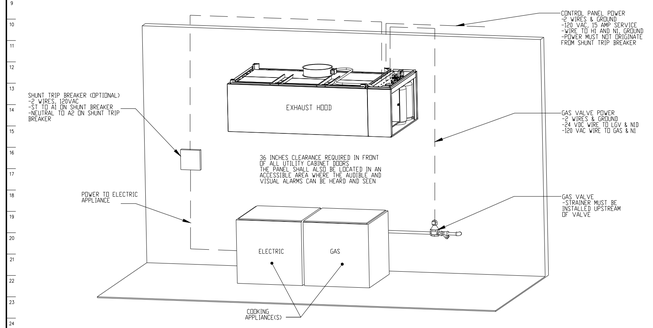
02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AUL & N1	SOLENOID	120 VAC	< 6 AMPS	120V TO AUL AUX TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & N1(3 OF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VAC - 2 WIRES & GROUND, N1 TO RED, LGV TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN CRAIG T. RIEBE LICENSE NUMBER 6201049255 PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVE-AIRE
www.captiveaire.com
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0500 FAX: 9195168735 EMAIL: reg123@captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 10

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
SHEET M-816
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
7578422	SC-E011011MA		INSTALL	Fire System #1 TANK FS - 4.0/4.0. Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood prewire panel.
	JOB NAME: Jackson (West) Armory R2	DATE: 12/10/2025	DWG NO: ECP #1-4	

TANK PROTECTION LOW-VOLTAGE DETAIL

10/01/2023 Rev. 3

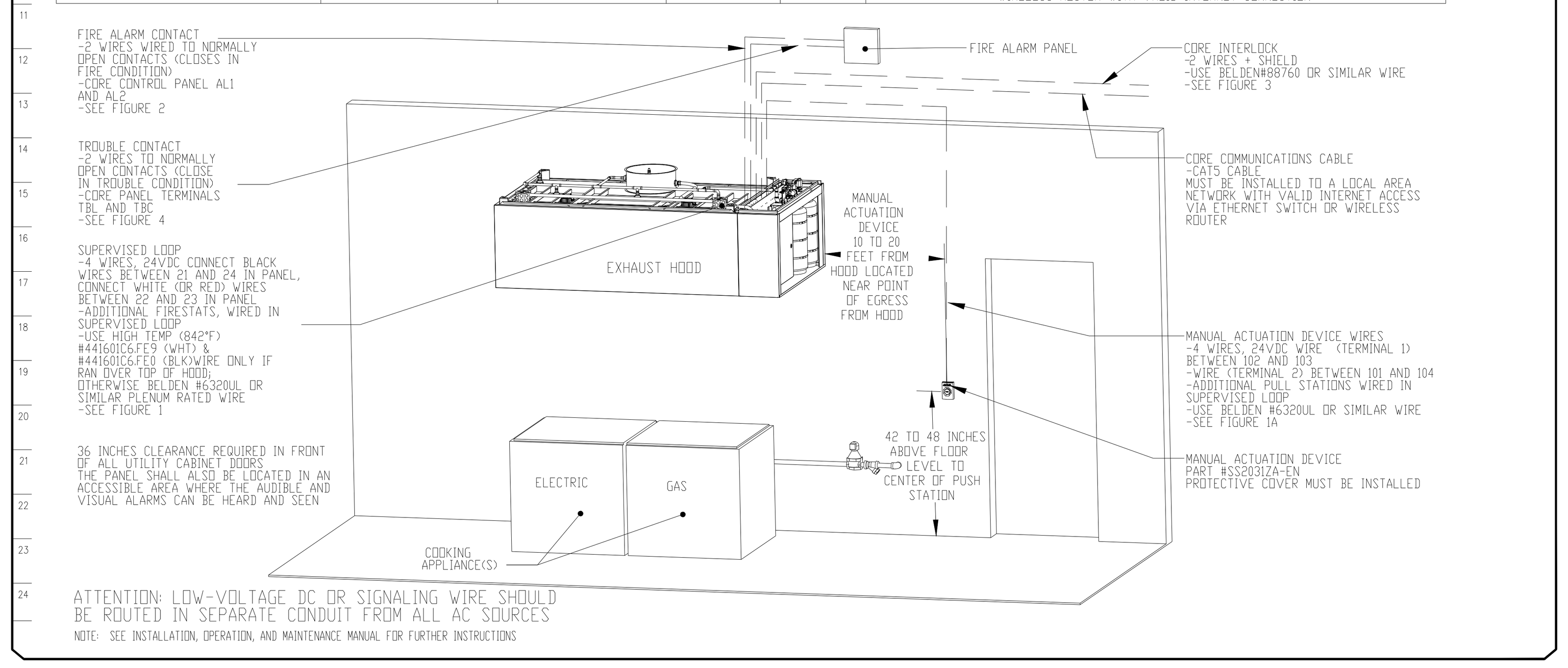
FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), *REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

*REMOTE FIRESTAT(S) MAYBE BE REQUIRED DEPENDING ON THE DUCT LAYOUT AND HOOD TEMPERATURE RATING. REFERENCE MANUAL FOR LOCATION AND GUIDELINES.

ALARM CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED, USE COVER EXTENSION STI-6531B
REMOTE FIRESTAT SENSOR(S)	21 AND 24 22 AND 23	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23 WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24 HIGH TEMP (842°F) #441601C6.FE9 (WHT) & #441601C6.FE0 (BLK)WIRE OR SIMILAR ONLY IF RAN OF HOOD; OTHERWISE BELDEN #6320UL OR SIMILAR PLENUM RATED WIRE; SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) CA, TO CORE SYSTEM (2) CA. CORE SYSTEM (1) CB, TO CORE SYSTEM (2) CB. CORE SYSTEM (1) CC, TO CORE SYSTEM (2) CC. USE BELDEN# 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TOK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

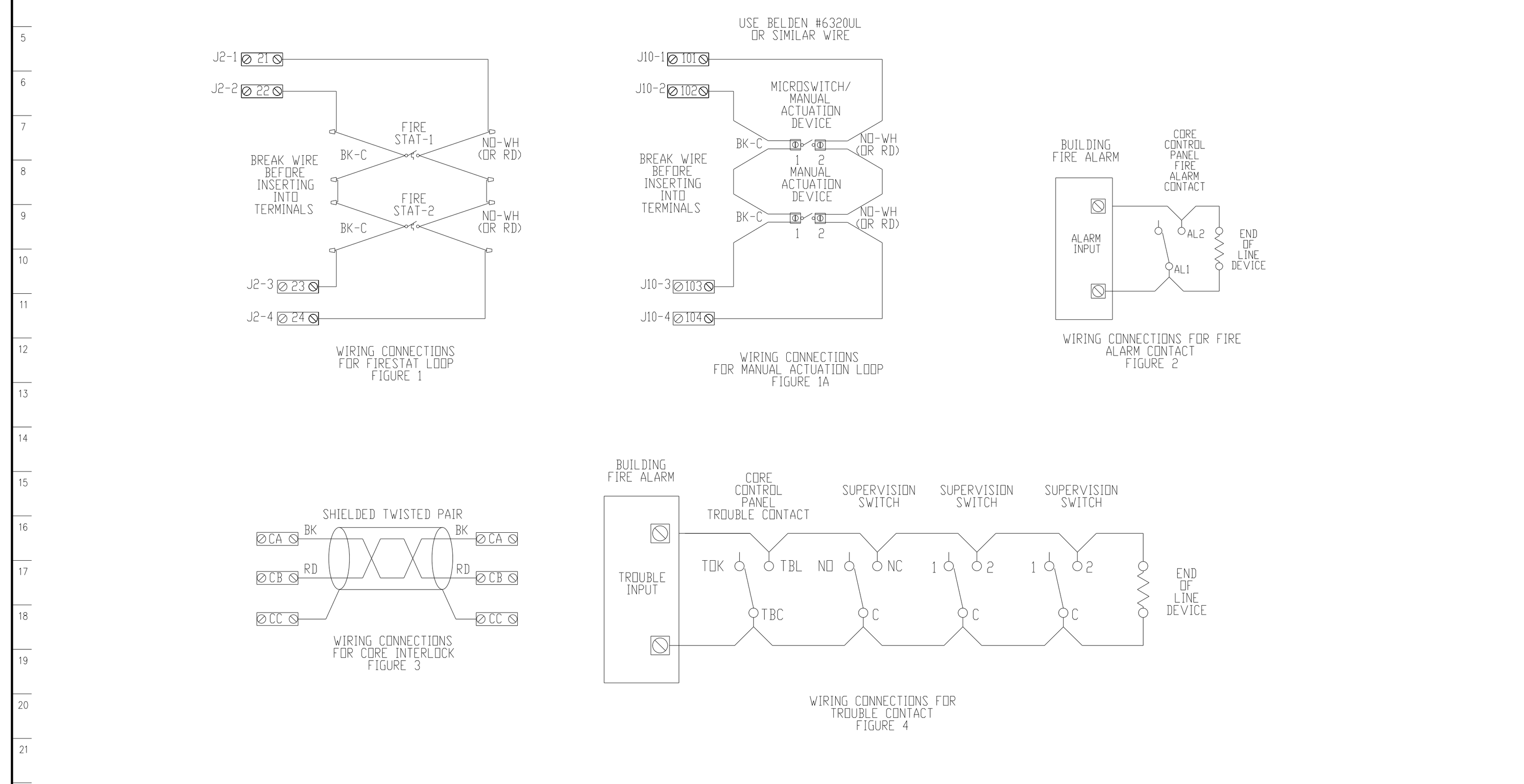
NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO 7578422 — MODEL NUMBER SC-E011011MA — JOB NAME Jackson (West) Armory R2

