

MECHANICAL SPECIFICATION

- INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL AND FUEL GAS CODES, NFPA 90A AND 101 AND ALL STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.
- COORDINATE EXACT LOCATIONS AND ORIENTATION OF EQUIPMENT WITH ARCHITECTURAL AND STRUCTURAL REQUIREMENTS. EQUIPMENT SHALL BE SCREENED IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS AND AS SHOWN ON ARCHITECTURAL DRAWINGS.
- DUCTWORK FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS.
- ALL DUCTWORK SHALL BE SHEET METAL, CONSTRUCTED TO SMACNA STANDARDS, MINIMUM OF 2" WG PRESSURE CLASS AND SEAL CLASS 'C' MINIMUM. ALL LONGITUDINAL AND TRANSVERSE JOINTS TO BE SEALED, EXCEPT AS OTHERWISE NOTED. ROUND AND FLEX DUCT CONNECTIONS SHALL BE MADE WITH SPIN COLLARS WITH EXTRACTORS AND VOLUME DAMPERS.
- DUCT RUNOUT SIZES NOT SHOWN SHALL BE THE SAME SIZE AS THE DIFFUSER NECK CONNECTION.
- RECTANGULAR DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR SHALL INCLUDE AN ALLOWANCE FOR 1" DUCT LINER IN LOW VELOCITY DUCTS WHERE APPLICABLE. CONCEALED ROUND DUCTS SHALL BE INSULATED WITH 2" DUCT WRAP. EXPOSED ROUND DUCTS DO NOT NEED TO BE INSULATED.
- ROUND OR OVAL EXPOSED DUCT SHALL BE SPIRAL DUCT, PAINT GRADE WHERE SCHEDULED BY ARCHITECT TO BE PAINTED.
- FLEX DUCT SHALL BE UL CLASS 1 AIR DUCT SUITABLE FOR +/- 2" WG PRESSURE WITH 1-1/2" FIBERGLASS INSULATION WITH ALL SERVICE JACKET, 5' MAXIMUM LENGTH, ENDS BANDED IN PLACE AND TAPED WITH FOIL TAPE. ADEQUATELY SUPPORT FLEX DUCT TO PREVENT KINKS OR OBSTRUCTIONS. PROVIDE SHEET METAL ELBOW OR THERMAFLEX 'FLEXFLOW' ELBOW SUPPORT AT DIFFUSER CONNECTION.
- PROVIDE FLEXIBLE FABRIC CONNECTORS AT ALL DUCTWORK CONNECTIONS TO ROTATING EQUIPMENT. CONNECTORS EXPOSED TO SUNLIGHT SHALL BE MADE OF UV RESISTANT MATERIAL.
- CAULK AND SEAL ALL DUCT AND PIPING PENETRATIONS OF EXTERIOR OR DEMISING WALLS.
- THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE INTEGRITY OF ALL FIRE RATED AND SOUND RATED ASSEMBLIES.
- TEST AND BALANCE ALL SYSTEMS.

ELECTRICAL GENERAL NOTES

- CONTRACTOR SHALL COORDINATE INSTALLATION REQUIREMENTS AND SCHEDULING OF ALL WORK WITH BUILDING REPRESENTATIVE AND GENERAL CONTRACTOR.
- INSTALLATION SHALL COMPLY WITH 2017 EDITION OF NEC AND LOCAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL BE LICENSED TO PERFORM WORK IN MUNICIPALITY WHERE PROJECT IS LOCATED.
- ALL WIRING SHALL BE INSTALLED IN CONDUIT. EMT CONDUIT WITH SET SCREW FITTINGS MAY BE UTILIZED WHERE PERMITTED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 1/2".
- ALL WIRING SHALL BE COPPER WITH 600 VOLT INSULATION AND COLOR CODED. ALUMINUM WIRING SHALL ONLY BE USED FOR FEEDERS FROM TRANSFORMER TO METER CENTER.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMIT AND INSPECTION FEES.
- INSTALL BLANK COVER PLATE ON ALL PULL BOXES AND JUNCTION BOXES.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL WORK WITH ALL OTHER TRADES INVOLVED WITH CONSTRUCTION OF PROJECT.
- ALL WIRING DEVICES SHALL BE RATED 20 AMP, OR AS NOTED.
- ALL NEW BRANCH CIRCUIT CONDUITS SHALL BE INSTALLED CONCEALED ABOVE LAY-IN CEILING OR IN WALLS.
- CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING OF ALL CONDUITS TO NEW EQUIPMENT.
- DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, NEMA 1 FOR INDOOR AND NEMA 3R FOR OUTDOOR INSTALLATIONS. MANUFACTURED BY SQUARE D, ITE/SIEMENS, GE, OR CUTLER-HAMMER.
- FURNISH MATERIALS AND LABOR FOR A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION.
- MATERIAL AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE 'UL' LABELS AS REQUIRED.
- E.C. SHALL VERIFY ALL CONDITIONS PRIOR TO ANY ROUGH-IN.
- E.C. SHALL PROVIDE AND INSTALL SMOKE AND FIRE STOPS AT ALL CONDUIT PENETRATIONS OF SMOKE AND FIRE-RATED WALLS AND CEILINGS.
- CAULK AND SEAL ALL RACEWAY PENETRATIONS OF EXTERIOR OR DEMISING WALLS.
- THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE INTEGRITY OF ALL FIRE RATED AND SOUND RATED ASSEMBLIES.
- DUCT SMOKE DETECTOR SHALL BE 120 VOLT, PHOTO-ELECTRIC WITH SAMPLING TUBES - INSTALLED IN RETURN AIR DUCT OF HVAC UNITS(S). PROVIDE WITH MIN-ALERT SOUNDER, STROBE AND REMOTE TEST/RESET STATION. WIRE DETECTORS SO THAT UPON SENSING SMOKE HVAC UNIT FAN(S) AUTOMATICALLY SHUTS DOWN AND SOUNDER/STROBE IS ACTIVATED. WHERE MULTIPLE HVAC UNIT FANS SHARE A COMMON RETURN AIR PLENUM (IN EXCESS OF 2,000 CFM COMBINED), ALL FANS SHALL AUTOMATICALLY SHUT DOWN UPON DETECTION OF SMOKE AT ANY SINGLE SMOKE DETECTOR (INCLUDING VAV BOX FANS OR OTHER FANS ASSOCIATED WITH THE PLENUM). PROVIDE ALL RELAYS AND ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. EQUIPMENT SHALL BE BY EDWARDS, SIMPLEX, PYROTRONICS, OR NOTIFIER.
- THE COMPONENTS OF THE ELECTRICAL SYSTEM SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE THEREOF EITHER FOR BENEFICIAL USE OR FINAL ACCEPTANCE, WHICHEVER IS EARLIER, AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP.

