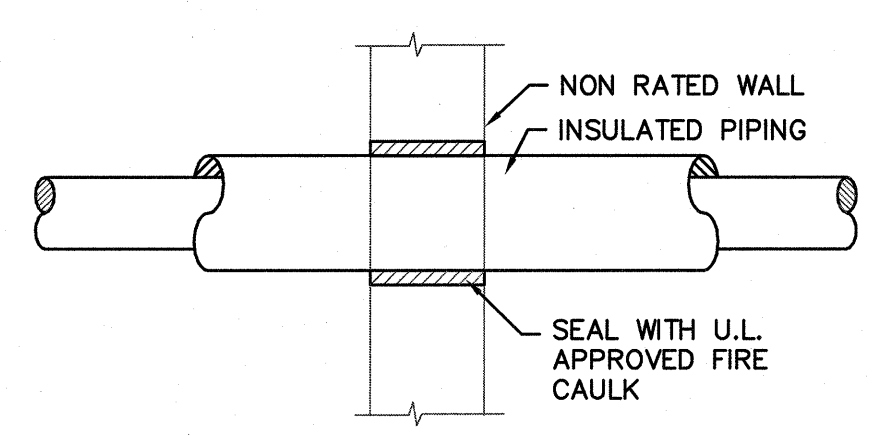
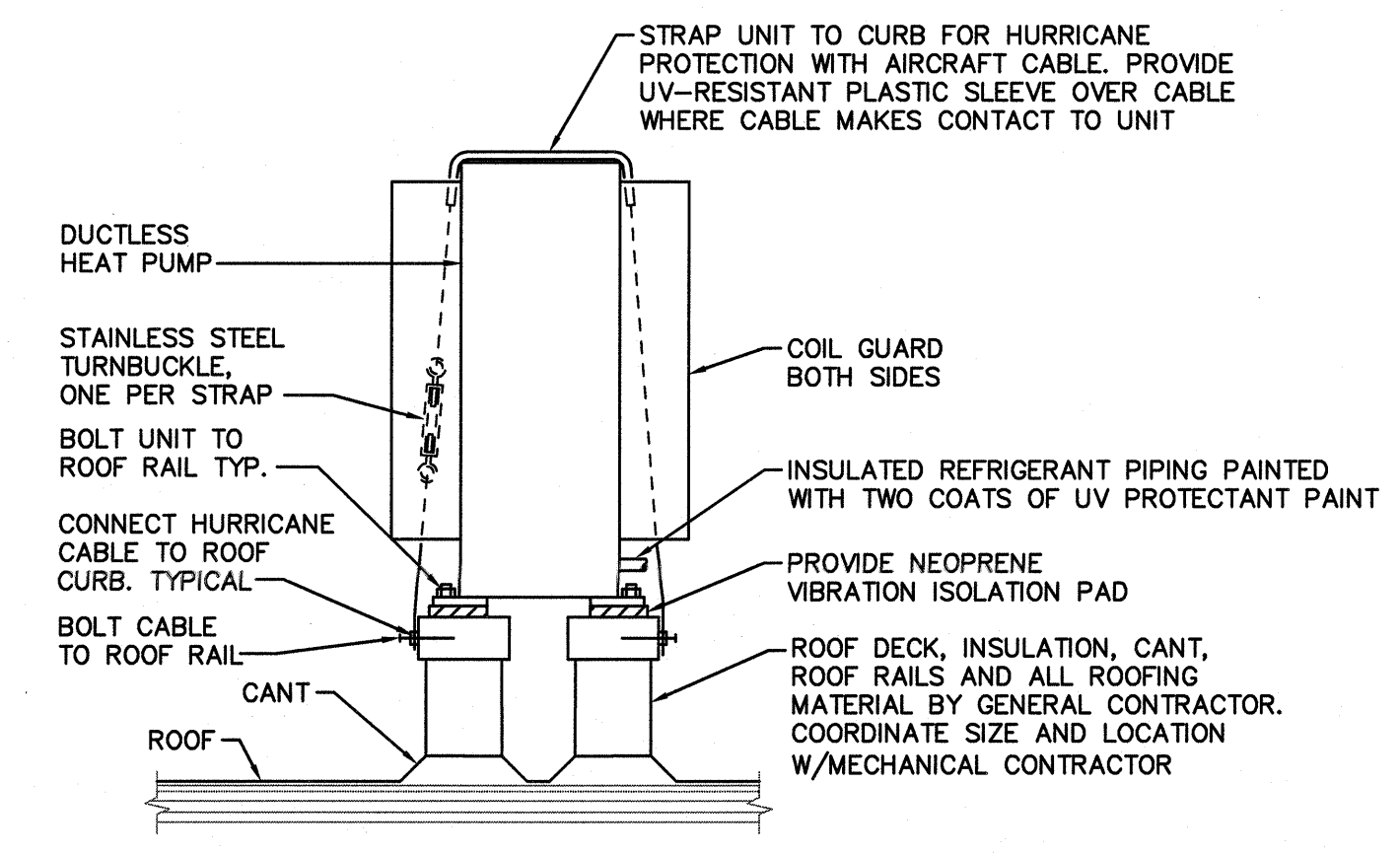
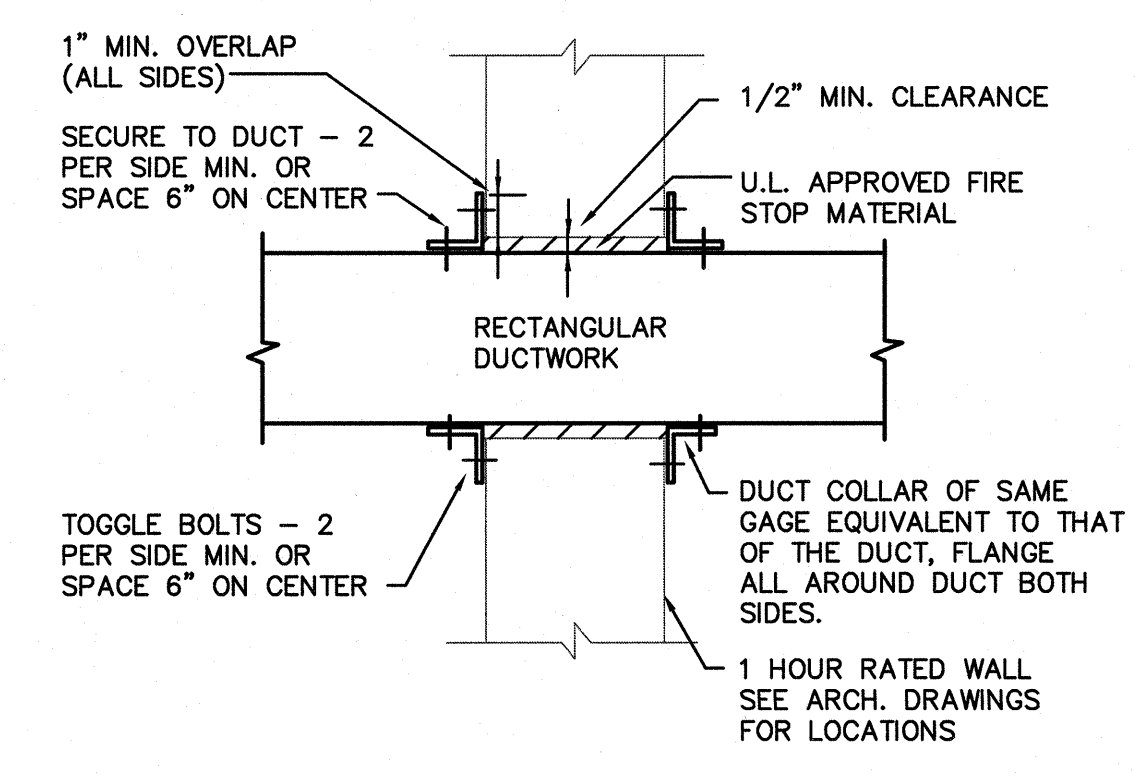


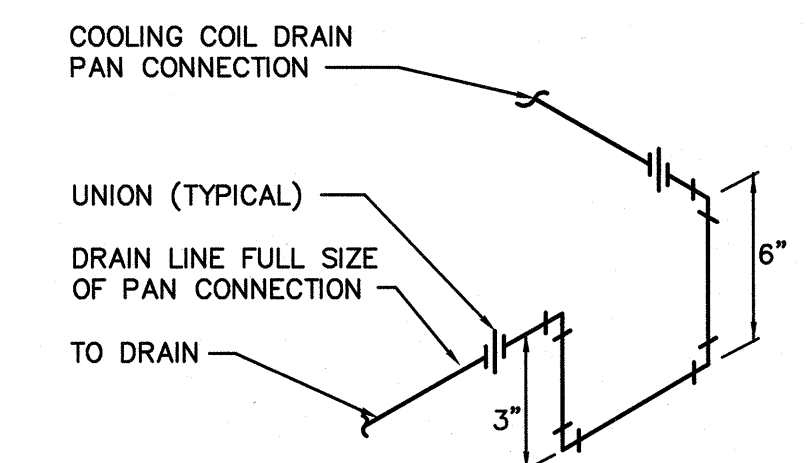
(A) DUCTLESS HEAT PUMP ON ROOF DETAIL
SCALE: NONE



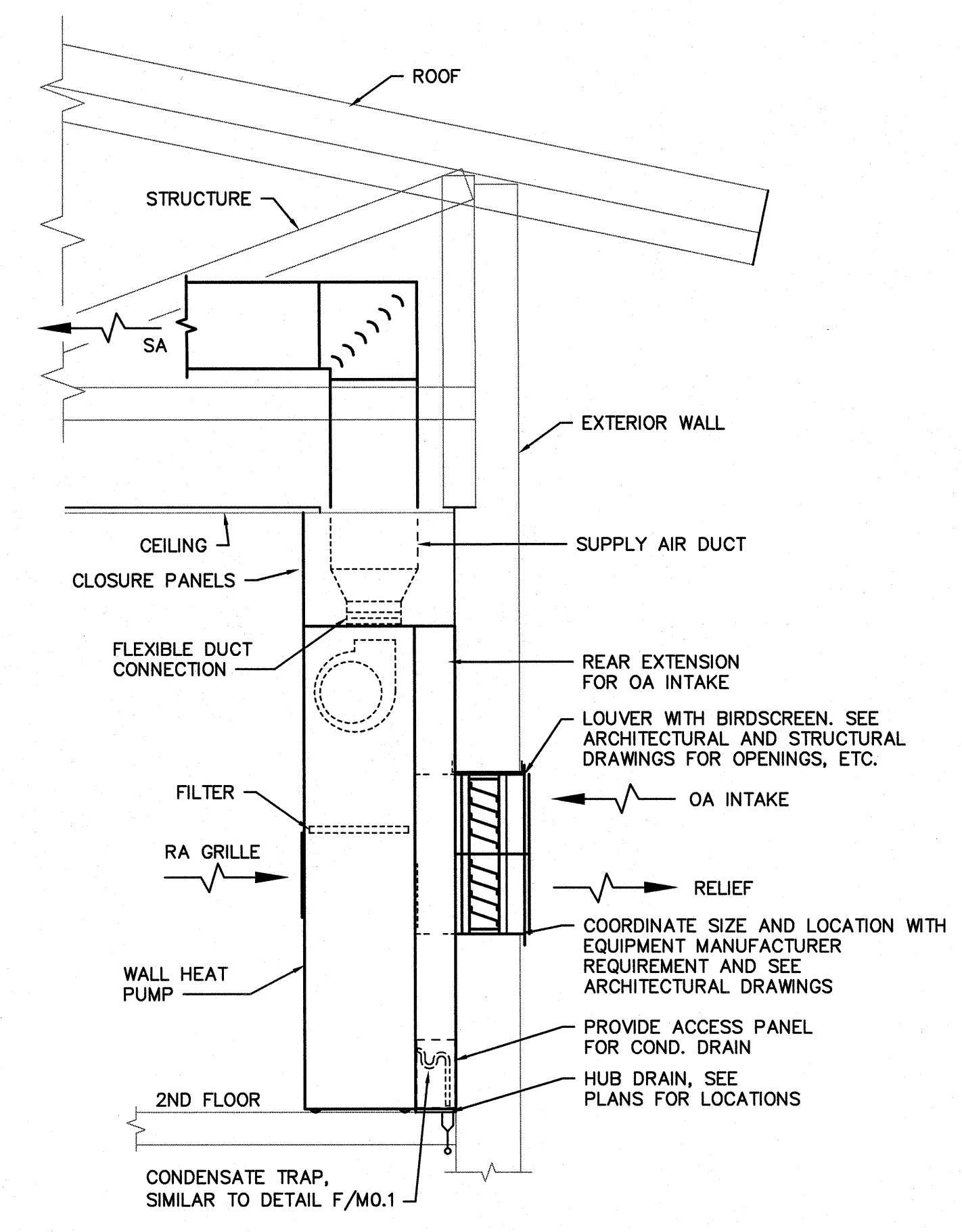
(D) NON-RATED WALLS WALL PENETRATION DETAIL
NO SCALE



