HACP Task Order #32
Heating & A/C Related Improvements
At the Public Safety Center,Northview Heights
441 Mount Pleasant Road, Pittsburgh, PA 15214
for
Housing Authority of the City of Pittsburgh
100 Ross Street, Suite 201
Pittsburgh, PA 15219

Architect

ARCHITECTURAL INNOVATIONS, LLC
1003 McKnight Park Drive
Pittsburgh, PA 15237
Phone: 412-364-4966
Contact: James Johnston

HVAC / Electrical

ALLEN & SHARIFF
700 River Avenue
Suite 600
Pittsburgh, PA 15212
Phone: 412-322-9280
Contact: **Alexander Radkoff, P.E**

DRAWING INDEX:

CODE INFORMATION

BUILDING CODE	2015 INTERNATIONAL EXISTING BUILDING CODE ~~2018 INTERNATIONAL BUILDING CODE CHAPTER 11~~ N/A
ELECTRICAL CODE	NATIONAL ELECTRIC CODE NFPA 70-2014
MECHANICAL CODE	2015 INTERNATIONAL MECHANICAL CODE
PLUMBING CODE	2015 INTERNATIONAL PLUMBING CODE 2017 ALLEGHENY COUNTY HEALTH DEPARTMENT PLUMBING CODE
FIRE CODE	2015 INTERNATIONAL FIRE CODE
ENERGY CODE	2015 INTERNATIONAL ENERGY CODE
ACCESSIBILITY CODE	~~ICC A117.1-2009~~ N/A

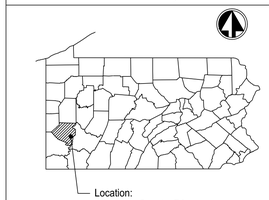
NARRATIVE: THE SCOPE OF THIS PROJECT IS LIMITED TO MECHANICAL SYSTEM UPGRADES TO MEET CURRENT CODE REQUIREMENTS FOR FRESH AIR AND TO PROVIDE ENOUGH HEATING & COOLING FOR THE LOADS IMPOSED. BECAUSE THE SCOPE IS LIMITED TO MECHANICAL WORK, ACCESSIBILITY IMPROVEMENTS ARE NOT REQUIRED.

CONSTRUCTION TYPE:	VB
CLASSIFICATION OF WORK:	ALTERATION - LEVEL 1
OCCUPANCY:	B
AREA OF RENOVATION:	N/A
OCCUPANT LOAD RENOVATED AREA:	N/A
FIRE SUPPRESSION:	NOT SPRINKLED

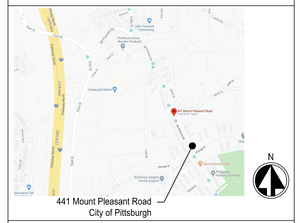
Code Approvals

No.	Revision / Issue	Date

State / County Map



Location Map



PERMIT SET

No.	Revision / Issue	Date

REGISTERED ARCHITECT
JAN GRIMMEIER No 017825-R

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COVER SHEET

Project : 20-591
Date : 09-28-2020
Sheet No.: G001

GENERAL MECHANICAL NOTES (ALL DRAWINGS):

1. MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND REQUIRED BY CODE.
2. THE CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC ONLY, AND ARE INTENDED TO CONVEY THE SCOPE AND GENERAL ARRANGEMENT OF WORK.
3. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR BY FIELD INSPECTION PRIOR TO BIDDING. ANY INTERFERENCES TO INSTALLATION SHALL BE NOTED AND THE CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COST TO AVOID OR RELOCATE ALL ITEMS, INCLUDING ITEMS OF OTHER TRADES, THAT INTERFERE. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. ALL OFFSETS, RISES, TRANSITIONS AND DROPS IN DUCTS AND PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
4. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS OR PIPE ADAPTERS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
5. PROVIDE ACCESS IN WALLS & CEILINGS TO ACCESS ALL EQUIPMENT, VALVES, CONTROL DEVICES, VOLUME DAMPERS, AND FIRE/SMOKE DAMPERS.
6. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT. ALSO REFER TO TYPICAL DETAILS FOR INSTALLATION OF EQUIPMENT.
7. ALL MATERIALS FURNISHED, AND ALL WORK PERFORMED BY THE MECHANICAL CONTRACTOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE LATEST APPLICABLE EDITIONS OF NFPA, IEEE, OSHA, SMACNA, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, AND ANY STATE, COUNTY, AND LOCAL CODES.
8. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED SUFFICIENTLY AND ANY ADDITIONAL SUPPORT SHALL BE PROVIDED AS REQUIRED TO PROVIDE VIBRATION FREE AND SAFE INSTALLATION. ALL MISCELLANEOUS STEEL REQUIRED AND/OR AS SHOWN IN DETAILS FOR DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. SUPPORT ALL DUCTWORK, PIPING AND EQUIPMENT MOUNTED ABOVE THE CEILING DIRECTLY FROM THE STRUCTURE. ALL ATTACHMENTS TO BEAMS, TRUSSES, OR JOIST SHALL BE MADE AT PANEL POINTS WITH BEAM CLAMPS MEETING MSS STANDARDS.
9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND ELECTRICAL SPECIFICATIONS FOR THIS PROJECT.

DUCTWORK GENERAL NOTES (ALL DRAWINGS):

1. ALL DUCTWORK INDICATED IS SCHEMATIC AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS, RISES, TRANSITIONS AND ELBOWS AS NEEDED TO INSTALL PROPERLY.
2. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL HVAC DEVICES, FANS, DAMPERS, (FIRE, SMOKE, BALANCING) COILS, AND TERMINAL EQUIPMENT.
3. LOCATIONS OF TERMINAL DEVICES, AIR OUTLETS AND INLETS ARE APPROXIMATE. LOCATE PER THE ARCHITECTURAL DRAWINGS AND TO AVOID OTHER TRADE'S WORK. COORDINATE LOCATIONS WITH OTHER TRADES. CONSULT ARCHITECT/ENGINEER FOR CLARIFICATION IF CONFLICTS OCCUR.
4. DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE FACE-TO-FACE DIMENSIONS AND DO NOT INCLUDE DUCT LINER WHERE SPECIFIED. INCREASE DIMENSIONS OF LINED DUCTWORK TO PROVIDE FREE INSIDE AREA EQUAL DIMENSIONS SHOWN. REFER TO THE SPECIFICATIONS FOR LOCATION OF LINED DUCTWORK.
5. FINAL CONNECTIONS FROM HIGH VELOCITY MAIN DUCTS TO AIR TERMINAL UNITS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 3 FEET IN LENGTH. CONNECTIONS BETWEEN LOW VELOCITY DUCTWORK AND/OR TERMINAL UNITS TO AIR INLETS AND OUTLETS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 6 FEET IN LENGTH. LONGER DUCT RUN OUTS SHALL BE CONSTRUCTED OF HARD DUCT OF THE SAME MATERIAL SPECIFIED FOR THE SYSTEM SERVED AND INSULATED AS SPECIFIED FOR THAT SYSTEM. FLEXIBLE DUCTWORK SHALL BE OF THE PRESSURE CLASS AND FACTORY INSULATED AS SPECIFIED FOR THE SYSTEM WHERE INSTALLED.
6. FLEXIBLE DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITHOUT ANY SAGS, SHARP TURNS OR KINKS. AT THE MINIMUM, THE FLEXIBLE DUCTWORK SHALL BE FASTENED TO THE HARD DUCT BY A NYLON STRAP SECURED BY SHEETMETAL SCREWS TO PREVENT SLIPPING OFF FROM COLLAR.
7. PROVIDE VOLUME DAMPERS AT EACH AIR OUTLET, AIR INLET AND TERMINAL DEVICE AND AT EACH BRANCH TAKE-OFF CONNECTION FROM THE MAIN.

MECHANICAL PIPING GENERAL NOTES (ALL DRAWINGS):

1. ALL PIPING SHOWN HAS BEEN DRAWN SCHEMATICALLY FOR CLARITY AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS AND ELBOWS AS NEEDED TO INSTALL PROPERLY AND TO AVOID INTERFERENCES.
2. ALL NEW OR REPLACED HYDRONIC PIPING SHALL BE INSTALLED SO THAT IT CAN BE COMPLETELY VENTED AT HIGH POINTS AND DRAINED AT LOW POINTS. PROVIDE AIR VENTS AT HIGH POINTS, TYPE PER SPECIFICATIONS. PROVIDE 1/2" BALL VALVES WITH HOSE END CONNECTIONS AND CAPS AT LOW POINT. ALL WATER MAINS SHALL BE INSTALLED LEVEL, UNLESS OTHERWISE NOTES.
3. PROVIDE SERVICE VALVES AT EACH BRANCH CONNECTION FROM MAINS AND AT EACH TERMINAL DEVICE OR EQUIPMENT CONNECTION.
4. CONTRACTOR SHALL PROVIDE NEW VALVES ON EXISTING PIPING WHERE THE PIPES ARE TO BE REMOVED SO THAT THE SYSTEM DOES NOT HAVE TO BE DRAINED WHILE REMOVING EXISTING UNITS, INSTALLING NEW UNITS AND MAKING CONNECTIONS TO NEW EQUIPMENT.

MECHANICAL DUCTWORK & GENERAL SYMBOLS LEGEND

SYMBOL	ABRV.	DESCRIPTION
	XTR	EXISTING EQUIPMENT OR DUCTWORK TO REMAIN
	RX	EXISTING EQUIPMENT OR DUCTWORK TO BE REMOVED
		NEW EQUIPMENT OR DUCTWORK
		LINED DUCTWORK
		SUPPLY DUCT UP
		SUPPLY DUCT DOWN
		RETURN / EXHAUST DUCT UP
		RETURN / EXHAUST DUCT DOWN
		ROUND DUCT ELBOW UP
		ROUND DUCT ELBOW DOWN
		ELBOW WITH TURNING VANES
R		DUCT OFFSET UP
D		DUCT OFFSET DOWN
		SQUARE / RECTANGULAR DUCT TRANSITION
		SQUARE/RECTANGULAR TO ROUND DUCT TRANSITION
	CD	CEILING DIFFUSER. - ROUND NECK - # THROW DIRECTIONS
	SD	SUPPLY DIFFUSER - RECTANGULAR - MULTI-DIRECT.
	SG/EG	SIDEWALL SUPPLY or RETURN GRILLE - (R = REGISTER)
	LD	LINEAR DIFFUSER. SEE SCHEDULE FOR INFORMATION.
	RG/EG	RETURN or EXHAUST GRILLE - (R = REGISTER)
		FLEXIBLE DUCT
	FLEX	FLEXIBLE DUCT CONNECTION (TO EQUIPMENT)
		SPIN TAP WITH VOLUME CONTROL DAMPER
AD	AD	DUCT ACCESS DOOR
	VD	VOLUME CONTROL DAMPER
BDD	BDD	BACKDRAFT DAMPER
M	MD	MOTORIZED DAMPER
	FD	VERTICAL FIRE DAMPER (WALL)
	HFD	HORIZONTAL FIRE DAMPER (FLOOR)
	SD	VERTICAL SMOKE DAMPER (WALL)
	HSD	HORIZONTAL SMOKE DAMPER (FLOOR)
	FD/SD	COMBINATION VERTICAL FIRE & SMOKE DAMPER
	HFD/SD	COMBINATION HORIZONTAL FIRE & SMOKE DAMPER
	RD	CEILING RADIATION FIRE DAMPER
DD	DD	DUCT SMOKE DETECTOR
T		THERMOSTAT
H		HUMIDISTAT
SP		STATIC PRESSURE SENSOR
CO2		CARBON DIOXIDE SENSOR
CO		CARBON MONOXIDE SENSOR
TAG #		EQUIPMENT UNIT DESIGNATION
TAG CFM		DIFFUSER, REGISTER & GRILLE UNIT DESIGNATION W/ CFM
U		UNDER CUT DOOR
L		LOUVERED DOOR
		CONNECTION POINT, NEW TO EXISTING
		DISCONNECTION POINT
1		DRAWING KEYNOTE
1		DEMOLITION DRAWING KEYNOTE
1		REVISION NUMBER
	RA or EA	RETURN OR EXHAUST AIR
	SA or OA	SUPPLY OR OUTSDIE AIR

MECHANICAL PIPING SYMBOLS LEGEND

SYMBOL	ABRV.	DESCRIPTION
HWS	HWS	HEATING WATER SUPPLY PIPING
HWR	HWR	HEATING WATER RETURN PIPING
CWS	CWS	CONDENSER WATER SUPPLY PIPING
CWR	CWR	CONDENSER WATER RETURN PIPING
CHWS	CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHWR	CHILLED WATER RETURN PIPING
G	G	NATURAL GAS PIPING
D	D	CONDENSATE DRAIN PIPING
R	R	REFRIGERANT PIPING
LPS	LPS	LOW PRESSURE STEAM SUPPLY PIPING (0-15 PSIG)
MPS	MPS	MEDIUM PRESSURE STEAM SUPPLY PIPING (16-60 PSIG)
HPS	HPS	HIGH PRESSURE STEAM SUPPLY PIPING (61 TO 200 PSIG)
LPR	LPR	LOW PRESSURE STEAM CONDENSATE RETURN
MPR	MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
HPR	HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
PC	PC	PUMPED STEAM CONDENSATE
V	V	VENT PIPING
CW	CW	CITY (DOMESTIC) WATER
FOS	FOS	FUEL OIL SUPPLY PIPING
FOR	FOR	FUEL OIL RETURN PIPING
		ELBOW TURNED UP
		ELBOW TURNED DOWN
		BOTTOM PIPE CONNECTION
		TOP PIPE CONNECTION
		PIPING CAP
		UNION
		FLANGED CONNECTION
		CONCENTRIC PIPE REDUCER
		ECCENTRIC PIPE REDUCER
		FLOW ARROW
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	PV	PLUG VALVE
	GV	GATE VALVE
	GBV	GLOBE VALVE
	CV	CHECK VALVE
		2-WAY CONTROL VALVE
		3-WAY CONTROL VALVE
		CIRCUIT SETTER (BALANCING VALVE)
		STRAINER (W/ BALL VALVE AND CAP)
		BACKFLOW PREVENTER
		PRESSURE REGULATING VALVE
		PRESSURE RELIEF VALVE
		TRIPLE DUTY VALVE WITH MEASURING CONNECTIONS
		PRESSURE GAGE W/ SHUT-OFF
		FLEXIBLE CONNECTOR
		AUTOMATIC AIR VENT
		HOSE BIB
		PIPE ANCHOR
		PIPE GUIDE
T		STEAM TRAP

MECHANICAL ABBREVIATIONS

ABRV.	DESCRIPTION
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
MBH	1000 - BRITISH THERMAL UNITS
KW	1000-WATT (1 KW = 3,412 BTUH)
SENS.	SENSIBLE
LAT.	LATENT
E.A.T.	ENTERING AIR TEMPERATURE
L.A.T.	LEAVING AIR TEMPERATURE
E.W.T.	ENTERING WATER TEMPERATURE
L.W.T.	LEAVING WATER TEMPERATURE
DB/WB	DRY BULB / WET BULB
IN. W.G.	INCHES WATER GAUGE (AIR)
FT. W.G.	FEET WATER GAUGE (HYDRONIC)
E.S.P.	EXTERNAL STATIC PRESSURE
T.S.P.	TOTAL STATIC PRESSURE
TG	TRANSFER GRILLE
TR	TOP REGISTER
(E)	EXISTING
R / R	REMOVE EXISTING ITEM & RELOCATE TO NEW LOCATION
UNO	UNLESS NOTED OTHERWISE
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
Ø OR PH	PHASE
Ø	DIAMETER
AFF	ABOVE FINISHED FLOOR
ELEV.	ELEVATION FROM DATUM

NOTES:
1. NOT ALL SYMBOLS AND ABBREVIATIONS ARE IN USE FOR THIS PROJECT.