TANK PROTECTION LOW-VOLTAGE FIGURES

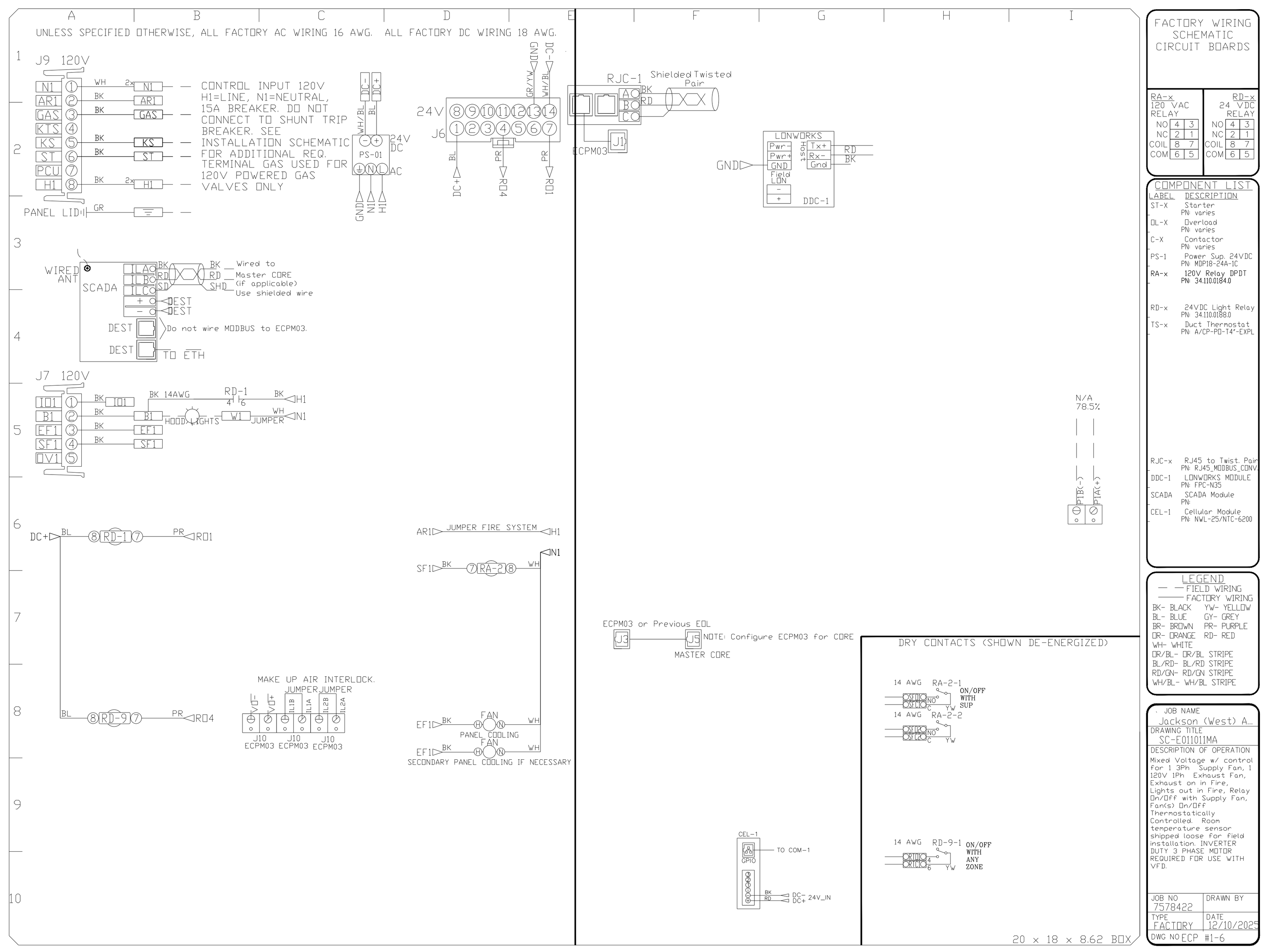
10/01/2023 Rev. 17

FS-1: MASTER



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS



MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN — CRAIG TRIERWEILER — ENGINEER NO. 6201049255 — LICENSED PROFESSIONAL ENGINEER

REVISIONS

DESCRIPTION	DATE:

CAPTIVEAIRE — Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 11

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

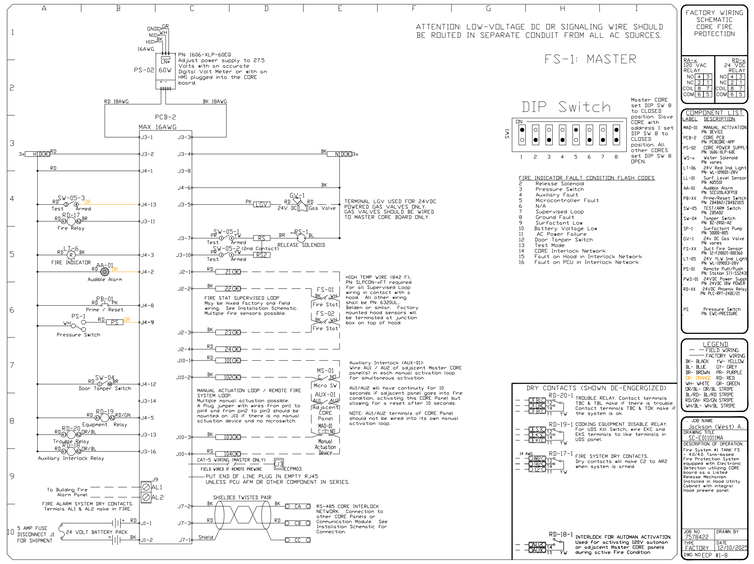
ISSUED FOR:		DATE
PRELIMINARY	☐	
CONSTRUCTION	☒	1/15/2026
FINAL RECORD	☐	

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO: PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-817

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget — MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc. — ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS



MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG A. TRIEPMEIER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVE-AIRE
www.captiveaire.com
Detroit Mechanical
38255 West Ten Mile Road Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025
DWG.#: 7578422
DRAWN BY: jacob.puff
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 12

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-818
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

DUCTWORK #1 PARTS – JOB#7578422 DOUBLE WALL

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1445DWASY-2R-S						19.87		1	DOUBLE WALL DUCT - 14" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL.
P2	DW1445DWASY-2R-S						19.87		1	DOUBLE WALL DUCT - 14" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL.
P3	DW1435DWLT-2R-S						46.53		1	DOUBLE WALL DUCT - 14" INNER DUCT, 35" LONG - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL.
P4	DW1447DWAJD-2R-S						93.18		1	DOUBLE WALL ADJUSTABLE DUCT - 14" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P5 ASSEMBLED W/P6	DW144550DWLTTP-2R-S						61.01		1	DOUBLE WALL DUCT - 14" INNER DUCT, 45.5" LONG - 2 LAYERS REDUCED CLEARANCE - 18" STAINLESS STEEL OUTER SHELL - USED WITH TRANSITION PLATE.
P6 ASSEMBLED W/P5 O=B	DW2314TP						8.49		1	DUCT TO CURB TRANSITION, 23" CURB TO 14" DUCT, 16 GA ALUMINIZED. USED ON BDU15, DU75 & 85.
	3M-2000PLUS						0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW14DWCLASY-2R-S						7.21		3	DUCT - 14" DUCT - 18" DOUBLE "V" CLAMP - 2R INSULATION & SINGLE "V" CLAMP INCLUDED - REDUCED CLEARANCE.
TOTAL WEIGHT							272.18			

