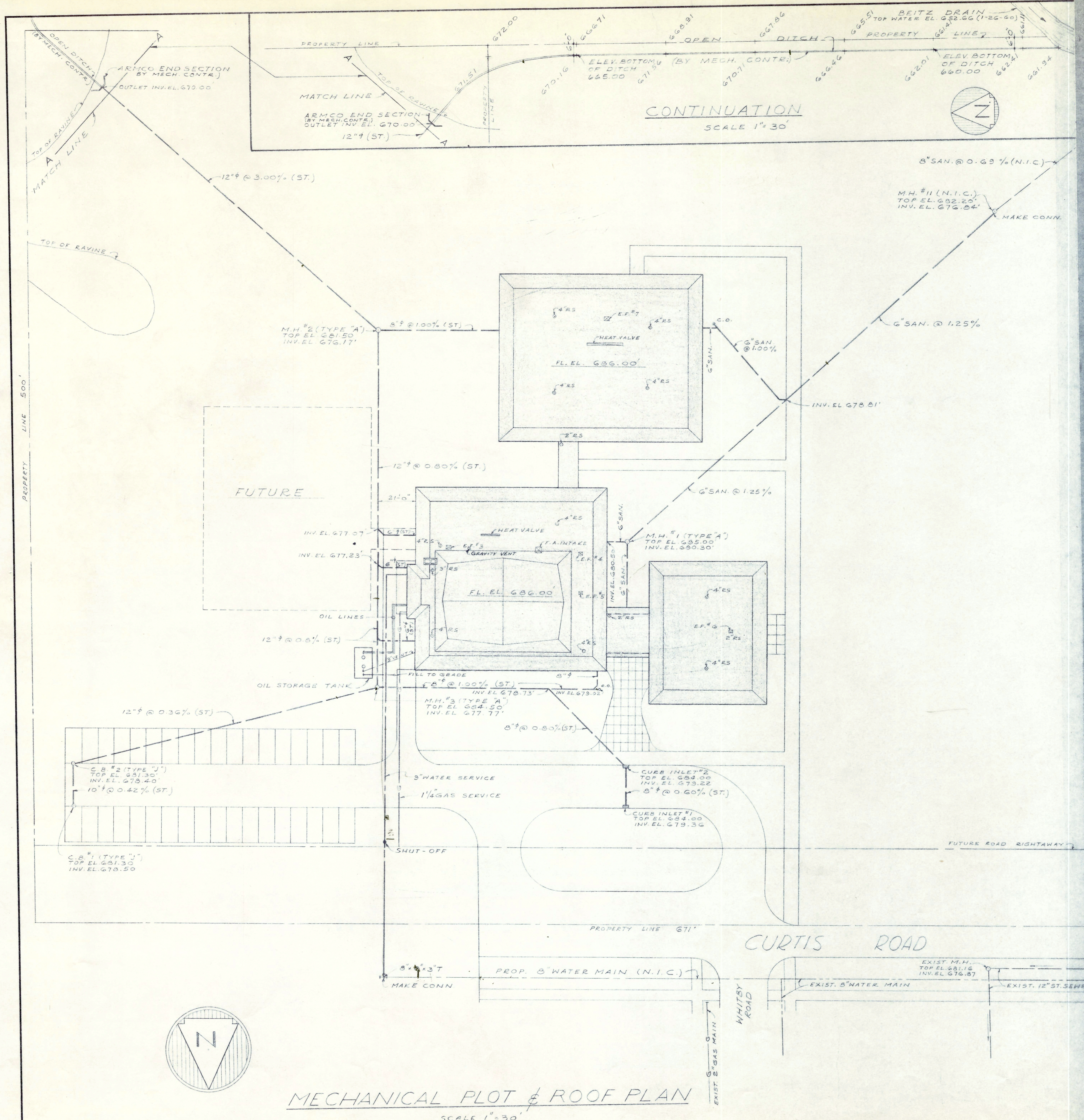




MECHANICAL SYMBOLS

AV	AUTO. CONTROL VALVE	AV	AUTOMATIC AIR VENT	EF	EXHAUST FAN	PRV	PRESSURE REDUCING VALVE	SMD	SAFE WASTE FLOOR DRAIN
B	BALANCING COCK	AWD	AREA WAY DRAIN	EP	END PLATE	R	CONDENSATE RETURN	TDC	TILE DRAIN CONNECTION
CV	CHECK VALVE	AC	AUTOMATIC CONTROL	FA	FRESH AIR	RA	RETURN AIR	UF	UTILITY FIXTURE
SW	SANITARY SEWER	AD	ACCESS DOOR	FD	FLOOR DRAIN	RG	RETURN GRILLE	UH	UNIT HEATER
CW	COLD WATER	BFV	BOILER FEED WATER	FP	FILLER PANEL (UTIL. CABIN)	RS	ROOF SUMP	UV	UNIT VENTILATOR
HW	HOT WATER	BL	BLEEDER LINE	FR	FINNED RADIATION	ST	STEAM TRAP	UR	URINAL
HWR	HOT WATER RETURN	BCC	BALANCING COCK CONTROL	GT	GREASE TRAP	SH	SHOWER HEAD	VB	VACUUM BREAKER
ST	STORM SEWER	BWV	BACK WATER VALVE	HS	HOSE BIBB	SS	SERVICE SINK	VD	VENT DUCT
FL	FLOW IN LINE	CB	CATCH BASIN	HFD	HOPPER FLOOR DRAIN	SN	SINK	VS	VENT GRILLE
GV	GATE VALVE	CC	CONTINUOUS CONVECTOR	HR	HEATING RETURN (WATER)	SP	SOIL PIPE	VP	VENT PIPE
G	GAS	CD	CEILING DIFFUSER	HS	HEATING SUPPLY (WATER)	S & D	STOP AND DRAIN	VR	VENT REGISTER
RT	RUNNING TRAP & C.O.	CA	COMPRESSED AIR	LAV	LAVATORY	SD	SUPPLY DUCT	H & VU	HOT & VENT. UNIT
T	THERMOSTAT	COND.	CONDUCTOR	MC	MANUAL CONTROL	SG	SUPPLY GRILLE	WH	WALL HYDRANT
DUR	DURIRON	CONV.	CONVECTOR	MH	MANHOLE	SR	SUPPLY REGISTER	W	WASTE
SCV	STEAM CONTROL VALVE	DD	DRAFT DUCT	MT	NONFLOW TEE	SO	SUPPLY OUTLET	W & V	WASTE AND VENT
S	STRAINER	DF	DRINKING FOUNTAIN	MV	MANUAL VENT	SW	SAFE WASTE	WC	WATER CLOSET
		DPH	DRY PIPE HYDRANT	NIC	NOT IN CONTRACT	THW	THERMOMETER AND WELL	WFD	WITH FINE DAMPER
		EC	END COVER	PCR	PUMPED COND. RETURN	THW	TEMPERED HOT WATER		

