MECHANICAL LEGEND AND ABBREVIATIONS

ABBREVIATIONS

A.D.	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
AV	AUTOMATIC AIR VENT
BDD	BACKDRAFT DAMPER
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CD	CONDENSATE DRAIN
DB	DRY BULB
DN	DOWN
DWG(S)	DRAWING(S)
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EWT	ENTERING WATER TEMPERATURE
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLEX	FLEXIBLE DUCTWORK
FLR	FLOOR
FOB	FLAT ON BOTTOM TRANSITION
FOT	FLAT ON TOP TRANSITION
FS	FLOW SWITCH
FSD	COMBINATION FIRE & SMOKE DAMPER
GC	GAS COCK OR GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HP	HEAT PUMP
HSTAT	HUMIDISTAT
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MBH	THOUSAND BRITISH THERMAL UNITS
MC	MECHANICAL CONTRACTOR
MD	MOTORIZED DAMPER
MV	MANUAL AIR VENT
MVD/VD	MANUAL VOLUME DAMPER
(N)	NEW
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OA, OSA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
PC	PLUMBING CONTRACTOR
PG	PRESSURE GAUGE W/ GAUGE COCK
P.O.C.	POINT OF CONNECTION OF NEW TO EXISTING
P.O.D.	POINT OF DISCONNECT
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
RA	RETURN AIR
%RH	PERCENT RELATIVE HUMIDITY
SA	SUPPLY AIR
SD	SMOKE DAMPER
SP	STATIC PRESSURE
TA	TRANSFER AIR
T&P	T&P RELIEF VALVE
TP	TEMPERATURE & PRESSURE TEST PLUG
TSTAT	THERMOSTAT
TYP	TYPICAL
U	UNION
UC	DOOR UNDERCUT WITH HEIGHT
WB	WET BULB

PIPING DESIGNATIONS

D	DRAIN
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	SWING CHECK VALVE
	BUTTERFLY VALVE
	BALANCING VALVE
	HOSE END DRAIN VALVE
	PRESSURE REDUCING VALVE
	TEMPERATURE CONTROL VALVE 2-WAY
	TEMPERATURE CONTROL VALVE 3-WAY
	T&P RELIEF VALVE
MV	MANUAL AIR VENT
AV	AUTOMATIC AIR VENT
	SOLENOID VALVE
	GAS COCK
	IN-LINE PUMP
	STRAINER W/ BLOWOFF VALVE
	TEMPERATURE & PRESSURE TEST PLUGS
	THERMOMETER
	PIPING RISER
	PIPE DROP
PS	PRESSURE SWITCH
FS	FLOW SWITCH
	GAS COCK OR GENERAL CONTRACTOR
	PRESSURE GAUGE W/ GAUGE COCK
	HEAT TRACE
	FLEXIBLE PIPE CONNECTION
	PIPE SLEEVE
	UNION
	PIPE CAP
	FLOW METER FITTING
	ITEM TO DEMOLISH
D	DRAIN
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID

SYMBOL	DESCRIPTION
	DIRECTION OF FLOW
	FLEXIBLE DUCTWORK
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE & SMOKE DAMPER
	RADIATION DAMPER
	DUCT MOUNTED SMOKE DETECTOR
S	TEMPERATURE SENSOR
T	THERMOSTAT
H	HUMIDISTAT
	RECTANGULAR ELBOW WITH TURNING VANES
	RECTANGULAR ELBOW WITHOUT TURNING VANES
	ROUND ELBOW
	SUPPLY AIR DUCT UP
	RETURN AIR DUCT UP
	EXHAUST AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT DOWN
12	TRANSITION (RISE OR DROP) IN DUCT ELEVATION IN DIRECTION OF AIR FLOW
	RECTANGULAR BRANCH FROM RECTANGULAR DUCT
	MANUAL VOLUME DAMPER
	SPIN-IN FITTING
M	SPIN-IN FITTING W/ MVD
M	MOTORIZED DAMPER
B	BACKDRAFT DAMPER
UC 1"	DOOR UNDERCUT WITH HEIGHT
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE/REGISTER
	EXHAUST AIR GRILLE/REGISTER
	ACCESS PANEL
	FLEXIBLE CONNECTION
	LINEAR DIFFUSER
	SUPPLY AIR
	RETURN AIR

REFERENCE SYMBOLS

X SIZE / CFM	AIR DEVICE DESIGNATION
X TAG	EQUIPMENT DESIGNATION
X TAG / LENGTH	BASEBOARD RADIATION TAG / PLENUM LENGTH TAG
1	REVISION DESIGNATION
??	KEY NOTE DESIGNATION
	POINT OF CONNECTION OF NEW TO EXISTING
? / ???	DUCT RISER DESIGNATION
? / ???	WATER RISER DESIGNATION
? / ???	ENLARGED PLAN DESIGNATION
	NORTH ARROW

MECHANICAL GENERAL NOTES

A. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED STATE AND LOCAL CODES, AS WELL AS FEDERAL, STATE, AND MUNICIPAL REGULATIONS.

B. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK UNDER THIS CONTRACT WITH ALL OTHER BUILDING TRADES INCLUDING ARCHITECTURAL. NOTIFY THE ARCHITECT OF ALL DISCREPANCIES OR QUESTIONS PERTAINING TO EXTENT OF WORK PRIOR TO BIDDING.

C. THE WORK REQUIRED CONSISTS OF PERFORMING ALL LABOR AND FURNISHING ALL MATERIALS, DEVICES AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ALL MECHANICAL SYSTEMS AS INDICATED IN THE CONTRACT DOCUMENTS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL ASSOCIATED ITEMS REQUIRED FOR THE PROPER OPERATION OF ALL MECHANICAL SYSTEMS.

D. THE INFORMATION INDICATED WITHIN THESE DRAWINGS IS DIAGRAMMATIC IN NATURE, CONTAINING INFORMATION TO A DEGREE OF DETAIL CONSISTENT WITH THEIR SCALE, ADEQUATE TO CONVEY THE DESIGN INTENT AND THEREFORE DOES NOT INDICATE EVERY REQUIRED OFFSET, FITTING OR SLOPE. PROVIDE EQUIPMENT, MATERIALS AND METHODS NOT SHOWN OR SPECIFIED BUT REQUIRED TO PROVIDE A COMPLETE AND COORDINATED INSTALLATION.

E. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL FIELD DIMENSIONS, LOCATIONS AND CONDITIONS PRIOR TO THE INSTALLATION OF ANY MATERIALS AND COMMENCEMENT OF WORK. NOTIFY THE ARCHITECT OF ALL DISCREPANCIES THAT WILL AFFECT THE WORK FOR RESOLUTION.

F. EQUIPMENT, DEVICES AND MATERIALS SHOWN ON DRAWINGS ARE BASED ON MANUFACTURER'S PUBLISHED DATA, AND ARE, IN THE DESIGNER'S PROFESSIONAL OPINION, REPRESENTATIVE OF TYPICAL SIZES. ALL EQUIPMENT, DEVICES AND MATERIALS PROVIDED SHALL FIT WITHIN THE SPACE PROVIDED.

G. ALL EQUIPMENT AND SERVICEABLE DEVICES SHALL BE INSTALLED WITH ACCESS AND CLEARANCE FOR MAINTENANCE, REPLACEMENT AND/OR USE. COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES TO PROVIDE THIS ACCESS AND CLEARANCE. INSTALL ALL EQUIPMENT, DEVICES AND MATERIALS PER MANUFACTURER'S INSTRUCTIONS.

H. IF EQUIPMENT, DEVICES AND MATERIALS, OTHER THAN THOSE SCHEDULED OR SPECIFIED, ARE APPROVED AND PROVIDED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND PROVIDE REVISED UTILITIES AND SERVICE CONNECTIONS AND VERIFY THE SPACE ALLOTTED IS ADEQUATE TO MAINTAIN THE CLEARANCE REQUIREMENTS REQUIRED BY THE MANUFACTURER AND FOR ACCESS AND MAINTANABILITY AS INDICATED ON THE CONSTRUCTION DOCUMENTS.

I. PROVIDE STARTERS FOR EQUIPMENT UNLESS SPECIFICALLY IDENTIFIED AS BEING PROVIDED BY THE ELECTRICAL CONTRACTOR. PROVIDE ALL INTERNAL OVER CURRENT PROTECTION DEVICES AND INTERNAL TRANSFORMERS FOR PACKAGED EQUIPMENT.

J. COORDINATE ALL DUCTWORK, DEVICE, PIPING AND EQUIPMENT LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO STARTING ANY WORK. COORDINATE WITH GENERAL CONTRACTOR, AND ALL TRADES, ALL REQUIREMENTS FOR INSTALLATION, INCLUDING SERVICE/UTILITY CONNECTIONS, POINT LOADS, CHASES, SLEEVES, SUPPORTING DEVICES, OPENINGS AND CUT-OUTS, AND PENETRATIONS OF WALLS, CEILINGS OR SHAFTS. WHERE DUCTS AND PIPES PASS THROUGH FIRE-RATED CONSTRUCTION, SEAL WITH CODE REQUIRED MATERIALS.

K. ACCESS DOORS AND/OR PANELS SHALL BE PROVIDED AT ALL MAINTENANCE AND SERVICE LOCATIONS FOR CONCEALED EQUIPMENT, VALVES, DAMPERS AND DEVICES. UNLESS A SIZE IS SPECIFICALLY NOTED, PANELS SHALL BE SIZED TO SERVICE EQUIPMENT/DEVICE BUT SHALL NOT BE LESS THAN 12" x 12". DOORS AND PANELS SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY ARE INSTALLED. ACCESS DOORS AND/OR PANELS ARE NOT REQUIRED WHERE ADJUSTMENT, MAINTENANCE AND REPLACEMENT ARE POSSIBLE THROUGH LAY-IN SUSPENDED CEILING.

L. INSULATION AND VAPOR BARRIER SHALL BE PROVIDED ON ALL PIPING AND EQUIPMENT SUBJECT TO HEAT LOSS, CONDENSATION, OR CONSTITUTING A POTENTIAL BURN HAZARD.

M. PIPE, DUCT AND EQUIPMENT INSULATION SHALL NOT BE CRUSHED OR COMPRESSED THROUGH INTERFERENCE WITH SYSTEMS INSTALLED BY OTHER TRADES OR BUILDING CONSTRUCTION.

N. ALL PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID FREEZING. NO PIPING SHALL BE INSTALLED WITHIN EXTERIOR WALLS EXCEPT AT CONDENSATE TERMINATION POINTS. ALL CONDENSATE PIPING SHALL BE LOCATED ON THE HEATED SIDE OF THE INSULATION EXCEPT THE TERMINATION POINT.

O. ROUTE ALL CONDENSATE ABOVE CEILING AS HIGH AS POSSIBLE.

P. ALL FINISHED CONSTRUCTION AND/OR EXISTING BUILDING AND SITE FEATURES NOT BEING ALTERED BY THIS PROJECT ARE TO BE PROTECTED FROM DAMAGE. CONTRACTOR SHALL REPAIR ALL DAMAGE TO FINISHED AND/OR EXISTING CONSTRUCTION CAUSED BY THE CONTRACTOR'S OPERATIONS AT CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE OWNER.

Q. ALL DUCTWORK SIZES ARE CLEAR INSIDE DIMENSIONS. INCREASE DUCTWORK SIZE FOR ACOUSTICAL LINER WHERE SPECIFIED.

R. ALL SPIN-IN FITTINGS SHOWN ARE TO BE INSTALLED PER SMACNA AND MANUFACTURER'S RECOMMENDATIONS. ALL DUCTWORK IS TO BE OF SHEETMETAL CONSTRUCTION PER SMACNA STANDARDS FOR LOW AND MEDIUM PRESSURE DISTRIBUTION.

S. ALL MECHANICAL SYSTEMS SHALL BE TESTED, BALANCED, AND ADJUSTED. COORDINATE AND PROVIDE BALANCING DEVICE REQUIREMENTS WITH TEST AND BALANCE SERVICE TO ASSURE ADEQUATE DAMPERS AND VALVES ARE PROVIDED FOR FLOW CONTROL. MECHANICAL CONTRACTOR TO PROVIDE ALL MANUAL VOLUME DAMPERS WHERE SHOWN ON DRAWINGS AND WHERE REQUESTED BY BALANCING CONTRACTOR TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.

T. ALL ELBOWS IN RECTANGULAR SUPPLY DUCTS SHALL HAVE TURNING VANES OR SHALL BE RADIUS STYLE.

U. DUCT CONNECTION TO EQUIPMENT SHALL BE FABRICATED AFTER EQUIPMENT HAS BEEN SET IN PLACE AND DIMENSIONS VERIFIED.

V. ALL BRANCH DUCTWORK AND FLEX TO INDIVIDUAL DIFFUSERS SHALL BE THE SAME SIZE AS THE NECK OF THE DIFFUSER UNLESS OTHERWISE NOTED.

W. COORDINATED DIFFUSER AND GRILLE PLACEMENT IS SHOWN ON THE FP400 SERIES DRAWINGS. COORDINATE DIFFUSER AND GRILLE PLACEMENT WITH LIGHTING AND OTHER CEILING DEVICE INSTALLATIONS FOR A CONSISTENT, FUNCTIONAL AND SYMMETRICAL PATTERN.

X. MOUNT ALL THERMOSTATS WITH TOP OF THERMOSTAT AT 48 INCHES ABOVE FINISH FLOOR.

Y. MAINTAIN ONE SET OF RED-LINED AS-BUILT DRAWINGS ON JOB SITE. SUBMIT TO ARCHITECT AT THE COMPLETION OF ALL WORK.

Z. FLEXIBLE DUCTWORK MAXIMUM LENGTH SHALL NOT EXCEED 5'-0".

AA. BALANCING CONTRACTOR SHALL CALIBRATE ALL THERMOSTATS AND SENSORS AT THE COMPLETION OF THE PROJECT.

BB. PROVIDE NOISE AND VIBRATION ISOLATION FOR ALL EQUIPMENT. PROVIDE FLEX CONNECTIONS AT ALL INLET AND OUTLET DUCT CONNECTIONS.

CC. ALL INSULATION SHALL MEET THE TEMPERATURE AND SMOKE RATINGS AS REQUIRED BY NFPA FOR THE INTENDED USE.

DD. COORDINATE ALL PHASING REQUIREMENTS WITH THE GENERAL CONTRACTOR'S SCHEDULE TO ENSURE CONTINUITY OF SYSTEM OPERATION.

MECHANICAL DEMOLITION NOTES

1. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SITE PRIOR TO SUBMITTING THEIR BID. DUE TO THE NATURE OF THIS PROJECT AND THE STATE OF THE EXISTING BUILDING, IT IS IMPOSSIBLE TO COMPLETELY RELATE THE SCOPE OF THE DEMOLITION REQUIRED TO THE CONTRACTOR THROUGH THE CONTRACT DOCUMENTS. FAILURE TO VISIT THE SITE WILL NOT RELIEVE THE CONTRACTOR OF THEIR DEMOLITION RESPONSIBILITIES UNDER THIS CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND COORDINATE THE EXACT CONTENT OF DEMOLITION NECESSARY TO PROVIDE A RENOVATED AND UPGRADED SPACE AND TO FACILITATE NEW WORK.
2. INFORMATION REGARDING THE EXISTING CONDITIONS WAS GATHERED FROM ALL AVAILABLE EXISTING DRAWINGS, SURVEY AND CORRESPONDENCE WITH UTILITY, STAFF AND MUNICIPAL PERSONNEL. THERE ARE NO GUARANTEES AS TO THE ACCURACY OF THIS INFORMATION AND IT IS OFFERED FOR INFORMATION ONLY. ALL CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR.
3. VERIFY EXISTING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING AND SYSTEM COMPONENTS PRIOR TO DEMOLITION. IF EXISTING CONDITIONS ARE DIFFERENT THAN WHAT IS INDICATED ON THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.
4. MINIMIZE DISTURBANCE AND/OR DAMAGE TO EXISTING FINISHED SURFACES AND FINISHES. WHERE DEMOLITION OF MECHANICAL SYSTEM COMPONENTS DAMAGES EXISTING SURFACE TO REMAIN, RESTORE THOSE SURFACES TO THE SAME CONDITION AS THE ADJACENT SURFACES. RESTORATION MUST BE PERFORMED BY WORKMEN SKILLED IN PERFORMING SUCH WORK. ALL FIRE AND SMOKE RATINGS SHALL BE RETAINED AS PART OF THE REPAIRS AND PATCH/SEAL HOLES WEATHERTIGHT WHERE REQUIRED. ALL PATCHES AND REPAIRS SHALL BE SUBJECT TO REVIEW AND APPROVAL OF THE ARCHITECT.
5. ALL AREAS OF EGRESS SHALL BE KEPT OPEN AND FREE FROM DEBRIS AT ALL TIMES.
6. DO NOT REMOVE ITEMS SUPPORTING OTHER ITEMS WITHOUT PROVIDING TEMPORARY OR PERMANENT SUPPORT AS REQUIRED. SEE DRAWINGS FOR AREAS AND EXTENT OF DEMOLITION. PROPERLY SUPPORT ALL EXISTING ITEMS TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SUPPORTS FOR AFFECTED ITEMS.
7. VERIFY EXTENT OF PIPING, EQUIPMENT, COMPONENTS AND CONTROLS TO BE RETAINED OR REUSED PRIOR TO THE DEMOLITION OF SPECIFIC SYSTEM. PROTECT ITEMS WHICH ARE TO BE REUSED ON SITE TO MINIMIZE POST-CONSTRUCTION REPAIRS. ANY ITEMS WHICH ARE DAMAGED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CONTRACT.
8. REFER TO M300, M400 AND M500 SERIES FOR EXISTING DUCTWORK, PIPING, EQUIPMENT AND SYSTEM COMPONENTS TO BE RE-USED.
9. REMOVE EQUIPMENT OWNER WISHES TO RETAIN AND DELIVER TO THE LOCATION DESIGNATED BY THE OWNER. REMOVE PROMPTLY FROM SITE ALL MATERIALS AND EQUIPMENT INDICATED FOR REMOVAL WHICH ARE NOT SPECIFIED FOR REUSE, STORAGE, OR RETAINED BY OWNER.
10. VERIFY ALL EXISTING STRUCTURAL CONDITIONS AND NOTIFY STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO PENETRATING EXISTING BUILDING STRUCTURAL SYSTEMS.
11. NO DEMOLITION SHALL OCCUR WHICH LEAVES THE BUILDING INTERIOR WITHOUT WEATHER PROTECTION. ALL DEMOLITION OF EXTERIOR SURFACES SHALL BE FOLLOWED IMMEDIATELY BY PROTECTIVE CONSTRUCTION. CONTRACTORS SHALL PROVIDE AND INSTALL TEMPORARY PROTECTION IN ALL OPENINGS WHERE WINDOWS AND EXTERIOR DOORS HAVE BEEN REMOVED.
12. THE INTENT OF THE DEMOLITION ON THIS PROJECT IS THE PARTIAL REMOVAL OF INTERIOR AND EXTERIOR MECHANICAL SYSTEMS, EXCEPT WHERE NOTED. UNLESS NOTED OTHERWISE AFTER THE DEMOLITION OF AN AREA, THE ONLY EXISTING ITEM THAT SHOULD REMAIN IS PIPING IN (E) MASONRY WALLS AND BELOW (E) FLOOR SLABS. REMAINING PIPING IN THESE LOCATIONS SHALL BE PATCHED OVER AND NOT VISIBLE NOR REUSABLE. NO PIPING SHALL REMAIN IN CEILING SPACES.
13. ALL HAZARDOUS MATERIALS ENCOUNTERED WHICH AFFECT THE COMPLETION OF THE SCOPE OF WORK SHALL BE IMMEDIATELY REPORTED TO THE GENERAL CONTRACTOR FOR REMEDIATION.

MECHANICAL PHASING NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL CONNECTIONS TO EXISTING AND NEW SYSTEMS AS NECESSARY TO FACILITATE PROPER CONTINUAL OPERATION OF ALL SYSTEMS AND EQUIPMENT, EXISTING OR NEW, EXCEPT WHEREIN AREA OF CURRENT PHASE IN CONSTRUCTION.

B. IF THE NEED FOR TEMPORARY SERVICE(S) DICTATES WORK MUST BE DONE AHEAD OF SCHEDULE OR DELAYED FOR A PARTICULAR AREA AS INDICATED ON THE ARCHITECTURAL PHASING PLANS, WORK AHEAD OF SCHEDULE OR DELAYED MUST BE APPROVED BY THE ARCHITECT AND OWNER. WORK SHALL TAKE PLACE IN SUCH A MANNER SO AS NOT TO INTERFERE WITH THE DAY-TO-DAY OPERATION OF THE FACILITY AS DETERMINED BY THE OWNER.

C. REFER TO THE SPECIFICATIONS AND ARCHITECTURAL PHASING PLANS TO DETERMINE THE PHASING OF COMPONENTS OF THE FACILITY MECHANICAL SYSTEMS. PORTIONS AND COMPONENTS OF MECHANICAL SYSTEMS ARE CONSIDERED TO BE IN A SPECIFIC PHASE INDICATED ON THE ARCHITECTURAL PHASING PLANS DEPENDING ON WHETHER THEIR COMPLETION IS REQUIRED TO OCCUPY AND PROPERLY USE THE SPACES INCLUDED IN THE SPECIFIC PHASE. THIS MAY MEAN THAT ELEMENTS OF MECHANICAL SYSTEMS PHYSICALLY LOCATED OUTSIDE OF THE PHASED AREA MAY NEED TO BE COMPLETED AS PART OF THE PHASE IN QUESTION. COORDINATE ALL PHASING REQUIREMENTS WITH THE GENERAL CONTRACTOR'S SCHEDULE TO ENSURE CONTINUITY OF SYSTEM OPERATION AS REQUIRED BY THE OWNER.

D. THE CONTRACTOR SHALL BE AWARE THAT THE EXISTING BUILDING(S) AND ADJACENT SITE WILL BE OCCUPIED AND IN USE DURING THE LENGTH OF THE CONTRACT 24 HOURS PER DAY, 7 DAYS A WEEK. THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS SO THAT THERE WILL BE MINIMUM INTERFERENCE WITH THE CONTINUED OPERATIONS OF THE EXISTING BUILDING AND STAFF. ANY INTERFERENCE OR INCONVENIENCE WITH THE CONTINUED OPERATIONS OF THE BUILDING(S) WILL BE REVIEWED WITH THE ARCHITECT AND OWNER PRIOR TO APPROVAL.

E. CONTRACTOR SHALL MINIMIZE SHUTDOWN TIME DURING MECHANICAL SYSTEM SWITCHOVERS. COORDINATE WITH THE OWNER THE SHUTDOWN TIMES AND THEIR DURATIONS.