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No.	Revision / Issue	Date

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REGISTERED PROFESSIONAL
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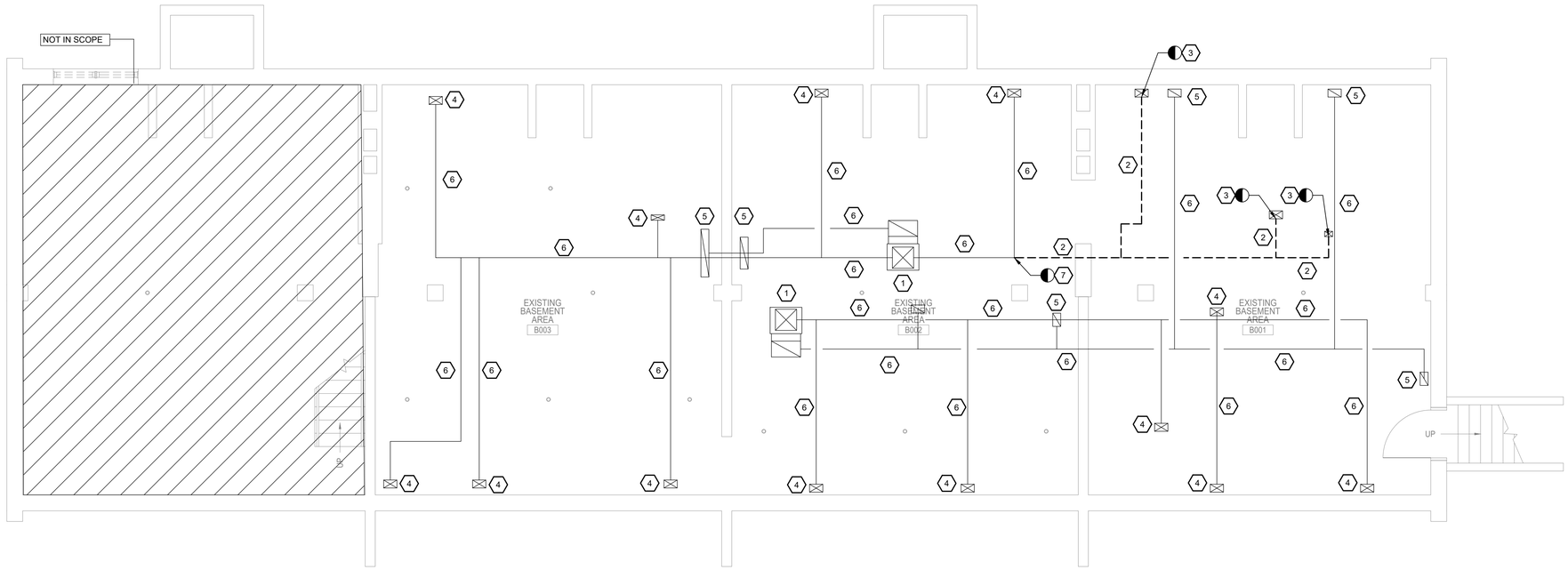
MECHANICAL DATA SHEET

Project : 20-591
Date : 09-28-2020
Sheet No.: M001



1 M100 BASEMENT FLOOR MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.

MECHANICAL DEMOLITION KEY NOTES: (#)

1. EXISTING GEOTHERMAL HEAT PUMP AIR HANDLER AND ALL ASSOCIATED APPURTENANCES TO REMAIN. GEOTHERMAL PIPING, PUMPS, SUPPLY AIR DUCTWORK, RETURN AIR DUCTWORK AND CONDENSATE PIPING CONNECTED TO AIR HANDLING UNIT SHALL REMAIN AS INSTALLED.
2. EXISTING SUPPLY DUCTWORK TO BE DEMOLISHED. VERIFY SIZE AND LOCATION IN FIELD.
3. EXISTING SUPPLY DUCTWORK BOOT TRANSITION CONNECTOR TO FLOOR GRILLE TO REMAIN. SUPPLY BRANCH DUCTWORK SHALL BE DISCONNECTED UPSTREAM OF SUPPLY BOOT TRANSITION FOR FUTURE CONNECTION. VERIFY SIZE AND LOCATION IN FIELD.
4. EXISTING SUPPLY DUCTWORK BOOT TRANSITION CONNECTOR TO FLOOR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
5. EXISTING RETURN DUCTWORK TRANSITION CONNECTOR TO FLOOR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
6. EXISTING SUPPLY DUCTWORK TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
7. SUPPLY DUCTWORK TO BE CAPPED AT THIS LOCATION UPON DISCONNECTION OF SUPPLY DUCTWORK TO BE DEMOLISHED. VERIFY SIZE AND LOCATION IN FIELD.

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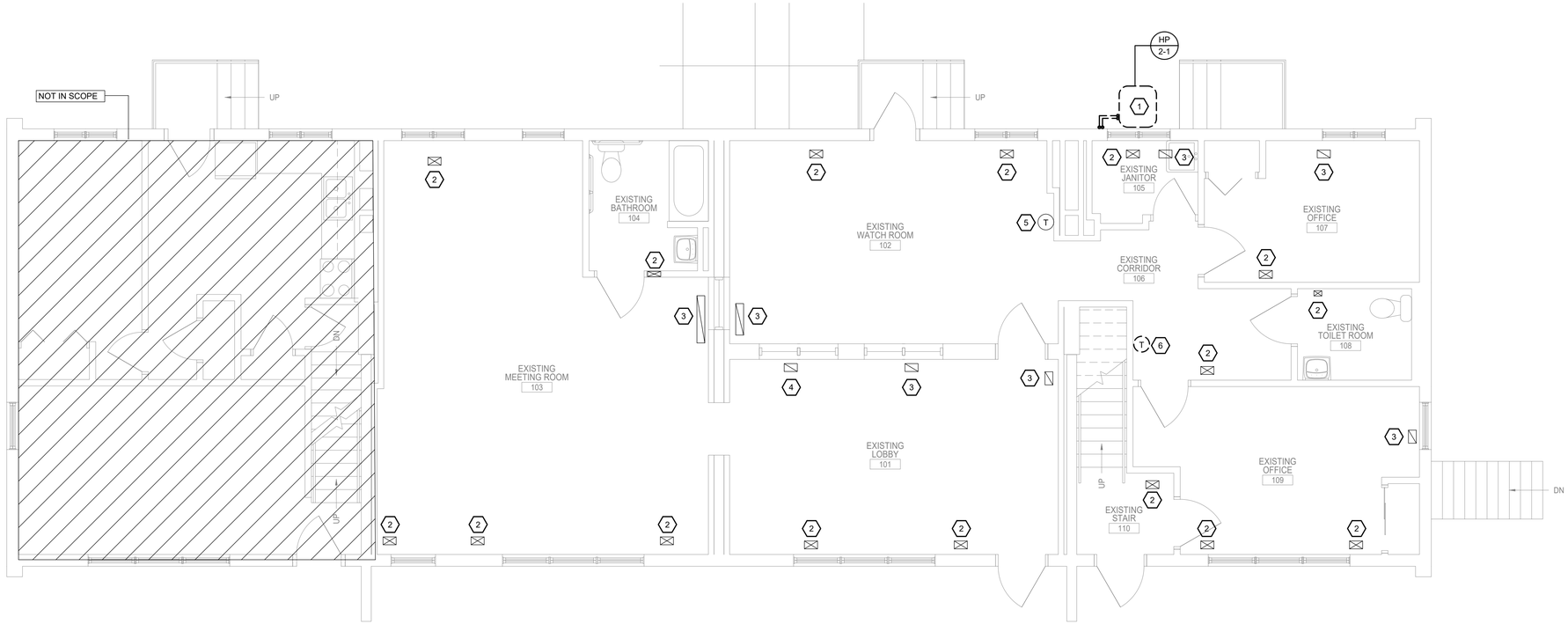
BASEMENT FLOOR MECHANICAL DEMOLITION PLAN

Project : 20-591	Sheet No.: M100
Date : 09-28-2020	



1 M101 FIRST FLOOR MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.

MECHANICAL DEMOLITION KEY NOTES: (#)

1. EXISTING HEAT PUMP AND ALL ASSOCIATED APPURTENANCES TO BE DEMOLISHED. REFRIGERANT PIPING, EXTERIOR WALL MOUNTING BRACKET, AND ELECTRICAL WIRING AND DISCONNECT ASSOCIATED WITH AIR HANDLING UNIT SHALL BE DEMOLISHED. PATCH WALL AT BRACKET TO MATCH EXISTING AFTER DEMOLITION OF EQUIPMENT.
2. EXISTING SUPPLY AIR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
3. EXISTING RETURN AIR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
4. EXISTING FLOOR GRILLE TO REMAIN. FLOOR GRILLE TO BE CAPPED AT FLOOR BELOW AND DISCONNECTED FROM RETURN DUCT SYSTEM.
5. EXISTING THERMOSTAT SHALL REMAIN. VERIFY EXACT LOCATION IN FIELD.
6. EXISTING THERMOSTAT TO BE RELOCATED. EXISTING CONTROL WIRING TO BE PULLED BACK TO ASSOCIATED GEOTHERMAL HEAT PUMP FOR RE-ROUTING TO NEW THERMOSTAT LOCATION.

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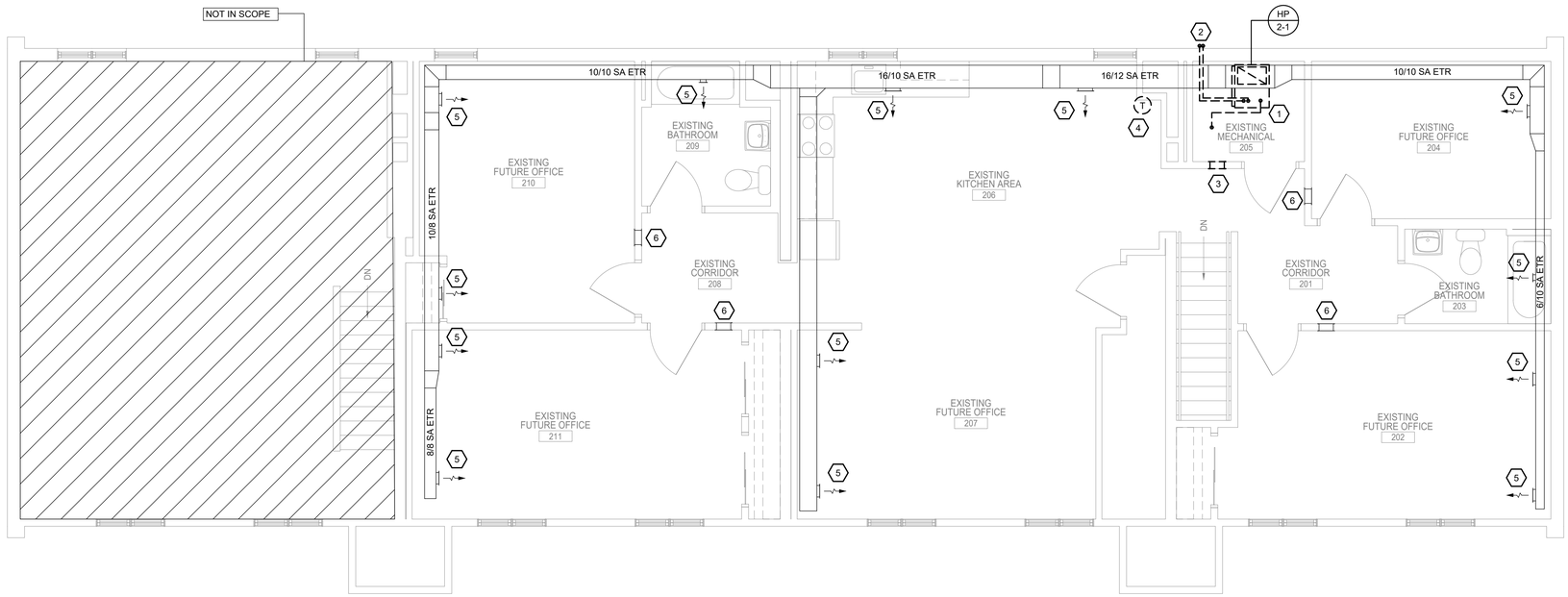
FIRST FLOOR MECHANICAL DEMOLITION PLAN

Project : 20-591	Sheet No.: M101
Date : 09-28-2020	



1 / M102 SECOND FLOOR MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.

MECHANICAL DEMOLITION KEY NOTES: (#)

1. EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED APPURTENANCES TO BE DEMOLISHED. REFRIGERANT PIPING, SUPPLY AIR DUCTWORK, RETURN AIR DUCTWORK AND CONDENSATE PIPING CONNECTED TO AIR HANDLING UNIT SHALL BE DEMOLISHED.
2. REFRIGERANT SUCTION AND LIQUID PIPING DN TO ASSOCIATED OUTDOOR HEAT PUMP BELOW TO BE DEMOLISHED. MC TO PROVIDE PATCHING OF EXTERIOR WALL PIPE SLEEVE OPENING. VERIFY LOCATION AND ROUTING IN FIELD.
3. EXISTING TRANSFER/RETURN AIR GRILLES (QUANTITY OF 2) TO BE DEMOLISHED. VERIFY LOCATION AND SIZE IN FIELD. PATCH WALL TO MATCH EXISTING WALL CONSTRUCTION.
4. EXISTING WALL MOUNTED THERMOSTAT AND ASSOCIATED CONTROL WIRING TO BE DEMOLISHED. VERIFY EXACT LOCATION IN FIELD.
5. EXISTING SUPPLY AIR GRILLE TO REMAIN. VERIFY EXACT LOCATION IN FIELD.
6. EXISTING TRANSFER AIR GRILLES AND DUCT STACK WITHIN PARTITION WALL TO REMAIN. VERIFY EXACT LOCATION IN FIELD.

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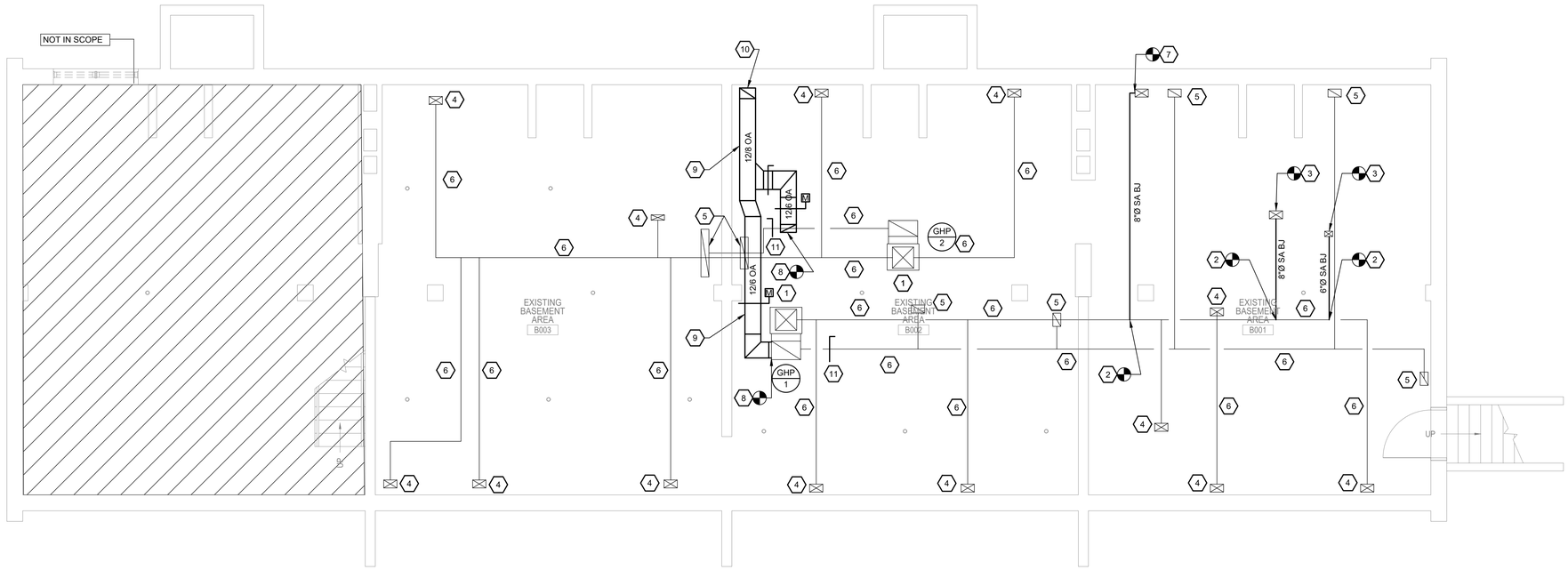
SECOND FLOOR MECHANICAL DEMOLITION PLAN

Project : 20-591	Sheet No.: M102
Date : 09-28-2020	



1 M200 BASEMENT FLOOR MECHANICAL PLAN

1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.
4. MC TO VERIFY EXISTING STRUCTURE IN BASEMENT AND SHALL COORDINATE ALL NEW DUCT ROUTING WITH EXISTING STRUCTURE.
5. DUCTWORK INSTALLED ON THIS FLOOR SHALL BE LOCATED AS TIGHT TO STRUCTURE AS POSSIBLE AND SHALL TRANSITION ABOVE OR BELOW EXISTING DUCTWORK, PIPING, WIRING, AND EQUIPMENT AS NECESSARY.
6. MC SHALL REPLACE FILTERS TO GEOTHERMAL HEAT PUMPS IN KIND.