MECHANICAL SYMBOLS

	NEW SHEET METAL DUCTWORK & SIZE.
	NEW SHEET METAL DUCTWORK & SIZE.
	SUPPLY AIR DUCT OR OUTSIDE AIR INTAKE.
	RETURN AIR DUCT OR EXHAUST AIR DUCT.
	DIRECTION OF RETURN AIRFLOW.
	THERMOSTAT OR TEMPERATURE SENSOR.
	CONDENSATE DRAIN.
	ELBOW DOWN.
	ELBOW UP.
SA	SUPPLY AIR.
OA	OUTSIDE AIR.
RA	RETURN AIR.
EA	EXHAUST AIR.
CU	CONDENSING UNIT.
EF	EXHAUST FAN.
RTU	ROOFTOP UNIT.
	PLAN NOTE DESIGNATION.
	PLAN REVISION DESIGNATION.
	CONNECT TO EXISTING.
	MECHANICAL EQUIPMENT DESIGNATION - TOP PORTION IS EQUIPMENT (RTU, EF, HP, ETC.), BOTTOM PORTION IS NO. OR LETTER (SEE APPROPRIATE SCHEDULE).

PLUMBING SYMBOLS

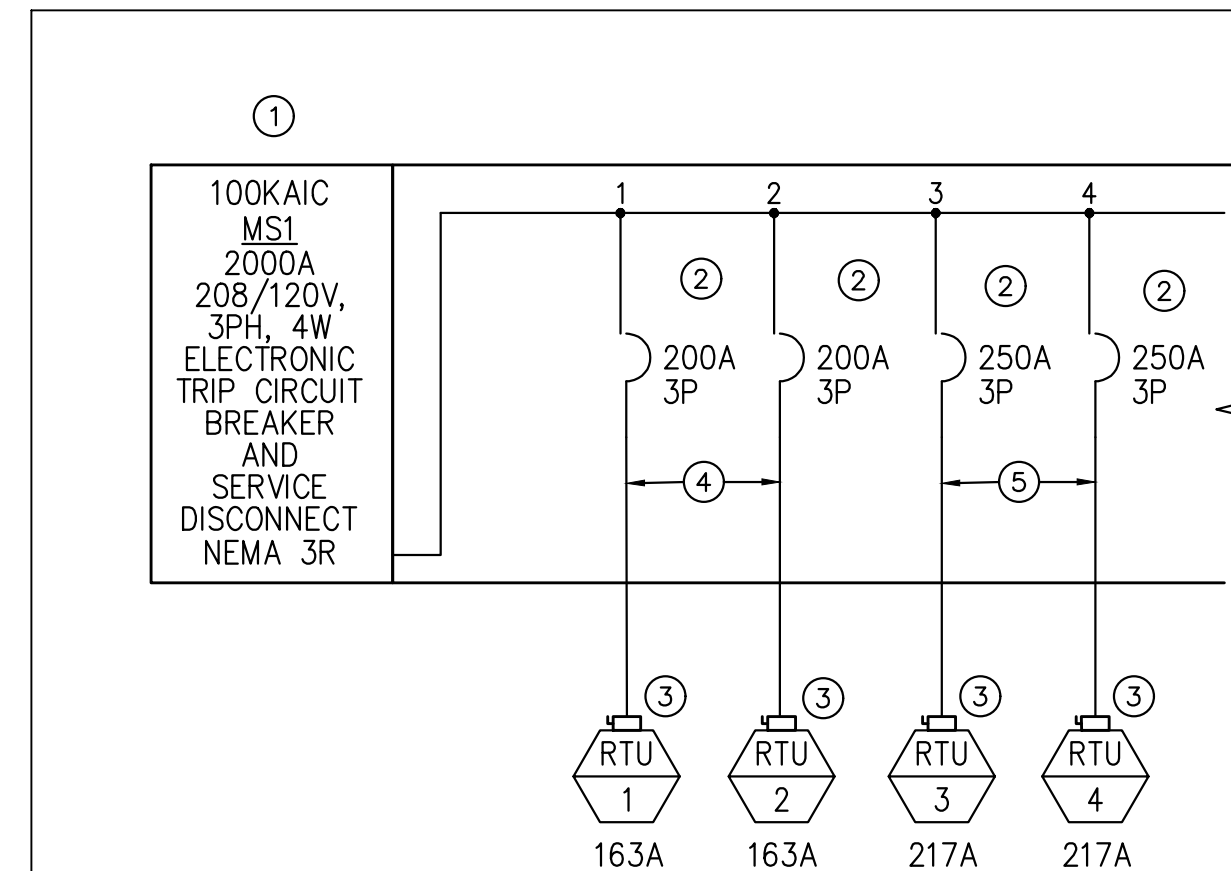
