

MECHANICAL ABBREVIATIONS

A/C or AC	AIR CONDITIONING	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	KWH	KILOWATT HOUR
AHU	AIR HANDLING UNIT	LAV	LAVATORY
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS	LEED	LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN
BTU	BRITISH THERMAL UNITS	LWT	LEAVING WATER TEMPERATURE
BTUH	BTUS PER HOUR	MAX	MAXIMUM
CA	COMBUSTION AIR	MCA	MINIMUM CIRCUIT AMPS
CC	COOLING COIL	MOC	MAXIMUM OVERCURRENT PROTECTION
CFM	AIR FLOW RATE (CUBIC FEET PER MINUTE)	MIN	MINIMUM
CHWR	CHILLED WATER RETURN	NC	NOISE CRITERIA
CHWS	CHILLED WATER SUPPLY	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CLG	CEILING	NTS	NOT TO SCALE
CW	COLD WATER	OSA	OUTSIDE AIR
DEG or °	DEGREE	PD	PRESSURE DROP
DIA or Ø	DIAMETER	PH or Ø	PHASE
DB	DRY BULB	PRV	PRESSURE REDUCING VALVE
EA	EXHAUST AIR	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
ERF	ENERGY EFFICIENCY RATIO	RTU	ROOFTOP UNIT
ESP	EXTERNAL STATIC PRESSURE	SA	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE	SEER	SEASONAL ENERGY EFFICIENCY RATIO
FCO	FLOOR CLEANOUT	SFD	COMBINATION SMOKE/FIRE DAMPER
FD	FIRE DAMPER	SP	STATIC PRESSURE
FLA	FULL LOAD AMPS	SYM	SYMBOL
FLR	FLOOR	T & P	TEMPERATURE AND PRESSURE
FPM	FEET PER MINUTE	TEMP	TEMPERATURE
FT	FEET	TYP	TYPICAL
GA	GAUGE	UMC	UNIFORM MECHANICAL CODE
GCO	GRADE CLEANOUT	UPC	UNIFORM PLUMBING CODE
GPM	WATER FLOW RATE (GALLONS PER MINUTE)	URL	URINAL
HC	HEATING COIL	V	VOLTS
HP	HORSE POWER	VTR	VENT THROUGH ROOF
HVAC	HEATING, VENTILATING, AIR CONDITIONING	W	WITH
HW	HOT WATER	WB	WET-BULB
HWR	HOT WATER RETURN	WC	WATER CLOSET
HWS	HOT WATER SUPPLY	WCO	WALL CLEANOUT
IBC	INTERNATIONAL BUILDING CODE	WH	WATER HEATER
IECC	INTERNATIONAL ENERGY CONSERVATION CODE		
IFC	INTERNATIONAL FIRE CODE		
IFGC	INTERNATIONAL FUEL GAS CODE		
IMC	INTERNATIONAL MECHANICAL CODE		
IPC	INTERNATIONAL PLUMBING CODE		

NOTE: THIS IS A STANDARD LIST OF COMMONLY USED MECHANICAL ABBREVIATIONS. SOME OF THE ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED IN THIS DRAWING PACKAGE.

MECHANICAL GENERAL NOTES

- ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE (IMC) LATEST EDITION, AND ALL LOCAL & STATE CODES.
- ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED PLUMBING CODE, AND ALL LOCAL & STATE CODES.
- ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
- MECHANICAL CONTRACTORS SHALL RECEIVE PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER BEFORE MAKING CUTS THROUGH ANY STRUCTURAL MEMBER.
- MECHANICAL CONTRACTORS SHALL COORDINATE INSTALLATION WITH CONSTRUCTION SUPERVISOR AND WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- THE MECHANICAL CONTRACTORS SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWINGS BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.
- SEE MECHANICAL SCHEDULE SHEET FOR SCHEDULED CAPACITIES OF ALL MECHANICAL EQUIPMENT AND MATERIALS SPECIFIED.
- DOMESTIC WATER SERVICE IS PROVIDED WITH A DOUBLE CHECK BACKFLOW PREVENTER.
- ALL MECHANICAL EQUIPMENT TO BE PROPOSED MUST BE ON THE APPROVED LIST PRIOR TO SUBMITTALS. ALL APPROVED MANUFACTURERS MUST BE CAPABLE OF MEETING THE REQUIREMENTS OF THE SPECIFIED EQUIPMENT.
- RUNOUT AND HOOKUP SIZES TO INDIVIDUAL PLUMBING FIXTURE CAN BE FOUND ON THE PLUMBING FIXTURE SCHEDULE.
- PROVIDE REMOTE CEILING ACCESS BALANCE DAMPERS WITH CONCEALED CHROME PLATE COVERS FOR BALANCE DAMPERS LOCATED ABOVE HARD CEILING.
- PAINT ALL VTRS, FLUES, EXHAUST CAPS, AND OTHER MECHANICAL ITEMS ON THE ROOF TO MATCH THE ROOF COLOR.
- INSULATED FLEXIBLE DUCTWORK MAY BE USED FOR RUNOUTS TO GRILLES AND DIFFUSERS, IN LENGTHS OF 6'-0" OR LESS.
- MAINTAIN MINIMUM OF 10'-0" DISTANCE BETWEEN ALL FRESH AIR INTAKES AND EXHAUST OR GAS FLUE DISCHARGES.
- THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL BACKFLOW DEVICES TO BE INSPECTED BY A CERTIFIED BACKFLOW TECHNICIAN BEFORE THE USE OF THE BUILDING POTABLE WATER SYSTEM.
- LOCATE ACCESS HATCHES SO AS TO PROVIDE OPTIMUM SERVICEABILITY TO EQUIPMENT AND/OR VALVING. SEE ARCHITECTURAL SPECIFICATION FOR TYPE AND COLOR. COORDINATE LOCATION WITH STRUCTURAL & LIGHTING.
- WHENEVER THERE IS A DISCREPANCY BETWEEN THE RUNOUT DUCT SIZE SHOWN ON THE PLANS AND THAT SHOWN IN THE SCHEDULE, ALWAYS USE THE LARGER OF THE TWO DUCT SIZES.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR VERIFICATION OF EXISTING JOB CONDITIONS PRIOR TO BID. NO ADDITIONAL COST SHALL BE AWARDED TO THE SUCCESSFUL CONTRACTOR (OR THEIR SUBCONTRACTORS) AFTER BIDS HAVE BEEN SUBMITTED AND CONTRACTS AWARDED FOR FAILURE TO VERIFY EXISTING FIELD CONDITIONS. DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR ALTERNATIVE METHODS OF INSTALLATION PRIOR TO THE BIDDING OF THIS PROJECT.
- UNLESS OTHERWISE NOTED ALL EXISTING MECHANICAL EQUIPMENT, PIPING, ETC. TO BE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR UNDER THIS CONTRACT. THE OWNER SHALL RETAIN THE RIGHT TO KEEP ANY REMOVED ITEMS.
- ALL DOMESTIC COLD AND HOT WATER LINES IN THE AREA OF WORK WHICH ARE NO LONGER IN USE DUE TO THIS PROJECT SHALL BE REMOVED BACK TO THE MAINS AND CAPPED.
- HOLES IN EXISTING WALL OR FLOORS SHALL BE PATCHED TO MATCH EXISTING WHERE PIPING, DUCTWORK, ETC. WERE REMOVED OR ADDED DURING THIS PROJECT.
- DAMAGE TO THE EXISTING FACILITY DURING THE CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.

MECHANICAL AND PLUMBING DRAWINGS LEGEND

	FLEXIBLE DUCTWORK		THREE WAY CONTROL VALVE
	DUCTWORK		TWO WAY CONTROL VALVE
	DUCTWORK BREAK		PRESSURE REDUCING VALVE
	DUCTWORK OR PIPING RISE		GATE VALVE
	CONCENTRIC SQUARE TO ROUND TRANSITION		REDUCER
	MOTORIZED DAMPER		GLOBE VALVE
	MANUAL VOLUME DAMPER		BALL VALVE
	SPIN-IN FITTING W/ AIR EXTRACTOR AND HAND DAMPER		BUTTERFLY VALVE
	HIGH EFFICIENCY FITTING W/ HAND DAMPER		BALANCE VALVE
	SWITCH		CHECK VALVE
	THERMOSTAT		FLOOR CLEANOUT
	HUMIDISTAT		WALL CLEANOUT
	TEMPERATURE SENSOR		GRADE CLEANOUT
	CARBON DIOXIDE SENSOR		WATER HAMMER ARRESTOR
	CARBON MONOXIDE SENSOR		FLOOR DRAIN
	NITROGEN DIOXIDE SENSOR		FLOOR SINK
	DUCT SMOKE DETECTOR		GAS PRESSURE REGULATOR W/ GAS COCK
	COMBINATION SMOKE/FIRE DAMPER		PRESSURE RELIEF VALVE
	FIRE DAMPER		VENT-THROUGH-ROOF
	SMOKE DAMPER		VENT
	EQUIPMENT CALLOUT		SOIL, WASTE, OR SANITARY SEWER
	TURNING VANES		ACID WASTE LINE
	INTAKE OR EXHAUST		ACID VENT LINE
	DIRECTION OF AIRFLOW		STORM DRAIN
	SUPPLY DIFFUSER		ROOF DRAIN LINE
	RETURN GRILLE		OVERFLOW DRAIN LINE
	EXHAUST GRILLE		CONDENSATE DRAIN LINE
	FLOOR GRILLE		DOMESTIC COLD WATER (CW)
	CEILING EXHAUST FAN		DOMESTIC HOT WATER (HW)
	TEMPERATURE GAUGE		DOMESTIC HOT WATER RETURN (HWR)
	PRESSURE GAUGE (LIQUID FILLED W/ ISOLATION VALVE)		TEMPERED WATER (TW)
	TEMPERATURE SENSOR (DUCT OR PIPING)		MEDIUM PRESSURE NATURAL GAS
	FLOW SWITCH		LOW PRESSURE NATURAL GAS
	STAINLESS STEEL BRAIDED FLEX CONNECTION		FIRE SPRINKLER LINE
	ELASTOMETRIC FLEX CONNECTOR		GEO THERMAL WATER SUPPLY
	SUCTION DIFFUSER		GEO THERMAL WATER RETURN
	Y TYPE STRAINER (1 1/2" OR LARGER PROVIDED W/ BLOW DOWN VALVE)		CHILLED WATER SUPPLY
	FLOW DIRECTION		CHILLED WATER RETURN
	DEMOLITION / EQUIPMENT TO BE REMOVED		CONDENSER WATER SUPPLY
	NEW TO EXISTING CONNECTION POINT		CONDENSER WATER RETURN
	EXISTING		HEATING WATER SUPPLY
	FUTURE		HEATING WATER RETURN
	NEW		LIQUID REFRIGERANT LINE
	REDUCED PRESSURE BACKFLOW PREVENTER		SUCTION REFRIGERANT LINE
	DOUBLE CHECK BACKFLOW PREVENTER		SLOPE PIPE IN DIRECTION OF ARROW
	UNION		PIPE ANCHOR
	AIR VENT		PIPE GUIDE
	TRIPLE DUTY VALVE		CAP

NOTE: THIS IS A LIST OF COMMONLY USED MECHANICAL AND PLUMBING SYMBOLS. SOME OF THE SYMBOLS SHOWN ABOVE MAY NOT BE USED IN THIS DRAWING PACKAGE.

ENERGY CODE COMPLIANCE

- A. COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE IS REQUIRED FOR THIS PROJECT. THESE NOTES COVER MANDATORY REQUIREMENTS OF THE CODE. ADDITIONAL REQUIREMENTS ARE NOTED ON THE DRAWINGS AND IN THE SPECIFICATIONS.
- B. MINIMUM REQUIREMENTS FOR SUPPLY AND RETURN DUCTWORK INSULATION:
- R-6: DUCTS LOCATED IN UNCONDITIONED SPACES (SPACE NEITHER HEATED NOR COOLED SUCH AS ABOVE CEILING SPACES, WALL SPACES, DUCT CHASES, SOFFITS, ATTICS, CRAWL SPACES, UNHEATED BASEMENTS, AND UNHEATED GARAGES).
 - R-12: DUCTS LOCATED OUTSIDE OF THE BUILDING'S INSULATION ENVELOPE (SUCH AS ABOVE THE ATTIC INSULATION).
- TYPICAL INSULATION THICKNESS REQUIRED TO MEET THESE REQUIREMENTS:
- DUCT WRAP:
R-6 = 1-1/2"
R-12 = 4"
 - DUCT LINER:
R-6 = 1-1/2"
R-12 = 3"
- C. CONTRACTOR SHALL VERIFY WITH THE MANUFACTURER, THE R-VALUES OF THE ACTUAL INSULATION USED. R-VALUES SHALL BE INSTALLED VALUES.
- D. WHERE DUCTS USED FOR COOLING ARE EXTERNALLY INSULATED, THE INSULATION SHALL BE COVERED WITH A VAPOR RETARDER HAVING A MAXIMUM PERMEANCE OF 0.05 PERM OR ALUMINUM FOIL HAVING A MINIMUM THICKNESS OF 2 MILS. INSULATION HAVING A PERMEANCE OF 0.05 PERMS OR LESS SHALL NOT BE REQUIRED TO BE COVERED. ALL JOINTS AND SEAMS SHALL BE SEALED TO MAINTAIN THE CONTINUITY OF THE VAPOR RETARDER.
- E. ALL DUCT JOINTS, SEAMS, AND CONNECTIONS SHALL BE FASTENED AND SEALED WITH WELDS, GASKETS, ADHESIVES, MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS, OR TAPES, TAPES AND MASTICS SHALL BE LISTED AND LABELED PER UL181A OR UL181B. DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS. DUCT CONNECTIONS TO FLANGES OR EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED.
- F. MINIMUM REQUIREMENTS (THICKNESS) FOR PIPING INSULATION SHALL BE AS FOLLOWS:

FLUID	NOMINAL PIPE DIAMETER	1/2" TO < 1 1/2"	1 1/2" TO < 4"	4" AND ABOVE
REFRIGERANT		SEE SPECIFICATIONS		

THE ABOVE INSULATION IS BASED ON HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU-INCH/HOUR-FT²-F.

- G. DOMESTIC HOT WATER PIPING SYSTEMS SHALL BE INSULATED WITH 1" INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU-INCH/HOUR-FT²-F.
- H. DOMESTIC WATER HEATERS WHICH ARE NOT PROVIDED WITH INTEGRAL HEAT TRAPS AND SERVE NONCIRCULATING SYSTEMS SHALL BE PROVIDED WITH HEAT TRAPS ON THE SUPPLY AND DISCHARGE PIPING AT THE WATER HEATER.
- I. DOMESTIC HOT WATER SYSTEMS WITH RECIRCULATION PUMPS OR ELECTRIC HEAT TRACE SHALL BE CONTROLLED WITH 7-DAY TIME CLOCKS.
- J. AN OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY. THE O&M MANUAL SHALL CONTAIN THE FOLLOWING INFORMATION AS A MINIMUM:
- EQUIPMENT CAPACITY (INPUT & OUTPUT).
 - EQUIPMENT OPERATING AND MAINTENANCE INSTRUCTIONS.
 - CONTROL SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCES.
 - CONTROL SYSTEM SETPOINTS SHALL BE SHOWN ON CONTROL DRAWINGS, AT CONTROL DEVICES, OR IN PROGRAMMING COMMENT ON DDC SYSTEMS.
 - A COMPLETE WRITTEN NARRATIVE ON HOW EACH MECHANICAL SYSTEM IS INTENDED TO OPERATE.

ENERGY CODE COMMISSIONING COMPLIANCE NOTES

SECTION 408.2.5 DOCUMENTATION REQUIREMENTS

IT SHALL BE THE COMMISSIONING AGENT'S RESPONSIBILITY TO PROVIDE ALL BELOW NOTED DOCUMENTS WITHIN 90 DAYS OF CERTIFICATE OF OCCUPANCY:

- A. **AS-BUILT DRAWINGS** - DRAWINGS SHALL INCLUDE THE LOCATION AND PERFORMANCE DATA OF ALL PIECES OF MECHANICAL EQUIPMENT.
- A.1. AS BUILT DRAWINGS TO BE FURNISHED TO THE COMMISSIONING AGENT BY THE MECHANICAL CONTRACTOR.

- B. **OPERATING AND MAINTENANCE MANUALS** - MANUALS SHALL INCLUDE THE FOLLOWING:

- SUBMITTAL DATA ON ALL PIECES OF EQUIPMENT REQUIRING MAINTENANCE.
- MANUFACTURER'S OPERATIONS AND MAINTENANCE DATA ON ALL PIECES OF EQUIPMENT. ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
- NAME AND ADDRESS AND PHONE NUMBER OF AT LEAST ONE (1) SERVICE PROVIDED.
- MECHANICAL CONTROL SYSTEMS MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, EQUIPMENT AND SYSTEM SCHEMATICS, AND CONTROL SEQUENCES OF OPERATIONS. DESIRED OR FIELD DETERMINED SETPOINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT ALL CONTROL DEVICES OR FOR DIGITAL CONTROL SYSTEMS, IN THE SYSTEM PROGRAMMING INSTRUCTIONS.
- A NARRATIVE ON HOW EACH MECHANICAL SYSTEM IS INTENDED TO OPERATE, INCLUDING RECOMMENDED SETPOINTS.

- C. **SYSTEM BALANCE REPORT** - REPORT SHALL BE IN COMPLIANCE WITH IECC 408.2.2 AND INCLUDE THE FOLLOWING:

- ALL AIR SYSTEMS BALANCED. THIS SHALL INCLUDE ALL AIR OUTLETS. SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH IMC CHAPTER 6, AND IECC SECTION 408.2.2.
- ALL HYDRONIC SYSTEMS BALANCED. THIS SHALL INCLUDE ALL HYDRONIC BALANCING VALVES. EACH SYSTEM SHALL BE PROPERLY BALANCED TO MINIMIZE THROTTLING LOSSES, AND THEN THE PUMP IMPELLER SHALL BE TRIMMED OR PUMP SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. HYDRONIC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH IMC CHAPTER 6, AND IECC SECTION 408.2.2.

- D. **FINAL COMMISSIONING REPORT** - A REPORT OF TEST PROCEDURES AND RESULTS IDENTIFIED AS THE "FINAL COMMISSIONING REPORT" SHALL BE DELIVERED TO THE BUILDING OWNER. THE REPORT SHALL INCLUDE THE FOLLOWING:

- LIST OF FUNCTIONAL TESTS USED DURING THE COMMISSIONING PROCESS ON EACH PIECE OF EQUIPMENT.
- RESULTS OF ALL FUNCTIONAL TESTS ON ALL PIECES OF EQUIPMENT.
- LIST OF DEFICIENCIES FOUND AND CORRESPONDING CORRECTIVE MEASURES EITHER IMPLEMENTED OR PROPOSED ON EACH PIECE OF EQUIPMENT.
- LIST OF EQUIPMENT NOT ABLE TO BE FUNCTIONALLY TESTED DUE TO CURRENT CLIMATE CONDITIONS. THESE PIECES OF EQUIPMENT WILL FUNCTIONALLY TESTED ONCE CLIMATE CHANGES ALLOW.

SECTION 408.2.1 COMMISSIONING REQUIREMENTS

PRIOR TO PASSING THE FINAL MECHANICAL INSPECTION, THE REGISTERED DESIGN PROFESSIONAL (OR OTHERWISE APPROVED INDIVIDUAL) SHALL PROVIDE EVIDENCE OF THE MECHANICAL SYSTEMS COMMISSIONING AND COMPLETION IN ACCORDANCE WITH THE BELOW NOTED REQUIREMENTS:

- A. **COMMISSIONING PLAN** - A COMMISSIONING PLAN SHALL BE DEVELOPED BY A REGISTERED DESIGN PROFESSIONAL (OR OTHERWISE APPROVED INDIVIDUAL) AND SHALL INCLUDE THE FOLLOWING:

- A NARRATIVE OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF THE COMMISSIONING PROCESS, INCLUDING THE NECESSARY INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES IN THE COMMISSIONING PROCESS DURING EACH PHASE.
- A LISTING OF THE MECHANICAL EQUIPMENT, APPLIANCE, OR SYSTEMS INTENDED TO BE COMMISSIONED ALONG WITH AN EQUIPMENT SPECIFIC NARRATIVE ON THE TESTS FOR EACH SPECIFIC MECHANICAL EQUIPMENT, APPLIANCE, OR SYSTEM.
- A LISTING OF THE FUNCTIONS TO BE TESTED ON EACH MECHANICAL EQUIPMENT, APPLIANCE, OR SYSTEM. FUNCTIONAL TESTING SHALL INCLUDE COMPLETE CALIBRATION ON ALL COMPONENTS, CONFIRMATION OF ALL APPLICABLE MODES OF OPERATION INCLUDING BUT NOT LIMITED TO HEATING, COOLING, VENTILATION, AND ECONOMIZER.
- CONDITIONS UNDER WHICH THE ABOVE NOTED TESTS ARE TO BE PERFORMED. IF CLIMATE CONDITIONS PROHIBIT THE FUNCTIONAL TESTING OF CERTAIN MODES OF OPERATIONS, THEN THOSE SPECIFIC TESTS MAY BE POSTPONED UNTIL SUCH CLIMATE CONDITIONS ALLOW FOR CORRESPONDING TESTS.
- MEASURABLE PASS/FAIL CRITERIA FOR ALL FUNCTIONAL TESTS.

- B. **SYSTEM ADJUSTING AND BALANCING** - THE ENTIRE MECHANICAL SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND THE FOLLOWING:

- ALL AIR SYSTEMS BALANCED. THIS SHALL INCLUDE ALL AIR OUTLETS AND ZONE TERMINAL DEVICE. SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH IMC CHAPTER 6, AND IECC SECTION 408.2.2.1.
- ALL HYDRONIC SYSTEMS BALANCED. THIS SHALL INCLUDE ALL HYDRONIC BALANCING VALVES. EACH SYSTEM SHALL BE PROPERLY BALANCED TO MINIMIZE THROTTLING LOSSES, AND THEN THE PUMP IMPELLER SHALL BE TRIMMED OR PUMP SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. HYDRONIC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH IMC CHAPTER 6, AND IECC SECTION 408.2.2.2.
- ALL CONTROLS SHALL BE CALIBRATED AND ADJUSTED TO ENSURE PROPER SEQUENCE OF OPERATIONS IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.
- ALL ECONOMIZERS SHALL BE ADJUSTED TO OPERATE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- C. **PRELIMINARY COMMISSIONING REPORT** - A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE REGISTERED DESIGN PROFESSIONAL (OR OTHERWISE APPROVED INDIVIDUAL) AND PROVIDED TO THE BUILDING OWNER. THE REPORT SHALL INCLUDE THE FOLLOWING:

- LIST OF DEFICIENCIES FOUND DURING THE TESTING REQUIRED BY THE COMMISSIONING PLAN THAT HAVE NOT YET BEEN CORRECTED AT THE TIME OF THE REPORT.
- LIST OF EQUIPMENT OR SYSTEMS NOT ABLE TO BE FUNCTIONALLY TESTED DUE TO UNFAVORABLE CURRENT CLIMATE CONDITIONS. THESE PIECES OF EQUIPMENT AND SYSTEMS WILL BE FUNCTIONALLY TESTED ONCE CLIMATE CHANGES ALLOW. TESTING IS DEFERRED UNTIL CLIMATE CONDITIONS ALLOW PROPER TESTING.
- DESCRIPTION OF NECESSARY CLIMATE CONDITIONS REQUIRED FOR FUNCTIONAL TESTING OF DEFERRED EQUIPMENT AND OR SYSTEMS.

* THE BUILDING, OR PORTION THEREOF, SHALL NOT PASS THE FINAL MECHANICAL INSPECTION UNTIL SUCH TIME AS THE CODE OFFICIAL HAS RECEIVED A LETTER OF TRANSMITTAL FROM THE BUILDING OWNER ACKNOWLEDGING THAT THE BUILDING OWNER HAS RECEIVED THE PRELIMINARY COMMISSIONING REPORT. THE CODE OFFICIAL MAY REQUIRE A COPY OF THE PRELIMINARY REPORT FOR REVIEW.



