Replace HVAC Units for 10 Group Homes
St. Charles Habilitation Center
St. Charles, MO

CASE
Engineering Inc.

796 Merus Court
St. Louis, MO 63026

T 636.349.1600
F 636.349.1730

CERTIFICATE OF AUTHORITY NO. 001498

OWNER: STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

DEPARTMENT OF
MENTAL HEALTH

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

SHEET INDEX:

DESIGNER: Case Engineering INC.

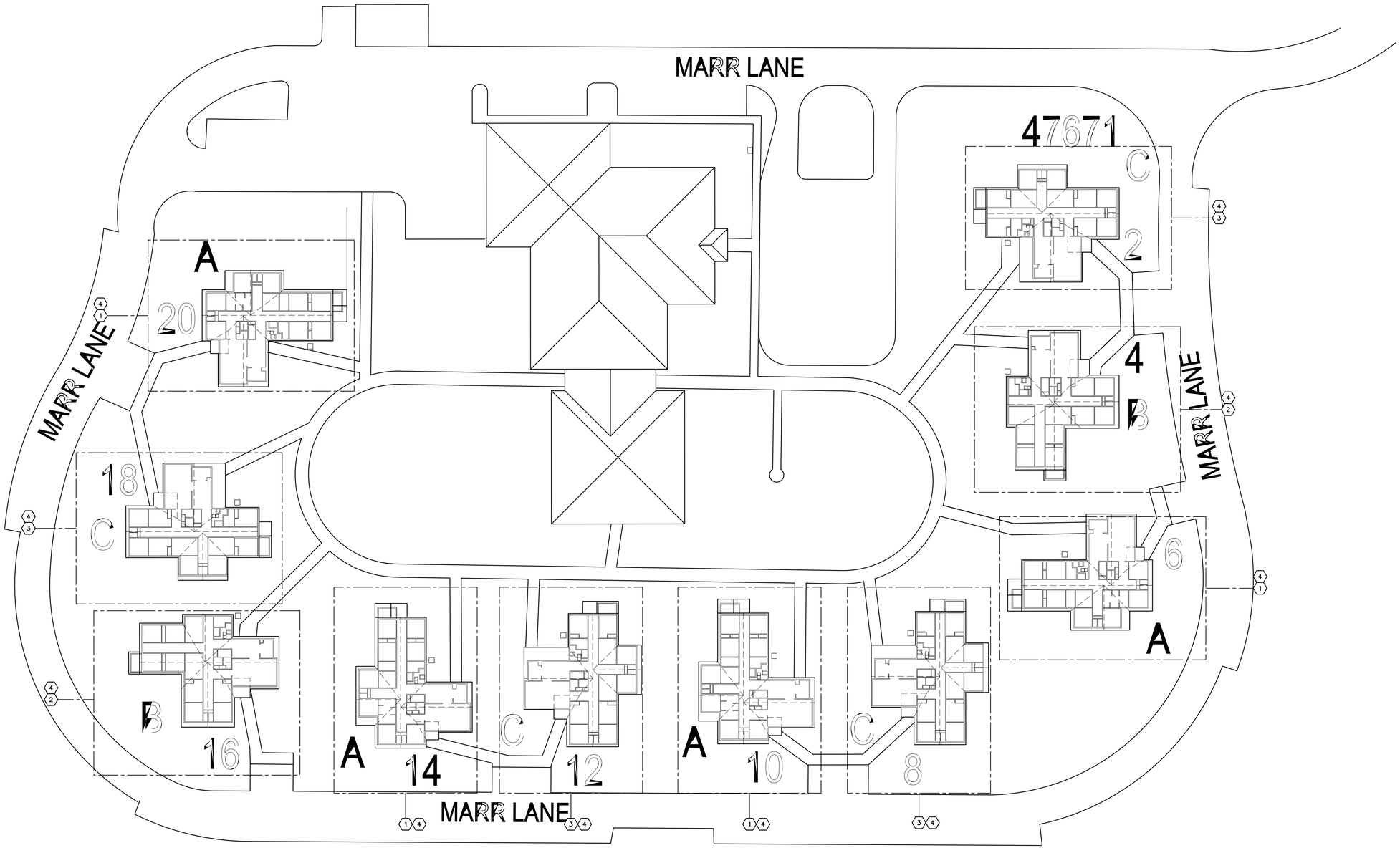
PROJECT NUMBER: M2511-01

SITE NUMBER: 7372
ASSET NUMBERS: 6517372005, 6517372006,
6517372007, 6517372008,
6517372009, 6517372010,
6517372011, 6517372012,
6517372013, 6517372014

SHEET NUMBER:
G-001
1 OF 14 SHEETS
January 07, 2026

SITE KEYED NOTES

1. REFER TO SHEET M101 FOR MECHANICAL SCOPE OF WORK AT TYPE "A" GROUP HOME LAYOUTS.
2. REFER TO SHEET M102 FOR MECHANICAL SCOPE OF WORK AT TYPE "B" GROUP HOME LAYOUTS.
3. REFER TO SHEET M103 FOR MECHANICAL SCOPE OF WORK AT TYPE "C" GROUP HOME LAYOUTS.
4. REFER TO SHEET MD101 FOR MECHANICAL DEMOLITION SCOPE OF WORK.



1 SITE PLAN
SCALE: 1/32" = 1'-0"

N

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MATTHEW R. CASE
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PE-2011006282
PROFESSIONAL ENGINEER

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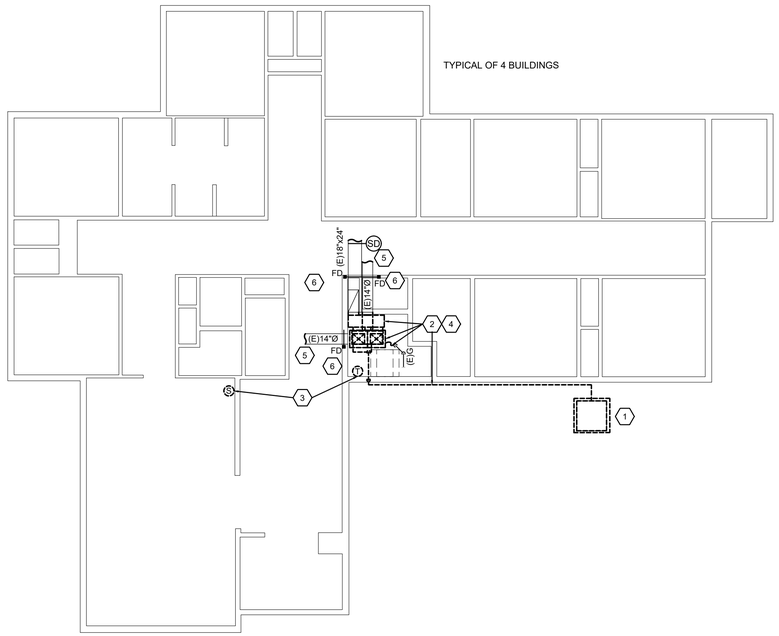
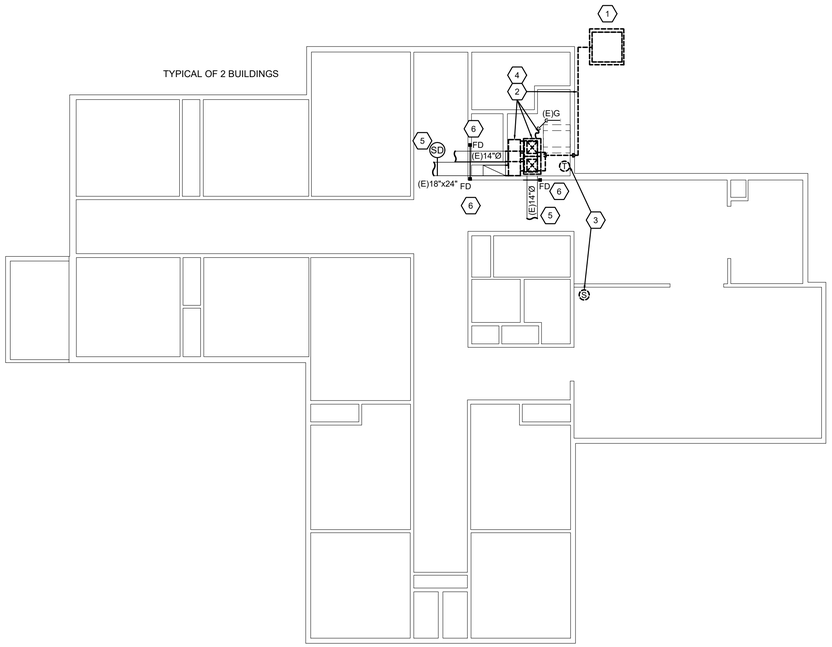
SHEET TITLE: **SITE PLAN**

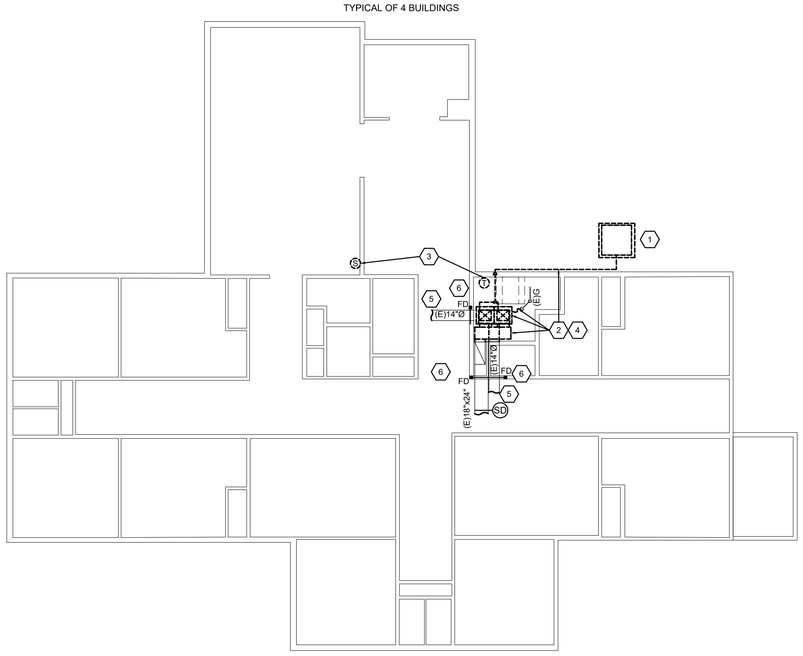
SHEET NUMBER: **M100**



1 GROUP HOME TYPE "A" DEMO PLAN
SCALE: 1/8" = 1'-0"



2 GROUP HOME TYPE "B" DEMO PLAN
SCALE: 1/8" = 1'-0"



3 GROUP HOME TYPE "C" DEMO PLAN
SCALE: 1/8" = 1'-0"

MECHANICAL DEMO KEYED NOTES

1. REMOVE EXISTING CONDENSING UNIT AND DEMOLISH HOUSEKEEPING PAD.
2. REMOVE EXISTING TWINNED FURNACES, RETURN AND SUPPLY AIR PLENUM BOXES, AND EXISTING REFRIGERANT LINESETS. REMOVE FLEXIBLE GAS CONNECTION AND CAP EXISTING GAS PIPE FOR FUTURE FURNACE CONNECTION.
3. REMOVE EXISTING THERMOSTAT, TEMPERATURE SENSOR, AND ALL CONTROL WIRING SERVING SPLIT SYSTEM.
4. REMOVE EXISTING FURNACE FLUE DUCT, PATCH AND SEAL WATER HEATER FLUE AT CONNECTION OF COMBINED FLUE. COMBINED FLUE SECTION SHALL REMAIN TO SERVE EXISTING WATER HEATER.
5. EXISTING DISTRIBUTION DUCTWORK FROM FURNACES TO REMAIN. ONLY FURNACE PLENUM BOXES SHALL BE REMOVED. CLEAN AND PREP DUCTWORK FOR CONNECTION TO NEW FURNACES.
6. EXISTING FIRE DAMPERS AND SMOKE DETECTOR IN DUCTWORK SHALL REMAIN.

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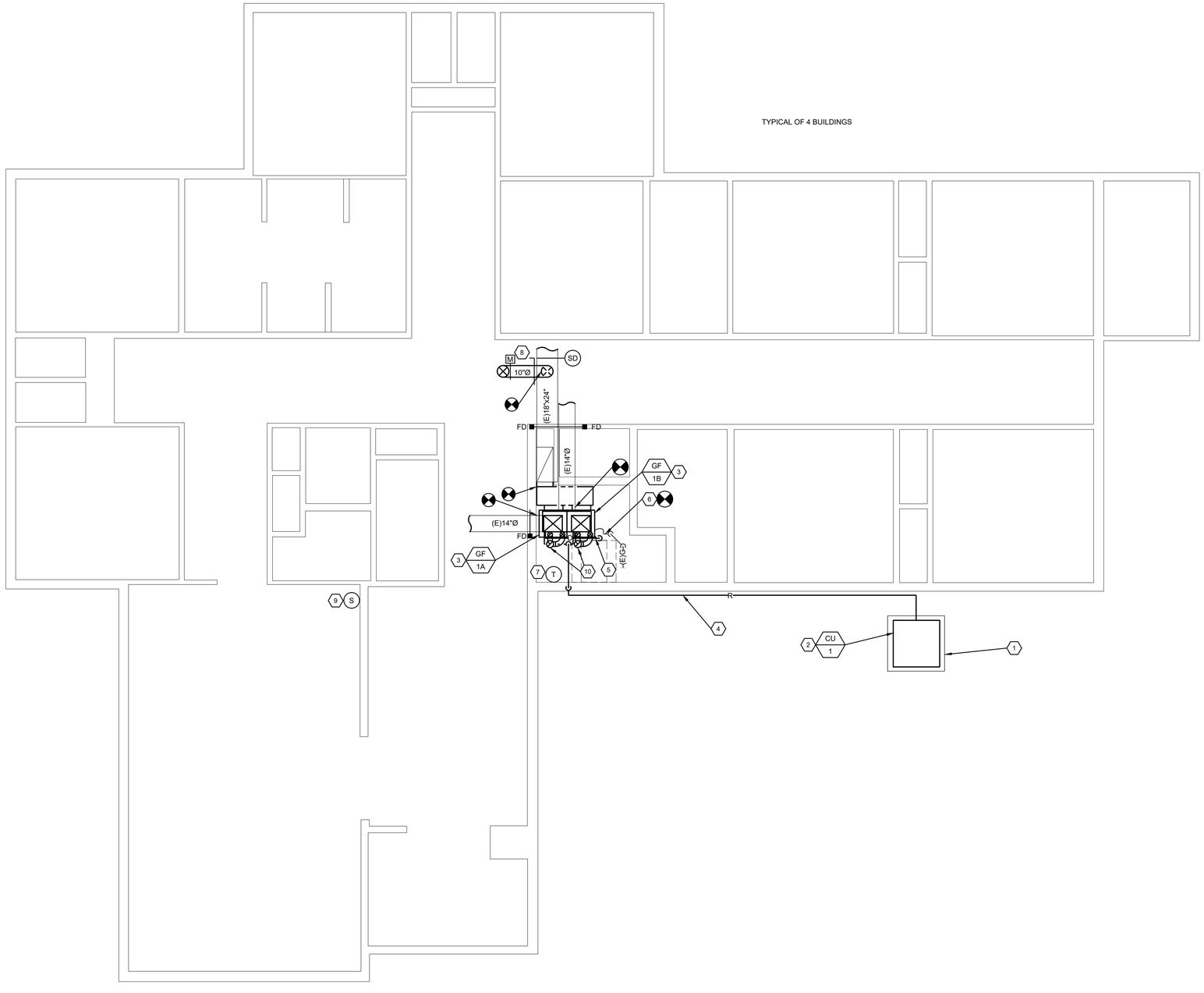
DESIGNED BY:

SHEET TITLE: **DEMO PLAN**

SHEET NUMBER: **DM101**



1 GROUP HOME TYPE "A" NEW WORK PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL KEYED NOTES

1. PROVIDE NEW CONCRETE HOUSEKEEPING PAD, EXTEND 6" PAST EDGE OF MECHANICAL EQUIPMENT.
2. PROVIDE NEW CONDENSING UNIT ON HOUSEKEEPING PAD.
3. PROVIDE VERTICAL GAS FURNACES, (GF-1A,1B) WITH DX COIL IN MECHANICAL ROOM. PROVIDE MANUFACTURER TWINNING KIT AND LINK FURNACES TOGETHER. CONNECT DUCTWORK FROM SUPPLY OPENINGS TO EXISTING SUPPLY MAIN, AND FROM RETURN OPENINGS TO EXISTING RETURN DUCT MAIN. PROVIDE SUPPLY AIR TEMPERATURE SENSOR IN FURNACE DUCTWORK. TEMPERATURE SENSOR SHALL BE WIRED TO BAS TERMINAL READOUT. SEE DETAIL SHEET FOR ALL REQUIRED FURNACE CONNECTIONS.
4. ROUTE SUCTION AND DISCHARGE LINE SETS FROM CONDENSING UNIT TO DX COILS AT GAS FURNACES. PROVIDE MANUFACTURER TWINNING TEE TO CONNECT BOTH FURNACES TO CONDENSING. INSULATE LINE SETS ACCORDING TO MECHANICAL SCHEDULES AND SPECIFICATIONS. INSTALL IN ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS. PROVIDE UNISTRUT SUPPORT FOR NEW REFRIGERANT PIPE ON HOUSEKEEPING PAD, SEE DETAIL SHEET FOR MORE INFORMATION.
5. ROUTE FULL DIAMETER CONDENSATE LINE FROM GAS FURNACES AND DX COILS TO TERMINATE OVER EXISTING FLOOR DRAIN WITH AIR GAP.
6. PROVIDE NEW FLEXIBLE GAS CONNECTOR TO CONNECT NEW FURNACES TO EXISTING GAS PIPE IN SPACE. CONFIRM OPERATION OF EXISTING SHUT-OFF VALVE, AND CLEAN SEDIMENT TRAP. PROVIDE NEW SHUTOFF VALVE IF EXISTING VALVE IS NOT FULLY OPERATIONAL. SUBMIT PRICE OF NEW VALVE INSTALLATION WITH BASE BID, UNDER CONTINGENT LINE ITEMS.
7. PROVIDE SEVEN-DAY PROGRAMMABLE THERMOSTAT WITH BAS COMPATIBILITY, AUTO CHANGEOVER AND RELATED WIRING TO CONTROL TWINNED GAS FURNACES. MOUNT AT 48" AFF IN MECHANICAL ROOM. ENGAGE CONTROLS CONTRACTOR TO INTEGRATE TEMPERATURE CONTROLS WITH EXISTING SITE BAS. FURNACES SHALL BE CONTROLLABLE LOCALLY FROM THERMOSTAT, AND REMOTELY FROM BAS USER INTERFACE.
8. 10"Ø OUTSIDE AIR DUCT DOWN THROUGH ROOF TO EXISTING RETURN AIR DUCT. PROVIDE LOW-LEAK SHUTOFF AND VOLUME DAMPERS, BALANCE OUTSIDE AIR TO 250 CFM. TERMINATE ABOVE ROOF WITH GOOSENECK AND BIRDSCREEN. MOTORIZED SHUTOFF DAMPER SHALL BE ENERGIZED DURING ACTIVE HEATING OR COOLING.
9. PROVIDE REMOTE TEMPERATURE SENSOR, COMPATIBLE WITH CORRESPONDING THERMOSTAT. INSTALL SENSOR ON LIVING ROOM WALL AT 48"AFF.
10. ROUTE UL-1738 LISTED FLUE/INTAKE PIPE FROM MECHANICAL EQUIPMENT, SIZED PER MANUFACTURER'S RECOMMENDATIONS, UP TO ROOF AND TERMINATE WITH CONCENTRIC VENT. TERMINATION MUST BE AT LEAST 10'-0" AWAY FROM ALL OUTDOOR AIR INTAKES. INSTALL PER ALL MANUFACTURER'S RECOMMENDATIONS.

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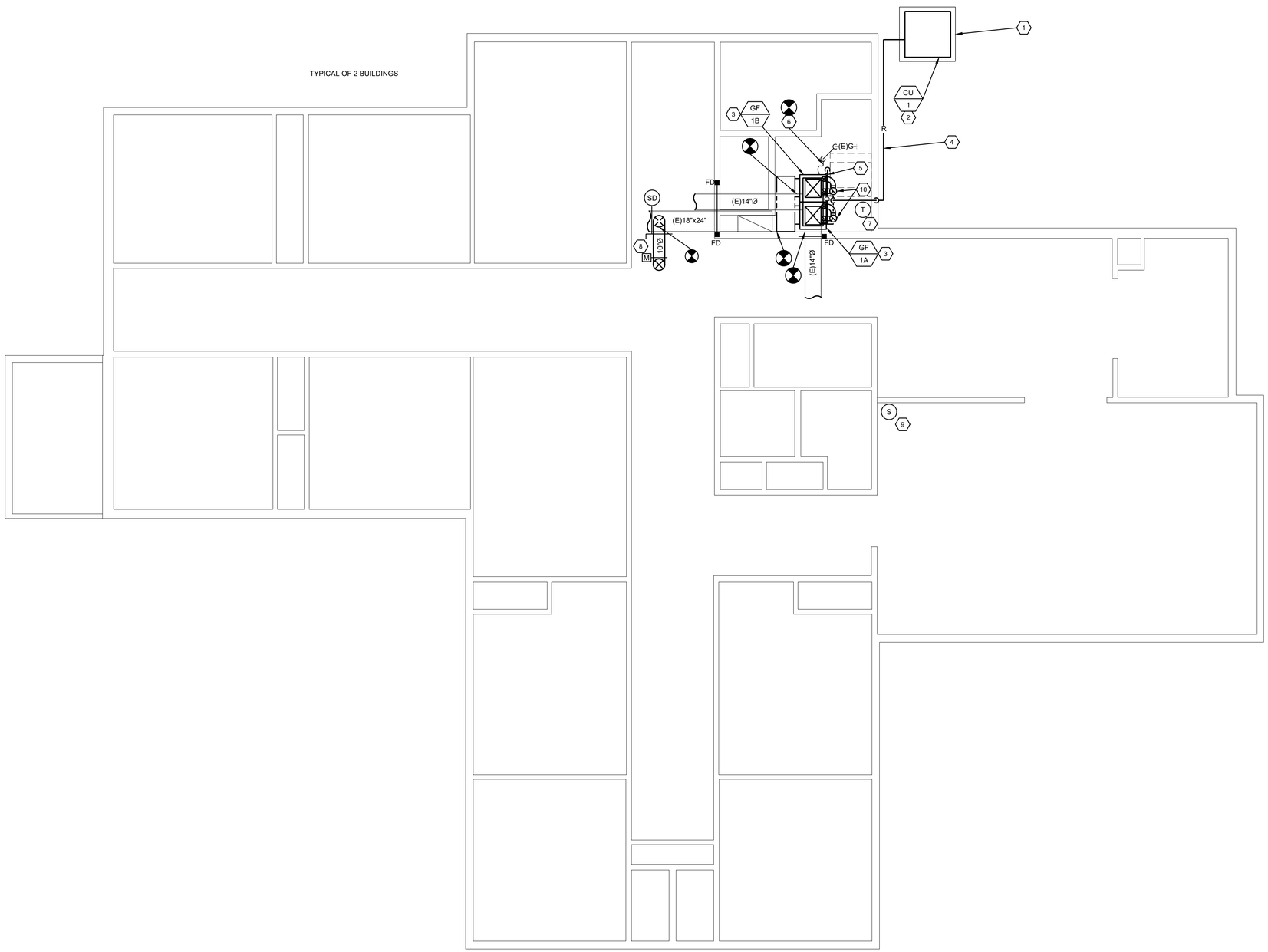
DESIGNED BY:

SHEET TITLE: **BUILDING TYPE "A" MECHANICAL PLAN**

SHEET NUMBER: **M101**



1 GROUP HOME TYPE "B" NEW WORK PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL KEYED NOTES

1. PROVIDE NEW CONCRETE HOUSEKEEPING PAD, EXTEND 6" PAST EDGE OF MECHANICAL EQUIPMENT.
2. PROVIDE NEW CONDENSING UNIT ON HOUSEKEEPING PAD.
3. PROVIDE VERTICAL GAS FURNACES, (GF-1A,1B) WITH DX COIL IN MECHANICAL ROOM. PROVIDE MANUFACTURER TWINNING KIT AND LINK FURNACES TOGETHER. CONNECT DUCTWORK FROM SUPPLY OPENINGS TO EXISTING SUPPLY MAIN, AND FROM RETURN OPENINGS TO EXISTING RETURN DUCT MAIN. PROVIDE SUPPLY AIR TEMPERATURE SENSOR IN FURNACE DUCTWORK. TEMPERATURE SENSOR SHALL BE WIRED TO BAS TERMINAL READOUT. SEE DETAIL SHEET FOR ALL REQUIRED FURNACE CONNECTIONS.
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5. ROUTE FULL DIAMETER CONDENSATE LINE FROM GAS FURNACES AND DX COILS TO TERMINATE OVER EXISTING FLOOR DRAIN WITH AIR GAP.
6. PROVIDE NEW FLEXIBLE GAS CONNECTOR TO CONNECT NEW FURNACES TO EXISTING GAS PIPE IN SPACE. CONFIRM OPERATION OF EXISTING SHUT-OFF VALVE, AND CLEAN SEDIMENT TRAP. PROVIDE NEW SHUTOFF VALVE IF EXISTING VALVE IS NOT FULLY OPERATIONAL. SUBMIT PRICE OF NEW VALVE INSTALLATION WITH BASE BID, UNDER CONTINGENT LINE ITEMS.
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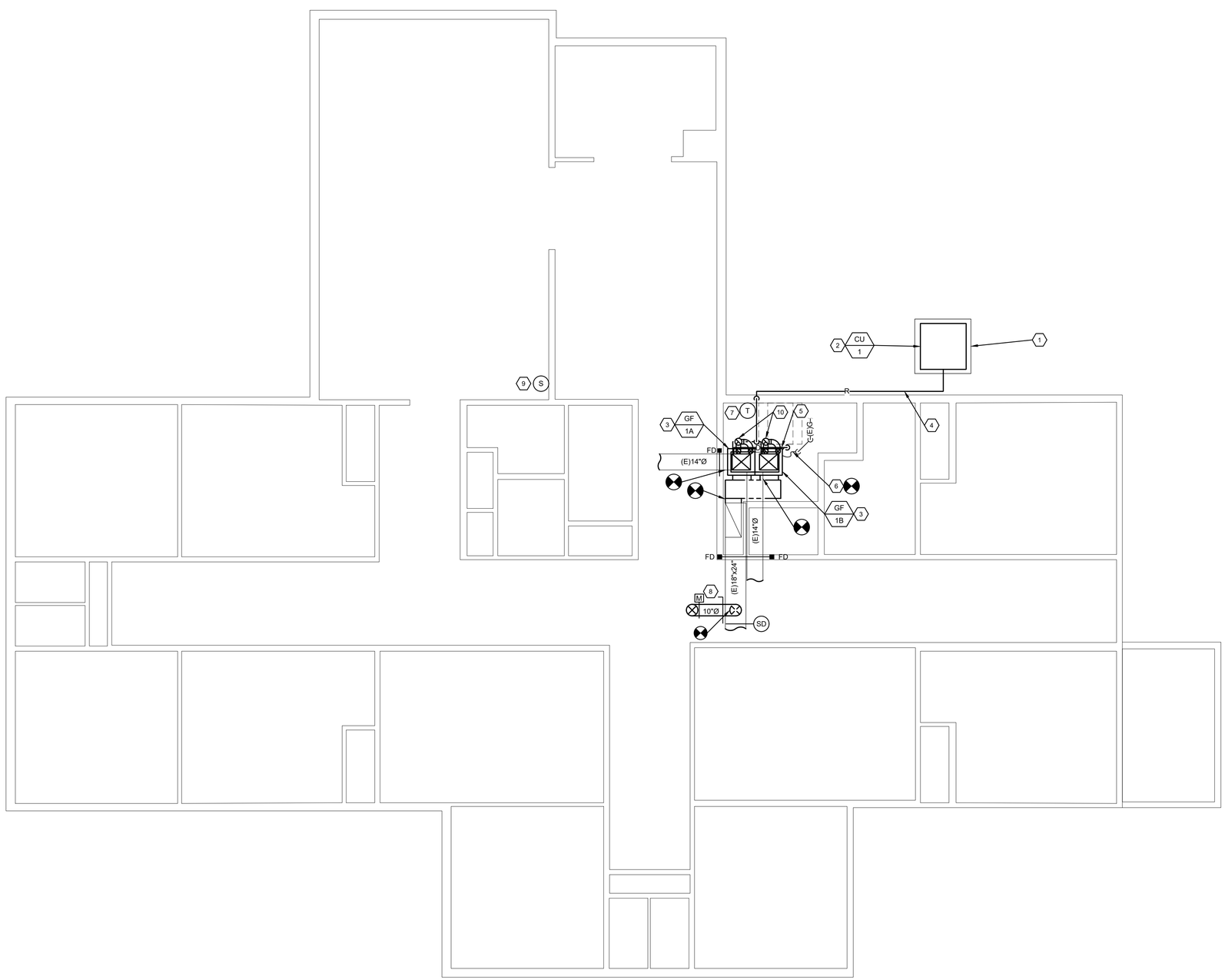
SHEET TITLE: **BUILDING TYPE "B" MECHANICAL PLAN**

SHEET NUMBER: **M102**

TYPICAL OF 4 BUILDINGS



1 GROUP HOME TYPE "C" NEW WORK PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL KEYED NOTES

1. PROVIDE NEW CONCRETE HOUSEKEEPING PAD, EXTEND 6" PAST EDGE OF MECHANICAL EQUIPMENT.
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SHEET TITLE: **BUILDING TYPE "C" MECHANICAL PLAN**

SHEET NUMBER: **M103**

GAS FURNACE SCHEDULE

MFR: TRANE				FAN			ELECTRICAL				
PLAN MARK	MODEL	INPUT/OUTPUT (MBH)	EFF. %	(HP)	CFM	E.S.P. (IN.W.G.)	V/PH/60	MCA/MOCP	WEIGHT (LBS)	REMARKS	QUANTITY
GF-1A	S9X1C100U5PSB	100/97	97.0	1.0	1500	0.5	115/1/60	13.3/15.0	155	1,2,3,4,5,6,7,8,9,10,11,12	10
GF-1B	S9X1C100U5PSB	100/97	97.0	1.0	1500	0.5	115/1/60	13.3/15.0	155	1,2,3,4,5,6,7,8,9,10,11,12	10

1. ALUMINIZED STEEL INSHOT BURNERS, ALUMINIZED STEEL TUBULAR HEAT EXCHANGER, HOT SURFACE IGNITION.
2. ECM MULTI SPEED CONSTANT TORQUE FAN MOTOR.
3. PROVIDE FULL DIAMETER AIR AND EXHAUST AIR VENT CONNECTIONS.
4. PROVIDE VIBRATION ISOLATION PADS.
5. PROVIDE DUCT MOUNTED TEMPERATURE SENSOR, WIRED TO BAS TO SUPPLY USER READOUT.
6. DX EVAPORATOR COIL MODEL: 5TXCC005AS3
7. ELECTRICAL DISCONNECT BY E.C.
8. MOUNT UNIT ON VIBRATION ISOLATION PADS.
9. PROVIDE FACTORY TWINNING KIT TO INTERLOCK GF-1A AND GF-1B.
10. PROVIDE FACTORY REFRIGERANT LEAK DETECTION CONTROLS AND ASSOCIATED SENSORS. GF-1A AND GF-1B SHALL HAVE LEAK DETECTION SENSORS INTERLOCKED WITH FACTORY CONTROLS.
11. PROVIDE RUSKIN CD-51 LOW-LEAK TYPE MOTORIZED DAMPER ON O.A. INTAKE WITH 24V BELIMO ACTUATOR.
12. PROVIDE RA AND OA BALANCING DAMPERS.

DUCT INSULATION SCHEDULE

SERVICE	MATERIAL	MFR.	TYPE	PCF	R $\frac{FT^2 HR\ °F}{BTU}$	THICKNESS	LAYERS	JACKET	DUCT DIMENSION	REMARKS
RETURN	FIBERGLASS	KNAUF	LINER	1.5	4.2	1"	1	-	F.A.	1,2,3,4
SUPPLY	FIBERGLASS	KNAUF	WRAP	1.5	*6.0	2"	1	FSK	F.A.	1,2,3
OA INTAKE	FIBERGLASS	KNAUF	WRAP	1.5	*6.0	2"	1	FSK	F.A.	1,2,3,5

* ACTUAL INSTALLED R-VALUE AT 25% COMPRESSION.