DOUBLE WALL FACTORY BUILT DUCTWORK

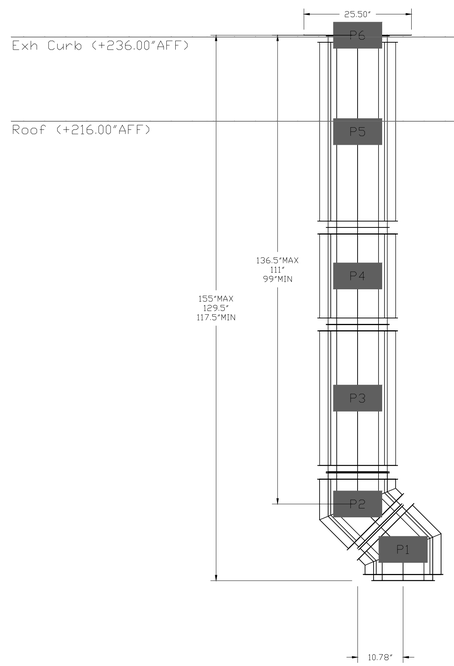
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5'-16')	20'	24'	24'
2R (18')	18'	24'	24'
3R & 3Z (5'-24')	10'	24'	24'
3Z (26' -36')	10'	20'	20'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

DUCTWORK #1 FRONT VIEW



MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG M. TRIEMELER
ENGINEER
NO. 6201049255
LICENSED PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI, 48335 PHONE: (248) 658 - 0509 FAX: 919516873 5 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 13

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT	ISSUED FOR:	DATE
DRAWN	TAT	☐ PRELIMINARY	
CHECKED	CAT	☒ CONSTRUCTION	1/15/2026
APPROVED	CAT	☐ FINAL RECORD	

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-819

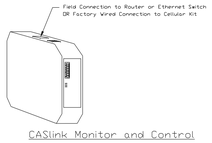
FOR SITE OWNED UTILITIES
72 HOURS
(3 WORKING DAYS)
BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

ELECTRICAL PACKAGE – JOB#7578422

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		SC-E011011MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL w/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	1	1.000	115	11.6
				HOOD # 1	1 FAN		MAU-1	SUPPLY	3	2.000	208	6.1



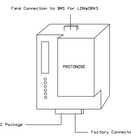
CASlink Monitor and Control

- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood control panel to allow remote changes to system setting such as: VFD frequencies, ECM speeds, temperature set points, fan and wash schedules, etc.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL



LONWORKS Interface for Hood Control Panel Specifications:

- Captive-Aire's microprocessor-based Hood Controls support communications to an external Building Management System through a LonMark certified gateway.
- The Hood Control Panel communicates real time data from sensors and equipment status to the Building Management System. The Hood Control Panel also allows the Building Management System to control fans, lights and wash cycles.
- The monitoring and controlling points for Hood Smart Controls and Demand Control Ventilation Systems are listed below:

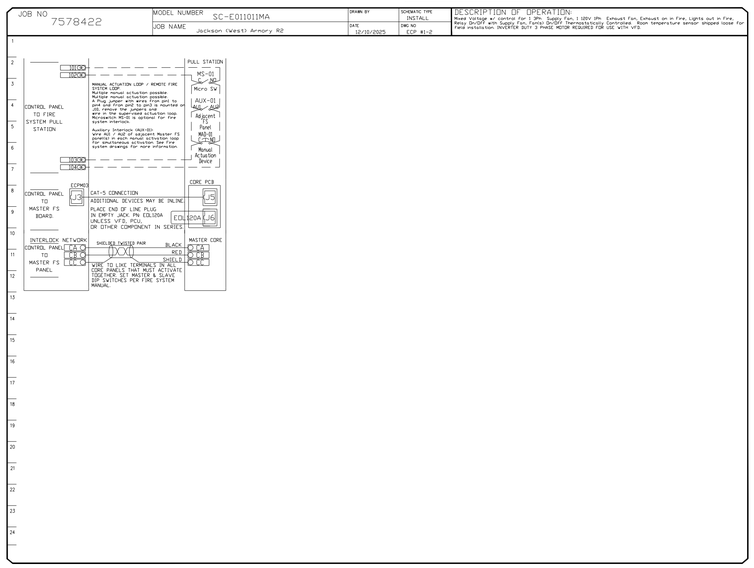
MONITORING AND CONTROL POINTS LIST

DCV Packages	*Function*
Room Temperature	*MONITOR*
Duct Temperature(s)	*MONITOR*
MUA Discharge Temperature	*MONITOR*
Kitchen RTU Discharge Temperature	*MONITOR*
Fan Speed	*MONITOR*
Fan Amperage	*MONITOR*
Fan Power	*MONITOR*
VFD Faults	*MONITOR*
Controller Faults	*MONITOR*
Fan Faults	*MONITOR*
Fan Status	*MONITOR*
PCU Faults	*MONITOR*
PCU Filter Clog Percentages	*MONITOR*
Fire Condition	*MONITOR*
CORE Fire System	*MONITOR*
Building Pressures	*MONITOR & CONTROL*
Prep Time Button	*MONITOR & CONTROL*
Fans Button	*MONITOR & CONTROL*
Lights Button	*MONITOR & CONTROL*
Wash Button	*MONITOR & CONTROL*

SC Packages	*Function*
Room Temperature(s)	*MONITOR*
Duct Temperature(s)	*MONITOR*
MUA Discharge Temperature	*MONITOR*
Kitchen RTU Discharge Temperature	*MONITOR*
Controller Faults	*MONITOR*
Fan Faults	*MONITOR*
Fan Status	*MONITOR*
PCU Faults	*MONITOR*
PCU Filter Clog Percentages	*MONITOR*
Fire Condition	*MONITOR*
Building Pressures	*MONITOR*
Fans Button(s)	*MONITOR & CONTROL*
Lights Button(s)	*MONITOR & CONTROL*
Wash Button	*MONITOR & CONTROL*

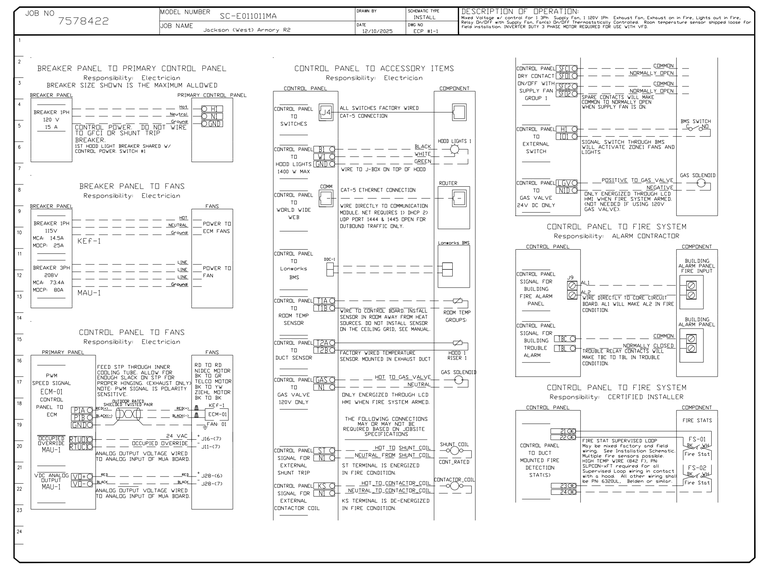
JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2

DESCRIPTION OF OPERATION:
Hood Voltage w/ control for 1 3Ph - Supply Fan, 1 120V 1Ph - Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.



JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2

DESCRIPTION OF OPERATION:
Hood Voltage w/ control for 1 3Ph - Supply Fan, 1 120V 1Ph - Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.



JOB NO 7578422 | MODEL NUMBER SC-E011011MA | JOB NAME Jackson (West) Armory R2 | DRAWN BY | DATE 12/10/2025 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION:
Fire System w/ 1 New FS-1 - 42x12 Twin-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood preamp panel.