MECHANICAL KEY NOTES: (#)

1. EXISTING GEOTHERMAL HEAT PUMP AND ALL ASSOCIATED APPURTENANCES TO REMAIN. VERIFY SIZE, LOCATION AND ALL CONNECTION POINT IN FIELD.
2. NEW SUPPLY AIR DUCT SHALL CONNECT TO TOP OF EXISTING SUPPLY MAIN DUCT AND SHALL BE ROUTED BETWEEN JOISTS.
3. NEW SUPPLY AIR DUCT SHALL CONNECT TO EXISTING SUPPLY FLOOR GRILLE BOOT TRANSITION WITHIN JOIST SPACE. TRANSITION AS NECESSARY TO MAKE CONNECTION. VERIFY LOCATION AND SIZE OF BOOT ELBOW IN FIELD.
4. EXISTING SUPPLY AIR DUCT UP TO FLOOR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
5. EXISTING RETURN AIR DUCT UP TO FLOOR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
6. EXISTING DUCT TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
7. NEW SUPPLY AIR DUCT SHALL CONNECT TO EXISTING SUPPLY FLOOR GRILLE BOOT TRANSITION. AS NEW SUPPLY AIR DUCT DOES NOT RESIDE WITHIN THE SAME JOIST SPACE AS BOOT ELBOW, TRANSITIONS SHALL BE PROVIDED UNDER JOIST AND SHALL CONNECT THE NEW SUPPLY AIR DUCT TO BOOT ELBOW. TRANSITION AS NECESSARY TO MAKE CONNECTION. VERIFY LOCATION AND SIZE OF BOOT ELBOW IN FIELD.
8. 12"X6" OUTSIDE AIR DUCT CONNECTS TO EXISTING RETURN AIR DUCT AT ASSOCIATED GEOTHERMAL HEAT PUMP. COORDINATE ROUTING AND FINAL CONNECTION IN FIELD.
9. OUTSIDE AIR DUCT SHALL BE ROUTED AS TIGHT TO STRUCTURE AS POSSIBLE AND SHALL TRANSITION ABOVE OR BELOW EXISTING DUCTWORK AS NECESSARY TO BE ROUTED ALONG MASONRY WALL. COORDINATE ROUTING IN FIELD WITH EXISTING CONDITIONS.
10. 12"X8" OUTSIDE AIR DUCT SHALL BE ROUTED UP THROUGH FLOOR TO FLOOR ABOVE. MC TO COORDINATE ROUTING OF DUCT THROUGH FLOOR WITH EXISTING STRUCTURAL JOISTS.
11. PROVIDE VOLUME DAMPER IN EXISTING RETURN AIR DUCTWORK FOR BALANCING. VERIFY SIZE OF EXISTING RETURN DUCT AND MATCH SIZE OF VOLUME DAMPER WITH EXISTING RETURN DUCT DIMENSIONS.

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HACP Task Order #32
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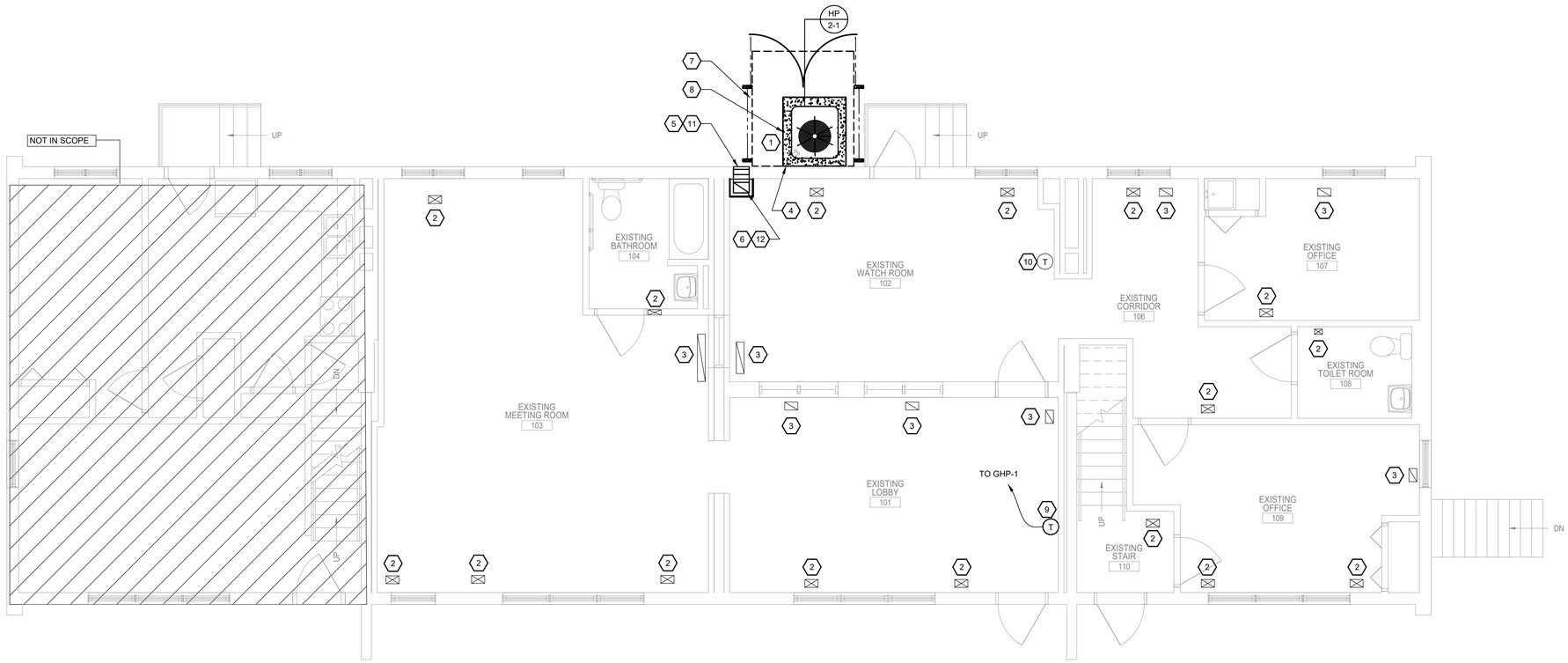
BASEMENT FLOOR MECHANICAL PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: M200



1 FIRST FLOOR MECHANICAL PLAN
M201 1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.
4. THERMOSTATS SHALL BE MOUNTED AT 44" ABOVE FINISHED FLOOR.
5. EXISTING GRILLES TO REMAIN SHALL BE CLEANED AND FREE OF DEBRIS AND DUST UPON FINAL COMPLETION OF WORK.

MECHANICAL KEY NOTES: (#)

1. NEW HEAT PUMP TO BE INSTALLED ON 6" CONCRETE PAD. INSTALL PER THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. MC TO VERIFY THAT SERVICE CLEARANCE AROUND HEAT PUMP IS FREE OF ANY OBSTRUCTIONS.
2. EXISTING SUPPLY AIR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
3. EXISTING RETURN AIR GRILLE TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
4. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE ROUTED ALONG EXTERIOR WALL UP TO ASSOCIATED AIR HANDLING UNIT ON SECOND FLOOR. COORDINATE ROUTING IN FIELD.
5. 12"X24" MODEL POTTORFF EFD-245 DRAINABLE FRESH AIR LOUVER TO BE INSTALLED AT EXTERIOR WALL NO LESS THAN 14" ABOVE GRADE. PROVIDE WALL SLEEVE, BACKDRAFT DAMPER AND BIRDSCREEN AT WALL AND MOTORIZED CONTROL DAMPERS AT BASEMENT CEILING BELOW.
6. 12"X8" OUTSIDE AIR DUCT SHALL BE ROUTED DOWN THROUGH FLOOR TO CEILING SPACE BELOW. MC TO COORDINATE GYPSUM WALL ENCLOSURE AROUND DUCTWORK AND INSULATION FROM FLOOR TO CEILING. MC TO COORDINATE ROUTING OF DUCT THROUGH FLOOR WITH EXISTING STRUCTURAL JOISTS.
7. OUTDOOR HEAT PUMP SHALL BE PROTECTED BY A LOCKED EXPANDED METAL MESH ENCLOSURE. ENCLOSURE SHALL HAVE AN EXPANDED METAL MESH LID ACROSS TOP OF ENCLOSURE THAT SHALL BE LOCATED NO LESS THAN 4 FEET ABOVE TOP OF HEAT PUMP. MC SHALL FURNISH AND INSTALL EXPANDED METAL MESH ENCLOSURE. SEE DETAILS ON MECHANICAL DETAILS SHEET M303.
8. 6" CONCRETE PAD SHALL TO BE PROVIDED WITHIN MECHANICAL ENCLOSURE. MC SHALL FURNISH AND INSTALL CONCRETE PAD. CONCRETE PAD DIMENSIONS SHALL BE NO LESS THAN 6" WIDER THAN INSTALLED HEAT PUMP DIMENSIONS ON ALL SIDES. INSTALL SEALANT AT ALL PERIMETER EDGES OF NEW CONCRETE PAD ABUTTING EXISTING SURFACES. SEE DETAILS ON MECHANICAL DETAILS SHEET M303.
9. EXISTING THERMOSTAT TO BE RELOCATED TO THIS LOCATION. MC TO RECONNECT THERMOSTAT TO ASSOCIATED GEOTHERMAL HEAT PUMP IN BASEMENT. EXTEND CONTROL WIRING AS NECESSARY TO REACH NEW THERMOSTAT LOCATION.
10. EXISTING THERMOSTAT TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
11. CUT HOLE IN EXISTING WALL AS REQUIRED TO ACCOMMODATE NEW DUCT AND LOUVER. ANY CUT STUDS IN EXTERIOR WALL FURR-OUT TO BE BRACED TO ADJACENT STUDS. PATCH WALL TO MATCH EXISTING WALL CONSTRUCTION. BRICK TO BE NEATLY CUT TO THE SIZE TO ACCOMMODATE LOUVER. BRICK TO BE SALVAGED FOR ANY PATCH WORK THAT MIGHT BE NECESSARY. FOR EVERY 4" OF MASONRY THICKNESS FURNISH AND INSTALL 3-1/2" X 3-1/2" X 5/16" GALVANIZED STEEL LINTEL WITH 6" MINIMUM BEARING EACH END ON SOLID MASONRY, 8" DEEP. VERTICAL LEG OF ANGLE TO BE CONCEALED BEHIND BRICK. HOLD LOUVER AS CLOSE TO EDGE OF BRICK AS POSSIBLE TO ALLOW LOUVER TO CONCEAL SAWN EDGE OF BRICK. INSTALL SEALANT AND BACKER ROD AROUND PERIMETER OF LOUVER.
12. FURNISH AND INSTALL NEW GYPSUM BOARD AND METAL STUD ENCLOSURE AROUND NEW OUTSIDE AIR DUCT FROM FLOOR TO CEILING. ENCLOSURE SHALL BE MINIMUM IN SIZE AND SHALL BE MADE OF:
    - 3-5/8" METAL STUDS, MIN 20 GA. AT 16" OC MAX
    - 5/8" GYPSU, DRYWALL
    - 3-1/2" THERMAL BATT INSULATION WITH VAPOR BARRIER
    - BASE TO MATCH EXISTING AT NEW ENCLOSURE AND AS REQUIRED AT EXISTING PARTITIONS.
    - PAINT NEW ENCLOSURE AND ADJACENT WALLS TO VISIBLE STOPPING POINT SUCH AS CORNER

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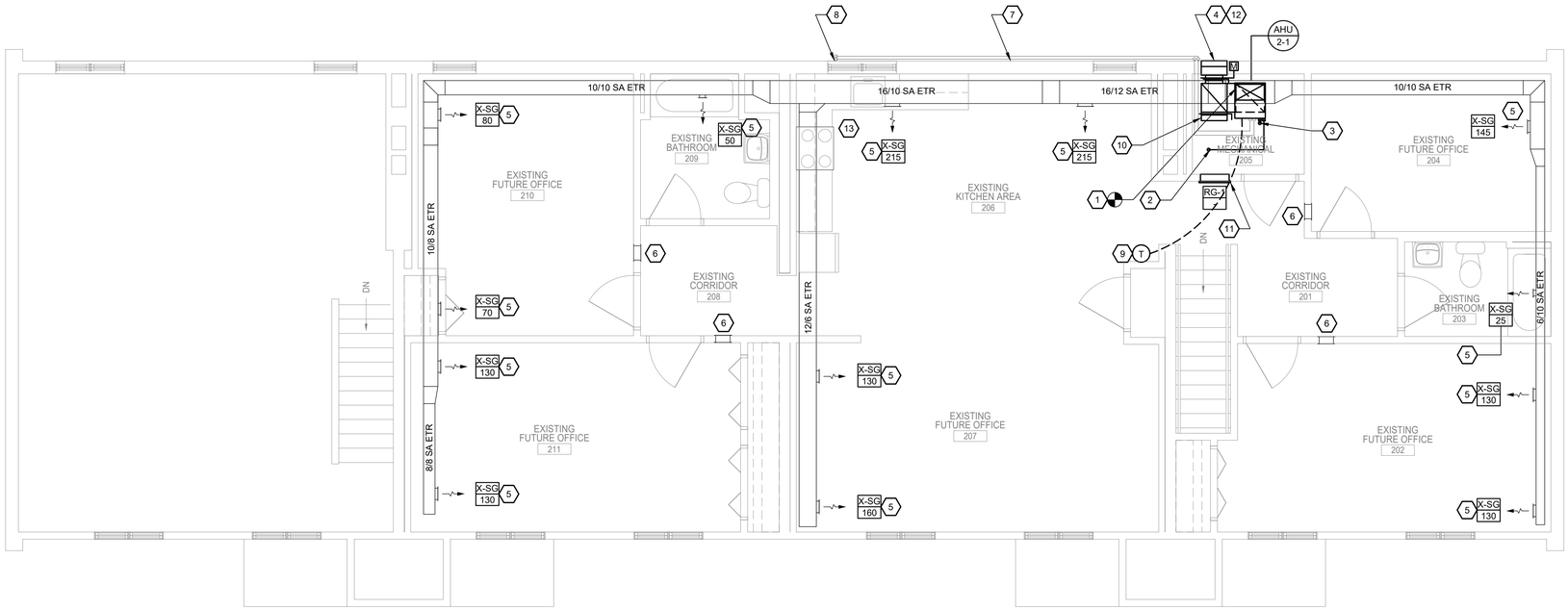
FIRST FLOOR MECHANICAL PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: M201



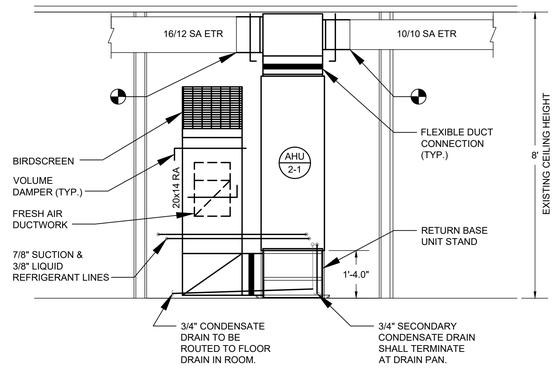
1 M202 SECOND FLOOR MECHANICAL PLAN
1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.
4. THERMOSTATS SHALL BE MOUNTED AT 44" ABOVE FINISHED FLOOR.
5. EXISTING GRILLES TO REMAIN SHALL BE CLEANED AND FREE OF DEBRIS AND DUST UPON FINAL COMPLETION OF WORK.
6. MECHANICAL ROOM SHALL BE UTILIZED AS A MECHANICAL PLENUM RETURN SPACE. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT ALL MATERIALS INSTALLED WITHIN SPACE ARE PLENUM RATED. NONPLENUM RATED MATERIALS ARE NOT PERMITTED WITHIN MECHANICAL ROOM.

