Replace Chiller & HVAC, Headquarters & Garage Buildings
TROOP F HEADQUARTERS
Jefferson City, Missouri

ARCHITECT:

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MEP ENGINEER:

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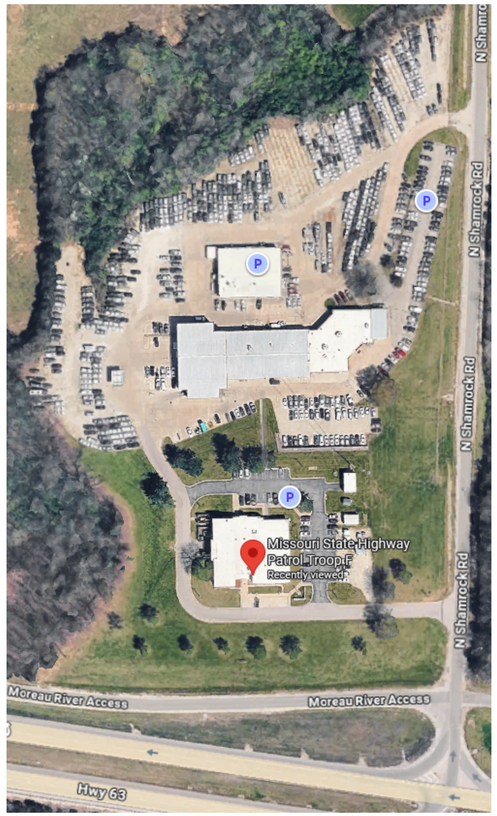

OWNER: STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

DEPARTMENT OF PUBLIC SAFETY
MISSOURI STATE HIGHWAY PATROL

PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER: TIMBERLAKE ENGINEERING
A CEI COMPANY

PROJECT NUMBER: R2507-01

SITE NUMBER: 6007
FACILITY NUMBER: 8136007002 - HEADQUARTERS
8136007004 GHQ VEHICLE MAINTENANCE BUILDING

SHEET NUMBER:
G-001
SHEET 1 OF 18
ISSUE DATE: 05/07/2026

SHEET LIST

SHEET NUMBER	SHEET TITLE
G-001	COVER SHEET
G-002	CODES & SHEET LIST
A101	FIRST FLOOR DEMOLITION RCP
A102	SECOND FLOOR DEMOLITION RCP
A201	FIRST FLOOR REFLECTED CEILING PLAN
A202	SECOND FLOOR REFLECTED CEILING PLAN
ME000	MECHANICAL & ELECTRICAL NOTES, SPECIFICATIONS, AND LEGENDS
ME001	MECHANICAL & ELECTRICAL SITE PLAN
MED101	HEADQUARTERS DEMO MECHANICAL & ELECTRICAL PLAN
ME100	HEADQUARTERS BASEMENT MECHANICAL & ELECTRICAL PLAN
ME101	HEADQUARTERS MAIN LEVEL MECHANICAL & ELECTRICAL PLAN
ME102	HEADQUARTERS ROOF MECHANICAL & ELECTRICAL PLAN
ME201	GARAGE / RADIO SHOP MECHANICAL & ELECTRICAL PLAN
ME202	CAR WASH MECHANICAL & ELECTRICAL PLAN
ME501	MECHANICAL & ELECTRICAL DETAILS
ME601	MECHANICAL & ELECTRICAL SCHEDULES 1
ME602	MECHANICAL & ELECTRICAL SCHEDULES 2
ME603	SEQUENCE OF OPERATION

BASED ON THE FOLLOWING CODES

2018	INTERNATIONAL BUILDING CODE
2018	INTERNATIONAL MECHANICAL CODE
2018	INTERNATIONAL PLUMBING CODE
2018	INTERNATIONAL FUEL GAS CODE
2018	INTERNATIONAL FIRE CODE
2018	INTERNATIONAL ENERGY CONSERVATION CODE
2017	NATIONAL ELECTRIC CODE

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

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SHANE L. FLOYD
NUMBER PE-2019017814
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MAY 7, 2026

Shane Floyd, P.E.
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REPLACE CHILLER & HVAC, HEADQUARTERS & GARAGE BUILDINGS
TROOP F HEADQUARTERS
JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

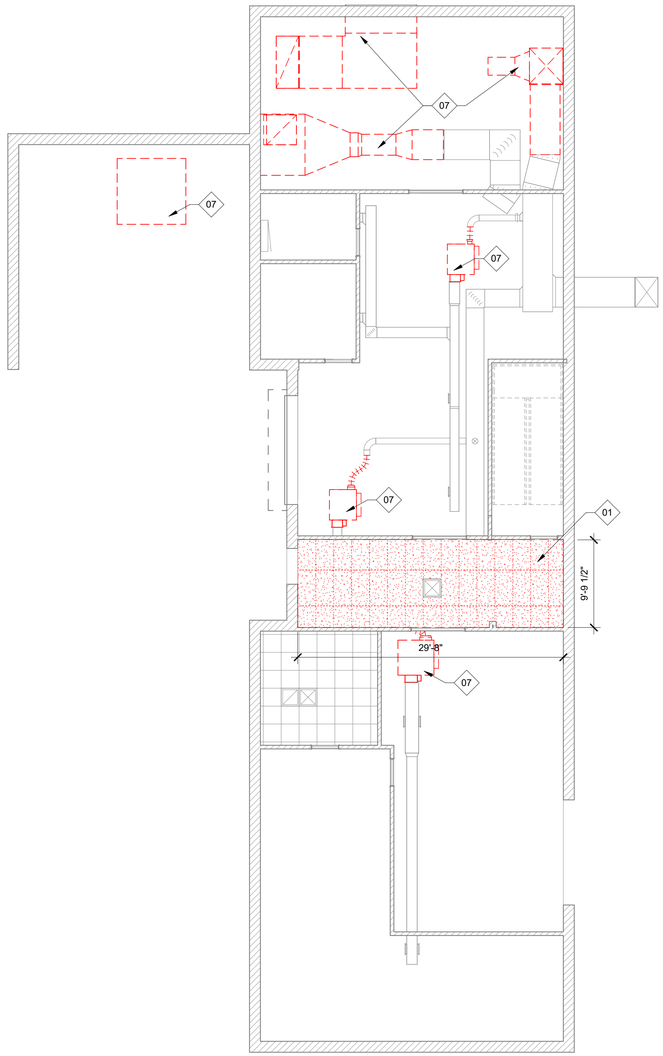
PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
CODES & SHEET LIST

SHEET NUMBER:
G-002
SHEET 2 OF 18
ISSUE DATE: 05/07/2026



01 BASEMENT LEVEL - DEMOLITION REFLECTED CEILING PLAN

A106 A101 1/8" = 1'-0"

GENERAL NOTES - DEMOLITION

1. REMOVE CEILING INDICATED BY THE FOLLOWING LINETYPE (UNLESS NOTED OTHERWISE):
2. PROTECT EXISTING SURFACES & COMPONENTS SCHEDULED TO REMAIN
3. REFER TO STRUCTURAL & MEP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION
4. BEFORE DEMOLITION PHASE, COORDINATE WITH OWNER REPRESENTATIVE

= REMOVE CEILING TILES FOR WORK AT LOCATION

KEYNOTES - DEMOLITION RCP

01	DEMO EXISTING 2' X 4' ACT SYSTEM
07	REFER TO MEP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION

STATE OF MISSOURI
MIKE PARSON, GOVERNOR

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5/7/2026
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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

HVAC Renovation Highway Patrol Troop F Building

MO State Highway Patrol Troop F Jefferson City, MO

2920 N Shamrock Rd Jefferson City, Missouri 65102

PROJECT # R2507-01
SITE#6007
FACILITY # 8136007002

REVISION	DATE

CAD DWG FILE: R2507-01_A101.dwg
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SHEET TITLE:
FIRST FLOOR DEMOLITION RCP

SHEET NUMBER:
A101
SHEET 3 OF 18
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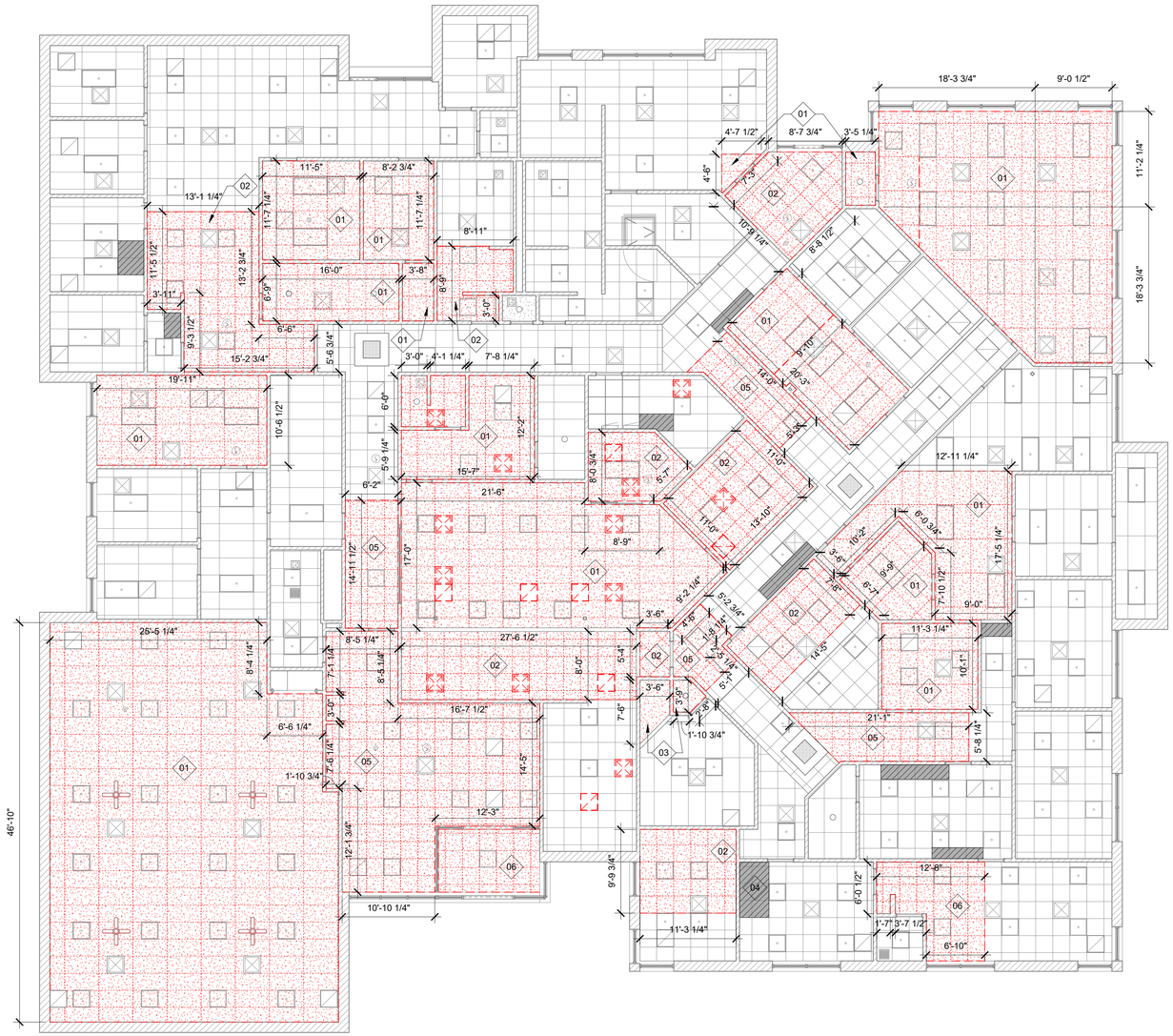

01 MAIN LEVEL - DEMOLTION REFLECTED CEILING PLAN

A102 1/8" = 1'-0"

GENERAL NOTES - DEMOLITION

1. REMOVE CEILING INDICATED BY THE FOLLOWING LINETYPE (UNLESS NOTED OTHERWISE):
2. PROTECT EXISTING SURFACES & COMPONENTS SCHEDULED TO REMAIN
3. REFER TO STRUCTURAL & MEP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION
4. BEFORE DEMOLITION PHASE, COORDINATE WITH OWNER REPRESENTATIVE

= REMOVE CEILING TILES FOR WORK AT LOCATION

KEYNOTES - DEMOLITION RCP

01	DEMO EXISTING 2' X 4' ACT SYSTEM
02	DEMO EXISTING 2' X 2' ACT SYSTEM
03	DEMO EXISTING GYPSUM BOARD CEILING
04	REMOVE AND PROTECT EXISTING CEILING TILE FOR WORK IN THIS AREA
05	REMOVE ACT SYSTEM AND SALVAGE EXISTING 2' X 2' CEILING TILE FOR REINSTALLATION
06	REMOVE AND SALVAGE EXISTING HEAVY TEXTURED 2' X 2' CEILING TILE ONLY FOR REINSTALLATION. EXISTING CEILING GRID TO REMAIN.

STATE OF MISSOURI
MIKE PARSON, GOVERNOR

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HVAC Renovation Highway Patrol Troop F Building

MO State Highway Patrol Troop F Jefferson City, MO

2920 N Shamrock Rd Jefferson City, Missouri 65102

PROJECT # R2507-01
SITE#6007
FACILITY # 8136007002

REVISION	DATE

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SHEET TITLE:
SECOND FLOOR DEMOLITION RCP

SHEET NUMBER:
A102
SHEET 4 OF 18
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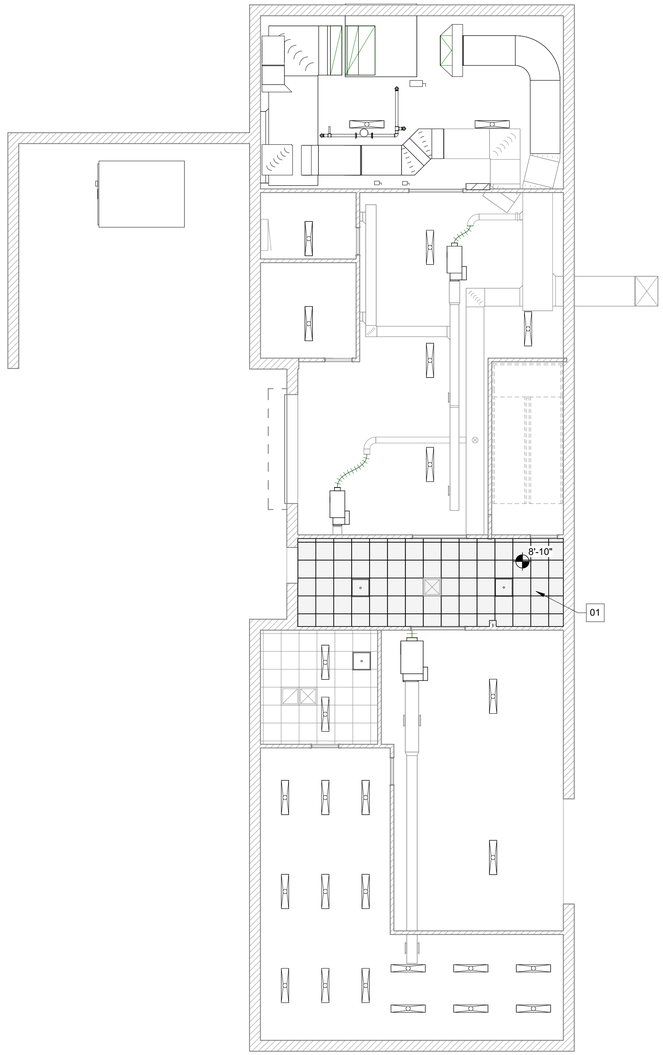

01 BASEMENT LEVEL - REFLECTED CEILING PLAN

A201 1/8" = 1'-0"

GENERAL NOTES - CEILING

1. FOR SPECIFICATION OF LIGHT FIXTURES AND MECHANICAL SYSTEM COMPONENTS, REFER TO MEP
2. CEILING LEGEND IS SYMBOLIC TO ACTUAL FIXTURE - REFER TO MEP FIXTURE SCHEDULES
3. ALL CEILING HEIGHTS ARE 9'-0" UNLESS NOTED OTHERWISE.
4. FOR LOCATIONS OF LIGHT FIXTURES - REFER MEP
5. SHIFT CEILING TILE TO AVOID SLIVERS AT WALLS - IF THIS REQUIRES A SIGNIFICANT SHIFT INFORM ARCHITECT AND MEP FOR DIRECTION
6. REFER TO SPECIFICATIONS

= NEW CEILING TILE AND GRID

LEGEND - REFLECTED CEILING

- 2' X 2' LAY-IN ACOUSTICAL CEILING PANEL & GRID SYSTEM
- GWB CEILING
- 2 X 2 LIGHT FIXTURE - REF MEP
- 2 X 4 LIGHT FIXTURE - REF MEP
- CAN LIGHT FIXTURE - REF MEP
- PENDANT LIGHT FIXTURE - REF MEP
- WALL MOUNTED FIXTURE - REF MEP
- SUPPLY AIR DIFFUSER - REF MEP
- RETURN AIR GRILLE
- ABOVE CEILING SOUND MASKING SYSTEM EXTENTS
- SPRINKLER HEAD - REF MEP
- (S) SPEAKER ROUGH-IN LOCATION - REF MEP
- CUBICLE CURTAIN TRACK
- CEILING ELEVATION LEVEL
- TUBULAR SKYLIGHT LENS
- EXIT LIGHT - REF MEP

KEYNOTES - REFLECTED CEILING PLAN

01	NEW 2' x 2' ACT SYSTEM (ACT-1)

STATE OF MISSOURI
MIKE PARSON, GOVERNOR

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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

HVAC Renovation Highway Patrol Troop F Building

MO State Highway Patrol Troop F Jefferson City, MO

2920 N Shamrock Rd Jefferson City, Missouri 65102

PROJECT # R2507-01
SITE#6007
FACILITY # 8136007002

REVISION	DATE

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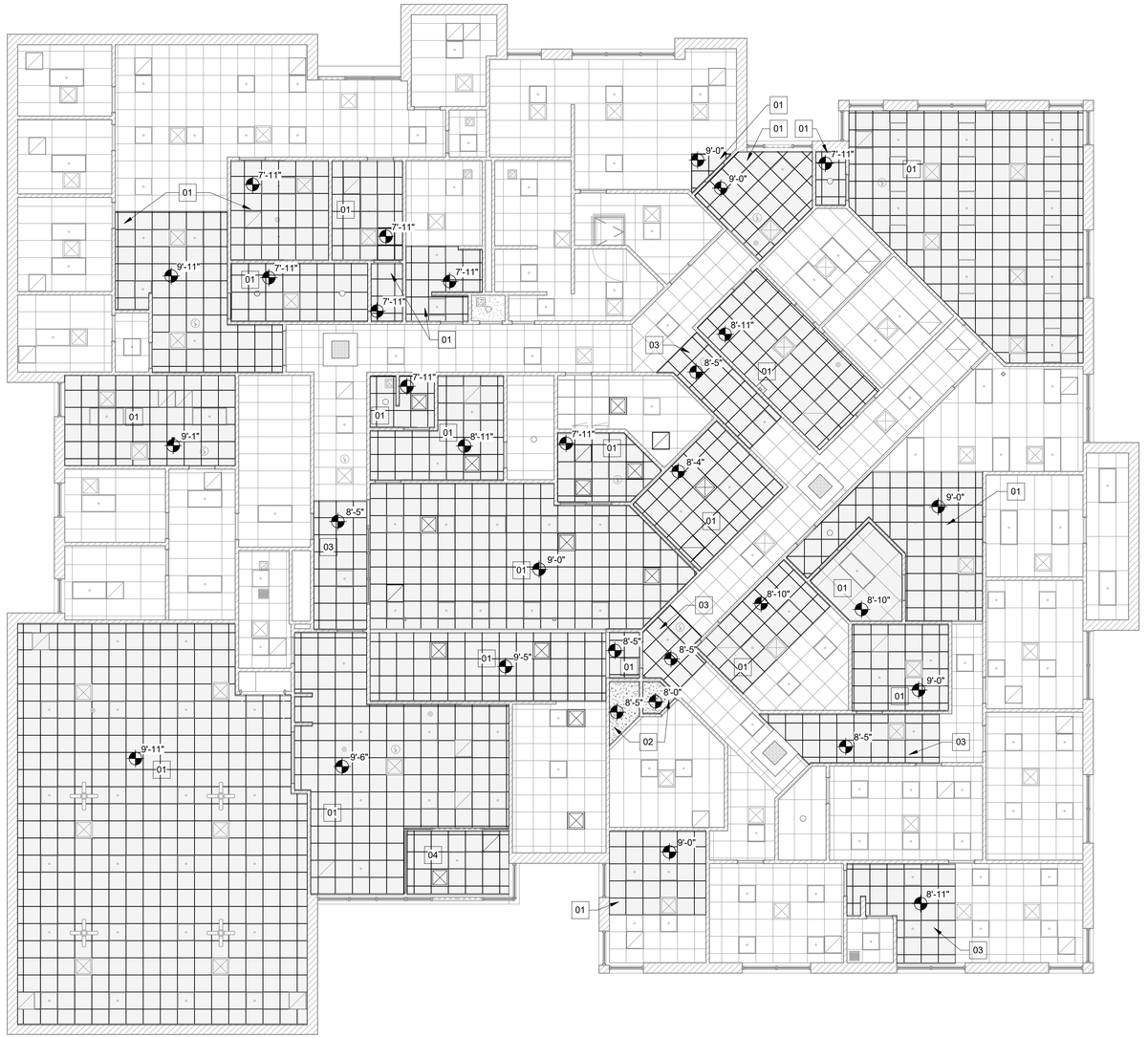
SHEET TITLE:
FIRST FLOOR REFLECTED CEILING PLAN

