

**Wake County Public School System  
RAND ROAD ELEMENTARY SCHOOL  
FIRE ALARM REPLACEMENT**

**ADDENDUM NO. 3**

**DATE:** November 1, 2023

**PROJECT:** Wake County Public School System  
Rand Road Elementary School  
Fire Alarm Replacement

**OWNER:** Wake County Public School System  
1551 Rock Quarry Road, Building A, Raleigh, NC 27610

**ENGINEER:** Dewberry Engineers Inc.  
2610 Wycliff Road, Suite 410, Raleigh, NC 27607

This Addendum, applicable to the work designated herein, shall be understood to be and is an Addendum to the contract documents and, as such, shall become a part of and included in the contract.

**Drawings:**

1. No revised drawings issued.

**Specifications:**

1. No specifications change.

**Clarifications:**

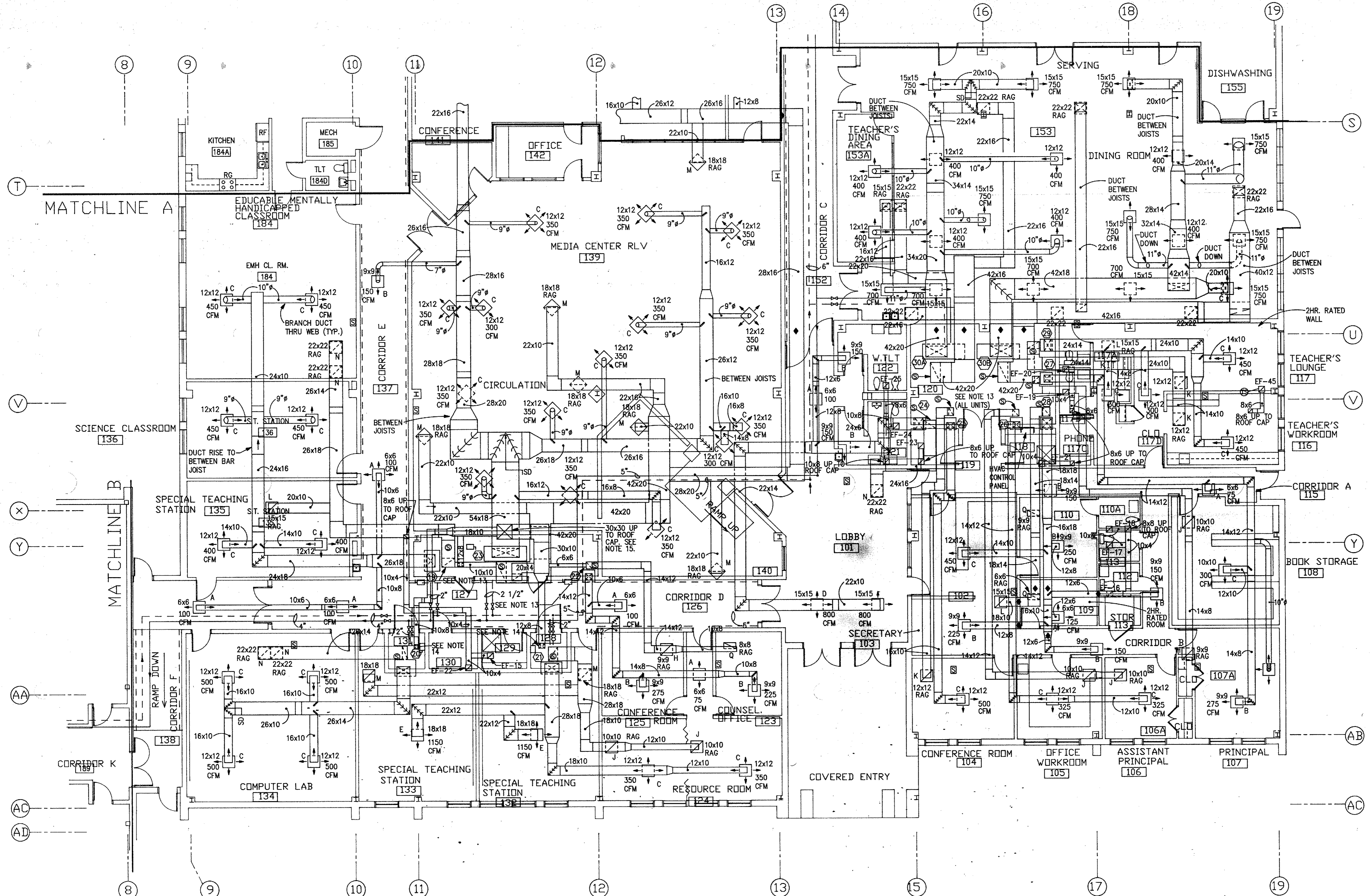
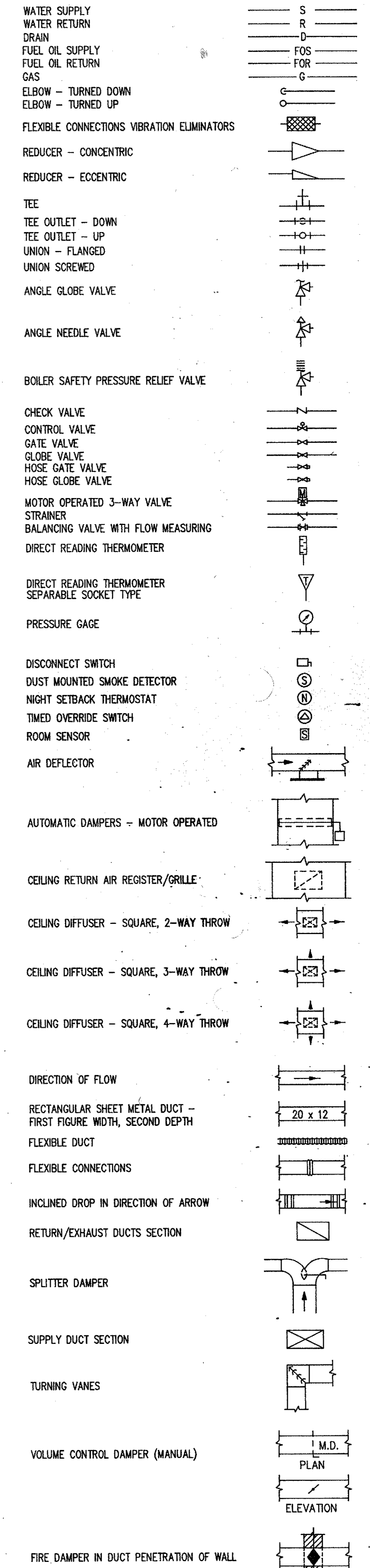
1. See attached original 1989 signed mechanical drawings for additional information on exhaust fans to be replaced as noted on Sheet FA201, Keynote 7 and Sheet FA202, Keynote 7.