TANK PROTECTION ELECTRICAL DETAIL

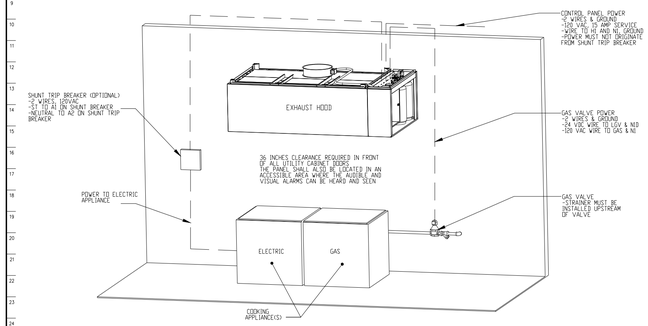
02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANGUL AUTOMAN (OPTIONAL)	AUL AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AUL AU2 TO ANGUL ELECTRIC AUTOMAN ANGUL SOLENOID TO NEUTRAL
GAS VALVE	LGV & N3 (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VAC - 2 WIRES & GROUND. N3 TO RED, LGV TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG ALAN FRIEWALDER
ENGINEER
NO. 6201049255
PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVE-AIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0500 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 14

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT		
DRAWN	TAT		
CHECKED	CAT		
APPROVED	CAT		

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL DETAILS
IDENTIFICATION NO:
PROJECT NO: 24986.00
SHEET M-820
FILE NO./INDEX CODE:

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

DTMB Technology, Management & Budget
MICHIGAN ARMY NATIONAL GUARD

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

MATRIX
CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG TRIEMWEILER
ENGINEER
NO. 6201049255
LICENSED PROFESSIONAL ENGINEER

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

CAPTIVEAIRE
Detroit Mechanical
38255 West Ten Mile Road, Farmington Hills, MI. 48335 PHONE: (248) 658 - 0509 FAX: 9195168735 EMAIL: reg123@captiveaire.com
www.captiveaire.com

Jackson (West) Armory R2
2700 West Argyle Street,
Jackson, MI, 49202

DATE: 12/10/2025

DWG.#: 7578422

DRAWN BY: jacob.puff

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 15

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations

2700 W. Argyle St., Jackson, MI 49202

SHEET TITLE: MECHANICAL DETAILS
SHEET IDENTIFICATION NO: M-821
PROJECT NO: 24986.00
FILE NO./INDEX CODE:

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

DESIGNED TAT
DRAWN TAT
CHECKED CAT
APPROVED CAT

GAS MONITERING EQUIPMENT SCHEDULE

MARK	DESCRIPTION	BASIS OF DESIGN	MOUNTING LOCATION	NOTES
CO-1	CO SENSOR & BASE	VERIS - AG01 CO SENSOR	HYDRONIC SYSTEM	WALL MOUNT, SEE NOTES 1 & 2
SL-1	LED STROBE LIGHT W/ SIREN	SECO-LARM - SL-1301-SAQ (RED)	HYDRONIC SYSTEM	MOUNT ON TOP OF GAS MONITERING ENCLOSURE

NOTES:
1. INCLUDE (2) ADDITIONAL CO SENSORS
2. INSTALL 2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR TO EACH BASE SENSOR UNIT FROM GAS CONTROLLER

AIR SEPARATOR SCHEDULE

TAG	MODEL	LOCATION	TYPE	MAX GPM	CONNECTION SIZE (FLANGED OR GROOVED)	COMMENTS
AS-1	R-6	MECHANICAL ROOM	HYDRONIC	700	6"	1,2

NOTES:
1. BASED ON BELL & GASSETT
2. CONTAINS STRAINER

DEHUMIDIFIER SCHEDULE

TAG	SERVES	MODEL	CFM	ESP	WATER REMOVAL (PINTS/DAY)	ELECTRICAL			COMMENTS
						AMPS	VOLTAGE	PHASE	
DEH-1	119TH HHC BTN STORAGE	QUEST 100	280	0.1	100.0	5	120	1	1,2,3,4,5,6,7,8,9
DEH-2	117TH HHC BTN STORAGE	QUEST 100	280	0.1	100.0	5	120	1	1,2,3,4,5,6,7,8,9

NOTES:
1. BASED ON QUEST
2. CONDENSATE PUMP KIT
3. CEILING AND WALL MOUNTING KIT
4. MANU. PROVIDED, REMOTE MOUNTED DIGITAL HUMIDISTAT
5. LONWORKS CONTROLS INTERFACE CONNECTION
6. R454B REFRIGERANT
7. DISCONNECT BY EC
8. MERV-13 FILTER
9. VIBRATION ISOLATORS

SPLIT SYSTEM HEAT PUMP SCHEDULE

TAG	CONNECTED EVAPORATOR	CONDENSING UNIT / HEAT PUMP LOCATION	OUTDOOR MODEL	INDOOR MODEL	SERVES	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	COOLING EFFICIENCY (IEER/EER)	HEATING COP	VOLTAGE	PHASE	MCA	COMMENTS
HP-1	AC-1	WALL MOUNTED	PUZ-AH24NL	PKA-AK24NL	PHYSICAL TRAINING	24.0	28.0	12.0	3.4	208	1	22	1,2,3,4,5,6,7,8,9,10,11,12,13,14

NOTES:
1. BASED ON MITSUBISHI ELECTRIC
2. R-454B REFRIGERANT
3. MANUFACTURER PROVIDED OUTDOOR WALL MOUNTING KIT
4. MANU. PROVIDED CONDENSATE PUMP
5. LOW AMBIANT COOLING KIT (100% COOLING AT 0 DEG F)
6. OUTDOOR UNIT POWERS INDOOR UNIT
7. COOLING DESIGN BASED ON 80°F DB AND 67°F WB, OUTDOOR 95°F DB
8. HEATING DESIGN BASED ON 70°F DB AND 60°F WB, OUTDOOR 47°F DB
9. EC SHALL PROVIDE DISCONNECT SWITCH FOR OUTDOOR UNIT
10. MANU. PROVIDED REMOTE MOUNTED THERMOSTAT
11. MANU. PROVIDED WIND BAFFLES
12. MANU. PROVIDED DEFROST HEATER
13. HEATING CAPACITY DOWN TO -4°F
14. LONWORKS INTERFACE CARD

INDIRECT DOMESTIC WATER HEATER SCHEDULE

TAG	MODEL	LOCATION	GALLON CAPACITY	GPH @ 100°F RISE	DOMESTIC INLET / OUTLET (")	HYDRONIC COIL						COMMENTS
						CAPACITY (MBH)	COIL INLET / OUTLET (")	EWT °F	LWT °F	GPM	WPD FT. HD.	
DWH-1	GVG0257JR	MECHANICAL ROOM	257	500	2" / 2"	425.0	3" / 3"	165	145	43	1.5'	1,2,3,4,5
DWH-2	GVG0257JR	MECHANICAL ROOM	257	500	2" / 2"	425.0	3" / 3"	165	145	43	1.5'	1,2,3,4,5

NOTES:
1. BASED ON: LOCHINVAR
2. 91" TALL x 34" DIA
3. VERTICAL ORIENTATION
4. GROUND MOUNTED
5. PRESSURE/TEMPERATURE RELIEF VALVE

CONDENSING UNIT SCHEDULE

TAG	SERVES	MODEL	NOMINAL TONS	CAPACITY MBH	EER	ELECTRICAL				COMMENTS
						VOLTAGE	PHASE	MCA	DISC. BY	
CU-1	AHU-1	CFA-025	25	290.0	14.8	480	3	50	EC	1,2,3,4,5,6,7,8,9
CU-2	AHU-2	CFA-025	25	290.0	14.8	480	3	50	EC	1,2,3,4,5,6,7,8,9

NOTES:
1. BASED ON AAON
2. VARIABLE SCROLL COMPRESSORS
3. VIBRATION ISOLATORS
4. R-454B REFRIGERANT
5. TWO COMPRESSORS, DUAL CIRCUIT SERVING ITERLACED COIL
6. CRANKCASE HEATER
7. DIGITAL MODULATING LEAD SCROLL COMPRESSOR
8. SECONDARY TWO STAGE COMPRESSOR
9. INCLUDE THE FOLLOWING ACCESSORIES: EVAPORATOR FREEZESTAT, TXV VALVE, FAN CYCLING KIT, COMPRESSOR SHORT CYLCE CONTROL, AND REFRIGERANT FILTER/DRIER

