PROJECT DIRECTORY

PROJECT SITE:
LAUDERDALE COUNTY ANIMAL SHELTER
6100 ROCKY LANE
MARION, MS 39342

PRIME PROFESSIONAL AND MECHANICAL ENGINEER:
ENGINEERING RESOURCE GROUP
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ELECTRICAL ENGINEER
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REGULATORY STANDARDS

APPLICABLE CODES AND STANDARDS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

2018 - INTERNATIONAL BUILDING CODE
2018 - INTERNATIONAL MECHANICAL CODE
2018 - INTERNATIONAL FUEL GAS CODE
ASHRAE STANDARD 90.1-2010

PROJECT SUMMARY

LAUDERDALE COUNTY ANIMAL SHELTER
PROJECT INCLUDES, BUT IS NOT LIMITED TO:

1. REMOVE EXISTING (2) LOW PRESSURE AIR HANDING UNITS, CONDENSING UNITS, ALL RELATED DUCTWORK, CONTROLS, HANGERS, SUPPORTS, ETC.
2. REMOVE EXISTING (2) EXHAUST FANS SYSTEM AND ALL RELATED DUCTWORK.
3. INSTALL NEW DOAS UNIT, RELATED DUCTWORK, AND CONTROLS.
4. TESTING, ADJUSTING, AND BALANCING OF ALL NEW AND EXISTING HVAC SYSTEMS AND EQUIPMENT. TAB AGENCY TO ADJUST AIRFLOW SUCH THAT THE BUILDING HAS A NET POSITIVE PRESSURE RELATIVE TO OUTDOORS UNDER ALL OPERATING CONDITIONS.
5. PROVIDE NATURAL GAS LINE TO NEW DOAS UNIT. NEW GAS LINE SHALL BE SIZED AND INSTALLED PER THE 2018 INTERNATIONAL FUEL GAS CODE. MODIFY EXISTING NATURAL GAS SERVICE IN CONJUNCTION WITH THE SERVING NATURAL GAS UTILITY COMPANY.
6. PROVIDE CONDENSATE LINE FROM DOAS TO NEAREST STORM OR SANITARY SEWER LINE BELOW GRADE.
7. PROVIDE ELECTRICAL SERVICE TO NEW DOAS UNIT. MODIFY EXISTING ELECTRICAL AS REQUIRED. DEMO EXISTING ELECTRICAL TO EXISTING HVAC EQUIPMENT REMOVED UNDER THIS CONTRACT.
8. REMOVE EXISTING CEILINGS, CEILING GRID, AND CEILING TILES AS REQUIRED TO PERFORM WORK.
9. RE-INSTALL REMOVED CEILINGS, CEILING GRID, AND CEILING TILES. PATCH, PAINT REPAIR, REPLACE DAMAGED CEILINGS, CEILING GRID, AND CEILING TILES. NEW CEILING, CEILING GRID, AND CEILING TILES SHALL MATCH EXISTING.
10. CUTTING, PATCHING, REPAIRING, PAINTING, ETC. DAMAGED SURFACES/FINISHES.

SPECIAL PROJECT NOTES

1. ANY UTILITY OUTAGES SHALL BE COORDINATED WITH THE OWNER AND PROFESSIONAL AND SHALL BE PERFORMED DURING PERIODS CONVENIENT FOR THE OWNER. OUTAGES WILL LIKELY BE REQUIRED TO BE PERFORMED AT NIGHT, ON WEEKENDS, HOLIDAYS, ETC. (PERIODS OF LIGHT OR NO CAMPUS OCCUPANCY).

GENERAL NOTES

1. EACH CONTRACTOR, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT, COMPLIANCE WITH SPECIFICATIONS, PROPER ELECTRICAL SERVICE, AND AVOID CONFLICT WITH ANY OTHER BUILDING SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS.
2. ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC., MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED. ADDITIONAL ALLOWANCES SHALL BE INCLUDED FOR SAME AT EACH PROPOSERS' DISCRETION.
3. OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS (CITY, COUNTY, LOCAL, STATE, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, ETC.).
4. ALL SYSTEMS, EQUIPMENT, AND MATERIALS ARE TO BE INSTALLED IN A NEAT AN WORKMANLIKE MANNER. WORK NOT DONE SO SHALL BE REMOVED AND REINSTALLED SATISFACTORILY.
5. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEER BEFORE INSTALLATION. REFER ALSO TO ARCHITECTURAL WALL INTERIOR AND EXTERIOR WALL ELEVATIONS, CEILING HEIGHTS AND OTHER DETAILS OF THESE DOCUMENTS. REFERENCE SPECIFICATION 230010 "MECHANICAL GENERAL PROVISIONS" FOR COORDINATION DRAWING REQUIREMENTS.
6. DO NOT SCALE DRAWINGS, PRINTING DISTORTS SCALE. WORK SHALL BE LAID OUT FROM DIMENSIONED DRAWINGS, OR DIMENSIONS SUPPLIED TO THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THEIR WORK, ALL CUTTING AND PATCHING SHALL MATCH ADJACENT SURFACES.
8. THESE DRAWINGS ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE, HOWEVER LOCATIONS, DEPTHS, ELEVATIONS, AND SIZES WERE TAKEN FROM DIFFERENT SOURCES AND ARE SUBJECT TO DEVIATION. THE CONTRACTOR SHALL ASSUME SOME DEVIATIONS AND INCLUDE OFFSETS, ADDITIONAL PIPING, ETC. AT THE TIME OF BID.
9. ADVISE THE ENGINEER OF ANY CONFLICTS, ERRORS, OMISSIONS, ETC. AT LEAST TEN DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.
10. DEVIATION FROM SPECIFICATIONS OR PLANS REQUIRES PRIOR WRITTEN APPROVAL FROM THE ENGINEER AND MUST BE SUBMITTED IN WRITING NO LATER THAN TEN DAYS PRIOR TO THE BID DATE.
11. THE PURPOSE AND INTENT OF THE DOCUMENTS PERTAINING TO THIS PROJECT IS TO PROVIDE A COMPLETE, FUNCTIONAL, AND SAFE FACILITY, ANYTHING LESS SHALL BE UNACCEPTABLE.
12. ALL VIBRATING, OSCILLATING, NOISE PRODUCING OR ROTATING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY, VIBRATING, OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTOR'S EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION SHALL BE THAT OF THE ARCHITECT.
13. INSTALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DIRECTIONS. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ARCHITECT PRIOR TO INSTALLATION FOR CLARIFICATION.
14. ALL SUPPORTS FOR EQUIPMENT, DEVICES, OR FIXTURES SHALL BE UNIQUE FROM THE BUILDING STRUCTURE. DO NOT SUPPORT FROM OTHER TRADES, EQUIPMENT OR SUPPORTS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT AND CONSENT OF THE OTHER TRADE, IN WRITING.
15. DEVIATIONS IN SIZE, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT SPECIFIED SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ARCHITECT OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
16. THE GENERAL CONTRACTOR FOR THIS CONSTRUCTION IS RESPONSIBLE FOR THE COORDINATION, APPEARANCE, SCHEDULING, AND TIMELINESS OF THE WORK OF ALL TRADES, CONTRACTORS, SUPPLIERS, INSTALLERS, ETC.
17. THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, AND ALL OTHER CONTRACTORS SHALL ENSURE PROPER COORDINATION BETWEEN ALL TRADES SUCH THAT CONDUITS, PIPING, DUCTWORK, ETC. DO NOT BLOCK ACCESS TO VALVES, EQUIPMENT, DUCT ACCESS DOORS, ETC. ITEMS THAT HAVE BEEN INSTALLED WHERE ACCESS IS COMPROMISED SHALL BE RELOCATED AT THE CONTRACTOR'S EXPENSE.
18. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ALL COSTS ASSOCIATED WITH DRAINING, FLUSHING, AND FILLING PIPING SYSTEMS AS REQUIRED TO INSTALL THEIR NEW WORK.
19. PRIOR TO ORDERING ANY MATERIALS OR ROUGH-IN OF ANY KIND, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF ALL ELECTRICAL REQUIREMENTS (I.E., VOLTAGE, PHASE, CIRCUIT BREAKER, WIRING SIZE, ETC.) WITH THE ELECTRICAL CONTRACTOR. THERE WILL BE NO CHANGE IN THE CONTRACT AMOUNT FOR ANY DISCREPANCIES. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER CONTRACTORS, VENDORS, AND SUPPLIERS AND SHALL INSURE COMPLETE, 100% FUNCTIONAL, TESTED, INSPECTED, AND APPROVED SYSTEMS. CLAIMS FOR ADDITIONAL COST OR CHANGE ORDERS WILL IMMEDIATELY BE REJECTED.
20. EQUIPMENT BRACING WILL BE INCLUDED FOR ALL OVERHEAD UTILITIES AND OTHER EQUIPMENT WEIGHING 31 POUNDS OR MORE (EXCLUDING DISTRIBUTED SYSTEMS SUCH AS PIPING, ETC.). BRACING SHALL BE ACCOMPLISHED BY EITHER RIGID OR FLEXIBLE SYSTEMS. ALL EQUIPMENT MOUNTINGS SHALL BE DESIGNED TO RESIST FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT IN ANY DIRECTION AND 1.5 TIMES THE EQUIPMENT WEIGHT IN THE DOWNWARD DIRECTION. ALL BRACING SHALL BE CONTRACTOR DESIGNED.