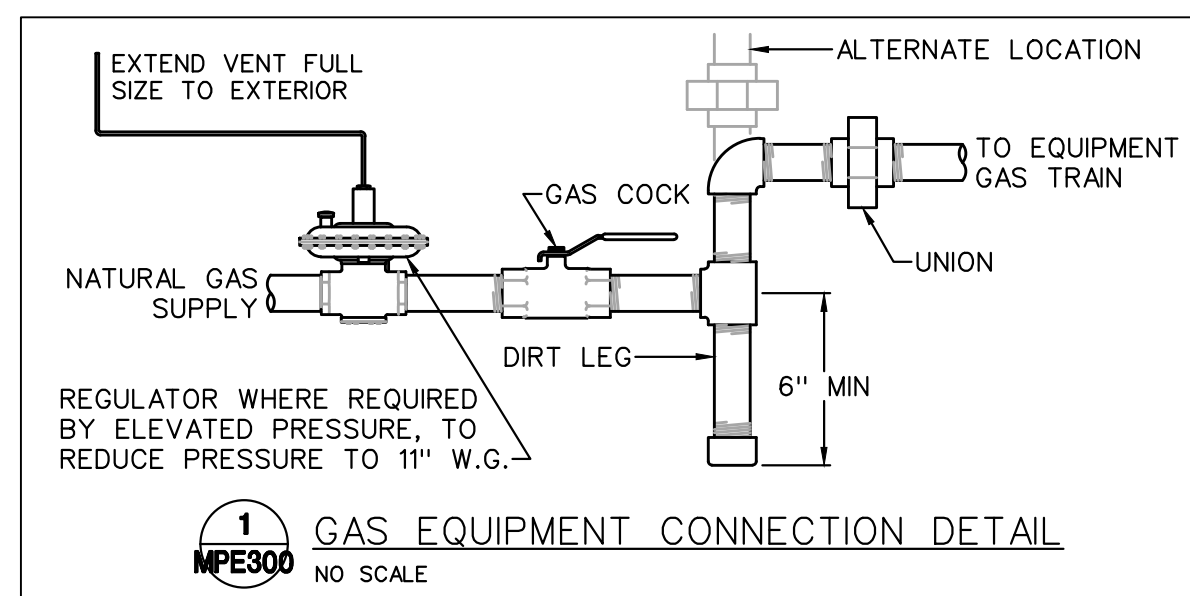
	EXISTING TO REMAIN.
	NEW PIPING WORK.
	DOMESTIC COLD WATER (CW).
	DOMESTIC HOT WATER (HW).
	HOT WATER RECIRCULATION (HWR).
	PLUMBING VENT ABOVE FLOOR (V).
	SANITARY WASTE ABOVE FLOOR (W).
	SANITARY WASTE BELOW FLOOR (W).
	GAS (NATURAL) (NG).
	ELBOW DOWN.
	ELBOW UP.
	TEE DOWN.
	TEE UP.
	CAP.
	PIPE UNION.
	1/4 TURN SHUT-OFF VALVE.
	CHECK VALVE.
	PUMP.
	VENT THRU ROOF (VTR).
ETR	EXISTING TO REMAIN.
	PLAN NOTE DESIGNATION.
	PLAN REVISION DESIGNATION.
	CONNECT TO EXISTING.
	PLUMBING EQUIPMENT DESIGNATION - TOP PORTION IS EQUIPMENT (HW, RTU, ETC.), BOTTOM PORTION IS NO. OR LETTER (SEE APPROPRIATE SCHEDULE).