**Attached Documents:**

1. M-1: SOUTH CORE AREA PLAN – HVAC
2. M-2R: NORTH CORE AREA PLAN – HVAC
3. M-6R: GRILL AND DIFFUSER SCHEDULE

End of Addendum No. 3

HVAC LEGEND

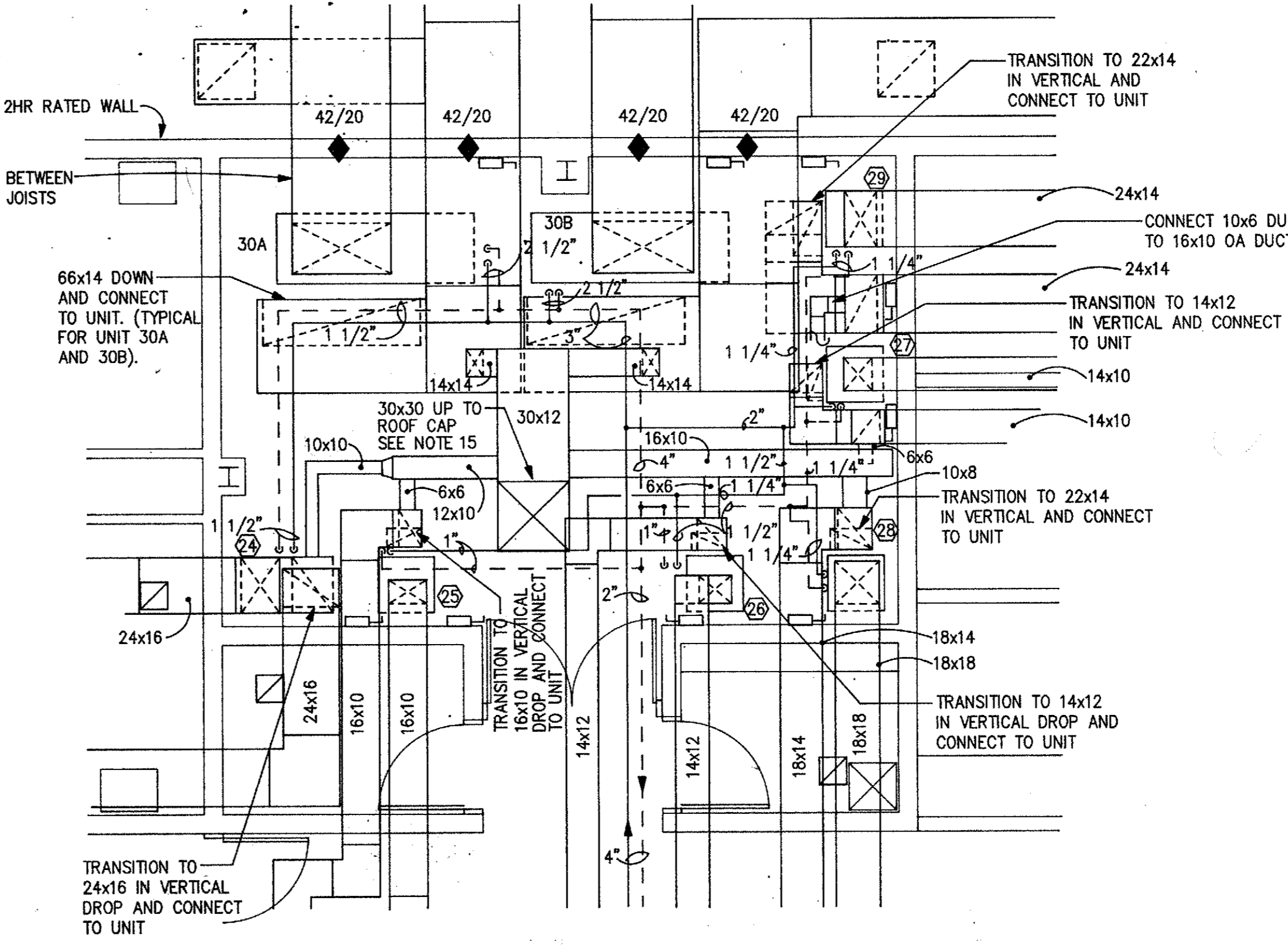


SOUTH CORE AREA PLAN - HVAC

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

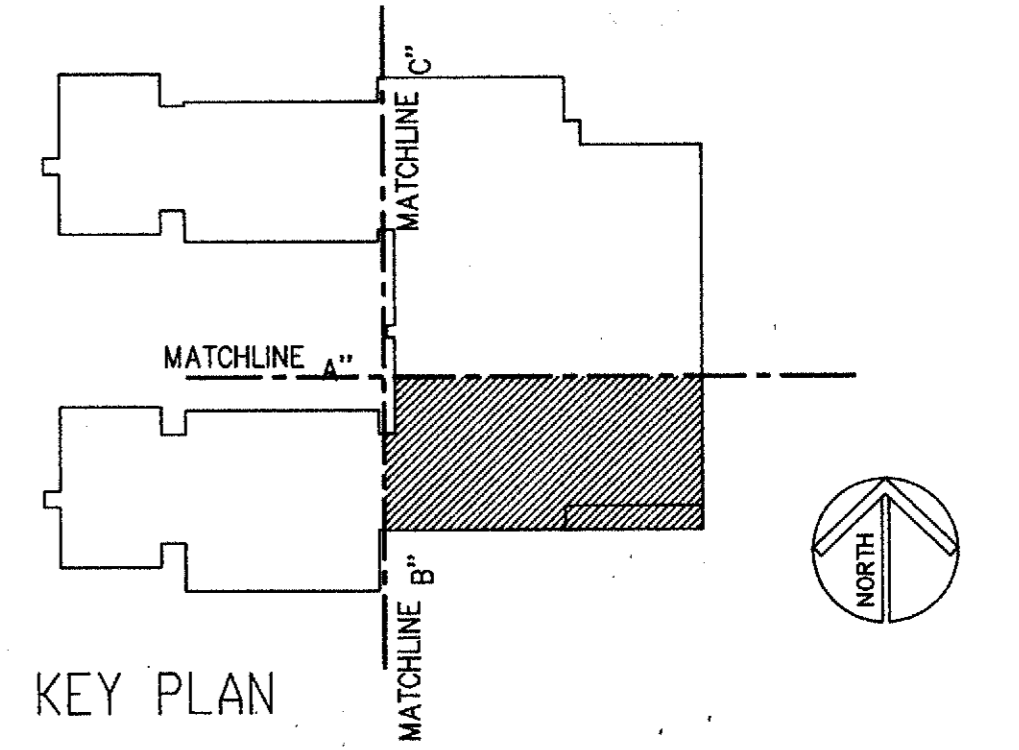
NOTES:

- DUCT DIMENSIONS SHOWN ON THE DRAWING ARE OVER ALL DUCT DIMENSIONS, ALLOWANCES HAVE BEEN MADE FOR INTERNAL DUCT INSULATION.
- SMOKE DETECTORS ARE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR IN THE RETURN AIR DUCT OF EACH HEAT PUMP UNIT. ELECTRICAL CONTROL SHALL WIRE FROM SMOKE DETECTOR TO FIRE ALARM PANEL AND FROM FIRE ALARM TO EACH HEAT PUMP CONTROL PANEL. HVAC CONTRACTOR SHALL MAKE FINAL CONNECTION AT HEAT PUMP CONTROL PANEL SUCH THAT HEAT PUMP SHUTS DOWN WHEN SMOKE DETECTOR IS ENERGIZED.
- COORDINATE LOCATION OF ALL CEILING MOUNTED DIFFUSERS AND GRILLES WITH CEILING GRID SYSTEM AND LIGHT FIXTURES.
- REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES TO VERIFY DIFFUSER AND GRILLE FRAME TYPES.
- COORDINATE ALL WALL PENETRATIONS WITH THE GENERAL CONTRACTOR.
- SEAL AROUND ALL PIPING, DUCTWORK OR OTHER EQUIPMENT PENETRATIONS OF FIRE RATED WALLS WITH FIRE PROOF MATERIALS, MATERIALS SHALL BE U.L. APPROVED.
- COORDINATE SIZE AND LOCATION OF ALL ROOF OPENINGS WITH THE GENERAL CONTRACTOR.
- ALL DUCT RUNOUTS SHALL BE THE SAME SIZE AS THE DIFFUSER NECK SIZE. CONTRACTOR MAY USE INSULATED METAL DUCT OR INSULATED FLEXIBLE DUCT. FLEXIBLE DUCT SHALL NOT HAVE SHARP TURNS OR DIP'S.
- PROVIDE MANUAL AIR VENTS AT THE HIGHEST POINTS OF EACH SECTION OF PIPING FOR PROPER VENTING.
