TABLE 403.3 VENTILATION REQUIREMENTS

ROOM	AREA (SF)	AREA RATE	AREA CFM	AREA CFM W 0.8 ZONE EFFECT	PEOPLE CALCULATION BASIS	NO. OF PEOPLE	PEOPLE RATE	PEOPLE CFM	PEOPLE CFM W 0.8 ZONE EFFECT	REQUIRED CFM
RTU–1 & RTU–2										
WORSHIP	1350	0.06 CFM/SF	81	101	86 TOTAL SEATS	86	5 CFM / P	430	538	639
PLATFORM	758	0.06 CFM/SF	45	56	70 P / 1000 SF	53	10 CFM / P	530	663	719
RTU–3										
PLAY AREA	569	0.12 CFM/SF	68	85	35 P / 1000 SF	20	10 CFM / P	200	250	335
CORRIDOR	294	0.06 CFM/SF	18	23	–	–	–	–	–	23
RTU–4										
BREAKOUT	1587	0.12 CFM/SF	190	238	25 P / 1000 SF	40	10 CFM / P	400	500	*SEE BELOW

MECHANICAL CONTRACTOR TO ADJUST OUTSIDE AIR QUANTITIES PER THE FOLLOWING SCHEDULE:

RTU–1 = 200 CFM
RTU–2 = MINIMUM CFM = 420 CFM; DCV CONTROLS
RTU–3 = MINIMUM CFM = 300 CFM; DCV CONTROLS
*RTU–4 = *370 CFM; SEE *NOTE BELOW

*ACCORDING TO ASHRAE 62 6.1.3.4 INTERMITTENT OF VAERIABEL OCCUPANCY WHERE PEAK OCCUPANCIES OF LESS THAN 3 HOURS DURATION OCCUR, THE OUTSIDE AIR REQUIREMENT MAY BE REDUCED, PROVIDED THAT THE AVERAGE OCCUPANCY IS GREATER THAN ONE–HALF THE MAXIMUM.

OUTSIDE AIR VIA DEMAND CONTROLLED VENTILATION

THE AMOUNT OF OUTSIDE AIR BEING INTRODUCED TO THE SPACE SHALL BE CONTROLLED TO PROVIDE OUTSIDE AIR TO MEET THE DEMAND OF THE MEASURED OCCUPANCY LOAD. THE MEASURED OCCUPANCY LOAD IS DETERMINED THROUGH MONITORING OF CO2 LEVELS IN THE SPACE VIA CO2 SENSORS. THE OPERATIONS AND SPECIFICATIONS OF THE DEMAND CONTROLLED VENTILATION SYSTEMS SHALL FUNCTION AS DESCRIBED BELOW.

THE AMOUNT OF OUTSIDE AIR BEING INTRODUCED TO THE SPACE SHALL BE CONTROLLED VIA PACKAGED UNITS RTU–2 AND RTU–3, EACH EQUIPPED WITH AN OUTSIDE AIR ECONOMIZER THAT HAS A FULLY MODULATING OUTSIDE AIR DAMPER. THESE UNITS SHALL BE EQUIPPED WITH A RETURN AIR DUCT MOUNTED CO2 SENSOR. CO2 MONITOR AND ITS ASSOCIATED OUTSIDE AIR DAMPER SHALL FUNCTION AS DESCRIBED BELOW.

THE INDOOR CO2 LEVEL SHALL BE COMPARED TO THE AMBIENT (OUTDOOR) CO2 LEVEL AS MEASURED BY A SENSOR LOCATED ON THE EXTERIOR OF THE BUILDING.

PROVIDE CONTROL SUCH THAT OUTSIDE AIR DAMPER FOR RTU'S MENTIONED ABOVE WILL MODULATE IN RESPONSE TO THE NEED FOR OUTSIDE AIR AS INDICATED BY THE CO2 LEVEL. WHEN THE CO2 LEVEL BEGINS TO CLIMB PAST 1100 PARTS–PER–MILLION (PPM) THE UNIT OUTSIDE AIR DAMPER SHALL MODULATE TO PROVIDE THE MAXIMUM AIRFLOWS INDICATED FOR EACH UNIT.

WHEN THE INDOOR CO2 LEVEL DROPS TO BELOW 1000 PPM, THE FRESH AIR DAMPER SHALL CLOSE TO POSITION THAT PROVIDES OUTSIDE AIR AT A RATE OF NO LESS THAN THE AMOUNT INDICATED AS THE MINIMUM AIRFLOW FOR EACH UNIT.

MECHANICAL LEGEND

SUPPLY DIFFUSER	RTU ROOF TOP UNIT
RETURN GRILLE	AHU AIR HANDLING UNIT
CEILING EXHAUST FAN	FP FAN POWERED BOX
EXISTING SUPPLY DIFFUSER	XRTU EXISTING ROOFTOP MOUNTED UNIT
EXISTING RETURN GRILLE	XAHU EXISTING AIR HANDLING UNIT
RELOCATED EXISTING DIFFUSER	CFM CUBIC FEET PER MINUTE
NEW ROUND DUCT	AFF ABOVE FINISHED FLOOR
NEW FLEX DUCT	EER ENERGY EFFICIENCY RATIO
NEW RIGID DUCT	SEER SEASONAL ENERGY EFFICIENCY RATIO
EXISTING DUCT TO REMAIN	SP STATIC PRESSURE
FD FIRE DAMPER	DOOR UNDER CUT 3/4"
T THERMOSTAT / UNIT CONTROL	SD DUCT SMOKE DETECTOR
H HUMIDISTAT UNIT CONTROL	CONNECT TO EXISTING
CO CARBON MONOXIDE DETECTOR	

MINI-SPLIT HEAT PUMP SCHEDULE

UNIT DESIG. AH/HP	AREA SERVED	FAN COIL UNIT DATA: MODEL #	TOTAL CFM	O.A. CFM	EXT. S.P. (IN.WG)	FAN RPM	ELECTRICAL DATA: UNIT VOLT/PH	MCA	MOCP	COOLING MBH	HEATING MBH @47F	HEATING MBH @17F	WEIGHT LBS	OUTDOOR UNIT: MODEL #	WEIGHT LBS	ELECTRICAL DATA: VOLT/PH	MCA	MOCP	COOLING MBH	HEATING MBH @47F	HEATING MBH @17F	SEER2	COP @47F	COP @17F	NOTES
AHU–1 HP–1	SEE PLAN	PKA–AL18NL	450	–	–	BY MFG	208V/1ø	–	–	18	23.6	11.7	28	PUZ–AK18NL	99	208V/1ø	16	27	18	23.6	11.7	19.5	3.1	2.4	1–8

NOTES:
1. COOLING CAP. RATED IN ACCORDANCE WITH ARI STD. 210/290 AT 95°F AMBIENT OUTDOOR AIR TEMP., 80°F DRY BULB, 67° WET BULB ENTERING AIR TEMP.& NOM. AIR QTY. LISTED.
2. OUTDOOR UNIT SHALL HAVE A MINIMUM EFFICIENCY RATING AS STATED ABOVE
3. AUTOMATIC UNIT SHUTDOWN VIA FLOAT SWITCH IN SECONDARY DRAIN PANS.
4. PROVIDE EQUIPMENT SUPPORTS TO MATCH SITE CONDITIONS.
5. OUTDOOR UNIT TO SUPPLY POWER TO INDOOR UNIT.
6. REFRIGERANT PIPING TO BE SIZED PER TOTAL INSTALLED EQUIVALENT LENGTH. LONG–LINE APPARATUS TO BE PROVIDED WHENEVER MFG. RECOMMENDED LENGTHS ARE EXCEEDED, INCLUDING LIQUID LINE SOLENOID VALVES, ACCUMULATOR, ETC. MAX T.E.L. IS 100'. INSTALL ALL REFRIGERANT LINES AND ACCESSORIES PER MANUFACTURER INSTRUCTIONS.
7. R–454B REFRIGERANT TYPE UNITS.
8. PROVIDE WITH CONDENSATE PUMP AS NECESSARY