SHEET NUMBER:
A201
SHEET 5 OF 18
ISSUE DATE: 05/07/2026



01 MAIN LEVEL - REFLECTED CEILING PLAN

A202 1/8" = 1'-0"

GENERAL NOTES - CEILING

1. FOR SPECIFICATION OF LIGHT FIXTURES AND MECHANICAL SYSTEM COMPONENTS, REFER TO MEP
2. CEILING LEGEND IS SYMBOLIC TO ACTUAL FIXTURE - REFER TO MEP FIXTURE SCHEDULES
3. ALL CEILING HEIGHTS ARE 9'-0" UNLESS NOTED OTHERWISE.
4. FOR LOCATIONS OF LIGHT FIXTURES - REFER MEP
5. SHIFT CEILING TILE TO AVOID SLIVERS AT WALLS - IF THIS REQUIRES A SIGNIFICANT SHIFT INFORM ARCHITECT AND MEP FOR DIRECTION
6. REFER TO SPECIFICATIONS

= NEW CEILING TILE AND GRID

LEGEND - REFLECTED CEILING

- 2' X 2' LAY-IN ACOUSTICAL CEILING PANEL & GRID SYSTEM
- GWB CEILING
- 2 X 2 LIGHT FIXTURE - REF MEP
- 2 X 4 LIGHT FIXTURE - REF MEP
- CAN LIGHT FIXTURE - REF MEP
- PENDANT LIGHT FIXTURE - REF MEP
- WALL MOUNTED FIXTURE - REF MEP
- SUPPLY AIR DIFFUSER - REF MEP
- RETURN AIR GRILLE
- ABOVE CEILING SOUND MASKING SYSTEM EXTENTS
- SPRINKLER HEAD - REF MEP
- SPEAKER ROUGH-IN LOCATION - REF MEP
- CUBICLE CURTAIN TRACK
- CEILING ELEVATION LEVEL
- TUBULAR SKYLIGHT LENS
- EXIT LIGHT - REF MEP

KEYNOTES - REFLECTED CEILING PLAN

01	NEW 2' x 2' ACT SYSTEM (ACT-1)
02	NEW GYPSUM BOARD CEILING, PAINTED (IPS-2A)
03	REINSTALL SALVAGED 2' x 2' HEAVY TEXTURE TILE (ACT-4)
04	NEW 2' X 2' CEILING TILE ONLY (ACT-2)

STATE OF MISSOURI
MIKE PARSON, GOVERNOR

STATE OF MISSOURI
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NUMBER A-2025015734
REGISTERED ARCHITECT

5/7/2026
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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

HVAC Renovation Highway Patrol Troop F Building

MO State Highway Patorl Troop F Jefferson City, MO

2920 N Shamrock Rd Jefferson City, Missouri 65102

PROJECT # R2507-01
SITE#6007
FACILITY # 8136007002

REVISION	DATE

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DESIGNED BY: SOA

SHEET TITLE:
SECOND FLOOR REFLECTED CEILING PLAN

SHEET NUMBER:
A202
SHEET 6 OF 18
ISSUE DATE: 05/07/2026

GENERAL MECHANICAL SYMBOLS

	REVISION NUMBER - SHOWN ON PLANS
	POINT WHERE NEW CONNECTS TO EXISTING OR EXISTING SEPARATES FROM DEMOLISHED
	DETAIL NUMBER ON SHEET / SHEET NUMBER WHERE DETAIL APPEARS
?	KEYNOTE
	PIPING TO BE DEMOLISHED
2" HWS	PIPE SIZE/SYSTEM TAG (DIAMETER)
	ABOVE GROUND PIPING
X" (ETR)	EXISTING TO REMAIN PIPE/SYSTEM TAG
12"x8" S/A	SQUARE DUCT/SYSTEM TAG (WIDTH X HEIGHT)
12"/8" S/A	OVAL DUCT/SYSTEM TAG (WIDTH / HEIGHT)
12"Ø S/A	ROUND DUCT/SYSTEM TAG (DIAMETER)
DROP	SUPPLY/OUTSIDE AIR DUCT RISE
DROP	RECTANGULAR RETURN/TRANSER AIR DUCT RISE
DROP	EXHAUST DUCT AIR DUCT RISE

GRILLES, REGISTERS & DIFFUSERS TAG

AIR DEVICE — SD1 | CFM (DUCT SIZE)"

GENERAL MECHANICAL NOTES

1. ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH THE LOCAL BUILDING CODES.
2. ALL MATERIALS SHALL BE NEW, FIRST CLASS, AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.
3. ALL SYSTEMS SHALL BE COMPLETE AND OPERABLE IN EVERY WAY.
4. GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM FINAL ACCEPTANCE. PROVIDE FIVE YEAR AIR CONDITIONING COMPRESSOR WARRANTY.
5. INSPECT JOB SITE PRIOR TO BIDDING TO DETERMINE EXACT JOB REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS.
6. ARCHITECTURAL DRAWING DIMENSIONS SHALL GOVERN IN ALL CASES. COORDINATE ENGINEERING DRAWINGS WITH ARCHITECTURAL DRAWINGS FOR ALL EQUIPMENT LAYOUTS AND LOCATIONS.
7. LAYOUTS AND ROUTINGS SHOWN ON THE PLANS ARE APPROXIMATE AND GENERAL IN NATURE.
8. CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL DRAWINGS AND ASPECTS OF THE PROJECT SCOPE, AND FOR INCLUDING IN THEIR BID ALL WORK ASSOCIATED WITH THEIR TRADE, REGARDLESS OF WHICH DRAWING OR SHEET IT IS SHOWN ON.
9. COORDINATE WORK WITH ALL OTHER TRADES. EACH SUBCONTRACTOR SHALL REVIEW ENTIRE DRAWING SET AND AVOID CONFLICTS WITH OTHER TRADES.
10. REPRESENTATIVES FROM APPLICABLE TRADES SHALL BE AVAILABLE FOR BAS, PLC, MECHANICAL AND FIRE ALARM SYSTEMS VALIDATION, COMMISSIONING AND TESTING.
11. REPRESENTATIVES FROM APPLICABLE TRADES SHALL ASSIST EQUIPMENT MANUFACTURERS WITH SET-UP, TESTING, AND CLEAN-UP ACTIVITIES.
12. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR MORE INFORMATION.
13. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE MECHANICAL SYSTEMS INDICATED.
14. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
15. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
16. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS NECESSARY TO INSTALL ALL NEW MECHANICAL SYSTEMS WITHIN THE CONFINES OF THE SPACES AVAILABLE AND WITHOUT INTERFERENCES.
17. PLANS ARE INTENDED TO INDICATE THE GENERAL SCOPE OF WORK. DETAILS OF INSTALLATION COVERED BY CODE AND OTHER MINOR ITEMS NOT SHOWN SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND ACCEPTABLE INDUSTRY STANDARDS. ALL MECHANICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. CONTRACTOR SHALL SITE VERIFY EXISTING CONDITIONS.
18. DURING CONSTRUCTION, ALL EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERINGS SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
19. PROVIDE ALL CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NEEDED TO INSTALL MECHANICAL SYSTEMS. PATCHING WORK SHALL INCLUDE METHODS AND MATERIALS NEEDED FOR AFFECTED SURFACES TO MATCH ADJACENT AREAS. SEAL AROUND ALL EXTERIOR WALL PENETRATIONS WEATHER-TIGHT.
20. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT ROOF WARRANTY WILL BE MAINTAINED. REFER TO PROJECT MANUAL APPENDIX FOR ROOF WARRANTY INFORMATION AND CONTACT INFORMATION.
21. FIELD SUPPORT ALL MECHANICAL SYSTEM EQUIPMENT AND MATERIALS FROM STRUCTURE.
22. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
23. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUCTED AS LIMITING COMPETITION, ARTICLES, FIXTURES, ETC., OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
24. CONDENSATE DRAIN PIPING TO BE FIELD ROUTED TO NEAREST DRAIN RECEPTACLE. REFER TO PLUMBING SHEETS FOR WASTE/VENT PIPING AND LOCATIONS.
25. THERMOSTATS SHALL BE INSTALLED AT +42" A.F.F. UNLESS NOTED OTHERWISE.
26. MECHANICAL PIPING:
    A. SOME PIPING MAY HAVE BEEN SHOWN OFFSET FOR CLARITY.
    B. PROVIDE OFFSETS AND TRANSITIONS AS NECESSARY TO AVOID OBSTRUCTIONS.
    C. FIELD VERIFY EXACT ROUTING OF PIPING. MOUNT PIPING FROM STRUCTURE ABOVE AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE. ROUTE PIPING PARALLEL OR PERPENDICULAR TO BUILDING LINES.
    D. USE CLEVIS-STYLE HANGERS TO SUPPORT PIPING EVERY 6'-0" WITH INSULATION PROTECTION SHIELDS AND ALL-THREAD RODS FROM STRUCTURE ABOVE, NOT FROM OTHER PIPING, DUCTWORK, CONDUIT, AND SO FORTH. DO NOT SUPPORT OTHER PIPING, CEILING GRID, DUCTWORK, CONDUIT, AND SO FORTH FROM PIPING.
    E. PROVIDE DIELECTRIC CONNECTIONS BETWEEN FERROUS AND NONFERROUS PIPING.
    F. PROPERLY DISPOSE OF ALL REFRIGERANT IN ACCORDANCE WITH EPA 40 CFR 82.
27. ALL NEW EXTERIOR PROPANE PIPING SHALL BE PAINTED TO MATCH BUILDING WHERE EXPOSED ON BUILDING FACE AND YELLOW IN ALL OTHER LOCATIONS. ROOFTOP MOUNTED PIPING SHALL BE FASTENED TO AND SUPPORTED BY "ROOFTOP BLOX".

EQUIPMENT

1. EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY APPROVED BY OSHA.
2. INSTALL EQUIPMENT WHILE MAINTAINING CLEARANCES AS RECOMMENDED BY MANUFACTURER AND REQUIRED BY APPLICABLE CODES AND STANDARDS.
3. PROVIDE CONNECTIONS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND APPLICABLE CODES AND STANDARDS. COORDINATE CONNECTION REQUIREMENTS FOR FINAL EQUIPMENT SELECTIONS WITH OTHER AFFECTED TRADES.
4. VERIFY FINAL CONNECTION SIZES WITH OWNER PROVIDED EQUIPMENT AND PROVIDE REQUIRED ISOLATION VALVES, CHECK VALVES, UNIONS, GAUGES, AND SO FORTH FOR A COMPLETE INSTALLATION.
5. PROVIDE ENGRAVED PLASTIC LAMINATE NAMEPLATES ON ALL NEW AND EXISTING EQUIPMENT. SURVEY BUILDING TO ENSURE THAT NAMES ARE UNIQUE AND CONSISTENT WITH EXISTING CONVENTIONS.

CONTROL WIRING SPECIFICATIONS

1. ELECTRICAL WIRING AND WIRING CONNECTIONS NEEDED FOR THE INSTALLATION OF MECHANICAL SYSTEMS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR UNLESS OTHERWISE INDICATED.
2. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED. INSTALL IN NEAT, WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH APPLICABLE NATIONAL ELECTRICAL CODE EDITION AND THE ELECTRICAL SPECIFICATIONS.
3. REFER TO BAS SPECIFICATION SECTION AND BAS CONTRACTOR PROVIDED CONTROL WIRING DIAGRAMS, SCHEMATICS, AND REQUIREMENTS. COORDINATE WITH BAS CONTRACTOR PRIOR TO ROUGH-IN.
4. INSTALL VOLTAGE CIRCUITS LOCATED IN CONCRETE SLAB AND MASONRY WALLS, OR EXPOSED IN OCCUPIED AREAS, IN ELECTRICAL CONDUIT. ALL WIRING IN AREAS NOT USED FOR AIR MOVEMENT SHALL BE IN ELECTRIC METALLIC TUBING EXCEPT LOW VOLTAGE WIRING MAY BE IN APPROVED SIGNAL CABLE WHERE APPROVED BY LOCAL CODES.

ABBREVIATIONS - CONTROLS

AI	ANALOG INPUT	EC	ELECTRONICALLY COMMUTATED
AO	ANALOG OUTPUT	ENTH	ENTHALPY
AR	ANALOG REGISTER		
		FLA	FULL LOAD AMPS
BI	BINARY INPUT		
BO	BINARY OUTPUT	HR	HEATING WATER RETURN
		HS	HEATING WATER SUPPLY
CALC	CALCULATION	HW	HEATING WATER
CO2	CARBON DIOXIDE		
CRTL	CONTROL	P	PUMP
		PA	PRIMARY AIR
DA	DISCHARGE AIR	PH	PHASE
DDC	DIRECT DIGITAL CONTROL	PID	PROPORTIONAL-INTEGRAL-DERIVATIVE
DIFF	DIFFERENTIAL	POT	POTENTIOMETER
DO	DIGITAL OUTPUT	PPM	PARTS PER MILLION

MECHANICAL PLENUM SPACE NOTES

MECHANICAL:
1. MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

EXCEPTIONS:
1. RIGID AND FLEXIBLE DUCTS AND CONNECTORS SHALL CONFORM TO SECTION 603 OF THE 2018 INTERNATIONAL MECHANICAL CODE.
2. DUCT COVERINGS, LININGS, TAPE AND CONNECTORS SHALL CONFORM TO SECTIONS 603 AND 604 OF THE 2018 INTERNATIONAL MECHANICAL CODE.
3. THIS SECTION SHALL NOT APPLY TO SMOKE DETECTORS.

GENERAL PLUMBING NOTES

1. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING SYSTEMS INDICATED.
2. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATION SO THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
4. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS NECESSARY TO INSTALL ALL NEW PLUMBING SYSTEMS WITHIN THE CONFINES OF THE SPACES AVAILABLE AND WITHOUT INTERFERENCES.
5. PLANS ARE INTENDED TO INDICATE THE GENERAL SCOPE OF WORK. DETAILS OF INSTALLATION COVERED BY CODE AND OTHER MINOR ITEMS NOT SHOWN SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND ACCEPTABLE INDUSTRY STANDARDS. ALL MECHANICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. CONTRACTOR SHALL SITE VERIFY EXISTING CONDITIONS.
6. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERINGS SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
7. PROVIDE ALL CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NEEDED TO INSTALL MECHANICAL SYSTEMS. PATCHING WORK SHALL INCLUDE METHODS AND MATERIALS NEEDED FOR AFFECTED SURFACES TO MATCH ADJACENT AREAS. SEAL AROUND ALL EXTERIOR WALL PENETRATIONS WEATHERTIGHT.
8. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT EXISTING ROOF WARRANTY (IF ANY) WILL BE MAINTAINED.
9. FIELD SUPPORT ALL MECHANICAL SYSTEM EQUIPMENT AND MATERIALS FROM STRUCTURE.
10. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
11. SPECIFIC MODELS ARE SPECIFIED TO ESTABLISH QUALITY ONLY. SUBSTITUTIONS MAY BE MADE WITH ENGINEER'S APPROVAL.
12. ARCHITECTURAL DRAWING DIMENSIONS SHALL GOVERN IN ALL CASES. COORDINATE ENGINEERING DRAWINGS WITH ARCHITECTURAL DRAWINGS FOR ALL EQUIPMENT LAYOUTS AND LOCATIONS.
13. CONTRACTOR IS TO INCLUDE COSTS FOR ALL PERMITS, INSPECTIONS, TAPS, METERS & FUEL ASSOCIATED WITH HIS WORK.
14. ALL SYSTEMS SHALL BE COMPLETE AND OPERABLE IN EVERY WAY.
15. CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL DRAWINGS AND ASPECTS OF PROJECT SCOPE AND FOR INCLUDING IN HIS BID ALL WORK ASSOCIATED WITH HIS TRADE, REGARDLESS OF WHICH SHEET IT IS SHOWN ON.

ELECTRICAL SYMBOLS

	HATCH AND 'E' DENOTES EMERGENCY FIXTURE
	RECESSED CEILING MOUNTED LIGHT FIXTURES
	SURFACE CEILING MOUNTED LIGHT FIXTURES
	LED STRIP FIXTURE
	EXIT LIGHT. ARROW INDICATES THE DIRECTION THE CHEVRON POINTS. IF WALL MOUNTED - CENTERLINE 90" AFF. UNO.
$	SINGLE POLE WALL SWITCH - 42" AFF U.N.O., "a" INDICATES ZONE.
	DUPLEX CONVENIENCE RECEPTACLE - 18" AFF UNO "XX" DESIGNATES TYPE
GFCI	GFCI RECEPTACLE "XX" DESIGNATES TYPE
WP	WEATHERPROOF RECEPTACLE "XX" DESIGNATES TYPE
	FOURPLEX CONVENIENCE RECEPTACLE - 18" AFF UNO
J	JUNCTION BOX
	DATA OUTLET - 18" AFF UNO
F	FIRE ALARM HORN-STROBE
	POWER/LIGHTING PANELBOARD
	DISTRIBUTION PANEL OR MAIN SWITCH GEAR
	DISCONNECT SWITCH
T	THERMOSTAT
AP	WIRELESS ACCESS POINT
S	SPEAKER

ABBREVIATIONS

Ø	DIAMETER	LAT	LEAVING AIR TEMPERATURE
		LB	POUND
A	AMP	LB/HR	POUNDS PER HOUR
ABV	ABOVE	LP	LOW PRESSURE
AC	AIR CONDITIONING	LVR	LOUVER
AC/HR	AIR CHANGES PER HOUR	LWT	LEAVING WATER TEMP
ADD	ADDENDUM	LP	PROPANE
AFF	ABOVE FINISHED FLOOR		
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	M/A	MIXED AIR
		MAX	MAXIMUM
ALT	ALTERNATE	MBH	ONE THOUSAND BTU PER HOUR
AP	ACCESS PANEL	MCF	ONE THOUSAND CUBIC FEET
ARCH	ARCHITECT/ARCHITECTURAL	MD	MOTORIZED DAMPER
		MECH	MECHANICAL
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSE POWER	MIN	MINIMUM
BLW	BELOW	MISC	MISCELLANEOUS
BTU	BRITISH THERMAL UNITS	MTD	MOUNTED
BTUH	BRITISH THERMAL UNITS PER HOUR	MTR	MOTOR
		MUA	MAKE-UP AIR
CAP	CAPACITY		
CD	CEILING DIFFUSER	NC	NOISE CRITERIA
CFM	CUBIC FEET PER MINUTE	N.C.	NORMALLY CLOSED
CLG	CEILING	NIC	NOT IN CONTRACT
CON'T	CONTINUED	NO	NUMBER
		N.O.	NORMALLY OPEN
D	DEGREE	NTS	NOT TO SCALE
DB	DRY BULB		
DIA	DIAMETER	O/A	OUTSIDE AIR
DIDW	DOUBLE INLET DOUBLE WIDTH	OPER	OPERATOR
DN	DOWN		
DX	DIRECT EXPANSION	PD	PRESSURE DROP
DWG	DRAWING	PRESS	PRESSURE
		PSI	POUNDS PER SQUARE INCH
EA	EACH	PSIG	POUNDS PER SQUARE INCH GAUGE
E/A	EXHAUST AIR		
EAT	ENTERING AIR TEMPERATURE	PWR	POWER
EFF	EFFICIENCY		
ELEC	ELECTRICAL	R/A	RETURN AIR
EQUIP	EQUIPMENT	RCP	RADIANT CEILING PANEL
ER	EXHAUST REGISTER	REC	RECESSED
ESP	EXTERNAL STATIC PRESSURE	REV	REVISION
EWT	ENTERING WATER TEMPERATURE	RG	RETURN GRILLE
EXIST	EXISTING	RH	RELATIVE HUMIDITY
		RL/A	RELIEF AIR
F	DEGREES FAHRENHEIT	RM	ROOM
FC	FORWARD CURVED	RPM	REVOLUTIONS PER MINUTE
FD	FIRE DAMPER		
FL	FLOOR	S/A	SUPPLY AIR
FPM	FEET PER MINUTE	SF	SQUARE FOOT
FT	FOOT, FEET	SD	SMOKE DAMPER
FTHD	FEET OF HEAD	SM	SURFACE MOUNT
FTR	FIN TUBE RADIATION	SP	STATIC PRESSURE
FTWG	FEET OF HEAD WATER GAUGE	SPEC	SPECIFICATION
		SR	SUPPLY REGISTER
GA	GAUGE	STD	STANDARD
GAL	GALLON		
GALV	GALVANIZED	T	THERMOSTAT
GC	GENERAL CONTRACTOR	T/A	TRANSFER AIR
GPM	GALLONS PER MINUTE	TD	TEMPERATURE DROP
		TEMP	TEMPERATURE
HP	HORSE POWER	TYP	TYPICAL
HT	HEIGHT		
HTG	HEATING	VAC	VACUUM
HTR	HEATER	VAV	VARIABLE AIR VOLUME
HUM	HUMIDITY	VENT	VENTILATION
HWS	HEATING WATER SUPPLY	VFD	VARIABLE FREQUENCY DRIVE
HWR	HEATING WATER RETURN	V	VOLTAGE
HZ	HERTZ		
		W/	WITH
IN	INCH	W/O	WITHOUT
INWC	INCHES WATER COLUMN	WB	WET BULB
KW	KILOWATT	ZD	ZONE DAMPER

