MECHANICAL
SYMBOL LIST AND ABBREVIATIONS

SYMBOL LIST

SYMBOL	DESCRIPTION
—CS—	CONDENSING WATER FROM TOWER
—CR—	CONDENSING WATER TO TOWER
—CHWS—	CHILLED & HEATING WATER SUPPLY
—CHWR—	CHILLED & HEATING WATER RETURN
—HPS—	HIGH PRESSURE STEAM
—MPS—	MEDIUM PRESSURE STEAM
—LPS—	LOW PRESSURE STEAM
—C—	CONDENSATE RETURN
—CD—	COIL CONDENSATE DRAIN LINE
—SV—	STEAM VENT
—VPD—	VACUUM PUMP DISCHARGE
—CPD—	CONDENSATE PUMP DISCHARGE
—CCA—	CONTROL COMPRESSED AIR
	SOIL OR WASTE
	VENT
—CW—	COLD WATER
	STRAINER
	VALVE IN RISER (SEE NOTES)
	GATE VALVE
	GATE VALVE, ANGLE
	SQUARE HEAD COCK
	BALL VALVE
	GLOBE VALVE
	CHECK VALVE
PRV	PRESSURE REDUCING VALVE
	WALL HYDRANT
SV SV	RELIEF VALVE
HB	HOSE BIBB
	AUTOMATIC CONTROL VALVE, 2-WAY
	AUTOMATIC CONTROL VALVE, 3-WAY
	THERMOMETER WELL
	CHAIN OPERATED VALVE
	PRESSURE GAUGE W/ GAUGE COCK
	CAPPED PIPE
E E	PIPE, RISE/FALL
	GAUGE COCK
	BUTTERFLY VALVE
	BALANCING FITTING
	MANUAL AIR VENT
	FLOW DIRECTION OF ARROW
	PIPE, TURNING UP
	PIPE, TURNING DOWN
	PIPE, RISE OR DROP
	UNION
T	THERMOMETER
P	PRESSURE GAUGE
	AUTOMATIC AIR ELIMINATOR
	STEAM GAUGE SIPHON
	REDUCER, CONCENTIC
	REDUCER, ECCENTRIC
V	VENT
VTR	VENT THRU ROOF
	VIBRATION ABSORBER IN PIPING
	NEW CONNECTION TO EXISTING
FD	FLOOR DRAIN
	DIRT LEG
W	WATER METER
DA 1,2,3,ETC	DRIP ASSEMBLY, SEE DETAILS
T P.E.	THERMOSTAT
CWS/CWR	CHILL WATER (EXISTING)
	EQUIPMENT ITEM
	SPRINKLER HEAD, UPRIGHT
	" " " , PENDANT
	" " " , FLUSH MTR.
	" " " , SIDE WALL
—F—	MAIN SUPPLY FOR SPRINKLERS
(E)	EXISTING TO REMAIN
(E-X)	EXISTING TO BE REMOVED
—X—X—X—	EXIST. PIPING TO BE REMOVED

ABBREVIATIONS

ABBR.	TERM
ABV	ABOVE
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BLW	BELOW
BTM	BOTTOM
BTU	BRITISH THERMAL UNIT
BTU/H	BRITISH THERMAL UNIT/HOUR
C+C	CENTER TO CENTER
CONT	CONTINUATION
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB
DIA or Ø	DIAMETER
DN	DOWN
DPR	DAMPER
°F	DEGREE, FARENHEIT
DIFF or Δ	DIFFERENCE OR DELTA
E/A	RELIEF AIR
EXH	EXHAUST
EWT	ENTERING WATER TEMPERATURE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, & AIR COND.
LWT	LEAVING WATER TEMPERATURE
MBD	MANUAL BALANCING DAMPER
MAX	MAXIMUM
MFR	MANUFACTURER
OPNG	OPENING
OA	OUTSIDE AIR
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
SA	SUPPLY AIR
SP	STATIC PRESSURE
SHR	SENSIBLE HEAT RATIO
TD	TEMPERATURE DIFFERENCE
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
WB	WET BULB

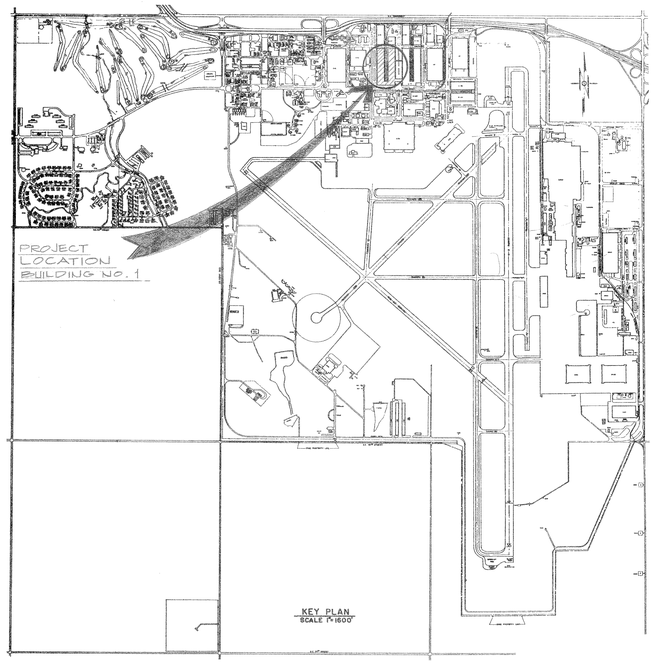
SUPPLY	GRILLE	FLOOR	
RETURN	REGISTER	CEILING	
EXHAUST	DIFFUSER	LOW WALL	
TRANSFER		HIGH WALL	
DOOR			

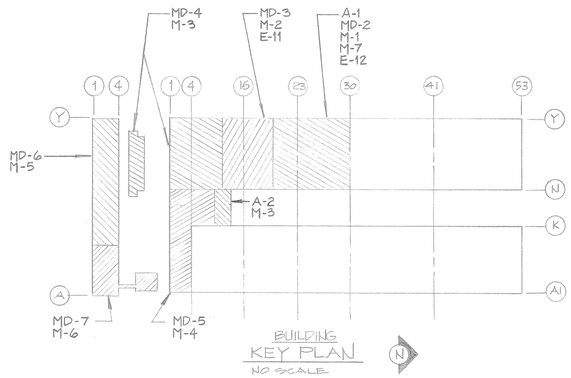
EQUIPMENT LIST

ITEM NO.	DESCRIPTION	LOCATION
1	AHU	RM 142
2	AHU	RM 141
3	AHU	RM 121
4	AHU	RM 233
5	AHU	RM 171
6	AHU	RM 230
7	AHU	RM 171
8	AHU	RM 171
9	AHU	RM 109
10	AHU	RM 107
11	AHU	RM 120
12	AHU	RM 120
13	(NOT USED)	
14	AHU	RM 114
15	AHU	RM 114
16	AHU	RM 114
17	AHU	RM 114
18	AHU	RM 147
19	AHU	RM 102
20	AHU	OFFICE IN AREA "A"
21	AHU	RM 103
22	AHU	RM 108
23	AHU	RM 108
24	AHU	RM 108
25	AHU	RM 100
26	AHU	RM 100
27	AHU	RM 100
28	AHU	RM 100
29	AHU	RM 200A
30	AHU	RM 200A
31	AHU	RM 200A
32	AHU	RM 200A
33	AHU	PENTHOUSE ABOVE RM 205
34	AHU	RM 218
35	AHU	RM 218
36	AHU	RM 218
37	AHU	RM 218
40	CENTRIFUGAL CHILLER	NEW MECH ROOM 108M
41	(NOT USED)	
42	CHW PUMP	NEW MECH ROOM 108M
43	(NOT USED)	
44	CW PUMP	NEW MECH ROOM 108M
~~45~~	~~CHW. PUMP~~	
46	COOLING TOWER	ON ROOF ABOVE RM 142
47	40 TON RECIP. COMPRESSOR	RM 142
48	30 TON RECIP. COMPRESSOR	RM 142
49	60 TON RECIP. COMPRESSOR	RM 142
50	CONTROL AIR COMPRESSOR	RM 142
51	CONTROL AIR DRIER	RM 142
52	CONTROL AIR COMPRESSOR	RM 142
53	15 TON RECIP. COMPRESSOR	RM 142
54	15 TON RECIP. COMPRESSOR	RM 142
55	50 TON RECIP. COMPRESSOR	RM 142
56	50 TON RECIP. COMPRESSOR	RM 142
57	10 TON RECIP. COMPRESSOR	RM 142
58	50 TON CHILLER	RM 142
59	UTILITY FAN SET	RM 142
60	VACUUM FAN	RM 142
61	DUPLEX CONDENSATE RECEIVER	RM 142
62	CONDENSER WATER PUMP	RM 142
63	CHW PUMP	RM 142
64	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
65	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
66	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
67	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
68	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
69	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
70	AIR COOLED CONDENSER	ON ROOF ABOVE RM 142
71	COOLING TOWER	ON ROOF ABOVE RM 142
72	COOLING TOWER	ON ROOF ABOVE RM 142
73	CONDENSER WATER PUMP	RM 142
74	CHW PUMP	RM 142
75	PUMP	RM 142
76	(NOT USED)	
77	(NOT USED)	
78	(NOT USED)	
79	2-50 TON CHILLERS	RM 171
80	CHW PUMP	RM 171
81	25 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
82	25 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
83	25 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
84	25 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
85	40 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
86	40 TON AIR COOLED CONDENSER	ON ROOF ABOVE RM 171
87	CONDENSATE RECEIVER PUMP	WEST OF RM 147
88	DOM. HOT WATER BOILER	RM 142
89	250 GAL STORAGE TANK FOR ITEM 88	RM 142
90	HHW CONVERTOR	NEW MECH ROOM 108M
91	DOM. HW CIRC.	RM 142
92	EXPANSION TANK	NEW MECH ROOM 108M
93	CONDENSING UNIT FOR AHU 13	ON ROOF ABOVE RM 102
94	CONDENSING UNIT FOR AHU 19	ON ROOF ABOVE RM 102
95	AIR COOLED (50 TONS) CONDENSER FOR AHU 33	ON ROOF ABOVE RM 205
96	CONDENSATE RECEIVER PUMP	EAST SIDE OF RM 171
97	OA INTAKE FOR AHU 5	RM 171
98	RELIEF AIR UNIT FOR AHU 5	RM 171
99	OA INTAKE FOR AHU 5	RM 171
100	RELIEF AIR UNIT FOR AHU 7	RM 171
101	OA INTAKE UNIT FOR AHU 8	RM 171
102	RELIEF AIR UNIT FOR AHU 8	RM 171
103	HW GENERATOR	RM 142
104	NEW CONDENSATE RECEIVER PUMP	NEW MECH ROOM 108M
105	HHW UNIT HEATER	NEW MECH ROOM 108M
106	HHW UNIT HEATER	PENTHOUSE FOR AHU 34
107	CONDENSER FOR ITEM 20	OFFICE IN AREA "A"
108	AIR SEPARATOR	NEW MECH ROOM 108M
109	VENTILATION FAN	NEW MECH ROOM 108M
110	VENTILATION INTAKE LOUVER	NEW MECH ROOM 108M

DRAWING INDEX

DRAWING NO.		TITLE
DE-F-83079-1	ME-1	INDEX, KEY PLAN, SYMBOL LIST
ARCHITECTURAL		
DE-F-83079-2	A-1	ARCHITECTURAL REFLECTED CEILING PLAN
DE-F-83079-3	A-2	ARCHITECTURAL FLOOR PLAN MECHANICAL ROOM 108M
MECHANICAL		
DE-F-83079-4	MD-1	MECHANICAL DEMOLITION PLAN MECHANICAL ROOF PLAN
DE-F-83079-5	MD-2	MECHANICAL DEMOLITION ROOMS 160,161,170,171
DE-F-83079-6	MD-3	MECHANICAL DEMOLITION PLAN PRINT SHOP AREA
DE-F-83079-7	MD-4	MECHANICAL DEMOLITION PLAN 1st FLOOR ADMIN WEST AND MEZZANINE
DE-F-83079-8	MD-5	MECHANICAL DEMOLITION PLAN 1st FLOOR ADMIN EAST AND CENTRAL
DE-F-83079-9	MD-6	MECHANICAL DEMOLITION PLAN 2nd FLOOR ADMIN WEST AND CENTRAL
DE-F-83079-10	MD-7	MECHANICAL DEMOLITION PLAN 2nd FLOOR ADMIN EAST
DE-F-83079-11	MD-8	MECHANICAL DEMOLITION PLAN ROOM 142
DE-F-83079-12	M-1	MECHANICAL FLOOR PLAN ROOMS 160,161,170
DE-F-83079-13	M-2	MECHANICAL FLOOR PLAN PRINT SHOP AREA
DE-F-83079-14	M-3	MECHANICAL FLOOR PLAN 1st FLOOR ADMIN WEST AND MEZZANINE
DE-F-83079-15	M-4	MECHANICAL FLOOR PLAN 1st FLOOR ADMIN CENTRAL AND EAST
DE-F-83079-16	M-5	MECHANICAL FLOOR PLAN 2nd FLOOR ADMIN WEST AND CENTRAL
DE-F-83079-17	M-6	MECHANICAL FLOOR PLAN 2nd FLOOR ADMIN EAST
DE-F-83079-18	M-7	FIRE PROTECTION PLAN ROOM 160,161,170
DE-F-83079-19	M-8	MECHANICAL FLOOR PLAN MECHANICAL ROOMS 142 & 171
DE-F-83079-20	M-9	MECHANICAL SCHEDULES
DE-F-83079-21	M-10	MECHANICAL PIPING AND CONTROL
DE-F-83079-22	M-11	SCHEMATICS MECHANICAL DETAILS
DE-F-83079-23	M-12	MECHANICAL DETAILS
DE-F-83079-24	M-13	MECHANICAL FLOOR PLAN ROOM 108M
DE-F-83079-25	M-14	MECHANICAL DETAILS
DE-F-83079-26	M-15	MECHANICAL DETAILS
ELECTRICAL		
DE-F-83079-27	E-1	~~RM.108 LG. CTL & POWER~~ SYMBOLS & SCHEDULES
DE-F-83079-28	E-2	ELECTRICAL ONE-LINE DEMOLITION
DE-F-83079-29	E-3	ELECTRICAL ONE-LINE DIAGRAM
DE-F-83079-30	E-4	208Y/120V PANEL SCHEDULE
DE-F-83079-31	E-5	480Y/277V PANELBOARDS SCHEDULE
DE-F-83079-32	E-6	PANELBOARD DEMOLITION PLAN
DE-F-83079-33	E-7	ELECTRICAL FLOOR PLAN
DE-F-83079-34	E-8	ELECTRICAL REVISIONS - VAULT "A"
DE-F-83079-35	E-9	ELECTRICAL REVISIONS - VAULT "C"
DE-F-83079-36	E-10	ELECTRICAL REVISIONS - VAULT "D"
DE-F-83079-37	E-11	ELECTRICAL LIGHTING PLAN ROOM 150
DE-F-83079-38	E-12	ELECTRICAL LIGHTING PLAN ROOMS 160,161,170,171





NOTE:
SIGNATURES ON THIS SHEET INDICATES OFFICIAL APPROVAL OF ALL DRAWINGS AS INDICATED IN THE DRAWING INDEX ON THIS SHEET.

AS BUILT
DATE: 19 MAY 86

COORDINATION	
APPROVED — ENVIRONMENTAL ENGINEER / DEEV	DATE
APPROVED — CORROSION ENGINEER / DEEE	DATE 14 Nov 84
APPROVED — CHIEF, FIRE PREVENTION	DATE
APPROVED — 1984 COMM. SQ. / L 70	DATE
APPROVED —	DATE 18 Jun 84
APPROVED —	DATE 18 Jun 84
APPROVED —	DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: F. RAY
DRAWN BY: J. BOWMAN
CHECKED BY: J. GRAHAM — DATE 9-2-83
SUBMITTED BY — DATE 22 Jun 84 — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

INDEX TO DRAWINGS, KEY PLANS
MECHANICAL SYMBOL LIST

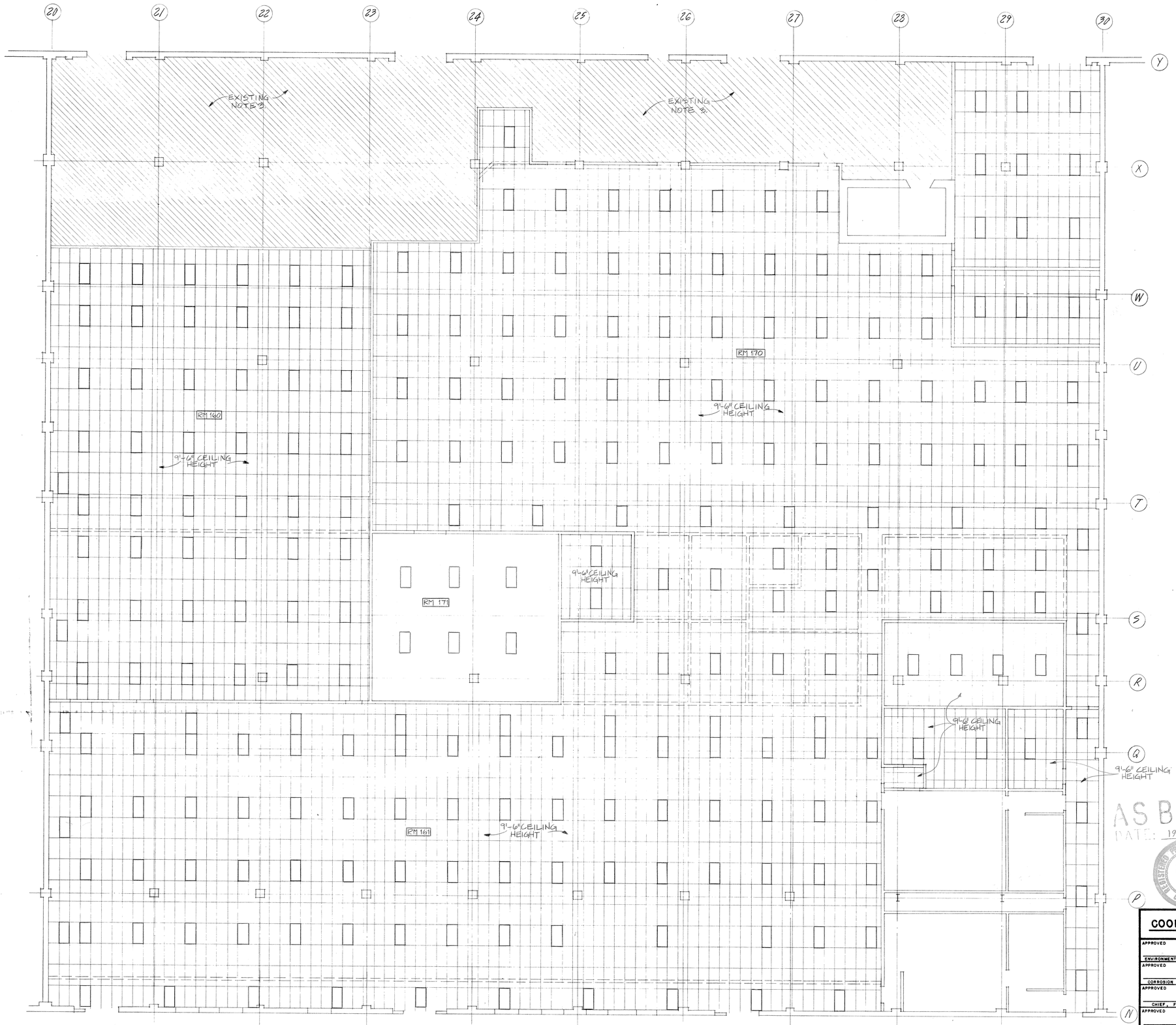
APPROVED — DEPUTY CIVIL ENGINEER	DATE 22 Jun 84
APPROVED — THE CIVIL ENGINEER	DATE 22 Jun 84
APPROVED — OFFICE, GROUND SAFETY ENGINEER	DATE 20 Sep 84
APPROVED — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)	DATE 17 Oct 1984

DRAWING FILE NUMBER: T1 - 1 - F 7 - 259
SCALE: NONE
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING NUMBER: DE - F - 83079 - 1
SHEET 1 OF 38 — ME-1

OKLAHOMA CITY ALC FORM OCT 76 2298 PREVIOUS EDITION MAY BE USED

☆ U. S. GOVERNMENT PRINTING OFFICE: 1978-775-696

AF 168518



1/1 REFLECTED CEILING PLAN scale 1/8" = 1'-0"

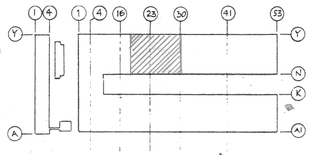
LEGEND

Partitions extend above the ceiling of 9'-6"

Partition height is below the ceiling of 9'-6"

NOTE:

1. Bracing on partitions that are less than 9'-6" high shall be remove and reinstalled with new ceiling.
2. Hanger wires shall be attached to existing structure above.
3. REFER SHEET MD-2 AND M-1 FOR WORK IN THIS AREA.



KEY PLAN

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ./L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY D. DUNHAM | DRAWN BY D. DUNHAM
CHECKED BY J. GRAHAM | DATE 8-30-83
SUBMITTED BY | DATE
CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING

BUILDING 1 — TINKER AIR FORCE BASE

ARCHITECTURAL REFLECTED CEILING PLAN

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)
APPROVED DATE — THE CIVIL ENGINEER

DRAWING FILE NUMBER T1 - 1 - F 7 - 258

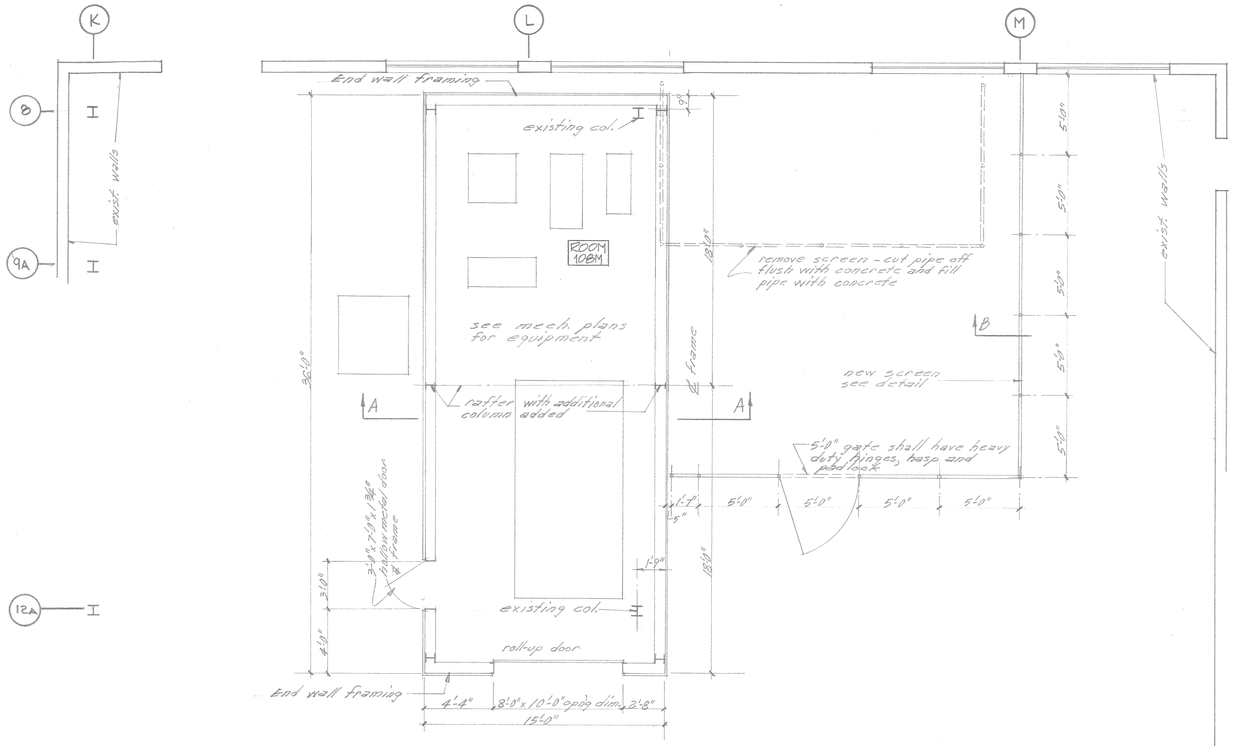
SCALE AS NOTED

PROJ. NR. OC-9-9 | DATE NOV 83

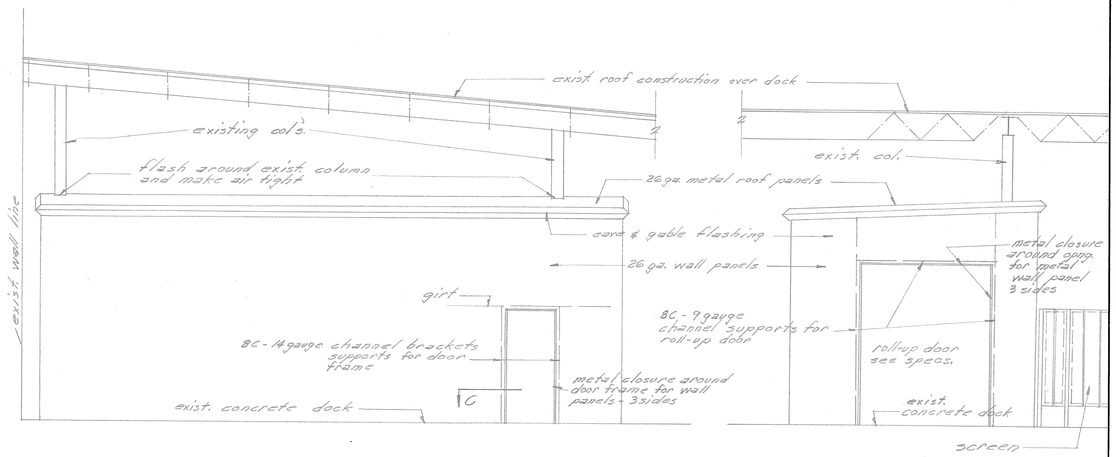
DRAWING NUMBER DE - F - 83079 - 2

SHEET 2 OF 38 | A-1

GPO GOVERNMENT PRINTING OFFICE 1982-570-039

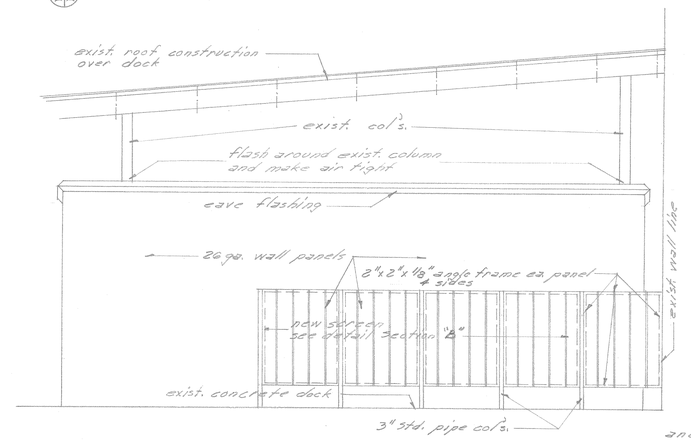


1/2 2/2 FLOOR PLAN 1/4"=1'-0"

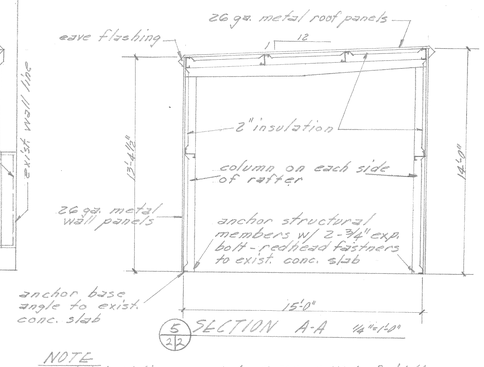


2/2 2/2 EAST ELEVATION 1/4"=1'-0"

3/2 2/2 NORTH ELEVATION 1/4"=1'-0"

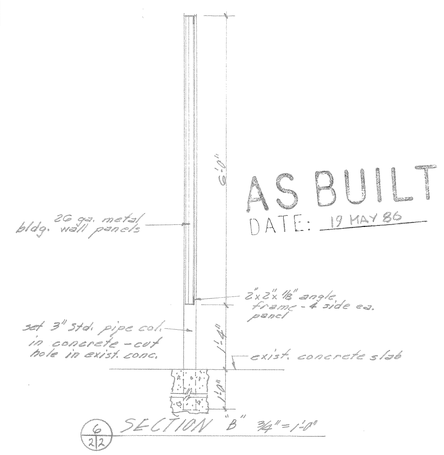


4/2 2/2 WEST ELEVATION 1/4"=1'-0"

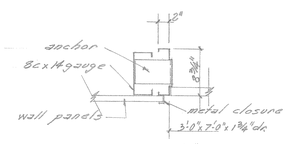


5/2 2/2 SECTION A-A 1/4"=1'-0"

NOTE
Metal building equal to STAR SWE4 Building Expansion System. SWE4 has additional column added. Loading - 12 psf live load plus dead load

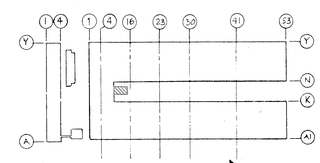


6/2 2/2 SECTION B" 3/4"=1'-0"



7/2 2/2 SECTION "C" 1"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA



KEY PLAN

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEEE					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ. / LTO					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: DUNHAM
DRAWN BY: DUNHAM
CHECKED BY — DATE
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

ARCHITECTURAL FLOOR PLAN
MECHANICAL ROOM 108M

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAM IND. HYG. ENGR.)

DRAWING FILE NUMBER: T1 - 1 - F 7 - 257

SCALE: AS NOTED

PROJ. NR. OC-9-9 — DATE NOV. 83

DRAWING NUMBER: DE - F - 83079 - 3 — A-2

SHEET 3 OF 38

USGPO GOVERNMENT PRINTING OFFICE 1982-570-039

[redacted]

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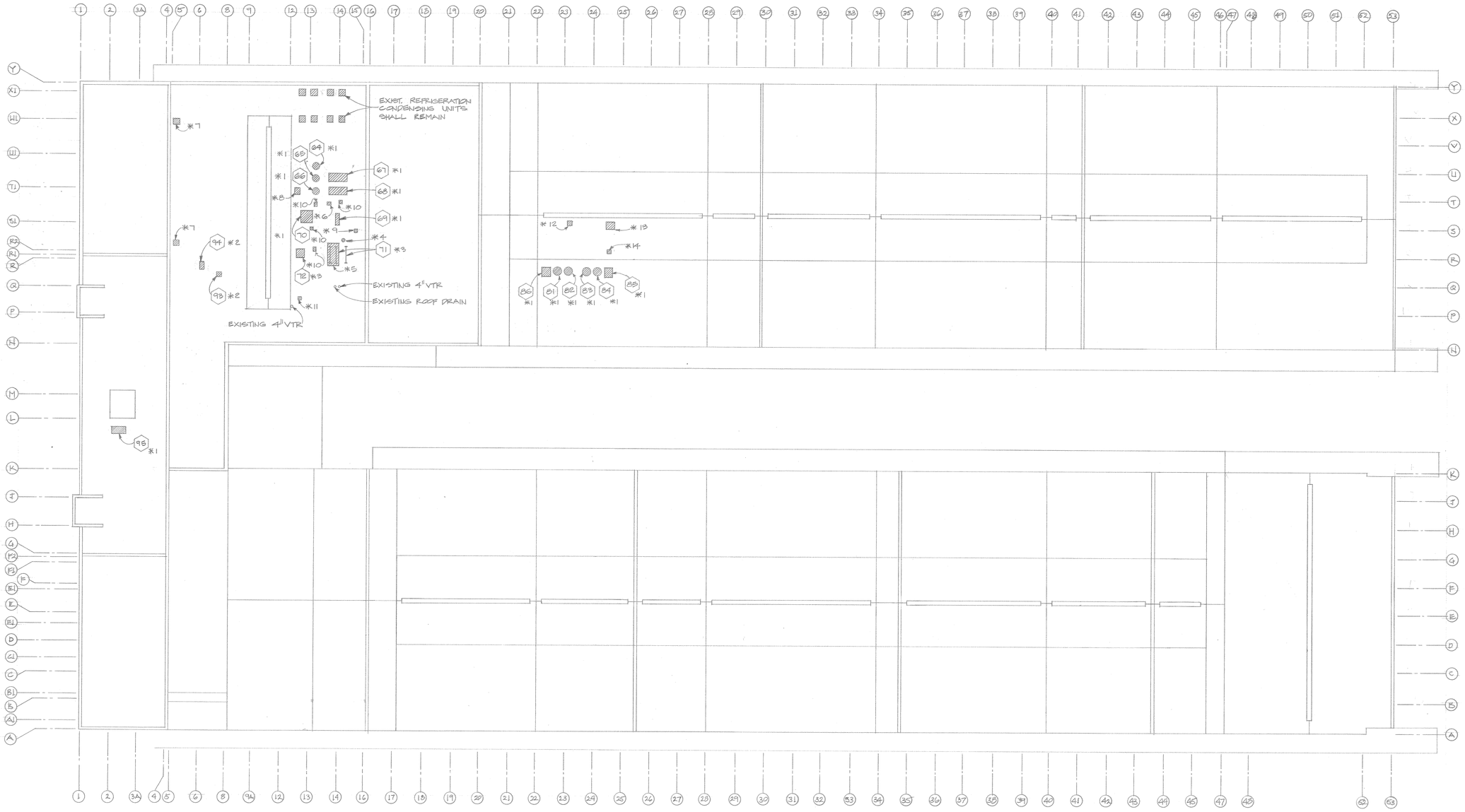


1/111 DEMOLITION MECHANICAL PLAN - ROOF PLAN

SCALE: 1/32" = 1'-0"

AS BUILT
DATE: 19 MAY 86

*NOTES:

*1 REMOVE EXISTING AIR COOLED CONDENSER, SUPPORTS, AND REFRIGERANT PIPING. CAP REFRIGERANT LIQUID AND DISCHARGE LINES ON CONDENSER. RETURN CONDENSER TO GOVERNMENT.

*2 EXISTING CONDENSING UNITS SHALL REMAIN.

*3 REMOVE EXISTING COOLING TOWER, SUPPORTS AND WATER PIPING. RETURN COOLING TOWER TO GOVERNMENT. REMOVE EXISTING 1" CW MAKE-UP LINE BACK TO MAIN, VALVE AND CAP.

*4 REMOVE EXISTING 28" DIAMETER PNEUMATIC TUBE EXHAUST STACK AND SUPPORT GUY WIRES. CAP AND SEAL WATER-TIGHT 6" ABOVE FINISHED ROOF.

*5 REMOVE EXISTING 12" DIAMETER EXHAUST STACK AND SUPPORT GUY WIRES. CAP AND SEAL WATER-TIGHT 6" ABOVE FINISHED ROOF.

*6 EXISTING 24" DIAMETER BOILER FLUE SHALL REMAIN.

*7 REMOVE EXISTING 48" X 48" GOOSENECK OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

*8 REMOVE EXISTING 24" X 42" OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

*9 REMOVE EXISTING 20" X 20" OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

*10 EXISTING ROOF OPENINGS AND COVERINGS SHALL REMAIN.

*11 REMOVE EXISTING 22" X 22" GOOSENECK OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

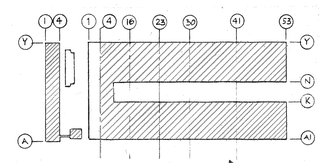
*12 REMOVE EXISTING 42" X 30" GOOSENECK OA INTAKE AND EXISTING 42" X 14" GOOSENECK EXHAUST OUTLET. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

*13 REMOVE EXISTING 74" X 62" GOOSENECK OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

*14 REMOVE EXISTING 24" X 24" GOOSENECK OA INTAKE. PROVIDE CAP TO PREVENT RAIN FROM ENTERING OPENING.

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DIMENSIONS OF EXISTING EQUIPMENT, ROOF OPENINGS, PIPING, ETC., PRIOR TO CONSTRUCTION.
2. ALL PIPE SUPPORTS FOR EQUIPMENT BEING REMOVED SHALL BE CUT OFF 6" ABOVE FINISHED ROOF. CAP AND SEAL PIPE OPENING WATER-TIGHT.
3. CONTRACTOR SHALL REPAIR ANY ROOF DAMAGE, CAUSED BY DEMOLITION OF EQUIPMENT ON ROOF, TO MATCH EXISTING ROOF AND ROOFING.



KEY PLAN

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 6789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY G. McCLAIN
DRAWN BY G. McCLAIN
CHECKED BY DATE
SUBMITTED BY DATE
CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL DEMOLITION PLAN - MECHANICAL ROOF PLAN

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAR. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 DATE Nov. 83

DRAWING FILE NUMBER T1 - 1 - F 7 - 256

SCALE 1/32" = 1'-0"

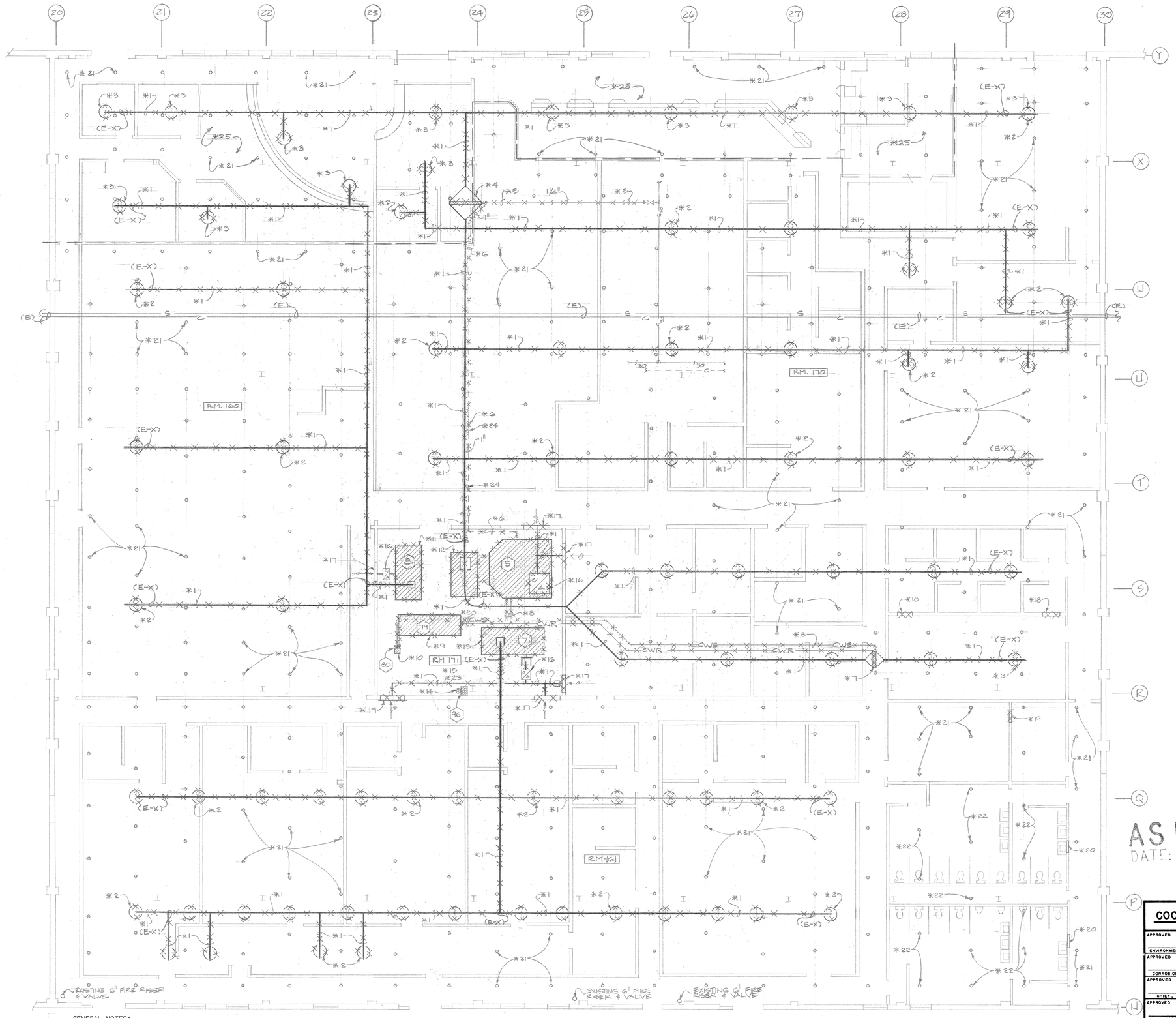
DRAWING NUMBER DE - F - 83079 - 4

4

SHEET 4 OF 38 MD-1

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

AF 168518



*NOTES:

*1 REMOVE EXISTING DUCTWORK AND DUCT SUPPORTS.

*2 REMOVE EXISTING AIR DIFFUSERS (TYPICAL).

*3 REMOVE EXISTING AIR DIFFUSER. REPLACE EXISTING DAMAGED ACCOUSTICAL CEILING TILES AND EXISTING DAMAGED "T" BAR GRIDS WITH NEW, TO MATCH EXISTING.

*4 REMOVE EXISTING 72" X 42", 1 ROW STEAM COIL, DUCT CASING, SUPPORTS, AND CONTROLS. RETURN COIL TO GOVERNMENT.

*5 REMOVE EXISTING 1-1/4" STEAM RUNOUT BACK TO BRANCH. VALVE AND CAP AT BRANCH CONNECTION. REMOVE EXISTING PIPE SUPPORT.