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Revisions	Description	Date
#1	Addendum #1	05/11/2023
#2	Addendum #2	05/16/2023

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

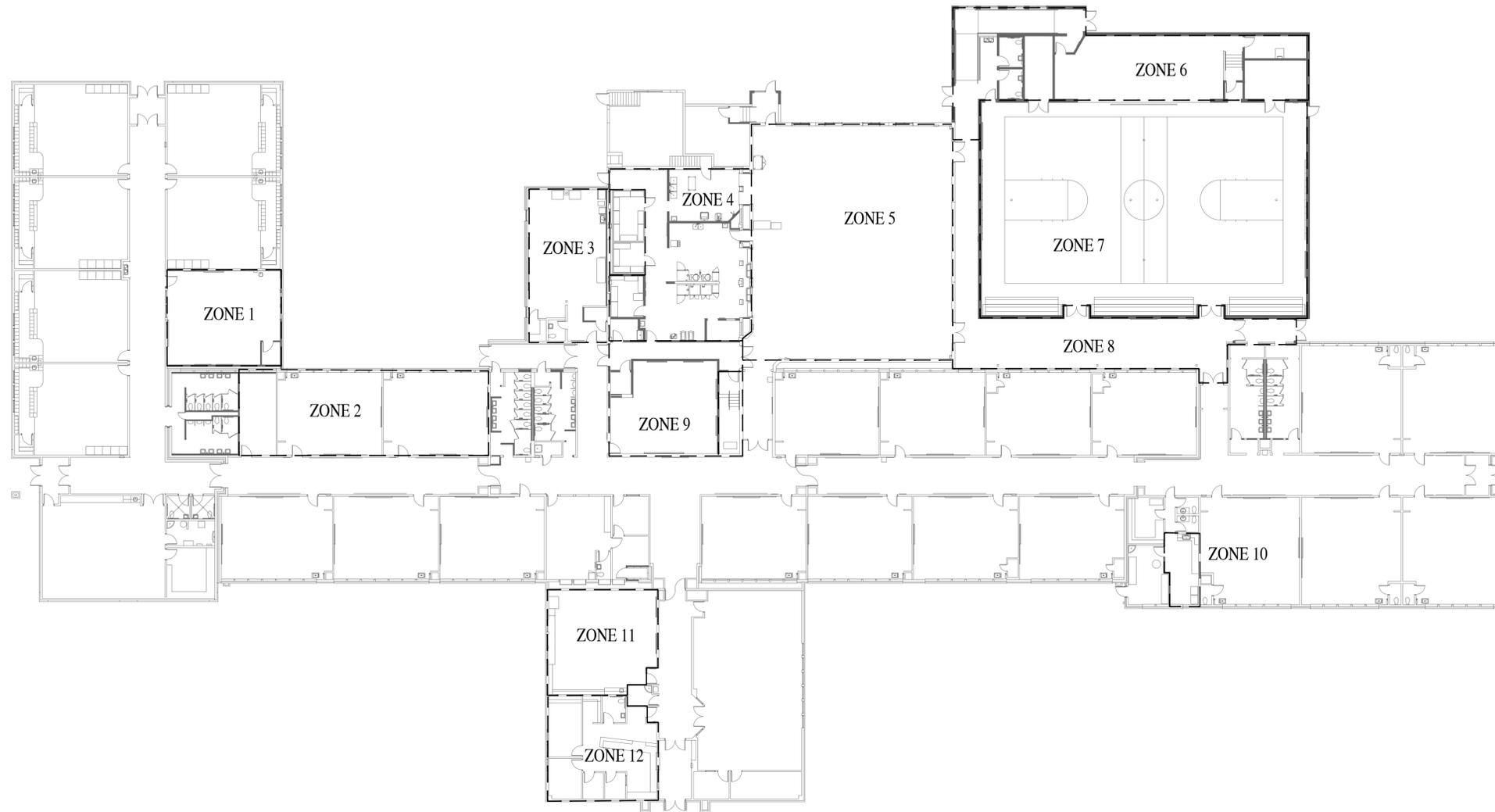
DRAWN BY: JM/CD
CHECKED BY: BC

Agency Review

DRAWING NO.

M-0.0

MECHANICAL COVER SHEET



Mechanical Zone Plan
Scale: 1" = 20'-0"

MECHANICAL COMCHECK REPORT

Quantity System Type & Description	Compliance Status
1 3.5-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 140 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 82 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 1 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 1 Supply, Constant Volume, 3000 CFM, 3.0 motor nameplate hp, 2.4 design brake hp (2.4 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
4 10-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 224 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 111 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 4 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 4 Supply, Constant Volume, 4000 CFM, 3.0 motor nameplate hp, 2.4 design brake hp (2.4 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
2 15-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 350 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 140 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 2 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 2 Supply, Constant Volume, 5000 CFM, 3.0 motor nameplate hp, 2.4 design brake hp (2.4 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
7 3-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 110 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 55 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 7 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 7 Supply, Constant Volume, 1800 CFM, 1.0 motor nameplate hp, 0.7 design brake hp (0.7 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
1 5-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 150 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 75 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 5 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 5 Supply, Constant Volume, 2000 CFM, 1.0 motor nameplate hp, 0.7 design brake hp (0.7 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
6 10-TON RTU (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 110 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 75 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 6 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 6 Supply, Constant Volume, 3400 CFM, 3.0 motor nameplate hp, 1.3 design brake hp (1.3 max. BHP), 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
3 1.5-TON DUCTLESS (Single Zone) Split System Heat Pump Heating: 1 each - Heat Pump, Capacity = 18 MBtu/h Proposed Efficiency = 8.20 HSPF, Required Efficiency = 8.20 HSPF Cooling: 1 each - Heat Pump, Capacity = 18 MBtu/h, Required Efficiency = 14.00 SEER Proposed Part Load Efficiency = 9.00, Required Part Load Efficiency = 9.00 Fan System: FAN SYSTEM 3 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 3 Supply, Constant Volume, 4800 CFM, 1.0 motor nameplate hp, 0.9 design fan efficiency, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes
1 Walk-In Cooler (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 343 MBtu/h Proposed Efficiency = 82.00% E1, Required Efficiency = 80.00% E1 or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 211 MBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.30 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.40 EER, Required Part Load Efficiency = 12.40 EER Fan System: FAN SYSTEM 8 - Compliance (Duct NF and fan efficiency method) - Passes Notes: FAN 8 Supply, Constant Volume, 4800 CFM, 3.0 motor nameplate hp, 90.0 fan efficiency grade, 90.0 total fan efficiency, 90.0 design fan efficiency - fan exception: Single fan <= 5HP	Passes

Mechanical Compliance Statement
 Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMCHECK version COMCHECKweb and to comply with any applicable mandatory requirements listed in the respective Checklists.
 Christopher Dyke, PE
 Date: 2/23/2023

MECHANICAL LOAD CALCULATIONS

MUSGROVE ENGINEERING, PA
234 S. WHISPERWOOD WAY BOISE, IDAHO 83709

Zone Summary

Zone Reference	FLOOR SQ. FT.	Heating Load		Sensible Cooling Load		Total Cooling Load		NOMINAL TON (TONS-BTU/RTON)	SQ. FT PER NOMINAL TON	NUMBER OF PEOPLE	OSA	EXHAUST TONS	Unit Selection
		BTUH	KW	BTUH	BTUH	BTUH	TONS						
1 ZONE 1 New Class 120	950	45,988	13	50,306	38,721	3.2	308.7	30	524	0	4-TON RTU		
2 ZONE 2 Classes 134, 136 and new office	2478	100,342	29	59,396	77,969	6.5	381.7	66	1108	0	6-TON RTU		
3 ZONE 3 New Faculty	1167	46,604	14	35,735	52,285	4.4	267.8	59	456	0	4-TON (E)		
4 ZONE 4 New Kitchen	1906	92,090	27	55,911	74,746	6.2	308.0	67	1123	0	7.5-TON RTU		
5 ZONE 5 New Cafeteria	4330	330,723	97	197,072	282,377	23.5	184.0	282	3618	0	(2) 10-TON RTU		
6 ZONE 6 New Stage	2494	121,542	36	61,539	80,132	6.7	372.0	67	909	0	6-TON RTU		
7 ZONE 7 New Gym	8373	437,643	128	322,245	542,245	45.2	141.0	400	4228	0	(2) 15-TON RTU		
8 ZONE 8 Gym Foyer	1895	47,308	14	69,887	75,217	6.3	302.3	19	261	0	6-TON RTU		
9 ZONE 9 New Multi Purpose Class	1194	45,339	13	28,994	37,689	3.1	360.2	31	518	0	4-TON RTU		
10 ZONE 10 Prep Room	220	4,797	1	3,697	4,119	0.3	841.1	2	29	0	1.5-TON DS		
11 ZONE 11 Computer Lab	1009	48,592	14	53,976	63,232	5.3	191.5	33	564	0	5-TON RTU		
12 ZONE 12 Office	1007	23,688	7	16,754	18,437	1.5	655.4	6	113	0	EXISTING		
Total Loads =		25059	1,344,477	384	935,212	1,347,197	112.3	223	1062	13451	0		

Energy Compliance Calculations (Not Equipment Schedule)
 Equipment is selected based on next available size.

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Revisions	Date
#1	05/11/2023
#2	05/16/2023

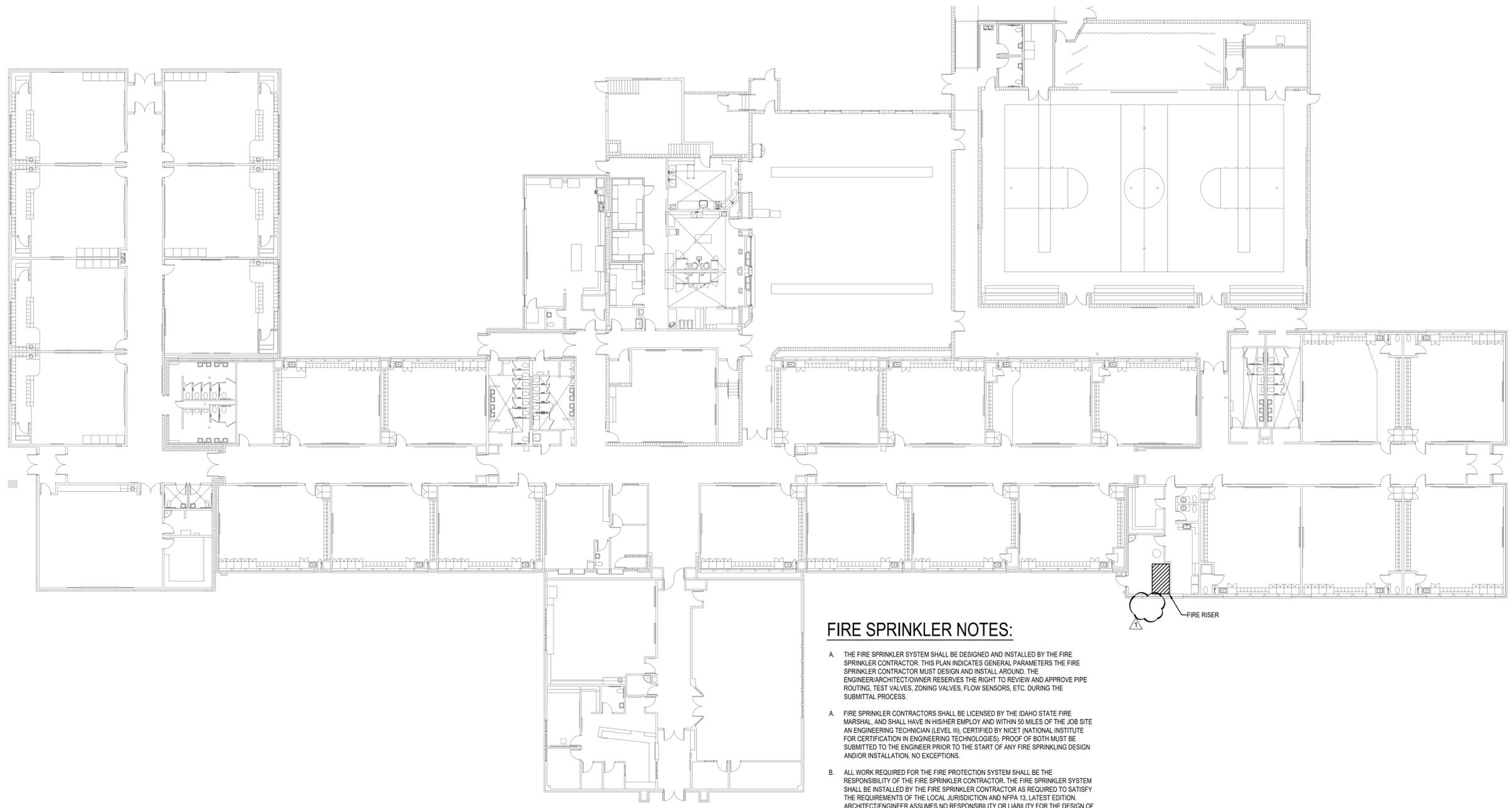
Jefferson Elementary School
 Addition and Remodel
 600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
 LKV PROJECT # -
 REVISIONS:

DRAWN BY: JM/CDC
 CHECKED BY: BC

Agency Review

DRAWING NO.
M-0.1
 ENERGY COMPLIANCE

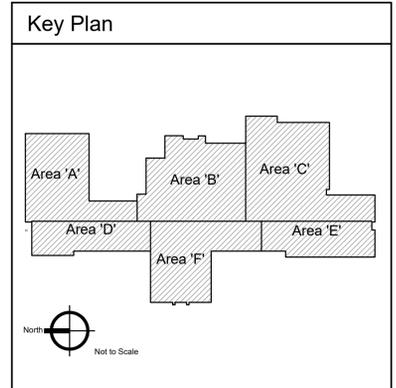



Fire Protection Criteria Plan
 Scale: 1/16" = 1'-0"

FIRE SPRINKLER NOTES:

- A. THE FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE FIRE SPRINKLER CONTRACTOR. THIS PLAN INDICATES GENERAL PARAMETERS THE FIRE SPRINKLER CONTRACTOR MUST DESIGN AND INSTALL AROUND. THE ENGINEER/ARCHITECT/OWNER RESERVES THE RIGHT TO REVIEW AND APPROVE PIPE ROUTING, TEST VALVES, ZONING VALVES, FLOW SENSORS, ETC. DURING THE SUBMITTAL PROCESS.
- A. FIRE SPRINKLER CONTRACTORS SHALL BE LICENSED BY THE IDAHO STATE FIRE MARSHAL, AND SHALL HAVE IN HIS/HER EMPLOY AND WITHIN 50 MILES OF THE JOB SITE AN ENGINEERING TECHNICIAN (LEVEL III), CERTIFIED BY NICET (NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES). PROOF OF BOTH MUST BE SUBMITTED TO THE ENGINEER PRIOR TO THE START OF ANY FIRE SPRINKLING DESIGN AND/OR INSTALLATION, NO EXCEPTIONS.
- B. ALL WORK REQUIRED FOR THE FIRE PROTECTION SYSTEM SHALL BE THE RESPONSIBILITY OF THE FIRE SPRINKLER CONTRACTOR. THE FIRE SPRINKLER SYSTEM SHALL BE INSTALLED BY THE FIRE SPRINKLER CONTRACTOR AS REQUIRED TO SATISFY THE REQUIREMENTS OF THE LOCAL JURISDICTION AND NFPA 13, LATEST EDITION. ARCHITECT/ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE DESIGN OF THE FIRE SPRINKLER SYSTEM.
- C. REFER TO FIRE SPRINKLER SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- D. PROVIDE RECESSED HEADS IN ALL AREAS EXCEPT WHERE ROOM IS OPEN TO STRUCTURE.
- E. PROVIDE PROTECTIVE COVERS ON SPRINKLER HEADS IN GYM AND CAFETERIA.
- F. NO STANDOFF SPRINKLER HEADS (THOSE THAT DROP BELOW CEILING OR SOFFIT TO PROVIDE BETTER COVERAGE) ALLOWED. ALL SPRINKLER HEADS MUST BE FLUSH WITH CEILING OR EXTERIOR SOFFIT.
- G. REFERENCE ARCHITECTURAL SECTIONS FOR LOCATION OF BUILDING INSULATION ENVELOPES.
- H. PROVIDE SPRINKLER COVERAGE AT ALL SKYLIGHTS REQUIRING COVERAGE. COORDINATE EXACT ROUTING OF SPRINKLER LINE WITH THE ARCHITECT.
- I. PIPE ALL AUXILIARY DRAINS TO EXTERIOR OF BUILDING OR APPROVED RECEPTACLE. COORDINATE WITH ARCHITECT.
- J. IN COLD SPACES WHERE A NON-FREEZE FIRE SPRINKLER SYSTEM IS REQUIRED, CONTRACTOR SHALL PROVIDE A DRY PIPE SPRINKLER SYSTEM. THE SYSTEM IN ALL OTHER AREAS SHALL BE WET PIPE.
- K. PIPING SHALL RUN ABOVE CEILING IN ALL BUILDING AREAS WITH SUSPENDED OR DROPPED CEILING.
- L. ALL EXPOSED PIPING LOCATIONS, HORIZONTAL AND VERTICAL, SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.
- M. FDC SHALL BE REMOTE MOUNTED LOCATION SHALL BE APPROVED BY JEROME FIRE CODE OFFICIAL.

 FIRE RISER



Revisions	Description	Date
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# 2	Addendum #2	05/16/2023

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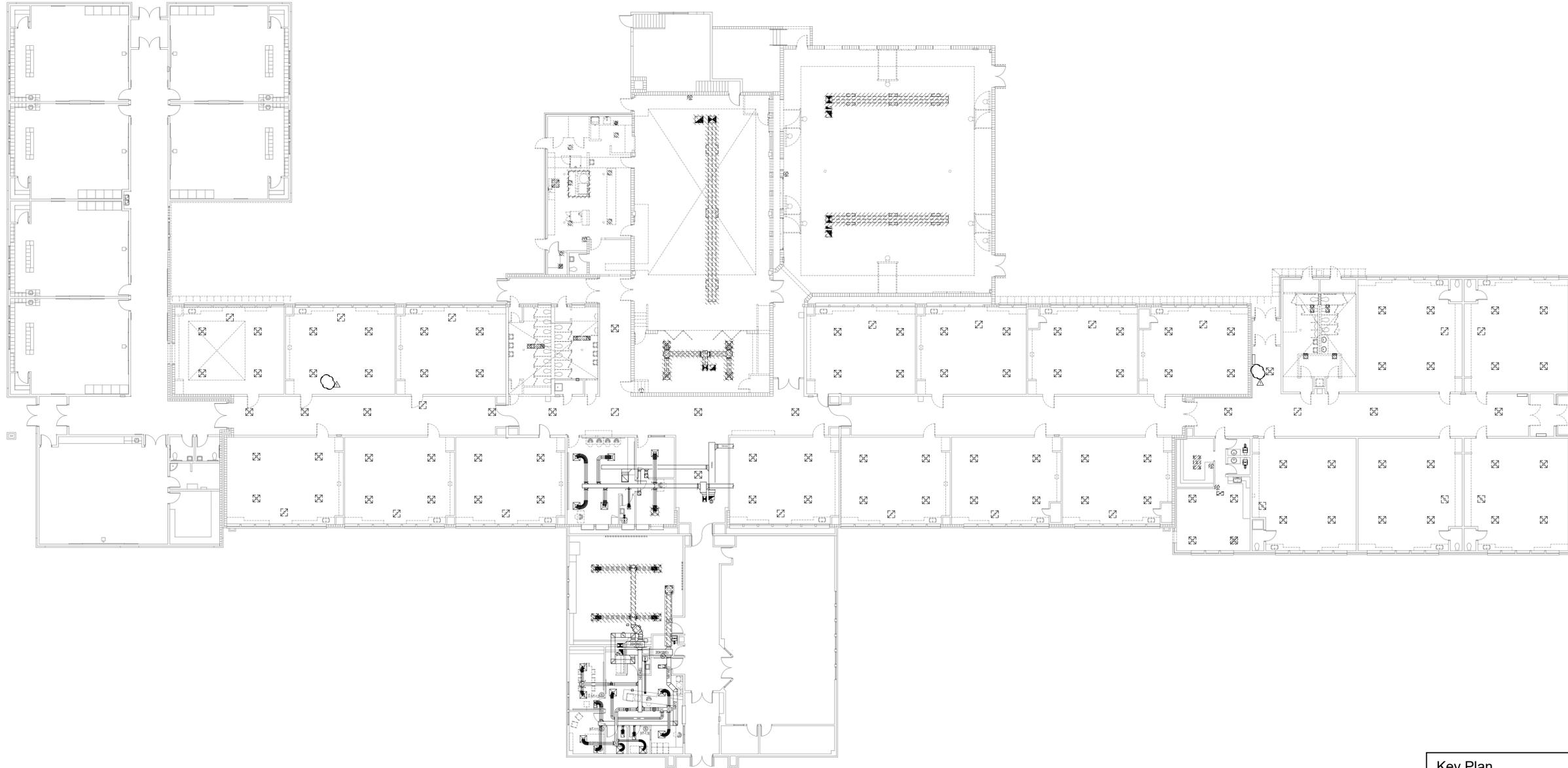
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DRAWING NO.

M-0.2
 FIRE PROTECTION
 CRITERIA PLAN

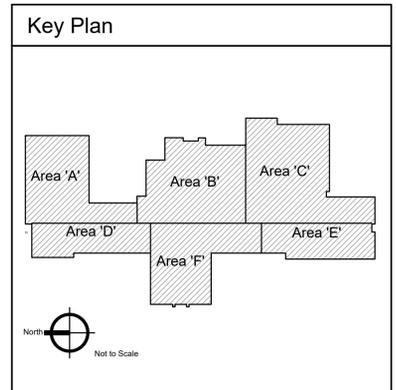
KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. KEYNOTES



Overall Mechanical Demolition Floor Plan

Scale: 1/16" = 1'-0"



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DRAWING NO.