PACKAGED DX COOLING ELECTRIC HEATING ROOFTOP UNIT SCHEDULE

UNIT NO.	AREA SERVED	LOCATION	TONS	SUPPLY – FAN DATA: TOTAL CFM	O/A CFM	EXT. S.P. (IN.WG)	FAN RPM	MOTOR H.P.	COOLING CAPACITY: TOTAL MBH	SENSIBLE MBH	AUXILIARY HEATER: KW # STEPS	VOLT/PH	ELECTRICAL DATA: VOLT/PH	MCA	MOCP	WEIGHT (LBS.)	MANUFACTURER & MODEL	NOTES
RTU–1	SEE PLANS	SEE PLANS	8.5	2,775	SEE OA TABLE	0.5	HIGH	3.0	104.0	73.3	27	208/3	208/3	126	150	1076	TRANE WSK102A3	1–12
RTU–2	SEE PLANS	SEE PLANS	3.0	1,200	SEE OA TABLE	0.5	HIGH	0.75	37.9	29.0	12	208/3	208/3	54	60	694	TRANE WSK036A3	4–12
RTU–3	SEE PLANS	SEE PLANS	5.0	2,000	SEE OA TABLE	0.5	HIGH	1.0	60.1	46.5	12	208/3	208/3	61	70	770	TRANE WSK060A3	1–12

NOTES:
1. FIELD INSTALLED BAROMETRIC RELIEF DAMPER IN RETURN DUCT
2. FIELD INSTALLED 0–100% ECONOMIZER, DRY BULB CONTROL, HORIZONTAL
3. FIELD INSTALLED HORIZONTAL CONVERSION PANEL
4. 5 YEAR COMPRESSOR AND HEAT EXCHANGER WARRANTIES
5. 30% THROWAWAY MERV 13 FILTERS
6. UL LISTED FOR SINGLE POINT POWER CONNECTION
7. OUTDOOR AIR VOLUME MEETS THE REQUIREMENTS OF ASHRAE STANDARD 62
8. STANDARD 14" HIGH FLAT CURB; VERIFY ROOF SLOPE AND LEVEL ACCORDINGLY
9. SCROLL COMPRESSORS
10. COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARD 210/290 AT 95° AMBIENT OUTDOOR AIR TEMP., 80° DRY BULB, 67° WET BULB ENTRANCE AIR TEMP., AND NOMINAL AIR QUANTITY LISTED.
11. PROVIDE MANUFACTURERS AUTOMATIC CHANGEOVER HEAT/COOL THERMOSTAT.
12. FACTORY INSTALLED AND WIRED SMOKE DETECTORS IN SUPPLY AND RETURN AIRSTREAMS.

FAN SCHEDULE

UNIT DESIG.	SERVICE	AREA SERVED	MANUFACTURER & MODEL #	FAN TYPE & ARRANGEMENT	CFM	S.P.	RPM	FLA	DRIVE TYPE	ELECTRICAL DATA: HP/WATTS	VOLT/PH	CONTROL SCHEME	ACCESSORIES NOTES
EF–1	EXHAUST	SEE PLANS	COOK GC–148	CEILING MOUNT	75	.25"	BY MFG	SEE MANF.	DIRECT	31 W	115/1ø	A	1,2,3,4,5
EF–2	EXHAUST	SEE PLANS	COOK GC–148	CEILING MOUNT	75	.25"	BY MFG	SEE MANF.	DIRECT	31 W	115/1ø	A	1,2,3,4,5
EF–3	EXHAUST	SEE PLANS	COOK GC–148	CEILING MOUNT	75	.25"	BY MFG	SEE MANF.	DIRECT	31 W	115/1ø	A	1,2,3,4,5

NOTES:
1. INTEGRAL DISCONNECT SWITCH
2. BACKDRAFT DAMPER
3. MANUFACTURER APPROVED WALL/ROOF CAP.
4. UL RATED
5. SPEED CONTROLLER BY MANUFACTURER

CONTROL:
A. INTERLOCK WITH LIGHTS

PACKAGED DX COOLING ROOFTOP MOUNTED UNIT SCHEDULE

UNIT NO.	AREA SERVED	LOCATION	SUPPLY – FAN DATA: TOTAL CFM	O/A CFM	EXT. S.P. (IN.WG)	FAN RPM	MOTOR H.P.	COOLING CAPACITY: TOTAL MBH	SENSIBLE MBH	ELECTRICAL DATA: VOLT/PH	MCA	MOCP	WEIGHT (LBS.)	MANUFACTURER & MODEL	NOTES
RTU–4	SEE PLANS	SEE PLANS	1635	SEE OA TABLE	1.5	BY MFGR	1.5	59.4	41.7	208/3	31	45	691	TRANE TSK060A3	1–12

NOTES:
1. FIELD INSTALLED FRESH AIR OPTION MODULE
2. FIELD INSTALLED BAROMETRIC RELIEF DAMPER IN RETURN DUCT
3. FIELD INSTALLED 0–100% ECONOMIZER, DRY BULB CONTROL, HORIZONTAL
4. FIELD INSTALLED HORIZONTAL CONVERSION PANEL
5. 5 YEAR COMPRESSOR AND HEAT EXCHANGER WARRANTIES
6. MERV 11 FILTERS
7. UL LISTED FOR SINGLE POINT POWER CONNECTION
8. SCROLL COMPRESSORS
9. COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARD 210/290 AT 95° AMBIENT OUTDOOR AIR TEMP., 80° DRY BULB, 67° WET BULB ENTRANCE AIR TEMP., AND NOMINAL AIR QUANTITY LISTED.
10. PROVIDE MANUFACTURERS AUTOMATIC CHANGEOVER HEAT/COOL THERMOSTAT.
11. FACTORY INSTALLED AND WIRED SMOKE DETECTORS IN SUPPLY AND RETURN AIRSTREAMS.
12. MULTI ZONE VAV APPLIATION PROVIDE VFD AND SA DUCT STATIC PRESSURE SENSOR.

DIFFUSER SCHEDULE

SYMBOL	CFM	NECK SIZE	MODULE SIZE	FRAME TYPE	PATTERN	DAMPER	MATERIAL	SERVICE	FINISH	MANUFACTURER & MODEL No.	NOTES
A	AS NOTED	AS NOTED	AS NOTED	MATCH CEILING	4–WAY	YES	ALUM.	SUPPLY	NOTE 2	TITUS TDC	1–4
B	AS NOTED	AS NOTED	AS NOTED	MATCH CEILING	PERFORATED	NO	ALUM.	RETURN	NOTE 2	TITUS PAR	1–4
C	AS NOTED	AS NOTED	AS NOTED	MATCH CEILING	DBL. DEFLECTION	NO	ALUM.	SUPPLY	NOTE 2	TITUS 300FL	1–4
D	AS NOTED	AS NOTED	AS NOTED	MATCH CEILING	LOUVERED	NO	ALUM.	RETURN	NOTE 2	TITUS 350RL	1–4
E	AS NOTED	AS NOTED	AS NOTED	MATCH CEILING	EGG CRATE	NO	ALUM.	EXHAUST	NOTE 2	TITUS 50F	1–4

NOTES:
1. DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWS:
   DIFFUSER OR NECK SIZE. 12x12 / 300 (A) DIFFUSER TYPE AS NOTED ABOVE
   AIR QUANTITY
2. COORDINATE COLOR WITH ARCHITECT/OWNER PRIOR TO ORDERING.
3. ALL EXPOSED DUCT AND DIFFUSERS TO BE PAINTED AS DIRECTED BY ARCHITECT.
4. PROVIDE PROPER MOUNT FOR CEILING TYPE LAY–IN OR GYPSUM CEILING.

