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ENERGY SOLUTIONS
cmsh

BERKELEY SPRINGS HIGH SCHOOL
GUARANTEED ENERGY SAVINGS CONTRACT
MORGAN COUNTY BOARD OF EDUCATION
MORGAN COUNTY, WV
MECHANICAL DETAILS AND SCHEDULES

REVISIONS	
A. BIDDING	
DATE	3/14/2017
CREATED BY	CM
CHECKED BY	

SET NO.

M1.0
HIGH SCHOOL

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	CARRIER NUMBER	SUPPLY AIR CONDITIONS		RETURN AIR CONDITIONS		MIN. ENERGY RECOVERY		SAFETY AIR CONDITIONS		ESP		ELECTRICAL		WEIGHT (LBS.)	NOMINAL SIZE	
		TEMP (°F)	REL. HUM. (%)	TEMP (°F)	REL. HUM. (%)	WINTER (%)	SUMMER (%)	WINTER (ft)	SA	EA	VOL/9 (MCA)	RW	MCA			KW
ERU-1	ERVA04H0200	200	212	85.0	72.0	53.6	XXX	XXX	0.3	0.3	XX	115/1	2.1	1.9	65	40" x 18" x 17"

- REMARKS:
 1. STANDARD DESIGN: 95 F DB OUTDOOR, 78 F WB OUTDOOR, 75 F DB/64 F WB INDOOR.
 2. WINTER DESIGN: 4 F DB OUTDOOR, 70 F WB INDOOR.
 3. PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
 4. PROVIDE 1/2" RIGID INSULATION TO THE EXTERIOR OF THE UNIT.
 5. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.
 6. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.
 7. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.

SPLIT SYSTEM HEAT PUMP SCHEDULE

MARK	INDOOR UNIT				OUTDOOR UNIT			
	MFR./CARRIER MODEL	CFM	ESP.	MCA	MFR./CARRIER MODEL	CFM	ESP.	MCA
OS-1	OS0500AC	1130	0.5	1	15	208/1	0.1	1

- REMARKS:
 1. SINGLE POINT ELECTRICAL CONNECTION.
 2. PROVIDE 1/2" RIGID INSULATION TO THE EXTERIOR OF THE UNIT.
 3. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.
 4. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.
 5. PROVIDE TIED ON/OFF EXHAUST FRESH AIR INTAKE.
 6. COOLING CAPACITY IS BASED ON 95 DB OUTDOOR, 78 DB INDOOR, 75 DB COIL ENTERING INDOOR AIR TEMPERATURE AND 85 DB AMBIENT.
 7. HEATING CAPACITY IS BASED ON 40 DB COIL ENTERING INDOOR AIR TEMPERATURE AND 0 DB AMBIENT.

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

MARK	MANUF./MODEL	MATERIAL/TYPE	GRILLE SIZE	PANEL SIZE (IN.)	BRANCH DUCT SIZE (IN.)	CFM	P.D.	AIR PATTERN	MAX. VC
S-1	TITUS TDC-M SERIES	ALUMINUM ADJUSTABLE SQUARE DIFFUSER	12x12	24x24	6x6	0-100	.05	4-WAY	25
R-1	TITUS 207	ALUMINUM 1/2" ESP GRILLE	12x12	24x24	-	0-100	.05	-	25

- REMARKS:
 1. PROVIDE WITH FILTER RACK AND 1 INCH DISPOSABLE FILTER.

LOUVER SCHEDULE

MARK	MODEL	CFM	DEVICE SIZE	FACE AREA (SQ. FT.)	MAX. VEL. (FT./MIN)	MAX. WIND SPEED (MPH)	REMARKS
L-1	RUSHAN FLS750	200	12"x12"	0.28	750	0.12	ALL
L-2	ELF8750	200	12"x12"	0.28	750	0.12	ALL

- REMARKS:
 1. STATIONARY DRAINABLE BLADES, 4" DEEP FRAME AND BIRDSCREEN.
 2. FINISHED SURFACE SHALL BE PAINTED TO MATCH SURROUNDING SURFACE.
 3. FINISHED SURFACE SHALL BE PAINTED TO MATCH SURROUNDING SURFACE.
 4. FINAL SIZE AND LOCATION OF LOUVERS SHOWN ON ARCHITECTURAL DRAWINGS MAX. 5% OF TOTAL AREA.
 5. LOUVER MOUNTING PER ARCHITECTURAL DETAILS.