- THOROUGHLY FLUSH HEAT PUMP SYSTEM WITHOUT THE HEAT PUMPS ATTACHED TO THE SYSTEM AND WITH THE HEAT PUMP BYPASS PIPING ATTACHED TO THE SYSTEM PIPING. AFTER FLUSHING FOR SEVERAL HOURS AND AFTER STRAINERS HAVE BEEN REPEATEDLY CLEANED TO ASSURE THE SYSTEM WATER IS CLEAN, THE HEAT PUMP UNIT MAY BE ATTACHED TO THE SYSTEM.
- DUCT PENETRATIONS THRU ONE HOUR RATED WALL SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 6, N.C. BUILDING CODE, VOLUME II.
- CORE AREA CEILING SUPPLY AND RETURNS ARE IN ONE HOUR RATED CEILINGS AND SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 11, N.C. BUILDING CODE, VOLUME III.
- TRANSITION DUCTWORK IN VERTICAL DROP AND CONNECT TO UNIT RETURN AIR CONNECTION, ALLOW FOR FILTER REMOVAL AND UNIT ACCESS.
- DUCT UP TO ROOF CAP, DUCT TO EXTEND 12" BELOW CEILING WITH MOTORIZED DAMPER, CONNECT DAMPER OPERATOR TO HEAT PUMP CONTROL PANEL.
- DUCT UP TO ROOF CAP, EXTEND PLENUM BELOW CEILING 18", CONNECT INDIVIDUAL DUCTS FROM PLENUM TO HEAT PUMP RETURN AIR DUCT AS SHOWN, INSTALL MOTORIZED DAMPER IN EACH DUCT AND CONNECT DAMPER OPERATOR TO HEAT PUMP CONTROL PANEL.
- EXHAUST FANS SHALL HAVE DISCHARGE DUCT UP TO ROOF. THE SAME SIZE AS FAN DISCHARGE OPENING UNLESS OTHERWISE NOTED.
- REFER TO ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS, BUILDING SECTIONS, AND COORDINATE WITH DUCTWORK ELEVATIONS, RISES, DROPS, ETC.
- COORDINATE LOCATION OF DUCT NOTED TO BE BETWEEN JOIST WITH THE GENERAL CONTRACTOR AND STRUCTURAL ENGINEER TO REVISE BRIDGING WHERE REQUIRED.
- THE HVAC CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE KITCHEN EQUIPMENT PLANS AND SPECIFICATIONS, AND WITH THE WORK BEING PERFORMED BY OTHER CONTRACTORS.