MECHANICAL KEY NOTES: (#)

1. NEW AIR HANDLING UNIT TO BE INSTALLED ON SIDE RETURN AIR HANDLER STANDS IN MECHANICAL ROOM. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. NEW SUPPLY AIR DUCTWORK SHALL CONNECT TO AIR HANDLER WITH FLEXIBLE CONNECTION AND SHALL TRANSITION TO CONNECTION WITH EXISTING DUCTWORK. PROVIDE TEE CONNECTION WITH TURNING VANES. TRANSITION DUCTWORK AS NECESSARY TO MAKE CONNECTION.
2. 3/4" CONDENSATE DRAIN PIPING SHALL TERMINATE INDIRECTLY AT FLOOR DRAIN IN MECHANICAL ROOM. VERIFY EXACT LOCATION OF FLOOR DRAIN IN FIELD AND COORDINATE ROUTING OF PIPING ACCORDINGLY.
3. 3/4" CONDENSATE DRAIN PIPING SHALL TERMINATE AT AIR HANDLER DRAIN PAN. PROVIDE DRAIN PAN WATER LEVEL SENSOR CUTOFF THAT SHUTS UNIT DOWN UPON ALARM.
4. 18"X18" MODEL POTTORFF EFD-245 DRAINABLE FRESH AIR LOUVER TO BE INSTALLED AT EXTERIOR WALL. PROVIDE WALL SLEEVE, BACKDRAFT DAMPER, BIRDSCREEN AND MOTORIZED CONTROL DAMPER AT WALL.
5. EXISTING SUPPLY AIR DAMPER SHALL BE RE-BALANCED BY THE BALANCING CONTRACTOR TO THE AIRFLOW INDICATED ON THE FLOOR PLAN. FINAL TESTING, ADJUSTING AND BALANCING REPORT TO BE PROVIDED TO THE ENGINEER OF RECORD FOR REVIEW.
6. EXISTING TRANSFER AIR DUCTWORK TO REMAIN. VERIFY SIZE AND LOCATION IN FIELD.
7. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE ROUTED ALONG EXTERIOR WALL UNDERNEATH SECOND FLOOR WINDOWS. COORDINATE ROUTING IN FIELD.
8. SUCTION AND LIQUID REFRIGERANT PIPING DN TO ASSOCIATED HEAT PUMP AT GROUND LEVEL BELOW.
9. NEW 7 DAY PROGRAMMABLE THERMOSTAT TO BE INSTALLED AT WALL.
10. PROVIDE BIRDSCREEN AT RETURN AIR OPENING IN MECHANICAL ROOM.
11. RETURN AIR GRILLE RG-1 SHALL BE DUCTED INTO AND SHALL TERMINATE INSIDE MECHANICAL ROOM.
12. CUT HOLE IN EXISTING WALL AS REQUIRED TO ACCOMMODATE NEW DUCT AND LOUVER. ANY CUT STUDS IN EXTERIOR WALL FURR-OUT TO BE BRACED TO ADJACENT STUDS. PATCH WALL TO MATCH EXISTING WALL CONSTRUCTION. BRICK TO BE NEATLY CUT TO THE SIZE TO ACCOMMODATE LOUVER. BRICK TO BE SALVAGED FOR ANY PATCH WORK THAT MIGHT BE NECESSARY. FOR EVERY 4" OF MASONRY THICKNESS FURNISH AND INSTALL 3-1/2" X 3-1/2" X 5/16" GALVANIZED STEEL LINTEL WITH 6" MINIMUM BEARING EACH END ON SOLID MASONRY, 8" DEEP. VERTICAL LEG OF ANGLE TO BE CONCEALED BEHIND BRICK. HOLD LOUVER AS CLOSE TO EDGE OF BRICK AS POSSIBLE TO ALLOW LOUVER TO CONCEAL SAWN EDGE OF BRICK. INSTALL SEALANT AND BACKER ROD AROUND PERIMETER OF LOUVER.
13. EXISTING HOOD ABOVE STOVETOP AND ALL ASSOCIATED APPURTENANCES TO REMAIN.



1 M202 SECOND FLOOR INTERIOR MECHANICAL ROOM ELEVATION
1/2" = 1'-0"

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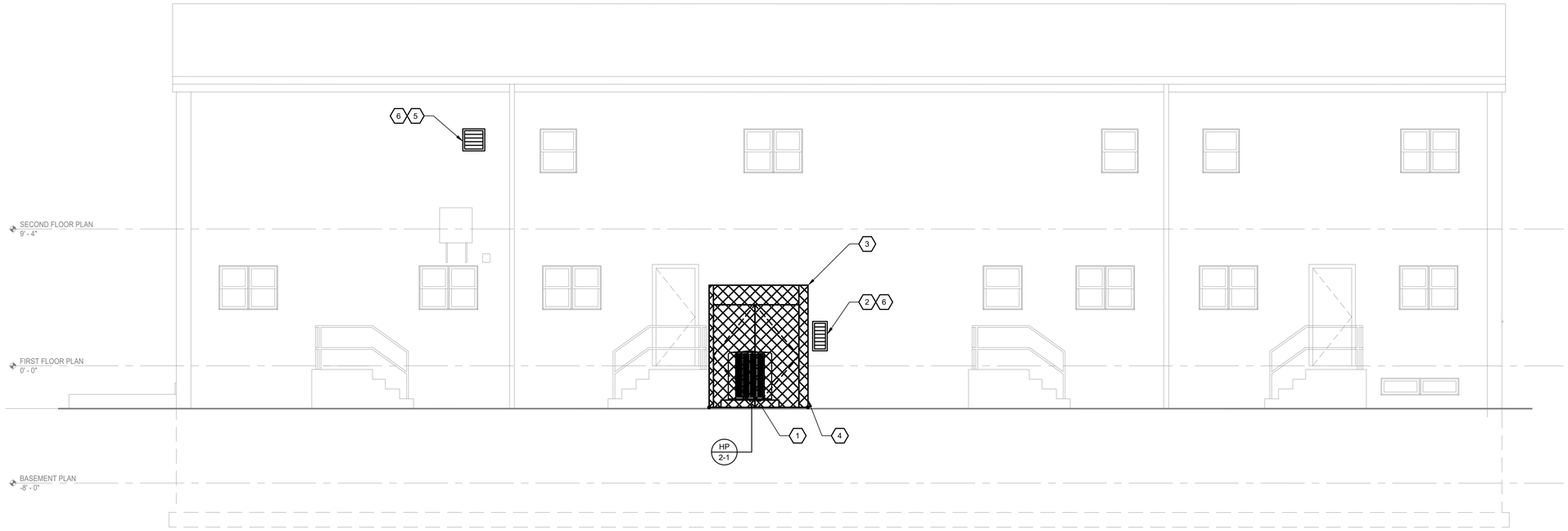
SECOND FLOOR MECHANICAL PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: M202



1 M203 MECHANICAL REAR BUILDING ELEVATION

1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MC SHALL VERIFY ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, AND APPURTENANCE SIZES AND LOCATION IN FIELD PRIOR TO BID.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL PATCH EXISTING WALLS AND CEILINGS AS NECESSARY TO MATCH EXISTING WALL CONSTRUCTION AT LOCATIONS OF DEMOLISHED MECHANICAL WORK. MC SHALL PROVIDE PAINTING OF WALL PARTITIONS FROM VISUAL STOPPING POINT TO VISUAL STOPPING POINT (I.E. CORNER TO CORNER) TO MATCH EXISTING COLOR.
4. MC SHALL REMOVE ALL OBSTRUCTIONS AND DEBRIS FROM AREAS OF NEW WORK AT REAR ELEVATION OF BUILDING.

MECHANICAL KEY NOTES: (#)

1. NEW HEAT PUMP TO BE INSTALLED 6" CONCRETE PAD. INSTALL PER THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. MC TO VERIFY THAT SERVICE CLEARANCE AROUND HEAT PUMP IS FREE OF ANY OBSTRUCTIONS.
2. 12"X24" MODEL POTTORFF EFD-245 DRAINABLE FRESH AIR LOUVER TO BE INSTALLED AT EXTERIOR WALL NO LESS THAN 14" ABOVE GRADE. PROVIDE WALL SLEEVE, BACKDRAFT DAMPER AND BIRDSCREEN AT WALL AND MOTORIZED CONTROL DAMPERS AT BASEMENT CEILING BELOW. COORDINATE FINAL LOCATION WITH EXISTING MASONRY WALL.
3. OUTDOOR HEAT PUMP SHALL BE PROTECTED BY A LOCKED EXPANDED METAL MESH ENCLOSURE. ENCLOSURE SHALL HAVE AN EXPANDED METAL MESH LID ACROSS TOP OF ENCLOSURE THAT SHALL BE LOCATED NO LESS THAN 4 FEET ABOVE TOP OF HEAT PUMP. SEE DETAILS ON MECHANICAL DETAILS SHEET M303.
4. 6" CONCRETE PAD SHALL TO BE PROVIDED WITHIN MECHANICAL ENCLOSURE. MC SHALL FURNISH AND INSTALL CONCRETE PAD. CONCRETE PAD DIMENSIONS SHALL BE NO LESS THAN 6" WIDER THAN INSTALLED HEAT PUMP DIMENSIONS ON ALL SIDES. SEE DETAILS ON MECHANICAL DETAILS SHEET M303.
5. 18"X18" MODEL POTTORFF EFD-245 DRAINABLE FRESH AIR LOUVER TO BE INSTALLED AT EXTERIOR WALL. PROVIDE WALL SLEEVE, BACKDRAFT DAMPER AND BIRDSCREEN AT WALL AND MOTORIZED CONTROL DAMPERS AT BASEMENT CEILING BELOW. COORDINATE FINAL LOCATION WITH EXISTING MASONRY WALL.
6. CUT HOLE IN EXISTING WALL AS REQUIRED TO ACCOMMODATE NEW DUCT AND LOUVER. ANY CUT STUDS IN EXTERIOR WALL FURR-OUT TO BE BRACED TO ADJACENT STUDS. PATCH WALL TO MATCH EXISTING WALL CONSTRUCTION. BRICK TO BE NEATLY CUT TO THE SIZE TO ACCOMMODATE LOUVER. BRICK TO BE SALVAGED FOR ANY PATCH WORK THAT MIGHT BE NECESSARY. FOR EVERY 4" OF MASONRY THICKNESS FURNISH AND INSTALL 3-1/2" X 3-1/2" X 5/16" GALVANIZED STEEL LINTEL WITH 6" MINIMUM BEARING EACH END ON SOLID MASONRY, 8" DEEP. VERTICAL LEG OF ANGLE TO BE CONCEALED BEHIND BRICK. HOLD LOUVER AS CLOSE TO EDGE OF BRICK AS POSSIBLE TO ALLOW LOUVER TO CONCEAL SAWN EDGE OF BRICK. INSTALL SEALANT AND BACKER ROD AROUND PERIMETER OF LOUVER.

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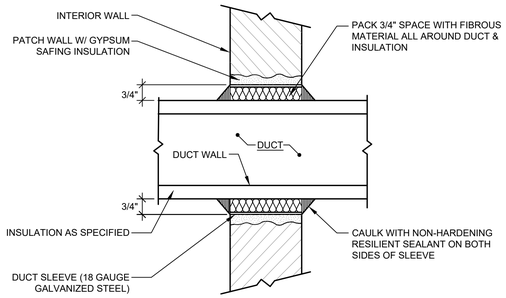
MECHANICAL BUILDING REAR ELEVATION

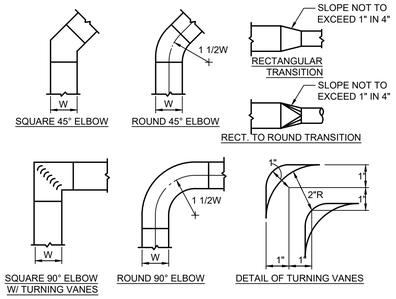
Project : 20-591
Date : 09-28-2020
Sheet No.: M203



1 M301 INSULATED DUCT AND DUCT SLEEVE THRU NON-RATED WALL DETAIL

NO SCALE

NOTES:
1. FOR INSTALLATION IN 2 HOUR RATED FIRE WALL CONSTRUCTION, SEE FIRE DAMPER DIAGRAM.
2. FOR INFORMATION ON DUCT SLEEVES THRU RATED WALLS AND FLOORS SEE SPECIFICATIONS SECTION 15055.
3. 3/4" MIN. SPACE IS REQUIRED BETWEEN SLEEVE & DUCT INSULATION IN AREA WHERE DUCT IS SPECIFIED TO BE INSULATED.
4. ONLY 1 HOUR RATED SMOKE PARTITIONS & 2 HOUR RATED FIRE WALLS ARE INDICATED ON HEATING DRAWINGS. FOR ADDITIONAL RATED WALLS SEE ARCHITECTURAL DRAWINGS.
5. CONTRACTOR TO EXTEND FLOOR SLEEVES IN EQUIPMENT ROOMS & OVER HABITABLE SPACES 2 INCHES ABOVE FINISHED FLOOR.

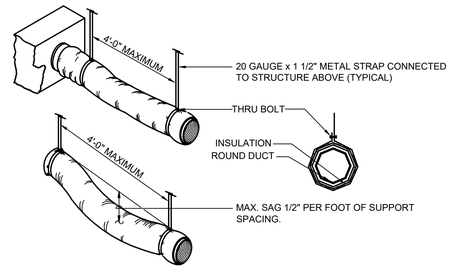


2 M301 LOW VELOCITY DUCTWORK DIAGRAMS

NO SCALE

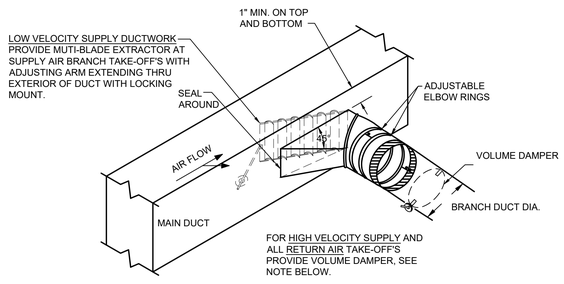
NOTE:
PROVIDE RADIUS ELBOWS, 18" AND LARGER WITH TURNING BLADES AT 1/3 AND 1/2 THE WIDTH OF THE DUCT FROM THE INSIDE RADIUS. TURNING BLADES SHALL BE PROVIDED WITH HEMMED ENDS. (SEE SECTION 233113 OF MECHANICAL SPECIFICATIONS FOR ADDITIONAL DUCT CONSTRUCTION INFORMATION AND RESTRICTIONS.)

NOTES:
1. FLEXIBLE DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM RECTANGULAR DUCT CONNECTION BEFORE BENDING.
2. FLEXIBLE DUCT SHOULD NOT EXCEED 4'-0" IN LENGTH. USE RIGID ROUND DUCTWORK WHEN RUNOUTS EXCEED 4'-0".

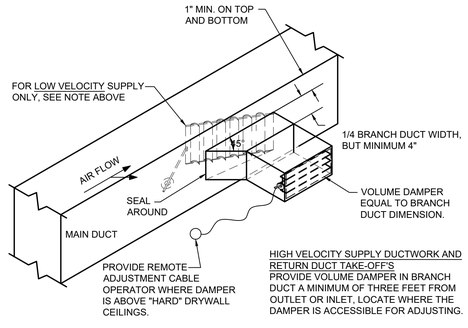


3 M301 FLEXIBLE DUCT RUN-OUT SUPPORT DETAIL

NO SCALE



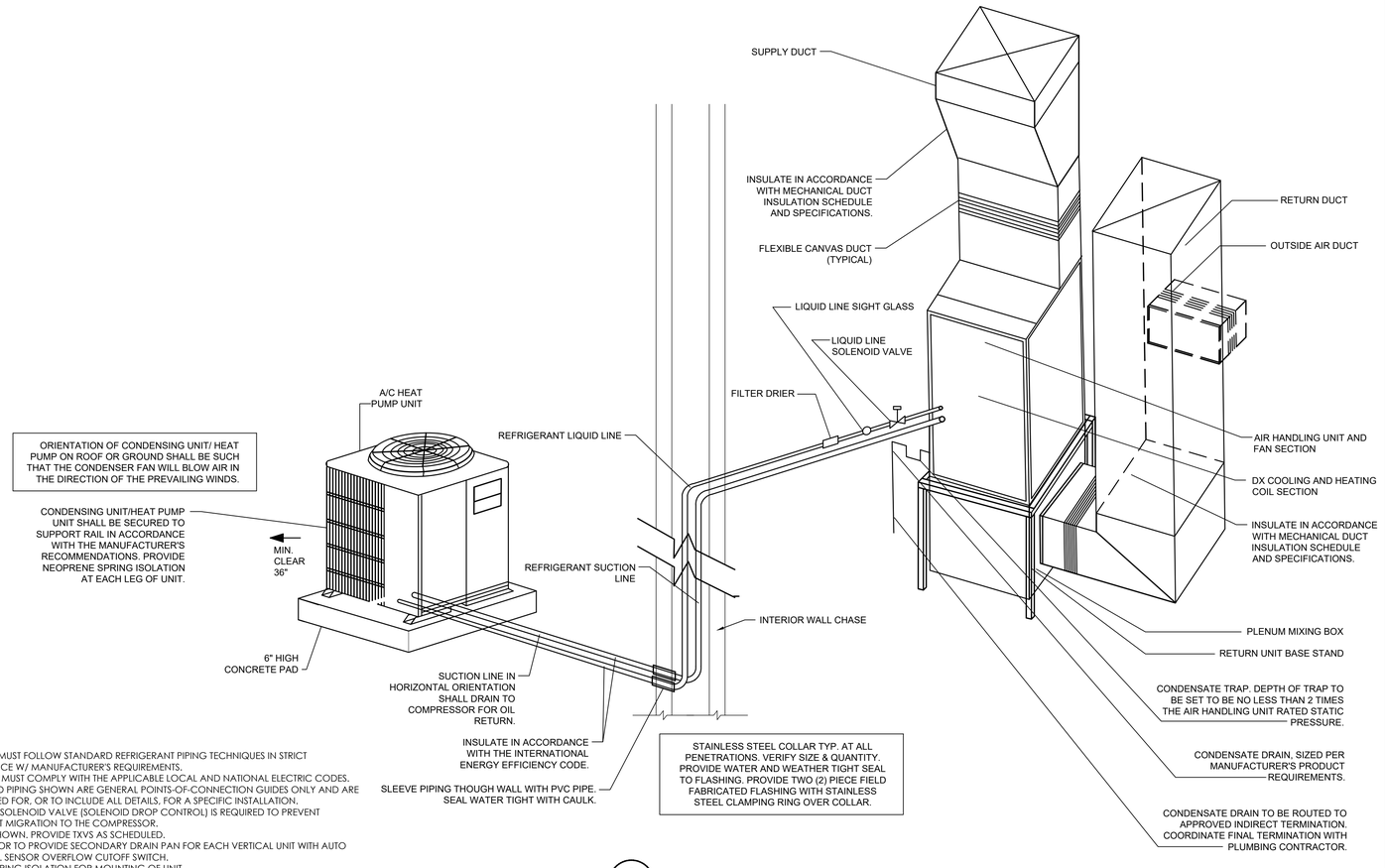
ROUND DUCT TAKE-0FF



RECTANGULAR DUCT TAKE-0FF

4 M301 TYPICAL LOW VELOCITY DUCT BRANCH DETAILS

NO SCALE



NOTES:
1. ALL PIPING MUST FOLLOW STANDARD REFRIGERANT PIPING TECHNIQUES IN STRICT ACCORDANCE W/ MANUFACTURER'S REQUIREMENTS.
2. ALL WIRING MUST COMPLY WITH THE APPLICABLE LOCAL AND NATIONAL ELECTRIC CODES.
3. WIRING AND PIPING SHOWN ARE GENERAL POINTS-OF-CONNECTION GUIDES ONLY AND ARE NOT INTENDED FOR, OR TO INCLUDE ALL DETAILS, FOR A SPECIFIC INSTALLATION.
4. LIQUID LINE SOLENOID VALVE (SOLENOID DROP CONTROL) IS REQUIRED TO PREVENT REFRIGERANT MIGRATION TO THE COMPRESSOR.
5. TXVs NOT SHOWN. PROVIDE TXVS AS SCHEDULED.
6. CONTRACTOR TO PROVIDE SECONDARY DRAIN PAN FOR EACH VERTICAL UNIT WITH AUTO WATER LEVEL SENSOR OVERFLOW CUTOFF SWITCH.
7. PROVIDE SPRING ISOLATION FOR MOUNTING OF UNIT.