AIR HANDLING UNIT SCHEDULE

SYMBOL	AREA SERVED	MECH. CENTER	DESIGN CFM/SPM	MINIMUM OUTSIDE AIR CFM	TYPE	TSF / ESP (SEE REMARK 6)	ACOUSTICS (DB, DUCTED)	HPF/HP
AH1-1/HP-1			8000 / 917	-	FLENAM	0.97/0.15	102/89/84/78/87/83	4.59/5

SUPPLY FAN

DESIGN CFM/SPM	MINIMUM OUTSIDE AIR CFM	TYPE	TSF / ESP (SEE REMARK 6)	ACOUSTICS (DB, DUCTED)	HPF/HP
8000 / 917	-	FLENAM	0.97/0.15	102/89/84/78/87/83	4.59/5

DX COOLING COIL

TOTAL COOLING CAP. (MBH)	SENSIBLE COOLING CAP. (MBH)	EAT - WINTER (DB)	EAT - SUMMER (DB/WB)	LAT - WINTER (DB/WB)	LAT - SUMMER (DB/WB)
232.1	180.8	70F	80F/87F	78.1F	80F/87F

HEAT PUMP SECTION

TOTAL HEATING CAP. (MBH)	EAT - WINTER (DB)	EAT - WINTER (DB)	LAT - WINTER (DB/WB)