FIXTURE	LOCATION	MAKE	MODEL NO.	CODE NAME	SIZE	MATERIAL	ACCESSORIES
V.C.	A-13, A-14, A-15, & A-16	KOHLER	K-3060ET	JUVENILE		CHINA	SLOAN ROYAL # 110 FV
W.C.	OTHERS	KOHLER	K-3060ET	PENRYN		CHINA	SLOAN ROYAL # 110 FV
UR	ALL	KOHLER	K-1091	BRANHAM		CHINA	SLOAN ROYAL # 105 FV
LAV	A-29, A-33, A-34, A-42	KOHLER	K-1650A	ROCKPORT	17" x 17"	CHINA	CORNER LAVATORY
LAV	OTHERS	KOHLER	K-1775C	GREENWICH	20" x 10"	CHINA	CORNER LAVATORY
LAV	OTHERS	KOHLER	K-12733	GREENWICH	20" x 18"	CHINA	CORNER LAVATORY
SS	ALL	KOHLER	K-12874A	LAVING TON	24" x 20"	C I	SINGLE PUNCHING SPEAKMAN #84320 SELF-CLOSING METERING FAUCET. K-7711
SN.	ACTIVITY RM #A-52	KOHLER	K-12874A	LAMBETH	22" x 15"	CHINA	DRAIN SEE DETAIL SN-5
SN.	WORK RM A-51	ELKAY	LTD-6021-14	3-COMP.	60" x 21"	ST'LESS ST.	2-K7890 FAUCETS LK-35 STRAINER EACH COMPARTMENT
DF	MULTI-PURPOSE	KOHLER	K-5293A	GLENDROOK	12" x 8"	CHINA	SEMI-RECESSED
DF	OUTSIDE	KOHLER	K-5330A	EDGE BROOK	14" x 13"	CHINA	
DF	OTHERS	KOHLER	K-5260A	SAYBROOK	14" x 13"	CHINA	
HFD	BOILER ROOM	BOOSEY	110		16" x 16"	C I	LESS TOP GRATE AND INTERNAL STRAINER BEEHIVE INTERMEDIATE STRAINER
FD	TOILETS	BOOSEY	1205RA		5"	C I	ILLINOIS METAL STRAINER
FD	KITCHEN	BOOSEY	134J		9"	C I	HINGED ILLINOIS METAL STRAINER WITH INTERMEDIATE STRAINER
FD	OTHERS	BOOSEY	134CI		9"	C I	
RS	ALL	BOOSEY	1148		13"	C I	

EXHAUST FANS

UNIT	NO. & SERVICE	CFM	SP	OV-FFM	SPEED	DRIVE	VOLTAGE	HP	MATERIAL	DAMPER	REMARKS	*AUTOMATIC CONTROL
A	1 TOILETS	250	1/4	1250		DIRECT	115V-10	1/20	STEEL	SELF-ACT	TRANE #6 THCN *	
A	2 OFFICE AREA	1530	1/4	1475		BELT	115V-10	1/4	STEEL	SELF-ACT	TRANE #13 THCN *	
A	3 KITCHEN	1520	1/8		3000	BELT	115V-10	1/6	ALUM.	SELF-ACT	JENN AIR #16 BCR TWO SPEED	
A	4 MUSIC & TEACH. RMS.	1500	1/4		3400	BELT	115V-10	1/4	ALUM.	SELF-ACT	JENN AIR #18 HCB *	
A	5 TOILETS	350	1/4		2000	DIRECT	115V-10	1/12	ALUM.	SELF-ACT	JENN AIR #100 CR *	
A	6 KIND. TOILETS	700	1/4		2900	BELT	115V-10	1/6	ALUM.	SELF-ACT	JENN AIR #16 HCB *	
B	7 TOILETS - UNIT B	1340	3/8		3300	BELT	115V-10	1/4	ALUM.	SELF-ACT	JENN AIR #18 HCB *	

RADIATION

MARK	SIZE	SIZE	FINS.	NO/FT	HEATING MED.	BTU/HR	MARK	MAKE	TYPE	GAUGE	LOUVERS
CC	6	6" x 2-7/8"	72	180	180	2130	A	TRANE	6" CC 20" HIGH SLOPING TOP	16	LOUVERS
CC	4	4" x 2-5/8"	72	180	180	1275	B	TRANE	4" CC 20" HIGH SLOPING TOP	16	LOUVERS
							C	TRANE	6" CC 24" HIGH SLOPING TOP	16	LOUVERS