*6 REMOVE EXISTING 1" STEAM CONDENSATE LINE AND PIPE SUPPORTS.

*7 REMOVE EXISTING 36" X 24", 2 ROW CHW COIL, DUCT CASING, SUPPORTS AND CONTROLS. RETURN COIL TO GOVERNMENT.

*8 REMOVE EXISTING CHILLED WATER PIPING AND PIPE SUPPORTS.

*9 REMOVE EXISTING CHILLER 79 . CAP CHW OUTLETS AND REFRIGERANT OUTLETS. RETURN CHILLER TO GOVERNMENT. REMOVE REFRIGERANT PIPING AND ACCESSORIES FROM CHILLER TO AIR COOLED CONDENSERS ON ROOF.

*10 REMOVE EXISTING CHW PUMP 80 . RETURN TO GOVERNMENT.

*11 REMOVE EXISTING AHU 76 AND CONTROLS. CAP REFRIGERANT OUTLETS. REMOVE REFRIGERANT LINES AND ACCESSORIES FROM AHU TO AIR COOLED CONDENSERS ON ROOF. RETURN AHU TO GOVERNMENT.

*12 REMOVE EXISTING AHU 77 AND CONTROLS. UNIT IS FIELD BUILT-UP. RETURN FAN AND MOTOR, CHW COIL AND STEAM COIL TO GOVERNMENT.

*13 REMOVE EXISTING AHU 78 AND CONTROLS. CAP REFRIGERANT OUTLETS. REMOVE REFRIGERANT LINES AND ACCESSORIES FROM AHU TO AIR COOLED CONDENSERS ON ROOF. RETURN AHU TO GOVERNMENT.

*14 EXISTING STEAM CONDENSATE RECEIVER/PUMP 96 SHALL REMAIN.

*15 REMOVE EXISTING STEAM AND STEAM CONDENSATE RETURN RUNOUTS AND BRANCH LINES BACK TO MAINS IN MECHANICAL ROOM 171. VALVE AND CAP LINES AT MAIN CONNECTIONS.

*16 REMOVE EXISTING OA DUCTWORK FROM AHU UP TO ROOF.

*17 REMOVE EXISTING RETURN AIR GRILLES. PATCH OPENING TO MATCH EXISTING WALL.

*18 REMOVE EXISTING 20" X 36" TRANSFER GRILLE. PATCH OPENING TO MATCH EXISTING WALL.

*19 REMOVE EXISTING 24" X 24" TRANSFER GRILLE. PATCH OPENING TO MATCH EXISTING WALL.

*20 EXISTING 12" X 18" TRANSFER GRILLE SHALL REMAIN.

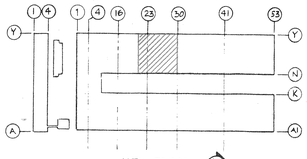
*21 REMOVE EXISTING SPRINKLER HEADS (TYPICAL).

*22 EXISTING SPRINKLER HEADS SHALL REMAIN.

*23 REMOVE EXISTING FIRE SPRINKLER BRANCH LINES, FOR ROOM 171, BACK TO POINT OF ENTRANCE INTO ROOM 171. PROVIDE TEMPORARY CAPS.

*24 REMOVE EXISTING SPRINKLER HEAD AND CAP.

*25 REMOVE CEILING AS NECESSARY TO REMOVE EXISTING DUCTWORK AND DIFFUSERS. REPLACE DAMAGED GRID TEES AND TILES TO MATCH EXISTING.



AS BUILT
DATE: 19 MAY 86

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DIMENSIONS OF EXISTING EQUIPMENT, ROOF AND WALL OPENINGS, PIPING, ETC., PRIOR TO CONSTRUCTION.

1/2 2/2 MECHANICAL DEMOLITION- ROOMS 160, 161, & 170
SCALE: 1/8"=1'-0"

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SG./L 70
APPROVED DATE
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY — DRAWN BY G. McCLAIN
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL DEMOLITION- ROOMS 160, 161, & 171

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN IND. HYG. ENGR.)
APPROVED DATE — THE CIVIL ENGINEER

PROJ. NR. 06-9-9 — DATE Nov. 83
DRAWING FILE NUMBER T1 - 1 - F 7 - 255
SCALE 1/8"=1'-0"
5
DRAWING NUMBER DE - F - 83079 - 5
SHEET 5 OF 28
MD-2

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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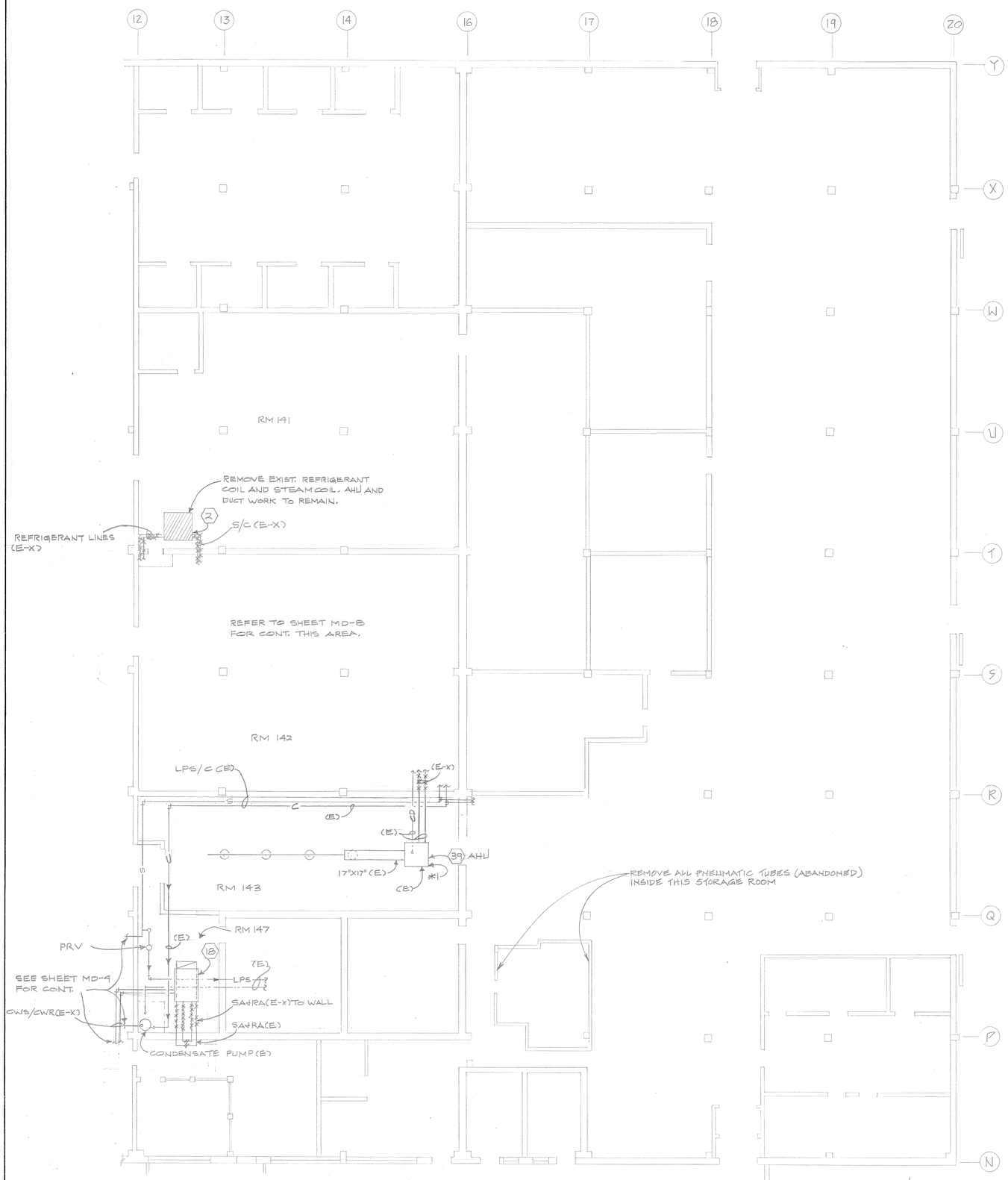
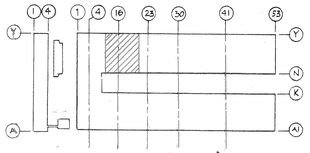


1/3 MECHANICAL DEMOLITION PLAN - PRINT SHOP AREA
SCALE: 1/8" = 1'-0"

* NOTES:

* 1 EXISTING AHU AND COIL TO REMAIN. REPLACE CWS AND CWR LINES IN RM 142.



KEY PLAN

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8783 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / L 70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F. RAY
DRAWN BY J. BOLLMAN
CHECKED BY DATE
SUBMITTED BY DATE
CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 TINKER AIR FORCE BASE
MECHANICAL DEMOLITION PLAN
PRINT SHOP AREA

APPROVED DATE DEPUTY CIVIL ENGINEER
APPROVED DATE THE CIVIL ENGINEER
APPROVED DATE OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE OFFICE, SURGEON (SAN IND. HYG. ENGR.)

PROJ. NR. OC-9-9
DATE Nov 83
DRAWING FILE NUMBER T1 - 1 - F 7 - 254
SCALE 1/8" = 1'-0"
6
DRAWING NUMBER DE - F - 83079 - 6
SHEET 6 OF 33
MD-3

52 U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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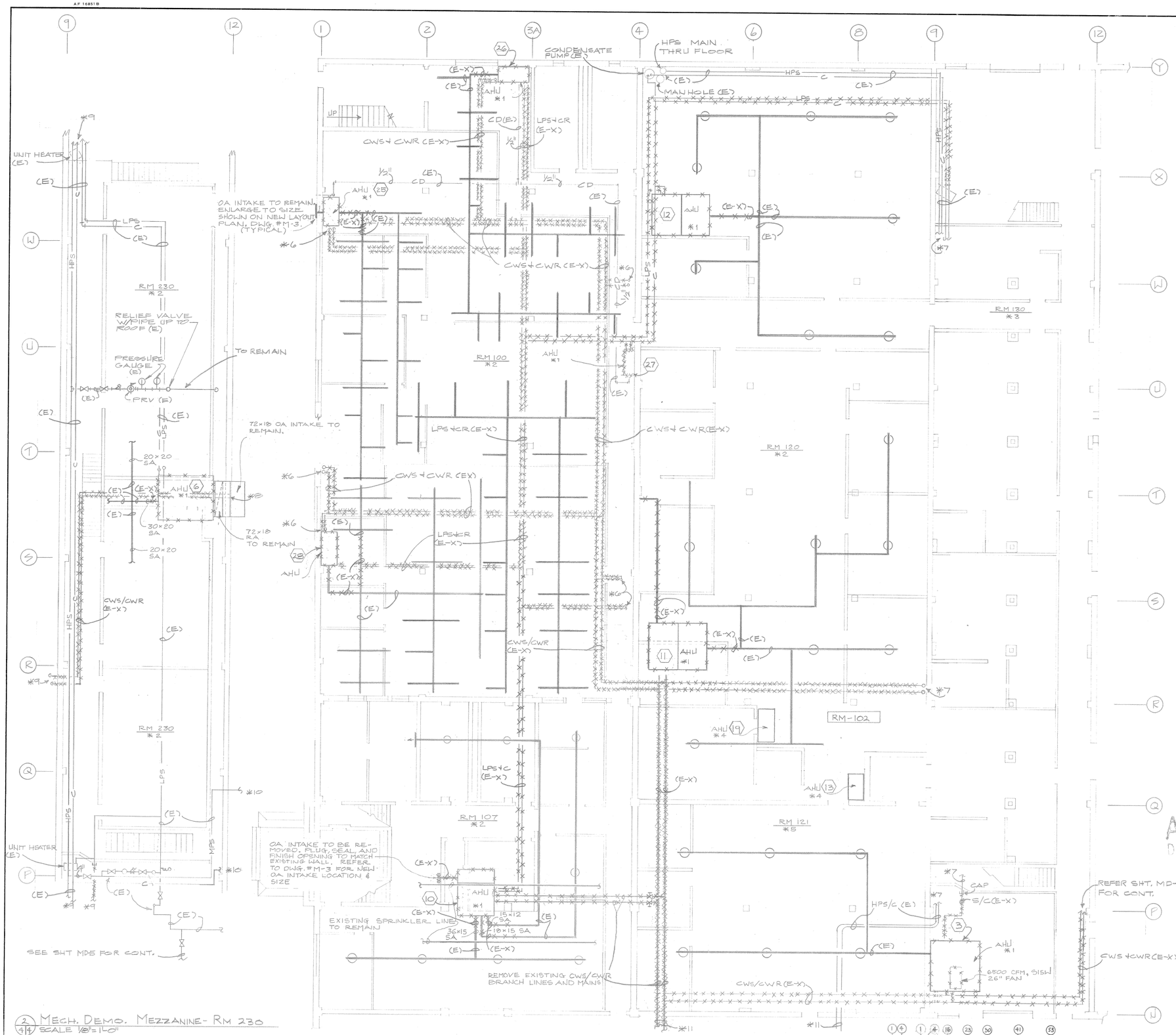
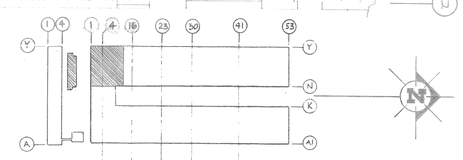
AF 16851B



2 / 4/4 MECH. DEMO. MEZZANINE - RM 230
SCALE 1/8" = 1'-0"

1 / 4/4 MECHANICAL DEMOLITION — 1ST FLOOR ADMIN WEST AND MEZZANINE
SCALE: 1/8" = 1'-0"



KEY PLAN

*DEMOLITION NOTES:

*1 REPLACE EXISTING AHU WITH NEW. REFER TO SHT. M-3 FOR NEW LAYOUT PLAN. NEW AHU WILL HAVE EQUAL AIR FLOW, COOLING CAPACITY TO EXISTING AHU. NEW AHU SHALL BE CHILLED WATER COOLING AND HOT WATER HEATING. REMOVE EXISTING STEAM BRANCH LINE BACK TO STEAM MAIN OR TO NEAREST ACTIVE LINE. VALVE AND CAP. REMOVE ALL CHILLED WATER SUPPLY AND RETURN BRANCH LINES AND MAINS AND REPLACE WITH NEW. RETURN AHU TO GOVERNMENT.

*2 EXISTING SUPPLY DUCTWORK IN THIS AREA SHALL REMAIN WITH MINOR ALTERATIONS TO FIT NEW AHU, AS SHOW. CHANGE RETURN AIR DUCTWORK AS SHOWN ON NEW PLAN. UNLESS NOTED, OA INTAKES TO REMAIN IN SAME LOCATION. CHANGE TO NEW SIZE, EXTEND OA DUCT TO NEW HORIZONTAL AHU ABOVE CEILING AND FURR AROUND EXPOSED DUCTWORK IN OCCUPIED SPACES. REFER TO SHT. M-3.

*3 EXISTING SUPPLY AND RETURN AIR DUCTWORK, GRILLES AND REGISTERS IN THIS AREA TO REMAIN THE SAME. CONNECT TO NEW AHU 6 ABOVE MEZZANINE. CHANGE OA AND EA ON AHU 6 AS SHOWN ON SHEET M-3.

*4 EXISTING AHU AND APPURTENANCES TO REMAIN.

*5 SUPPLY AND RETURN DUCTWORK TO REMAIN THE SAME. REROUTE OA DUCT, CHANGE SIZE OF EA AS SHOWN ON SHEET M-3. REMOVE 6500 CFM, 26" FAN AND RETURN TO GOVERNMENT.

*6 REMOVE EXISTING CWS, CWR, STEAM, AND CONDENSATE LINES UP TO 2ND FLOOR. SEE SHEET MD-6 FOR CONTINUATION.

*7 FOR CONTINUATION SEE MEZZANINE RM 230 THIS SHEET.

*8 CWS AND CWR. FOR CONTINUATION SEE SHEET MD-8.

*9 SEE 1ST FLOOR ADMIN. WEST, THIS SHEET FOR CONTINUATION.

*10 SEE SHEET MD-3 FOR CONTINUATION.

*11 SEE SHEET MD-5 FOR CONTINUATION.

GENERAL NOTES:

1. ALL STEAM MAINS TO REMAIN. REMOVE, CAP AND VALVE STEAM BRANCH LINES.
2. ALL UNIT HEATERS SHALL REMAIN
3. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EQUIPMENT, PIPING, ETC.

AS BUILT
DATE: 19 MAY 86

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / LTO
APPROVED DATE
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
CIVIL ENGINEERING DIVISION
OKLAHOMA CITY — OKLAHOMA

DESIGNED BY N.J.H — DRAWN BY J. BOWMAN — CHECKED BY DATE — SUBMITTED BY DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL DEMOLITION PLAN
FIRST FLOOR ADMIN. WEST AND MEZZANINE

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)
APPROVED DATE — THE CIVIL ENGINEER

DRAWING FILE NUMBER T1 - 1 - F 7 - 253
SCALE 1/8" = 1'-0"
7
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 7
SHEET 7 OF 38 — MD-4

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-570-038

[redacted]

A.F. 16851B

*DEMOLITION NOTES:

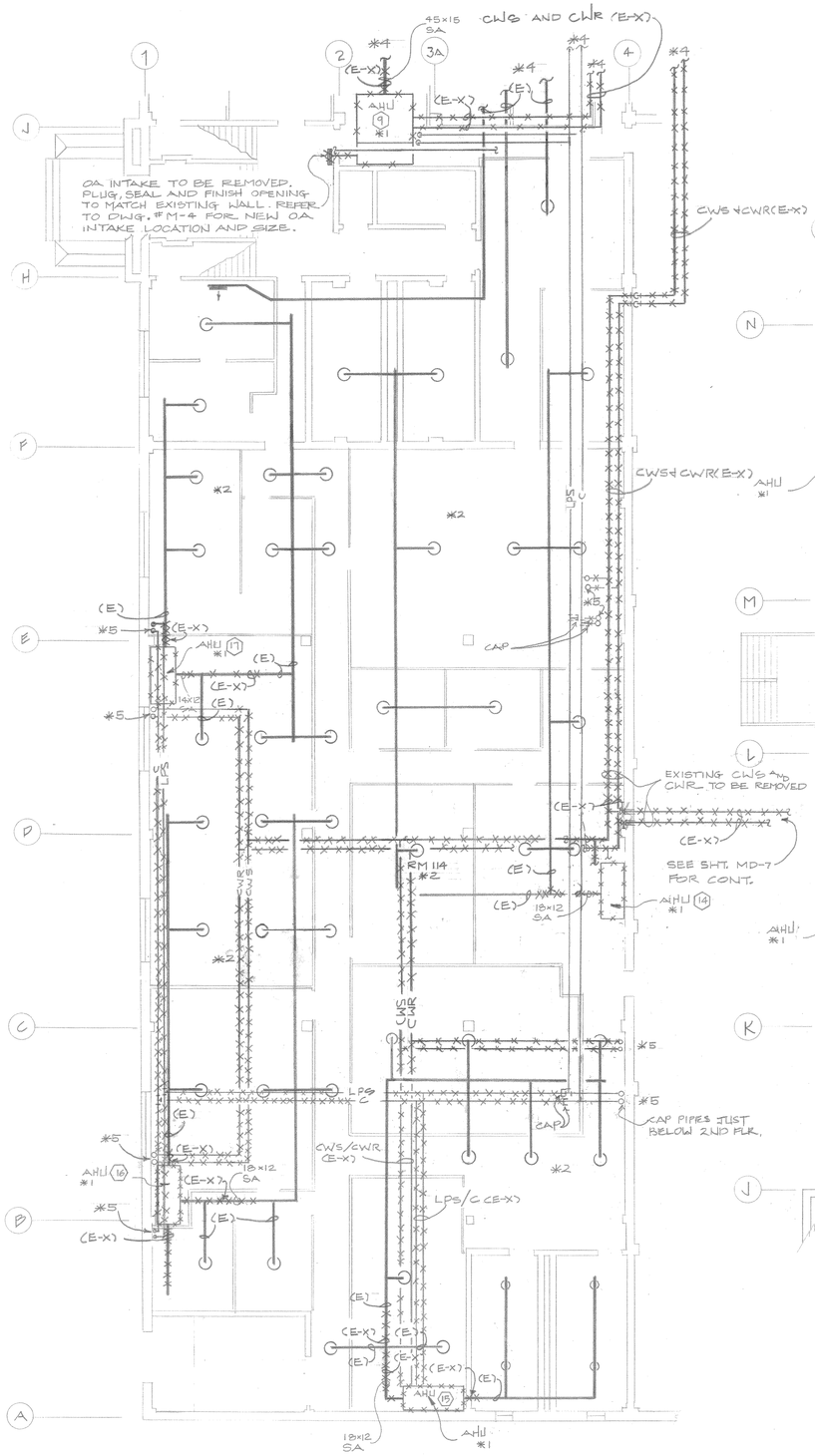
*1 REPLACE EXISTING AHU WITH NEW. REFER TO SHT. M-4 FOR NEW LAYOUT PLAN. NEW AHU WILL HAVE EQUAL AIR FLOW. COOLING CAPACITY TO EXISTING AHU. NEW AHU SHALL BE CHILLED WATER COOLING AND HOT WATER HEATING. REMOVE EXISTING STEAM BRANCH LINE BACK TO STEAM MAIN OR TO NEAREST ACTIVE LINE. VALVE AND CAP. REMOVE ALL CHILLED WATER SUPPLY AND RETURN BRANCH LINES AND MAINS AND REPLACE WITH NEW. RETURN AHU TO GOVERNMENT.

*2 EXISTING SUPPLY DUCTWORK IN THIS AREA SHALL REMAIN WITH MINOR ALTERATIONS TO FIT NEW AHU, AS SHOW. CHANGE RETURN AIR DUCTWORK AS SHOWN ON NEW PLAN. UNLESS NOTED, OA INTAKES TO REMAIN IN SAME LOCATION. CHANGE TO NEW SIZE, EXTEND OA DUCT TO NEW HORIZONTAL AHU ABOVE CEILING AND FURR AROUND EXPOSED DUCTWORK IN OCCUPIED SPACES. REFER TO SHT. M-4.

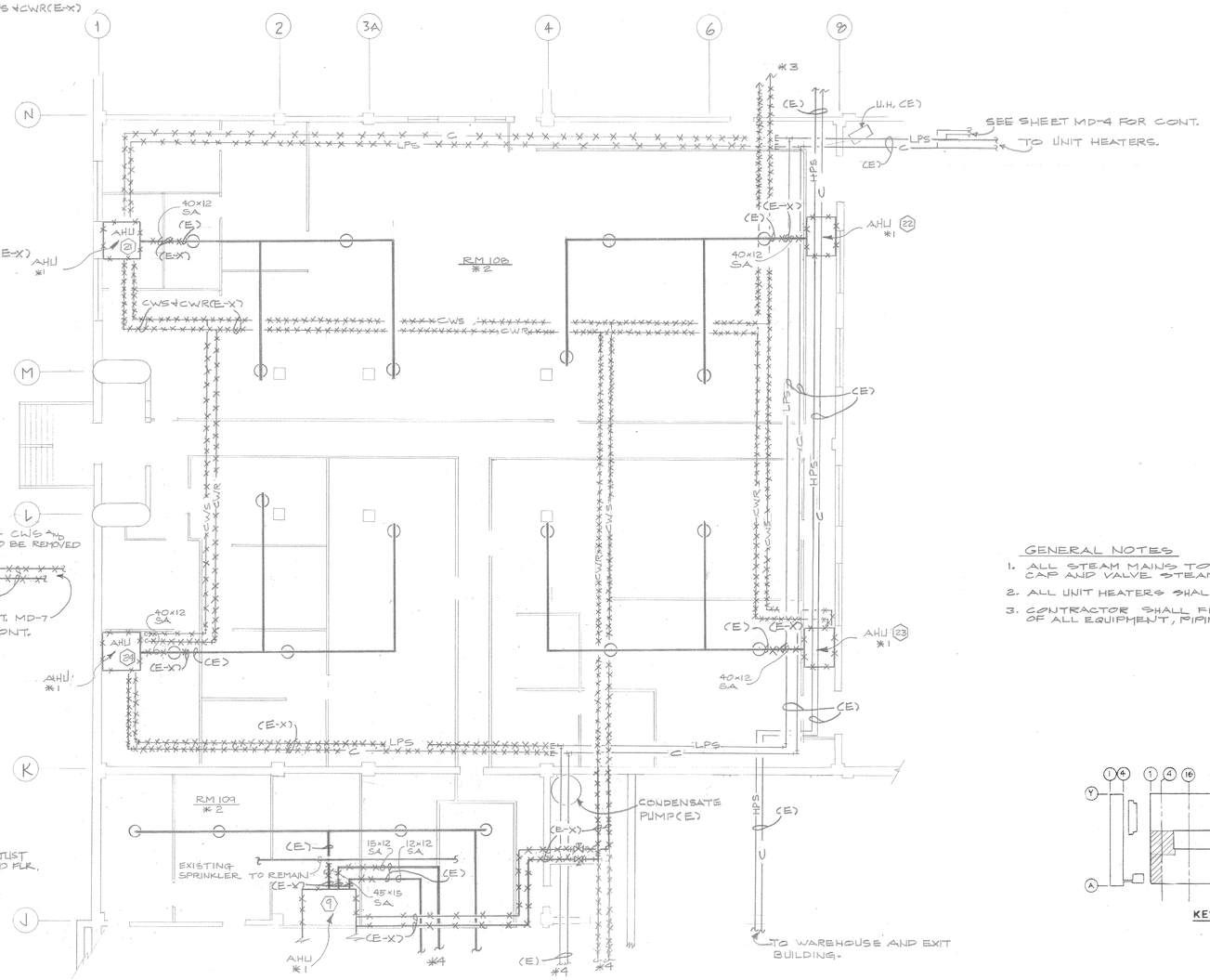
*3 SEE SHEET MD-4 FOR CONTINUATION.

*4 SEE THIS SHEET FOR CONTINUATION.

*5 PIPES TO SECOND FLOOR, SEE SHEET MD-7.



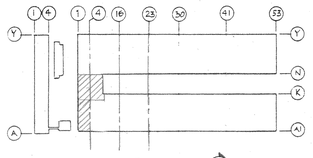
1/5 MECHANICAL DEMOLITION — 1ST FLOOR ADMIN EAST
SCALE: 1/8" = 1'-0"



2/5 MECHANICAL DEMOLITION — 1ST FLOOR ADMIN CENTRAL
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. ALL STEAM MAINS TO REMAIN. REMOVE CAP AND VALVE STEAM BRANCH LINES
2. ALL UNIT HEATERS SHALL REMAIN
3. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EQUIPMENT, PIPING, ETC.



KEY PLAN

AS BUILT
DATE: 19 MAY 86

JACK H. GRAHAM 8789 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ./L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY P. RAY
DRAWN BY J. BOWMAN
CHECKED BY DATE
SUBMITTED BY DATE
CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL DEMOLITION PLAN
FIRST FLOOR, ADMIN. EAST AND CENTRAL

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING FILE NUMBER T1 - 1 - F7 - 252
SCALE 1/8" = 1'-0"
8
DRAWING NUMBER DE - F - 83079 - 8
SHEET 8 OF 38
MD-5

SOLE GOVERNMENT PRINTING OFFICE: 1982-870-038

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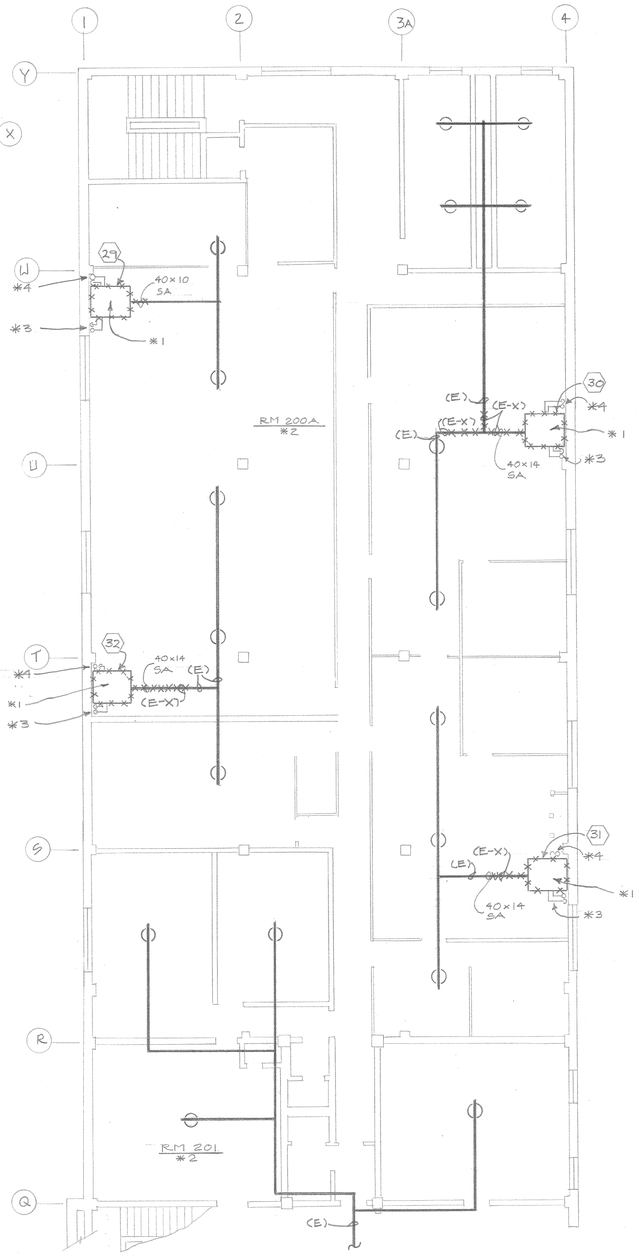
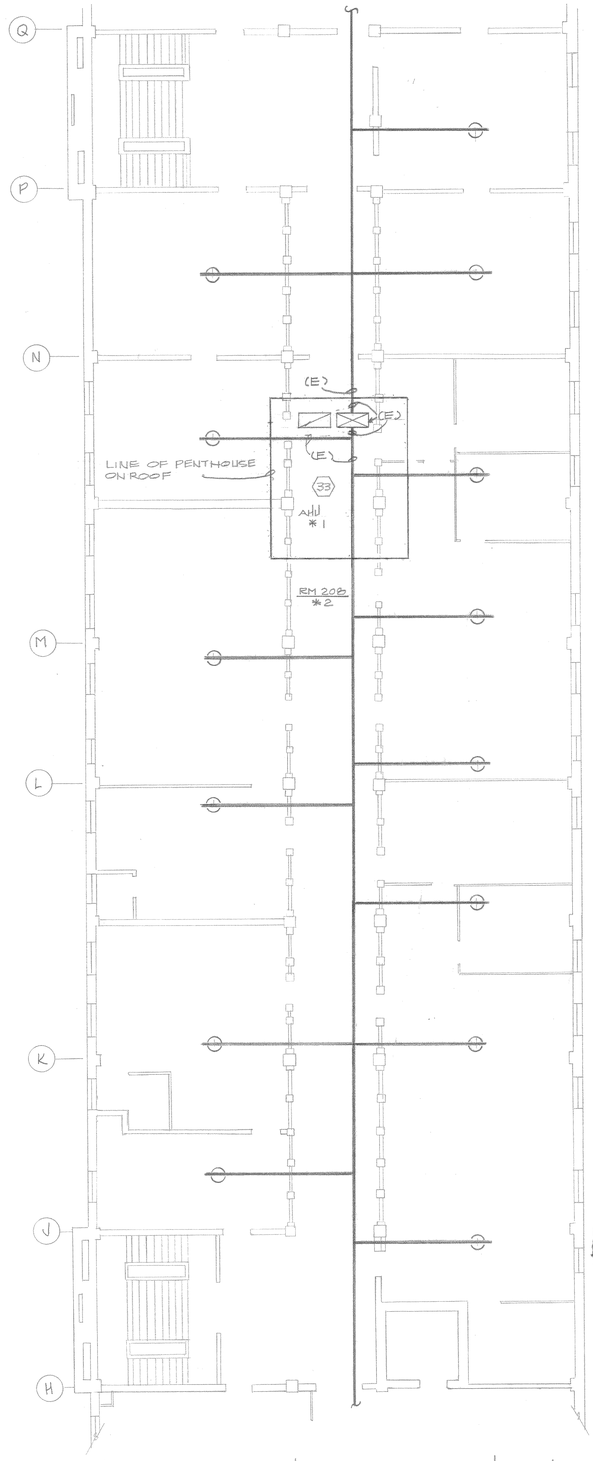
A.F. 16051B



1/66 MECHANICAL DEMOLITION – 2ND FLOOR ADMIN. WEST

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



2/66 MECHANICAL DEMOLITION – 2ND FLOOR ADMIN. CENTRAL

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

*DEMOLITION NOTES:

*1 REPLACE EXISTING AHU WITH NEW. REFER TO SHT. M-5 FOR NEW LAYOUT PLAN. NEW AHU WILL HAVE EQUAL AIR FLOW, COOLING CAPACITY TO EXISTING AHU. NEW AHU SHALL BE CHILLED WATER COOLING AND HOT WATER HEATING. REMOVE EXISTING STEAM BRANCH LINE BACK TO STEAM MAIN OR TO NEAREST ACTIVE LINE. VALVE AND CAP. REMOVE ALL CHILLED WATER SUPPLY AND RETURN BRANCH LINES AND MAINS AND REPLACE WITH NEW. RETURN AHU TO GOVERNMENT.

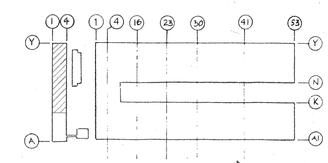
*2 EXISTING SUPPLY DUCTWORK IN THIS AREA SHALL REMAIN WITH MINOR ALTERATIONS TO FIT NEW AHU, AS SHOW. CHANGE RETURN AIR DUCTWORK AS SHOWN ON NEW PLAN, UNLESS NOTED. OA INTAKES TO REMAIN IN SAME LOCATION. CHANGE TO NEW SIZE, EXTEND OA DUCT TO NEW HORIZONTAL AHU ABOVE CEILING AND FURR AROUND EXPOSED DUCTWORK IN OCCUPIED SPACES. REFER TO SHT. M- .

*3 EXISTING STEAM AND CONDENSATE LINES (E-X) TO BE REMOVED. SEE SHEET MD-4 FOR CONTINUATION.

*4 EXISTING CWS AND CWR (E-X) TO BE REMOVED. SEE SHEET MD-4 FOR CONTINUATION.

GENERAL NOTES:

1. ALL STEAM MAINS TO REMAIN. REMOVE CAP AND VALVE STEAM BRANCH LINES.
2. ALL UNIT HEATERS SHALL REMAIN.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EQUIPMENT, PIPING, ETC.



KEY PLAN

AS BUILT
DATE: 19 MAY 87

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / LTO					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: P. RAY
DRAWN BY: J. BOLIMAN
CHECKED BY — DATE
SUBMITTED BY — DATE
CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL DEMOLITION PLAN
2ND FLOOR ADMIN WEST AND CENTRAL

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN IND. HYG. ENGR.)

PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 9
SHEET 9 OF 38
9
MD-6

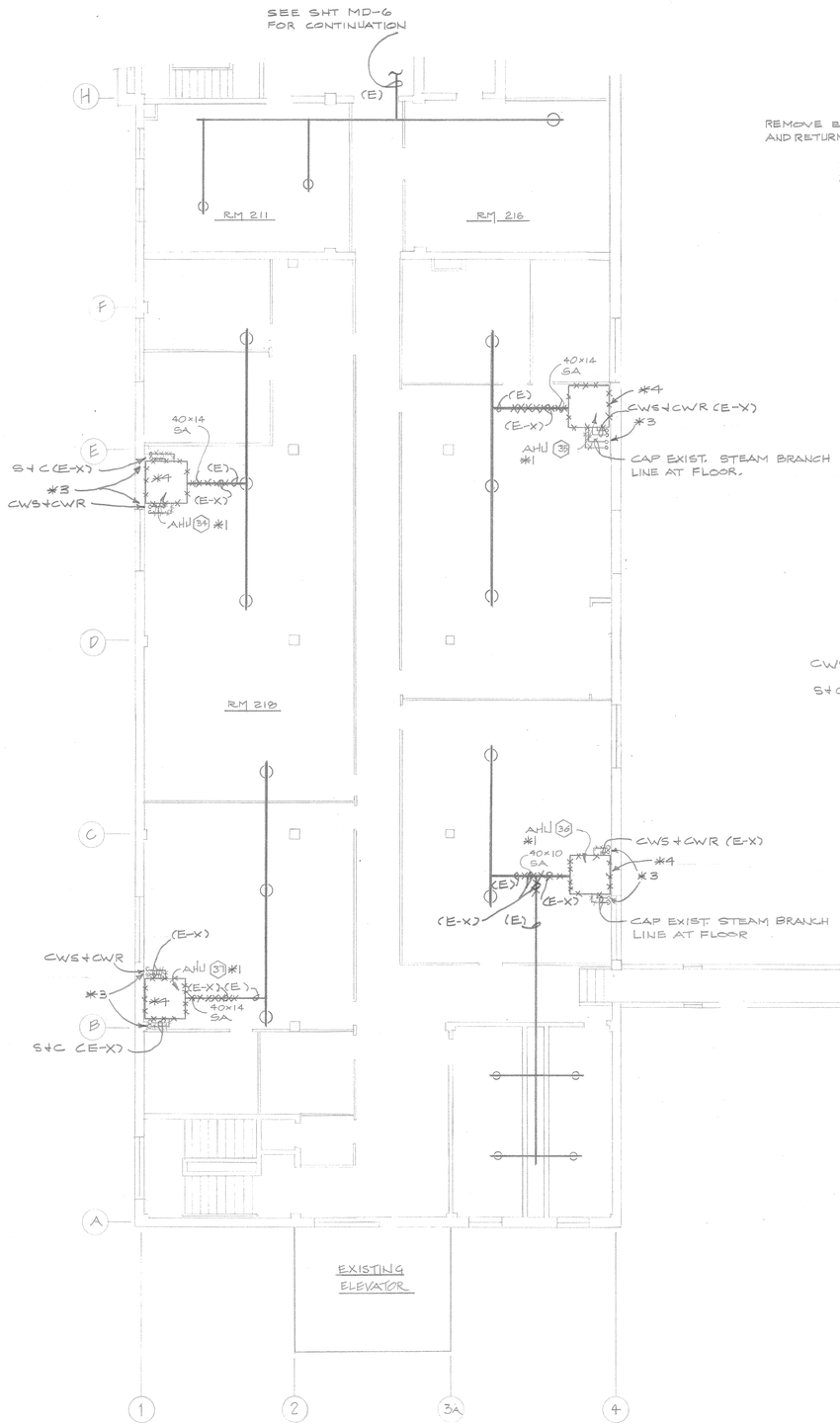
DRAWING FILE NUMBER T1 - 1 - F 7 - 251

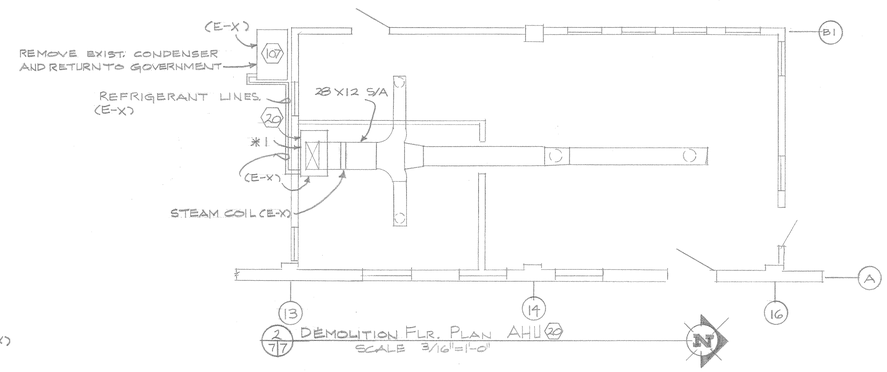
SCALE 1/8" = 1'-0"

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

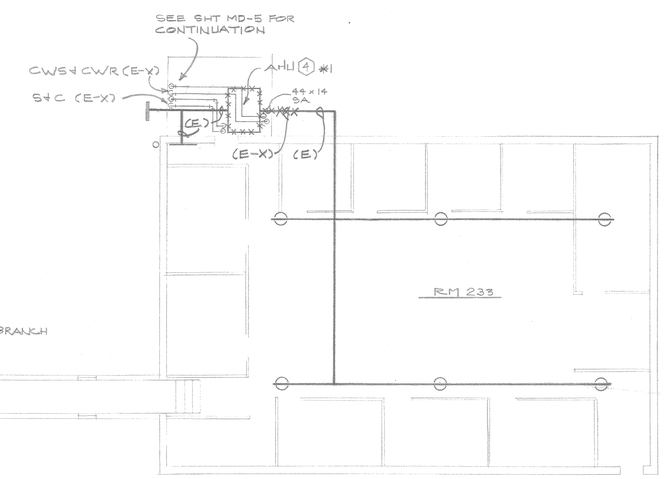
[redacted]

A.F. 16851B





2/7 DEMOLITION FLR. PLAN AHU 20
SCALE 3/16"=1'-0"



1/7 MECHANICAL DEMOLITION – 2ND FLOOR ADMIN EAST
SCALE: 1/8"=1'-0"

*DEMOLITION NOTES:

*1 REPLACE EXISTING AHU WITH NEW. REFER TO SHT. M-6 FOR NEW LAYOUT PLAN. NEW AHU WILL HAVE EQUAL AIR FLOW. COOLING CAPACITY TO EXISTING AHU. NEW AHU SHALL BE CHILLED WATER COOLING AND HOT WATER HEATING. REMOVE EXISTING STEAM BRANCH LINE BACK TO STEAM MAIN OR TO NEAREST ACTIVE LINE. VALVE AND CAP. REMOVE ALL CHILLED WATER SUPPLY AND RETURN BRANCH LINES AND MAINS AND REPLACE WITH NEW. RETURN AHU TO GOVERNMENT.