F.A.: DUCT DIMENSIONS ARE FREE AREA DIMENSIONS.

1. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S I.O.M.
2. COMPLIES WITH: NFPA 90A, 90B; ASTM E84; UL 723.
3. COMPLIES WITH NFPA 255.
4. RETURN DUCT INSULATION ONLY REQUIRED IN FIRST 20'-0" OF DUCT FOR ACOUSTICAL PURPOSES.
5. OA DUCT INSULATION ONLY REQUIRED ON INTERIOR DUCTWORK. NO INSULATION REQUIRED FOR EXTERIOR OA DUCTWORK.

CONDENSING UNIT SCHEDULE

MFR: TRANE		COOLING				ELECTRICAL				
MARK	MODEL	NET TTL/SENS MBH	IEER	AMB. °F	LINE SET I.D. IN.	V/PH/HZ	MCA/MOCP	WEIGHT (LBS)	REMARKS	QUANTITY
CU-1	TTA090K3DAA	99.7/76.3	14.8	95	1/2 x 1-3/8	208/3/60	35/45	399	1,2,3,4,5,6,7	10

1. PRIOR TO INSTALLATION, CONFIRM REFRIGERANT PIPE ROUTE. SIZE AND INSTALL REFRIGERANT PIPING IN STRICT ACCORDANCE WITH MANUFACTURER'S I.O.M.
2. INSULATE PIPE PER MANUFACTURER'S I.O.M. INSULATE WITH 1" THICK ELASTOMERIC INSULATION. ALL INSULATED PIPE ON BUILDING EXTERIOR SHALL BE WRAPPED WITH 30 MIL PVC JACKET.
3. REFRIGERANT: R454B
4. FEATURES: HIGH PRESSURE SWITCH (MANUAL RESET), DUAL SCROLL COMPRESSORS, HI-CAPACITY DRIER FACTORY INSTALLED IN LIQUID LINE, LOW PRESSURE SWITCH, CRANKCASE HEATER, COIL HAIL GUARDS.
5. TWIN COILS ASSEMBLED IN AN "A" CONFIGURATION.
6. THERMAL EXPANSION VALVE, FIELD INSTALLED.
7. ELECTRICAL DISCONNECT BY E.C.

GENERAL NOTES

1. ALL EXISTING PIPE, DUCT, AND DIFFUSER SIZES AND LOCATIONS SHOWN ON THESE DRAWINGS ARE TAKEN FROM EXISTING DRAWINGS AND ARE NOT GUARANTEED. THIS CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL.
2. ALL CUTTING AND PATCHING REQUIRED FOR THE REMOVAL OF EXISTING AND THE INSTALLATION OF ALL WORK SHOWN ON THESE DRAWINGS SHALL BE PERFORMED BY THIS CONTRACTOR.
3. ALL NEW OPENINGS THROUGH EXISTING FLOOR SLABS AND MASONRY WALLS SHALL BE SAW CUT OR CORE DRILLED. ALL SUCH OPENINGS SHALL BE LOCATED TO MINIMIZE THE REQUIREMENTS FOR FURRED CHASES AND SOFFITS. EXCEPT WHERE SPECIFICALLY OTHERWISE NOTED, NO NEW FLOOR OPENINGS SHALL PENETRATE THE REINFORCED PORTIONS OF BEAMS OR RIBS BUT MAY BE REQUIRED TO PENETRATE THICKENED PORTIONS OF FLOOR SLABS AND BEAM PROJECTIONS. THE CONTRACTOR SHALL LOCATE ALL FLOOR OPENINGS IN THE FIELD AND REVIEW PROPOSED LOCATIONS WITH THE ARCHITECT FOR COMPLIANCE WITH THE ABOVE BEFORE CUTTING OR DRILLING. DO NOT CUT STRUCTURAL REINFORCING WITHOUT SPECIFIC WRITTEN DIRECTIONS FROM THE ARCHITECT.
4. RELATIVE LOCATIONS OF EXISTING SERVICES ARE TAKEN FROM EXISTING DRAWINGS AND ARE NOT GUARANTEED. THIS CONTRACTOR SHALL FIELD VERIFY EXISTING SERVICES PRIOR TO MAKING NEW CONNECTIONS. PIPE MARKINGS (INCLUDING PAINTING) ARE NOT GUARANTEED.
5. ALL NEW PIPING AND CONDUIT INSTALLED EXPOSED TO VIEW IN THE MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, CORRIDORS, ETC., SHALL BE PAINTED (AFTER INSULATION HAS BEEN APPLIED, WHERE APPLICABLE) AS PER COLOR CODING SYSTEM FURNISHED BY FACILITIES ENGINEERING. SEE SPECIFICATIONS.
6. ALL NEW FLOOR OPENINGS, AND OPENINGS THROUGH FIRE WALLS CREATED FOR THE INSTALLATION OF NEW DUCTWORK AND OR PIPING OR CONDUIT, OR ANY EXISTING OPENINGS DISCOVERED BY THE CONTRACTOR DURING EXECUTION OF THE PROJECT SHALL BE FIRE SEALED IN ACCORDANCE WITH BJH BARRIER INTEGRITY POLICY & PROCEDURES.
7. BUILDING FIRE INTEGRITY: CONSTRUCTION OPERATIONS SHALL NOT VIOLATE THE FIRE INTEGRITY OF THE EXISTING BUILDING STRUCTURE. ANY BREAKS, PENETRATIONS OR DISCREPANCIES IN EXISTING FIRE RATED WALLS, CEILINGS, FLOORS, SHAFTS OR CHASES MADE NECESSARY BY CONSTRUCTION OR DISCOVERED BY THE CONTRACTOR DURING EXECUTION OF THE PROJECT MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE MANAGER OF FACILITIES ENGINEERING. APPROPRIATE INTERIM LIFE SAFETY MEASURES SHALL BE DEVELOPED AND INCREASED HAZARD SURVEILLANCE SHALL BE UNDERTAKEN UNTIL THE FIRE SEPARATION IS INTACT.
8. SHOULD ASBESTOS, OR ANY OTHER HAZARDOUS MATERIAL, BE ENCOUNTERED DURING THE EXECUTION OF THE WORK, OR SHOULD THE PRESENCE OF ASBESTOS OR ANY OTHER HAZARDOUS MATERIAL BE SUSPECTED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND SUSPEND ALL WORK IN THE AFFECTED AREA. THE OWNER WILL ACTIVATE AN ASSESSMENT STUDY TO DETERMINE THE PRESENCE OF ASBESTOS, OR OTHER HAZARDOUS MATERIAL, AND EVALUATE WHAT CONDITION IT IS IN. REMOVAL OF ASBESTOS, OR OTHER HAZARDOUS MATERIAL, IF REQUIRED, WILL BE CONTRACTED FOR SEPARATELY BY OWNER. ASBESTOS REMOVAL IS NOT IN THIS CONTRACT.
9. PROVIDE ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR THE REINSTALLATION AND RE-SUPPORT OF EXISTING SERVICES (DUCTWORK, ELECTRICAL CONDUIT, PIPING, EXISTING EQUIPMENT, ETC.) DISTURBED BY THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT.
10. ALL PIPE AND DUCTWORK HANGERS SHALL BE SUPPORTED BY STRUCTURAL MEMBERS. NO HANGERS SHALL BE ATTACHED TO THE WORK OF OTHER TRADES.
11. ALL EXISTING DUCT AND PIPE INSULATION DISTURBED BY WORK UNDER THIS CONTRACT SHALL BE PATCHED AND/OR REPLACED WITH MATERIALS TO MATCH EXISTING, AND SHALL BE PAINTED TO MATCH EXISTING WHERE APPLICABLE.
12. ALL EXISTING EQUIPMENT INDICATED TO BE REMOVED ON THE DRAWINGS SHALL BE INSPECTED BY THE OWNER IN THE PRESENCE OF THIS CONTRACTOR PRIOR TO REMOVAL. ANY EQUIPMENT THE OWNER ELECTS TO KEEP SHALL BE DISCONNECTED, REMOVED, AND DELIVERED TO A STORAGE LOCATION DESIGNATED BY THE OWNER, IN THE BASEMENT OF THE HOSPITAL, BY THIS CONTRACTOR. ALL EQUIPMENT DESIGNATED TO BE REMOVED THAT THE OWNER DOES NOT WISH TO KEEP SHALL BE DISCONNECTED, REMOVED, AND DISPOSED OF OFF-SITE BY THIS CONTRACTOR.
13. MECHANICAL CONTRACTOR SHALL OBTAIN AND INSTALL ASSET TAGS FROM THE MAINTENANCE DEPARTMENT FOR ALL NEW VALVES AND EQUIPMENT. CONTRACTOR SHALL MARK ALL COMPONENTS IN ACCORDANCE WITH FACILITY STANDARDS.
14. DO NOT REMOVE ANY PIPING, DUCTWORK, ETC. SERVING EXISTING AREAS OUTSIDE OF PROJECT SCOPE. ANY EXISTING AREAS IMPACTED BY DEMOLITION OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT NO INCREASE IN THE CONTRACT AMOUNT.
15. ALL EXISTING CONTROLLERS, CONTROLS, WIRING, CONDUIT, ETC ASSOCIATED WITH CONTROLLED DEVICES BEING REMOVED SHALL BE REMOVED IN THEIR ENTIRETY. NOTHING SHALL BE ABANDONED IN PLACE. THE EXISTING CONTROL SYSTEM SHALL BE REPROGRAMMED TO TO DELETE ALL PROGRAMMING ASSOCIATED WITH REMOVED DEVISES SO THAT NO ALARMS ARE GENERATED FROM REMOVED DEVISES THAT HAVE BEEN DEMOLISHED AS PART OF THIS PROJECT.

MECHANICAL PIPE & PIPE INSULATION SCHEDULE

PIPE APPLICATION / PIPE MATERIAL	AC CONDENSATE (CD) INDOORS (NON-PLENUM SPACES)	AC CONDENSATE (CD) INDOORS (PLENUM SPACES)	COMBUSTION AIR/VENT EXHAUST	REFRIGERANT (RSAL)
COPPER TUBE: ASTM B 280, TYPE ACR. WROUGHT-COPPER FITTINGS: ASME B16.22. SOLDER: ASTM B 32 USE 95-5 TIN ANTIMONY OR ALLOY HB SOLDER TO JOIN COPPER SOCKET FITTINGS ON COPPER PIPE. BRAZING METALS: AWS A5.8.	♦			
DWV COPPER TUBING: ASTM B 306, TYPE DWV. FITTINGS: WROUGHT-COPPER ASME B16.22. SOLDER: ASTM B 32, LEAD-FREE ALLOYS WITH ASTM B 813 WATER-FLUSHABLE FLUX.		♦		
PVC PLASTIC, SOLID WALL: ASTM D 1785, SCHEDULE 40. FITTINGS: PVC SOCKET-TYPE, ASTM D 2466.			♦	
"IPEX SYSTEM 1738" PVC PLASTIC, SOLID WALL: NON-METALLIC FLUE GAS VENT ASTM D 1784, NFPA-54 LISTED TO UL 1738, (CATEGORY II, AND IV APPLIANCES). ALL COMPONENTS BY SAME MANUFACTURER.		♦		
PIPE INSULATION (2021 IECC)				
PIPE DIAMETER: ALL; 1/2" THICK INSULATION			A	A
PIPE DIAMETER: ≤ 1.5"; 1-1/2" THICK INSULATION	A			
PIPE DIAMETER: ≥ 1.5"; 2" THICK INSULATION	A			
INSULATION TYPE				

A — FLEXIBLE CLOSED-CELL ELASTOMERIC: ASTM C 534, TYPE I. NFPA 90A, 90B. EXTERIOR EXPOSURES:PROVIDE CONTINUOUS 30 MIL PVC JACKET (UV, OZONE, MOISTURE RESISTANT).

*PROVIDE APPLIANCE VENTING MATERIALS IN STRICT ACCORDANCE WITH APPLIANCE LISTING. NOTE:
1. INSTALL ALL PIPING, PIPE INSULATION, AND JACKETING IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND PER APPLICABLE CODE AND AHJ'S REQUIREMENTS.
2. ALL MATERIALS INSTALLED IN PLENUM SPACES SHALL CONFORM WITH NFPA 90A AND NFPA 90B AND BE LABELED ACCORDINGLY.
3. DO NOT INSTALL ANY PIPING ABOVE ELECTRICAL PANELS AND/OR TRANSFORMERS.
4. LABEL PIPE PER BUILDING STANDARD OR AS SCHEDULED.

MECHANICAL SYMBOLS LEGEND

T	THERMOSTAT
H	HUMIDISTAT
SD	SMOKE DETECTOR
S	TEMPERATURE SENSOR
	FLEXIBLE DUCT
	VOLUME DAMPER
M	MOTORIZED DAMPER
BD	BACKDRAFT DAMPER
FD	FIRE DAMPER
	CEILING SUPPLY AIR DIFFUSER
	CEILING RETURN AIR GRILLE
	SIDEWALL AIR DIFFUSER OR GRILLE
	NEW DUCTWORK
	EXISTING DUCTWORK
D	CONDENSATE DRAIN
G	GAS PIPING
R	REFRIGERANT PIPING
	PIPE TURNING DOWN
	PIPE TURNING UP
	BALL VALVE
	GATE VALVE
	CONNECTION OF NEW TO EXISTING
AFF	ABOVE FINISHED FLOOR
S1 / 100	AIR DEVICE # / CFM — S - SUPPLY, R - RETURN, E - EXHAUST

GAS FURNACE/CU - SPLIT SYSTEM EQUIPMENT SEQUENCE OF OPERATIONS

GF-1A,GF-1B/CU-1

(NOTE: ST=SPACE TEMPERATURE)

1. UNOCCUPIED MODE:
   A. SETPOINT: HEATING 65°F/COOLING 78°F
   B. OUTSIDE AIR DAMPER: CLOSED
   C. SUPPLY FANS: NORMALLY OFF, OPERATE ONLY ON THERMOSTAT CALL FOR HEATING OR COOLING, AT SCHEDULED CFM.
   D. HEATING STAGE(S): ENERGIZES WHEN ST < SETPOINT-3°F
   E. COOLING STAGE(S): ENERGIZES WHEN ST > SETPOINT+3°F
   F. R.A. SMOKE DETECTOR/NORMAL MODE: NO ACTION
   G. R.A. SMOKE DETECTOR/ALARM MODE: SUPPLY FAN SHUT DOWN, FURNACE OFF, CU OFF.
2. OCCUPIED MODE:
   A. SETPOINT: HEATING 70°F/COOLING 75°F
   B. OUTSIDE AIR DAMPER: OPEN TO SCHEDULED CFM WHEN HEATING OR COOLING STAGES ARE ENERGIZED.
   C. SUPPLY FANS: RUN CONTINUOUSLY. FANS SHALL ENERGIZE AT LOW SPEED DURING FAN-ONLY MODES, AND INCREASE SPEED TO SCHEDULED CFM WHEN THERMOSTAT CALLS FOR HEATING OR COOLING
   D. HEATING STAGE(S): ENERGIZES WHEN ST < SETPOINT-3°F
   E. COOLING STAGE(S): ENERGIZES WHEN ST > SETPOINT+3°F
   F. R.A. SMOKE DETECTOR/NORMAL MODE: NO ACTION
   G. R.A. SMOKE DETECTOR/ALARM MODE: SUPPLY FAN SHUT DOWN, FURNACE OFF, CU OFF.

*PRIOR TO PROGRAMMING, COORDINATE WITH OWNER TIME OF DAY SCHEDULES AND SPACE SETPOINT TEMPERATURES. MECHANICAL CONTRACTOR SHALL TRAIN OWNER IN THERMOSTAT CONTROLS.