DRAWING INDEX

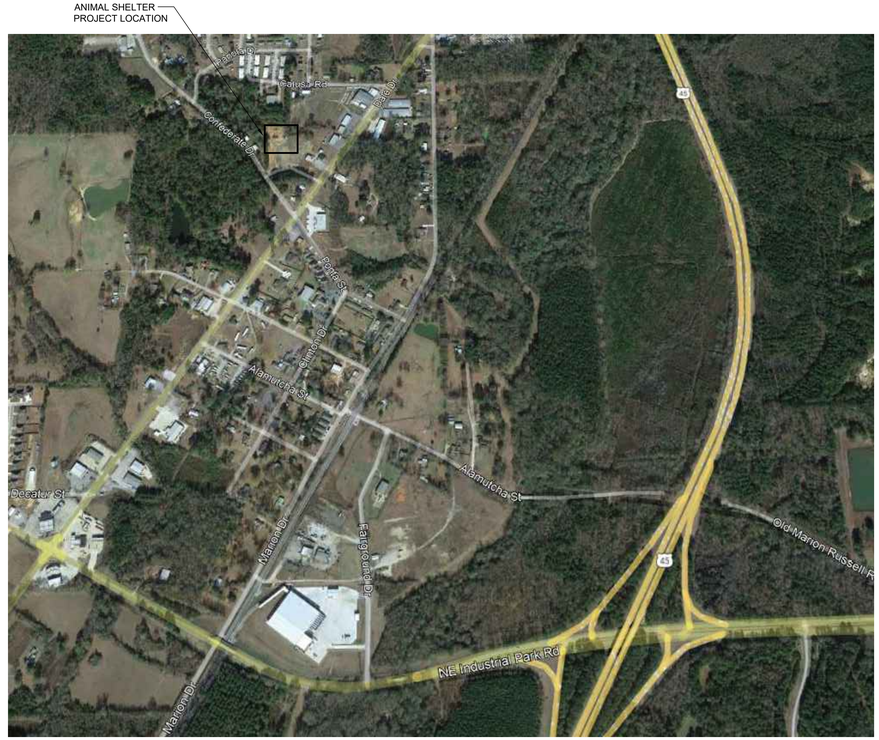
DWG. NO.	DESCRIPTION
T0.1	TITLE SHEET
MECHANICAL	
M0.1	HVAC LEGEND AND ABBREVIATIONS
MD1.1	FIRST FLOOR PLAN - MECHANICAL DEMOLITION
M1.1	FIRST FLOOR PLAN - MECHANICAL
M4.1	DETAIL OF MODULAR DOAS-1
M5.1	MECHANICAL DETAILS
M6.1	MECHANICAL SCHEDULES
M7.1	MECHANICAL CONTROLS
ELECTRICAL	
E101	ELECTRICAL DRAWINGS

HVAC UPGRADES
LAUDERDALE COUNTY
ANIMAL SHELTER

MARION, MISSISSIPPI

CONSTRUCTION DOCUMENTS
SEPTEMBER 19, 2024

PROJECT MAP



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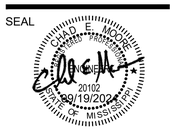

SHEET TITLE:
TITLE SHEET

SHEET NUMBER
T0.1

MECHANICAL LEGEND

DUCTWORK

	RADIUS ELBOW
	ELBOW WITH TURNING VANES
	RECTANGULAR BRANCH TAKEOFF WITH BALANCING DAMPER
	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN OR EXHAUST DUCT UP
	RECTANGULAR RETURN OR EXHAUST DUCT DOWN
	ROUND DUCT, UP
	ROUND DUCT, DOWN
18x12 / 18x12	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
18 ϕ / 18 ϕ	ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)
	VOLUME DAMPER
2-1	4 WAY CLG DIFFUSER

PIPING

—G—	GAS PIPING
—CD—	GRAVITY CONDENSATE DRAIN PIPING

CONTROLS

CO2	CARBON DIOXIDE SENSOR
H	HUMIDITY SENSOR
T	THERMOSTAT
T/C	TIME CLOCK
	WALL OR CEILING MOTION HEAT SENSOR

MISCELLANEOUS

CT 1-1	EQUIPMENT TYPE / EQUIPMENT NUMBER — EQUIPMENT DESIGNATION
	EXISTING EQUIPMENT, PIPING, OR DUCTWORK TO REMAIN IN SERVICE.
	EXISTING EQUIPMENT, PIPING, OR DUCTWORK TO BE REMOVE.
	NEW CONNECTION TO EXISTING PIPING, DUCTWORK AND/OR EQUIPMENT
	NORTH DIRECTION SYMBOL

DIFFUSER SCHEDULE TAG (AND LENGTH OR NECK SIZE FOR LINEAR OR SIDEWALL LOUVER DIFFUSERS ONLY)

AIR THROW PATTERN WHERE INDICATED (ALL DEVICES ARE 4 -WAY THROW IF NOT INDICATED OTHERWISE)

A-12x12"
200-2A

CFM

DIFFUSER, RETURN, & EXHAUST GRILLE TAG

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AMPS	AMPERAGE
BD	BALANCING DAMPER
BHP	BRAKE HORSE POWER
BMS	BUILDING MANAGEMENT SYSTEM
BPD	BYPASS DAMPER
BTU	BRITISH THERMAL UNIT
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE CFM
CO	CLEAN OUT
CRA	CONDITIONING RETURN AIR
CSA	CONDITIONING SUPPLY AIR
CTG	CEILING TRANSFER GRILLE
CU	CONDENSING UNIT
DAD	DUCT ACCESS DOOR
DB	DRY BULB
DH	DEHUMIDIFIER
DIA	DIAMETER
DN	DOWN
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
°F	DEGREES FAHRENHEIT
FC	FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FLR	FLOOR
FT	FEET
GF	GAS FURNACE
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
ID	INSIDE DIMENSION
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCK ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
M	MOTORIZED DAMPER
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFG	MANUFACTURER
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MUA	MAKE UP AIR UNIT
NC	NORMALLY CLOSED
NFA	NET FREE AREA
NIC	NOT IN THIS CONTRACT
NR	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIMENSION
PH OR Ø	PHASE
PD	PRESSURE DROP
PSA	PRIMARY SUPPLY AIR
PSI	POUNDS PER SQUARE INCH (GUAGE)
QTY	QUANTITY
RA	RETURN AIR
REFR	REFRIGERANT
RH	RELATIVE HUMIDITY
RLA	RUN LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
REQ'D	REQUIRED
SA	SUPPLY AIR
SENS	SENSIBLE
SD	SMOKE DAMPER
SQFT	SQUARE FEET
SP	STATIC PRESSURE
TA	TRANSFER AIR
TYP	TYPICAL
V	VOLTS
VAV	VARIABLE AIR VOLUME
VAVD	VARIABLE AIR VOLUME DAMPER
VEA	VENTILATION EXHAUST AIR
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VD	VOLUME DAMPER
VTR	VENT THRU ROOF
W/	WITH
WB	WET BULB
WSR	WALL SUPPLY REGISTER

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1
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3