F. THE DEMOLITION OF THE MECHANICAL SYSTEMS MUST BE PERFORMED TO CORRESPOND TO THE PHASED NATURE OF THE CONSTRUCTION OF THIS PROJECT. SEE THE ARCHITECTURAL PHASING PLANS FOR MORE DETAILS. IF ANY SYSTEM OR PORTION OF A SYSTEM IS REMOVED WHILE THAT SYSTEM IS STILL REQUIRED TO BE OPERATIONAL, THE CONTRACTOR WILL BE RESPONSIBLE FOR RESTORING THE SYSTEM TO A FULLY OPERATIONAL STATE. IN ADDITION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORK NECESSARY TO KEEP REQUIRED SYSTEMS OPERATIONAL UNTIL THEY ARE NO LONGER NEEDED. THIS WORK MAY INCLUDE, BUT IS NOT LIMITED TO: RELOCATION OF SYSTEM EQUIPMENT, RE-PIPING OF EQUIPMENT AND DEVICES AND RE-DUCTING OF EQUIPMENT AND DEVICES. EXISTING SYSTEMS THAT WILL REMAIN OPERATIONAL THROUGH MOST OR ALL OF THE CONSTRUCTION PERIOD INCLUDE, BUT ARE NOT LIMITED TO: ALL DUCTWORK SYSTEMS, CONDENSATE DISPOSAL SYSTEMS, DX SYSTEMS AND CONTROL SYSTEMS. ANY SHUTDOWN (EITHER LONG-TERM OR SHORT-TERM) OF ANY OF THESE SYSTEMS MUST BE COORDINATED WITH AND APPROVED BY THE OWNER.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE, S.W. ROANOKE, VA. 24018

DRAWN BY: R.H. | CHECKED BY: R.H. | APPROVED BY: R.H.

REVISIONS

NO.	DATE	DESCRIPTION

ALL VOLUMES
DRAWING NO: M001

MECHANICAL LEGEND AND GENERAL NOTES

COMMISSION NO: 2019091 | SCALE: AS NOTED | DATE: 08.28.2020

11/17/2020 9:20:04 AM

GENERAL NOTES

(THIS SHEET ONLY)

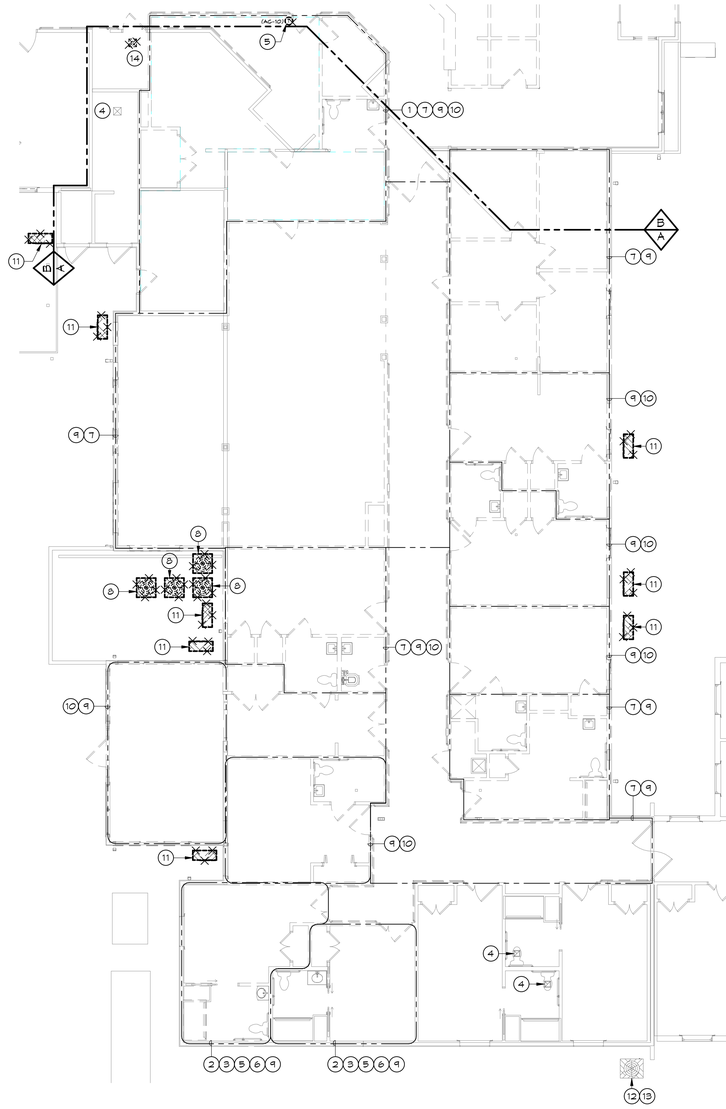
A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. UNLESS NOTED OTHERWISE, ALL EXISTING DUCTWORK AND PIPING SHOWN ON THIS LEVEL SHALL REMAIN.

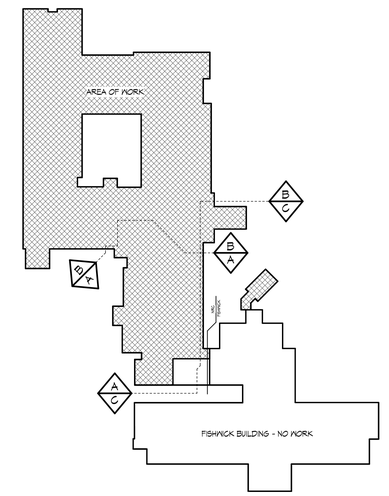
C. RETAIN ALL (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED AND DELIVER TO LOCATION DESIGNATED BY THE OWNER.

KEY NOTES

1. DEMOLISH (E) GREASE HOOD AND ASSOCIATED DUCTWORK IN THEIR ENTIRETY. (TYP. 2)
2. DEMOLISH (E) EXHAUST DUCTWORK AND AIR DEVICE IN ITS ENTIRETY.
3. DEMOLISH (E) REFRIGERANT PIPING FROM (E) CEILING CASSETTE TO (E) BRANCH CONTROLLER LOCATED IN THE ATTIC.
4. (E) AIR DEVICE AND ASSOCIATED DUCTWORK TO REMAIN.
5. (E) THERMOSTAT SHALL BE REMOVED AND RELOCATED.
6. (E) VRF CEILING CASSETTE SHALL BE REMOVED AND RELOCATED.
7. DEMOLISH DUCTWORK, AIR DEVICES AND ASSOCIATED CONTROLS SERVED BY (E) FURNACES LOCATED IN THIS AREA OF WORK.
8. DEMOLISH (E) CONDENSING UNIT, ASSOCIATED PIPING, AND ASSOCIATED CONTROLS IN THEIR ENTIRETY.
9. DEMOLISH (E) CONDENSATE PIPING IN ITS ENTIRETY.
10. DEMOLISH (E) INDOOR SPLIT SYSTEM AC UNIT(S), ASSOCIATED PIPING AND CONTROLS IN THEIR ENTIRETY.
11. DEMOLISH (E) OUTDOOR SPLIT SYSTEM AC UNIT, ASSOCIATED PIPING AND CONTROLS IN THEIR ENTIRETY.
12. (E) VRF OUTDOOR UNIT TO REMAIN.
13. (E) REFRIGERANT PIPING TO REMAIN.
14. DEMOLISH (E) SUPPLY AIR DUCTWORK AND AIR DEVICE IN ITS ENTIRETY.



1 / M201.2 **FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA A**
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE SW, ROANOKE, VA 24018

DRAWN BY: R.H. | CHECKED BY: R.H. | APPROVED BY: R.H.

REVISIONS

NO.	DATE	DESCRIPTION

FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA A

VOLUME II
PHASES 2 AND 3
DRAWING NO: M201.2

COMMISSION NO: 2019091 | SCALE: AS NOTED | DATE: 08.26.2020

11/17/2020 9:26:12 AM

FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA B
1 / M202.2
SCALE: 1/8" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. UNLESS NOTED OTHERWISE, ALL EXISTING DUCTWORK AND PIPING SHOWN ON THIS LEVEL SHALL REMAIN.

C. RETAIN ALL (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED AND DELIVER TO LOCATION DESIGNATED BY THE OWNER.

PRE-DEMOLITION TESTING NOTES

A. PRIOR TO THE START OF DEMOLITION A CERTIFIED TAB AGENT SHALL TEST AND RECORD THE AIRFLOW FROM EACH AIR DEVICE IN THE AREA OF WORK AND SERVED BY THE FOLLOWING EQUIPMENT:

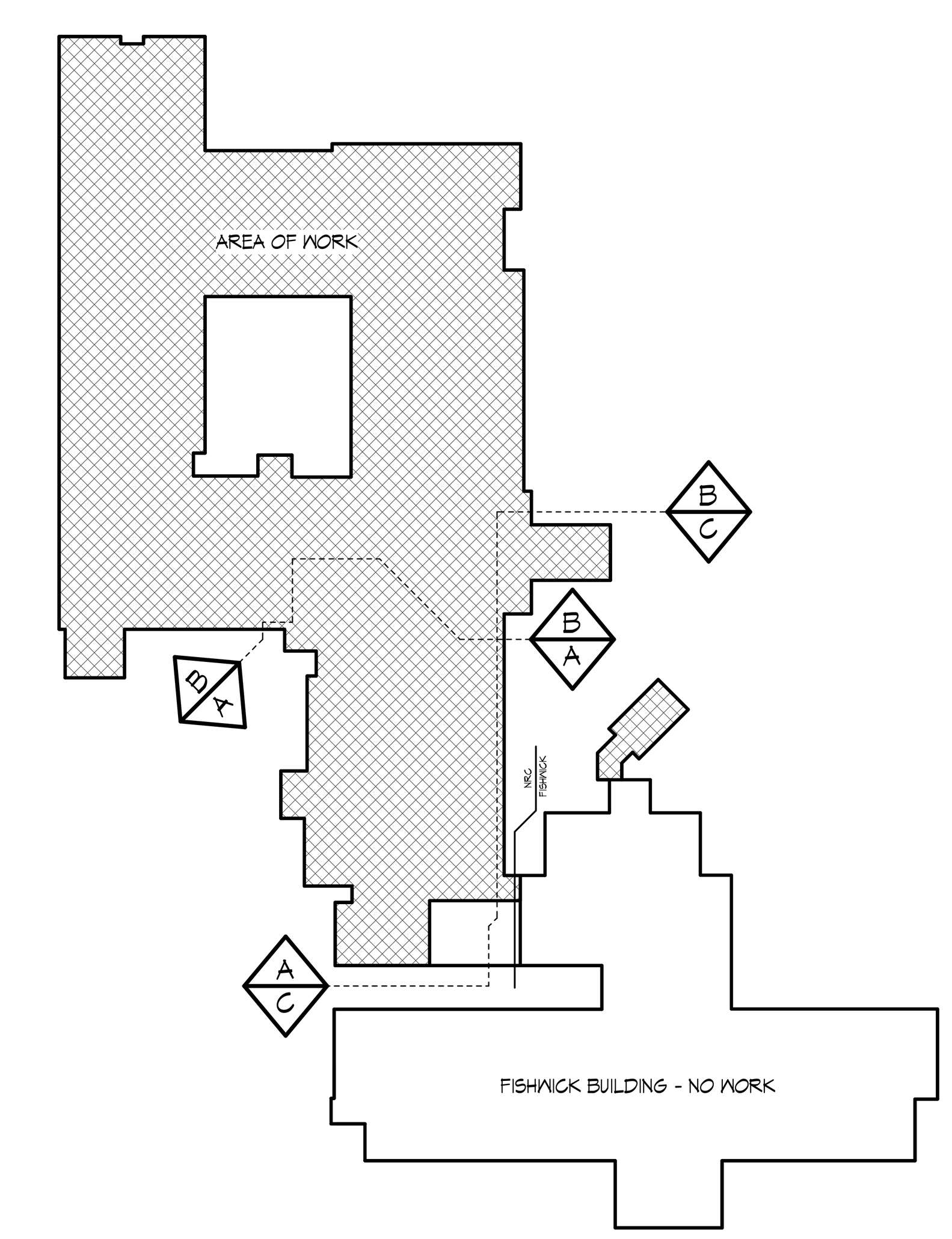
a. (E) AC-5 LOCATED IN ATTIC.
b. (E) AC-6 LOCATED IN ATTIC.
c. (E) AC-7 LOCATED IN ATTIC.
d. (E) AC-8 LOCATED IN ATTIC.
e. (E) AC-10 LOCATED IN ATTIC.
f. (E) AC-11 LOCATED IN ATTIC.
g. (E) AC-12 LOCATED IN ATTIC.
h. (E) AC-13 LOCATED IN ATTIC.

B. SUBMIT TEST RECORDS TO ENGINEER FOR REVIEW WITHIN ONE WEEK OF TEST.

C. AIRFLOW RATES FOR FINAL BALANCING AFTER COMPLETION OF THE WORK SHALL BE BASED ON INITIAL TEST RECORDS UNLESS OTHERWISE NOTED.

KEY NOTES

1. (E) OUTDOOR SPLIT SYSTEM HP UNIT TO REMAIN.
2. DEMOLISH (E) AIR DEVICE AND ASSOCIATED DUCTWORK.
3. (E) AIR DEVICE AND ASSOCIATED DUCTWORK TO REMAIN.
4. (E) THERMOSTAT SHALL BE DEMOLISHED.
5. DEMOLISH (E) DRYER VENT AND ASSOCIATED WALL CAP AT EXTERIOR WALL IN THEIR ENTIRETY.
6. DEMOLISH (E) PTHP. (E) OPENING SHALL BE PATCHED TO MATCH (N) CONSTRUCTION AS NOTED ON THE ARCHITECTURAL DRAWINGS.
7. DEMOLISH (E) CONDENSING UNIT, ASSOCIATED PIPING, AND ASSOCIATED CONTROLS IN THEIR ENTIRETY.
8. DEMOLISH (E) CONDENSATE PIPING IN ITS ENTIRETY.
9. DEMOLISH (E) INDOOR SPLIT SYSTEM HP UNIT, ASSOCIATED PIPING AND CONTROLS IN THEIR ENTIRETY.
10. DEMOLISH (E) OUTDOOR SPLIT SYSTEM HP UNIT, ASSOCIATED PIPING AND CONTROLS IN THEIR ENTIRETY.
11. (E) REFRIGERANT PIPING TO REMAIN.
12. (E) CONDENSING UNIT TO REMAIN.
13. DEMOLISH (E) PTHP. RETAIN (E) OPENING BELOW WINDOW AND MODIFY TO ACCOMMODATE (N) PTHP.
14. (E) INDOOR SPLIT SYSTEM HP UNIT TO REMAIN.
15. (E) THERMOSTAT TO REMAIN.
16. DEMOLISH (E) EXHAUST GRILLE. RETAIN (E) EXHAUST DUCT AND MODIFY TO ACCOMMODATE (N) AIR DEVICE IN DROPPED CEILING.
17. DEMOLISH (E) SUPPLY DIFFUSER. RETAIN (E) SUPPLY DUCT AND MODIFY TO ACCOMMODATE (N) AIR DEVICE IN DROPPED CEILING.
18. DEMOLISH (E) REFRIGERANT PIPING AS NOTED ON M204.2.
19. DEMOLISH (E) RETURN GRILLE. RETAIN (E) RETURN DUCT AND MODIFY TO ACCOMMODATE (N) AIR DEVICE IN DROPPED CEILING.
20. DEMOLISH (E) SUPPLY DIFFUSER. RETAIN (E) SUPPLY DUCT AND MODIFY TO ACCOMMODATE (N) AIR DEVICE.
21. DEMOLISH (E) RETURN GRILLE. RETAIN (E) RETURN DUCT AND MODIFY TO ACCOMMODATE (N) AIR DEVICE.
22. (E) THERMOSTAT SHALL BE REMOVED AND RELOCATED.



KEY PLAN
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BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.	DATE	DESCRIPTION
19	03.17.2021	PHASE 2 & 3 - REVISION 02

FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA B

VOLUME II
PHASES 2 AND 3
DRAWING NO:
M202.2

SCALE:	DATE:
AS NOTED	08.28.2020

COMMISSION NO: 2019091

3/17/2021 10:02:28 AM

GENERAL NOTES

(THIS SHEET ONLY)

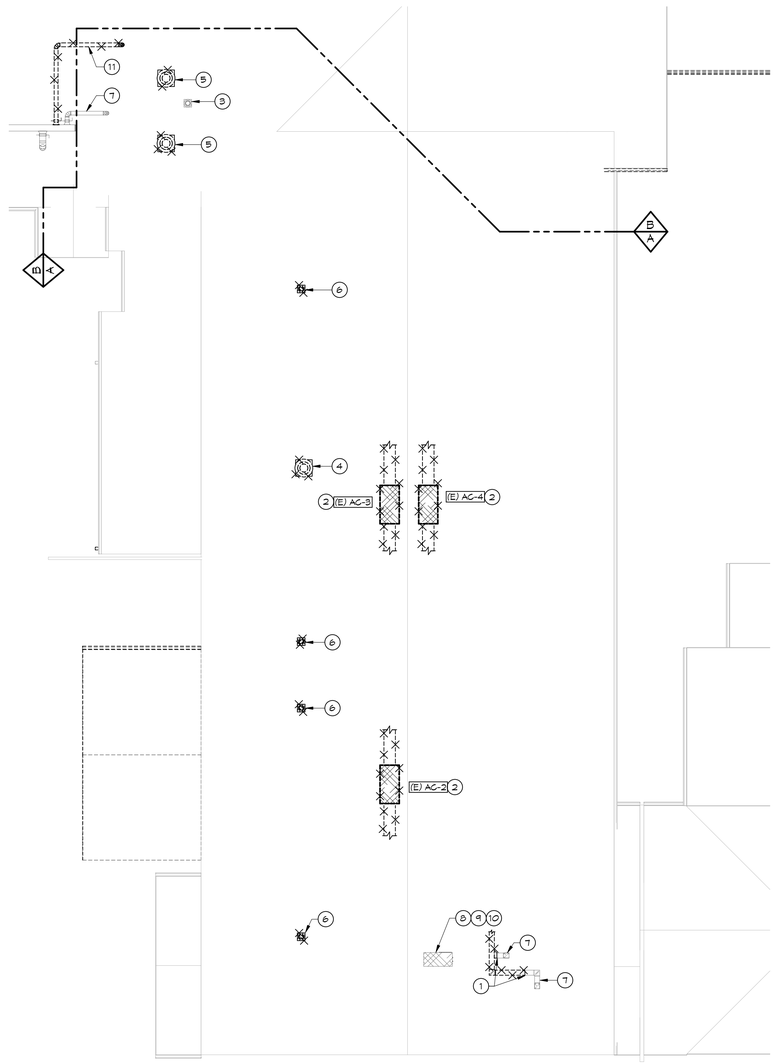
A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. UNLESS NOTED OTHERWISE, ALL EXISTING DUCTWORK AND PIPING SHOWN ON THIS LEVEL SHALL REMAIN.

C. RETAIN ALL (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED AND DELIVER TO LOCATION DESIGNATED BY THE OWNER.

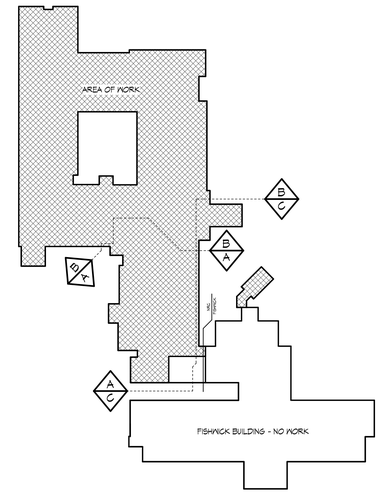
KEY NOTES

1. DEMOLISH (E) EXHAUST DUCTWORK IN ITS ENTIRETY UNLESS NOTED TO REMAIN AND BE REUSED.
2. DEMOLISH (E) GAS-FIRED FURNACE, ASSOCIATED REFRIGERANT PIPING, DUCTWORK, VENTS AND ASSOCIATED CONTROLS IN THEIR ENTIRETY.
3. (E) GRAVITY INTAKE TO REMAIN.
4. DEMOLISH (E) EXHAUST FAN, ASSOCIATED CONTROLS AND ASSOCIATED DUCTWORK IN ITS ENTIRETY. PATCH (E) ROOF TO MATCH ADJACENT. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. DEMOLISH (E) GREASE EXHAUST FAN AND ASSOCIATED DUCTWORK BACK TO (E) GREASE HOOD. PATCH (E) ROOF TO MATCH ADJACENT. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. DEMOLISH (E) GRAVITY INTAKE AND ASSOCIATED DUCTWORK BACK TO (E) FURNACE RETURN AIR DUCTWORK. PATCH (E) ROOF TO MATCH ADJACENT. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. (E) DUCTWORK TO REMAIN.
8. (E) BRANCH CONTROLLER LOCATED IN ATTIC SHALL REMAIN.
9. (E) REFRIGERANT PIPING TO (E) VRF OUTDOOR UNIT AND (E) CEILING CASSETTES NOT TO BE RELOCATED SHALL REMAIN.
10. (E) CONDENSATE PIPING TO REMAIN.
11. DEMOLISH (E) SUPPLY AIR DUCTWORK BACK TO POINT INDICATED.



1 M203.2 **ATTIC AND ROOF MECHANICAL DEMOLITION PLAN - AREA A**

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



KEY PLAN
NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION

FOR

VIRGINIA LUTHERAN HOMES

3837 BRANDOON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.:	DATE	DESCRIPTION

ATTIC AND ROOF MECHANICAL DEMOLITION PLAN - AREA A

SCALE:	DATE:
AS NOTED	08.28.2020

VOLUME II
PHASES 2 AND 3
DRAWING NO:
M203.2

COMMISSION NO:
2019091

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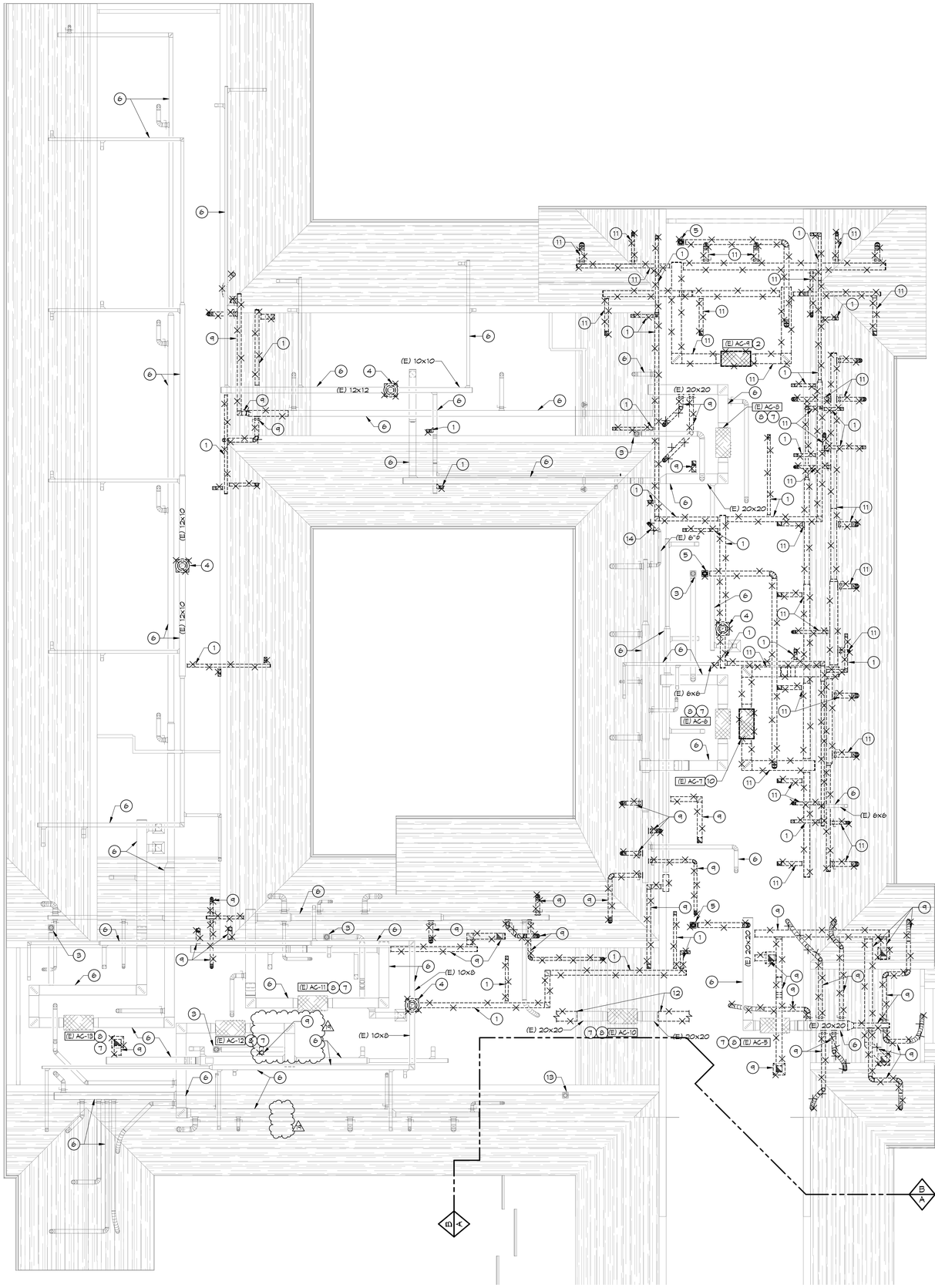


ATTIC AND ROOF MECHANICAL DEMOLITION PLAN - AREA B

1 / M204.2 SCALE: 1/8" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. UNLESS NOTED OTHERWISE, ALL EXISTING DUCTWORK AND PIPING SHOWN ON THIS LEVEL SHALL REMAIN.