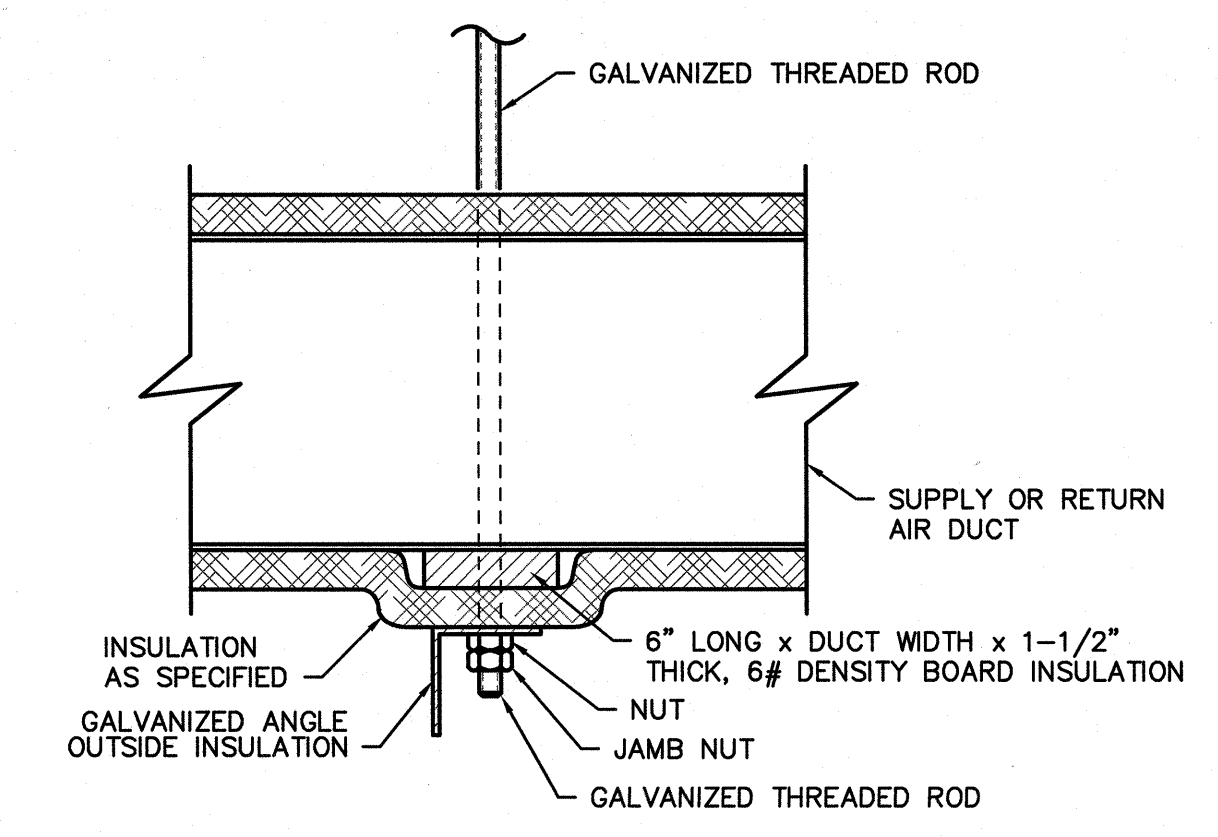
(C) 1 HOUR WALL PENETRATION
NO SCALE



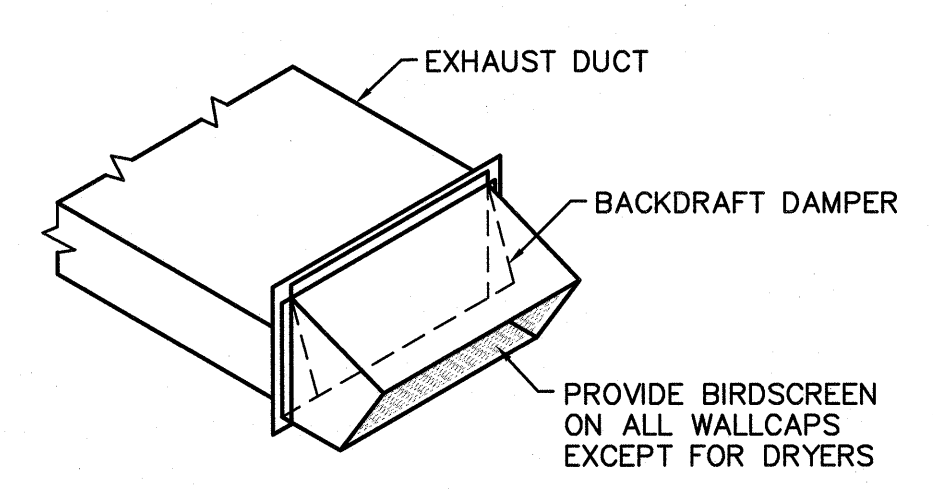
(F) CONDENSATE TRAP DETAIL
NO SCALE



(B) TYPICAL WALL HEAT PUMP DETAIL
SCALE: NONE



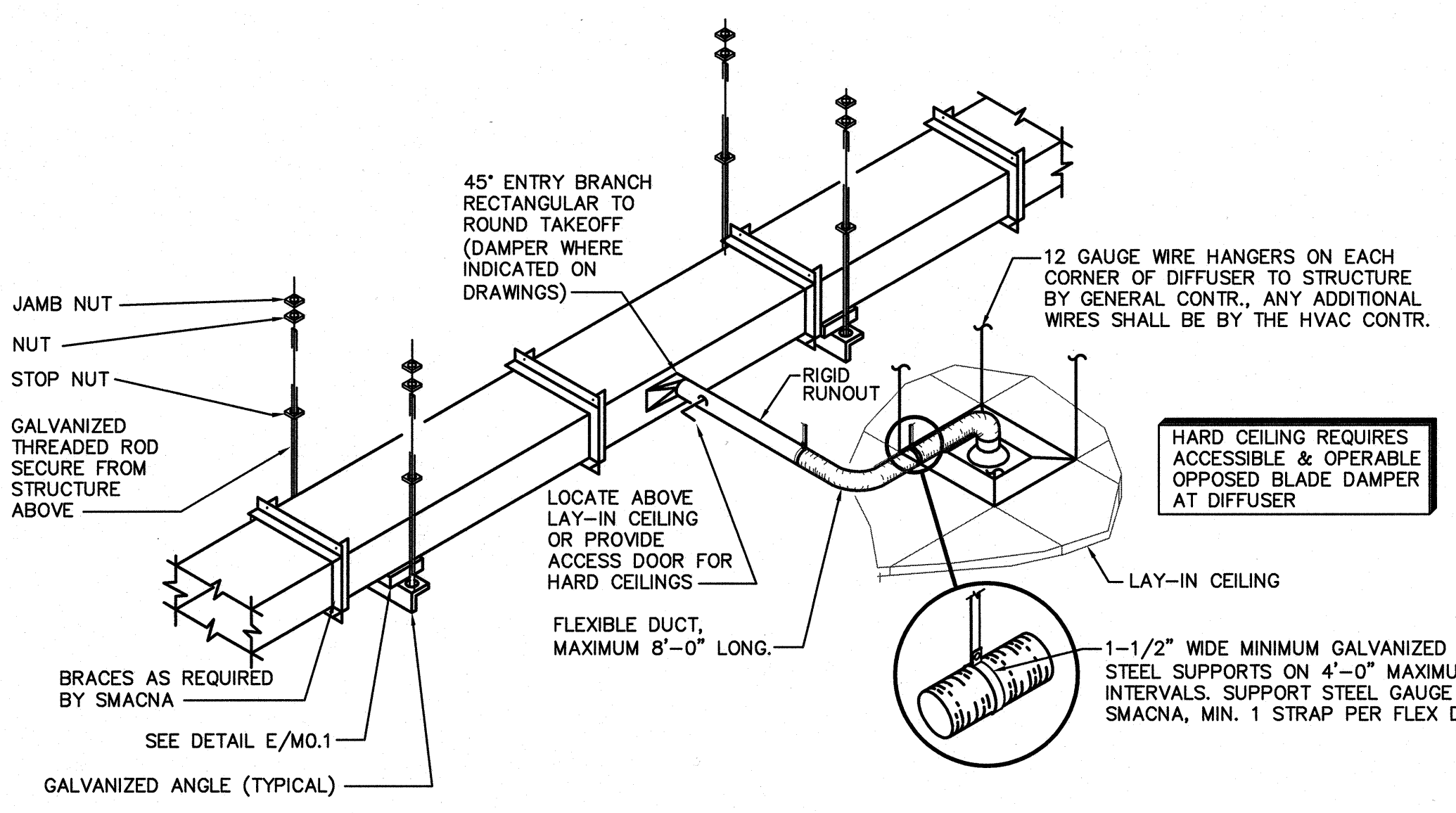
(E) TYPICAL DUCT HANGER DETAIL
SCALE: NONE



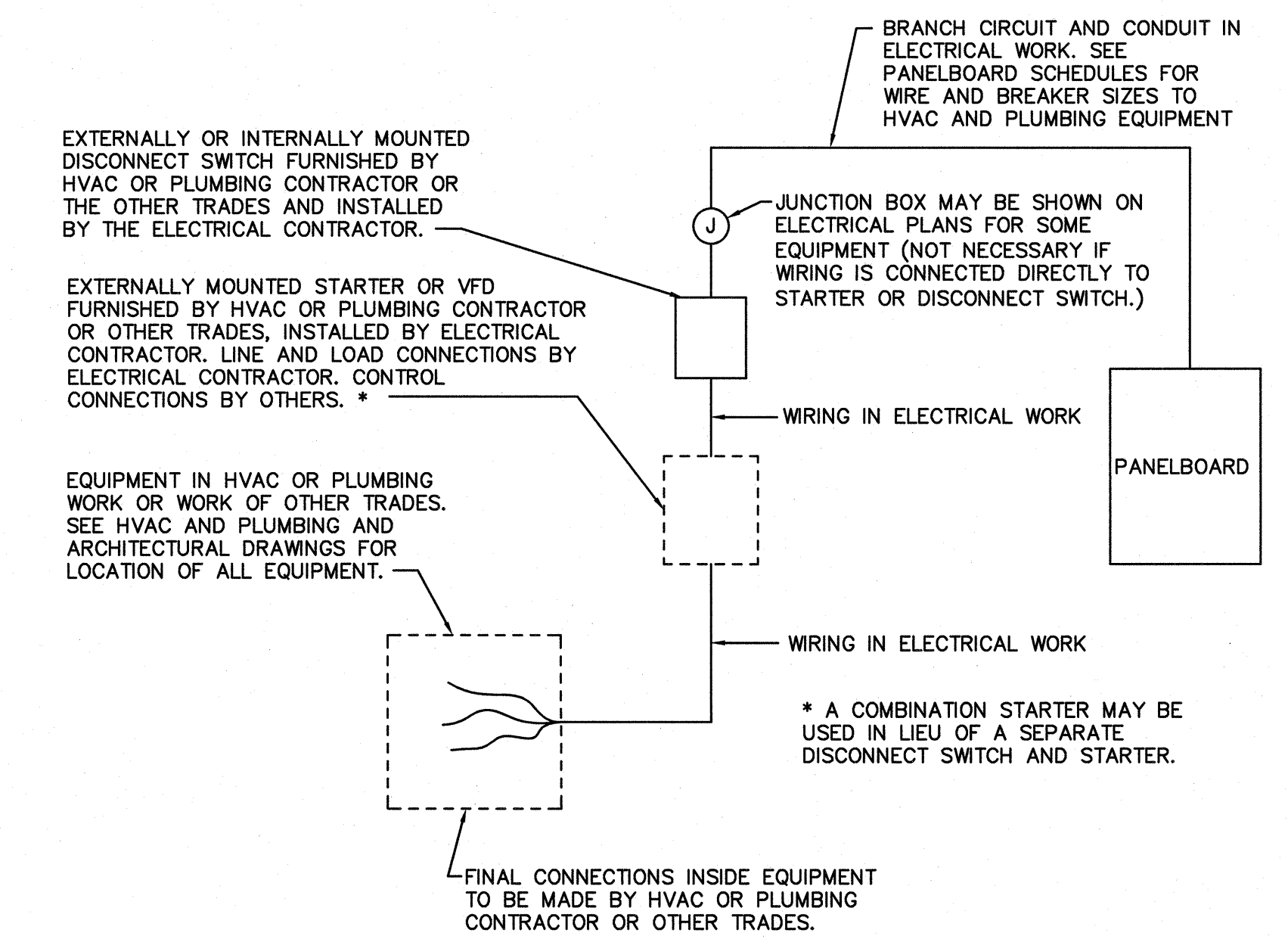
(G) WALL CAP DETAIL
NO SCALE

GENERAL NOTES:

- HVAC CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS, CLEARANCES, LOCATIONS AND ELEVATIONS PRIOR TO ORDERING, FABRICATION, AND INSTALLATION OF HIS WORK. DISCREPANCIES OR INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE. THE DRAWINGS DIAGRAMMATICALLY INDICATE THE GENERAL LOCATION OF DUCTS, PIPING AND EQUIPMENT AND DO NOT SHOW ALL SUPPORTS, OFFSETS, FITTINGS, BOLTS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE SYSTEM. WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS FOUND NECESSARY TO CHANGE THE LOCATION OF ANY WORK TO ACCOMMODATE THE CONDITIONS AT THE BUILDING, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, AND AS DIRECTED BY THE ENGINEER.
- ALL SUPPLY AND RETURN CONNECTIONS TO AHU SHALL BE MADE WITH A FLEXIBLE DUCT CONNECTION.
- PIPING, DUCTWORK, ETC., SHALL NOT BE SUPPORTED FROM BAR JOIST BRIDGING OR ROOFDECK. EQUIPMENT SUPPORTED BY BAR JOISTS SHALL HAVE SUPPORTS ATTACHED AS CLOSE AS POSSIBLE TO BAR JOIST PANEL POINTS. HVAC CONTRACTOR SHALL SUPPLY ANY AND ALL STRUCTURAL MEMBERS NECESSARY TO SUPPORT WORK FROM BAR JOISTS, BEAMS, ETC.
- ALL DUCT JOINTS SHALL BE SEALED AS SPECIFIED.
- IN AREAS WITH GYPBOARD CEILINGS, HVAC CONTRACTOR SHALL INSTALL EQUIPMENT, DUCTWORK AND PIPE HANGERS PRIOR TO GYPBOARD INSTALLATION.
- HVAC CONTRACTOR / CONTROLS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR PROVISIONS OF POWER TO DDC CONTROL SYSTEM CONTROL PANELS, CONTROLLERS, ETC., NOT SHOWN ON M OR E DRAWINGS. ELECTRICAL CONTRACTOR WILL PROVIDE POWER TO GENERAL POINTS, JUNCTION BOXES, ETC., AND POWER WIRING FROM THOSE POINTS TO EQUIPMENT SHALL BE BY THE HVAC CONTRACTOR/CONTROL CONTRACTOR.
- ALL PIPING PENETRATIONS THROUGH RATED AND NONRATED WALLS SHALL BE FIRE STOPPED USING PIPE PENETRATIONS DETAILS SHOWN ON SHEET M.O.1. ALL DUCT PENETRATIONS THRU RATED AND NONRATED WALLS SHALL BE FIRE STOPPED USING DETAILS SHOWN ON SHEET M.O.1.
- ALL THERMOSTATS AND SWITCHES FOR MECHANICAL SYSTEMS SHALL BE MOUNTED 44" AFF.
- RECOVER AND REUSE REFRIGERANT FROM SYSTEMS BEING DISTURBED AND REUSED. STORE IN APPROPRIATE CONTAINERS. REUSE ONLY IF NOT CONTAMINATED.
- CONTRACTOR TO VERIFY WITH LOCAL MITSUBISHI REPRESENTATIVE LINE LENGTHS, REFRIGERANT CHARGE AND NEW UNIT INFORMATION ADDED TO EXISTING SYSTEM TO PROVIDE A COMPLETE SYSTEM AS REQUIRED BY MANUFACTURER FOR ALL VRF SYSTEMS BEING RENOVATED OR NEW.
- EXISTING MECHANICAL EQUIPMENT, REFRIGERANT PIPING, CONDENSATE PIPING, AND ALL ACCESSORIES TO REMAIN AND BE REUSED SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR TO PROVIDE LAMINATED POSTER FOR EACH FIRST AND SECOND FLOOR MECHANICAL PLAN. POSTER SHALL TAG MECHANICAL EQUIPMENT NUMBER, LOCATION, MODEL NUMBER AND SERIAL NUMBER.



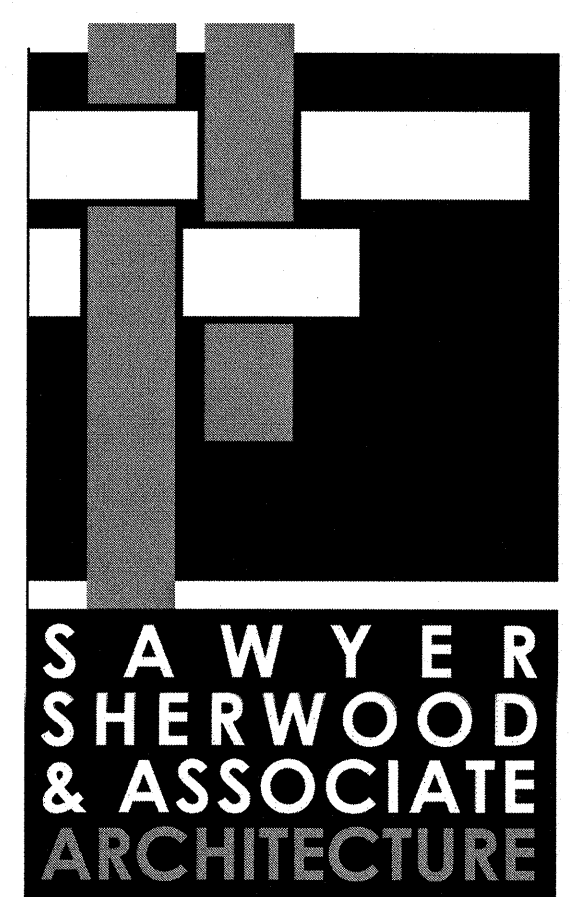
(G) TYPICAL SUPPLY DUCT DETAIL
SCALE: NONE



(H) ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT
NO SCALE

LEGEND	
	RECTANGULAR DUCTWORK
	SUPPLY AIR DUCTWORK TURNED DOWN
	SUPPLY AIR DUCTWORK TURNED UP
	RETURN AIR/EXHAUST AIR TURNED DOWN
	RETURN AIR/EXHAUST AIR TURNED UP
	BRANCH TAKEOFF WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT TEE WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT WITH RUNOUT (SPIN-IN TAKE OFF WITH DAMPER)
	CEILING RETURN AIR/ EXHAUST AIR REGISTER
	CEILING SUPPLY AIR DIFFUSER
	ACCESS DOOR
	REMOVE EXISTING DUCTWORK
	REMOVE EXISTING PIPING, LINE SYMBOL INDICATES SERVICE
	EXISTING DUCTWORK TO REMAIN
	EXISTING REFRIGERANT PIPING
	REFRIGERANT PIPING
	AIR CONDITIONING CONDENSATE PIPING
	REGISTER, GRILLE OR DIFFUSER SYMBOL
	HEATING AND COOLING THERMOSTAT WITH # INDICATING UNIT
	HUMIDITY SENSOR
	HEAVY DUTY DISCONNECT SWITCH
	KEYED NOTE SYMBOL
	ACCESS DOOR (10"x10" MIN.)
	SUPPLY AIR
	RETURN AIR
	OUTSIDE AIR
	EXHAUST AIR
	NORMALLY OPEN
	NORMALLY CLOSED
	MANUAL DAMPER
	MOTOR OPERATED DAMPER
	ABOVE FINISHED FLOOR
	FINISHED FLOOR
	ABOVE FINISHED GRADE
	CONCRETE
	CONTINUATION
	CONTRACTOR
	TERMINATION POINT OF DEMOLITION
	POINT OF NEW CONNECTION TO EXISTING
	1 HOUR WALL DESIGNATION

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE	
<input checked="" type="checkbox"/>	COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C402.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE), C403.4 HYDROIC AND MULTIPLE ZONE (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
<input type="checkbox"/>	C406.2 MORE EFFICIENT HVAC PERFORMANCE
<input type="checkbox"/>	C406.3 REDUCED LIGHTING POWER DENSITY
<input type="checkbox"/>	C406.4 ENHANCED LIGHTING CONTROLS
<input type="checkbox"/>	C406.5 ON-SITE RENEWABLE ENERGY
<input type="checkbox"/>	C406.6 DOAS PROVISION FOR CERTAIN HVAC
<input type="checkbox"/>	C406.7 HIGH ENERGY SERVICE WATER HEATING
<input type="checkbox"/>	COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C402.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE), C403.4 HYDROIC AND MULTIPLE ZONE (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
<input type="checkbox"/>	C406.2 MORE EFFICIENT HVAC PERFORMANCE
<input type="checkbox"/>	C406.3 REDUCED LIGHTING POWER DENSITY
<input type="checkbox"/>	C406.4 ENHANCED LIGHTING CONTROLS
<input type="checkbox"/>	C406.5 ON-SITE RENEWABLE ENERGY
<input type="checkbox"/>	C406.6 DOAS PROVISION FOR CERTAIN HVAC
<input type="checkbox"/>	C406.7 HIGH ENERGY SERVICE WATER HEATING
<input type="checkbox"/>	COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C406.5, C406.6 AND C407 TOTAL BUILDING PERFORMANCE. THE BUILDING ENERGY COST SHALL BE EQUAL TO OR LESS THAN 85 PERCENT OF THE STANDARD REFERENCE DESIGN BUILDING.
<input type="checkbox"/>	COMPLIANCE PER ANSI/ASHRAE/IESNA 90.1-2013.
<input type="checkbox"/>	COMPLIANCE PER NORTH CAROLINA SPECIFIC COMCHECK OR ASHRAE 90.1-2013 COMCHECK.
CLIMATE ZONE 3A	
EXTERIOR DESIGN CONDITIONS	
winter dry bulb: 23°F	
summer dry bulb: 83°F	
relative humidity: 50%	
INTERIOR DESIGN CONDITIONS	
winter dry bulb: 70°F	
summer dry bulb: 75°F	
relative humidity: 50%	
BUILDING HEATING LOAD: BLOCK LOAD = 4527 MBH EXISTING BUILDING	
BLOCK LOAD = 3738 MBH ADDITION	
BUILDING COOLING LOAD: BLOCK LOAD = 38.5 TONS EXISTING BUILDING	
BLOCK LOAD = 37.2 TONS ADDITION	
MECHANICAL SPACING CONDITIONING SYSTEM	
Unitary:	
description of unit:	
heating efficiency:	
cooling efficiency:	
heat output of unit:	
cooling output of unit:	
SEE SCHEDULES ON SHEET M2.0	
Boiler: N/A	
total boiler output: If oversized, state reason.	
Chiller: N/A	
total chiller capacity: If oversized, state reason.	
LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON SHEET M2.0	
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)	
motor horsepower:	
number of phases:	
minimum efficiency:	
motor type:	
# of poles:	
SEE SCHEDULES ON SHEET M2.0	
DESIGNER STATEMENT	
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Conservation Code.	
SIGNED:	
NAME: Kenneth Lynch, P.E.	
TITLE: Professional Engineer	



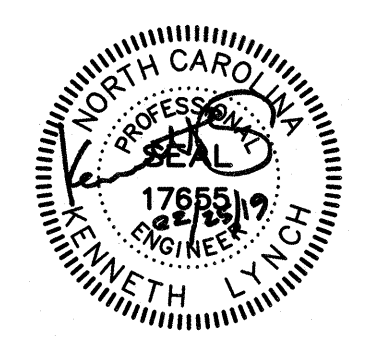
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Wrightsville Beach Elementary School Addition & Renovation