HVAC SYSTEM SAFETY CONTROLS

- DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE HVAC CONTRACTOR. SEE ELECTRICAL FOR INTEGRATION OF ALL SMOKE DETECTION AND SHUTDOWN OF EQUIPMENT. ALL HVAC EQUIPMENT IN EXCESS OF 2000 CFM SHALL BE EQUIPPED WITH SMOKE DETECTORS IN THE RETURN AIR STREAM OF THE UNIT. WHERE MULTIPLE HVAC UNIT FANS SHARE A COMMON RETURN AIR PLENUM (IN EXCESS OF 2,000 CFM COMBINED), ALL HVAC UNITS (INCLUDING VAV BOX FANS OR OTHER FANS ASSOCIATED WITH THE PLENUM) SHALL BE PROVIDED WITH A SMOKE DETECTOR. WHERE DUCT MOUNTED DETECTORS ARE SHOWN OR REQUIRED, USE DUCT INSERTION TUBE TYPE DETECTORS. IF FIRE ALARM SYSTEM IS INSTALLED, COORDINATE TYPE OF SMOKE DETECTOR WITH THE FIRE ALARM CONTRACTOR. IF A FIRE ALARM SYSTEM IS NOT PROVIDED, COORDINATE INSTALLATION OF A STROBE/HORN WITH THE ELECTRICAL CONTRACTOR TO NOTIFY OCCUPANTS OF THE SENSING OF SMOKE AT A SMOKE DETECTOR.

PLUMBING SPECIFICATION

- INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL PLUMBING CODE, NFPA 90A AND 101 AND ALL STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.
- PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
- CAULK AND SEAL ALL DUCT AND PIPING PENETRATIONS OF EXTERIOR OR DEMISING WALLS.
- THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE INTEGRITY OF ALL FIRE RATED AND SOUND RATED ASSEMBLIES.
- NATURAL GAS PIPING (ABOVE GROUND) SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED JOINTS. CONNECT USING JOINT COMPOUND SUITABLE FOR NATURAL GAS PIPING. ALL EXPOSED BLACK STEEL NATURAL GAS PIPING SHALL BE PROTECTED WITH A RUST INHIBITING COATING IN ACCORDANCE WITH THE PLUMBING CODE.
- GAS SERVICE VALVES TO BE LUBRICATED PLUG COCKS, ROCKWELL 142 OR 143. CONNECTIONS TO EQUIPMENT SHALL HAVE SERVICE VALVES, 6" MINIMUM DIRT LEG AND UNION OR AT CONTRACTOR OPTION, UL LISTED APPLIANCE FLEXIBLE CONNECTORS MAY BE USED.
- TEST AND CLEAN PIPING SYSTEMS PER INDUSTRY STANDARDS. PRESSURE TEST OF PRESSURE PIPING SHALL BE AT 1-1/2 TIMES THE ANTICIPATED OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR 2 HOURS. NON-PRESSURIZED SYSTEMS SHALL BE TESTED WITH 10" WATER COLUMN ABOVE NORMAL OPERATING CONDITIONS OR 5 PSI FOR 2 HOURS. THERE SHALL BE NO MEASURABLE DROP DURING THE TEST PERIOD.

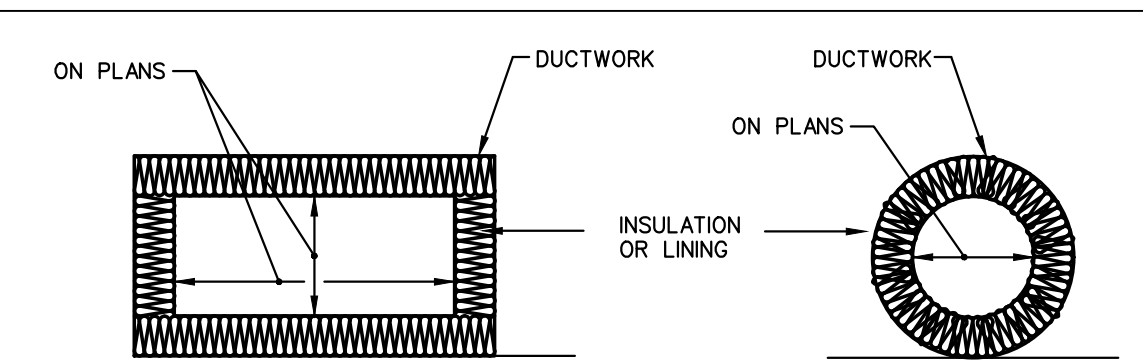


ONE-LINE DIAGRAM NOTES:

- EXISTING 2080-AMP, 208/3-PHASE DISCONNECT AND CIRCUIT BREAKERS.
- EXISTING CIRCUIT BREAKER.
- RELOCATED NEMA 3R DISCONNECT.
- 2" C WITH 3-#2/0 CU AND 1-#6 CU GROUND.
- 2-1/2" C WITH 3-#4/0 CU AND 1-#4 CU GROUND.