C. RETAIN ALL (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED AND DELIVER TO LOCATION DESIGNATED BY THE OWNER.

PRE-DEMOLITION TESTING NOTES

A. PRIOR TO THE START OF DEMOLITION A CERTIFIED TAB AGENT SHALL TEST AND RECORD THE AIRFLOW FROM EACH AIR DEVICE IN THE AREA OF WORK AND SERVED BY THE FOLLOWING EQUIPMENT:

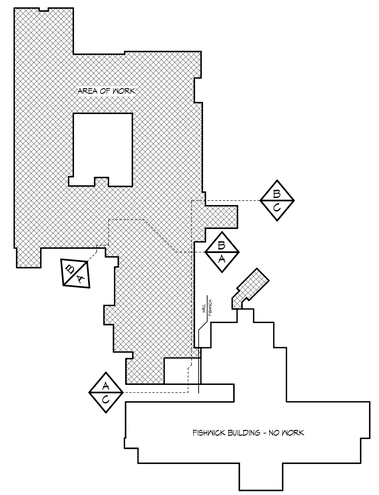
a. (E) AC-5 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
b. (E) AC-6 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
c. (E) AC-7 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
d. (E) AC-8 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
e. (E) AC-10 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
f. (E) AC-11 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
g. (E) AC-12 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.
h. (E) AC-13 LOCATED IN ATTIC AND ASSOCIATED GRAVITY INTAKE.

B. SUBMIT TEST RECORDS TO ENGINEER FOR REVIEW WITHIN ONE WEEK OF TEST.

C. AIRFLOW RATES FOR FINAL BALANCING AFTER COMPLETION OF THE WORK SHALL BE BASED ON INITIAL TEST RECORDS UNLESS OTHERWISE NOTED.

KEY NOTES

1. DEMOLISH (E) EXHAUST DUCTWORK IN ITS ENTIRETY UNLESS NOTED TO REMAIN AND BE REUSED.
2. DEMOLISH (E) GAS-FIRED FURNACE AND ASSOCIATED REFRIGERANT PIPING, DUCTWORK, VENTS, AIR DEVICES AND ASSOCIATED CONTROLS IN THEIR ENTIRETY.
3. (E) GRAVITY INTAKE TO REMAIN. CONTRACTOR SHALL VALIDATE DAMPER IS OPERATIONAL. IF NOT OPERATIONAL CONTRACTOR SHALL REPAIR DAMPER.
4. DEMOLISH (E) EXHAUST FAN, ASSOCIATED CONTROLS AND ASSOCIATED DUCTWORK. REMOVE (E) ROOF CURB AND MODIFY ROOF TO ACCOMODATE (N) ROOF CURB INSTALLATION.
5. DEMOLISH (E) GRAVITY INTAKE AND ASSOCIATED DUCTWORK BACK TO (E) FURNACE RETURN AIR DUCTWORK. PATCH (E) ROOF TO MATCH ADJACENT. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. (E) DUCTWORK TO REMAIN.
7. (E) REFRIGERANT PIPING AND CONDENSATE PIPING TO REMAIN.
8. (E) GAS-FIRED FURNACE TO REMAIN.
9. DEMOLISH (E) BRANCH DUCT IN ITS ENTIRETY. CAP (E) DUCT MAIN AT LOCATION SHOWN AND REINSULATE.
10. REMOVE (E) FURNACE LOCATED IN ATTIC. RETAIN (E) FURNACE FOR RELOCATION. DEMOLISH ASSOCIATED REFRIGERANT PIPING, DUCTWORK, VENTS, AIR DEVICES AND ASSOCIATED CONTROLS IN THEIR ENTIRETY.
11. DEMOLISH (E) DUCTWORK IN ITS ENTIRETY.
12. DEMOLISH (E) DUCTWORK BACK TO POINTS INDICATED.
13. (E) GRAVITY INTAKE TO REMAIN. DEMOLISH ASSOCIATED DUCTWORK IN ITS ENTIRETY.
14. DEMOLISH (E) BRANCH DUCT BACK TO POINT INDICATED.



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REVISIONS

NO.	DATE	DESCRIPTION
19	03.17.2021	PHASE 2 & 3 - REVISION 02

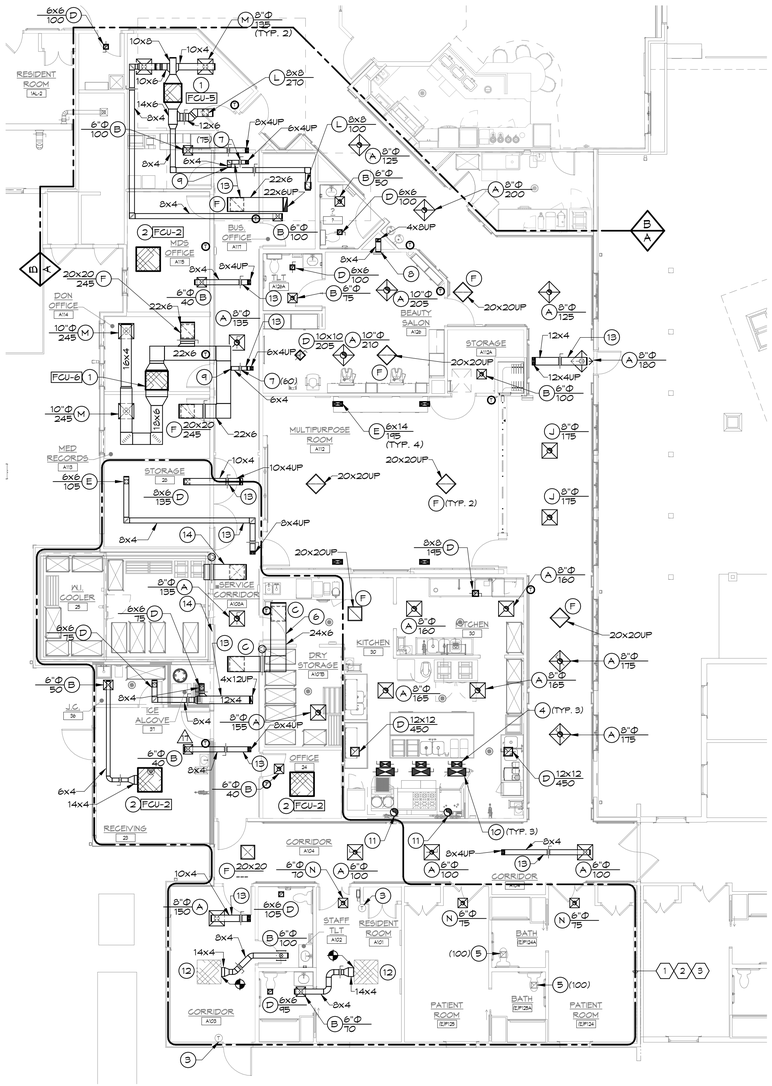
BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE SW, ROANOKE, VA 24018

DRAWN BY: R.H. | CHECKED BY: R.H. | APPROVED BY: R.H.

ATTIC AND ROOF MECHANICAL DEMOLITION PLAN - AREA B

VOLUME II
PHASES 2 AND 3
DRAWING NO: M204.2
COMMISSION NO: 2019031
SCALE: AS NOTED
DATE: 08.28.2020

3/17/2021 10:02:40 AM



FIRST FLOOR MECHANICAL PLAN - AREA A

1 / M301.2

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

TEMPORARY PHASING KEY NOTES

1. CONNECT (N) EXHAUST AIR DEVICES LOCATED IN JG A108A AND ICE ALCOVE A108 TO (E) EXHAUST DUCTWORK LOCATED IN ATTIC. BALANCE (E) EXHAUST FAN TO ACCOMMODATE ADDITIONAL AIRFLOW OF 150 CFM.
2. PROVIDE TEMPORARY VENTILATION UNIT INSTALLED AT GRADE TO SERVE THIS PORTION OF PHASE 2. COORDINATE INSTALLATION, SHUTDOWNS AND CHANGEOVERS WITH OWNER AND ARCHITECT. TEMPORARY DUCTWORK SHALL BE ROUTED FROM VENTILATION UNIT TO EACH SPACE WITHIN AREA OF WORK. ROUTE DUCTWORK THROUGH LOUVER OPENINGS OR NEW ROOF PENETRATION. VENTILATION UNIT SHALL BE PROVIDED WITH FILTER SECTION, GAS HEAT, DX COOLING COIL, SUPPLY FAN AND BE RATED FOR 925 CFM. THE UNIT SHALL RUN CONTINUOUSLY AND PROVIDE 100% OUTSIDE AIR AT A CONSTANT DISCHARGE AIR TEMPERATURE OF 70 DEGREES. CONTRACTOR SHALL PROVIDE TEMPORARY POWER PER THE NATIONAL ELECTRICAL CODE. TEMPORARY POWER CONNECTIONS SHALL BE REMOVED IN THEIR ENTIRETY AFTER THE PERMANENT EQUIPMENT HAS BEEN INSTALLED.
3. PROVIDE TEMPORARY OUTDOOR UNIT TO SERVE FCU-2 LOCATED IN RECEIVING VESTIBULE A106 AND OFFICE A107A. LOCATE UNIT AT GRADE. COORDINATE INSTALLATION, SHUTDOWNS AND CHANGEOVERS WITH OWNER AND ARCHITECT. TEMPORARY REFRIGERANT PIPING SHALL BE ROUTED FROM OUTDOOR UNIT TO EACH FCU WITHIN AREA OF WORK. OUTDOOR UNIT SHALL BE MODEL TUMY036BAK41NA SELECTED AT AMBIENT CONDITIONS ON EQUIPMENT SCHEDULES. FCU'S SHALL BE CONNECTED TO BRANCH CONTROLLER AND ASSOCIATED OUTDOOR UNIT INSTALLED IN PHASE 3 AS INDICATED ON DRAWING M303.2. CONTRACTOR SHALL PROVIDE TEMPORARY POWER PER THE NATIONAL ELECTRICAL CODE. TEMPORARY POWER CONNECTIONS SHALL BE REMOVED IN THEIR ENTIRETY AFTER THE PERMANENT EQUIPMENT HAS BEEN INSTALLED.

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

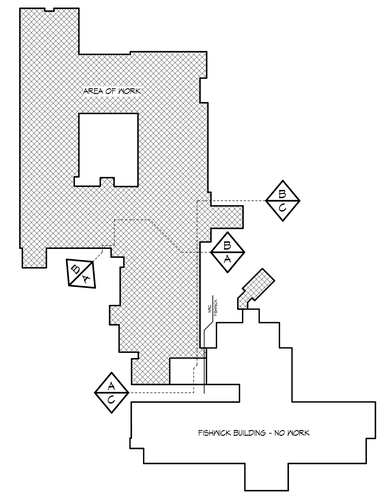
B. FULLY DUCTED EXHAUST AIR, OUTSIDE AIR AND SUPPLY AIR SYSTEMS PENETRATING 1-HOUR FIRE BARRIERS SHALL BE CONSTRUCTED OF SHEET METAL NO LESS THAN NO. 26 GAGE THICKNESS.

C. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES IN THE FOLLOWING SPACES: MULTIPURPOSE ROOM A112, BEAUTY SALON A126, CORRIDOR A123, CORRIDOR A104, PREP KITCHEN A107 AND DRY STORAGE A107B. BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

D. MOUNT ALL DEVICES, DUCTWORK, PIPING AND EQUIPMENT TIGHT TO CEILING ASSEMBLY IN RECEIVING VESTIBULE A106 AND JG A108A. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS.

KEY NOTES

1. HORIZONTAL DUCTED VRF FAN COIL UNIT MOUNTED ABOVE ACCESSIBLE CEILING. SUSPEND UNIT FROM STRUCTURE WITH VIBRATION ISOLATION. PROVIDE SERVICE AND CODE CLEARANCE TO CONTROL PANEL. RE: DETAIL 10/M801.2
2. CEILING CASSETTE MOUNTED IN CEILING. SUSPEND UNIT FROM STRUCTURE WITH VIBRATION ISOLATION. PROVIDE SERVICE AND CODE CLEARANCE TO CONTROL PANEL.
3. RELOCATED (E) THERMOSTAT.
4. 16"x6" SUPPLY AIR DUCT DOWN AND CONNECT TO HOOD COLLAR. BALANCE EQUALLY TO A TOTAL OF 675 CFM.
5. BALANCE (E) AIR DEVICE TO CFM INDICATED.
6. TRANSFER AIR DUCT. RE: DETAIL 7/M801.2.
7. BALANCE TO CFM INDICATED.
8. ROUTE EXHAUST DUCT DOWN IN WALL. DUCT SHALL ELBOW AND TRANSITION TO NECK SIZE OF SOURCE CAPTURE SYSTEM CONNECTION UPON EXITING WALL. BALANCE DUCT TO 100 CFM. CONNECT DUCT TO SOURCE CAPTURE SYSTEM. COORDINATE FINAL ELEVATION OF DUCT WITH SOURCE CAPTURE SYSTEM. PAINT ALL EXPOSED DUCT CUSTOM COLOR TO MATCH WALL FINISHES. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
9. CONNECT OUTSIDE AIR DUCTWORK TO RETURN AIR DUCTWORK AS SHOWN.
10. 28"x12" MAKE UP AIR DUCT DOWN AND CONNECT TO HOOD COLLAR. BALANCE EQUALLY TO A TOTAL OF 2400 CFM.
11. 12"Ø WELDED STEEL GREASE EXHAUST DOWN AND CONNECT TO HOOD COLLAR. BALANCE EQUALLY TO A TOTAL OF 3000 CFM. SLOPE DUCT TOWARDS HOOD. WRAP EXHAUST DUCT WITH 3M FIREMASTER DUCT WRAP FROM HOOD CONNECTION TO EXHAUST FAN TERMINATION.
12. RELOCATED (E) VRF CEILING CASSETTE. SUSPEND UNIT FROM STRUCTURE WITH VIBRATION ISOLATION. PROVIDE SERVICE AND CODE CLEARANCE TO CONTROL PANEL.
13. ROUTE DUCT TIGHT TO STRUCTURE. OFFSET INTO ATTIC AT LOCATION SHOWN.
14. 24"x6" TRANSFER AIR DUCT WITH TYPE 'G' RETURN GRILLE. TERMINATE DUCT IN CORRIDOR WALL ABOVE WALK-IN COOLER.



KEY PLAN
NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION

FOR

VIRGINIA LUTHERAN HOMES

3837 BRANDON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.:	DATE	DESCRIPTION
1	08.18.2020	PHASES 2 & 3 - ADDENDUM 01

FIRST FLOOR MECHANICAL PLAN - AREA A

VOLUME II
PHASES 2 AND 3

DRAWING NO: M301.2

SCALE: AS NOTED

DATE: 08.28.2020

COMMISSION NO: 2019091

11/17/2020 9:20:53 AM

KEY NOTES

1. EXTEND 3/4" CONDENSATE DRAIN FROM UNIT AND ROUTE DOWN IN EXTERIOR WALL. LOCATE PIPING ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.
2. VERTICAL TERMINAL HP UNIT MOUNTED ON METAL SUPPORT BRACKET IN MECHANICAL CLOSET. INSTALL UNIT WITH WALL SLEEVE AND ARCHITECTURAL LOUVER PER MANUFACTURER'S REQUIREMENTS. LOCATE UNIT DIRECTLY IN FRONT OF DOOR OPENING. MAINTAIN CLEARANCES PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXTERIOR LOUVER COLOR WITH ARCHITECT. RE: DETAIL 9/M302.2.
3. BALANCE AIR DEVICE TO PREVIOUSLY RECORDED VALUE.
4. (E) CONDENSING UNIT.
5. DRYER BOX #425 DRYER CONNECTION. COORDINATE MOUNTING HEIGHT WITH DRYER MANUFACTURER. PAINT DRYER BOX TO MATCH WALL COLOR. PROVIDE PERMANENT DUCT LENGTH LABEL ATTACHED TO WALL BEHIND DRYER PER IMC REQUIREMENTS. PROVIDE 36" FLEXIBLE ROUND METAL DUCT TO CONNECT DRYER BOX TO DRYER.
6. OUTDOOR HP MOUNTED ON 4" HOUSEKEEPING PAD WITH VIBRATION ISOLATION. RE: DETAIL 5/M302.2.
7. REFRIGERANT PIPING TO BE ROUTED DOWN ALONG EXTERIOR WALL TO HEAT PUMP/CONDENSING UNIT LOCATED AT GRADE. REFRIGERANT PIPING ROUTED ALONG EXTERIOR WALL SHALL BE WRAPPED WITH RECTORSEAL FORTRESS DUCT AND FITTINGS. COLOR TO BE SELECTED BY ARCHITECT. PROVIDE NOMINAL 6" HIGH PIPE SUPPORT, LOCATED AT 10'-0" INTERVALS AND AT EACH CHANGE IN DIRECTION. PROVIDE UV PROTECTION ON ALL EXPOSED REFRIGERANT PIPING. RE: DETAIL 12/M301.2.
8. DRYER WALL CAP WITH 4" OPENING. PAINT TO MATCH EXTERIOR WALL. RE: DETAIL 2/M302.2.
9. CONDENSATE PIPE DOWN IN EXTERIOR WALL ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.
10. VERTICAL TERMINAL HP UNIT MOUNTED ON METAL SUPPORT BRACKET IN MECHANICAL ENCLOSURE. INSTALL WITH WALL SLEEVE AND ARCHITECTURAL LOUVER PER MANUFACTURER'S REQUIREMENTS. LOCATE UNIT DIRECTLY IN FRONT OF RETURN AIR ACCESS PANEL. MAINTAIN CLEARANCES PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXTERIOR LOUVER COLOR WITH ARCHITECT. RE: DETAIL 8/M302.2.
11. ELECTRIC AIR CURTAIN MOUNTED IN CEILING.
12. CONNECT (N) AIR DEVICE TO (E) DUCTWORK. MODIFY BRANCH DUCT CONNECTION AS REQUIRED AND EXTEND BRANCH DUCT TO (N) AIR DEVICE LOCATION. CLEAN (E) BRANCH DUCTS (VACUUM) PRIOR TO INSTALLATION OF (N) AIR DEVICE.
13. CONNECT (N) REFRIGERANT PIPING TO (E) CONDENSING UNIT.
14. REFRIGERANT PIPING UP TO ATTIC.
15. (E) OUTDOOR SPLIT SYSTEM HP UNIT.
16. LOCATE (N) SUPPLY DIFFUSER IN DROPPED CEILING. EXTEND (N) DUCT AND CONNECT (E) SUPPLY DUCT.
17. CONDENSATE PIPING DOWN FROM ATTIC.
18. INDOOR HP MOUNTED AS HIGH AS POSSIBLE. EXTEND REFRIGERANT PIPING UP TO ATTIC.
19. BALANCE TO CFM INDICATED.
20. TRANSFER AIR DUCT. RE: DETAIL 7/M801.2.
21. RELOCATED (E) THERMOSTAT.
22. TRANSFER AIR DUCT. RE: DETAIL 7/M801.2.
23. ENTIRE DUCT FROM DRYER BOX TO EXTERIOR WALL TERMINATION SHALL BE WRAPPED IN UL LISTED 3M FIRE BARRIER DUCT WRAP 615+. WRAP DRYER DUCT IN QUANTITY OF LAYERS REQUIRED TO ACHIEVE 1-HR FIRE RESISTIVE RATING.
24. COORDINATE CONDENSATE ROUTING WITH ELECTRICAL PANEL AND ASSOCIATED CONDUITS.

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. LOCATE THERMOSTATS WITHIN 8' OF CORNER OF WALL.

C. ALL MATERIALS LOCATED WITHIN VTHP CLOSETS SHALL BE PLENUM RATED AND SHALL BE COMPLIANT WITH SECTION 602.2.1 OF THE 2015 IMC.

D. FULLY DUCTED EXHAUST AIR, OUTSIDE AIR AND SUPPLY AIR SYSTEMS PENETRATING 1-HOUR FIRE BARRIERS SHALL BE CONSTRUCTED OF SHEET METAL NO LESS THAN NO. 26 GAGE THICKNESS.

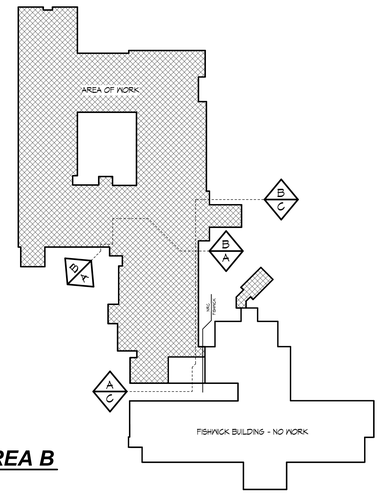
E. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS AND INDOOR UNITS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.

F. ALL REFRIGERANT PIPING SHALL BE RUN IN A STRAIGHT AND NEAT MANNER, FOLLOWING ORTHOGONAL ROUTES THROUGH THE CEILING PLENUM. PIPING SHALL NOT BLOCK ACCESS TO OTHER PLENUM MOUNTED EQUIPMENT AND DEVICES.

G. (E) FURNACE THERMOSTATS SHALL BE REUSED UNLESS OTHERWISE NOTED.

H. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES. BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

1 M302.2 **FIRST FLOOR MECHANICAL PLAN - AREA B**
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

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FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE SW, ROANOKE, VA 24018

REVISIONS			
NO.	DATE	DESCRIPTION	
17	04.19.2022	PHASES 2 & 3 - ADDENDUM 01	
19	05.17.2021	PHASE 2 & 3 - REVISION 02	

DRAWN BY: R.H. | CHECKED BY: R.H. | APPROVED BY: R.H.