SEAL

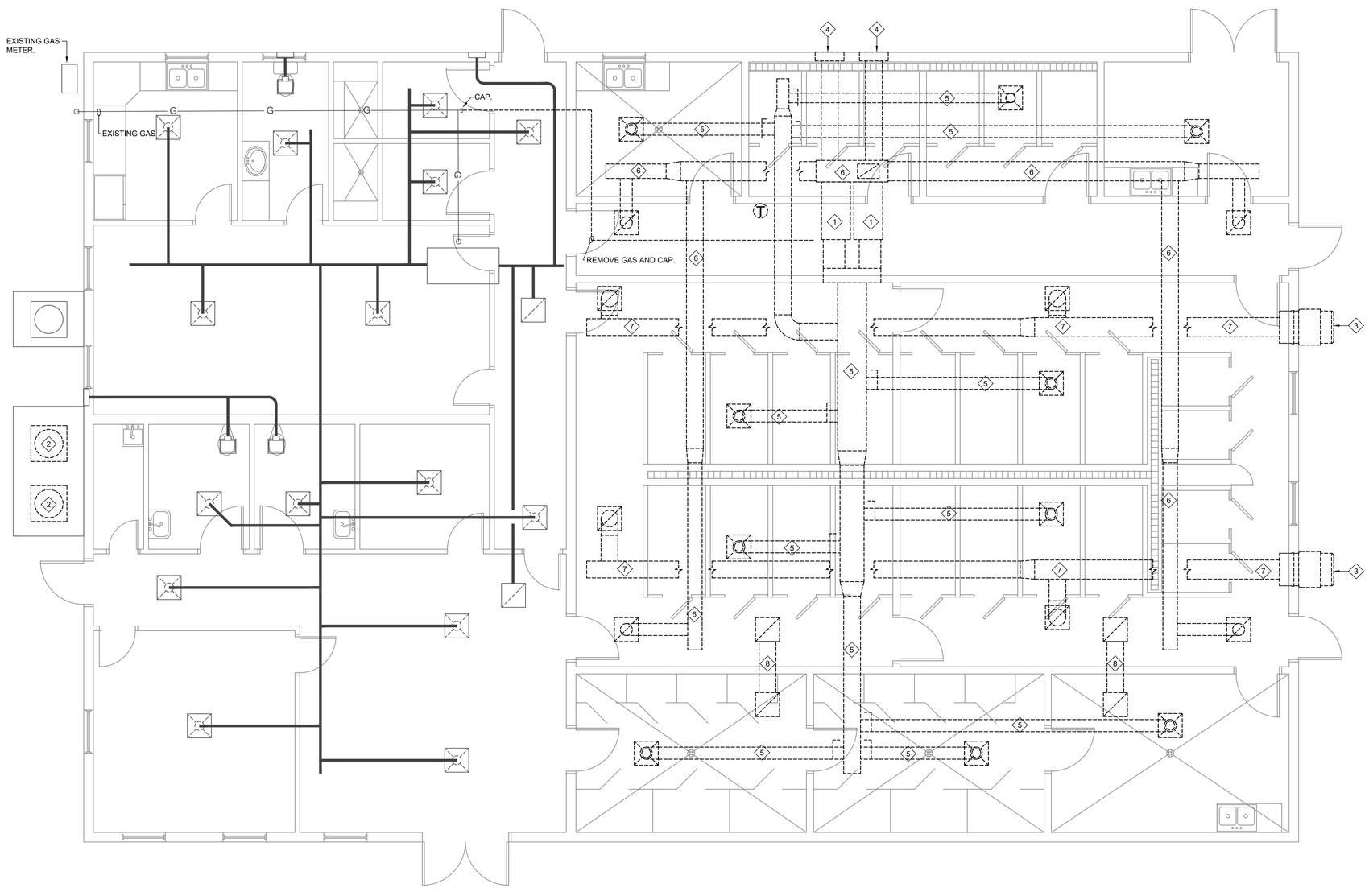
CHAD E. MOORE — 20102 — STATE OF MISSISSIPPI — REGISTERED PROFESSIONAL ENGINEER — 09/19/2024

SHEET TITLE:

MECHANICAL ABBREVIATIONS, LEGEND AND NOTES

SHEET NUMBER

M0.1



FIRST FLOOR PLAN - MECHANICAL DEMOLITION
SCALE:1/4" = 1'-0"

CONSTRUCTION DOCUMENTS

GENERAL NOTES:

A. REMOVE BUILDING COMPONENTS AS REQUIRED TO REMOVE EXISTING HVAC SYSTEMS/EQUIPMENT AND INSTALL NEW SYSTEMS/EQUIPMENT.
B. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, REPAIRING AND REFINISHING ALL SURFACES AND FINISHES DAMAGED OR DISTURBED AS PART OF WORK PERFORMED UNDER THIS CONTRACT.

PLAN NOTES: (X)

1. REMOVE EXISTING GAS FIRED AIR HANDING UNIT, CONTROLS, IN ITS ENTIRETY. CAP FLUE BELOW ROOF WATER TIGHT.
2. REMOVE EXISTING CONDENSING UNIT, REFRIGERANT PIPING, CONTROLS, IN ITS ENTIRETY.
3. REMOVE EXISTING SIDEWALL MOUNTED EXHAUST FAN IN ITS ENTIRETY. PATCH WALL TO MATCH EXISTING.
4. REMOVE EXISTING OUTSIDE AIR INTAKES. PATCH WALL TO MATCH EXISTING.
5. REMOVE EXISTING SUPPLY AIR DUCTWORK AND DIFFUSERS IN ITS ENTIRETY.
6. REMOVE EXISTING RETURN AIR DUCTWORK AND GRILLES IN ITS ENTIRETY.
7. REMOVE EXISTING EXHAUST DUCTWORK AND GRILLES IN ITS ENTIRETY.
8. REMOVE EXISTING TRANSFER AIR DUCTWORK AND GRILLES.

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20102
09/19/2024
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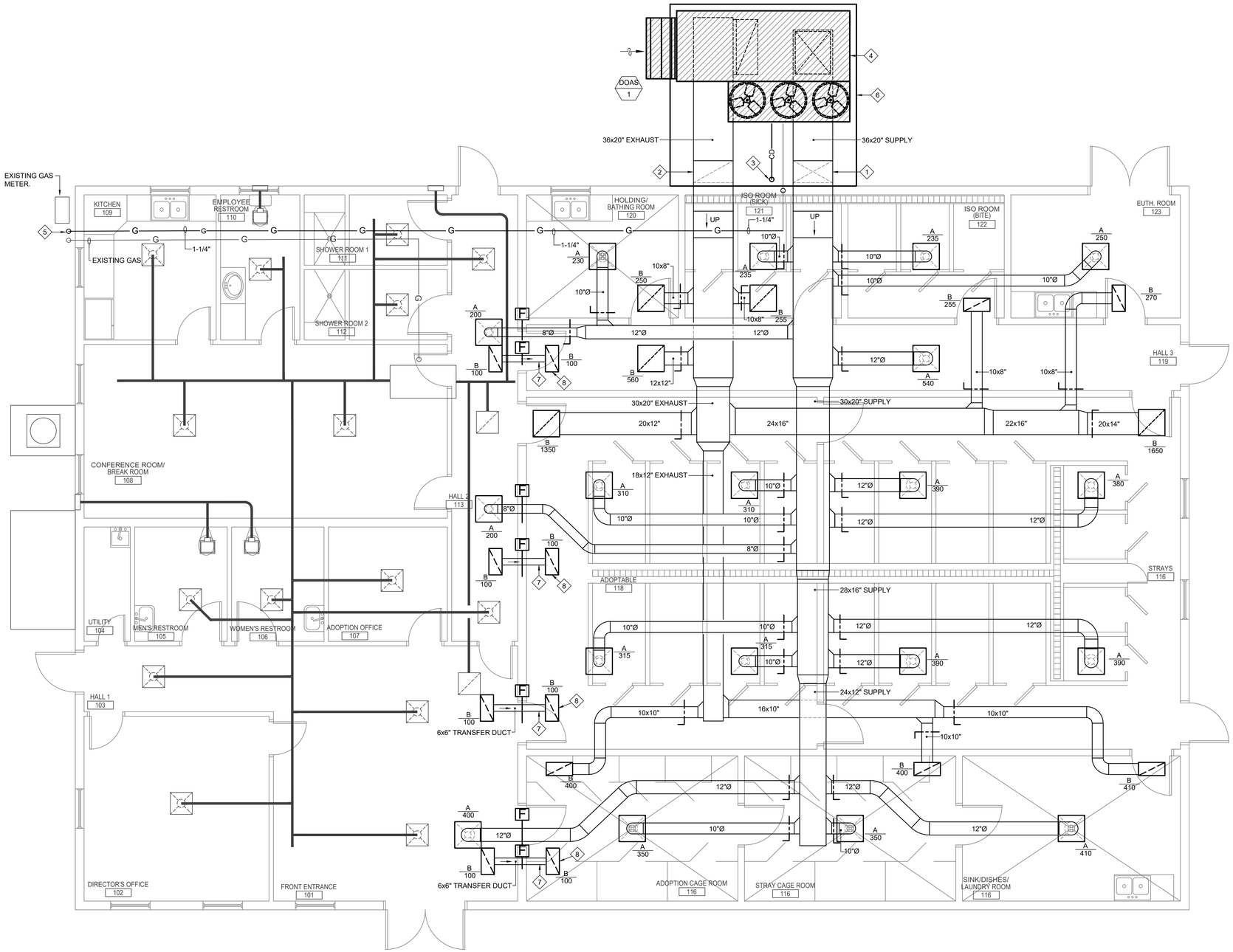
SHEET TITLE:

FIRST FLOOR PLAN - MECHANICAL DEMOLITION

SHEET NUMBER

MD1.1



FIRST FLOOR PLAN - MECHANICAL

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

CONSTRUCTION DOCUMENTS

GENERAL NOTES:

A. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, REPAIRING AND REFINISHING ALL SURFACES AND FINISHES DAMAGED OR DISTURBED AS PART OF WORK PERFORMED UNDER THIS CONTRACT.