RADIATION COVERS

NO.	CFM (STD)	FT	BTU/HR	HEAT MED.	HP	VOLTAGE	REMARKS
1	1000	132	65,200	180	1/8	115V-10	TRANE # 100 3" ADAPTER BACK, DRAFT DUCT, UTILITY CABINETS
2	1250	131	81,700	180	1/8	115V-10	TRANE # 125 3" ADAPTER BACK, DRAFT DUCT, UTILITY CABINETS

HEATING AND VENTILATING UNITS

NO. & SERVICE	CFM (STD)	SP (EXT)	OV FFM	EAT	FAT	BTU/HR	HEAT MED	HEAT HP	VOLTAGE	REMARKS
1 MULTI-PURPOSE	5600	1/2	1250	45	90	300,000	2#STEAM	2	230V-3Ø	TRANE #215

HOT WATER HEATER

MAKE	TYPE	STOR. CAP.	HEATING CAP.	MODEL	POWER BURNER
BOCK	GAS FIRED STORAGE-HEATER	100	470 GAL 100° RISE	1328	

OIL HEATERS

TYPE	HEAT MED.	OIL GPH	OIL HEATING RANGE	MAKE & MODEL
HOT WATER	212° ENT	75	80°-180°	ALSTROM #0T

BOILER

NO	MAKE	MODEL	HP	HEATING SURFACE	BTU/HR	MAKE	GAL/GPH.	GRADE OF OIL	VOLTAGE
1 & 2	KEWAMEE	78-25	59	322	1,970,000	IRON-FIREMAN REAH	17	#6 5	230V-3Ø

UNIT HEATER

NO	CFM	FT	BTU/HR	HEAT MED.	HP	VOLTAGE	P.D.	REMARKS	SIZE	GPH	ENT WATER	LVG WATER	BTU/HR	P.D. FT.	HEAT SURFACE	MAKE
1	510	100	22,400	180	1/30	115V-10	.05	TRANE #72H	12 x 84	16,500	170	190	2,750,000	4	119	PATTERSON-KELLY
2	740	131	56,000	180	1/8	115V-10	.26	TRANE #350-2 SEMI RECESSED 8"								
3	740	131	56,000	180	1/8	115V-10	.26	TRANE #350-2 SEE DETAIL								
4	650	120	43,000	180	1/8	115V-10	.18	TRANE #250-2 WALL HUNG FRONT INLET & OUTLET								
5	650	120	43,000	180	1/8	115V-10	.18	TRANE #250-2 SEMI-RECESSED 8"								

OIL BURNER

NO	MAKE	MODEL	HP	HEATING SURFACE	BTU/HR	MAKE	GAL/GPH.	GRADE OF OIL	VOLTAGE
1 & 2	KEWAMEE	78-25	59	322	1,970,000	IRON-FIREMAN REAH	17	#6 5	230V-3Ø

OIL STORAGE TANK

GALLONS	FILL LINE	VENT	PUMP OUT LINE	SUCTION	RETURN	MANHOLE
10,000	3"	3"	2"	(2) 2"	(1) 2"	18

PUMPS

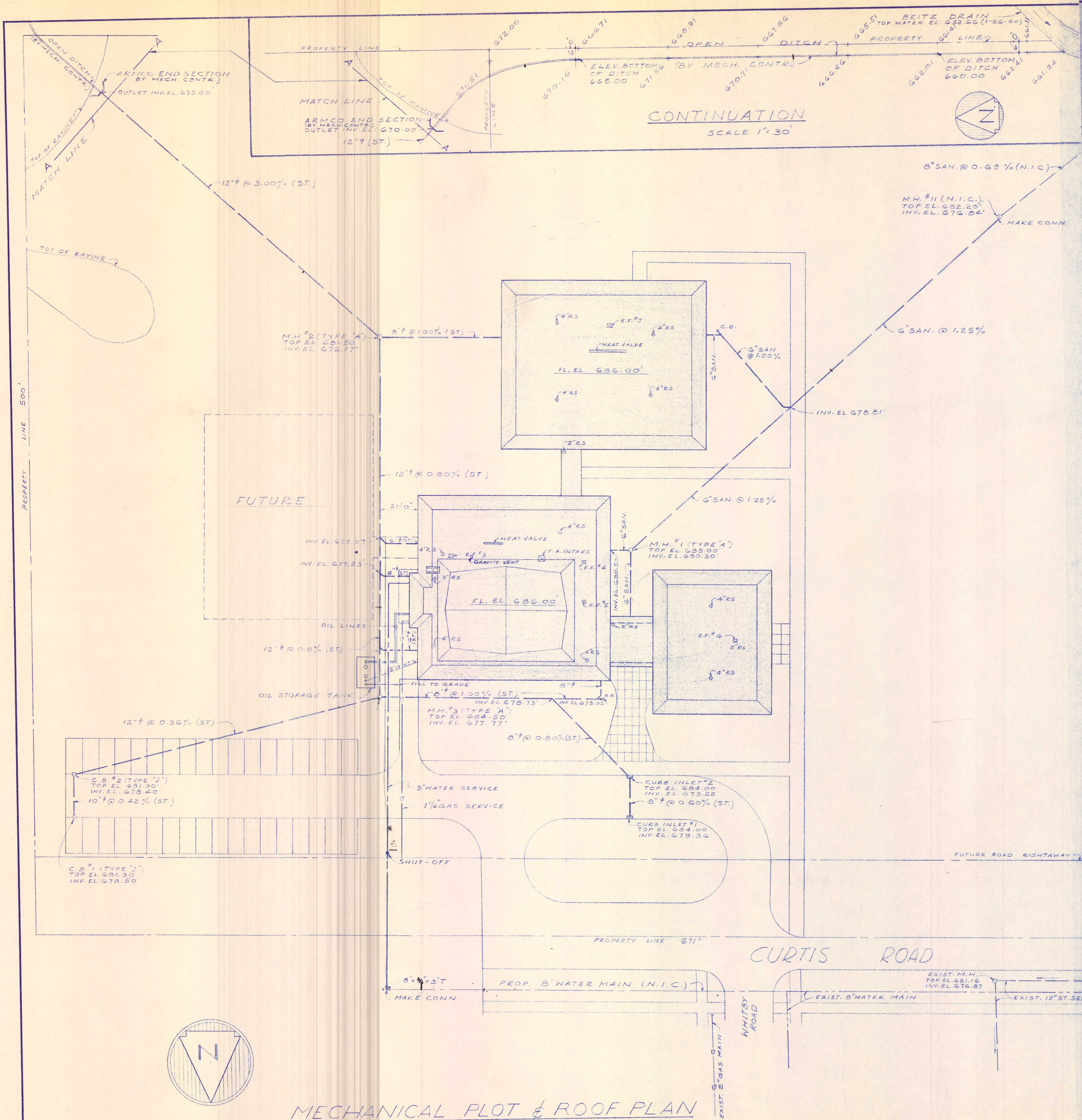
NO. & SERVICE	GPM	HEAD FT.	HP	VOLTAGE	MAKE & MODEL
1 & 2 HEAT CIRC.	250	30	3	230V-3Ø	B & G 3A
3 DOMESTIC H.W. CIRC.	15	11	1/6	115V-10	B & G 1" HV
4 & 5 BOILER FEED	15	35	1/2	230V-3Ø	WEIL #SRC 70 GAL. RECEIVER
6 RADIANT HEAT	25	9	1/6	115V-10	B & G #1 1/2" H.V.
7 & 8 OIL HEATER	10	7	1/12	115V-10	B & G # 125
9 & 10 FUEL OIL	1.0	57	1/2	230V-3Ø	DELAVAL