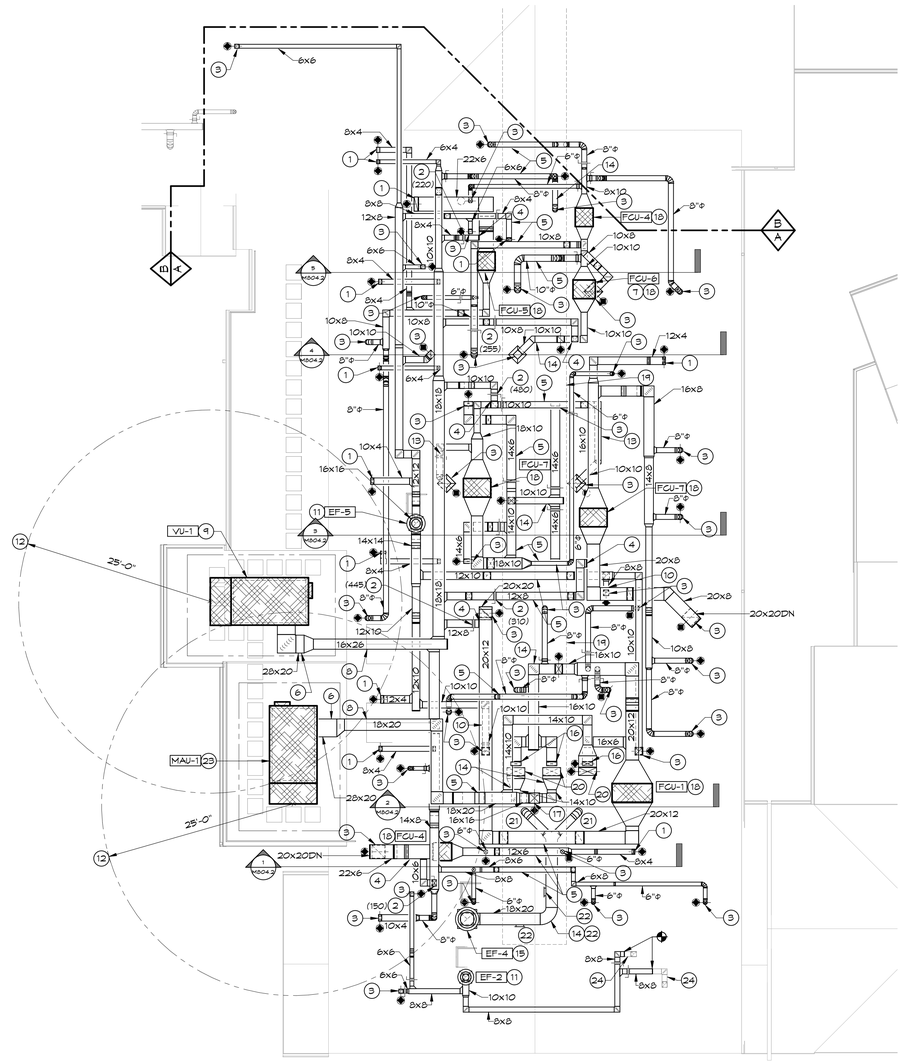
FIRST FLOOR MECHANICAL PLAN - AREA B

VOLUME II
PHASES 2 AND 3
DRAWING NO: M302.2

SCALE: AS NOTED
DATE: 08.26.2020

COMMISSION NO: 2019091

3/17/2021 10:02:57 AM



ATTIC AND ROOF MECHANICAL PLAN - AREA A

1 / M303.2 — SCALE: 1/8" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. FULLY DUCTED EXHAUST AIR, OUTSIDE AIR AND SUPPLY AIR SYSTEMS PENETRATING 1-HOUR FIRE BARRIERS SHALL BE CONSTRUCTED OF SHEET METAL NO LESS THAN NO. 26 GAGE THICKNESS.

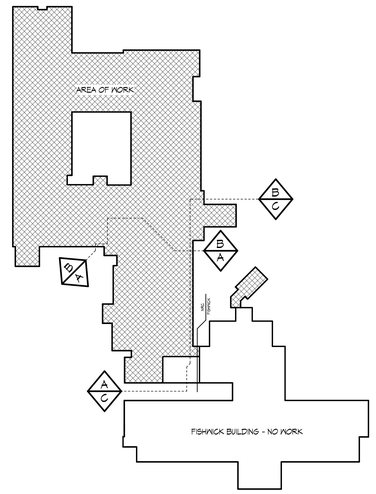
C. UNITS TO BE SUSPENDED A MINIMUM OF 2'-3" ABOVE BOTTOM CHORD OF TRUSS/RATED CEILING ASSEMBLY.

D. REFER TO M603.2 FOR TYPICAL BUILDING SECTIONS REGARDING UNIT AND DUCTWORK ELEVATIONS AND RELATIONSHIP TO EXISTING CATWALK AND EXISTING STRUCTURAL SYSTEM.

E. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES IN THE FOLLOWING SPACES: MULTIPURPOSE ROOM A112, BEAUTY SALON A128, CORRIDOR A123, CORRIDOR A104, PREP KITCHEN A107 AND DRY STORAGE A107B. BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

KEY NOTES

1. DUCTWORK DOWN TO LEVEL BELOW.
2. BALANCE TO CFM INDICATED.
3. DUCTWORK DOWN TO AIR DEVICE LOCATED ON THE LEVEL BELOW.
4. CONNECT OUTSIDE AIR DUCTWORK TO RETURN AIR DUCTWORK AS SHOWN.
5. OFFSET DUCT UP OVER CATWALK. ROUTE DUCT AS HIGH AS POSSIBLE. COORDINATE WITH (E) TO REMAIN SYSTEMS.
6. ROOF MOUNTED, PRE-MANUFACTURED DUCT SYSTEM BY THERMADUCT. RE: DETAIL 9/M801.2.
7. ROUTE FAN COIL UNIT AND ASSOCIATED DUCTWORK BELOW ADJACENT DUCTWORK AND EQUIPMENT. PROVIDE ADEQUATE CLEARANCE ON ACCESS SIDE OF UNIT.
8. ATTIC WALL PENETRATION. RE: DETAIL 4/M802.2.
9. VENTILATION UNIT MOUNTED ON VIBRATION ISOLATION CURB. RE: DETAIL 8/M801.2.
10. EXHAUST AIR DUCTWORK ROUTED BELOW RETURN AIR DUCTWORK.
11. UPBLAST EXHAUST FAN. RE: DETAIL 6/M801.2.
12. MAINTAIN RADIUS FROM EQUIPMENT INTAKE TO ANY VENT OR EXHAUST DISCHARGE POINTS.
13. RETURN AIR DUCTWORK ROUTED BELOW SUPPLY/OUTSIDE AIR DUCTWORK.
14. ROUTE DUCTWORK BELOW (E) CATWALK IN (E) CORRIDOR STRUCTURAL BUMP-UP. COORDINATE EXACT LOCATION WITH (E) STRUCTURE AND RATED CEILING ASSEMBLY.
15. UPBLAST GREASE EXHAUST FAN. RE: DETAIL 3/M802.2.
16. 16"x6" SUPPLY AIR DUCT DOWN TO HOOD BELOW.
17. 16"x16" MAKE-UP AIR DUCT DOWN THROUGH CATWALK. PROVIDE RADIATION DAMPER AT CATWALK PENETRATION. CONNECT (2) 14x10 BRANCH DUCTS TO 16x16 DUCT. ROUTE BRANCH DUCTS TO HOOD CONNECTIONS AND TRANSITION TO FULL SIZE OF HOOD CONNECTION.
18. HORIZONTAL DUCTED VRF FAN COIL UNIT MOUNTED IN ATTIC. SUSPEND UNIT FROM STRUCTURE WITH VIBRATION ISOLATION. PROVIDE SERVICE AND CODE CLEARANCE TO CONTROL PANEL. RE: DETAIL 10/M801.2.
19. (E) CATWALK. CONFIRM EXACT LOCATION IN FIELD.
20. 28"x12" MAKE UP AIR DUCT DOWN TO HOOD BELOW.
21. 12"Ø WELDED STEEL GREASE EXHAUST DOWN TO HOOD BELOW.
22. WELDED STEEL GREASE EXHAUST DUCT ROUTED IN ATTIC. SLOPE DUCT TOWARDS HOOD. WRAP EXHAUST DUCT WITH 3M FIREMASTER DUCT WRAP FROM HOOD CONNECTION TO EXHAUST FAN TERMINATION. PROVIDE CLEANOUTS AS REQUIRED PER SPECIFICATIONS AND LOCAL CODE REQUIREMENTS. RE: DETAIL 7/M802.2.
23. MAKE UP AIR UNIT MOUNTED ON VIBRATION ISOLATION CURB. RE: DETAIL 8/M801.2.
24. (E) DUCTWORK.



KEY PLAN

NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION

FOR

VIRGINIA LUTHERAN HOMES

3837 BRANDON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.:	DATE	DESCRIPTION

ATTIC AND ROOF MECHANICAL PLAN - AREA A

VOLUME II
PHASES 2 AND 3

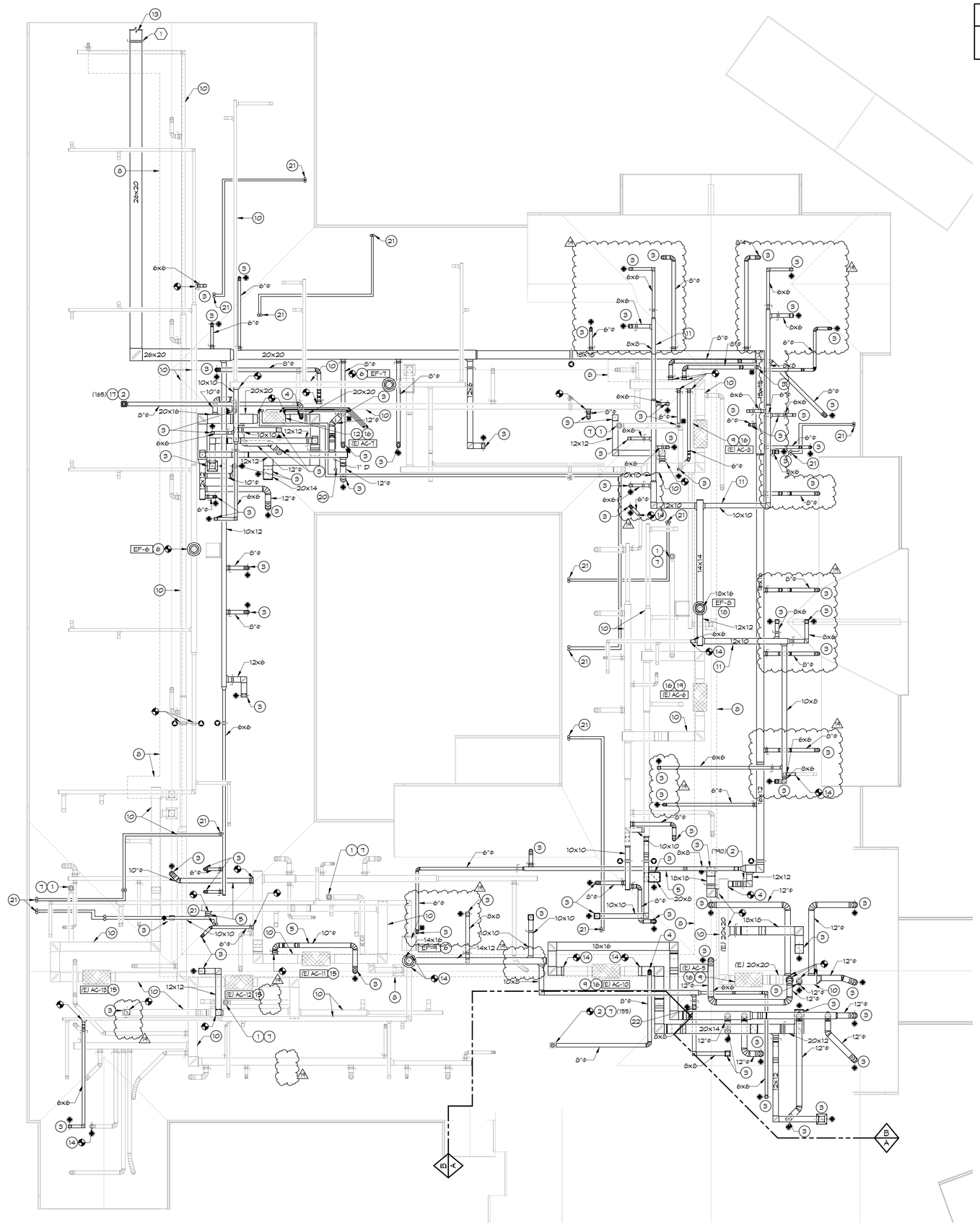
DRAWING NO: M303.2

COMMISSION NO: 2019091

SCALE: AS NOTED

DATE: 08.28.2020

11/17/2020 9:21:21 AM



1 M304.2 **ATTIC AND ROOF MECHANICAL PLAN - AREA B**
SCALE: 1/8" = 1'-0"

TEMPORARY PHASING KEY NOTES

1. SET DAMPER TO FULLY OPEN AT COMPLETION OF PHASE 3.

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. FULLY DUCTED EXHAUST AIR, OUTSIDE AIR AND SUPPLY AIR SYSTEMS PENETRATING 1-HOUR FIRE BARRIERS SHALL BE CONSTRUCTED OF SHEET METAL NO LESS THAN NO. 26 GAGE THICKNESS.

C. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES, BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

D. (E) COMBUSTION AIR INTAKE AND VENT SHALL REMAIN UNLESS NOTED OTHERWISE.

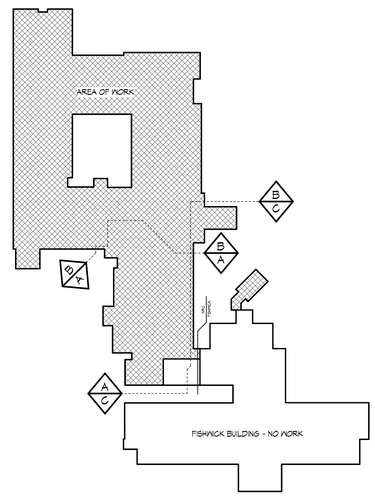
E. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS AND INDOOR UNITS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.

F. ALL REFRIGERANT PIPING SHALL BE RUN IN A STRAIGHT AND NEAT MANNER, FOLLOWING ORTHOGONAL ROUTES THROUGH THE CEILING PLENUM. PIPING SHALL NOT BLOCK ACCESS TO OTHER PLENUM MOUNTED EQUIPMENT AND DEVICES.

G. CONDENSATE PIPING AND CONDENSATE TRAPS EXPOSED IN UNCONDITIONED ATTIC SHALL BE INSULATED WITH 1-1/2" OF INSULATION REGARDLESS OF PIPE SIZE. HEAT TRACE ALL CONDENSATE PIPING AND CONDENSATE TRAPS LOCATED IN ATTIC AT 8 WATTS/L.F. RE: SPECIFICATIONS FOR ADDITIONAL INFORMATION.

KEY NOTES

1. BALANCE TO PREVIOUSLY RECORDED VALUE.
2. BALANCE TO CFM INDICATED.
3. DUCTWORK DOWN TO AIR DEVICE LOCATED ON THE LEVEL BELOW.
4. CONNECT OUTSIDE AIR DUCTWORK TO RETURN AIR DUCTWORK AS SHOWN.
5. OFFSET DUCT UP OVER CATWALK. ROUTE DUCT AS HIGH AS POSSIBLE. COORDINATE WITH (E) TO REMAIN SYSTEMS.
6. UPBLAST EXHAUST FAN. CONNECT TO (E) EXHAUST DUCTWORK. RE: DETAIL 6/M801.2.
7. (E) GRAVITY AIR INTAKE.
8. (E) CATWALK. CONFIRM EXACT LOCATION IN FIELD.
9. REBALANCE (E) GAS-FIRED FURNACE TO CFM INDICATED ON LEVEL BELOW.
10. (E) DUCTWORK.
11. DUCTWORK SHALL BE OFFSET ABOVE CATWALK AS NEEDED TO CONNECT TO EXHAUST FAN.
12. RELOCATED GAS-FIRED FURNACE. EXTEND 3" SCHEDULE 40 PVC COMBUSTION AIR AND VENT FROM FURNACE TO ADJACENT ROOF. ALL FURNACE COMBUSTION AIR AND VENT PIPING SHALL BE PROVIDED WITH LONG RADIUS ELBOWS. TERMINATE WITH CONCENTRIC VENT KIT PER MANUFACTURER'S REQUIREMENTS. EXTEND INSULATED REFRIGERANT PIPING FROM FURNACE TO CONDENSING UNIT LOCATED ON GRADE. SIZE REFRIGERANT PIPING PER MANUFACTURER'S REQUIREMENTS. RE: DETAIL 3/M803.2.
13. ATTIC WALL PENETRATION. RE: DETAIL 6/M802.3.
14. CONNECT (E) DUCTWORK TO (N) DUCTWORK.
15. REBALANCE (E) GAS-FIRED FURNACE TO PREVIOUSLY RECORDED VALUE.
16. REFER TO M302.2 AND M502.2 FOR AIR DEVICES SERVED FROM GAS-FIRED FURNACE.
17. PROVIDE (N) GREENHECK MODEL GRSB GRAVITY AIR INTAKE MOUNTED ON SLOPED ROOF CURB. EXTEND 5'-0" OUTSIDE AIR DUCT FROM INTAKE AND CONNECT TO RETURN DUCT. DUCT SHALL BE INSULATED PER SPECIFICATIONS.
18. UPBLAST EXHAUST FAN. RE: DETAIL 6/M801.2.
19. BALANCE (E) GAS-FIRED FURNACE TO 1555 CFM.
20. CONDENSATE PIPING DOWN TO LEVEL BELOW.
21. REFRIGERANT PIPING UP FROM LEVEL BELOW. ROUTE PIPING IN ATTIC. COORDINATE FINAL PIPE ROUTING WITH EXISTING TRUSS CONFIGURATION.
22. ROUTE DUCTWORK BELOW (E) CATWALK IN (E) CORRIDOR STRUCTURAL BUMP-UP. COORDINATE EXACT LOCATION WITH (E) STRUCTURE AND RATED CEILING ASSEMBLY.



KEY PLAN
NOT TO SCALE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORKS

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BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRENDAN LANE, S.W., ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.	DATE	DESCRIPTION
1	03.17.2021	PHASE 2 & 3 - REVISION 02

ATTIC AND ROOF MECHANICAL PLAN - AREA B

VOLUME II
PHASES 2 AND 3
DRAWING NO: **M304.2**

COMMISSION NO: 2019091
SCALE: AS NOTED
DATE: (06.26.2020)

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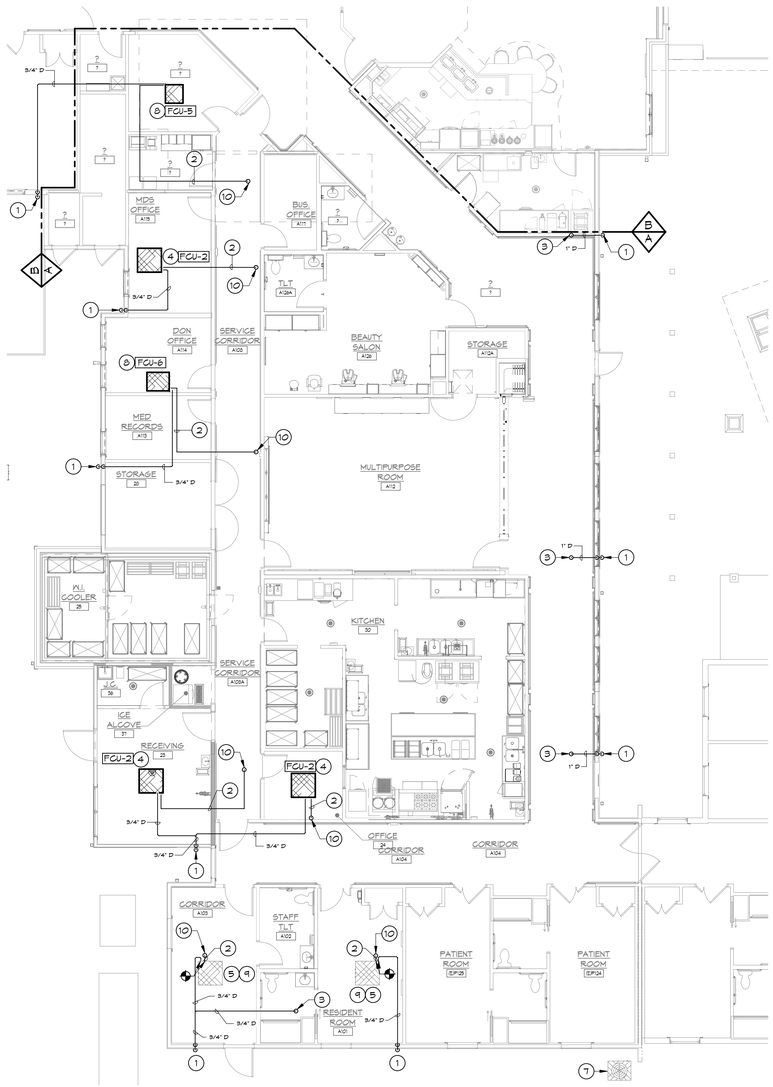


1 M401.2 **FIRST FLOOR MECHANICAL PLAN - AREA A**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS, INDOOR UNITS AND BRANCH CONTROLLERS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.

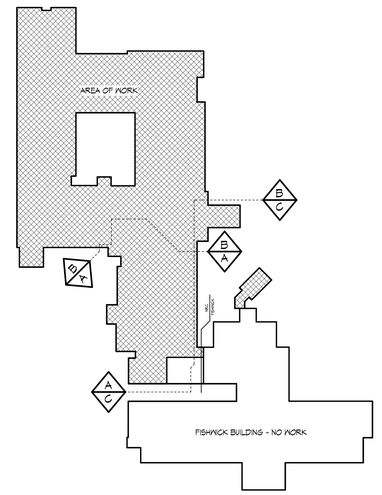
C. ALL REFRIGERANT PIPING SHALL BE RUN IN A STRAIGHT AND NEAT MANNER, FOLLOWING ORTHOGONAL ROUTES THROUGH THE CEILING PLENUM. PIPING SHALL NOT BLOCK ACCESS TO OTHER PLENUM MOUNTED EQUIPMENT AND DEVICES.

D. BRANCH REFRIGERANT PIPING FROM BRANCH CONTROLLERS TO FAN COIL UNITS IS INDICATED AS A SINGLE LINE FOR CLARITY. PROVIDE ALL BRANCH PIPING TO EACH FAN COIL UNIT AS REQUIRED BY VRF MANUFACTURER. ALTHOUGH ACTUAL BRANCH PIPING ROUTES AND SIZING AGREE NOT INDICATED ON DRAWINGS. RE: SCHEDULES FOR ADDITIONAL INFORMATION.

E. ROUTING PATHWAY FOR REFRIGERANT PIPING MAINS ARE SHOWN ON THE DRAWINGS. FINAL ROUTING AND SIZING TO BE DETERMINED BY VRF MANUFACTURER.

KEY NOTES

1. CONDENSATE PIPE DOWN IN EXTERIOR WALL ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.
2. ROUTING PATHWAY FOR REFRIGERANT PIPING. EXACT ROUTING AND SIZING TO BE DETERMINED BY VRF SYSTEM MANUFACTURER AND INSTALLING CONTRACTOR.
3. CONDENSATE PIPING DOWN FROM ATTIC.
4. CEILING CASSETTE. PROVIDE SERVICE AND CODE CLEARANCE TO REFRIGERANT CONNECTIONS.
5. RELOCATED (E) CEILING CASSETTE.
6. WALL MOUNTED SPLIT SYSTEM INDOOR UNIT.
7. (E) VRF OUTDOOR UNIT.
8. HORIZONTAL VRF FAN COIL UNIT. PROVIDE SERVICE AND CODE CLEARANCE TO REFRIGERANT CONNECTIONS. RE: DETAIL 10/M001.2.
9. EXTEND (N) REFRIGERANT PIPING FROM (E) CEILING CASSETTE TO (E) BRANCH CONTROLLER LOCATED IN THE ATTIC.
10. REFRIGERANT PIPING UP TO ATTIC.