5 M301 SPLIT SYSTEM HEAT PUMP DETAIL - VERTICAL AIR HANDLER

NO SCALE

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MECHANICAL DETAILS

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Date : 09-28-2020
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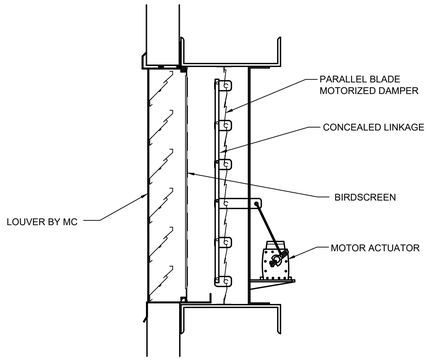
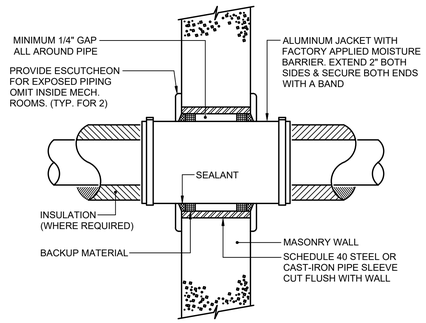
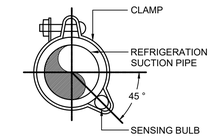


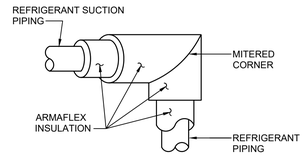
1 / M302 LOUVER DAMPER DETAIL
NOT TO SCALE



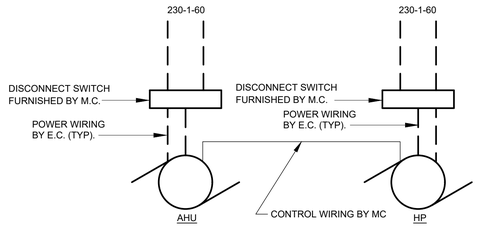
2 / M302 WALL PIPE PENETRATION DETAIL
NO SCALE



3 / M302 REFRIGERANT SUCTION PIPE SENSING BULB DETAIL
NO SCALE



4 / M302 TYPICAL INSULATED PIPING AND ELBOW DETAIL
NO SCALE



5 / M302 AHU / HP WIRING DIAGRAM
NO SCALE

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID C. PRICE
ENGINEER
No. PE081572

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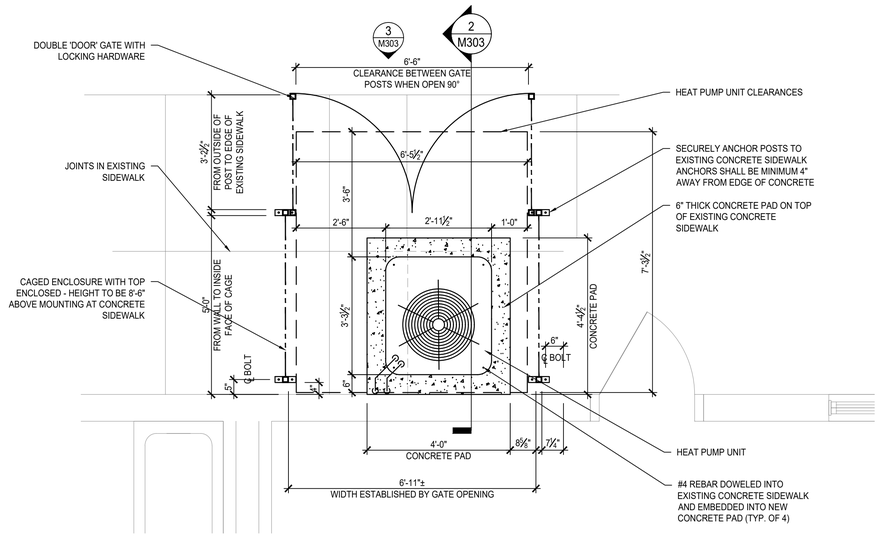
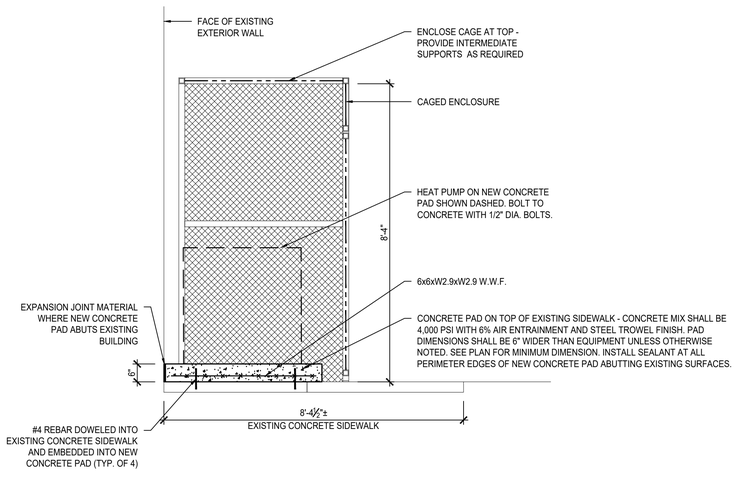


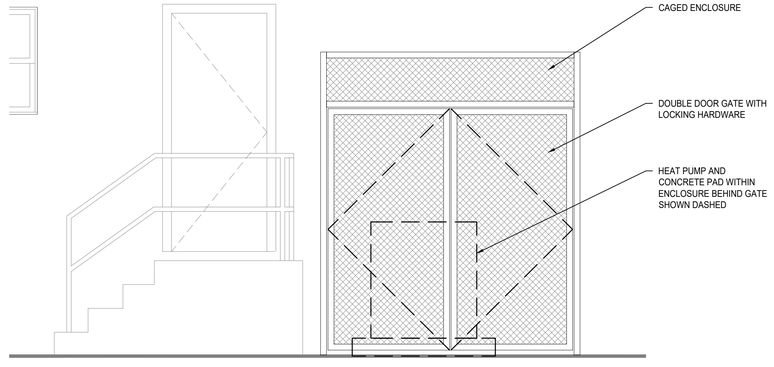
1 M303 HEAT PUMP CAGED ENCLOSURE - PLAN

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



2 M303 HEAT PUMP CAGED ENCLOSURE - SECTION

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



3 M303 HEAT PUMP CAGED ENCLOSURE - ELEVATION

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

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AIR HANDLING UNIT SCHEDULE

UNIT DES.	SUPPLY FAN DATA					DX HEATING CAPACITY				DX COOLING COIL						ELECTRIC RESISTANCE HEATING COIL				ELECTRICAL DATA			MODEL	WEIGHT	BASIS OF DESIGN	REMARKS
	CFM	MIN OA CFM	E.S.P. IN. WG	RPM	HP	MBH @ 47 DEG F	MBH @ 17 DEG F	EDB	LAT	EA DB	EA WB	LA DB	LA WB	SENS. MBH	TOTAL MBH	EAT	LAT	TOTAL MBH	TOTAL KW	VOLTS/PH	MCA	MOCP				
AHU2-1	1600	350	0.5	-	1.0	47.5	30.6	55.1°F	72.5°F	77.3°F	64.6°F	55.0°F	54.0°F	38.5	47.2	72.5°F	94.8°F	39.2	11.5	230V/1PH	75.0	80.0	CBX27UH-048	194 LBS.	LENNOX	1 THRU 15

REMARKS:
1. PROVIDE APPROPRIATE CLEARANCE FOR SERVICE AND MAINTENANCE PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
2. PROVIDE PRIMARY CONDENSATE DRAIN, SECONDARY DRAIN PAN WITH OVERFLOW SENSOR CUTOFF.
3. PROVIDE PLENUM MIXING BOX AND MOTORIZED OUTSIDE AIR CONTROL DAMPERS.
4. PROVIDE AUXILIARY ELECTRIC RESISTANCE HEATER.
5. PROVIDE DUAL POINT ELECTRICAL CONNECTION.
6. PROVIDE FULLY INSULATED CABINET.
7. R-410 REFRIGERANT.
8. PROVIDE OUTDOOR TEMPERATURE AND HUMIDITY SENSOR.
9. PROVIDE DEHUMIDIFICATION CONTROL.
10. PROVIDE MERV 8 FILTERS.
11. PROVIDE DISCONNECT(S).
12. PROVIDE AIR FLOW SWITCH.
13. PROVIDE VIBRATION ISOLATION.
14. PROVIDE RETURN BASE UNIT STAND.
15. VERTICAL AIR HANDLING UNIT.

GRILLE, REGISTER & DIFFUSER SCHEDULE

TAG	FACE SIZE (SLOT WIDTH)	# SLOTS/ BAR, GRID SPACE	DEFLECTION/ THROW	CONN. SIZE	MAX CFM	P.D. IN. W.C.	MAX. NC	BASIS OF DESIGN	MODEL	REMARKS
RG-1	24/20	3/4"	45°	24/18	1600	0.08	21	PRICE	530D	1,2,3

REMARKS:
1. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING TYPES AND MOUNTING REQUIREMENTS.
2. COLOR SELECTED BY ARCHITECT.
3. PROVIDE OPPOSED BLADE DAMPERS AT DIFFUSERS, GRILLES, OR REGISTERS IF INSTALLED IN HARD CEILING.

AIR COOLED HEAT PUMP UNIT CONDENSING UNIT SCHEDULE

UNIT DES.	SERVES	NO. OF STAGES	NOMINAL CAPACITY		COOLING EFF.		HSPF	NOM. CONN. CAP. %	EAT DEG F.		ELECTRICAL			REFRIGERANT LINESET		SOUND PRESS. DBA	WEIGHT	MANUF.	MODEL	REMARKS
			COOL MBTUH	HEAT MBTUH	SEER	EER			COOL -ING	HEAT -ING	VOLTS/PH.	MCA	MOCP	SUCTION	LIQUID					
HP2-1	AHU2-1	2	49.5	47.5	15.0	12.7	9.2	96.9	89.0	2.0	230V/1PH	29.0	50.0	7/8"	3/8"	84	312 LBS.	LENNOX	XP14-048	1 THRU 18

NOTES:
1. MCA - MINIMUM CIRCUIT AMPACITY, RFS - RECOMMENDED FUSE SIZE, MFS- MAXIMUM FUSE SIZE, MOCP - MAXIMUM OVERCURRENT PROTECTION
2. PROVIDE DISCONNECT.
3. MOUNT UNIT ON EQUIPMENT SUPPORT RAIL.
4. PROVIDE LIQUID LINE SOLENOID VALVE KIT.
5. PROVIDE FREEZE PROTECTION KIT.
6. PROVIDE LOW AMBIENT KIT.
7. PROVIDE FILTER DRIER.
8. PROVIDE HIGH AND LOW PRESSURE SWITCHES.
9. PROVIDE THERMOSTATIC EXPANSION VALVE.
10. PROVIDE BRASS SUCTION AND LIQUID SERVICE VALVES WITH SWEAT CONNECTIONS AND SERVICE PORTS.
11. PROVIDE CRANKCASE HEATER.
12. PROVIDE COMPRESSOR SOUND JACKET.
13. PROVIDE PROVIDE FUSED DISCONNECT.
14. PROVIDE SIGHT GLASS.
15. PROVIDE LONG LINE APPLICATION KIT ON RUNS GRATER THAN 80 FEET.
16. PROVIDE HARD START KIT.

SEQUENCE OF OPERATION

SPLIT SYSTEM HEAT PUMP AHU2-1 & HP2-1

1.1. OCCUPANCY SCHEDULE AND SETPOINTS
- 1.1.1. OCCUPIED HOURS - 24 HOURS A DAY (ADJ.)
- 1.1.2. UNOCCUPIED HOURS - NOT APPLICABLE ADJ.)
- 1.1.3. OCCUPIED COOLING SPACE TEMPERATURE SETPOINT - 74 DEGREES FAHRENHEIT
- 1.1.4. OCCUPIED HEATING SPACE TEMPERATURE SETPOINT - 70 DEGREES FAHRENHEIT
- 1.1.3. UNOCCUPIED COOLING SPACE TEMPERATURE SETPOINT - 80 DEGREES FAHRENHEIT
- 1.1.4. UNOCCUPIED HEATING SPACE TEMPERATURE SETPOINT - 65 DEGREES FAHRENHEIT

1.2. HEAT PUMP UNIT - SPLIT SYSTEM (W/ ELECTRIC HEAT)
- 1.2.1. COOLING CYCLE - OCCUPIED HOURS: UPON A RISE IN SPACE TEMPERATURE ABOVE THE OCCUPIED SETPOINT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT SETPOINT. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY AND THE OUTDOOR AIR DAMPER SHALL BE OPEN. ELECTRIC HEATER SHALL BE OFF.
- 1.2.2. COOLING CYCLE - UNOCCUPIED HOURS: SYSTEM SHALL OPERATE AS DESCRIBED FOR OCCUPIED TIMES, ALTHOUGH THE SETPOINTS WILL BE ADJUSTED ACCORDINGLY TO ACCOMMODATE SETBACK CONDITIONS.
- 1.2.3. HEATING CYCLE - PRIMARY - OCCUPIED HOURS: UPON A DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED HEATING SETPONT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO MAINTAIN TEMPERATURE AT SETPOINT. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY AND THE OUTDOOR AIR DAMPER SHALL BE OPEN.
- 1.2.4. HEATING CYCLE - SECONDARY - OCCUPIED HOURS: UPON A CONTINUED DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED HEATING SETPONT, THE AUXILIARY ELECTRIC HEATER SHALL ENERGIZE TO MAINTAIN SETPOINT. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY AND THE OUTDOOR AIR DAMPER SHALL BE OPEN.
- 1.2.5. HEATING CYCLE - UNOCCUPIED HOURS: SYSTEM SHALL OPERATE AS DESCRIBED FOR UNOCCUPIED TIMES, ALTHOUGH THE SETPOINTS WILL BE ADJUSTED ACCORDINGLY.