ONE-LINE DIAGRAM

NO SCALE



	DUCT INSULATION SCHEDULE						NOTES
	INTERNAL INSULATION			EXTERNAL INSULATION			
	1/2"	1"	OTHER	1"	2"	OTHER	
LOW VELOCITY DUCTS:							
RETURN DUCTS		o					1
SUPPLY DUCTS (RECT.)			o				
SUPPLY DUCTS (ROUND)					o		3.4
EXHAUST DUCTS	o			o			2
OUTSIDE AIR DUCTS				o			
RELIEF DUCTS	o						1
MEDIUM/HIGH VELOCITY DUCTS:							
ROUND SUPPLY				o			
FLAT OVAL SUPPLY				o			

NOTES:

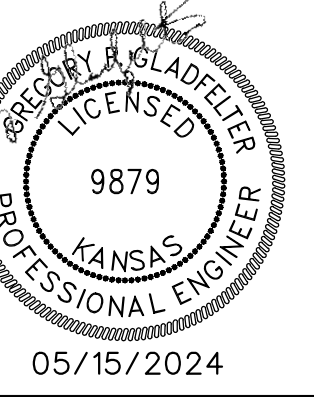
- INSULATION SHALL BE INSTALLED WHEN INDICATED OTHERWISE IN THE CONSTRUCTION DOCUMENTS. OTHERWISE, NO INSULATION IS REQUIRED.
- INSULATION IS REQUIRED WITHIN 6"-0" OF TERMINATION POINT OF EXHAUST AIR. RECTANGULAR DUCTS SHALL BE LINED, ROUND DUCTS SHALL BE WRAPPED.
- CONCEALED ROUND SUPPLY AIR DUCTS AND ROUND SUPPLY AIR DUCTS IN UNCONDITIONED SPACES SHALL BE INSULATED AS INDICATED AND SHALL INCLUDE A VAPOR BARRIER TO PREVENT CONDENSATION FROM FORMING ON COLD METAL SURFACES. NO INSULATION IS REQUIRED FOR ROUND SUPPLY AIR DUCT EXPOSED IN CONDITIONED SPACES UNLESS INDICATED OTHERWISE.
- AT CONTRACTOR'S OPTION, GALVANIZED STEEL ROUND DOUBLE WALL DUCT MAY BE USED WHERE ROUND SUPPLY AIR DUCTS ARE REQUIRED TO BE INSULATED. DOUBLE WALL DUCT SHALL BE LINK LINDLAB SPIRO-SAFE SPIRAL LOCKSEAM DUCTWORK. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- AT CONTRACTOR'S OPTION, ROUND DUCT LINER MAY BE USED WHERE ROUND SUPPLY AIR DUCTS ARE REQUIRED TO BE INSULATED. DUCT LINER SHALL BE JOHNS MANVILLE SPIRACOUS TIC PLUS, OR APPROVED EQUAL, 1.5" THICK (R6.4). SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2 INSULATED OR LINED DUCT DETAIL

MPE300

NO SCALE

Gladfelter Engineering Group assumes design responsibility for this project for only the mechanical, plumbing and electrical disciplines with drawing sheet number beginning with M, P and E. All other drawings should be considered the work of others. Further, drawings in this project set may contain drawing information, including but not limited to: architectural plans, sections and elevations, site plans and surveys and other information pertinent to showing the mechanical, plumbing and electrical work which is furnished by others, generally indicated by screened or light type. Gladfelter Engineering Group assumes no responsibility or liability for the accuracy or regulatory compliance for work prepared by others even though shown on MPE drawings. Gladfelter Engineering Group assumes responsibility only for the design of mechanical, plumbing and electrical disciplines contained herein, generally indicated in bold type.



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Date: 05/15/24 Issued for: PERMIT