B. CONTRACTOR SHALL BE RESPONSIBLE OF FRAMING, FLASHING, AND WEATHERPROOFING NEW EXTERIOR WALL PENETRATIONS FOR NEW DUCTWORK.

C. TRANSFER AIR DUCTS SHALL BE LINED WITH 1" THICK DUCT LINER (TYPE AL PER SPECIFICATION SECTION 230713 - DUCT INSULATION)

D. PROVIDE AND INSTALL 1-1/2 HR FIRE DAMPER IN SUPPLY AND TRANSFER AIR DUCTS PENETRATING THE FIRE RATED DEMISING WALL. FIRE DAMPERS SHALL BE EQUAL TO RUSKIN DIBD2. FIRE CAULK AROUND FIRE DAMPER TO PROVIDE A UL LISTED FIRE STOPPING ASSEMBLY.

PLAN NOTES:

1. SUPPLY AIR DUCTWORK TO RISE UP WALL AND ENTER ATTIC SPACE. ADJUST CEILING HEIGHT AS REQUIRED FOR DUCTWORK INSTALLATION.
2. EXHAUST AIR DUCTWORK TO RISE UP WALL AND ENTER ATTIC SPACE. ADJUST CEILING HEIGHT AS REQUIRED FOR DUCTWORK INSTALLATION.
3. ROUTE 2" CONDENSATE DRAIN TO NEAREST STORM OR SANITARY SEWER BELOW GRADE. STUB UP NEW SEWER LINE IN NEW CONCRETE PAD AND TERMINATE WITH HUB DRAIN.
4. CONTRACTOR TO INSTALL MIN 6" REINFORCED CONCRETE PAD IN EXISTING PARKING LOT AS REQUIRED FOR LEVEL UNIT OPERATION. PROVIDE MIN. 32" UNIT CURB FOR DOWN DISCHARGE DUCTWORK INSTALLATION.
5. CONNECT NEW 1-1/4" GAS LINE TO NEAREST 1-1/4 OR LARGER. FIELD VERIFY. SET REGULATOR FOR 410 CFH.
6. NEW 6" THICK REINFORCED CONCRETE EQUIPMENT PAD. SEE PAD MOUNTED HVAC PACKAGED UNIT DETAIL SHEET M5.1.
7. CONNECT 6" TYPE 6 ACOUSTICAL INSULATED FLEXIBLE DUCT TO THE EXHAUST GRILLE AND FIRE DAMPER (TYPICAL BOTH SIDES OF THE FIRE DAMPER). REFER TO SPECIFICATION SECTION 233113 - METAL DUCTS FOR TYPE 6 ACOUSTICAL FLEXIBLE DUCT SPECIFICATIONS.
8. PROVIDE OPPOSED BLADE VOLUME DAMPER IN RA GRILLE. BALANCE TO SPECIFIED CFM.

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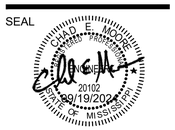
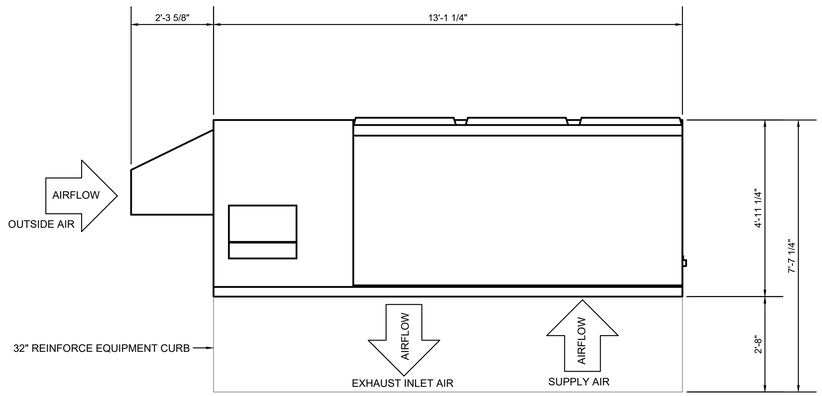


SHEET TITLE:

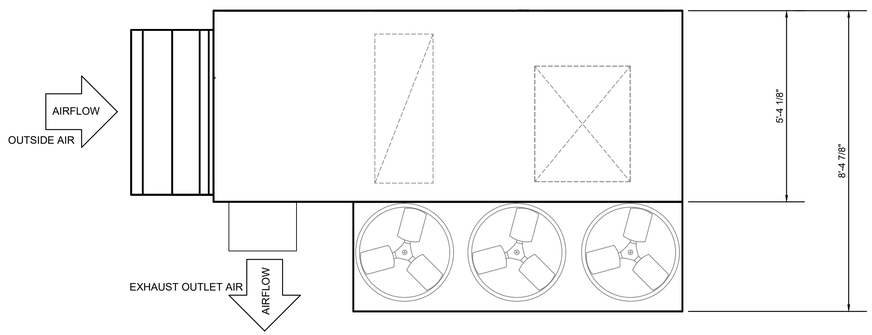
FIRST FLOOR PLAN - MECHANICAL

SHEET NUMBER

M1.1



DOAS SIDE ELEVATION VIEW



DOAS PLAN VIEW

1 / M4.1 DETAIL OF MODULAR DOAS-1

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

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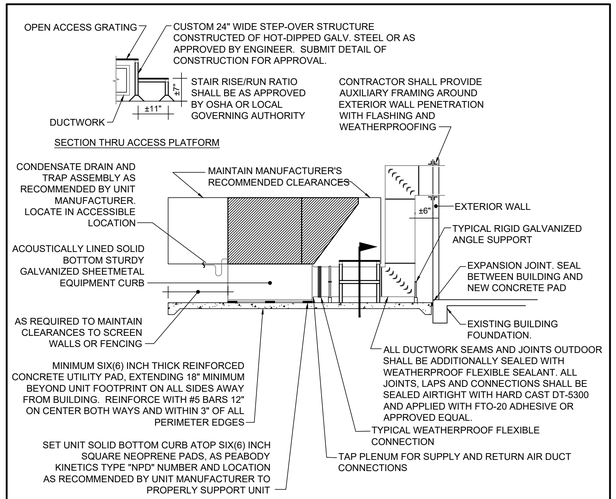
CHAD E. MOORE
LICENSED PROFESSIONAL ENGINEER
20102
09/19/2024
STATE OF MISSISSIPPI

SHEET TITLE:

DETAIL OF MODULAR DOAS-1

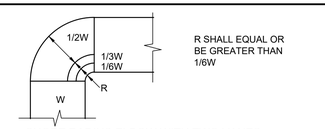
SHEET NUMBER

M4.1

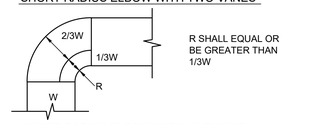


NOTE:
DUCTWORK AND AUXILIARY SUPPORTS SHALL BE NEATLY PRIMED AND PAINTED BY CONTRACTOR, WITH AN ALKYD-BASED RUST INHIBITIVE APPROVED PAINT SYSTEM

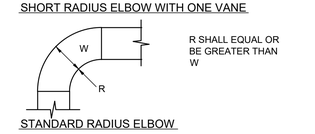
PAD MOUNTED HVAC PACKAGED UNIT DETAIL — NO SCALE