ELECTRICAL NOTES:
EC - ELECTRICAL CONTRACTOR
NR - NOT REQUIRED
MC - MECHANICAL CONTRACTOR

EXHAUST FAN SCHEDULE

TAG	MODEL	SERVICE/ LOCATION	CFM	TYPE	DRIVE	ESP (IN WC)	FAN RPM	SONES	ELECTRICAL					COMMENTS
									FAN HP	VOLTAGE	PHASE	DISC. BY	STARTER BY	
EF-1	G-095-VG	SOUTH BATHROOM	700	ROOF	DIRECT	0.7	1637	9.8	1/6	120	1	EC	EC	1,2,3,4,5
EF-2	G-090-D	NORTH BATHROOM	420	ROOF	DIRECT	0.5	1550	7.4	1/15	120	1	EC	EC	1,2,3,4,5
EF-3	G-070-VG	KITCHEN BATHROOM	170	ROOF	DIRECT	0.5	1352	3.1	1/15	120	1	EC	EC	1,2,4,5,6
EF-4	CSP-A390-VG	ELEVATOR ROOM	150	INLINE	DIRECT	0.5	989	1.2	1/15	120	1	EC	EC	1,2,4,5,7
EF-5	G-060-VG	JANITOR CLOSET	100	ROOF	DIRECT	0.3	1596	3.8	1/15	120	1	EC	EC	1,2,4,5,6
EF-6	G-140-VG	MECH. ROOM	1500	ROOF	DIRECT	0.3	978	7.9	1/2	120	1	EC	EC	1,2,4,5,6
EF-7	DQ-160-VG	PES 015	1800	INLINE	DIRECT	0.4	852	5.1	3/4	120	1	EC	EC	1,2,5,7,9
EF-8	GB-180-VG	SUPPLY 173	3300	ROOF	DIRECT	0.3	935	11.7	1	120	1	EC	EC	1,2,4,5,6,8,9
EF-9	GB-180-VG	SUPPLY 175	3300	ROOF	DIRECT	0.3	935	11.7	1	120	1	EC	EC	1,2,4,5,6,8,9

NOTES:
1. BASED ON GREENHECK
2. GRAVITY BACKDRAFT DAMPER
3. ROOF CURB ADAPTOR
4. CONTROLLED BY LONWORKS BAS
5. ELECTRICAL
   EC - ELECTRICAL CONTRACTOR
   MC - MECHANICAL CONTRACTOR
   NR - NOT REQUIRED
6. ROOF CURB
7. MANU. PROVIDED MOUNTING KIT
8. SECURITY BARS IN CURB
9. MANU. TO PROVIDE TIME DELAY SWITCH

ROOFTOP UNIT SCHEDULE

TAG	MODEL	SERVES	CFM	FAN HP	MIN. OA	E.S.P	COOLING				HYDRONIC HEATING COIL (DUCT MOUNTED)	ELECTRICAL			RTU WEIGHT (LBS)	COMMENTS
					CFM		MBH	TONS	EDB / EWB	LDB / LWB	TAG	VOLTS	PHASE	FLA		
RTU-1	RQ-004	NORTH UPPER LEVEL	1,640	2.0	150	1.0	48.5	4	80 / 67	55 / 55	RTU-HC-1	480	3	12	862	1,2,4,5,6,7,8,9,10,11,12,13,15,16,17,19
RTU-2	RQ-004	NORTH UPPER LEVEL	1,495	2.0	200	1.3	48.2	4	80 / 67	55 / 55	RTU-HC-2	480	3	12	854	1,2,4,5,6,7,8,9,10,11,12,13,15,16,17,19
RTU-3	RQ-004	NORTH UPPER LEVEL	1,435	2.0	125	1.0	47.4	4	80 / 67	55 / 55	RTU-HC-3	480	3	12	854	1,2,4,5,6,7,8,9,10,11,12,13,15,16,17,19
RTU-4	RN-013	DRILL HALL	3,810	3.0	2080	1.1	165.3	13	80 / 67	55 / 55	RTU-HC-4	480	3	31	1,738	1,3,4,5,6,7,9,10,11,12,13,15,16,17,18,19
RTU-5	RN-013	DRILL HALL	3,840	3.0	2010	1.1	165.3	13	80 / 67	55 / 55	RTU-HC-5	480	3	31	1,738	1,3,4,5,6,7,9,10,11,12,13,15,16,17,18,19
											REFER TO DUCT MOUNTED HEATING COIL SCHEDULE					

NOTES:
1. BASED ON AAON
2. VAV SYSTEM, VFD FOR SUPPLY FAN(S)
3. SINGLE ZONE VAV, VFD FOR SUPPLY FAN(S)
4. DUCT MOUNTED HEATING COIL CONTROLLED BY RTU CONTROLLER
5. UNPOWERED 120V CONVENIENCE BY MANU. WIRED BY EC
6. MANU. PROVIDED PACKAGED CONTROLLER
7. FIELD MOUNTED ENTHALPY ECONOMIZER
8. MANU. PROVIDED CURB ADAPTER
9. 7-DAY, 24-VOLT PROGRAMMABLE THERMOSTAT
10. LONWORKS CONTROLS INTERFACE CONNECTION
11. POWERED EXHAUST
12. R-454B REFRIGERANT
13. MODULATING COOLING
14. HOT GAS REHEAT
15. DOWNFLOW CONFIGURATION
16. SCHEDULED ESP IS TO BE AFTER AUXILARY HEATING COIL.
17. MERV-8 PLEATED FILTERS
18. ROOF CURB
19. CO2 SENSOR MOUNTED IN RETURN AIR DUCT

GAS BOILER SCHEDULE

TAG	MODEL	LOCATION	TYPE	FLUE/ INTAKE SIZE	INPUT MBH	OUTPUT MBH	EWT (°F)	LWT (°F)	FLOW RATE (GPM)	FLUID PRESSURE DROP (FT. OF HEAD)	ELECTRICAL					COMMENTS
											VOLTS	PHASE	FLA	DISC.	STARTER	
B-1	FBN-3001	MECHANICAL ROOM	HOT WATER	10" / 10"	3000.0	2883.0	110	140	216	7.0	208	3	6.5	EC	EC	1,2,3,4,5,6,7,8,9,10,11
B-2	FBN-3001	MECHANICAL ROOM	HOT WATER	10" / 10"	3000.0	2883.0	110	140	216	7.0	208	3	6.5	EC	EC	1,2,3,4,5,6,7,8,9,10,11

1. BASED ON LOCHINVAR
2. CONDENSATE NEUTRALIZER KIT
3. NATURAL GAS MODULATING CONDENSING BOILER
4. OUTDOOR AIR SENSOR
5. INTERNAL CASCADING SEQUENCER
6. 2-WAY BOILER CONTROL VALVE
7. LONWORKS CONTROLS INTERFACE CONNECTION
8. DOMESTIC WATER HEATER PRIORITIZATION
9. STAINLESS STEEL FIRE TUBE HEAT EXCHANGER
10. 160 PSI WORKING PRESSURE
11. ABBREVIATIONS
    EC - ELECTRICAL CONTRACTOR