M-1.0

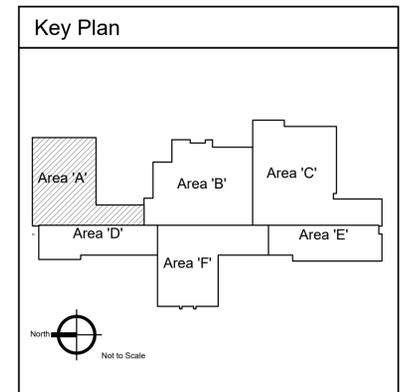
OVERALL MECHANICAL
DEMOLITION FLOOR PLAN

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. REMOVE EXISTING GRILLE / DIFFUSER FOR NEW WORK. ASSOCIATED DUCTWORK SHALL REMAIN.
- 2. BID ALT#2: REMOVE EXISTING WALL SENSOR AND ASSOCIATED WIRE.
- 3. SENSOR TO BE REMOVED



1 Mechanical Demolition Plan - Area 'A'
Scale: 1/8" = 1'-0"



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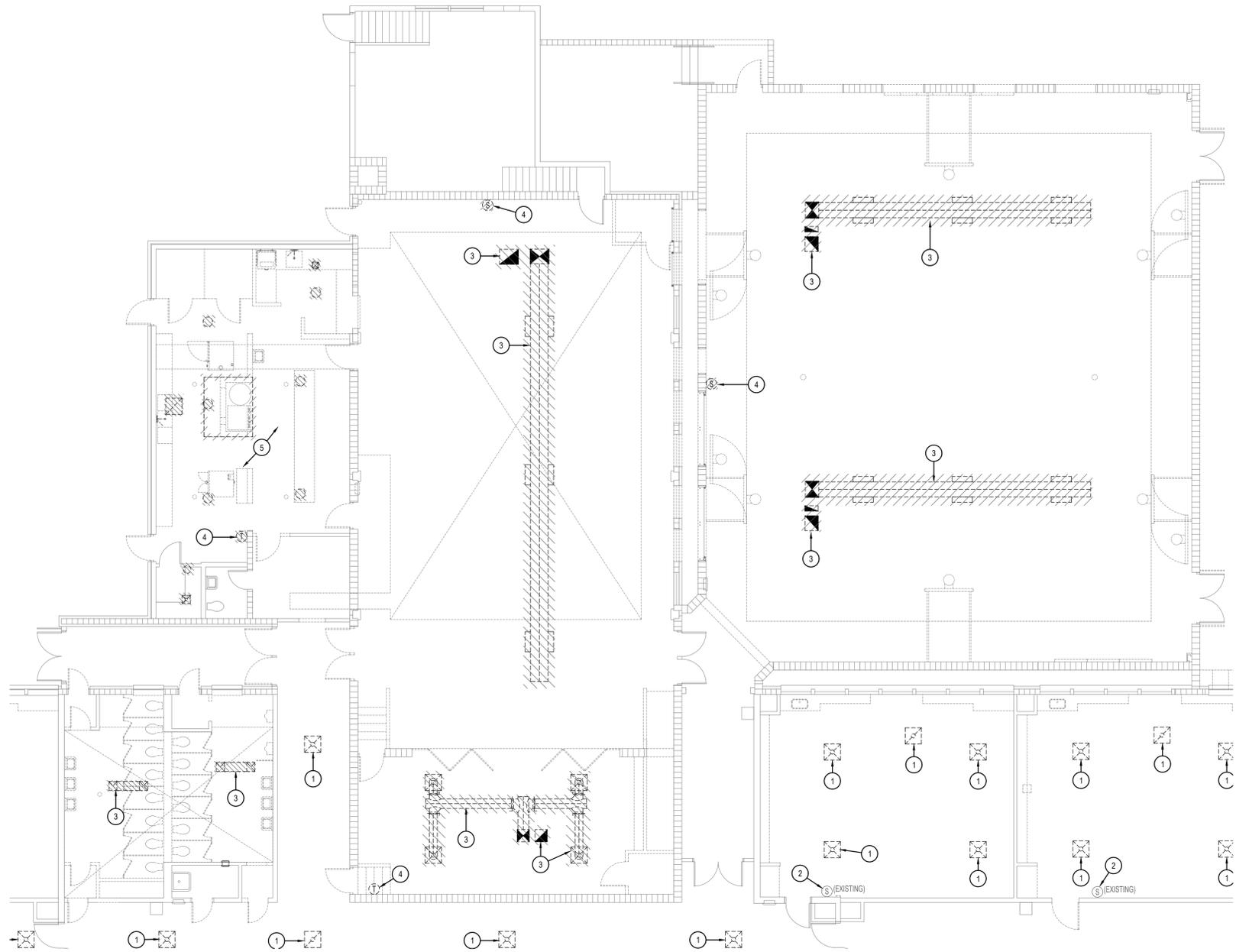
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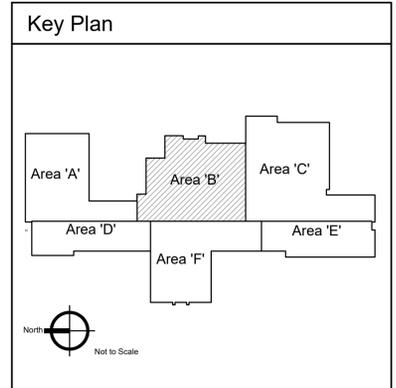
M-1.1
MECHANICAL DEMOLITION
PLAN - AREA 'A'



1 Mechanical Demolition Plan - Area 'B'
Scale: 1/8" = 1'-0"

KEYED NOTES:

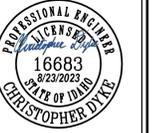
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- 1. REMOVE EXISTING GRILLE / DIFFUSER FOR NEW WORK. ASSOCIATED DUCTWORK SHALL REMAIN.
- 2. BID ALT#2: REMOVE EXISTING WALL SENSOR AND ASSOCIATED WIRE.
- 3. REMOVE EXISTING DUCTWORK AND ASSOCIATED PARTS INDICATED WITH HATCHING.
- 4. REMOVE EXISTING WALL SENSOR AND WIRE.
- 5. REMOVE ALL HVAC EQUIPMENT SERVING EXISTING KITCHEN, INCLUDING BUT NOT LIMITED TO DUCTWORK, GRILLES, EXHAUST FANS AND HOOD(S). FIELD VERIFY EXACT CONDITIONS.



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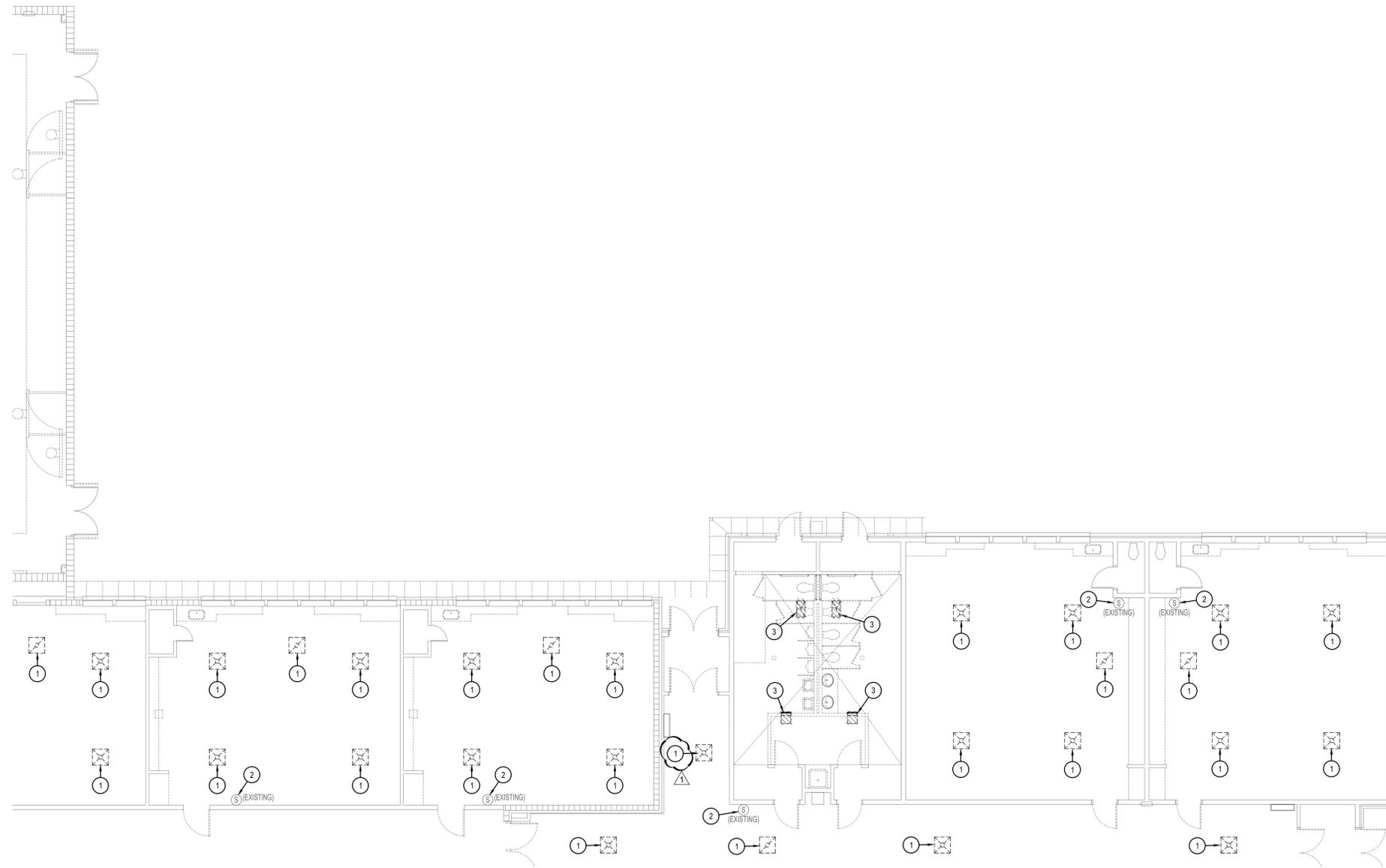
DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

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DRAWING NO.

M-1.2
MECHANICAL DEMOLITION
PLAN - AREA 'B'



1 Mechanical Demolition Plan - Area 'C'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1. REMOVE EXISTING GRILLE / DIFFUSER FOR NEW WORK. ASSOCIATED DUCTWORK SHALL REMAIN.
 2. BID ALT#2: REMOVE EXISTING WALL SENSOR AND ASSOCIATED WIRE.
 3. REMOVE EXISTING DUCTWORK AND ASSOCIATED GRILLES.



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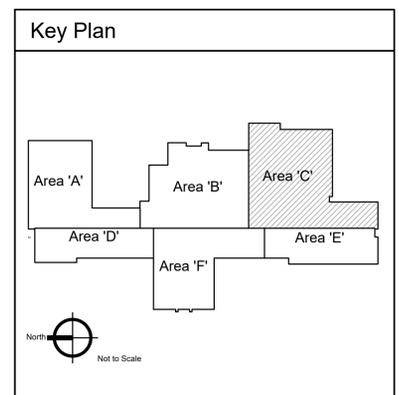
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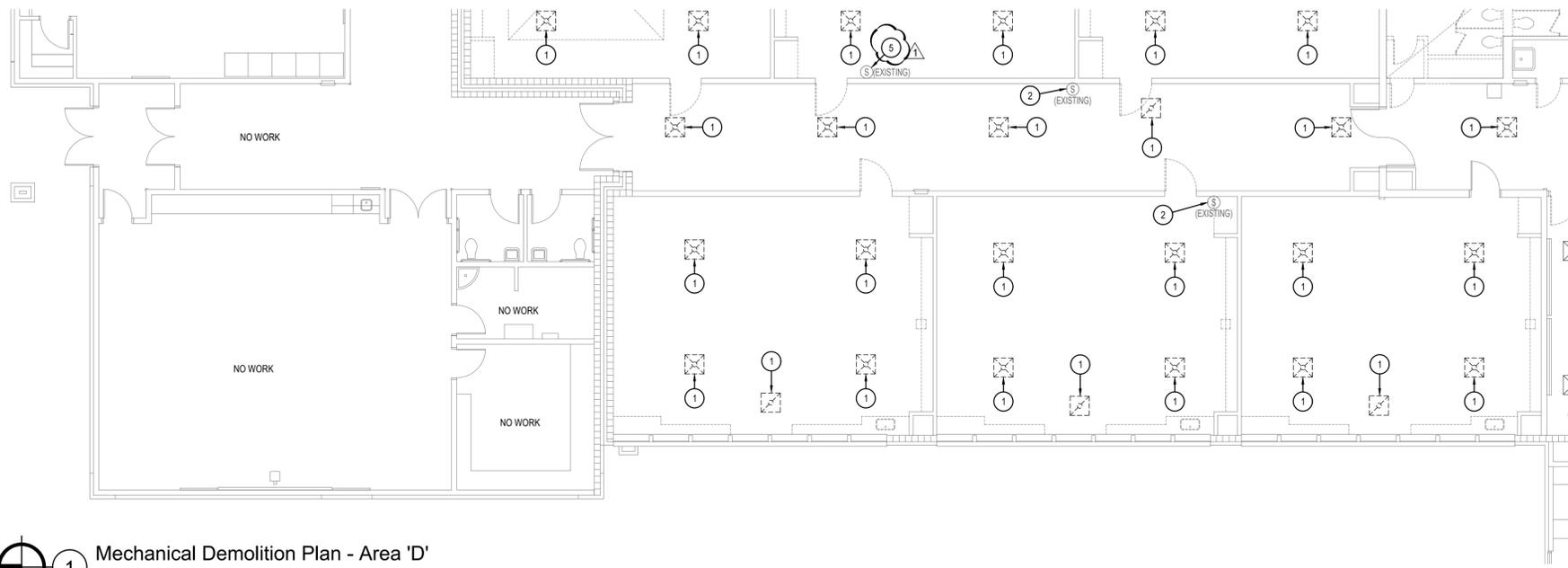
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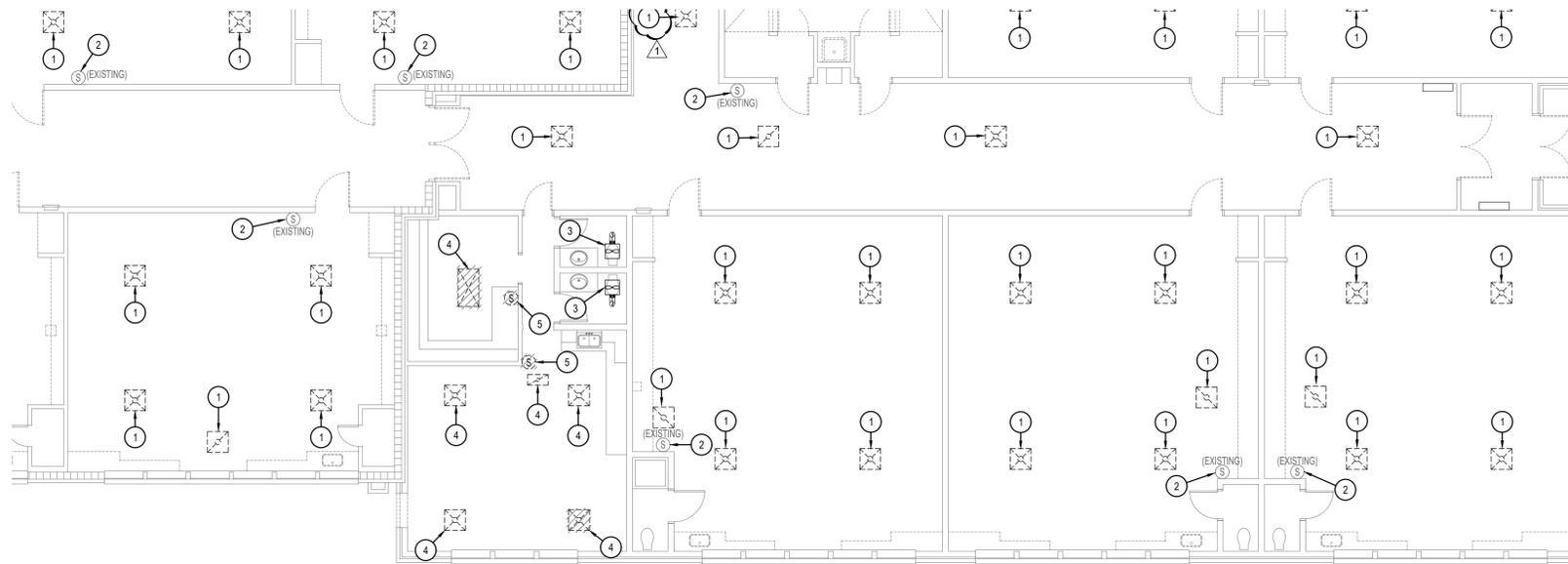
M-1.3

MECHANICAL DEMOLITION
PLAN - AREA 'C'





1 Mechanical Demolition Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Mechanical Demolition Plan - Area 'E'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. REMOVE EXISTING GRILLE / DIFFUSER FOR NEW WORK. ASSOCIATED DUCTWORK SHALL REMAIN.
- 2. BID ALT#2: REMOVE EXISTING WALL SENSOR AND ASSOCIATED WIRE.
- 3. EXISTING EXHAUST FANS REMAIN.
- 4. REMOVE EXISTING GRILLE / DIFFUSER AND ALL ASSOCIATED DUCTWORK.
- 5. REMOVE EXISTING WALL SENSOR AND ASSOCIATED WIRE.



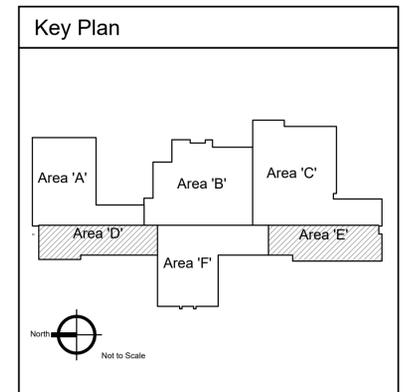
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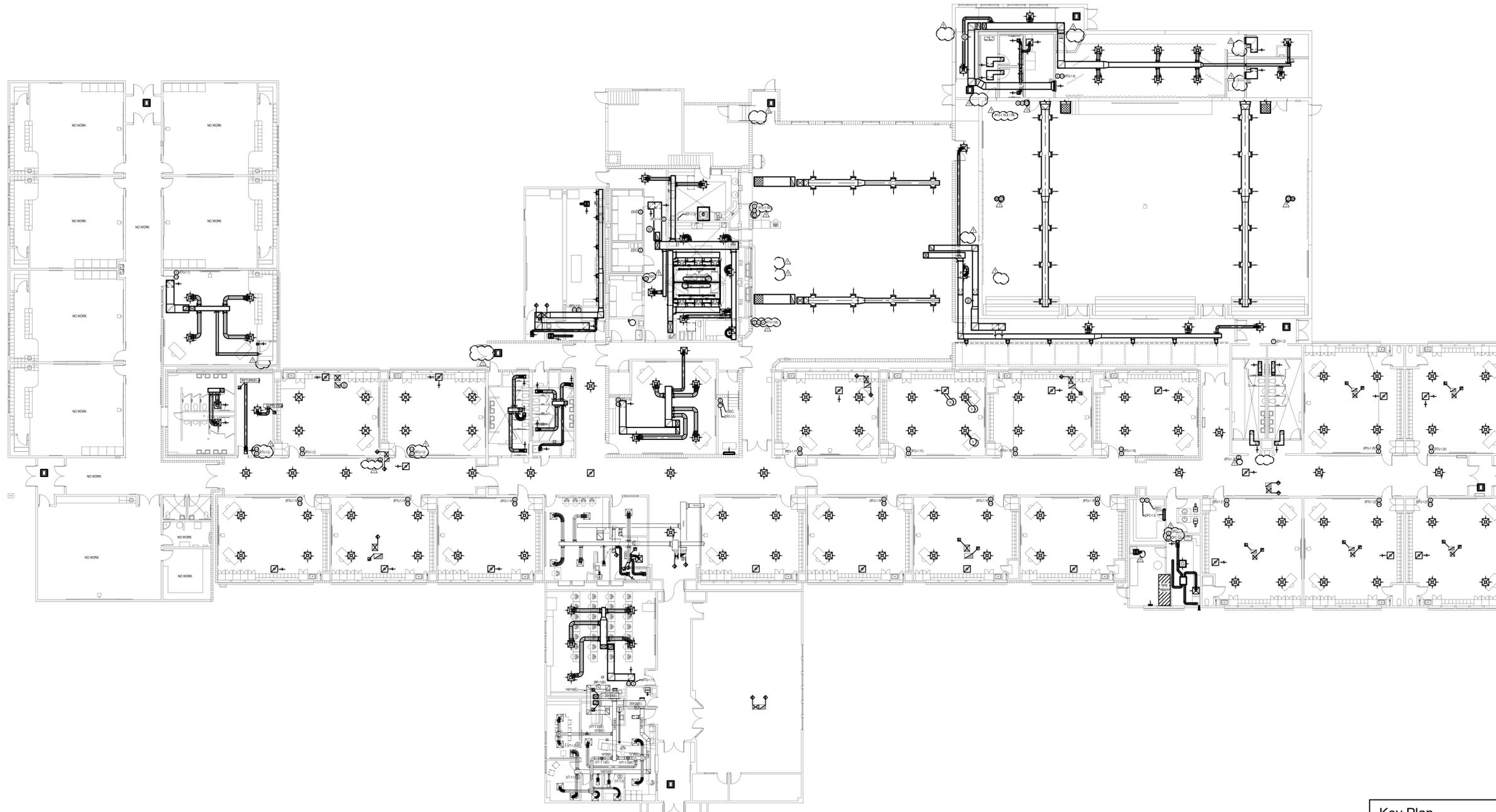
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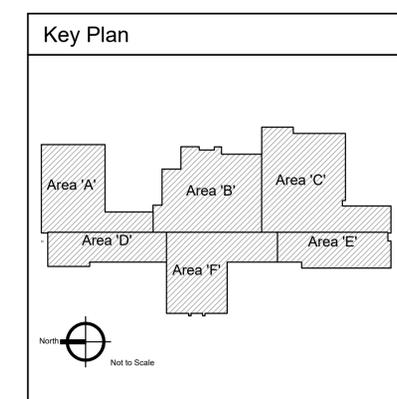
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M-1.4

MECHANICAL DEMOLITION
PLAN - AREA 'D' & 'E'



 Overall Mechanical New Work Floor Plan
 Scale: 1/16" = 1'-0"



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DRAWING NO.

M-2.0
 OVERALL MECHANICAL
 NEW WORK FLOOR PLAN




1 Mechanical New Work Plan - Area 'A'
 Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. ROUTE RETURN AND SUPPLY DUCTS UP THROUGH ROOF AND TRANSITION TO UNIT AS REQUIRED. PROVIDE TURNING VANES IN ELBOWS AND A FLEXIBLE DUCT CONNECTION AT UNIT.
- 2. PROVIDE TRANSFER DUCT AND GRILLES. MOUNT BOTTOM OF GRILLES 6" AFF. SIZE DUCT SAME AS GRILLE.
- 3. CONNECT NEW RTU TO EXISTING DUCTWORK. TRANSITION DUCTWORK AS REQUIRED. PROVIDE FLEXIBLE CONNECTION AT UNIT. FIELD VERIFY EXACT CONDITIONS.
- 4. PROVIDE NEW SUPPLY DIFFUSER IN NEW CEILING. CONNECT TO EXISTING SUPPLY DUCTWORK. BALANCE AIR FLOW AS INDICATED.
- 5. PROVIDE NEW RETURN GRILLE IN NEW CEILING. CONNECT TO EXISTING RETURN DUCTWORK.
- 6. ROUTE EXHAUST DUCT UP THROUGH ROOF TO ROOF MOUNTED EXHAUST FAN. TRANSITION TO UNIT AS REQUIRED. PROVIDE FLEXIBLE DUCT CONNECTION.
- 7. SMOKE DUCT DETECTOR IN RETURN DUCT SHALL SHUT DOWN UNIT UPON DETECTION OF SMOKE. SMOKE DETECTOR SHALL BE PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.
- 8. BID ALT#2: CONNECT EXISTING DUCT DROPS TO NEW UNIT. MODIFICATION SHALL BE REQUIRED. WHERE APPLIES REUSE EXISTING SMOKE DUCT DETECTOR.



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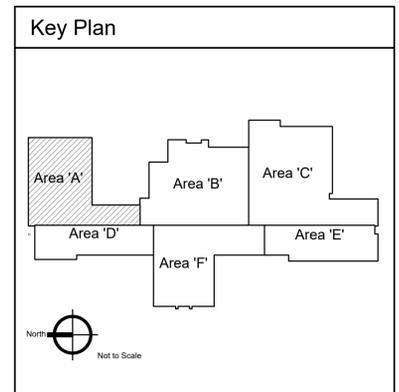
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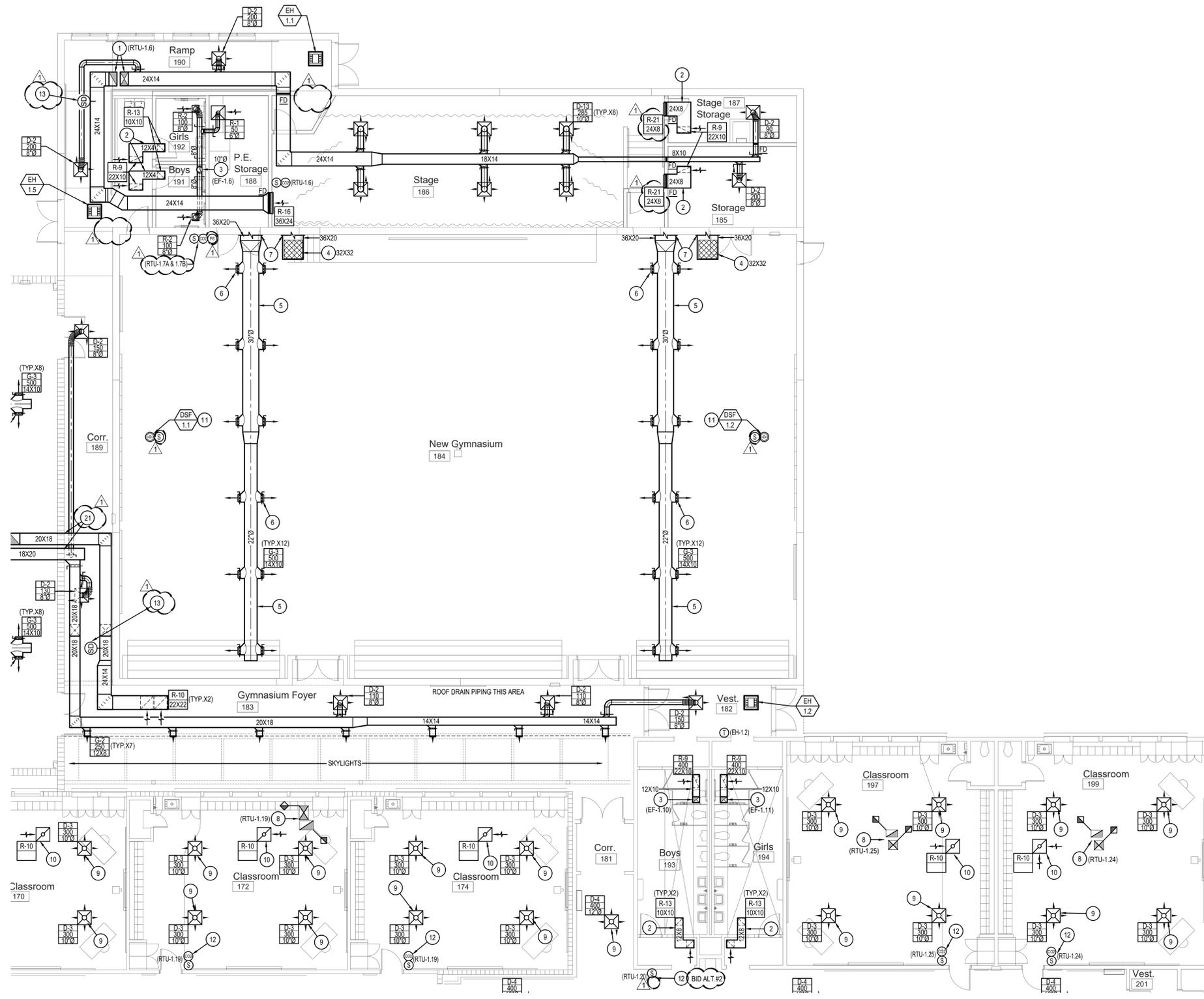
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DRAWING NO.