FAN POWERED PARALLEL TERMINAL UNIT WITH ELECTRIC HEAT

TAG	LOCATION	MANUFACTURER	MODEL#	INLET	COOLING CFM: SET	MAX	CMIN	HEATING CFM: TOTAL	FAN	HEATER ELECTRICAL: KW	VOLTS	PHASE	STEPS	FAN ELECTRICAL: SP	HP	VOLTS/PH	SINGLE POINT ELEC.: MCA	MOCP
FP–1	SEE PLANS	TRANE	VPEF0502SQ	5"ø	240	240	40	195	155	1.5	208	1	1	0.30	1/8	115/1	11.01	15
FP–2	SEE PLANS	TRANE	VPEF0502SQ	5"ø	250	250	40	200	160	1.5	208	1	1	0.30	1/8	115/1	11.01	15
FP–3	SEE PLANS	TRANE	VPEF0502SQ	5"ø	240	240	40	195	155	1.5	208	1	1	0.30	1/8	115/1	11.01	15
FP–4	SEE PLANS	TRANE	VPEF0502SQ	5"ø	250	250	40	200	160	1.5	208	1	1	0.30	1/8	115/1	11.01	15
FP–5	SEE PLANS	TRANE	VPEF0502SQ	5"ø	320	320	40	255	215	1.5	208	1	1	0.30	1/8	115/1	11.01	15
FP–6	SEE PLANS	TRANE	VPEF0502SQ	5"ø	335	335	40	270	230	2.0	208	1	1	0.30	1/8	115/1	14.02	15

NOTES:
1. THERMOSTAT TO PROVIDE SETPOINT AND OVERRIDE CONTROL ADJUSTABLE AT THE DDC. COORDINATE WITH DDC SUPPLIER.
2. DDC CONTROL TO BE FURNISHED FACTORY INSTALLED AND SHIPPED ON FP BOX.
3. UNIT ELECTRICAL: MCA & MOCP ARE FOR SINGLE POINT POWER CONNECTIONS.
4. 1" THROWAWAY FILTERS AT PLENUM INLET WHEN INSTALLED AND REPLACED PRIOR TO OCCUPANCY
5. OCCUPIED CFM
   MAX: TOTAL DIFFUSER AIRFLOW. AIR BALANCE TO THIS VALUE DURING COOLING.
   CMIN: MINIMUM AIRFLOW DURING OCCUPIED HOURS
   TOTAL HEATING CFM: MAXIMUM AIRFLOW AT DIFFUSER DURING HEATING.
6. UNOCCUPIED HEATING CFM
   FAN CFM EQUALS HEATING CFM MINUS CMIN.
7. DISCONNECT SWITCHES BY TERMINAL MANUFACTURER.
8. ALL INTERNAL INSULATION SHALL BE FOIL FACED.
9. TOTAL SOUND OUTPUT TO BE LESS THAN NC 35 AT SCHEDULED CONDITIONS.
10. PROVIDE SCR FAN SPEED CONTROL.
11. DDC CONTROLLER TO PROVIDE: ALL SHALL BE SHOWN ON THE BAS GRAPHICS.
    11.1. TERMINAL LEAVING AIR TEMPERATURE
    11.2. PRIMARY AIR FLOW CFM
    11.3. PRIMARY ENTERING AIR TEMPERATURE
    11.4. DAMPER POSITION (%OPEN)
    11.5. HEAT OFF/ON INDICATOR
    11.6. ALARMS FOR – HEAT FAILED, PRIMARY AIR TEMPERATURE OUT OF RANGE, LAT OUT OF RANGE,
    11.7. OCC/UNOCC MODE INDICATOR
12. PERFORMANCE BASED ON ASHRAE 130–2008 AND AHRI 880–2011.
13. NC LEVELS DETERMINED BY AHRI 885–2008 APPENDIX E.

ALTERNATE BID FAN SCHEDULE

UNIT DESIG.	SERVICE	AREA SERVED	MANUFACTURER & MODEL #	FAN TYPE & ARRANGEMENT	CFM	S.P.	RPM	FLA	DRIVE TYPE	ELECTRICAL DATA: HP/WATTS	VOLT/PH	CONTROL SCHEME	ACCESSORIES NOTES
EF–4	EXHAUST	SEE PLANS	COOK GC–148	CEILING MOUNT	75	.25"	BY MFG	SEE MANF.	DIRECT	31 W	115/1ø	A	1,2,3,4,5
EF–5	EXHAUST	SEE PLANS	COOK GC–186	CEILING MOUNT	150	.25"	BY MFG	SEE MANF.	DIRECT	65 W	115/1ø	A	1,2,3,4,5
EF–6	EXHAUST	SEE PLANS	COOK GC–186	CEILING MOUNT	150	.25"	BY MFG	SEE MANF.	DIRECT	65 W	115/1ø	A	1,2,3,4,5

NOTES:
1. INTEGRAL DISCONNECT SWITCH
2. BACKDRAFT DAMPER
3. MANUFACTURER APPROVED WALL/ROOF CAP.
4. UL RATED
5. SPEED CONTROLLER BY MANUFACTURER