PUMP SCHEDULE

TAG	MODEL	LOCATION	SERVES	TYPE	INLET/ OUTLET	GPM	TOTAL HEAD (FT. H2O)	ELECTRICAL			COMMENTS
								VOLTS	PHASE	HP	
P-1	E-1510 2.5BB	MECHANICAL ROOM	HYDRONIC SYSTEM	BASE MOUNTED	3.00" / 2.50"	300	75	480	3	10	1,2,3,5
P-2	E-1510 2.5BB	MECHANICAL ROOM	HYDRONIC SYSTEM	BASE MOUNTED	3.00" / 2.50"	300	75	480	3	10	1,2,3,5
P-3	E-1510 2AD-ES	MECHANICAL ROOM	DOMESTIC HW SYSTEM	BASE MOUNTED	2.50" / 2.00"	86	20	120	1	3/4	1,2,3,5
P-4	PL-100	MECHANICAL ROOM	AHU-1	INLINE	1.50" / 1.50"	25	20	120	1	2/5	1,4,5
P-5	PL-100	MECHANICAL ROOM	AHU-2	INLINE	1.50" / 1.50"	31	20	120	1	2/5	1,4,5
P-6	PL-36	NORTH WING CEILING	RTU-HC-1	INLINE	1.25" / 1.25"	4	15	120	1	1/6	1,4,5
P-7	PL-36	NORTH WING CEILING	RTU-HC-2	INLINE	1.25" / 1.25"	4	15	120	1	1/6	1,4,5
P-8	PL-36	NORTH WING CEILING	RTU-HC-3	INLINE	1.25" / 1.25"	4	15	120	1	1/6	1,4,5
P-9	PL-45	NORTH WING CEILING	ERV-HC-2	INLINE	1.50" / 1.50"	13	15	120	1	1/6	1,4,5
P-10	PL-100	DINING HALL CEILING	RTU-HC-4	INLINE	1.50" / 1.50"	21	15	120	1	2/5	1,4,5
P-11	PL-100	DINING HALL CEILING	RTU-HC-5	INLINE	1.50" / 1.50"	21	15	120	1	2/5	1,4,5
P-12	PL-45	KITCHEN CEILING	MAU-HC-1	INLINE	1.50" / 1.50"	15	20	120	1	1/6	1,4,5
P-13	PL-36	NORTH WING CEILING	ERV-HC-1	INLINE	1.25" / 1.25"	7	15	120	1	1/6	1,4,5

NOTES:
1. BASED ON BELL & GOSSETT
2. VFD BY MANU (REFER TO DIVISION 26 VFD SPECIFICATION)
3. SUCTION DIFFUSER WITH STRAINER
4. DISCONNECT/STARTER PROVIDED BY ELECTRICAL CONTRACTOR
5. LONWORKS CONTROLS INTERFACE CONNECTION

AIR HANDLING UNIT SCHEDULE

TAG	MODEL	SUPPLY FAN DATA					HOT WATER HEATING COIL								DX COOLING COIL				ELECTRICAL			COMMENTS
		SUPPLY CFM	MIN OA CFM	ESP (IN-WC)	TSP (IN-WC)	SUPPLY FAN (QTY @ HP)	MBH	ROWS	GPM	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	WPD	TOTAL MBH	ROWS	EAT (°F)	LAT (°F)	VOLTAGE	PHASE	FLA	
I-1	V3 - ERB	8,825	1375	2	3.7	2 @ 5 HP	359.0	2	25.0	57	95	140	110.8	2.5"	287.8	6	80	55	480	3	10	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17,18
I-2	V3 - ERB	8,755	2080	1.5	3.1	2 @ 5 HP	407.6	2	31.0	51	95	140	113.3	3.4"	293.1	6	80	55	480	3	10	1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18

NOTES:
1. BASED ON AAON
2. MOUNT ON 6" CONCRETE PAD
3. DIRECT DRIVE PLENUM FAN WITH FACTORY INSTALLED VFD
4. CONNECT TO NEW LONWORKS BAS
5. THREE-WAY MODULATING HEATING COIL CONTROL VALVE
6. DIRTY FILTER SWITCH
7. FREEZESTAT
8. FAN STATUS CONTROL
9. GALVANIZED DRAIN PAN
10. AHU MUST FIT THROUGH 84" TALL x 72" DOORWAY
11. AIR HANDLING UNIT TO CONSIST OF THE FOLLOWING MODULES: AIR MIXING SECTION (BACK OA INLET AND SIDE RA INTET) WITH ACCESS DOOR, FILTER RACK (MERV-13) HEATING COIL AND COOLING COIL SECTION WITH ACCESS DOOR, AND SUPPLY FAN SECTION (TOP DISCHARGE) WITH ACCESS DOOR
12. SMOKE DETECTORS INSTALLED IN SUPPLY AND RETURN AIR STREAM
13. ENTHALPY ECONOMIZER
14. SIDE RETURN AIR INLET WITH DAMPER, BACK OUTSIDE AIR WITH DAMPER, AND TOP SUPPLY AIR DISCHARGE
15. 214" LONG x 66.5" WIDE x 41.5" TALL
16. 80.0" LONG x 57.5" WIDE x 95" TALL
17. MODULATING COOLING
18. CO2 SENSOR MOUNTED IN RETURN AIR DUCT

FOR SITE OWNED UTILITIES

72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
CRAIG ALAN TRUEMPLER
LICENSE NO. 6201049255
PROFESSIONAL ENGINEER

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT

ISSUED FOR: DATE
☐ PRELIMINARY
☒ CONSTRUCTION 1/15/2026
☐ FINAL RECORD

SHEET TITLE: MECHANICAL SCHEDULES
IDENTIFICATION NO:
PROJECT NO: 24986.00
FILE NO./INDEX CODE:
SHEET M-900

EXPANSION TANK SCHEDULE

TAG	MODEL	LOCATION	TYPE	TANK VOLUME (GAL.)	ACCEPTABLE VOLUME (GAL.)	COMMENTS
XT-1	B-300	MECHANICAL ROOM	HYDRONIC	80	80	1,2,3

NOTES:
1. BASED ON BELL & GASSETT
2. BLADDER TYPE PRESSURE VESSEL
3. GROUND MOUNTED

INTAKE HOOD SCHEDULE

TAG	FUNCTION	SERVICE	MODEL	THROAT SIZE	HEIGHT	INLET FREE AREA (SQ. FT.)	CFM	PRESSURE DROP (IN WC)	SCREEN	COMMENTS
IH-1	INTAKE	EF-6	FGI	24x24	19"	4.00	1800	0.03	BIRD	1,2,3
IH-2	INTAKE	EF-8	FGI	30x36	19"	7.50	3300	0.03	BIRD	1,3,4,5
IH-3	INTAKE	EF-9	FGI	30x36	19"	7.50	3300	0.03	BIRD	1,3,4,5

NOTES:
1. BASED ON GREENHECK
2. CURB ADAPTER
3. CONTROL DAMPER WITH DDC ACTUATOR
4. SECURITY BARS IN CURB
5. MANU. PROVIDED ROOF CURB

SIDE STREAM FILTER SCHEDULE

TAG	MODEL	LOCATION	PARTICLE SIZE	MAX GPM	INLET/ OUTLET	ELECTRICAL VOLTS	ELECTRICAL PHASE	ELECTRICAL AMPS	COMMENTS
SSF-1	TBX-0030	SOUTH MECH. ROOM	44 MICRON	30	1-1/2"/1"	480	3	2.1	1,2,3,4,5,6,7,8,9,10,11,12,13,14

NOTES:
1. BASED ON LAKOS
2. UL LISTED/NEMA 4X MOTOR STARTER AND CONTROLS WITH HOA SWITCH.
3. SOLIDS RECOVERY VESSEL (SRV)
4. SRV 44 MICRON REPLACABLE BAG FILTER. DIRTY FILTER INDICATOR
5. 19.5" TALL x 13" DIA
6. INLET/OUTLET VALVE KIT
7. 150 PSI MAXIMUM PRESSURE
8. STAINLESS STEEL STANDPIPE
9. HIGH TEMPERATURE RATED CARTIDGE FILTERS
10. CONTRACTOR TO PROVIDE 5 REPACABLE CARTIDGE FILTERS
11. SIDE STREAM ASSEMBLY TO BE FULLY ASSEMBLED AND PRE PIPED ON SKID
12. INLET/OUTLET PRESSURE GUAGES (0-100 PSI SLYCERIN-FILLED)
13. INLET/OUTLET VALVE KIT
14. LONWORKS INTERFACE CARD

LOUVER SCHEDULE

TAG	FUNCTION	SERVES	MAKE/ MODEL	NECK SIZE WIDTH	NECK SIZE HEIGHT	DEPTH	INLET FREE AREA (SQ FT)	CFM	PRESSURE DROP (" WC)	SCREEN	COMMENTS
L-1	EXHAUST	EF-4	L6375D	12"	12"	6"	0.25	150	0.08	BIRD	1,2
L-2	EXHAUST	EF-7	L6375D	36"	24"	6"	2.72	1,815	0.08	BIRD	1,2
L-3	SUPPLY	D-4	L6375D	48"	24"	6"	3.69	1,815	0.08	BIRD	1,2