KEY PLAN
NOT TO SCALE

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BRANDON OAKS - PHASES 2 AND 3

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DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.	DATE	DESCRIPTION

FIRST FLOOR MECHANICAL PIPING PLAN - AREA A

VOLUME II
PHASES 2 AND 3
DRAWING NO: M401.2

COMMISSION NO: 2019031
SCALE: AS NOTED
DATE: 08.28.2020

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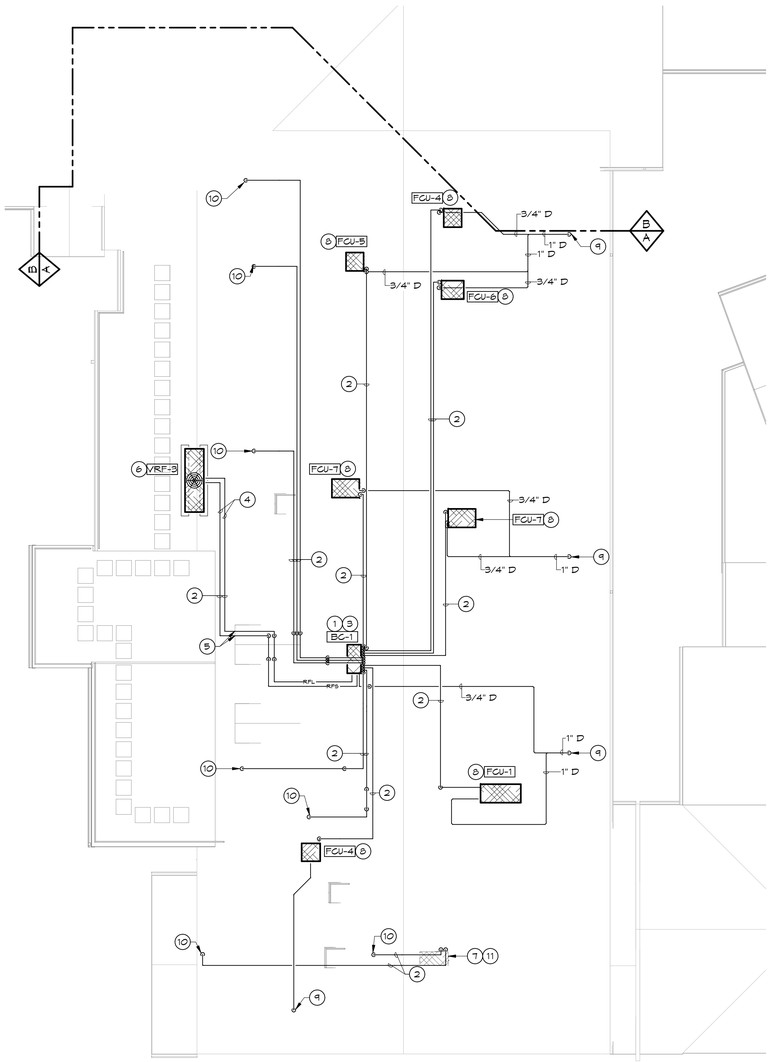


1 M402.2 **ATTIC AND ROOF MECHANICAL PLAN - AREA A**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS, INDOOR UNITS AND BRANCH CONTROLLERS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.

C. ALL REFRIGERANT PIPING SHALL BE RUN IN A STRAIGHT AND NEAT MANNER, FOLLOWING ORTHOGONAL ROUTES THROUGH THE CEILING PLENUM. PIPING SHALL NOT BLOCK ACCESS TO OTHER PLENUM MOUNTED EQUIPMENT AND DEVICES.

D. BRANCH REFRIGERANT PIPING FROM BRANCH CONTROLLERS TO FAN COIL UNITS IS INDICATED AS A SINGLE LINE FOR CLARITY. PROVIDE ALL BRANCH PIPING TO EACH FAN COIL UNIT AS REQUIRED BY VRF MANUFACTURER, ALTHOUGH ACTUAL BRANCH PIPING ROUTES AND SIZING AGREE NOT INDICATED ON DRAWINGS. RE: SCHEDULES FOR ADDITIONAL INFORMATION.

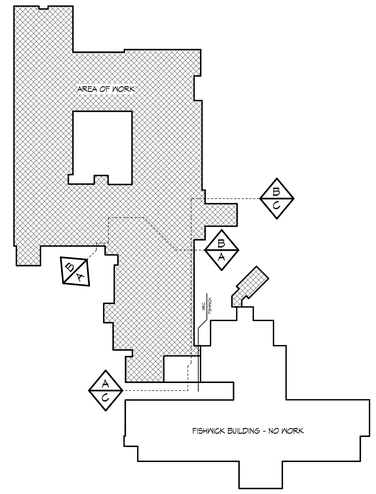
E. ROUTING PATHWAY FOR REFRIGERANT PIPING MAINS ARE SHOWN ON THE DRAWINGS. FINAL ROUTING AND SIZING TO BE DETERMINED BY VRF MANUFACTURER.

F. REFRIGERANT PIPING INSULATION EXPOSED ON ROOF SHALL BE PVC JACKETED WITH UV-DEGRADATION PROTECTION.

G. CONDENSATE PIPING AND CONDENSATE TRAPS EXPOSED IN UNCONDITIONED ATTIC SHALL BE INSULATED WITH 1-1/2" OF INSULATION REGARDLESS OF PIPE SIZE. HEAT TRACE ALL CONDENSATE PIPING AND CONDENSATE TRAPS LOCATED IN ATTIC AT 5 WATTS/L.F. RE: SPECIFICATIONS FOR ADDITIONAL INFORMATION.

KEY NOTES

1. BRANCH CONTROLLER MOUNTED IN ATTIC. RE: DETAIL 11/M801.2.
2. ROUTING PATHWAY FOR REFRIGERANT PIPING. EXACT ROUTING AND SIZING TO BE DETERMINED BY VRF SYSTEM MANUFACTURER AND INSTALLING CONTRACTOR.
3. EXTEND PIPING FROM BRANCH CONTROLLER TO VRF OUTDOOR UNIT.
4. PROVIDE NOMINAL 12" HIGH PIPE SUPPORT LOCATED AT 10'-0" INTERVALS AND AT EACH CHANGE IN DIRECTION. RE: DETAIL 4/M801.2.
5. REFRIGERANT PIPING THROUGH ROOF. PROVIDE AREX TITAN OUTLET WALL SEAL OR EQUIVALENT TO PROVIDE WEATHERTIGHT PIPING PENETRATION.
6. VRF OUTDOOR UNIT MOUNTED ON ROOF EQUIPMENT VIBRATION ISOLATION SUPPORT RAILS. UNIT SHALL BE A MINIMUM OF 10'-0" FROM ROOF EDGE. RE: DETAIL 1/M802.2.
7. COORDINATE (N) REFRIGERANT PIPING WITH (E) REFRIGERANT PIPING AND CONDENSATE DRAIN.
8. HORIZONTAL VRF FAN COIL UNIT. PROVIDE SERVICE AND CODE CLEARANCE TO REFRIGERANT CONNECTIONS. RE: DETAIL 10/M801.2.
9. CONDENSATE PIPING DOWN TO LEVEL BELOW.
10. REFRIGERANT PIPING UP FROM LEVEL BELOW. ROUTE PIPING IN ATTIC. COORDINATE FINAL PIPE ROUTING WITH EXISTING TRUSS CONFIGURATION.
11. (E) BRANCH CONTROLLER.



KEY PLAN
NOT TO SCALE

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REVISIONS

NO.:	DATE	DESCRIPTION

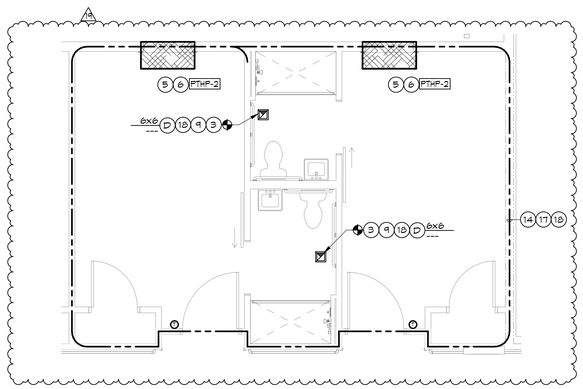
ATTIC AND ROOF MECHANICAL PIPING PLAN - AREA A

SCALE:	DATE:
AS NOTED	06.26.2020

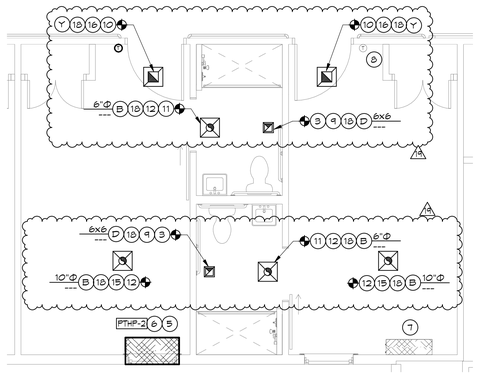
VOLUME II
PHASES 2 AND 3
DRAWING NO:
M402.2

COMMISSION NO:
2019031

11/17/2020 9:21:54 AM



3 M501.2 **ENLARGED MECHANICAL PLAN**
SCALE: 1/4" = 1'-0"



2 M501.2 **ENLARGED MECHANICAL PLAN**
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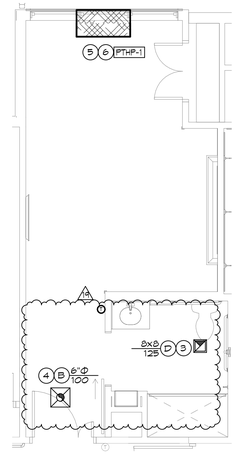

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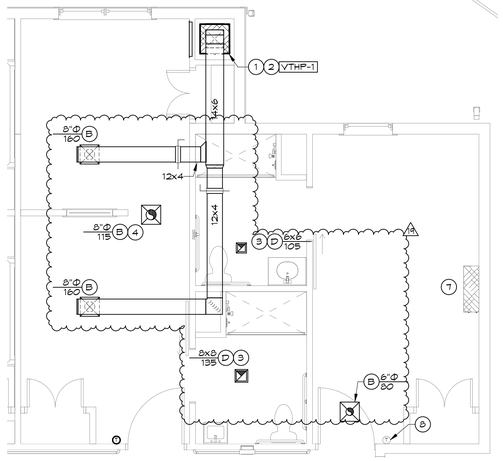

6 M501.2 **ENLARGED MECHANICAL PLAN**
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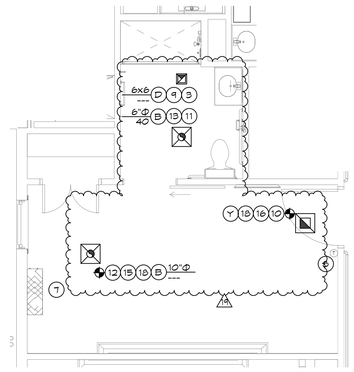

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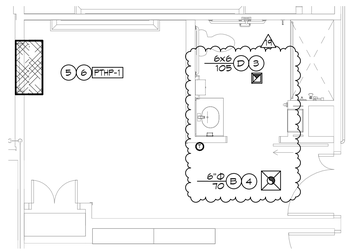

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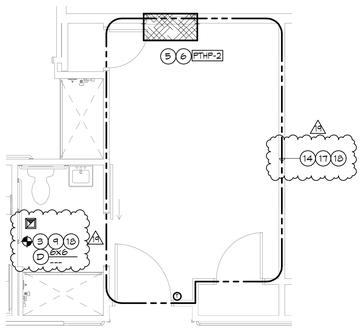
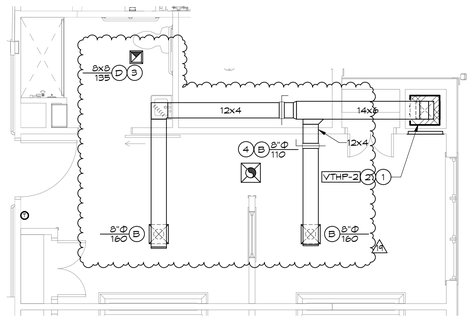
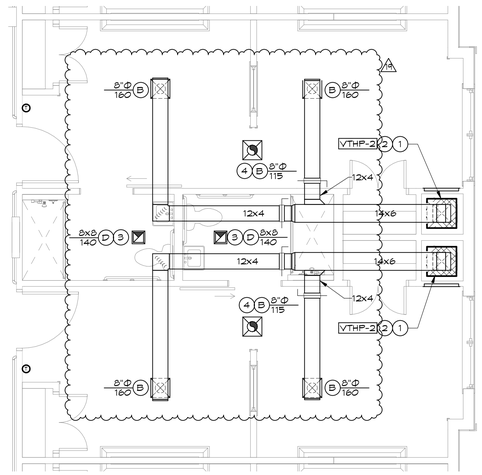


9 M501.2 **ENLARGED MECHANICAL PLAN**
SCALE: 1/4" = 1'-0"



8 M501.2 **ENLARGED MECHANICAL PLAN**
SCALE: 1/4" = 1'-0"



7 M501.2 **ENLARGED MECHANICAL PLAN**
SCALE: 1/4" = 1'-0"

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. LOCATE THERMOSTATS WITHIN 8' OF CORNER OF WALL.

C. ALL MATERIALS LOCATED WITHIN VTHP CLOSETS SHALL BE PLENUM RATED AND SHALL BE COMPLIANT WITH SECTION 602.2.1 OF THE 2015 IMC.

D. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES. BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

E. COORDINATE ALL AIR DEVICES LOCATED IN LIVING AREAS OF RESIDENT ROOMS WITH CURTAIN TRACK. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

KEY NOTES

1. EXTEND 3/4" CONDENSATE DRAIN FROM UNIT AND ROUTE DOWN IN EXTERIOR WALL. LOCATE PIPING ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.
2. VERTICAL TERMINAL HP UNIT MOUNTED ON METAL SUPPORT BRACKET IN MECHANICAL ENCLOSURE. INSTALL WITH WALL SLEEVE AND ARCHITECTURAL LOUVER PER MANUFACTURER'S REQUIREMENTS. LOCATE UNIT DIRECTLY IN FRONT OF RETURN AIR ACCESS PANEL. MAINTAIN CLEARANCES PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXTERIOR LOUVER COLOR WITH ARCHITECT. RE: DETAIL 3/M802.2.
3. EA DUCT UP TO ATTIC.
4. OSA DUCT UP TO ATTIC.
5. EXTEND 3/4" CONDENSATE DRAIN FROM UNIT THROUGH EXTERIOR WALL. TERMINATE AS HIGH AS POSSIBLE ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.
6. PACKAGED TERMINAL HP UNIT MOUNTED IN WALL SLEEVE. INSTALL ARCHITECTURAL LOUVER AND PROVIDE UNIT WITH LEVELING LEGS PER MANUFACTURER'S REQUIREMENTS. LOCATE UNIT DIRECTLY BELOW WINDOW. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. (E) INDOOR SPLIT SYSTEM HP UNIT.
8. (E) THERMOSTAT.
9. LOCATE (N) EXHAUST GRILLE IN DROPPED CEILING. EXTEND (N) DUCT AND CONNECT TO (E) EXHAUST DUCT. BALANCE AIR DEVICE TO THE FOLLOWING:
   - 50 CFM: RESIDENT ROOMS 1AL-2, 1AL-3, 1AL-4, 1AL-5, 1AL-6, 1AL-7, 1AL-9, 1SC-1, 1SC-4, 1SC-6.
   - 65 CFM: RESIDENT ROOMS 1SC-8
   - 75 CFM: RESIDENT ROOMS 1AL-11, 1AL-12, 1AL-13, 1AL-14, 1AL-15, 1AL-16, 1AL-17, 1AL-18, 1AL-19, 1AL-20, 1AL-21, 1AL-22, 1AL-23, 1AL-24, 1AL-25, 1AL-26.
   - 100 CFM: RESIDENT ROOMS 1AL-8, 1AL-10.
10. RA DUCT UP TO ATTIC.
11. LOCATE (N) SUPPLY DIFFUSER IN DROPPED CEILING. EXTEND (N) DUCT AND CONNECT TO (E) SUPPLY DUCT. BALANCE AIR DEVICE TO PREVIOUSLY RECORDED VALUE.
12. SA DUCT UP TO ATTIC.
13. PROVIDE (N) AIR DEVICE ONLY IN RESIDENT ROOM BATHROOMS WITH (E) SUPPLY AIR DEVICE.
14. BALANCE (E) AIR DEVICE(S) TO PREVIOUSLY RECORDED VALUE ONLY IN RESIDENT ROOMS WITH (E) SUPPLY AIR DEVICE(S). PROVIDE (N) 10"Ø TYPE 'B' SUPPLY DIFFUSER(S) AND CONNECT TO (E) SUPPLY DUCT ONLY IN RESIDENT ROOMS WITH (E) SUPPLY AIR DEVICE(S).
15. CONNECT (N) SUPPLY DIFFUSER TO (E) SUPPLY DUCT. BALANCE AIR DEVICE TO PREVIOUSLY RECORDED VALUE.
16. CONNECT (N) RETURN GRILLE TO (E) RETURN DUCT. BALANCE AIR DEVICE TO PREVIOUSLY RECORDED VALUE.
17. BALANCE (E) AIR DEVICE(S) TO PREVIOUSLY RECORDED VALUE ONLY IN RESIDENT ROOMS WITH (E) RETURN GRILLE(S). PROVIDE (N) TYPE 'Y' RETURN GRILLE(S) AND CONNECT TO (E) RETURN DUCT ONLY IN RESIDENT ROOMS WITH (E) RETURN GRILLE(S).
18. REUSE (E) RADIATION DAMPER. CONTRACTOR SHALL VERIFY (E) RADIATION DAMPER IS INSTALLED. IF NO DAMPER IS INSTALLED CONTRACTOR SHALL PROVIDE (N) RADIATION DAMPER.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE SW ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.	DATE	DESCRIPTION
19	03.17.2021	PHASE 2 & 3 - REVISION 02

ENLARGED MECHANICAL PLANS

SCALE:	DATE:
AS NOTED	08.26.2020

VOLUME II
PHASES 2 AND 3
DRAWING NO: **M501.2**

COMMISSION NO: 2019091

3/17/2021 10:03:29 AM

GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M001 FOR GENERAL NOTES THAT APPLY TO ALL MECHANICAL DRAWINGS.

B. DUE TO THE NATURE OF THE PROJECT AND THE STATE OF THE EXISTING BUILDING, IT MAY BE REQUIRED TO MODIFY THE DUCT CONNECTIONS TO AIR DEVICES. BASED ON THE LOCATION OF THE EXISTING STRUCTURAL TRUSSES IT MAY BE REQUIRED TO TRANSITION THE BRANCH DUCTWORK TO FLAT RECTANGULAR DUCTWORK IN THE ATTIC AND OFFSET ABOVE THE CEILING TO CONNECT TO THE AIR DEVICES LOCATED IN THE CEILING GRID. THE AIR DEVICE LOCATIONS SHALL NOT BE SHIFTED IF THERE IS A CONFLICT BETWEEN THE AIR DEVICE, THE EXISTING STRUCTURAL TRUSSES AND BRANCH DUCTWORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.

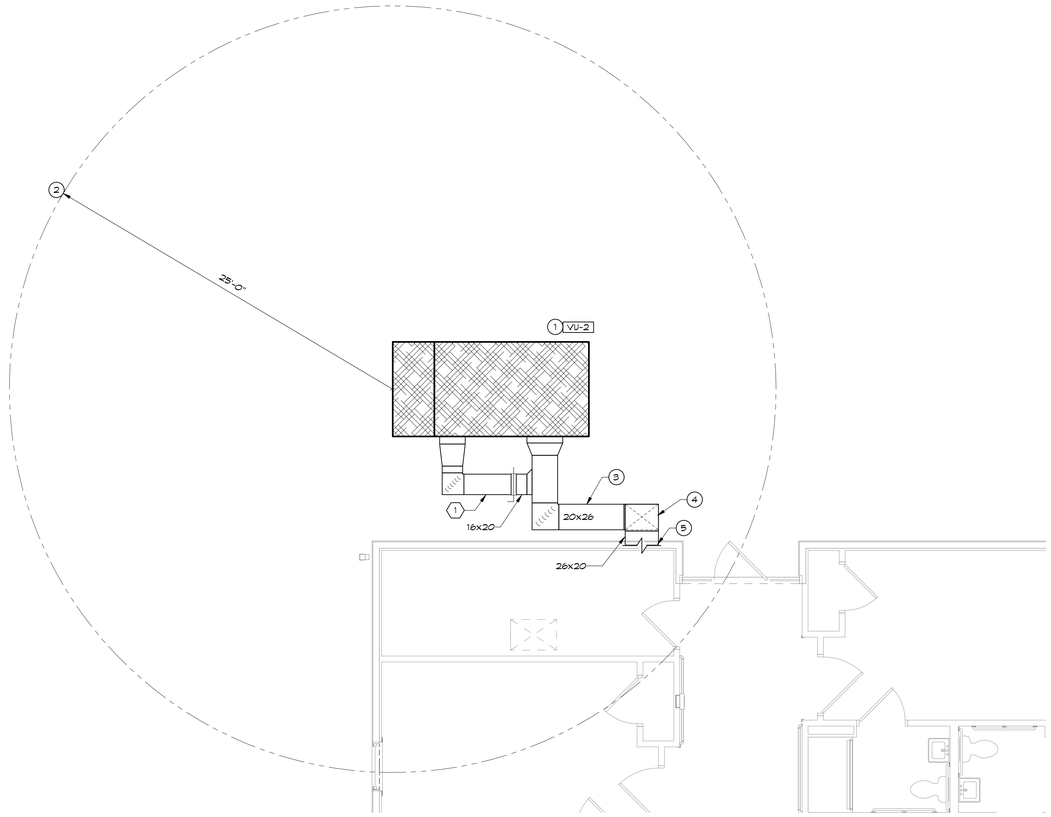
C. CONTRACTOR SHALL COORDINATE EXTERIOR DUCT BUILDING PENETRATION WITH EXISTING STRUCTURAL TRUSSES. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS.