CONTROL:
A. INTERLOCK WITH LIGHTS

MECHANICAL GENERAL NOTES

1. FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH RECOMMENDED PRACTICE AND ALL APPLICABLE CODES.
2. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS & REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
3. ALL MECHANICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
4. MECHANICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR, EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER. REFRIGERANT COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS.
5. DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL REQUIRED FITTINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE TYPE, SIZE AND LOCATION OF ALL AIR DEVICES, DUCTWORK, PIPING AND EQUIPMENT WITH THE CEILING PLAN, LIGHTS, STRUCTURAL ELEMENTS AND OTHER TRADES. CONTRACTOR TO FURNISH AND INSTALL ALL BENDS, OFFSETS, ELBOWS, ETC. AS REQUIRED. VERIFY ALL CLEARANCES PRIOR TO FABRICATING DUCTWORK OR ORDERING EQUIPMENT.
6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIALS AND INSTALLING THE WORK IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.
7. DUCTWORK
   A. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS WITH A MINIMUM PRESSURE CLASSIFICATION OF 2", SEAL CLASS C, WITH A MAXIMUM LEAKAGE RATE OF 5%.
   B. ALL SQUARE ELBOWS SHALL HAVE TURNING VANES. ALL RECTANGULAR ELBOWS SHALL BE LONG RADIUS UNLESS SPACE LIMITATIONS REQUIRE SQUARE ELBOWS.
   C. ALL DUCT DIMENSIONS SHOWN ARE INTERIOR CLEAR DIMENSIONS.
   D. PROVIDE A MANUAL BALANCING DAMPER AT ALL SUPPLY AND RETURN BRANCH TAKEOFFS.
   E. FLEXIBLE DUCT, IF SHOWN ON DRAWINGS, SHALL BE INSULATED ROUND DUCT WITH AN OUTER GLASS REINFORCED SILVER MYLAR JACKET ENCLOSING MIN. 1–1/2" THICK GLASS FIBER INSULATION AROUND A CONTINUOUS INNER LINER, AND SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6 FEET. "R" VALUE TO MEET/EXCEED ENERGY CODE.
   F. ALL SHEET METAL DUCTWORK SHALL BE LINED WITH DUCT LINER. ALL REMAINING SUPPLY, OUTSIDE AIR AND EXTERIOR DUCTS SHALL BE EITHER INTERNALLY LINED OR EXTERNALLY INSULATED WITH DUCT WRAP. PROVIDE AN ADDITIONAL 1–1/2" OF DUCT WRAP AND AN ALUMINUM JACKET FOR ALL EXTERIOR DUCT.
   G. ALL DUCT SYSTEMS ARE TO BE PER U.L. STANDARDS. DUCTS ARE TO BE INSTALLED WITH NO RESTRICTIONS AND AN ABSOLUTE MINIMUM AMOUNT OF AIR LEAKAGE.
   H. ALL DUCT INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS AND PARTITIONS.
8. PIPING
   A. CONDENSATE DRAINS SHALL BE SCHEDULE 40 PVC OR TYPE L COPPER WITH SOLDERED JOINTS.
   B. REFRIGERANT PIPING SHALL BE TYPE ACR WROUGHT COPPER WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS.
   C. THE MECHANICAL CONTRACTOR SHALL PROVIDE REFRIGERANT AND LOW VOLTAGE CONTROL LINES FROM THE CONDENSER TO THE AIR HANDLING UNIT. COORDINATE ROUTING AND INSTALLATION WITH THE GENERAL CONTRACTOR. SIZE REFRIGERANT LINES PER MANUFACTURER'S REQUIREMENTS.
9. INSULATION
   A. DUCT LINER – FIBROUS GLASS DUCT LINER, MINIMUM 1–1/2" THICK WITH R–VALUE TO MEET LOCAL ENERGY CODE, WITH COATED SURFACE EXPOSED TO AIR STREAM. APPLY WITH MECHANICAL FASTENERS AND 100% COVERAGE OF ADHESIVE.
   B. DUCT WRAP – MINERAL FIBER BLANKET, MINIMUM 2" THICK WITH R–VALUE TO MEET LOCAL ENERGY CODE, WITH REINFORCED FOIL AND PAPER VAPOR RETARDANT JACKET. APPLY WITH MECHANICAL FASTENERS AND ADHESIVE.
   C. INTERIOR CONDENSATE DRAINS – INSULATE WITH 1/2" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION.
   D. REFRIGERANT SUCTION LINES – INSULATE WITH 1" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION. PROVIDE ALUMINUM JACKET FOR EXTERIOR INSULATION.
   E. AIR DISTRIBUTION – INSULATE TOP–SIDE AS REQUIRED PER CODE
10. ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS & ROOF SHALL BE FLASHED & COUNTER–FLASHED IN A WATERPROOF MANNER.
11. EXTEND ALL CONDENSATE DRAINS TO JANITORS SINK, FLOOR DRAIN, SPLASH BLOCK OR AS REQUIRED PER CODE. DRAINS FROM AHU'S SHALL BE TRAPPED. SLOPE 1/8" PER FOOT.
12. LOCATE ALL THERMOSTATS AND SWITCHES 4'–0" ABOVE FINISHED FLOOR. FURNISH A THERMOSTAT FOR EVERY DEVICE REQUIRING ONE WHETHER SHOWN ON DRAWINGS OR NOT.
13. ALL EQUIPMENT SHALL BE INSTALLED PER CODE & MANUFACTURER'S REQUIREMENTS FOR SERVICE AND ACCESS CLEARANCES.
14. ALL EQUIPMENT SHALL BE U.L LISTED.
15. MECHANICAL CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES INDICATED ON PLANS AND PROVIDE A COMPETE BALANCING REPORT IN ACCORDANCE WITH NEBB OR AABC STANDARDS.
16. ALL CONTROL WIRING SHALL BE BY MECHANICAL CONTRACTOR.
17. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS OR DECONTAMINATION EQUIPMENT UPON ACTIVATION THE SMOKE DETECTOR SHALL SHUT DOWN THE AIR HANDLING UNIT. * IF THERE IS A FIRE ALARM SYSTEM: DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR. ACTIVATION OF A DUCT SMOKE DETECTORS SHALL INITIATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION.
    * IF THERE IS NOT A FIRE ALARM SYSTEM: DETECTORS SHALL BE FURNISHED AND WIRED AND INSTALLED BY THE MECHANICAL CONTRACTOR ACTIVATION OF A DUCT SMOKE DETECTORS SHALL INITIATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION.
18. PROVIDE A CLEAN SET OF FILTERS FOR ALL AIR HANDLING EQUIPMENT AT SUBSTANTIAL COMPLETION.
19. MAINTAIN A MINIMUM 10'–0" BETWEEN OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGE AND PLUMBING VENTS, ETC. FIELD COORDINATE.
20. ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF CURB SHALL BE LEVEL. SEE STRUCTURAL PLANS FOR SLOPE INFORMATION.
21. REFRIGERANT PIPING SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
22. ALL EQUIPMENT SHALL BE LABELED ACCORDING TO NUMBERING / IDENTIFICATION SYSTEM PER PLANS.
23. ALL EQUIPMENT SUPPORT IS REQUIRED TO MEET 1621 NCSBC.
24. MECHANICAL CONTRACTOR SHALL PROVIDE U.L. LISTED FIRE DAMPERS WHERE REQUIRED FOR FIRE PROTECTION AS REQUIRED BY LOCAL CODES.
25. ON MAKING PIPE CONNECTIONS TO EQUIPMENT, CARE SHOULD BE TAKEN TO ARRANGE PIPES SO AS NOT TO INTERFERE WITH OPENING OF ACCESS DOORS.
26. ELECTRICAL CONTRACTOR TO PROVIDE ALL HIGH VOLTAGE ELECTRICAL WIRING, CONDUIT, DISCONNECT SWITCHES, FUSES, ETC. TO CONDENSING UNITS AND AIR HANDLERS. ALL FINAL ELECTRICAL CONNECTIONS ARE BY ELECTRICAL CONTRACTOR.
27. PRIOR TO BEGINNING ANY WORK. MECHANICAL CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER'S REPRESENTATIVE, ARCHITECT OR ENGINEER IF THE MECHANICAL DESIGN CONFLICTS WITH EXISTING OR UNFORESEEN FIELD CONDITIONS.

MECHANICAL SHEET INDEX

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MECHANICAL SCHEDULES AND NOTES