THE SPLIT SYSTEMS SHALL BE INTEGRATED INTO THE EXISTING BAS SYSTEM SERVING THE SITE. THE GRAPHICS ON THE BAS SYSTEM OPERATORS' TERMINAL SHALL DISPLAY THE FOLLOWING FOR EACH SPLIT SYSTEM:

A. ZONE TEMPERATURE SET-POINT.
B. ACTUAL ZONE TEMPERATURE AND HUMIDITY.
C. FURNACE SUPPLY AIR TEMPERATURE.
D. STATUS AND SPEED OF THE SUPPLY FANS (HIGH-MED-LOW-OFF).
E. OPERATING MODE.
F. OA DAMPER POSITION.
G. STATUS INDICATION.
H. SYSTEM FAULTS WITH PROBABLE CAUSE.
I. AN ALARM SHALL BE SENT TO THE BAS OPERATORS' TERMINAL WHEN THE SYSTEM IS SHUTOFF BY THE R.A. SMOKE DETECTOR.
J. AN ALARM SHALL BE SENT TO THE BAS OPERATORS' TERMINAL WHEN THE REFRIGERANT LEAK DETECTION SYSTEM DETECTS A REFRIGERANT LEAK, AND THE SYSTEM IS OPERATING IN LEAK MITIGATION MODE.

*THE BAS OPERATOR SHALL BE ABLE TO MANUALLY ADJUST THE OPERATING MODE, THE SUPPLY FAN SPEED, AND THE SPACE TEMPERATURE SETPOINT FROM THE OPERATORS' TERMINAL.

** CONTROL WORK IS REQUIRED TO BE SOLE SOURCED BY APPROVED VENDOR FOR THIS PROJECT. THE C&C GROUP SHALL BE ENGAGED FOR CONTROL PACKAGE AND PROGRAMMING.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI — MATTHEW R. CASE — NUMBER PE-2017006282 — PROFESSIONAL ENGINEER

CASE Engineering Inc.
796 Meras Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF MENTAL HEALTH

REPLACE HVAC UNITS FOR 10 GROUP HOMES

ST. CHARLES HABILITATION CENTER

ST. CHARLES, MO

PROJECT # M2511-01
SITE # 7372
ASSET # 6517372005, 6517372006, 6517372007, 6517372008, 6517372009, 6517372010, 6517372011, 6517372012, 6517372013, 6517372014

REVISION: _____ DATE: _____
REVISION: _____ DATE: _____
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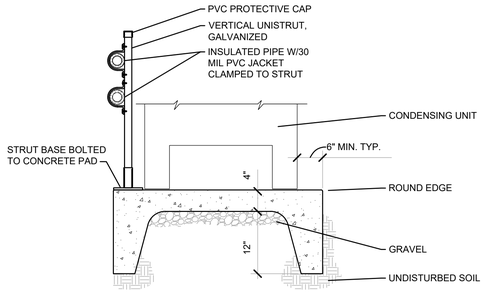
ISSUE DATE: 01/07/2026

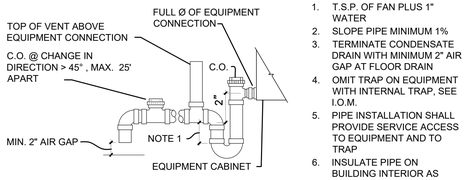
CAD DWG FILE: _____
DRAWN BY: _____
CHECKED BY: _____
DESIGNED BY: _____

SHEET TITLE: **MECHANICAL SCHEDULES**

SHEET NUMBER: **M200**

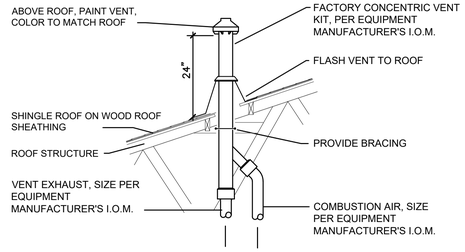


1 M300 EQUIPMENT CONCRETE PAD DETAIL
SCALE: NO SCALE

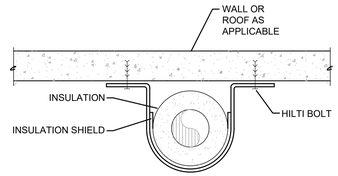


1. T.S.P. OF FAN PLUS 1" WATER
2. SLOPE PIPE MINIMUM 1%
3. TERMINATE CONDENSATE DRAIN WITH MINIMUM 2" AIR GAP AT FLOOR DRAIN
4. OMIT TRAP ON EQUIPMENT WITH INTERNAL TRAP, SEE I.O.M.
5. PIPE INSTALLATION SHALL PROVIDE SERVICE ACCESS TO EQUIPMENT AND TO TRAP
6. INSULATE PIPE ON BUILDING INTERIOR AS SPECIFIED.

2 M300 AC EQUIPMENT CONDENSATE DRAIN DETAIL
SCALE: NO SCALE



3 M300 CONCENTRIC VENT THRU ROOF
SCALE: NO SCALE



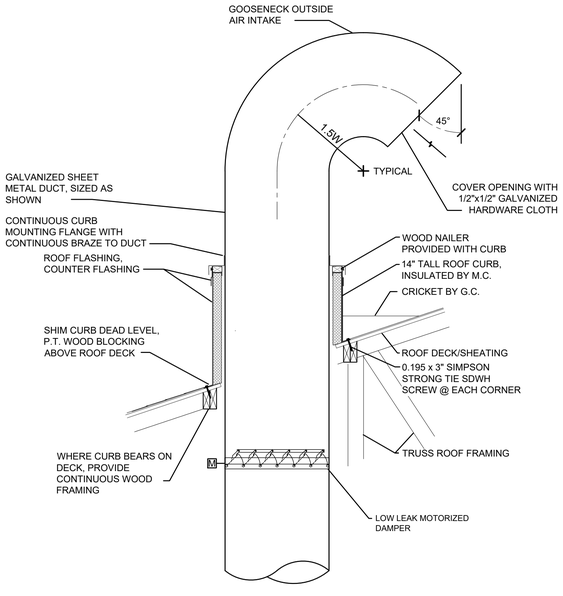
PIPES WITH VAPOR BARRIER INSULATION

APPLICABLE FOR:

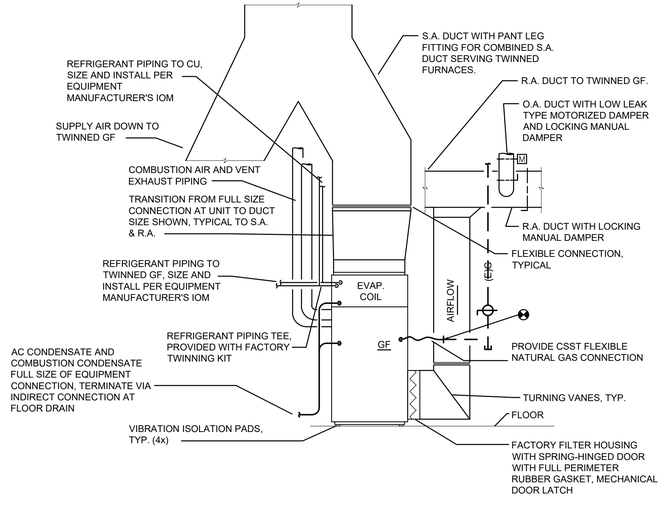
a) REFERIGERANT PIPING
B) CONDENSATE DRAIN

NOTE:
SUPPORT PIPING AT 6'-0" ON CENTER

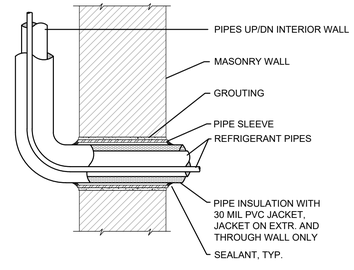
4 M300 PIPE HANGER DETAIL
SCALE: NO SCALE



5 M300 OUTSIDE AIR DUCT CURB DETAIL
SCALE: NO SCALE



6 M300 VERTICAL GAS FURNACE DETAIL
SCALE: NO SCALE



7 M300 INSULATED PIPE - SLEEVE DETAIL
SCALE: NO SCALE

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DESIGNED BY:

SHEET TITLE: **MECHANICAL DETAILS**

SHEET NUMBER: **M300**

GENERAL MECHANICAL NOTES

1. GENERAL
   - A. THE GENERAL CONDITIONS OF THE GENERAL SPECIFICATIONS, AND ALL APPLICABLE INSTRUCTIONS TO BIDDERS SHALL BE PART OF THESE SPECIFICATIONS.
   - B. THE WORD "PROVIDE" AS USED HEREIN MEANS TO FURNISH AND INSTALL COMPLETE.
   - C. THE TERM "CONTRACTOR" AS USED HEREIN MEANS ANY CONTRACTOR OR SUBCONTRACTOR CONTRACTED TO PERFORM WORK INCLUDED IN AND DEFINED BY THIS SECTION.
   - D. MECHANICAL WORK SHALL BE PROVIDED IN STRICT COMPLIANCE WITH THE 2014 NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE LOCAL ORDINANCES, STATE LAWS AND FEDERAL LAWS.

2. PRIOR TO BIDDING:
   - A. THOROUGHLY REVIEW THE BID INSTRUCTIONS INCLUDING ALL CIVIL, STRUCTURAL, AND MEP CONSTRUCTION DOCUMENTS. OBTAIN AND THOROUGHLY EXAMINE THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, DETAILS, AND REQUIREMENTS FOR THE SCHEDULED AND SPECIFIED EQUIPMENT AND MATERIALS. FOR AMBIGUOUS, CONTRADICTORY, OR CONFLICTING ITEMS WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL REQUEST CLARIFICATION IN A WRITTEN "REQUEST FOR INFORMATION" (RFI), AT LEAST FIVE (5) WORKING DAYS PRIOR TO BID DATE. RFI NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ENGINEER IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK.
   - B. EXISTING CONDITIONS: THE CONTRACT DOCUMENTS ARE BASED ON INFORMATION PROVIDED TO CASE ENGINEERING AT THE TIME OF DESIGN. THIS CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO: EXISTING HVAC SYSTEM LOCATIONS, EXISTING DUCT AND PIPING LAYOUTS, CLEARANCES, ETC. REPORT IN WRITING ANY DISCREPANCIES TO THE ARCHITECT (ENGINEER) AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO BID. DISCREPANCIES NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ARCHITECT (ENGINEER) IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK.
   - C. IF THE CONTRACTOR BELIEVES THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.
   - D. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THE CONSTRUCTION DOCUMENTS OR FOR THE FAILURE OF THE CONTRACTOR TO OBTAIN CLARIFICATIONS PRIOR TO BID.
   - E. VISIT THE JOB SITE AND THOROUGHLY INVESTIGATE CONDITIONS. THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.
   - F. REFER TO APPLICABLE CODES CITED IN CONSTRUCTION DOCUMENTS, EXAMINE GOVERNING STATE AND LOCAL CODES, AND LOCAL REGULATIONS AND ORDINANCES, AND PROVIDE ALL EQUIPMENT AND INSTALLATION IN STRICT ACCORDANCE WITH SAME.
   - G. REFER TO CONSTRUCTION DOCUMENTS FOR SCHEDULED AND SPECIFIED MATERIALS AND EQUIPMENT. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS.
   - H. ALL WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH THE FACILITIES CONSTRUCTION CRITERIA AND SPECIFICATIONS. THIS CONTRACTOR SHALL EXAMINE THE OWNER'S CRITERIA, AND THEY SHALL BE PART OF THESE SPECIFICATIONS. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THESE DOCUMENTS.

3. BIDDING
   - A. SUBMISSION OF A BID ACKNOWLEDGES THAT THE CONTRACTOR HAS REVIEWED THE BID INSTRUCTIONS, EXAMINED ALL CONSTRUCTION DOCUMENTS, AND AGREES TO ALL ITEMS AND CONDITIONS WITHIN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S BID SHALL INCLUDE ALL MECHANICAL WORK IN THE CONSTRUCTION DOCUMENTS, INCLUDING MECHANICAL WORK RELATED TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS.

4. PERMITS
   - A. SECURE AND PAY FOR ALL PERMITS, LICENSES, AND INSPECTIONS REQUIRED BY THE AHJ FOR THIS WORK.

5. SUBSTITUTIONS
   - A. MANUFACTURERS' EQUIPMENT AND MATERIALS SCHEDULED, NOTED, AND SPECIFIED IN THE CONSTRUCTION DOCUMENTS ARE THE DESIGN STANDARD. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT OR ENGINEER. IN BIDDING, DO NOT ASSUME ACCEPTANCE OF SUBSTITUTIONS. CONTRACTOR MUST STATE IN SUBSTITUTION REQUEST: "PROPOSED SUBSTITUTIONS ARE EQUAL OR OF HIGHER QUALITY, EFFICIENCY AND DEPENDABILITY COMPARED TO THE SPECIFIED EQUIPMENT AND MATERIAL. CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS." IF DEEMED NECESSARY BY THE ARCHITECT OR ENGINEER, SUBSTITUTIONS WHICH ARE NOT APPROVED OR NOT EQUAL TO DESIGN STANDARD SHALL BE REMOVED AND THE SCHEDULED, NOTED, AND SPECIFIED EQUIPMENT AND MATERIALS SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE. SUBMITTING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS.

6. SCHEDULING
   - A. ALL PERFORMANCE OF CONSTRUCTION SHALL BE AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION, AS SCHEDULED BY THE GC. PROVIDE COMPLETE INFORMATION AND FULL COOPERATION WITH OTHER CONTRACTORS AND TRADES, AS REQUIRED FOR THE TIMELY COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
   - B. PROVIDE ALL TESTS AND INSPECTIONS REQUIRED BY AHJ.
   - C. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE PROJECT COMPLETION.

7. SCOPE
   - A. PROVIDE PERMIT(S), INSPECTIONS, FINAL CERTIFICATE(S) OF INSPECTION BY AHJ, PERMIT AND INSPECTION FEES, AND ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR A COMPLETE AND FULLY OPERATING HVAC SYSTEM.
   - B. INSTALL ALL WORK AND EQUIPMENT RIGID, DEAD LEVEL, PLUMB, AND TRUE-TO-LINE, UNLESS NOTED OTHERWISE. SUPPORT AND MOUNTING OF EQUIPMENT, DUCT, PIPING, ETC., ARE THIS CONTRACTOR'S MEANS AND METHODS. THE CONTRACTOR SHALL UNDERSTAND THE SPECIFIED AND SCHEDULED EQUIPMENT AND MATERIALS AND MEANS AND METHODS OF INSTALLATION. THIS CONTRACTOR SHALL PROVIDE ALL ACCESSORIES REQUIRED FOR PROPER SUPPORT WHETHER SHOWN ON THE DRAWINGS OR NOT. IF SUPPORTS ARE REQUIRED, CONTRACTOR SHALL SUBMIT DRAWINGS TO THE ARCHITECT FOR APPROVAL.
   - C. PROVIDE ACCESSORY MOUNTING HARDWARE INCLUDING BUT NOT LIMITED TO STRUCTURAL STEEL, STRUT SYSTEMS, ALL THREAD RODS, AND BRACES, AS REQUIRED TO MOUNT EQUIPMENT. PROVIDE STEEL SHAPES AND FRAMES TO SUPPORT EQUIPMENT WHERE NEEDED. ALL SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATION.
   - D. PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' PRINTED INSTALLATION AND MAINTENANCE LITERATURE. COMPONENTS REQUIRING PERIODIC MAINTENANCE OR ADJUSTMENTS SHALL BE INSTALLED AS TO PERMIT ACCESS WITHOUT DAMAGE TO STRUCTURE, FINISHES, OR OTHER EQUIPMENT.
   - E. CONTRACTOR SHALL PROVIDE DAILY CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH GENERATED BY THIS WORK.
   - F. AS-BUILT DRAWINGS: DURING CONSTRUCTION, AS WORK PROCEEDS, MAINTAIN AS-BUILT MARK-UPS OF ACTUAL INSTALLATION. AT CONSTRUCTION COMPLETION AND PRIOR TO TURNOVER TO OWNER, PROVIDE FINAL MARK-UPS IN PDF FORMAT TO ARCHITECT AND ENGINEER.
   - G. PROVIDE FINAL CONNECTIONS TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS, AS NOTED.
   - H. DO NOT ROUTE ANY PIPING OR DUCTWORK ABOVE ELECTRICAL PANELS.
   - I. UNLESS NOTED OTHERWISE, ALL DUCT AND PIPE SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS, BEAMS, OR COLUMNS. PIPE SHALL BE RUN AS DIRECT AS POSSIBLE - AVOID UNNECESSARY OFFSETS AND MAXIMIZE HEADROOM.
   - J. PRIOR TO ORDERING EQUIPMENT, THIS CONTRACTOR SHALL PROVIDE FINAL COORDINATION OF ELECTRICAL POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
   - K. CONTRACTOR SHALL MAINTAIN ACTIVITIES WITHIN AREA APPROVED BY OWNER OR GC. CONTRACTOR'S ACTIVITIES SHALL NOT INTERFERE WITH THE OWNER'S OPERATIONS, EXCEPT AS APPROVED.
   - L. EXCEPT THOSE COORDINATED AND APPROVED BY THE G.C., CONTINUITY OF ALL BUILDING SERVICES AND UTILITIES SERVING BUILDING FACILITIES SHALL BE MAINTAINED UNINTERRUPTED AT NO ADDITIONAL COST. PROVIDE ALL NECESSARY CROSS CONNECTIONS AND TEMPORARY CONNECTIONS REQUIRED TO PERFORM THE CONSTRUCTION, AS DETERMINED BY THE G.C., AND NEEDED TO MAINTAIN CONTINUITY OF THE BUILDING SERVICE(S). THIS CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY AND ALL CONNECTIONS, AND/OR REARRANGEMENT OF EXISTING EQUIPMENT, PIPING, ETC., SHALL ASSURE FULL RESUMPTION OF SERVICE(S) AT THE G.C.'S DESIGNATED TIME.