NOTES:
1. BASED ON RUSKIN
2. ARCHITECT TO SELECT COLOR

ELECTRIC HEATER SCHEDULE

TAG	MODEL	LOCATION	TYPE	CAPACITY (KW)	EAT °F	VOLTS	PHASE	DISC. BY	STARTER BY	COMMENTS
ECUH-1	F3425	STAIRWELL	VERTICAL	5.0	70	208	1	MANU	-	1,2,3
ECUH-2	F3425	CORRIDOR 014	VERTICAL	5.0	70	208	1	MANU	-	1,2,3
ECUH-3	F3425	KITCHEN 013	VERTICAL	5.0	70	208	1	MANU	-	1,2,3

NOTES:
1. BASED ON MARKEL
2. INTERNAL TAMPERPROOF THERMOSTAT
3. SURFACE MOUNTED

VAV BOX SCHEDULE

TAG	MODEL NUMBER	SYSTEM	AIRFLOW (CFM) SA (MAX.)	AIRFLOW (CFM) MIN. FLOW	APD "WG	COMMENTS
VAV-1	DESV	AHU-1	340	100	NOTE 2	1,2
VAV-2	DESV	AHU-1	750	225	NOTE 2	1,2
VAV-3	DESV	AHU-1	200	60	NOTE 2	1,2
VAV-4	DESV	AHU-1	735	220	NOTE 2	1,2
VAV-5	DESV	AHU-1	1470	440	NOTE 2	1,2
VAV-6	DESV	AHU-1	420	125	NOTE 2	1,2
VAV-7	DESV	AHU-1	105	30	NOTE 2	1,2
VAV-8	DESV	AHU-1	105	30	NOTE 2	1,2
VAV-9	DESV	AHU-1	335	100	NOTE 2	1,2
VAV-10	DESV	AHU-1	285	85	NOTE 2	1,2
VAV-11	DESV	AHU-1	400	120	NOTE 2	1,2
VAV-12	DESV	AHU-1	400	120	NOTE 2	1,2
VAV-13	DESV	AHU-1	315	95	NOTE 2	1,2
VAV-14	DESV	AHU-1	315	95	NOTE 2	1,2
VAV-15	DESV	AHU-1	840	250	NOTE 2	1,2
VAV-16	DESV	AHU-1	1140	340	NOTE 2	1,2
VAV-17	DESV	AHU-1	390	115	NOTE 2	1,2
VAV-18	DESV	AHU-2	600	180	NOTE 2	1,2
VAV-19	DESV	AHU-2	155	45	NOTE 2	1,2
VAV-20	DESV	AHU-2	270	80	NOTE 2	1,2
VAV-21	DESV	AHU-2	270	80	NOTE 2	1,2
VAV-22	DESV	AHU-1	280	85	NOTE 2	1,2
VAV-23	DESV	AHU-2	725	220	NOTE 2	1,2
VAV-24	DESV	AHU-2	1500	450	NOTE 2	1,2
VAV-25	DESV	AHU-2	705	210	NOTE 2	1,2
VAV-26	DESV	AHU-2	600	180	NOTE 2	1,2
VAV-27	DESV	AHU-2	200	60	NOTE 2	1,2
VAV-28	DESV	AHU-2	500	150	NOTE 2	1,2
VAV-29	DESV	AHU-2	270	80	NOTE 2	1,2
VAV-30	DESV	AHU-2	220	65	NOTE 2	1,2
VAV-31	DESV	AHU-2	500	150	NOTE 2	1,2
VAV-32	DESV	AHU-2	740	220	NOTE 2	1,2
VAV-33	DESV	AHU-2	290	85	NOTE 2	1,2
VAV-34	DESV	AHU-2	605	180	NOTE 2	1,2
VAV-35	DESV	AHU-2	605	180	NOTE 2	1,2
VAV-36	DESV	RTU-1	490	145	NOTE 2	1,2
VAV-37	DESV	RTU-1	160	50	NOTE 2	1,2
VAV-38	DESV	RTU-1	400	120	NOTE 2	1,2
VAV-39	DESV	RTU-1	170	50	NOTE 2	1,2
VAV-40	DESV	RTU-1	420	125	NOTE 2	1,2
VAV-41	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-42	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-43	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-44	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-45	DESV	RTU-2	115	35	NOTE 2	1,2
VAV-46	DESV	RTU-2	115	35	NOTE 2	1,2
VAV-47	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-48	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-49	DESV	RTU-2	115	35	NOTE 2	1,2
VAV-50	DESV	RTU-2	115	35	NOTE 2	1,2
VAV-51	DESV	RTU-2	110	35	NOTE 2	1,2
VAV-52	DESV	RTU-2	125	40	NOTE 2	1,2
VAV-53	DESV	RTU-2	140	40	NOTE 2	1,2

NOTES:
1. BASED ON TITUS
2. THE TOTAL MAXIMUM PRESSURE DROP ACROSS THE BOX AND REHEAT COIL SHALL NOT EXCEED 0.3"

DAMPER SCHEDULE

TAG	FUNCTION	LOUVER SERVICE	# OF SECTIONS	SECTION SIZE WIDTH	SECTION SIZE HT OR L	DEPTH	CFM	ELECTRICAL WATTS	ELECTRICAL VOLTAGE	ELECTRICAL DISC. BY	ELECTRICAL STARTER BY	NOTES
D-1	RELIEF AIR	AHU-1	1	40	24	6"	8,825	--	24	NR	NR	1,2,3,4
D-2	RELIEF AIR	AHU-2	1	40	24	6"	8,755	--	24	NR	NR	1,2,3,4
D-3	INTAKE AIR	IH-1	1	24	24	6"	1,800	--	24	NR	NR	1,2
D-4	INTAKE AIR	L-3	1	48	24	6"	1,815	--	24	NR	NR	1,2
D-5	INTAKE AIR	IH-2	1	36	30	6"	3,300	--	24	NR	NR	1,2
D-6	INTAKE AIR	IH-3	1	36	30	6"	3,300	--	24	NR	NR	1,2

NOTES:
1. BASED ON RUSKIN
2. LOW LEAKAGE AND LOW PRESSURE
3. DAMPER TO BE INSTALLED ON EXISTING HOOD
4. CONTRACTOR TO FIELD VERIFY REQUIRED DAMPER SIZE NEEDED FOR EXISTING HOOD

ELECTRICAL NOTES:
EC - ELECTRICAL CONTRACTOR
MC - MECHANICAL CONTRACTOR
NR - NOT REQUIRED

HYDRONIC UNIT HEATER SCHEDULE

TAG	MODEL	CFM	HOT WATER MBH	HOT WATER EWT °F	HOT WATER LWT °F	HOT WATER GPM	FAN - ELECTRICAL HP	FAN - ELECTRICAL VOLTS	FAN - ELECTRICAL PHASE	COMMENTS
UH-1	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,7
UH-2	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,8
UH-3	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,8
UH-4	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,8
UH-5	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,8
UH-6	UHSB146	2220	92.8	140	110	6.4	1/6	120	1	1,2,3,4,5,6,8
UH-7	UHSB122	1790	72.5	140	110	5.0	1/6	120	1	1,2,3,4,5,6,8
UH-8	UHSB122	1790	72.5	140	110	5.0	1/6	120	1	1,2,3,4,5,6,8

NOTES:
1. BASED ON TRANE
2. VERTICALLY MOUNTED
3. MANUFACTURER PROVIDED LINE VOLTAGE 24-VOLT THERMOSTAT
4. AIR DEFLECTION LOUVERS
5. DISCONNECT BY EC
6. PROVIDE WALL MOUNTING HARDWARE
7. 3-WAY MODULATING CONTROL VALVE
8. 2-WAY MODULATING CONTROL VALVE

DUCT MOUNTED HEATING COIL

TAG	HTG. MBH	EAT (DB)	LAT (DB)	CFM	EWT	LWT	CONTROL VALVE GPM	COMMENTS
RTU-HC-1	59.3	62	95	1640	140	110	4.0	1,2,4,5,8
RTU-HC-2	59.3	59	95	1495	140	110	4.0	1,2,4,5,8
RTU-HC-3	51.9	63	95	1435	140	110	3.5	1,2,4,5,8
RTU-HC-4	315.1	26	102	3810	140	110	21.0	1,2,4,6,9
RTU-HC-5	315.1	28	104	3840	140	110	21.0	1,2,4,6,9
ERV-HC-1	96.3	31	104	1215	140	110	6.5	1,2,4,7,8
ERV-HC-2	192.7	29	98	2600	140	110	13.0	1,2,4,7,10
MAU-HC-1	234.7	-10	95	2070	140	108.3	15.0	1,2,4,6,11