GENERAL ELECTRICAL NOTES

1. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE USED ON THIS SPECIFIC PROJECT.
2. ALL WORK SHALL CONFORM WITH THE MOST CURRENT NATIONAL ELECTRICAL CODE AND ALL STATE AND LOCAL CODES AND ORDINANCES AND O.S.H.A. WHERE MINIMUM CODE REQUIREMENTS ARE EXCEEDED BY THE REQUIREMENTS INDICATED IN THE SPECIFICATIONS AND ON THESE DRAWINGS, THE DRAWINGS AND SPECIFICATIONS SHALL TAKE PRECEDENCE. (IN THE CASE OF CODE CONFLICT, DIRECTION SHALL BE TAKEN FROM THE MORE STRICT OF THE CONFLICTING CODES).
3. CAREFULLY REVIEW CONTRACT DOCUMENTS INCLUDING DRAWINGS & PROJECT MANUAL. INFORMATION REGARDING WORK OF THE VARIOUS TRADES & SUBCONTRACTORS ARE DISPERSED THROUGHOUT THE DOCUMENTS & CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE FULL SET OF DOCUMENTS. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF THE MECHANICAL SYSTEMS, PIPING, ETC. CONDUIT & PIPE TO BE RUN TO MAXIMIZE USE OF CEILING SPACE FOR USE BY OTHER TRADES.
4. CONDUIT ROUTES SHOWN ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL FIELD VERIFY AND PROVIDE CONDUIT ROUTES AS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE DRAWINGS, INCLUDING BUT NOT LIMITED TO CONDUITS SHOWN ON THE ONE-LINE AND CONTROL DIAGRAMS AS WELL AS HOME RUNS SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS DEFINED IN THE SPECIFICATIONS.
5. WHERE EXISTING CIRCUITS, CONDUCTORS, CONDUITS, JUNCTION BOXES, PANELS, SWITCHES AND OTHER EQUIPMENT CONFLICTS WITH NEW CONSTRUCTION, EXISTING EQUIPMENT SHALL BE RELOCATED TO MAINTAIN FUNCTION AND SERVICE.
6. AT THE CONCLUSION OF THIS PROJECT PROVIDE AN UPDATED TYPEWRITTEN, AS-BUILT DIRECTORY INSIDE EACH PANELBOARD/SWITCHBOARD PROPERLY IDENTIFYING EACH CIRCUIT USED & THE SPECIFIC LOAD SERVED. ALSO PROVIDE SCHEDULES ON CD DISK.
7. FIELD VERIFY EXACT LOCATION OF ALL FLOOR PENETRATIONS PRIOR TO ROUGH-IN INSTALLATION.
8. OPENINGS SHALL BE CUT TO THE EXACT SIZE REQUIRED IN ORDER TO MAINTAIN ANY MATERIAL RATINGS AND SEALED TO MAINTAIN RATING. PROVIDE ALL NECESSARY FLOOR CUTTING/PENETRATIONS AND ALL OF THE RE-PATCHING FOR THE COMPLETE EXECUTION OF THIS WORK.
9. ALL EXIT AND EMERGENCY LIGHTS SHALL BE CONNECTED TO AN UN-SWITCHED CIRCUIT SERVING THIS AREA.
10. CONCEAL ALL ELECTRICAL WIRING AND RACEWAYS WHERE CONSTRUCTION PERMITS. EXPOSED RACEWAY SHALL BE MINIMIZED WHERE STRUCTURE IS EXPOSED TO VIEW. WHERE NECESSARY, CAREFULLY INSTALL RACEWAYS PARALLEL TO WALLS, BEAMS AND COLUMNS. EXPOSED RACEWAY SHALL BE HELD TIGHT TO STRUCTURE & LOCATED SO AS TO KEEP IT AS INCONSPICUOUS AS POSSIBLE.
11. ALL SPARE WIRES SHALL BE TAPED AND COILED.
12. COORDINATE ALL DEVICES AND WIRING WITH EQUIPMENT NAMEPLATE DATA. VERIFY THE ELECTRICAL LOADS, MOUNTING HEIGHTS AND NEMA CONFIGURATIONS WITH THE MECHANICAL, PLUMBING AND OTHER CONTRACTORS AND SUPPLIERS PRIOR TO ROUGH-IN.
13. PROVIDE FINAL CONNECTION, WIRING, HOOK-UP, ETC. FOR ALL EQUIPMENT AND CONTROLS REQUIRING ELECTRICAL POWER TO OPERATE.
14. FURNISH AND INSTALL ALL WIRE, WIREWAY, CONDUIT, CONNECTORS, OUTLETS, ETC, NECESSARY TO ACHIEVE A COMPLETE AND WORKING INSTALLATION.
15. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE OR STRING.
16. ALL EXTERIOR MOUNTED ELECTRICAL DEVICES AND EQUIPMENT SHALL BE IN WEATHERPROOF ENCLOSURE AND U.L. LISTED FOR WET LOCATION AND/OR UL/NEMA 3R LISTED U.N.O.
17. NO "PIGGYBACK" BREAKERS SHALL BE ALLOWED.
18. ALL SINGLE-PHASE CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR.
19. ALL FEEDERS SHALL HAVE A SEPARATE COPPER GROUNDING CONDUCTOR INSTALLED. IN NO CASE SHALL THE CONDUIT OR RACEWAY BE USED AS THE GROUNDING CONDUCTOR.
20. ALL ELECTRICAL LIGHTING WIRE SHALL NOT BE SMALLER THAN #12A.W.G. TIN-PLATED COPPER WIRE.
21. ALUMINUM CONDUCTORS SHALL NOT BE PERMITTED.
22. NON-METALLIC CABLE IS NOT PERMITTED.
23. COLOR AND MATERIAL FOR ALL SWITCHES, AND COVER PLATES SHALL BE SELECTED BY ARCHITECT.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS. THIS SHALL INCLUDE ALL CONDUITS SHOWN ON THE ONE-LINES AND HOMERUNS SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS INDICATED ON THE DRAWINGS AND DEFINED IN THE SPECIFICATIONS.
25. INSTALL ANY / ALL CORD SETS SUPPLIED WITH THE EQUIPMENT.
26. MOUNT DISCONNECT SWITCHES AND COMBINATION STARTERS AT 65" AFF. TO TOP OF ENCLOSURE UNLESS OTHERWISE INDICATED.
27. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN VALUE SHOWN, THE CABLE CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE ENLARGED, AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.

ELECTRICAL PLENUM NOTES

WIRING EXPOSED WITHIN A PLENUM SHALL CONFORM TO THE FOLLOWING:
COMBUSTIBLE ELECTRICAL OR ELECTRONIC WIRING METHODS AND MATERIALS, OPTICAL FIBER CABLE, AND OPTICAL FIBER RACEWAY EXPOSED WITHIN A PLENUM SHALL HAVE A PEAK OPTICAL DENSITY NOT GREATER THAN 0.50, AN AVERAGE OPTICAL DENSITY NOT GREATER THAN 0.15, AND A FLAME SPREAD NOT GREATER THAN 5 FEET WHEN TESTED IN ACCORDANCE WITH UL 910. ONLY TYPE OFNP (PLENUM RATED NONCONDUCTIVE OPTICAL FIBER CABLE) SHALL BE INSTALLED IN A PLENUM RATED OPTICAL FIBER RACEWAY.

COMBUSTIBLE ELECTRICAL EQUIPMENT WITHIN A PLENUM SHALL CONFORM TO THE FOLLOWING:
COMBUSTIBLE ELECTRICAL EQUIPMENT EXPOSED WITHIN A PLENUM SHALL HAVE A PEAK RATE OF HEAT RELEASE NOT GREATER THAN 100 KILO-WATTS, A PEAK OPTICAL DENSITY NOT GREATER THAN 0.50, AND AN AVERAGE OPTICAL DENSITY NOT GREATER THAN 0.15 WHEN TESTED IN ACCORDANCE WITH UL 2043. COMBUSTIBLE ELECTRICAL EQUIPMENT SHALL BE LISTED AND LABELED.

GENERAL DEMOLITION NOTES

1. DEMOLITION PLANS SHOW THE GENERAL EXTENT OF THE ELECTRICAL DEMOLITION WORK. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT BEING REMOVED, SEE MECHANICAL PLANS. OWNER SHALL HAVE THE OPTION TO RETAIN REUSABLE ITEMS, SUCH AS COVER PLATES, RECEPTACLES, LIGHTS, PANELS, ETC. NOT BEING USED IN THE FINISHED WORK. COORDINATE WITH OWNER PRIOR TO STARTING DEMOLITION. PROPERLY AND LEGALLY DISPOSE OF ALL EQUIPMENT AND MATERIALS BEING REMOVED.
2. E.C. SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOLLOWING THE REQUIREMENTS FOR DEMOLITION WORK WITHIN THE GOVERNING MUNICIPALITY.
3. E.C. SHALL BE TOTALLY RESPONSIBLE FOR SAFE PROCEDURES, PRACTICES AND OPERATION. FOR ALL EXISTING ELECTRICAL DEVICES TO BE REMOVED. E.C. SHALL PROTECT ALL SURFACES, FURNISHINGS, EQUIPMENT, ETC. ADJACENT TO DEMOLITION AREAS FROM DAMAGE.
4. FOR ALL EXISTING ELECTRICAL DEVICES TO BE REMOVED, E.C. SHALL VERIFY PANEL AND CIRCUIT NUMBERS IN THE EXISTING ELECTRICAL PANELS AND ISOLATE WIRING AT THE BREAKERS. CONTRACTOR SHALL REMOVE ALL CABLE AND ACCESSIBLE EXPOSED CONDUIT BETWEEN END DEVICE AND IT'S UPSTREAM POWER SOURCE. REMOVE ALL ELECTRICAL APPURTENANCES (DISCONNECT, STARTER, WIRING, CONDUIT, CONDUIT STRAPS, ETC.) ASSOCIATED WITH THE DEVICE AND / OR EQUIPMENT THAT IS BEING REMOVED. PROVIDE BLANK METAL COVER PLATES FOR ALL JUNCTION BOXES NO LONGER IN USE THAT ARE EMBEDDED IN CONCRETE OR MASONRY WALLS. PROVIDE PLUGS FOR ALL PANELS WHERE CONDUIT HAS BEEN REMOVED. COVER PLATES SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.
5. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK.
6. E.C. SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOLLOWING THE REQUIREMENTS FOR DEMOLITION WORK WITHIN THE GOVERNING MUNICIPALITY.
7. E.C. SHALL BE TOTALLY RESPONSIBLE FOR SAFE PROCEDURES, PRACTICES AND OPERATION. FOR ALL EXISTING ELECTRICAL DEVICES TO BE REMOVED. E.C. SHALL PROTECT ALL SURFACES, FURNISHINGS, EQUIPMENT, ETC. ADJACENT TO DEMOLITION AREAS FROM DAMAGE.
8. CONTRACTOR SHALL REMOVE ALL DEMOLISHED ELECTRICAL EQUIPMENT FROM THE SITE AND DISPOSE OF PROPERLY.
9. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS AND RELOCATION REQUIRED TO MAINTAIN ALL ELECTRICAL CIRCUITS TO AREAS OUTSIDE DEMOLITION.
10. PATCH HOLES AFTER REMOVAL OF ELECTRICAL EQUIPMENT IN AREAS OF DEMOLITION.
11. ALL DEVICES AND EQUIPMENT LOCATED IN THE DEMOLITION PLAN SHALL BE REMOVED, U.N.O.
12. NOT ALL EQUIPMENT MAY BE SHOWN. CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION.
13. EXISTING ELECTRICAL SYSTEMS LAYOUT, LOCATION AND SIZES ARE BASED ON AS-BUILT DOCUMENTS AND LIMITED FIELD SURVEYS. DUE TO HIDDEN CONDITIONS AT TIME OF SURVEY, CONTRACTOR SHALL ADVISE ENGINEER OF RECORD OF ANY FIELD CONDITIONS OF AFFECTED SYSTEMS THAT ARE NOT REFLECTED IN THIS SET OF DOCUMENTS PRIOR TO DEMOLITION OF THE SYSTEM AND BEFORE THE START OF NEW WORK TO THE SYSTEM.
14. PROVIDE MATCHING BLANK COVER PLATES WHERE DEVICES ARE BEING REMOVED FROM EXISTING WALLS TO REMAIN.

GENERAL CONSTRUCTION NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM WITH LOCAL AND STATE ELECTRICAL CODES, O.S.H.A., AND THE LATEST NATIONAL ELECTRICAL CODE AND ELECTRICAL SPECIFICATIONS.
2. E.C. SHALL FURNISH AND INSTALL, FOR WORK DESIGNATED AS HIS RESPONSIBILITY, ALL WIRE, WIREWAY, CONDUIT, CONNECTORS, OUTLETS, ETC. NECESSARY TO ACHIEVE A COMPLETE ELECTRICAL INSTALLATION. WHERE AN ELECTRICAL DEVICE IS REQUIRED BY CODE BUT NOT SHOWN, IT SHALL BE FURNISHED AND INSTALLED BY E.C. AS THOUGH FULLY SHOWN AND SPECIFIED.
3. THE TERM "E.C." IN THESE NOTES REFERS TO THE ELECTRICAL SUBCONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL COORDINATE THIS WORK WITH THE MECHANICAL CONTRACTOR.
5. ELECTRICAL CONNECTION TO ALL EQUIPMENT SUPPLIED BY OTHERS SHALL BE THE RESPONSIBILITY OF THE E.C. UNLESS OTHERWISE NOTED.
6. COORDINATE WIRING OF THERMOSTATS WITH THE MECHANICAL SUBCONTRACTOR.

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI — SHANE L. FLOYD — NUMBER PE-2019017814 — PROFESSIONAL ENGINEER

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JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

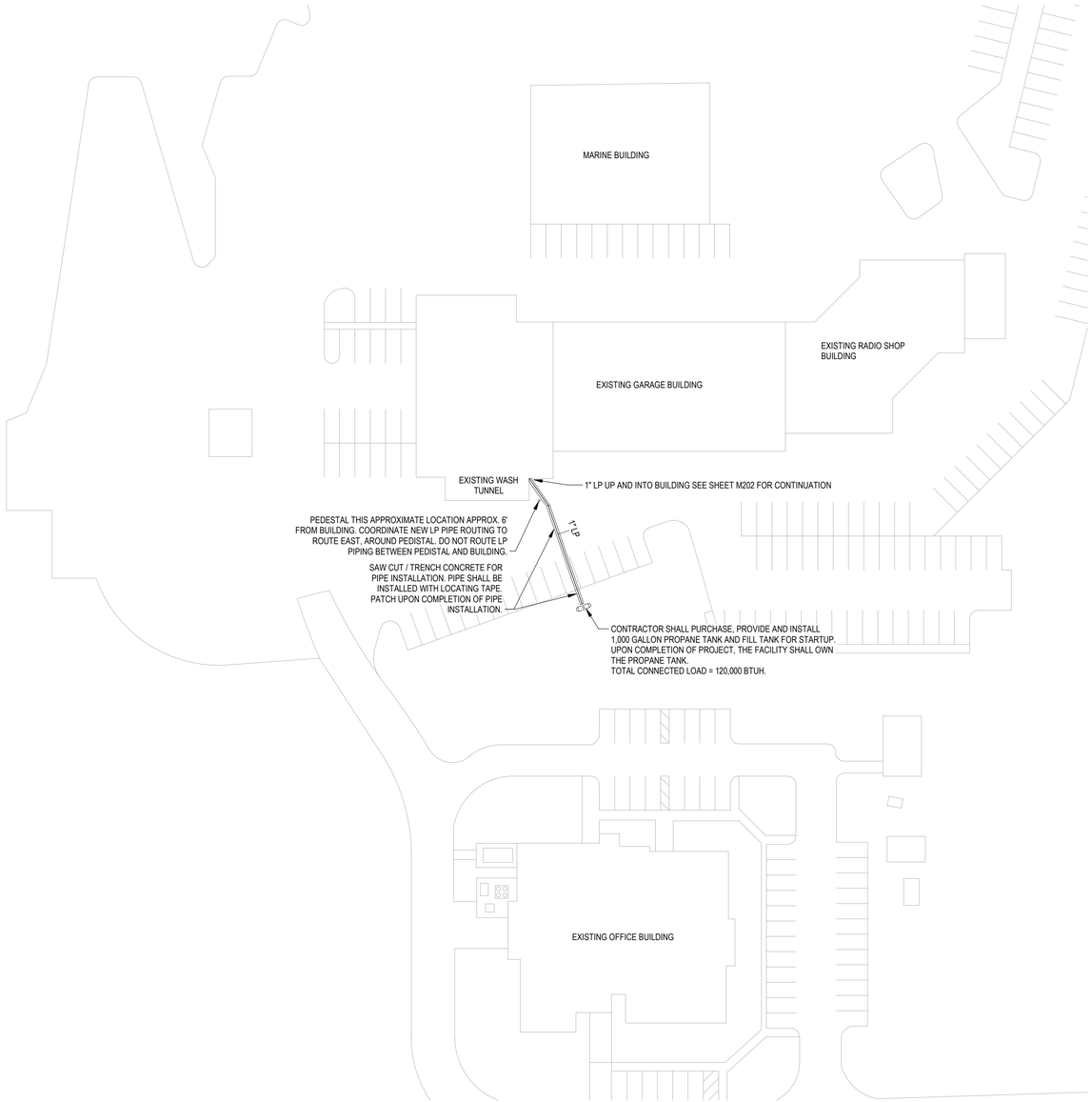
REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
MECHANICAL & ELECTRICAL NOTES, SPECIFICATIONS, AND LEGENDS

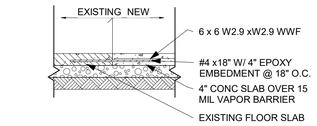
SHEET NUMBER:
ME000

ISSUE DATE: 05/07/2026



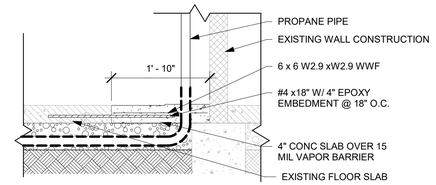
1 ME SITE PLAN

ME001 1" = 40'-0"