SHEET ISSUE & REVISION

#	DATE	DESCRIPTION

DESIGN TEAM

Designed By	DESIGNER
Drawn By	TEAM
Checked By	APPROVER
Approved By	APPROVER

Project No. 23614

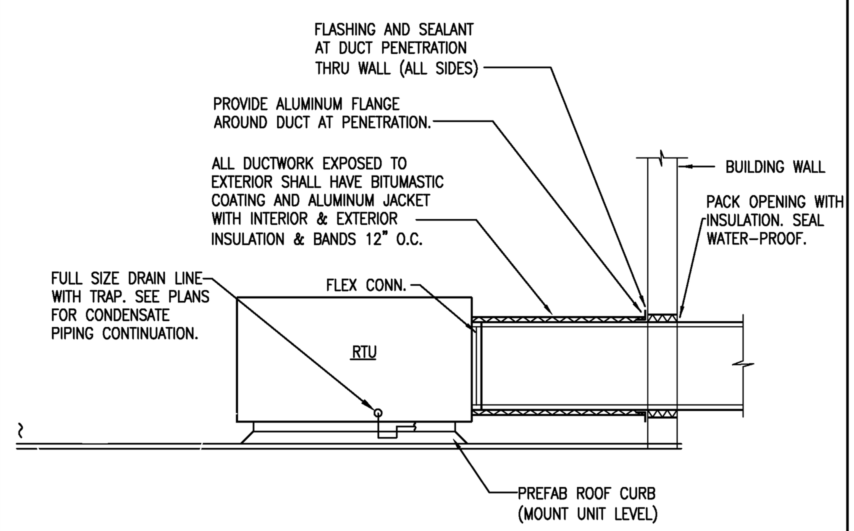
Date 08/26/25

Project Status
DESIGN DEVELOPMENT

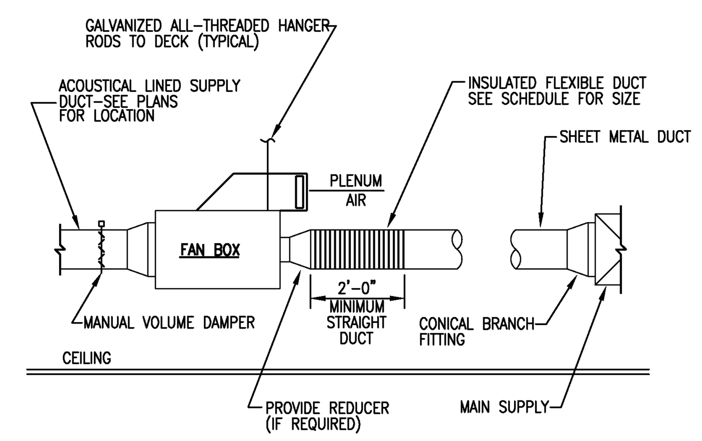
Sheet Name
MECHANICAL SCHEDULES AND NOTES

Sheet No.
M101

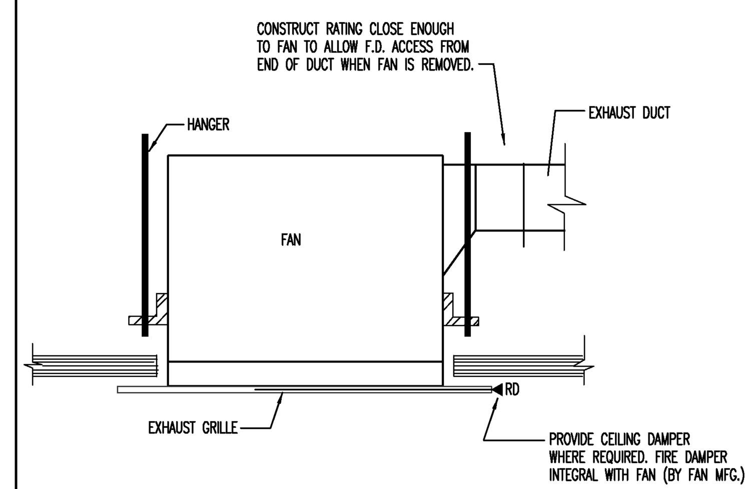
NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF DUCT CONNECTIONS AND ROOFTOP UNIT.
2. TOP OF ROOF CURB SHALL BE INSTALLED LEVEL.



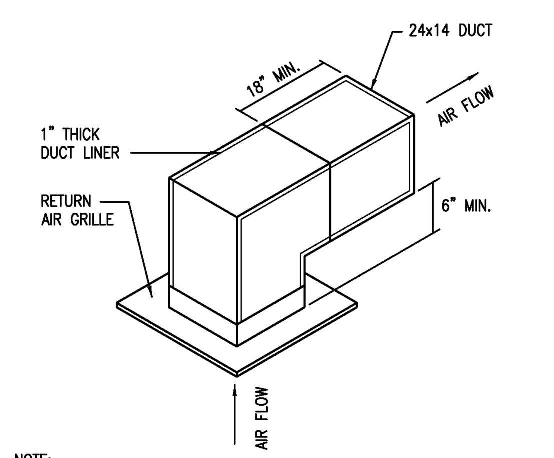
1	PACKAGE UNIT w/ GAS ON ROOF THRU WALL
M201	NO SCALE



2	PARALLEL FAN POWERED VAV BOX w/ ELEC. HEAT
M201	NO SCALE

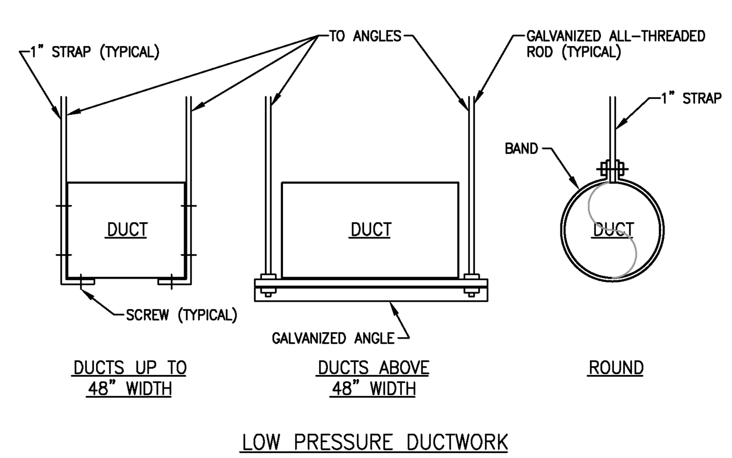


3	CEILING EXHAUST FAN DETAIL
M201	NO SCALE

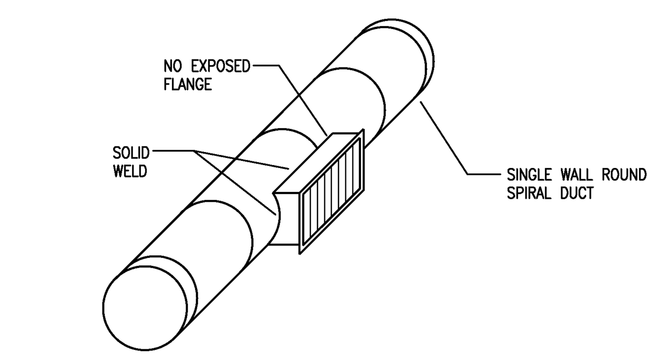


NOTE:
THIS DETAIL IS TYPICAL FOR ALL RETURN AIR DIFFUSERS IN BREAKOUT ROOMS WITH SOUND BATTS IN WALLS, ON CEILING, AND WHERE WALLS EXTEND UP TO STRUCTURE. EXTEND SOUND TRAP LEG THRU WALLS AS REQ'D. TO INSURE THAT ALL ROOMS HAVE RETURN AIR CAPABILITIES. COORDINATE WITH ARCHITECTURAL DRAWINGS.