M-2.1
MECHANICAL NEW WORK
PLAN - AREA 'A'

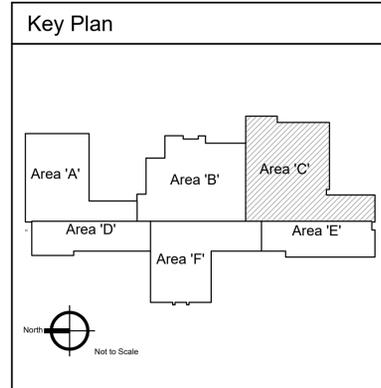




1 Mechanical New Work Plan - Area 'C'
Scale: 1/8" = 1'-0"

KEYED NOTES:

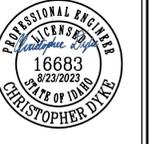
- # SYMBOL USED FOR NOTE CALLOUT.
- 1. ROUTE RETURN AND SUPPLY DUCTS UP THROUGH ROOF AND TRANSITION TO UNIT AS REQUIRED. PROVIDE TURNING VANES IN ELBOWS AND A FLEXIBLE DUCT CONNECTION AT UNIT.
- 2. PROVIDE TRANSFER DUCT AND GRILLES, AT CEILING. SEE DETAIL.
- 3. ROUTE EXHAUST DUCT UP THROUGH ROOF TO ROOF MOUNTED EXHAUST FAN. TRANSITION TO UNIT AS REQUIRED. PROVIDE FLEXIBLE DUCT CONNECTION.
- 4. PROVIDE OPENING ON TOP SIDE OF DUCT. COVER WITH EXPANDED METAL SCREENING. MAINTAIN A MINIMUM DISTANCE OF 6" BETWEEN OPENING (TOP SIDE OF DUCT) AND STRUCTURE. SIZE OF OPENING AS INDICATED.
- 5. SUSPEND EXPOSED ROUND SPIRAL DUCTWORK. SEE DETAIL.
- 6. PROVIDE TAKE OFF WITH DAMPER AND GRILLE, ANGLE TAKE OFF 45 DEGREES DOWNWARD FROM HORIZONTAL. TYPICAL. SEE DETAIL.
- 7. ROUTE DUCTWORK THROUGH WALL TO LOWER ROOF. SEE HVAC ROOF PLAN FOR CONTINUATION.
- 8. BID ALT#2: CONNECT EXISTING DUCT DROPS TO NEW UNIT. MODIFICATION SHALL BE REQUIRED. WHERE APPLIES REUSE EXISTING SMOKE DUCT DETECTOR.
- 9. PROVIDE NEW SUPPLY DIFFUSER IN NEW CEILING. CONNECT TO EXISTING SUPPLY DUCTWORK. BALANCE AIR FLOW AS INDICATED.
- 10. PROVIDE NEW RETURN GRILLE IN NEW CEILING. CONNECT TO EXISTING RETURN DUCTWORK.
- 11. SUSPEND DESTRATIFICATION FAN HIGH IN STRUCTURE. SEE DETAIL AND DDC SCHEMATIC.
- 12. BID ALT#2: PROVIDE NEW DDC SENSORS.
- 13. SMOKE DUCT DETECTOR IN RETURN DUCT SHALL SHUT DOWN UNIT UPON DETECTION OF SMOKE. SMOKE DETECTOR SHALL BE PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.



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Revisions	Date
1	05/11/2023
2	05/16/2023

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

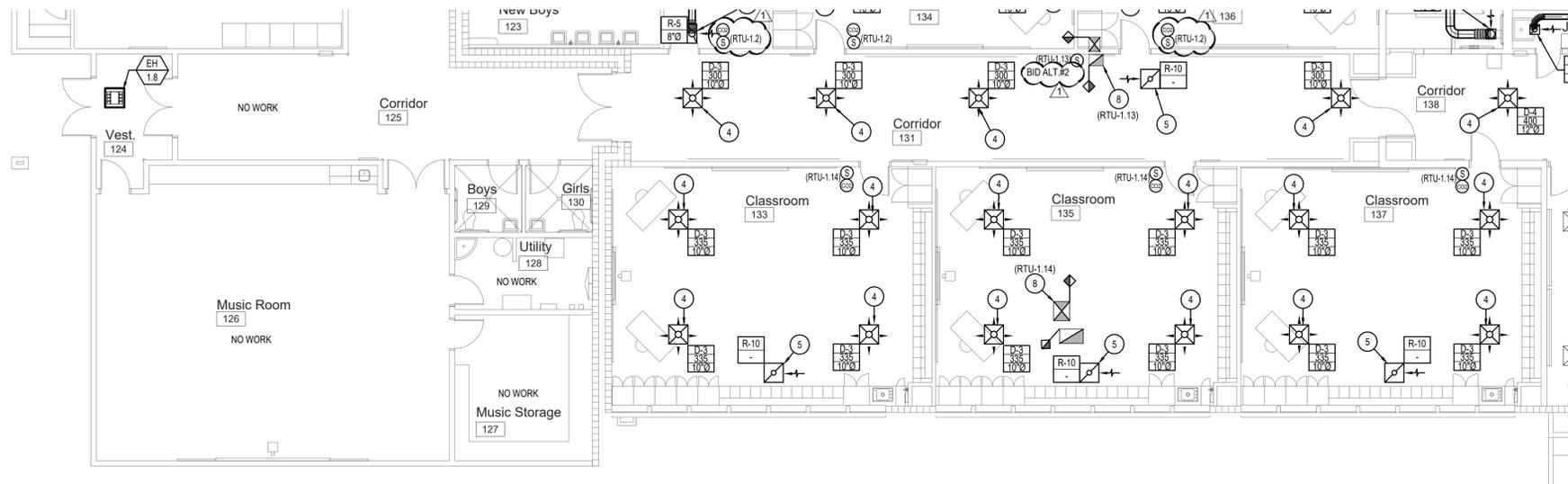
DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

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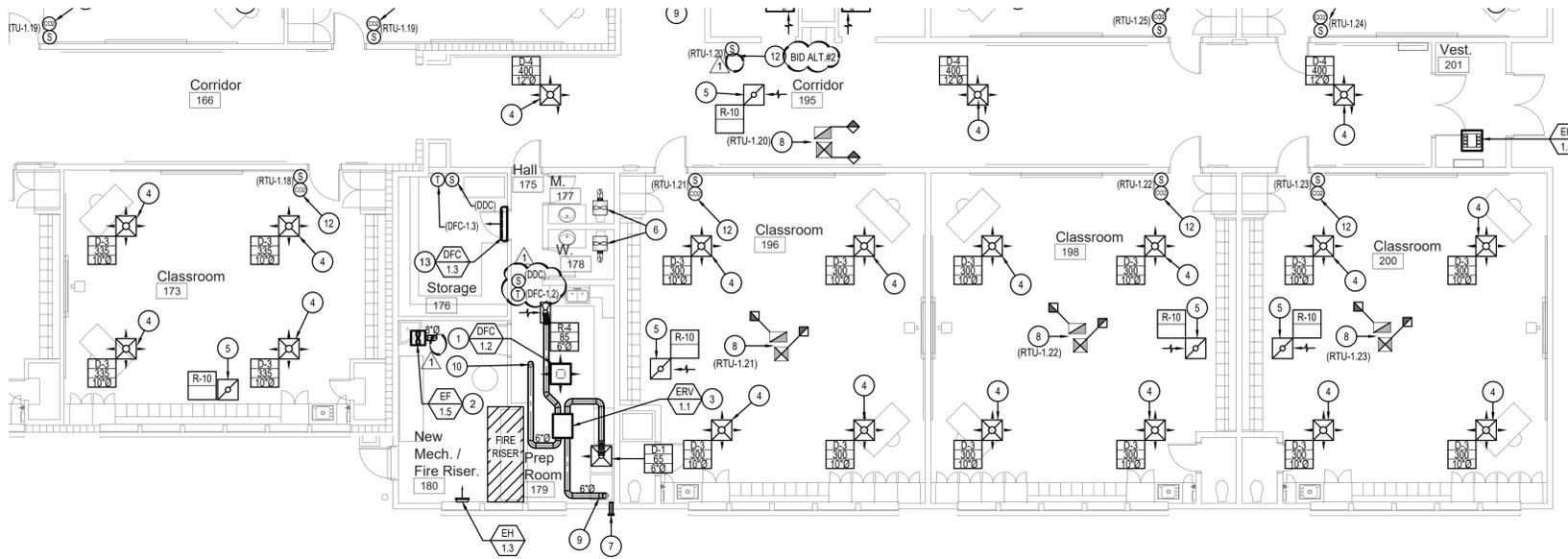
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DRAWING NO.

M-2.3
MECHANICAL NEW WORK
PLAN - AREA 'C'



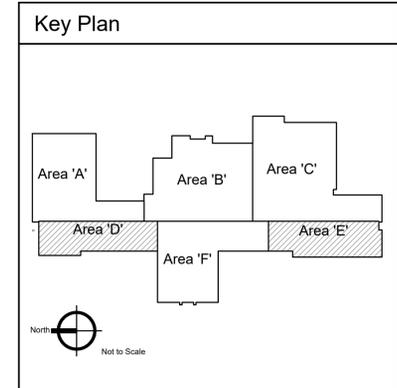
1 Mechanical New Work Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Mechanical New Work Plan - Area 'E'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- 1. PROVIDE CEILING MOUNTED DUCTLESS FAN COIL CASSETTE. ROUTE REFRIGERATION LINES TO CORRESPONDING ROOF MOUNTED UNIT.
- 2. PROVIDE AND SURFACE MOUNT CEILING MOUNTED EXHAUST FAN. LOCATE FAN BELOW FIRE RATED CEILING. FABRICATE FRAME TO HOUSE FAN. PROVIDE FLEX CONNECTION AND VIBRATION ISOLATION. ROUTE DUCT UP THROUGH FIRE RATED CEILING PROTECT RATING WITH FIRE DAMPER AND ROUTE DUCT UP THROUGH ROOF, TERMINATE WITH CURB AND CAP.
- 3. PROVIDE ERU ABOVE CEILING. PROVIDE FLEX CONNECTIONS AND VIBRATION ISOLATION.
- 4. PROVIDE NEW SUPPLY DIFFUSER IN NEW CEILING. CONNECT TO EXISTING SUPPLY DUCTWORK. BALANCE AIR FLOW AS INDICATED.
- 5. PROVIDE NEW RETURN GRILLE IN NEW CEILING. CONNECT TO EXISTING RETURN DUCTWORK.
- 6. EXISTING EXHAUST FAN TO REMAIN. NO WORK.
- 7. ROUTE 4" DRYER DUCT FROM DRYER TO EXTERIOR WALL. TERMINATE WITH METAL DRYER WALL VENT.
- 8. BID ALT#2: CONNECT EXISTING DUCT DROPS TO NEW UNIT. MODIFICATION SHALL BE REQUIRED, WHERE APPLIES REUSE EXISTING SMOKE DUCT DETECTOR.
- 9. ROUTE ERU EXHAUST UP THROUGH ROOF. MAINTAIN A MINIMUM DISTANCE OF 10'-0" FROM ANY FRESH AIR INTAKE.
- 10. ROUTE ERU FRESH AIR INTAKE DUCT UP THROUGH ROOF.
- 11. NOT USED.
- 12. BID ALT#2: PROVIDE NEW DDC SENSORS.
- 13. MOUNT DUCTLESS SPLIT FAN COIL HIGH ABOVE DOOR. MAINTAIN MANUFACTURERS REQUIRED CLEARANCES. ROUTE REFRIGERATION LINES HIDDEN OUT OF SITE IN WALLS AND CEILINGS TO ROOF MOUNTED CORRESPONDING CONDENSING UNIT.



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Revisions	Date
Description	05/11/2023
Addendum #1	05/16/2023
Addendum #2	

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

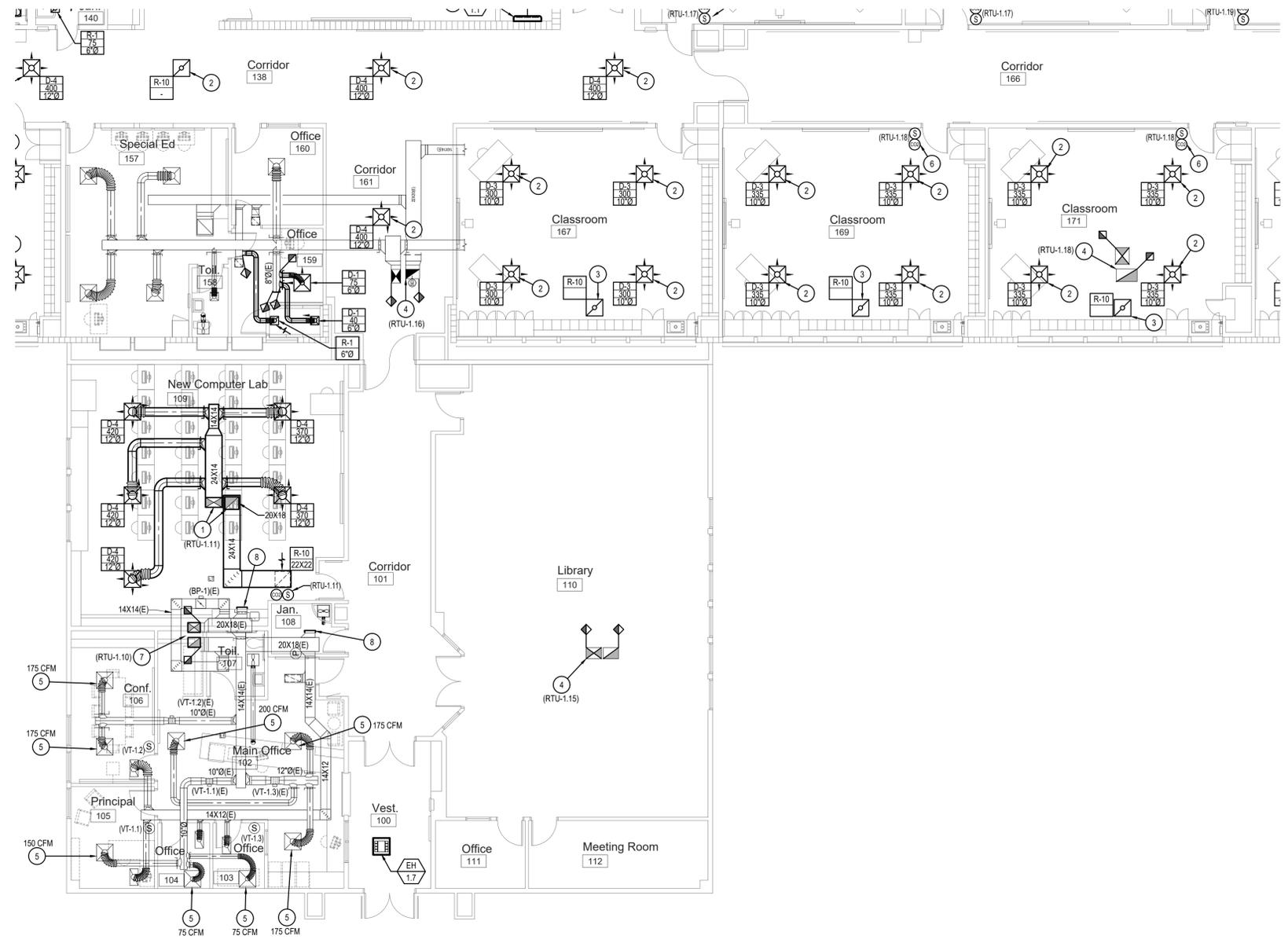
DATE: February 24, 2023
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DRAWING NO.

M-2.4
MECHANICAL NEW WORK
PLAN - AREA 'D' & 'E'




1 Mechanical New Work Plan - Area 'F'
 Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. ROUTE RETURN AND SUPPLY DUCTS UP THROUGH ROOF AND TRANSITION TO UNIT AS REQUIRED. PROVIDE TURNING VANES IN ELBOWS AND A FLEXIBLE DUCT CONNECTION AT UNIT.
- 2. PROVIDE NEW SUPPLY DIFFUSER IN NEW CEILING. CONNECT TO EXISTING SUPPLY DUCTWORK. BALANCE AIR FLOW AS INDICATED.
- 3. PROVIDE NEW RETURN GRILLE IN NEW CEILING. CONNECT TO EXISTING RETURN DUCTWORK.
- 4. BID ALT#2: CONNECT EXISTING DUCT DROPS TO NEW UNIT. MODIFICATION SHALL BE REQUIRED. WHERE APPLIES REUSE EXISTING SMOKE DUCT DETECTOR.
- 5. BALANCE EXISTING DIFFUSER AS INDICATED.
- 6. BID ALT#2: PROVIDE NEW DDC SENSORS.
- 7. CONNECT EXISTING DUCT DROPS TO NEW UNIT. MODIFICATION SHALL BE REQUIRED. WHERE APPLIES REUSE EXISTING SMOKE DUCT DETECTOR.
- 8. CAP EXISTING DUCTWORK AIR TIGHT.



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Revisions	Description	Date
#1	Addendum #1	05/11/2023
#2	Addendum #2	05/16/2023

Jefferson Elementary School
Addition and Remodel
 600 N. Fillmore Street, Jerome, Idaho

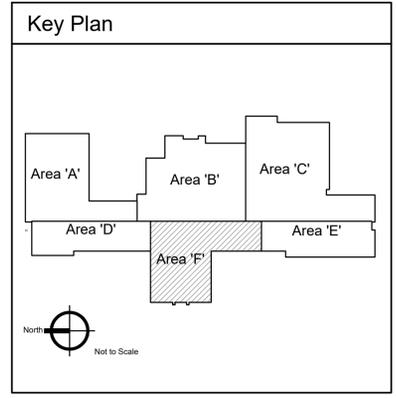
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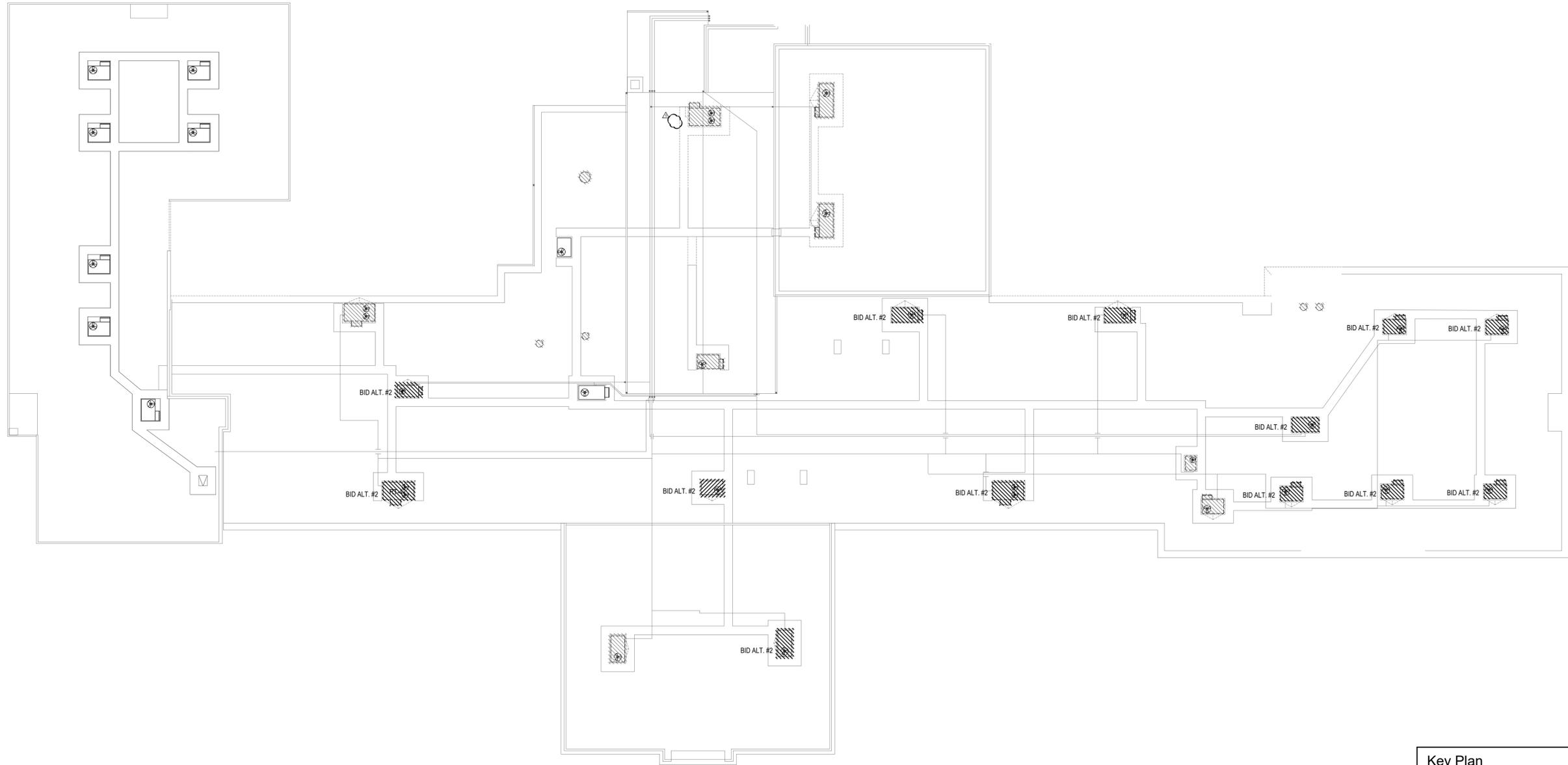
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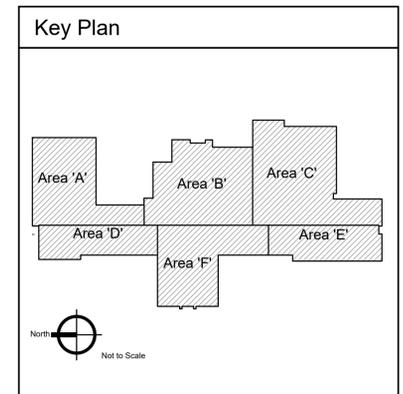
DRAWING NO.