MECHANICAL PLOT & ROOF PLAN & DATA

DATE	REVISION	NEW ELEMENTARY SCHOOL SECTION 9 FOR LIVONIA PUBLIC SCHOOLS SCHOOL DISTRICT WAYNE COUNTY, MICHIGAN	FILE NO.
2-5-60			1480

DRAWN BY	APPROVED BY	ROOM 626 - 153 EAST ELIZABETH STREET - DETROIT 1 - WOODWARD 5-8180
BOSS		

EBERLE M. SMITH ASSOC., INC.
ARCHITECTS ENGINEERS
SHEET NO. M-1



MECHANICAL PLOT & ROOF PLAN
SCALE 1"=30'

MECHANICAL SYMBOLS											
	AUTO. CONTROL VALVE	AAV	AUTOMATIC AIR VENT	EF	EXHAUST FAN	PRV	PRESSURE REDUCING VALVE	SWFD	SAFE WASTE FLOOR DRAIN		
	BALANCING COCK	AMD	AREA WAY DRAIN	EP	END PLATE	R	CONDENSATE RETURN	TDC	TILE DRAIN CONNECTION		
	CHECK VALVE	AC	AUTOMATIC CONTROL	FA	FRESH AIR	RA	RETURN AIR	UF	UTILITY FIXTURE		
	SANITARY SEWER	AD	ACCESS DOOR	FD	FLOOR DRAIN	RG	RETURN GRILLE	UH	UNIT HEATER		
	COLD WATER	BFV	BOILER FEED WATER	FP	FILLER PANEL (UTIL. CAB.)	RS	ROOF SUMP	UV	UNIT VENTILATOR		
	HOT WATER	BL	BLEEDER LINE	FR	FINNED RADIATION	SI	STEAM	UR	URINAL		
	HOT WATER RETURN	BCC	BALANCING COCK CONTROL	GT	GREASE TRAP	SH	SHOWER HEAD	VB	VACUUM BREAKER		
	STORM SEWER	BWV	BACK WATER VALVE	HB	HOSE BIBB	SS	SERVICE SINK	VD	VENT DUCT		
	FLOW IN LINE	BMV	BACK WATER VALVE	HFD	HOPPER FLOOR DRAIN	SN	SINK	VG	VENT GRILLE		
	GATE VALVE	CB	CATCH BASIN	HR	HEATING RETURN (WATER)	SP	SOIL PIPE	VP	VENT PIPE		
	GAS	CC	CONTINUOUS CONVECTOR	HS	HEATING SUPPLY (WATER)	S & D	STOP AND DRAIN	VR	VENT REGISTER		
	RUNNING TRAP & C.O.	CD	CEILING DIFFUSER	LAV	LAVATORY	SD	SUPPLY DUCT	H & VU	HOT & VENT. UNIT		
	THERMOSTAT	CA	COMPRESSED AIR	MC	MANUAL CONTROL	SG	SUPPLY GRILLE	WH	WALL HYDRANT		
	DURIRON	CONV.	CONVECTOR	MH	MANHOLE	SR	SUPPLY REGISTER	W	WASTE		
	STEAM CONTROL VALVE	DD	DRAFT DUCT	MT	MONOFLOW TEE	SO	SUPPLY OUTLET	W & V	WASTE AND VENT		
	STRAINER	DF	DRINKING FOUNTAIN	MV	MANUAL VENT	SW	SAFE WASTE	WC	WATER CLOSET		
		DPH	DRY PIPE HYDRANT	NIC	NOT IN CONTRACT	TRW	THERMOMETER AND WELL	WFD	WITH FIRE DAMPER		
		EC	END COVER	PCR	PUMPED COND. RETURN	THW	TEMPERED HOT WATER				