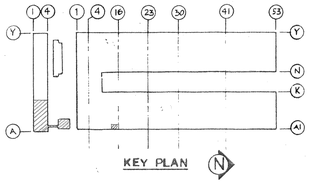
*2 EXISTING SUPPLY DUCTWORK IN THIS AREA SHALL REMAIN WITH MINOR ALTERATIONS TO FIT NEW AHU, AS SHOW. CHANGE RETURN AIR DUCTWORK AS SHOWN ON NEW PLAN. UNLESS NOTED, OA INTAKES TO REMAIN IN SAME LOCATION. CHANGE TO NEW SIZE, EXTEND OA DUCT TO NEW HORIZONTAL AHU ABOVE CEILING AND FURR AROUND EXPOSED DUCTWORK IN OCCUPIED SPACES. REFER TO SHT. M- .

*3 PIPES FROM FIRST FLOOR. SEE SHEET MD-5 FOR CONTINUATION.

*4 REMOVE EXISTING RETURN AIR DUCTWORK IN CLOSET. WOODEN RETURN AIR GRILLE TO REMAIN.

GENERAL NOTES:

1. ALL STEAM MAINS TO REMAIN. REMOVE, CAP AND VALVE STEAM BRANCH LINES
2. ALL UNIT HEATERS SHALL REMAIN.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EQUIPMENT, PIPEING, ETC.



AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ./L70
APPROVED DATE
APPROVED DATE

DESIGNED BY: P. RAY
DRAWN BY: J. BOWMAN
CHECKED BY — DATE
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

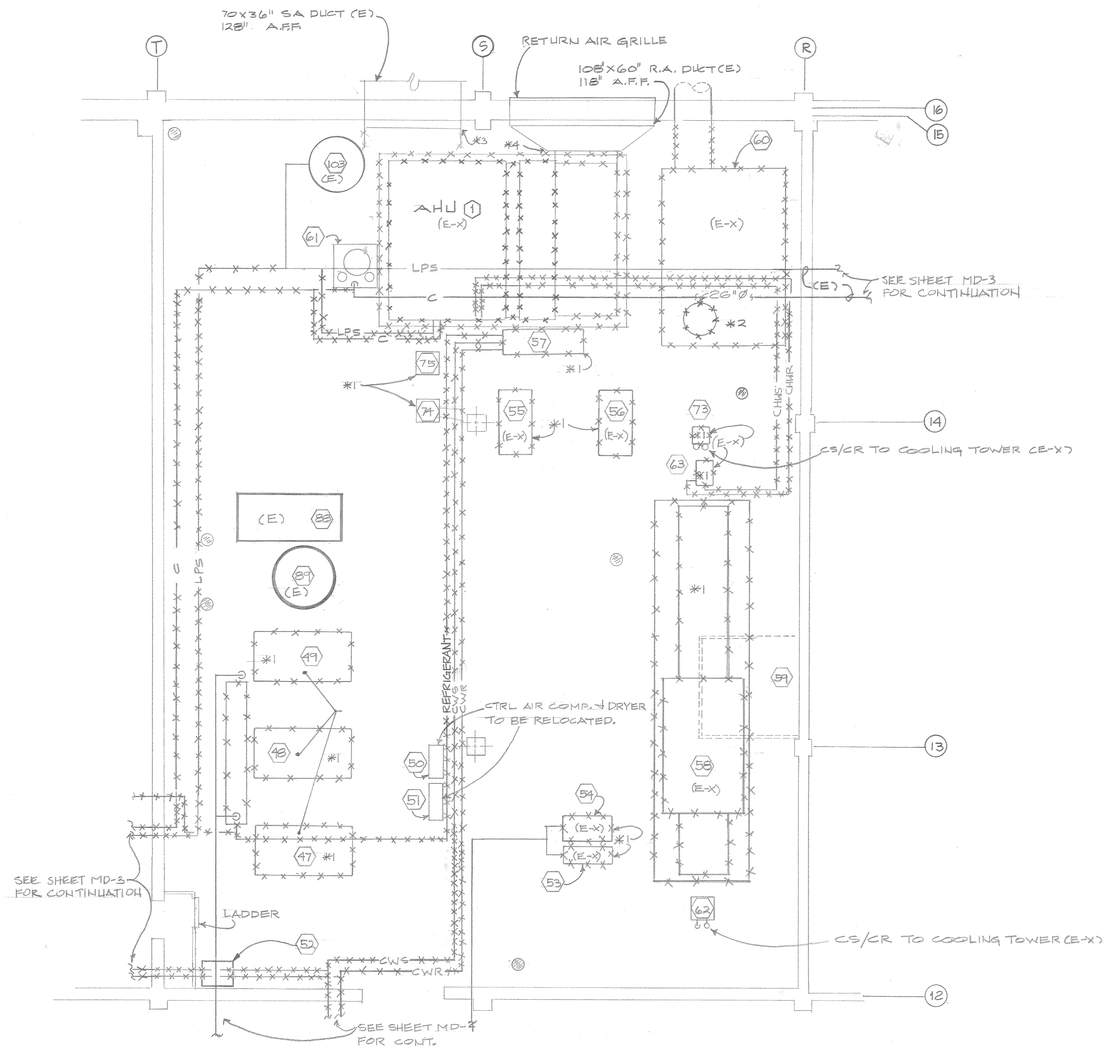
MECHANICAL DEMOLITION PLAN
2ND FLOOR ADMIN EAST

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN IND. HYG. ENGR.)

PROJ. NR. 06-9-9 — DATE NOV. 83
DRAWING NUMBER: DE – F – 83079 – 10
DRAWING FILE NUMBER: T1 – 1 – F 7 – 250
SCALE: 1/8" = 1'-0"
10
SHEET 10 OF 33
MD-7

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

[redacted]



1/8 MECHANICAL DEMOLITION FLOOR PLAN - R.M. 142
SCALE: 1/4" = 1'-0"

* DEMOLITION NOTES

1. REMOVE AND RETURN TO GOVERNMENT EXISTING EQUIPMENT AND APPURTENANCES.
2. CAP ROOF PENETRATIONS.
3. REMOVE SA DUCTWORK FROM AHU 1 TO THIS POINT.
4. REMOVE RA DUCTWORK FROM AHU 1 TO THIS POINT. OA DUCTWORK SHALL REMAIN.

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / L70
APPROVED DATE
APPROVED DATE

DESIGNED BY P. RAY
DRAWN BY J. BOLLMAN
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL DEMOLITION PLAN
ROOM 142

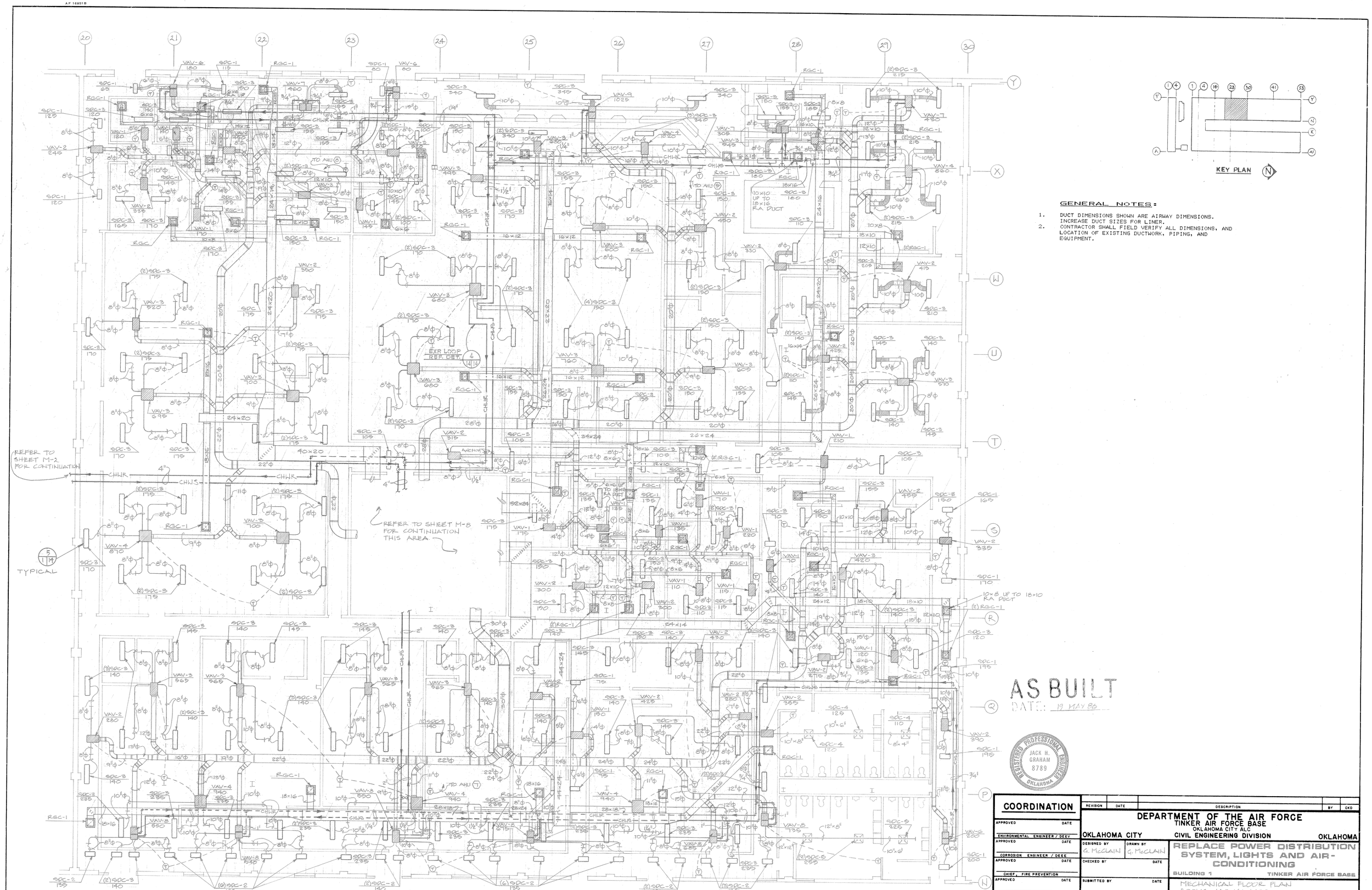
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN IND. HYG. ENGR.)

DRAWING FILE NUMBER T1 - 1 - F7 - 249
SCALE 1/4" = 1'-0"
PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 11
11
SHEET 11 OF 38
MD-8

GPO: GOVERNMENT PRINTING OFFICE: 1982-570-039

[redacted]

AF 16851B



1/M1 MECHANICAL FLOOR PLAN- ROOMS 160, 161, & 170

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

GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE					
ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE					
CORROSION ENGINEER / DEEE					
APPROVED DATE					
CHIEF, FIRE PREVENTION					
APPROVED DATE					
1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: G. McCLAIN
DRAWN BY: G. McCLAIN
CHECKED BY: DATE
SUBMITTED BY: DATE
CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL FLOOR PLAN
ROOMS 160, 161, & 170

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING FILE NUMBER: T1 - 1 - F7 - 248
SCALE: 1/8" = 1'-0"
12
DRAWING NUMBER: DE - F - 83079 - 12
SHEET 12 OF 38
M-1

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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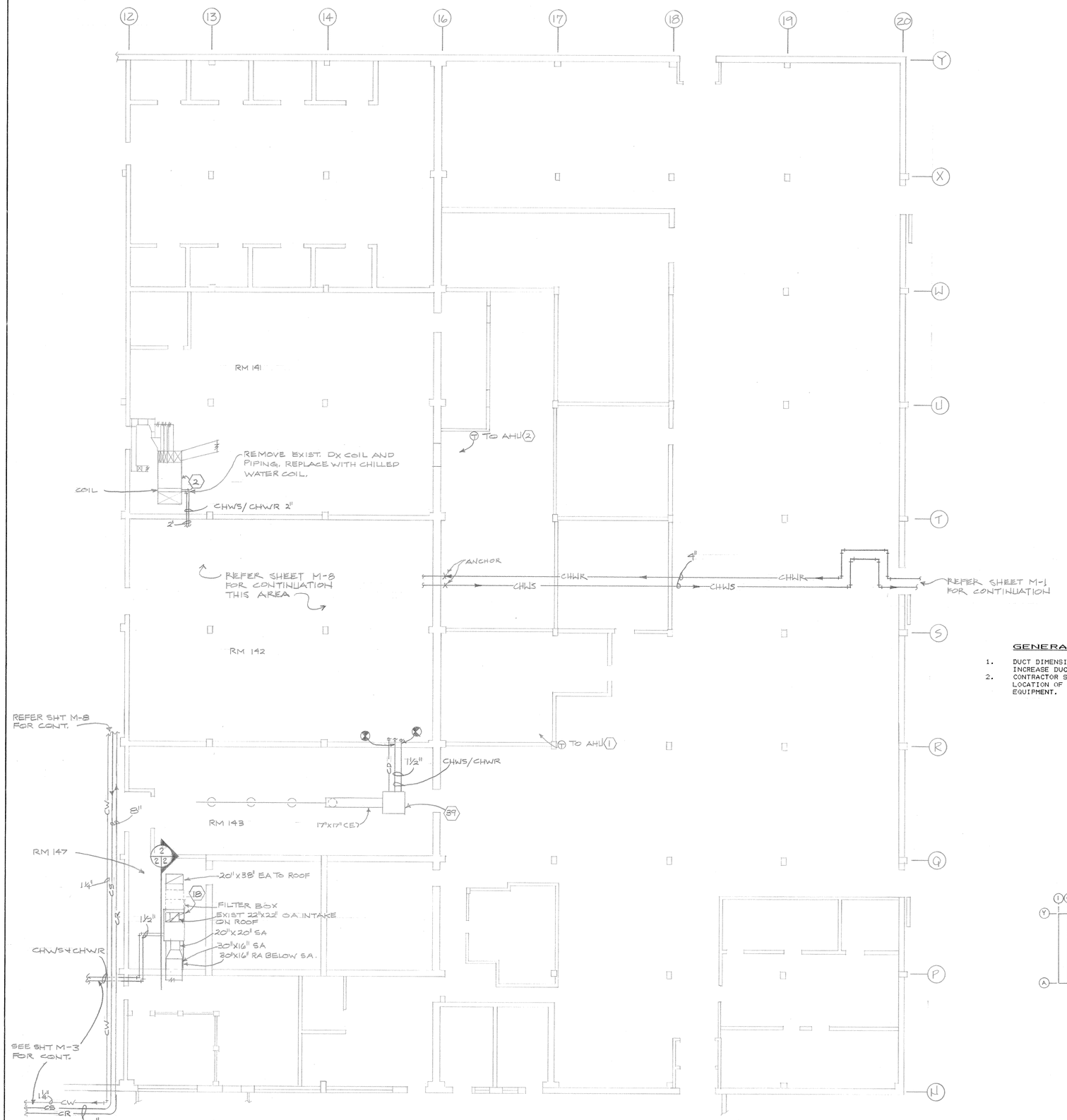
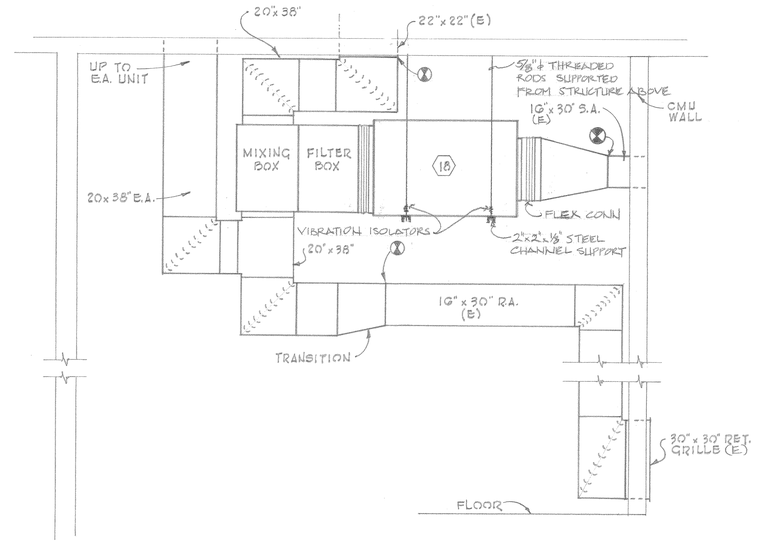
AF 168518



1 / 2/2 MECHANICAL FLOOR PLAN – PRINT SHOP AREA
SCALE 1/8" = 1'-0"

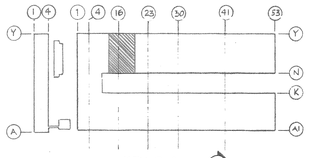


2 / 2/2 ELEVATION A.H.U. 18
SCALE 1/2" = 1'-0"

GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.

AS BUILT
DATE: 19 MAY 86



KEY PLAN

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEES					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ./LTO					
APPROVED DATE — DEPUTY CIVIL ENGINEER					
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: G McCLAIN
DRAWN BY: G. McCLAIN
CHECKED BY
SUBMITTED BY — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL FLOOR PLAN - PRINT SHOP AREA

APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

DRAWING FILE NUMBER: T1 - 1 - F 7 - 247
SCALE: AS NOTED
PROJ. NR. OC-9-9
DATE Nov. 83
DRAWING NUMBER: DE - F - 83079 - 13
13
SHEET 13 OF 38
M-2

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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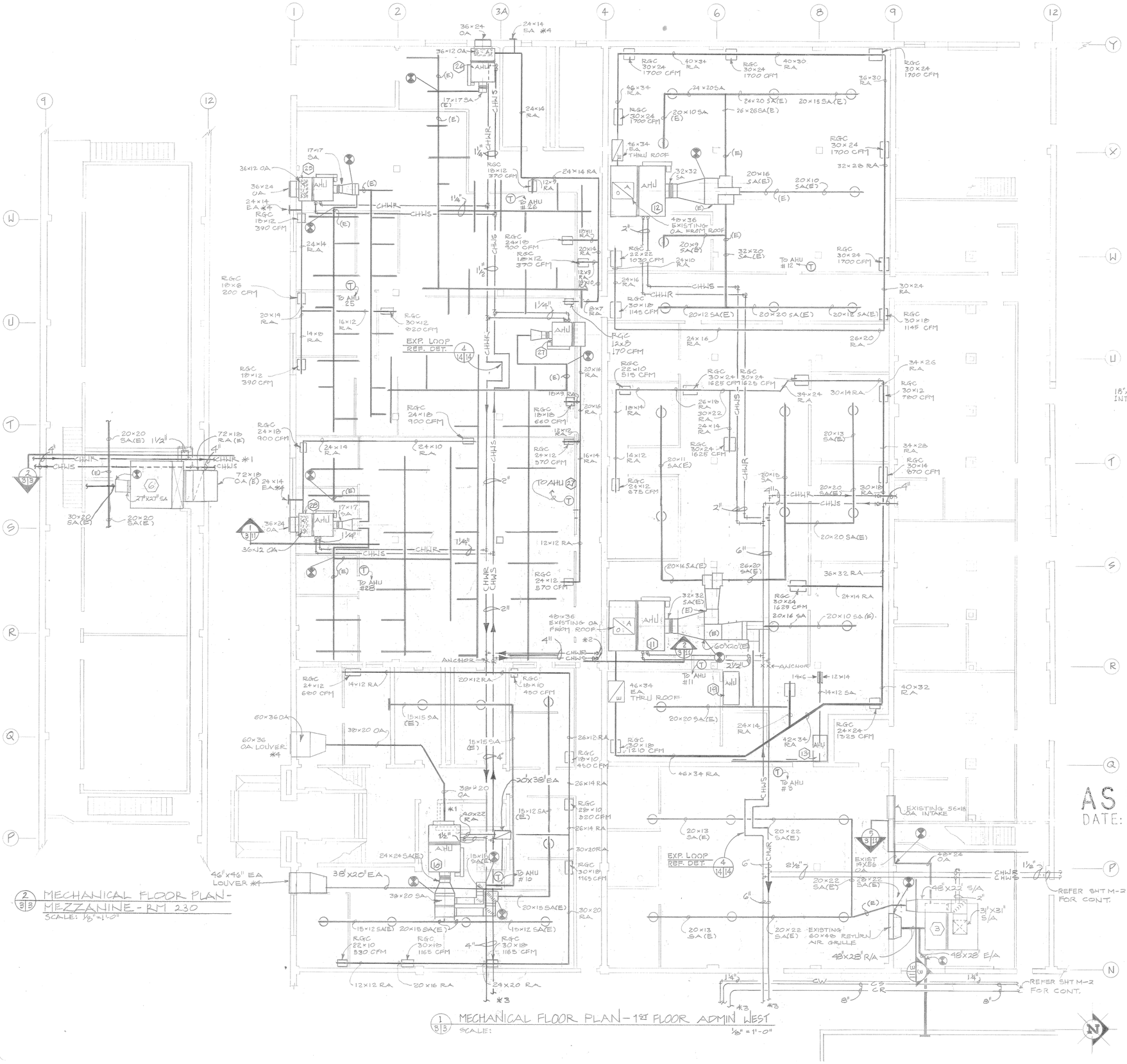
AF 16851B

NOTES:

*1 SEE SHEET M-8 FOR CONTINUATION.
*2 SEE SHEET M-5 FOR CONT.
*3 SEE SHEET M-4 FOR CONT.
*4 NEW WALL PENETRATION

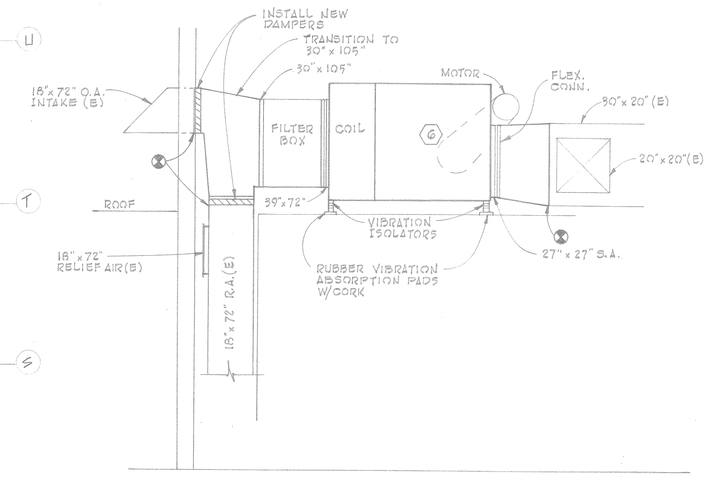
GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.

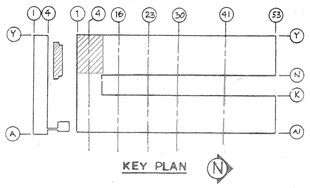


2/3|3 MECHANICAL FLOOR PLAN - MEZZANINE - RM 230
SCALE: 1/8" = 1'-0"

1/3|3 MECHANICAL FLOOR PLAN - 1ST FLOOR ADMIN WEST
SCALE: 1/8" = 1'-0"



2/3|3 ELEVATION AHU (G)
SCALE 1/2" = 1'-0"



KEY PLAN

AS BUILT
DATE: 19 MAY 83

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY G. McCLAIN | DRAWN BY J. BOWMAN | CHECKED BY | DATE | SUBMITTED BY | DATE | CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL FLOOR PLANS - 1ST FLOOR ADMIN WEST AND MEZZANINE

APPROVED DATE DEPUTY CIVIL ENGINEER | APPROVED DATE THE CIVIL ENGINEER
APPROVED DATE OFFICE, GROUND SAFETY ENGINEER | APPROVED DATE OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 | DATE NOV. 83
DRAWING FILE NUMBER | SCALE
DRAWING NUMBER DE - F - 83079 - 14
14 | SHEET 14 OF 38 | M-3

T1 - 1 - F 7 - 246

QUS GOVERNMENT PRINTING OFFICE: 1982-370-029

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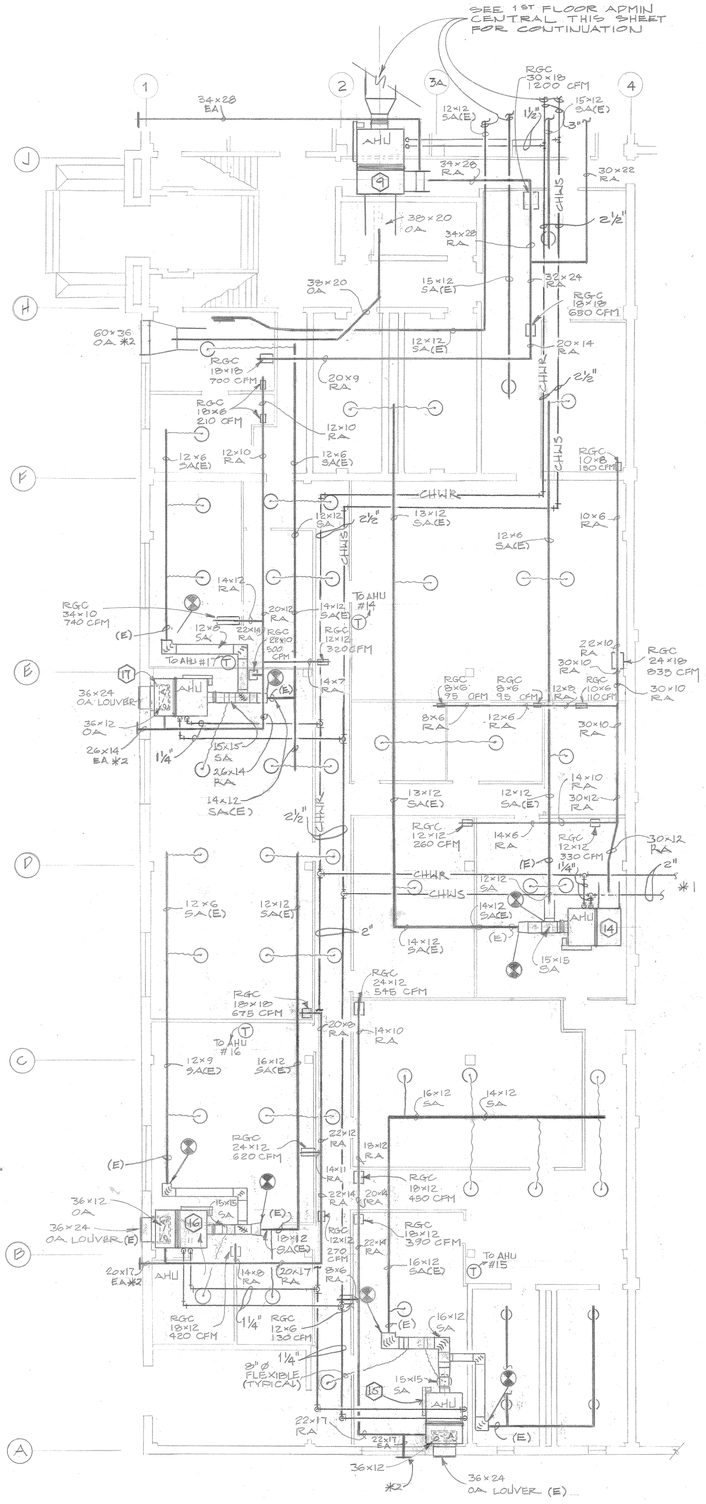
AF 16851D

NOTES:

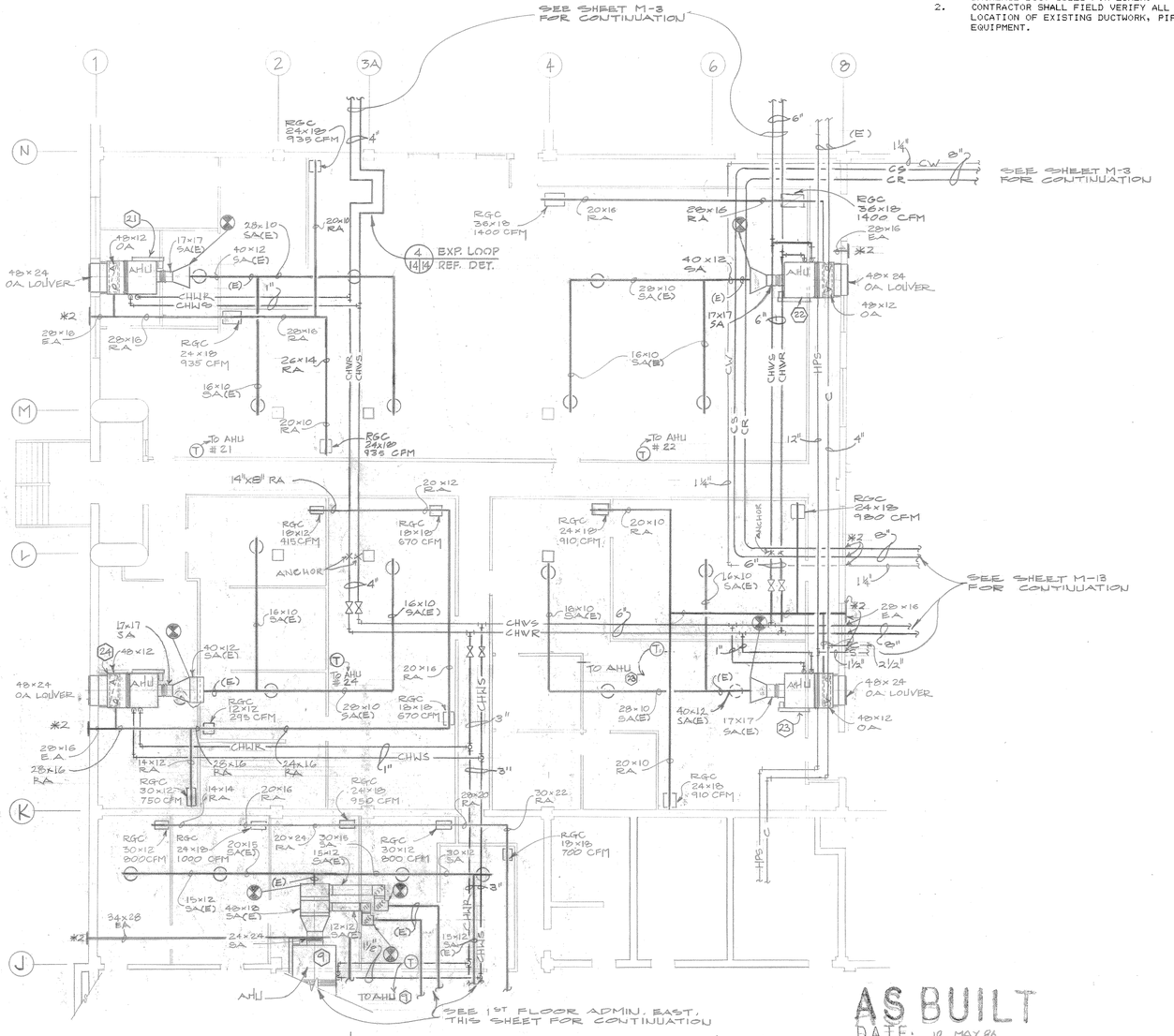
*1 SEE SHEET M-6 FOR CONT.
*2 NEW WALL PENETRATION.



1/4 MECHANICAL FLOOR PLAN — 1ST FLOOR ADMIN. EAST
SCALE: 1/8" = 1'-0"

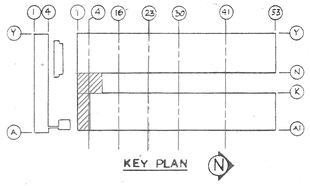
GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.



2/4 MECHANICAL FLOOR PLAN — 1ST FLOOR ADMIN. CENTRAL
SCALE: 1/8" = 1'-0"

AS BUILT
DATE: 12 MAY 86



COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEEE					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ./LTO					
APPROVED DATE					
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: J. HATOUGH
DRAWN BY: J. BOLLMAN
CHECKED BY — DATE
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL FLOOR PLAN-
1ST FLOOR ADMIN CENTRAL AND ADMIN EAST

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN IND. HYG ENGR.)

PROJ. NR. OC-9-9 — DATE NOV-83
DRAWING FILE NUMBER
SCALE 1/8" = 1'-0"
15
DRAWING NUMBER DE - F - 83079 - 15
SHEET 15 OF 38
M-4

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

TI - 1 - F 7 - 245

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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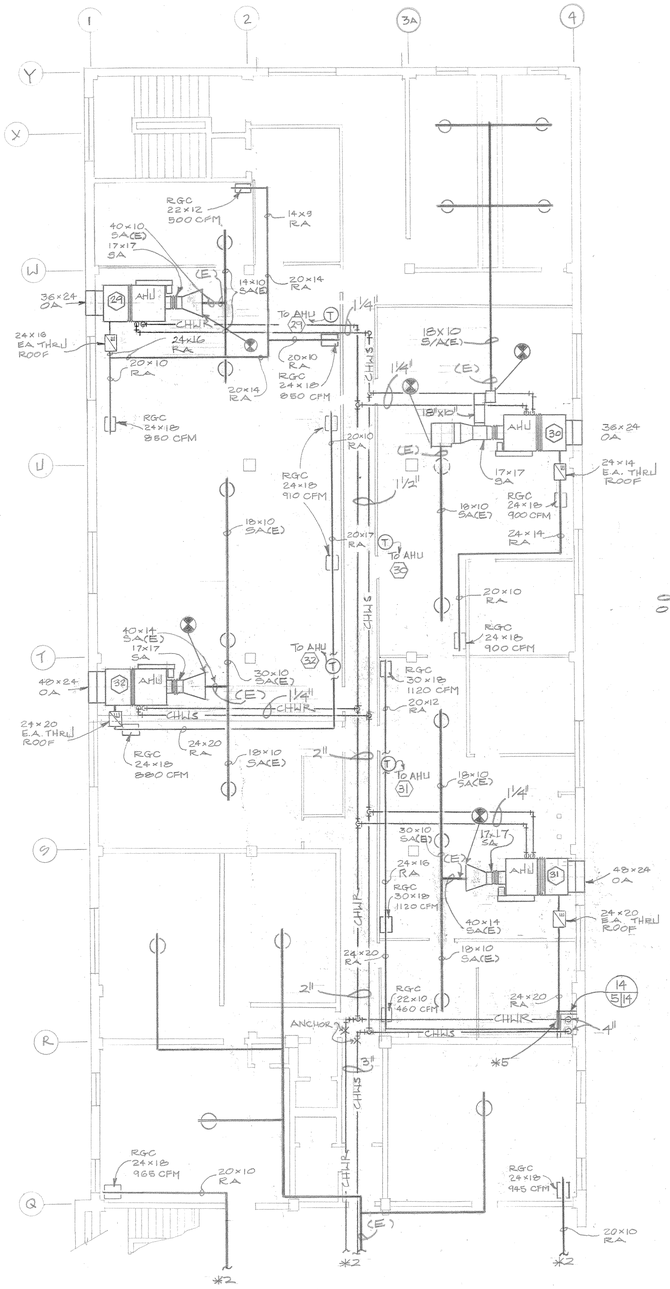
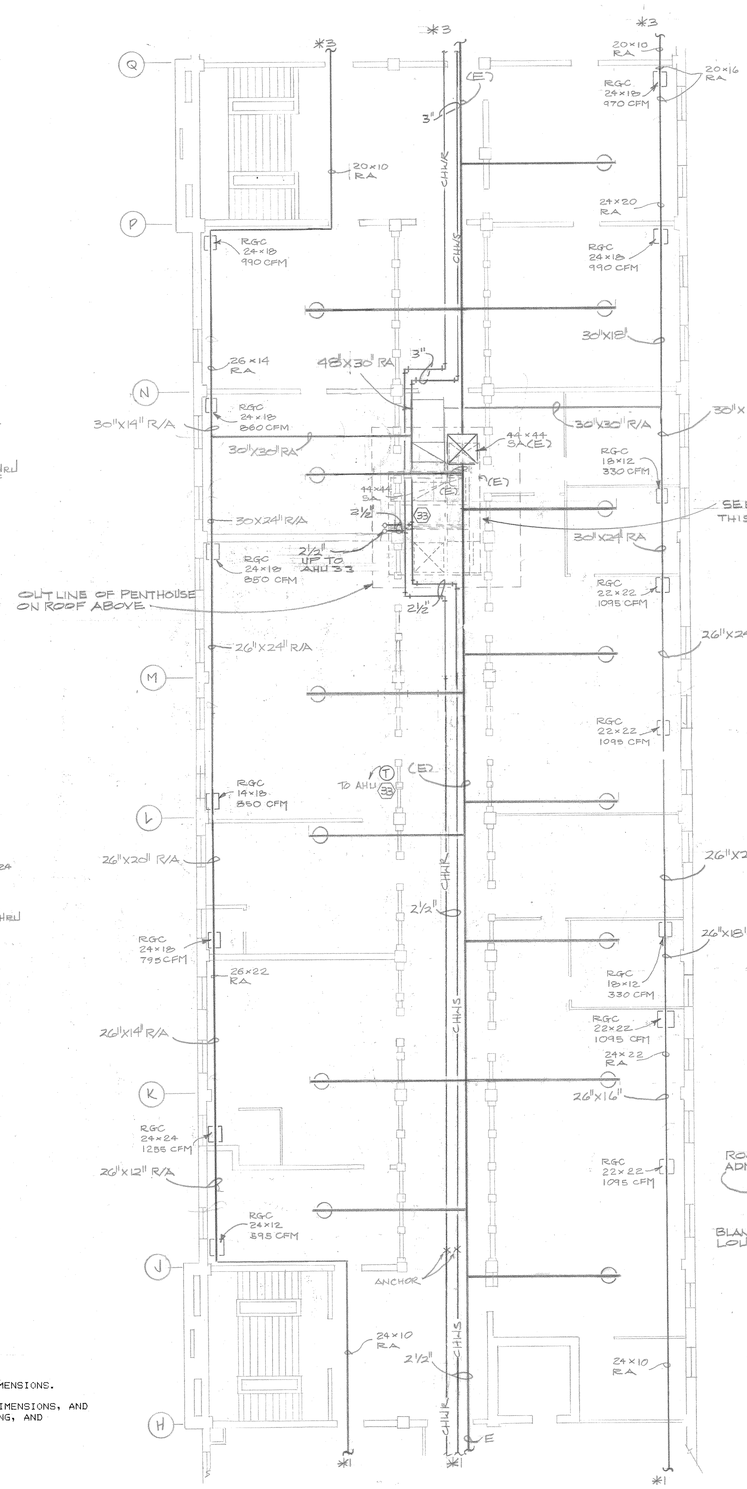
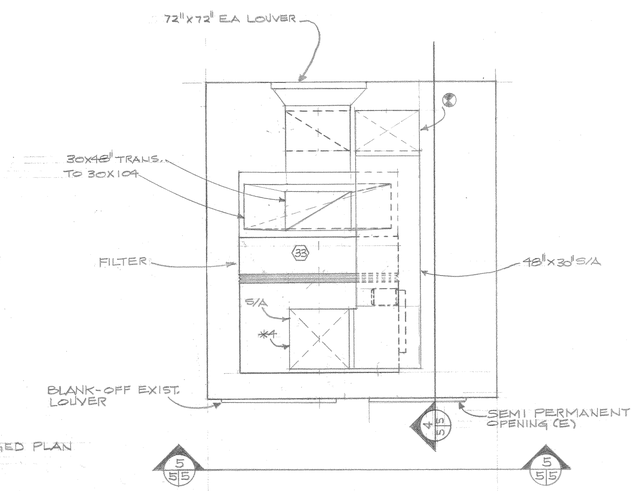
A.F. 16851B



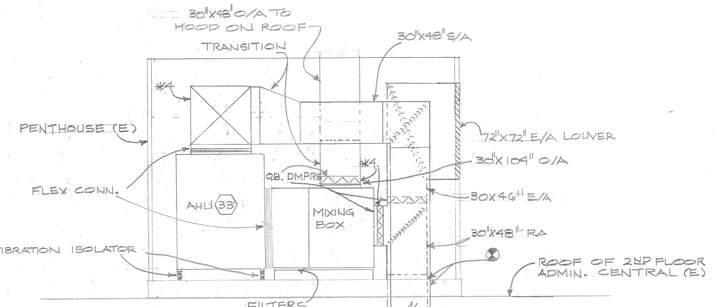
1 5/5 MECHANICAL FLOOR PLAN – 2ND FLOOR ADMIN WEST
SCALE 1/8" = 1'-0"



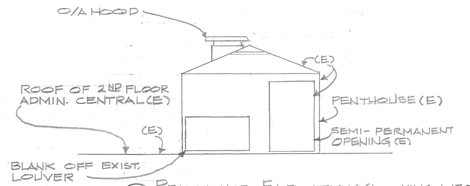
2 5/5 MECHANICAL FLOOR PLAN – 2ND FLOOR ADMIN. CENTRAL
SCALE: 1/8" = 1'-0"



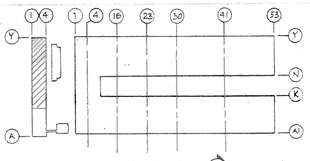
3 5/5 MECHANICAL FLOOR PLAN – PENTHOUSE
SCALE 1/4" = 1'-0"



4 5/5 ELEVATION AHU (33) (LOOKING SOUTH)
SCALE 1/4" = 1'-0"



5 5/5 PENTHOUSE ELEVATION (LOOKING WEST)
SCALE 1/8" = 1'-0"



KEY PLAN

NOTES:
*1 SEE SHEET M-6 FOR CONTINUATION
*2 SEE 2ND FLR. ADMIN, CENTRAL, THIS SHEET FOR CONTINUATION.
*3 SEE 2ND FLR ADMIN WEST, THIS SHEET FOR CONTINUATION.
*4 SAME SIZE AS MFR. OPNG.
*5 CHWS AND CHWR UP FROM 1ST. FLR. WITH GATE VALVES, CONTRACTOR TO BUILD CHASE WITH ACCESS PANEL. SEE SHEET M-3 FOR CONT.

GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ./L70
APPROVED DATE
APPROVED DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY P. RAY
DRAWN BY J. BOWMAN
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL FLOOR PLAN – 2ND FLOOR ADMIN WEST AND ADMIN CENTRAL

PROJ. NR. 0009-9 — DATE NOV. 83
DRAWING FILE NUMBER
SCALE AS NOTED
16
DRAWING NUMBER DE - F - 83079 - 16
SHEET 16 OF 38 — M-5

T1 - 1 - F 7 - 244

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-570-029

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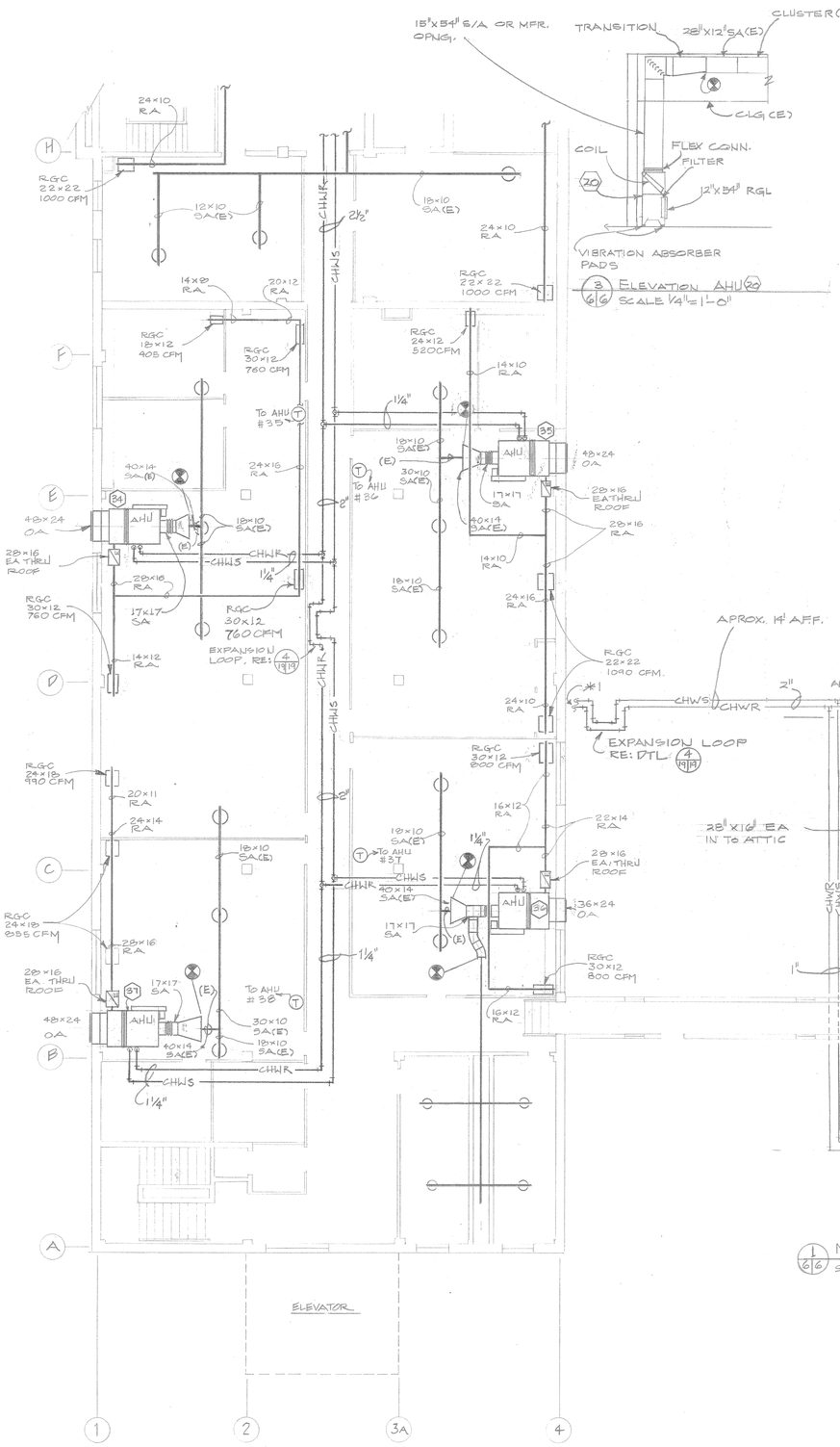
AF 168518

NOTES:

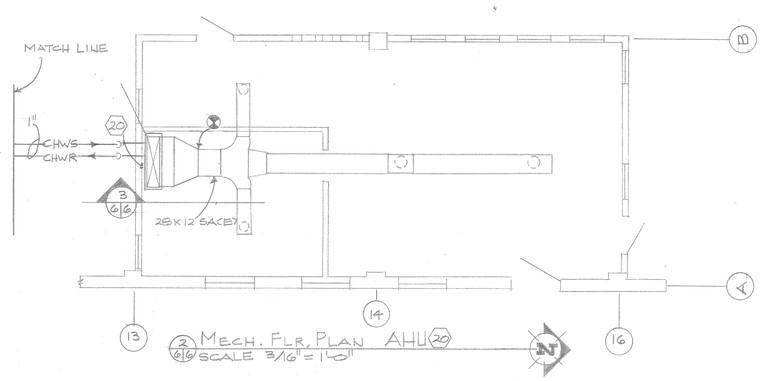
*1 SEE SHEET M-4 FOR CONT.

GENERAL NOTES:

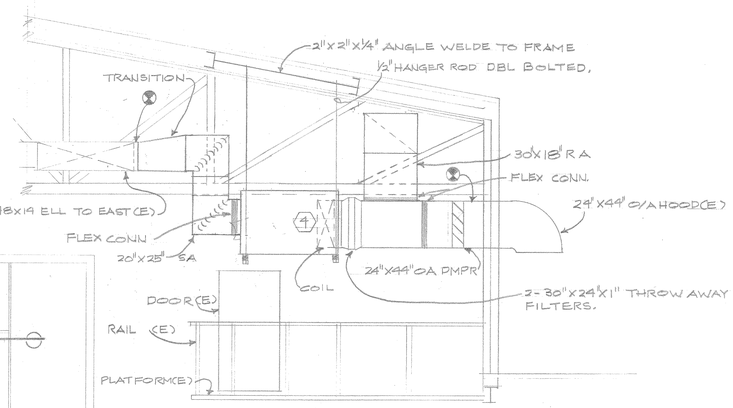
1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.



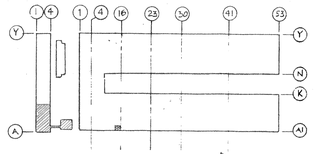
1/6/6 MECHANICAL FLOOR PLAN — 2ND FLOOR ADMIN EAST
SCALE: 1/8"=1'-0"



2/6/6 MECHANICAL FLR. PLAN AHU 20
SCALE 3/16"=1'-0"



4/6/6 ELEVATION AHU 4
SCALE 3/8"=1'-0"



AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: F RAY
DRAWN BY: J. BOWMAN
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL FLOOR PLAN - 2ND FLOOR ADMIN EAST

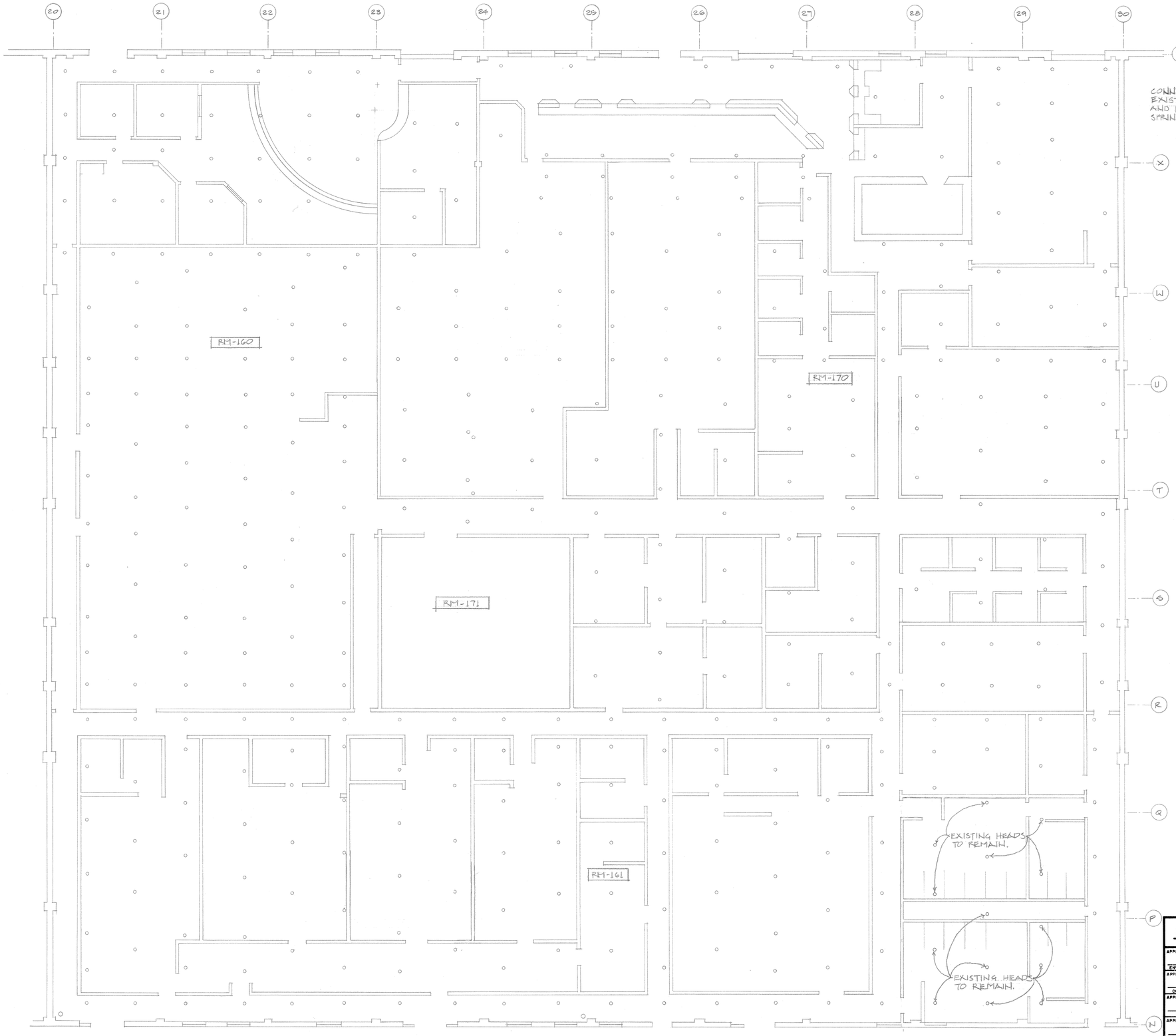
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN. ING. HYG. ENGR.)

DRAWING FILE NUMBER
SCALE AS NOTED
17
PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 17
SHEET 17 OF 38
M-6

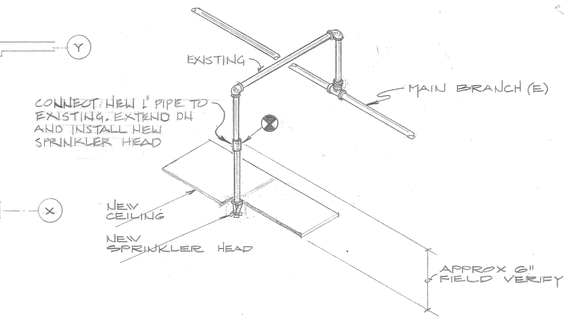
T1 - 1 - F 7 - 243

GPO GOVERNMENT PRINTING OFFICE: 1982-570-039

AF 16851 B



1/77 FIRE PROTECTION PLAN-ROOMS 160, 161, & 170
SCALE: 1/8"=1'-0"



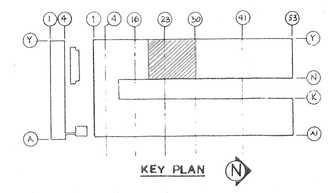
2/77 FIRE SPRINKLER EXTENSION
NO SCALE

GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, SPRINKLER HEADS SHOWN ARE NEW IN EXISTING LOCATIONS. FIELD VERIFY EXACT LOCATIONS.

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA



COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEEE					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: G. McCLAIN
DRAWN BY: G. McCLAIN
CHECKED BY: DATE
SUBMITTED BY: DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

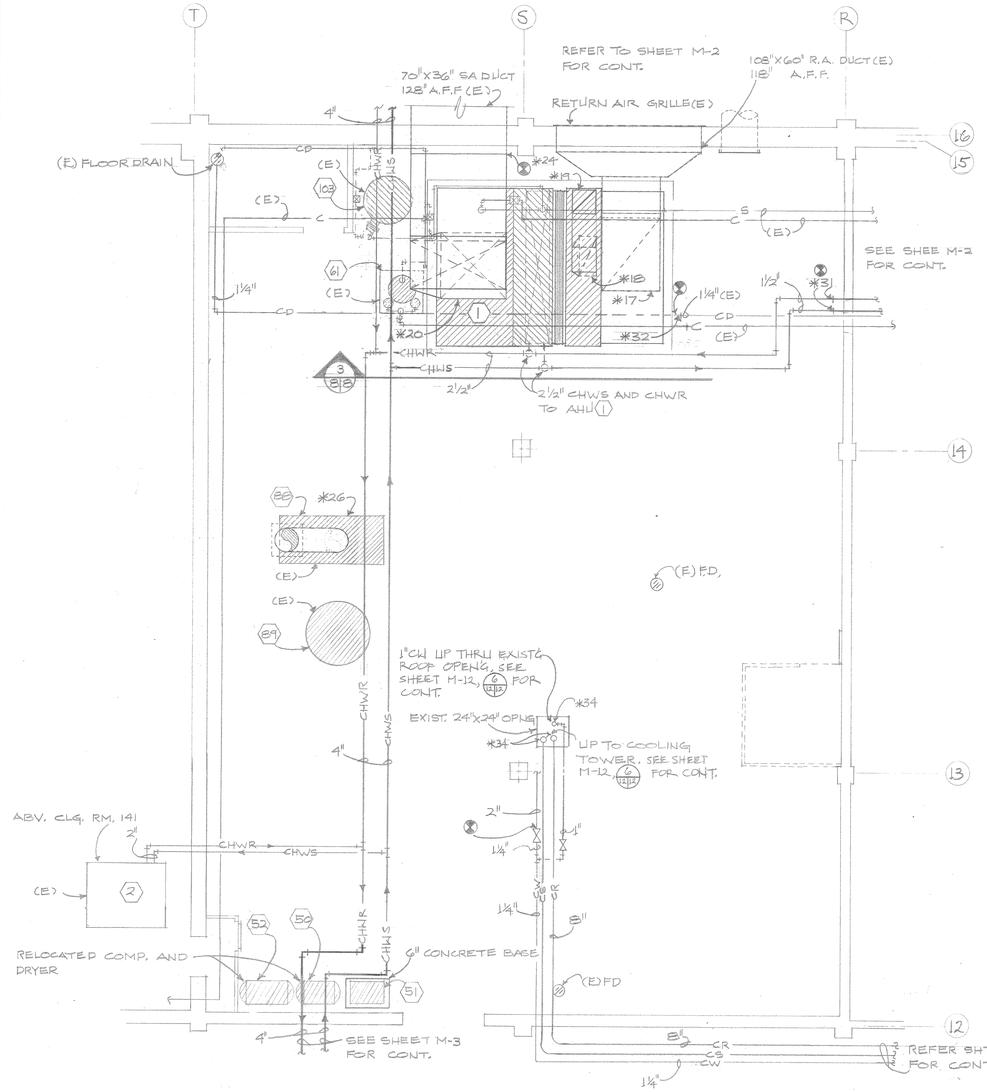
REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
FIRE PROTECTION PLAN
ROOMS 160, 161, & 170

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

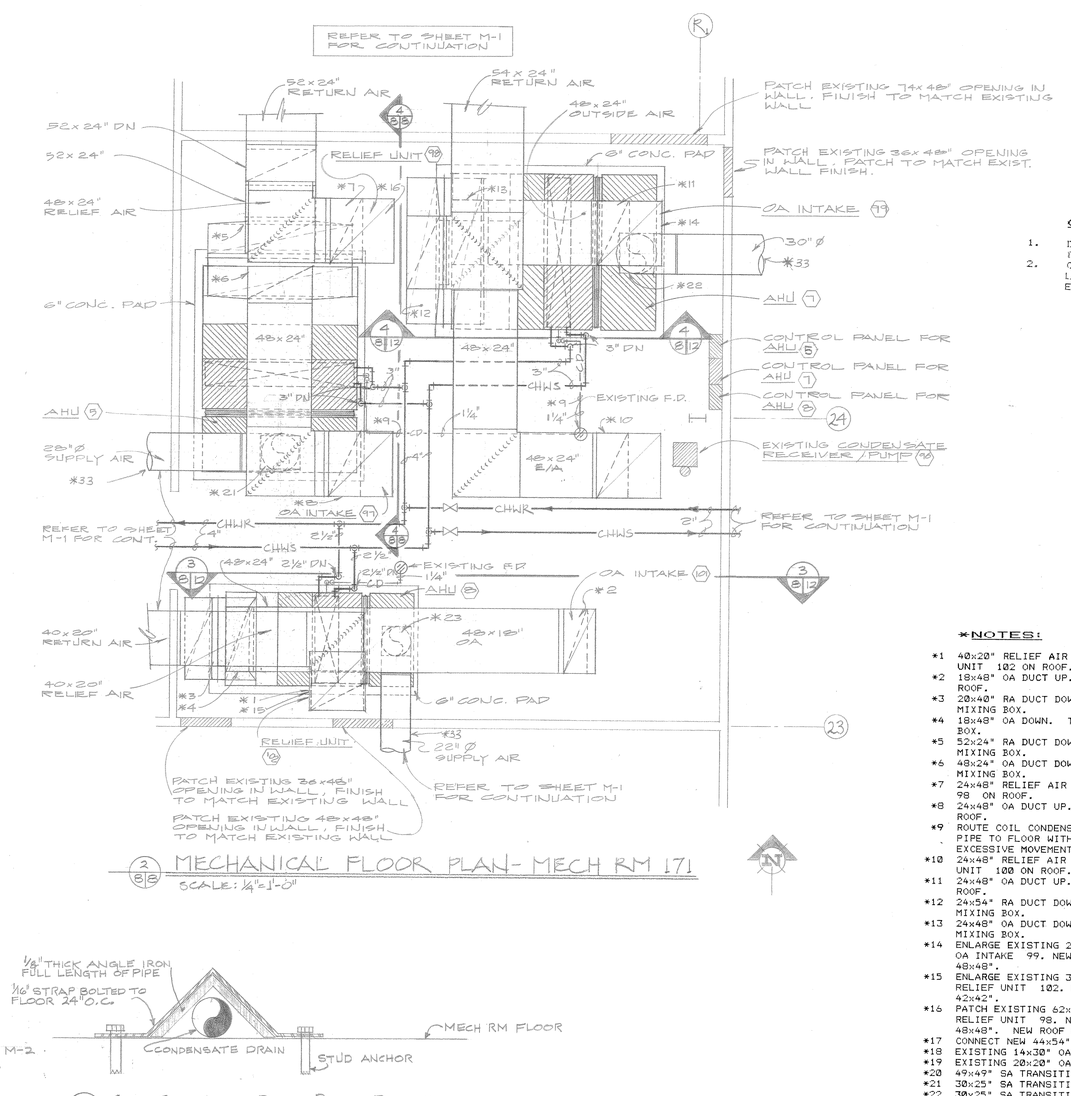
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER: T1 - 1 - F7 - 242
SCALE: AS NOTED
18
DRAWING NUMBER: DE - F - 83079 - 18
SHEET 18 of 38
M-7

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

[redacted]



1/8 MECHANICAL FLOOR PLAN - MECH RM 142
SCALE: ¼"=1'-0"



2/8 MECHANICAL FLOOR PLAN - MECH RM 171
SCALE: ¼"=1'-0"

5/8 COIL CONDENSATE DRAIN PIPING DETAIL
NO SCALE

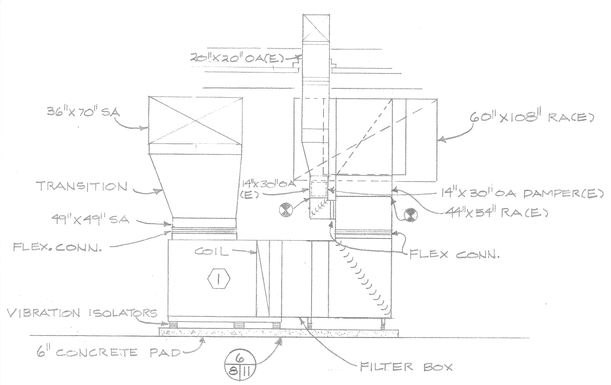
GENERAL NOTES:

1. DUCT DIMENSIONS SHOWN ARE AIRWAY DIMENSIONS. INCREASE DUCT SIZES FOR LINER.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, AND LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT.

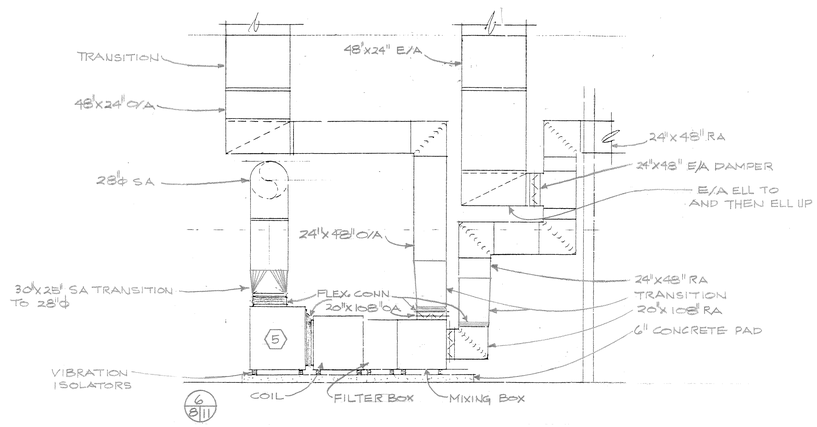
*NOTES:

*1 40x20" RELIEF AIR DUCT UP. TRANSITION TO RELIEF UNIT 102 ON ROOF.
*2 18x48" OA DUCT UP. TRANSITION TO OA INTAKE 101 ON ROOF.
*3 20x40" RA DUCT DOWN. TRANSITION TO 20x60" RA AT MIXING BOX.
*4 18x48" OA DOWN. TRANSITION TO 22x60" OA AT MIXING BOX.
*5 52x24" RA DUCT DOWN. TRANSITION TO 108x20" RA AT MIXING BOX.
*6 48x24" OA DUCT DOWN. TRANSITION TO 108x20" OA AT MIXING BOX.
*7 24x48" RELIEF AIR DUCT UP. TRANSITON TO RELIEF UNIT 98 ON ROOF.
*8 24x48" OA DUCT UP. TRANSITON TO OA INTAKE 97 ON ROOF.
*9 ROUTE COIL CONDENSATE DRAIN LINE ON FLOOR. SECURE PIPE TO FLOOR WITH STEEL STRAPS TO PREVENT EXCESSIVE MOVEMENT. SEE DETAIL THIS SHEET.
*10 24x48" RELIEF AIR DUCT UP. TRANSITION TO RELIEF UNIT 100 ON ROOF.
*11 24x48" OA DUCT UP. TRANSITON TO OA INTAKE 99 ON ROOF.
*12 24x54" RA DUCT DOWN. TRANSITION TO 20x108" OA AT MIXING BOX.
*13 24x48" OA DUCT DOWN. TANSITION TO 20x108" OA AT MIXING BOX.
*14 ENLARGE EXISTING 24x24" ROOF OPENING TO ACCOMMODATE OA INTAKE 99. NEW ROOF OPENING APPROXIMATELY 48x48".
*15 ENLARGE EXISTING 30x42" ROOF OPENING TO ACCOMMODATE RELIEF UNIT 102. NEW ROOF OPENING APPROXIMATELY 42x42".
*16 PATCH EXISTING 62x74" ROOF OPENING TO ACCOMMODATE RELIEF UNIT 98. NEW ROOF OPENING APPROXIMATELY 48x48". NEW ROOF PATCH SHALL MATCH EXISTING ROOF.
*17 CONNECT NEW 44x54" RA DUCT TO EXISTING 44x54" RA.
*18 EXISTING 14x30" OA DUCT SHALL REMAIN.
*19 EXISTING 20x20" OA DUCT FROM ABOVE SHALL REMAIN.
*20 49x49" SA TRANSITION UP TO 70x36" SA.
*21 30x25" SA TRANSITION UP TO 28" DIA. SA.
*22 30x25" SA TRANSITION UP TO 30" DIA. SA.
*23 21x21" SA TRANSITION UP TO 22" DIA. SA.
*24 CONNECT NEW 70x36" SA DUCT TO EXISTING 70x36" SA.
*25 (NOT USED)
*26 EXISTING BOILER 88, CONTROLS, AND PIPING SHALL REMAIN.
*27 (NOT USED)
*28 (NOT USED)
*29 REPLACE EXISTING FLEXIBLE CONNECTION FROM UTILITY FAN 59 TO EXISTING EXHAUST DUCT UP THRU ROOF.
*30 ROUTE 1-1/2" CONDENSATE DRAIN LINE TO EXISTING FLOOR DRAIN AT COLUMN T-15.
*31 CONNECT NEW 1-1/2" CHWS & CHWR PIPING TO EXISTING CHWS & CHWR PIPING.
*32 CONNECT NEW 1-1/4" COIL CONDENSATE DRAIN LINE TO EXISTING LINE.
*33 INSTALL 20'-0" LENGTH OF ACOUSTI-DUCT FROM AHU.
*34 INSTALL 1" DRAIN VALVE AT BOTTOM OF RISE UP THRU ROOF TO FACILITATE DRAINING OF COOLING TOWER PIPING.

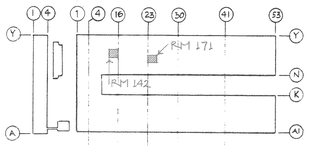
AS BUILT
DATE: 19 MAY 86



3/8 ELEVATION AHU 1
SCALE ¼"=1'-0"



4/8 ELEVATION AHU 5
SCALE ¼"=1'-0"



KEY PLAN

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
CIVIL ENGINEERING DIVISION
OKLAHOMA CITY — OKLAHOMA

APPROVED — ENVIRONMENTAL ENGINEER / DEEV
APPROVED — CORROSION ENGINEER / DEEE
APPROVED — CHIEF, FIRE PREVENTION
APPROVED — 1984 COMM. SQ. / LTO
APPROVED — DEPUTY CIVIL ENGINEER
APPROVED — OFFICE, GROUND SAFETY ENGINEER
APPROVED — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)
APPROVED — THE CIVIL ENGINEER

DESIGNED BY: G. McCLAIN
DRAWN BY: G. McCLAIN
CHECKED BY
SUBMITTED BY — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL FLOOR PLAN - MECHANICAL ROOMS 142 AND 171

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER
SCALE: AS NOTED
DRAWING NUMBER: 19 — DE - F - 83079 - 19 — M-8
19 ea
T1 - 1 - F 7 - 241

AF 1685 B

AIR HANDLING UNIT SCHEDULE

AHU No.	ROOM # LOCATION	TYPE	C.F.M.	TOTAL S.P. INCHES OF WATER	FAN HP	MIN. O/A CFM	HEATING COIL GPM	HEATING COIL TRANSFER MEDIA	HEATING COIL CAPACITY BTU./HR	HEATING COIL ENT. AIR °F	HEATING COIL LVG. AIR °F	HEATING COIL EWT/LWT °F	COOLING COIL TRANSFER MEDIA	COOLING COIL CAPACITY-BTU/HR TOTAL	COOLING COIL CAPACITY-BTU/HR SENS.	COOLING COIL ENT. AIR-°F D.B.	COOLING COIL ENT. AIR-°F W.B.	COOLING COIL LVG AIR-°F D.B.	COOLING COIL LVG AIR-°F W.B.	COOLING COIL ENT. WTR. °F	COOLING COIL LVG WTR. °F	COOLING COIL G.P.M.	COOLING COIL MAX FACE VEL. FPM	COOLING COIL PRESS. DROP	COOLING COIL TOTAL UNIT WGT
1	142	H.P.T.	24430	2	15	1400	57	HOT WATER	330158	66	86	180/160	CHILLED WATER	419630	383566	75	61	60	55	45	60	57	550	MAX. 15"	
2 [1]	141	V.P.T.	6380	—	—	640	24		94796	63	83			139,534	118,108	78	64	59	56	45	57	24			
3	NORTH #121	V.P.T.	11,500	2.5	7½	106	31		35,578	69	89			206,833	202,981	78	63	60	57	45	58	31			
4	283	H.P.T.	4,000	2.5	3	400	17		78728	65	85			120,000	98967	78	65	56	55	45	59	17			
5	171	P.T.	11,870	5	15	1180	53		135,029	63	83			348,880	305412	76	63	53	52	45	58	53			
6	230	H.P.T.	11,000	3	10	311	15		45021	68	88			147,887	130,694	65	76	64	58	45	65	15			
7	171	P.T.	12,925	5	20	800	48		71938	68	88			340,387	311,847	76	62	53	52	45	60	48			
8	171	P.T.	6940	5	10	620	32		63727	64	84			199,646	178686	76	63	53	52	45	57	32			
9	109	H.P.T.	6860	2.5	5	264	18		53085	67	87			125,783	109,734	76	63	60	57		59	18			
10	107	H.P.T.	6860	2.5	5	276	20		50736	67	87			130,283	111,495	76	63	59	57		58	20			
11	180	H.P.T.	13,500	2.5	10	190	37		71642	69	89			243,228	219,428	76	63	60	57		58	37			
12	120	H.P.T.	13,500	2.5	10	190	37		71642	69	89			243,228	219,428	76	63	60	57		58	37			
14	114	H.P.T.	2160	2.5	1½	264	12		53085	61	81			68036	59,355	76	63	51	50		58	12			
15	114	H.P.T.	1980	2.5	1½	264	12		53085	61	81			68036	59,355	76	63	49	48		58	12			
16	114	H.P.T.	1980	2.5	1½	264	12		53085	61	81			68036	59,355	76	63	49	48		58	12			
17	114	H.P.T.	1980	2	2	264	12		53085	61	81			68036	59,355	76	63	49	48		58	12			
18	147 147		3100	2	2	310	17		43909	65	85			96,000	73,781	78	64	54	53		57	17			
20	WAREHOUSE	V.P.T.	2000	1	3/4	100	6		34102	65	85			32,687	27,697	76	64	57	56		58	6			
21	108	H.P.T	2800	2	2	107	8		43052	67	87			55,826	49,865	76	63	58	56		58	8			
22	108	H.P.T.	2800	2	2	107	8		43052	67	87			55,826	49,865	76	63	58	56		58	8			
23	108	H.P.T.	2800	2	2	107	8		43052	67	87			55,826	49,865	76	63	58	56		58	8			
24	108	H.P.T.	2800	2	2	107	8		43052	67	87			55,826	49,865	76	63	58	56		58	8			
25	100	H.P.T.	1800	2	1½	276	11		50736	59	79			58,483	50,049	76	63	51	50		57	11			
26	100	H.P.T	1900	2	1½	276	11		50736	60	80			58,483	50,049	76	63	51	50		57	11			
27	100	H.P.T	1800	2	1½	276	11		50736	59	79			58,483	50,049	76	63	51	50		57	11			
28	100	H.P.T.	1800	2	1½	276	11		50736	59	79			58,483	50,049	76	63	51	50		57	11			
29	200A	H.P.T.	2200	2	1½	199	10		68084	64	84			60,901	54,877	76	63	53	52		57	10			
30	200A	H.P.T	1800	2	1½	199	13		68084	62	82			60,901	54,877	76	63	48	47		57	13			
31	200A	H.P.T.	2700	2	1½	199	11		68084	65	85			60,901	54,877	76	63	56	54		57	11			
32	200A	H.P.T.	2700	3	2	199	11		68084	65	85			60,901	54,877	76	63	56	54		57	11			
33	ROOF OF 208	V.P.T.	18600	3	15	260	55		405255	69	89			393,222	378306	75	62	56	55		57	55			
34	218	H.P.T.	2700	2	1½	199	12		75706	65	85			70516	63,782	76	63	54	53		57	12			
35	218	H.P.T.	2700	2	1½	199	12		75706	65	85			70516	63,782	76	63	54	53		57	12			
36	218	H.P.T	2700	2	1½	199	12		75706	65	85			70516	63,782	76	63	54	53		57	12			
37	218	H.P.T	2700	2	1½	199	12		75706	65	85			70516	63,782	76	63	54	53		57	12			

[1] REPLACING COILS ONLY

PUMP SCHEDULE

DESIGNATION	TYPE	G.P.M.	HEAD FT. OF WTR	HP	RPM	TOT. WT.
42	CHW/HHW	696	52	15	1750	
44	CONDENSER WATER	1130	66	25	1750	
104	DUPLEX 365 GOL. PUMP MFG.	16	20 PSIG	½	1750	

CHILLER SCHEDULE

ITEM No	TYPE	CAPACITY (TONS)	EVAPORATOR GPM	EVAPORATOR WATER TEMP ENT	EVAPORATOR WATER TEMP LVG	EVAPORATOR MAX P.D. FT	EVAPORATOR FOULING FACTOR	CONDENSER GPM	CONDENSER WATER TEMP ENT	CONDENSER WATER TEMP LVG	CONDENSER MAX P.D. FT	CONDENSER FOULING FACTOR	ELECTRICAL KW/TON	ELECTRICAL KW	ELECTRICAL FLA	ELECTRICAL VOLTAGE/Ø	REMARKS
40	CENTRIFUGAL	376	696	58°	45°	20	.0005	1130	85°	95°	20	.0005	.66	248	345	460V, 3Ø	

HHW UNIT HEATER SCHEDULE

ITEM No.	DESCRIPTION	CFM	CAPACITY BTUH	WATER TEMP ENT	WATER TEMP LVG	AIR TEMP ENT	AIR TEMP LVG	GPM	H2O PD	ELECTRICAL HP	ELECTRICAL VOLTS/Ø	REMARKS
105	HORIZ. DISC.	630	22220	180°	170°	40°	73°	4.5	.5'	1/28	120V, 1Ø	
106	" "	685	31000	180°	170°	40°	82°	6.5	1'	1/22	120V, 1Ø	

SINGLE DUCT-VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE

MARK	VAV-1	VAV-2	VAV-3	VAV-4	VAV-5	VAV-6	VAV-7	VAV-8	VAV-9
TYPE	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING	FULL THROTTLING
MAXIMUM CFM ■	225	460	780	1300	2000	225	460	780	1300
▲ MINIMUM OPERATING STATIC PRESS (IN.WG)	.5"	.5"	.5"	.5"	.5"	.55"	.6"	.6"	.64"
NC ■	30	30	30	30	30	30	30	30	30
DIMENSIONS (IN) HEIGHT									
DIMENSIONS (IN) WIDTH									
DIMENSIONS (IN) OUTLET (W x H)									
DIMENSIONS (IN) LENGTH									
DIMENSIONS (IN) INLET ●	5"Ø	6"Ø	8"Ø	10"Ø	12"Ø	5"Ø	6"Ø	8"Ø	10"Ø
ELECT HEAT COIL CAPACITY (KW)	—	—	—	—	—	—	—	—	—
ELECT HEAT COIL ENT./LVG AIR TEMP. (F)	—	—	—	—	—	—	—	—	—
ELECT HEAT COIL NUM. STAGES	—	—	—	—	—	—	—	—	—
ELECT HEAT COIL VOLTAGE/PHASE	—	—	—	—	—	—	—	—	—
HOT WATER HEAT COIL CAPACITY (BTUH)	—	—	—	—	—	14800	12520	23300	43800
HOT WATER HEAT COIL ENT./LVG AIR. TEMP. (F)	—	—	—	—	—	55°/120°	55°/95°	55°/95°	55°/100°
HOT WATER HEAT COIL AIR PRESS. DROP (IN.WC)	—	—	—	—	—	.25"	.10"	.10"	.14"
HOT WATER HEAT COIL WATER FLOW (GPM)	—	—	—	—	—	3.0	2.5	4.7	8.75
HOT WATER HEAT COIL ENT./LVG. WATER TEMP (F)	—	—	—	—	—	180°/170°	180°/170°	180°/170°	180°/170°
HOT WATER HEAT COIL WATER VEL./H2O P.D.	—	—	—	—	—	4 FPS 1.26	4 FPS 1.26	5.5 FPS 2.7	8 FPS 9.5
REMARKS						①	①	①	①

■ AT MINIMUM OPERATING STATIC PRESSURE

▲ TERMINAL UNIT AND HEATING COIL (AS APPLICABLE) ONLY. DOES NOT INCLUDE DOWNSTREAM DUCTWORK LOSS.

● LENGTH INCLUDES TERMINAL UNIT; SOUND ATTENUATOR AND HEATING COIL (AS APPLICABLE)

① HIGH CAPACITY COIL

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	SDC-1	SDC-2	SDC-3	SDC-4	SDC-5	RGC-1
FUNCTION SUPPLY	X	X	X	X	X	
FUNCTION RETURN						X
FUNCTION EXHAUST						
FUNCTION TRANSFER						
TYPE DIFFUSER				X	X	
TYPE GRILLE						X
TYPE REGISTER						
TYPE LINEAR	X	X	X			
MAX. CFM	200	165	355	125	255	
DIMENSION THROAT	6"Ø	6"Ø	8"Ø	6"Ø	8"Ø	22 x 22"
DIMENSION FACE	2-SLOT	2-SLOT	2-SLOT	12" x 12"	12" x 12"	24 x 24"
DIMENSION H x W	24" LEN	24" LEN	48" LEN	—	—	—
MOUNTING LOCATION CEILING	X	X	X	X	X	X
MOUNTING LOCATION WALL						
MOUNTING LOCATION FLOOR						
MOUNTING LOCATION DOOR						
● HEIGHT AFF					10'-0"	10'-0"
MOUNTING FRAME	LAY-IN	LAY-IN	LAY-IN	SURF. MTD.	SURF. MTD.	LAY-IN
THROW ▼ RANGE	13-19 FT	16-21 FT	11-17 FT	3-5 FT	6-7 FT.	
THROW ■ PATTERN	2-WAY	1-WAY	2-WAY	4-WAY	4-WAY	
MAX. VELOCITY FACE/THROAT						
MAX. SP DROP	.20"	.20"	.20"	.10"	.10"	.05"
MAX. NOISE CRITERIA	30	30	30	30	30	30
REMARKS						EGG-CRATE FACE

● TO BOTTOM OF WALL OR DOOR MOUNTED AIR DISTRIBUTION DEVICE MARGIN

▼ SEE ARROWS ON DRAWINGS

■ AT AIR VELOCITY 100-50 FPM

COOLING TOWER SCHEDULE

ITEM No	DESCRIPTION	CAPACITY TONS	CAPACITY GPM	CAPACITY ENT AIR	CAPACITY WATER TEMP ENT	CAPACITY WATER TEMP LVG	ELECTRICAL HP	ELECTRICAL VOLT/PHASE	OPERATING WEIGHT	REMARKS
46	INDUCED DRAFT DOUBLE FLOW	376	1130	78" WB	95°	85°	20	460V, 3 PHASE	16890 #	

HHW CONVERTOR

ITEM NO	DESCRIPTION	CAPACITY BTUH	TUBE SIDE GPM	TUBE SIDE WATER TEMP ENT	TUBE SIDE WATER TEMP LVG	TUBE SIDE MAX VEL	TUBE SIDE MAX PD	TUBE SIDE No PASSES	SHELL SIDE STEAM PSIG	SHELL SIDE #/HR	REMARKS
90	SHELL & TUBE CONVERTER	3066718	895	170°	180°	6 FPS	6 PSI	2	30	3310	

AS BUILT
DATE: 19 MAY 86

COORDINATION

APPROVED DATE
ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE
CORROSION ENGINEER / DEEE
APPROVED DATE
CHIEF, FIRE PREVENTION
APPROVED DATE
1984 COMM. SQ. / L70
APPROVED DATE

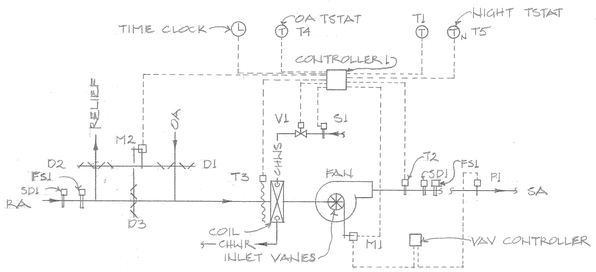
REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY G. McCLAIN
DRAWN BY J. BOWMAN
CHECKED BY DATE
SUBMITTED BY DATE
CHIEF, ENGR. & CONSTRUCTION BRANCH
APPROVED DATE
APPROVED DATE

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL SCHEDULES
M-9

AF 16651B



CONTROL SEQUENCE FOR AHU #5
(SIMILAR FOR AHU'S #7 & #8)

OCCUPIED:
TIME CLOCK SHALL ENERGIZE CONTROL SYSTEM AND START FAN.