4	RETURN AIR SOUND TRAP
M201	NO SCALE

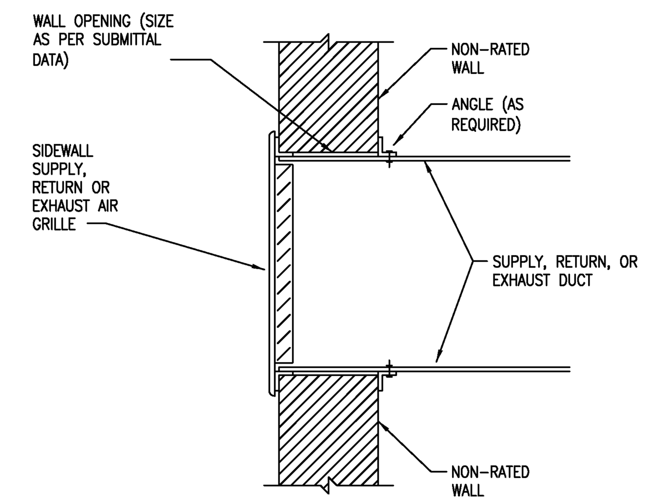


5	DUCTWORK HANGER DETAILS
M201	NO SCALE



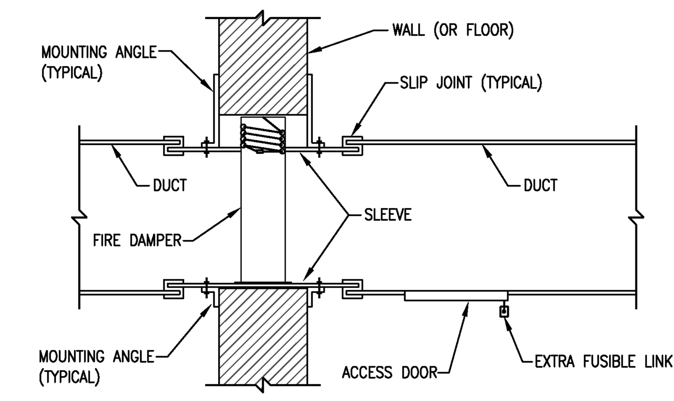
NOTE
DETAIL ROTATED FOR CLARITY

6	SIDEWALL GRILLE TAKE-OFF @ ROUND DUCT
M201	NO SCALE

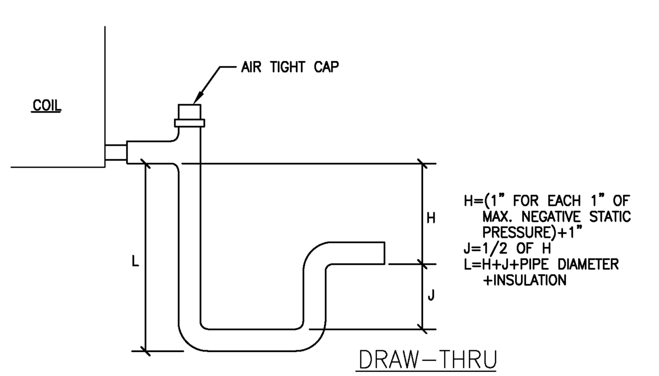


7	SIDEWALL AIR DISTRIBUTION
M201	NO SCALE

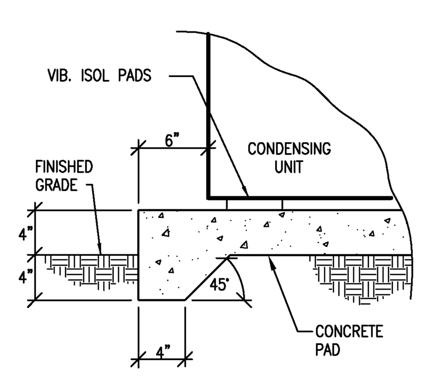
NOTE:
1. FIRE DAMPER SHALL BE RUSKIN TYPE DIBD2 STYLE B 1-1/2 HOUR U.L., INSTALLED IN ACCORDANCE WITH NFPA. ACCESS DOOR SHALL BE RUSKIN MODEL ADH22 LOCATED ON ACCESSIBLE CEILING SIDE OF WALL. IF ACCESSIBLE CEILING NOT AVAILABLE, MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS DOOR IN CEILING (OR WALL) TO MATCH FINISH COLOR. DAMPER SHALL BE EQUIPPED FOR HORIZONTAL OR VERTICAL MOUNTING AS REQUIRED. WHERE ROUND DUCTS REQUIRE A DAMPER, AN ENCLOSURE WITH ROUND DUCT CONNECTION WILL BE REQUIRED WITH TYPE B DAMPER INSIDE. ALL MODELS ARE RUSKIN (APPROVED EQUAL ACCEPTABLE). PROVIDE AN EXTRA FUSIBLE LINK WIRED TO ACCESS DOOR.



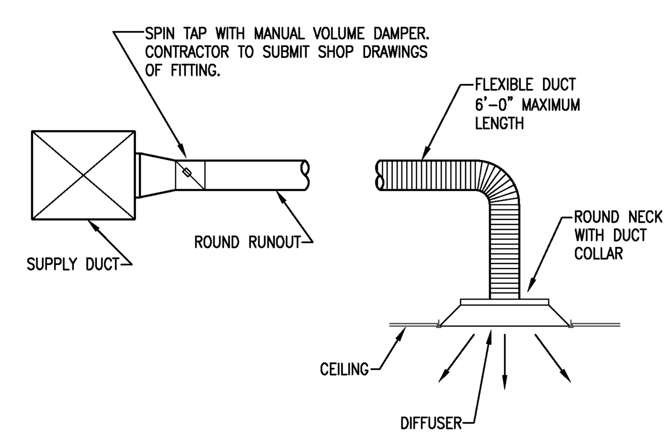
8	FIRE DAMPER DETAIL
M201	NO SCALE



9	CONDENSATE TRAP DETAIL
M201	NO SCALE



10	CONDENSING UNIT PAD ON GRADE
M201	NO SCALE



11	SPIN TAP TO ROUND NECK DIFFUSER
M201	NO SCALE

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MECHANICAL DETAILS

SHEET ISSUE & REVISION

#	DATE	DESCRIPTION

DESIGN TEAM

Designed By	DESIGNER
Drawn By	TEAM
Checked By	APPROVER
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Sheet Name
MECHANICAL DETAILS

Sheet No.
M201

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1 MECHANICAL DEMOLITION PLAN - KIDS
1/8" = 1'-0"

KEYED NOTES

X

1. ALL MECHANICAL EQUIPMENT AND CORRESPONDING DUCTWORK/DIFFUSERS IN EXISTING KID WORSHIP SPACE TO BE DEMOLISHED.

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MECHANICAL DEMOLITION PLAN AND NOTES

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Date	08/26/25

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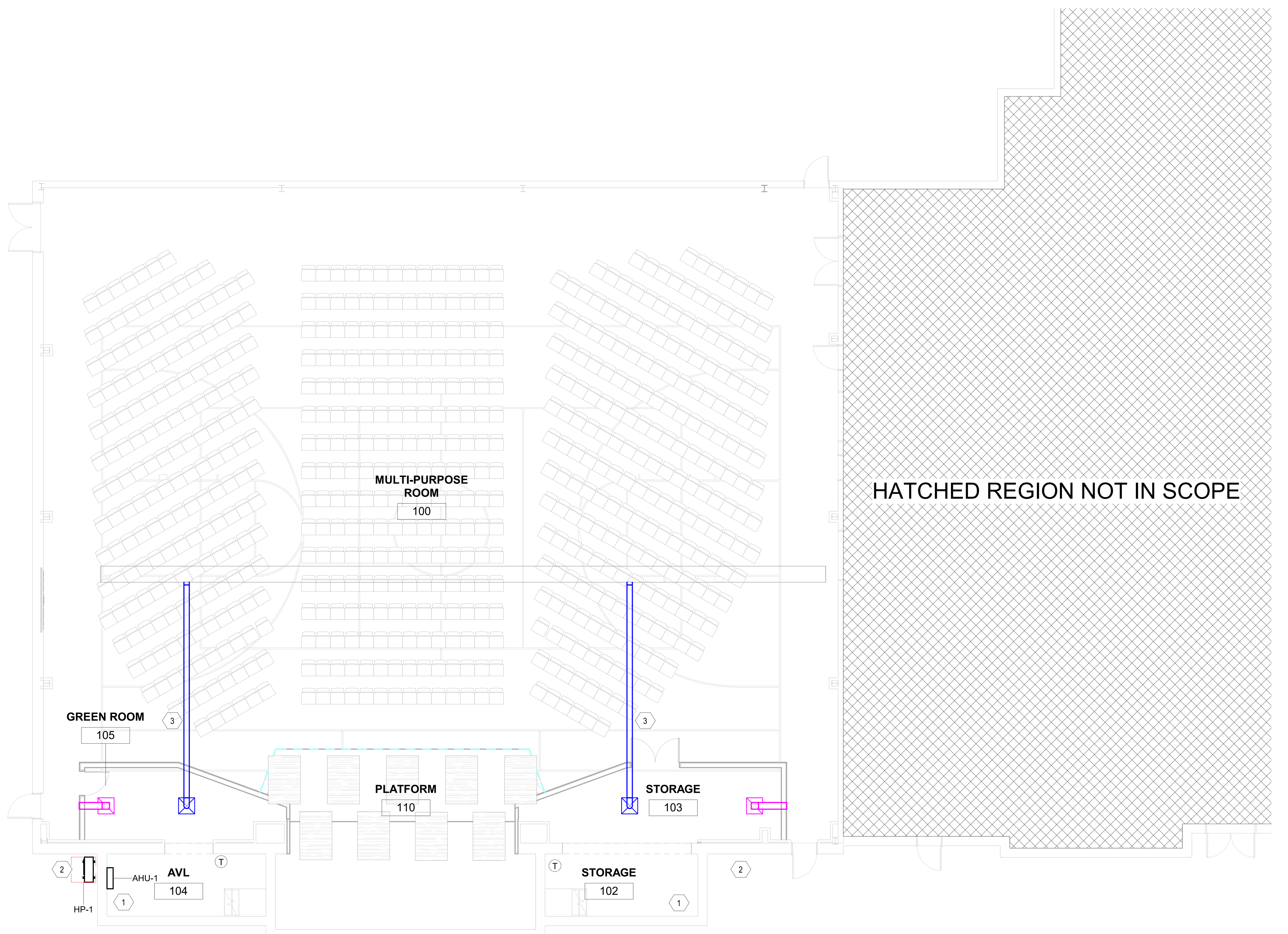
Sheet Name
MECHANICAL DEMOLITION PLAN AND NOTES