M-2.5
 MECHANICAL NEW WORK
 PLAN - AREA 'F'





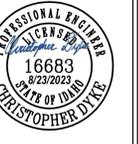
Overall Demolition Mechanical Roof Plan
 Scale: 1/16" = 1'-0"



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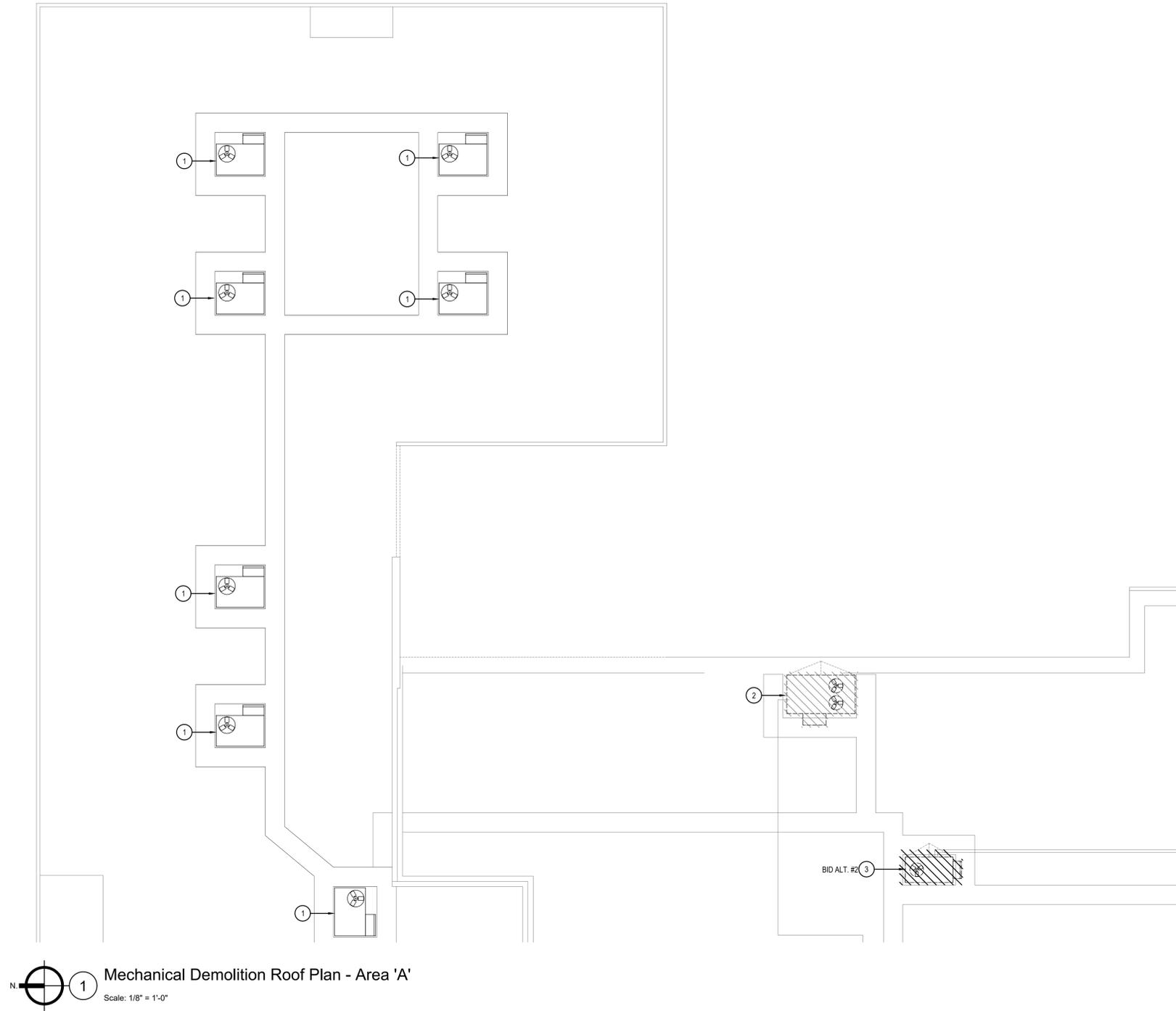
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M-3.0

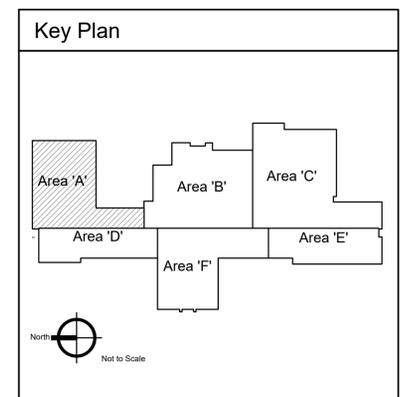
OVERALL DEMOLITION
 MECHANICAL ROOF PLAN

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1.  NO WORK TO EXISTING UNIT REMAIN AS IS.
 2.  DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB. ROOF PENETRATION SHALL BE REUSED.
 3.  DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB UNDER BID ALT. #2.



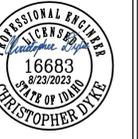
 **Mechanical Demolition Roof Plan - Area 'A'**
Scale: 1/8" = 1'-0"



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2	Addendum #2	05/16/2023

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT #: -
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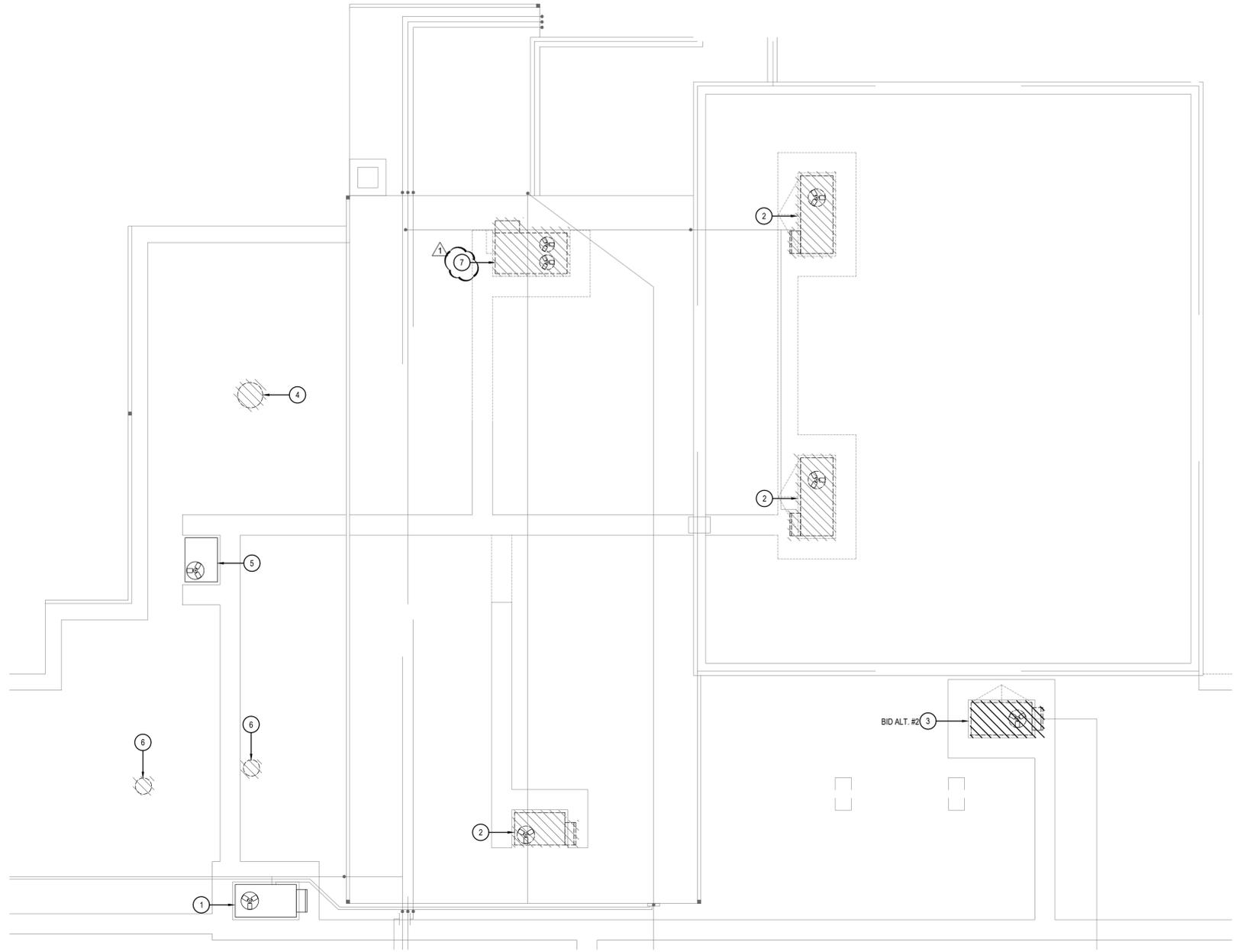
Agency Review

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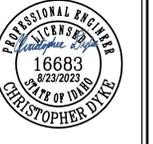
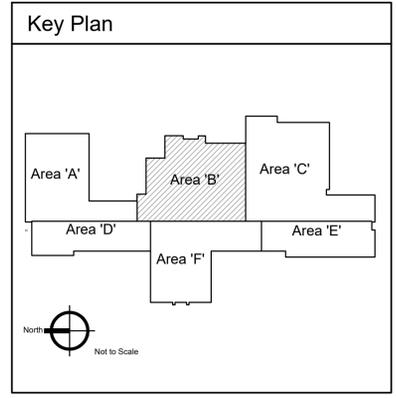
M-3.1
MECHANICAL DEMOLITION
ROOF PLAN - AREA 'A'

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1. NO WORK TO EXISTING UNIT REMAIN AS IS.
 2. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK. REMOVE EXISTING UNIT AND EXISTING CURB. ROOF PENETRATION SHALL BE REUSED.
 3. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK. REMOVE EXISTING UNIT AND EXISTING CURB UNDER BID ALT. #2.
 4. REMOVE EXISTING EXHAUST FAN AND CURB, PATCH ROOF TO MATCH EXISTING.
 5. EXISTING RTU SHALL REMAIN.
 6. REMOVE EXISTING EXHAUST FAN AND CURB, RE-USE OPENING FOR NEW WORK.
 7. DISCONNECT EXISTING GAS LINE AND CAP. REMOVE EXISTING UNIT. ROOF PENETRATION SHALL NOT BE REUSED. CAP CURB WEATHER TIGHT.



1 Mechanical Demolition Roof Plan - Area 'B'
Scale: 1/8" = 1'-0"



Revisions		Date
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2	Addendum #2	05/16/2023

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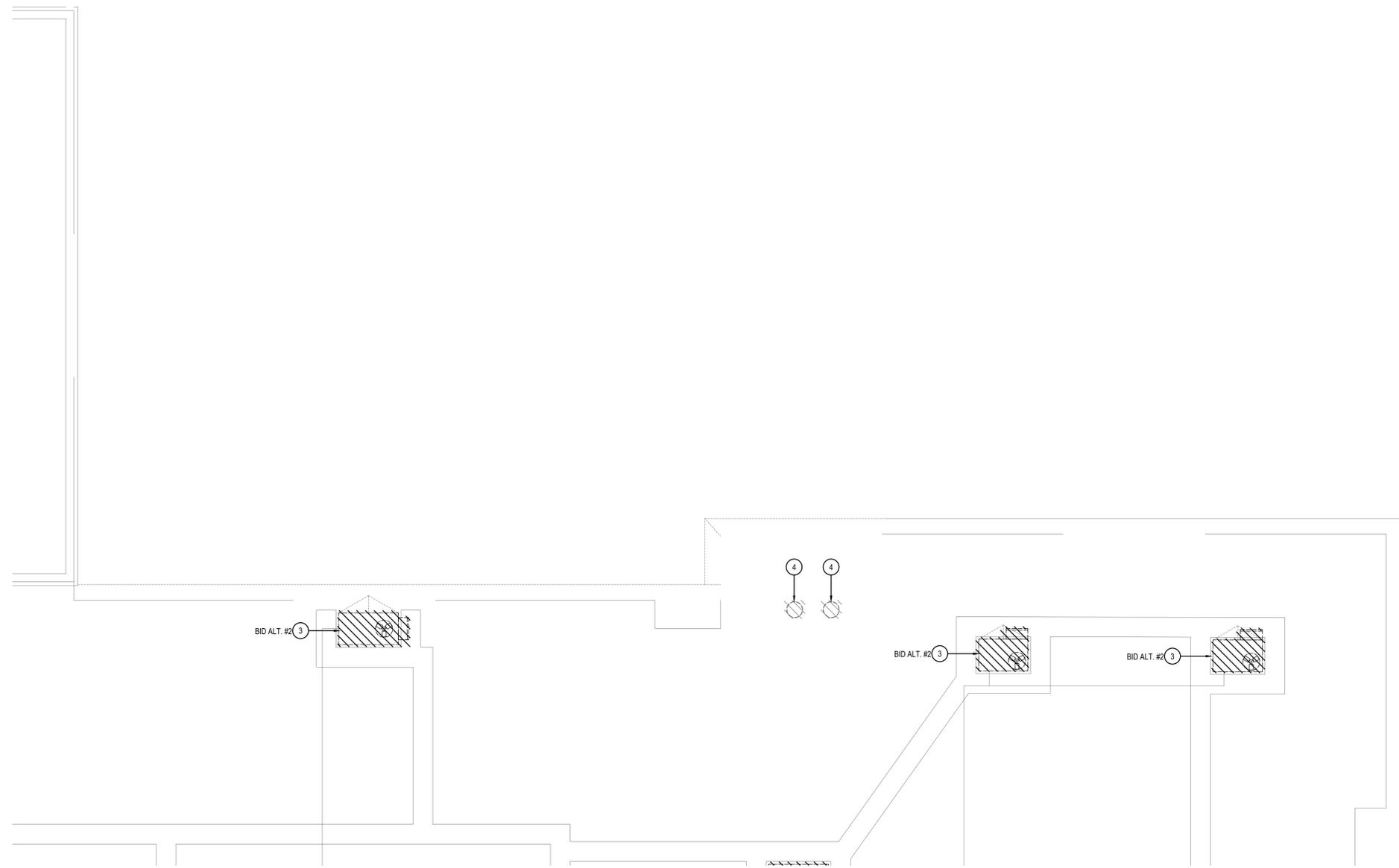
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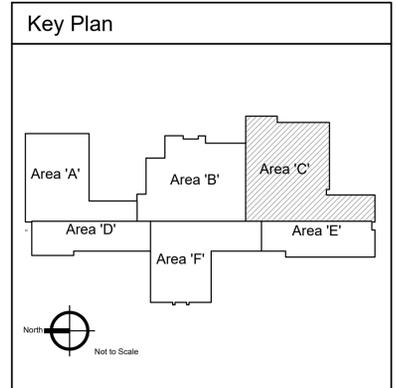
M-3.2
MECHANICAL DEMOLITION
ROOF PLAN - AREA 'B'

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. NOT USED.
- 2. NOT USED.
- 3. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB UNDER BID ALT. #2.
- 4. REMOVE EXISTING EXHAUST FAN AND CURB, RE-USE OPENING FOR NEW.



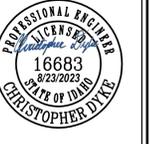
1 Mechanical Demolition Roof Plan - Area 'C'
Scale: 1/8" = 1'-0"



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Revisions	Description	Date
#1	Addendum #1	05/11/2023
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**Jefferson Elementary School
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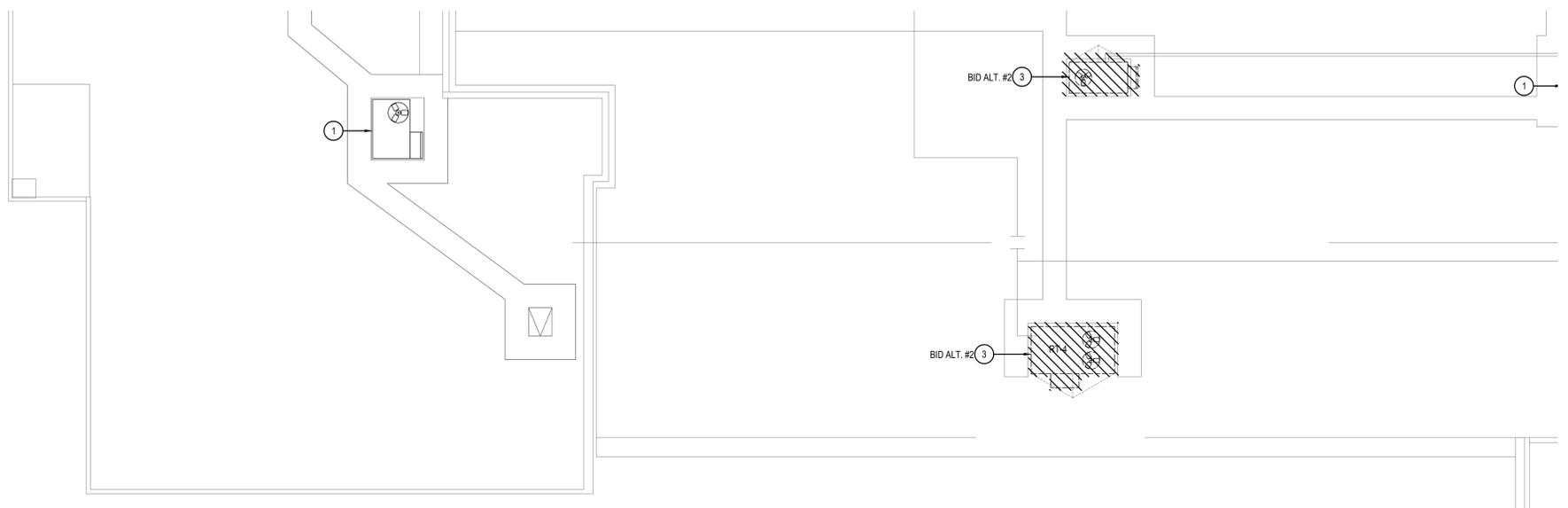
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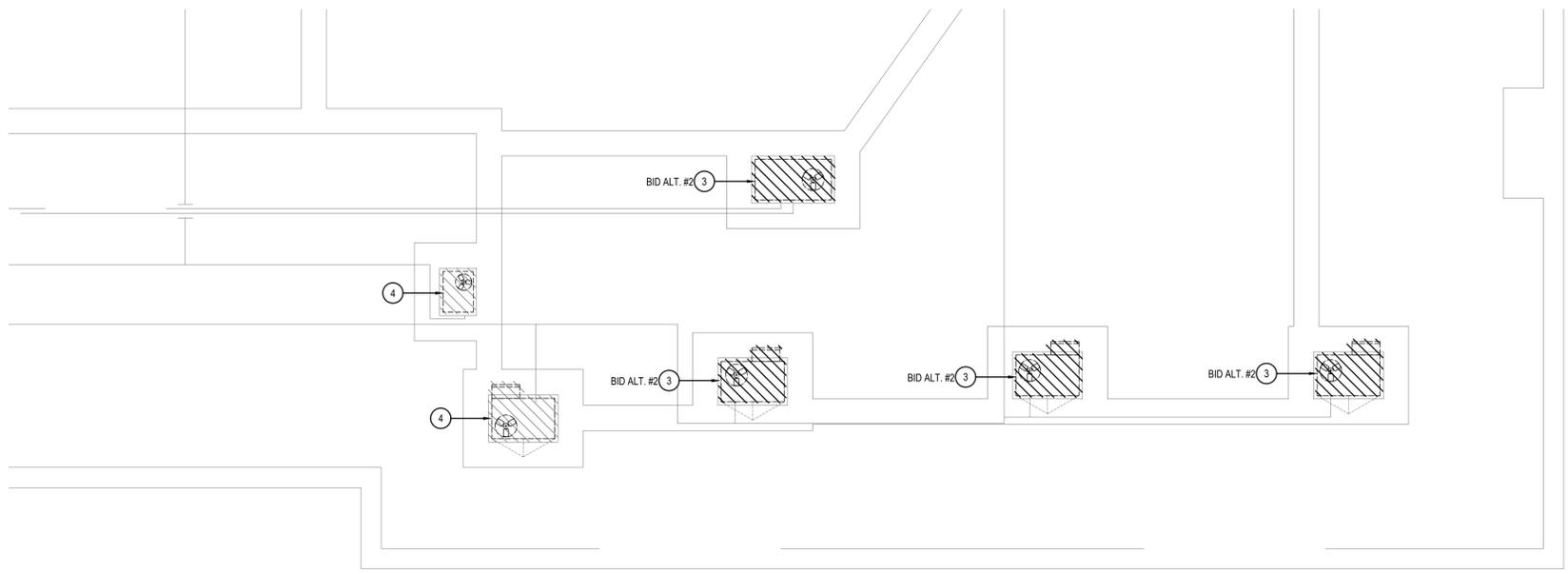
DRAWING NO.

M-3.3
MECHANICAL DEMOLITION
ROOF PLAN - AREA 'C'

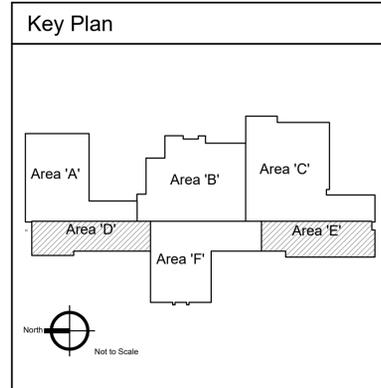


- KEYED NOTES:**
- # SYMBOL USED FOR NOTE CALLOUT.
 - 1. NO WORK TO EXISTING UNIT REMAIN AS IS.
 - 2. NOT USED.
 - 3. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB UNDER BID ALT. #2
 - 4. DISCONNECT EXISTING GAS LINE AND CAP. REMOVE EXISTING UNIT. ROOF PENETRATION SHALL NOT BE REUSED. CAP CURB WEATHER TIGHT.

1 Mechanical Demolition Roof Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Mechanical Demolition Roof Plan - Area 'E'
Scale: 1/8" = 1'-0"



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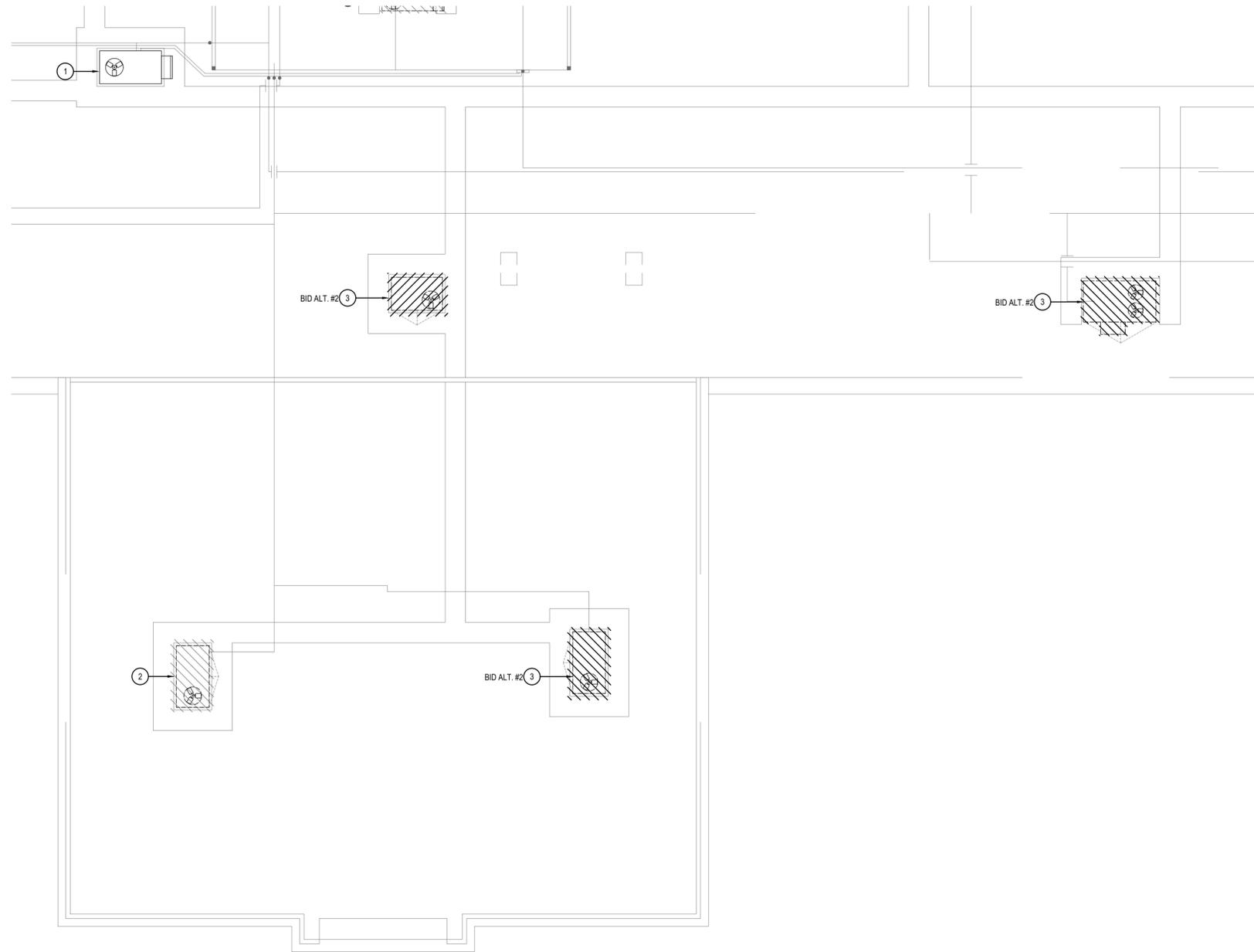
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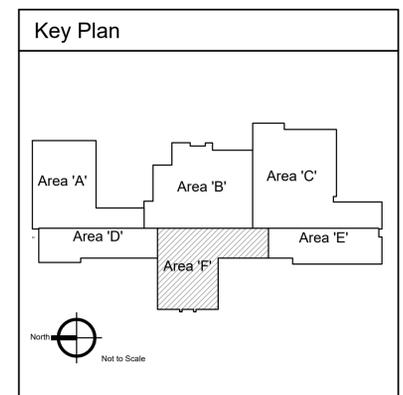
M-3.4
MECHANICAL DEMOLITION
ROOF PLAN - AREA 'D' & 'E'

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1. NO DEMO WORK TO EXISTING UNIT.
 2. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB. ROOF PENETRATION SHALL BE REUSED.
 3. DISCONNECT EXISTING GAS LINE TO BE REUSED IN NEW WORK, REMOVE EXISTING UNIT AND EXISTING CURB UNDER BID ALT. #2.