FIXTURE	LOCATION	MAKE	MODEL NO.	CODE NAME	SIZE	MATERIAL	ACCESSORIES
W.C.	A-13, A-14, A-15, & A-16	KOHLER	K-3000ET	JUVENILE		CHINA	SLOAN ROYAL # 110 F.V.
W.C.	OTHERS	KOHLER	K-3050ET	PENRYN		CHINA	SLOAN ROYAL # 110 F.V.
UR	ALL	KOHLER	K-1891	BRANHAM		CHINA	SLOAN ROYAL #105 F.V.
LAV	A-24	KOHLER	K-1650A	ROCKPORT	17"x17"	CHINA	CORNER LAVATORY
LAV	A-29, A-33, A-34, A-42	KOHLER	K-1975C	GREENWICH	20"x10"	CHINA	
LAV	OTHERS	KOHLER	K-12733	GREENWICH	20"x10"	CHINA	SINGLE PUNCHING SPEARMAN #54320 SELF-CLOSING METERING FAUCET. K-7711 DRAIN SEE DETAIL SM-5
SS	ALL	KOHLER	K-12874A	LIVING TON	24"x20"	C I	
SN.	ACTIVITY RM A-52	KOHLER	K-12848A	LAMBETH	22"x15"	CHINA	K-7891 FAUCET K-7710 DRAIN K-6699 METAL FRAME
SN.	KITCHEN	ELKAY	LTD-6021	3-COMP.	60"x21"	ST'LESS ST.	2-K7890 FAUCETS LK-35 STRAINER EACH COMPARTMENT
DF	MULTI-PURPOSE	KOHLER	K-5293A	GLENBROOK	12"x8"	CHINA	SEMI-RECESSED
DF	OUTSIDE	KOHLER	K-5350A	EDGEBROOK	12"x8"	C I	
DF	OTHERS	KOHLER	K-5260A	SAYBROOK	14"x13"	CHINA	
HFD	BOILER ROOM	BOOSEY	#100		16 x 16	C I	LESS TOP GRATE AND INTERNAL STRAINER BEEHIVE INTERMEDIATE STRAINER
FD	TOILETS	BOOSEY	1205RA		5"	C I	ILLINOIS METAL STRAINER
FD	KITCHEN	BOOSEY	134J		9"	C I	HINGED ILLINOIS METAL STRAINER WITH INTERMEDIATE STRAINER
FD	OTHERS	BOOSEY	134C1		9"	C I	
RS	ALL	BOOSEY	1148		13"	C I	

EXHAUST FANS												
UNIT	NO. & SERVICE	CFM	SP	OV-FPM	SPEED	DRIVE	VOLTAGE	HP	MATERIAL	DAMPER	REMARKS	*AUTOMATIC CONTROL
A	1 TOILETS	250	1/4	1250		DIRECT	115V-10	1/20	STEEL	SELF-ACT	TRANE #6 THCM *	
A	2 OFFICE AREA	1530	1/4	1475		BELT	115V-10	1/4	STEEL	SELF-ACT	TRANE #13 THCM *	
A	3 KITCHEN	1520	1/8		3000	BELT	115V-10	1/6	ALUM.	SELF-ACT	JENN AIR #18 BCR TWO SPEED	
A	4 MUSIC & TEACH. RMS	1480	1/4		3400	BELT	115V-10	1/4	ALUM.	SELF-ACT	JENN AIR #18 HCB *	
A	5 TOILETS	340	1/4		2800	DIRECT	115V-10	1/12	ALUM.	SELF-ACT	JENN AIR # 108 CR *	
A	6 KIND. TOILETS	700	1/4		2900	BELT	115V-10	1/6	ALUM.	SELF-ACT	JENN AIR # 16 HCB *	
B	7 TOILETS - UNIT B	1440	3/8		3300	BELT	115V-10	1/4	ALUM.	SELF-ACT	JENN AIR # 18 HCB *	

RADIATION											
MARK	SIZE	FIN.	NO/FT	HEATING MED.	BTU/HR	MARK	MAKE	TYPE	GAUGE	LOUVERS	
CC	6	6" x 2-5/8"	72	100	2130	A	TRANE	6" CC 20" HIGH SLOPING TOP	16	LOUVERS	
CC	4	4" x 2-5/8"	72	100	1275	B	TRANE	4" CC 20" HIGH SLOPING TOP	16	LOUVERS	
						C	TRANE	6" CC 24" HIGH SLOPING TOP	16	LOUVERS	

UNIT VENTILATORS											
NO.	CFM (STD)	FT	BTU/HR	HEAT MED.	HP	VOLTAGE	REMARKS				
1	1000	132	65,200	100	1/8	115V-10	TRANE # 180 3" ADAPTER BACK, DRAFT DUCT, UTILITY CABINETS				
2	1250	131	81,700	100	1/8	115V-10	TRANE # 125 3" ADAPTER BACK, DRAFT DUCT, UTILITY CABINETS				

HEATING AND VENTILATING UNITS											
NO. & SERVICE	CFM (STD)	SP (EXT)	OV FPM	EAT	FATT	BTU/HR	HEAT MED.	HP	VOLTAGE	REMARKS	
1	MULTI-PURPOSE	5600	1/2	1250	45	90	300,000	2#STEAM	2	230V-30	TRANE #215

HOT WATER HEATER											
MAKE	TYPE	STOR. CAP.	HEATING CAP.	MODEL	POWER BURNER						
BOCK	GAS FIRED STORAGE-HEATER	100	470 GAL 100° RISE	1328							

OIL HEATERS											
TYPE	HEAT MED.	OIL GPH	OIL HEATING RANGE	MAKE & MODEL							
HOT WATER	212° ENT	75	80°-180°	ALSTROM #DT							

BOILER											
NO	MAKE	MODEL	HP	HEATING SURFACE	BTU/HR	OIL BURNER					
1 & 2	KEWANCE	78-25	59	322	1,970,000	IRON-FIREMAN REAK					