Sheet No.
M301



1 MECHANICAL NEW WORK PLAN - GYM
1/8" = 1'-0"

KEYED NOTES

1. NEW WALL MOUNTED DUCTLESS MINI-SPLIT.
2. NEW OUTDOOR HEAT PUMP, COORDINATE LOCATION OF OUTDOOR HEAT PUMP WITH ARCHITECT PRIOR TO PRICING AND INSTALLATION.
3. PROVIDE NEW RUNNOUT OF DUCTWORK BACK TO EXISTING SUPPLY DUCT MAIN SERVING MULTI-PURPOSE ROOM 100.

NOTES:

A. MECHANICAL CONTRACTOR SHALL CONDUCT A SURVEY OF EXISTING CONDITIONS AND REPORT TO ARCHITECT AND ENGINEER OF RECORD OF ANY AND ALL UNEXPECTED CONDITIONS PRIOR TO PRICING.
B. MECHANICAL CONTRACTOR SHALL VERIFY THERMOSTAT LOCATIONS WITH OWNER AND ARCHITECT PRIOR TO PRICING AND INSTALLATION.
C. MAINTAIN MANUFACTURER'S CLEARANCES, TYPICAL.
D. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED, PAINTABLE, SPIRAL DUCT, AND BE HUNG TIGHT TO STRUCTURE.
E. EXISTING MECHANICAL SYSTEM SERVING MULTI-PURPOSE ROOM 100 AND PLATFORM 110 EXISTING TO REMAIN.

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MECHANICAL NEW WORK PLAN AND NOTES

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MECHANICAL NEW WORK PLAN AND NOTES

Sheet No.
M401

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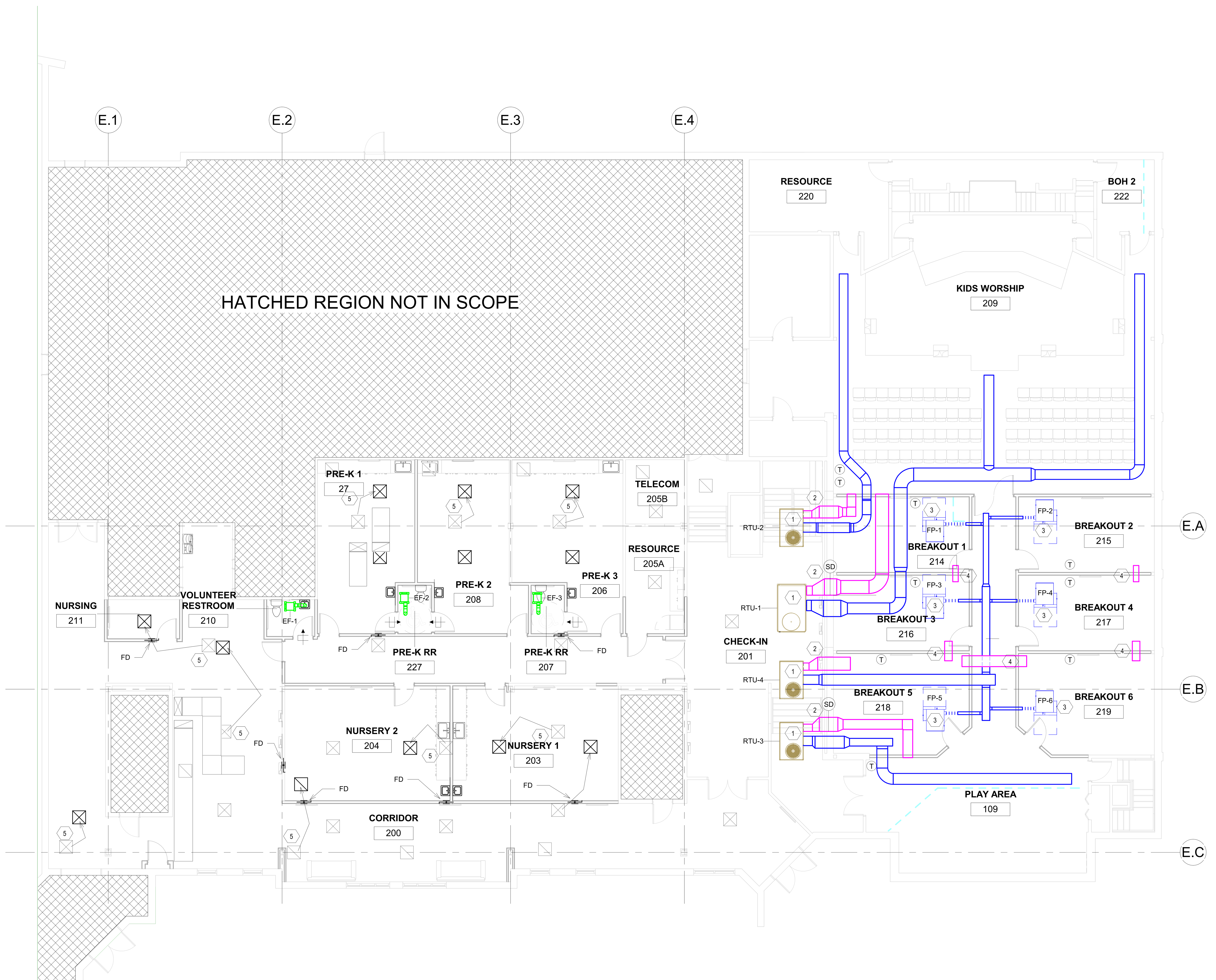

1 MECHANICAL NEW WORK PLAN - KIDS
1/8" = 1'-0"

KEYED NOTES

1. NEW RTU ABOVE CHECK-IN 201.
2. SUPPLY / RETURN DUCTWORK TO ENTER ABOVE NEW BREAKOUT ROOM ADDITIONS. COORDINATE ALLOWABLE DUCT SIZING BENEATH OVERHEAD ROOFING PRIOR TO PRICING AND INSTALLATION.
3. NEW PARALLEL FAN POWERED BOX.
4. ABOVE CEILING RETURN PLENUM TRANSFER.
5. EXISTING DIFFUSER/GRILLE TO BE RELOCATED AS INDICATED. BALANCE TO AIRFLOW INDICATED. EXTEND OR REPLACE EXISTING RUNNOUT DUCTWORK AS NECESSARY TO RELOCATE DIFFUSER/GRILLE.