KEY NOTES

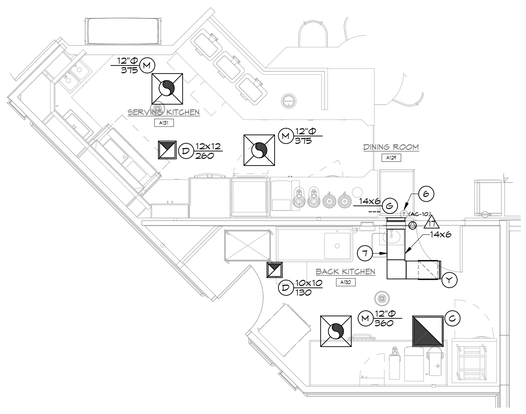
1. MOUNT VENTILATION UNIT ON 4" CONCRETE PAD WITH VIBRATION ISOLATION. MAINTAIN A MINIMUM OF 44" CLEAR ON ACCESS SIDE OF VENTILATION UNIT AND A MINIMUM OF 48" CLEAR ON ALL OTHER SIDES. DISCHARGE CONDENSATE DRAIN TO ADJACENT GRADE WITH 2" AIR GAP ABOVE FINISHED GRADE. RE: DETAIL 6/M802.2.
2. MAINTAIN RADIUS FROM EQUIPMENT INTAKE TO ANY VENT OR EXHAUST DISCHARGE POINTS.
3. GRADE MOUNTED, PRE-MANUFACTURED DUCT SYSTEM BY THERMADUCT. RE: DETAIL 1/M803.2.
4. OFFSET DUCT AT EXTERIOR WALL. ROUTE TIGHT TO WALL THEN OFFSET INTO ATTIC. ANCHOR TO BUILDING AND PAINT BRACKETS TO MATCH ADJACENT WALL. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. ATTIC WALL PENETRATION. RE: DETAIL 4/M802.2.
6. RELOCATED (E) THERMOSTAT.
7. TRANSFER AIR DUCT. RE: DETAIL 7/M801.2.

TEMPORARY PHASING KEY NOTES

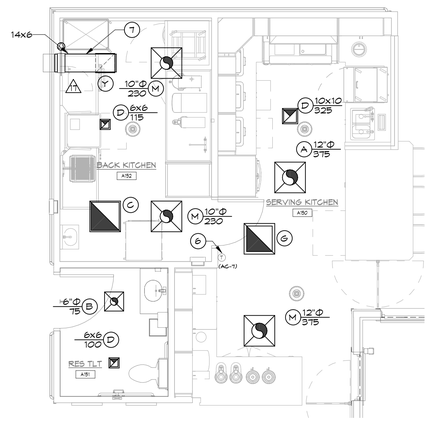
1. PROVIDE TEMPORARY BYPASS DUCT. EXTEND FROM RETURN CONNECTION OF VENTILATION UNIT AND CONNECT TO SUPPLY DISCHARGE OF UNIT. SUPPLY DISCHARGE TO SPACES SHALL BE BALANCED TO THE TOTAL OF ALL OA AIRFLOW RATES FOR SPACES WITHIN PHASE 2 SCOPE OF WORK. ADJUST RA DAMPER AS REQUIRED. BYPASS DUCT SHALL BE REMOVED AT COMPLETION OF PHASE 3 AND RA DAMPER SHALL BE SET TO A CLOSED POSITION. PROVIDE (N) SUPPLY AIR DUCTWORK AT PREVIOUS BYPASS DUCT CONNECTION AND SEAL WEATHERTIGHT. PROVIDE INSULATED BLANK-OFF PANEL THAT MATCHES THE UNIT CONSTRUCTION OVER RA OPENING, AND SEAL WEATHER TIGHT.



1 / M502.2 **MECHANICAL ENLARGED PLAN - GRADE MOUNTED VENTILATION UNIT**
SCALE: 1/4" = 1'-0"



3 / M502.2 **MECHANICAL ENLARGED PLAN - ASSISTED LIVING KITCHEN**
SCALE: 1/4" = 1'-0"



2 / M502.2 **MECHANICAL ENLARGED PLAN - MEMORY CARE KITCHEN**
SCALE: 1/4" = 1'-0"

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BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
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DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

REVISIONS

NO.:	DATE	DESCRIPTION
1	04.15.2020	PHASES 2 & 3 - ADDENDUM 01

ENLARGED MECHANICAL PLANS

VOLUME II
PHASES 2 AND 3
DRAWING NO: **M502.2**

SCALE: AS NOTED
DATE: 08.28.2020
COMMISSION NO: 2019091

11/17/2020 9:22:18 AM

EXHAUST / SUPPLY FAN SCHEDULE

NOTES:
1. PROVIDE WITH FACTORY DISCONNECT.
2. FAN SHALL BE UL-762 LISTED (GREASE EXHAUST) AND SHALL INCLUDE GREASE TRAP, GREASE FITTINGS, FACTORY INSULATED ROOF CURB AND ALUMINUM BIRD SCREEN.
3. PROVIDE WITH MOTORIZED DAMPER.
4. PROVIDE WITH FACTORY INSULATED SLOPED ROOF CURB AND BIRD SCREEN.
5. PROVIDE WITH INVERTER DUTY MOTOR AND SHAFT GROUNDING RINGS.
6. PROVIDE WITH VARIGREEN MOTOR AND SPEED CONTROLLER.
7. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.

PLAN CODE	SERVICE	TYPE	AIR FLOW (CFM)	SP (IN WG)	MOTOR					FAN RPM	OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
					HP (BHP) / WATTS	VOLTS	Ø	HZ	RPM					
EF-2	VARIOUS	UPBLAST	400	0.50	1/10	120	1	60	1725	1464	32	GREENHECK	CUE-090-VG	1, 3, 4, 6, 7
EF-4	GREASE EXHAUST	UPBLAST	3,000	1.25	1-1/2	208	3	60	1725	1445	116	GREENHECK	CUBE-180HP-15	1, 2, 5, 7
EF-5	VARIOUS	UPBLAST	1,935	0.75	3/4	120	1	60	1550	1403	70	GREENHECK	CUE-141-VG	1, 3, 4, 6, 7
EF-6	VARIOUS	UPBLAST	925	0.50	1/4	120	1	60	1725	1415	46	GREENHECK	CUE-101HP-VG	1, 3, 4, 6, 7
EF-7	VARIOUS	UPBLAST	1,065	0.50	1/4	120	1	60	1400	1195	50	GREENHECK	CUE-121HP-VG	1, 3, 4, 6, 7
EF-8	VARIOUS	UPBLAST	1,810	0.50	1/2	120	1	60	1300	1222	67	GREENHECK	CUE-141-VG	1, 3, 4, 6, 7
EF-9	VARIOUS	UPBLAST	1,540	0.50	1/2	120	1	60	1300	1138	67	GREENHECK	CUE-141-VG	1, 3, 4, 6, 7

ELECTRIC HEATER SCHEDULE

NOTES:
1. PROVIDE WITH INTEGRAL DISCONNECT, REMOTE THERMOSTAT AND ALL REQUIRED INTERCONNECTIONS.
2. PROVIDE CUSTOM COLOR TO MATCH ADJACENT FINISH. CUSTOM COLOR FINISH SHALL BE FACTORY-PAINTED OR SHOP-PAINTED.
3. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.
4. UNIT SHALL BE SURFACE MOUNTED.
5. UNIT SHALL BE RECESSED MOUNTED.
6. PROVIDE MOUNTING KIT/BRACKETS TO MOUNT AIR CURTAIN TO WALL ABOVE DOOR HEIGHT. COORDINATE WITH DOOR HEIGHT.

PLAN CODE	SERVICE	AIR FLOW (CFM)	HEATING CAPACITY (KW)	ELECTRICAL			SIZE (IN)			MANUFACTURER	MODEL	NOTES
				VOLTS	Ø	HZ	L	W	H			
ECH-1	TOILET	65	0.75	120	1	60	13	11	4	QMARK	QCH1151F	1-3, 5
ECH-2	CORRIDOR	150	2	120	1	60	19	16	4	QMARK	EFF4008	1-4
ECH-3	CORRIDOR	150	2	120	1	60	19	16	4	QMARK	EFF4008	1-3, 5
ECH-4	ENTRY	1050	8	208	1	60	42	12	8	MARS AIR	LPV242-1EBD-0B	2-4, 6

AIR DEVICE SCHEDULE

NOTES:
1. COORDINATE MOUNTING TYPE WITH ARCHITECTURAL REFLECTED CEILING PLAN OR WALL CONSTRUCTION. WALL MOUNTED AIR DEVICES SHALL BE FACTORY PRIMED FOR ELECTROSTATIC PAINTING. FINAL PAINTING BY G.C.
2. 18" x 18" BACK PAN WITH SQUARE TO ROUND TRANSITION.
3. 9" x 9" BACK PAN WITH SQUARE TO ROUND TRANSITION.
4. AIR DEVICE SHALL BE PROVIDED WITH RADIATION DAMPER AND RADIATION BLANKET.
5. PROVIDE CUSTOM COLOR TO MATCH ADJACENT FINISH FOR ALL AIR DEVICES MOUNTED ON A WALL OR CEILING THAT ARE NOT WHITE. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC LOCATIONS. CUSTOM COLOR FINISH IS TO BE FACTORY-PAINTED OR SHOP-PAINTED.
6. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.

PLAN CODE	TYPE & SERVICE	NECK SIZE	FACE SIZE	FINISH	VOLUME DAMPER	MATERIAL	MANUFACTURER	MODEL	NOTES
A	SUPPLY DIFFUSER	AS NOTED	24" x 24"	NOTE #5	NO	STEEL	TITUS	TDC	1, 2, 6
B	SUPPLY DIFFUSER	AS NOTED	12" x 12"	NOTE #5	NO	STEEL	TITUS	TDC	1, 3, 6
C	RETURN GRILLE	22" x 22"	24" x 24"	NOTE #5	NO	STEEL	TITUS	PAR	1, 6
D	EXHAUST GRILLE	AS NOTED	NECK + 1-3/4"	NOTE #5	NO	ALUMINUM	TITUS	355RL	1, 6
E	LOUVERED FACE SUPPLY REGISTER	AS NOTED	NECK + 1-3/4"	NOTE #5	NO	STEEL	TITUS	300 RL	1, 6
F	LOUVERED FACE RETURN REGISTER	AS NOTED	NECK + 1-3/4"	NOTE #5	NO	STEEL	TITUS	350 FLF1	1, 6
G	RETURN GRILLE	21" x 21"	24" x 24"	NOTE #5	NO	STEEL	TITUS	TDC	1, 6
J	SUPPLY DIFFUSER	AS NOTED	24" x 24"	NOTE #5	NO	STEEL	TITUS	OMNI	1, 6
L	LOUVERED FACE RETURN REGISTER	8" x 8"	12" x 12"	NOTE #5	NO	STEEL	TITUS	350 FLF1	1, 6
M	SUPPLY DIFFUSER	AS NOTED	24" x 24"	NOTE #5	YES	STEEL	TITUS	TDC	1, 2, 6
N	SUPPLY DIFFUSER	AS NOTED	12" x 12"	NOTE #5	YES	STEEL	TITUS	TDC	1, 3, 6
O	RETURN GRILLE	10" x 10"	12" x 12"	NOTE #5	NO	STEEL	TITUS	PAR	1, 4
P	SUPPLY DIFFUSER	6" x 6"	12" x 12"	NOTE #5	NO	STEEL	TITUS	TDC	1, 4, 6
Q	LOUVERED FACE SUPPLY REGISTER	AS NOTED	NECK + 1-3/4"	NOTE #5	YES	STEEL	TITUS	300 RL	1, 6
R	RETURN GRILLE	12" x 12"	24" x 24"	NOTE #5	YES	STEEL	TITUS	TDC	1, 6
T	SUPPLY DIFFUSER	10"x10"	24" x 24"	NOTE #5	NO	STEEL	TITUS	TDC	1, 4, 6
U	RETURN GRILLE	12" x 12"	24" x 24"	NOTE #5	NO	STEEL	TITUS	TDC	1, 4, 6
V	LOUVERED FACE RETURN REGISTER	AS NOTED	NECK + 1-3/4"	NOTE #5	YES	STEEL	TITUS	350 RL	1, 6
W	LOUVERED FACE RETURN REGISTER	AS NOTED	NECK + 1-3/4"	NOTE #5	NO	STEEL	TITUS	350 RL	1, 6
X	RETURN GRILLE	12" x 12"	24" x 24"	NOTE #5	NO	STEEL	TITUS	TDC	1, 6
Y	RETURN GRILLE	10" x 10"	12" x 12"	NOTE #5	NO	STEEL	TITUS	PAR	1
Z	EXHAUST GRILLE	AS NOTED	NECK + 1-3/4"	NOTE #5	NO	STEEL	TITUS	355RL	1, 4, 6

VENTILATING AIR HANDLING UNIT SCHEDULE

NOTES:
1. PROVIDE FACTORY MOUNTED DISCONNECT, SINGLE POINT POWER CONNECTION AND CONDENSATE OVERFLOW SWITCH.
2. DOUBLE WALL CONSTRUCTION, HINGED ACCESS DOOR.
3. PROVIDE WITH MODULATING GAS HEAT, HOT GAS REHEAT AND DIGITAL SCROLL COMPRESSOR.
4. PROVIDE RIS PADS FOR SUPPLY FAN AND COMPRESSOR.
5. PROVIDE SMOKE DETECTOR ON SUPPLY SIDE OF UNIT.
6. PROVIDE WITH MERV 13 FILTERS.
7. PROVIDE WITH MOTORIZED DAMPER ON INTAKE WEATHER HOOD.
8. PROVIDE SPRING ISOLATED ROOF CURB RAILS.
9. PROVIDE WITH INTEGRAL, FACTORY WIRED CONVENIENCE OUTLET.
10. PROVIDE VFD WITH MANUAL BYPASS ON SUPPLY FAN. INCLUDE INVERTER DUTY MOTOR WITH SHAFT GROUNDING RINGS.
11. UNIT SHALL HAVE HORIZONTAL SUPPLY DISCHARGE.
12. PROVIDE STAINLESS STEEL HEAT EXCHANGER AND BLOWER.
13. INTERNAL SPRING ISOLATORS SHALL BE BOLTED DOWN IN THE LOCKED POSITION OR SHALL BE REPLACED WITH ELASTOMERIC MOUNTS.
14. UNIT SHALL BE PROVIDED WITH RA OPENING AND MODULATING RA DAMPER FOR TEMPORARY PHASING. RE: M300 AND M500 SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

PLAN CODE	SUPPLY FAN					DX COOLING COIL					GAS HEATING SECTION				ELECTRICAL				SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
	CFM	DESIGN OA (CFM)	MINIMUM OA (CFM)	EXT. SP (IN WG)	BHP	HP	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EAT DB/WB (°F)	LAT DB/WB (°F)	REHEAT LAT DB/WB (°F)	EER	INPUT CAP. (MBH)	OUTPUT CAP. (MBH)	EAT DB (°F)	LAT DB (°F)	TURNDOWN	VOLTS	Ø	HZ	MCA	MOCP	L	W	H				
VU-1	2800	2800	2765	0.75	1.15	4	255.5	140.6	97/78	51.0/51.0	72.0/54.5	11.2	300	240	10	69.4	10:1	208	3	60	98.1	125	121	74	67	3208	TRANE	D4SD264F3	1-13
VU-2	3200	3200	2765	1.00	1.34	4	282.6	154.2	97/78	52.8/52.2	73.2/60.3	11.1	300	240	10	79.4	10:1	208	3	60	131.3	175	121	74	67	3244	TRANE	D4SD300D3	1-14

GAS FIRED MAKE UP AIR UNIT SCHEDULE

NOTES:
1. PROVIDE FACTORY MOUNTED DISCONNECT, SINGLE POINT POWER CONNECTION AND CONDENSATE OVERFLOW SWITCH.
2. DOUBLE WALL CONSTRUCTION, HINGED ACCESS DOOR, 10:1 MODULATING NATURAL GAS TURNDOWN.
3. PROVIDE WITH HOT GAS REHEAT AND DIGITAL SCROLL COMPRESSOR.
4. PROVIDE RIS PADS FOR SUPPLY FAN AND COMPRESSOR.
5. PROVIDE SMOKE DETECTOR ON SUPPLY SIDE OF UNIT.
6. PROVIDE WITH MERV 13 FILTERS.
7. PROVIDE WITH MOTORIZED DAMPER ON INTAKE WEATHER HOOD.
8. PROVIDE SPRING ISOLATED ROOF CURB RAILS.
9. PROVIDE WITH INTEGRAL, FACTORY WIRED CONVENIENCE OUTLET.
10. PROVIDE VFD WITH MANUAL BYPASS ON SUPPLY FAN. INCLUDE INVERTER DUTY MOTOR WITH SHAFT GROUNDING RINGS.
11. UNIT SHALL HAVE HORIZONTAL SUPPLY DISCHARGE.
12. PROVIDE STAINLESS STEEL HEAT EXCHANGER AND BLOWER.
13. INTERNAL SPRING ISOLATORS SHALL BE BOLTED DOWN IN THE LOCKED POSITION OR SHALL BE REPLACED WITH ELASTOMERIC MOUNTS.

PLAN CODE	SUPPLY FAN							DX COOLING COIL					GAS HEATING SECTION					ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
	SA CFM	DESIGN OA (CFM)	MINIMUM OA (CFM)	EXT. SP (IN WG)	FAN RPM	BHP	HP	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	EAT DB/WB (°F)	LAT DB/WB (°F)	MAX. AIR PD (IN WG)	EER	INPUT CAP. (MBH)	OUTPUT CAP. (MBH)	EAT DB (°F)	LAT DB (°F)	TURNDOWN	VOLTS	Ø	HZ	MCA	MOCP	L	W	H				
MAU-1	2400	2400	2304	0.75	1151	0.73	4	221.2	120	97/78	51.4/50.8	0.16	11.6	250	200	10	81.2	10:1	208	3	60	87.2	110	121	74	67	3185	TRANE	D4SD240F3	1-13

VRF INDOOR UNIT SCHEDULE

NOTES:
1. DISCONNECTS SHALL BE PROVIDED BY E.C.
2. CONTROL WIRING BETWEEN UNITS BY UNIT INSTALLER.
3. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS, INDOOR UNITS AND BRANCH CONTROLLERS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.
4. CONTRACTOR TO PROVIDE CONDENSATE OVERFLOW SWITCH CONFORMING TO UL508.
5. PROVIDE WITH MERV 8 FILTERS.
6. PROVIDE INDOOR UNITS WITH INTEGRAL CONDENSATE PUMP.
7. DO NOT PROVIDE WITH MANUFACTURER'S BOTTOM ACCESSIBLE FILTER RACK/HOLDER WHERE FILTER GRILLES ARE USED.
8. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.

PLAN CODE	UNIT TYPE	REFRIGERANT	TOTAL COOLING CAPACITY (MBH)	SENS. COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	TOTAL AIRFLOW (CFM)	MAX E.S.P. (IN WG)	SOUND DATA (dB)	COOLING EAT DB/WB (°F)	COOLING LAT (°F)	HEATING EAT DB/WB (°F)	HEATING LAT (°F)	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
													VOLTS	Ø	HZ	MCA	MOCP (AMPS)	L	W	H				
FCU-1	HORIZONTAL CONCEALED	R-410A	51.4	38.2	60.0	1480	0.6	45	75/63	50.9	70	108	208	1	60	3.51	15	29	63	10	86	MITSUBISHI	TPEFYP054MA14JA	1-8
FCU-2	CEILING CASSETTE	R-410A	11.1	9.4	12.8	600	0.0	31	75/63	60.4	70	90	208	1	60	0.58	15	37	37	10	46	MITSUBISHI	TPLFYP012EM14JA	1-4, 6, 8
FCU-4	HORIZONTAL CONCEALED	R-410A	7.6	6.3	9.0	300	0.6	28	75/63	55.4	70	95	208	1	60	1.05	15	29	28	10	48	MITSUBISHI	TPEFYP009MA14JA	1-8
FCU-5	HORIZONTAL CONCEALED	R-410A	11.4	8.2	13.5	370	0.6	34	75/63	54.3	70	104	208	1	60	1.2	15	29	28	10	49	MITSUBISHI	TPEFYP012MA14JA	1-8
FCU-6	HORIZONTAL CONCEALED	R-410A	14.3	11.1	17.0	490	0.6	34	75/63	54.0	70	102	208	1	60	1.45	15	29	35	10	58	MITSUBISHI	TPEFYP015MA14JA	1-8
FCU-7	HORIZONTAL CONCEALED	R-410A	22.8	18.8	27.0	880	0.6	34	75/63	55.1	70	95	208	1	60	2.73	15	29	43	10	67	MITSUBISHI	TPEFYP024MA14JA	1-8

VRF OUTDOOR UNIT SCHEDULE

NOTES:
1. DISCONNECTS BY E.C.
2. PROVIDE REFRIGERANT PIPING SIZE AND CHARGE AS RECOMMENDED BY MANUFACTURER.
3. OUTDOOR UNIT SHALL BE BY SAME MANUFACTURER AS THE UNIT(S) IT SERVES AND SHALL BE SELECTED SPECIFICALLY TO MATCH THE CAPACITY OF THOSE UNITS.
4. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.

PLAN CODE	SERVICE	LOCATION	EER	COP	NOM. COOLING CAPACITY @ S.L. (MBH)	CORRECTED COOLING CAPACITY @ S.L. (MBH)	NOM. HEATING CAPACITY @ S.L. (MBH)	CORRECTED HEATING CAPACITY @ S.L. (MBH)	SUMMER AAT DB/WB (°F)	WINTER AAT (°F)	SOUND DATA (dB)	ELECTRICAL						SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
												VOLTS	Ø	HZ	MCA_1	MOCP_1 (AMPS)	MCA_2	MOCP_2 (AMPS)	L	W	H				
VRF-3	PUBLIC SPACES	ROOF MOUNTED	11.7	3.56	240	238.1	270	260.2	97/78	7	88	208	3	60	47	70	47	70	98	29	72	1324	MITSUBISHI	TURYH2403BN40AN	1-4

VRF BRANCH CONTROLLER SCHEDULE

NOTES:
1. ALL PORTS AND TAPS TO MAIN SHALL INCLUDE REFRIGERANT RATED, FULL PORT BALL VALVES.
2. REFER TO PLANS FOR NUMBER OF USED PORTS. CAP UN-USED PORTS.
3. DISCONNECTS BY E.C.
4. PLAN CODE REFERENCES NOT IN THIS SCHEDULE ARE IN OTHER VOLUMES.
5. PROVIDE CONDENSATE OVERFLOW SWITCH CONFORMING TO UL508.
6. PROVIDE WITH INTEGRAL CONDENSATE PUMP.

PLAN CODE	SERVICE	NO. PORTS	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
			VOLTS	Ø	HZ	MCA	MOCP (AMPS)	L	W	H				
BC-1	VARIOUS	12	208	1	60	1.6	15	45	22	10	133	MITSUBISHI	TCMBM1012JA11N4	1-6

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THIS WORK.

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BRANDON OAKS - PHASES 2 AND 3
NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE S.W. ROANOKE, VA 24018
DRAWN BY: R.H. CHECKED BY: R.H. APPROVED BY: R.H.

REVISIONS

NO.	DATE	DESCRIPTION
17	08.18.2020	PHASES 2 & 3 - ADDENDUM 01

VOLUME III
PHASES 2 AND 3
DRAWING NO: M701.2

MECHANICAL SCHEDULES

SCALE: AS NOTED
DATE: 08.28.2020
COMMISSION NO: 2019091

11/17/2020 9:22:29 AM

PACKAGED TERMINAL HEAT PUMP SCHEDULE

NOTES:

1. PROVIDE OUTSIDE AIR SLIDE DAMPER AND MERV 8 FILTER.
2. PROVIDE REMOTE ESCUTCHEON KIT.
3. PROVIDE INSULATED STEEL WALL SLEEVE, SUBBASE, LEVELING LEGS, AND ALUMINUM ARCHITECTURAL LOUVER IN CUSTOM COLOR SELECTED BY ARCHITECT. WALL SLEEVE SHALL BE COORDINATED WITH FINAL LOUVER SELECTION. RE: ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PROVIDE DRAIN KIT AND CONDENSATE OVERFLOW SWITCH.
5. PROVIDE CORD AND PLUG.
6. PTHP AIRFLOW RATE IS BASED ON LOW MOTOR SPEED SETTING.