NOTES:
1. BASED ON AAON
2. 2-WAY MODULATING CONTROL VALVE
3. 3-WAY MODUALTING CONTROL VALVE
4. REFER TO PIPE SIZE INDICATED ON DRAWINGS
5. 2-ROW COPPER COIL WITH ALUMINUM FINS
6. 4-ROW COPPER COIL WITH ALUMINUM FINS
7. 3-ROW COPPER COIL WITH ALUMINUM FINS
8. 24" WIDE x 17.5" TALL WITH 168 FINS PER FOOT
9. 36" WIDE x 28.5" TALL WITH 168 FINS PER FOOT
10. 32" WIDE x 22.5" TALL WITH 168 FINS PER FOOT
11. 24" WIDE x 23.75" TALL WITH 168 FINS PER FOOT

DIFFUSER, REGISTER, & GRILLE SCHEDULE

TAG	MODEL	NECK SIZE	FACE SIZE	CFM RANGE (MIN-MAX.)	PATTERN	MOUNT	MATERIAL	COLOR	100 FPM THROW	COMMENTS
SD-1	TMS	6"	24x24	50-135	3 CONE / 4-WAY	LAY-IN / SURFACE	STEEL	WHITE	3'	1,2,3,4
SD-1	TMS	8"	24x24	140-245	3 CONE / 4-WAY	LAY-IN / SURFACE	STEEL	WHITE	5'	1,2,3,4
SD-1	TMS	10"	24x24	250-380	3 CONE / 4-WAY	LAY-IN / SURFACE	STEEL	WHITE	6'	1,2,3,4
SD-1	TMS	14"	24x24	600-1275	3 CONE / 4-WAY	LAY-IN / SURFACE	STEEL	WHITE	10'	1,2,3,4
SD-2	S300FL	10x4	12x6	50-160	ADJ DBL DEFL	DUCT	ALUMINUM	WHITE	6'-11'	1,2,3,4,5
SD-2	S300FL	12x8	14x10	180-430	ADJ DBL DEFL	DUCT	ALUMINUM	WHITE	11'-21'	1,2,3,4,5
SD-3	TLF	12"	48x24	265-400	LAMINAR	LAY-IN	STEEL	WHITE	-	1,2,3,4
SD-4	272RL	10x10	10x10	215-430	ADJ DBL DEFL	SURFACE	EXT AL BLDS	WHITE	11'-21'	1,2,3,4
SD-4	272RL	48x24	48x24	1,800 -4,500	ADJ DBL DEFL	SURFACE	EXT AL BLDS	WHITE	13'-40'	1,2,3,4
RG-1	50F	24x24	24x24	2,000	1/2x1/2x1/2 GRID	LAY-IN / SURFACE	ALUMINUM	WHITE	-	1,2,3,4
TG-1	23RL	8x8	8x8	100-200	3/4 SPC - 45° DFL	SURFACE	STEEL	WHITE	-	1,2,3,4
EG-1	50F	12x12	12x12	500	1/2x1/2x1/2 GRID	LAY-IN / SURFACE	ALUMINUM	WHITE	-	1,2,3,4
EG-2	50F	24x24	24x24	2,000	1/2x1/2x1/2 GRID	LAY-IN / SURFACE	ALUMINUM	WHITE	-	1,2,3,4

NOTES:
1. BASED ON: TITUS
2. MAX. NC = 30
3. MAX. APD - 0.10 INCHES
4. SELECT BORDER TO MATCH ROOM FINISH SCHEDULE
5. INTENGRAL DAMPER

FINNED TUBE RADIATION SCHEDULE

TAG	TYPE	LENGTH, FT. FIN TUBE	LENGTH, FT. ENCLOSURE	CAPACITY BTU/HR	EWT °F	LWT °F	GPM	DIMENSIONS (WIDTH x	COMMENTS
FT-1	LT-SERIES S-TYPE	4'6"	7'6"	2790	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-2	LT-SERIES S-TYPE	4'6"	7'6"	2790	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-3	LT-SERIES S-TYPE	4'6"	7'6"	2790	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-4	LT-SERIES S-TYPE	4'6"	7'6"	2790	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-5	LT-SERIES S-TYPE	3'4"	8'0"	2067	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-6	LT-SERIES S-TYPE	3'4"	8'0"	2067	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-7	LT-SERIES S-TYPE	3'4"	8'0"	2067	140	120	0.5	6" x 14"	1,2,3,4,5,6,7
FT-8	LT-SERIES S-TYPE	3'4"	8'0"	2067	140	120	0.5	6" x 14"	1,2,3,4,5,6,7

NOTES:
1. BASED ON STERLING
2. MANUFACTURER SHALL PROVIDE END CAP, CORNER, AND ALL SLEEVE ACCESSORIES FOR CONTINOUS ENCLOSURE
3. FIN TUBE SHALL BE CENTERED UNDER WINDOW (CONTRACTOR TO VERIFY IN FIELD)
4. SLOPE TOP ENCLOUSRE
5. 2-WAY, 2-POSITION CONTROL VALVE
6. MOUNT ON WALL BELOW WINDOW
7. FIN TUBE TUBE SIZE TO MATCH BRANCH PIPING SIZE
8. 3-WAY MODULATING CONTROL VALVE

ENERGY RECOVERY UNIT SCHEDULE

TAG	MODEL	LOCATION	EA CFM	OA CFM	SA ESP (IN. WC)	EA ESP (IN. WC)	OUTDOOR AIR SUMMER (°F)	OUTDOOR AIR WINTER (°F)	EXHAUST AIR SUMMER (°F)	EXHAUST AIR WINTER (°F)	SUPPLY AIR SUMMER (°F)	SUPPLY AIR WINTER (°F)	FAN QTY SA	FAN QTY EA	ELECTRICAL FLA	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	COMMENTS
ERV-1	RQ-005	ROOF MOUNTED	1215	1215	0.8	0.7	90	-10	72	72	55	NOTE 15	1 (2 HP)	1 (1 HP)	15	480	3	1,2,3,4,5,6,7,8,9,10,11,12,13,14
ERV-2	RN-008	ROOF MOUNTED	2600	2600	0.9	0.8	90	-10	72	72	55	NOTE 15	1 (3 HP)	1 (2 HP)	23	480	3	1,2,3,4,5,6,7,8,9,10,11,12,13,14

NOTES:
1. BASED ON AAON
2. BACKDRAFT DAMPER KIT
3. ENERGY RECOVERY CUBE
4. MOTORIZED DAMPER KIT
5. MERV-8 FILTERS
6. DIRECT DRIVE VARIABLE SPEED FANS
7. DISCONNECT BY EC
8. HOT GAS REHEAT
9. ROOF CURB ADAPTORS
10. MODULATING COOLING
11. VFD(S) PROVIDED BY MANU.
12. DOWNFLOW CONFIGURATION
13. LONWORKS CONTROLS INTERFACE CONNECTION
14. REMOTE DUCT MOUNTED HEATING COIL CONTROLLED BY UNIT CONTROLS
15. REFER TO DUCT MOUNTED HEATING COIL SCHEDULE

Sidock Group, Inc.
ENGINEERS • ARCHITECTS • CONSULTANTS • PROJECT MANAGERS

MATRIX CONSULTING ENGINEERS, INC
544 CHERBOURG DRIVE
LANSING, MI 48917
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24986.00

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LARCH, R.A., DIRECTOR

Jackson West Armory Renovations
2700 W. Argyle St., Jackson, MI 49202

DESIGNED	TAT
DRAWN	TAT
CHECKED	CAT
APPROVED	CAT
DATE	1/15/2026
ISSUED FOR: PRELIMINARY	☐
ISSUED FOR: CONSTRUCTION	☒
ISSUED FOR: FINAL RECORD	☐
SHEET TITLE:	MECHANICAL SCHEDULES
IDENTIFICATION NO:	
PROJECT NO: 24986.00	
SHEET	M-901
FILE NO./INDEX CODE:	

STATE OF MICHIGAN
CRAIG TRIERWEILER
LICENSEE
NUMBER NO.
6201049255
PROFESSIONAL ENGINEER

FOR SITE OWNED UTILITIES
72 HOURS (3 WORKING DAYS) BEFORE YOU DIG
CALL: MR. ZIMMERMAN
PH: (248) 606-8821
FACILITIES MANAGEMENT