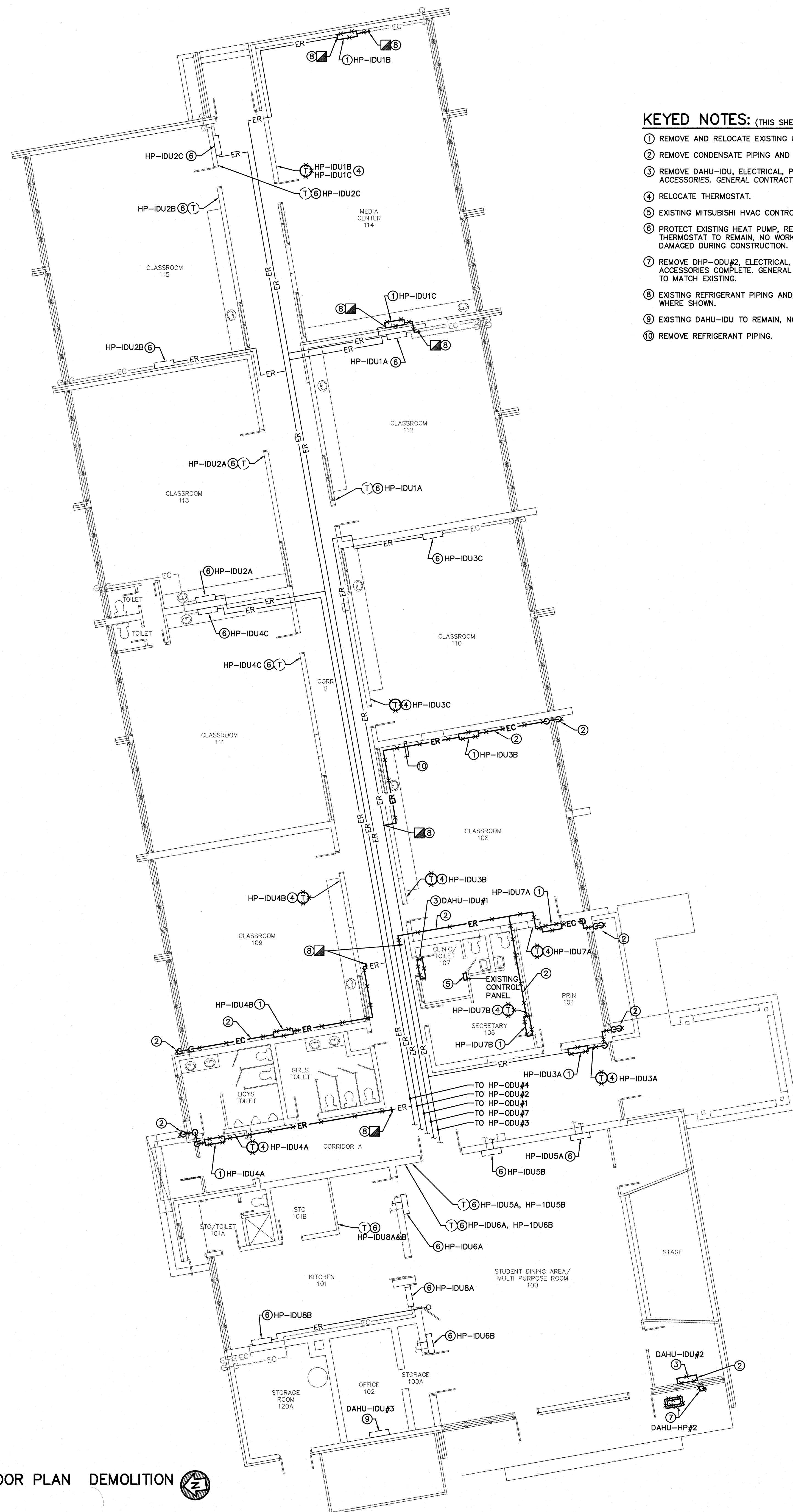
220 Coral Drive
Wrightsville Beach, NC

Construction Drawings
January 24, 2019

Revisions:

MECHANICAL LEGEND, NOTES, ENERGY SCHEDULE AND DETAILS

M.O.1
1 of 7



- KEYED NOTES: (THIS SHEET ONLY)**
- ① REMOVE AND RELOCATE EXISTING UNIT. SEE M1.0 FOR NEW LOCATION.
 - ② REMOVE CONDENSATE PIPING AND GENERAL CONTRACTOR TO PATCH WALL.
 - ③ REMOVE DAHU-IDU, ELECTRICAL, PIPING, CONDENSATE PUMP AND ALL ACCESSORIES. GENERAL CONTRACTOR TO PATCH WALLS TO MATCH EXISTING.
 - ④ RELOCATE THERMOSTAT.
 - ⑤ EXISTING MITSUBISHI HVAC CONTROL PANEL TO REMAIN.
 - ⑥ PROTECT EXISTING HEAT PUMP, REFRIGERANT PIPING, CONDENSATE AND THERMOSTAT TO REMAIN. NO WORK. REPAIR OR REPLACE ANY EQUIPMENT DAMAGED DURING CONSTRUCTION.
 - ⑦ REMOVE DHP-ODU#2, ELECTRICAL, PIPING, CONCRETE PAD AND ALL ACCESSORIES COMPLETE. GENERAL CONTRACTOR TO PATCH EXTERIOR WALL TO MATCH EXISTING.
 - ⑧ EXISTING REFRIGERANT PIPING AND CONDENSATE PIPING TO BE REMOVED WHERE SHOWN.
 - ⑨ EXISTING DAHU-IDU TO REMAIN. NO WORK. PROTECT DURING CONSTRUCTION.
 - ⑩ REMOVE REFRIGERANT PIPING.

1 MECHANICAL FIRST FLOOR PLAN DEMOLITION
SCALE: 1/8" = 1'-0"

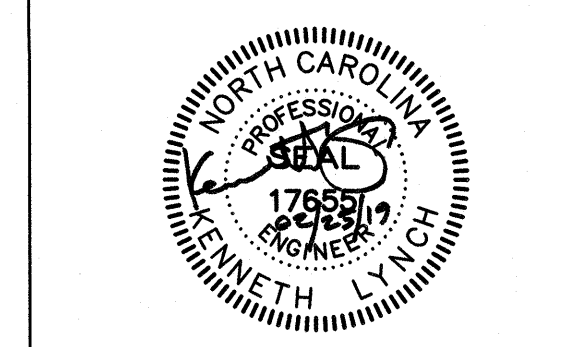
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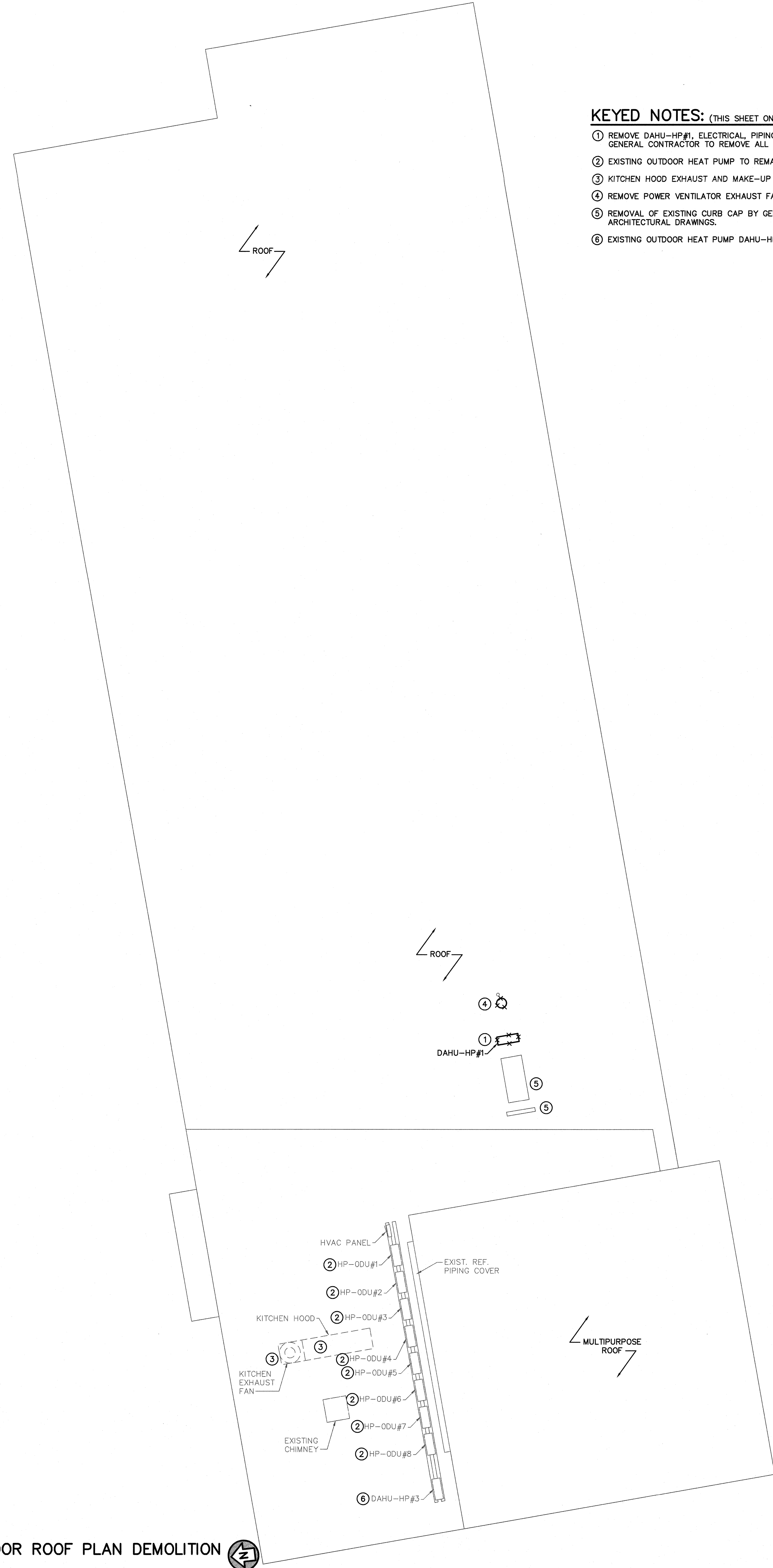
Wrightsville Beach Elementary School Addition & Renovation

220 Coral Drive
Wrightsville Beach, NC

Construction Drawings
January 24, 2019

Revisions:

MECHANICAL
FIRST FLOOR
PLAN
DEMOLITION



- KEYED NOTES: (THIS SHEET ONLY)**
- ① REMOVE DAHU-HP#1, ELECTRICAL, PIPING AND ALL ACCESSORIES ON ROOF. GENERAL CONTRACTOR TO REMOVE ALL ROOF SUPPORTS.
 - ② EXISTING OUTDOOR HEAT PUMP TO REMAIN.
 - ③ KITCHEN HOOD EXHAUST AND MAKE-UP TO REMAIN, NO WORK.
 - ④ REMOVE POWER VENTILATOR EXHAUST FAN ON ROOF.
 - ⑤ REMOVAL OF EXISTING CURB CAP BY GENERAL CONTRACTOR, SEE ARCHITECTURAL DRAWINGS.
 - ⑥ EXISTING OUTDOOR HEAT PUMP DAHU-HP#3 TO REMAIN.



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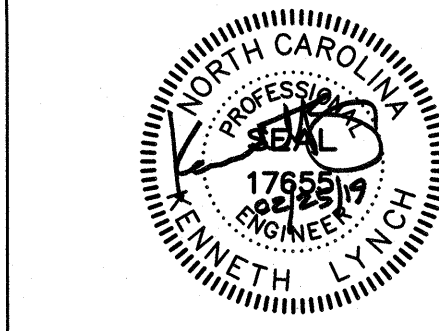
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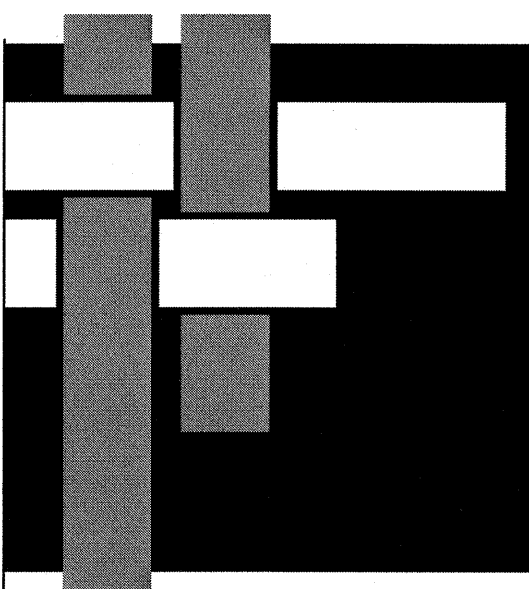
**Wrightsville
Beach
Elementary
School Addition
& Renovation**

220 Coral Drive
Wrightsville Beach, NC

Construction Drawings
January 24, 2019

Revisions:

MECHANICAL
FIRST FLOOR
ROOF PLAN
DEMOLITION

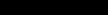


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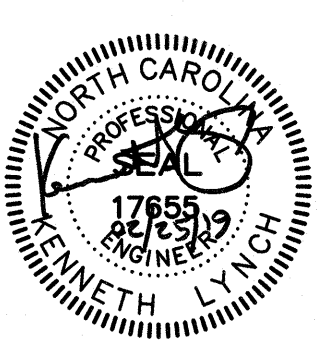
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220 Coral Drive
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Construction Drawings
February 20, 2019

Revisions:

MECHANICAL
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RENOVATION

M1.0

4 of 7



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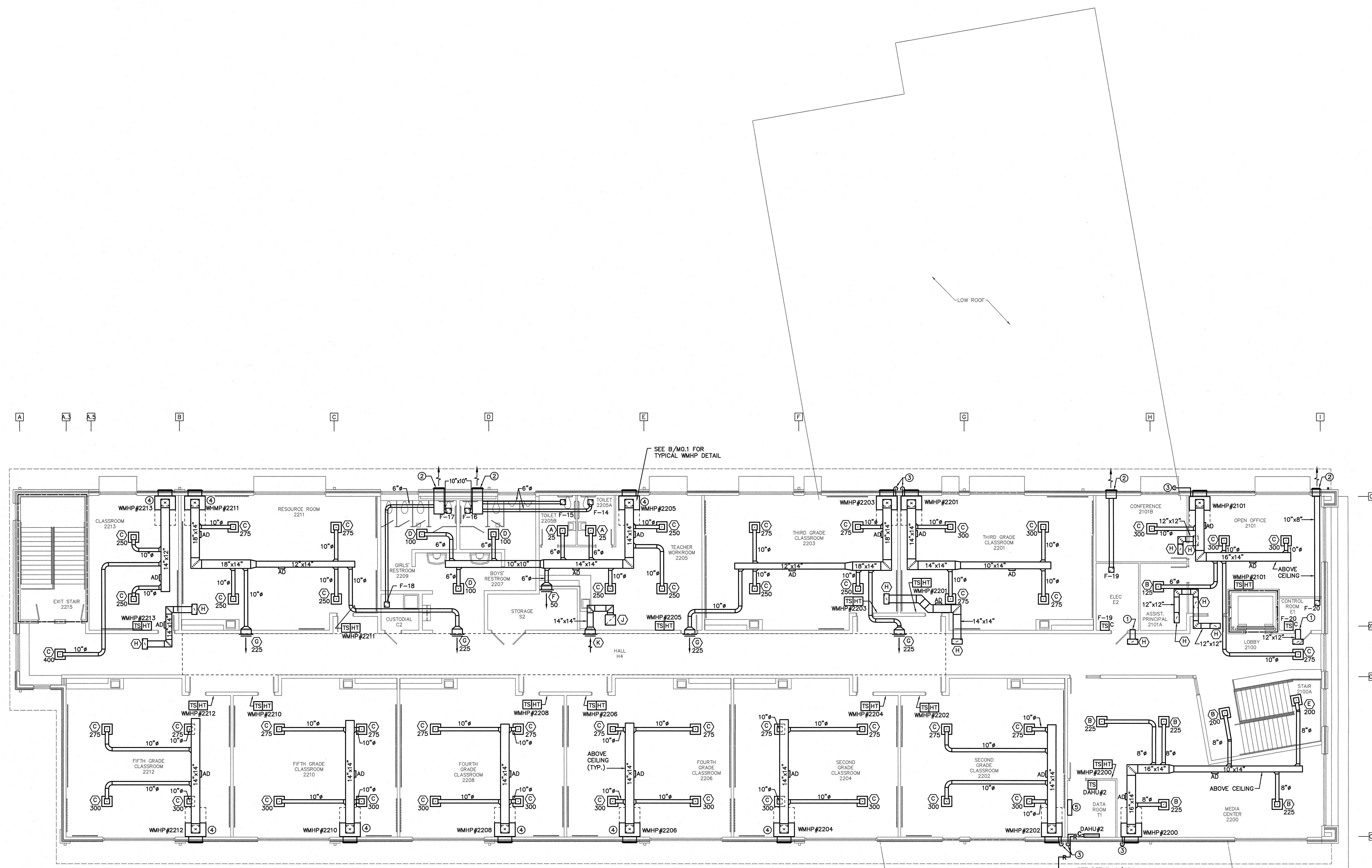
Revisions:

MECHANICAL
SECOND FLOOR
PLAN
RENOVATION

M1.1

5 of 7

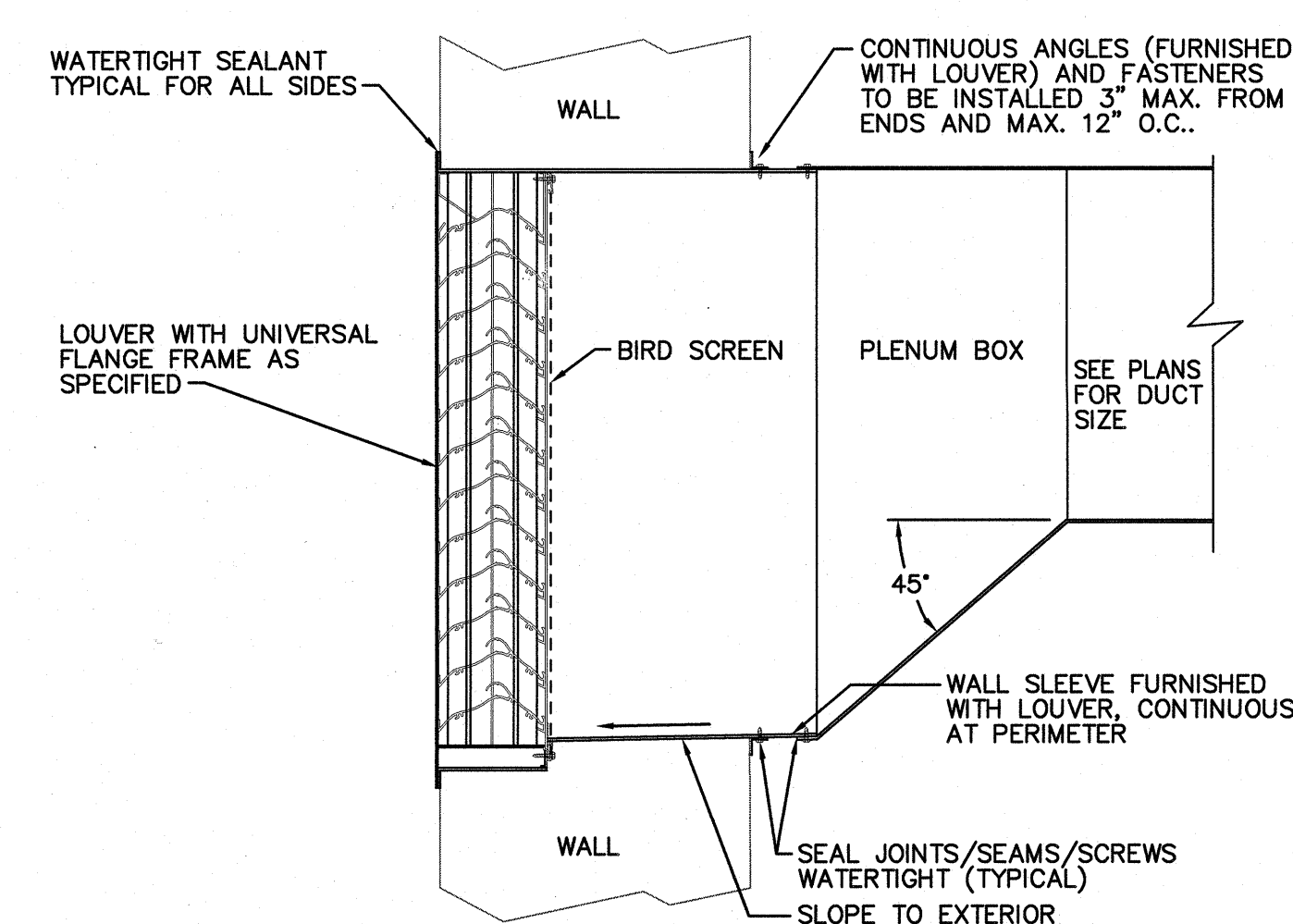
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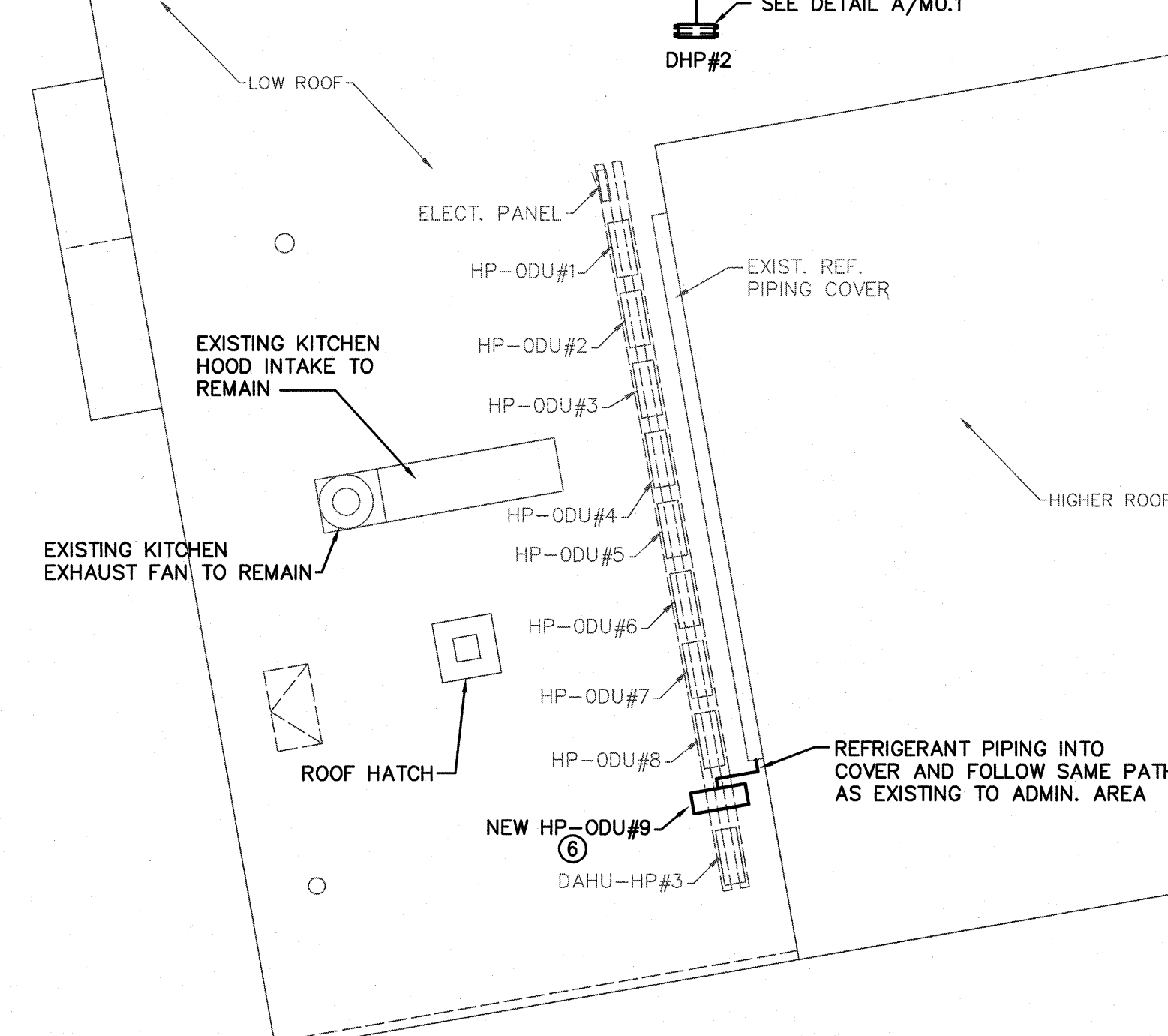
1 MECHANICAL SECOND FLOOR PLAN RENOVATION
M1.1 SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

- ① COVER OPEN END OF DUCTWORK WITH 1/2"x1/2" WIRE MESH.
- ② 16"X12" SIDEWALL EXHAUST LOUVER WITH BIRDSCREEN.
PROVIDE INSULATED PLENUM BOX ON BACKSIDE AS DEEP AS NECESSARY FOR DUCT CONNECTIONS, FULL SIZE OF LOUVER.
- ③ SPILL CONDENSATE THROUGH WALL TO SPILL ON ROOF.
- ④ SPILL CONDENSATE INTO HUB DRAIN INSIDE WHMP CABINET.
SEE PLUMBING DRAWINGS FOR HUB DRAIN.
- ⑤ HVAC CONTROL PANEL. COORDINATE LOCATION WITH ELECTRICAL WORK.
- ⑥ PROVIDE PRIMED AND PAINTED GALVANIZED STEEL CROSS SUPPORTS AS NECESSARY ATTACH SUPPORTS TO THE EXISTING RAIL AS NECESSARY.