PLAN CODE	SERVICE	SUPPLY FAN		COOLING						EER (MIN.)	HEATING					HEATER (KW)	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
		AIR FLOW (CFM)	OA (CFM)	TOTAL (MBH)	SENS (MBH)	AMBIENT AIR (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)		TOTAL (MBH)	AMBIENT AIR (°F)	EAT DB (°F)	LAT DB (°F)	COP		VOLTS	Ø	HZ	MCA	MOCP	L	W	H				
PTHP-1	VARIOUS	250	0	9.4	7.5	97	75	63	55	12.1	8.5	10	70	116	3.51	3.6	208	1	60	19.9	20	42	21	16	114	FRIEDRICH	PVH09K	2-6
PTHP-2	VARIOUS	360	35	11.8	9.2	97	75	63	55	11.5	11.8	10	62	103	3.58	3.6	208	1	60	19.9	20	42	21	16	120	FRIEDRICH	PVH12K	1-6

VERTICAL TERMINAL HEAT PUMP SCHEDULE

NOTES:

1. PACKAGED UNIT WITH STEEL WALL PLENUM, EVAPORATOR / INDOOR FAN ASSEMBLY, HEAT PUMP CHASSIS, AND ELECTRIC HEATING COIL INSTALLED IN VERTICAL UNIT CABINET.
2. PROVIDE WITH DRAIN KIT AND CONDENSATE OVERFLOW SWITCH.
3. PROVIDE ARCHITECTURAL EXTRUDED ALUMINUM WALL LOUVER IN CUSTOM COLOR SELECTED BY ARCHITECT.
4. PROVIDE UNIT MOUNTED FILTER BRACKET AND MERV 8 FILTER.
5. VTHP AIRFLOW RATE IS BASED ON LOW MOTOR SPEED SETTING.
6. PROVIDE INTERNAL CONDENSATE DRAIN PAN AND CONNECTION.
7. FOR ALL VTHP'S, THE OUTSIDE AIR DAMPER SHALL BE DISCONNECTED AND SET IN THE CLOSED POSITION.

PLAN CODE	SERVICE	SUPPLY FAN		COOLING							HEATING					HEATER (KW)	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
		AIR FLOW (CFM)	ESP (IN W.C.)	TOTAL (MBH)	SENS (MBH)	AMBIENT AIR (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	EER (MIN.)	TOTAL (MBH)	AMBIENT AIR (°F)	EAT DB (°F)	LAT DB (°F)	COP		VOLTS	Ø	HZ	MCA	MOCP	L	W	H				
VTHP-1	VARIOUS	320	0.3	9.4	7.1	97	75	63	55	10.4	8.4	10	70	104	3.0	3.4	208	1	60	19.9	20	23	23	32	142	FRIEDRICH	VHA09K	1-7
VTHP-2	RESIDENT ROOMS	320	0.3	12.0	9.0	97	75	63	55	10.0	9.0	10	70	104	3.0	3.4	208	1	60	19.9	20	23	23	47	147	FRIEDRICH	VHA12K	1-7
VTHP-3	VARIOUS	510	0.4	22.8	16.0	97	75	63	55	9.1	20.0	10	70	117	3.0	7.5	208	1	60	44.3	45	23	23	47	205	FRIEDRICH	VHA24K	1-7

SPLIT SYSTEM HEAT PUMP INDOOR UNIT SCHEDULE

NOTES:

1. PROVIDE MANUFACTURER'S REMOTE MOUNTED UNIT CONTROLLER MATCHED TO UNIT, MODEL PAR-40MAAU.
2. PROVIDE WITH CONDENSATE OVERFLOW SWITCH AND CONDENSATE PUMP.
3. REFRIGERANT PIPING SIZE BETWEEN OUTDOOR UNITS AND INDOOR UNITS SHALL BE DETERMINED BY THE UNIT MANUFACTURER AND SHALL TAKE INTO ACCOUNT THE FIELD INSTALLATION CONDITIONS.
4. INDOOR UNIT POWERED BY OUTDOOR UNIT. RE: SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT SCHEDULE FOR ADDITIONAL INFORMATION.

PLAN CODE	SERVICE	STYLE	AIR FLOW (CFM)	ESP (IN WG)	COOLING TOTAL CAPACITY (MBH)	COOLING SENSIBLE CAPACITY (MBH)	HEATING TOTAL CAPACITY (MBH)	SEER	HSPF	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
										VOLTS	Ø	HZ	MCA	MOCP (AMPS)	L	W	H				
SSAHU-1	OFFICES	WALL MOUNTED	235	---	12.2-3.8	10.0-3.0	8.2	24.8	12.8	208	1	60	0	0	32	9	12	22	MITSUBISHI	MSZ-GL09NA	1-4
SSAHU-2	IT/DATA	WALL MOUNTED	320	---	12.0-5.8	9.7-4.7	11.1	20.8	10.2	208	1	60	0	0	35	10	12	29	MITSUBISHI	PKA-A12HA7	1-4
SSAHU-3	NURSING	CEILING CASSETTE	265	---	9.0-3.6	7.3-3.1	4.1	22.4	12.2	208	1	60	0	0	25	25	10	31	MITSUBISHI	NTXSKS09A112A	1-4

SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT SCHEDULE

NOTES:

1. OUTDOOR UNIT SHALL BE MATCHED TO INDOOR UNIT.
2. PROVIDE LOW AMBIENT TEMPERATURE OPERATION DOWN TO 0 DEGREES AND HARD START KIT.
3. PROVIDE REFRIGERANT CHARGE REQUIRED FOR ACTUAL REFRIGERANT PIPING LENGTHS. REFRIGERANT TO BE R410A.

PLAN CODE	SERVICE	MAX. AMBIENT TEMP (°F)	MIN. AMBIENT TEMP (°F)	ELECTRICAL					SIZE (IN)			OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
				VOLTS	Ø	HZ	MCA	MOCP (AMPS)	L	W	H				
SSHP-1	SSAHU-1	115	0	208	1	60	9	15	32	11	22	61	MITSUBISHI	MUZ-GL09NA-U1	1-3
SSHP-2	SSAHU-2	115	0	208	1	60	11	20	32	11	25	63	MITSUBISHI	PUZ-A12NKA7	1-3
SSHP-3	SSAHU-3	115	0	208	1	60	9	15	32	11	22	61	MITSUBISHI	NTXSKS09A112A	1-3

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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BRANDON OAKS - PHASES 2 AND 3

NURSING REHABILITATION CENTER RENOVATION

FOR

VIRGINIA LUTHERAN HOMES

3837 BRANDON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY: R.H. | CHECKED BY: R.H. | APPROVED BY: R.H.

REVISIONS

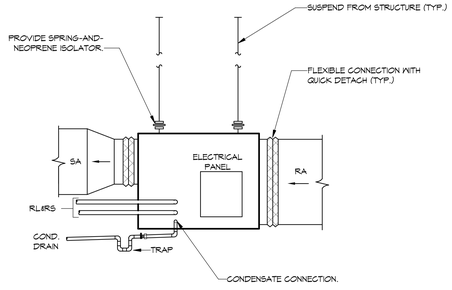
NO.:	DATE	DESCRIPTION

VOLUME II
PHASES 2 AND 3
DRAWING NO: **M702.2**

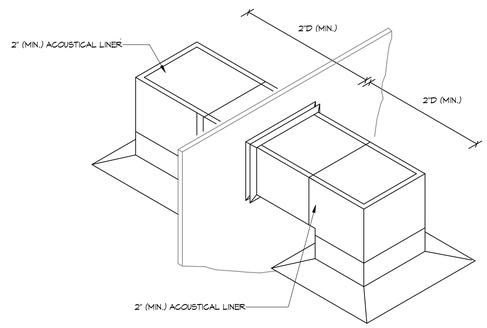
MECHANICAL SCHEDULES

COMMISSION NO: 2019091 | SCALE: AS NOTED | DATE: 08.28.2020

11/17/2020 9:22:39 AM



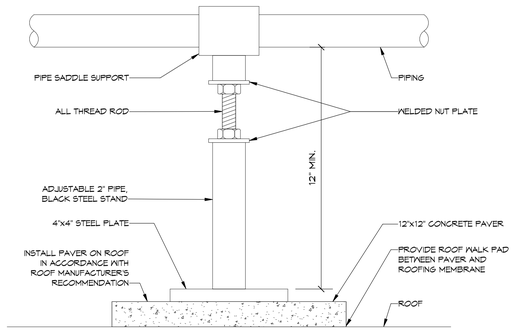
10 M801.2 **HORIZONTAL VRF UNIT DETAIL**
SCALE: NONE



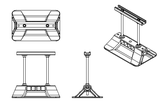
NOTE:

1. DUCT DIMENSIONS INDICATED ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. INCREASE DUCTWORK SIZE FOR ACOUSTICAL LINER WHERE SPECIFIED.

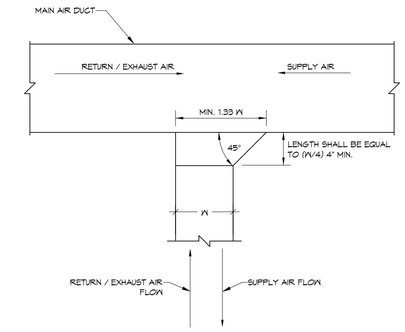
7 M801.2 **TYPICAL TRANSFER AIR DUCT**
SCALE: NONE



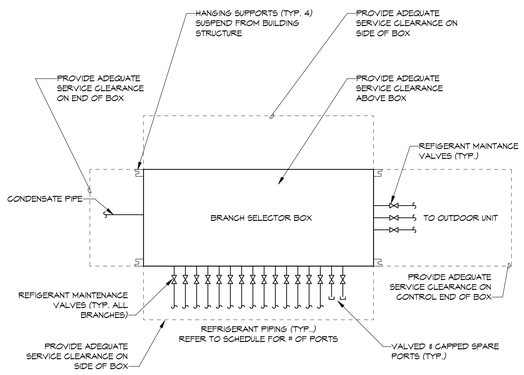
NOTES:
1. A PRE-MANUFACTURED ROOFTOP PIPE SUPPORT MAY BE SUBSTITUTED FOR THE ABOVE DETAIL. ACCEPTABLE DEVICES ARE THE CADDY(R) PYRAMID ST AND RL SERIES, OR APPROVED EQUAL.



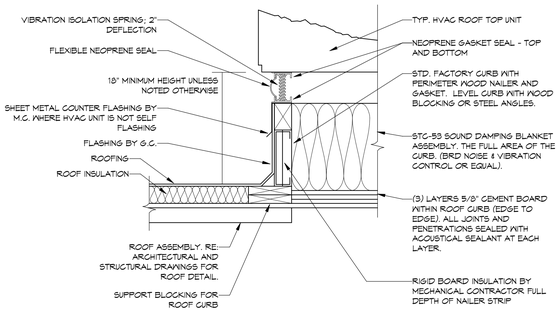
4 M801.2 **ROOF MOUNTED PIPE SUPPORT DETAIL**
SCALE: NONE



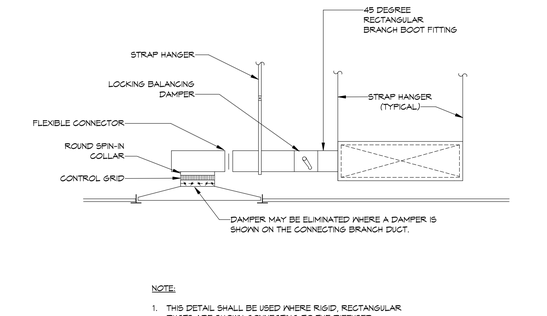
1 M801.2 **BRANCH DUCT TAKE-OFF DETAIL**
SCALE: NONE



11 M801.2 **BRANCH CONTROLLER DETAIL**
SCALE: NONE



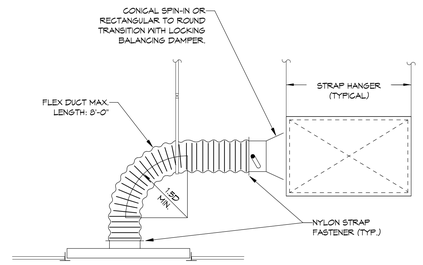
8 M801.2 **ROOF MOUNTED EQUIPMENT CURB WITH VIBRATION ISOLATION**
SCALE: NONE



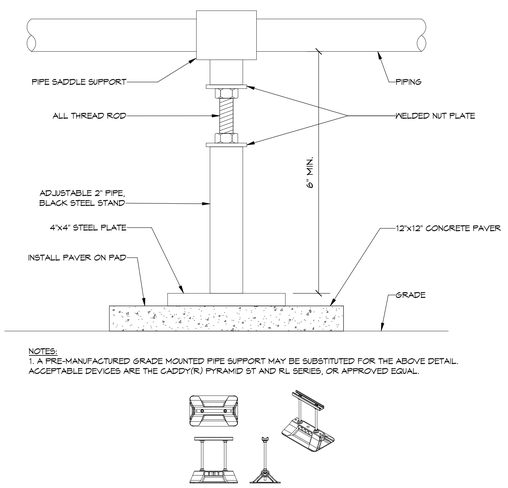
NOTE:

1. THIS DETAIL SHALL BE USED WHERE RIGID, RECTANGULAR DUCTS ARE SHOWN CONNECTING TO THE DIFFUSER.

5 M801.2 **DIFFUSER CONN. TO RECT. DUCT DETAIL**
SCALE: NONE

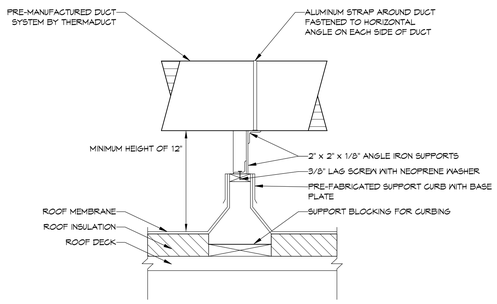


2 M801.2 **FLEXIBLE DUCT INSTALLATION DETAIL**
SCALE: NONE



NOTES:
1. A PRE-MANUFACTURED GRADE MOUNTED PIPE SUPPORT MAY BE SUBSTITUTED FOR THE ABOVE DETAIL. ACCEPTABLE DEVICES ARE THE CADDY(R) PYRAMID ST AND RL SERIES, OR APPROVED EQUAL.

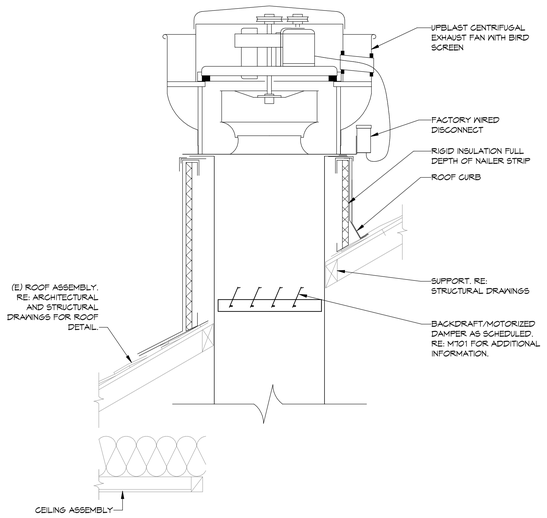
12 M801.2 **GRADE MOUNTED PIPE SUPPORT DETAIL**
SCALE: NONE



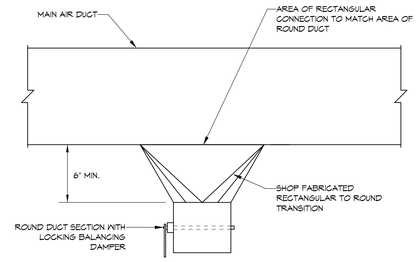
NOTES:

1. CONTRACTOR HAS OPTION TO USE PIPE SUPPORTS IN LIEU OF ANGLE IRON SUPPORTS. MOCK-UP SHALL BE PROVIDED IF THIS OPTION IS SELECTED.
2. SPACE ROOF CURB SUPPORTS PER SMACNA.
3. A PRE-MANUFACTURED ROOFTOP DUCT SUPPORT MAY BE SUBSTITUTED FOR THE ABOVE DETAIL. ACCEPTABLE DEVICES ARE THE MIRO INDUSTRIES DS SERIES, OR APPROVED EQUAL.

9 M801.2 **ROOF MOUNTED DUCT DETAIL**
SCALE: NONE



6 M801.2 **UPBLAST EXHAUST FAN DETAIL**
SCALE: NONE



3 M801.2 **TRANSITION DUCT TAP DETAIL**
SCALE: NONE

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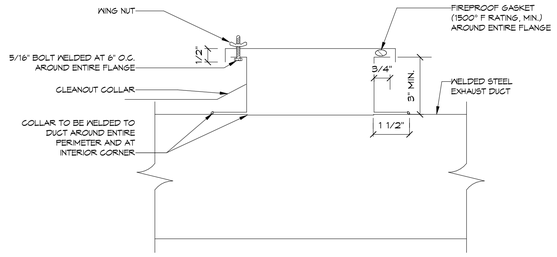
REVISIONS

NO.	DATE	DESCRIPTION

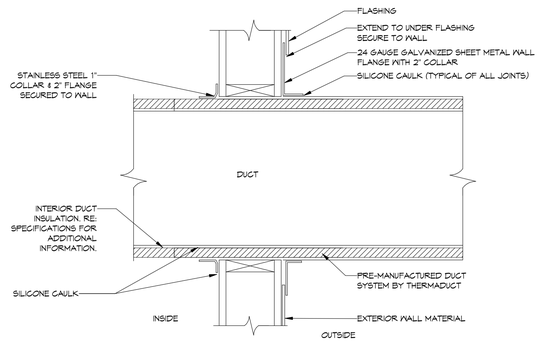
MECHANICAL DETAILS

VOLUME II
PHASES 2 AND 3
DRAWING NO: M801.2
SCALE: AS NOTED
DATE: 08.26.2020
COMMISSION NO: 2019091

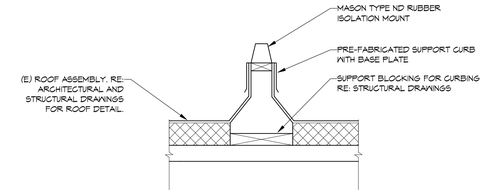
11/17/2020 9:22:46 AM



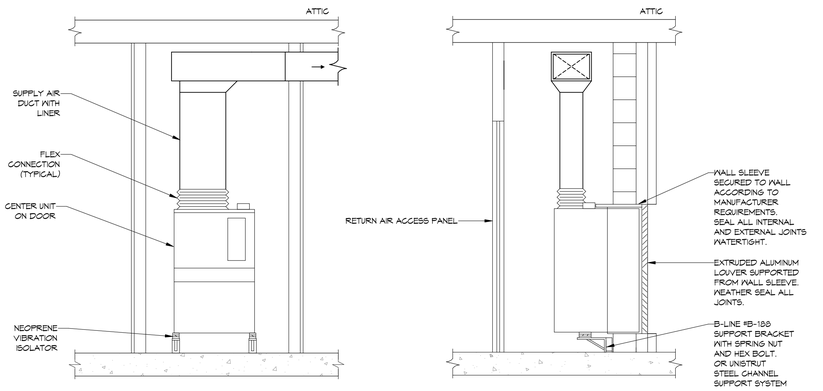
7 M802.2 **GREASE EXHAUST DUCT CLEANOUT DETAIL**
SCALE: NONE



4 M802.2 **DUCT THROUGH WALL DETAIL**
SCALE: NONE



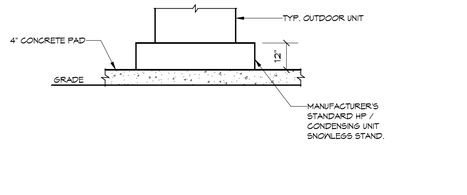
1 M802.2 **ROOF MOUNTED BASE RAIL DETAIL**
SCALE: NONE



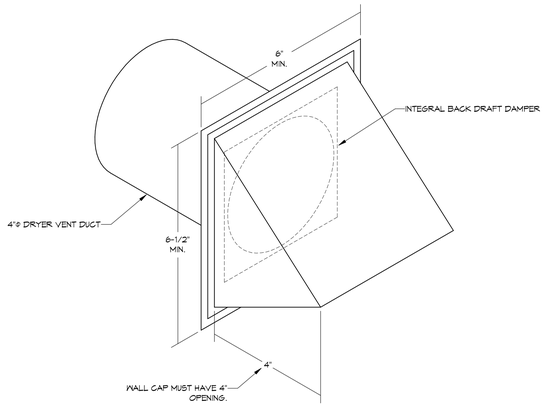
NOTES:

1. A SHOP FABRICATED PLATFORM MAY BE SUBSTITUTED FOR THE ABOVE SUPPORT BRACKET DETAIL.
2. EXTEND 3/4" CONDENSATE DRAIN FROM UNIT AND ROUTE DOWN IN EXTERIOR WALL. LOCATE PIPING ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.

8 M802.2 **VERTICAL TERMINAL HEAT PUMP UNIT WITH NON-DUCTED RETURN DETAIL**
SCALE: NONE



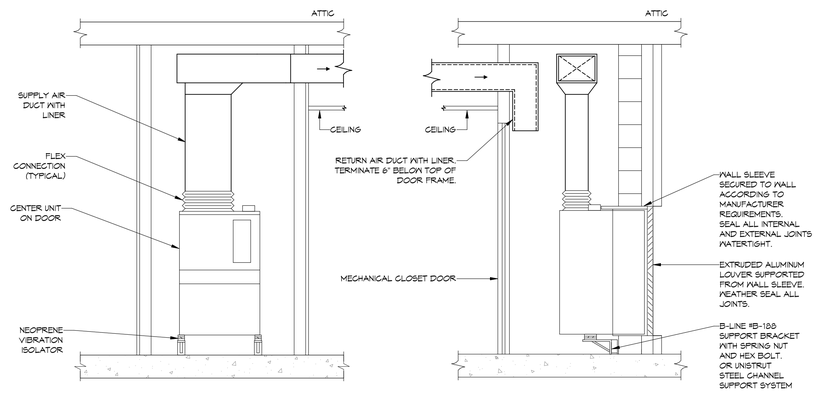
5 M802.2 **GRADE MOUNTED HP / CONDENSING UNIT DETAIL**
SCALE: NONE



NOTES:

1. WALL CAP SHALL BE GALVANIZED SHEETMETAL OR ALUMINUM.
2. PAINT WALL CAP TO MATCH SURROUNDING WALLS.

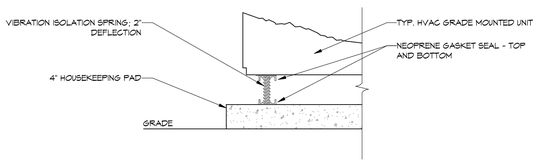
2 M802.2 **WALL CAP DETAIL**
SCALE: NONE



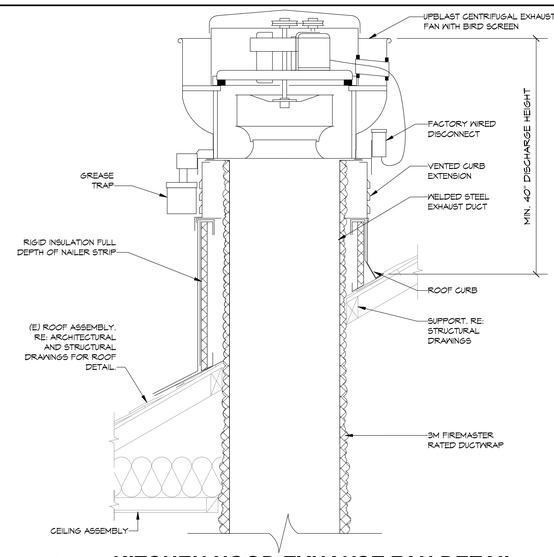
NOTES:

1. A SHOP FABRICATED PLATFORM MAY BE SUBSTITUTED FOR THE ABOVE SUPPORT BRACKET DETAIL.
2. EXTEND 3/4" CONDENSATE DRAIN FROM UNIT AND ROUTE DOWN IN EXTERIOR WALL. LOCATE PIPING ON HEATED SIDE OF INSULATION. EXTEND PIPING THROUGH EXTERIOR WALL AND TERMINATE AT 12" ABOVE FINISHED GRADE WITH 90 DEGREE COPPER ELBOW AND INTERNAL INSECT SCREEN.