THERMAL INSULATION SCHEDULE

SYSTEM	SYSTEM- LOCATION	OPERATING TEMPERATURE	MATERIAL	SMACNA CLASS					REMARKS
				TYPE	THICKNESS IN.S	DENSITY LB/CU. FT.	INSTALLED "R" VALUE/ CONDUCTIVITY	JACKET	
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, ACCESSIBLE	40-120	MINERAL-FIBER	BLANKET	2.0"	0.75	5.0	FSK	1, 5
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, INACCESSIBLE	40-120	MINERAL-FIBER	BOARD	1.5 "	2.25	6.5	FSK	2
DUCT	SUPPLY AIR DUCT - INDOOR EXPOSED	40-120	UNINSULATED	-	-	-	-	-	-
DUCT	RETURN AIR DUCT - INDOOR EXPOSED	40-120	MINERAL-FIBER	LINED	1.0 "	2.25	4.0	-	2
DUCT	OUTSIDE AIR DUCT - INDOOR	0-100	MINERAL-FIBER	BOARD	2.5 "	2.25	8.0	FSK	7
PIPING	REFRIGEANT - CONDITIONED SPACE	40-60	MINERAL-FIBER	PRE-MOLDED	REFER TO PIPING INSULATION THICKNESS SCHEDULE			ASJ+SSL	6
PIPING	REFRIGERANT - UNCONDITIONED SPACE	40-60	MINERAL-FIBER WICKING	PRE-MOLDED				ASJ+SSL	6
PIPING	COLD CONDENSATE DRAIN - INDOOR, ONLY ON METAL PIPE	40-60	MINERAL-FIBER	PRE-MOLDED				ASJ+SSL	7
PIPING	OUTDOOR PIPING EXPOSED TO FREEZING (HEAT TRACED PIPE)	40-100	MINERAL-FIBER	PRE-MOLDED				ALUM.	

NOTES:
1. CONCEALED, ACCESSIBLE LOCATIONS - ABOVE LAY-IN OR ACCESSIBLE CEILINGS, ACCESSIBLE MECHANICAL SHAFTS.
2. CONCEALED, INACCESSIBLE LOCATIONS - ABOVE HARD CEILINGS, (DRY WALL, PLASTER), MECHANICAL SHAFTS, BEHIND WALLS.
3. FOR DUCTS LOCATED OUTDOORS PROVIDE WATERPROOF CONSTRUCTION WITH WATER & UV RESISTANT MASTIC ON ALL JOINTS. INTERNALLY LINE WITH ACOUSTICAL DUCT LINER. CROSS-BREAK TOP TO SHED WATER.
4. CONSTRUCT PER NFPA 96 STANDARDS FOR KITCHEN EXHAUST. WHERE LOCATED WITH 3" OF COMBUSTIBLE PROTECT COMBUSTIBLE MATERIALS, WRAP EXTERIOR WITH FIRE RESISTANT INSULATION.
5. DO NOT INSULATE:
   - MAKE-UP AIR DUCTWORK OPERATING AT SURROUNDING AMBIENT CONDITIONS
   - RETURN AND EXHAUST AIR DUCTWORK LOCATED INDOORS.
   - TRANSFER AIR DUCTWORK (ACOUSTICALLY LINE DUCT)
   - EXPOSED SUPPLY DUCTWORK LOCATED IN CONDITIONED SPACE. (DOES NOT INCLUDE RETURN AIR PLENUM)
6. COVER ALL EXPOSED PIPING LOCATED BELOW 7' 0" ABOVE FINISHED FLOOR WITH PVC JACKET.
7. MULTIPLE INSULATION METHODS MAY BE USED TO ACHIEVE THE TOTAL REQUIRED R-VALUE.
8. DUCTWORK SHALL BE PAINTED WHERE EXPOSED OR VISIBLE TO OCCUPANTS. COLOR TO BE SELECTED BY ARCHITECT.

PIPE INSULATION THICKNESS SCHEDULE

FLUID OPERATING TEMPERATURE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (IN)				
	CONDUCTIVITY BTU·IN.(h·ft²·°F)	MEAN RATING TEMPERATURE (°F)	< 1	1 to < 1 1/2	1 1/2 < 4	4 to < 8	≥ 8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
40	0.20 - 0.26	50	0.5	1.0	1.0	1.0	1.5

REMARKS:

PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE ABOVE (IECC 2015 TABLE C403.2.10) WITH THE FOLLOWING EXCEPTIONS:
1. FACTORY-INSTALLED PIPING WITHIN HVAC EQUIPMENT TESTED AND RATED IN ACCORDANCE WITH A TEST PROCEDURE REFERENCED BY THIS CODE.
2. FACTORY-INSTALLED PIPING WITHIN ROOM FAN-COILS AND UNIT VENTILATORS TESTED AND RATED ACCORDING TO AHRI 330 (EXCEPT THAT THE SAMPLING AND VARIATION PROVISIONS OF SECTION 6.5 SHALL NOT APPLY) AND AHRI 840, RESPECTIVELY.
3. PIPING THAT CONVEYS FLUIDS THAT HAVE A DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60°F AND 105°F.
4. PIPING THAT CONVEYS FLUIDS THAT HAVE NOT BEEN HEATED OR COOLED THROUGH THE USE OF FOSSIL FUELS OR ELECTRIC POWER.
5. STRAINERS, CONTROL VALVES, AND BALANCE VALVES ASSOCIATED WITH PIPING 1 INCH OR LESS IN DIAMETER.
6. DIRECT BURIED PIPING THAT CONVEYS FLUIDS AT OR BELOW 60°F.

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MECHANICAL SCHEDULES

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VENTILATION SCHEDULE (1)

AIR HANDLING UNIT	AREA SERVED	SPACE DESIGNATION	AREA RATE			PEOPLE RATE				TOTAL REQ'D VENT @ ROOM (CFM)	VENT EFFECTIVENESS (%)	TOTAL REQ'D VENT @ AHU INLET (CFM)	REMARKS
			AREA (SQFT)	REQ'D VENT (CFM/SQFT)	REQ'D VENT (CFM)	PEOPLE	REQ'D VENT (CFM/PERSON)	DIVERSITY	REQ'D VENT (CFM)				
AHU2-1	201 EXISTING CORRIDOR	CORRIDOR	83	0.06	5	0	5.0	1.0	0	5	0.8	6.2	
AHU2-1	202 EXISTING FUTURE OFFICE	OFFICE	265	0.06	16	2	5.0	1.0	10	26	0.8	32.4	
AHU2-1	204 EXISTING FUTURE OFFICE	OFFICE	127	0.06	8	2	5.0	1.0	10	18	0.8	22.0	
AHU2-1	206 EXISTING KITCHEN AREA	BREAK ROOM	250	0.12	30	2	5.0	1.0	10	40	0.8	50.0	
AHU2-1	207 EXISTING FUTURE OFFICE	OFFICE	316	0.06	19	7	5.0	1.0	35	54	0.8	N/A	2
AHU2-1	208 EXISTING CORRIDOR	CORRIDOR	59	0.06	4	0	5.0	1.0	0	4	0.8	4.4	
AHU2-1	210 EXISTING FUTURE OFFICE	OFFICE	194	0.06	12	2	5.0	1.0	10	22	0.8	27.1	
AHU2-1	211 EXISTING FUTURE OFFICE	OFFICE	235	0.06	14	2	5.0	1.0	10	24	0.8	30.1	
												122.000	TOTAL FOR SECOND FLOOR

REMARKS:
1. CALCULATIONS WERE PERFORMED BASED ON IMC-2015 SECTIONS 402 & 403. CALCULATIONS WERE CONDUCTED FOR 2ND FLOOR NEW MECHANICAL WORK AND SYSTEM.
2. VENTILATION REQUIREMENTS MET BY NATURAL VENTILATION. OPERABLE PORTION OF WINDOWS IS EQUAL TO 15.0 SQUARE FEET. OPERABLE AREA IS 6% OF THE TOTAL NET SQUARE AREA FOR SPACE, AND THUS MEETS THE MINIMUM 4% NET OPERABLE OPENING AREA FOR NATURAL VENTILATION.

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MECHANICAL SCHEDULES

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GENERAL ELECTRICAL NOTES:

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT.

DEMOLITION: SEE "ELECTRICAL GENERAL DEMOLITION NOTES FOR ADDITIONAL DEMOLITION REQUIREMENTS.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT.

RECORD DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE ARCHITECT OR ENGINEER AT PROJECT CLOSE-OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #8 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE OWNER.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL SYSTEM, INCLUDING EQUIPMENT FRAMES CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL CIRCUITS.

LABELS: PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

PANEL DIRECTORY: PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH PANELBOARD, INCLUDING EXISTING PANELBOARDS MODIFIED FOR THIS PROJECT, WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

MOTOR COORDINATION: MOTORS, MOTOR STARTERS, CONTROLLERS, INTEGRAL DISCONNECT SWITCHES, AND CONTACTORS SHALL BE PROVIDED WITH THEIR RESPECTIVE PIECES OF EQUIPMENT BY THE EQUIPMENT SUPPLIER. COMMUNICATE WITH THE TRADES PROVIDING THE EQUIPMENT, VERIFYING ALL REQUIREMENTS. PROVIDE ALL ELECTRICAL CONNECTIONS REQUIRED THEREIN AND INSTALL MOTOR STARTERS.

MOTOR DISCONNECTS: ALL MOTORS SHALL HAVE DISCONNECTING MEANS.

MOTOR FUSE PROTECTION: WHERE FUSE PROTECTION IS SPECIFICALLY REQUIRED BY THE EQUIPMENT MANUFACTURER, PROVIDE FUSIBLE SWITCHES IN LIEU OF NON-FUSIBLE SWITCHES OR FUSIBLE ENCLOSED CIRCUIT BREAKERS OR OTHER DEVICES INDICATED.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

EQUIPMENT DETAILS: MECHANICAL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. THE LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE. COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE THE EXACT LOCATION OF EACH PIECE OF EQUIPMENT AND DETERMINE THE EXACT ROUGH-IN AND CONNECTION REQUIREMENTS.

STARTER MOUNTING: WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER OR CIRCUIT BREAKER IS SHOWN ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKETS, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

MATERIAL COORDINATION: VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING DEVICES TO ENSURE PROPER OR DEVICES ARE FURNISHED TO MATCH CONSTRUCTION.

MOUNTING HEIGHTS: MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED.

DEVICE LOCATIONS: COORDINATE LOCATIONS OF SWITCHES, RECEPTACLES, AND TELE/DATA OUTLETS WITH OTHER WALL MOUNTED DEVICES SUCH AS THERMOSTATS AND CONTROL STATIONS. DO NOT MOUNT WIRING DEVICES BACK TO BACK.

BARRIERS: WHERE A MULTIPLE GANG BOX HAS CIRCUITS OF DIFFERENT VOLTAGES OR SYSTEMS WHICH ARE REQUIRED TO BE SEPARATED, PROVIDE THE CODE-REQUIRED SEPARATION, USING A FULL HEIGHT AND DEPTH BARRIER PLATE.

FIRE PROOFING: FOR ANY WALL OR FLOOR PENETRATIONS THROUGH FIRE RATED STRUCTURES, PROVIDE FIRE-PROOFING TO SEAL ALL THE PENETRATIONS AFTER THE CONDUIT HAS BEEN INSTALLED. FIRE PROOFING FOR PENETRATIONS SHALL BE UL APPROVED PER THE THE PENETRATION MADE IN ORDER TO MAINTAIN FIRE RATED INTEGRITY OF THE STRUCTURE.

CLEAN UP: ON PROJECT CLOSE-OUT, CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES, AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

OWNER FURNISHED EQUIPMENT: CONTRACTOR SHALL OBTAIN CUT SHEETS, INSTALLATION DATA, AND ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT AND COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO STARTING ANY ASSOCIATED WORK.

CONDUIT ROUTING: ALL CONDUIT RUN OVERHEAD SHALL BE RUN AT THE BOTTOM OF THE FLOOR, ROOF STRUCTURE, OR LOWEST CHORD OF JOIST SPACE (AS APPLICABLE) ABOVE IN ORDER TO AVOID CONFLICTS WITH OTHER TRADES.

WIRING DEVICES: ALL RECEPTACLES AND SWITCHES SHALL BE LABELED WITH CLEAR PLASTIC LAMINATED LABEL WITH BLACK TEXT, NOTING PANELBOARD DESIGNATION AND CIRCUIT NUMBER FROM WHICH IT IS FED.

EQUIPMENT DEMONSTRATION: PROVIDE A DEMONSTRATION OF THE OPERATION OF ALL ELECTRICAL COMPONENTS.

CEILING PLENUM: ALL WIRING THAT WILL NOT BE RUN IN CONDUIT SHALL BE PLENUM RATED.

ELECTRICAL GENERAL DEMOLITION NOTES:

GENERAL: DEMOLITION DRAWINGS ARE BASED ON EXISTING PLANS AND FIELD INVESTIGATION PRIOR TO DEMOLITION. VISIT THE EXISTING BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND IN ORDER TO AVOID CONFLICTS.

DASHED ITEMS: ALL ITEMS SHOWN DASHED ON DEMOLITION PLANS ARE EXISTING AND SHALL BE REMOVED COMPLETE INCLUDING BOXES, CONDUIT, WIRE, FASTENERS, AND ASSOCIATED APPURTENANCES UON.

SOLID ITEMS: ALL ITEMS SHOWN SOLID ON DEMOLITION PLANS ARE EXISTING TO REMAIN.

CIRCUITING TO REMAIN: WHERE AFFECTED BY NEW WORK, EXISTING CIRCUITING TO REMAIN SHALL BE REROUTED OR RECONNECTED AS REQUIRED, IN ORDER TO MAINTAIN CONTINUITY OF CIRCUIT.

REUSE OF EXISTING CIRCUITRY: EXISTING CIRCUITS SHALL BE REUSED WHERE CONVENIENT TO SERVE THE NEW LAYOUT. PROVIDE CIRCUIT MODIFICATIONS INDICATED OR REQUIRED TO MAINTAIN CONTINUITY OF EXISTING CIRCUITS THAT REMAIN.

EXISTING CONDUIT: ALL EXISTING CONDUITS AND WIRING THAT WILL NOT BE REUSED SHALL BE REMOVED. EXISTING CONDUIT TO REMAIN CONCEALED IN WALLS SHALL BE ABANDONED. EXISTING CONDUIT TO REMAIN BELOW FLOOR SLAB SHALL BE CUT OFF ONE INCH BELOW ROUGH FLOOR AND GROUTED FLUSH. ALL EXISTING WIRING IN CONDUITS TO BE ABANDONED SHALL BE DISCONNECTED FROM POWER SOURCE AND REMOVED.

REPAIR DAMAGE: EXERCISE CARE IN REMOVAL OF DEMOLITION ITEMS. REPAIR, AT NO ADDITIONAL COST TO OWNER, ANY DAMAGE CAUSED TO EXISTING CONSTRUCTION AND/OR EQUIPMENT TO REMAIN.

ASSOCIATED APPURTENANCES: REMOVE ALL ELECTRICAL APPURTENANCES (DISCONNECTS, STARTERS, WIRING, CONDUIT, ETC.) ASSOCIATED WITH EQUIPMENT TO BE REMOVED BY OTHERS.

KNOCKOUT PLUGS AND COVERS: ALL CONDUIT REMOVED SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING FITTINGS, MOUNTING DEVICES, MOUNTING HARDWARE, ETC. PROVIDE CONDUIT PLUGS AND BLANKS FOR ALL OPENINGS CREATED BY THE REMOVAL OF CONDUIT. PROVIDE BLANK COVER PLATES FOR ALL OPENED OUTLET BOXES CREATED BY THE REMOVAL OF THE EQUIPMENT AND/OR DEVICES.

DEMOLISHED MATERIALS: ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR DESIGNATED TO BE TURNED OVER TO THE OWNER, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.

SCHEDULE OUTAGES: ALL WORK AND ALL POWER OUTAGES SHALL BE SCHEDULED AT TIMES CONVENIENT TO THE OWNER.

NOTIFICATION: NOTIFY THE OWNER PRIOR TO TURNING OFF ANY CIRCUITS.

EXISTING CIRCUITS: IF DURING THE COURSE OF CONSTRUCTION, IT IS DETERMINED BY THE CONTRACTOR THAT AN EXISTING CIRCUIT BECOMES SPARE, THE CONTRACTOR SHALL UPDATE THE PANELBOARD DIRECTORY TO INDICATE SUCH, EVEN IF IT IS NOT EXPLICITLY MARKED ON THE ELECTRICAL PLANS.