SUMMER-WINTER CONTROLLER: UPON SENSING OUTDOOR TEMP (OA STAT T4) GREATER THAN 65°F (adj.) AND CHW TEMP (CHW SENSOR S1) LESS THAN 48°F (adj.), CONTROLLER 1 SHALL OPERATE IN SUMMER MODE. UPON SENSING OUTDOOR TEMP (T4) LESS THAN 65°F (adj.) AND CHW TEMP (S1) GREATER THAN 48°F (adj.), CONTROLLER 1 SHALL OPERATE IN WINTER MODE.

SUMMER MODE: DAMPER MOTOR M2 SHALL POSITION OA DAMPERS D1, RELIEF AIR DAMPERS D2, AND RA DAMPERS D3 TO MINIMUM OA POSITION. T2 SHALL MODULATE CHW VALVE V1 TO MAINTAIN 55°F (adj.) DISCHARGE TEMPERATURE.

WINTER MODE: M2 SHALL POSITION DAMPERS D1,D2, AND D3 TO MINIMUM OA POSITION. T2 SHALL MODULATE V1 TO MAINTAIN 85°F (adj.) DISCHARGE TEMPERATURE.

ECONOMIZER CYCLE: WHEN CONTROLLER 1 IS IN WINTER MODE AND SPACE THERMOSTAT T1 SENSES A CONTINUED TEMPERATURE RISE ABOVE 76°F (adj.), T2 SHALL CLOSE V1 AND M2 SHALL POSITION DAMPERS D1,D2,AND D3 TO 100% OA POSITION. M2 SHALL MODULATE DAMPERS D1,D2, AND D3 TO MAINTAIN 55°F (adj.) AT T2. UPON SENSING A CONTINUED DROP IN SPACE TEMPERATURE BELOW 72°F (adj.) T1 SHALL RESET CONTROLLER 1 TO WINTER MODE AS DESCRIBED ABOVE.

AIR VOLUME CONTROL: STATIC PRESSURE SENSOR P1 MODULATES INLET VANE MOTOR M1 TO MAINTAIN REQUIRED STATIC PRESSURE.

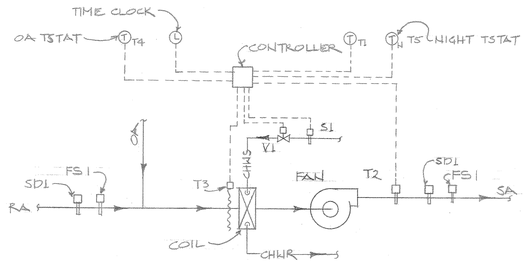
UNOCCUPIED:
TIME CLOCK SHALL CLOSE D1 AND D2, CLOSE V1, MODULATE M1 TO OPEN INLET VANES, DE-ENERGIZE CONTROL SYSTEM, ACTIVATE NIGHT THERMOSTAT T5, AND STOP FAN. UPON SENSING SPACE TEMPERATURE LESS THAN 55°F (adj.), T5 SHALL OVERRIDE TIME CLOCK AND START FAN. T5 SHALL MODULATE V1 TO MAINTAIN SPACE TEMPERATURE (F 55°F (adj.). UPON SENSING A CONTINUED RISE ABOVE 58°F (adj.) WITH V1 CLOSED, T5 SHALL STOP FAN AND TRANSFER CONTROL TO TIME CLOCK.

WARM-UP:
TIME CLOCK SWITCHES FROM UNOCCUPIED TO OCCUPIED AND CONTROLLER 1 IS IN WINTER MODE. UPON SENSING SPACE TEMPERATURE LESS THAN 68°F (adj.), T1 SHALL MODULATE M2 TO CLOSE DAMPERS D1 AND D2, MODULATE OPEN V1, MODULATE M1 TO OPEN INLET VANES, AND START FAN. UPON SENSING TEMP RISE ABOVE 68°F (adj.), T1 SHALL INITIATE HEATING AS DESCRIBED IN WINTER MODE ABOVE.

SAFETY CONTROLS:
FREEZE STAT: UPON SENSING ENTERING MIXED AIR TEMPERATURE LESS THAN 35°F (adj.), T3 SHALL CLOSE D1 AND D2, CLOSE V1, STOP FAN, OPEN INLET VANES, AND ALARM AT UNIT CONTROL PANEL.

SMOKE DETECTORS: UPON SENSING SMOKE PARTICLES IN RA OR SA DUCT, SMOKE DETECTOR SD1 SHALL OPEN D1 AND D2, STOP FAN, OPEN INLET VANES, ALARM AT UNIT CONTROL PANEL, AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.

FIRE DETECTORS: UPON SENSING A RISE IN RA OR SA TEMP ABOVE 135°F (adj.), FIRE DETECTOR FS1 SHALL OPEN D1 AND D2, STOP FAN, OPEN INLET VANES, ALARM AT UNIT CONTROL PANEL, AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.



CONTROL SEQUENCE FOR AHU 1
(SIMILAR FOR AHU'S 14 AND 27, LESS OUTDOOR AIR AND FREEZE TSTAT.)

OCCUPIED:
TIME CLOCK SHALL ENERGIZE CONTROL SYSTEM AND START FAN.

SUMMER-WINTER CONTROLLER: UPON SENSING OUTDOOR TEMP (OA TSTAT T4) ABOVE 65°F (adj.) AND CHW TEMP (SENSOR S1) LESS THAN 48°F (adj.), CONTROLLER SHALL OPERATE IN SUMMER MODE. UPON SENSING OUTDOOR TEMP (T4) LESS THAN 65°F (adj.) AND CHW TEMP (S1) ABOVE 48°F (adj.), CONTROLLER SHALL OPERATE IN WINTER MODE.

SUMMER MODE: UPON SENSING A RISE IN SPACE TEMPERATURE ABOVE 78°F (adj.), THERMOSTAT T1 SHALL RESET DISCHARGE THERMSTAT T2 TO LOWER DISCHARGE TEMP (1:1 RATIO, adj.). T2 SHALL MODULATE CHW VALVE V1 TOWARDS OPEN POSITION. UPON SENSING A DROP IN SPACE TEMPERATURE BELOW 76°F (adj.), T1 SHALL RESET T2 TO INCREASE DISCHARGE TEMP. T2 SHALL MODULATE V1 TOWARDS CLOSED POSITION.

WINTER MODE: UPON SENSING A DROP IN SPACE TEMPERATURE BELOW 68°F (adj.), T1 SHALL RESET T2 TO INCREASE DISCHARGE TEMP (1:1 RATIO, adj.). T2 SHALL MODULATE V1 TOWARDS OPEN POSITION. UPON SENSING A RISE IN SPACE TEMPERATURE ABOVE 78°F (adj.), T1 SHALL RESET T2 TO DECREASE DISCHARGE TEMP. T2 SHALL MODULATE V1 TOWARDS CLOSED POSITION.

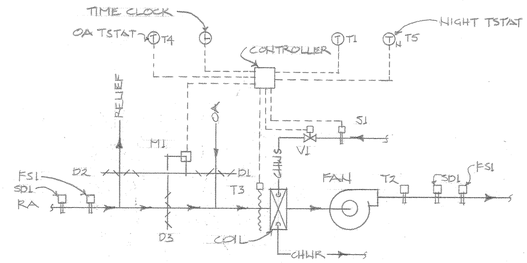
UNOCCUPIED:
TIME CLOCK SHALL CLOSE V1, DE-ENERGIZE CONTROL SYSTEM, ACTIVATE NIGHT THERMOSTAT T5, AND STOP FAN. UPON SENSING SPACE TEMPERATURE LESS THAN 55°F (adj.), T5 SHALL OVERRIDE TIME CLOCK AND START FAN. T5 SHALL MODULATE V1 TO MAINTAIN SPACE TEMPERATURE OF 55°F (adj.). UPON SENSING A CONTINUED RISE ABOVE 58°F (adj.) WITH V1 CLOSED, T5 SHALL STOP FAN AND TRANSFER CONTROL TO TIME CLOCK.

WARM-UP:
TIME CLOCK SWITCHES FROM UNOCCUPIED TO OCCUPIED AND CONTROLLER 1 IS IN WINTER MODE. UPON SENSING SPACE TEMPERATURE LESS THAN 68°F (adj.), T1 SHALL MODULATE OPEN V1, AND START FAN MOTOR. UPON SENSING TEMP RISE ABOVE 68°F (adj.), T1 SHALL INITIATE HEATING AS DESCRIBED IN WINTER MODE ABOVE.

SAFETY CONTROLS:
FREEZE STAT: UPON SENSING ENTERING MIXED AIR TEMPERATURE LESS THAN 35°F (adj.), T3 SHALL CLOSE V1, STOP FAN, AND SOUND ALARM.

SMOKE DETECTORS: UPON SENSING SMOKE PARTICLES IN RA OR SA DUCT, SMOKE DETECTOR SD1 SHALL OPEN D1 AND D2, STOP FAN, AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.

FIRE DETECTORS: UPON SENSING A RISE IN RA OR SA TEMP ABOVE 135°F (adj.), FIRE DETECTOR FS1 SHALL STOP FAN AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.



CONTROL FOR AHU 3
(SIMILAR FOR AHU'S 4, 9, 10, 11, 12, 15, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, AND 37.

OCCUPIED:
TIME CLOCK SHALL ENERGIZE CONTROL SYSTEM AND START FAN.

SUMMER-WINTER CONTROLLER: UPON SENSING OUTDOOR TEMP (OA TSTAT T4) ABOVE 65°F (adj.) AND CHW TEMP (SENSOR S1) LESS THAN 48°F (adj.), CONTROLLER SHALL OPERATE IN SUMMER MODE. UPON SENSING OUTDOOR TEMP (T4) LESS THAN 65°F (adj.) AND CHW TEMP (S1) ABOVE 48°F (adj.), CONTROLLER SHALL OPERATE IN WINTER MODE.

SUMMER MODE: DAMPER MOTOR M1 SHALL POSITION OA DAMPERS D1, RELIEF AIR DAMPERS D2, AND RA DAMPERS D3 TO MINIMUM OA POSITION. UPON SENSING A RISE IN SPACE TEMPERATURE ABOVE 78°F (adj.), THERMOSTAT T1 SHALL RESET DISCHARGE THERMOSTAT T2 TO LOWER DISCHARGE TEMP (1:1 RATIO, adj.). T2 SHALL MODULATE CHW VALVE V1 TOWARDS OPEN POSITION. UPON SENSING A DROP IN SPACE TEMPERATURE BELOW 76°F (adj.), T1 SHALL RESET T2 TO INCREASE DISCHARGE TEMP. T2 SHALL MODULATE V1 TOWARDS CLOSED POSITION.

WINTER MODE: DAMPER MOTOR M1 SHALL POSITION DAMPERS D1,D2, AND D3 TO MINIMUM OA POSITION. UPON SENSING A DROP IN SPACE TEMPERATURE BELOW 68°F (adj.), T1 SHALL RESET T2 TO INCREASE DISCHARGE TEMP (1:1 RATIO, adj.). T2 SHALL MODULATE V1 TOWARDS OPEN POSITION. UPON SENSING A RISE IN SPACE TEMPERATURE ABOVE 78°F (adj.), T1 SHALL RESET T2 TO DECREASE DISCHARGE TEMP. T2 SHALL MODULATE V1 TOWARDS CLOSED POSITION.

ECONOMIZER CYCLE: WHEN THE CONTROLLER IS IN WINTER MODE AND THERMOSTAT T1 SENSES A TEMP RISE ABOVE 76°F (adj.), T2 SHALL CLOSE V1 AND M2 SHALL POSITION D1,D2, AND D3 TO 100% OA POSITION. T1 SHALL RESET T2 TO DECREASE DISCHARGE TEMP. T2 SHALL MODULATE DAMPERS D1,D2, AND D3 TO MAINTAIN SPACE TEMPERATURE OF 76°F (adj.) AT T1. UPON SENSING A CONTINUED DROP BELOW 72°F (adj.) AND DAMPERS D1,D2, AND D3 ARE AT MINIMUM OA POSITION, T1 SHALL RESET CONTROLLER TO WINTER MODE AS DESCRIBED ABOVE.

UNOCCUPIED:
TIME CLOCK SHALL CLOSE DAMPERS D1 AND D2, D3 SHALL REMAIN OPEN, CLOSE V1, DE-ENERGIZE CONTROL SYSTEM, ACTIVATE NIGHT THERMOSTAT T5, AND STOP FAN. UPON SENSING SPACE TEMPERATURE LESS THAN 55°F (adj.), T5 SHALL OVERRIDE TIME CLOCK AND START FAN. T5 SHALL MODULATE V1 TO MAINTAIN SPACE TEMPERATURE OF 55°F (adj.). UPON SENSING A CONTINUED RISE ABOVE 58°F (adj.) WITH V1 CLOSED, T5 SHALL STOP FAN AND TRANSFER CONTROL TO TIME CLOCK.

WARM-UP:
TIME CLOCK SWITCHES FROM UNOCCUPIED TO OCCUPIED AND CONTROLLER 1S IN WINTER MODE. UPON SENSING SPACE TEMPERATURE LESS THAN 68°F (adj.), T1 SHALL MODULATE M2 TO CLOSE DAMPERS D1 AND D2, MODULATE OPEN V1, AND START FAN MOTOR. UPON SENSING TEMP RISE ABOVE 68°F (adj.), T1 SHALL INITIATE HEATING AS DESCRIBED IN WINTER MODE ABOVE.

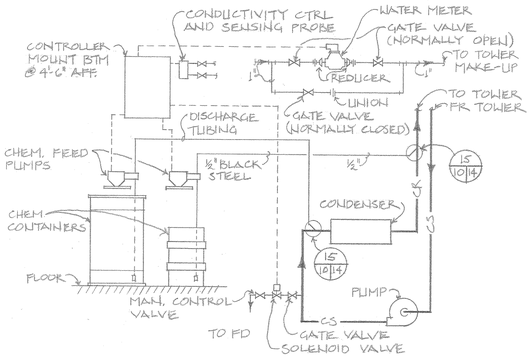
SAFETY CONTROLS:
FREEZE STAT: UPON SENSING ENTERING MIXED AIR TEMPERATURE LESS THAN 35°F (adj.), T3 SHALL CLOSE D1 AND D2, CLOSE V1, STOP FAN, AND SOUND ALARM.

SMOKE DETECTORS: UPON SENSING SMOKE PARTICLES IN RA OR SA DUCT, SMOKE DETECTOR SD1 SHALL OPEN D1 AND D2, STOP FAN, AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.

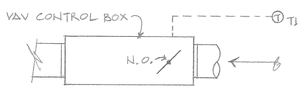
FIRE DETECTORS: UPON SENSING A RISE IN RA OR SA TEMP ABOVE 135°F (adj.), FIRE DETECTOR FS1 SHALL OPEN D1 AND D2, STOP FAN, AND ALARM AT BUILDING'S FIRE ALARM SYSTEM.

CONTROL LEGEND

SYMBOL	DESCRIPTION
(3F)	PUMP OR FAN
	AVERAGING THERMOSTAT OR SENSOR
	INSERTION THERMOSTAT OR SENSOR
	COIL
	DAMPERS
	FLOW DETCTOR
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	GATE VALVE
	CHECK VALVE
	TIME CLOCK
(T) $T_{1,2,etc}$	THERMOSTAT
(S) $S_{1,2,etc}$	SENSOR
$D_{1,2,etc}$	DAMPER
$M_{1,2,etc}$	MOTOR ACCUATOR
SD	SMOKE DETECTOR
FS	FIRE DETECTOR
V	VALVE
RA	RETURN AIR
SA	SUPPLY AIR
OA	OUTDOOR AIR



CONDENSER WATER CHEMICAL FEED SCHEMATIC
NO SCALE

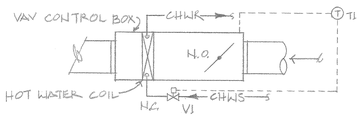


VAV CONTROL SCHEMATIC

GENERAL:
SPACE THERMOSTAT T1 SHALL MODULATE VAV CONTROL BOX TO MAINTAIN SET SPACE TEMPERATURE. VAV BOX SHALL BE SET TO NORMALLY OPEN DURING UNOCCUPIED PERIOD.

SUMMER:
UPON SENSING A RISE ABOVE 78°F (adj.), T1 SHALL MODULATE OPEN VAV CONTROL BOX TO MAXIMUM CFM SETTING.

WINTER:
UPON SENSING A DROP BELOW 68°F (adj.), T1 SHALL MODULATE CLOSED VAV CONTROL BOX TO 100% SHUTOFF POSITION.

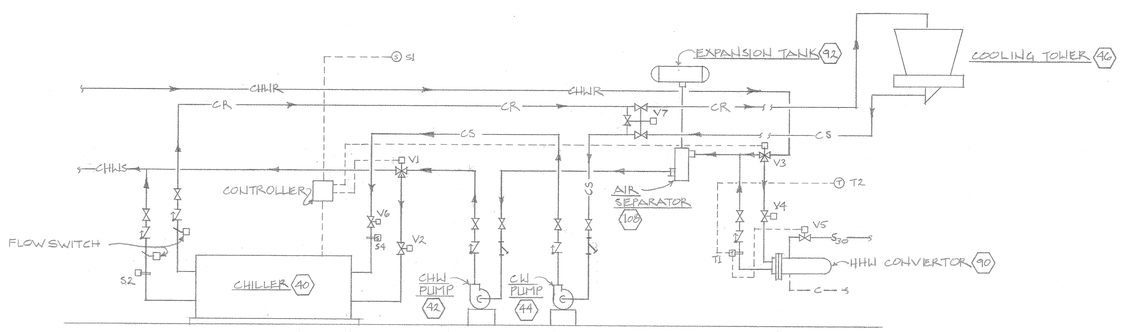


VAV TERMINAL HEAT CONTROL SCHEMATIC

GENERAL:
SPACE THERMOSTAT T1 SHALL MODULATE VAV CONTROL BOX AND HEATING HOT WATER VALVE V1 TO MAINTAIN SET SPACE TEMPERATURE. VAV CONTROL BOX SHALL BE SET TO NORMALLY OPEN DURING UNOCCUPIED PERIOD.

SUMMER:
VALVE V1 SHALL REMAIN CLOSED IN SUMMER MODE. UPON SENSING A RISE ABOVE 78°F (adj.), T1 SHALL MODULATE OPEN VAV CONTROL BOX TO MAXIMUM CFM SETTING. T1 SHALL MODULATE CLOSED VAV CONTROL BOX TO 100% SHUTOFF POSITION.

WINTER:
UPON SENSING A DROP BELOW 68°F (adj.), T1 SHALL MODULATE CLOSED VAV CONTROL BOX TO 100% SHUTOFF POSITION. ON A CONTINUED DROP BELOW 68°F (adj.) AT 100% SHUTOFF, T1 SHALL OPEN VAV CONTROL BOX TO 50% OF MAXIMUM CFM, THEN MODULATE OPEN VALVE V1 TO MAINTAIN 68°F (adj.).



CONTROL SCHEMATIC FOR CHILLER/HHW CONVERTOR SYSTEM

GENERAL:
CHW PUMP RUNS CONTINUOUSLY.

COOLING OPERATION:
WHEN OUTSIDE AIR SENSOR S1 SENSES AMBIENT TEMP GREATER THAN 65°F (adj.), THEN CONTROLLER SHALL CLOSE STEAM VALVE V5, CLOSE HHW VALVE V4, POSITION DIVERTING VALVE V3 TO BYPASS HHW CONVERTOR, OPEN CHW VALVE V2, POSITION DIVERTING VALVE V1 FOR FLOW TO CHILLER, OPEN CONDENSER WATER VALVE V6, START CONDENSER WATER PUMP, AND START CHILLER. CHILLER SHALL NOT START UNTIL FLOW IS PROVEN BY FLOW SWITCHES.

CHILLER: CHW SENSOR S2 SHALL CONTROL CHILLER TO MAINTAIN 45°F (adj.) CHW TEMPERATURE.

COOLING TOWER: CONDENSER WATER PUMPS ARE STARTED FROM CONTROLLER. CONTROLLER SHALL MODULATE MIXING VALVE V7 TO MAINTAIN 68°F (adj.) CONDENSER WATER TEMP AS SENSED BY SENSOR S4. UPON TEMP RISE ABOVE 85°F (adj.) AS SENSED BY S4, CONTROLLER SHALL START COOLING TOWER FAN MOTOR AND MODULATE V7 CLOSED. WHEN V7 IS FULLY OPEN, CONTROLLER SHALL STOP COOLING TOWER FAN MOTOR.

HEATING OPERATION:
WHEN OUTSIDE AIR SENSOR S1 SENSES AMBIENT TEMP LESS THAN 65°F (adj.), THE CONTROLLER SHALL STOP CHILLER, OPEN HHW VALVE V4, POSITION DIVERTING VALVE V3 TO ALLOW FLOW TO CONVERTOR, MODULATE DIVERTING VALVE V1 TO BYPASS CHILLER, CLOSE CHW VALVE V2, STOP COOLING TOWER FAN MOTOR, AND STOP CONDENSER WATER PUMP. HHW THERMOSTAT T1 SHALL MODULATE STEAM CONTROL VALVE V5 TO MAINTAIN SET HHW TEMPERATURE. OUTSIDE AIR THERMOSTAT T2 SHALL RESET T1 TO THE FOLLOWING SCHEDULE:

OUTDOOR TEMP	HHW TEMP
20°F	180°F
30°F	155°F
40°F	130°F
50°F	105°F
60°F	80°F

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER
JACK H. GRAHAM
8789
OKLAHOMA

COORDINATION	
APPROVED	DATE
ENVIRONMENTAL ENGINEER / DEEV	
APPROVED	DATE
CORROSION ENGINEER / DEEE	
APPROVED	DATE
CHIEF, FIRE PREVENTION	
APPROVED	DATE
1984 COMM. SQ./LTO	
APPROVED	DATE
APPROVED	DATE
APPROVED	DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY	DRAWN BY
G. McCLAIN	G. McCLAIN
CHECKED BY	DATE
SUBMITTED BY	DATE
CHIEF, ENGR. & CONSTUCTION BRANCH	
APPROVED	DATE
DEPUTY CIVIL ENGINEER	
APPROVED	DATE
OFFICE, GROUND SAFETY ENGINEER	
APPROVED	DATE
OFFICE, SURGEON (SAN. IND. HYG. ENGR.)	
APPROVED	DATE
THE CIVIL ENGINEER	

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL PIPING AND CONTROL SCHEMATICS

PROJ. NR. OC-9-9 — DATE Nov.83

DRAWING FILE NUMBER — SCALE: NO SCALE — 21 — DRAWING NUMBER DE - F - 83079 - 21 — SHEET 21 OF 38 — M-10

T1 - 1 - F 7 - 239

☆U.S. GOVERNMENT PRINTING OFFICE:1982-570-039

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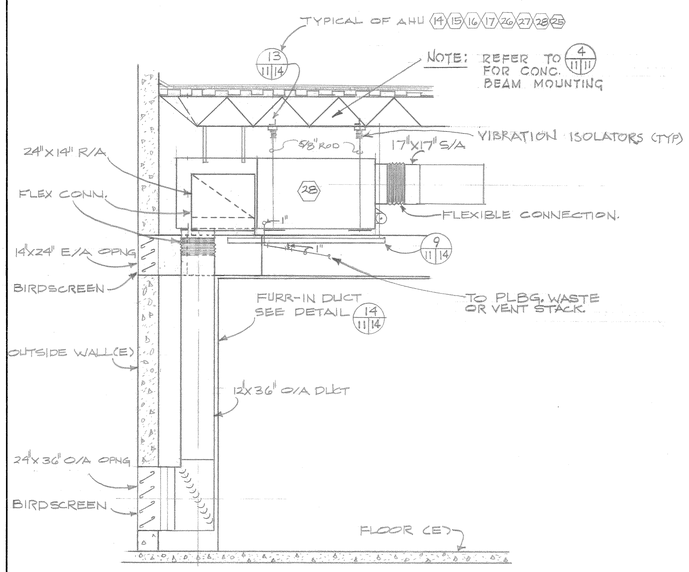
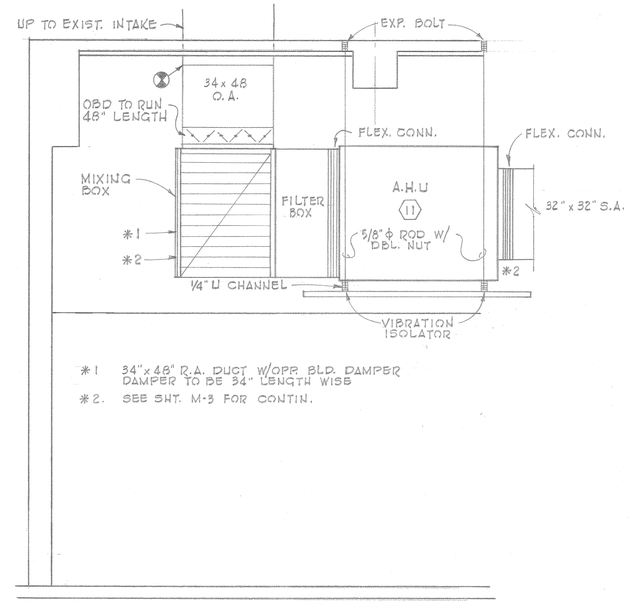
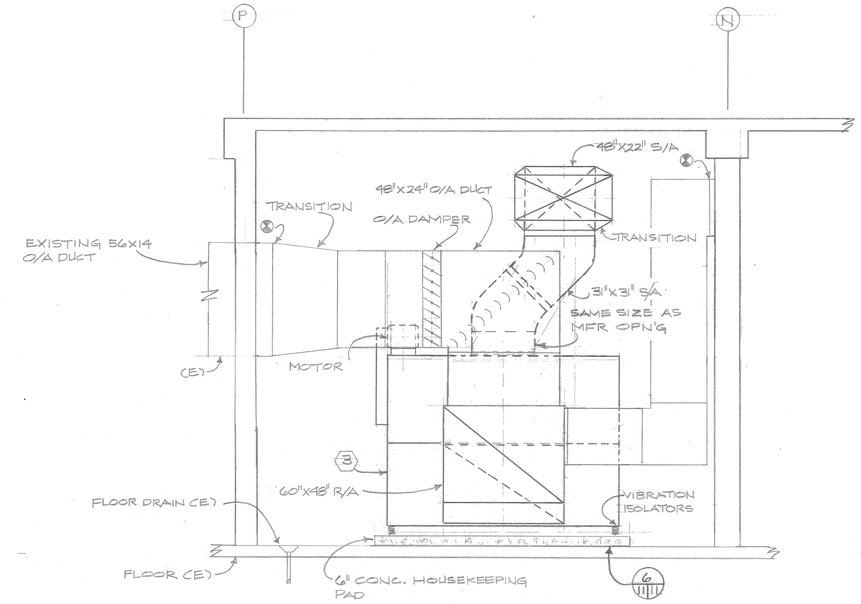


1 3/11 ELEVATION AHU 28 TYPICAL OF 14 15 16 17 21 22 23 24 25 26 27 28 29 30 31 32 34 35 36 37
SCALE 1/2" = 1'-0"

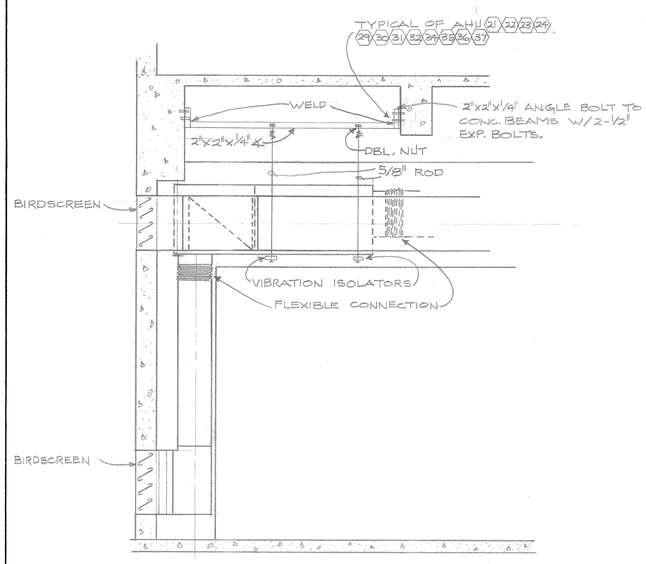
SEE PLANS FOR SIZE OF EACH TYP. AHU AND DUCT WORK. AHU 14 AND 27 HAVE NO O/A.



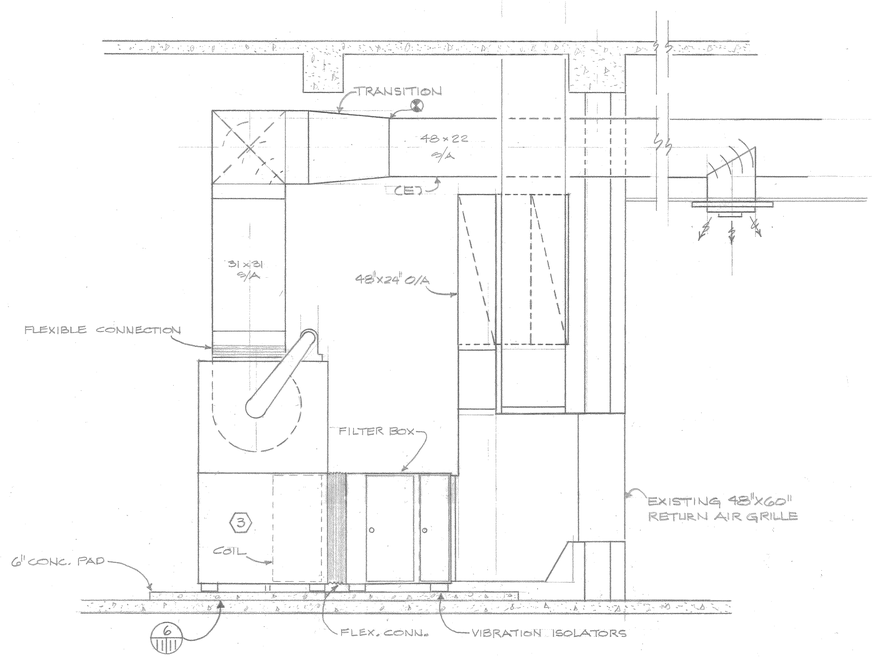
2 3/11 ELEVATION A.H.U. 11
SCALE 1/2" = 1'-0"



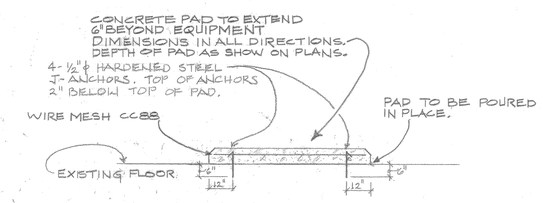
3 3/11 ELEVATION AHU 3 LOOKING NORTH
SCALE 3/8" = 1'-0"



4 11/11 ELEVATION (TYPICAL)
SCALE 1/2" = 1'-0"



5 3/11 ELEVATION AHU 3 LOOKING EAST
SCALE 1/2" = 1'-0"



6 8/11 11/12/13 TYPICAL CONCRETE PAD SECTION
NO SCALE

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY G. McCLAIN | DRAWN BY P.G.R.
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL DETAILS

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. CC-9-9 | DATE NOV. 88
DRAWING FILE NUMBER | SCALE | 22
DRAWING NUMBER DE - F - 83079 - 22
SHEET 22 of 38 M-11

T1 - 1 - F 7 - 238

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

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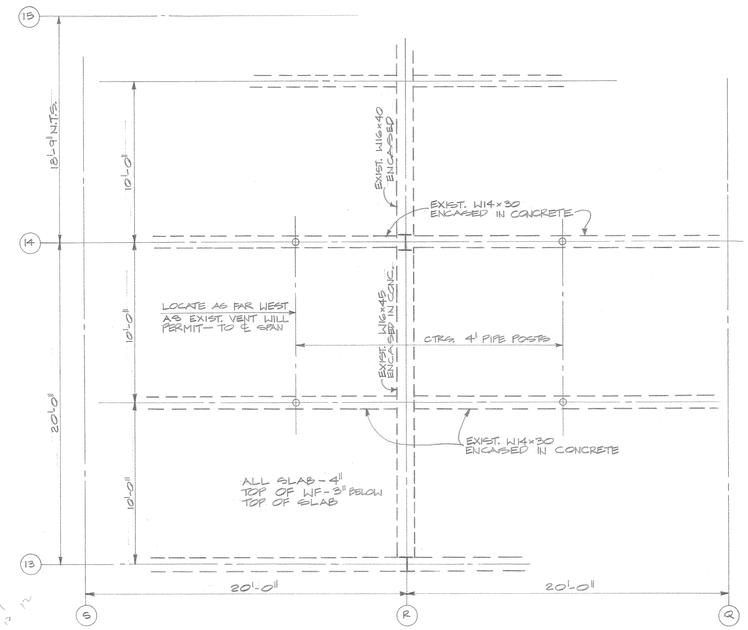
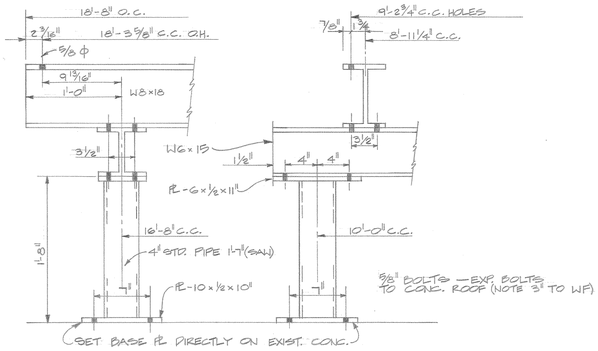
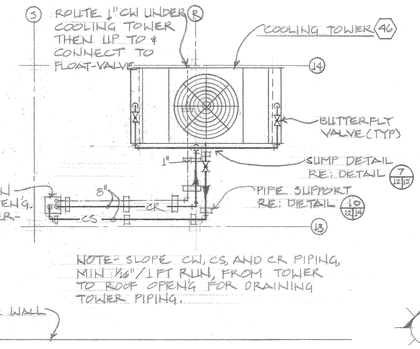
AF 16851 D



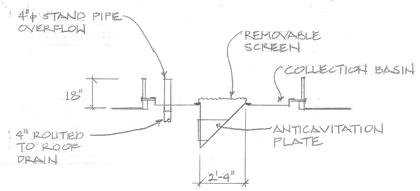
1/12 PLAN-4" ϕ POSTS & EXIST. ROOF STRUCTURE
SCALE: 1/4" = 1'-0"



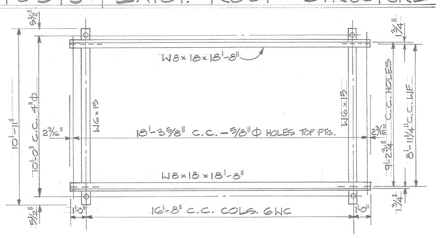
2/12 DETAILS
SCALE: 1 1/2" = 1'-0"



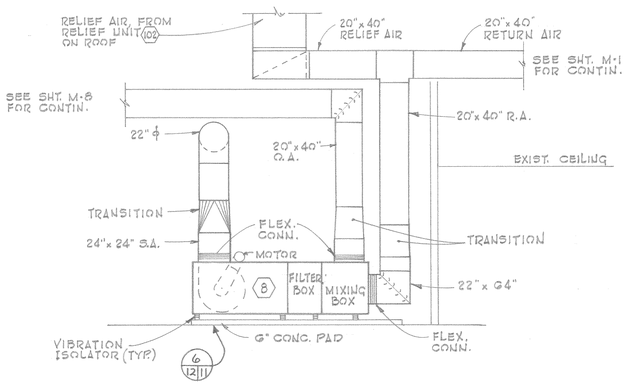
6/12/12 PARTIAL ROOF PLAN - COOLING TOWER
SCALE: 1/8" = 1'-0"



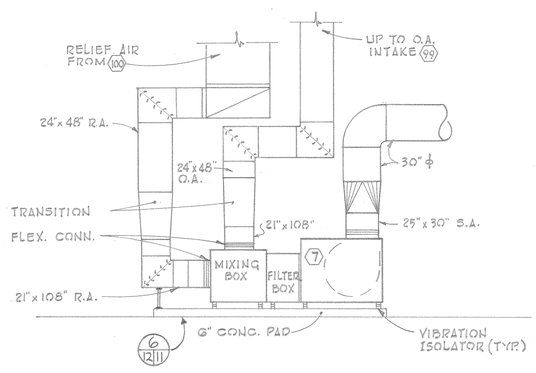
7/12/12 COOLING TOWER SUMP DETAIL
NO SCALE



5/12/12 SUPPORT PLAN
SCALE: 1/4" = 1'-0"



3/8/12 ELEVATION AHU 8
SCALE 1/4" = 1'-0"



4/8/12 ELEVATION A.H.U. 7
SCALE 1/4" = 1'-0"

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE CORROSION ENGINEER / DEEE					
APPROVED DATE CHIEF, FIRE PREVENTION					
APPROVED DATE 1984 COMM. SG. / L 70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY: F. SPRENE
DRAWN BY: P. RAY
CHECKED BY: DATE
SUBMITTED BY: DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
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REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

MECHANICAL DETAILS

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER: 23
SCALE: AS NOTED
DRAWING NUMBER: DE - F - 83079 - 23
SHEET 23 OF 38 — M-12

T1 - 1 - F 7 - 237

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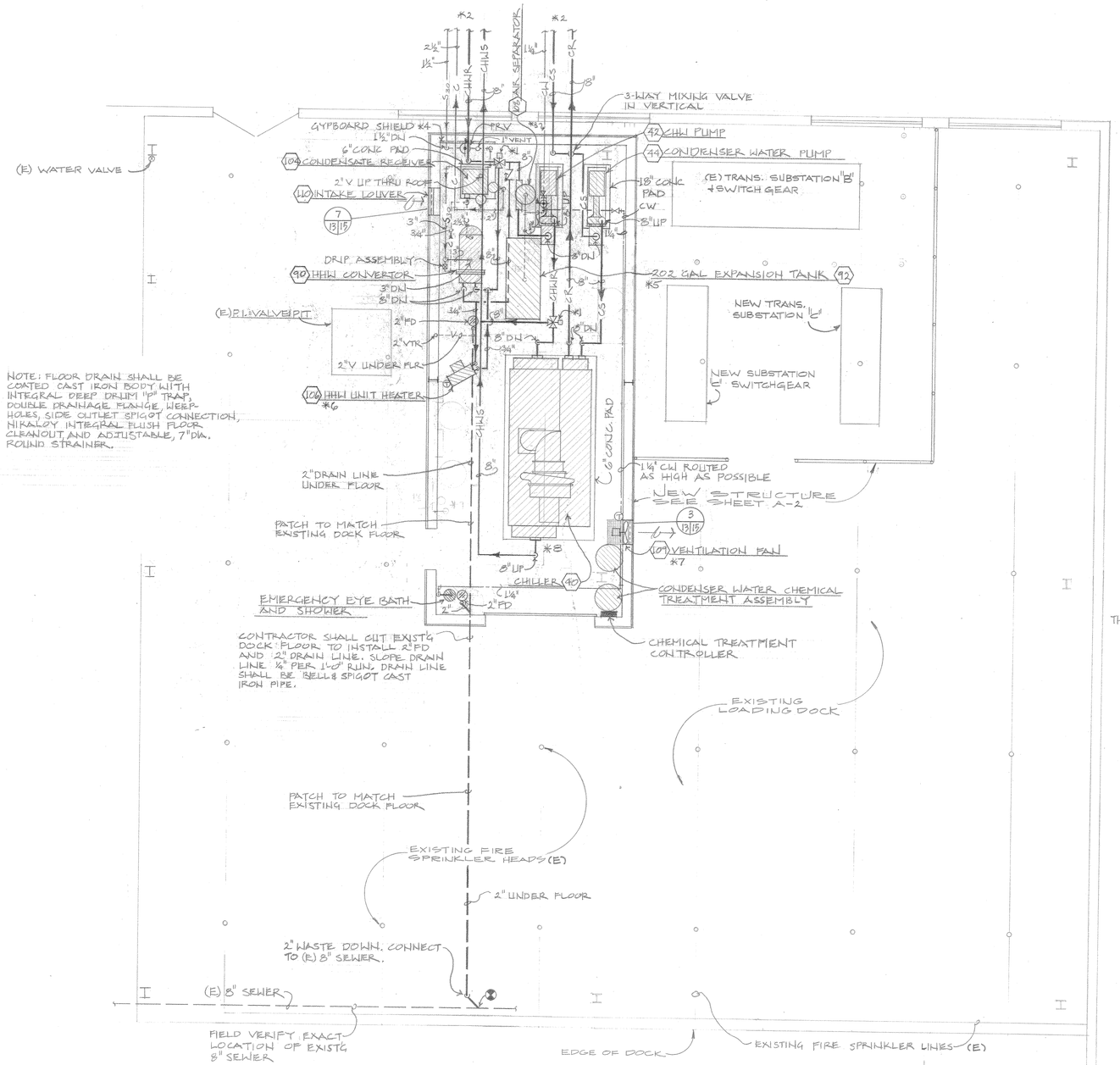
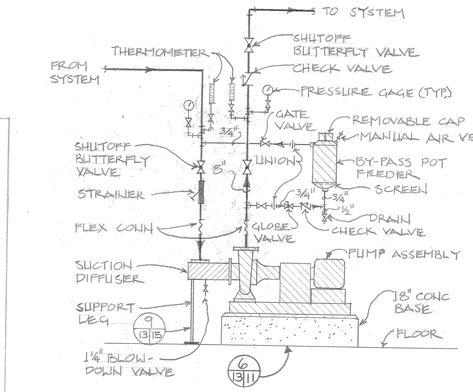


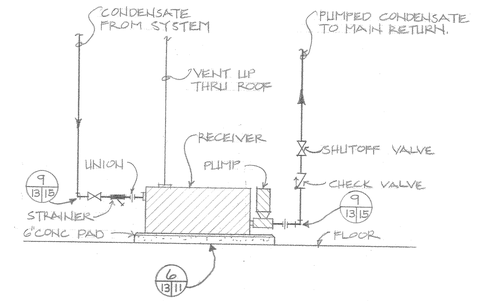
NOTE: FLOOR DRAIN SHALL BE COATED CAST IRON BODY WITH INTEGRAL DEEP DRUM "P" TRAP, DOUBLE DRAINAGE FLANGE, WEEP-HOLES, SIDE OUTLET SPIGOT CONNECTION, NIKALOY INTEGRAL FLUSH FLOOR CLEANOUT, AND ADJUSTABLE, 7" DIA. ROUND STRAINER.