210.7	70F	84.4F	78.1F

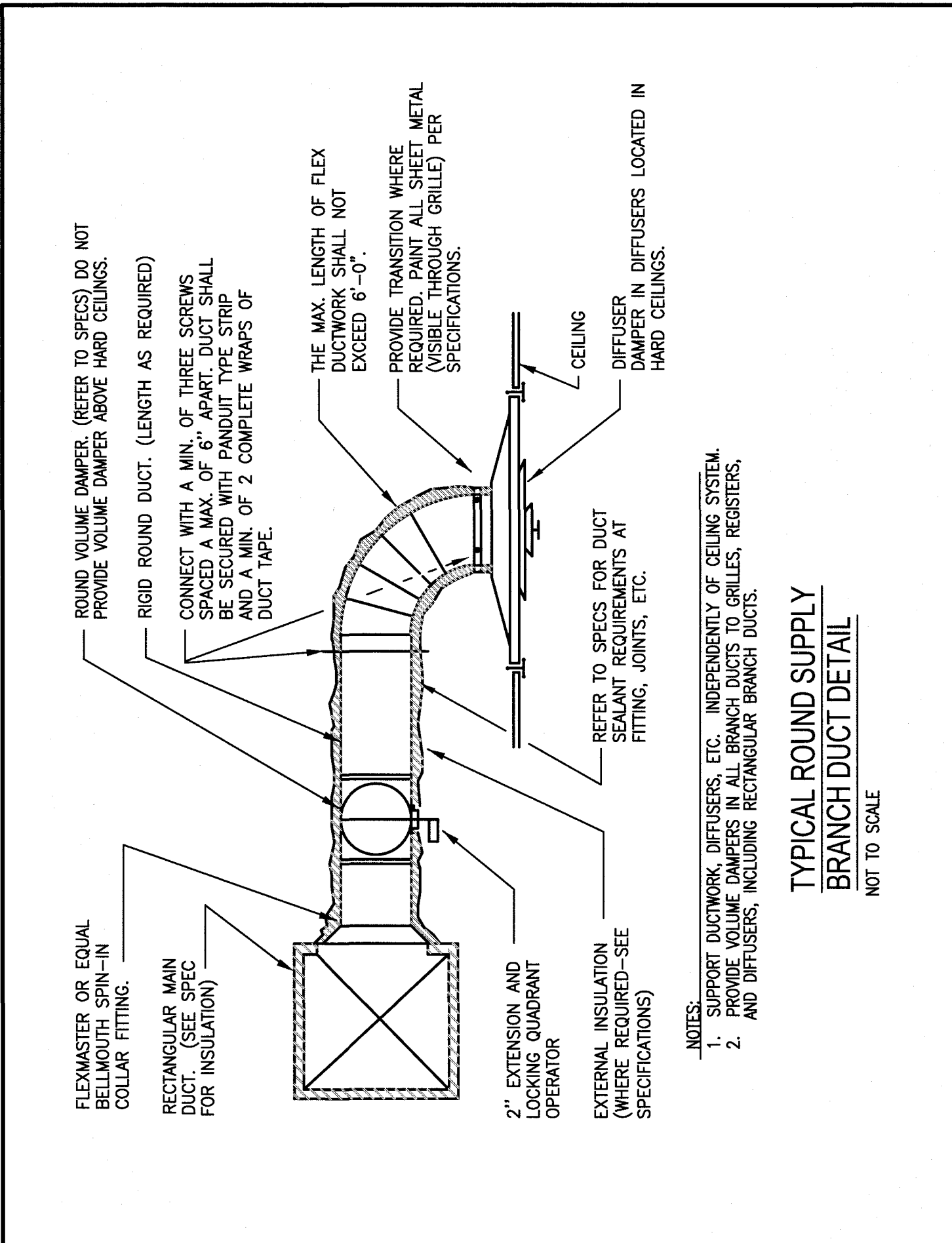
ELECTRIC HEAT SECTION

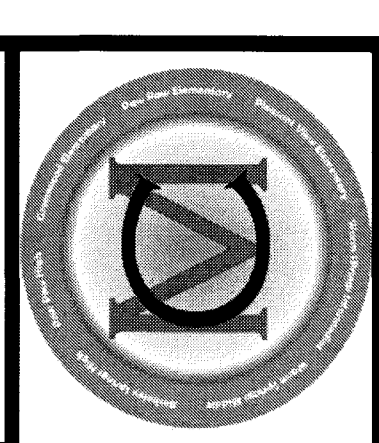
TOTAL HEATING CAP. (MBH)	ELECTRIC CONSUMPTION (KW)	EAT - WINTER (DB/WB)	LAT - WINTER (DB/WB)	STAGES
156.6	50	80F	78.1F	TWO

DISPOSABLE PRIMARY FILTER

MANUFACTURER	MODEL/TYPE	EFFICIENCY/TTEST METHOD	SIZE (IN. x IN. x IN.)
AF	30-50/AL/EA (MERV 7)	30%/ASHRAE 52-76	AS REQUIRED

- REMARKS:
 A. REFER TO SPEC FOR MECHANICAL LEGEND, GENERAL NOTES, ETC.
 B. ALL EQUIPMENT WITH EXCEPTION OF FINE DAMPERS, LOUVERS, GRILLES, REGISTERS, AND DIFFUSERS TO BE PROVIDED BY OWNER, INSTALLED BY CONTRACTOR.