ELECTRICAL ABBREVIATIONS	
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CURRENT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO/VISUAL
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FLA	FULL LOAD AMPS
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSE POWER/HEAT PUMP
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
LC	LIGHTING CONTACTOR
LTG	LIGHTING
MAU	MAKE UP AIR UNIT
MCA	MINIMUM CIRUIT AMPS
MC	MECHANICAL CONTRACTOR
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
P	POLE
PF	POWER FACTOR
PL	PROPERTY LINE
PNL	PANEL
PNLBD	PANELBOARD
Ø	PHASE
PRI	PRIMARY
RECP	RECEPTACLE
RTU	ROOF TOP UNIT
SE	SERVICE ENTRANCE
SEC	SECONDARY
TBB	TELEPHONE BACKBOARD
TR	TAMPER RESISTANT
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE REQUENCY DRIVE
W	WATTS/WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

POWER	
J	JUNCTION BOX - ABOVE CEILINGS OR FLUSH IN WALLS.
	ELECTRICAL PANELBOARD
	DUPLEX RECEPTACLE, 20A, 120V, 18"AFF, UON.
WP	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, WITH COOPER MODEL WIU-1D (OR EQUAL) "WHILE-IN-USE" WEATHERPROOF COVER, 18"AFG UON.
	ELECTRICAL CIRCUIT RUN IN CONDUIT AND CIRCUIT HOMERUN TO PANELBOARD (PANEL AND CIRCUIT DESIGNATION AS INDICATED). AS A MINIMUM CONDITION, EACH SINGLE PHASE CIRCUIT SHALL HAVE 1 #12 PHASE CONDUCTOR, 1 #12 NEUTRAL CONDUCTOR, AND 1 #12 GROUNDING CONDUCTOR IN 3/4" CONDUIT. PROVIDE ADDITIONAL PHASE CONDUCTORS AS REQUIRED FOR "MULTIPLE PHASED" ELECTRICAL LOADS. PROVIDE ADDITIONAL "SWITCH LEG" CONDUCTORS TO PROVIDE THE LIGHT FIXTURE CONTROL INDICATED. MULTIPLE SINGLE PHASE CONDUCTORS SHALL BE GROUPED TOGETHER IN A COMMON CONDUIT IN ACCORDANCE WITH THE NEC AND AT THE CONTRACTOR'S DISCRETION. NEUTRAL AND GROUNDING CONDUCTORS SHALL BE SHARED AS ALLOWED BY THE NEC. CONDUIT LARGER THAN 3/4" AND CONDUCTORS LARGER THAN #12 SHALL BE AS INDICATED.

LINEWEIGHTS	
	NEW
	EXISTING
	REMOVE EXISTING

GENERAL	
1	KEYNOTE.

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HACP Task Order #32
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At the Public Safety Center,Northview Heights
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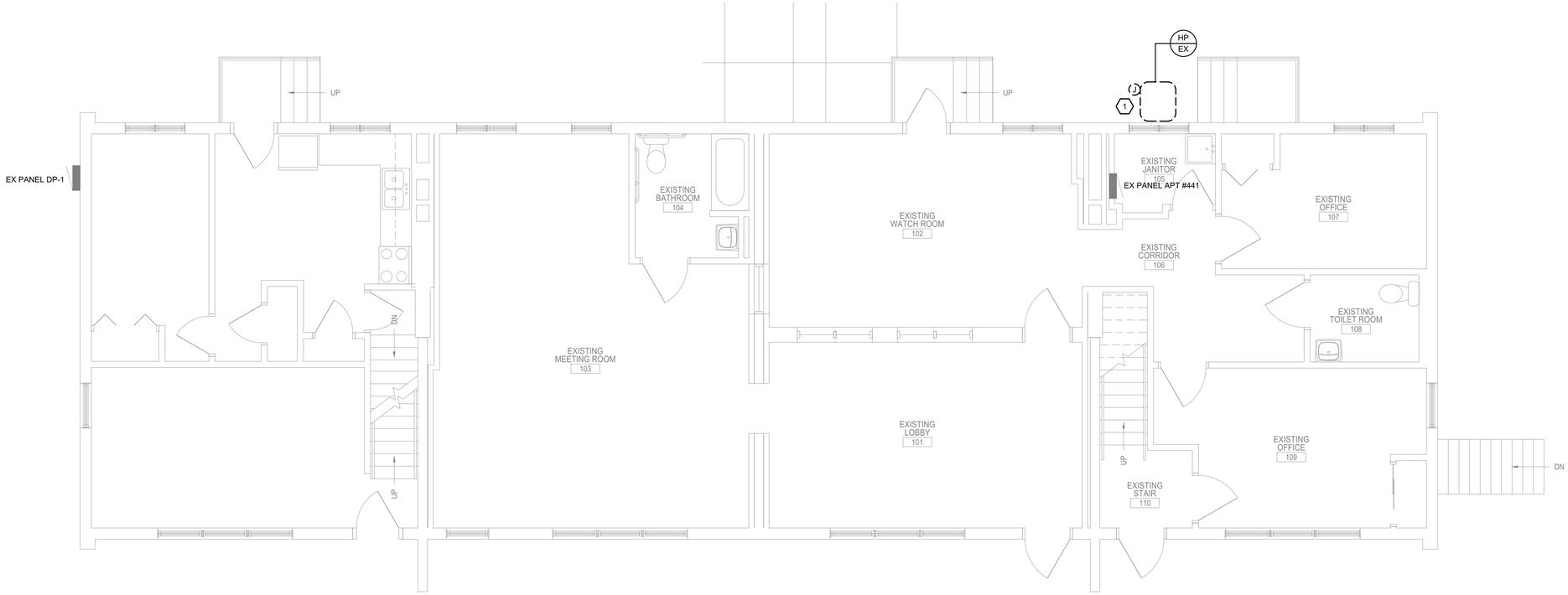
ELECTRICAL DATA SHEET

Project : 20-591
Date : 09-28-2020
Sheet No.: E001



1 E101 FIRST FLOOR ELECTRICAL DEMOLITION PLAN

1/4" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES:

1. ELECTRICAL DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN.
2. DEVICES NOTED WITH "EX" ARE EXISTING TO REMAIN. MAINTAIN EXISTING CIRCUITRY UNLESS OTHERWISE NOTED ON NEW WORK PLANS.
3. ALL HOLES IN WALLS, COLUMN ENCLOSURES, CEILINGS AND FLOORS FROM CONDUIT PENETRATIONS, JUNCTION BOXES OR WIRING DEVICES SHALL BE PATCHED AND PAINTED PER THE ARCHITECT.
4. NOT ALL DEVICES ON WALLS THAT ARE SCHEDULED AS EXISTING TO REMAIN ARE REPRESENTED ON THIS PLAN. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY AND CONSULT WITH ARCHITECT AND BUILDING OWNER ABOUT WHETHER DEVICE SHOULD BE REMOVED OR NOT.
5. UNLESS OTHERWISE NOTED, MAINTAIN ALL ELECTRICAL CONNECTIONS TO EXISTING MECHANICAL EQUIPMENT SCHEDULED AS EXISTING TO REMAIN. COORDINATE THE MECHANICAL DEMOLITION SCOPE OF WORK WITH DIVISION 23.

ELECTRICAL DEMOLITION KEY NOTES: (#)

1. DISCONNECT AND REMOVE ALL ELECTRICAL CONNECTIONS TO THE EXISTING HEAT PUMP TO BE DEMOLISHED. DEMOLISH THE ASSOCIATED BRANCH CIRCUIT WIRING AND CONDUIT BACK TO SOURCE. COORDINATE DEMOLITION OF WIRING AND CONDUIT WITH OWNER PRIOR TO START. COORDINATE FULL DEMOLITION SCOPE WITH THE MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR IN FIELD.

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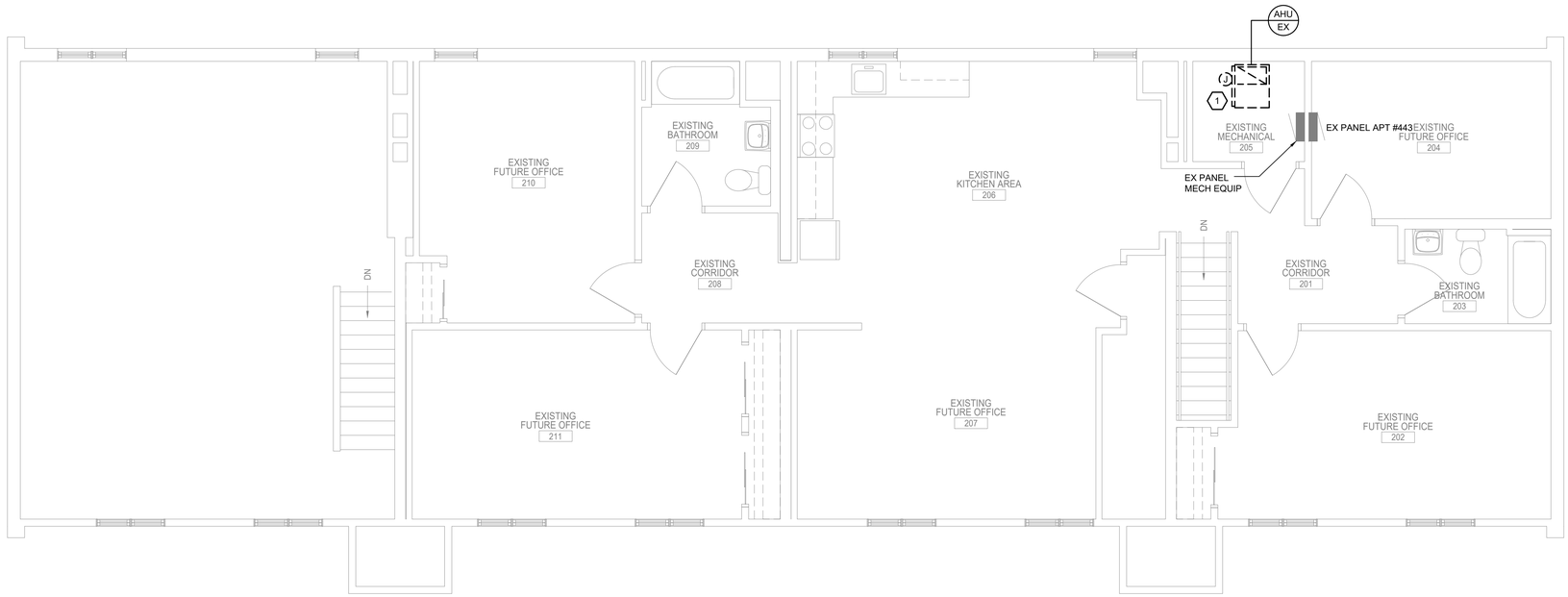
FIRST FLOOR ELECTRICAL DEMOLITION PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: E101



1 / E102 SECOND FLOOR ELECTRICAL DEMOLITION PLAN

1/4" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES:

1. ELECTRICAL DISTRIBUTION EQUIPMENT IS EXISTING TO REMAIN.
2. DEVICES NOTED WITH "EX" ARE EXISTING TO REMAIN. MAINTAIN EXISTING CIRCUITRY UNLESS OTHERWISE NOTED ON NEW WORK PLANS.
3. ALL HOLES IN WALLS, COLUMN ENCLOSURES, CEILINGS AND FLOORS FROM CONDUIT PENETRATIONS, JUNCTION BOXES OR WIRING DEVICES SHALL BE PATCHED AND PAINTED PER THE ARCHITECT.
4. NOT ALL DEVICES ON WALLS THAT ARE SCHEDULED AS EXISTING TO REMAIN ARE REPRESENTED ON THIS PLAN. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY AND CONSULT WITH ARCHITECT AND BUILDING OWNER ABOUT WHETHER DEVICE SHOULD BE REMOVED OR NOT.
5. UNLESS OTHERWISE NOTED, MAINTAIN ALL ELECTRICAL CONNECTIONS TO EXISTING MECHANICAL EQUIPMENT SCHEDULED AS EXISTING TO REMAIN. COORDINATE THE MECHANICAL DEMOLITION SCOPE OF WORK WITH DIVISION 23.

ELECTRICAL DEMOLITION KEY NOTES: (#)

1. DISCONNECT AND REMOVE ALL ELECTRICAL CONNECTIONS TO THE EXISTING AIR HANDLING UNIT TO BE DEMOLISHED. DEMOLISH THE ASSOCIATED BRANCH CIRCUIT WIRING AND CONDUIT BACK TO SOURCE. COORDINATE DEMOLITION OF WIRING AND CONDUIT WITH OWNER PRIOR TO START. COORDINATE FULL DEMOLITION SCOPE WITH THE MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR IN FIELD.

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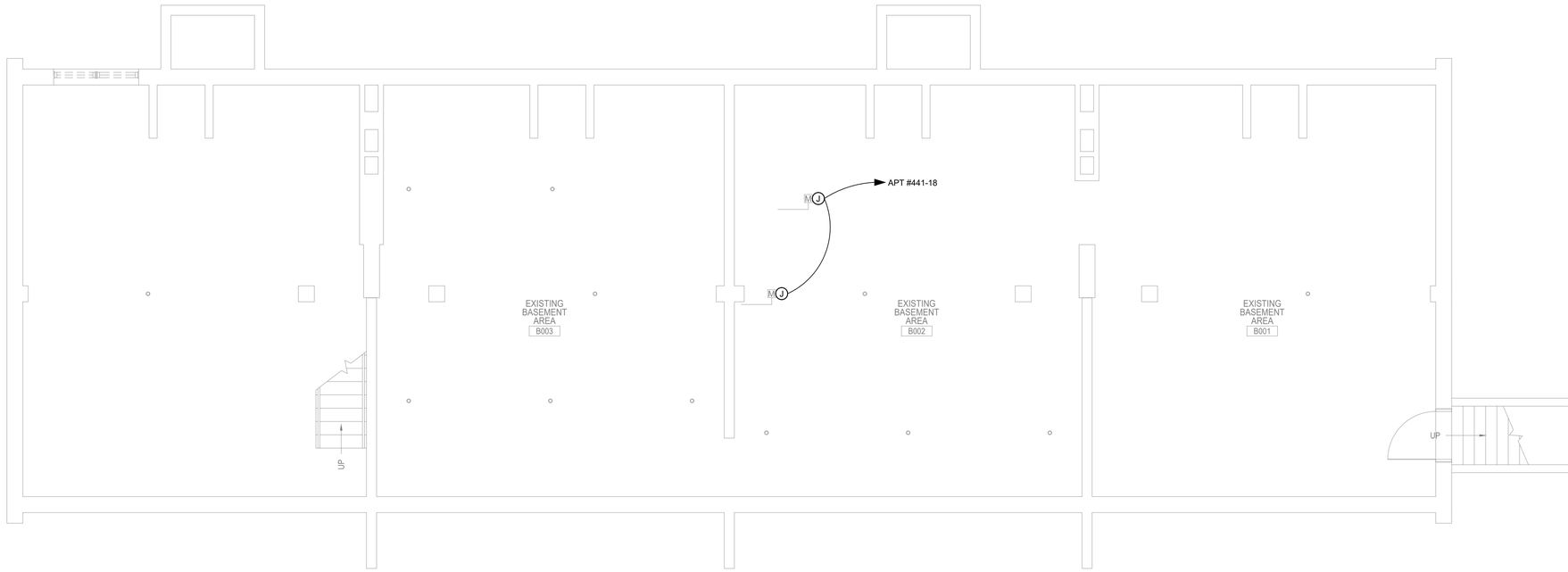
SECOND FLOOR ELECTRICAL DEMOLITION PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: E102



1 E300 BASEMENT FLOOR POWER PLAN
1/4" = 1'-0"

POWER GENERAL NOTES:

1. FIRE STOP ALL FIRE RATED FLOORS,CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL PLANS.
3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER ARCHITECT.
4. EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
5. WHERE WIRE SIZE IS NOT INDICATED, #12 AWG MINIMUM SHALL BE USED FOR CIRCUITS LESS THAN 100 FEET IN LENGTH, #10 AWG SHALL BE USED FOR CIRCUITS FROM 100 TO 150 FEET IN LENGTH, AND #8 AWG SHALL BE USED FOR CIRCUITS FROM 150 TO 250 FEET IN LENGTH. CIRCUIT LENGTHS GREATER THAN 250 FEET SHALL BE WIRED USING #6 MINIMUM, SUBJECT TO FIELD VERIFICATION. ALL EXACT CONDUIT FOOTINGS, LENGTHS, AND WIRE SIZES SHALL BE FIELD DETERMINED BY THE E.C. PER ALL APPLICABLE CODES BASED ON ACTUAL CONDUIT AND WIRE ROUTING. THE INFORMATION ABOVE SHALL BE USED FOR PRICING PURPOSES ONLY.
6. COORDINATE EXACT LOCATIONS OF MECHANICAL EQUIPMENT WITH DIVISION 23. MECHANICAL EQUIPMENT DISCONNECTS AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY EC, UNLESS NOTED OTHERWISE. THESE DISCONNECTS HAVE NOT BEEN SHOWN ON THIS PLAN.