1 | 13/13 NEW MECHANICAL EQUIPMENT ROOM 108M
SCALE: ¼" = 1'-0"

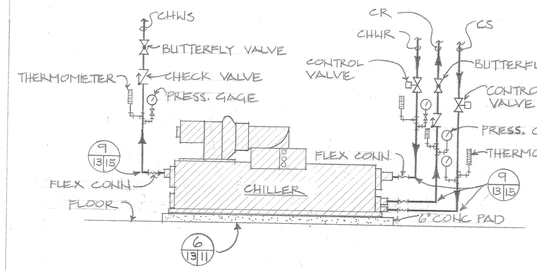


2 | 13/13 PUMP PIPING SCHEMATIC
NO SCALE

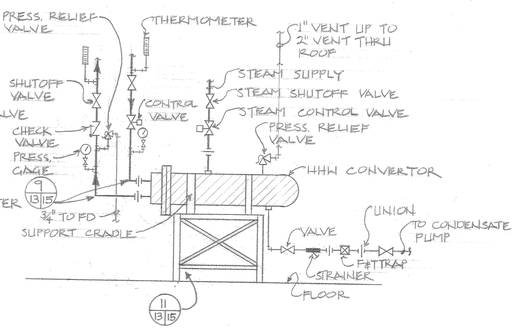
NOTE
1. MAXIMUM MOUNTING HEIGHT FOR CHEMICAL FEEDER AT 5'-0".



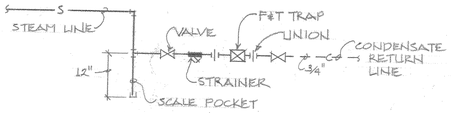
3 | 13/13 CONDENSATE PUMP PIPING SCHEMATIC
NO SCALE



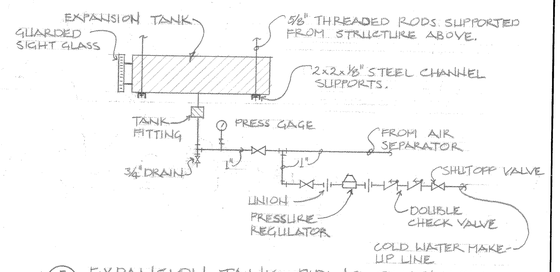
4 | 13/13 CHILLER PIPING SCHEMATIC
NO SCALE



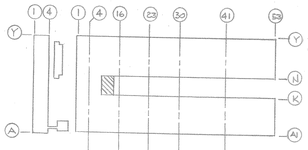
5 | 13/13 HHW CONVERTOR PIPING SCHEMATIC
NO SCALE



6 | 13/13 STEAM DRIP ASSEMBLY SCHEMATIC
NO SCALE



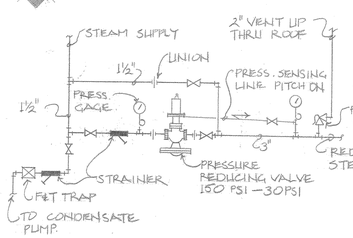
7 | 13/13 EXPANSION TANK PIPING SCHEMATIC
NO SCALE



*NOTES:

*1 DIVERTING VALVE
*2 BOTTOM OF PIPE PENETRATIONS SHALL BE 11'-0"± ABOVE FIN. FLOOR. STEAM, CONDENSATE RETURN, CHWS, CHWR, CS, CR, AND CW.
*3 PROVIDE ELECTIRC HEAT TAPE AROUND PIPING. HEAT TAPE SHALL BE 120V, 1 PHASE, WITH THERMOSTAT TO MAINTAIN MIN. OF 40°F AT PIPE SURFACE.
*4 PROVIDE 2- 4'x4'x5/8" GYPBOARD PANELS SANDWICHED TOGETHER TO ACT AS INSULATING SHIELD BETWEEN WALL AND STEAM PRESSURE REDUCING STATION. FASTEN GYPBOARD SHIELD TO WALL.
*5 MOUNT EXPANSION TANK AS HIGH AS POSSIBLE.
*6 BOTTOM OF UNIT HEATER MOUNTED 9'-0" ABOVE FIN. FLOOR.
*7 VENTILATION FAN SHALL BE DIRECT DRIVE PROPELLER WALL FAN WITH SOLID STATE VARIABLE SPEED CONTROLLER, BACKDRAFT DAMPERS, DISCHARGE LOUVER, WIRE GUARD, AND WALL SLEEVE. FAN SHALL HAVE CAPCITY OF 1215 CFM @ .25" S.P., 1507 RPM, 1/6 HP, 120V, 1 PHASE. FAN SHALL BE INTERLOCKED WITH INTAKE LOUVER 110 . UNIT MOUNTED THERMOSTAT SHALL START FAN AND OPEN INTAKE LOUVER UPON A TEMP RISE ABOVE 80°F (adj.). UPON A DROP BELOW 80°F (adj.), THERMOSTAT SHALL STOP FAN AND CLOSE INTAKE LOUVER. BOTTOM OF FAN OPENING SHALL BE 7'-9"± ABOVE FIN. FLOOR.

*8 PIPING TO BE INSTALLED SO AS TO ALLOW REMOVAL OF BUNDLES.



8 | 13/13 PRESSURE REDUCING STATION SCHEMATIC
NO SCALE

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
CIVIL ENGINEERING DIVISION
OKLAHOMA CITY OKLAHOMA

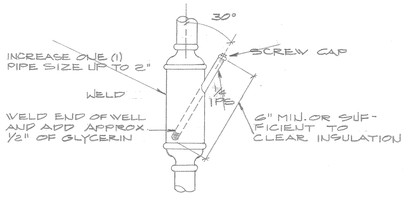
APPROVED DATE ENVIRONMENTAL ENGINEER / DEEV	DESIGNED BY G. McCLAIN	DRAWN BY G. McCLAIN
APPROVED DATE CORROSION ENGINEER / DEEE	CHECKED BY DATE	
APPROVED DATE CHIEF, FIRE PREVENTION		
APPROVED DATE 1984 COMM. SQ./L.TO	SUBMITTED BY DATE CHIEF, ENGR. & CONSTUCTION BRANCH	
APPROVED DATE	APPROVED DATE DEPUTY CIVIL ENGINEER	APPROVED DATE THE CIVIL ENGINEER
APPROVED DATE	APPROVED DATE OFFICE, GROUND SAFETY ENGINEER	APPROVED DATE OFFICE, SURGEON (SAN. IND. HYG. ENGR.)
APPROVED DATE	DRAWING FILE NUMBER	

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 TINKER AIR FORCE BASE
MECHANICAL FLOOR PLAN - ROOM 108M

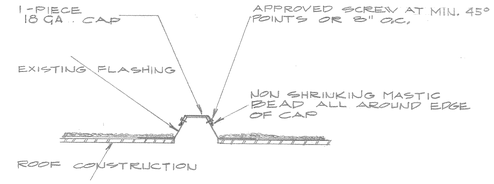
PROJ. NR. OC-9-9 DATE NOV. 83
SCALE AS NOTED
DRAWING NUMBER 24 DE - F - 83079 - 24 M-13

T1 - 1 - F 7 - 236

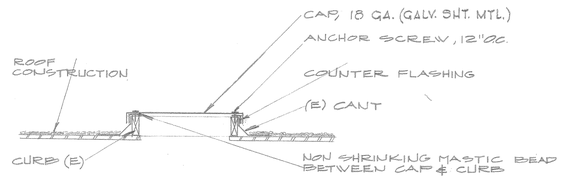
AF 168518



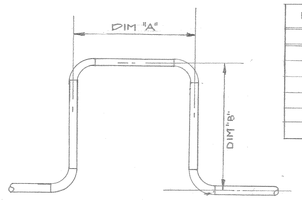
1/14 THERMOMETER WELL IN STEEL PIPING
NO SCALE



2/14 CAP FOR EXISTING ROUND FLASHING
NO SCALE

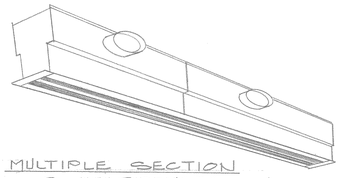


3/14 CAP FOR EXISTING CURB
NO SCALE

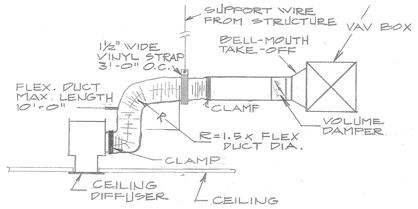


EXPANSION LOOP SCHEDULE		
PIPE SIZE	DIM "A"	DIM "B"
1 1/2"	3'-0"	3'-0"
2"	3'-4"	3'-4"
2 1/2"	3'-8"	3'-8"
3"	4'-0"	4'-0"
4"	4'-6"	4'-6"
6"	5'-4"	5'-4"

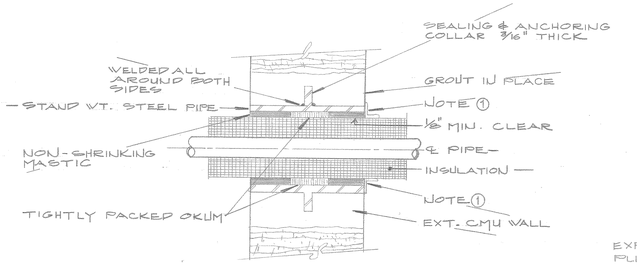
4/14 EXPANSION BENDS DETAIL
NO SCALE



MULTIPLE SECTION SLOT DIFFUSER

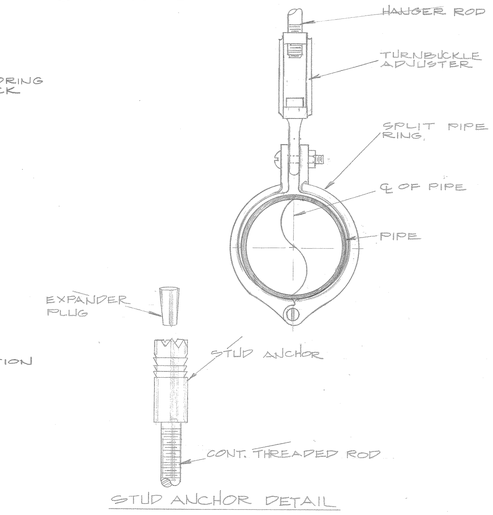


5/14 FLEXIBLE DUCT—CEILING DIFFUSER CONNECTION
NO SCALE

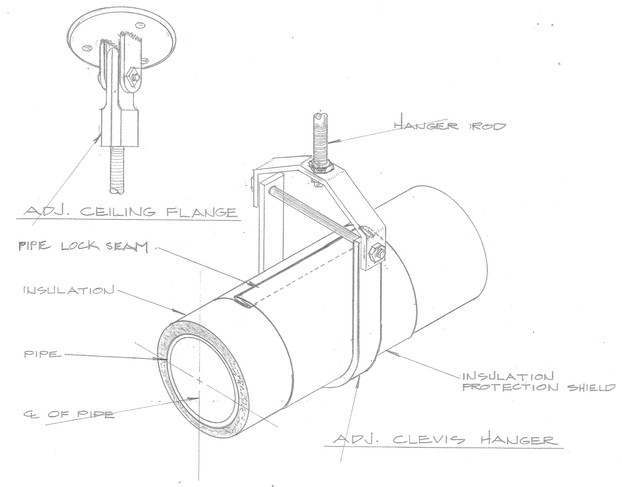


NOTE
1 COAT EXT. SURFACE OF SLEEVE & INSULATION W/ TAR ALL AROUND.

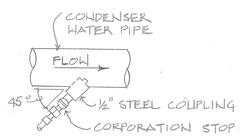
6/14 INSTALLATION DETAIL PIPE THRU WALL
NO SCALE



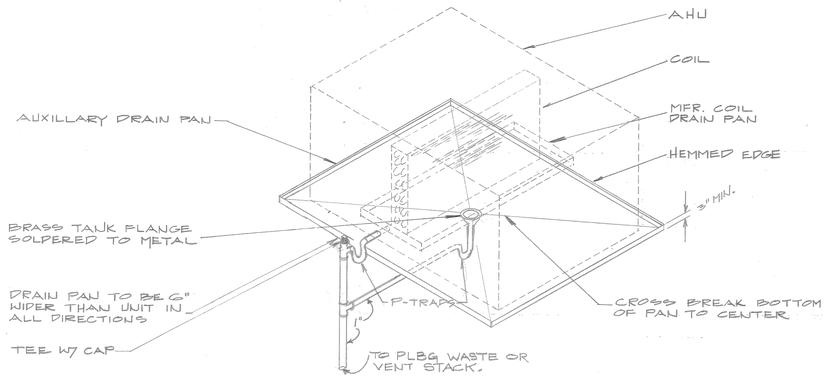
7/14 SPLIT RING DETAIL
NO SCALE



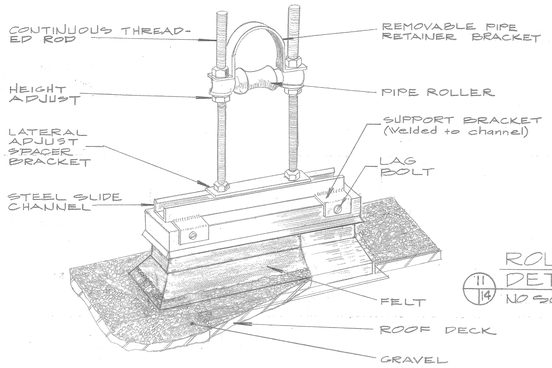
8/14 PIPE HANGER DETAIL
NO SCALE



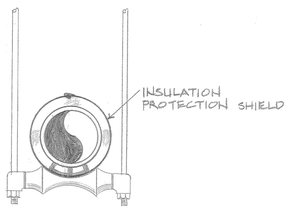
CORPORATION STOP AND INJECTION ASSEMBLY DTL.
15/10/14 NO SCALE



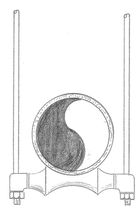
9/11/14 AUXILLARY DRAIN PAN DETAIL—TYPICAL
NO SCALE



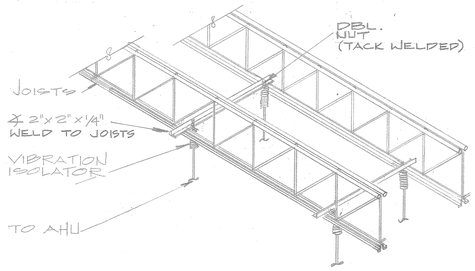
10/12/14 ROOF PIPE MOUNTING PEDESTAL
NO SCALE



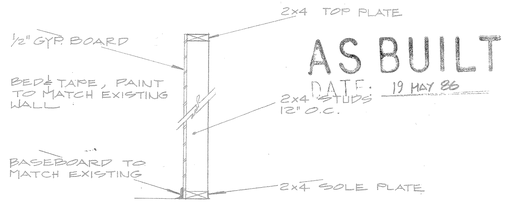
11/14 ROLLER HANGER DETAIL-INSULATED
NO SCALE



12/14 ROLLER HANGER DETAIL



13/11/14 AHU HANGER DETAIL
NO SCALE



AS BUILT
DATE: 19 MAY 86

14/11/14/5 FURRING DETAIL
NO SCALE

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
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DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F. RAY — DRAWN BY J. BOYMAN
CHECKED BY DATE
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL DETAILS

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PROJ. NR. 06-9-9 — DATE NOV 88
DRAWING FILE NUMBER
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SHEET 25 OF 38
25
M-14

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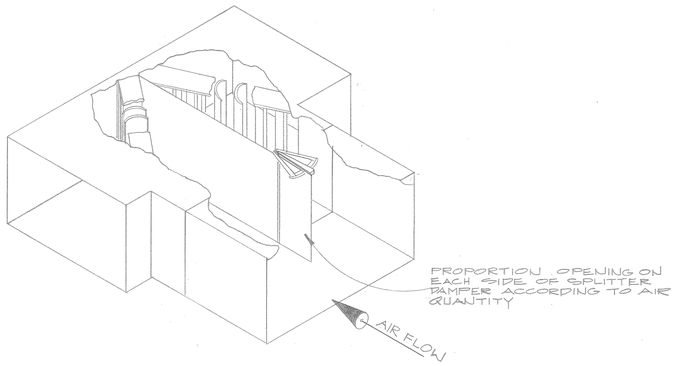
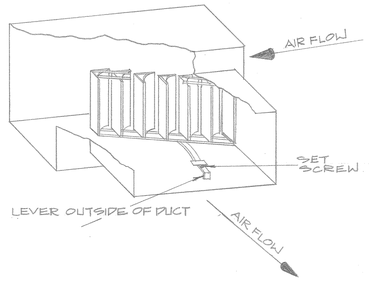
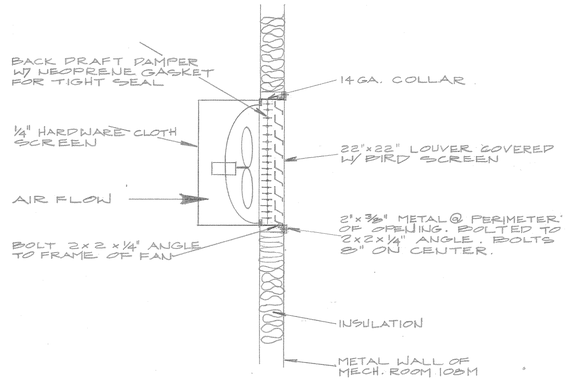
AF 16851 B



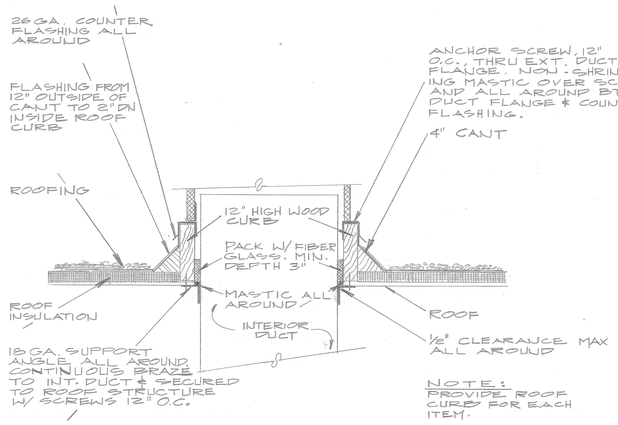
1/15/15 TYP. SPLITTER DAMPER
N.T.S.



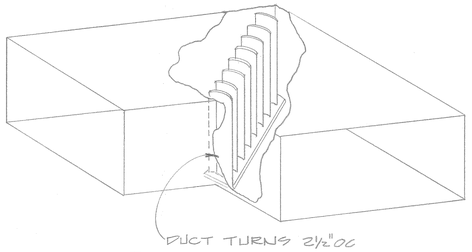
2/15/15 TYP. BRANCH TAKE-OFF
N.T.S.



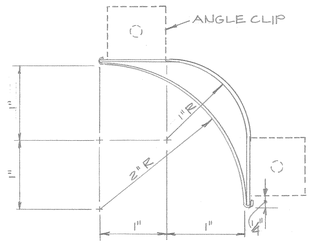
3/13/15 WALL EXHAUST FAN DETAIL
N.T.S.



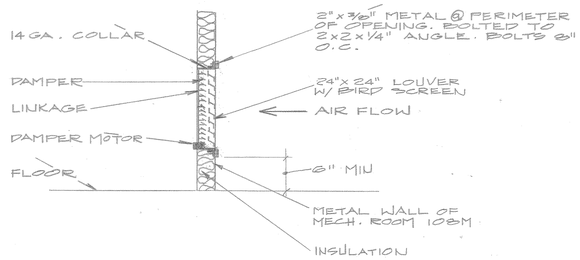
4/15/15 INSTALLATION DETAIL – ROOF CURB
N.T.S.



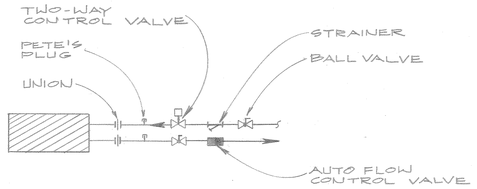
5/15/15 TYP. ELBOW
N.T.S.



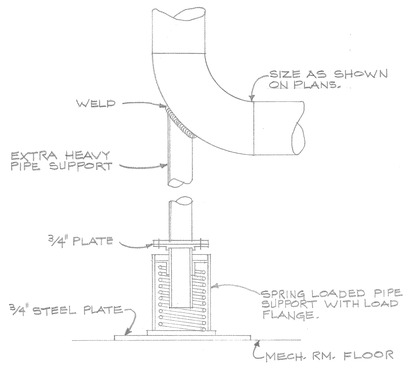
6/15/15 TYP. TURNING VANE
FULL SCALE



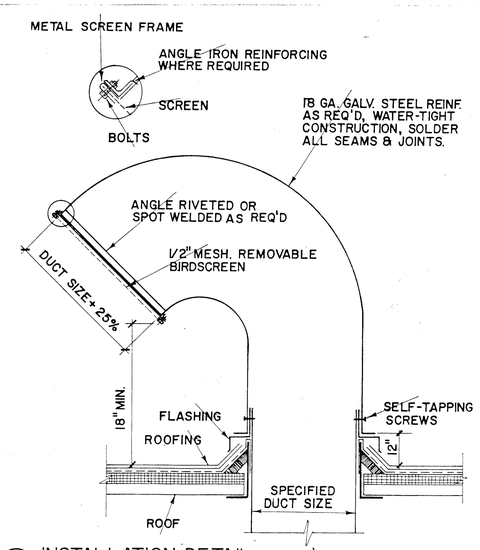
7/13/15 WALL AIR INTAKE DETAIL
N.T.S.



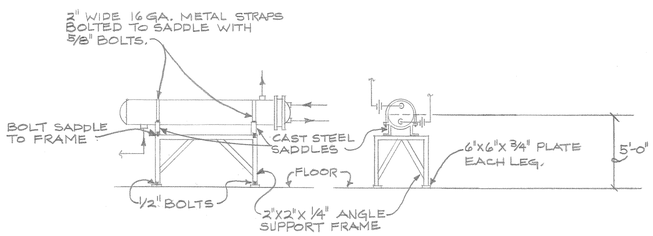
8/15/15 VAV BOX TERMINAL, HHW HEATING COIL & UNIT HEATER PIPING SCHEMATIC
NTS



9/13/15 PIPE SUPPORT DETAIL
NO SCALE



10/15/15 INSTALLATION DETAIL - RECTANGULAR GOOSENECK
NO SCALE



11/13/15 HEAT EXCHANGER SUPPORT FRAME DETAIL
NO SCALE

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / LTO
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY P. RAY — DRAWN BY J. BOWMAN
CHECKED BY J. GRAHAM — DATE 9-1-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
MECHANICAL DETAILS

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER — SCALE AS NOTED — 26
DRAWING NUMBER DE - F - 83079 - 26
SHEET 26 OF 38 — M-15

T1 - 1 - F 7 - 234

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039

[redacted]

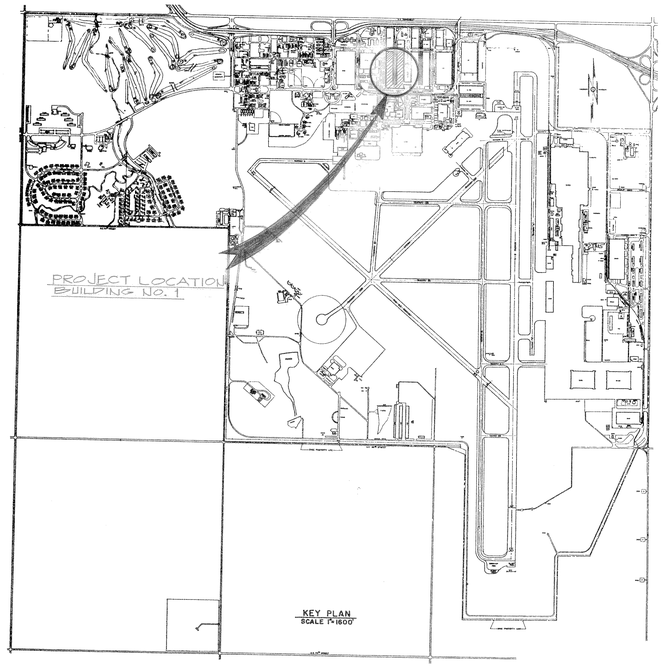
FEEDER CIRCUIT CONDUIT AND CABLE SCHEDULE

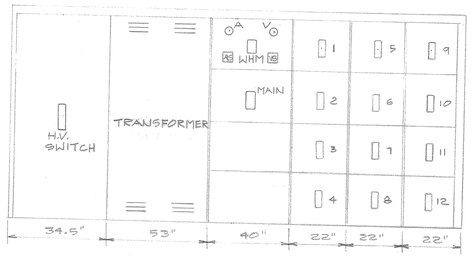
NO	PHASE NO/SIZE	NEUTRAL NO./SIZE	GROUND NO/SIZE	CONDUIT SIZE	CONDUIT TYPE	FUSE OR BKR.	REMARKS
A	3#6	1#6	1#10	1¼"	EMT	50	
B	3#2	1#2	1#8	1½"	"	100	
C	3#4/0	1#4/0	1#4	2½"	"	225	
D	6#3/0	2#3/0	2#3	2-2½"	"	400	
E	6#350	2#350	2#1	2-3"	"	600	
F	3#1/0	—	1#6	1½"	"	150	
G	3#3/0	—	1#6	2"	"	200	
H	6#3/0	—	2#6	2-2"	"	200	
I	12#350	4#350	4#1	4-3"	"	600	

NOTE
1. ALL CONDUCTOR INSULATION TO BE TYPE THHW

ELECTRICAL SYMBOL LIST

SYMBOL	DISCRIPTION
	HID OR INCANDESCENT FIXTURE
	FLUORESCENT FIXTURE
	EXIT LIGHTING
	DOUBLE POLE SWITCH
	THREE-WAY SWITCH
	SWITCH FOR LOW VOLTAGE SWITCHING
	PANELBOARD
	DISCONNECT SWITCH, F=FUSIBLE
	MAGNETIC CONTACTOR
	MANUAL MOTOR STARTER
	DRY TYPE TRANSFORMER
	MOTOR WITH ITEM # & HORSEPOWER
	CONDUIT CONCEALED IN WALL & CEILING
	CONDUIT IN SLAB OR UNDERGROUND
	JUNCTION BOX
	BRANCH CIRCUIT, SLASHES DENOTE NO. OF CONDUCTORS, INC. GND
	HOMERUN TO PANELBOARD ARROW & CKTS
	INTERRUPTER SWITCH
	FUSED INTERRUPTER SWITCH
	CIRCUIT BREAKER 600 V. & BELOW
	DRAWOUT CIRCUIT BREAKER 600 V. & BELOW
800 / 800	BREAKER TRIP SETTING / BREAKER FRAME SIZE
	SURGE ARRESTER
	POWER TRANSFORMER
	MOTOR STARTER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	GROUND CONNECTION
	CABLE TERMINATION FOR 3Ø & 1Ø 200
	CABLE TERMINATION FOR 1Ø
	AMMETER SWITCH
	VOLTMETER SWITCH
	AMMETER
	KILOWATT HOUR METER
	KILOWATT HOUR DEMAND METER
	VOLTMETER
	VOLTAGE SENSOR
MLO	MAIN LUGS ONLY
MCB	MAIN CIRCUIT BREAKER
	MECHANICAL EQUIPMENT
	GROUND FAULT INDICATOR





TYPICAL UNIT SUB-STATION LINE-UP (FREE STANDING)
NO SCALE

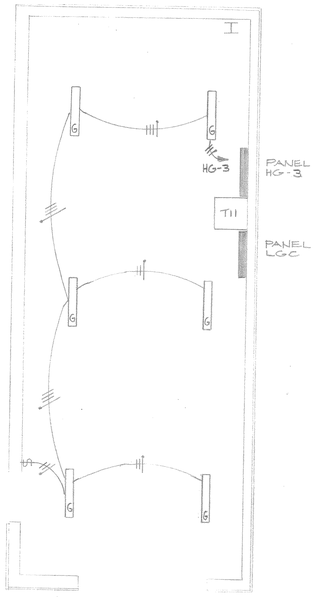
TRANSFORMER SCHEDULE

NO.	KVA	VOLTAGE PRIMARY	VOLTAGE SECONDARY	WINDING TYPE PRIMARY	WINDING TYPE SECONDARY	LOCATION	REMARKS
T1	112.5	480	120/208	DELTA	WYE	AREA B	
T2	112.5	"	"	"	"	AREA C	
T3	150	"	"	"	"	AREA D	
T4	150	"	"	"	"	AREA E	
T5	112.5	"	"	"	"	AREA J	
T6	150	"	"	"	"	AREA J	
T7	150	"	"	"	"	ROOM 142	
T8	150	"	"	"	"	AREA N	
T9	150	"	"	"	"	AREA S	
T10	15	"	"	"	"	AREA S	
T11	15	"	"	"	"	ROOM 108M	

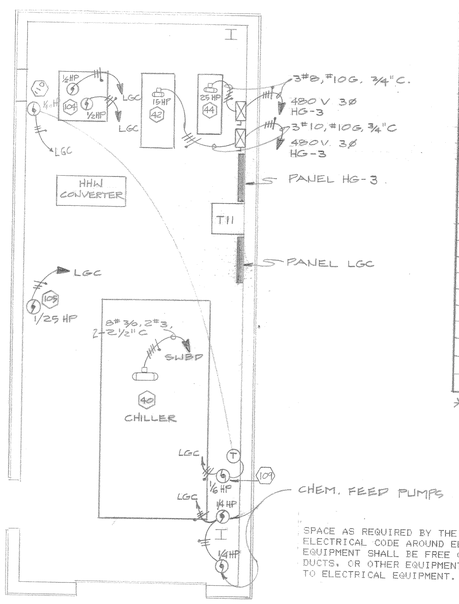
UNIT SUB-STATION SCHEDULE

STATION	MOUNTING	MAIN VOLTAGE EE	SPACE	BREAKER	SERVES	*1 FEEDER
C	FREE STANDING	1800 AT 1800 AF SOLID STATE	C1	3P400A SPACE	—	—
		MAIN, 1000 KVA,	C2	3P400A SPACE	—	—
		12.47 KV 480Y/	C3	3P400A SPACE	—	—
		277 VOLT, 3Ø	C4	3P 600 AT 1200 AF	MPP-D	I
		4W & GND.	C5	3P400A SPACE	—	—
			C6	3P 225AT 400 AF	HG1	C
			C7	3P 200 AT 225 AF	T7	G
			C8	3P 400AT 400 AF	CHILLER	D
			C9	3P400A SPACE	—	—
			C10	3P 300 AT 400 AF	MCC-1	D
			C11	3P 400 AT 400 AF	HJ1	D
			C12	3P 150 AT 225 AF	T5	F
A	FREE STANDING	800 AT 800 AF SOLID	A1	3P400A SPACE	—	—
		STATE, 500 KVA,	A2	3P400A SPACE	—	—
		12.47 KV. 480Y/	A3	3P400A SPACE	—	—
		277 VOLT, 3Ø	A4	3P 150 AT 225 AF	T1	F
		4W & GND.	A5	3P 225A SPACE	—	—
			A6	3P 150 AT 225 AF	T2	F
			A7	3P 200 AT 225 AF	T3	G
			A8	3P 200 AT 225 AF	T4	H

*1 SEE "FEEDER CIRCUIT CONDUIT & CABLE SCHEDULE" THIS SHEET



RM 108M-LIGHTING PLAN



SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.

RM 108M-POWER WIRING

AS BUILT
19 MAY 86

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / L70
APPROVED DATE
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY P. FANT — DRAWN BY J. BOHMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
RM. 108 LIGHTING & POWER PLAN, ELECTRICAL SYMBOLS & SCHEDULES

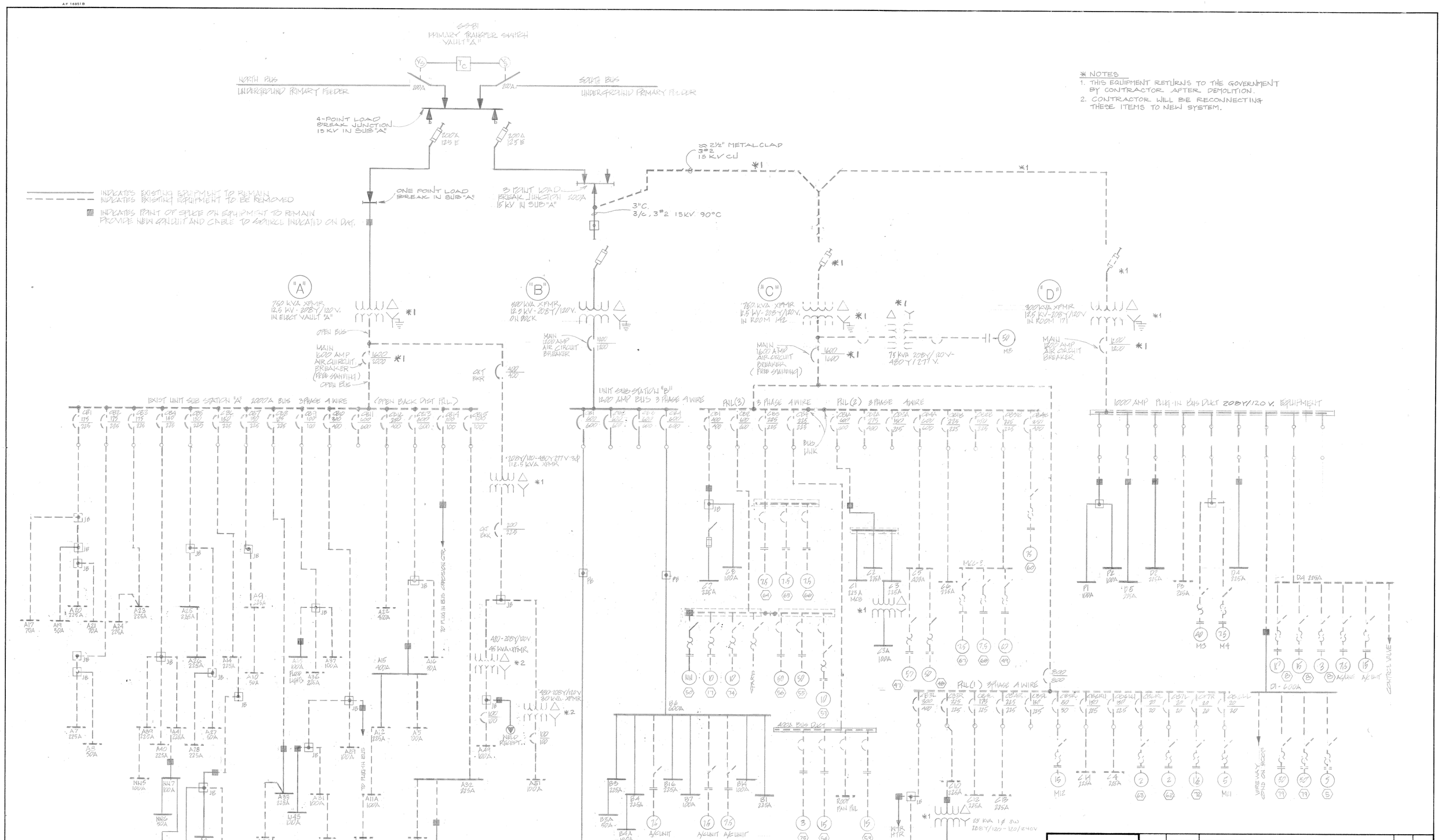
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN. IND. HYG. ENGR.)

DRAWING FILE NUMBER
SCALE NO SCALE
PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 27
27
SHEET 27 OF 38
E-1

OKLAHOMA CITY ALC FORM OCT 75 2298 PREVIOUS EDITION MAY BE USED

T1 - 1 - F 7 - 233

AF 16851B



* NOTES

1. THIS EQUIPMENT RETURNS TO THE GOVERNMENT BY CONTRACTOR AFTER DEMOLITION.
2. CONTRACTOR WILL BE RECONNECTING THESE ITEMS TO NEW SYSTEM.

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. BG./L.70
APPROVED DATE
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.P. — DRAWN BY J. BOLIMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

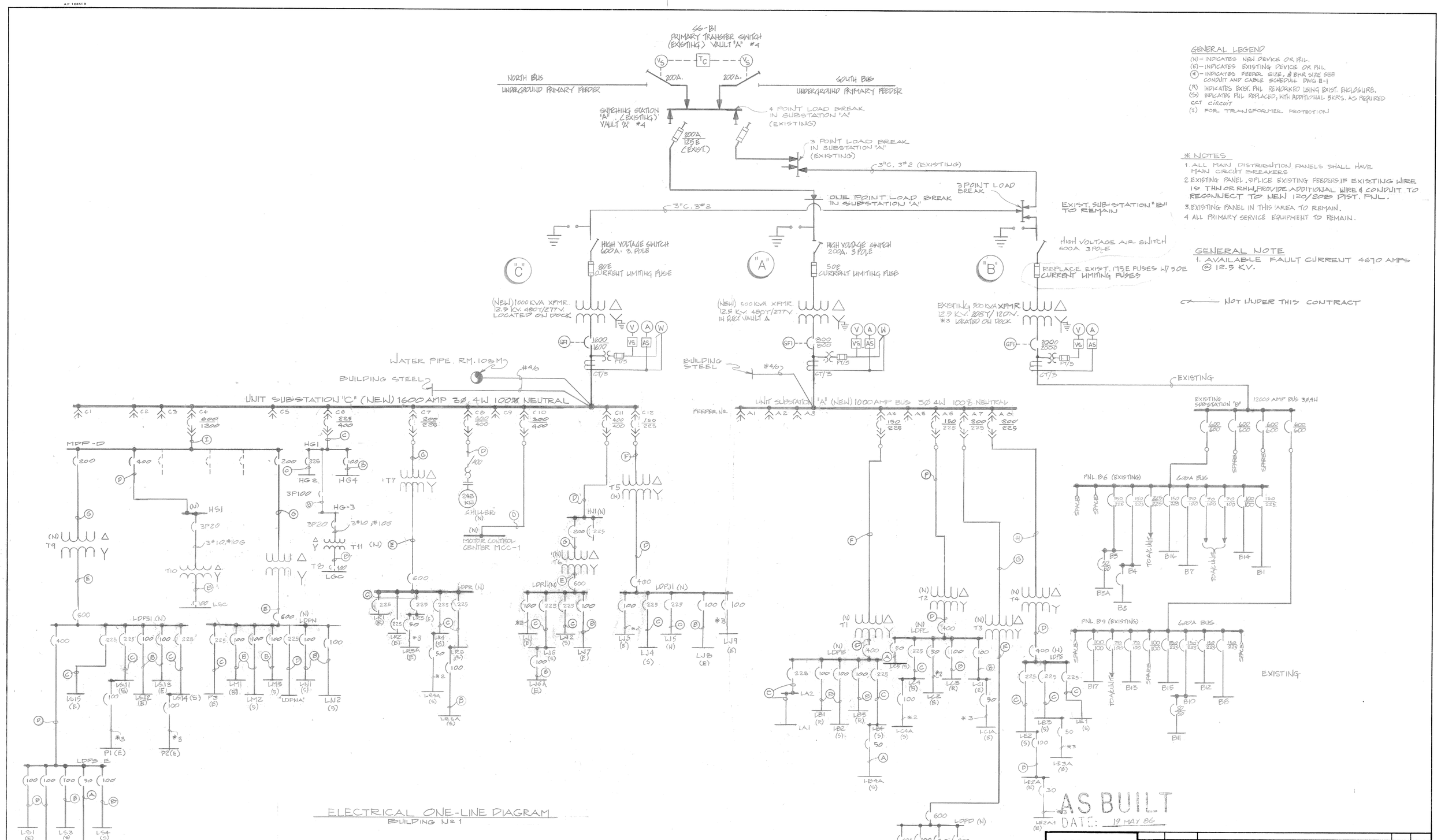
ELECTRICAL ONE-LINE DEMOLITION

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. ING. HYG. ENGR.)