9 M802.2 **VERTICAL TERMINAL HEAT PUMP UNIT WITH DUCTED RETURN DETAIL**
SCALE: NONE



6 M802.2 **GRADE MOUNTED EQUIPMENT WITH VIBRATION ISOLATION DETAIL**
SCALE: NONE



3 M802.2 **KITCHEN HOOD EXHAUST FAN DETAIL**
SCALE: NONE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE BEFORE PROCEEDING WITH THE WORK.

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NURSING REHABILITATION CENTER RENOVATION
FOR
VIRGINIA LUTHERAN HOMES
3837 BRANDON AVENUE S.W. ROANOKE, VA 24018

DRAWN BY:	CHECKED BY:	APPROVED BY:
R.H.	R.H.	R.H.

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SCALE:	DATE:
AS NOTED	08.28.2020

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2019091

VOLUME II
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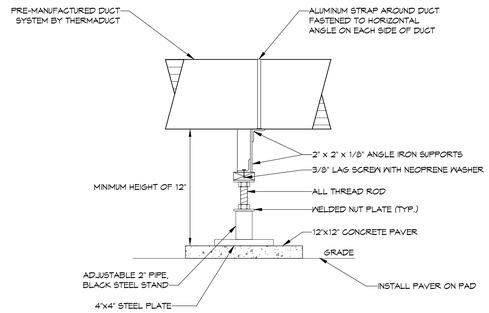
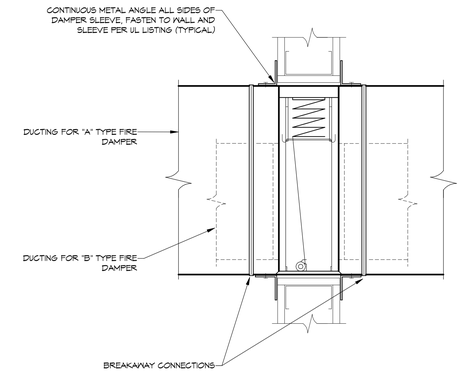


NOTES:

1. CONTRACTOR HAS OPTION TO USE PIPE SUPPORTS IN LIEU OF ANGLE IRON SUPPORTS. MOCK-UP SHALL BE PROVIDED IF THIS OPTION IS SELECTED.
2. A PRE-MANUFACTURED GRADE MOUNTED DUCT SUPPORT MAY BE SUBSTITUTED FOR THE ABOVE DETAIL. ACCEPTABLE DEVICES ARE THE MIRO INDUSTRIES DS SERIES, OR APPROVED EQUAL.

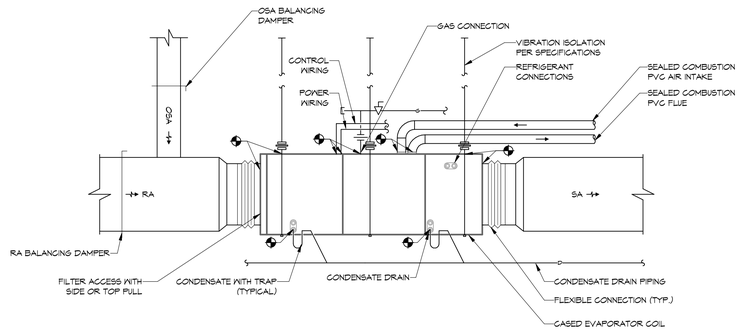
1 / M803.2 **GRADE MOUNTED DUCT DETAIL**
SCALE: NONE



NOTES:

1. ENTIRE DAMPER INSTALLATION SHALL BE ACCORDING TO THE UL LISTING AND LOCAL JURISDICTIONAL REQUIREMENTS.
2. PROVIDE ACCESS DOOR IN DUCTWORK ON ONE SIDE OF FIRE DAMPER. DUCTWORK OVER 48" WIDE REQUIRES TWO (2) ACCESS DOORS.
3. ALL DAMPER ACCESS POINTS SHALL BE ABOVE ACCESSIBLE CEILINGS WHERE POSSIBLE.

2 / M803.2 **VERTICAL FIRE DAMPER DETAIL**
SCALE: NONE



NOTES:

1. CONDENSATE PIPING AND CONDENSATE TRAPS EXPOSED IN UNCONDITIONED ATTIC SHALL BE INSULATED WITH 1-1/2" OF INSULATION REGARDLESS OF PIPE SIZE. HEAT TRACE ALL CONDENSATE PIPING AND CONDENSATE TRAPS LOCATED IN ATTIC AT 8 WATTS/L.F. RE: SPECIFICATIONS FOR ADDITIONAL INFORMATION.

3 / M803.2 **RELOCATED FURNACE DETAIL**
SCALE: NONE

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M803.2	2019031	AS NOTED	08.28.2020

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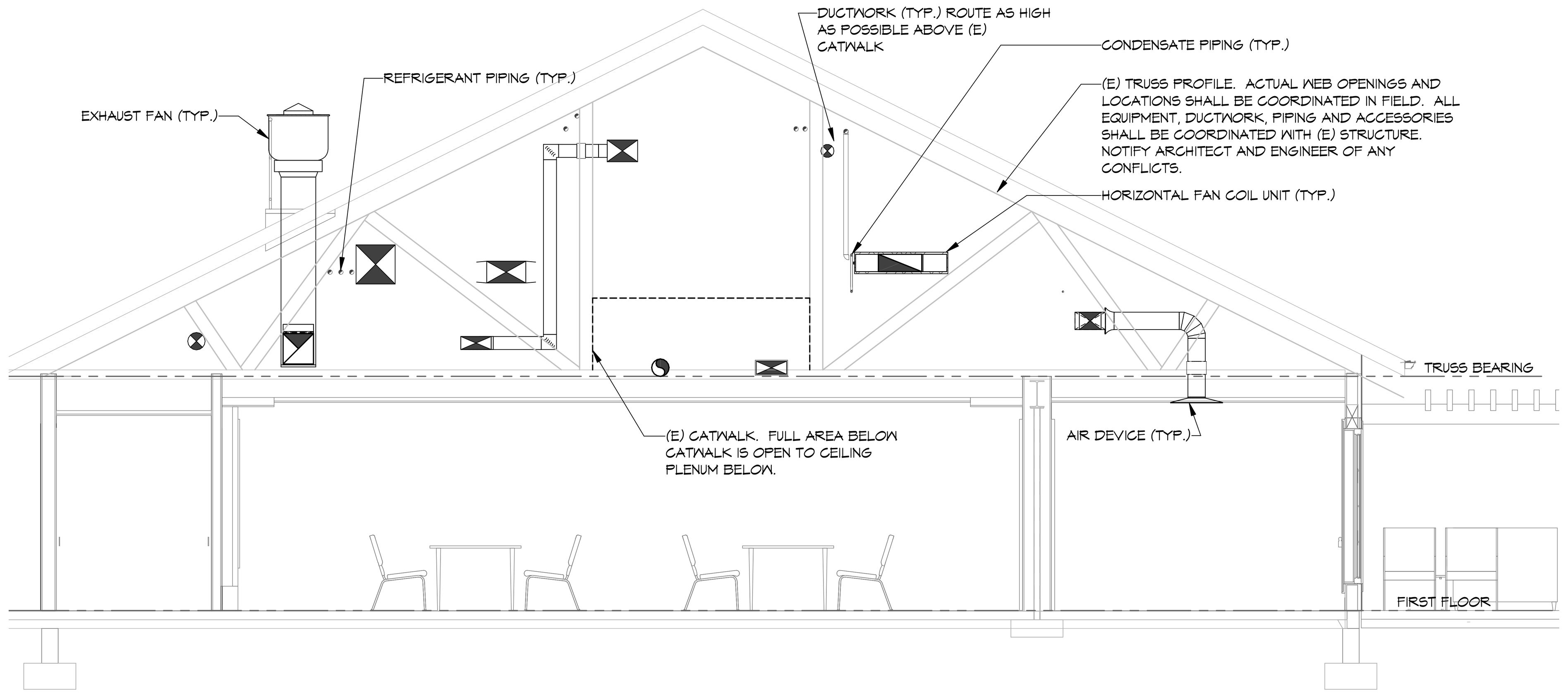
GENERAL NOTES

(THIS SHEET ONLY)

A. REFER TO M300'S AND M400'S FOR ADDITIONAL INFORMATION REGARDING DUCT SIZES, DAMPERS, PIPE SIZES AND EQUIPMENT TAGS. COORDINATION SECTIONS PROVIDED FOR CLARIFICATION PURPOSES ONLY.

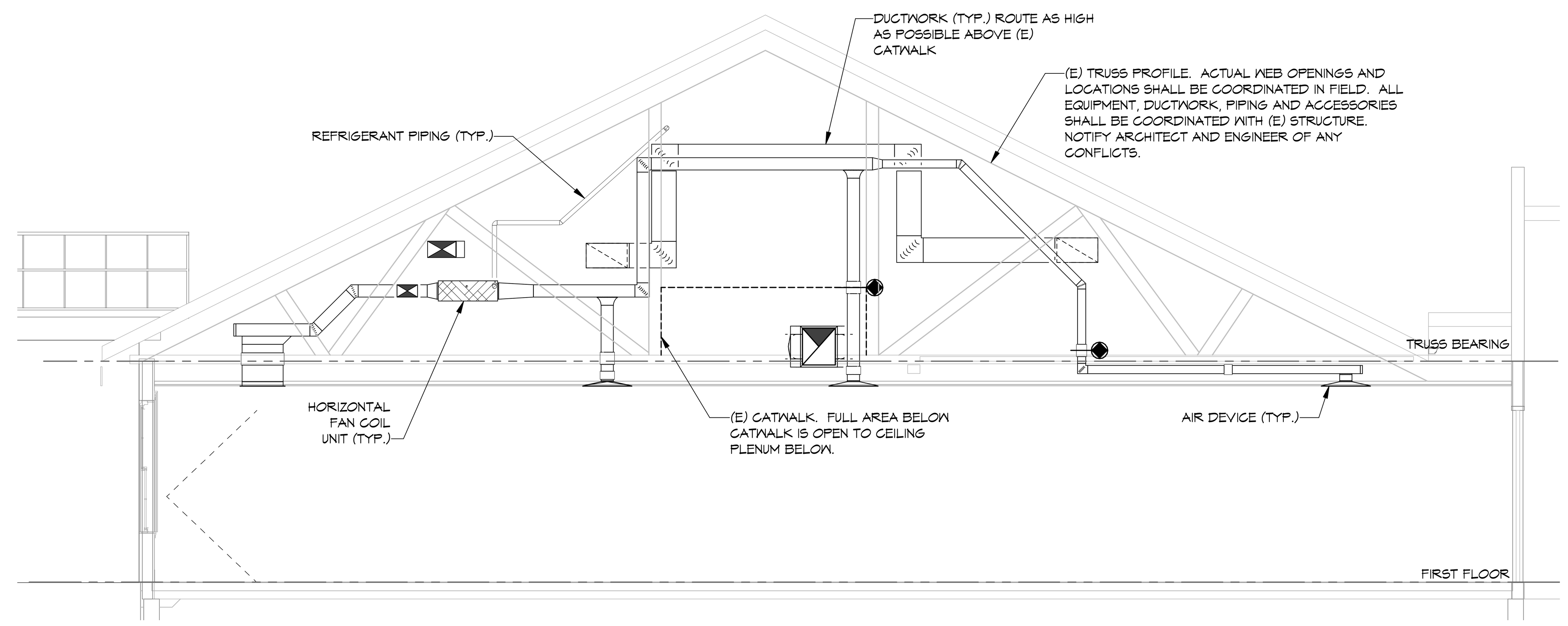
B. CONDENSATE PIPING AND CONDENSATE TRAPS EXPOSED IN UNCONDITIONED ATTIC SHALL BE INSULATED WITH 1-1/2" OF INSULATION REGARDLESS OF PIPE SIZE. HEAT TRACE ALL CONDENSATE PIPING AND CONDENSATE TRAPS LOCATED IN ATTIC AT 8 WATTS/L.F. RE: SPECIFICATIONS FOR ADDITIONAL INFORMATION.

C. ALL RADIATION DAMPERS SHALL BE INSTALLED AT BOTTOM CHORD OF TRUSS AT RATED CEILING ASSEMBLY.



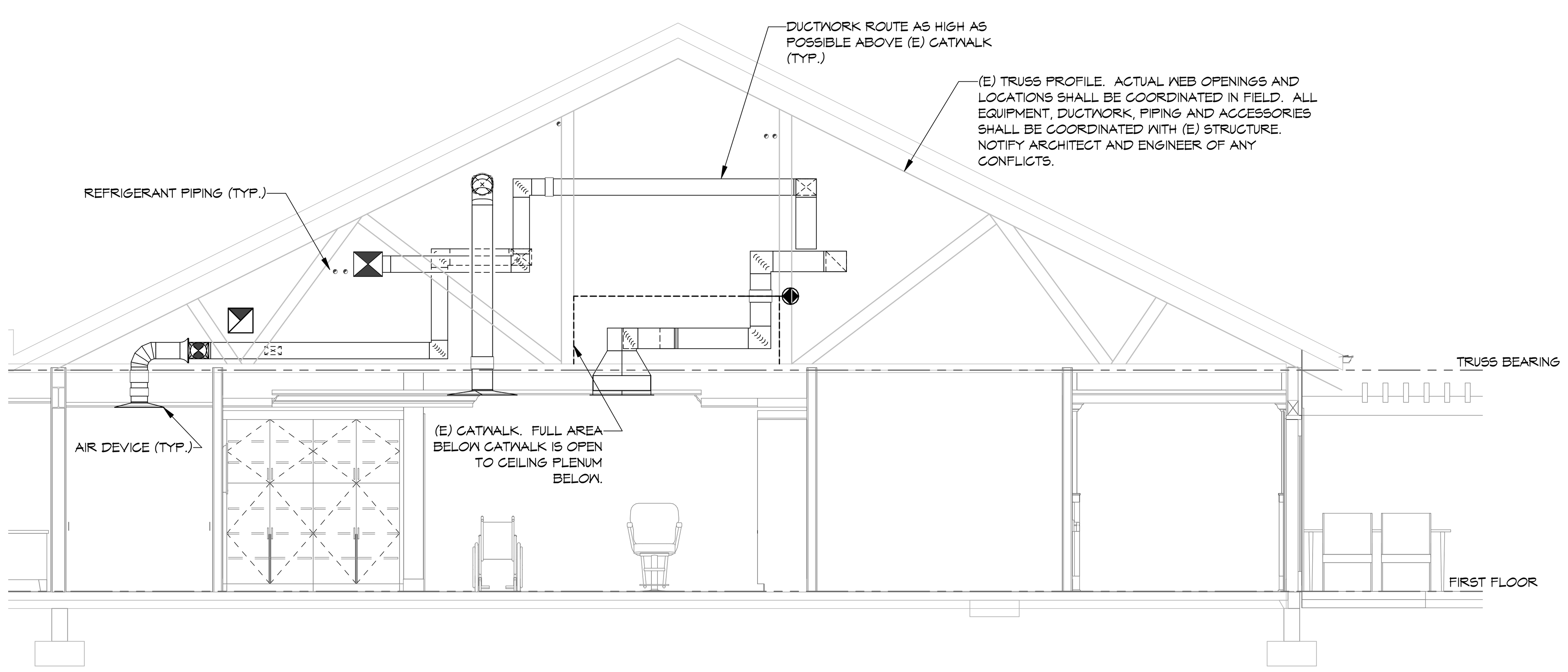
3 M804.2 **MECHANICAL ATTIC COORDINATION SECTION**

SCALE: NONE



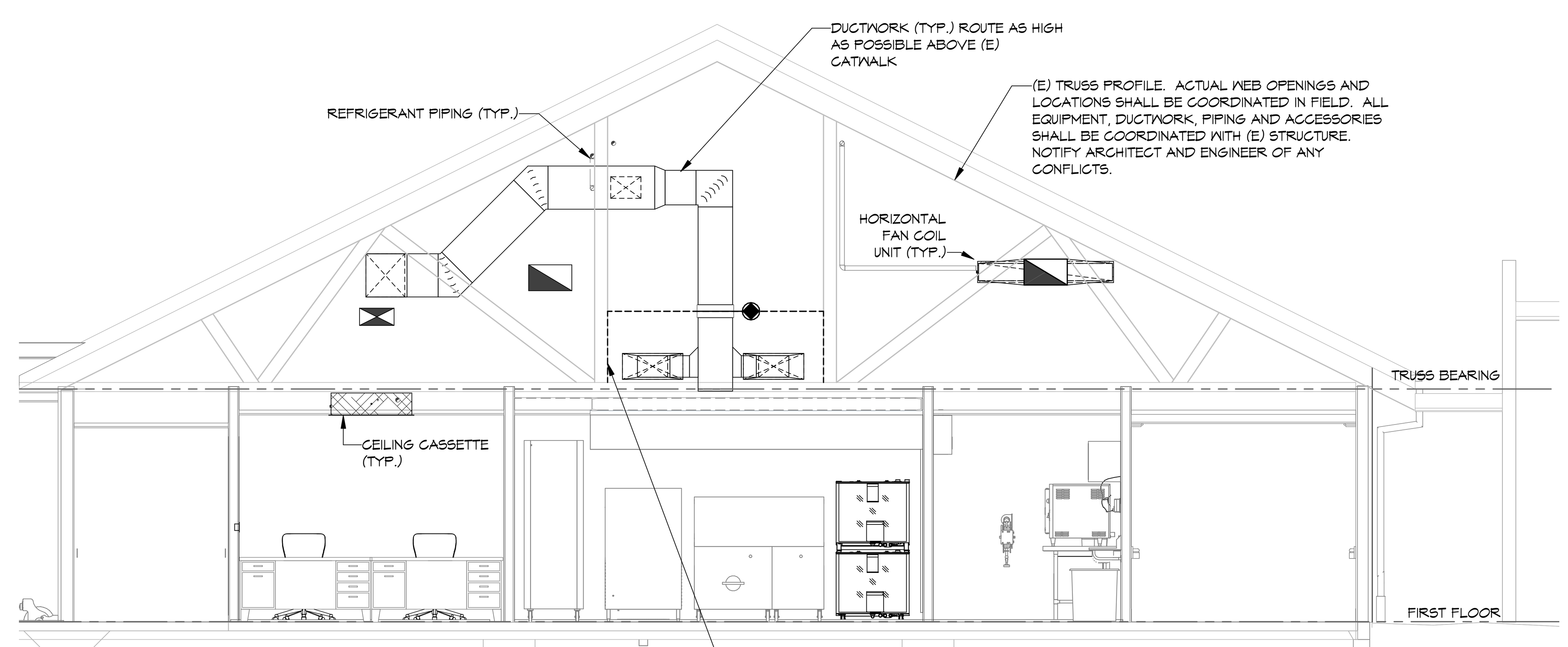
1 M804.2 **MECHANICAL ATTIC COORDINATION SECTION**

SCALE: NONE



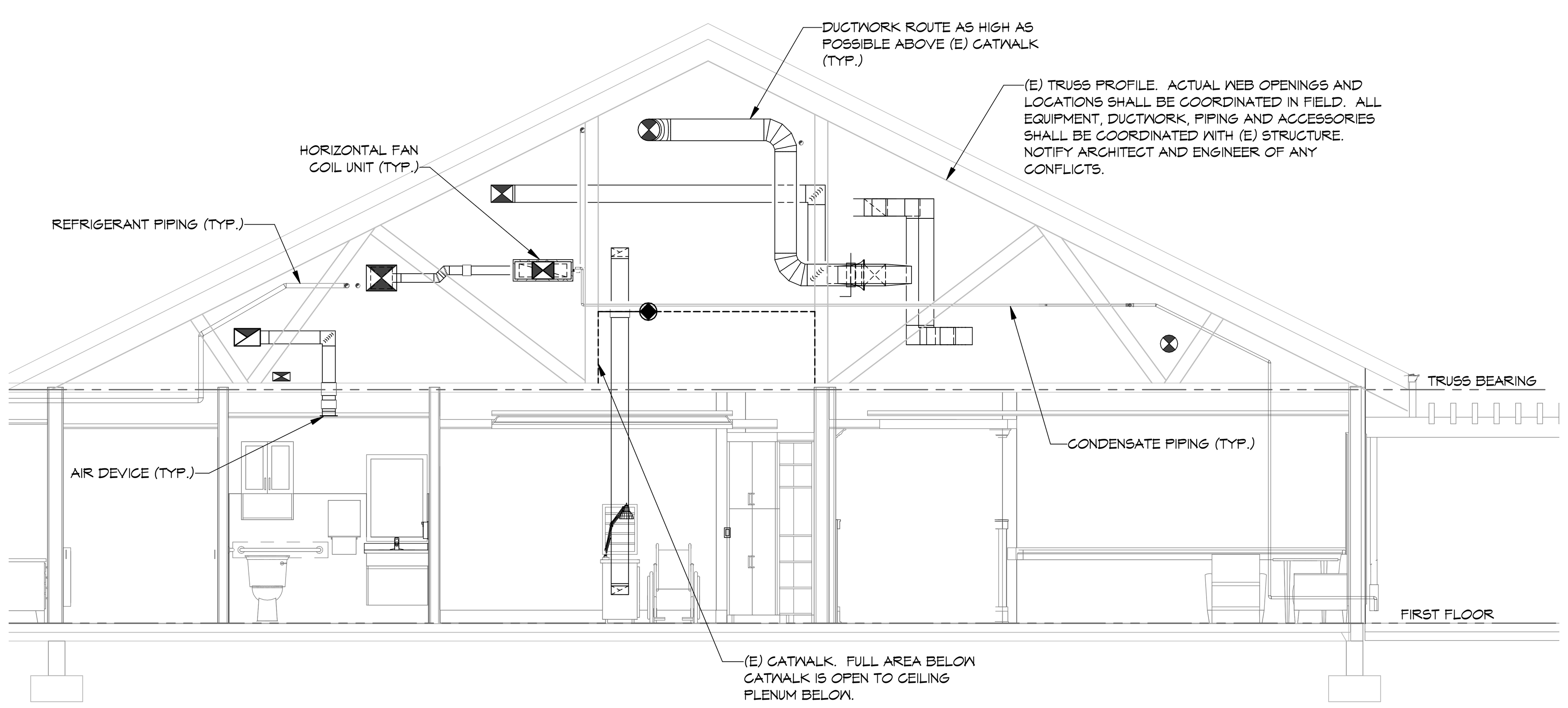
4 M804.2 **MECHANICAL ATTIC COORDINATION SECTION**

SCALE: NONE



2 M804.2 **MECHANICAL ATTIC COORDINATION SECTION**

SCALE: NONE



5 M804.2 **MECHANICAL ATTIC COORDINATION SECTION**

SCALE: NONE

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11/17/2020 9:23:08 AM