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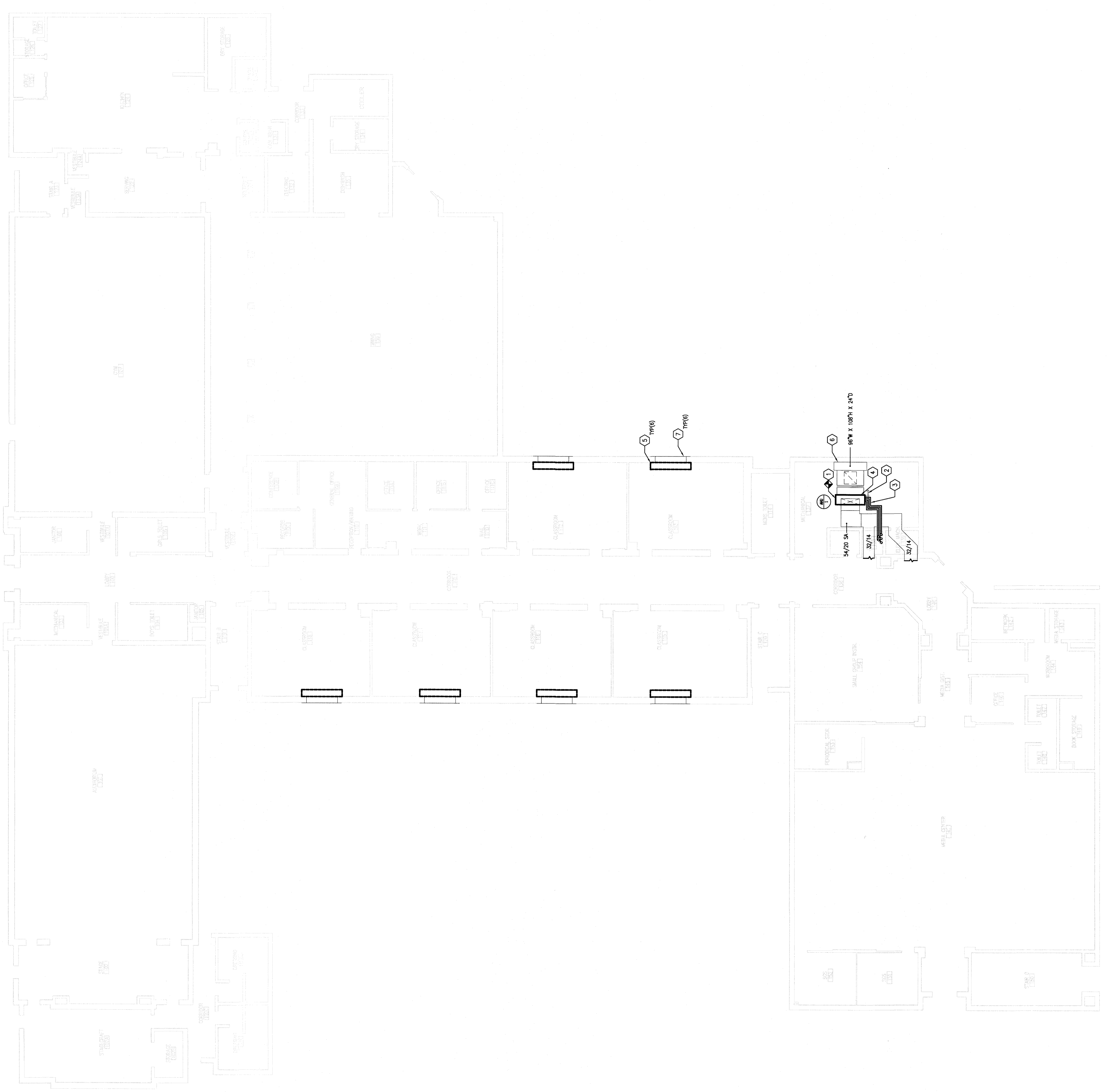
BERKELEY SPRINGS HIGH SCHOOL
GUARANTEED ENERGY SAVINGS CONTRACT
MORGAN COUNTY BOARD OF EDUCATION
MORGAN COUNTY, WV
MECHANICAL FIRST FLOOR DEMOLITION PLAN

REVISIONS
A: BIDDING

DATE: 3/14/2017
DRAWN:
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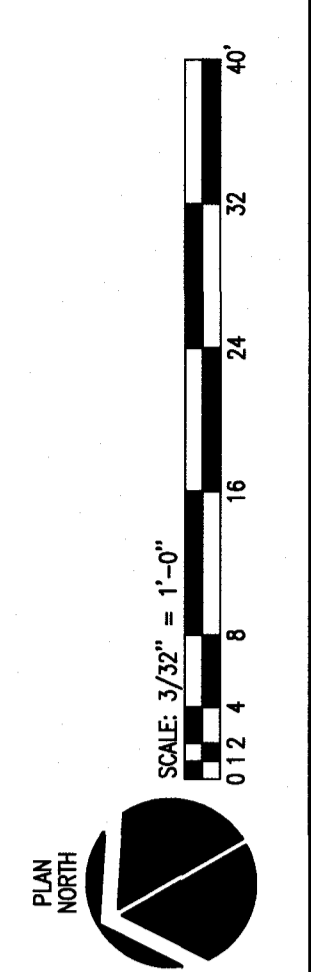
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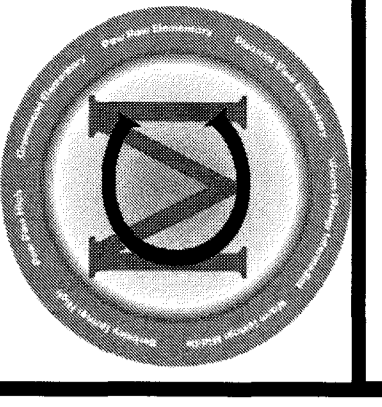
M2.1
HIGH SCHOOL