SHORT RADIUS ELBOW WITH TWO VANES



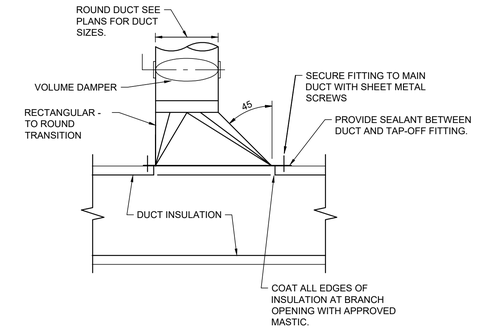
SHORT RADIUS ELBOW WITH ONE VANE



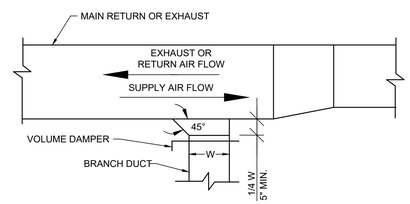
STANDARD RADIUS ELBOW

NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL RADIUS ELBOWS SHOWN ON PLANS SHALL BE STANDARD RADIUS ELBOWS. SHORT RADIUS ELBOWS SHALL BE USED ONLY WHERE APPROVED BY THE ENGINEER. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

DETAILS OF RADIUS ELBOWS — NO SCALE

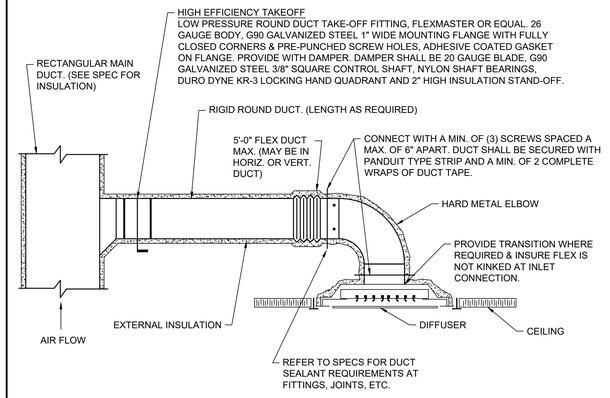


TAP - OFF FITTING FOR ROUND BRANCH DUCT TAP, TYPE "A" DETAIL — NO SCALE

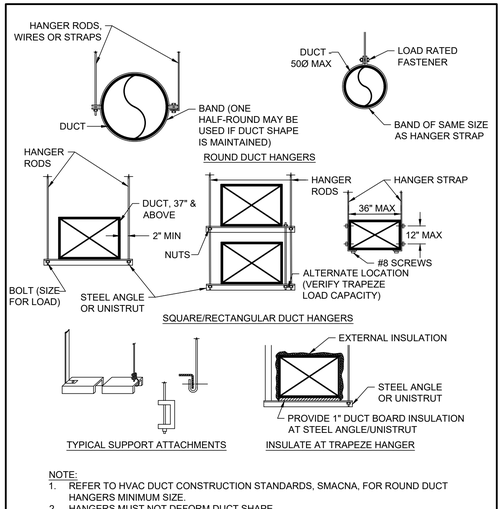


NOTE: SUPPLY DUCT TAP SIMILAR, EXCEPT AIR FLOW IS IN OPPOSITE DIRECTION

DETAIL OF SUPPLY, EXHAUST AND/OR RETURN BRANCH DUCT TAP, TYPE "B" — NO SCALE

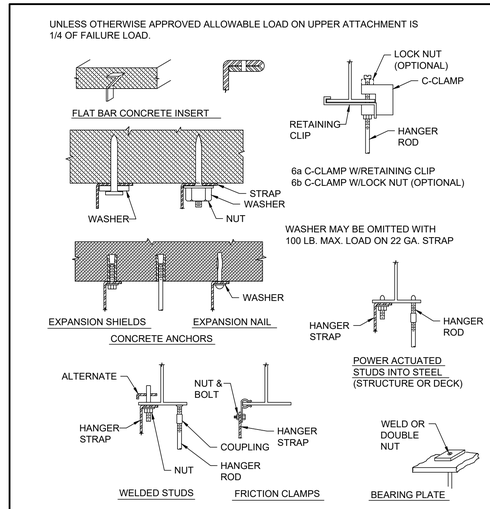


TYPICAL ROUND SUPPLY BRANCH DUCT DETAIL — NO SCALE



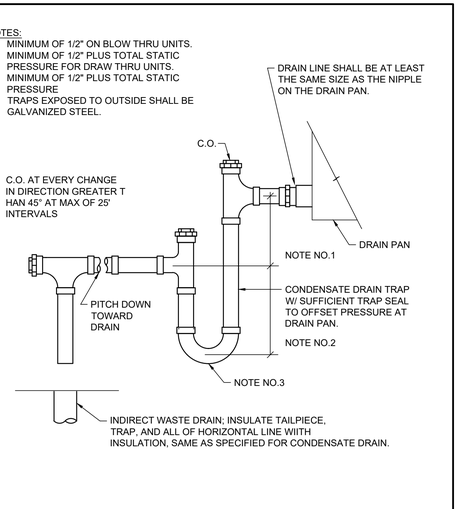
NOTE:
1. REFER TO HVAC DUCT CONSTRUCTION STANDARDS, SMACNA, FOR ROUND DUCT HANGERS MINIMUM SIZE.
2. HANGERS MUST NOT DEFORM DUCT SHAPE.

DUCTWORK LOWER HANGER ATTACHMENTS DETAIL — NO SCALE



UPPER ATTACHEMENT DEVICES — NO SCALE

NOTES:
1. MINIMUM OF 1/2" ON BLOW THRU UNITS. MINIMUM OF 1/2" PLUS TOTAL STATIC PRESSURE FOR DRAW THRU UNITS.
2. MINIMUM OF 1/2" PLUS TOTAL STATIC PRESSURE
3. TRAPS EXPOSED TO OUTSIDE SHALL BE GALVANIZED STEEL.



(#) CONDENSATE DRAIN TRAP DETAIL — NO SCALE

CONSTRUCTION DOCUMENTS

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350 EDGEWOOD TERRACE DRIVE
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JACKSON, MS 39206
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PROJECT:

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LAUDERDALE COUNTY
ANIMAL SHELTER

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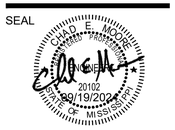

SHEET TITLE:

MECHANICAL DETAILS

SHEET NUMBER

M5.1

DEDICATED OUTDOOR AIR SYSTEM (OUTDOOR PACKAGED UNIT)

TAG	BASIS OF DESIGN	SUPPLY FAN				EXHAUST FAN				DX COOLING							HGRH (MBH)	GAS HEAT				ENERGY WHEEL (SUMMER)									ENERGY WHEEL (WINTER)									FILTER			ELECTRICAL DATA					OP WT (LBS.)
		TOTAL CFM	ESP	QTY	MOTOR HP	TOTAL CFM	ESP	QTY	MOTOR HP	EDB	LDB	CAPACITY, MBH		FPI	MIN EER	MIN IEER		EAT	INPUT (MBH)	OUTPUT (MBH)	MIN. EFF.	OUTDOOR AIR				EXHAUST AIR				EFF.	OUTDOOR AIR				EXHAUST AIR				EFF.	TYPE	DEPTH	MERV	V/Ø	COMPRESSOR RLA	CONDENSER FLA	MCA	MOP	
										EWB	LWB	TOTAL	SENS	ROWS								EDB	EWB	LDB	LWB	EDB	EWB	LDB	LWB		EDB	EWB	LDB	LWB	EDB	EWB	LDB	LWB										
DOAS 1	AAON RN-025-8-0	6,200	1.0	1	7.5	5,800	1.0	1	5	78.3	52.3	323.47	308.4	12	11.6	12.7	118	20.0	270	218	80%	86.0	77.3	78.3	69.6	75.0	62.4	83.0	71.5	68.8	20.0	19.0	54.0	40.9	70.0	50.0	32.7	28.8	67.0	PLEATED	4"	8	208/3	48.1 48.1	(3) @ 7	173	200	3,724
										69.6	52.2			6																																
REMARKS																																															
CONFIGURE FOR SPACE TEMPERATURE, HUMIDITY CONTROL, & BUILDING PRESSURE CONTROL. PROVIDE WITH 10:1 MODULATING GAS HEAT, HIGH EFFICIENCY EC SUPPLY/EXHAUST MOTOR, OUTSIDE AIR, RETURN AIR AND EXHAUST AIR MODULATING POWERED DAMPER WITH BUILDING PRESSURE CONTROL, INVERTER SCROLL + FIXED SCROLL COMPRESSORS, FACTORY WIRED DISCONNECT, UNIT POWERED 115V GFI OUTLET, PHASE FAILURE MONITOR, BACNET IP CARD, REMOTE CONTROLLER, SPACE TEMPERATURE AND HUMIDITY SENSOR, BUILDING PRESSURE TRANSDUCER & ACCESSORIES, MIN 32" CURB.																																														