ENLARGED PLAN MECHANICAL ROOM 120

SCALE: 1/4" = 1'-0"



KEY PLAN

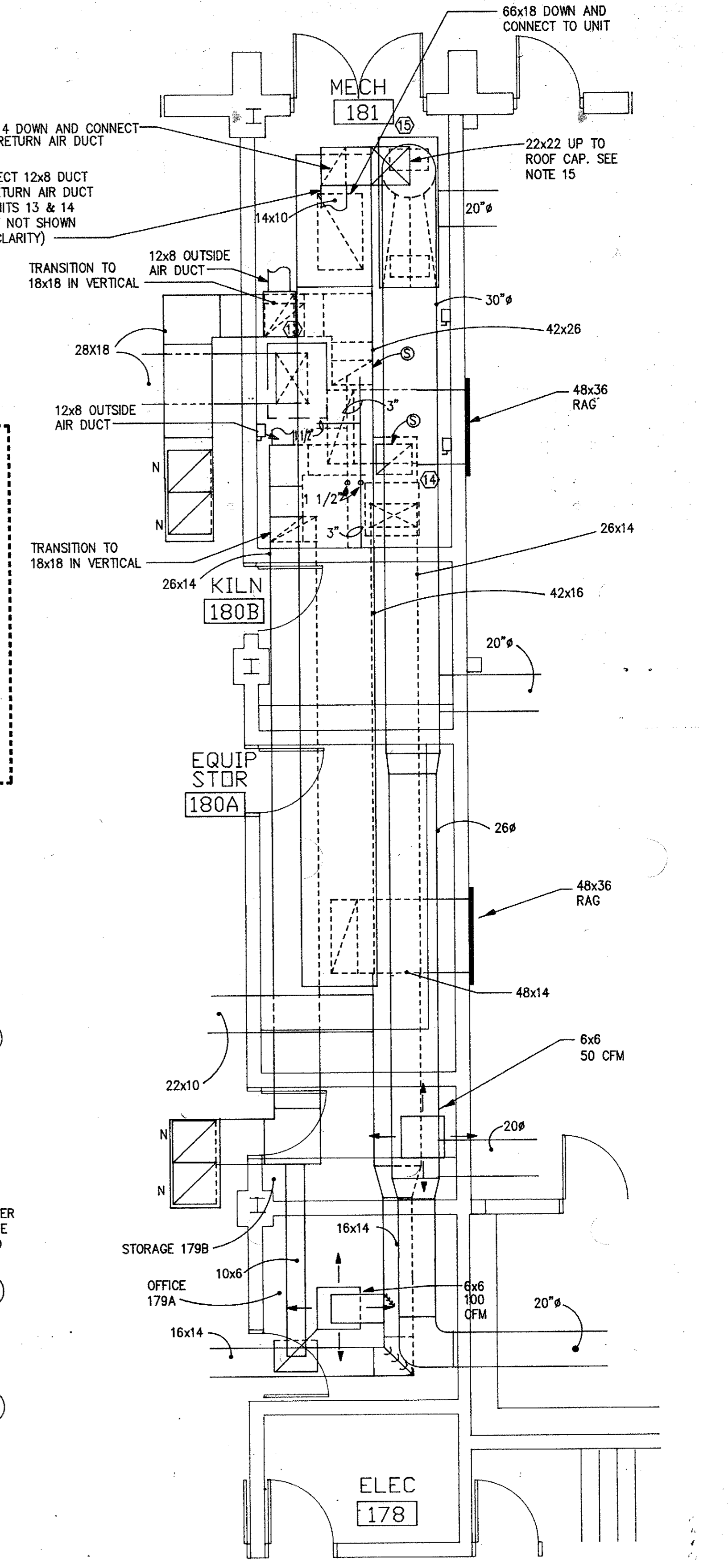
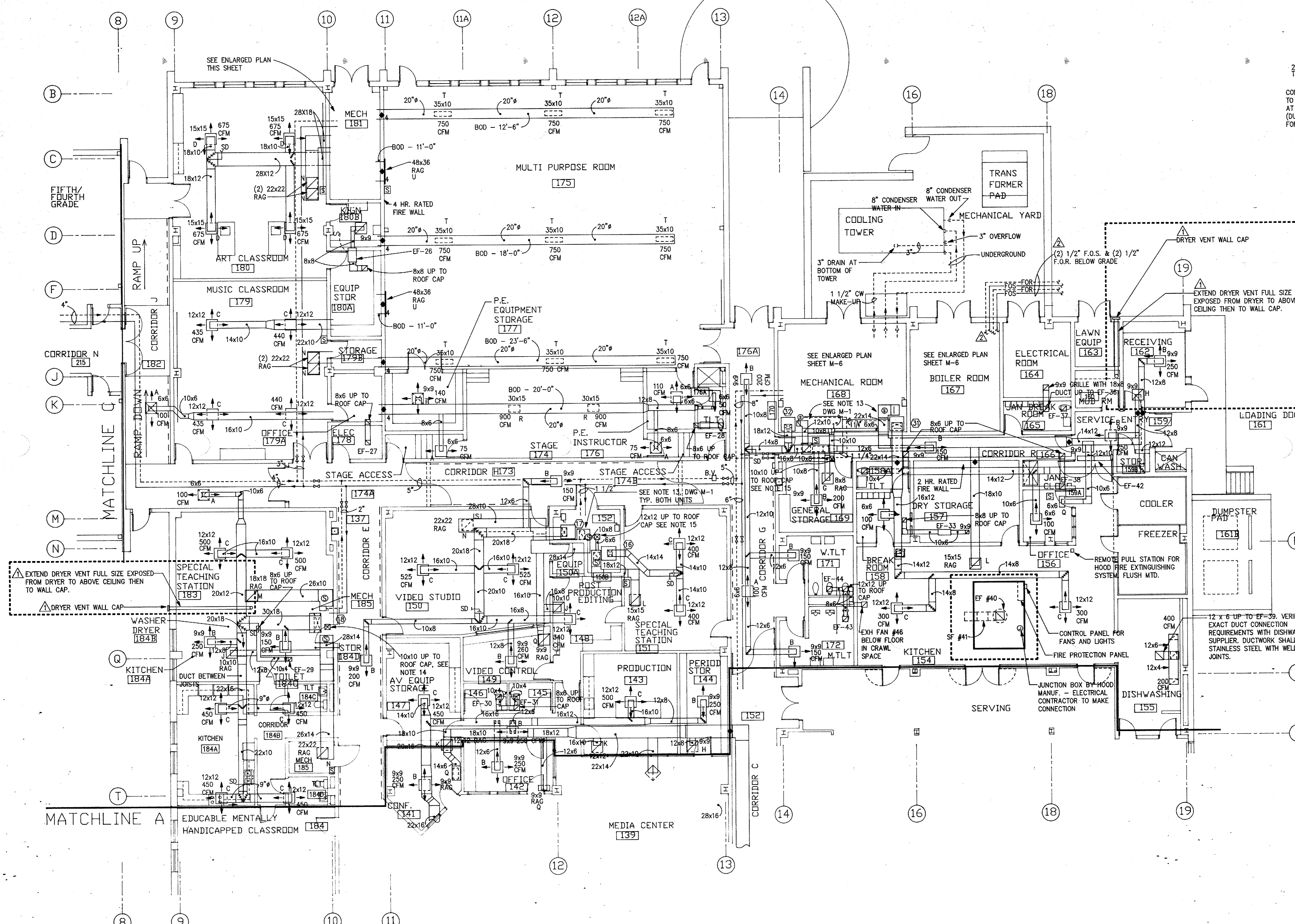
CORRECTED IN ACCORDANCE WITH CONSTRUCTION  
 SOUTH CORE AREA PLAN - HVAC  
 RAND ROAD ELEMENTARY SCHOOL  
 WAKE COUNTY PUBLIC SCHOOL SYSTEM  
 RALEIGH, NORTH CAROLINA