DRAWING FILE NUMBER
SCALE NONE
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 28
28 — SHEET 28 OF 38
E-2

T1 - 1 - F 7 - 232

AF 16851B



GENERAL LEGEND

(N) – INDICATES NEW DEVICE OR PNL.
(E) – INDICATES EXISTING DEVICE OR PNL.
(*) – INDICATES FEEDER SIZE, & BKR SIZE SEE CONDUIT AND CABLE SCHEDULE DWG E-1
(R) INDICATES EXIST. PNL REWORKED USING EXIST. ENCLOSURE.
(S) INDICATES PNL REPLACED, WITH ADDITIONAL BKR'S. AS REQUIRED
CCT CIRCUIT
(I) FOR TRANSFORMER PROTECTION

* NOTES

1. ALL MAIN DISTRIBUTION PANELS SHALL HAVE MAIN CIRCUIT BREAKERS
2. EXISTING PANEL. SPLICE EXISTING FEEDERS IF EXISTING WIRE IS THW OR RHW, PROVIDE ADDITIONAL WIRE & CONDUIT TO RECONNECT TO NEW 120/208 DIST. PNL.
3. EXISTING PANEL IN THIS AREA TO REMAIN.
4. ALL PRIMARY SERVICE EQUIPMENT TO REMAIN.

GENERAL NOTE

1. AVAILABLE FAULT CURRENT 4670 AMPS @ 12.5 KV.

ELECTRICAL ONE-LINE DIAGRAM

BUILDING Nº 1

AS BUILT
DATE: 19 MAY 86

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
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APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
CIVIL ENGINEERING DIVISION
OKLAHOMA CITY — OKLAHOMA

DESIGNED BY: F. FERDOSIAN
DRAWN BY: J. BOWMAN
CHECKED BY: J. GRAHAM — DATE: 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

ELECTRICAL ONE-LINE DIAGRAM

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER — SCALE NONE
DRAWING NUMBER: DE - F - 83079 - 29
SHEET 29 OF 38 — 29 — E-3

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

T1 - 1 - F 7 - 231

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208Y/120V. 3Ø, 4W. PANELBOARD SCHEDULE

NUMBER	LOCATION MOUNTING	PANELBOARD MAINS	FEEDER	GND.	BRANCH CIRCUITS	SOURCE EST. KVA	GENERAL NOTES
			*	*			
PNL LA1	SURFACE	225A, MLO.	EXIST.	EXIST.	30-1P20 EXIST.	LDPB 25.2	TWO PNLS HAVE SAME 225A MLO
PNL LA2	SURFACE	225A, MLO.	EXIST.	EXIST.	7-3P20 EXIST. 4-3P25 EXIST. 5-3P30 EXIST. 6-3P50 EXIST	LDPB 48.6	FEED THROUGH THE LA-1 WITH THE SAME MLO
PNL LDPB	SURFACE	400A, MCB	NEW	NEW	3-3P100A PNLS LB3, LB2, LB1, 2-3P225A PNLS LB4, LA2 1-3P SPACE	VIA XFMR "T1" 99.36	NEW DISTRIBUTION PANEL.
PNL LB 1	SURFACE	225A MLO.	EXIST	EXIST	17-1P20 EXIST CCT. 6-3P30 EXIST CCT. 5-1P20 SPARES 5-1P SPACES	LDPB 20.2	EXIST "ID" A24, PNL ENCLOSURE TO REMAIN. NEW BUS AND BKRS REMOVE 200A MCB
PNL LB 2	SURFACE	225A MLO.	NEW	NEW	22-1P20 EXIST CCT. 10-1P20 EXIST CCT. FROM OLD PNL NN1 5-1P30 SPARES 5-SPACES	LDPB 26.8	EXIST "ID" A23, TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LB 3	SURFACE	100A MLO	EXIST	EXIST	22-1P20 EXIST CCT 5-1P30 (4 SPARES, 1 EXIST) CCT 3-1P20 SPARES	LDPB 18.4	EXIST "ID" A25, PNL ENCLOSURE TO REMAIN PROVIDE NEW BUS AND BRKS, REMOVE EXIST 200A MCB
PNL LB 4	SURFACE	225A MLO	NEW	NEW	24-1P20 EXIST CCT. 6-1P30 SPARES 1-3P30 NEW PNL "LB4A" 9-SPACES	LDPB 33.9	EXIST "ID" A34 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LB 4A	SURFACE	100A MLO	NEW	NEW	23-1P20 EXIST CCT 7 SPACES	LB-4 13.8	EXIST "ID" A34A TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LDPC	SURFACE	400 A MCB	NEW	NEW	1-3P225A PNLS LC4 2-3P100A PNLS LC1, LC3 1-3P SPACE 2-3P50 PNLS LC2, LC5	"K4" VIA XFMR "K2" 99.5	NEW DISTRIBUTION PANEL
PNL LC1	SURFACE	100A MLO	EXIST	EXIST	4-1P20 3-1P30 5-3P30 TO BE USED AS SPARE 1-3P50 (NEW PNL LC1A)	LDPC 13.6	EXIST "ID" N43 TO REMAIN NEW FEEDER TO "LDPC".
PNL LC1A	SURFACE	100A MLO	EXIST	EXIST	8-1P20 4 SPACES	LC1 6.7	EXIST LOAD CENTER TO REMAIN. EXIST "ID" NN4
PNL LC2	SURFACE	100A MLO	EXIST	EXIST	10-1P30 FLOODLIGHTS	LDPC 12.0	EXIST FLOOD LIGHT PANEL TO REMAIN.
PNL LC3	SURFACE	100A MLO	EXIST	EXIST	30-1P20 EXIST CCT.	LDPC 25.2	EXIST "ID" A26 ENCLOSURE TO REMAIN.
PNL LC4	SURFACE	225A MLO	NEW	NEW	24-1P20 EXIST. CCT., 8-1P20 EXIST CCT. 1-5P20 (NEW) PNL LC4A 7-SPACES	LDPC 42.0	EXIST "ID" A29 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LC4A	RECESSED	100A MLO	NEW	NEW	20-1P20 EXIST CCT 10-SPACES	LC-4 16.8	EXIST "ID" A35 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LC5	SURFACE	100A MLO	NEW	NEW	8-1P20 EXIST CCT. FROM OLD PNL NN5 8-1P20 SPARES 14-SPACES	LDPC 6.7	EXIST "ID" A31 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LDPD	SURFACE	600A MCB	NEW	NEW	2-3P225A PNLS LD1, LD4 1-3P225A SPARE 1-3P100A PNL LD2 1-3P50A PNL LD3	"K1" VIA XFMR "T3" 143.3	
PNL LD1	SURFACE	225A MLO	NEW	NEW	21-1P20 EXIST CCT 6-1P30 EXIST CCT 1-3P40 EXIST CCT 8-1P20 SPARE	LDPD 56.8	EXIST "ID" A39 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LD2	SURFACE	100A MLO	NEW	NEW	21-1P20 EXIST CCT 9-1P30 EXIST CCT	LDPD 28.4	EXIST "ID" A40 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LD3	SURFACE	100A MLO	EXIST	EXIST	3-1P15 1-1P20 6-1P30	LDPD 10.2	EXIST "ID" A32B TO REMAIN EXTEND EXIST SERVICE TO LDPD
PNL LD4	SURFACE	225A MLO	NEW	NEW	27-1P20 EXIST CCT 3-1P30 EXIST CCT 1-3P100 NEW TO PNL LD4A 9-SPACES	LDPD 47.5	EXIST "ID" A32 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LD4A	RECESSED	100A MLO	EXIST	EXIST	3-1P20 SPARES 6-3P50 9-SPACES	LD4 21.6	EXIST "ID" A32A TO REMAIN
PNL LDPE	SURFACE	400A MCB	NEW	NEW	3-3P225A PNLS LE1, LE2, LE3 1-3P100 SPARE 1-SPACE	128.7	
PNL LE1	SURFACE	225A MLO	NEW	NEW	18-1P20 EXIST CCT 20-1P20 EXIST CCT FROM OLD PNL A51 1-3P20 EXIST CCT 1-SPACE	LDPE 34.4	EXIST "ID" A-49 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LE2	SURFACE	225A MLO	NEW	NEW	17-1P20 EXIST CCT 10-1P20 EXIST CCT FROM OLD PNL A51 1-5P20 PNL LE2A 12 SPACES	LDPE 40.6	EXIST "ID" A41 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LE2A	SURFACE	100A MLO	EXIST	EXIST	12-1P20 EXIST. CCT 1-2P20 EXIST CCT 1-2P30 EXIST CCT 1-3P30 PNL LE2A1	LE2 17.4	EXIST "ID" NN7 TO REMAIN EXTEND NEW FEEDER TO PNL LE2
PNL LE2A1	SURFACE	100A MLO	EXIST	EXIST	4-1P20 4-SPACES	LE2A 3.3	EXIST "ID" NN8 TO REMAIN
PNL LE3	SURFACE	225A MLO	NEW	NEW	3-1P20 EXIST CCT. 1-3P50 PNL LE3A 7-3P15 EXIST CCT. 5 1P SPARES 3-3P50 EXIST CCT 1-3P70 EXIST CCT	LDPE 53.7	EXIST "ID" A27 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LE3A	SURFACE	100A MLO	EXIST	EXIST	4-1P20 4-SPACES	LE3 3.3	EXIST "ID" NN6 TO REMAIN

NUMBER	LOCATION MOUNTING	PANELBOARD MAINS	FEEDER	GND.	BRANCH CIRCUITS	SOURCE EST KVA	GENERAL NOTES
PNL LDPJ	SURFACE	600A MCB	NEW	NEW	2-3P225A PNL'S LW5, LW6 2-3P100A PNL'S LW7, LJ1 1-3P SPACE	VIA XFMR "T6" 139.2	
PNL LW1	SURFACE	225A MLO	EXIST	EXIST	30-1P20 6-SPACES	LDPJ 23.2	EXIST. PNL "ID" A 2 TO REMAIN PROVIDE NEW FEEDER TO LDPJ
PNL LW2	SURFACE	225A MLO	NEW	NEW	1-2P15, 1-2P20 EXIST. CCT. 1-2P50, 1-2P100 EXIST. CCT 3-3P30, 2-3P50 7-1P20 SPARES 12 SPACES	LDPJ 44.0	EXIST. PNL "ID" C14 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LW6	SURFACE	225A MLO	NEW	NEW	27-1P20, 2-1P50 EXIST CCT. 3-2P30 EXIST. CCT 1-3P50 EXIST. CCT 1-3P100 PNL LJ6A	LDPJ 53.2	EXIST PNL "ID" C10 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LW6A	SURFACE	100A MLO	EXIST	EXIST	2-1P20, 1-1P30 5-2P30, 4-2P50 9 SPACES	LW6 18.8	EXIST. PNL "ID" C11 TO REMAIN
PNL LW7	SURFACE	225A MLO	EXIST	EXIST	20-1P20 22 SPACES	LDPJ 16.8	EXIST PNL "ID" A1 TO REMAIN
PNL LDPJ1	SURFACE	400A MCB	NEW	NEW	2-3P225A. PNLS LW3, LW4, 3-3P100A PNL LW3 LW8, LW9 1-3P225A SPARE	VIA XFMR T5 94.4	NEW SUB DISTRIBUTION PANEL
PNL LW3	SURFACE	100 A MLO	NEW	NEW	24-1P20 EXIST CCT 1-1P30 EXIST CCT. 4-1P20 SPARE 1-SPACE	LDPJ1 21.3	EXIST. PNL "ID" C13 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LW4	SURFACE	225A MLO	NEW	NEW	2-1P30 EXIST. CCT. 1-2P20, 1-2P40, 1-2P60, 1-2P70 EXIST CCT. 4-3P20 2-3P30, 2-3P40 EXIST CCT 6-1P20 2 SPACES	LDPJ1 40.8	EXIST. PNL "ID" C12 TO BE REPLACED. WITH NEW AT SAME LOCATION
PNL LW5	SURFACE	225A MLO	NEW	NEW	8-1P20 EXIST. CCT FROM OLD A11B 29-1P20 EXIST. CCT FROM OLD A11A 1-3P30 EXIST. CCT FROM OLD A11A 2 SPACES	LDPJ1 32.1	NEW 42 POLE PANEL
PNL LDPN	SURFACE	600A MCB	NEW	NEW	5-3P100A-PNLS LN-1, LN-2 LM-1, LM-2, LM-3 12 SPACE 1-3P225A PNL P3.	VIA XFMR T8 142	
PNL LM1	SURFACE	100A MLO	NEW	NEW	30-1P20 EXIST CCT	LDPN 25.2	EXIST. PNL "ID" A 7 TO REMAIN
PNL LM2	SURFACE	100A MLO	NEW	NEW	28-1P20 EXIST. CCT	LDPN 23.5	EXIST PNL "ID" A 17 TO REMAIN
PNL LM3	SURFACE	225A MLO	NEW	NEW	20-1P20 EXIST. CCT.	LDPN 16.8	EXIST PNL "ID" A18 TO REMAIN, PROVIDE NEW FEEDER FROM LDPM
PNL P 3	SURFACE	225A MLO	NEW	NEW	17-1P20 1-3P15 1-3P60 19 SPACES	LDPN 40.7	EXIST. PNL "ID" P3 TO REMAIN
PNL LDPNA	SURFACE	225A MLO	NEW	NEW	20-1P20	LDPN 64.8	EXIST. PNL "ID" A21 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LN1	SURFACE	100A MLO	NEW	NEW	20-1P20 EXIST. CCT 8-1P20 SPARES 2-1P30 SPARES	LDPN 16.8	EXIST PNL "ID" A20 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LN2	SURFACE	100A MLO	NEW	NEW	19-1P20 EXIST CCT 1-3P20 EXIST. CCT 2-1P20 SPARES 6 SPACES	LDPN 18.4	EXIST PNL "ID" A8 TO BE REPLACED W/NEW AT SAME LOCATION
PNL LR1	SURFACE	225 MLO	EXIST	EXIST	1-1P20, 19-1P30 3-2P30, 1-2P40 1-3P100	LDPR 48.8	EXIST PNL "ID" C1 TO REMAIN
PNL LR2	SURFACE	225A MLO	EXIST	EXIST	10-1P20, 18-1P30 1-3P100	LDPR 39.6	EXIST. PNL "ID" C2 TO REMAIN
PNL LR3	SURFACE	225A MLO	EXIST	EXIST	3-1P20, 23-1P30 2-3P100 1-3P50 PNL LR3-A	LDPR 37.5	EXIST PNL "ID" C3 TO REMAIN
PNL LR3A	SURFACE	100A MLO	EXIST	EXIST	1-1P20, 1-1P30 1-2P30	LR3 7.4	EXIST PNL "ID" C3A TO REMAIN
PNL LDPR	SURFACE	600A MCB	NEW	NEW	5-3P225A PNL LR1, LR2, LR3 LR4, LR5, 1-3P225A SPARE 1 SPACE	VIA XFMR T7 190	NEW SUB DISTRIBUTION PANEL
PNL LR4	SURFACE	225A MLO	NEW	NEW	36-1P20 EXIST. CCT. FROM OLD C6 1-3P50 NEW PNL LR4A 3 SPACES	LDPR 38.6	NEW 42 POLE PANEL
PNL LR4A	SURFACE	100A MLO	EXIST	EXIST	10-1P20	LR4 8.4	EXIST PNL "ID" C9C TO REMAIN
PNL LR5	SURFACE	225A MLO	NEW	NEW	33-1P20 EXIST. CCT. 2-3P50 EXIST CCT 1-3P100 PNL LR5A	LDPR 48.6	EXIST PNL "ID" C9 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LR5A	SURFACE	100A MLO	NEW	NEW	12-1P20 12-1P20 EXIST. CCT. FROM OLD C9B	LR5 20.1	EXIST PNL "ID" C9A TO REMAIN
PNL LJ8	SURFACE	225A MLO	EXIST	EXIST	4-1P30 3-2P20 1-2P70	LDPJ1 31.4	EXIST PNL "ID" C7 TO REMAIN. REMOVE CCT. BRK. RETURN TO OWNER.
PNL LJ9	SURFACE	100A MLO	EXIST	EXIST	1-2P30 1-2P50 1-2P100.	LDPJ1 21.6	EXIST PNL "ID" C8 TO REMAIN
PNL LDPS	SURFACE	400A MLO	EXIST	EXIST	4-3P100. PNL'S. LS1, LS2, LS3, LS4 4-3P50 PNL. LS5 2-3P70	LDPS1 101.6	EXIST PNL "ID" A1E TO REMAIN EXTEND NEW FEEDER TO LDPS1

NUMBER	LOCATION MOUNTING	PANELBOARD MAINS	FEEDER	GND.	BRANCH CIRCUITS	SOURCE EST. KVA	GENERAL NOTES
PNL LS1	SURFACE	225A MLO	EXIST	EXIST	42-1P20	LDPS 28.8	EXIST PNL "ID" P2 TO REMAIN
PNL LS2	SURFACE	100 A MLO	NEW	NEW	25-1P20 EXIST CCT. 5-1P20 SPARES	LDPS 17.1	EXIST PNL "ID" A12 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LS3	SURFACE	100A MLO	NEW	NEW	27-1P20 EXIST CCT. 3-1P20 SPARES	LDPS 18.5	EXIST PNL "ID" A14 TO BE REPLACED WITH NEW AT SAME LOCATION.
PNL LS4	SURFACE	225A MLO	NEW	NEW	30-1P20 EXIST CCT 6-2P20 EXIST CCT	LDPS 28.8	EXIST. PNL "ID" A16 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL LS6	SURFACE	100A MLO	NEW	NEW	12-1P20	LDPS 8.4	NEW 30 POLE PANEL REPLACE PANEL D-1
PNL LDPS1	SURFACE	600A MCB	NEW	NEW	3-3P225A PNL'S LS11, LS14 & 15 2-3P100A PNL'S, LS13, LS12 1-3P400 PNL LDPS	VIA XFMR T9 150	EXIST. DISTRIBUTION PANEL WILL REPLACE W/ NEW 42 CIRCUIT
PNL LS11	SURFACE	225A MLO	NEW	NEW	36-1P20 EXIST CCT. 1-3P100 NEW FEEDER P1 3-1P20 SPARE	LDPS1 24.1	EXIST PNL "ID" D 3 TO BE REPLACED WITH NEW AT SAME LOCATION
PNL P1	RECESSED	100A MLO	EXIST.	EXIST	18 1P20 12 SPACES	LS11	EXIST PNL "ID" P-1 TO REMAIN
PNL LS12	SURFACE	225A MLO	EXIST	EXIST	39-1P 20 1-3P20	LDPS1 22.5	EXIST PNL "ID" P3 TO REMAIN
PNL LS13	SURFACE	225A MLO	EXIST	EXIST	39-1P20 1-2P30	LDPS1 28.1	EXIST PNL "ID" D4 TO REMAIN
PNL LS14	SURFACE	225A MLO	NEW	NEW	30-1P20 EXIST CCT. 1-3P100 NEW PNL P2 9 SPACES	LDPS1 20.1	EXIST PNL "ID" A6 TO BE REPLACED, WITH NEW AT SAME LOCATION
PNL P2	RECESSED	100A MLO	EXIST	EXIST	11-1P20 19 SPACES	LS14	EXIST PNL "ID" P-2
PNL LS15	SURFACE	225A MLO	EXIST	EXIST	1-3P20, 1-3P40, 1-3P60 1-3P100 1-2P20	LDPS1 30.8	EXIST PNL "ID" D4 TO REMAIN
PNL LSC	SURFACE	100A MCB	NEW	NEW	5-1P20 3-1P20 SPARES 22-1P SPACES	HS1 VIA XFMR T10 9.2	NEW PANEL
PNL LGC	SURFACE	100A MCB	NEW	NEW	12-1P20 16-SPACES	HS 3 VIA XFMR T11 2.5	NEW PANEL
PNL LW14	SURFACE	100A MLO	EXIST	EXIST	24-1P20 EXIST	8.6	ADD 1-1P20 FOR (106)

* FOR CABLE SIZE SEE ONE-LINE DWG., SHT. E-3. & SCHEDULE ON DWG. E-1.

AS BUILT
DATE: 19 MAY 86

JACK H. GRAHAM 8789 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

COORDINATION

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV.
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / L70
APPROVED DATE
APPROVED DATE
APPROVED DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F. FERDOSIAN — DRAWN BY J. BOHMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

208Y/120V PANEL SCHEDULE

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BIOM. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 — DATE Nov. 83
DRAWING FILE NUMBER
SCALE NONE
DRAWING NUMBER DE - F - 83079 - 30
30 — SHEET 30 OF 38 — E-4

T1 - 1 - F 7 - 230

A.F. 16051B

PANELBOARD SCHEDULE - ROOMS # 160-170

PANEL: HS1A VOLTS: 480/277 MAIN AMPS: 225 PHASE: 3 WIRES: 4 MLO: 225 A.

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	RM'S. 160-170				RM'S. 160-170	2	20	1
3	20	1	" "				" "	4	20	1
5	20	1	" "				" "	6	20	1
7	20	1	SPARE				RM'S. 160-170 EMERGENCY	8	20	1
9	20	1					SPARE	10		
11	20	1						12		
13	20	1						14		
15								16		
17			SPACE					18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 180 A

TOTAL CONNECTED LOAD: 15.8 KVA — EXPECTED FUTURE LOAD: 150 KVA

PANELBOARD SCHEDULE - ROOMS #160-170

PANEL: HS1B VOLTS: 480/277 MAIN AMPS: 100 PHASE: 3 WIRES: 4 MLO: 100A

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	RM'S. 160-170				RM'S. 160-170	2	20	1
3	20	1	" "				" "	4	20	1
5	20	1	" "				SPACE	6		
7	20	1	SPARE					8		
9	20	1	" "					10		
11	20	1	" "					12		
13	20	1	" "					14		
15	20	1	" "					16		
17	20	1	SPACE					18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 60 A

TOTAL CONNECTED LOAD: 3.1 KVA — EXPECTED FUTURE LOAD: 50 KVA

PANELBOARD SCHEDULE - ROOM # 171

PANEL: HS1 VOLTS: 480/277 MAIN AMPS: 400 PHASE: 3 WIRES: 4 MLO: 400A

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	ROOM 160-170				ROOM 160-170	2	20	1
3	20	1	" "				" "	4	20	1
5	20	1	" "				" "	6	20	1
7	40	3	ROOM 171 (5)				ROOM 171 (7)	8	50	3
9								10		
11								12		
13	30	3	ROOM 171 (8)				T10 TRANSFORMER	14	20	3
15								16		
17								18		
19	225	3	PANEL HS1A				RMS. 160-170	20	20	1
21							" "	22		
23							" "	24		
25	100	3	PANEL HS1B				" "	26		
27							" "	28		
29							" "	30		
31			SPACE				" "	32		
33							" "	34		
35							" "	36		
37							" "	38		
39							" "	40		
41							RMS 160-170 EMERGENCY	42		

TOTAL — FUTURE AMPS: 360 A

TOTAL CONNECTED LOAD: 120 KVA — EXPECTED FUTURE LOAD: 300 KVA

PANELBOARD SCHEDULE - AREAS "L", "M", "N"

PANEL: MDPO VOLTS: 480/277 MAIN AMPS: 1200 PHASE: 3 WIRES: 4 MLO: 1200A

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	200	3	TRANSFORMER T8				SPACE	2		
3								4		
5								6		
7	200	3	TRANSFORMER T9					8		
9								10		
11								12		
13	400	3	PANEL HS-1 AREA L					14		
15								16		
17								18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 960 A

TOTAL CONNECTED LOAD: 49.2 KVA — EXPECTED FUTURE LOAD: 800 KVA

PANELBOARD SCHEDULE - RMS. 107, 200A, 208, & 230

PANEL: HS2 VOLTS: 480/277 MAIN AMPS: 225 PHASE: 3 WIRES: 4 MLO: 225A.

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	40	3	RM. 208, AHU 34				RM. 100, AHU 27	2	20	3
3								4		
5								6		
7	20	3	RM. 200A, AHU 32				RM. 100, AHU 26	8	20	3
9								10		
11								12		
13	20	3	RM. 200A, AHU 31				RM. 100, AHU 28	14	20	3
15								16		
17								18		
19	20	3	RM. 200A, AHU 30				RM. 100, AHU 29	20	20	3
21								22		
23								24		
25	20	3	RM. 200A, AHU 33				RM. 230, AHU 6	26	20	3
27								28		
29								30		
31			SPACE				SPACE	32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 110 A

TOTAL CONNECTED LOAD: 45 KVA — EXPECTED FUTURE LOAD: 90 KVA

PANELBOARD SCHEDULE - ROOMS 109, 114, 218, & 233

PANEL: HG4 VOLTS: 480/277 MAIN AMPS: 100 PHASE: 3 WIRES: 4 MLO:

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	3	RM. 218, AHU 38				RM. 218, AHU 37	2	20	3
3								4		
5								6		
7	20	3	RM. 233, AHU 4				RM. 218, AHU 35	8	20	3
9								10		
11								12		
13	20	3	RM. 114, AHU 17				RM. 218, AHU 36	14		3
15								16		
17								18		
19	20	3	RM. 114, AHU 16				RM. 109, AHU 9	20	20	3
21								22		
23								24		
25	20	3	RM. 114, AHU 15				SPACE	26		
27								28		
29								30		
31	20	3	RM. 114, AHU 18					32		
33								34		
35								36		
*1 37	70	3	EXIST. ELEVATOR SERVICE					38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 60 A

TOTAL CONNECTED LOAD: 25 KVA — EXPECTED FUTURE LOAD: 50 KVA

*1 EXISTING 30 KVA GP XFMR TO REMAIN GOVT. PROPERTY, EXISTING SERVICE FROM PANEL B-9.

PANELBOARD SCHEDULE - ROOMS 107, 108 & 121

PANEL: HG1 VOLTS: 480/277 MAIN AMPS: 400 PHASE: 3 WIRES: 4 MLO: 400A.

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	3	RM. 108, AHU 22				RM. 108, AHU 23	2	20	3
3								4		
5								6		
7	20	3	RM. 108, AHU 25				RM. 121, AHU 24	8	20	3
9								10		
11								12		
13	20	3	RM. 108 AHU 20				PNL. HG-3	14	100	3
15								16		
17								18		
19	20	3	RM. 107, AHU 10				PNL HG-2	20	225	3
21								22		
23								24		
25			SPACE				PNL HG-4	26	100	3
27								28		
29								30		
31							SPACE	32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 348A

TOTAL CONNECTED LOAD: 180 KVA — EXPECTED FUTURE LOAD: 290 KVA

PANELBOARD SCHEDULE - ADMIN. AREA "J"

PANEL: HJ1 VOLTS: 480/277 MAIN AMPS: 400 PHASE: 3 WIRES: 4 MLO: 400A.

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	200	3	TRANSFORMER (T6)				HJ1A	2	225	3
3								4		
5								6		
7			SPACE				SPACE	8		
9								10		
11								12		
13								14		
15								16		
17								18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 300A

TOTAL CONNECTED LOAD: 184 KVA — EXPECTED FUTURE LOAD: 250 KVA

PANELBOARD SCHEDULE - ROOM 150

PANEL: HJ1A VOLTS: 480/277 MAIN AMPS: 100 PHASE: 3 WIRES: 4 MLO:

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	ROOM 150				ROOM 150	2	20	1
3							" "	4		1
5							" "	6		1
7							RM. 150, EMERG. LIGHT	8		1
9							SPACE	10		
11								12		
13			SPACE					14		
15								16		
17								18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 78A

TOTAL CONNECTED LOAD: 34 KVA — EXPECTED FUTURE LOAD: 65 KVA

PANELBOARD SCHEDULE -

PANEL: HG3 VOLTS: 480/277 MAIN AMPS: 100 PHASE: 3 WIRES: 4 MLO: 100

CIRC. NO.	TRIP AMPS	NO. POLES	LOAD SERVED	PHASE LOAD VA A	B	C	LOAD SERVED	CIRC. NO.	TRIP AMPS	NO. POLES
1	20	1	LIGHTING IN NEW MECH. ROOM				SPARE	2	20	1
3	20	3	T11 XFMR				CW PUMP (4A)	4	60	3
5								6		
7								8		
9	30	3	CHW PUMP (4B)					10		
11								12		
13								14		
15								16		
17								18		
19								20		
21								22		
23								24		
25								26		
27								28		
29								30		
31								32		
33								34		
35								36		
37								38		
39								40		
41								42		

TOTAL — FUTURE AMPS: 70

TOTAL CONNECTED LOAD: 45 KVA — EXPECTED FUTURE LOAD: 65 KVA

AS BUILT
DATE: 19 MAY 86

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

COORDINATION

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / L70
APPROVED DATE
APPROVED DATE
APPROVED DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.F. — DRAWN BY J. BOHLMAN
CHECKED BY J.H.G. — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

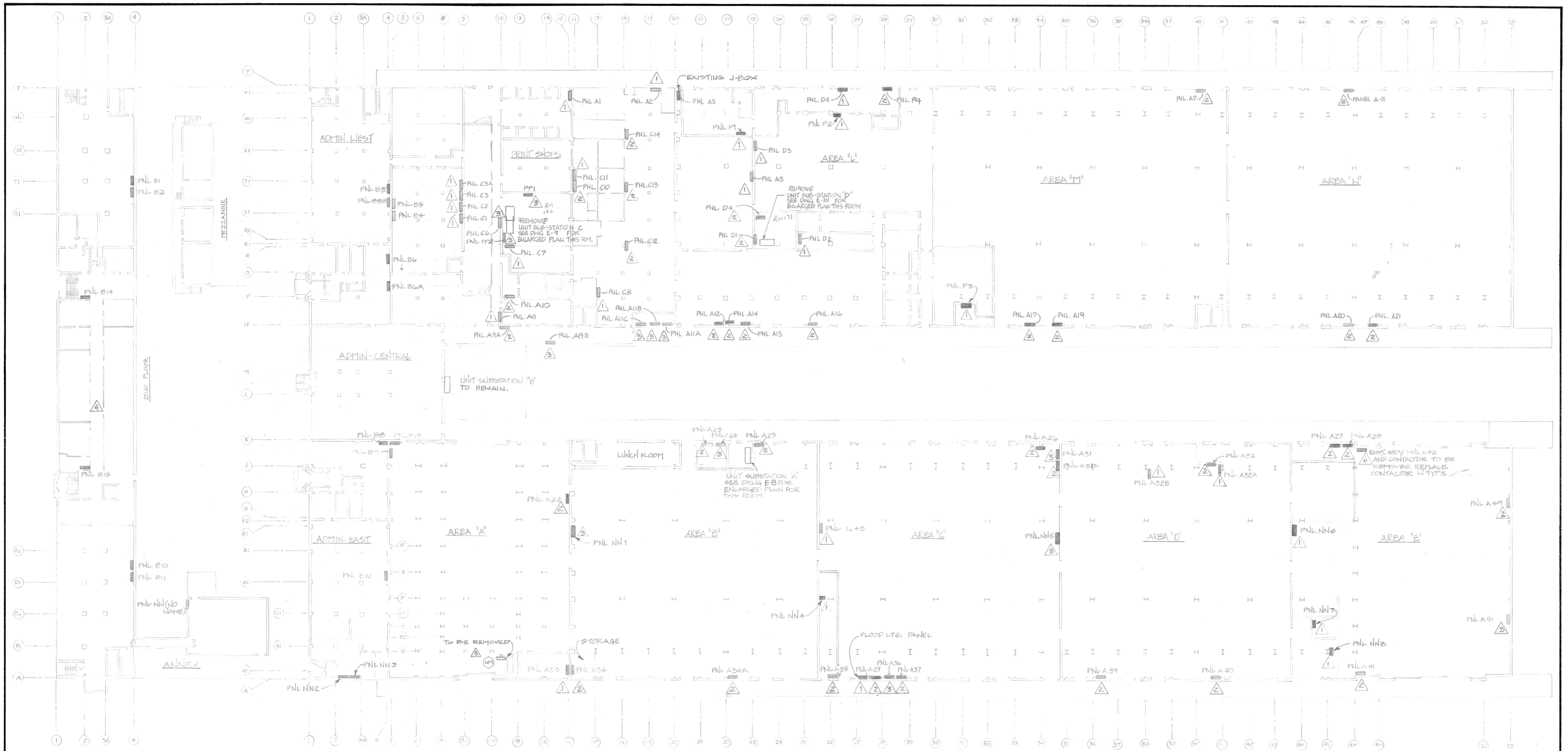
REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

480Y/277V. PANELBOARD SCHEDULE

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (BAN IND. HYG. ENGR.)

DRAWING FILE NUMBER
SCALE NONE
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 31
SHEET 31 OF 38
31
E-5

T1 - 1 - F 7 - 229



NOTE: NN INDICATES PANELS WITHOUT INDENTIFICATION

ELECTRICAL PANELBOARD DEMOLITION PLAN
SCALE 1/32" = 1'

TAFB BLDG. #1 DEMOLITION LEGEND

1. CONTRACTOR TO CAP & ABANDON EXISTING UNDERFLOOR CONDUIT & FEEDERS; ROUTE NEW FEEDER, & RECONNECT EXISTING CIRCUITS.
2. PANEL TO BE REPLACED W/NEW 120/208V 42 SPACE PANELBOARD, MAIN & BREAKERS AT SAME RATE AS EXISTING. RECONNECT EXISTING BRANCH CIRCUITS AS REQUIRED. CAP & ABANDON EXISTING UNDERFLOOR CONDUIT & FEEDERS. ROUTE NEW FEEDER ABOVE DROP CEILING TO THIS PANEL.
3. PANEL TO BE REMOVED; RE-ROUTE ALL EXISTING BRANCH CIRCUITS TO NEW PANEL AS SHOWN ON SHEET E-4. PROVIDE NEW OVERHEAD FEEDER. CAP & ABANDON EXISTING UNDERFLOOR CONDUIT AND FEEDER IF REQUIRED. EXISTING PANELS TO REMAIN FOR USE AS JUNCTION BOXES.
4. REMOVE ALL WIRING TO CONDENSER ITEM #95 ON ROOF
5. REMOVE ALL WIRING, CONDUIT, BREAKERS, ETC.

AS BUILT
DATE: 19 MAY 86

JACK H. GRAHAM 8789 PROFESSIONAL ENGINEER

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEEE					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ. / L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
CIVIL ENGINEERING DIVISION
OKLAHOMA CITY — OKLAHOMA

DESIGNED BY: FNF
DRAWN BY: J. BOLIMAN
CHECKED BY: J. GRAHAM
DATE: 8-30-83
SUBMITTED BY — CHIEF, ENGR. & CONSTUCTION BRANCH — DATE

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

PANELBOARD DEMOLITION PLAN

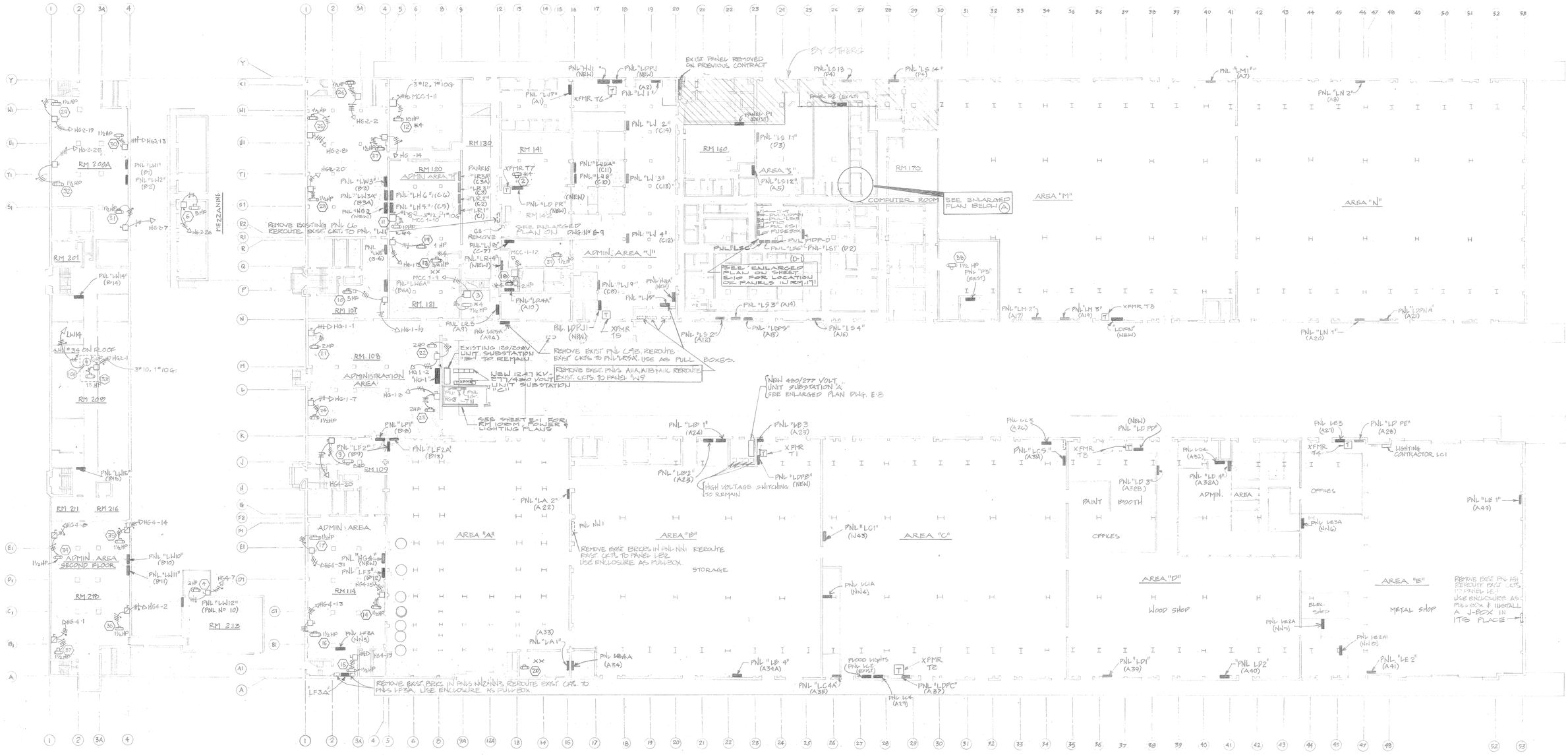
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9
DATE NOV. 83
DRAWING FILE NUMBER: 32
SCALE: 1/32" = 1'-0"
DRAWING NUMBER: DE - F - 83079 - 32
SHEET 32 OF 38
E-6

OKLAHOMA CITY ALC FORM OCT 75 2298 PREVIOUS EDITION MAY BE USED

T1 - 1 - F7 - 228

AF 16851 B

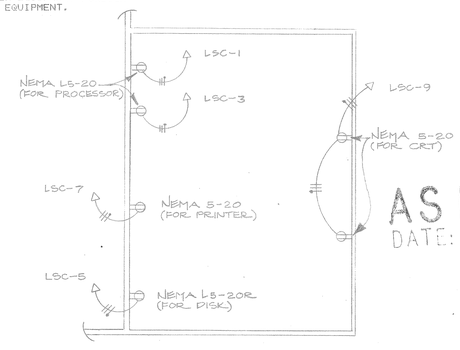


2ND FLOOR

ELECTRICAL FLOOR PLAN

SCALE: 1/32" = 1'-0"

SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.



(A) ENLARGED PLAN — COMPUTER RM.
NO SCALE

AS BUILT
DATE: 19 MAY 85

*NOTES:

1. CONTRACTOR TO RECONNECT NEW CIRCUITS, INSTALL NEW PANELBOARD, LABLE WIRE, RECONNECT AND PROVIDE CIRCUIT SCHEDULE CLEARLY IDENTIFING DEVICE OR EQUIPMENT & ITS SERVICING.
2. FOR ONE-LINE DIAGRAM, SEE DWG E-3.
3. ALL THE NEW PANELS ARE SURFACE MOUNTED AND IF BY SOME REASON THE LOCATION IS NOT SUITABLE AT THE TIME OF CONSTRUCTION, CONTRACTOR HAS TO RELOCATE THEM FREE OF CHARGE.
4. FOR WIRING DIAGRAM, SEE SHEET E-9 & MCC-1.
5. XX EXISTING UNIT TO REMAIN
6. EXISTING SUBSTATION IN VAULT "C" WILL BE DEMOLISHED AFTER ALL LOADS ARE CONNECTED TO NEW SUBSTATION.
7. DUE TO DIFFERENT PHASE OF CONSTRUCTION, IN THE PAST SOME PANELS HAVE LOST THIER NAMES &/OR LOCATION. THIS SHOULD NOT RESULT IN ANY ADDITIONAL COST TO THE OWNER. ANY NEW NAMES & LOCATIONS OF THESE PANELS ARE FOR IDENTIFICATION IN THIS GENERAL AREA.
8. UNLESS OTHERWISE NOTED, MAIN BREAKERS WILL REMAIN AT EXISTING RATE
9. SEAL ALL CONDUITS ENTERING OR LEAVING ELECTRICAL VAULTS.