AIR DISTRIBUTION DEVICE SCHEDULE

TAG	TYPE	MANUFACTURER & MODEL NO.	NECK SIZE	FACE SIZE	REMARKS
A	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE SPD	SEE PLANS/ SCHEDULE BELOW	SEE PLANS/ SCHEDULE BELOW	24"x24" OR 12"x12" FACE SIZE AS INDICATED ON PLANS. PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT. NECK SIZE TO BE AS INDICATED ON PLANS OR CONNECTION SCHEDULE BELOW.
B	CEILING MOUNTED EXHAUST AIR DEVICE	PRICE 80	SEE PLANS/ SCHEDULE BELOW	SEE PLANS/ SCHEDULE BELOW	24x24" OR 24"x12" FACE SIZE AS INDICATED ON PLANS. PROVIDE ALL SURFACE MOUNTED GRILLES WITH SCREW HOLES. NECK SIZE TO BE AS INDICATED ON PLANS OR CONNECTION SCHEDULE BELOW.

NOTES:

1. CEILING DIFFUSERS ARE 4-WAY UNLESS OTHERWISE NOTED BY SHADING ON PLANS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE AND CONSTRUCTION DETAILS.
3. AIR DEVICE FRAME AND STYLE SHALL MATCH CEILING TYPE. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN.
4. REFER TO ARCHITECT FOR FINISHES AND COLOR OF DEVICES.
5. FACE SIZE TO BE NECK SIZE PLUS 2".
6. PROVIDE OPPOSED BLADE VOLUME DAMPER IN TRANSFER AIR GRILLES (QTY 4.)

AIR DEVICE CONNECTION SCHEDULE

AIR QUANTITY (CFM)	CEILING MOUNTED NECK SIZE	SIDEWALL MOUNTED NECK SIZE	EXHAUST AIR GRILLE NECK SIZE	BRANCH DUCT SIZE	
				ROUND	ALTERNATE RECTANGULAR DUCT
0-100	6"Ø	8x4"	8x8"	6"Ø	8x4"
101-200	8"Ø	10x6"	8x8"	8"Ø	10x6"
201-350	10"Ø	12x8"	10x10"	10"Ø	12x8"
351-600	12"Ø	14x10"	12x12"	12"Ø	14x10"
601-850	14"Ø	16x12"	14x14"	14"Ø	16x12"
851-1200	16"Ø	18x16"	16x16"	16"Ø	18x16"

CONSTRUCTION DOCUMENTS

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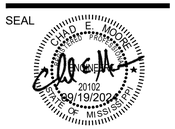
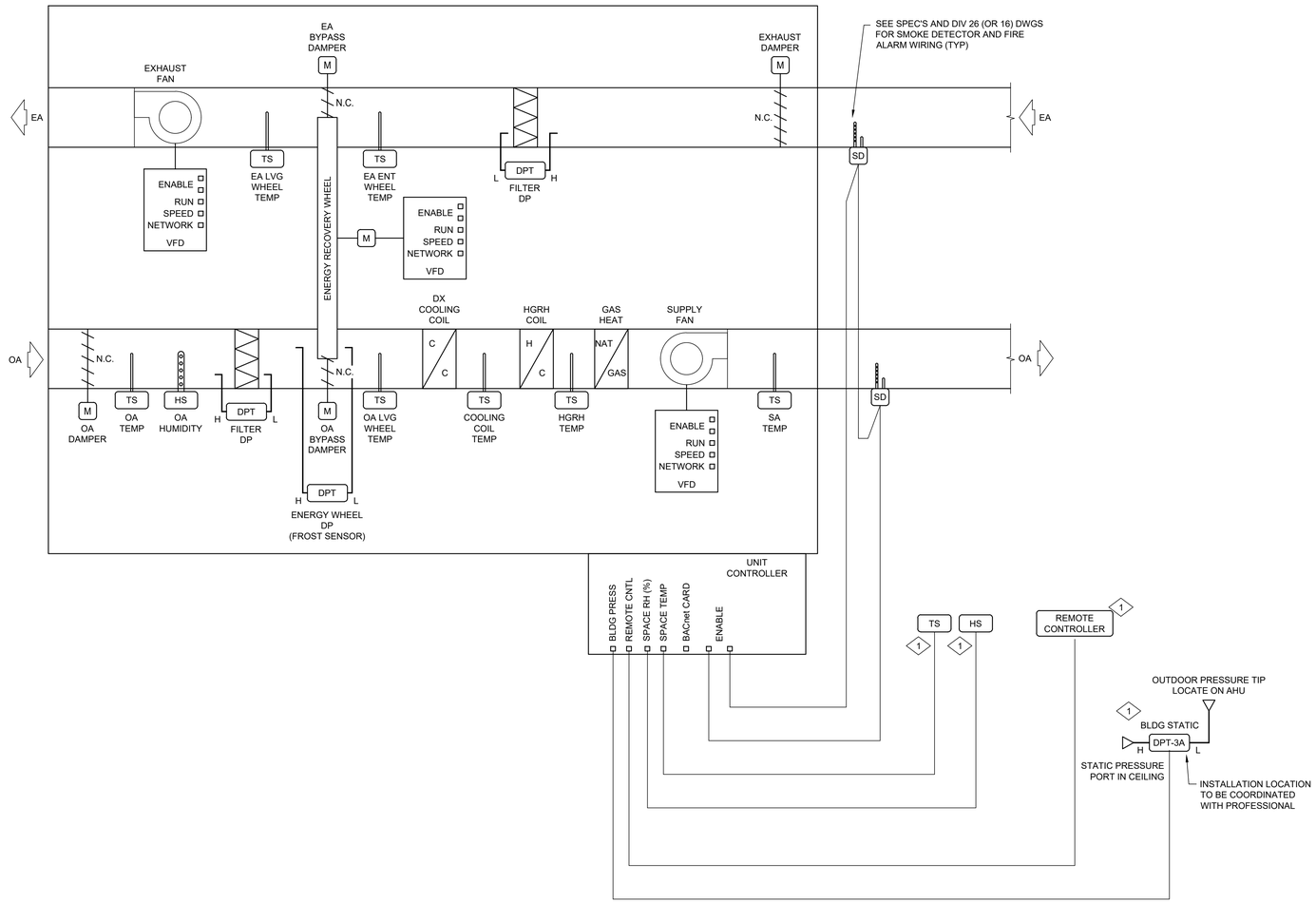


SHEET TITLE:

MECHANICAL SCHEDULES

SHEET NUMBER

M6.1



1 M7.1 OUTDOOR AIR UNIT (DOAS) CONTROL SCHEMATIC

NO SCALE

NOTES

1. CONTROL DEVICES PROVIDED BY DOAS MANUFACTURER, FIELD INSTALLED AND WIRED BY DIVISION 23 HVAC CONTRACTOR.

DOAS SEQUENCE OF OPERATION

General: Constant Volume (CV) Dedicated Outdoor Air System (DOAS) with energy recovery wheel, Direct Expansion (DX) cooling coil, hot-gas reheat coil, natural gas furnace, supply fan and exhaust fan. Unit shall be controlled by its internal Direct-Digital Controller.