8. CODE REQUIREMENTS
   - A. ALL WORK SHALL COMPLY WITH THE CONSTRUCTION DOCUMENTS OR, AS DIRECTED BY THE ARCHITECT (ENGINEER), AND SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS OF THE AHJ, WHETHER SO SHOWN OR NOT. CONTRACTOR SHALL BE FAMILIAR WITH PROVISIONS OF ALL APPLICABLE CODES AND SHALL INSURE THE WORK COMPLIES WITH ALL LOCAL, STATE AND FEDERAL CODES, TRADE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS. IF CONTRACTOR BELIEVES THE DRAWINGS AND/OR SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE G.C. IN WRITING. DO NOT INSTALL WORK NOT COMPLYING WITH CODE REQUIREMENTS. IN CASE OF CONFLICT BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. AS A MINIMUM STANDARD, CONTRACTOR SHALL SATISFY CODE REQUIREMENTS. ALL MODIFICATIONS REQUIRED BY AHJ SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. BEFORE COMMENCING WORK NOT SHOWN IN DOCUMENTS BUT REQUIRED TO ACHIEVE FULL COMPLIANCE WITH CODES, CONTRACTOR SHALL NOTIFY ARCHITECT (ENGINEER).

9. CUTTING & PATCHING
   - A. CORE-DRILL OR SAW-CUT EXISTING FLOORS, WALLS, ROOF, ETC., AS REQUIRED FOR EQUIPMENT, PIPE, OR DUCTWORK. PRIOR TO CUTTING, PERFORM NON-DESTRUCTIVE TESTING TO VERIFY LOCATION OF STRUCTURAL COMPONENTS. NOTIFY ARCHITECT (ENGINEER) OF ANY DISCREPANCIES. PATCH SURROUNDING AREAS FLUSH WITH ADJACENT SURFACE AND READY TO RECEIVE FINISH. PATCH AND REPAIR ROOF TO MATCH EXISTING ROOFING. ALL ROOF WORK SHALL MEET WARRANTY REQUIREMENTS OF EXISTING ROOFING. COORDINATE REQUIRED OPENINGS AND PENETRATIONS WITH THE GC AND OTHER TRADES. (OPENINGS IN FOUNDATIONS, FLOORS, WALLS, CEILINGS, AND ROOF SHALL BE BUILT INTO THE STRUCTURE WITH SLEEVES, CURBS, ETC.)

10. FIRE STOPPING
   - A. PROVIDE FIRE STOPPING FOR PENETRATIONS OF DUCT, PIPING, AND OTHER MECHANICAL EQUIPMENT THROUGH FIRE-RATED VERTICAL BARRIERS (WALLS AND PARTITIONS), HORIZONTAL BARRIERS (FLOOR/CEILING ASSEMBLIES), AND VERTICAL SERVICE SHAFT WALLS AND PARTITIONS. FIRESTOP SYSTEM INSTALLATION MUST MEET REQUIREMENTS OF ASTM E 814 OR UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO OR GREATER THAN THAT OF CONSTRUCTION BEING PENETRATED. INSTALL IN STRICT ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY, AHJ, AND MANUFACTURER'S SPECIFIED REQUIREMENTS. ONLY TESTED FIRESTOP SYSTEMS BY "3M", "HILTI", OR EQUAL SHALL BE USED. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY RATING.

11. MATERIALS AND WORKMANSHIP
   - A. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE NEW U.N.O., FREE OF DEFECTS, AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS, AND INDEPENDENTLY TESTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY - UNDERWRITERS LABORATORIES (UL) OR INTERTEK (ETL). ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURE AND QUALITY U.N.O.
   - B. ALL MATERIALS 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 E84 OR UL 723. ALL MATERIALS INSTALLED IN PLENUM SPACES SHALL BE LISTED AND LABELED FOR SUCH APPLICATION.
   - C. ALL WORK SHALL BE SUPERVISED BY THE INSTALLING CONTRACTOR'S COMPETENT AND SKILLED FOREMAN. ALL WORK SHALL BE PERFORMED BY COMPETENT AND SKILLED WORKERS, WITH ALL TRADE AND MANUFACTURER REQUIRED TRAINING, AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS, INCLUDING APPLICABLE OSHA REGULATIONS. PROPERLY PROTECT WORK DURING CONSTRUCTION. AT CONSTRUCTION COMPLETION, THOROUGHLY CLEAN WORK AND REMOVE ALL DEBRIS FROM THE PREMISES.

12. PROTECTION OF WORK AND PROPERTY
   - A. PROTECT ALL WORK FROM DAMAGE AND PROTECT THE OWNER'S PROPERTY FROM DIRT, DAMAGE, OR LOSS ARISING FROM CONTRACTOR WORK.
   - B. COMPLY WITH OSHA REQUIREMENTS AND TAKE ALL NECESSARY PRECAUTIONS FOR EMPLOYEE SAFETY.
   - C. PROTECT ALL OPEN PIPING, DUCT, AND EQUIPMENT, EXISTING AND NEW FROM CONSTRUCTION DIRT AND DUST. COVER, CAP, OR PLUG OPEN ENDS OF PIPING AND DUCT. KEEP EQUIPMENT CLOSED OR COVER AND SEAL EQUIPMENT OPENINGS. ANY MECHANICAL SYSTEMS, NEW AND/OR EXISTING OPERATED DURING CONSTRUCTION SHALL BE PROTECTED BY COVERING EACH RETURN AIR DUCT OPENING WITH MERV 8 FILTERS AND INSTALLING MERV 8 FILTER(S) IN EQUIPMENT FILTER RACK. PRIOR TO TESTING AND BALANCING, REMOVE FILTERS FROM FILTER RACKS AND INSTALL NEW MERV 8 FILTERS.
   - D. AT COMPLETION OF WORK, PRIOR TO EQUIPMENT START-UP, REMOVE COVERS, CAPS, OR PLUGS ON DUCT AND PIPING.

13. DAMAGE BY LEAKS
   - A. THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL DAMAGES TO THE PROPERTY (GROUNDS, WALKS, ROADS, BUILDING COMPONENTS, FINISHES, PIPING SYSTEMS, ELECTRICAL SYSTEMS, HVAC SYSTEMS, AND THEIR EQUIPMENT AND CONTENT) CAUSED BY LEAKS IN THE SYSTEMS BEING INSTALLED OR HAVING BEEN INSTALLED AS PART OF THIS WORK. ALL REPAIRS WILL BE MADE AT THIS CONTRACTOR'S EXPENSE.

14. DRAWINGS AND SPECIFICATIONS
   - A. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW GENERAL LOCATIONS OF DUCTS, PIPES, AND EQUIPMENT AND THE METHODS OF CONNECTING AND CONTROL. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONDITIONS AND THE WORK OF OTHER TRADES PERMIT. THE DRAWINGS ARE NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL OR ALL OFFSETS, TRANSITIONS, OR FITTINGS REQUIRED FOR A COMPLETE SYSTEM NOR IS IT IMPLIED THAT ALL CONFLICTS BETWEEN BUILDING ELEMENTS AND/OR OTHER TRADES ARE INDICATED. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION OF DOORS, WINDOWS, LIGHTS, ETC.
   - B. THE DRAWINGS AND SPECIFICATIONS ARE MUTUALLY COMPLEMENTARY, AND ANY WORK REQUIRED BY ONE BUT NOT BY THE OTHER SHALL BE REQUIRED BY BOTH.
   - C. PRIOR TO INSTALLING EQUIPMENT, DUCT, OR PIPE COORDINATE PROPOSED LOCATIONS WITH EACH TRADE/DISCIPLINE AND GC. EXAMINE EACH DISCIPLINE'S DRAWINGS FOR CONSTRUCTION DETAILS, CEILING HEIGHTS, REQUIRED CLEARANCES, AND SPACE CONSTRAINTS. PROVIDE SYSTEMS INSTALLATION BASED ON THIS EXAMINATION AND COORDINATION. IMMEDIATELY REPORT INSTALLATION CONFLICTS IN WRITING TO THE GC. RESOLVE ALL CONFLICTS WITH GC AND OTHER TRADES PRIOR TO PROCEEDING. INSTALLING CONTRACTOR IS FULLY RESPONSIBLE FOR CORRECT INTERPRETATION AND APPLICATION OF ALL SIZES AND DIMENSIONS.
   - D. SIGNIFICANT DEVIATIONS OR CHANGES FROM THE DRAWINGS, WHICH ARE REQUIRED TO ACCOMPLISH THE INTENT OF THE CONTRACT DOCUMENTS MUST BE REVIEWED AND APPROVED BY THE ARCHITECT (ENGINEER) BEFORE PROCEEDING. IF THE CONTRACTOR BELIEVES CHANGES TO THE CONTRACT DRAWINGS ARE NECESSARY, SHOP DRAWINGS WITH WRITTEN DESCRIPTIONS OF THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE ARCHITECT (ENGINEER) FOR APPROVAL.
   - E. ALL PIPE, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED WATERPROOF. PROVIDE ALL FLASHING FOR PIPE AND DUCTWORK PENETRATING BUILDING ENVELOPE. PROVIDE DUCT AND/OR PIPE SLEEVES AT WALL PENETRATIONS. SEAL ANNULAR SPACE WEATHER TIGHT.

15. CONTROLS
   - A. PROVIDE COMPLETE EQUIPMENT CONTROLS, AND INTEGRATION INTO EXISTING SITE BAS, INCLUSIVE OF ALL COMPONENTS, VOLTAGES, PROGRAMMING, WIRING ETC. FOR COMPLETE AND OPERATIONAL SYSTEMS. ENGAGE THE C&C GROUP FOR CONTROL PACKAGE AND PROGRAMMING.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI · MATTHEW R. CASE · NUMBER PE-2017006282 · PROFESSIONAL ENGINEER

CASE Engineering Inc.
796 Meras Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF MENTAL HEALTH

REPLACE HVAC UNITS FOR 10 GROUP HOMES

ST. CHARLES HABILITATION CENTER

ST. CHARLES, MO

PROJECT # M2511-01
SITE # 7372
ASSET # 6517372005, 6517372006, 6517372007, 6517372008, 6517372009, 6517372010, 6517372011, 6517372012, 6517372013, 6517372014

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 01/07/2026

CAD DWG FILE: _____
DRAWN BY: _____
CHECKED BY: _____
DESIGNED BY: _____

SHEET TITLE: **MECHANICAL GENERAL NOTES**

SHEET NUMBER: **M301**

ELECTRICAL SYMBOLS LEGEND

WIRING DEVICES	
S^a	SINGLE POLE SWITCH - "a" INDICATES SWITCH LEG - MOUNT 46" AFF.
J	JUNCTION BOX OR POINT OF CONNECTION - MOUNT 18" AFF OR AT HEIGHT REQUIRED BY RESPECTIVE EQUIPMENT ITEM MANUFACTURER.
	DUPLEX RECEPTACLE - MOUNT 18" AFF.
MOTORS AND EQUIPMENT	
30/20/3	DISCONNECT SWITCH (FUSED OR NON-FUSED AS INDICATED) - MOUNT 60" AFF. 30/20/3 INDICATES SWITCH AMPS/FUSE AMPS/POLES.
	NEW BRANCH CIRCUIT PANELBOARD - MOUNT TOP 78" AFF.
	EXISTING BRANCH CIRCUIT PANELBOARD.
MISCELLANEOUS	
XXX / XX	MECHANICAL EQUIPMENT ITEM IDENTIFICATION PER EQUIPMENT SCHEDULE ON MECHANICAL DRAWINGS.
X	EQUIPMENT FEEDER - REFER TO FEEDER SCHEDULE ON E0.2

GENERAL CONSTRUCTION NOTES:

1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NECESSARY PERMITS, LICENSES, INSPECTIONS AND FEES FROM THE LOCAL AUTHORITIES. CONTRACTOR SHALL BE LICENSED BY LOCAL AND/OR STATE AUTHORITIES HAVING JURISDICTION.
2. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), APPLICABLE EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), INTERNATIONAL BUILDING CODE (IBC) AND OTHER APPLICABLE LOCAL, STATE AND NATIONAL CODES.
3. ALL ELECTRICAL MATERIAL USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.
4. THE ENTIRE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE DRAWINGS. PROVIDE AN EQUIPMENT GROUND CONDUCTOR IN EACH FEEDER AND BRANCH CIRCUIT CONDUIT, SIZED PER THE NEC.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE SYSTEM PER CONTRACT DRAWINGS AND ENSURING THAT THE SYSTEM IS OPERATIONAL AND CODE COMPLIANT UPON JOB COMPLETION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES AND DISCIPLINES TO AVOID CONFLICTS AND TO VERIFY ALL EQUIPMENT CONNECTIONS. COORDINATE ALL WIRING DEVICE LOCATIONS AND ELEVATIONS INDICATED ON THE PLANS WITH THE OWNER, ARCHITECT AND FINAL FURNITURE/EQUIPMENT LAYOUTS.
7. CONTRACTOR SHALL GUARANTEE ALL LABOR AND MATERIAL INSTALLED OR FURNISHED UNDER THIS CONTRACT FOR A PERIOD OF NOT LESS THAN ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING.
8. MAINTAIN AND VERIFY ELECTRICAL EQUIPMENT CLEARANCES AND WORKING SPACE PER NEC.
9. PROVIDE ELECTRICAL SYSTEMS IDENTIFICATION AS INDICATED IN THE SPECIFICATIONS AND REQUIRED BY THE NEC OR NFPA 70E.
10. IF ANYTHING ON THE PLANS IS NOT IN COMPLIANCE WITH NATIONAL, STATE OR LOCAL CODES, THE ENGINEER SHALL BE ADVISED BY THE ELECTRICAL CONTRACTOR DURING THE BIDDING PROCESS. THERE ARE TO BE NO CHANGES TO THE CONTRACT DOCUMENTS WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS FOR NEW WORK, SAFETY, ETC., IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION. (I.E. OSHA, NEC, ETC.)
12. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR PHASING AND SCHEDULING OF THIS PROJECT. COORDINATE WITH OWNER'S FIELD REPRESENTATIVE.
13. VERIFY ALL INDICATED DIMENSIONS BY FIELD MEASUREMENTS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
14. PROVIDE ACCESS PANELS OR DOORS WHERE EQUIPMENT OR DEVICES REQUIRED TO BE ACCESSIBLE ARE CONCEALED BEHIND INACCESSIBLE SURFACES.
15. PRIOR TO TURNOVER, THIS CONTRACTOR SHALL REMOVE ALL RUBBISH, DIRT, DEBRIS AND STAINS ON THEIR WORK OR CAUSED BY THEIR WORK AND SHALL THOROUGHLY CLEAN ALL EQUIPMENT, FIXTURES, DEVICES, ETC. CONTRACTOR SHALL REPLACE, TOUCH-UP OR REFINISH THE FACTORY FINISH ON EQUIPMENT, FIXTURES, DEVICES, ETC. MARRED DURING SHIPMENT, INSTALLATION OR CONSTRUCTION.
16. PANELBOARD CIRCUIT BREAKERS SHALL BE EQUIPPED WITH BOLT-ON TYPE BREAKERS, PHENOLIC NAME TAGS AND KEYED LOCK AND LATCH. EACH PANEL SHALL BE PROVIDED WITH TWO KEYS WITH ALL PANELS KEYED ALIKE. ALL CIRCUIT BREAKERS USED TO SWITCH LIGHT FIXTURES SHALL BE TYPE SWD SHALL BE APPROVED FOR THE PURPOSE. ALL CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR TYPE.
17. ALL CIRCUITS INDICATED ON THESE DRAWINGS ARE 20A, 1P CIRCUIT BREAKERS IN PANELS UNLESS NOTED OTHERWISE.
18. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS. EACH PANELBOARD SHALL BE EQUIPPED WITH A TYPE WRITTEN CIRCUIT DIRECTORY. ALL EXISTING PANELBOARDS THAT HAVE CIRCUITS ALTERED SHALL HAVE A NEW TYPE WRITTEN CIRCUIT DIRECTORY SHOWING CIRCUIT REVISIONS AND EXISTING CIRCUIT CONDITIONS ON THE NEW DIRECTORY.
19. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED. ALL CONDUIT IN SLABS OR EXTERIOR TO BUILDING SHALL BE MINIMUM 1". PROVIDE A NYLON/POLY PULL CORD IN ALL EMPTY CONDUITS. EMT FITTINGS SHALL BE SET SCREW TYPE.
20. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL COPPER CONDUCTORS TYPE THHN/THWN FOR ALL INTERIOR BUILDING WIRE. FOR EXTERIOR FEEDERS AND BRANCH CIRCUITS PROVIDE ALL COPPER CONDUCTORS TYPE XHHW-2.
21. VOLTAGE DROP MINIMUM WIRE SIZING (20A CIRCUIT) USE: 120V CIRCUIT OVER 100' SHALL BE #10 MINIMUM; 120V CIRCUIT OVER 175' SHALL BE #8 MINIMUM; 208V CIRCUIT OVER 200' SHALL BE #10 MINIMUM; 277V CIRCUIT OVER 200' SHALL BE #10 MINIMUM. MINIMUM WIRE SIZE FOR ANY 20A BRANCH CIRCUIT SHALL BE #12. FURTHERMORE, CONSIDER ALL DERATING OF CONDUCTORS AS REQUIRED IN ACCORDANCE WITH THE APPLICABLE NEC.
22. ELECTRICAL CONTRACTOR SHALL HAVE THE OPTION OF GROUPING HOME RUNS IN ONE CONDUIT, PER THE REQUIREMENTS OF SECTION 310 OF THE NATIONAL ELECTRICAL CODE. NO MORE THAN FOUR (4) CIRCUITS SHALL BE ALLOWED TO BE GROUPED AND INSTALLED IN A SINGLE JUNCTION BOX. EC SHALL BE RESPONSIBLE FOR INCREASING CONDUCTOR SIZE AND DERATING. HOME RUNS WITH MORE THAN THREE CIRCUITS SHALL BE #10 AWG. CONDUCTOR MINIMUM. PROVIDE DEDICATED NEUTRALS FOR EACH PHASE CONDUCTOR AND CONSIDER THEM AS A CURRENT CARRYING CONDUCTOR FOR DERATING.
23. ALL HOME RUNS SHALL BE IN EMT CONDUIT. MC CABLE IS PERMITTED ABOVE CEILINGS FROM HOMERUNS TO FIXTURES. REFER TO ELECTRICAL SPECIFICATIONS FOR MORE DETAILED INFORMATION.
24. ALL EMERGENCY SERVICE WIRING SHALL BE ENTIRELY INDEPENDENT AND BE IN SEPARATE CONDUIT, PULL BOXES, PANELS, ETC.
25. ONLY PVC CONDUIT SHALL BE PERMITTED IN CONCRETE SLAB, PROVIDE GRS ELLS WHERE CONDUITS BELOW SLAB TURN UP AND EXTEND THRU SLAB.
26. WHEN SAW CUTTING FLOOR IS REQUIRED, CONTRACTOR SHALL LIMIT DEPTH TO A MINIMUM. ROUTE NEW CONDUITS BELOW OR ABOVE EXISTING CONDUITS, WATER PIPES, ETC. CONDUIT SHALL HAVE A MINIMUM OF 18" OF CONCRETE COVER BELOW BOTTOM OF CONCRETE SLAB.
27. ELECTRICAL CONTRACTOR SHALL ARRANGE WITH THE ELECTRIC, CATV AND TELEPHONE UTILITY COMPANIES FOR INCOMING SERVICE REQUIREMENTS AND INCLUDE ALL COSTS IN BASE BID.
28. TELEPHONE SHALL INCLUDE AN UNDERGROUND SERVICE CONDUIT WITH PULL TAPE, 4'x8'x3/4" PAINTED FIRE RETARDANT PLYWOOD TERMINAL BOARD, 120V DOUBLE DUPLEX RECEPTACLE, ISOLATED TELECOM MAIN GROUND BUS AND #6 AWG COPPER GROUND CONDUCTOR TO BUILDING SERVICE GROUND. PLYWOOD MANUFACTURERS FIRE RATING LABEL SHALL BE MASKED OFF BEFORE PAINTING.
29. HEATING, VENTILATING, AIR CONDITIONING EQUIPMENT AND PLUMBING EQUIPMENT ALONG WITH ALL OTHER MISCELLANEOUS EQUIPMENT, MOTORS, AND KITCHEN EQUIPMENT SHALL BE POWERED AS CALLED OUT ON EQUIPMENT PROVIDER'S SCHEDULES UNLESS OTHERWISE NOTED. EC SHALL PROVIDE DISCONNECTING MEANS UNLESS SPECIFICALLY NOTED ON EQUIPMENT PROVIDER'S SCHEDULE.
30. SUPPORT ALL CONDUITS FROM STRUCTURAL WALLS, SLABS, MEMBERS AND ROOF JOISTS. DO NOT SUPPORT CONDUITS FROM CEILING TIE WIRES, DUCTWORK, PIPING, ROOF DECK OR OTHER NON-STRUCTURAL MEMBERS.
31. SUPPORTING OF ELECTRICAL CONDUITS: THE INDIVIDUAL BRANCH CIRCUIT CONDUIT AND ASSOCIATED 4" X 4" JUNCTION BOXES MAY BE SUPPORTED FROM FLOOR/ROOF JOISTS. ALL LARGER FEEDER CONDUITS AND/OR CLUSTER OR GROUPS OF BRANCH CIRCUIT CONDUITS SHALL BE SUPPORTED ON STEEL TRAPEZE WITH STEEL CHANNEL ATTACHED TO STEEL JOIST/BEAMS WITH PROPER ATTACHMENTS. NO SUPPORT SHALL BE ATTACHED TO THE ROOF DECK (NO EXCEPTIONS). HANG CONDUIT FROM TOP CHORD OF BAR JOIST WHEN ATTACHING HOME RUNS TO JOIST.
32. INTERIOR AND EXTERIOR LIGHT FIXTURES SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE DRAWINGS AND AS CALLED OUT IN THE LIGHTING FIXTURE SCHEDULE.
33. ALL WIRING DEVICES SHALL BE FLUSH MOUNTED, UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL BE INSTALLED CONCEALED WITHIN WALL CAVITIES, BELOW FLOOR AND ABOVE CEILINGS. SURFACE MOUNTED ELECTRICAL WORK SHALL NOT BE USED UNLESS SPECIFICALLY NOTED ON THE PLANS.
34. ALL WALL AND CEILING FIXTURES AND DEVICES SHALL BE INDEPENDENTLY AND SECURELY MOUNTED SO THEY ARE NOT DEPENDENT ON CEILING FINISH FOR SUPPORT AND CAN NOT BE ROTATED OR DISPLACED. FIXTURES AND DEVICES MOUNTED IN SUSPENDED ACOUSTICAL CEILING TILE SHALL HAVE CHANNEL SUPPORTS ACROSS THE MAIN GRID RUNNERS OR GRID SUPPORTS SECURELY ANCHORED SO AS NOT TO CAUSE TILE TO SAG OR SO FIXTURE OR DEVICE CAN NOT BE LIFTED, ROTATED OR DISPLACED.
35. ELECTRICAL LIGHT FIXTURES, MECHANICAL AIR DEVICES, FIRE SPRINKLERS, AND SMOKE DETECTORS IN CEILING: ALL SUBS NEED TO TAKE OTHER DISCIPLINES INTO CONSIDERATION BEFORE STARTING THEIR WORK. ALL ITEMS THAT NEED TO BE MOVED WILL BE MOVED AT THE SUB'S EXPENSE. FIRE SPRINKLERS MUST BE LOCATED A MINIMUM OF 30 INCHES FROM ANY SURFACE MOUNTED LIGHT. SMOKE DETECTORS MUST BE MOUNTED NO CLOSER THAN 3 FEET OF AN AIR DEVICE OR CEILING FAN. FIRE SPRINKLERS, LIGHT FIXTURES, SMOKE DETECTORS, AND AIR DEVICES ALL TO BE CENTERED DOWN THE HALLWAYS. ELECTRICAL, MECHANICAL, FIRE SPRINKLER, AND LOW VOLTAGE SUB CONTRACTOR MUST MEET AND DECIDE BEFORE ANYONE STARTS, WHERE LOCATION OF THESE ITEMS WILL BE LOCATED. IF ITEM NEEDS TO BE MOVED, IT WILL BE AT THE EXPENSE OF THE SUB CONTRACTOR. COORDINATE WITH ARCHITECT'S REFLECTED CEILING PLAN.
36. ALL OPENINGS IN FIRE AND/OR SMOKE RATED WALLS, FLOORS, AND PARTITIONS FOR CONDUITS SHALL BE SEALED WITH RED FIRE RESISTANT FOAM OR PUTTY TO MAINTAIN THE FIRE AND/OR SMOKE RATING. ALL OPENINGS IN FIRE RATED AND/OR SMOKE WALLS, FLOORS, AND PARTITIONS FOR CABLING SHALL BE SEALED WITH WIREMOLD FLAMESTOPPER, STI EZ-PATH, HILTI SPEED SLEEVE OR EQUIVALENT.
37. AFTER METAL STUD FRAMING INSTALLATION, THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND PHYSICALLY MARK THE LOCATION OF ALL DEVICES WITH THE VARIOUS SUB-CONTRACTORS.
38. RECEPTACLES/WIRING DEVICES SHALL NOT BE INSTALLED BACK-TO-BACK, INSTALL ON OPPOSITE SIDES OF WALL STUDS; WHERE DEVICES EXIST ALONG FIRE WALLS, COVER WITH UL LISTED PUTTY PACKS.
39. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES, DIMENSIONAL LOCATION OF FIXTURES IN DRYWALL CEILING, ETC. LOCATION OF FLOOR BOXES AND RECEPTACLES, INCLUDING MOUNTING HEIGHTS. ALL RECEPTACLES AND COVER PLATE COLORS SHALL BE APPROVED BY ARCHITECT.
40. OWNER RESERVES THE RIGHT TO RELOCATE ANY LIGHT FIXTURE, RECEPTACLE, ETC., BEFORE BEING INSTALLED 10'-0" FROM LOCATION AS SHOWN ON PLANS AT NO ADDITIONAL EXPENSE TO THE OWNER.
41. NO CONDUIT OR CABLES SHALL BE INSTALLED EXPOSED IN FINISHED AREA. NON-CEILING AREA CONDUITS SHALL BE INSTALLED EXPOSED IN A NEAT WORKMAN LIKE MANNER AND BE PAINTED TO MATCH ADJACENT FINISHES.
42. ALL MATERIALS, DEVICES, FIXTURES, ETC., THAT ARE REQUIRED FOR THIS PROJECT ARE TO BE PROVIDED BY THE EC, UNLESS SPECIFICALLY INDICATED TO BE FURNISHED AND OR INSTALLED BY OTHERS.
43. TELEPHONE, DATA, TV, VIDEO AND SECURITY OUTLETS SHALL CONSIST OF A BACK BOX WITH 1" CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING WITH PLENUM RATED NYLON BUSHING ON THE END OF THE CONDUIT. COORDINATE SIZE OF BACK BOX WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE(S) INTENDED FOR COMPUTER USE
44. TELEPHONE, IT, AUDIO, VIDEO, SECURITY AND FIRE ALARM CABLE WIRING IN WALLS AND FLOOR SHALL BE ROUTED IN CONDUIT FROM DEVICE/JUNCTION BOX TO ABOVE AN ACCESSIBLE CEILING OR IN ATTIC SPACE; 1" EMT MINIMUM. NO SPLICING OF TELEPHONE OR DATA CABLES SHALL BE PERMITTED. ALL CABLES SHALL BE BUNDLED AND SUPPORTED FROM STRUCTURE ABOVE. NO MORE THAN 60" O.C. DO NOT LAY CABLES ON CEILING SYSTEM. PROVIDE J-HOOKS AND/OR CABLE TRAY SYSTEM. MAINTAIN 12" CLEARANCE ABOVE CEILING. COLOR CODE EACH CABLE BY USAGE.
45. ALL SIGNAL AND CONTROL CABLES SHALL BE MINIMUM #18 STRANDED COPPER, UNLESS NOTED OTHERWISE. ALL CONNECTIONS AND SPLICES TO BE MADE BY USE OF "STA-KON" CONNECTORS AND TERMINAL STRIPS.
46. CABLES AND CABLE SUPPORT PRODUCTS INSTALLED WITH-IN AIR HANDLING PLENUMS SHALL BE PLENUM RATED.
47. TYPICAL SEISMIC DETAILS ARE PROVIDED ON THE DRAWINGS FOR REFERENCE ONLY. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER'S ENGINEER FOR REVIEW AND APPROVAL PRIOR TO SUBMITTAL TO THE PLAN REVIEWER. SHOP DRAWINGS SHALL SHOW ALL EQUIPMENT ANCHORAGE TO WALLS/CEILINGS/FLOORS AND SHALL INCLUDE SIZE OF SEISMIC ANCHOR BOLTS USED FOR EACH SYSTEM. CONTRACTOR SHALL PROVIDE CALCULATIONS, DETAILS, ETC. - PREPARED BY, SIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER. REFER TO SPECIFICATIONS.
48. THE WORD "PROVIDE", WHEN USED ON ANY DRAWING OR IN ANY SPECIFICATION, SHALL BE DEFINED AS TO FURNISH AND INSTALL AND CONNECT ALL ELECTRICAL WORK AS REQUIRED FOR A COMPLETE, FUNCTIONAL AND CODE COMPLIANT INSTALLATION READY FOR INTENDED USE.