**HASKINS, RICE, SAVAGE & PEARCE, P.A.**  
 ARCHITECTS & PLANNERS  
 2515 FAIRVIEW ROAD  
 RALEIGH, NORTH CAROLINA  
 P.O. BOX 9988  
 27609  
 TELEPHONE (919) 787-9751

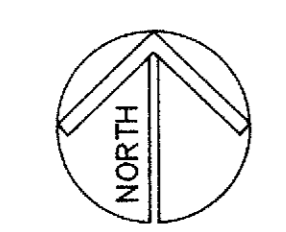
DRAWN: BE  
 CHECKED: ATH  
 APPROVED: DYP

DOUGLAS Y. PERRY ASSOCIATES, P.A.  
 CONSULTING ENGINEERS  
 9715 BENDON DRIVE • RALEIGH, NORTH CAROLINA 27609 • 919-976-1422

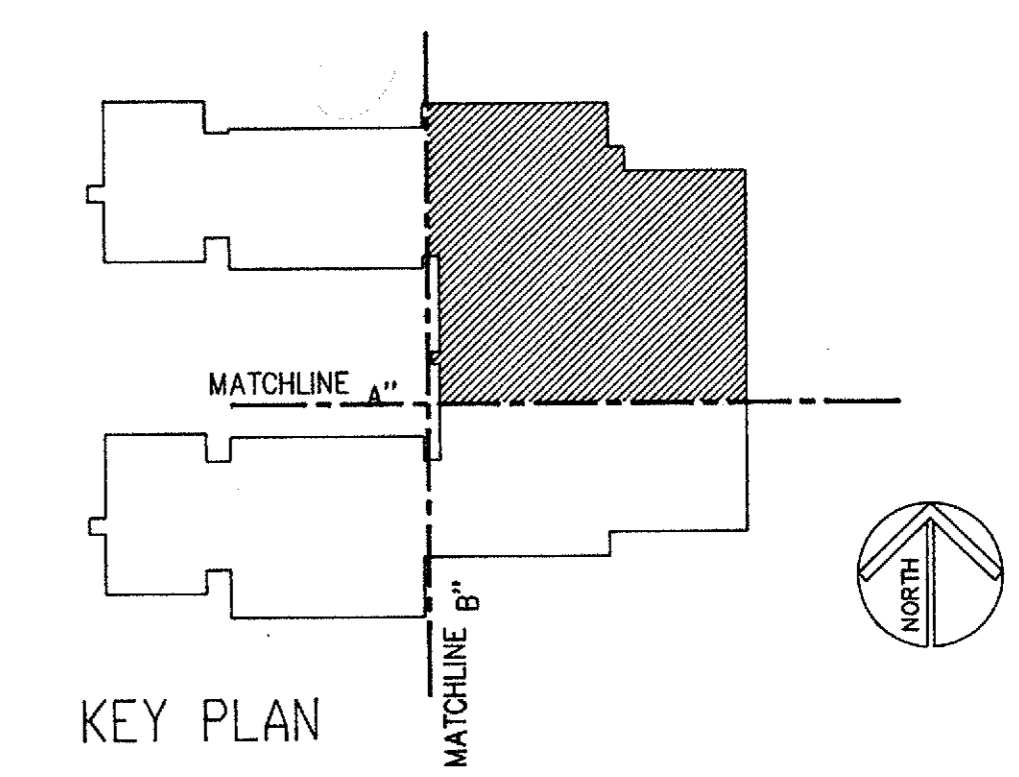
M-1  
 APRIL 20, 1989



ENLARGED PLAN OF  
ROOMS 181,180B,180A,179B,179A,178  
SCALE: 1/4" = 1'-0"



NORTH CORE AREA PLAN - HVAC  
SCALE: 1/8" = 1'-0"



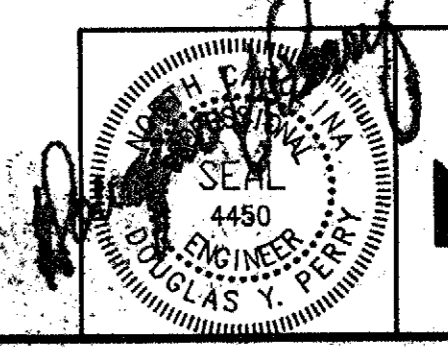
KEY PLAN

HASKINS, RICE, SAVAGE & PEARCE, P.A.  
ARCHITECTS & PLANNERS  
2515 FAIRVIEW ROAD  
RALEIGH, NORTH CAROLINA  
TELEPHONE (919) 787-9751