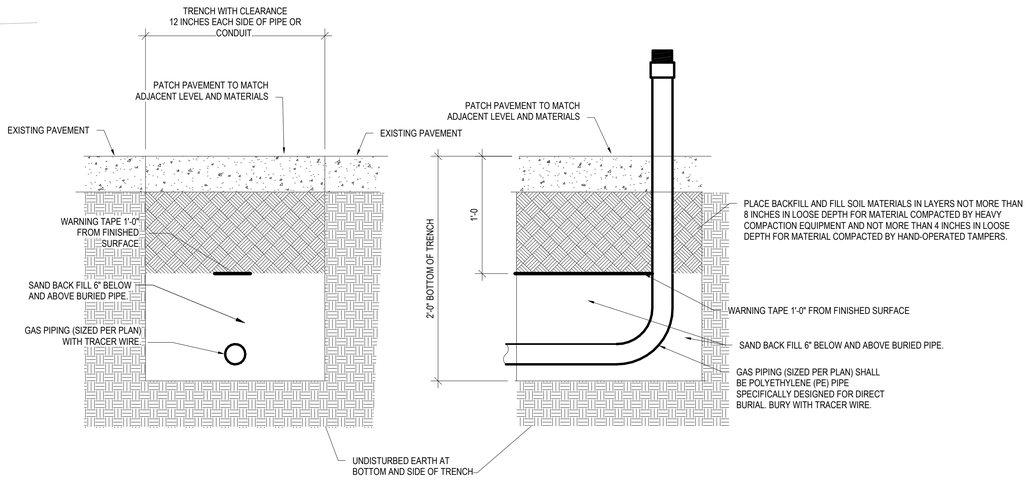
2 TYP DETAIL - CONCRETE TRENCH INFILL DETAIL

ME001 NOT TO SCALE



3 TYP DETAIL SECT - PIPE AT BUILDING

ME001 NOT TO SCALE



4 GAS PIPING DETAIL UNDER AREAS TRAFFIC TRAVEL

ME001 12" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
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2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: MKH
CHECKED BY: SLF
DESIGNED BY: MKH

SHEET TITLE:
MECHANICAL & ELECTRICAL SITE PLAN

SHEET NUMBER:
ME001
SHEET 8 OF 18
ISSUE DATE: 05/07/2026

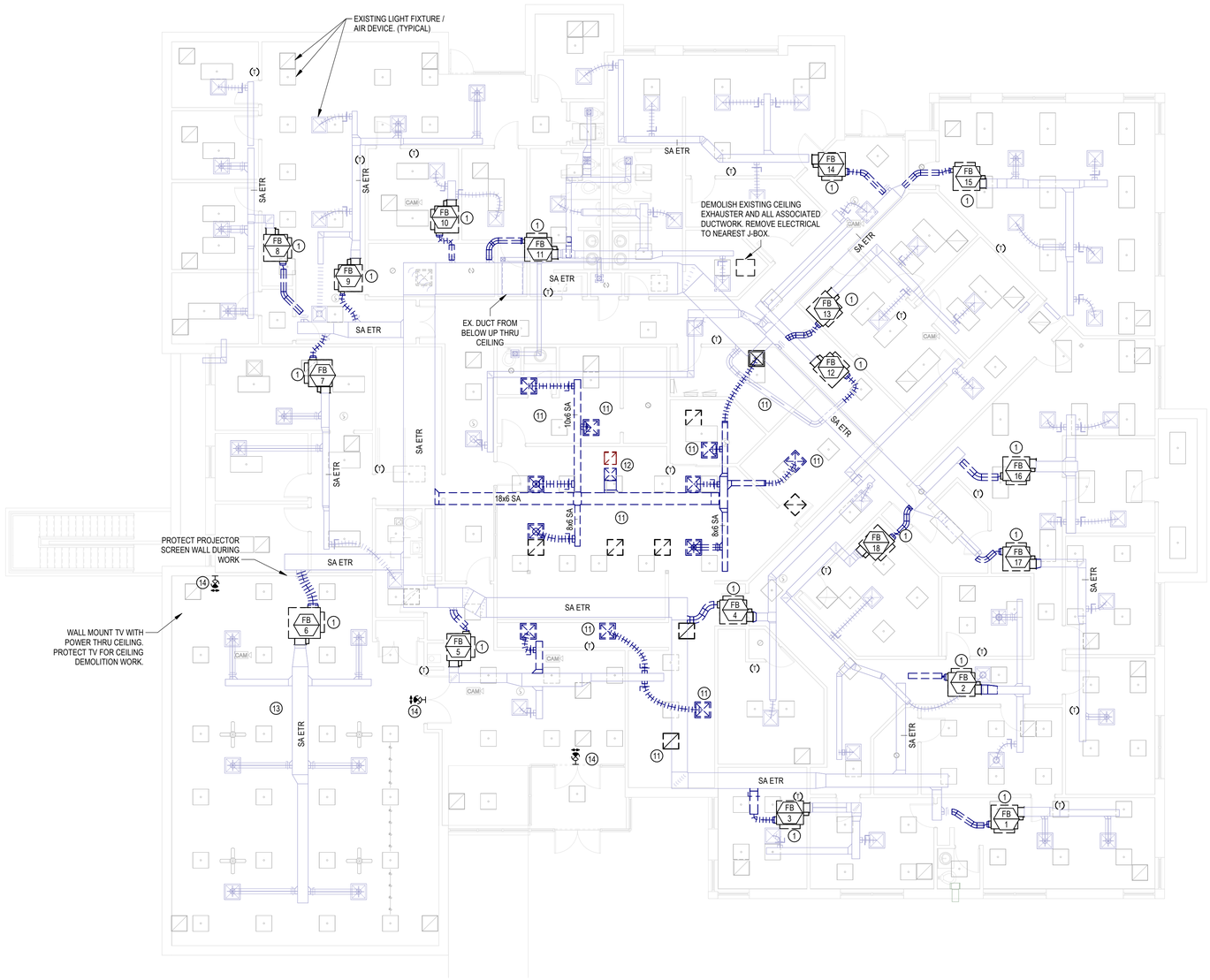
1/8"=1'-0" 0" 4'-0" 8'-0" 16'-0" 24'-0"

KEYED NOTES

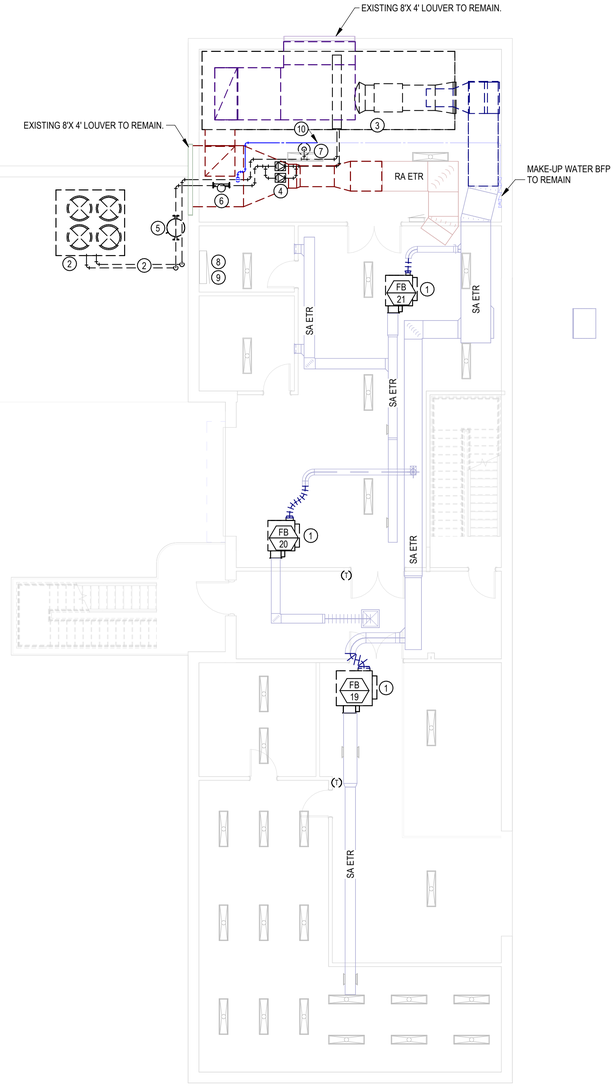
1. EXISTING VAV FAN POWERED TERMINAL BOXES TO BE DEMOLISHED AND REPLACED WITH NEW FTU. CONTROLS SHALL BE DISCONNECTED AND LEFT IN PLACE FOR NEW CONNECTION. DEMOLISH ASSOCIATED VAV BOX FLEX DUCT / DUCTWORK SHOWN DASHED.
2. DEMOLISH 70 TON AIR COOLED CHILLER AND ASSOCIATED PIPING, ELECTRICAL, & CONTROLS. INSTALL NEW 35 TON CHILLER AS INDICATED.
3. DEMOLISH EXISTING BUILT-UP AIR HANDLING UNIT AND ASSOCIATED DASHED DUCTWORK AS SHOWN. PREPARE EXISTING TO REMAIN DUCTWORK FOR NEW CONNECTION. ELECTRICAL CONTROLS CIRCUIT, AND CONTROLS SHALL BE REMOVED TO NEAREST J-BOX AND COILED UP FOR NEW CONNECTION. CONTRACTOR SHALL ALSO DEMOLISH EXISTING CONCRETE PAD AND CURBS AND PREPARE SPACE FOR NEW PAD / AHU INSTALLATION.
4. DEMOLISH (2) INLINE CHILLED WATER PUMPS AND ASSOCIATED PIPING, ELECTRICAL AND CONTROLS.
5. DEMOLISH CHILLED WATER BUFFER TANK AND ASSOCIATED PIPING.
6. DEMOLISH AIR SEPERATOR AND ASSOCIATED PIPING.
7. DEMOLISH CHILLED WATER EXPANSION TANK AND ASSOCIATED PIPING. REUSE EXISTING UNISTRUT SUPPORTS AND/OR PROVIDE NEW SUPPORT AS REQUIRED.
8. DEMOLISH EXISTING CHILLER CIRCUIT AND ASSOCIATED 400A BREAKER IN EXISTING MDP AND PREPARE BREAKER SPACE FOR NEW BREAKER. SEE ME100 FOR ADDITIONAL DETAILS.
9. DEMOLISH EXISTING SUPPLY FAN CIRCUIT BACK TO PANEL MDP. DEMOLISH ASSOCIATED BREAKER AND PREPARE BREAKER SPACE FOR NEW. SEE ME100 FOR ADDITIONAL DETAILS.
10. DEMOLISH MAKE-UP CW (DASHED) DOWNSTREAM OF THIS LOCATION AND PREPARE FOR NEW CONNECTION.
11. AIR DEVICES (DASHED) AND ASSOCIATED FLEX DUCT SHALL BE DEMOLISHED THIS ROOM.
12. DEMOLISHED DUCT ALL THE WAY TO RTU BEING DEMOLISHED.
13. EXISTING CEILING PROJECTOR THIS APPROXIMATE LOCATION SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING TO BE INSTALLED IN NEW CEILING. REFER TO ARCHITECTURAL PLANS SHEET A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
14. EXISTING CEILING MOUNTED EMERGENCY EXIT SIGN SHALL BE DEMOLISHED. EXISTING WIRING COILED UP TO REMAIN FOR NEW EXIT SIGN INSTALLATION AT SAME LOCATION.

GENERAL PLAN NOTES

1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.



1 MECHANICAL HVAC PLAN - FIRST FLOOR DEMO
MED101 1/8" = 1'-0"



2 MECHANICAL HVAC PLAN - BASEMENT DEMO
MED101 1/8" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER
MAY 7, 2026

Shane Floyd, P.E.
PE-2019017814
MO Certificate of Authority #000239

Timberlake ENGINEERING
A Custom Engineering Company
912 Old Highway 63 South
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MISSOURI CERTIFICATE OF AUTHORITY E-2018039887

REPLACE CHILLER & HVAC, HEADQUARTERS & GARAGE BUILDINGS
TROOP F HEADQUARTERS
JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

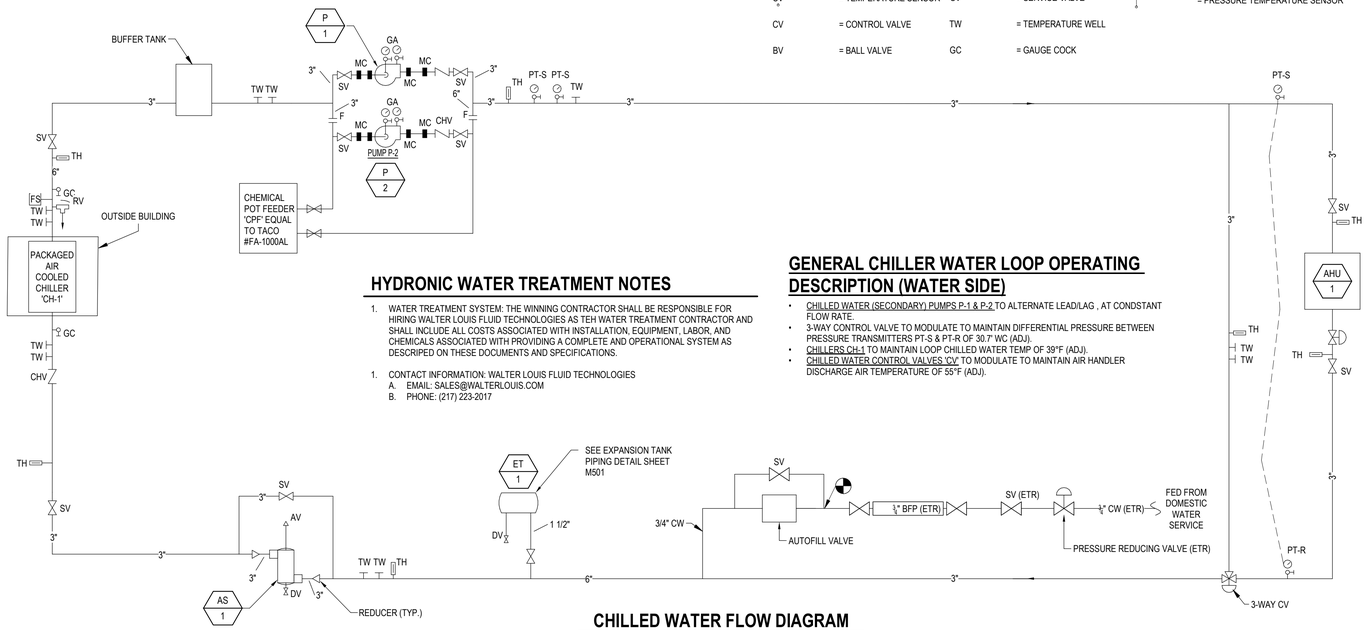
CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
HEADQUARTERS DEMO MECHANICAL & ELECTRICAL PLAN

SHEET NUMBER:
MED101
SHEET 9 OF 18
ISSUE DATE: 05/07/2026

CHILLED WATER FLOW DIAGRAM LEGEND

P	= PRESSURE GAUGE	TH	= THERMOMETER	RV	= RELIEF VALVE
T	= THERMOMETER	MC	= MECHANICAL COUPLING	FS	= FLOW SENSOR
TE CV	= TEMPERATURE SENSOR	SV	= SERVICE VALVE	PT	= PRESSURE TEMPERATURE SENSOR
CV	= CONTROL VALVE	TW	= TEMPERATURE WELL		
BV	= BALL VALVE	GC	= GAUGE COCK		



CHILLED WATER FLOW DIAGRAM

NOT TO SCALE

HYDRONIC WATER TREATMENT NOTES

1. WATER TREATMENT SYSTEM: THE WINNING CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING WALTER LOUIS FLUID TECHNOLOGIES AS TEH WATER TREATMENT CONTRACTOR AND SHALL INCLUDE ALL COSTS ASSOCIATED WITH INSTALLATION, EQUIPMENT, LABOR, AND CHEMICALS ASSOCIATED WITH PROVIDING A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIPED ON THESE DOCUMENTS AND SPECIFICATIONS.

1. CONTACT INFORMATION: WALTER LOUIS FLUID TECHNOLOGIES
   A. EMAIL: SALES@WALTERLOUIS.COM
   B. PHONE: (217) 223-2017

GENERAL CHILLER WATER LOOP OPERATING DESCRIPTION (WATER SIDE)

- CHILLED WATER (SECONDARY) PUMPS P-1 & P-2 TO ALTERNATE LEAD/LAG , AT CONDSTANT FLOW RATE.
- 3-WAY CONTROL VALVE TO MODULATE TO MAINTAIN DIFFERENTIAL PRESSURE BETWEEN PRESSURE TRANSMITTERS PT-S & PT-R OF 30.7' WC (ADJ).
- CHILLERS CH-1 TO MAINTAIN LOOP CHILLED WATER TEMP OF 39°F (ADJ).
- CHILLED WATER CONTROL VALVES 'CV' TO MODULATE TO MAINTAIN AIR HANDLER DISCHARGE AIR TEMPERATURE OF 55°F (ADJ).

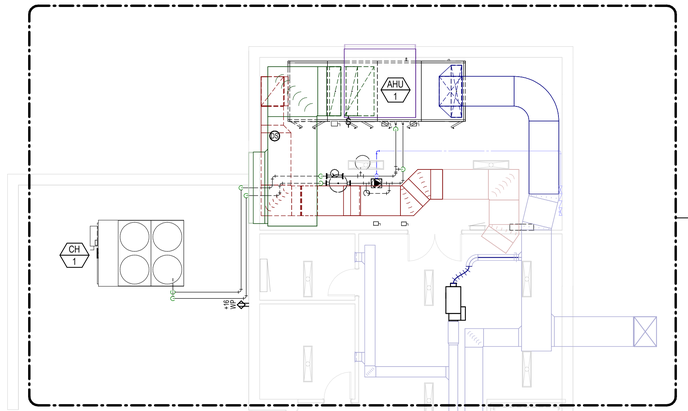
KEYED NOTES

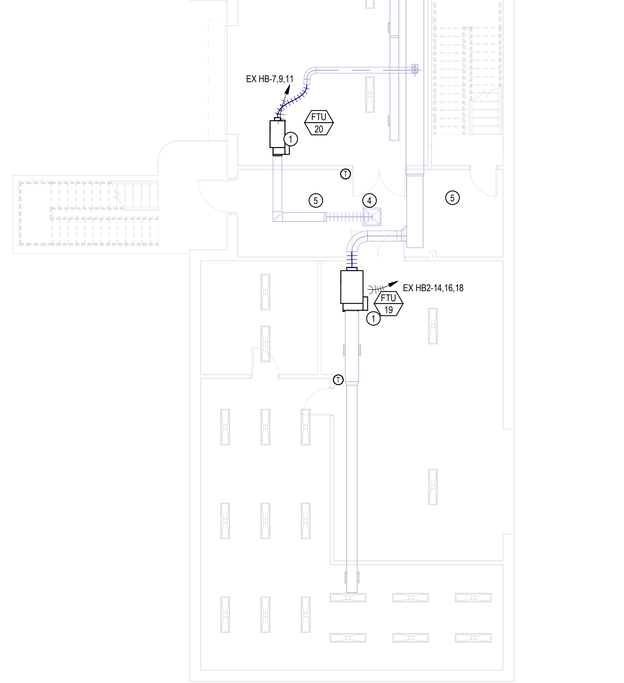
1. INSTALL NEW FTU AT LOCATION OF DEMO'D FTU TIE INTO EXISTING DUCTWORK AND POWER THROUGH EXISITING CIRCUIT
2. REPLACE / UPGRADE EXISTING JCI CONTROL SYSTEM WITH NEW. COORDINATE WITH JCI / CONTROLS CONTRACTOR REPRESENTATIVE BEFORE STARTING WORK THIS AREA. POWER THROUGH EXISTING CONTROLS CABINET ELECTRICAL CIRCUIT. JCI CONTROLS REP CONTACT INFORMATION: JACK CONROY EMAIL: jack.conroy@jci.com PHONE: (314) 624-7181
3. POWER NEW PUMP THROUGH EXISTING (DEMOLISHED) PUMP CIRCUIT. SEE SCHEDULE SHEET ME602 FOR NEW BREAKER SIZE.
4. CONTRACTOR SHALL REMOVE, CLEAN, RE-INSTALL EXISTING AIR DEVICE CONNECTED TO EXISTING DUCTWORK AT SAME APPROXIMATE LOCATION IN NEW 2X2 CEILING SYSTEM.
5. NEW CEILING SYSTEM IS BEING INSTALLED THIS ROOM. REFER TO SHEET A201 FOR CEILING DETAILS. ALL EXISTING ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, SPEAKERS, FIRE ALARMS, AIR DEVICES, PROJECTOR MOUNT, PROJECTOR SCREEN SHALL BE INSTALLED IN NEW CEILING SYSTEM.
6. CONTRACTOR SHALL POUR NEW 6" TALL CONCRETE EQUIPMENT PAD FOR AIR HANDLING UNIT. LENGTH AND WIDTH OF THE PAD SHALL EXTEND 3"-6" BEYOND THE FOOTPRINT OF THE AIR HANDLING UNIT.
7. WIRE THRU EXISTING SUPPLY FAN BREAKER SPACE IN EXISTING PANEL 'MDP'. SEE MDP PANEL SCHEDULE SHEET ME602 FOR BREAKER SIZE.
8. WIRE THRU EXISTING RETURN FAN BREAKER SPACE IN EXISTING PANEL 'MDP'. SEE MDP PANEL SCHEDULE SHEET ME602 FOR BREAKER SIZE.
9. WIRE THRU EXISTING CHILLER BREAKER SPACE IN EXISTING PANEL 'MDP'. SEE MDP PANEL SCHEDULE SHEET ME602 FOR BREAKER SIZE.
10. (2) THERMOSTAT / TEMPERATURE SENSORS THIS LOCATION, STACKED. ONE TO CONTROL NEW RTU-101 AND (1) FOR FTU-22. PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
11. WIRE THRU EXISTING BASEMENT MECH ROOM RECEPTACLE CIRCUIT FROM EXISTING PANEL 'BA' LOCATED IN BASEMENT MECH ROOM. CKT. BA-13