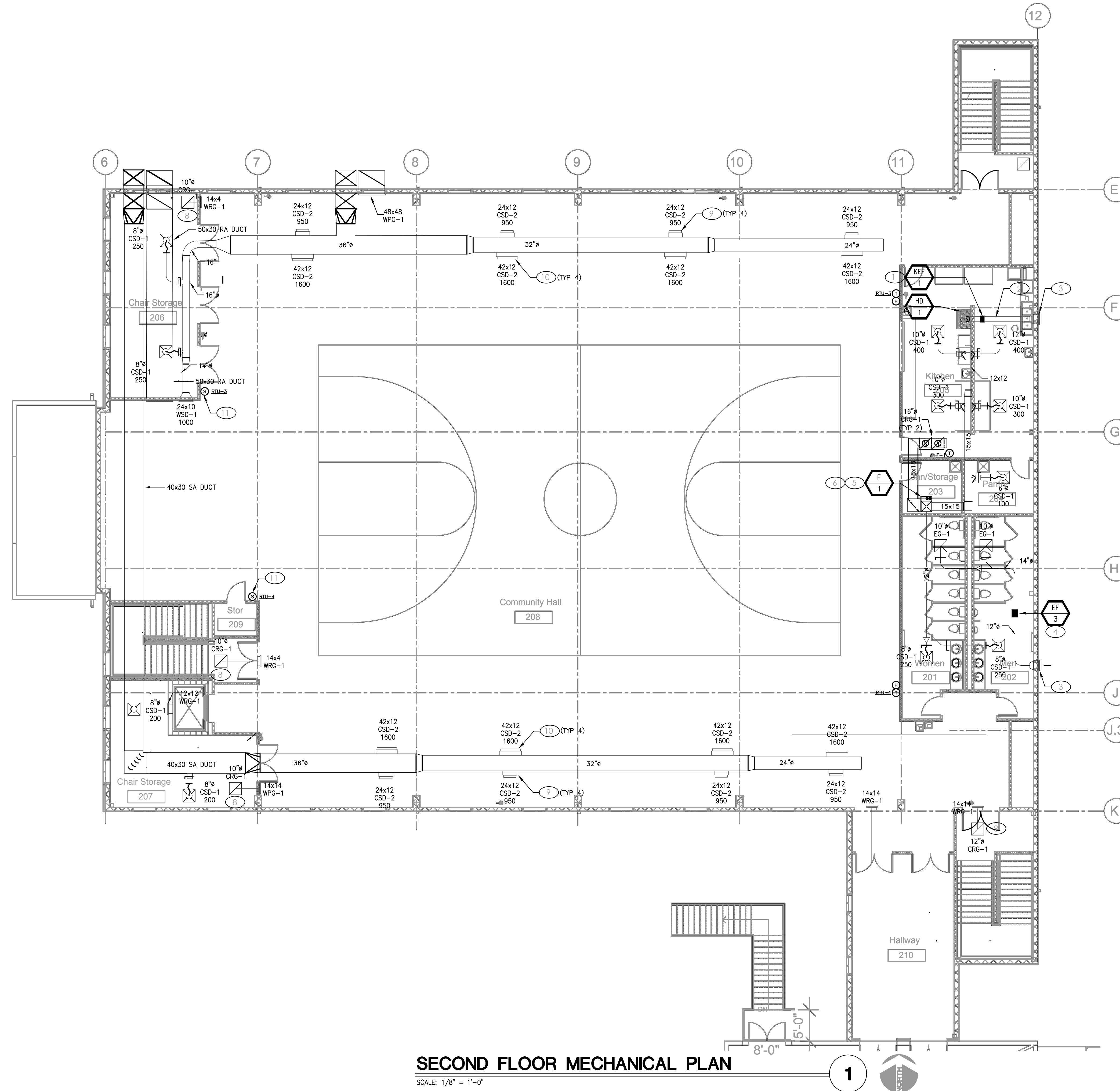
Project number: 23-228

Drawn: JEE/SWB/GPG/MKS

Date: 2024/05/15

Sheet Number:

MPE300



SECOND FLOOR MECHANICAL PLAN

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

GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.
- C. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AROUND EQUIPMENT.
- D. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.
- E. PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS AND REGISTERS.
- F. BRANCH DUCTWORK SHALL BE THE SAME SIZE AS NECK SIZE SHOWN UNLESS OTHERWISE NOTED.
- G. REFER TO SPECIFICATIONS FOR DUCTWORK AND PIPING INSULATION REQUIREMENTS. DUCT SIZES ON MECHANICAL PLANS ARE INDICATED CLEAR INSIDE AIRFLOW DIMENSIONS. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.
- H. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- I. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

KEYED PLAN NOTES

- 1. INLINE EXHAUST FAN FURNISHED WITH HOOD SYSTEM. INSTALL PER MANUFACTURER'S WRITTEN REQUIREMENTS. TRANSITION DUCTWORK TO FAN AND HOOD AS REQUIRED.
- 2. PROVIDE 10" TYPE 'B' VENT DUCTWORK FOR HOOD EXHAUST.
- 3. PROVIDE 18"x18" LOUVER ON WALL EQUAL TO RUSKIN ELF6375DX WITH MINIMUM 0.97 SQ-FT OF FREE AREA AND INSECT SCREEN. TRANSITION DUCTWORK TO LOUVER AS REQUIRED. PAINT LOUVER COLOR TO MATCH BUILDING. COORDINATE COLOR WITH ARCHITECT.
- 4. PROVIDE INLINE EXHAUST FAN AT LOCATION SHOWN. INSTALL BACKDRAFT DAMPER IN DISCHARGE DUCT. TRANSITION DUCTWORK TO FAN AS REQUIRED.
- 5. PROVIDE CONCENTRIC VENT FOR FURNACE TO EXTERIOR WALL. INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS. ADHERE TO SIZE AND LENGTH LIMITATIONS. LOCATED A MINIMUM OF 10'-0" FROM OUTSIDE AIR INTAKE.
- 6. PROVIDE CONDENSATE DRAIN TRAP. DISCHARGE WITH AIR GAP TO MOP SINK IN ROOM.
- 7. OUTDOOR AIR DUCT UP TO INTAKE HOOD. SIZE PER PLANS. PROVIDE RUSKIN CDR25 ROUND CONTROL DAMPER WITH 24V SPRING RETURN ACTUATOR FOR CONTROL OF OUTDOOR AIR SUPPLY. INTERLOCK WITH FURNACE CONTROLS SO THAT DAMPER IS OPEN WHEN THE FURNACE FAN IS ON AND CLOSED WHEN THE FURNACE FAN IS OFF.
- 8. PROVIDE LAY-IN GRILLE WITH DUCT TO GRILLE MOUNTED HIGH ON WALL.
- 9. INSTALL DUCT MOUNTED DRUM LOUVER AT 30° ANGLE DOWN FROM HORIZONTAL. TYPICAL ALL LOUVERS FACING EXTERIOR WALL.
- 10. INSTALL DUCT MOUNTED DRUM LOUVER AT 0° ANGLE. TYPICAL ALL LOUVERS FACING INTERIOR OF SPACE.
- 11. PROVIDE AVERAGING SENSOR FOR INDICATED RTU THERMOSTAT. MOUNT AT 48" AFF.
- 12. PROVIDE 12x12 OPENING THROUGH WALL INTO ELEVATOR HOISTWAY WITH GRILLE ON STORAGE ROOM SIDE.
- 13. SUPPORT VERTICAL DUCTS WITH STEEL ANGLES OR CHANNEL SECURED TO THE SIDES OF THE DUCT WITH WELDS, BOLTS, SHEET METAL SCREWS, OR BLIND RIVETS. SUPPORT AT EACH FLOOR AND AT A MAXIMUM INTERVALS OF 16 FEET.