- TAGGED NOTES:
1. EXISTING DUCTWORK TO REMAIN.
 2. EXISTING CONDENSATE TO REMAIN.
 3. EXISTING RETROFIT PIPING FROM EXISTING HEAT PUMP LOCATED ON ROOF TO AIR HANDLING UNIT TO BE REMOVED.
 4. REMOVE EXISTING AIR HANDLING UNIT, EXISTING CONCRETE AND VIBRATION ISOLATORS TO REMAIN. MECHANICAL CONTRACTOR TO REMOVE EXISTING SELF CONTAINED HEAT PUMP AND ASSOCIATED PIPING AND RETROFIT PIPING AND WALLS TO MATCH EXISTING ROOM CONDITIONS. MECHANICAL CONTRACTOR TO REMOVE EXISTING DUCTWORK AND CONDENSATE PIPING. MECHANICAL CONTRACTOR TO SEAL AIR TIGHT. REFER TO ARCHITECTURAL INSTRUCTIONS FOR ADDITIONAL INFORMATION.
 5. EXISTING OUTSIDE AIR DUCTWORK AND LOWER TO REMAIN.
 6. EXISTING LOWER TO REMAIN.

GENERAL NOTES:
 A. REFER TO PROJECT MECHANICAL SYSTEMS MANUAL FOR THE MECHANICAL SYSTEMS.
 B. REFER TO PROJECT ARCHITECTURAL INSTRUCTIONS FOR ADDITIONAL INFORMATION.
 C. REFER TO PROJECT ELECTRICAL INSTRUCTIONS FOR ADDITIONAL INFORMATION.





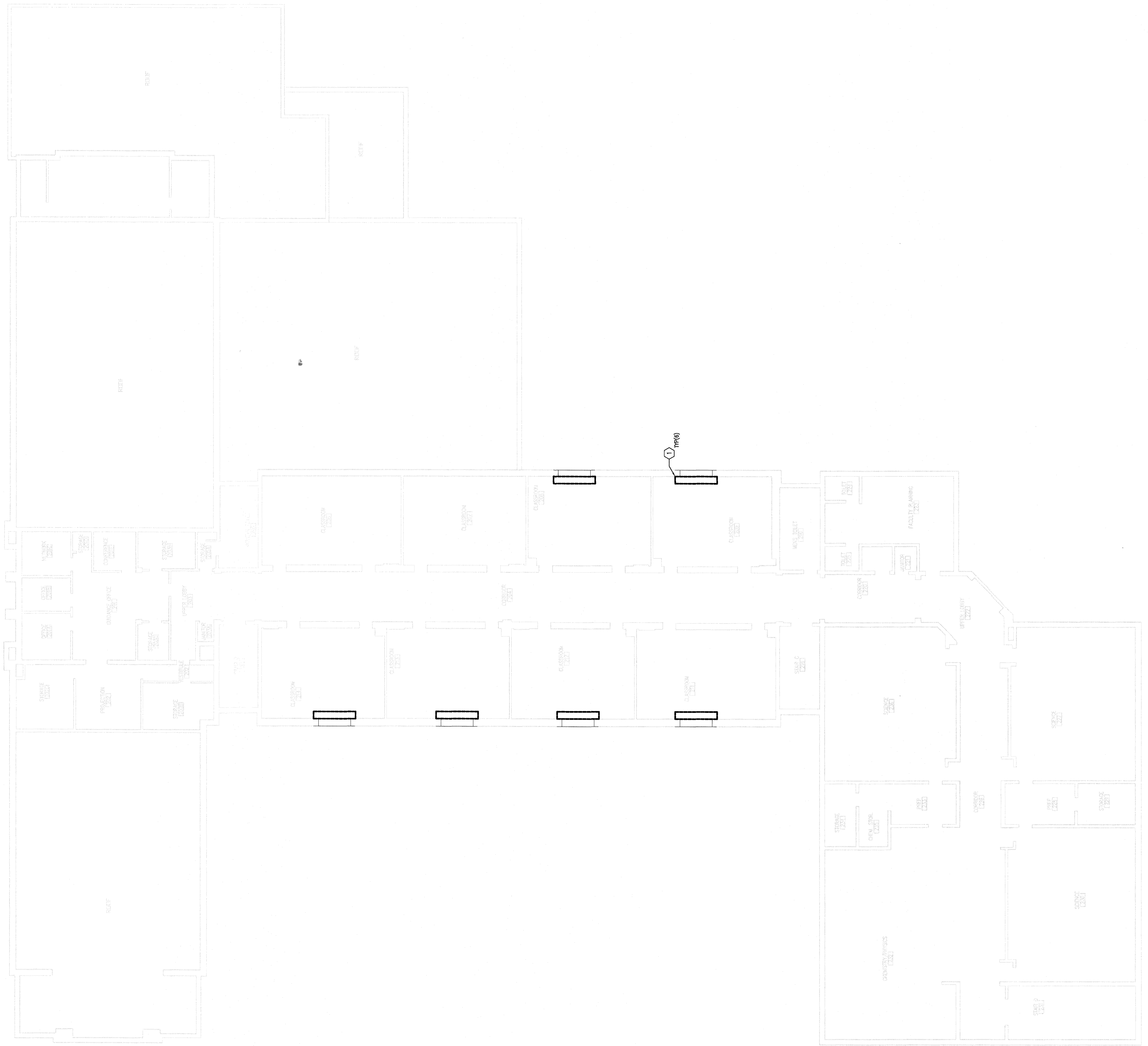
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BERKELEY SPRINGS HIGH SCHOOL
 GUARANTEED ENERGY SAVINGS CONTRACT
 MORGAN COUNTY BOARD OF EDUCATION
 MORGAN COUNTY, WV
 MECHANICAL SECOND FLOOR DEMOLITION PLAN