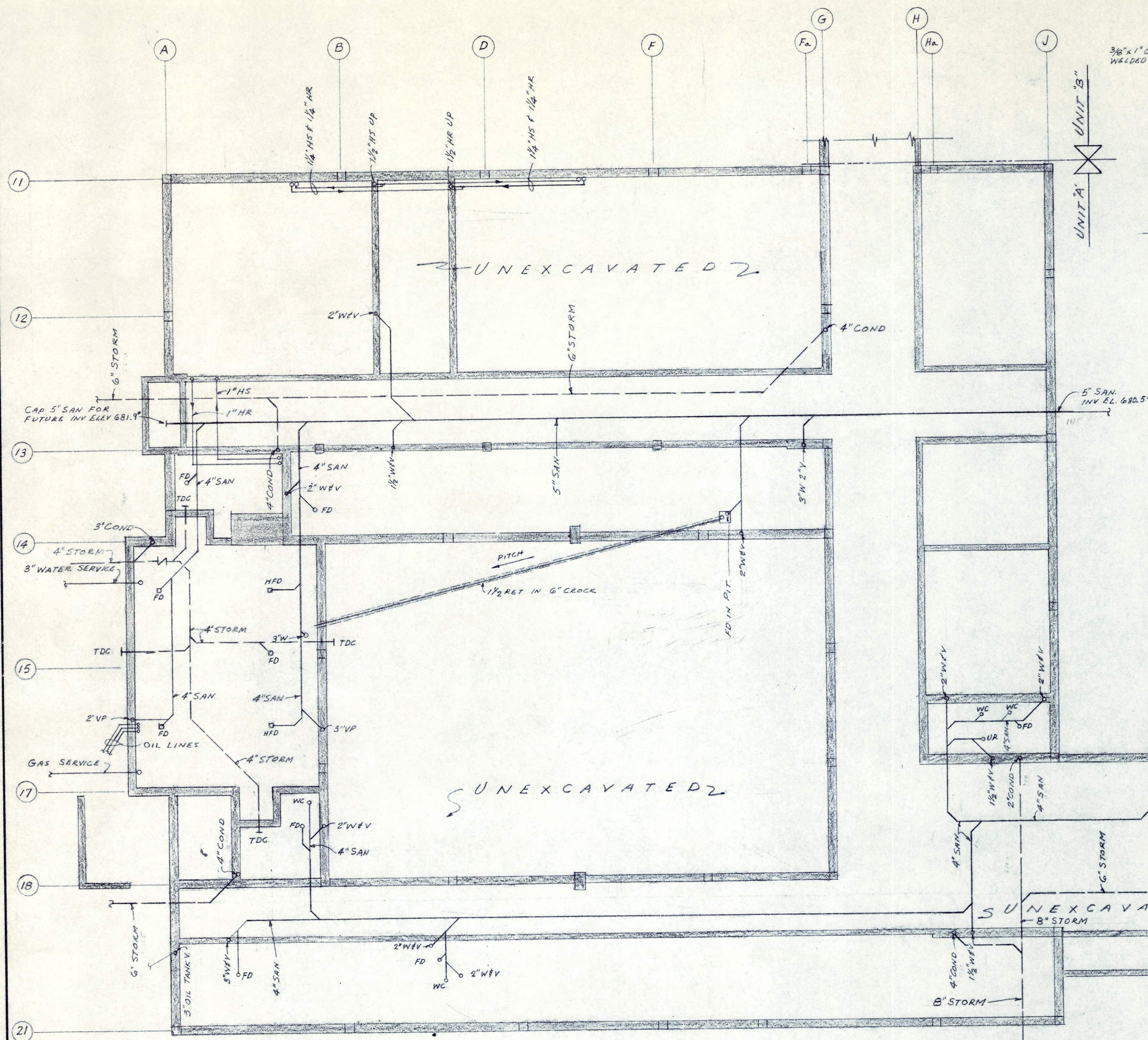
UNIT HEATER																		
NO	CFM	FT	BTU/HR	HEAT MED.	HP	VOLTAGE	P.D.	REMARKS	SIZE	GPH	ENT	LVG	WATER	BTU/HR	P.D.	HEAT	SURFACE	MAKE
1	510	100	22,400	180	1/30	115V-10	.05	TRANE #72H	12 x 84	16,500	170	190	2,750,000	4	119	PATTERSON-KELLY		
2	740	131	56,000	180	1/8	115V-10	.26	TRANE #350-2 SEMI RECESSED 8"										
3	740	131	56,000	180	1/8	115V-10	.26	TRANE #350-2 SEE DETAIL										
4	650	120	43,000	180	1/8	115V-10	.10	TRANE 250-2 WALL HUNG FRONT INLET & OUTLET										
5	650	120	43,000	180	1/8	115V-10	.10	TRANE #250-2 SEMI-RECESSED 8"										

OIL STORAGE TANK											
GALLONS	FILL LINE	VENT	PUMP OUT LINE	SUCTION	RETURN	MANHOLE					
10,000	3"	3"	2"	(2) 2"	(1 1/2)"	18					

PUMPS											
NO. & SERVICE	GPM	HEAD FT.	HP	VOLTAGE	MAKE & MODEL						
1 & 2	HEAT CIRC.	250	30	3	230V-30	B & G 3A					
3	DOMESTIC H.W. CIRC.	15	11	1/6	115V-10	B & G 1" HV					
4 & 5	BOILER FEED	15	35	1/2	230V-30	WEIL #SRC 70 GAL. RECEIVER					
6	RADIANT HEAT	25	9	1/6	115V-10	B & G #1 1/2" H.V.					
7 & 8	OIL HEATER	10	7	1/12	115V-10	B & G # 125					
9 & 10	FUEL OIL	1.0	57	1/2	230V-30	DELAVAL					