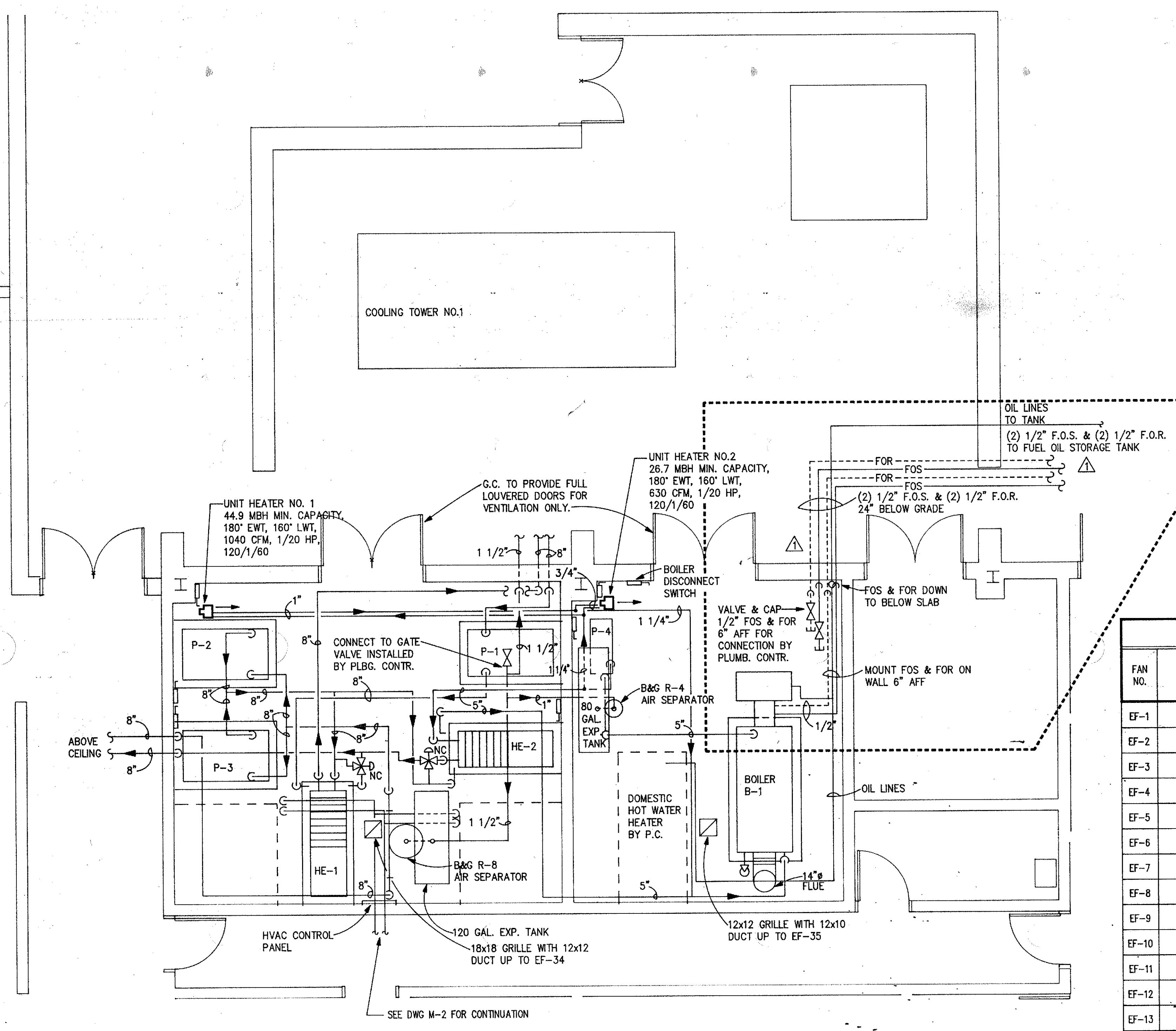
DRAWN	BE
CHECKED	ATH
APPROVED	DYP

NORTH CORE AREA PLAN - HVAC  
1/2" & 3/4" CLOTHES DRYER VENTS AND KITCHEN HOOD REWIRING  
1/2" & 3/4" FUEL OIL PIPING & REMOVE GAS PIPING

CORRECTED IN ACCORDANCE WITH CONSTRUCTION SET 2 of 1880  
RAND ROAD ELEMENTARY SCHOOL  
WAKE COUNTY PUBLIC SCHOOL SYSTEM  
RALEIGH, NORTH CAROLINA