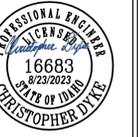
1 Mechanical Demolition Roof Plan - Area 'F'
Scale: 1/8" = 1'-0"



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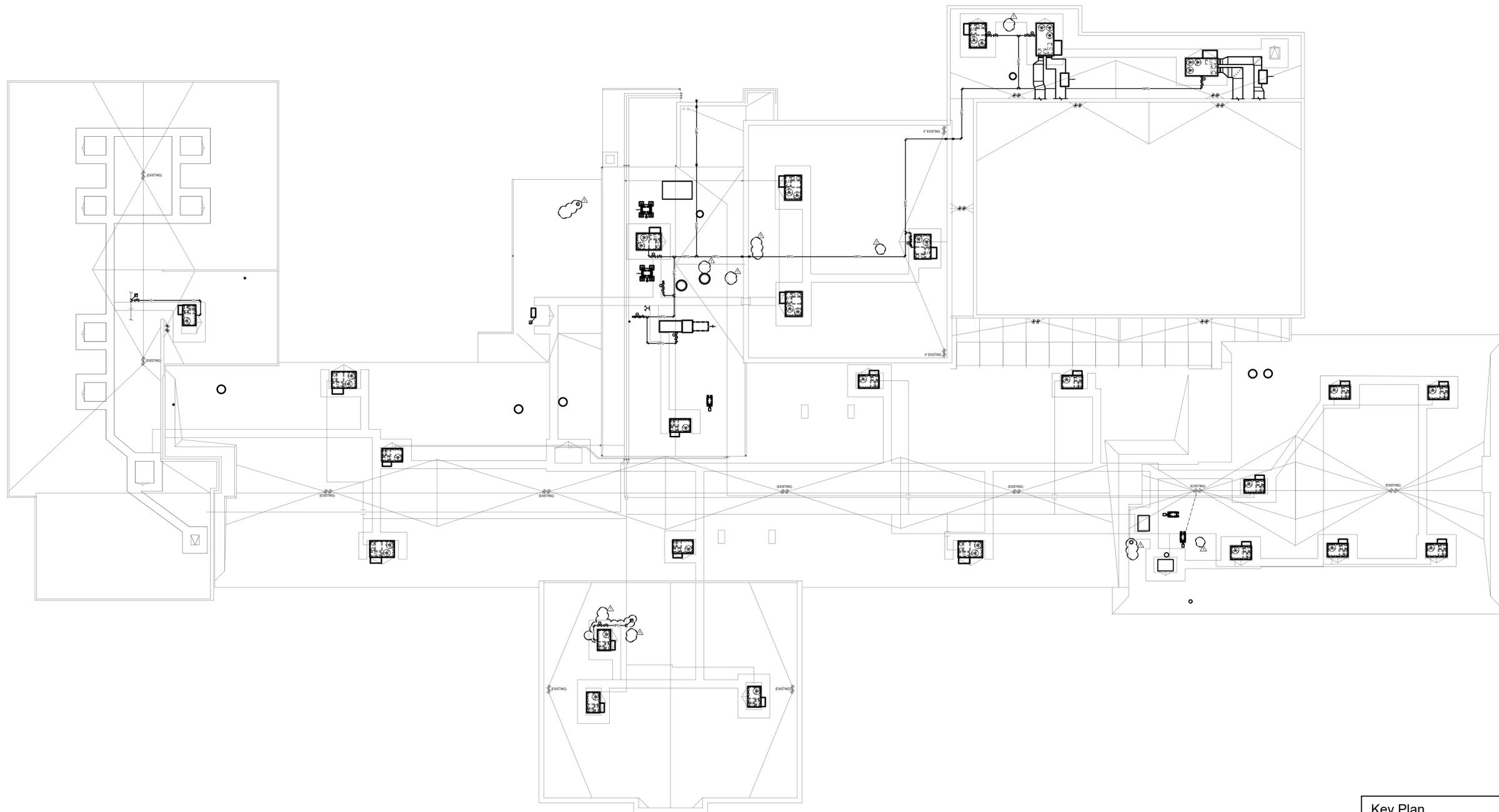
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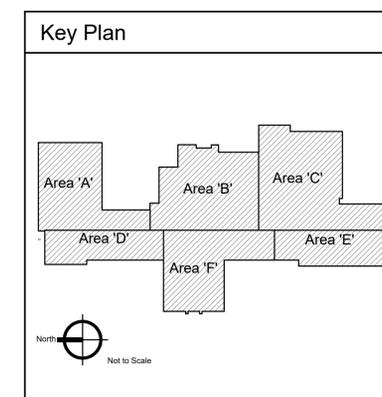
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DRAWING NO.

M-3.5
MECHANICAL DEMOLITION
ROOF PLAN - AREA 'F'



 Overall Mechanical New Work Roof Plan
 Scale: 1/16" = 1'-0"



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Revisions	Description	Date
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 600 N. Fillmore Street, Jerome, Idaho

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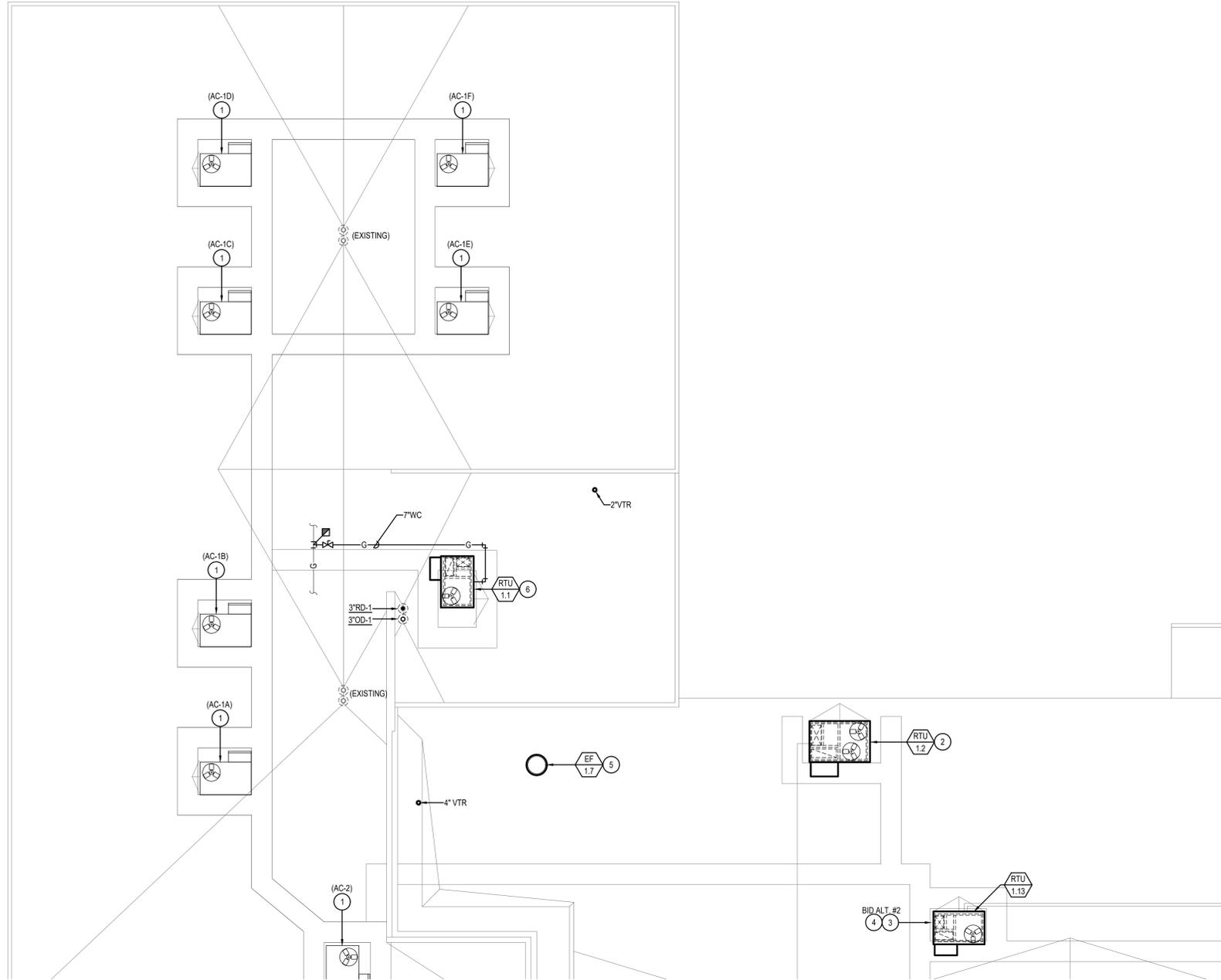
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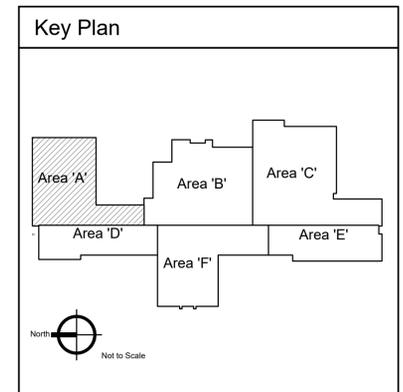
M-4.0
 OVERALL MECHANICAL
 NEW WORK ROOF PLAN

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. NO WORK TO EXISTING UNIT REMAIN AS IS.
- 2. PROVIDE NEW ISO ROOF CURB, ROOF PENETRATION SHALL BE REUSED, PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON ISO CURB, SEE ISO CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S), CONNECT TO NEW UNIT.
- 3. PROVIDE NEW ROOF CURB, ROOF PENETRATION SHALL BE REUSED, PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON CURB, SEE CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S), CONNECT TO NEW UNIT.
- 4. WORK TO BE DONE UNDER BID ALT. #2.
- 5. PROVIDE NEW CURB AND EXHAUST FAN, SET EXHAUST FAN ON CURB. SEE EXHAUST FAN DETAIL.
- 6. PROVIDE NEW ROOF CURB ON NEW ROOF, SET NEW RTU ON CURB, SEE CURB DETAIL.



1 Mechanical New Work Roof Plan - Area 'A'
Scale: 1/8" = 1'-0"



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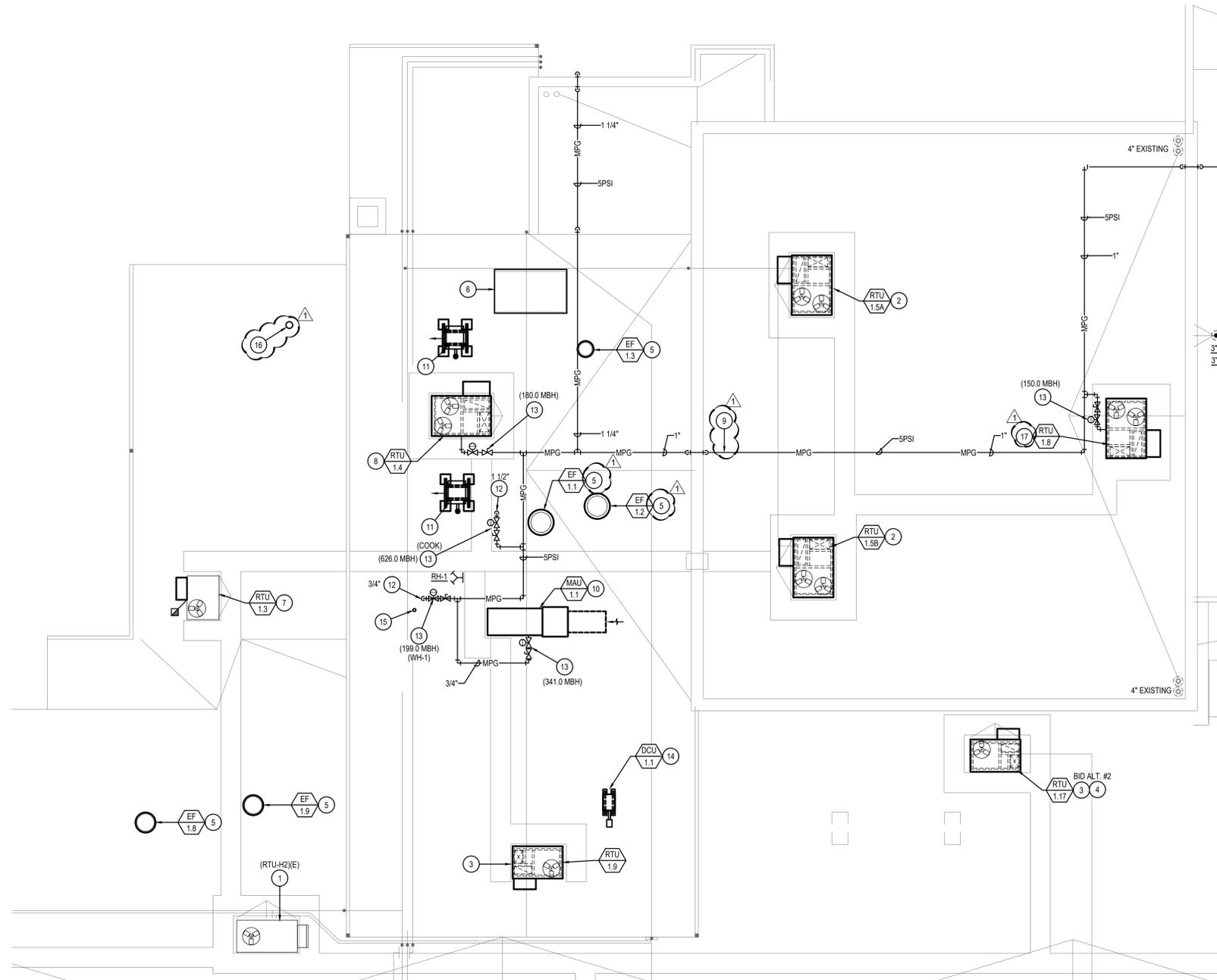
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REVISIONS:

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CHECKED BY: BC

Agency Review

DRAWING NO.

M-4.1
MECHANICAL NEW WORK
ROOF PLAN - AREA 'A'



1 Mechanical New Work Roof Plan - Area 'B'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. NO WORK TO EXISTING UNIT REMAIN AS IS.
- 2. PROVIDE NEW ISO ROOF CURB. ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON ISO CURB. SEE ISO CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S). CONNECT TO NEW UNIT.
- 3. PROVIDE NEW ROOF CURB. ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON CURB. SEE CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S). CONNECT TO NEW UNIT.
- 4. WORK TO BE DONE UNDER BID ALT. #2.
- 5. PROVIDE NEW CURB AND EXHAUST FAN. SET EXHAUST FAN ON CURB. SEE EXHAUST FAN DETAIL.
- 6. CAP UNUSED EXISTING CURB WEATHER TIGHT.
- 7. EXISTING RTU SHALL REMAIN. PROVIDE NEW ECONOMIZER AND POWER EXHAUST. SEE RTU SCHEDULE FOR FURTHER INFORMATION.
- 8. PROVIDE NEW ISO ROOF CURB AND SET RTU ON ISO CURB. SEE ISO CURB DETAIL.
- 9. SET GAS PIPING ON PIPE STANDS. SEE DETAIL.
- 10. MOUNT MAKE UP AIR UNIT ON ROOF.
- 11. HVAC CONTRACTOR SHALL PROVIDE MIRRO STAND FOR KITCHEN WALK IN COOLER AND FREEZER. PROVIDED BY OTHERS. COORDINATE SIZE AND WEIGHT WITH COOLER/FREEZER SUPPLIER. SEE DETAIL.
- 12. ROUTE GAS LINE DOWN THROUGH ROOF. SEAL PENETRATION WEATHER TIGHT.
- 13. PROVIDE GAS PRESSURE REGULATOR. REDUCE PRESSURE FROM 5 PSI DOWN TO 7"WC. PROVIDE SHUT OFF VALVE. SEE DETAIL.
- 14. PROVIDE EQUIPMENT STAND FOR CONDENSING UNIT. SEE DETAIL. ROUTE REFRIGERATION LINES DOWN THROUGH ROOF IN PIPE GOOSENECK. SEE DETAIL.
- 15. PROVIDE CONCENTRIC FLUE FOR WATER HEATER. ROUTE UP THROUGH ROOF.
- 16. ROUTE 8"Ø EXHAUST DUCT UP THROUGH ROOF. TERMINATE WITH ROOF CURB AND ALUMINUM CAP.
- 17. SET NEW UNIT ON STANDARD CURB. SEE STANDARD CURB DETAIL.



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Revisions	
#	Date
1	05/11/2023
2	05/16/2023

Addendum	
#	Description
1	Addendum #1
2	Addendum #2

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

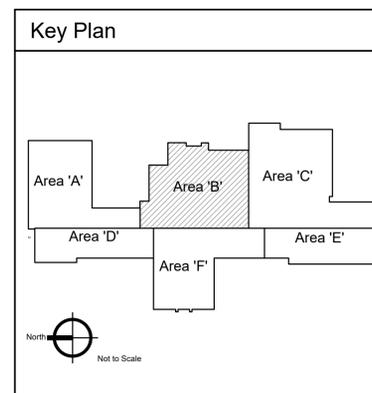
DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

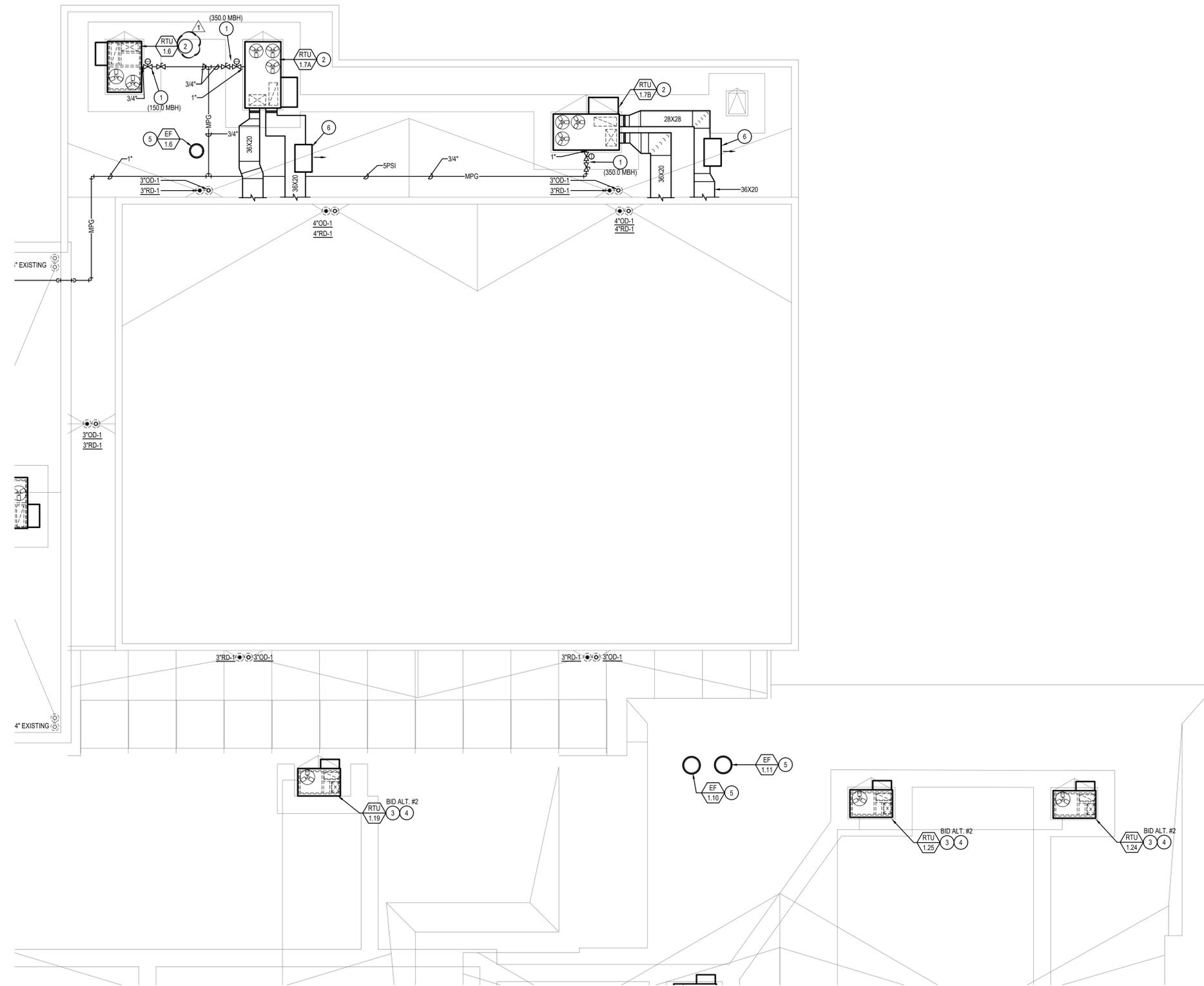
DRAWN BY: JM/CD
CHECKED BY: BC

Agency Review

DRAWING NO.

M-4.2
MECHANICAL NEW WORK
ROOF PLAN - AREA 'B'





1 Mechanical New Work Roof Plan - Area 'C'
Scale: 1/8" = 1'-0"

KEYED NOTES:

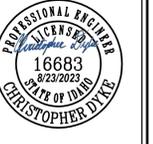
- # SYMBOL USED FOR NOTE CALLOUT.
- 1. PROVIDE GAS PRESSURE REGULATOR, REDUCE PRESSURE FROM 5 PSI DOWN TO 7"WC, PROVIDE SHUT OFF VALVE. SEE DETAIL.
- 2. PROVIDE NEW ISO ROOF CURB, SET NEW RTU ON ISO CURB, SEE ISO CURB DETAIL.
- 3. PROVIDE NEW ROOF CURB, ROOF PENETRATION SHALL BE REUSED, PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON CURB, SEE CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S), CONNECT TO NEW UNIT.
- 4. WORK TO BE DONE UNDER BID ALT. #2.
- 5. PROVIDE NEW CURB AND EXHAUST FAN. SET EXHAUST FAN ON CURB. SEE EXHAUST FAN DETAIL.
- 6. SET POWER EXHAUST ON RETURN DUCT. PROVIDE ADDITIONAL LEG SUPPORT (TYP.X4) FOR DUCT MOUNTED POWER EXHAUST. SEE DETAIL.