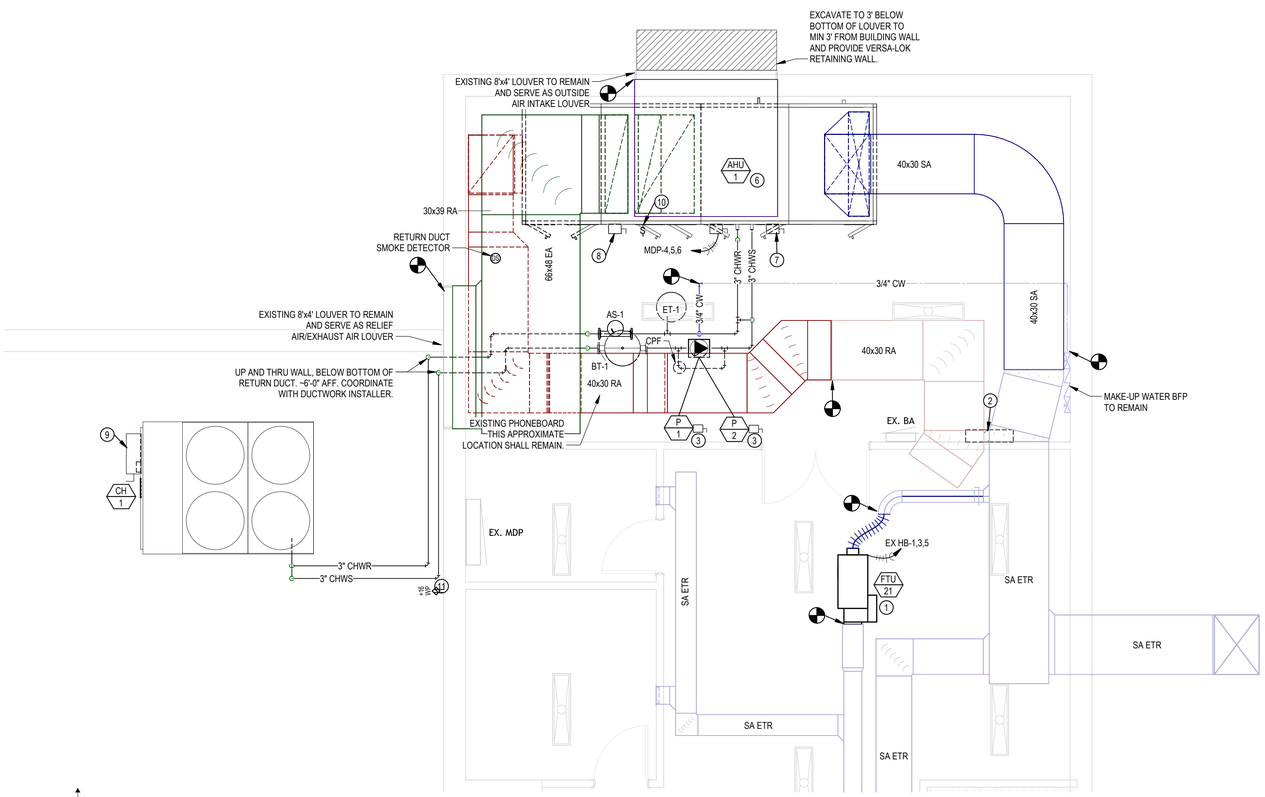
GENERAL PLAN NOTES

1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.

1/8"=1'-0" 0 4'-0" 8'-0" 16'-0" 24'-0"







4 MECHANICAL PLAN - BASEMENT ENLARGED NEW WORK

ME100 1/4" = 1'-0"

2 MECHANICAL PLAN - BASEMENT - OVERALL

ME100 1/8" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER
MAY 7, 2026

Shane Floyd, P.E.
PE-2019017814
MO Certificate of Authority #000239

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JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
HEADQUARTERS BASEMENT MECHANICAL & ELECTRICAL PLAN

SHEET NUMBER:
ME100
SHEET 10 OF 18
ISSUE DATE: 05/07/2026

HYDRONIC WATER TREATMENT NOTES

1. WATER TREATMENT SYSTEM: THE WINNING CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING WALTER LOUIS FLUID TECHNOLOGIES AS TEH WATER TREATMENT CONTRACTOR AND SHALL INCLUDE ALL COSTS ASSOCIATED WITH INSTALLATION, EQUIPMENT, LABOR, AND CHEMICALS ASSOCIATED WITH PROVIDING A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIPED ON THESE DOCUMENTS AND SPECIFICATIONS.

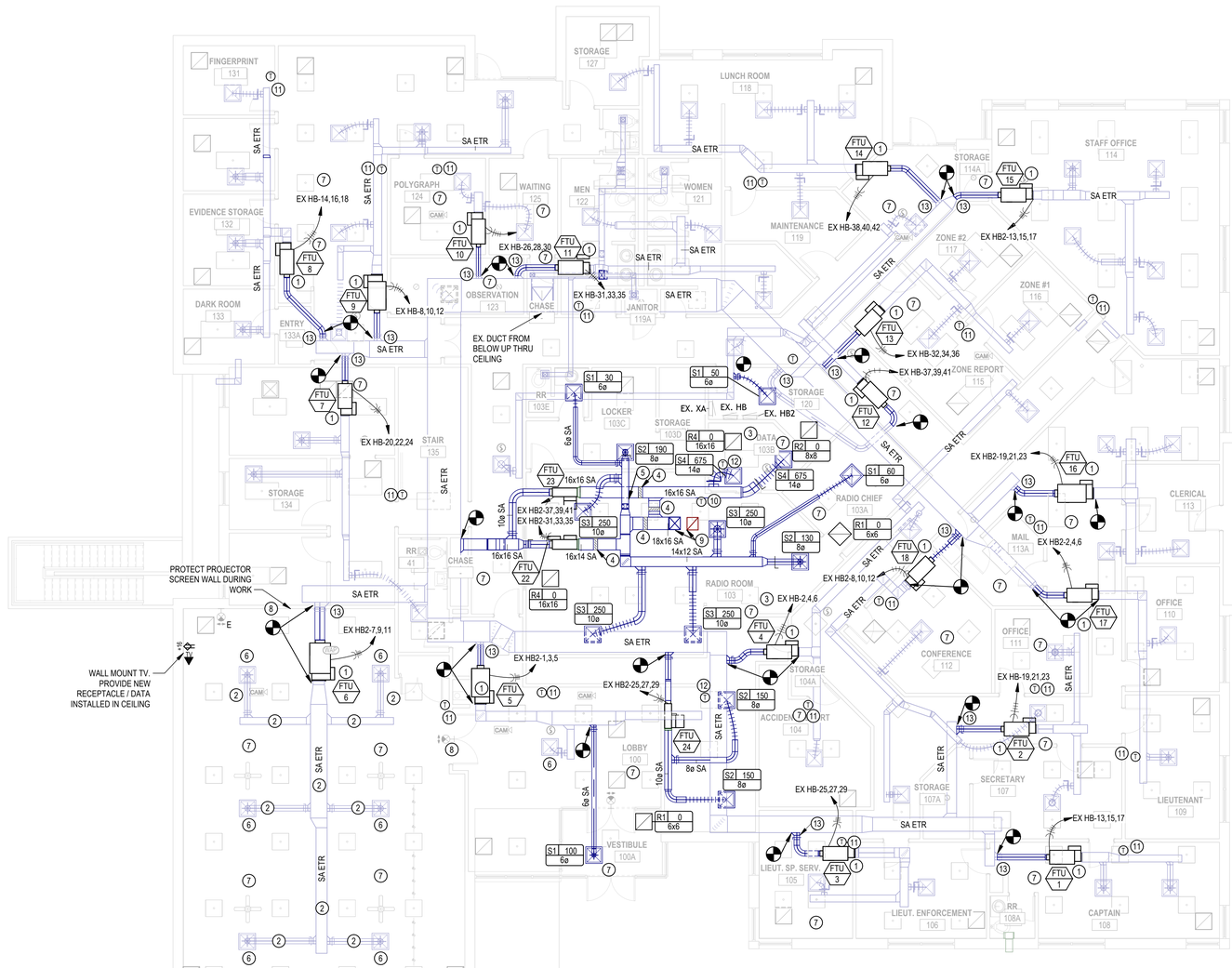
1. CONTACT INFORMATION: WALTER LOUIS FLUID TECHNOLOGIES
   A. EMAIL: SALES@WALTERLOUIS.COM
   B. PHONE: (217) 223-2017

GENERAL PLAN NOTES

1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE.PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.

KEYED NOTES

1. INSTALL NEW FTU AT LOCATION OF DEMOLISHED VAV FAN TERMINAL. TIE INTO EXISTING SUPPLY AIR DUCT AND ELECTRICAL CIRCUIT FROM DEMO'D TERMINAL UNIT. FTU CONTROLLER PROVIDED AND INSTALLED BY BAS CONTRACTOR.
2. INSTALL NEW DUCT WRAP ON EXISTING SUPPLY AIR DUCT PER SPECIFICATIONS.
3. INSTALL EXISTING SMOKE DETECTOR / LIGHT FIXTURES THIS ROOM INTO NEW CEILING.
4. INSTALL BACKDRAFT DAMPER
5. ROUTE NORTH/SOUTH DUCT UP IN JOISTS SPACE TO CROSS OVER EAST / WEST DUCT(S)
6. CONTRACTOR SHALL REMOVE, CLEAN, REINSTALL EXISTING AIR DEVICE CONNECTED TO EXISTING DUCTWORK AT SAME APPROXIMATE LOCATION IN NEW 2X2 CEILING SYSTEM.
7. NEW CEILING SYSTEM IS BEING INSTALLED THIS ROOM, REFER TO SHEET A202 FOR CEILING DETAILS. ALL EXISTING ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, SPEAKERS, FIRE ALARM SYSTEMS, AIR DEVICES, PROJECTOR MOUNT, AV SYSTAEMS, WIRELESS ACCESS POINTS SHALL BE INSTALLED IN NEW CEILING SYSTEM.
8. INSTALL NEW EMERGENCY EXIT SIGN, CEILING MOUNTED AT THE LOCATION OF THE DEMO'D EXIT SIGN. WIRE THRU DEMO'D SIGN CIRCUIT.
9. INSTALL NEW FTU AT LOCATION OF DEMOLISHED VAV FAN TERMINAL. TIE INTO EXISTING SUPPLY AIR DUCT AND ELECTRICAL CIRCUIT FROM DEMO'D TERMINAL UNIT.
10. (2) THERMOSTAT / TEMPERATURE SENSORS THIS LOCATION, STACKED. ONE TO CONTROL NEW RTU-101 AND (1) FOR FTU-22. PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
11. REPLACE / UPGRADE EXISTING THERMOSTAT / TEMPERATURE SENSOR SERVING FTU'S. CONTROL DEVICE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
12. THERMOSTAT / TEMPERATURE SENSOR THIS LOCATION. PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
13. LOCATION OF EXISTING BALANCING DAMPER FOR BRANCHING DUCT SERVING FTU PER RECORD DOCUMENT. CONTRACTOR SHALL VERIFY DAMPER IS FULLY FUNCTIONAL AND PROVIDE REPORT TO ENGINEER OF ANY DAMPERS FOUND WITH DEFICIENCIES OR WHERE NOT EXISTING. PROVIDE UNIT COST TO REPLACE EXISTING DAMPER WITH NEW.



1 MECHANICAL AND ELECTRICAL PLAN - FIRST FLOOR

ME101 1/8" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER

MAY 7, 2026

Shane Floyd, P.E.
PE-2019017814
MO Certificate of Authority #000239

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MISSOURI CERTIFICATE OF AUTHORITY E-2018039887

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TROOP F HEADQUARTERS
JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
HEADQUARTERS MAIN LEVEL MECHANICAL & ELECTRICAL PLAN

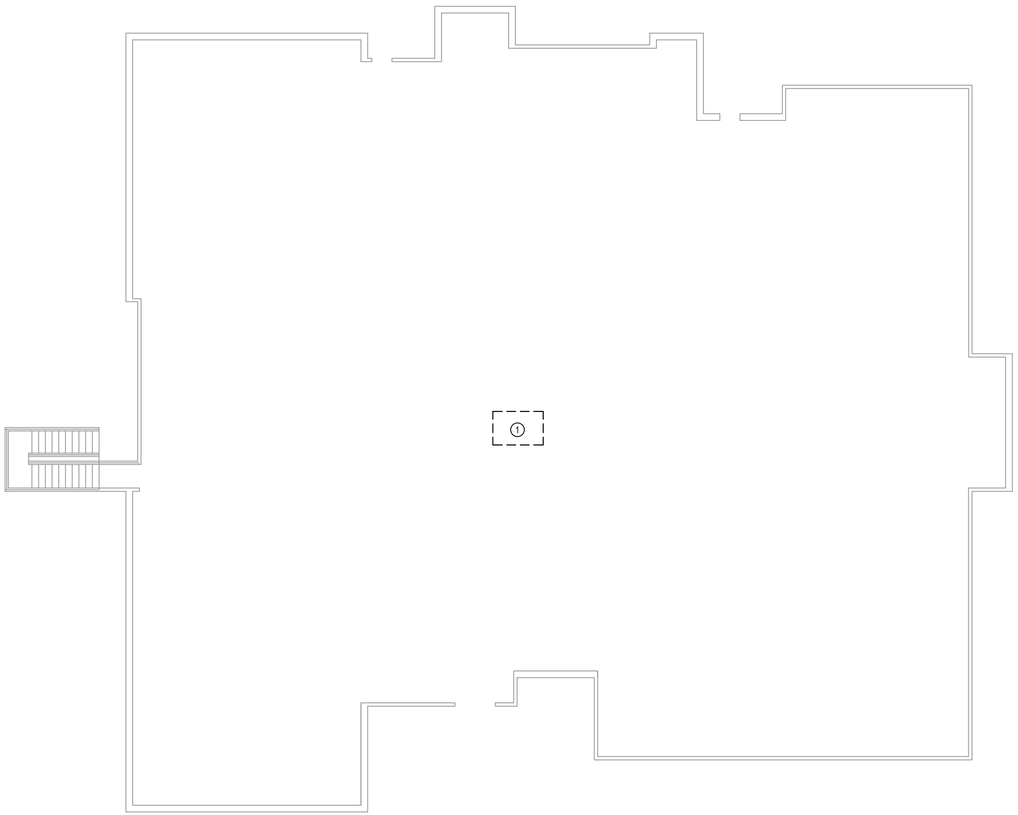
SHEET NUMBER:
ME101
SHEET 11 OF 18
ISSUE DATE: 05/07/2026

GENERAL PLAN NOTES

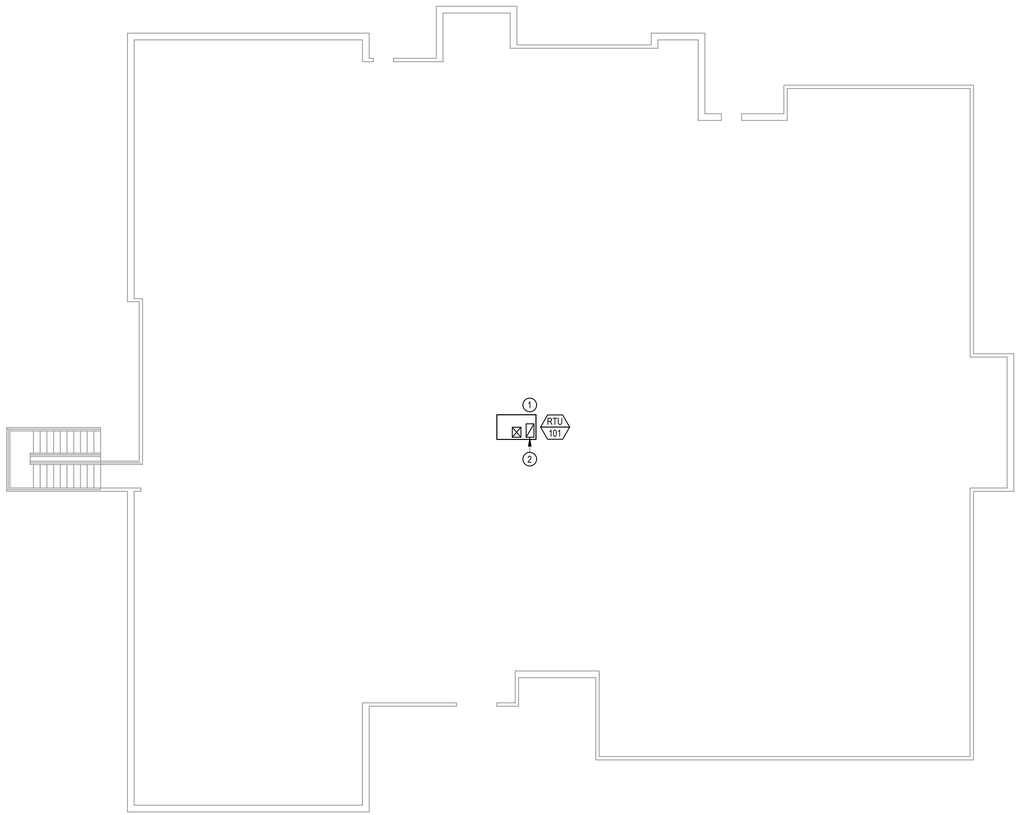
1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.

KEYED NOTES

1. DEMOLISH 5 TON ROOFTOP UNIT. INSTALL NEW UNIT AS INDICATED. RECONNECT TO EXISTING DUCTWORK, GAS PIPING, ELECTRICAL CIRCUIT & CONTROLS. PROVIDE CURB ADAPTER AS NECESSARY.
2. RETURN DUCT SMOKE DETECTOR INSTALLED IN RETURN AIR DUCT OF RTU. DETECTOR SHALL BE TIED INTO THE EXISTING FIRE ALARM SYSTEM. DUCT SMOKE DETECTOR PROVIDED BY ALARM CONTRACTOR.