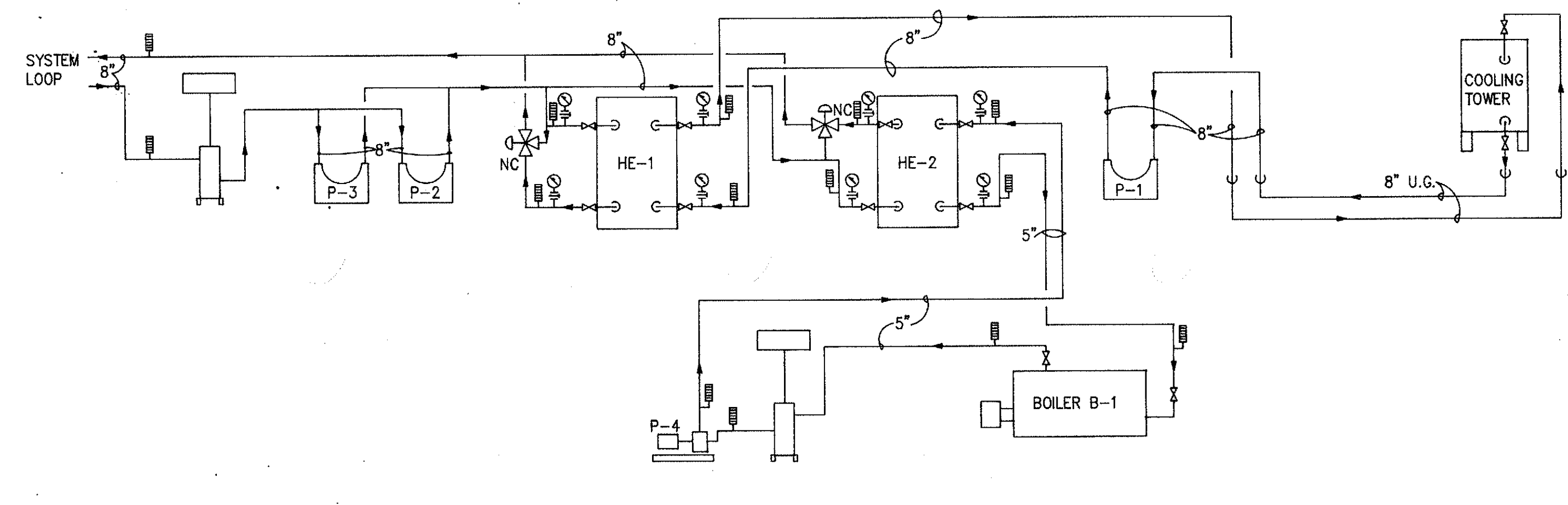


DOUGLAS Y. PERRY ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
9718 BERTON DRIVE • RALEIGH, NORTH CAROLINA 27609 • 919-876-1822



**ENLARGED MECH. RM. & BOILER RM.**

SCALE: 1/4" = 1'-0"  
NOTE: ALL PIPING & EQUIPMENT SHALL BE AT LEAST 6" BELOW CEILING.



**PIPING SCHEMATIC**  
NO SCALE

UNIT NO.	TYPE	TYPE OF FUEL	NET I.B.R. RATING	ENT. WATER TEMP. °F	LEAV. WATER TEMP. °F
B-1	HOT WATER	GAS	2843.5 MBH	160	180

NOTES:  
1. SELECTION BASED ON WEL-MCLAIN MODEL BGL1388WF.  
2. BURNER BASED ON GORDON-PIATT, 3 HP, 480 VOLT, 3 PHASE.

UNIT NO.	GPM	MIN. CAP. TONS	ENT. AIR WBT °F	WATER CONDITION ENT. °F	NOZZLE L.V.G. °F	BASEIN HTR. KW	MAX. WTR. PRESS. DROP "WG	ELECTRIC SERVICE VOLTS PHASE STARTER
1	800	267	78	85	95	10	---	480 3 ---

SELECTION BASED ON B.A.C. EJECTOR II, MODEL J1809 WITH 31 PSI SPRAY PRESSURE, 120/1/60 CONTROL REQUIRED. (ALT. H-1)  
BASE BID SELECTION BASED ON B.A.C. MODEL 3643 W/15HP, 480V-3PHASE TWO SPEED MOTOR.

NO.	HOT SIDE SYSTEM				COLD SIDE TOWER					
	GPM	INLET TEMP.	OUTLET TEMP.	PRESS. DROP	NOZZLE	GPM	INLET TEMP.	OUTLET TEMP.	PRESS. DROP	NOZZLE
1*	800	100°F	90°F	14.7 PSI	4"	800	85.8°F	95.7°F	15.0 PSI	4"
2*	285	180°F	145°F	7.2 PSI	4"	400	58°F	82°F	14.4 PSI	4"

\*SELECTIONS BASED ON B.A.C. EXCHANGER, PLATE AND FRAME HEAT EXCHANGER, MODEL EC.

**FAN SCHEDULE**

FAN NO.	LOCATION	SERVICE	MANUF.	MODEL	C.F.M.	STAT. RES. "WG.	MAX. FAN RPM	WHEEL DIA.	DRIVE	MIN. HP.	ELECTRIC SERVICE VOLTS PHASE CONTROL
EF-1	CEILING	RM. 198	GREENHECK	SP-25	208	0.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-2	CEILING	RM. 201	GREENHECK	SP-25	208	0.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-3	CEILING	RM. 200	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-4	CEILING	RM. 196A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-5	CEILING	RM. 192A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-6	CEILING	RM. 197A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-7	CEILING	RM. 193A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-8	CEILING	RM. 190A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-9	CEILING	RM. 185A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-10	CEILING	RM. 191A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-11	CEILING	RM. 186A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-12	CEILING	RM. 222	GREENHECK	SP-27	335	.150	1550	---	DIRECT	1/15	120 1 EMCS
EF-13	CEILING	RM. 223	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-14	CEILING	RM. 225	GREENHECK	SP-27	335	.150	1550	---	DIRECT	1/15	120 1 EMCS
EF-15	CEILING	RM. 129	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-16	CEILING	RM. 112	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-17	CEILING	RM. 113	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-18	CEILING	RM. 110A	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-19	CEILING	RM. 117B	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-20	CEILING	RM. 117A	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-21	CEILING	RM. 118	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-22	CEILING	RM. 130	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-23	CEILING	RM. 119	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-24	CEILING	RM. 121	GREENHECK	SP-25	208	.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-25	CEILING	RM. 122	GREENHECK	SP-25	208	.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-26	INLINE	RM. 180B	GREENHECK	CSP-27	237	.25	1550	---	DIRECT	1/15	120 1 MANUAL SWITCH
EF-27	CEILING	RM. 178	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-28	CEILING	RM. 174B	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-29	CEILING	RM. 184C	GREENHECK	SP-17	150	.150	1550	---	DIRECT	1/50	120 1 EMCS
EF-30	CEILING	RM. 146	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-31	CEILING	RM. 145	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-32	CEILING	RM. 158A	GREENHECK	SP-8	84	.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-33	INLINE	RM. 157	GREENHECK	CSP-27	237	.25	1550	---	DIRECT	1/15	120 1 EMCS
EF-34	ROOF	RM. 168	GREENHECK	GB-9-4	771	.25	1465	---	BELT	1/4	120 1 T'STAT
EF-35	ROOF	RM. 167	GREENHECK	GB-8-4	578	.25	1625	---	BELT	1/4	120 1 T'STAT
EF-36	ROOF	RM. 164	GREENHECK	GB-7-4	314	.25	1800	---	BELT	1/4	120 1 T'STAT
EF-37	CEILING	RM. 165	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-38	CEILING	RM. 159A	GREENHECK	SP-8	84	0.150	1550	---	DIRECT	1/125	120 1 EMCS
EF-39	ROOF	RM. 155	GREENHECK	GB-8-4	617	.375	1800	---	BELT	1/4	120 1 MANUAL SWITCH
EF-40	ROOF	RM. 154	GREENHECK	CUBE 30	6050	.75	585	---	BELT	1 1/2	480 3 PACKAGE KITCHEN SYSTEM
EF-41	ROOF	RM. 154	GREENHECK	MSJ 15	4235	.50	550	---	BELT	1 1/2	480 3 MICRO SWITCH
EF-42	WALL	RM. 159	GREENHECK	(36)	1700	---	---	---	DIRECT	1/2	208 1 MICRO SWITCH
EF-43	CEILING	RM. 172	GREENHECK	SP-25	208	.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-44	CEILING	RM. 171	GREENHECK	SP-25	208	.150	1050	---	DIRECT	1/40	120 1 EMCS
EF-45	CEILING	RM. 117	GREENHECK	SP-17	150	.150	1550	---	DIRECT	1/50	120 1 0-60 MIN. TIMER
EF-46	CRAWL SPACE	RM. 159	GREENHECK	SP-17	150	.150	1550	---	DIRECT	1/50	120 1 EMCS