 **TYPICAL WALL LOUVER DETAIL**
NO SCALE



DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE													
AIR HANDLING UNIT SECTION						OUTDOOR HEAT PUMP SECTION						REMARKS	
SYMBOL	AIR QUANTITY		EXT. S.F. H ₂ O ①	ELECTRICAL		SYMBOL	ELECTRICAL		COOLING CAPACITY BTU/H ②	HEATING CAPACITY BTU/H ③	SEER		
	TOTAL CFM	OUTSIDE CFM		FAN FLA	VOLTAGE & PHASE		MCA	MOCP					
DAHU-IDU#3	④	—	—	④	208V-1ø	DAHU-HP#3	16	28	208V-1ø	18,000	— ④	18	STORAGE 301 — EXISTING TO REMAIN NO WORK
DAHU#2	700	—	—	1.0	208V-1ø	DHP#2	19	25	208V-1ø	10,000-24,000	18,300	21	DATA ROOM T1

① EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.

② CAPACITY WHEN MATCHED WITH INDOOR HEAT PUMP SECTION AT AHRI CONDITIONS.

③ CAPACITY AT 17° F OUTSIDE AIR TEMPERATURE.

④ EXISTING TO REMAIN — DATA NOT AVAILABLE

POWER VENTILATOR SCHEDULE										
SYMBOL	CFM	ESP	RPM	TIP SPEED	ELECTRICAL		TYPE	DRIVE	CONTROL	REMARKS
					WATTS	VOLTAGE				
F-1	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 204A
F-2	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 203A
F-3	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 202A
F-4	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 200A
F-5	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 201A
F-6	300	0.50"	1280	2260	135	115V-1ø	CEILING EXHAUST	DIRECT	②	BOYS RESTROOM 105
F-7	300	0.50"	1280	2260	135	115V-1ø	CEILING EXHAUST	DIRECT	②	GIRLS RESTROOM 106
F-8	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 304
F-9	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 303
F-10	100	0.50"	815	1700	128	115V-1ø	CEILING EXHAUST	DIRECT	①	CUSTODIAL C1
F-11	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 100D
F-12	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	CAN WASH 302B TOILET
F-13	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	CAN WASH 302B
F-14	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 2205A
F-15	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	②	TOILET 2205B
F-16	300	0.50"	1280	2260	135	115V-1ø	CEILING EXHAUST	DIRECT	②	BOYS RESTOOM 2207
F-17	300	0.50"	1280	2260	135	115V-1ø	CEILING EXHAUST	DIRECT	②	GIRLS RESTROOM 2209
F-18	75	0.50"	805	1665	80	115V-1ø	CEILING EXHAUST	DIRECT	①	CUSTODIAL C2
F-19	225	0.50"	1100	1940	135	115V-1ø	CEILING EXHAUST	DIRECT	COOLING TSTAT	ELECTRICAL E2
F-20	225	0.50"	1100	1940	135	115V-1ø	CEILING EXHAUST	DIRECT	COOLING TSTAT	CONTROL ROOM E1

① COOLING THERMOSTAT IN PARALLEL WITH TWIST TIMER.

② VIA LIGHTING CONTROL SYSTEMS OCCUPANCY SENSOR.

REGISTER, GRILLE & DIFFUSER SCHEDULE					
SYMBOL	C.F.M.	NECK SIZE	TYPE	RUNOUT SIZE	REMARKS
Ⓐ	50-100	6"x6"	2'X2' LAY-IN CEILING SA DIFFUSER	6"ø	
Ⓑ	125-225	9"x9"	2'X2' LAY-IN CEILING SA DIFFUSER	8"ø	
Ⓒ	250-400	12"x12"	2'X2' LAY-IN CEILING SA DIFFUSER	10"ø	
Ⓓ	50-100	6"x6"	CEILING SA DIFFUSER	6"ø	
Ⓔ	125-225	9"x9"	CEILING SA DIFFUSER	8"ø	
Ⓕ	50-155	12"x6"	SIDEWALL SA REGISTER	8"ø	
Ⓖ	175-225	18"x6"	SIDEWALL SA REGISTER	10"ø	
Ⓕ	0-750	10"x22"	1'X2' LAY-IN RA REGISTER	—	
Ⓖ	750-1600	22"x22"	2'X2' LAY-IN RA REGISTER	—	
Ⓖ	300-600	18"x6"	SIDEWALL RA REGISTER	—	

VRF HEAT PUMP UNIT SCHEDULE																					
SYMBOL	LOCATION	MANUFACTURER ④	INDOOR UNIT										NOTES	OUTDOOR UNIT ON ROOF	OUTDOOR UNIT						
			COOLING TOTAL (MBH)	SENS (MBH)	HEATING TOTAL (MBH)	FAN SA (CFM)	OA (CFM)	ESP (IN H2O)	ELECTRICAL VOLTAGE	MCA	COOLING TOTAL (MBH)	HEATING TOTAL (MBH)			ELECTRICAL			NOTES			
															VOLTAGE	MCA	MOCP				
HP-IDU1A	1 GR CLRM 203	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①	HP-ODU1	47.8	54.6	208V-1ø	26	30	②			
HP-IDU1B	SAT MEDIA 205	mitsubishi	12.3	16.9	13.6	336	0	—	208V-1ø	0.3	①										
HP-IDU1C	MUSIC 207	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU2A	K CLRM 202	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①	HP-ODU2	47.8	54.6	208V-1ø	26	30	②			
HP-IDU2B	ART 204	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU2C	HALL H2	mitsubishi	12.3	8.6	13.6	336	0	—	208V-1ø	0.3	①										
HP-IDU3A	ENTRY 100A	mitsubishi	12.3	8.6	13.6	336	0	—	208V-1ø	0.3	①	HP-ODU3	47.8	54.6	208V-1ø	26	30	②			
HP-IDU3B	LOBBY 101	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU3C	1 GR CLRM 201	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU4A	GUIDANCE 104	mitsubishi	12.3	8.6	13.6	494	0	—	208V-1ø	0.3	①	HP-ODU4	47.8	54.6	208V-1ø	26	30	②			
HP-IDU4B	HALL H3	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU4C	K CLRM 200	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU5A	MULTIPUR 300	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①③	HP-ODU5	47.8	54.6	208V-1ø	26	30	②			
HP-IDU5B	MULTIPUR 300	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①③										
HP-IDU6A	MULTIPUR 300	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①③	HP-ODU6	47.8	54.6	208V-1ø	26	30	②			
HP-IDU6B	MULTIPUR 300	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①③										
HP-IDU7A	CLRM 103	mitsubishi	9	—	8.5	247	0	—	208V-1ø	0.15	①	HP-ODU7	15.6	17.0	208V-1ø	15	20	②			
HP-IDU7B	PRINCIPAL 102	mitsubishi	9	—	8.5	247	0	—	208V-1ø	0.15	①										
HP-IDU8A	KITCHEN 302	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①	HP-ODU8	47.6	54.6	208V-1ø	26	30	②			
HP-IDU8B	KITCHEN 302	mitsubishi	24.2	16.9	27.3	494	0	—	208V-1ø	0.3	①										
HP-IDU9A	RECEPTION 100	mitsubish ⑤	9	—	8.5	247	0	—	208V-1ø	0.15	⑤	HP-ODU9	15.6	17.0	208V-1ø	11	15	⑤			
HP-IDU9B	NURSE 100C	mitsubish ⑤	9	—	8.5	247	0	—	208V-1ø	0.15	⑤										

① EXISTING HEAT PUMP UNITS INDOOR AND OUTDOOR SECTIONS TO BE REUSED, REFER TO PLANS FOR SOME UNITS BEING RELOCATED. REWORK ELECTRICAL, REFRIGERANT PIPING AND CONDENSTE TO NEW UNIT LOCATIONS.

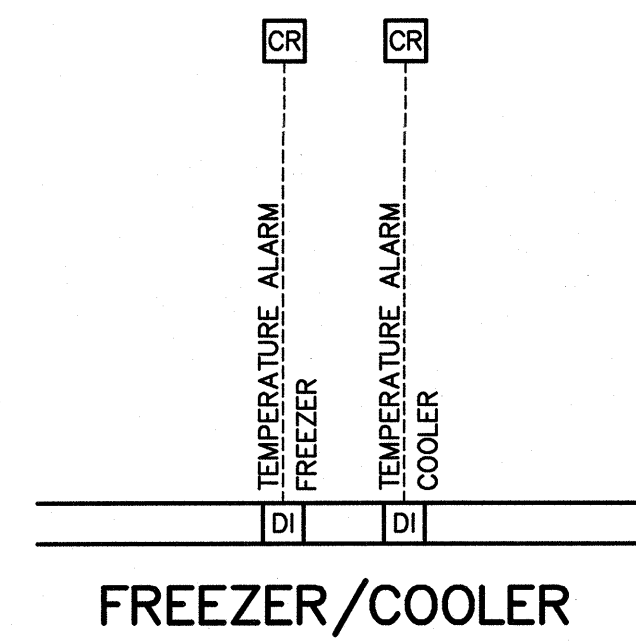
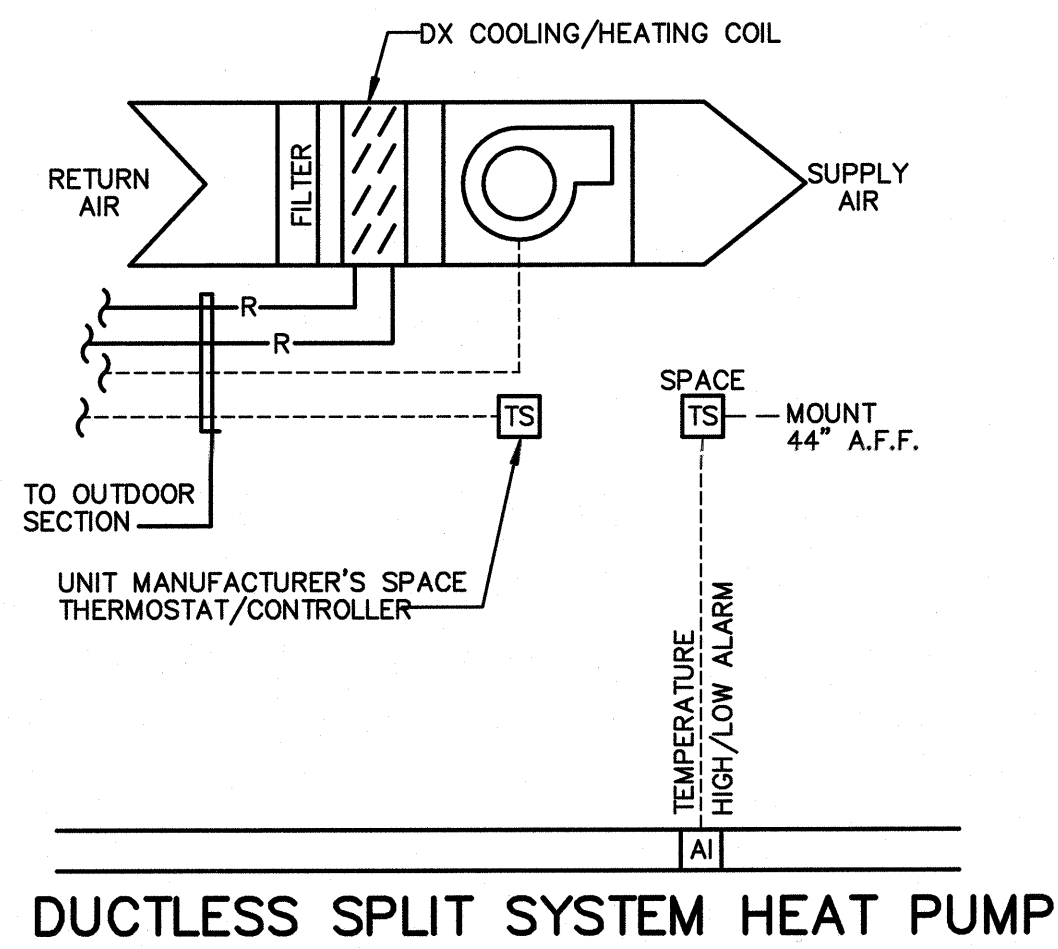
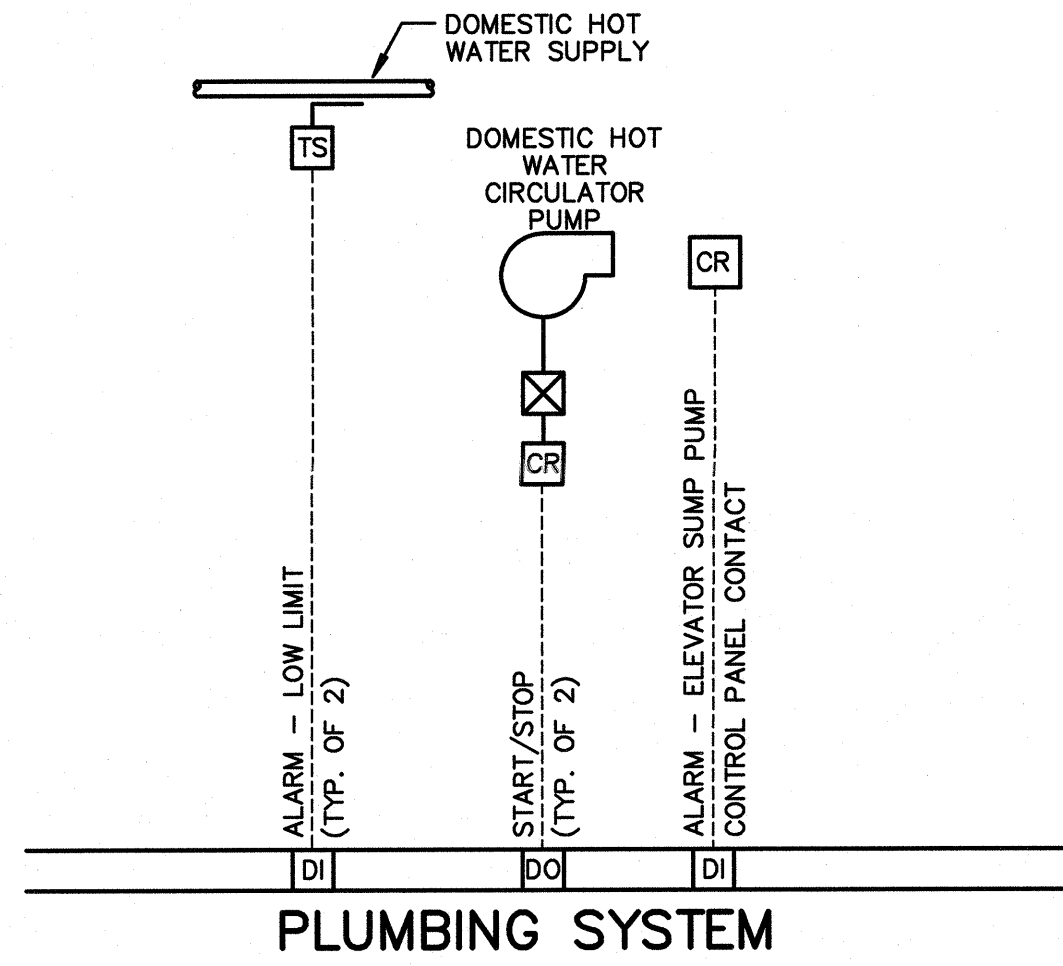
② EXISTING DUCTLESS SPLIT SYSTEM TO REMAIN.