2 MECHANICAL HVAC PLAN - HEADQUARTERS ROOF DEMO
ME102 3/32" = 1'-0"



1 MECHANICAL HVAC PLAN - HEADQUARTERS ROOF
ME102 3/32" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER

MAY 7, 2026

Shane Floyd, P.E.
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MO Certificate of Authority #000239

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

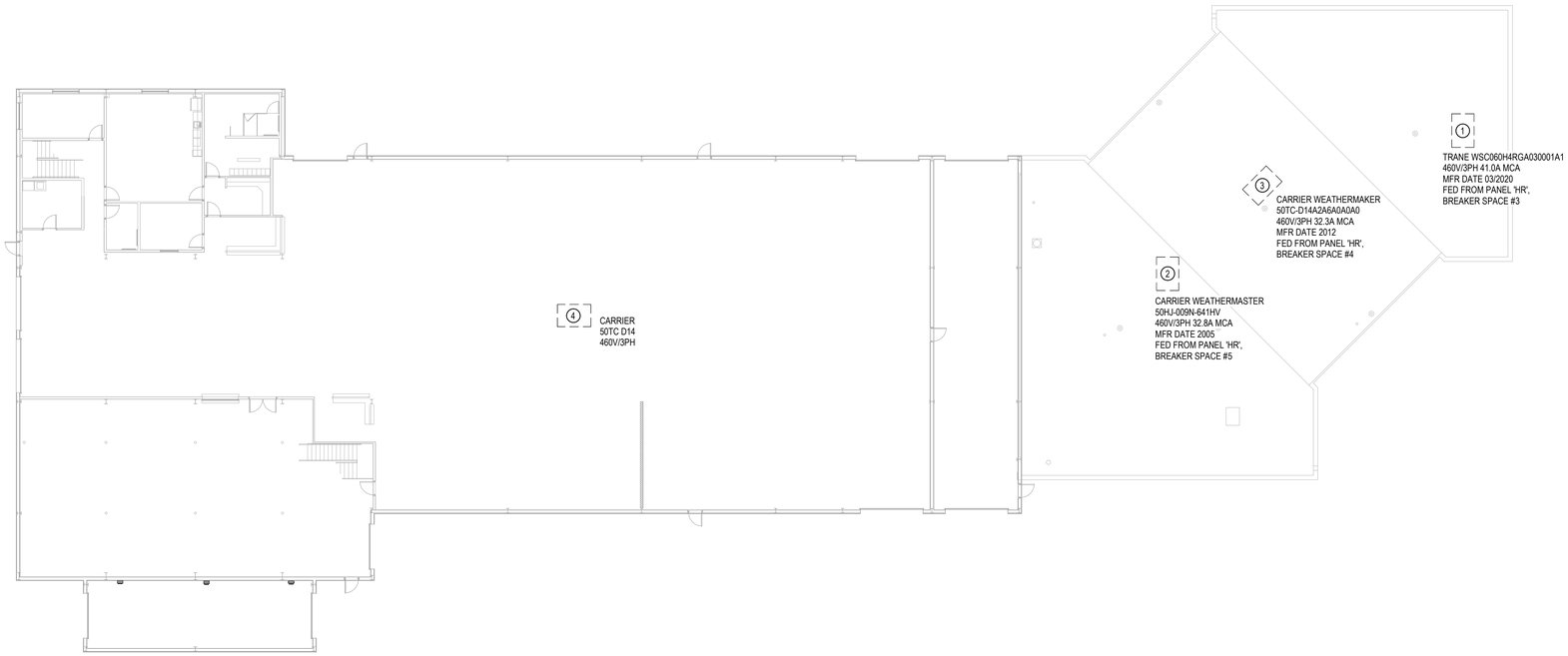
PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: SLF

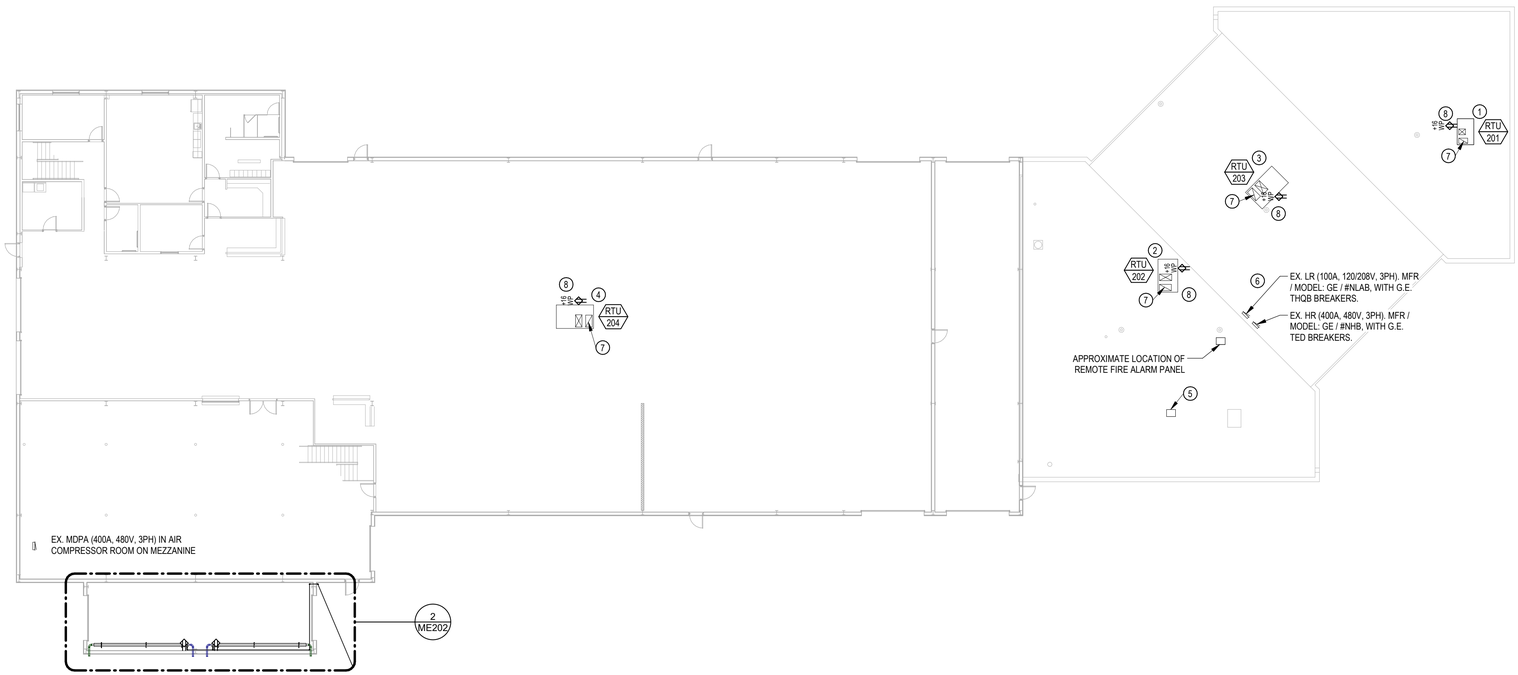
SHEET TITLE:
HEADQUARTERS ROOF MECHANICAL & ELECTRICAL PLAN

SHEET NUMBER:
ME102
SHEET 12 OF 18
ISSUE DATE: 05/07/2026



1 MECHANICAL PLAN - RADIO SHOP DEMO

ME201 1/16" = 1'-0"



2 MECHANICAL PLAN - RADIO SHOP

ME201 1/16" = 1'-0"

GENERAL PLAN NOTES

1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.

KEYED NOTES

1. DEMOLISH 5 TON ROOFTOP UNIT AND ASSOICATED THERMOSTAT. INSTALL NEW UNIT AND THERMOSTAT AT LOCATION OF DEMOLISHED. RECONNECT TO EXISTING DUCTWORK, ELECTRICAL CIRCUIT (EX. 40A BREAKER IN PANEL 'HR'). PROVIDE CURB ADAPTER AS NECESSARY.
2. DEMOLISH 8.5 TON ROOFTOP UNIT AND ASSOICATED THERMOSTAT. INSTALL NEW UNIT AND THERMOSTAT AT LOCATION OF DEMOLISHED. RECONNECT TO EXISTING DUCTWORK, AND ELECTRICAL CIRCUIT (EX. 60A BREAKER IN PANEL 'HR'). PROVIDE CURB ADAPTER AS NECESSARY.
3. DEMOLISH 12.5 TON ROOFTOP UNIT AND ASSOCIATED THERMOSTAT. INSTALL NEW UNIT AND THERMOSTAT AT LOCATION OF DEMOLISHED. DEMOLISH ASSOCIATED ELECTRICAL CONDUIT AND CONDUCTORS BACK TO PANEL 'HR' INSIDE BUILDING. REPLACE BREAKER IN PANEL 'HR' WITH NEW 80-3 BREAKER AND INSTALL NEW ELECTRICAL CONDUIT AND CONDUCTORS TO NEW RTU. RECONNECT TO EXISTING DUCTWORK. PROVIDE CURB ADAPTER AS NECESSARY.
4. DEMOLISH EXISTING 12.5 TON ROOFTOP UNIT AND ASSOICATED THERMOSTAT. INSTALL NEW 15 TON UNIT AND THERMOSTAT AT LOCATION OF DEMOLISHED. RECONNECT TO EXISTING DUCTWORK, ELECTRICAL CIRCUIT (EX. 100A BREAKER IN PANEL 'MDPA') AND FIRE ALARM SYSTEM. PROVIDE CURB ADAPTER AS NECESSARY.
4. DEMOLISH EXISTING 12.5 TON ROOFTOP UNIT AND ASSOICATED THERMOSTAT. INSTALL NEW 15 TON UNIT AND THERMOSTAT AT LOCATION OF DEMOLISHED. RECONNECT TO EXISTING DUCTWORK, ELECTRICAL CIRCUIT (EX. 100A BREAKER IN PANEL 'MDPA') AND FIRE ALARM SYSTEM. PROVIDE CURB ADAPTER AS NECESSARY. SEE FIRE ALARM VENDOR CONTACT INFORMATION THIS SHEET.
5. INSTALL NEW BAS SYSTEM CONTROL CABINET, DEDICATED PERSONAL COMPUTER FOR CONTROL SYSTEM, AND ANY ASSOCIATED CONTROLS COMPONENTS THIS APPROXIMATE LOCATION IN RADIO ROOM, SURFACE MOUNTED TO WALL. WIRE THRU EXISTING PANEL 'LR', CIRCUIT 'LR-29'. COORDINATE CONNECTION TO OWNERS IT NETWORK WITH OWNERS REPRESENTATIVE. COORDINATE FINAL LOCATION OF CONTROL PANEL WITH MSHP AGENCY PRIOR TO ROUGH-IN.
6. INSTALL NEW 20-1 BREAKER IN BLANK BREAKER SPACE #29 OF EXISTING PANEL 'LR' FOR NEW BAS CONTROL SYSTEM CONTROL CABINET.
7. RETURN DUCT SMOKE DETECTOR INSTALLED IN RETURN AIR DUCT OF RTU. DETECTOR SHALL BE TIED INTO THE EXISTING FIRE ALARM SYSTEM. DUCT SMOKE DETECTOR PROVIDED BY FIRE ALARM CONTRACTOR.
8. FACTORY MOUNTED INTEGRAL UNPOWERED, WP GFCI RECEPTACLE. WIRE THRU SPARE 20-1 BREAKER IN PANEL 'LR', CIRCUIT LR-27

FIRE ALARM VENDOR

Crystal Cannell
End User Account Representative
Midwest electronic systems, inc
2000 Forum Blvd, Suite #6 | Columbia, MO 65203
O: 573.443.5343 ext. 1001
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STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER

MAY 7, 2026

Shane Floyd, P.E.
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REPLACE CHILLER & HVAC, HEADQUARTERS & GARAGE BUILDINGS
TROOP F HEADQUARTERS
JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

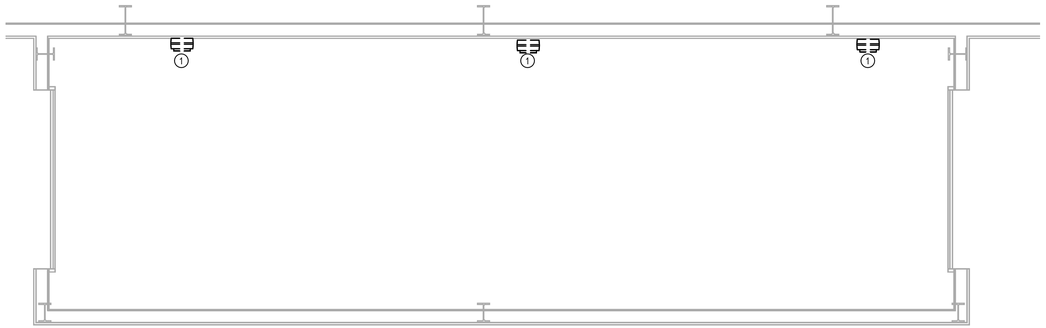
REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
GARAGE / RADIO SHOP MECHANICAL & ELECTRICAL PLAN

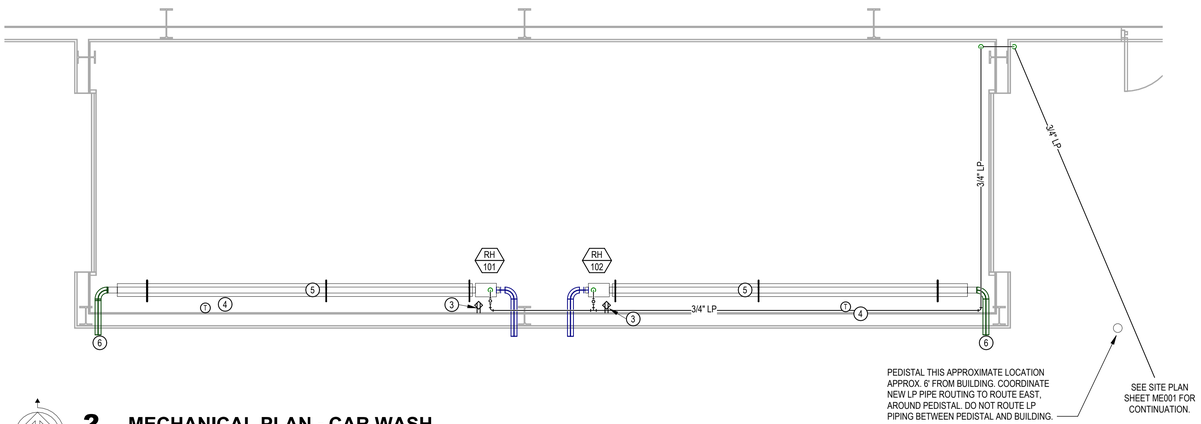
SHEET NUMBER:
ME201
SHEET 13 OF 18
ISSUE DATE: 05/07/2026

1/4"=1'-0" 0" 2'-0" 4'-0" 8'-0" 12'-0"



1 MECHANICAL PLAN - CAR WASH DEMO

ME202 1/4" = 1'-0"



2 MECHANICAL PLAN - CAR WASH

ME202 1/4" = 1'-0"

GENERAL PLAN NOTES

1. ALL DUCTWORK, AIR DEVICES, AND VAV / FTU BOXES SHOWN DASHED SHALL BE DEMOLISHED.
2. ALL DUCTWORK, EQUIPMENT, AND AIR DEVICES LABELED EXISTING OR ETR SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING DUCTWORK, EQUIPMENT, CONTROLS AND AIR DEVICE LOCATIONS SHOWN ARE BASED ON EXISTING BUILDING PLANS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF DUCTS OR EQUIPMENT TO DEMOLISH.
4. REFER TO ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES ON SHEET ME000.
5. FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT SCHEDULES SHEET M601 AND M602.
6. ALL EQUIPMENT, GEAR, DEVICES, CONDUITS LABELED EX. OR EXISTING SHALL BE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
7. ALL EXISTING EQUIPMENT, GEAR, DEVICES, CONDUITS SHOWN ARE AN APPROXIMATION BASED ON EXISTING RECORD DOCUMENTS AND FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO START OF WORK.
8. ALL NEW THERMOSTAT / TEMPERATURE SENSORS ARE PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. WIRING BY CONTROLS CONTRACTOR.
9. REFER TO ARCHITECTURAL PLAN SHEETS A101 AND A102 FOR EXTENT OF CEILING TO BE DEMOLISHED.
10. WHERE CEILINGS ARE BEING DEMOLISHED, ALL ELECTRICAL DEVICES, LIGHT FIXTURES, SECURITY DEVICES, AV SYSTEMS, SPEAKERS, WIRELESS ACCESS POINTS, AND FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN, SHALL HANG IN PLACE IN AREA OF DEMOLISHED CEILING, AND THEN BE INSTALLED INTO NEW CEILING.

KEYED NOTES

1. EXISTING ELECTRIC HEATER TO BE DEMOLISHED. REMOVE EXISTING CONDUIT / CONDUCTORS TO ASSOCIATED ELECTRICAL PANEL 'MDPA'. CAP CONDUIT / PLUG KNOCKOUT AT PANEL. SEE SHEET ME201 FOR PANEL LOCATION.
1. EXISTING ELECTRIC HEATER TO BE DEMOLISHED. REMOVE EXISTING CONDUIT / CONDUCTORS TO ASSOCIATED ELECTRICAL PANEL. CAP CONDUIT / PLUG KNOCKOUT AT PANEL.
3. GFCI RECEPTACLE FOR RADIANT HEATER. COORDINATE MOUNTING HEIGHT WITH RADIANT HEATER INSTALLER.
4. PROVIDE WITH NEMA 4X THERMOSTAT, MOUNT THERMOSTAT AT 8'-0" A.F.F.
5. INSTALL HEATER 12" OFF OF SIDE WALL. 12" BELOW CEILING, AND PLACE AT 45 DEGREE ANGLE AWAY FROM WALL.
6. RADIANT HEATER FLUE THRU WALL. INSTALL PER MANUFACTURERS SPECIFICATIONS.

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER

MAY 7, 2026

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2920 N. Shamrock Rd.
Jefferson City, MO 65101

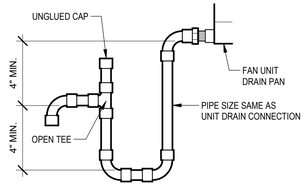
PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

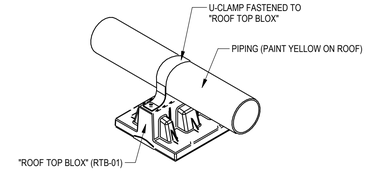
CAD DWG FILE: R2507-01
DRAWN BY: MKH
CHECKED BY: SLF
DESIGNED BY: MKH

SHEET TITLE:
CAR WASH MECHANICAL & ELECTRICAL PLAN

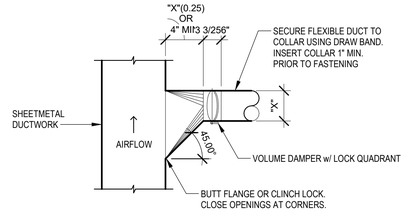
SHEET NUMBER:
ME202
SHEET 14 OF 18
ISSUE DATE: 05/07/2026



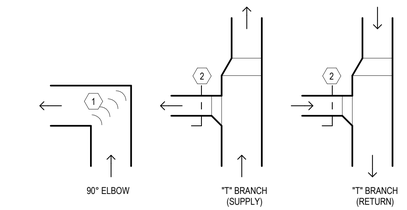
4 RTU CONDENSATE DRAIN DETAIL
ME501 NOT TO SCALE



3 ROOF MOUNTED PIPE SUPPORT DETAIL
ME501 NOT TO SCALE

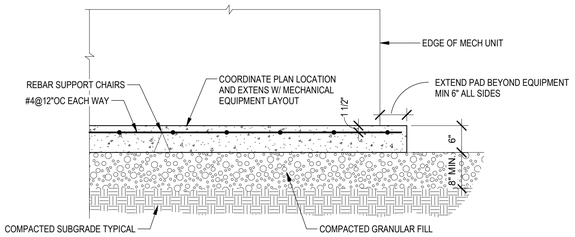


2 45° TAKEOFF DETAIL
ME501 NOT TO SCALE

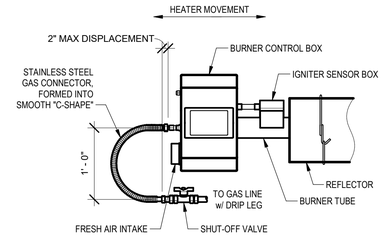


NOTE: SEE FLOOR PLAN FOR DIMENSIONS

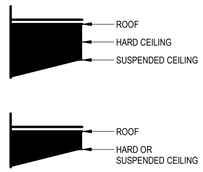
1 DUCTWORK FITTINGS DETAIL
ME501 NOT TO SCALE



6 AHU EQUIPMENT PAD DETAIL
ME501 3/4" = 1'-0"



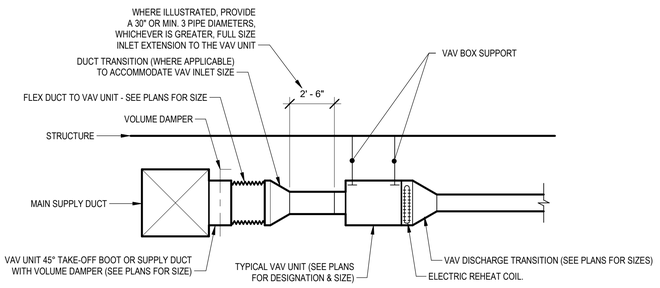
5 TUBE HEATER GAS LINE INSTALL DETAIL
ME501 NOT TO SCALE