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD
APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV					
APPROVED DATE — CORROSION ENGINEER / DEEE					
APPROVED DATE — CHIEF, FIRE PREVENTION					
APPROVED DATE — 1984 COMM. SQ./L70					
APPROVED DATE					
APPROVED DATE					
APPROVED DATE					

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.F. — DRAWN BY J. BOWMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTRUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

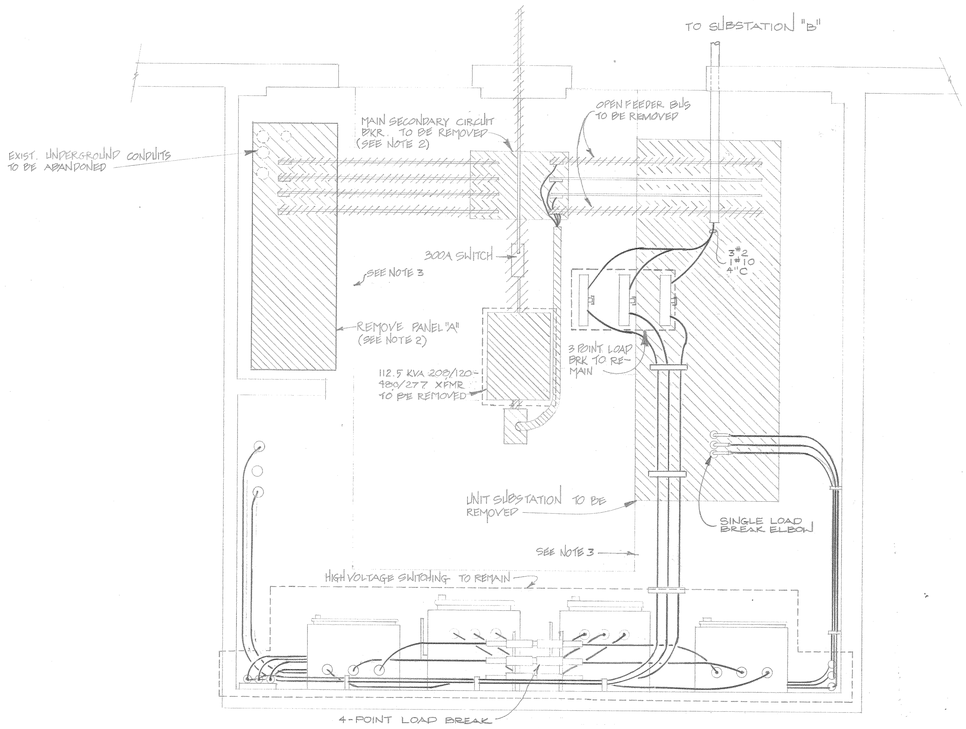
ELECTRICAL FLOOR PLAN

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. ING. HYG. ENGR.)

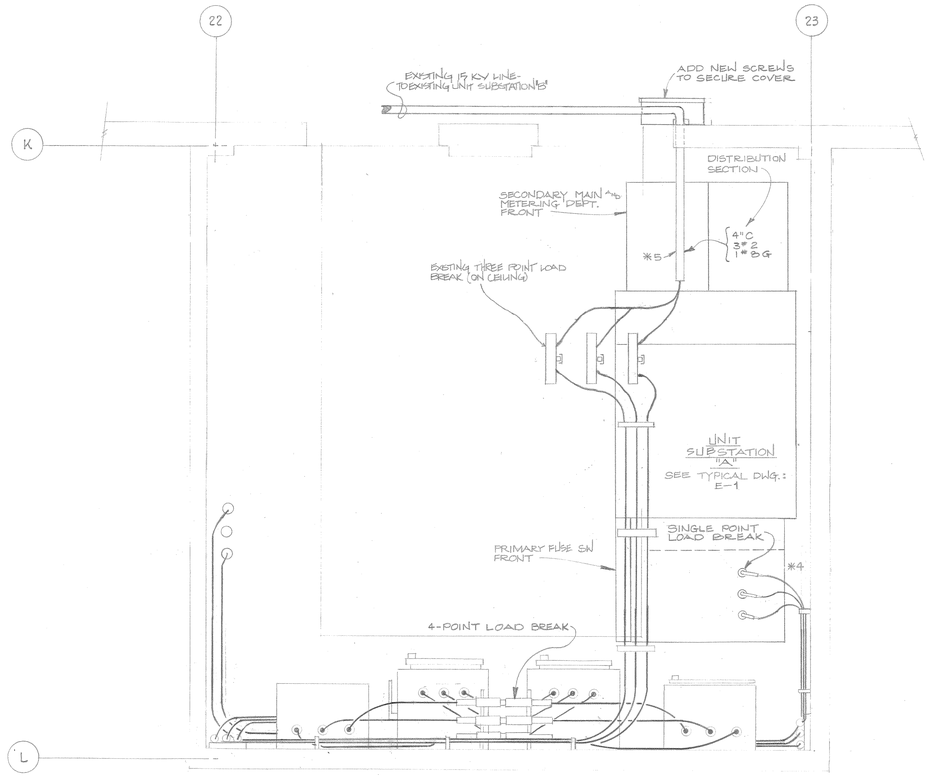
PROJ. NR. OC-9-9 — DATE NOV, 83
DRAWING FILE NUMBER 33
SCALE 1/32" = 1'-0"
DRAWING NUMBER DE - F - 83079 - 33
E-7

T1 - 1 - F7 - 227

AF 16851B



DEMOLITION PLAN – VAULT A
NO SCALE



NEW POWER PLAN – VAULT A
NO SCALE

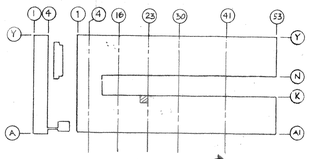
*NOTES

1. ALL EQUIPMENT INSIDE HATCHED AREA TO REMAIN OR TO BE RELOCATED. SEE NEW ONE-LINE DIAGRAM DWG. № E-3
2. ALL REMOVED EQUIPMENT TO BE RETURNED TO THE OWNER.
3. EXISTING CONCRETE PADS UNDER UNIT SUBSTATION AND DISTRIBUTION PANELBOARD "A" TO REMAIN CONTRACTOR TO CORE DRILL AND INSERT LEAD ANCHORS AS REQUIRED TO SET NEW SUBSTATION SECURELY TO PADS.
4. IT IS REQUIRED 20" CLEARANCES TO WALLS FROM UNIT SUBSTATION.
5. UNDER THIS CONTRACT, THIS CONDUIT IS TO BE RELABELED FROM 4160 V. TO 12.5 KV.

SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.

GENERAL NOTES

TEMPORARY 480/277 – 208/120 V SUBSTATION SHALL BE INSTALLED BY CONTRACTOR OUTSIDE OF THIS VAULT @ TIME OF CONSTRUCTION AND ALL SAFETY PRECAUTIONS MUST BE FOLLOWED. CONSTRUCT FENCE AROUND TEMPORARY SUBSTATION ADEQUATE TO EXCLUDE UNAUTHORIZED PERSONS



KEY PLAN

AS BUILT
DATE: 19 MAY 86

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

APPROVED / DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED / DATE — CORROSION ENGINEER / DEEE
APPROVED / DATE — CHIEF, FIRE PREVENTION
APPROVED / DATE — 1984 COMM. SQ. / L70
APPROVED / DATE
APPROVED / DATE
APPROVED / DATE

DESIGNED BY: E.N.F — DRAWN BY: J. BOHLMAN
CHECKED BY: J. GRAHAM — DATE: 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH
APPROVED / DATE — DEPUTY CIVIL ENGINEER
APPROVED / DATE — THE CIVIL ENGINEER
APPROVED / DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED / DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

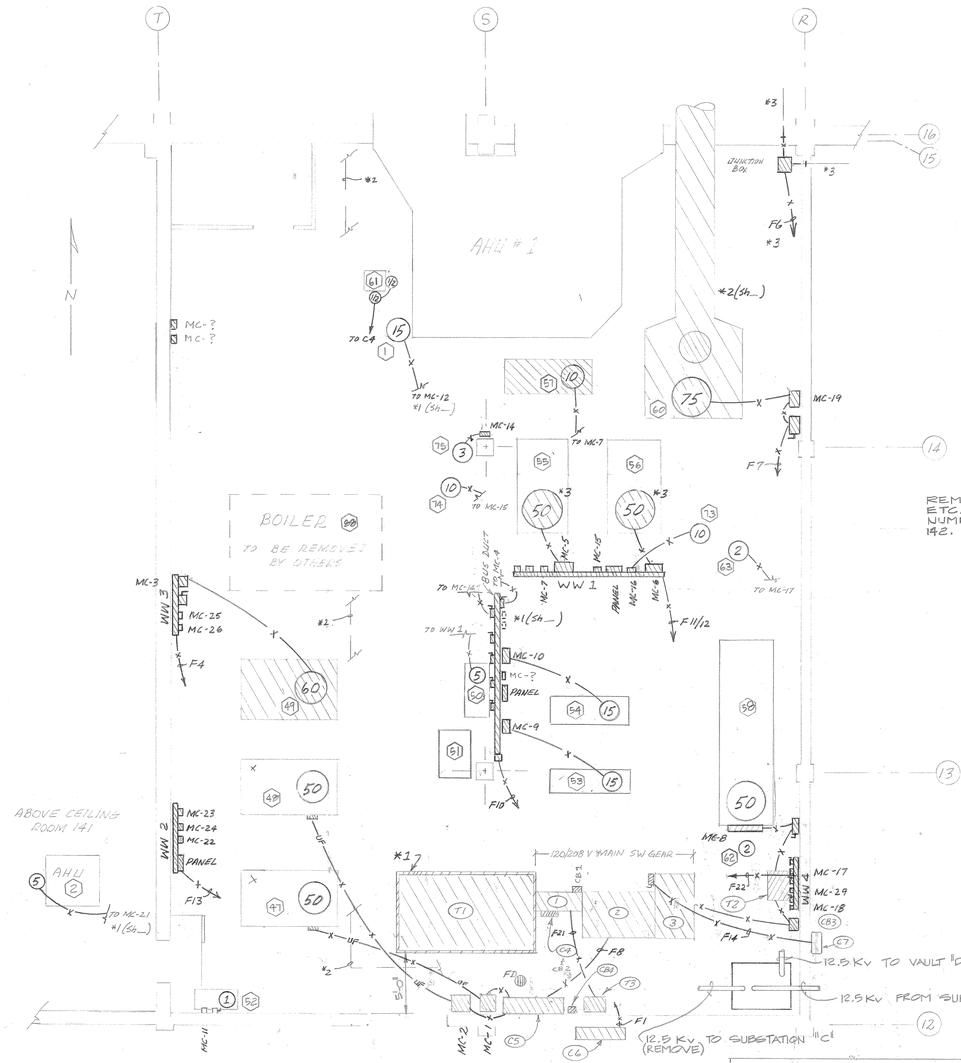
REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE
ELECTRICAL REVISIONS – VAULT "A"

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER: 34 — SCALE: NO SCALE
DRAWING NUMBER: DE - F - 83079 - 34
SHT. 34 OF 38 — E-8

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

T1 - 1 - F 7 - 226

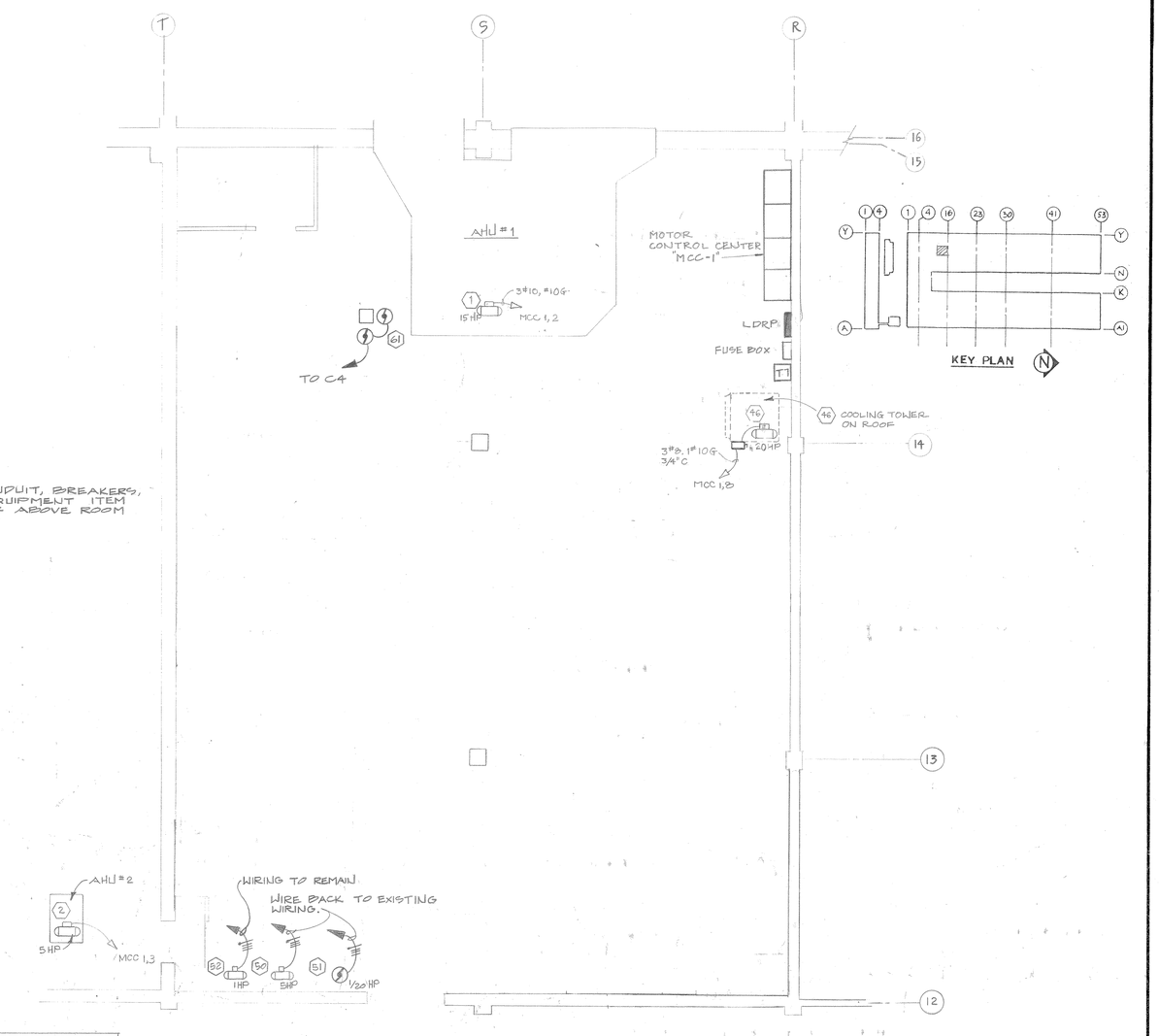
U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039



REMOVE ALL WIRING, CONDUIT, BREAKERS, ETC., TO MECHANICAL EQUIPMENT ITEM NUMBERS 64 → 72 ON ROOF ABOVE ROOM 142.

ELECTRICAL-MECHANICAL DEMOLITION PLAN RM. 142

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



NEW POWER PLAN - ELECTRICAL-MECHANICAL ROOM 142

SCALE: 1/4" = 1'-0" (UNIT SUBSTATION "C")

AS BUIL

DATE: 19 MAY 86

MOTOR CONTROL CENTER SCHEDULE

MCC-1: 480Y/277 V, 3 Ø, 4 W. & GND, 60 HZ., AMPS MAIN BUS, MINIMUM BUS BRACING 42,000 A, IN ROOM 142 225 AMP.

CCT Nº	H.P.	FUSE AMP	F.L.A.	STARTER SIZE	STARTER TYPE	ITEM Nº	NAMEPLATE	REMARKS
1	—	—	—	—	—		INCOMING LINE	—
2	15	30	21	2	■ FVNR	1	AHU #1	ROOM 142
3	5	20	7.6	1	↓	2	AHU #2	" "
4							3P 50 SPACE	
5							↓	
6								
7								
8	20	50	27	2	FVNR	46	COOLING TOWER	ROOF
9	7½	20	11	1	↓	3	AHU #3	ROOM 121
10	10	20	14	1		11	AHU #11	ROOM 120
11	10	20	14	1		12	AHU #12	ROOM 120
12	2	20	3.4	1	↓	18	AHU #19	ROOM 147
13							3P 50 SPACE	

■ FVNR - FULL VOLTAGE NON-REVERSIBLE

TOTAL CONNECTED 70 HP, 112 AMPS.

NOTES:

1. DOORWAY CLEARANCES TO EXIST. SUBSTATIONS APPROX. 8'-0". CONTRACTOR SHALL EXERCISE CAUTION WHEN INSTALLING EQUIPMENT SO AS TO AVOID DAMAGE TO WALLS.
2. EXISTING SUBSTATION SHALL BE REMOVED AFTER ALL LOADS ARE CONNECTED TO NEW SUBSTATION.
3. DURING CONSTRUCTION ALL SUBSTATIONS & FEEDERS ARE ENERGIZED, THEREFORE, CONTRACTOR MUST EXERCISE EXTREME CAUTION.
4. ALL SAFETY REGULATIONS OF N.E.C. MUST BE FOLLOWED BY CONTRACTOR FOR ENTIRE PROJECT.
5. EXISTING UNITS WHICH REMAIN AT SAME LOCATION & VOLTAGE WILL HAVE SAME CIRCUIT PROVIDED TO THEM.

SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.

COORDINATION

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ./L70
APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE
APPROVED DATE

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.F — DRAWN BY J. BOLMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

ELECTRICAL REVISIONS - VAULT "C"

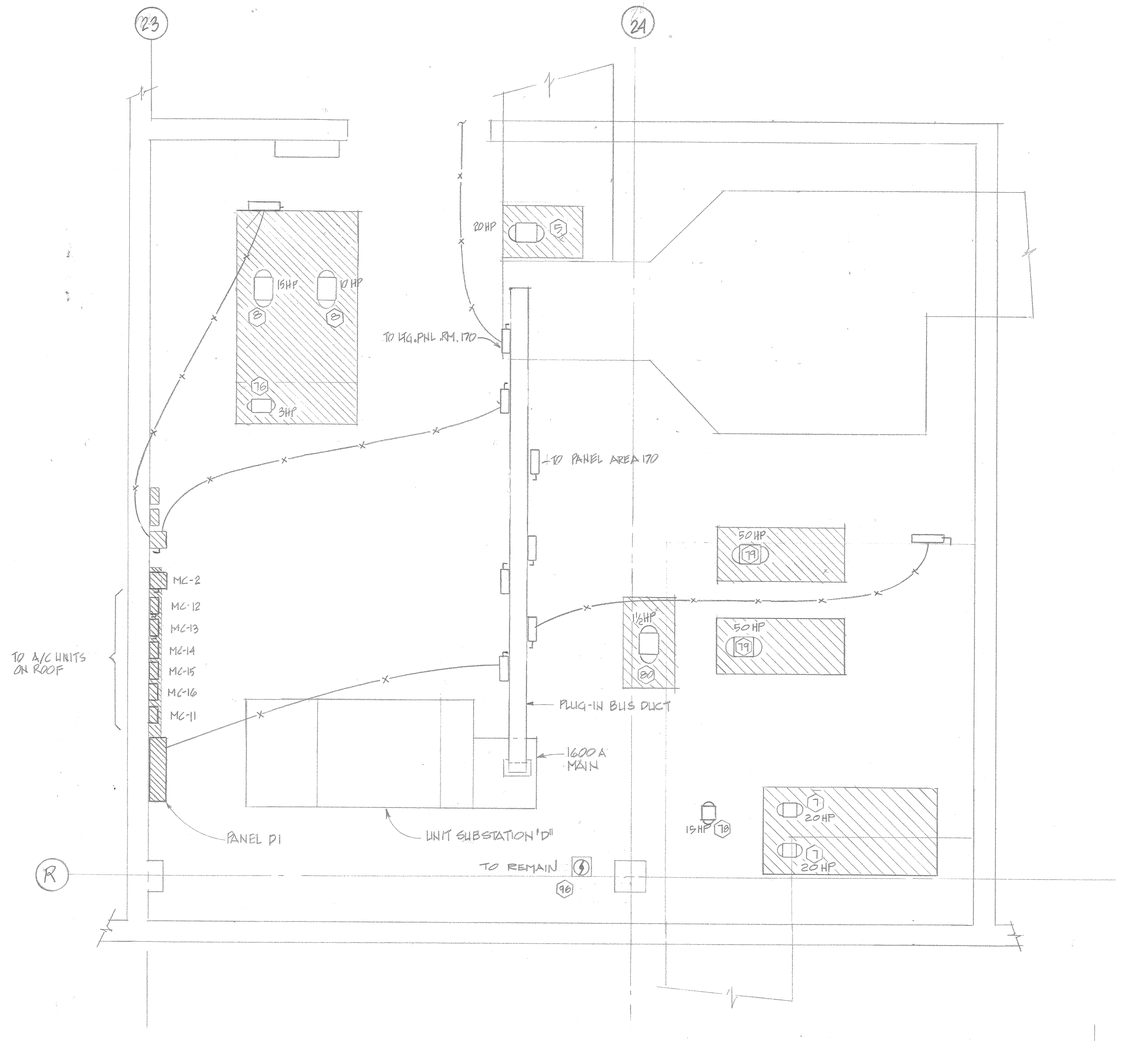
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER — SCALE 1/4" = 1'-0" — 35
DRAWING NUMBER DE - F - 83079 - 35
SHEET 35 OF 38 — E-9

REGISTERED PROFESSIONAL ENGINEER JACK H. GRAHAM 8789 OKLAHOMA

OKLAHOMA CITY ALC FORM OCT 76 2298 PREVIOUS EDITION MAY BE USED

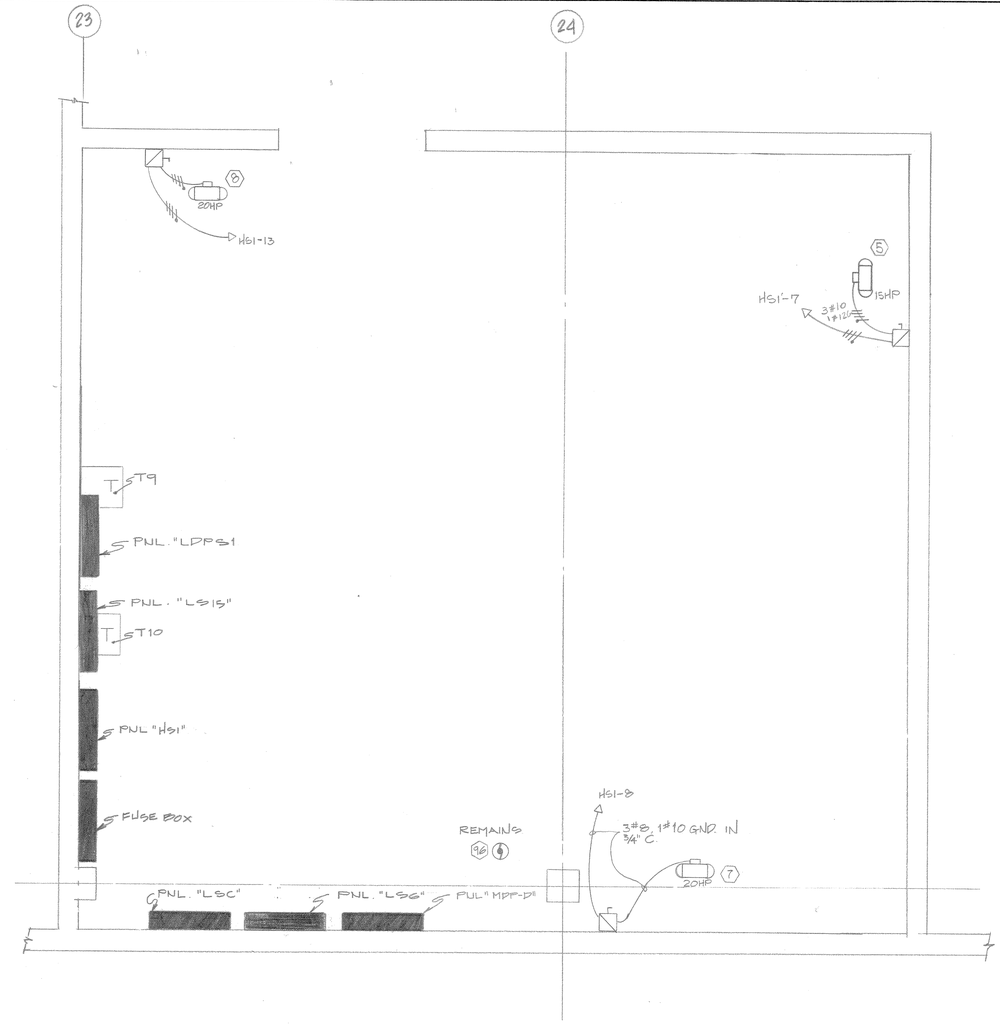
T1 - 1 - F 7 - 225



MECHANICAL-ELECTRICAL DEMOLITION PLAN RM. 171

SCALE: 3/8" = 1'-0"

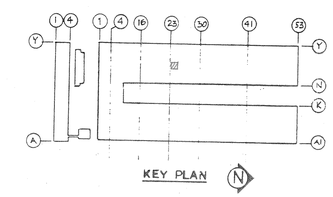
REMOVE WIRING, CONDUIT, BREAKERS, ETC. SERVING MECHANICAL ITEMS NUMBERS 21-26 ON ROOF ABOVE ROOM 171.



NEW POWER PLAN — MECHANICAL-ELECTRICAL RM. 171

SCALE: 3/8" = 1'-0"

SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.



KEY PLAN

AS BUILT
DATE: 19 MAY 86

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
APPROVED DATE — 1984 COMM. SQ. / LTO
APPROVED DATE
APPROVED DATE
APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.F — DRAWN BY J. BOWMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

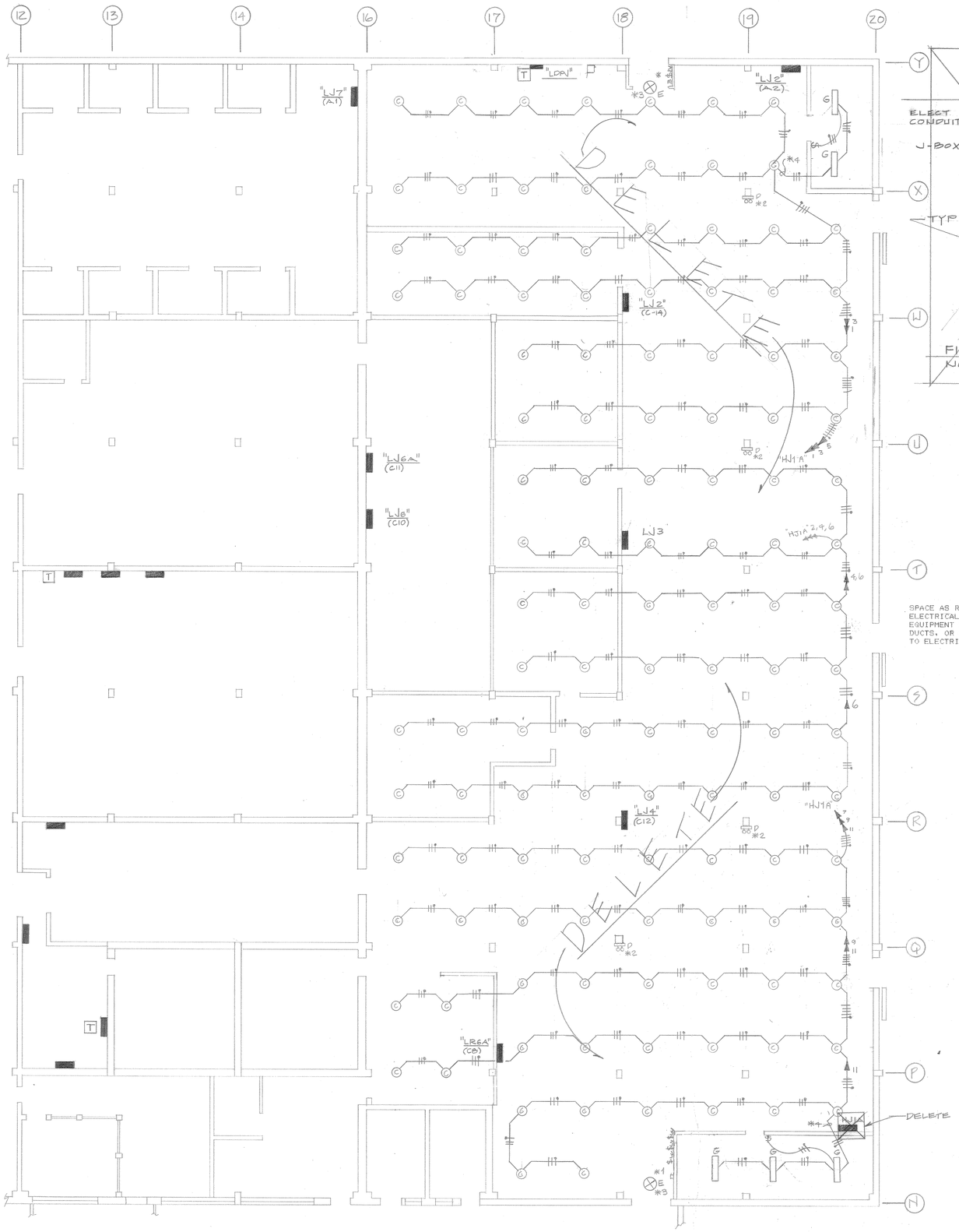
ELECTRICAL REVISIONS - VAULT "D"

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

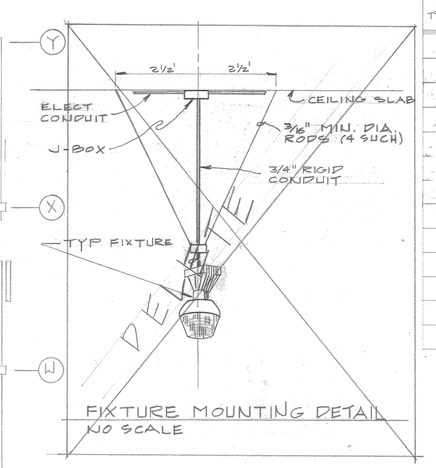
PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING FILE NUMBER — SCALE 3/8" = 1'-0"
36 — DRAWING NUMBER DE - F - 83079 - 36 — SHEET 36 OF 38
E-10

REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

T1 - 1 - F 7 - 224



NOTE: DELETE NEW LIGHTING AND PANELBOARD "HJIA" IN ROOM #150; ALL OTHER NEW (REPLACEMENT) PANELBOARDS ARE TO BE PROVIDED.

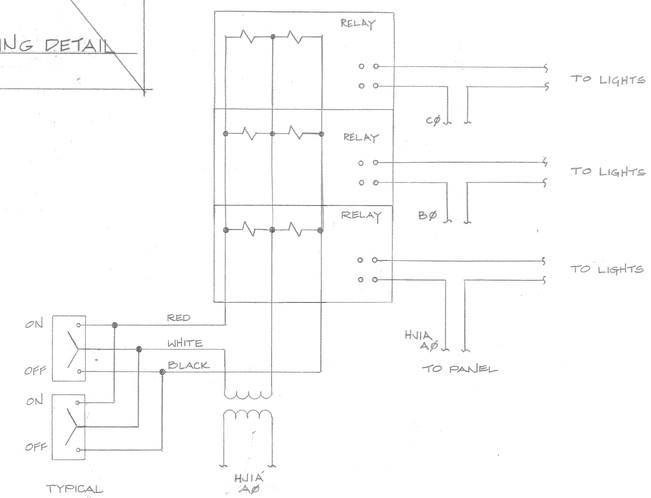


FIXTURE MOUNTING DETAIL
NO SCALE

SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.

LIGHTING FIXTURE SCHEDULE

TYPE *	DESCRIPTION	MOUNTING	LAMPS
A	FLUORESCENT STATIC TROFFER 2'x4" -277V.	RECESSED	4-F40CW/RS/WM II
B	FLUORESCENT STATIC TROFFER 2'x4' -277V.	RECESSED	2-F40CW/RS/WM II
C	METAL HALIDE LOW BAY	PENDANT	MVR 175/C.U
D	EMERGENCY LIGHT. 277V.	SURFACE	FURNISHED 2-6V. HEADS
E	EXIT LIGHT - SINGLE FACE		FURNISHED
F	EXIT LIGHT - DOUBLE FACE (SAME AS E)		FURNISHED
G	FLUORESCENT-INDUSTRIAL OPEN	SUSPENSION	2-F40CW/RS/WM



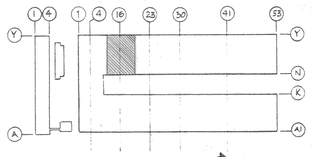
LIGHTING SCHEMATIC DIAGRAM

* NOTES

1. LOW VOLTAGE SWITCHES. SEE LIGHTING SCHEMATIC THIS SHEET.
2. NON-SWITCH FEEDERS. HOME RUN SHALL BE CONNECTED TO PNL HJI FOR EMERGENCY LIGHTS.
3. CONTRACTOR SHALL FURNISH FIXTURE HANGING MATERIALS.
4. RUN SEPARATE CONDUCTOR, (NOT SWITCHED W/ LOW VOLTAGE SWITCHES).

GENERAL NOTES:

1. ALL TELEPOWER POLES & CONVENIENCE OUTLETS IN THIS AREA SHALL REMAIN & ARE TO BE RECONNECTED TO ORIGINAL CIRCUITS.



KEY PLAN

AS BUILT
DATE: 19 MAY 86

COORDINATION	REVISION	DATE	DESCRIPTION	BY	CKD

APPROVED DATE — ENVIRONMENTAL ENGINEER / DEEV
APPROVED DATE — CORROSION ENGINEER / DEEE
APPROVED DATE — CHIEF, FIRE PREVENTION
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APPROVED DATE
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APPROVED DATE

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F. FERDOSIAN — DRAWN BY J. BOWMAN
CHECKED BY J. GRAHAM DATE 8-30-83
SUBMITTED BY DATE — CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

ELECTRICAL LIGHTING PLAN—RM 150

APPROVED DATE — DEPUTY CIVIL ENGINEER
APPROVED DATE — THE CIVIL ENGINEER
APPROVED DATE — OFFICE, GROUND SAFETY ENGINEER
APPROVED DATE — OFFICE, SURGEON (SAN. IND. HYG. ENGR.)

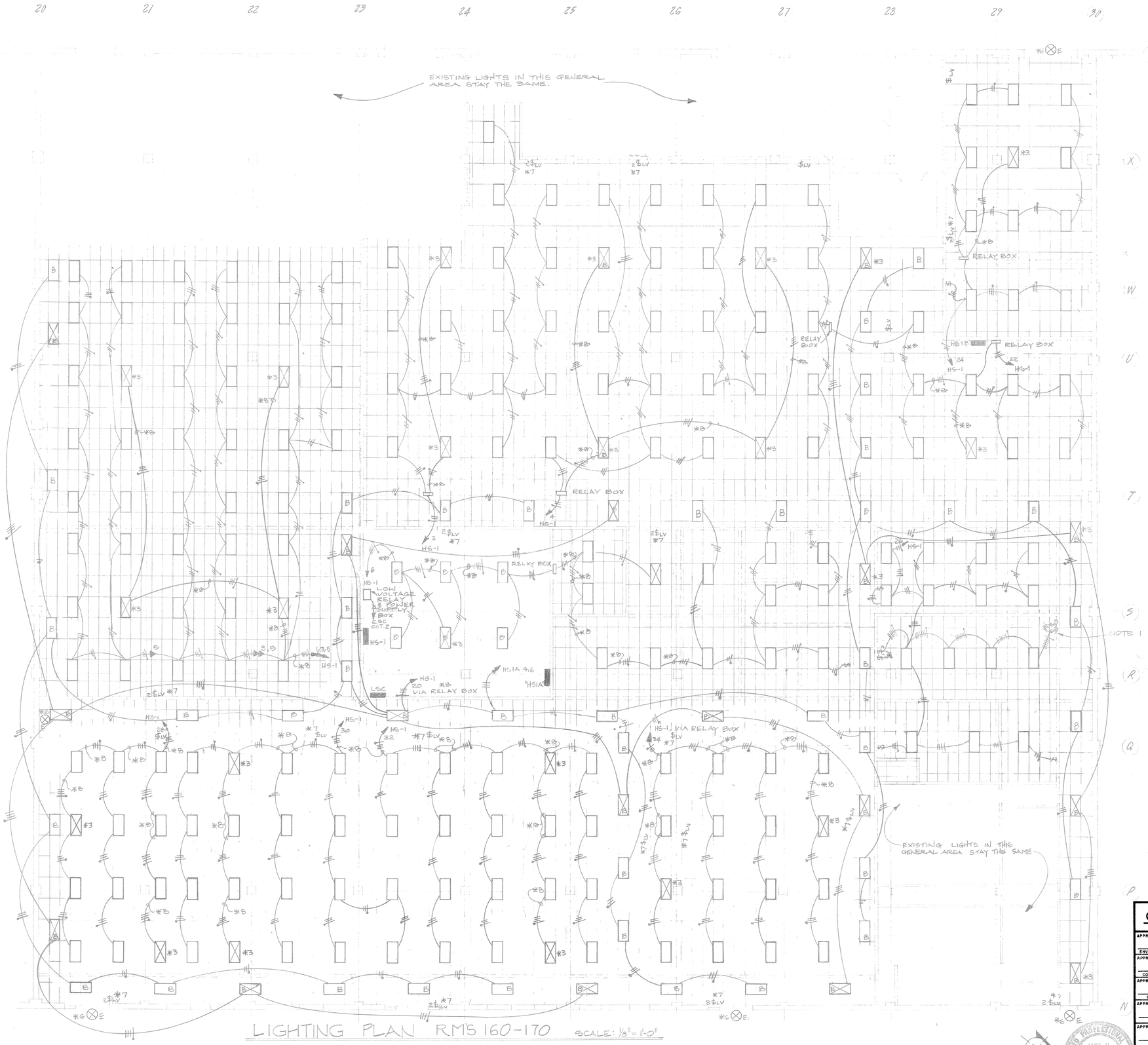
REGISTERED PROFESSIONAL ENGINEER — JACK H. GRAHAM 8789 — OKLAHOMA

PROJ. NR. OC-9-9 — DATE NOV. 83
DRAWING NUMBER DE - F - 83079 - 37
DRAWING FILE NUMBER — SCALE 1/8" = 1'-0" — 37 — SHEET 37 OF 38 — E-11

T1 - 1 - F 7 - 223

U.S. GOVERNMENT PRINTING OFFICE: 1982-570-003

A.F. 16851 B

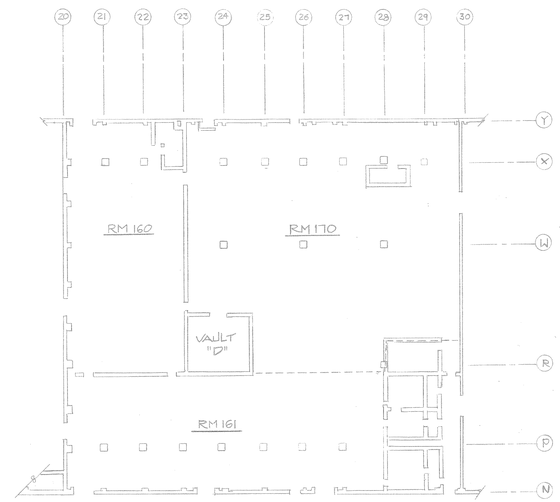


LIGHTING PLAN RM'S 160-170 SCALE: 1/8" = 1'-0"

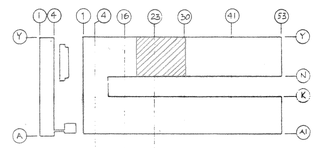
SPACE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AROUND ELECTRICAL EQUIPMENT SHALL BE FREE OF PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT.

NOTES:

1. CONTRACTOR WILL CONNECT TWO OUTER LAMPS TO ONE CIRCUIT & TWO INNER LAMPS TO THE OTHER CIRCUIT.
2. ALL FIXTURES ARE "A" TYPE UNLESS OTHERWISE NOTED.
3. FIXTURES SHALL BE FURNISHED WITH AN EMERGENCY BALLAST FOR TWO (2) LAMPS ONLY.
4. THIS AREA SHALL BE DIVIDED INTO THREE PHASES OF CONSTRUCTION. PARTITIONS MUST BE INSTALLED BY CONTRACTOR TO PREVENT DUST & TO INTERRUPT NORMAL ACTIVITY.
5. ALL TELEPOWER POLES IN THIS AREA SHALL REMAIN, & WILL BE RECONNECTED TO THIER ORIGINAL CIRCUITS.
6. CONTRACTOR SHALL FURNISH FIXTURE HANGING MATERIALS.
7. TWO LOW VOLTAGE SWITCHES MOUNT ONE ABOVE THE OTHER. LABLE TOP SWITCH "SECURITY LIGHTS". ROUTE CONTROL WIRES TO TWO SEPARATE RELAYS IN RELAY BOX IN VAULT "D".
8. SWITCHED CONDUCTORS FROM RELAY BOX & ONE UNSWITCHED CONDUCTOR TO EMERGENCY BALLASTS



ROOMS 160 THRU 170 PHASING PLAN



KEY PLAN

AS BUILT
DATE: 19 MAY 86

COORDINATION	
APPROVED / DATE	ENVIRONMENTAL ENGINEER / DEEV
APPROVED / DATE	CORROSION ENGINEER / DEEE
APPROVED / DATE	CHIEF, FIRE PREVENTION
APPROVED / DATE	1984 COMM. SQ./L 70
APPROVED / DATE	
APPROVED / DATE	
APPROVED / DATE	

REVISION	DATE	DESCRIPTION	BY	CKD

DEPARTMENT OF THE AIR FORCE
TINKER AIR FORCE BASE
OKLAHOMA CITY ALC
OKLAHOMA CITY — CIVIL ENGINEERING DIVISION — OKLAHOMA

DESIGNED BY F.N.F. — DRAWN BY J. BOLLMAN
CHECKED BY J. GRAHAM — DATE 8-30-83
SUBMITTED BY — DATE
CHIEF, ENGR. & CONSTUCTION BRANCH

REPLACE POWER DISTRIBUTION SYSTEM, LIGHTS AND AIR-CONDITIONING
BUILDING 1 — TINKER AIR FORCE BASE

ELECTRICAL LIGHTING PLAN - RM 160-170

DEPUTY CIVIL ENGINEER — APPROVED / DATE
THE CIVIL ENGINEER — APPROVED / DATE
OFFICE, GROUND SAFETY ENGINEER — APPROVED / DATE
OFFICE, SURGEON (SAN. IND. HY & ENGR.) — APPROVED / DATE

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U.S. GOVERNMENT PRINTING OFFICE: 1982-570-039