DOAS System Modes: DOAS system modes are the same as the mode of the Zone Group served by the system. When Zone Groups served by the DOAS are in different modes, the following hierarchy applies (highest one sets DOAS mode):

1. Occupied mode
2. Unoccupied mode

Fan Control:

1. Supply Fan and Exhaust Fan Start/Stop
   - 1.1. DOAS supply fan and exhaust fans shall run when the system is Occupied and shall be off in Unoccupied Mode.
   - 1.2. DOAS unit controller shall command the outdoor and exhaust air dampers open whenever the DOAS is enabled. Dampers shall be closed when unit is disabled.
   - 1.3. DOAS shall be hard-wire interlocked through smoke detectors. Unit shall be shutdown when the smoke detector auxiliary contacts are energized.
2. Supply Fan Speed Control:
   - 2.1. Supply fan VFD speed shall be set to run at the speed corresponding to its design air flow rate when the fan is proven on. Division 23 HVAC contractor shall coordinate with Testing, Adjusting, and Balancing Agency to determine exact VFD speed setpoint.
3. Exhaust Fan Speed Control:
   - 3.1. Exhaust fan VFD speed shall be set to run at the speed corresponding to its design air flow rate when the fan is proven on. Division 23 HVAC contractor shall coordinate with Testing, Adjusting, and Balancing Agency to determine exact VFD speed setpoint. Exact exhaust air flow rate shall be determined by TAB Agency that provides both code required exhaust and a positive building pressurization of 0.05 inches w.c. (adjustable).

Enthalpy Wheel Control:

1. Energy recovery wheel control shall be enabled when the supply fan is proven on.
2. Energy recovery wheel control logic:
   - 2.1. OA temperature < 55°F (adjustable): Leaving energy recovery wheel air temperature (outdoor air side) shall be controlled to the supply air temperature setpoint using a PID loop whose output is mapped to sequence the energy recovery wheel and wheel bypass dampers.
   - 2.2. 55°F >= OA temperature >= 69°F (adjustable): Energy recovery wheel is off and bypass dampers open.
   - 2.3. OA temperature > 69°F (adjustable): Energy recovery wheel shall be at full speed and bypass dampers closed.

Cooling Mode:

1. Unit controller shall measure the zone temperature and stage the cooling to maintain the zone cooling set point.

Heating Mode:

1. Unit controller shall measure the zone temperature and stage the heating to maintain the zone heating set point.

Dehumidification Mode:

1. Dehumidification mode shall be enabled when the zone relative humidity exceeds the high-limit set point for 10 minutes. Initial high-limit set point shall be 55% RH.
2. Unit controller shall measure the zone relative humidity and override the cooling sequence to maintain the zone humidity at or below 55% (adj.). During dehumidification mode the hot gas reheat shall be modulated to maintain the zone temperature at the Occupied zone cooling set point.

Safeties and Interlocks:

1. Supply fan shall be hardwire interlocked through the unit smoke detector(s) to shut down the unit upon smoke detection.

CONSTRUCTION DOCUMENTS

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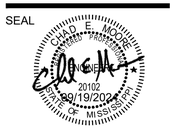
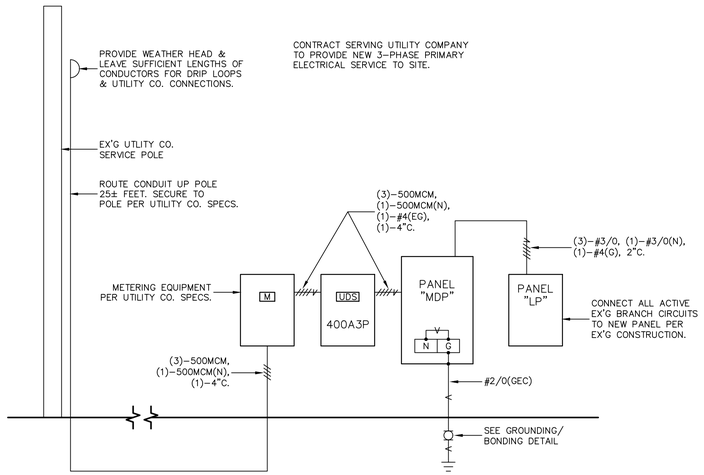


SHEET TITLE:

MECHANICAL CONTROLS

SHEET NUMBER

M7.1



2 / E101

ELECTRICAL SERVICE & DISTRIBUTION SYS. SCHEMATIC POWER RISER DIAGRAM

NO SCALE

PANEL "MPD" SCHEDULE

CIRCUIT	POLES	AMPS	LOAD	REMARKS
1	3	200	DOAS-1	VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4 WITH GROUND BUS MAIN BUS: 400A NEUT. BUS: 400A MOUNTING: NEMA 3R MIN. K.A.I.C.: 22
2	3	200	PNL. LP	
3	3	225	SPACE	
4	3	225	SPACE	

NEW LOAD (DOAS-1): 160A @ 208V/3PH, 57.6KVA

PANEL "LP" SCHEDULE

CIRCUIT	POLES	AMPS	LOAD	REMARKS
1-29	1	20	EX'G	VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4 WITH GROUND BUS MAIN BUS: 200A NEUT. BUS: 200A MOUNTING: SURFACE MIN. K.A.I.C.: 22
30-33	2	50	EX'G	
34-35	2	30	EX'G	

RE-SERVE ALL ACTIVE EX'G BRANCH CIRCUITS FROM NEW PANEL. ARRANGE C/B'S AS REQUIRED & CONNECT LOADS PER EX'G CONSTRUCTION.

POWER RACEWAYS & BOXES SYMBOLS LEGEND

- BRANCH CIRCUIT (CONDUIT & WIRING) CONCEALED ABOVE CEILING OR IN WALL, NUMBER OF CONDUCTORS, (V) INDICATES EQUIP. GROUNDING CONDUCTOR SIZED PER BRANCH CIRCUIT UNLESS INDICATED OTHERWISE.
- BRANCH CIRCUIT (CONDUIT & WIRING) CONCEALED IN/UNDER FLOOR SLAB PER THE SPECS. OR BELOW THE FINISHED GRADE PER THE SPECS., NUMBER OF CONDUCTORS WITH EQUIPMENT GROUNDING CONDUCTOR (V).
- BRANCH CIRCUIT (CONDUIT & WIRING), FLEXIBLE METALLIC CONDUIT (FMC) UNLESS INDICATED OTHERWISE, NUMBER OF CONDUCTORS WITH EQUIPMENT GROUNDING CONDUCTOR (V).
- BRANCH CIRCUIT (CONDUIT & WIRING), LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC), NUMBER OF CONDUCTORS WITH EQUIPMENT GROUNDING CONDUCTOR (V).
- BRANCH CIRCUIT(S) (CONDUIT & WIRING) HOMERUN, PANEL & CIRCUIT DESIGNATION(S), ROUTE CONCEALED, NUMBER OF CONDUCTORS, (V) INDICATE'S EQUIPMENT GROUNDING CONDUCTOR, MINIMUM 3/4" CONDUIT, ALL HOMERUNS GREATER THAN 75 FT. IN LENGTH SHALL USE MINIMUM #10 AWG CONDUCTORS.
- BRANCH CIRCUIT(S) (CONDUIT & WIRING) HOMERUN, PANEL & CIRCUIT DESIGNATION(S), ROUTE CONCEALED IN/UNDER FLOOR SLAB OR BELOW FINISHED GRADE PER THE SPECS. NUMBER OF CONDUCTORS, (V) INDICATES EQUIPMENT GROUNDING CONDUCTOR, MINIMUM 3/4" CONDUIT, ALL HOMERUNS GREATER THAN 75 FT. IN LENGTH SHALL USE MINIMUM #10 AWG CONDUCTORS.
- J — SURFACE JUNCTION BOX WITH COVER, SIZE & MOUNTING HEIGHT AS INDICATED, MINIMUM BOX SIZE SHALL BE 4" SQUARE.
- FJ — FLUSH JUNCTION BOX WITH PLATE, SIZE & MOUNTING HEIGHT AS INDICATED, MINIMUM BOX SIZE SHALL BE 4" SQUARE WITH 1 GANG RAISED COVER.
- BRANCH CIRCUIT HOMERUN JUNCTION BOX, 4" SQUARE MINIMUM, MOUNT ABOVE ACCESSIBLE CEILING WHERE PRESENT, AT OVERHEAD STRUCTURE OR AS INDICATED.
- UGS — DUCT BANK & CONDUCTORS, UNDERGROUND, SECONDARY, CONDUCTOR & CONDUIT ELECTRICAL CHARACTERISTICS AS INDICATED, LOCATION & ROUTING SHOWN ARE APPROXIMATE & REPRESENTATIVE.