Scharhag

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BUILDING ADDITION FOR
**BEAUTIFUL SAVIOR
LUTHERAN CHURCH**
13105 S. BLACK BOB ROAD

No.	Description	Date
△	OWNER ADDITIONS	01.26.21
△	OWNER CHANGE	02.03.21
△	RESTROOM ADD	09.13.21
△	GAS METER LOCATION	11.03.21
△	SITE POLE CHANGE	11.08.21

**2ND FLOOR
MECHANICAL
PLAN**

Project number 19-130
Date 11.08.2021

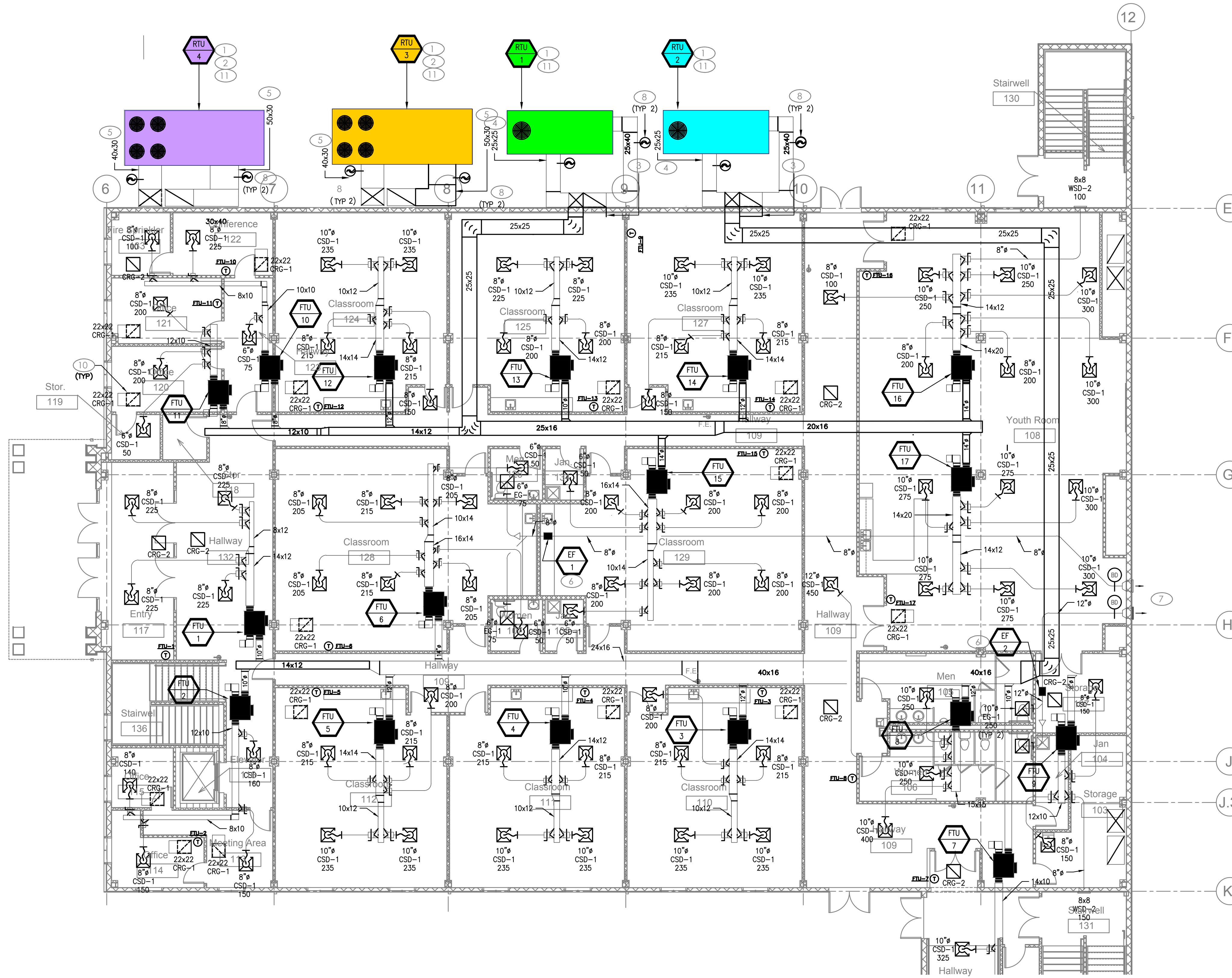
M102

GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.
- C. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AROUND EQUIPMENT.
- D. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.
- E. PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS AND REGISTERS.
- F. BRANCH DUCTWORK SHALL BE THE SAME SIZE AS NECK SIZE SHOWN UNLESS OTHERWISE NOTED.
- G. REFER TO SPECIFICATIONS FOR DUCTWORK AND PIPING INSULATION REQUIREMENTS. DUCT SIZES ON MECHANICAL PLANS ARE INDICATED CLEAR INSIDE AIRFLOW DIMENSIONS. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.
- H. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.
- I. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

KEYED PLAN NOTES

- 1. GROUND MOUNTED PACKAGED AC UNIT. INSTALL ON CONCRETE EQUIPMENT PAD PROVIDED BY OTHERS.
- 2. UNDER UNIT PROVIDE 36" TALL INSULATED SUPPLY/RETURN AIR PLENUM CURB. CONNECT SUPPLY AND RETURN AIR DUCTS TO CURB AS REQUIRED.
- 3. ROUTE 40x25 RETURN DUCT INTO BUILDING THEN UP TO ELEVATION OF PLENUM SPACE. EXTEND 36" INTO PLENUM AND TERMINATE WITH OPEN END. AT EXTERIOR WALL COORDINATE WITH GENERAL CONTRACTOR TO NOTCH STEM WALL FOR DUCT. SEAL WEATHER TIGHT.
- 4. ROUTE 25x25 SUPPLY DUCT INTO BUILDING THEN UP TO ELEVATION OF PLENUM SPACE. ROUTE DUCT AS SHOWN WITH MAIN TRUNK DOWN CORRIDOR. AT EXTERIOR WALL COORDINATE WITH GENERAL CONTRACTOR TO NOTCH STEM WALL FOR DUCT. SEAL WEATHER TIGHT.
- 5. ROUTE DUCT FROM UNIT TO INSIDE OF BUILDING THEN UP TO SECOND FLOOR. SEE M102 FOR CONTINUATION. AT EXTERIOR WALL COORDINATE WITH GENERAL CONTRACTOR TO NOTCH STEM WALL FOR DUCT. SEAL WEATHER TIGHT.