**GRILLE & DIFFUSER SCHEDULE**

SYMBOL	TYPE	SERVICE	PANEL SIZE	NECK SIZE	CFM
A	LOUVER FACE	SUPPLY	24 x 24	6 x 6	50-125
B	LOUVER FACE	SUPPLY	24 x 24	9 x 9	130-280
C	LOUVER FACE	SUPPLY	24 x 24	12 x 12	300-550
D	LOUVER FACE	SUPPLY	24 x 24	15 x 15	550-800
E	LOUVER FACE	SUPPLY	24 x 24	18 x 18	800-1150
F	PERFORATED FACE	RETURN	24 x 24	6 x 6	50-125
G	PERFORATED FACE	RETURN	24 x 24	8 x 8	130-230
H	PERFORATED FACE	RETURN	24 x 24	9 x 9	230-280
J	PERFORATED FACE	RETURN	24 x 24	10 x 10	280-350
K	PERFORATED FACE	RETURN	24 x 24	12 x 12	350-550
L	PERFORATED FACE	RETURN	24 x 24	15 x 15	550-800
M	PERFORATED FACE	RETURN	24 x 24	18 x 18	800-1150
N	PERFORATED FACE	RETURN	24 x 24	22 x 22	1150-1700
P	LOUVER FACE	SUPPLY	12 X 24	6 x 6	50-125
Q	PERFORATED FACE	RETURN	12 X 24	9 x 9	230-280
R	ROTO-LOUVER	SUPPLY	---	30 x 15	900
T	ROTO-LOUVER	SUPPLY	---	35 x 10	750
U	BAR GRILLE	RETURN	---	48 x 36	4500
V	BAR GRILLE	RETURN	---	36 x 24	2050

**PUMP SCHEDULE**

PUMP NO.	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD	MIN. EFF. %	ESTIMATED MOTOR HP.	MOTOR RPM	ELECTRIC SERVICE VOLTS PHASE	MANUFACTURER - MODEL NO.
1	MECH RM. 168	COND. WATER	DOUBLE SUCTION	800	60	82%	20	1750	480 3	B & G, VSC 6 X 6 X 9 3/4
2	MECH RM. 168	HEAT PUMP LOOP	DOUBLE SUCTION	800	130	60%	40	1750	480 3	B & G, VSC, 8 X 8 X 13B
3	MECH RM. 168	HEAT PUMP LOOP	DOUBLE SUCTION	800	130	60%	40	1750	480 3	B & G, VSC, 8 X 8 X 13B
4	BOILER RM. 167	HOT WATER	END SUCTION	285	30	70%	3	1750	480 3	B & G, 1510, 4 AC
1	MECH RM. 168	COND. WATER	DOUBLE SUCTION	800	133	60%	40	1750	480 3	B & G, VSC, 8 X 8 X 13B

**CLOSED LOOP HEAT PUMP SCHEDULE**

UNIT NO.	LOCATION	GPM	MIN. O.A. CFM	CONDENSER WATER CONDITION		ENT. AIR CONDITION & CAPACITY		FANS		ELEC. SERVICE		CLIMATE MASTER MODEL NO.								
				COOLING ENT. °F	HEATING L.V.G. °F	COOLING EDB	HEATING EDB	HP	EXT. S.P. IN. WATER (EST.)	TOT. EST. S.P. IN. WATER	VOLTS PHASE									
1	204	4100	390	31.9	90	100	65	58	13.5	80	67	119	91	70	125	2	1.0	---	480 3	V-120
2	205	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
3	195	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
4	194	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
5	187	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
6	188	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
7	228	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
8	229	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
9	219	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
10	218	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
11	211	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
12	212	3700	383	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
13	181	2000	233	16.4	90	100	65	58	12.8	80	67	62	47.5	70	74.5	1	0.5	---	480 3	813-060
14	181	2000	233	16.4	90	100	65	58	12.8	80	67	62	47.5	70	74.5	1	0.5	---	480 3	813-060
15	181	9000	998	80	90	100	65	58	20.3	80	67	292	222	70	306	3	1.2	---	480 3	V-300
16	152	800	120	6.6	90	100	65	58	12.6	80	67	252	17.5	70	33.4	1/4	0.5	---	208 1	803-024
17	152	2000	270	16.4	90	100	65	58	12.8	80	67	67	47.5	70	74.5	1	0.5	---	480 3	813-060
18	185	3300	323	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
19	127	3300	345	26.8	90	100	65	58	16.8	80	67	100	78	70	104	1 1/2	1.0	---	480 3	V-100
20	131	2000	230	16.4	90	100	65	58	12.8	80	67	62	47.5	70	74.5	1 1/2	0.5	---	480 3	813-060
21	128</																			