EQUIPMENT ELECTRICAL SERVICES SYMBOLS LEGEND

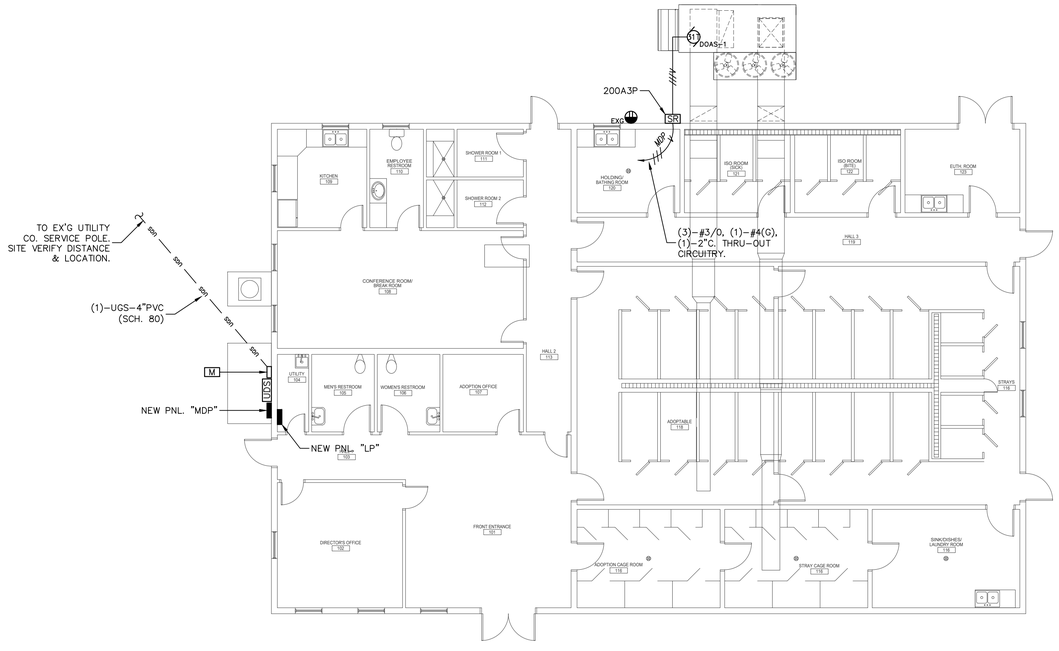
- XX — EQUIPMENT POWER CONNECTION MARK, SEE EQUIPMENT ELEC. SERVICE SCHEDULE FOR BRANCH CIRCUIT & CONNECTION REQUIREMENTS, LOCATION SHOWN IS APPROXIMATE & REPRESENTATIVE.
- M — BRANCH CIRCUIT & POWER CONNECTION TO ELECTRIC MOTOR, PROVIDE & CONNECT THRU PROPER DISCONNECT SWITCH ADJACENT TO UNIT, LOCATION SHOWN IS APPROXIMATE, CIRCUIT DESIGNATION.
- F — BRANCH CIRCUIT & POWER CONNECTION TO EXHAUST FAN, INSTALL & CONNECT THRU CONTROL DEVICE & INTEGRAL DISCONNECT SWITCH, LOCATION SHOWN IS APPROXIMATE, CIRCUIT DESIGNATION.

WIRING DEVICES SYMBOLS LEGEND

- GROUNDING RECEPTACLE WITH BOX, PLATE & BRANCH CIRCUIT, 120 VOLTS, NEMA 5-20R, MOUNT C.L. UP 18" A.F.F. UNLESS OTHERWISE INDICATED, CIRCUIT DESIGNATION.
- DUPLEX GROUNDING RECEPTACLE WITH BOX, PLATE & BRANCH CIRCUIT, 120 VOLTS, NEMA 5-20R, MOUNT C.L. UP 18" A.F.F. UNLESS OTHERWISE INDICATED, CIRCUIT DESIGNATION.
- DUPLEX GROUNDING RECEPTACLE WITH BOX, PLATE & BRANCH CIRCUIT, G.F.I. TYPE, 120 VOLTS, NEMA 5-20R, MOUNT C.L. UP 18" A.F.F. UNLESS OTHERWISE INDICATED, CIRCUIT DESIGNATION.
- DUPLEX GROUNDING RECEPTACLE WITH BOX, WEATHERPROOF COVER & BRANCH CIRCUIT, G.F.I. TYPE, 120 VOLTS, NEMA 5-20R, MOUNT C.L. UP 18" A.F.F. UNLESS NOTED OTHERWISE, CIRCUIT DESIGNATION.
- FINAL EQUIPMENT CONNECTION WITH OUTLET BOX, PLATE & BRANCH CIRCUIT, EQUIPMENT AS INDICATED, 120 VOLTS, VERIFY CONNECTION LOCATION WITH EQUIPMENT PROVIDER, CIRCUIT DESIGNATION.

L.V. ELECTRICAL EQUIPMENT SYMBOLS LEGEND

- BRANCH CIRCUIT PANELBOARD, SURFACE MOUNT, 208Y/120 VOLT SYSTEM.
- BRANCH CIRCUIT PANELBOARD, DOUBLE SECTION, SURFACE MOUNT, 208Y/120 VOLT SYSTEM.
- POWER OR SMALL DISTRIBUTION PANELBOARD, SURFACE MOUNT, 208Y/120 VOLT SYSTEM.
- UDS — UTILITY COMPANY DISCONNECT, NON-FUSED NEMA 3R DISCONNECT SWITCH, AMPERE RATING & NUMBER OF POLES AS INDICATED, NEUTRAL/GROUND BUSES, SURFACE MOUNT PER UTILITY COMPANY SPECS.
- M — UTILITY COMPANY METERING EQUIPMENT PER UTILITY COMPANY SPECS FOR ELECTRICAL SERVICE CHARACTERISTICS, NEMA 3R EQUIPMENT, SURFACE MOUNT PER UTILITY COMPANY SPECS.
- SU — SWITCH, UNFUSED SAFETY DISCONNECT, AMPERE RATING, NUMBER OF POLES, PROPER VOLTAGE RATING FOR BRANCH CIRCUIT, SURFACE MOUNT C.L. UP 54" A.F.F. UNLESS INDICATED OTHERWISE.
- SR — SWITCH, UNFUSED SAFETY DISCONNECT, NEMA 3R RATED, AMPERE RATING, NUMBER OF POLES, PROPER VOLTAGE RATING FOR BRANCH CIRCUIT, MOUNT C.L. UP 54" A.F.F. UNLESS INDICATED OTHERWISE.
- SF — SWITCH, FUSED SAFETY DISCONNECT, AMPERE RATING, NUMBER OF POLES, PROPER VOLTAGE RATING FOR BRANCH CIRCUIT, SURFACE MOUNT C.L. UP 54" A.F.F. UNLESS INDICATED OTHERWISE.
- SFR — SWITCH, FUSED SAFETY DISCONNECT, NEMA 3R RATED, AMPERE RATING, NUMBER OF POLES, PROPER VOLTAGE RATING FOR BRANCH CIRCUIT, MOUNT C.L. UP 54" A.F.F. UNLESS INDICATED OTHERWISE.
- S_T — DISCONNECT SWITCH, TOGGLE SWITCH TYPE WITH OUTLET BOX & PLATE, 20A1P, 120/277V, FLUSH MOUNT C.L. UP 48" A.F.F. UNLESS INDICATED OTHERWISE.
- S_{2T} — DISCONNECT SWITCH, TOGGLE SWITCH TYPE WITH OUTLET BOX & PLATE, 20A2P, 120/277V, FLUSH MOUNT C.L. UP 48" A.F.F. UNLESS INDICATED OTHERWISE.



1 / E101

ELECTRICAL FLOOR PLAN POWER SYSTEMS - NEW WORK

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

NORTH

GENERAL DEMOLITION NOTES:

1. DEMOLITION WORK TO BE SCHEDULED & PERFORMED AS REQUIRED TO COMPLY WITH THE PROJECT PHASING & AS REQUIRED TO MAINTAIN ELECTRICAL SERVICE TO THE ACTIVE PORTIONS OF THE BUILDING DURING NORMAL BUSINESS HOURS.
2. DISCONNECT & REMOVE EX'G ELECTRICAL SERVICE(S) TO MECHANICAL EQUIPMENT INDICATED ON THE MECHANICAL DRAWINGS TO BE REMOVED. SEE MECHANICAL DRAWINGS.
3. DISCONNECT & REMOVE THE EX'G 1-PHASE ELECTRICAL PANEL & ASSOCIATED ELECTRICAL SERVICE ENTRANCE & METERING. REMOVE SERVICE ENTRANCE TO UTILITY POLE CONNECTIONS. MAINTAIN & PROTECT EX'G ACTIVE BRANCH CIRCUITS FOR CONNECTION TO NEW EQUIPMENT.

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