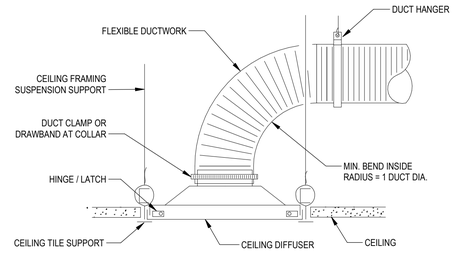
DUCTWORK INSIDE THERMAL ENVELOPE INSULATION SCHEDULE				
TYPE OF DUCTWORK	INSULATION			
	½" LINER	1" LINER	1½" WRAP	2" WRAP
RECTANGULAR SUPPLY				
RECTANGULAR RETURN				
RECTANGULAR EXHAUST				
RECTANGULAR OUTSIDE AIR				X
ROUND SUPPLY			X	
ROUND RETURN				
ROUND EXHAUST				
ROUND OUTSIDE AIR				X
SPIRAL SUPPLY				
SPIRAL RETURN				
SPIRAL EXHAUST				
SPIRAL OUTSIDE AIR				X

DUCTWORK OUTSIDE THERMAL ENVELOPE INSULATION SCHEDULE				
TYPE OF DUCTWORK	INSULATION			
	½" LINER	1" LINER	1½" WRAP	2" WRAP
RECTANGULAR SUPPLY			X	
RECTANGULAR RETURN			X	
RECTANGULAR EXHAUST			X	
RECTANGULAR OUTSIDE AIR				
ROUND SUPPLY				X
ROUND RETURN				X
ROUND EXHAUST			X	
ROUND OUTSIDE AIR				
SPIRAL SUPPLY				X
SPIRAL RETURN				X
SPIRAL EXHAUST			X	
SPIRAL OUTSIDE AIR				

9 TYP. DUCT INSULATION DETAIL
ME501 3/4" = 1'-0"



8 TYP. VAV UNIT INSTALLATION DETAIL
ME501 NOT TO SCALE



7 Ductwork Lay-In Supply Diffuser
ME501 NOT TO SCALE

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
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PROFESSIONAL ENGINEER

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2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
MECHANICAL & ELECTRICAL DETAILS

SHEET NUMBER:
ME501
SHEET 15 OF 18
ISSUE DATE: 05/07/2026

GAS-FIRED HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	NATURAL GAS BURNER				HEATER LENGTH (FT)	FLUE SIZE (IN)	FUEL SOURCE	ELECTRICAL			OPERATING WEIGHT (LBS.)	NOTES
				INPUT MBH (MBH)	STAGES	CONNECTION	PRESSURE				VOLTAGE /PHASE / PHASE	AMPS (AMPS)	BREAKER (AMPS)		
RH-101	ADVANCED RADIANT SYSTEMS	TWO STAGE INFRARED TUBE	GARAGE - CAR WASH	60	2	0.5"	3.5 WC	17'	4"	PROPANE	120/1	1	2	130	1,2,3,4,5,6,7,8
RH-102	ADVANCED RADIANT SYSTEMS	TWO STAGE INFRARED TUBE	GARAGE - CAR WASH	60	2	0.5"	3.5 WC	17'	4"	PROPANE	120/1	1	2	130	1,2,3,4,5,6,7,8

NOTES:
1. TOTALLY ENCLOSED STAINLESS STEEL BURNER CABINET.
2. 4", 16 GA CORROSION RESISTANT ALUMINIZED STEEL TUBING (COMBUSTION CHAMBER & RADIANT TUBES).
3. STAINLESS STEEL REFLECTOR AND END CAPS.
4. 4" VENT ADAPTER AND OUTSIDE COMBUSTION AIR ADAPTER KITS.
5. STAINLESS STEEL HANGING CHAIN SETS (CHAIN, KARABINER CLIPS, BEAM CLAMPS, EYE BOLTS).
6. 24V, 2 STAGE, WATER TIGHT THERMOSTAT (NEMA 4X)
7. PROVIDE 1/2" BALL VALVE AND 1/2" STAINLESS STEEL FLEX GAS CONNECTOR.
8. PROVIDE 10 YEAR WARRANTY ON TUBES, REFLECTORS & BURNER CABINET. 3 YEAR WARRANTY ON OTHER COMPONENTS.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	VOLTS	WATTS	AMPS	CCT (°K)	CRI	LAMPS	MOUNTING	REMARKS
E	SURE-LITES	APCH7 UNV R	EXIT SIGN / LIGHT COMBO	120	20.4	0.17	3500	80	LED	WALL	

ROOFTOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	SUPPLY			DX COOLING						ELECTRIC HEATING			ELECTRICAL			OPERATING WEIGHT (LBS.)	NOTES
				AIRFLOW (CFM)	EXT. S.P. (IN-WG)	MOTOR (HP)	NOMINAL TONS	TOTAL (MBH)	SENSIBLE (MBH)	AIR TEMP. (°F DB/WB) ENT.	AIR TEMP. (°F DB/WB) LVG.	EFFICIENCY EER	AMBIENT (°F)	INPUT (kW)	STAGES	AIR TEMP. (°F DB/WB) ENT.	AIR TEMP. (°F DB/WB) LVG.	VOLTAGE / PHASE	MCA (AMPS)	MOCP (AMPS)		
RTU-101	YORK	KLE06A4B3AB6G222A1	HEADQUARTERS	2000	0.6	2.40	5	63	46.2	80	60.1	12.0	95	14	2	60	82.1	208/3	66	70	602	1,2,3,4,5,6,7,8,9
RTU-201	YORK	KLE06A4B3AB6G222A1	RADIO SHOP	2000	0.6	2.40	5	63	46.2	80	60.1	12.0	95	14	2	60	82.1	480/3	28.6	30	602	1,2,3,4,5,6,7,8,9
RTU-202	YORK	KLE09A4B3AB6G222A1	RADIO SHOP	3400	0.6	2.40	8.5	106.3	75.4	80	60.8	12.5	95	33	1	60	90.6	480/3	55.4	60	945	1,2,3,4,5,6,7,8,9
RTU-203	YORK	KLE14A4B3AB6G222A1	RADIO SHOP	4375	0.6	3.70	12.5	147.5	104.8	80	59.7	11.20	95	41.7	2	60	90.1	480/3	70.4	80	1000	1,2,3,4,5,6,7,8,9
RTU-204	YORK	KD15E3CH4E1CEN86B1	GARAGE BAY	5500	1.0	3.00	15	179.7	130.2	80	59.4	11.00	95	48	2	60	88	480/3	85	100	2035	1,2,3,4,5,6,7,8,9

NOTES:
1. PROGRAMMABLE THERMOSTAT AND HUMIDISTAT WITH C02 SENSOR FOR DEMAND CONTROL VENTILATION, PROVIDED BY BAS SYSTEM CONTRACTOR. SET TO RUN FAN CONTINUOUS DURING OCCUPIED HOURS.
2. FACTORY MOUNTED DISCONNECT, SS OR RESIN-BASED DRAIN PAN, AND HAIL GUARDS
3. ECONOMIZER WITH SINGLE DRY BULB CONTROL, SET TO ENABLE ECONOMIZER AT 65° OAT, AND BAROMETRIC RELIEF SIZED AT 100% OF SUPPLY FLOW.
4. RETURN DUCT SMOKE DETECTOR WIRE TO FAN STARTER TO SHUT UNIT DOWN AND SEND ALARM SIGNAL TO FIRE ALARM SYSTEM (IF PRESENT) OR TO REMOTE SOUNDER LOCATED IN OCCUPIED AREA.
5. IECC 2018 COMPLIANT, WITH ECONOMIZER FAULT DETECTION AND NOTIFICATION
6. PROVIDE WITH GFCI PROTECTED CONVENIENCE RECEPTACLE, WIRED THRU WEATHERPROOF ROOF RECEPTACLE CIRCUIT SEPARATE FROM THE UNIT AS SHOWN ON PLAN.
7. WITH CURB ADAPTER
8. WITH BACNET IP.
9. WITH HOT-GAS REHEAT COIL / DEHUMIDIFICATION OPTION.

AIR COOLED CHILLER SCHEDULE

MARK	MANUFACTURER	MODEL	EQUIPMENT SERVED	NPLV	CAPACITY (MBH)	EVAPORATOR			ELECTRICAL				DIMENSIONS (L X W X H) (IN)	OPERATING WEIGHT	NOTES
						WATER FLOW (GPM)	TEMPERATURE EWT (°F)	TEMPERATURE LWT (°F)	VOLTS	PHASE	MCA (AMPS)	MOCP (AMPS)			
CH-1	YORK	YLAA0070SE	AHU-1	16.54	530.52	74.39	54	39	200	3	230	250	101.4 X 88.3 X 94.2	3384	1,2,3,4

NOTES:

1. WITH UNIT MOUNTED FACTORY DISCONNECT.
2. REMOTE COMMUNICATIONS: BACNET IP.
3. SINGLE POINT UNIT POWER CONNECTION.
4. PROVIDE WITH FACTORY STARTUP.

VAV BOX SCHEDULE (ELECTRIC HEAT)

LABEL	MANUFACTURER	MODEL	UNIT SIZE (IN)	INLET DIA.	PRIMARY AIRFLOW			FAN			ELECTRIC HEATING					MAX RAD NC	MAX DIS NC	ELECTRICAL		ELECTRICAL		DIMENSIONS (L X W X H)	NOTES
					MAX (CFM)	MIN. (CFM)	DISCHARGE EXT. S.P. (IN-WG)	CFM	MOTOR HP	FAN VOLTAGE	REHEAT CFM	NOMINAL KW	STAGES	VOLTAGE / PHASE	EAT (F)	LAT (F)			VOLTS	PHASE	MCA	MOCP		
FTU-1	PRICE	FDV	2008	8	600	150	0.3	300	1/3	208	450	3.5	SCRV	208/3	68.3	90	30	27	208	3	15.6	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-2	PRICE	FDV	2008	8	525	130	0.3	300	1/3	208	430	3	SCRV	208/3	69	90	29	25	208	3	8.05	15	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-3	PRICE	FDV	2008	8	540	135	0.3	300	1/3	208	435	3	SCRV	208/3	68.8	90	29	25	208	3	14.9	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-4	PRICE	FDV	2008	8	580	145	0.3	300	1/3	208	445	3	SCRV	208/3	68.5	90	30	26	208	3	14.9	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-5	PRICE	FDV	3012	12	1420	355	0.3	710	1/2	208	1065	7.5	SCRV	208/3	68.3	90	33	28	208	3	34.6	40	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-6	PRICE	FDV	4014	14	2190	550	0.3	1095	1/2	208	1645	11.5	SCRV	208/3	68.3	90	38	31	208	3	48.2	60	40 X 35 X 17.5	1,2,3,4,5,6,7
FTU-7	PRICE	FDV	2008	8	530	130	0.3	300	1/3	208	430	3	SCRV	208/3	69	90	29	25	208	3	14.9	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-8	PRICE	FDV	2008	8	615	155	0.3	310	1/3	208	465	3.5	SCRV	208/3	68.4	90	31	27	208	3	16	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-9	PRICE	FDV	2010	10	805	200	0.3	410	1/3	208	610	4.5	SCRV	208/3	69.8	90	31	23	208	3	19.5	30	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-10	PRICE	FDV	2006	6	425	105	0.3	300	1/3	208	405	3	SCRV	208/3	68.3	90	27	23	208	3	13.9	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-11	PRICE	FDV	2008	8	640	160	0.3	320	1/3	208	480	3.5	SCRV	208/3	68.3	90	31	28	208	3	16.3	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-12	PRICE	FDV	2008	8	640	160	0.3	320	1/3	208	480	3.5	SCRV	208/3	68.3	90	31	28	208	3	16.3	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-13	PRICE	FDV	2008	8	590	150	0.3	300	1/3	208	450	3.5	SCRV	208/3	68.3	90	30	26	208	3	15.6	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-14	PRICE	FDV	2008	8	615	155	0.3	310	1/3	208	465	3.5	SCRV	208/3	68.3	90	31	27	208	3	16	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-15	PRICE	FDV	2008	8	800	200	0.3	400	1/3	208	600	4.5	SCRV	208/3	69	90	35	31	208	3	19.1	30	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-16	PRICE	FDV	2010	10	1000	250	0.3	500	1/3	208	750	5.5	SCRV	208/3	68.3	90	30	25	208	3	22.9	35	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-17	PRICE	FDV	2008	8	510	130	0.3	300	1/3	208	430	3	SCRV	208/3	68.3	90	28	24	208	3	14.9	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-18	PRICE	FDV	2008	8	620	155	0.3	310	1/3	208	465	3.5	SCRV	208/3	68.8	90	31	27	208	3	16	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-19	PRICE	FDV	4014	14	2200	550	0.3	1100	1/2	208	1650	11.3	SCRV	208/3	68.3	90	38	31	208	3	48.2	60	40 X 35 X 17.5	1,2,3,4,5,6,7
FTU-20	PRICE	FDV	2008	8	500	125	0.3	300	1/3	208	425	3	SCRV	208/3	69.1	90	28	24	208	3	14.6	20	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-21	PRICE	FDV	2008	8	750	170	0.3	375	1/3	208	545	4	SCRV	208/3	68.8	90	34	30	208	3	17.7	25	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-22	PRICE	FDV	3012	10	1410	350	0.3	705	1/2	208	875	8.5	SCRV	208/3	65	95	30	25	208	3	33	40	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-23	PRICE	FDV	3012	12	1350	340	0.3	675	1/2	208	1015	7	SCRV	208/3	68.3	90	33	28	208	3	34.6	40	37 X 31 X 17.5	1,2,3,4,5,6,7
FTU-24	PRICE	FDV	2006	6	300	100	0.3	300	1/3	208	400	2.5	SCRV	208/3	70	90	30	27	208	3	13.6	20	45 X 31 X 17.5	1,2,3,4,5,6,7

NOTES:
1. PROVIDE BACNET VAV CONTROLLER CAPABLE OF MODULATING AIR DAMPER, 0-10VDC ECM FAN SPEED, AND SCRV 0-10V SCR CONTROL HEATING.
2. PROVIDE MERV 3 AIR FILTER, HANGAR BRACKETS, PROTECTIVE SHROUD, CONTROLS ENCLOSURE, 115-25V CONTROL TRANSFORMER (FACTORY MOUNTED), 3/4" THICK FIBERGLASS LINER
3. MULTI-POINT PRIMARY AIRFLOW SENSOR BY FACTORY.
4. SINGLE POINT POWER.
5. PROVIDE ECM FAN MOTORS.
6. PROVIDE WALL-MOUNT TEMPERATURE SENSOR WITH CO2 SENSOR, SETPOINT CONTROL AND DIGITAL DISPLAY, PROVIDED BY BAS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR.
7. CONTROLS SHALL BE FACTORY MOUNTED, SUPPLIED BY CONTROLS CONTRACTOR. .

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER

MAY 7, 2026

Shane Floyd, P.E.
PE-2019017814
MO Certificate of Authority #000239

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TROOP F HEADQUARTERS
JEFFERSON CITY, MISSOURI

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
MECHANICAL & ELECTRICAL SCHEDULES 1

SHEET NUMBER:
ME601
SHEET 16 OF 18
ISSUE DATE: 05/07/2026

MDP
EXISTING TO REMAIN

LOCATION: MAIN ELECT. ROOM
SUPPLY FROM:
MOUNTING: SURFACE
ENCLOSURE NEMA1
VOLTS: 120/208 WYE
PHASE: 3
WIRES: 4
MAINS TYPE: MLO
MAINS RATING: 1600 A
MCB Rating: 1600 A

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C
1				9		
2	AHU RETURN FANS	20	3		9	
3						9
4				***80***		
5	***AHU ELECTRIC HEAT***	***90***	***3***		***80***	
6						***80***
7				0		
8	NOT LABELED - TURNED OFF	50	3		0	
9						0
10				0		
11	WATER HEATER	40	3		0	
12						0
13				36		
14	AHU SUPPLY FANS	80	3		36	
15						36
16				0		
17	GARAGE HEAT	100	3		0	
18						0
19				245		
20	EX. HB2	400	3		245	
21						225
22				0		
23	TRANSFER SWITCH	300	3		0	
24						0
25				***230***		
26	***CHILLER***	***250***	***3***		***230***	
27						***230***
28				228		
29	EX. HB	400	3		228	
30						228
31				0		
32	PANEL BA & BB	200	3		0	
33						0
34				0		
35	PANEL 'HC'	20	3		0	
36						0
37				***8***		
38	***PUMP 'P1'***	***15***	***3***		***8***	
39						***8***
40				***8***		
41	***PUMP 'P2'***	***15***	***3***		***8***	
42						***8***
	TOTAL CONNECTED LOAD (AMPS):			844 A	844 A	824 A
	TOTAL CONNECTED LOAD (VA):			100932 VA	100932 VA	98852 VA

NOTES: ALL BREAKERS / CIRCUITS SHOWN IN BOLD / ITALICS ARE NEW BREAKERS / CIRCUITS REPLACING EXISTING.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

MARK	DESCRIPTION	SERVICE	MANUFACTURER	MODEL	FACE SIZE	NECK SIZE	THROW	DAMPER	MOUNTING	MATERIAL	FINISH	NOTES
S1	CONE STYLE SUPPLY DIFFUSER	SUPPLY	PRICE	SCD	24X24	6ø	6	YES	CEILING	STEEL	WHITE	1,2
S2	CONE STYLE SUPPLY DIFFUSER	SUPPLY	PRICE	SCD	24X24	8ø	7	YES	CEILING	STEEL	WHITE	1,2
S3	CONE STYLE SUPPLY DIFFUSER	SUPPLY	PRICE	SCD	24X24	10ø	9	YES	CEILING	STEEL	WHITE	1,2
S4	CONE STYLE SUPPLY DIFFUSER	SUPPLY	PRICE	SCD	24X24	14ø	14	YES	CEILING	STEEL	WHITE	1,2
R1	EGG CRATE RETURN GRILLE	RETURN	PRICE	80	24X24	6x6	-	NO	CEILING	STEEL	WHITE	1
R2	EGG CRATE RETURN GRILLE	RETURN	PRICE	80	24X24	8x8	-	NO	CEILING	STEEL	WHITE	1
R4	EGG CRATE RETURN GRILLE	RETURN	PRICE	80	24X24	16x16	-	NO	CEILING	STEEL	WHITE	1

NOTES:
1. PROVIDE DUCT CONNECTION SIZE AS INDICATED ON DRAWINGS.
2. PROVIDE MOLDED R-6 INSULATION BLANKET COVERING BACK OF CEILING DIFFUSER.

PUMP SCHEDULE

MARK	MANUFACTURER	MODEL	EQUIPMENT SERVED	FLUID	FLOW (GPM)	HEAD (FT H20)	SUCTION (IN)	DISCHARGE (IN)	MOTOR			ELECTRICAL			OPERATING WEIGHT (LBS.)	NOTES
									DRIVE	BHP	SPEED (RPM) (RPM)	VOLTAGE / PHASE	MCA (AMPS)	MOCP (AMPS)		
P-1	ARMSTRONG	4300 1505-002.0	CH-1	WATER	75	55	1.5	1.5	VFD	1.59	3012	208/3	8	15	69	1,2,3
P-2	BELL & GOSSETT	4300 1505-002.0	CH-1	WATER	75	55	1.5	1.5	VFD	1.59	3012	120/3	8	15	69	1,2,3

NOTES:
1. PUMP SHALL PROVIDE FLOW READING ON THE PUMP TOUCHSCREEN AND DIGITALLY FOR THE BAS SYSTEM.
2. FACTORY STARTUP OF THE PUMPS.
3. BACNET MS/TP

* OPERATING WEIGHT INCLUDES ALL ACCESSORIES AND EQUIPMENT, IF PROVIDED.