GENERAL DEMOLITION NOTES:

1. THE OWNER INTENDS TO VACATE SPECIFIC AREAS OF WORK BEFORE DEMOLITION BEGINS. ALL OTHER AREAS SHALL REMAIN OCCUPIED AND IN ACTIVE USE. UTILITIES AND SERVICES TO EXISTING ACTIVE AREAS SHALL NOT BE INTERRUPTED WITHOUT THE OWNER'S APPROVAL AS TO THE TIME AND DURATION. THE OWNER WILL CONTINUE TO OCCUPY THE REST OF THE EXISTING FACILITIES THROUGHOUT THE CONSTRUCTION OPERATIONS. THE ELECTRICAL CONTRACTOR SHALL SO ORGANIZE HIS WORK AS TO CAUSE A MINIMUM OF UTILITY INTERRUPTIONS, WHICH SHALL BE SCHEDULED AT THE CONVENIENCE OF THE OWNER.
2. THE OWNER INTENDS TO OCCUPY THE BUILDING THROUGHOUT CONSTRUCTION. UTILITIES AND SERVICES SHALL NOT BE INTERRUPTED WITHOUT THE OWNER'S APPROVAL AS TO THE TIME AND DURATION. THE CONTRACTOR SHALL SO ORGANIZE THEIR WORK AS TO CAUSE A MINIMUM OF UTILITY INTERRUPTIONS, WHICH SHALL BE SCHEDULED AT THE CONVENIENCE OF THE OWNER
3. ALL ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, SWITCHES, RECEPTACLES, SPECIAL OUTLETS, ETC., WHICH ARE NOTED TO BE DEMOLISHED, OR ARE SHOWN WITH DASHED LINE SYMBOLS ON THE DEMOLITION PLANS, SHALL BE REMOVED. ASSOCIATED WIRING AND CONDUIT SHALL BE REMOVED BACK TO THE SOURCE OR EXISTING UPSTREAM DEVICE TO REMAIN AND MADE SAFE.
4. REMOVE EQUIPMENT, FIXTURES, DEVICES AND OUTLETS AS SPECIFIED AND SHOWN ON DRAWINGS, AND AS MAY BECOME NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. EXAMINE ALL EXISTING WALLS AND CEILING DESIGNATED FOR REMOVAL TO DETERMINE THE CONDUIT AND WIRING THAT WILL REQUIRE REMOVAL.
5. FOR EXISTING ELECTRICAL DEVICES IN WALLS TO BE REMOVED, DISCONNECT POWER, REMOVE CONDUCTORS AND CAP CONDUIT BELOW FLOOR OR ABOVE CEILING AS REQUIRED. DEVICES ARE TO BE REMOVED ALONG WITH WALL BY GENERAL CONTRACTOR.
6. FOR EXISTING ELECTRICAL EQUIPMENT, FIXTURES AND DEVICES TO BE REMOVED FROM WALLS WHICH REMAIN, DISCONNECT POWER, REMOVE CONDUCTORS, REMOVE THE ELECTRICAL ITEM, AND PATCH AND FINISH THE SURFACE AS REQUIRED TO MATCH THE EXISTING, OR MAKE READY FOR NEW WALL FINISH. PROVIDE BLANK PLATES WHERE NOTED OR REQUIRED.
7. EXISTING RECEPTACLES, DEVICES, ETC. TO REMAIN ARE DENOTED BY THIN SOLID LINE OR MAY NOT BE INDICATED AT ALL. THESE DEVICES SHALL BE EXTENDED TO BE FLUSH WITH NEW FINISH ON EXISTING WALL WHERE REQUIRED.
8. MAINTAIN CIRCUIT CONTINUITY TO ALL EQUIPMENT, FIXTURES, DEVICES, ETC., TO REMAIN IN USE WHETHER NOTED ON THE PLANS OR NOT. FIELD VERIFY EXISTING ITEMS TO REMAIN IN USE. WIRING FOR EXISTING CIRCUITS WHICH ARE PARTIALLY ABANDONED SHALL BE RECONNECTED BY THE ELECTRICAL CONTRACTOR TO SERVICE THE REMAINING OUTLETS ON THE CIRCUIT.
9. ALL WIRING FOR A CIRCUIT WHICH IS TO BE REMOVED SHALL BE REMOVED BACK TO THE PANEL WHICH SUPPLIED THE CIRCUIT.
10. EXISTING CONDUIT & CONDUCTORS MAY BE REUSED WHERE FEASIBLE. ALL UNUSED CONDUIT MADE EMPTY BY THIS DEMOLITION SHALL BE REMOVED BY THE ELECTRICAL CONTRACTOR. WHERE CONDUITS EXTENDING OUT OF THE FLOOR ARE TO BE REMOVED, CUT THE CONDUIT OFF 1/2" BELOW THE FLOOR LINE AND PATCH.
11. ALL ACTIVE CIRCUITING THAT RUNS THROUGH THIS SPACE, ORIGINATING AND/OR TERMINATING IN OTHER SPACES, SHALL REMAIN IN PLACE. COORDINATE WITH NEW CEILING WORK FOR RAISED CEILING WHICH MAY REQUIRE CIRCUITING RELOCATION.
12. ALL UNUSED TELEPHONE AND DATA CABLES SHALL BE REMOVED. ANY OTHER UNUSED LOW VOLTAGE SYSTEMS CABLES SHALL ALSO BE REMOVED.
13. ALL EXISTING EQUIPMENT, LIGHTING FIXTURES, WIRING DEVICES, AND MATERIALS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND LEGALLY DISPOSED OF IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION, UNLESS OTHERWISE NOTED. ALL ITEMS NOTED THAT THE OWNER CHOOSES TO KEEP SHALL BE TRANSFERRED TO THEIR STORAGE AREA BY THE ELECTRICAL CONTRACTOR.
14. FOR ALL EXISTING ELECTRICAL WIRING DEVICES, TELEPHONE, DATA ETC., CONTRACTOR SHALL REMOVE/REINSTALL COVERPLATES AS REQUIRED TO ALLOW FOR NEW FINISHES.
15. INFORMATION ON THE EXISTING CONDITIONS PLANS ARE COMPILED FROM EXISTING DRAWINGS AND CASUAL FIELD OBSERVATIONS AND SHALL BE CONSIDERED APPROXIMATE ONLY. VERIFICATION OF ALL EQUIPMENT, WIRING DEVICES AND FIXTURES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NOTIFY ENGINEER IMMEDIATELY IF DISCREPANCIES EXIST.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
MATTHEW R. CASE
NUMBER PE-2017000282
PROFESSIONAL ENGINEER

CASE Engineering Inc.
796 Meras Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

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REPLACE HVAC UNITS FOR 10 GROUP HOMES

ST. CHARLES HABILITATION CENTER

ST. CHARLES, MO

PROJECT # M2511-01
SITE # 7372
ASSET # 6517372005, 6517372006, 6517372007, 6517372008, 6517372009, 6517372010, 6517372011, 6517372012, 6517372013, 6517372014

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SHEET TITLE: **ELECTRICAL SYMBOLS LEGEND**

SHEET NUMBER: **E001**

10OF14SHEETS
01/07/2026

NEW CIRCUIT BREAKERS ADDED TO EXISTING PANELS SHALL BE OF THE SAME MANUFACTURER AS THE EXISTING PANEL; SHALL BE OF A "LETTER TYPE" COMPATIBLE WITH THE EXISTING PANEL, SUCH, THAT THE UL LISTING OF THE EXISTING PANEL IS MAINTAINED, AND SHALL HAVE AN AIC RATING EQUAL TO OR GREATER THAN THE AIC RATING OF THE EXISTING OVERCURRENT PROTECTIVE DEVICES WITH-IN THE EXISTING PANEL.

(EXISTING , TYPICAL PANEL SCHEDULE EP)

NOTES	MOUNT: SURFACE			120/208			3-PHASE, 4W	PANEL EP			CAPACITY: 225A			INT CAP: EXIST				NOTES
	LOCATION: ELEC/HVAC ROOM							LUGS: 60A MCB			DEMAND LOAD: 26A			AV. FAULT: EXIST				
	CKT	LTG	REC	HVAC	MISC	KIT	DESCRIPTION	AMP	POLE	Φ	AMP	POLE	DESCRIPTION	LTG	REC	HVAC	MISC	KIT	CKT	
A	1			1.596			NEW GAS FURN GF-1A	15	1	A	20	1	EX EMERGENCY LTG	1.200					2	
A	3			1.596			NEW GAS FURN GF-1B	15	1	B	20	1	EX FIRE PROTECTION				1.200		4	
	5			1.656			EXIST BLOWER	20	1	C		1	EXIST SPACE						6	
	7				1.200		EXIST FACP	20	1	A		1	EXIST SPACE						8	
	9						EXIST SPACE	20	1	B		1	EXIST SPACE						10	
	11				0.600		EXIST C02 DETECTOR	20	1	C		1	EXIST SPACE						12	

PHASE BALANCE			LOAD TYPE	CONNECTED	DEMAND	DEMAND FORMULA	TOTAL LOAD	
			LIGHTING	1.2 KVA	1.5 KVA	LOAD X 125% NEC 210.19 CONTINUOUS	CONNECTED	DEMAND
Φ	LOAD	%	RECEPTACLE	0.0 KVA	0.0 KVA	10KVA + 50% REMAINDER NEC 220.44	9.0 KVA	9.3KVA
A	4.0 KVA	44%	HVAC	4.8 KVA	4.8 KVA	LOAD X 100% (USED MCA IN CALCULATION)	25.1A	25.9A
B	2.8 KVA	31%	MISC	3.0 KVA	3.0 KVA	LOAD X 100% NEC 210.19 NON-CONT.	CASE Engineering Inc.	
C	2.3 KVA	25%	KIT	0.0 KVA	0.0 KVA	PER NEC TABLE 220.56		

NOTES:
A. PROVIDE NEW 15 AMP, SINGLE POLE CIRCUIT BREAKER.

(EXISTING , TYPICAL PANEL SCHEDULE LP)

NOTES	MOUNT: SURFACE			120/208			3-PHASE, 4W	PANEL LP			CAPACITY: 225A			INT CAP: EXIST				NOTES
	LOCATION: ELEC/HVAC ROOM							LUGS: 225A MLO			DEMAND LOAD: 147A			AV. FAULT: EXIST				
	CKT	LTG	REC	HVAC	MISC	KIT	DESCRIPTION	AMP	POLE	Φ	AMP	POLE	DESCRIPTION	LTG	REC	HVAC	MISC	KIT	CKT	
	1		1,440				EX KIT CTR RECS	20	1	A	20	1	EXIST WASHING MACH		1,920				2	
	3		1,440				EX KIT CTR RECS	20	1	B	30	2	EXIST DRYER		2,496				4	
	5		1,920				EXIST WATER HTR	20	1	C					2,496				6	
	7						EXIST SPACE		1	A	20	1	EX EXH FANS				1,200		8	
	9			4.198			NEW CU-1	45	3	B	20	1	EX SLEEP AREA RECS	1,440					10	
A	11			4.198						C	20	1	EX SLEEP AREA RECS	1,440					12	
	13			4.198						A	20	1	EX SLEEP AREA RECS	1,440					14	
	15		1,200				EX MICROWAVE	20	1	B	20	1	EX SLEEP AREA RECS	1,440					16	
	17		4,368				EXIST COOKTOP	50	2	C	20	1	EX SLEEP AREA RECS	1,440					18	
	19		4,368							A	20	1	EX FAMILY RM RECS	1,440					20	
	21		1,656				EXIST DISHWASHER	20	1	B	20	1	EX FAMILY RM RECS	1,440					22	
	23		1,920				EXIST REFRIG $ G.D.	20	1	C	20	1	EXIST SLEEP/CORR LTG	1,200					24	
	25		0,600				EXIST DOORBELL	20	1	A	20	1	EX SLEEP/BATH LTG	1,200					26	
	27						EXIST SPACE		1	B	20	1	EX FAM/STOR LTG	1,200					28	
	29						EXIST SPACE		1	C	20	1	EX DINING/KIT LTG	1,200					30	
	31						EXIST SPACE		1	A	20	1	EXIST HEAT LAMPS	1,200					32	
	33						EXIST SPACE		1	B		1	EXIST SPACE						34	
	35						EXIST SPACE		1	C		1	EXIST SPACE						36	
	37						EXIST SPACE		1	A		1	EXIST SPACE						38	
	39						EXIST SPACE		1	B		1	EXIST SPACE						40	
	41						EXIST SPACE		1	C		1	EXIST SPACE	1,000					42	

PHASE BALANCE			LOAD TYPE	CONNECTED	DEMAND	DEMAND FORMULA	TOTAL LOAD	
			LIGHTING	17.1 KVA	21.4 KVA	LOAD X 125% NEC 210.19 CONTINUOUS	CONNECTED	DEMAND
Φ	LOAD	%	RECEPTACLE	25.8 KVA	17.9 KVA	10KVA + 50% REMAINDER NEC 220.44	56.7 KVA	53.1KVA
A	19.0 KVA	34%	HVAC	13.8 KVA	13.8 KVA	LOAD X 100% (USED MCA IN CALCULATION)	157.4A	147.3A
B	16.5 KVA	29%	MISC	0.0 KVA	0.0 KVA	LOAD X 100% NEC 210.19 NON-CONT.	CASE Engineering Inc.	
C	21.2 KVA	37%	KIT	0.0 KVA	0.0 KVA	PER NEC TABLE 220.56		

NOTES:
A. PROVIDE NEW 45 AMP, THREE POLE CIRCUIT BREAKER.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
MATTHEW R. CASE
NUMBER PE-2017000282
PROFESSIONAL ENGINEER

CASE Engineering Inc.
796 Meras Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
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SITE # 7372
ASSET # 6517372005, 6517372006, 6517372007, 6517372008, 6517372009, 6517372010, 6517372011, 6517372012, 6517372013, 6517372014

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DESIGNED BY:

SHEET TITLE: **ELECTRICAL PANEL SCHEDULES**

SHEET NUMBER: **E002**

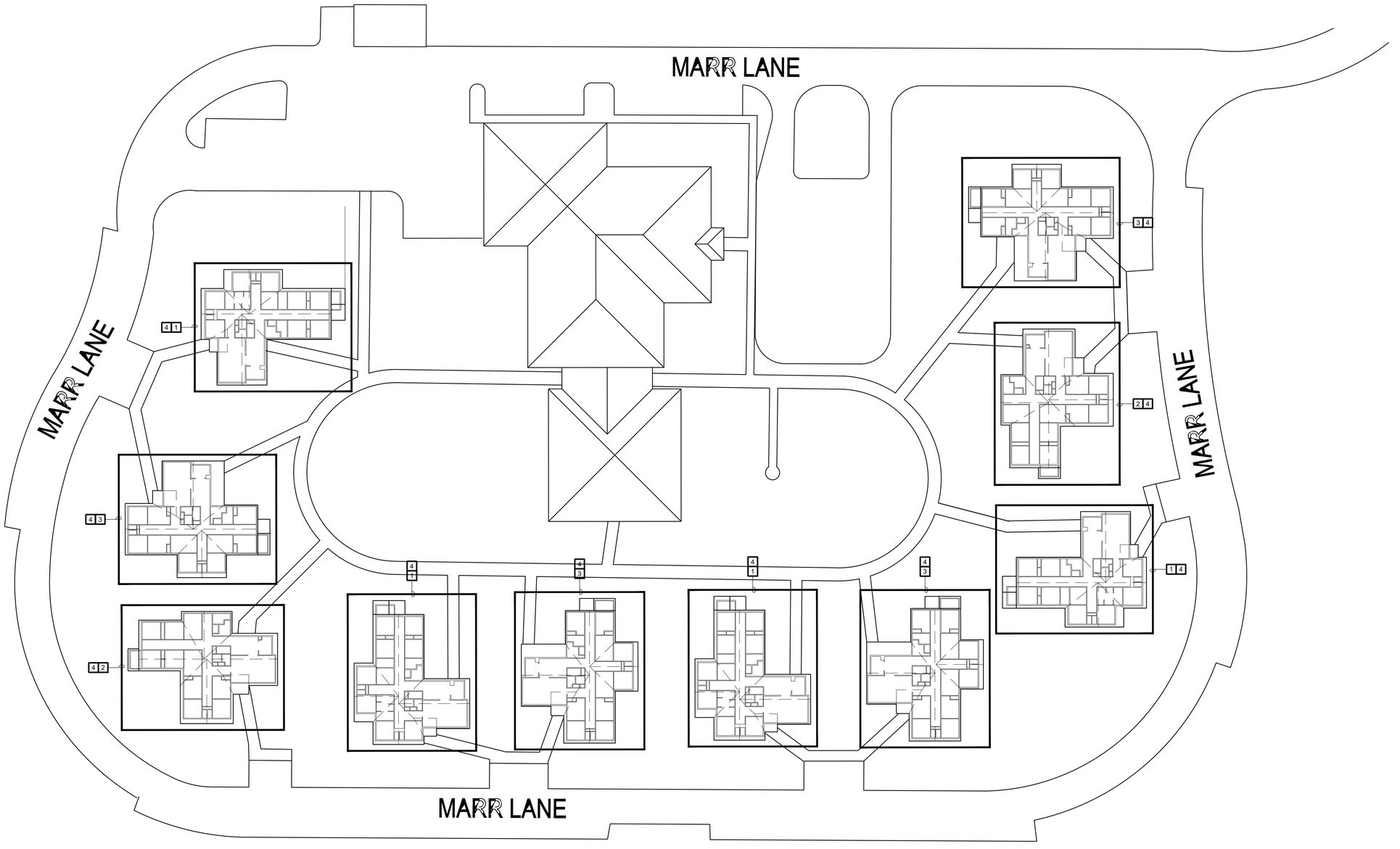
11 OF 14 SHEETS
01/07/2026

ELECTRICAL GENERAL NOTES:

1. REFER TO SHEET E001 FOR SYMBOLS, ABBREVIATIONS AND GENERAL CONSTRUCTION NOTES.

ELECTRICAL KEYED NOTES:

1. REFER TO SHEET E101 FOR ELECTRICAL SCOPE OF WORK IN TYPE "A" GROUP HOME.
2. REFER TO SHEET E102 FOR ELECTRICAL SCOPE OF WORK IN TYPE "B" GROUP HOME.
3. REFER TO SHEET E103 FOR ELECTRICAL SCOPE OF WORK IN TYPE "C" GROUP HOME.
4. REFER TO SHEET ED101 FOR ELECTRICAL DEMOLITION SCOPE OF WORK IN TYPE "A", "B" AND "C" GROUP HOMES.