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Revisions	Description	Date
#1	Addendum #1	05/11/2023
#2	Addendum #2	05/16/2023

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

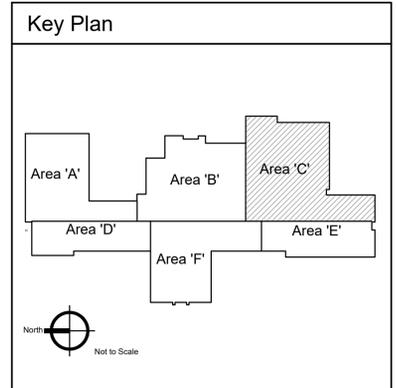
DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

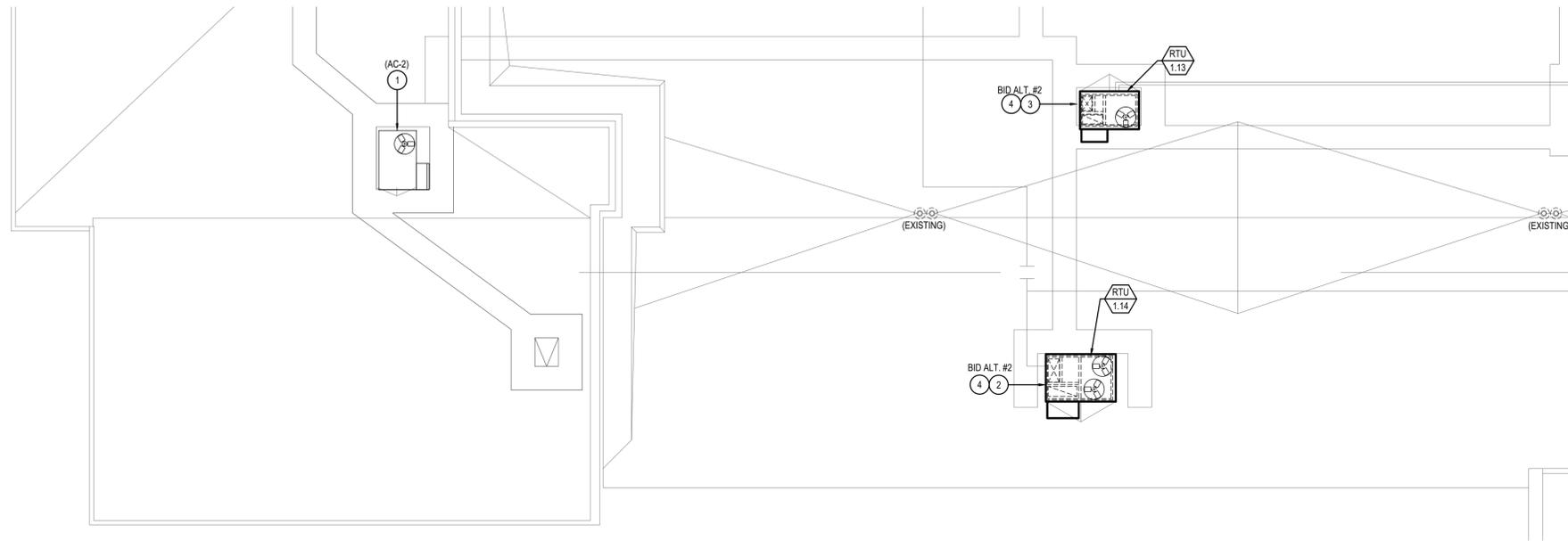
DRAWN BY: JM/CD
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Agency Review

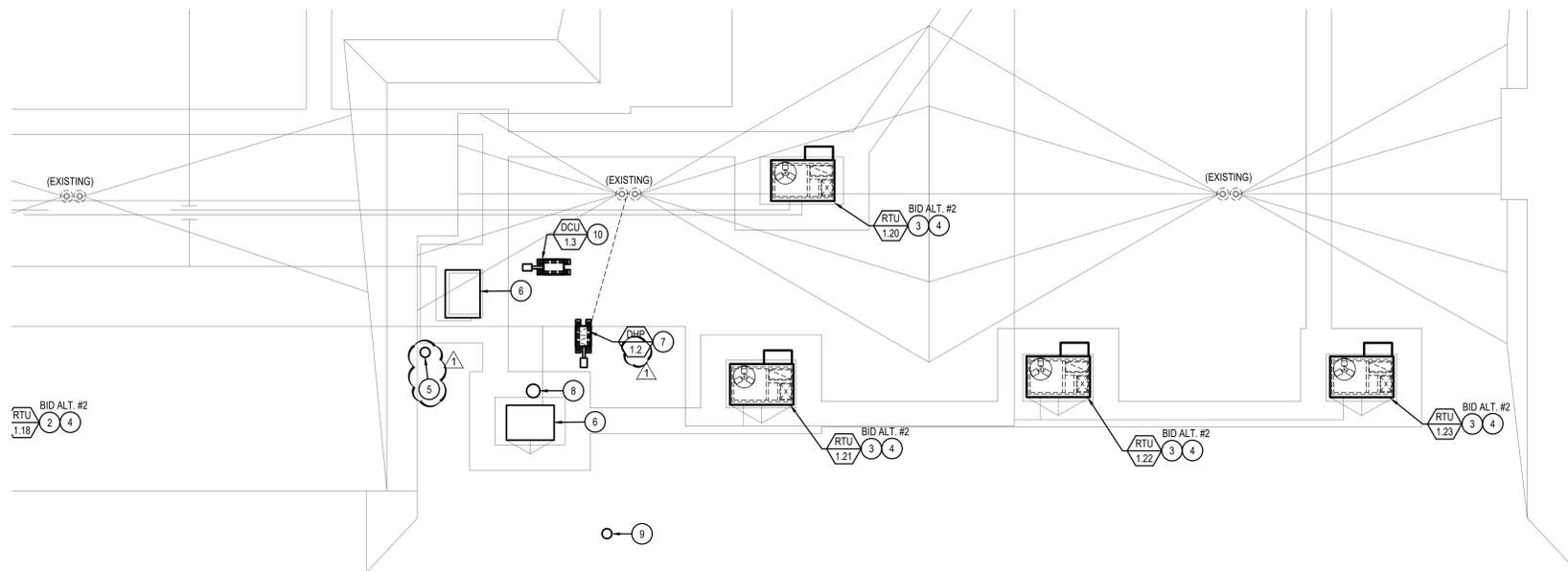
DRAWING NO.

M-4.3
MECHANICAL NEW WORK
ROOF PLAN - AREA 'C'





1 Mechanical New Work Roof Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Mechanical New Work Roof Plan - Area 'E'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. NO WORK TO EXISTING UNIT REMAIN AS IS.
- 2. PROVIDE NEW ISO ROOF CURB. ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON ISO CURB. SEE ISO CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S). CONNECT TO NEW UNIT.
- 3. PROVIDE NEW ROOF CURB. ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON CURB. SEE CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S). CONNECT TO NEW UNIT.
- 4. WORK TO BE DONE UNDER BID ALT. #2.
- 5. PROVIDE CURB AND TERMINATE 8"Ø EXHAUST DUCT WITH ALUMINUM CAP.
- 6. CAP UNUSED EXISTING CURB WEATHER TIGHT.
- 7. SET HEAT PUMP UNIT ON EQUIPMENT PLATFORM. PROVIDE HEAT TAPE UNDER UNIT AND EXTEND TO NEAREST ROOF DRAIN. COORDINATE WITH ELECTRICAL CONTRACTOR.
- 8. 6"Ø FRESH AIR INTAKE FOR ERU. TERMINATE WITH CAP AND CURB.
- 9. 6"Ø EXHAUST FOR ERU. TERMINATE WITH CAP AND CURB. MAINTAIN A MINIMUM DISTANCE OF 10'-0"
- 10. PROVIDE EQUIPMENT STAND FOR CONDENSING UNIT. SEE DETAIL. ROUTE REFRIGERATION LINES DOWN THROUGH ROOF IN PIPE GOOSENECK. SEE DETAIL.



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Revisions	Description	Date
# 1	Addendum #1	05/11/2023
# 2	Addendum #2	05/16/2023

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

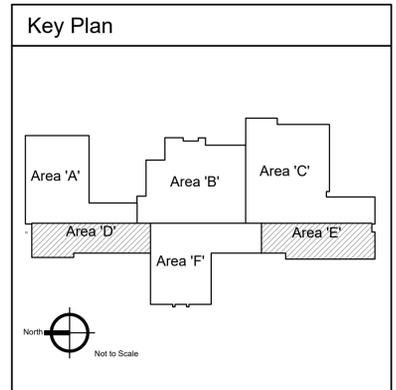
DRAWN BY: JM/CD
CHECKED BY: BC

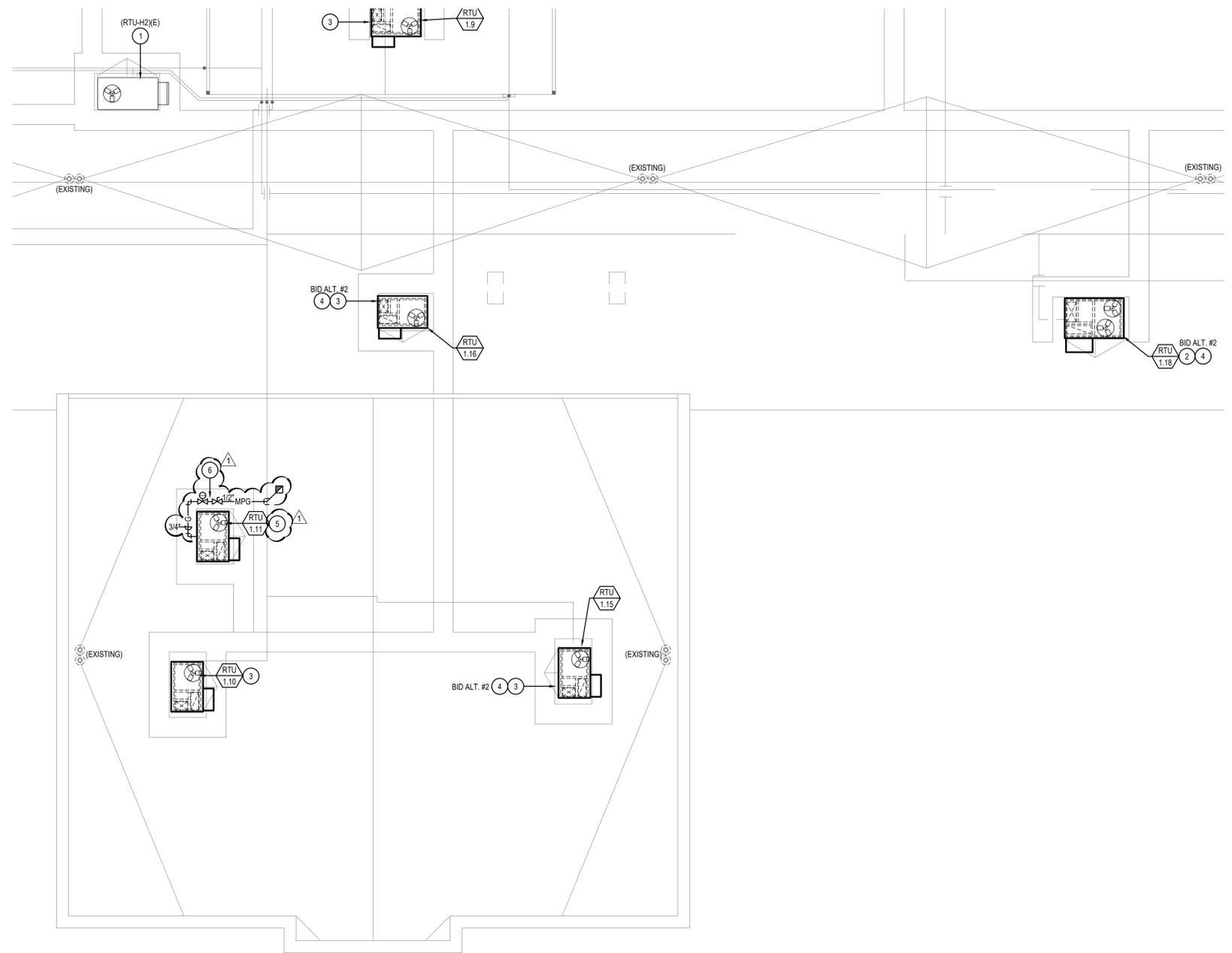
Agency Review

DRAWING NO.

M-4.4

MECHANICAL NEW WORK
ROOF PLAN - AREA 'D' & 'E'






1 Mechanical New Work Roof Plan - Area 'F'
 Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. EXISTING RTU TO REMAIN, RE-BALANCE OSA TO 250 CFM.
- 2. PROVIDE NEW ISO ROOF CURB, ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON ISO CURB. SEE ISO CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S), CONNECT TO NEW UNIT.
- 3. PROVIDE NEW ROOF CURB, ROOF PENETRATION SHALL BE REUSED. PATCH ROOF TO MATCH EXISTING CONDITIONS. SET NEW RTU ON CURB, SEE CURB DETAIL. USE EXISTING GAS LINE AND VALVE (S), CONNECT TO NEW UNIT.
- 4. WORK TO BE DONE UNDER BID ALT. #2.
- 5. PROVIDE NEW ROOF CURB, SET NEW RTU ON CURB, SEE CURB DETAIL.
- 6. PROVIDE GAS PRESSURE REGULATOR, REDUCE PRESSURE FROM 5 PSI DOWN TO 7"WC, PROVIDE SHUT OFF VALVE. CONNECT TO EXISTING MPG LINE. SEE DETAIL.



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Addendum #1	05/11/2023
Addendum #2	05/16/2023

Jefferson Elementary School
Addition and Remodel
 600 N. Fillmore Street, Jerome, Idaho

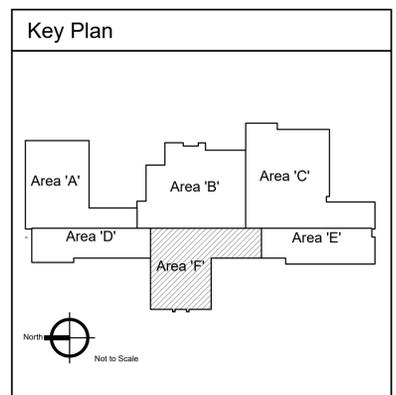
DATE: February 24, 2023
 LKV PROJECT #: -
 REVISIONS:

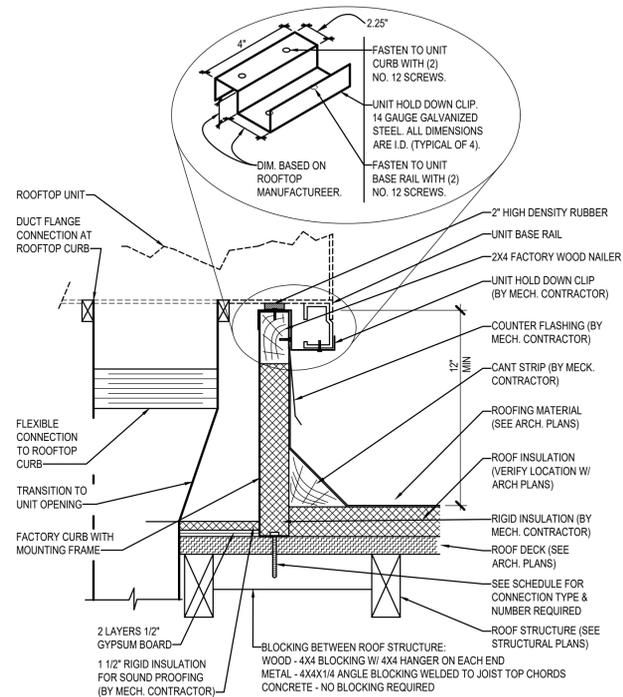
DRAWN BY: JM/CD
 CHECKED BY: BC

Agency Review

DRAWING NO.

M-4.5
 MECHANICAL NEW WORK
 ROOF PLAN - AREA 'F'

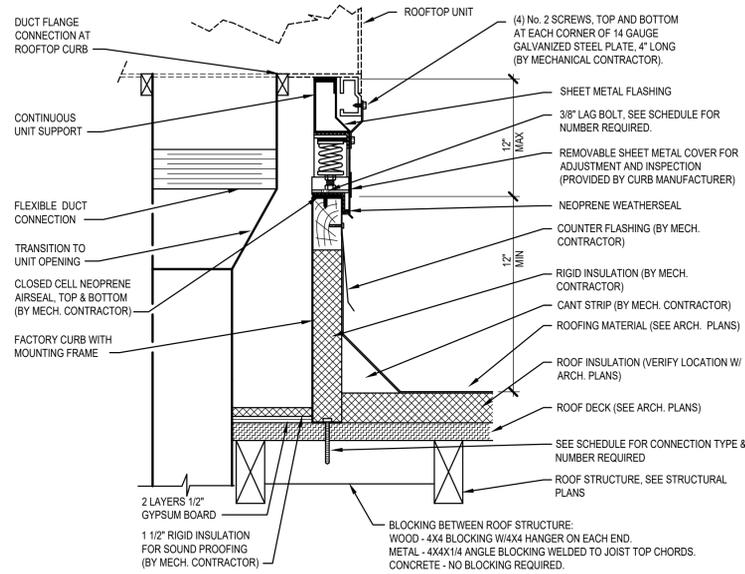




NOMINAL ROOFTOP UNIT CAPACITY	MAX. WEIGHTS	TOTAL LATERAL FORCE (Fp)	NO. & TYPE OF CONNECTION (EQUALLY SPACED)		
			ROOF STRUCTURE TYPE		
			METAL	WOOD	CONCRETE
3-6 TONS	750 LBS	810 LBS	(4) 1/2" LAG BOLT	(4) 1/2" LAG BOLT	(4) 3/8" EXPANSION BOLT

COMPLIES WITH THE INTERNATIONAL BUILDING CODE

1 ROOFTOP UNIT - MOUNTING DETAIL
NOT TO SCALE

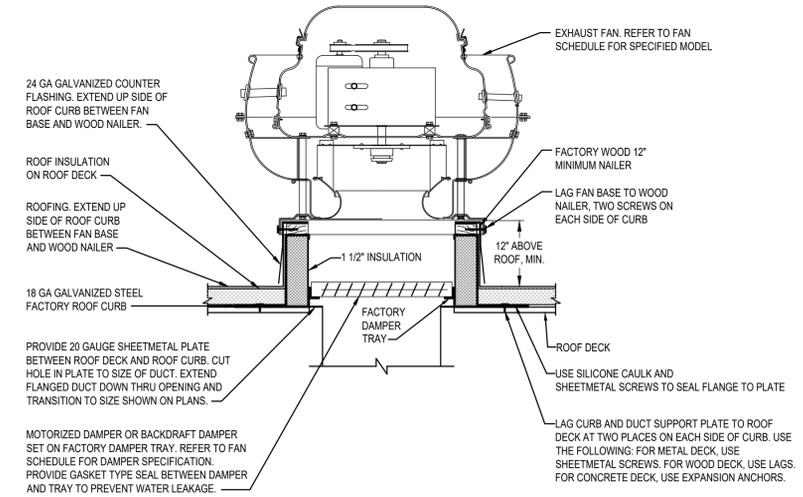


NOMINAL ROOFTOP UNIT CAPACITY	MAX. WEIGHTS	TOTAL LATERAL FORCE (Fp)	NO. & TYPE OF CONNECTION (EQUALLY SPACED)		
			ROOF STRUCTURE TYPE		
			METAL	WOOD	CONCRETE
7-8 TONS	1050 LBS	1135 LBS	(6) 1/2" LAG BOLT	(6) 1/2" LAG BOLT	(6) 3/8" EXPANSION BOLT
10-12 TONS	1300 LBS	1405 LBS	(8) 1/2" LAG BOLT	(8) 1/2" LAG BOLT	(8) 3/8" EXPANSION BOLT
15-18 TONS	2500 LBS	2700 LBS	(14) 1/2" LAG BOLT	(14) 1/2" LAG BOLT	(14) 3/8" EXPANSION BOLT
20-25 TONS	2800 LBS	3025 LBS	(16) 1/2" LAG BOLT	(16) 1/2" LAG BOLT	(16) 3/8" EXPANSION BOLT

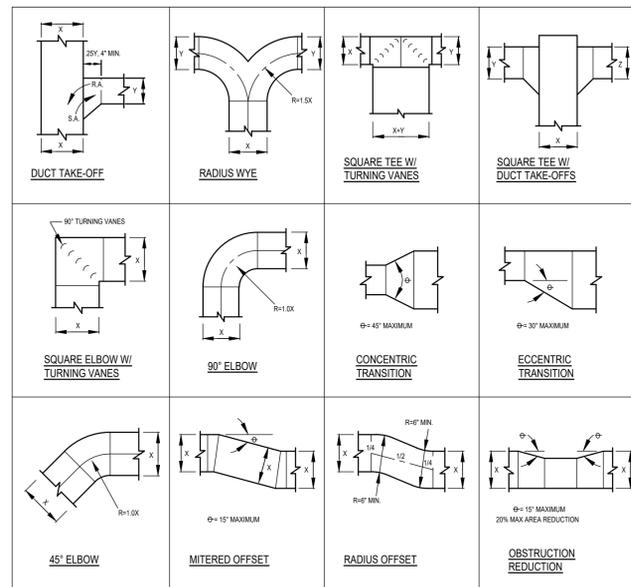
COMPLIES WITH THE INTERNATIONAL BUILDING CODE

MANUFACTURER SHALL PROVIDE CALCULATIONS FOR THE CURB MOUNTED SPRING RAIL SHOWING COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE (LATEST ADOPTED EDITION).

2 ROOFTOP UNIT - CURB MOUNTED SPRING RAIL DETAIL
NOT TO SCALE

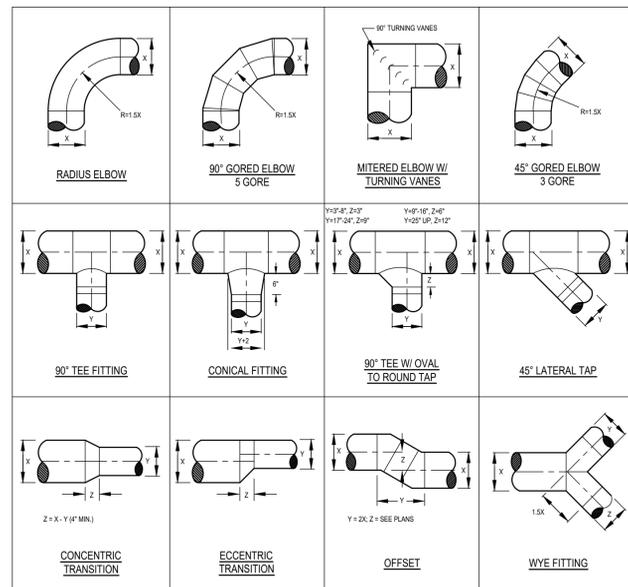


3 EXHAUST FAN MOUNTING DETAIL
NOT TO SCALE



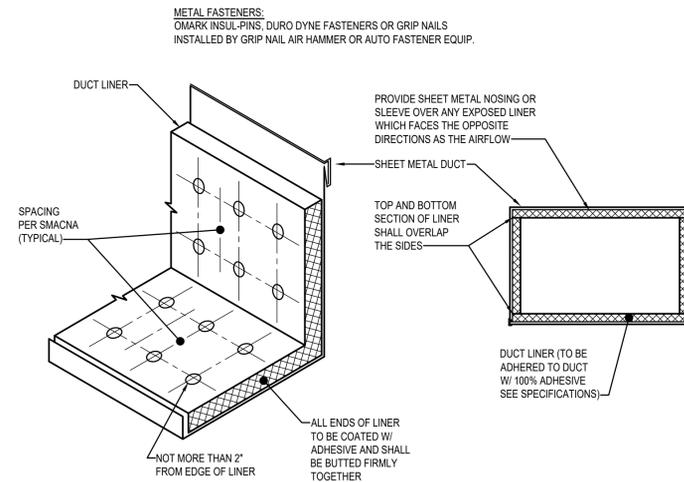
NOTE:
1. ALL DUCTWORK TRANSITIONS SHALL BE CONSTRUCTED AND INSTALLED TO SMACNA, SPECIFICATIONS AND THE ABOVE NOTED STANDARDS. ANY DEVIATIONS SHALL BE COORDINATED WITH THE ENGINEER.

4 RECTANGULAR DUCT FITTING DETAILS
NOT TO SCALE



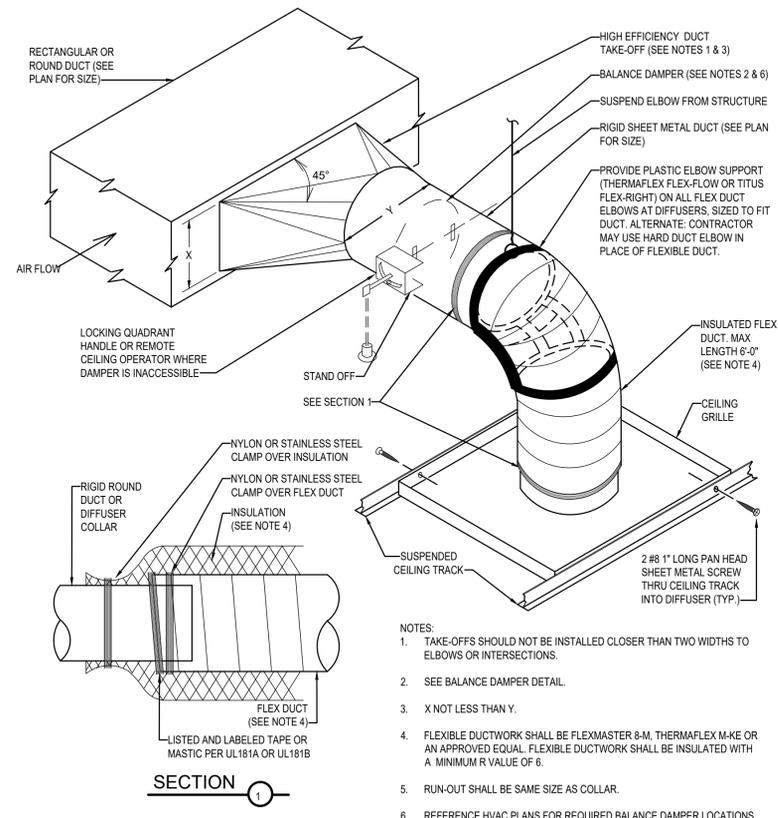
NOTE:
1. ALL DUCTWORK TRANSITIONS SHALL BE CONSTRUCTED AND INSTALLED TO SMACNA, SPECIFICATIONS, AND THE ABOVE NOTED STANDARDS. ANY DEVIATIONS SHALL BE COORDINATED WITH THE ENGINEER.