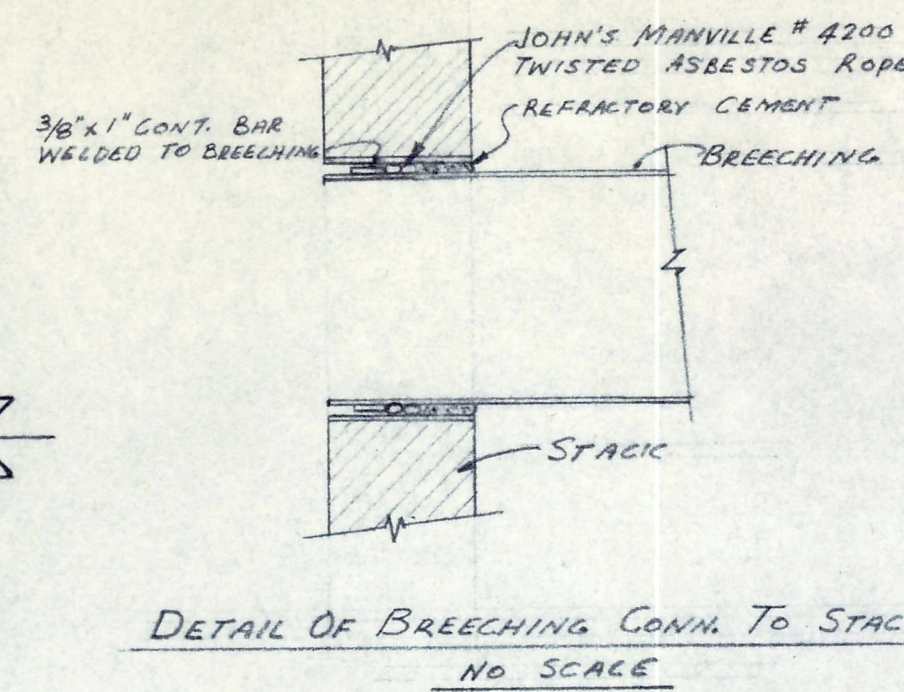
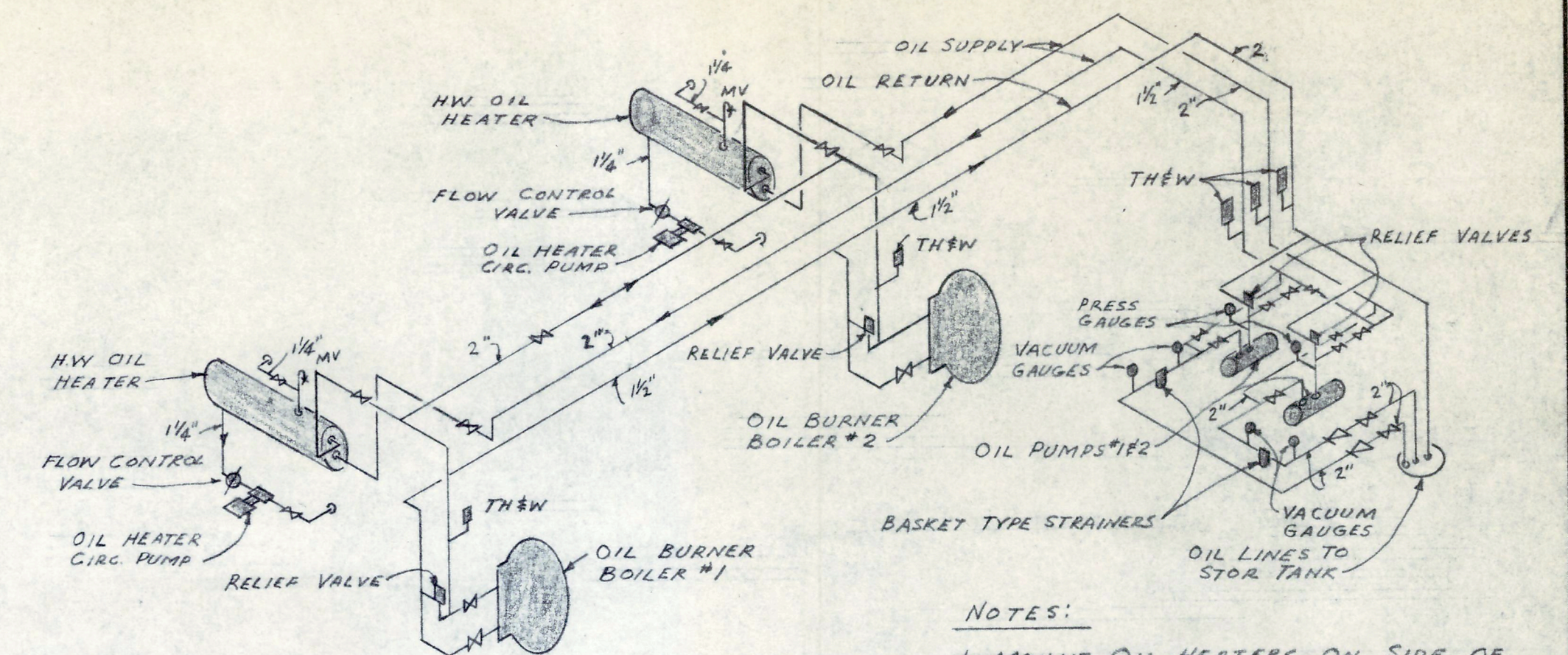
MECHANICAL PLOT & ROOF PLAN & DATA											
DATE	NEW ELEMENTARY SCHOOL SECTION 9										FILE NO.
2-5-60	FOR										1480
REVISED	LIVONIA PUBLIC SCHOOLS SCHOOL DISTRICT WAYNE COUNTY, MICHIGAN										
	EBERLE M. SMITH ASSOC., INC.										SHEET NO.
	ARCHITECTS ENGINEERS										M-
DRAWN BY	ROOM 626 - 153 EAST ELIZABETH STREET - DETROIT 1 - WOODWARD 5-8180										