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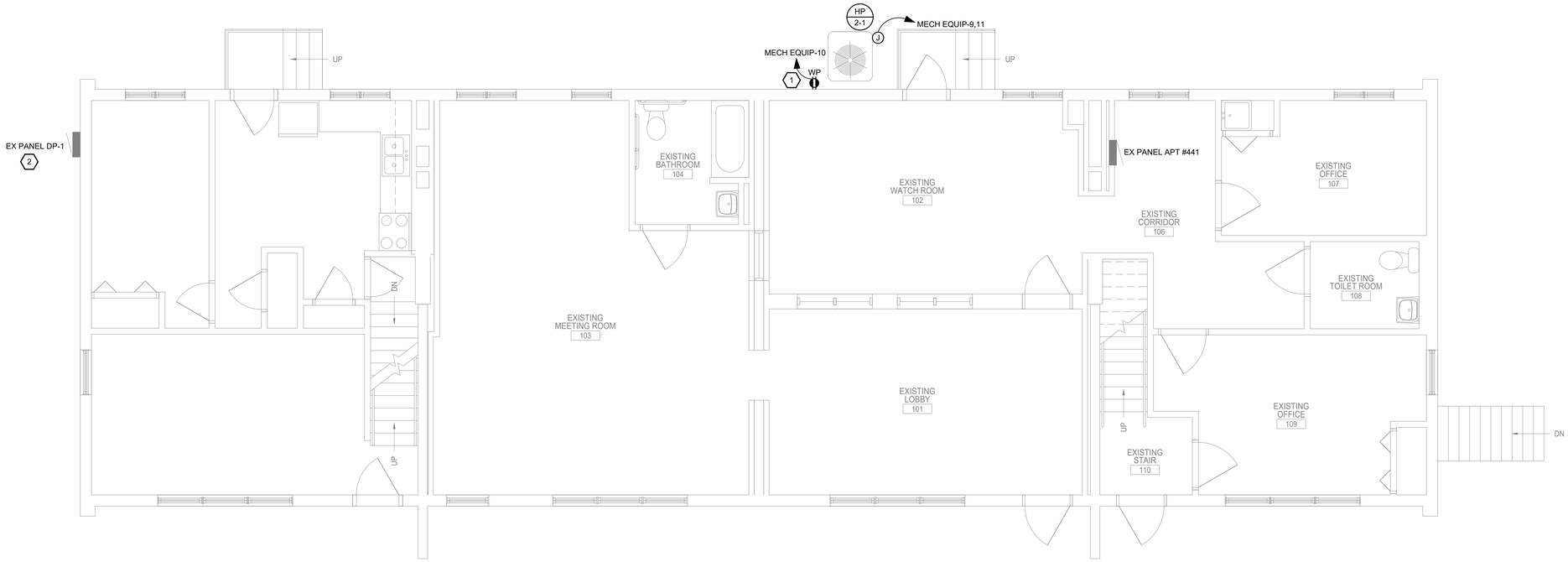
BASEMENT FLOOR POWER PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: E300



1 E301 FIRST FLOOR POWER PLAN

1/4" = 1'-0"

POWER GENERAL NOTES:

1. FIRE STOP ALL FIRE RATED FLOORS,CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL PLANS.
3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER ARCHITECT.
4. EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
5. WHERE WIRE SIZE IS NOT INDICATED, #12 AWG MINIMUM SHALL BE USED FOR CIRCUITS LESS THAN 100 FEET IN LENGTH, #10 AWG SHALL BE USED FOR CIRCUITS FROM 100 TO 150 FEET IN LENGTH, AND #8 AWG SHALL BE USED FOR CIRCUITS FROM 150 TO 250 FEET IN LENGTH. CIRCUIT LENGTHS GREATER THAN 250 FEET SHALL BE WIRED USING #6 MINIMUM, SUBJECT TO FIELD VERIFICATION. ALL EXACT CONDUIT FOOTINGS, LENGTHS, AND WIRE SIZES SHALL BE FIELD DETERMINED BY THE E.C. PER ALL APPLICABLE CODES BASED ON ACTUAL CONDUIT AND WIRE ROUTING. THE INFORMATION ABOVE SHALL BE USED FOR PRICING PURPOSES ONLY.
6. COORDINATE EXACT LOCATIONS OF MECHANICAL EQUIPMENT WITH DIVISION 23. MECHANICAL EQUIPMENT DISCONNECTS AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY EC, UNLESS NOTED OTHERWISE. THESE DISCONNECTS HAVE NOT BEEN SHOWN ON THIS PLAN.

POWER KEY NOTES: (#)

1. PROVIDE NEW GFI RECEPTACLE WITH A WEATHERPROOF COVER FOR MAINTENANCE OF MECHANICAL EQUIPMENT WHERE ONE IS NOT ALREADY LOCATED WITHIN 25 FEET OF THE EQUIPMENT.
2. REFER TO PANEL SCHEDULE ON DRAWING E701 FOR NOTE ABOUT MODIFYING BREAKER IN DISTRIBUTION PANEL DP-1.

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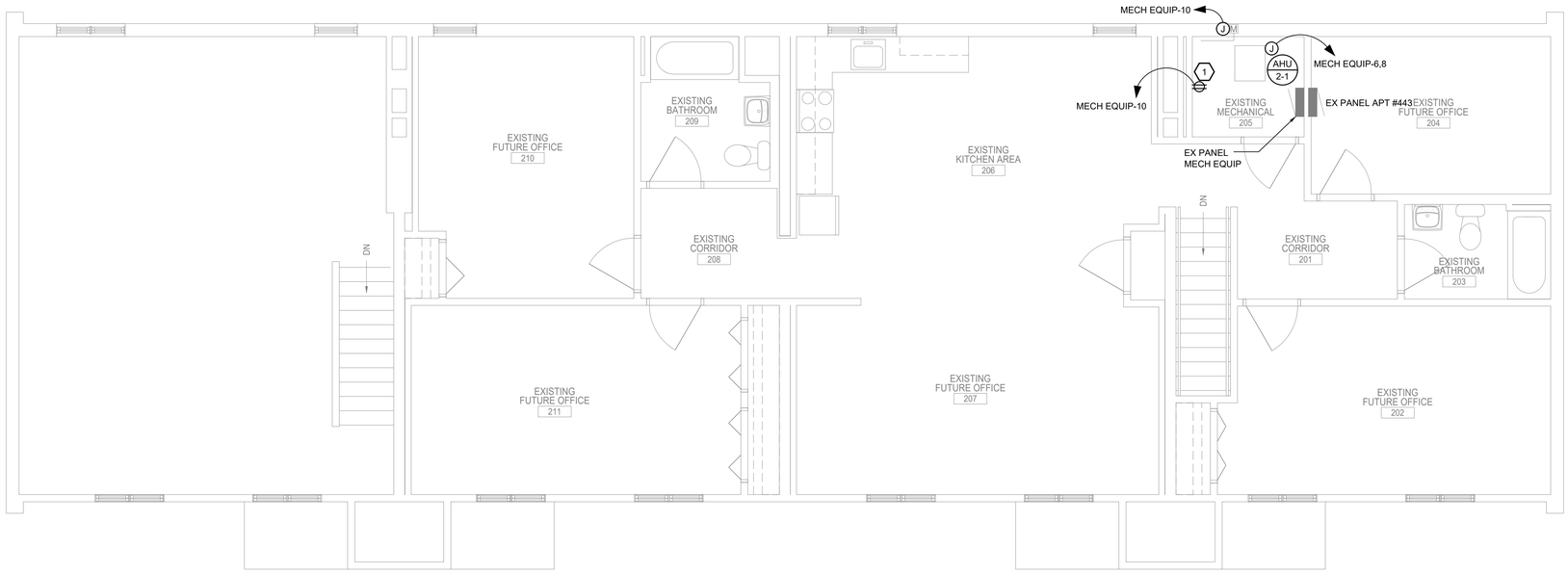
FIRST FLOOR POWER PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: E301



1 / E302 SECOND FLOOR POWER PLAN

1/4" = 1'-0"

POWER GENERAL NOTES:

1. FIRE STOP ALL FIRE RATED FLOORS,CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL PLANS.
3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER ARCHITECT.
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6. UNLESS NOTED OTHERWISE ON THIS PLAN, DEVICES NOTED WITH "EX" SHALL MAINTAIN EXISTING CIRCUITRY.
7. COORDINATE EXACT LOCATIONS OF MECHANICAL EQUIPMENT WITH DIVISION 23. MECHANICAL EQUIPMENT DISCONNECTS AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY EC, UNLESS NOTED OTHERWISE. THESE DISCONNECTS HAVE NOT BEEN SHOWN ON THIS PLAN.

POWER KEY NOTES: (#)

1. PROVIDE NEW RECEPTACLE FOR MAINTENANCE OF MECHANICAL EQUIPMENT WHERE ONE IS NOT ALREADY LOCATED WITHIN 25 FEET OF THE EQUIPMENT AND WITHIN THE SAME ROOM AS THE EQUIPMENT.

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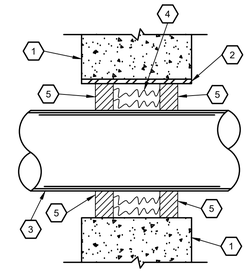
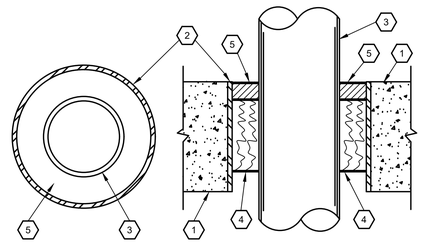
SECOND FLOOR POWER PLAN

Project : 20-591
Date : 09-28-2020
Sheet No.: E302



WALL ASSEMBLY



FLOOR ASSEMBLY

KEYED NOTES: ⟨#⟩

1. FLOOR OR WALL ASSEMBLY MINIMUM 5" THICK NORMAL WEIGHT CONCRETE FLOOR OR WALL OR MINIMUM 7-5/8" THICK MASONRY WALL HAVING A MINIMUM 2 HOUR FIRE RESISTIVE RATING WITH A NOMINAL 6" DIAMETER OPENING.

2. STEEL PIPE SLEEVE (OPTIONAL) NOMINAL 6" DIAMETER SCHEDULE 40 OR HEAVIER STEEL PIPE SLEEVE. (2 TRADE SIZES LARGER THAN CONDUIT).

3. STEEL OR EMT CONDUIT NOMINAL 4" DIAMETER CENTERED THROUGH THE OPENING.

4. FORMING MATERIAL MINERAL WOOL, MINIMUM DENSITY OF 4.4 PCF FIRMLY PACKED WITHIN THE OPENING TO A NOMINAL THICKNESS OF 3" FOR FLOORS. FOR WALLS, THE MINERAL WOOL SHALL BE CENTERED IN THE OPENING.

5. FILL, VOID OR CAVITY MATERIAL* - FILL MATERIAL THAT IS TROWELED INTO THE OPENING TO A MINIMUM THICKNESS OF 1/2" IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. IN WALLS, THE FILL MATERIAL SHALL BE INSTALLED ON BOTH SURFACES OF THE OPENING.

* BEARING THE "UL" CLASSIFICATION MARKING

1 / E501 FIRE STOP DETAIL
NOT TO SCALE

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No.	Revision / Issue	Date

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID C. PRICE
ENGINEER
No. PE081572

Architectural Innovations
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HACP Task Order #32
Heating & A/C Related Improvements
At the Public Safety Center,Northview Heights
441 Mount Pleasant Road, Pittsburgh, PA 15214
for
Housing Authority of the City of Pittsburgh
100 Ross Street, Suite 201
Pittsburgh, PA 15219

ELECTRICAL DETAILS

Project : 20-591
Date : 09-28-2020
Sheet No.: E501

Existing Distribution Panel: DP-1

Location: EXTERIOR BUILDING WALL
Supply From: UTILITY TRANSFORMER
Mounting: SURFACE
Enclosure: EXTERIOR

Volts: 240/120V
Phases: 1
Wires: 3

A.I.C. Rating: MATCH EXISTING
Mains Type: MCB
Mains Rating: 200
MCB Rating: 200

CKT	Circuit Description	Wire Size	Trip	Pole	LOAD (VA) A	LOAD (VA) B	Pole	Trip	Wire Size	Circuit Description	CKT
1	EX PROVISION				200		2	20	EXISTING	EX HOUSE LIGHTS	2
3	EX PROVISION					200					4
5	EX PROVISION				8000		2	125	EXISTING	EX PANELS APT #437, 441, 443	6
7	EX PROVISION					8000					8
9	EX PROVISION				10049		**2**	**100**	EXISTING	**EX PANEL MECH EQUIP (NOTE 2)**	10
11	EX PROVISION					9489					12
13	EX PROVISION									EX PROVISION	14
15	EX PROVISION									EX PROVISION	16
17	EX PROVISION									EX PROVISION	18
19	EX PROVISION									EX PROVISION	20
21	EX PROVISION									EX PROVISION	22
23	EX PROVISION									EX PROVISION	24
25	EX PROVISION									EX PROVISION	26
27	EX PROVISION									EX PROVISION	28
29	EX PROVISION									EX PROVISION	30
31	EX PROVISION									EX PROVISION	32
33	EX PROVISION									EX PROVISION	34
35	EX PROVISION									EX PROVISION	36
37	EX PROVISION									EX PROVISION	38
39	EX PROVISION									EX PROVISION	40
41	EX PROVISION									EX PROVISION	42
			Total Load:		18249	17689					
			Amps:		149.7						

NOTES:
1. UNLESS NOTED OTHERWISE, ALL BRANCH CIRCUIT BREAKERS ARE EXISTING TO REMAIN.
2. (WHERE NOTED) PROVIDE NEW CIRCUIT BREAKER SIZED AS SHOWN. MATCH THE MANUFACTURER, MODEL, AND AIC RATING OF EXISTING BREAKERS. BREAKER SHALL BE SERVICE ENTRANCE RATED AND 100% FULLY RATED.

Existing Branch Panel: APT #441

Location: EX 1ST FLR JANITOR CLOSET
Supply From: DP-1
Mounting: RECESSED
Enclosure: TYPE 1

Volts: 240/120V
Phases: 1
Wires: 3

A.I.C. Rating: MATCH EXISTING
Mains Type: MCB
Mains Rating: 125
MCB Rating: 125

CKT	Circuit Description	Wire Size	Trip	Pole	LOAD (VA) A	LOAD (VA) B	Pole	Trip	Wire Size	Circuit Description	CKT
1	EX LIGHTING	EXISITING	20	1			1	20	EXISTING	EX FRIDGE	2
3	EX LIVING ROOM REC.	EXISITING	20	1			1	20	EXISTING	EX KITCHEN CTR. REC.	4
5	EX BEDROOM	EXISITING	20	1			1	20	EXISTING	EX KITCHEN CTR. REC.	6
7	EX BEDROOM	EXISITING	20	1			1	20	EXISTING	EX RANGE	8
9	EX BED RM./SMOKE DET.	EXISITING	20	1			1	20	EXISTING	EX RANGE HOOD	10
11	EX BEDROOM	EXISITING	20	1			2	30	EXISTING	EX HEAT PUMP	12
13	EX BATHROOM	EXISITING	20	1							14
15	EX BATHROOM	EXISITING	20	1			1	20	EXISTING	EX RECEPTACLES	16
17	EX WASHER	EXISITING	20	1	**400**		**1**	**20**	**2#12, 1#12G - 3/4"C**	**MECH DAMPERS (NOTE 3)**	18
19	EX DRYER	EXISITING	20	1			2	30		EX CIRCUIT	20
21	EX PROVISION										22
23	EX BASEMENT LTS. GFI	EXISITING	20	1			1	20	EXISTING	EX BASEMENT FIRE ALRM	24
			Total Load:		400	0					
			Amps:		1.7						

NOTES:
1. UNLESS NOTED OTHERWISE, ALL BRANCH CIRCUIT BREAKERS ARE EXISTING TO REMAIN.
2. CIRCUITS MAY NOT SHARE NEUTRAL OR GROUND CONDUCTORS.
3. (WHERE NOTED) PROVIDE NEW CIRCUIT BREAKER SIZED AS SHOWN. MATCH THE MANUFACTURER, MODEL, AND AIC RATING OF EXISTING BREAKERS.

Existing Branch Panel: MECH EQUIP

Location: EX MECHANICAL 205
Supply From: DP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 240/120V
Phases: 1
Wires: 3

A.I.C. Rating: MATCH EXISTING
Mains Type: MLO
Mains Rating: 100
MCB Rating: -

CKT	Circuit Description	Wire Size	Trip	Pole	LOAD (VA) A	LOAD (VA) B	Pole	Trip	Wire Size	Circuit Description	CKT
1							2	60			2
3	**SPARE**		60	2						**SPARE**	4
5					**6662**		**2**	**80**	**3#3, 1#8G - 1 1/4"C**		6
7	**SPARE**		30	2		**6662**				**AHU 2-1 (NOTE 3)**	8
9	**HP 2-1 (NOTE 3)**	**3#6, 1#10G - 3/4"C**	**50**	**2**	**2827** **560**		**1**	**20**	**2#12, 1#12G - 3/4"C**	**REC, DAMPER (NOTE 3)**	10
11						**2827**				PROVISION	12
			Total Load:		10049	9489					
			Amps:		81.4						

NOTES:
1. UNLESS NOTED OTHERWISE, ALL BRANCH CIRCUIT BREAKERS ARE EXISTING TO REMAIN.
2. CIRCUITS MAY NOT SHARE NEUTRAL OR GROUND CONDUCTORS.
3. (WHERE NOTED) PROVIDE NEW CIRCUIT BREAKER SIZED AS SHOWN. MATCH THE MANUFACTURER, MODEL, AND AIC RATING OF EXISTING BREAKERS.

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ELECTRICAL SCHEDULES

Project : 20-591
Date : 09-28-2020
Sheet No.: E701