③ INSTALLED WITH CONDENSATE PUMP.

④ DESIGN BASIS.

⑤ PROVIDE NEW MITSUBISHI UNITS AND VERIFY THE NEW CONTROLS WILL INTEGRATE AND MATCH THE EXISTING SYSTEM.

WALL MOUNT HEAT PUMP SCHEDULE												
SYMBOL	AIR FLOW		EXT. S.P. °H2O ①	ELECTRICAL			COOLING CAPACITY MBH ②④	HEATING CAPACITY MBH ③	EER	BASIS OF DESIGN		
	SUPPLY CFM	OUTSIDE CFM		STRIP HEAT KW	MCA	MOCP					VOLTAGE & PHASE	
WMHP#2200	1300	225	0.60"	6.75	52	60	208V-3ø	41,500	38,500	12.0	BARD 142H1DB ⑤⑥⑦	
WMHP#2202	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2204	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2206	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2208	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2210	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2212	1150	225	0.55"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2213	900	135	0.60"	6.75	44	45	208V-3ø	27,800	26,600	11.7	BARD 130H1DB ⑤⑥⑦	
WMHP#2211	1500	265	0.70"	6.75	53	60	208V-3ø	47,000	44,500	12.0	BARD 148H1DB ⑤⑥⑦	
WMHP#2205	1150	170	0.70"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2203	1500	270	0.70"	6.75	53	60	208V-3ø	47,000	44,500	12.0	BARD 148H1DB ⑤⑥⑦	
WMHP#2201	1150	225	0.60"	6.75	49	50	208V-3ø	35,000	32,800	12.0	BARD 136H1DB ⑤⑥⑦	
WMHP#2201	1300	160	0.70"	6.75	52	60	208V-3ø	41,500	38,500	12.0	BARD 142H1DB ⑤⑥⑦	



CONTROL SYMBOL LEGEND

TS	TEMPERATURE SENSOR
HT	HUMIDITY SENSOR
VSD	VARIABLE SPEED DRIVE
CR	CONTROL RELAY
ES	EMERGENCY SWITCH
EVS	EVENT SWITCH
M2E	MOTOR OPERATED TWO POSITION ELECTRIC
MPE	MOTOR OPERATED PROPORTIONAL ELECTRIC NORMALLY OPEN
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FAR	FIRE ALARM RELAY
CLS	CONDENSATE LEVEL SENSOR
EN	ENTHALPY
O/V	OCCUPANCY/VACANCY SENSOR
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
CS	CURRENT SENSOR
ST	STARTER