1 / ? ELECTRICAL SITE PLAN

SCALE: 1/32" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

STATE OF MISSOURI
MATTHEW R. CASE
NUMBER PE-2017000282
PROFESSIONAL ENGINEER

CASE Engineering Inc.
796 Menas Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
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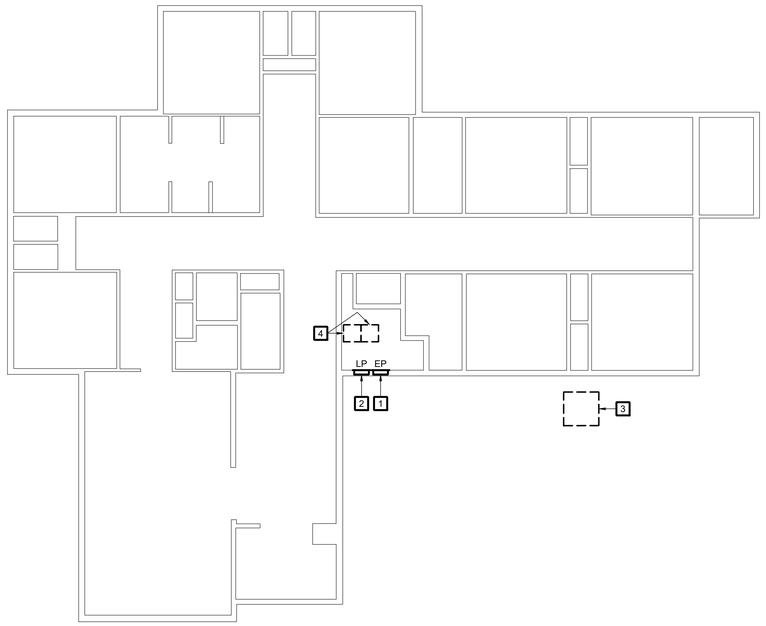
SHEET TITLE: **ELECTRICAL SITE PLAN**

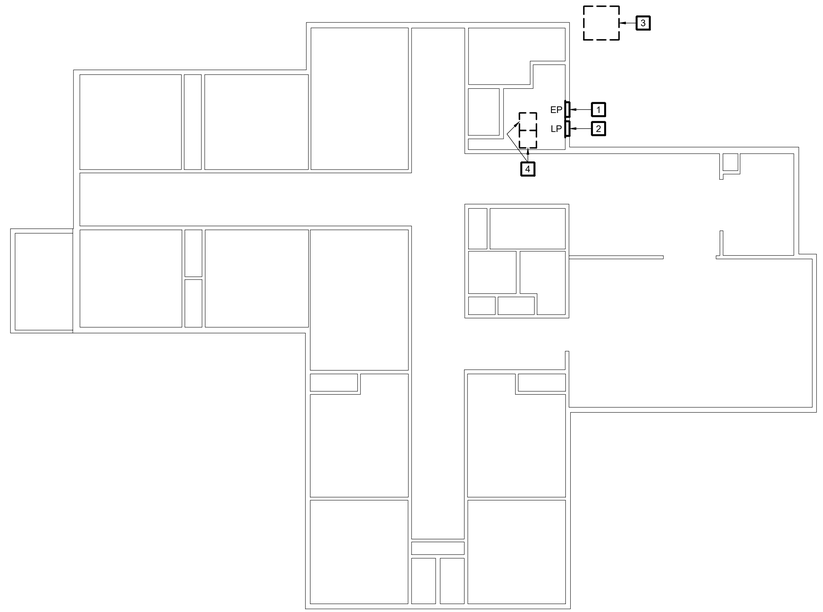
SHEET NUMBER: **E003**

12 OF 14 SHEETS
01/07/2026



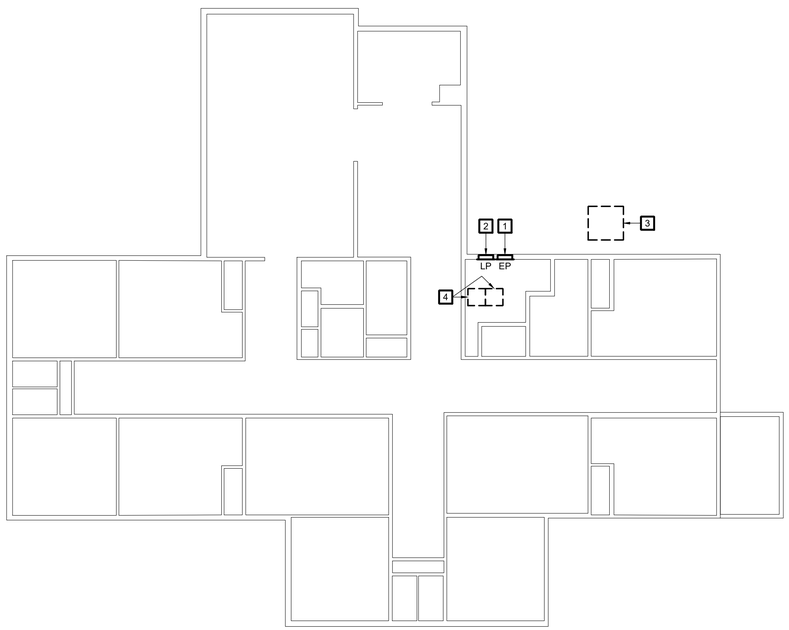
1 ED101 TYPICAL ELECTRICAL GROUP HOME TYPE "A" DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



2 ED101 TYPICAL ELECTRICAL GROUP HOME TYPE "B" DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



3 ED101 TYPICAL ELECTRICAL GROUP HOME TYPE "C" DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES:

1. REFER TO SHEET E001 FOR SYMBOLS, ABBREVIATIONS AND GENERAL CONSTRUCTION NOTES.
2. EXISTING EQUIPMENT AND DEVICES TO REMAIN ARE INDICATED WITH THIN SOLID LINES; DARK DASHED LINES INDICATE EQUIPMENT AND DEVICES THAT ARE INTENDED TO BE DEMOLISHED.
3. ALL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND HVAC WORK SHALL BE COORDINATED BY THE CONTRACTOR DOING THE WORK. ANY CORRECTIONS SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. INFORMATION ON THIS SHEET IS COMPILED FROM EXISTING DRAWINGS AND CASUAL FIELD OBSERVATIONS AND SHALL BE CONSIDERED APPROXIMATE ONLY. VERIFICATION OF ALL EQUIPMENT AND DEVICES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. CONTRACTOR SHALL FIELD VERIFY EXISTING EQUIPMENT AND DEVICES PRIOR TO STARTING WORK. NOTIFY ENGINEER IMMEDIATELY IF DISCREPANCIES EXIST.

ELECTRICAL DEMOLITION KEYED NOTES:

1 APPROXIMATE LOCATION OF EXISTING 60 AMP, 120/208 VOLT, 3 PHASE, 4 WIRE PANELBOARD "EP".

2 APPROXIMATE LOCATION OF EXISTING 225 AMP, 120/208 VOLT, 3 PHASE, 4 WIRE PANELBOARD "LP".

3 EXISTING CONDENSING UNIT SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL BY M.C. E.C. SHALL DEMOLISH EXISTING CONDUCTORS, CONDUIT, DISCONNECTS, J-BOXES AND SUPPORTS BACK TO PANEL AS REQUIRED.

4 EXISTING GAS FIRED FURNACE SHALL BE DISCONNECTED AND MADE SAFE FOR REMOVAL BY M.C. E.C. SHALL DEMOLISH EXISTING CONDUCTORS, CONDUIT, DISCONNECTS, J-BOXES AND SUPPORTS BACK TO PANEL AS REQUIRED.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

CASE Engineering Inc.
796 Menas Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. 001498

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
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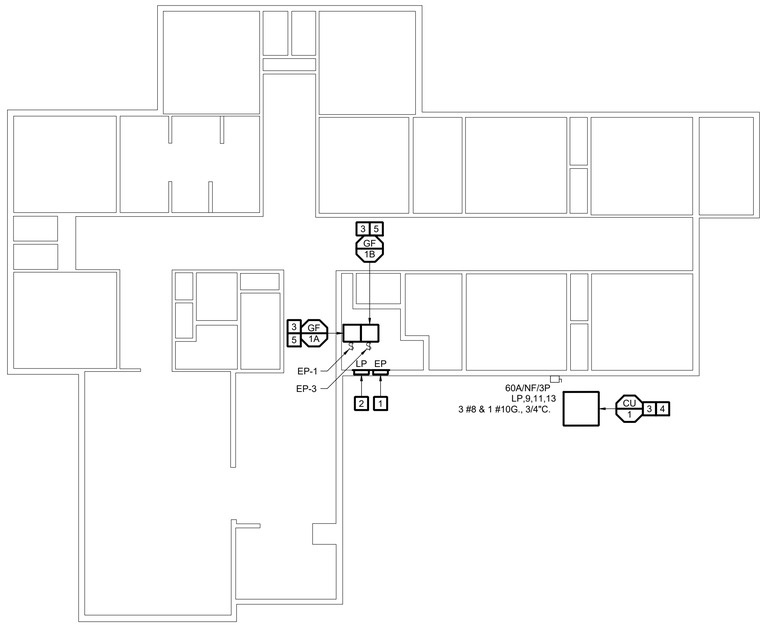
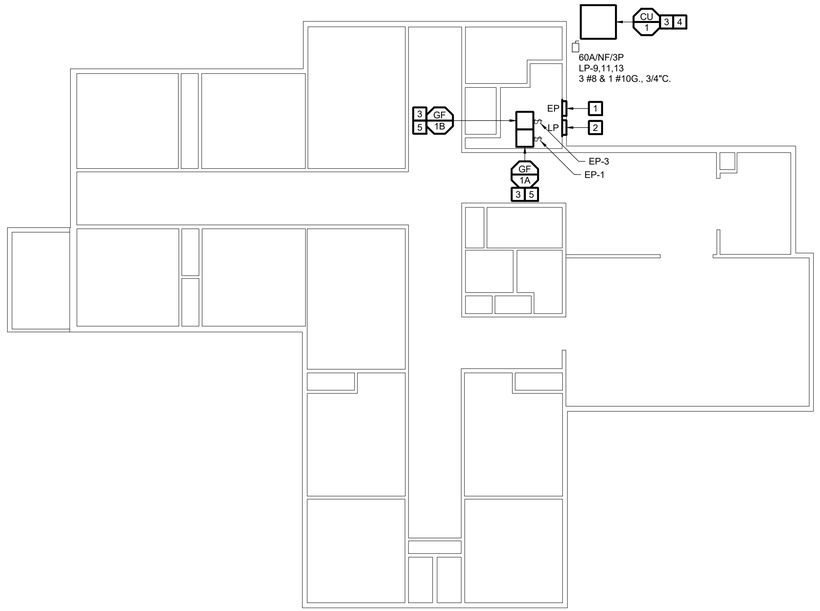
SHEET TITLE: **TYPICAL ELECTRICAL HVAC EQUIPMENT DEMOLITION PLANS**

SHEET NUMBER: **ED101**



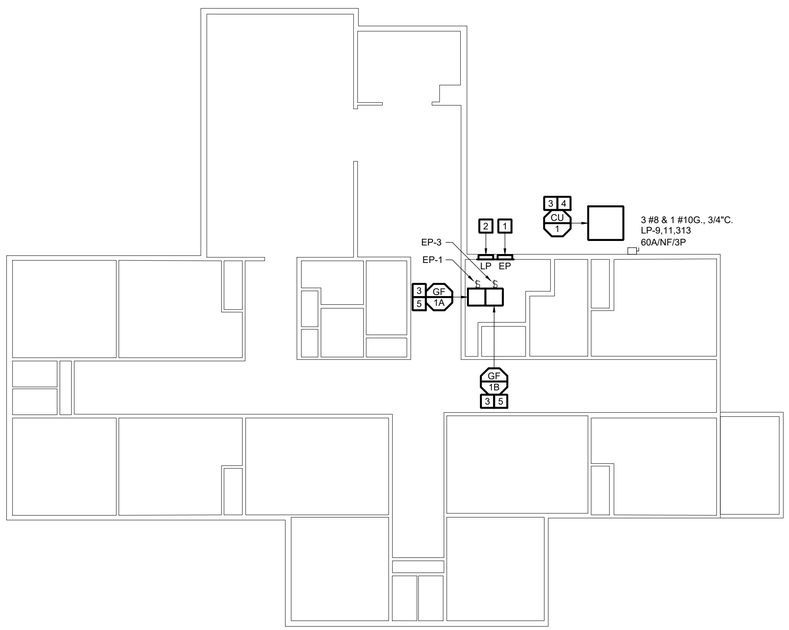
1 E101 TYPICAL ELECTRICAL GROUP HOME TYPE "A" RENOVATION PLAN

SCALE: 1/8" = 1'-0"



2 E101 TYPICAL ELECTRICAL GROUP HOME TYPE "B" RENOVATION PLAN

SCALE: 1/8" = 1'-0"



3 E101 TYPICAL ELECTRICAL GROUP HOME TYPE "C" RENOVATION PLAN

SCALE: 1/8" = 1'-0"

ELECTRICAL RENOVATION GENERAL NOTES:

1. REFER TO SHEET E0.1 FOR SYMBOLS, ABBREVIATIONS AND GENERAL CONSTRUCTION NOTES.
2. ALL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND HVAC WORK SHALL BE COORDINATED BY THE CONTRACTOR PERFORMING THE WORK. ANY CORRECTIONS TO ANY OF THE ABOVE SHALL BE AT THE CONTRACTOR'S EXPENSE.
3. ALL DISCONNECTS REQUIRED SHALL BE PROVIDED BY THE EC, U.N.O. SEE MECHANICAL & PLUMBING EQUIPMENT SCHEDULE(S) FOR EQUIPMENT DETAILS AND FOR DISCONNECTS FURNISHED BY OTHERS. REFER TO MANUFACTURER'S SPECIFICATIONS FOR MECHANICAL & PLUMBING EQUIPMENT CONNECTION DETAILS. COORDINATE WITH APPLICABLE TRADES.
4. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUITS, SIZED IN ACCORDANCE WITH NEC ARTICLE 250.122, SEE SPECIFICATIONS.
5. ALL EXTERIOR ELECTRICAL EQUIPMENT AND DISCONNECT SWITCHES SHALL BE IN RATED NEMA 3R OR 4X ENCLOSURES. FINAL CONDUIT CONNECTIONS TO MECHANICAL EQUIPMENT SHALL BE MADE WITH LFMC.
6. E.C. SHALL CONNECT MECHANICAL/PLUMBING EQUIPMENT ITEMS INDICATED. COORDINATE EXACT REQUIREMENTS WITH APPLICABLE TRADES.
7. ALL ELECTRICAL WORK PERFORMED IS TO BE DONE IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL CODES.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE GREEN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH CONDUIT SIZED PER NEC 250.122. ALL EQUIPMENT SHALL HAVE INDIVIDUAL GROUND CONDUCTORS. METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND BONDED TO FORM AN EQUIPMENT GROUND CONDUCTOR. THE METALLIC CONDUIT SYSTEM AND EQUIPMENT GROUND CONDUCTOR SHALL PROVIDE A REDUNDANT EQUIPMENT GROUND.

ELECTRICAL RENOVATION KEYED NOTES:

1. APPROXIMATE LOCATION OF EXISTING 60 AMP, 120/208 VOLT, 3 PHASE, 4 WIRE PANELBOARD "EP".
2. APPROXIMATE LOCATION OF EXISTING 225 AMP, 120/208 VOLT, 3 PHASE, 4 WIRE PANELBOARD "LP".
3. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY, CONNECT TO AVAILABLE SPARE OR SPACE IN PANEL INDICATED.
4. PROVIDE NEW 45 AMP, 3 POLE CIRCUIT BREAKER IN PANEL INDICATED.
5. PROVIDE NEW 15 AMP, 1 POLE CIRCUIT BREAKER IN PANEL INDICATED.

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

CASE Engineering Inc.
796 Menas Court
St. Louis, MO 63026
T 636.349.1600
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SHEET TITLE: **TYPICAL ELECTRICAL HVAC EQUIPMENT RENOVATION PLANS**

SHEET NUMBER: **E101**

14 OF 14 SHEETS
01/07/2026