REVISIONS
A: BIDDING
DATE: 3/14/2017
DRAWN: _____
CHECKED: _____
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M2.2
 HIGH SCHOOL

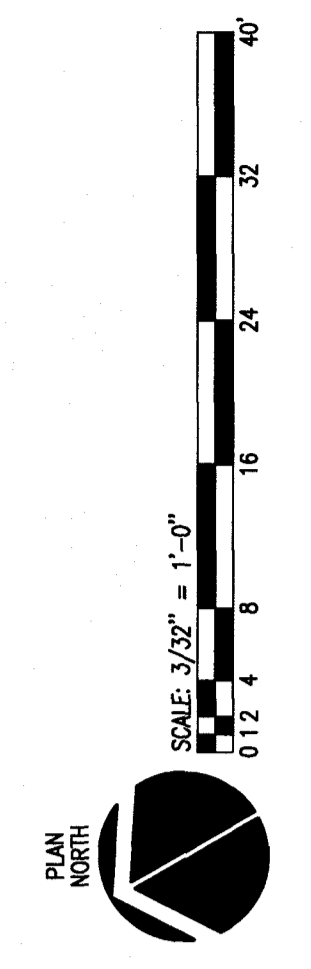


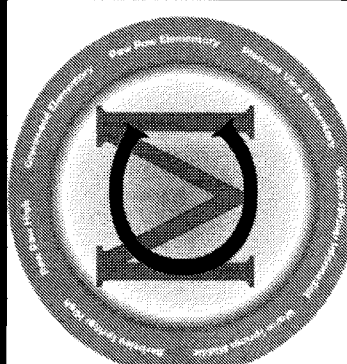
NOTED NOTES:

1. MECHANICAL CONTRACTOR TO REMOVE EXISTING SELF CONTAINED LIFE LINES AND APPURTENANCES, PIPES AND DRAINAGE W/OUT TO MATCH EXISTING. PROVIDE EXTERNAL INSULATION AND SHEET METAL ON INSIDE OF EXISTING CURSE. AIR COVER GENERAL CONTRACTOR TO SEAL AIR TIGHT.

SYMBOLS:

1. ALL EXISTING MECHANICAL EQUIPMENT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
2. ALL EXISTING MECHANICAL EQUIPMENT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.