NOTES:

A. MECHANICAL CONTRACTOR SHALL CONDUCT A SURVEY OF EXISTING CONDITIONS AND REPORT TO ARCHITECT AND ENGINEER OF RECORD OF ANY AND ALL UNEXPECTED CONDITIONS PRIOR TO PRICING.

B. MECHANICAL CONTRACTOR SHALL VERIFY THERMOSTAT LOCATIONS WITH OWNER AND ARCHITECT PRIOR TO PRICING AND INSTALLATION.

C. MAINTAIN MANUFACTURER'S CLEARANCES. TYPICAL.

D. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED, PAINTABLE, SPIRAL DUCT, AND BE HUNG TIGHT TO STRUCTURE.

E. ALL DUCTWORK SERVING KIDS WORSHIP SHALL BE MOUNTED ABOVE LIGHT FIXTURES. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT PRIOR TO PRICING AND INSTALLATION.

F. MECHANICAL CONTRACTOR SHALL PROVIDE NEW FIRE DAMPERS FOR BOTH EXISTING AND NEW DUCT PENETRATIONS AS NECESSARY TO MAINTAIN THE FIRE RATING OF ANY AND ALL FIRE RATED WALLS. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.

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Sheet No.
M402

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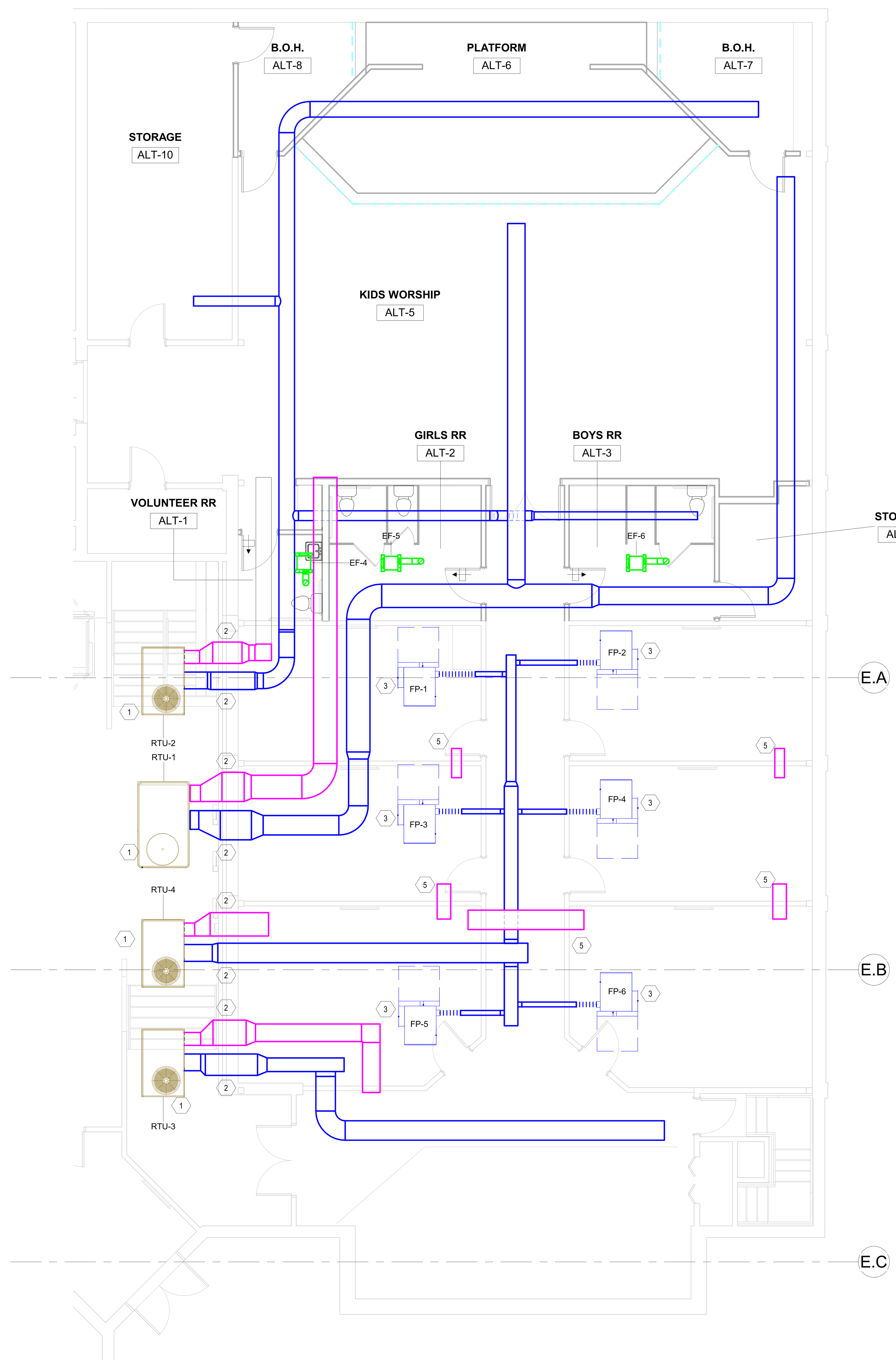

1 MECHANICAL NEW WORK PLAN - ALTERNATE BID
3/16" = 1'-0"

KEYED NOTES

1. NEW RTU ABOVE CHECK-IN 201.
2. SUPPLY / RETURN DUCTWORK TO ENTER ABOVE NEW BREAKOUT ROOM ADDITIONS. COORDINATE ALLOWABLE DUCT SIZING BENEATH OVERHEAD ROOFING PRIOR TO PRICING AND INSTALLATION.
3. NEW PARALLEL FAN POWERED BOX.
4. ABOVE CEILING RETURN PLENUM TRANSFER.

NOTES:

A. MECHANICAL CONTRACTOR SHALL CONDUCT A SURVEY OF EXISTING CONDITIONS AND REPORT TO ARCHITECT AND ENGINEER OF RECORD OF ANY AND ALL UNEXPECTED CONDITIONS PRIOR TO PRICING.

B. MECHANICAL CONTRACTOR SHALL VERIFY THERMOSTAT LOCATIONS WITH OWNER AND ARCHITECT PRIOR TO PRICING AND INSTALLATION.

C. MAINTAIN MANUFACTURER'S CLEARANCES. TYPICAL.

D. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED, PAINTABLE, SPIRAL DUCT, AND BE HUNG TIGHT TO STRUCTURE.

E. ALL DUCTWORK SERVING KIDS WORSHIP SHALL BE MOUNTED ABOVE LIGHT FIXTURES. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT PRIOR TO PRICING AND INSTALLATION.

F. MECHANICAL CONTRACTOR SHALL PROVIDE NEW FIRE DAMPERS FOR BOTH EXISTING AND NEW DUCT PENETRATIONS AS NECESSARY TO MAINTAIN THE FIRE RATING OF ANY AND ALL FIRE RATED WALLS. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.

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MECHANICAL ALTERNATE BID PLAN AND NOTES

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MECHANICAL ALTERNATE BID PLAN AND NOTES

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M403