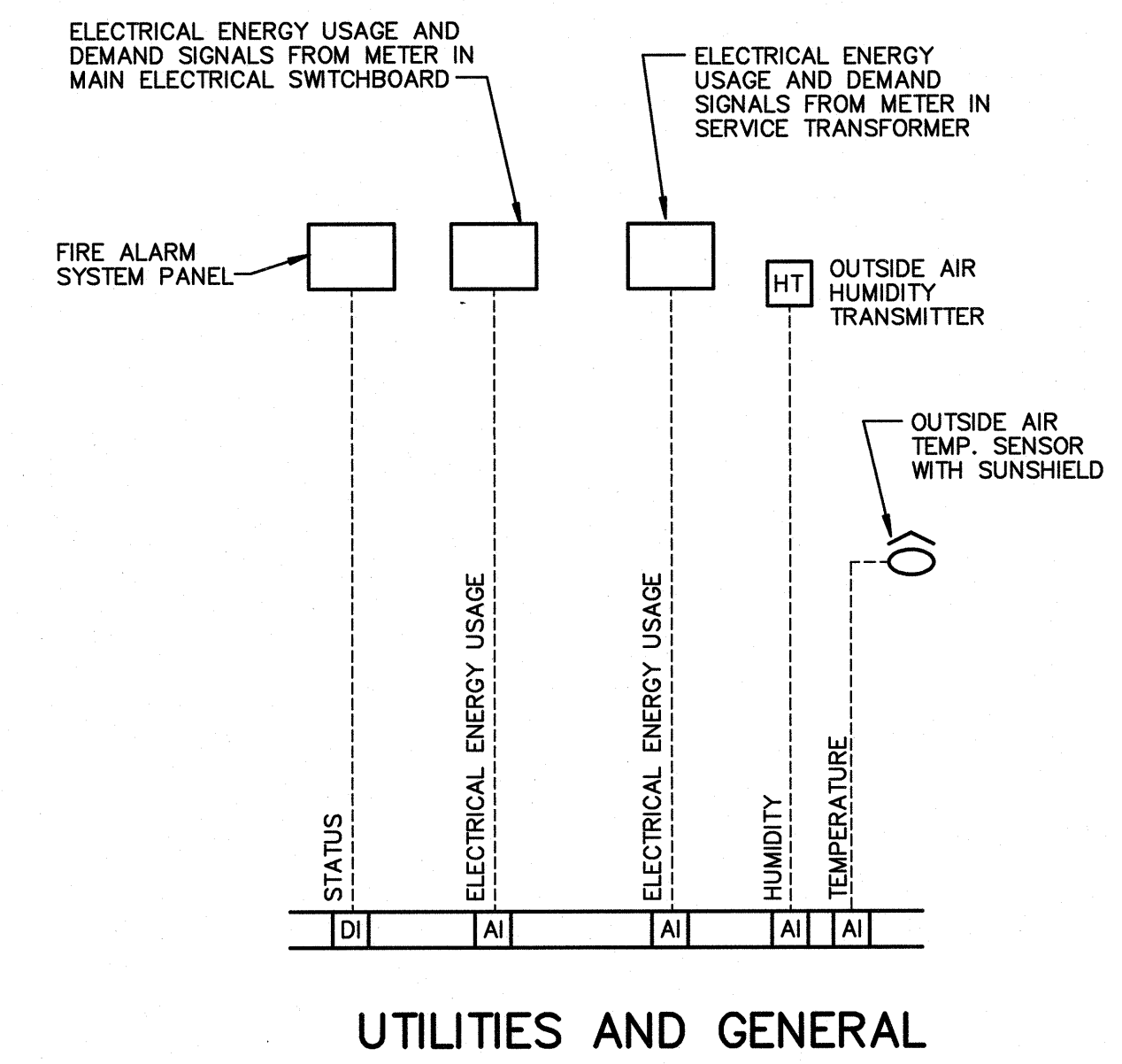
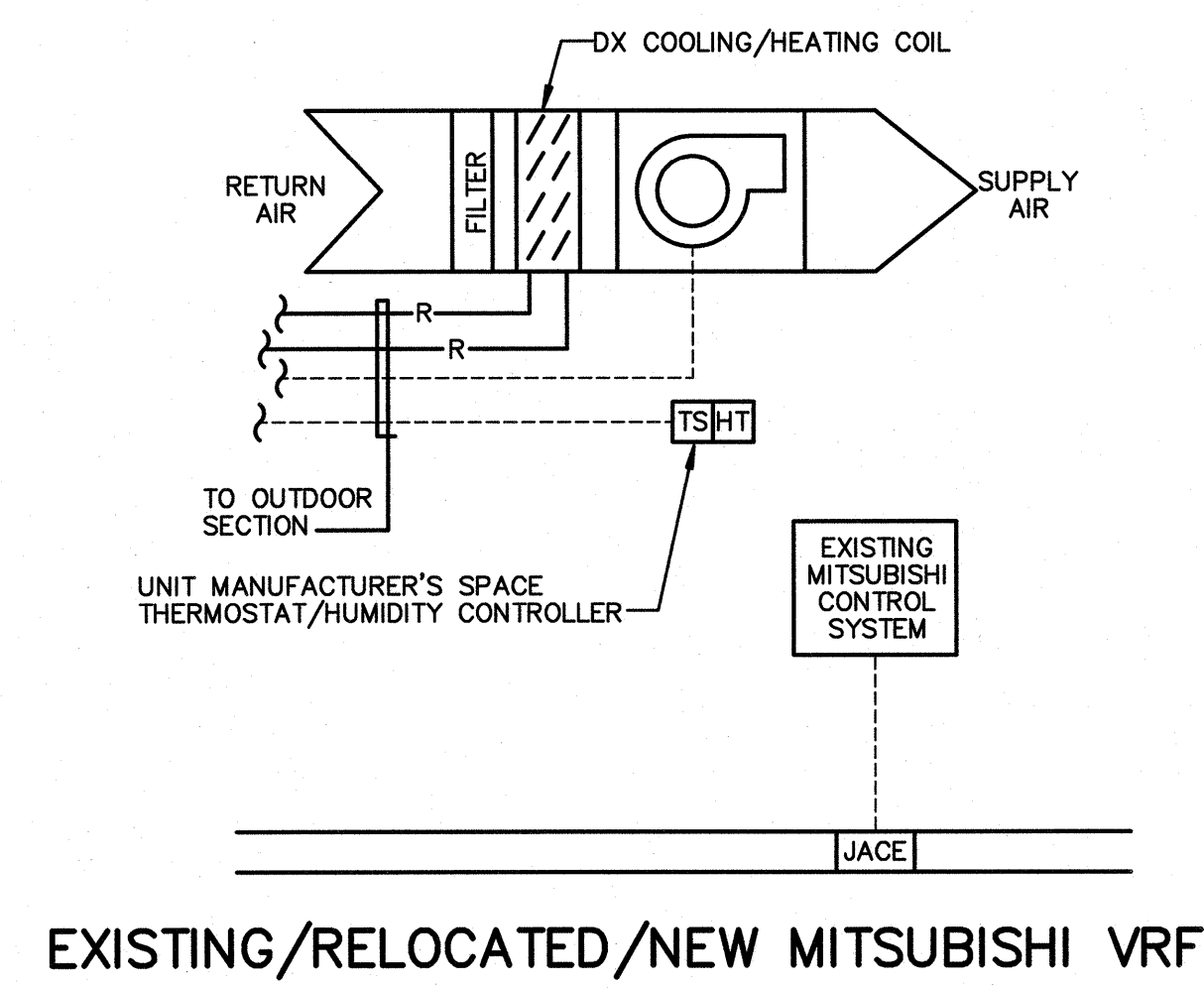
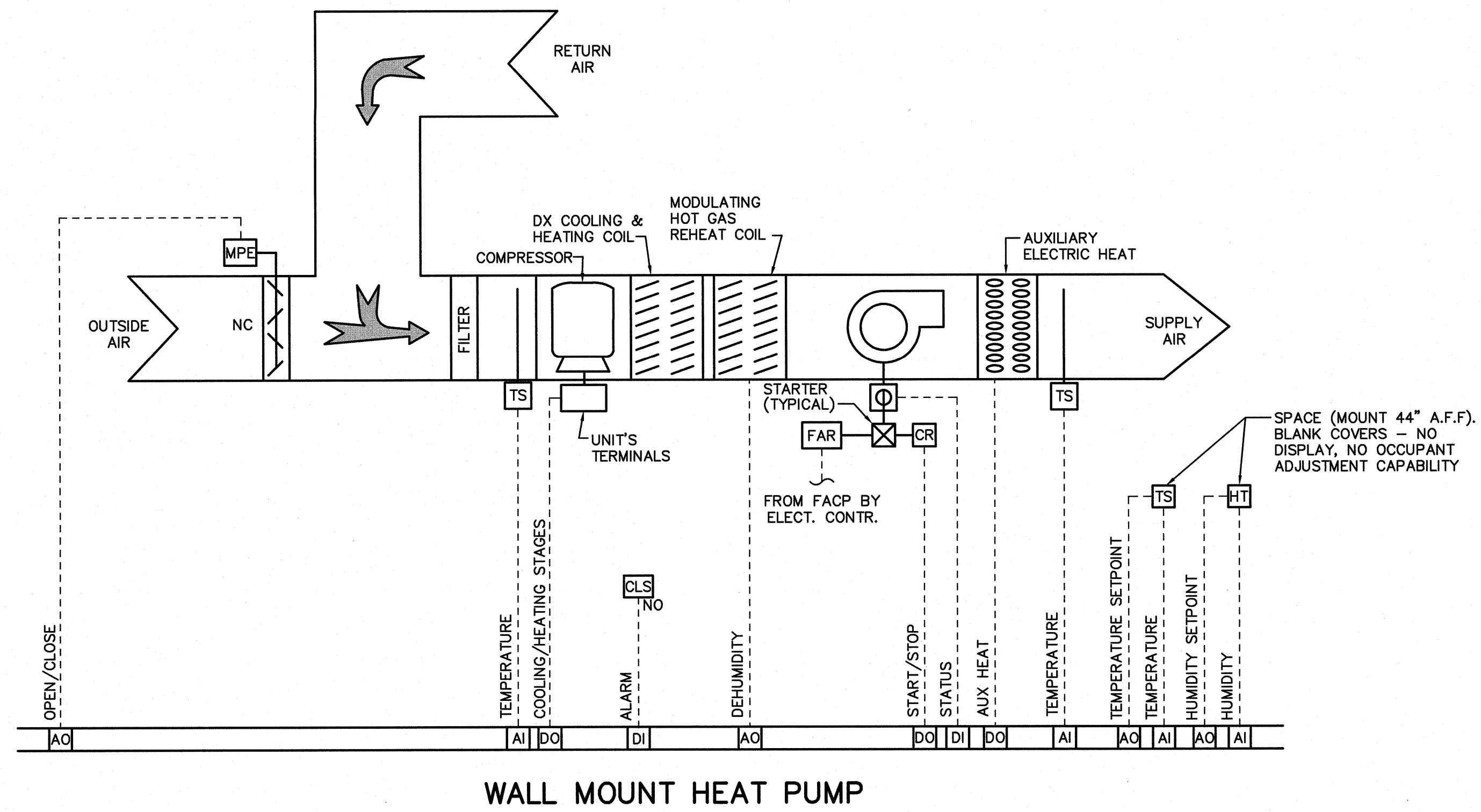
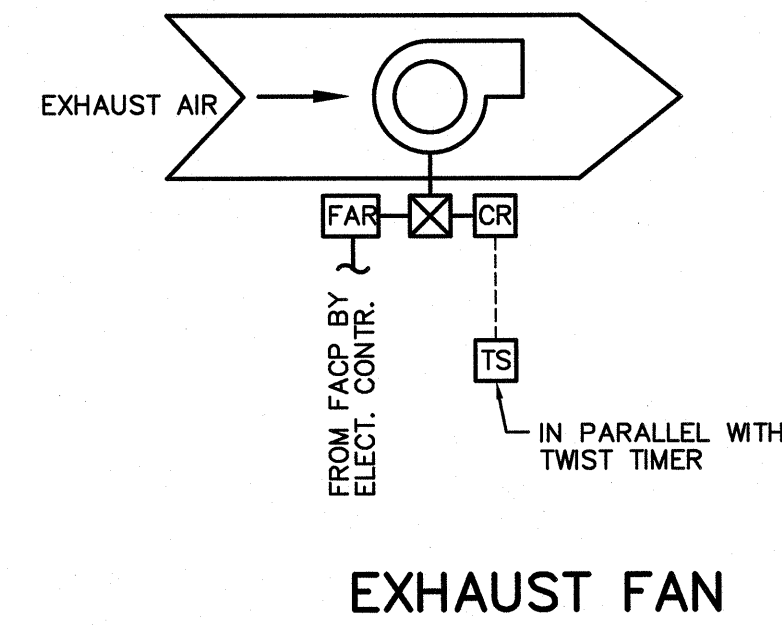
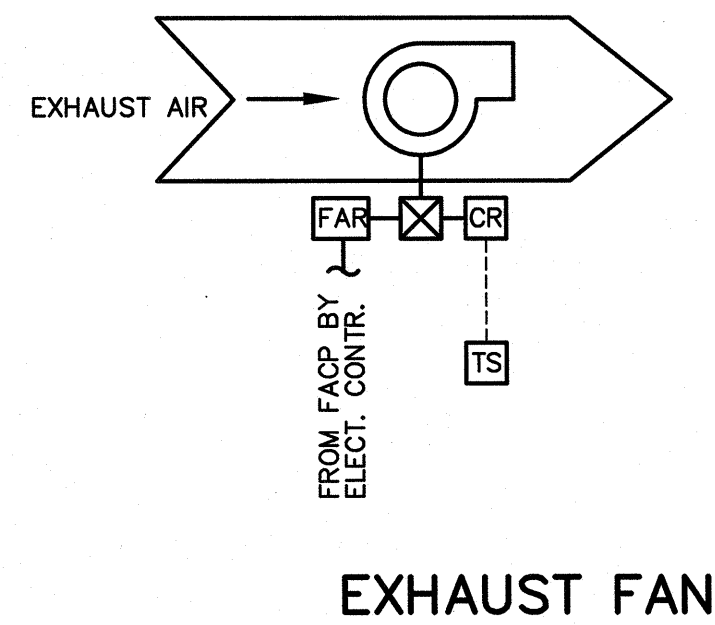
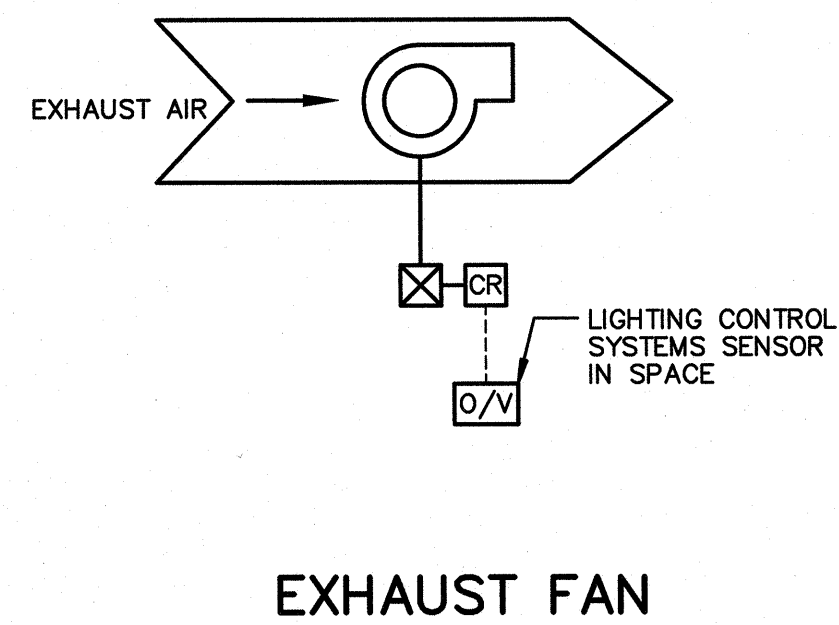
ALTERNATE BID – PREFERRED DDC CONTROLS BY JOHNSON CONTROLS

SEQUENCE OF OPERATION

DC20 EMERGENCY MOTOR STOP CONTROL SEQUENCE

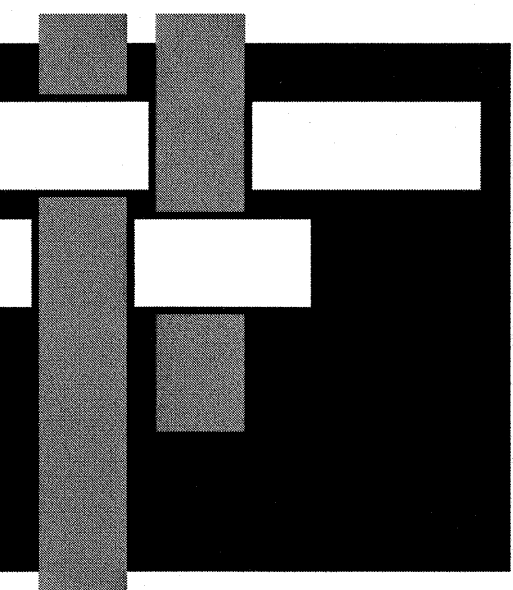
CONTROL SEQUENCES SHALL INCORPORATE MOTOR EMERGENCY STOP ELEMENTS IN ACCORDANCE WITH THE FOLLOWING WHETHER SPECIFICALLY DEFINED IN INDIVIDUAL SYSTEM OR COMPONENT SEQUENCES OF OPERATION OR NOT. ANY EMERGENCY STOP EVENT SHALL INITIATE AN ALARM.

APPLICATION	CONFIGURATION	EMERGENCY MOTOR STOP REQUIREMENTS
AHU/DOAS SUPPLY AIR FAN	UNIT SERVES MULTIPLE SPACES AND IS CAPABLE OF SPREADING SMOKE BEYOND THE SPACE IN WHICH SMOKE IS GENERATED.	NO DUCT SMOKE DETECTORS REQUIRED. MOTOR EMERGENCY STOP BY FIRE ALARM SYSTEM SHUTDOWN RELAY NOT REQUIRED.
	UNIT AIRFLOW > 2,000 CFM	DUCT SMOKE DETECTORS REQUIRED WHERE INDICATED IN UNIT RETURN AIR. MOTOR EMERGENCY STOP OF ALL UNIT FANS SHALL BE INITIATED BY FIRE ALARM SYSTEM SHUTDOWN RELAY.



HEAT PUMPS

- EXISTING MITSUBISHI VRF UNITS AND MITSUBISHI CONTROL SYSTEM SHALL REMAIN SEPARATE FROM NEW DDC BAS SYSTEM.
- PROVIDE TWO MITSUBISHI PAC-SK52ST DIAGNOSTIC MODULE SERVICE TOOLS FOR THE VRF UNITS. TURN OVER TO NHCS.
 - RELOCATED VRF SYSTEMS SHALL BE RECONNECTED TO EXISTING MITSUBISHI CONTROL SYSTEM WITH ALL EXISTING SEQUENCES OF OPERATION INCORPORATED ACCORDINGLY.
 - NEW VRF SYSTEMS SHALL BE CONNECTED TO EXISTING MITSUBISHI CONTROL SYSTEM WITH SEQUENCES OF OPERATION TO MATCH EXISTING.
 - COORDINATE CONNECTION AND INTEGRATION WITH EXISTING MITSUBISHI SYSTEM PROVIDER – BRADY TRANE SERVICES.



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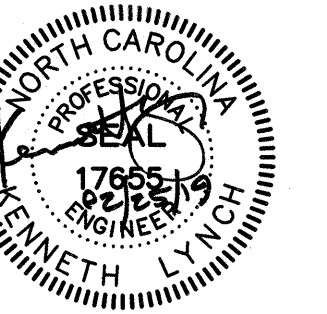
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**Wrightsville
Beach
Elementary
School Addition
& Renovation**

220 Coral Drive
Wrightsville Beach, NC

Construction Drawings
February 20, 2019

Revisions:

MECHANICAL
CONTROL
DIAGRAMS

M3.0

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