- 6. PROVIDE IN LINE EXHAUST FAN AT LOCATION SHOWN. INSTALL BACKDRAFT DAMPER IN DISCHARGE DUCT. TRANSITION DUCTWORK TO FAN AS REQUIRED.
- 7. PROVIDE 18"x18" LOUVER ON WALL EQUAL TO RUSKIN ELF6375DX WITH MINIMUM 0.91 SQ-FT OF FREE AREA AND INSECT SCREEN. TRANSITION DUCTWORK TO LOUVER AS REQUIRED. PAINT LOUVER COLOR TO MATCH BUILDING. COORDINATE COLOR WITH ARCHITECT. VERIFY DISCHARGE IS A MINIMUM OF 10'-0" FROM RTU OUTSIDE AIR INTAKE.
- 8. PROVIDE NEMA 4 RATED SMOKE DETECTOR IN RETURN AND SUPPLY AIR DUCTS IN COMPLIANCE WITH NFPA 72. DUCT SMOKE DETECTOR SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM. DUCT SMOKE DETECTORS SHALL BE INTERLOCKED TO SHUT DOWN ALL 'RTU' UNITS UPON DETECTION OF SMOKE.
- 9. CONDENSING UNIT LEVEL AT GRADE ON PREMANUFACTURED PAD. INSTALL PER MANUFACTURER'S INSTRUCTIONS. MAINTAINING RECOMMENDED SERVICE CLEARANCES. ROUTE REFRIGERANT LINES THROUGH WALL 18" AFG. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO CASED COILS AT FURNACE. SIZE, ROUTE AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 10. PROVIDE RETURN BOOT OR FLEXABOOT PER SCHEDULE WITH 16" DUCT. TYPICAL ALL RETURNS WITH THIS SYMBOL.
- 11. SUPPORT VERTICAL DUCTS IN BUILDING WITH STEEL ANGLES OR CHANNEL SECURED TO THE SIDES OF THE DUCT WITH WELDS, BOLTS, SHEET METAL SCREWS, OR BLIND RIVETS. SUPPORT AT EACH FLOOR AND AT A MAXIMUM INTERVALS OF 16 FEET.



FIRST FLOOR MECHANICAL PLAN

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



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BUILDING ADDITION FOR
BEAUTIFUL SAVIOR LUTHERAN CHURCH
 13105 S. BLACK BOB ROAD

No.	Description	Date
▲	OWNER ADDITIONS	01.26.21
▲	OWNER CHANGE	02.03.21
▲	RESTROOM ADD	09.13.21
▲	GAS METER LOCATION	11.03.21
▲	SITE POLE CHANGE	11.08.21

1ST FLOOR MECHANICAL PLAN

Project number 19-130
 Date 11.08.2021

M101