BUFFER TANK

MARK	MANUFACTURER	MODEL	TYPE	TANK VOLUME (GALLONS)
BT-1	AMERICAN WHEATLEY	AWCBT-200	BUFFER	200

AIR HANDLING UNIT (HYDRONIC) SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	SUPPLY FAN				COOLING					HEATING ELECTRIC	FILTER		RETURN FAN				OUTSIDE AIR	ELECTRICAL POWER					DIMENSIONS (L X W X H)	OPERATING WEIGHT (LBS)	NOTES
				AIRFLOW (CFM)	EXT. S.P. (IN-WG)	MOTOR (HP)	MOTOR QUANTITY	FLUID	PROPYLENE GLYCOL %	COIL				PRE-FILTER (MERV)	FINAL FILTER (MERV)	AIRFLOW (CFM)	EXT. S.P (IN-WG)	MOTOR (HP)	MOTOR QUANTITY	AIRFLOW (CFM)	VOLTS	PHASE	MCA (AMPS)	MOCP (AMPS)	SCCR (AMPS)			
										TOTAL (MBH)	SENSIBLE (MBH)	AIR TEMP. (°F DB/WB) ENT.	AIR TEMP. (°F DB/WB) LVG.	NOMINAL KW													
AHU-1	YORK	XTI-63X81	MULT-ZONE VAV	12200	2.5	15	2	WATER	35%	531	377	82.5	54.7	23	8	11	5078	0.75	3	2	2060	208	3	80	90	5	238 X 63 X 81	7437	1,2,3,4,5,6,7,8,9,10,11

NOTES:
1. UNIT CONTROLS PROVIDED BY BAS SYSTEM CONTRACTOR.
2. DISCHARGE AIR SENSOR BY BAS SYSTEM CONTRACTOR.
3. CONTROL VALVES SHALL BE FIELD SUPPLIED. ANALOG (2-10VDC) BY BAS SYSTEM CONTRACTOR.
4. PROVIDE WITH CONDENSATE OVERFLOW AND LOW LIMIT DEVICES.
5. AIR HANDLER SHALL BE CAPABLE OF 100% ECONOMIZER OPERATION.
6. PROVIDE MODULATING DAMPER ON OUTDOOR AIR.
7. PROVIDE WITH DUAL ENTHALPY SENSORS TO CONTROL OUTSIDE AIR AND RETURN AIR DAMPERS FOR ECONOMIZER FUNCTION.
8. 6" INTEGRAL BASE FRAME.
9. FACTORY MOUNT DISCONNECT.
10. RETURN DUCT SMOKE DETECTOR WIRE TO FAN STARTER TO SHUT UNIT DOWN AND SEND ALARM SIGNAL TO FIRE ALARM SYSTEM.
11. UNIT SHALL BE SHIPPED IN (4) SPLITS MINIMUM. MAXIMUM SHIPPING SPLIT DIMENSIONS SHALL BE 67" X 69" X 85"

PANELBOARD EX HB

LOCATION: STORAGE 120
SUPPLY FROM: EXISTING PANEL HA
MOUNTING: SURFACE
VOLTS: 120/208 WYE
PHASES: 3
WIRES: 4
MFR: GE
MAINS TYPE: MLO
RATING: 400 A

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1				20 A 15 A						2
3	FTU-21	25 A	3		20 A 15 A		3	20 A	FTU-4	4
5						20 A 15 A				6
7				14 A 21 A						8
9	FTU-20	20 A	3		14 A 21 A		***3***	***30 A***	***FTU-9***	10
11						14 A 21 A				12
13				17 A 17 A						14
15	***FTU-1***	***25 A***	***3***		17 A 17 A		***3***	***25 A***	***FTU-8***	16
17						17 A 17 A				18
19				14 A 15 A						20
21	FTU-2	20 A	3		14 A 15 A		3	20 A	FTU-7	22
23						14 A 15 A				24
25				15 A 13 A						26
27	FTU-3	20 A	3		15 A 13 A		3	20 A	FTU-10	28
29						15 A 13 A				30
31				17 A 17 A						32
33	***FTU-11***	***25 A***	***3***		17 A 17 A		***3***	***25 A***	***FTU-13***	34
35						17 A 17 A				36
37				17 A 17 A						38
39	***FTU-12***	***25 A***	***3***		17 A 17 A		***3***	***25 A***	***FTU-14***	40
41						17 A 17 A				42
	TOTAL CONNECTED LOAD (AMPS):			228.2	228 A	228 A				
	TOTAL CONNECTED LOAD (VA):			27,379	27,379	27,379				
	CALCULATED DEMAND:			228 A		82.14 kVA				

NOTES: ALL BREAKERS / CIRCUITS SHOWN IN BOLD / ITALICS ARE NEW BREAKERS REPLACING EXISTING.

PANELBOARD EX HB2

LOCATION: STORAGE 120
SUPPLY FROM:
MOUNTING: SURFACE
VOLTS: 120/208 WYE
PHASES: 3
WIRES: 4
MFR: GE
MAINS TYPE: MLO
RATING: 400 A

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1				38 A 15 A						2
3	***FTU-5***	***50 A***	***3***		38 A 15 A		3	20 A	FTU-17	4
5						38 A 15 A				6
7				48 A 17 A						8
9	***FTU-6***	***60 A***	***3***		48 A 17 A		***3***	***25 A***	***FTU-18***	10
11						48 A 17 A				12
13				22 A 60 A						14
15	FTU-15	30 A	3		22 A 60 A		***3***	***20 A***	***FTU-19***	16
17						22 A 60 A				18
19				25 A 20 A			2	30 A	EXISTING RANGE	20
21	***FTU-16***	***35 A***	***3***		25 A 20 A					22
23						25 A 0 A	1	20 A	EX RECEPTACLES CNTRL ROOM LOCKER	24
25				0 A --			1	--	SPACE	26
27	FTU-24	20 A	3		0 A --		1	--	SPACE	28
29						0 A --	1	--	SPACE	30
31				0 A --			1	--	SPACE	32
33	FTU-22	20 A	3		0 A --		1	--	SPACE	34
35						0 A --	1	--	SPACE	36
37				0 A --			1	--	SPACE	38
39	FTU-23	20 A	3		0 A --		1	--	SPACE	40
41						0 A --	1	--	SPACE	42
	TOTAL CONNECTED LOAD (AMPS):			245.3	245 A	225 A				
	TOTAL CONNECTED LOAD (VA):			29,118	29,118	27,038				
	CALCULATED DEMAND:			236.7 A		85.27 kVA				

NOTES: ALL BREAKERS / CIRCUITS SHOWN IN BOLD / ITALICS ARE NEW BREAKERS REPLACING EXISTING.

EXPANSION TANK SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	TANK VOLUME (GALLONS)	OPERATING WEIGHT (LBS)	NOTES
ET-1	BELL & GOSSETT	B130	CHILLED WATER	34.4	408	1

NOTES:
1. SUSPENDED WITH ALL THREAD

* OPERATING WEIGHT INCLUDES ALL ACCESSORIES, EQUIPMENT AND CURB, IF PROVIDED.

AIR SEPARATOR SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	CAPACITY GPM	PRESSURE DROP, FEET	SERVICE	OPERATING WEIGHT (LBS)
AS-1	BELL & GOSSETT	R-3F	AIR SEPERATOR	75	0.92	CHILLED WATER	188

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
SHANE L. FLOYD
NUMBER PE-2019017814
PROFESSIONAL ENGINEER
MAY 7, 2026
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PE-2019017814
MO Certificate of Authority #000239

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

2920 N. Shamrock Rd.
Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

CAD DWG FILE: R2507-01
DRAWN BY: CKT
CHECKED BY: SLF
DESIGNED BY: CKT

SHEET TITLE:
MECHANICAL & ELECTRICAL SCHEDULES 2

SHEET NUMBER:
ME602
SHEET 17 OF 18
ISSUE DATE: 05/07/2026

SEQUENCE OF OPERATION WITH DEMAND CONTROL VENTILATION:

Type: Sequence
Supply fan control
- Start/stop and enable:
- The variable speed supply fans (SFx-C) will be started based on the occupancy schedule (OCC-SCHEDULE).
- When the minimum number of supply fan statuses (SFx-S) indicates the fans have started, the AHU control sequence will be enabled.
- Static pressure control:
- The supply fans (SFx-O) will modulate in unison to maintain the discharge static pressure (DA-P) at setpoint (DAP-SP).
- Loss of airflow:
- Upon a loss of airflow (SFx-S) of enough fans to drop below the minimum required (MINIMUM RUNNING DEVICES), the fans will attempt to automatically restart until positive status is received.

Return fan control
- Start/stop and tracking:
- After the supply fan (SF-C) has been started, the variable speed return fans (RFx-C) will be started.
- The return fans (RFx-O) will modulate together in conjunction with the supply fan.
- The return fans will lag the supply fan by a percentage differential to maintain building pressure and proper return airflow.

Economizer control
- Free cooling:
- When the outdoor air temperature (OA-T) is cooler than the economizer setpoint, the economizer will act as the initial stage of cooling, working in sequence with the cooling coil.
- During economizer operation, the outdoor air damper may be opened beyond the demand ventilation requirement as needed to maintain discharge air temperature (DA-T) and/or mixed air temperature (MA-T) setpoints.

Minimum outdoor air and demand ventilation control
- Minimum outdoor air control:
- The fresh air intake of the unit will be controlled to:
  - Maintain a minimum outdoor air intake corresponding to the design ventilation rate for the served zones (MIN-OA-CFM), and
  - Prevent the preheat temperature (PH-T) from falling below the low limit setpoint (OALT-SP) by limiting outdoor air as required for freeze protection.
- A hard minimum outdoor air damper position (OAD-MINPOS) corresponding to MIN-OA-CFM will be enforced whenever the unit is in Occupied Mode, unless overridden by low-temperature protection.
- Demand ventilation enable:
- Demand ventilation (DCV) will be enabled when all of the following are true:
  - The unit is in Occupied Mode (OCC-SCHEDULE or OCC-OVERRIDE active).
  - Supply fan status (SFx-S) indicates normal operation.
  - Outdoor air temperature (OA-T) is above the low outdoor air temperature setpoint (OALT-SP) and within any additional DCV enable limits defined by the operator.
- CO_2 sensing basis:
- Return Air Quality (RA-Q) will be configured as a CO_2 concentration signal (ppm) representing the average of all zones served by AHU-22.
- A DCV low CO_2 setpoint (DCV-CO2-LOW) and a DCV high CO_2 setpoint (DCV-CO2-HI) will be provided (typical values to be set by the operator).
- Outdoor air reset by CO_2 (system-level DCV):
- When DCV is enabled and the economizer is not active:
  - If RA-Q ≤ DCV-CO2-LOW:
    - The outdoor air damper (OAD-O) will be reset down toward OAD-MINPOS, maintaining at least MIN-OA-CFM.
  - If RA-Q ≥ DCV-CO2-HI:
    - The outdoor air damper will be reset up toward a maximum DCV outdoor air position (OAD-DCV-MAXPOS), corresponding to MAX-OA-DCV-CFM (typically less than or equal to 100% outdoor air).
  - For RA-Q between DCV-CO2-LOW and DCV-CO2-HI:
    - The outdoor air damper position will be linearly modulated between OAD-MINPOS and OAD-DCV-MAXPOS.
- When DCV is disabled, the outdoor air damper will maintain OAD-MINPOS (subject to low-temperature limits).
- Interaction with economizer:
- When the economizer is active and outdoor air is suitable for free cooling:
  - The economizer sequence will take priority, and the outdoor air damper may be opened beyond OAD-DCV-MAXPOS as required to satisfy cooling and discharge air temperature control.
- When the economizer is not active:
  - The outdoor air damper will be limited to the DCV range between OAD-MINPOS and OAD-DCV-MAXPOS.

Temperature control
- Discharge air temperature:
- The unit will control to maintain a constant discharge air temperature (DA-T) at its setpoint (DA-SP), using the preheat coil and cooling coil in sequence as required.

Occupied mode
- Mode definition:
- The occupancy mode will be controlled via a network input (OCC-SCHEDULE).
- The occupancy mode can also be overridden by a network input (OCC-OVERRIDE).
- Operation:
- In Occupied Mode, the supply and return fans, preheat coil, cooling coil, outdoor air damper, and DCV logic will operate per the sequences described above.

Unoccupied mode
- Mode definition and operation:
- The unit will remain off during unoccupied periods, except as required for any separate night setback, warm-up, cooldown, or freeze protection sequences (if provided by the BAS).
- During Unoccupied Mode, DCV and economizer functions will be disabled.

Preheat coil
- Normal operation:
- The preheat coil (PH-O) will modulate to maintain the preheat temperature setpoint (PH-SP) and/or to maintain mixed air temperature (MA-T) above the low limit as defined by the operator.
- Shutdown and low outdoor air temperature:
- When the unit is shutdown, the preheat coil will be commanded to a preset position should the outdoor air temperature (OA-T) fall below the low outdoor air temperature setpoint (OALT-SP).
- Loss of airflow:
- Upon a loss of airflow (SF-S), the preheat coil will be commanded to a preset position should the outdoor air temperature (OA-T) fall below the low outdoor air temperature setpoint (OALT-SP).

Cooling coil
- Normal operation:
- The cooling coil (CLG-O) will modulate to maintain the discharge air temperature setpoint (DA-SP), in coordination with economizer operation.
- Shutdown:
- When the unit is shutdown, the cooling coil will be commanded to a preset position should the outdoor air temperature (OA-T) fall below the low outdoor air temperature setpoint (OALT-SP), as required by the design (typically closed).
- Loss of airflow:
- Upon a loss of airflow (SF-S), the cooling coil will be off.

Unit protection
- Low temperature alarm (LT-A):
- When in "Alarm", the control sequence will stop running, the valve(s) will open as required for freeze protection, and the fan(s) will be disabled via a hard-wired shutdown circuit.
- Discharge air high duct pressure alarm (DAPHI-A):
- When in "Alarm", the control sequence will stop running and the fan(s) will be disabled via a hard-wired shutdown circuit.
- Return air low duct pressure alarm (RAPLO-A):
- When in "Alarm", the control sequence will stop running and the fan(s) will be disabled via a hard-wired shutdown circuit.

Additional points monitored by the FMS
- Monitored points:
- Outdoor Air Temperature (OA-T)
- Preheat Leaving Water Temperature (PHLW-T)
- Chilled Water Entering Temperature (CHEW-T)
- Chilled Water Leaving Temperature (CHLW-T)
- Mixed Air Temperature (MA-T)
- Return Fan Status (RFx-S)
- Return Air Temperature (RA-T)
- Return Air Quality (RA-Q – CO_2 ppm for DCV)
- Zone Temperature (ZN-T)

Optional: enhanced DCV using zone CO_2 sensors

If zone CO_2 sensors are added at selected VAV boxes (e.g., conference rooms, open office areas), the following optional logic may be implemented:
- Zone CO_2 inputs:
- Each DCV-enabled VAV box will have a zone CO_2 sensor (ZN-CO2).
- A zone DCV setpoint (ZN-CO2-SP) will be defined for each such zone.
- Critical CO_2 selection:
- The AHU DCV logic will use the highest valid CO_2 reading among:
  - All DCV-enabled zones (ZN-CO2), and
  - The return air CO_2 (RA-Q) as a fallback/average.
- This "critical CO_2" value will be used in place of RA-Q in the outdoor air reset sequence described above.
- Fallback:
- If all zone CO_2 signals are invalid or unavailable, the AHU will revert to using RA-Q alone for DCV.
- If both RA-Q and all zone CO_2 signals are invalid, DCV will be disabled and the outdoor air damper will maintain OAD-MINPOS (subject to low-temperature limits).

VAV with electric reheat sequence of operation with DCV
Type: Sequence
Occupied mode
- Neutral band operation:
- When the zone temperature (ZN-T) is between the occupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside the deadband), the primary air damper (DPR-O) will be at the occupied minimum CFM (OCC-MIN-CFM), and there will be no mechanical heating.
- Cooling demand:
- On a rise in zone temperature (ZN-T) above the occupied cooling setpoint (EFFCLG-SP), the primary air damper (DPR-O) will modulate open to increase the primary air CFM (SA-F) up to the cooling maximum CFM (CLG-MAX-CFM) as required to maintain ZN-T at setpoint.
- Electric reheat will be off during cooling.
- Heating demand:
- On a drop in zone temperature (ZN-T) below the occupied heating setpoint (EFFHTG-SP), the reheat coil will be enabled and modulated to maintain ZN-T at setpoint.
- During heating, the primary air damper (DPR-O) will be controlled to provide the occupied heating minimum CFM (HTG-MIN-CFM), not less than the code-required ventilation minimum.

Unoccupied mode
- Neutral band operation:
- When in Unoccupied Mode, while ZN-T is between the unoccupied heating (EFFHTG-SP) and cooling (EFFCLG-SP) setpoints (inside the deadband), the primary air damper (DPR-O) will be at the unoccupied minimum CFM (UNOCC-MIN-CFM), and there will be no mechanical heating.
- Cooling demand:
- On a rise in ZN-T above the unoccupied cooling setpoint (EFFCLG-SP), the primary air damper (DPR-O) will modulate open to increase CFM (SA-F), if available from the AHU, to reduce ZN-T toward setpoint.
- Electric reheat will be off during cooling.
- Heating demand:
- On a drop in ZN-T below the unoccupied heating setpoint (EFFHTG-SP), the reheat coil will be enabled and modulated to maintain ZN-T at setpoint.
- During heating, DPR-O will be at UNOCC-MIN-CFM (or a warm-up minimum if commanded by the BAS).

Discharge air temperature sensor
- Monitoring:
- A discharge air temperature (DA-T) sensor is provided on each box for monitoring purposes and alarming only.
- DA-T will not be used for primary control of the VAV box unless otherwise noted.

Occupancy control
- Local occupancy sensor:
- A local occupancy sensor (OCC-S) will switch the box between Occupied and Standby/Unoccupied modes when occupancy of the zone is detected or cleared, as defined by the BAS.
- When OCC-S indicates occupied, the box will use the occupied setpoints (EFFHTG-SP, EFFCLG-SP) and OCC-MIN-CFM.
- When OCC-S indicates unoccupied/standby, the box will use the unoccupied or standby setpoints and UNOCC-MIN-CFM, as configured by the BAS.

Unit enable
- Network enable:
- A network unit enable signal (UNITEN-MODE) will control the mode of the box (Enabled/Disabled).
- When UNITEN-MODE is disabled, the primary air damper will drive closed and the reheat coil will be off.

Network warm-up / cooldown
- Warm-up mode:
- Warm-up mode will be activated by a network command (WC-C = WARMUP).
- When ZN-T is below the effective heating setpoint (EFFHTG-SP), the box damper (DPR-O) will be modulated to allow warm air flow up to a warm-up maximum CFM (WU-MAX-CFM), and the reheat coil will modulate as required to maintain ZN-T.
- When the box effective heating setpoint is satisfied, the flow will remain at the warm-up minimum position (WU-MIN-CFM) until the warm-up command has been removed.
- Cooldown mode:
- Cooldown mode will be activated by a network command (WC-C = COOLDOWN).
- When ZN-T is above the effective cooling setpoint (EFFCLG-SP), the box damper (DPR-O) will modulate open up to a cooldown maximum CFM (CD-MAX-CFM) to provide cooling air.
- When the box effective cooling setpoint is satisfied, the flow will remain at the cooldown minimum position (CD-MIN-CFM) until the cooldown command has been removed.

Optional: zone-level demand control ventilation (DCV)

If zone CO_2 sensors are provided at selected VAV boxes, the following optional logic applies.

Zone CO_2 sensing
- Inputs and setpoints:
- Each DCV-enabled VAV box will have a zone CO_2 sensor (ZN-CO2).
- A low and high CO_2 threshold will be defined for each zone (ZN-CO2-LOW, ZN-CO2-HI).

DCV impact on minimum airflow
- Occupied mode with DCV:
- When ZN-CO2 ≤ ZN-CO2-LOW:
  - The primary air damper (DPR-O) will maintain the standard occupied minimum CFM (OCC-MIN-CFM).
- When ZN-CO2 ≥ ZN-CO2-HI:
  - The minimum airflow setpoint for the box may be increased up to a DCV maximum minimum CFM (DCV-MIN-MAX-CFM), not exceeding CLG-MAX-CFM, to provide additional ventilation.
  - DPR-O will modulate to satisfy both temperature and the DCV-adjusted minimum airflow requirement.
- For ZN-CO2 between ZN-CO2-LOW and ZN-CO2-HI:
  - The minimum airflow setpoint will be linearly reset between OCC-MIN-CFM and DCV-MIN-MAX-CFM.
- Unoccupied mode with DCV:
- DCV will typically be disabled in Unoccupied Mode.
- DPR-O will follow the unoccupied logic and UNOCC-MIN-CFM (or any BAS-defined setback minimum), regardless of ZN-CO2.

Interaction with occupancy sensor
- Local occupancy priority:
- When OCC-S indicates no occupancy, the BAS may:
  - Reduce the minimum airflow to a standby minimum CFM (STBY-MIN-CFM), and
  - Ignore ZN-CO2 for DCV purposes (i.e., DCV disabled in standby/unoccupied).
- When OCC-S indicates occupied, DCV logic (if enabled for that zone) will be active and allowed to reset the minimum airflow as described above.

Fault and fallback
- CO_2 sensor failure:
- If ZN-CO2 is invalid, out of range, or in alarm:
  - The box will revert to standard VAV operation without DCV, using OCC-MIN-CFM / UNOCC-MIN-CFM as applicable.
- The BAS will generate an alarm for invalid or failed ZN-CO2.

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MAY 7, 2026

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

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Jefferson City, MO 65101

PROJECT # R2507-01
SITE # 6007
ASSET # 8136007002
8136007004

REVISION	DATE

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DRAWN BY: CKT
CHECKED BY: SLF
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