APPROVED BY
G. H. Applegate

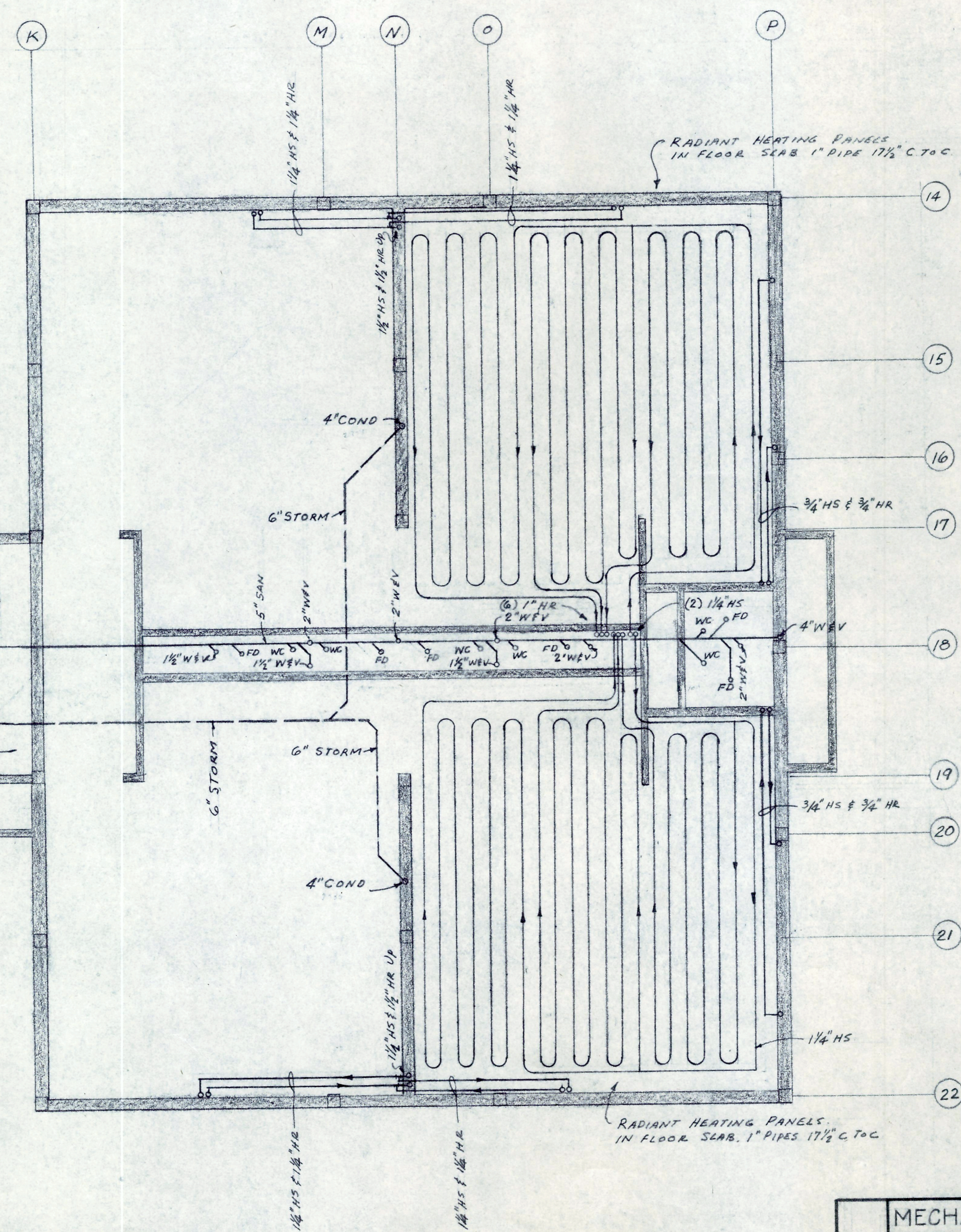
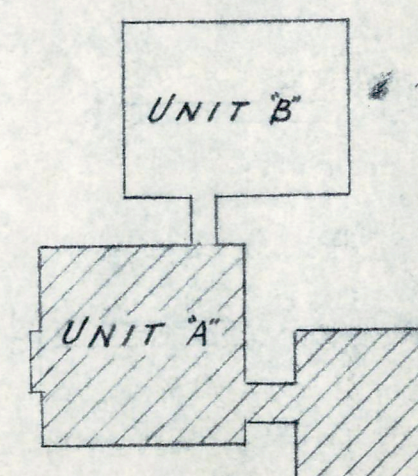


ALL HS & HR THIS SHEET SHALL BE
IN FLOOR SLAB UNLESS OTHERWISE NOTED.
SEE DETAIL ON SHEET M-5.

MECHANICAL FOUNDATION PLAN - UNIT A
SCALE 1/8" = 1'-0"



- NOTES:
1. MOUNT OIL HEATERS ON SIDE OF BOILERS.
 2. SUPPLY WATER CONN. OF OIL HEATERS SHALL BE 6" BELOW WATER LINE OF BOILER.
 3. INSULATE ALL OIL PIPING & OIL HEATING EQUIP.



KEY PLAN

MECHANICAL FOUNDATION PLAN - UNIT A			
DATE	2-5-50	NEW ELEMENTARY SCHOOL SECTION 9	FILE NO.
REVISED		FOR	1480
		LIVONIA PUBLIC SCHOOLS SCHOOL DISTRICT	
		WAYNE COUNTY, MICHIGAN	
DRAWN BY	EBERLE M. SMITH ASSOC., INC.	ARCHITECTS ENGINEERS	SHEET NO.
			M-2
ROOM 626 - 153 EAST ELIZABETH STREET - DETROIT 1. - WOODWARD 5-8190			