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MORGAN COUNTY, WV

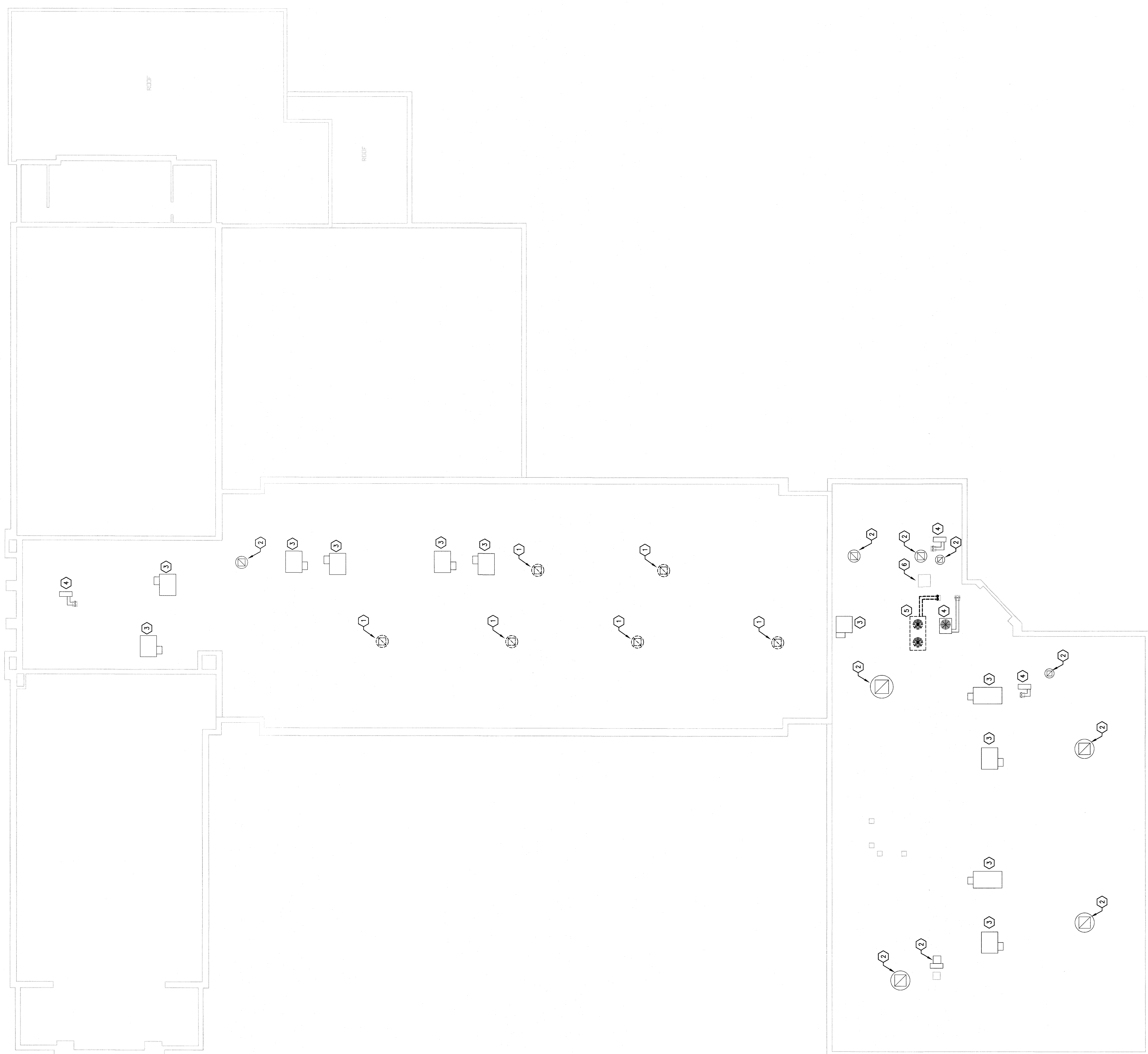
MECHANICAL DEMOLITION ROOF PLAN

REVISIONS
A: REDLINE

DATE: 3/1/2017
DRAWN:
CHECKED:

SET NO.

M2.3
HIGH SCHOOL



NOTED NOTES:

1. EXISTING RELIEF VENTILATOR TO BE REMOVED.
2. EXISTING EXHAUST FAN TO REMAIN.
3. EXISTING ROOF TOP UNIT TO REMAIN.
4. EXISTING HEAT PUMP UNIT AND ASSOCIATED PIPING TO REMAIN.
5. EXISTING HEAT PUMP UNIT AND ASSOCIATED PIPING TO BE REMOVED. CONTRACTOR SHALL RECOVER AND RECYCLE ALL REFRIGERANT.
6. EXISTING ROOF PATCH.

GENERAL NOTE:
A. REFER TO SHEET MECHANICAL LOCAL GENERAL NOTES FOR REVISIONS AND DETAILS TO BE PROVIDED FOR ANY MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