5 ROUND DUCT FITTING DETAILS
NOT TO SCALE

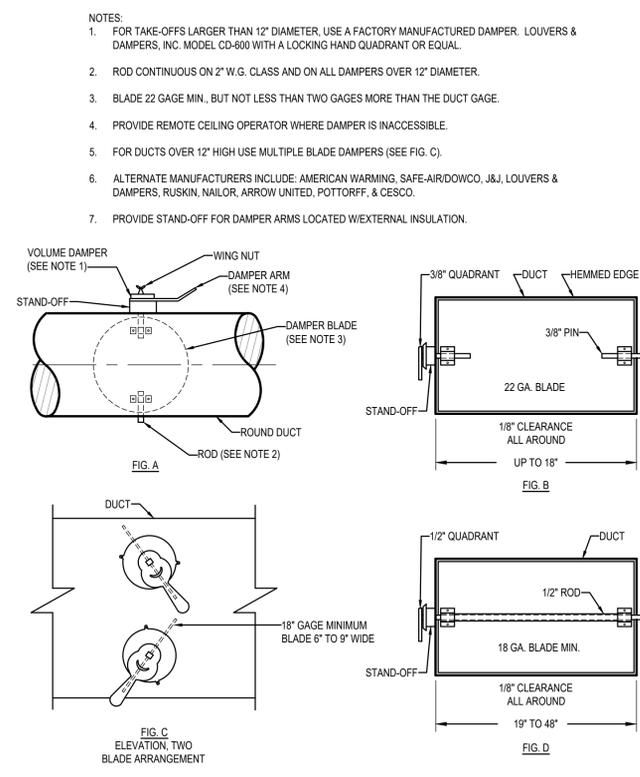


6 DUCT LINER DETAIL
NOT TO SCALE

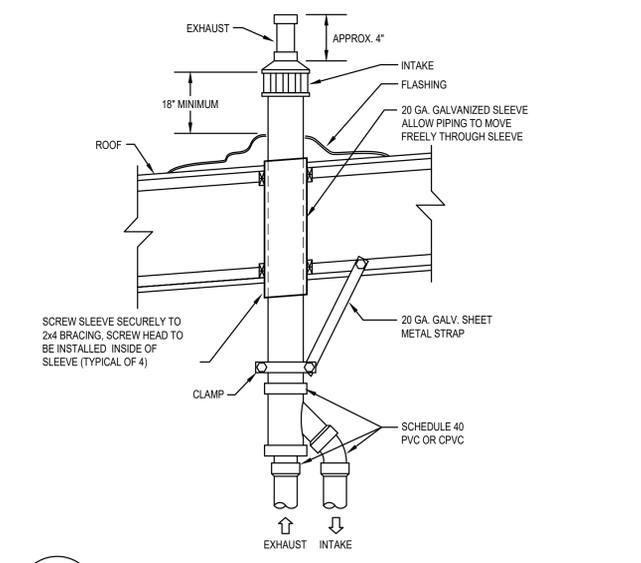
Revisions	Date	Description
#1	05/11/2023	Addendum #1
#2	05/16/2023	Addendum #2



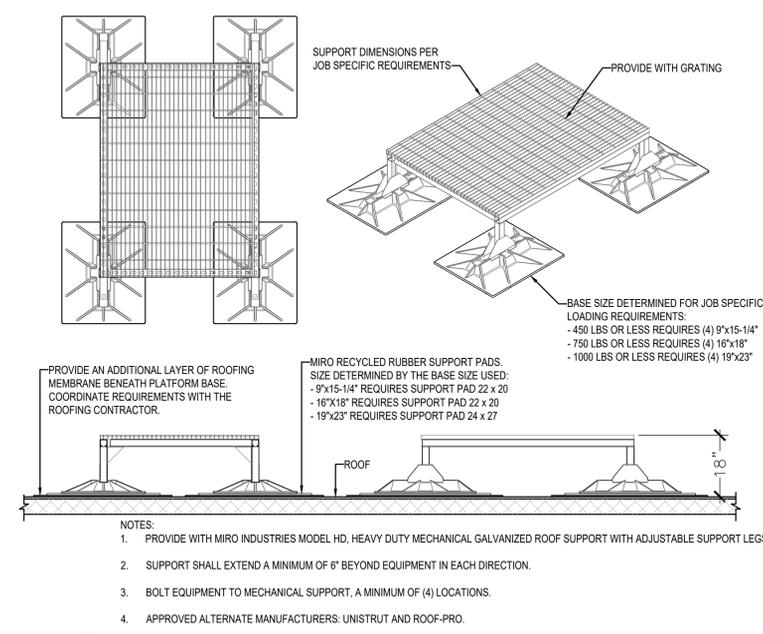
1 HIGH EFFICIENCY TAKE-OFF DETAIL
NOT TO SCALE



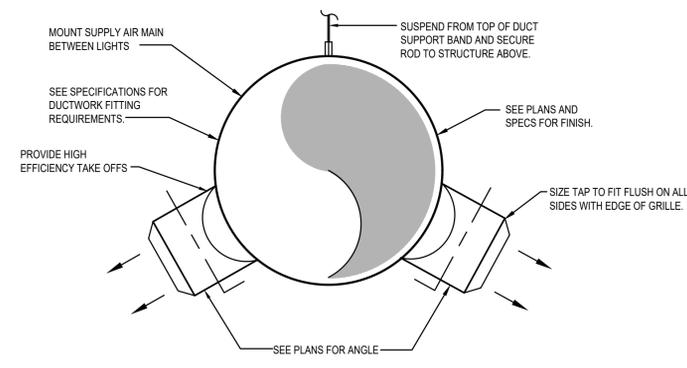
2 BALANCE DAMPER DETAIL
NOT TO SCALE



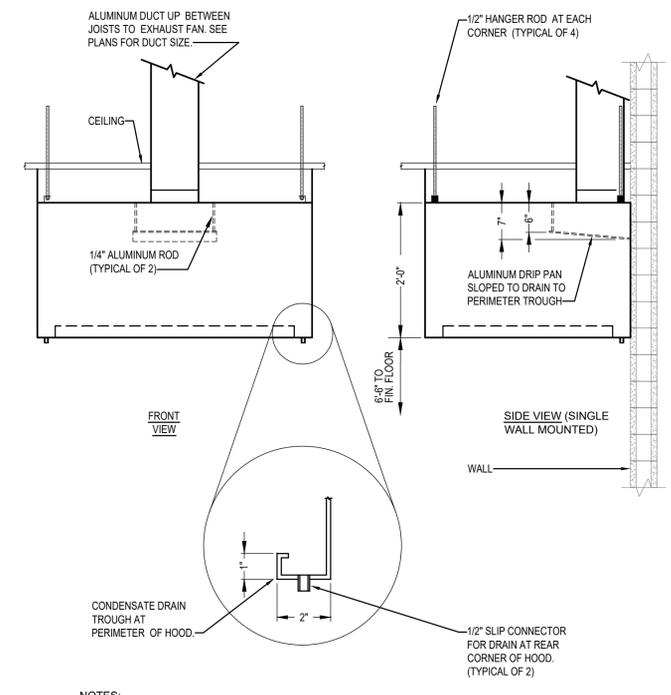
3 CONCENTRIC GAS VENT DETAIL (90%)
NOT TO SCALE



4 ROOFTOP CONDENSING UNIT PLATFORM DETAIL
NOT TO SCALE (EQUIPMENT WEIGHTS UP TO 1000 LBS)



5 EXPOSED SPIRAL ROUND DUCT DETAIL
NOT TO SCALE



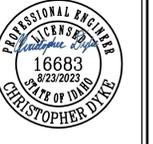
6 TYPE II DISHWASHER HOOD
NOT TO SCALE



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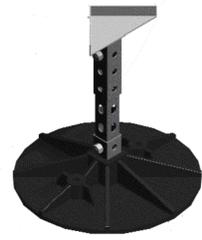
Jefferson Elementary School
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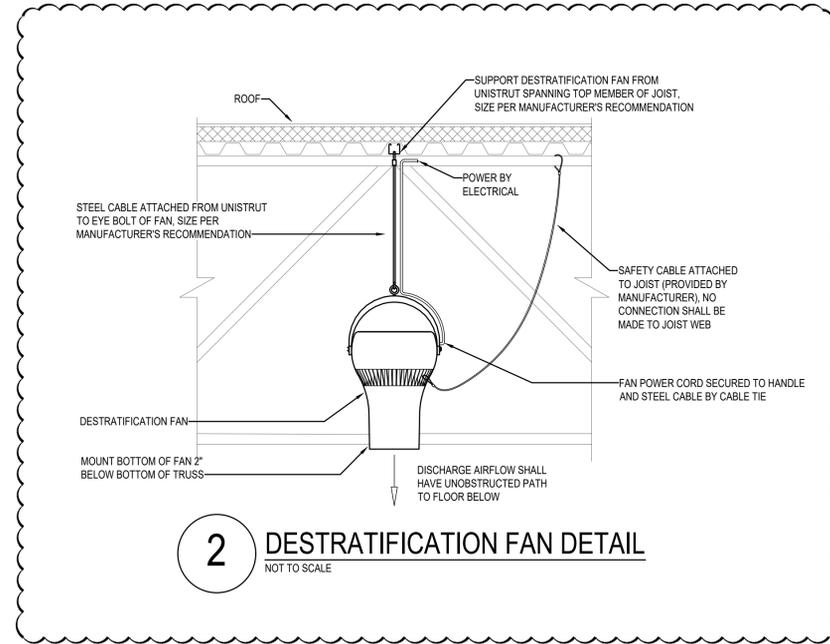
DRAWING NO.
M-5.1
HVAC DETAILS



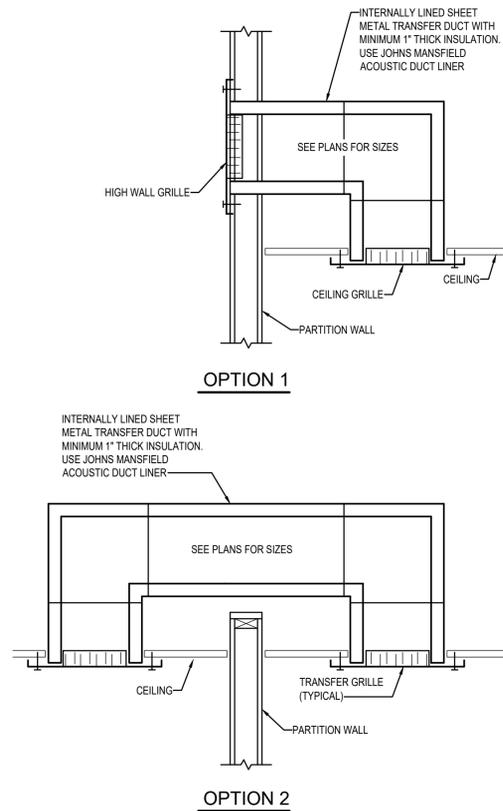
ADVANCED SUPPORT PRODUCTS MODEL SS1000EC OR EQUAL.

REPLACE MANUFACTURERS BASE/LEGS WITH FLOATING EQUIPMENT SUPPORT. PROVIDE SUPPORT AT EACH CORNER OF POWER EXHAUST.

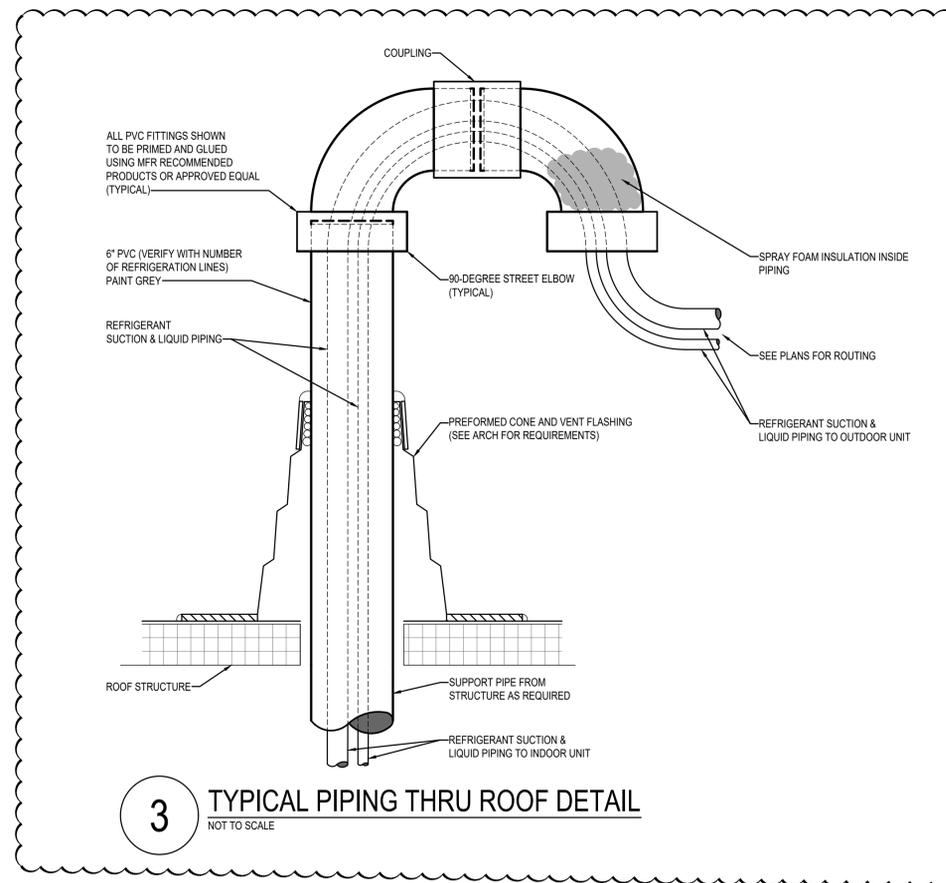
1 POWER EXHAUST SUPPORT DETAIL
SCALE: NOT TO SCALE



2 DESTRATIFICATION FAN DETAIL
NOT TO SCALE



3 TRANSFER DUCT DETAIL
NOT TO SCALE



3 TYPICAL PIPING THRU ROOF DETAIL
NOT TO SCALE



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Agency Review

DRAWING NO.

M-5.2
HVAC DETAILS

PACKAGED AIR CONDITIONING SCHEDULE																								
SYMBOL	AREA SERVED	NOM. TONS	SUPPLY FAN				COOLING CAPACITY 95°OSA, 80°EDB, 62°EWB				GAS HEATING CAPACITY			RTU ELECTRICAL			ELECTRICAL POWER EXHAUST			OSA CFM	MIN. SEER / EER	OPER. WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
			CFM	ESP	BRAKE BHP	DRIVE	STAGES	TOTAL MBH	SENS. MBH	INPUT MBH	OUTPUT MBH	MCA	MOC	V/Ø	HP	MCA	MOC	V/Ø						
RTU-1.1	CLASSROOM 120	4	1600	.50	.72	DIRECT ECM	1	42.8	41.3	120.0 / 150.0	96.0 / 120.0	24.0	30	208/3	0.5	2.9	5.2	208/3	520	14.0	1100	CARRIER 48FC-05 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.2	CLASSES 132, 134 & 136	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 150.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	1110	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.3 EXISTING	FACULTY	4	1600	.50	.72	DIRECT ECM	1	42.8	41.3	115.0	93.0	24.0	30	208/3	0.5	2.9	5.2	208/3	460	14.0	1100	EXISTING CARRIER MODEL 48KCEA05A2AS0A0A0	1, 8, 9, 10	
RTU-1.4	KITCHEN	7.5	3000	.50	2.4	DIRECT ECM	2	81.7	78.4	120.0 / 180.0	98.0 / 120.0	39.0	50	208/3	N/A	N/A	N/A	208/3	1125	11.2 EER	1900	CARRIER 48FC-08 STANDARD EFFICIENCY	1, 2, 4, 7, 8	
RTU-1.5A	CAFETERIA	10	4000	.50	2.4	DIRECT ECM	2	117.0	113.4	180.0 / 224.0	146.0 / 181.0	45.0	60	208/3	2	8.0	14.4	208/3	1810	11.0 EER	2000	CARRIER 48FC-12 STANDARD EFFICIENCY	1, 2, 5, 7, 8	
RTU-1.5B	CAFETERIA	10	4000	.50	2.4	DIRECT ECM	2	117.0	113.4	180.0 / 224.0	146.0 / 181.0	45.0	60	208/3	2	8.0	14.4	208/3	1810	11.0 EER	2000	CARRIER 48FC-12 STANDARD EFFICIENCY	1, 2, 5, 7, 8	
RTU-1.6	STAGE	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 180.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	910	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.7A	GYMNASIUM	15	6000	.50	3	DIRECT ECM	2	166.7	163.8	280.0 / 350.0	224.0 / 284.0	67.0	80	208/3	3	11.5	20.7	208/3	2115	10.8 EER	3000	CARRIER 48FC-16 STANDARD EFFICIENCY HORIZONTAL DISCHARGE	1, 2, 6, 7, 8	
RTU-1.7B	GYMNASIUM	15	6000	.50	3	DIRECT ECM	2	166.7	163.8	280.0 / 350.0	224.0 / 284.0	67.0	80	208/3	3	11.5	20.7	208/3	2115	10.8 EER	3000	CARRIER 48FC-16 STANDARD EFFICIENCY HORIZONTAL DISCHARGE	1, 2, 6, 7, 8	
RTU-1.8	GYM FOYER	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 180.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	320	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.9	MULTIPURPOSE CLASS	4	1600	.50	.72	DIRECT ECM	1	42.8	41.3	120.0 / 150.0	96.0 / 120.0	24.0	30	208/3	0.5	2.9	5.2	208/3	520	14.0	1100	CARRIER 48FC-05 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.10	ADMIN	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	130	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 7, 8	
RTU-1.11	COMPUTER LAB	5	2000	.50	1.06	DIRECT ECM	1	53.7	53.7	120.0 / 150.0	96.0 / 120.0	29.0	40	208/3	0.5	2.9	5.2	208/3	565	14.0	1100	CARRIER 48FC-06 STANDARD EFFICIENCY	1, 2, 3, 7, 8	

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: DAIKIN, TRANE, LENNOX, AND YORK.
 - PROVIDE UNIT WITH TERMINAL STRIP FOR DDC CONTROL. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.
 - PROVIDE UNIT WITH MANUFACTURER'S ROOF CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), HAIL GUARDS, LOW AMBIENT CONTROLS (TO 0°F), FLUE EXTENDER, HIGH ALTITUDE KIT, THRU-THE-BOTTOM OF CURB ELECTRICAL CONNECTION KIT, HINGED ACCESS PANELS, MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS, AND MICROMETL CENTRIFUGAL POWER EXHAUST (100% RELIEF) WITH WIRING HARNESS. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - PROVIDE UNIT WITH MICROMETL WELDED SPRING ISOLATION CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), MANUFACTURER HAIL GUARDS, LOW AMBIENT CONTROLS (TO 0°F), FLUE EXTENDER, HIGH ALTITUDE KIT, THRU-THE-BOTTOM OF CURB ELECTRICAL CONNECTION KIT, HINGED ACCESS PANELS, MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS, AND MICROMETL CENTRIFUGAL POWER EXHAUST (100% RELIEF) WITH WIRING HARNESS. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - PROVIDE UNIT WITH MICROMETL WELDED SPRING ISOLATION CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), MANUFACTURERS FLUE EXTENDER, HAIL GUARDS, HIGH ALTITUDE KIT, HINGED ACCESS PANELS, MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS AND AUX END SWITCH, AND MICROMETL MODULATING POWER EXHAUST WITH VARIABLE SPEED MOTOR CONTROLLER (100% RELIEF) WIRING HARNESS, PRESSURE SENSOR SET TO .02 POSITIVE PRESSURE. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - PROVIDE UNIT WITH MICROMETL WELDED SPRING ISOLATION CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), MANUFACTURERS FLUE EXTENDER, HAIL GUARDS, HIGH ALTITUDE KIT, HINGED ACCESS PANELS. PROVIDE WITH MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS AND AUX END SWITCH, AND REMOTE DUCT MOUNTED MICROMETL MODULATING POWER EXHAUST WITH VARIABLE SPEED MOTOR CONTROLLER (100% RELIEF) WIRING HARNESS, PRESSURE SENSOR SET TO .02 POSITIVE PRESSURE. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - MAXIMUM "A-WEIGHTED" SUPPLY AIR SOUND RATINGS FOR UNITS 2-18 TONS = 95 DB @ 125 HZ, 90 DB @ 250 HZ, PER ARI STANDARDS 270 & 370.
 - PROVIDE 2" PLEATED MERV 8 FILTER AND FILTER RACK WITH 4 EXTRA SETS PER UNIT.
 - PROVIDE EXISTING ROOFTOP UNIT WITH MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS AND MICROMETL CENTRIFUGAL POWER EXHAUST (100% RELIEF) WITH WIRING HARNESS. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED. CONTRACTOR SHALL ALSO COMB OUT BENT FINS, CHANGE FILTER WITH A 2" MERV 8 AND INSPECT UNIT. CONTRACTOR TO REPORT ANY DEFICIENCIES.
 - SEE CONTROL DRAWINGS FOR REVISED SEQUENCE OF OPERATION.

DUCTLESS SPLIT HIGH WALL COOLING UNIT SCHEDULE														
SYMBOL	AREA SERVED	NOMINAL TONS	UNIT TYPE	SUPPLY FAN		COOLING CAPACITY AT 95°F OSA		ELECTRICAL OUTDOOR UNIT			MINIMUM SEER	INDOOR / OUTDOOR WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
				CFM	V/Ø	TOTAL (MBH)	SENSIBLE (MBH)	MCA	MOC	V/Ø				
DFC-1.1 DCU-1.1	I.T. / SERVER 150	1.5	HIGH WALL COOLING ONLY	550	THRU OIU	18.0	13.0	15	20	208/1	19.0	25 / 75	CARRIER FAN COIL MODEL 40MHH18 CARRIER CONDENSING UNIT MODEL 38MHRBC18	1, 2, 3, 4, 5, 6, 7
DFC-1.3 DCU-1.3	DATA RACK - STORAGE	1.5	HIGH WALL COOLING ONLY	550	THRU OIU	18.0	13.0	15	20	208/1	19.0	25 / 75	CARRIER FAN COIL MODEL 40MHH18 CARRIER CONDENSING UNIT MODEL 38MHRBC18	1, 2, 3, 4, 5, 6, 7

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: LENNOX, MITSUBISHI, PANASONIC, SAMSUNG, LG, DAIKIN, OR APPROVED EQUAL BY ENGINEER.
 - CONTROL UNIT WITH MANUFACTURER'S HARD-WIRED WALL MOUNTED 7 DAY PROGRAMMABLE THERMOSTAT.
 - PROVIDE MANUFACTURERS CRANKCASE HEATER, LOW AMBIENT CONTROLS & (TO 0°F) WIND BAFFLES, REFRIGERATION LINE SET SIZED BY MANUFACTURER, AND TAMPER PROOF PORT CAPS.
 - PROVIDE WITH BIG FOOT MECHANICAL ROOF SUPPORT WITH ADJUSTABLE SUPPORT LEGS. SUPPORT SHALL EXTEND A MINIMUM OF 6" BEYOND EQUIPMENT IN EACH DIRECTION. BOLT EQUIPMENT TO MECHANICAL SUPPORT.
 - PROVIDE WITH MANUFACTURERS CONDENSATE PUMP, LITTLE GIANT MINI CONDENSATE PUMP, CONCEAL PUMP BEHIND UNIT WITHIN MOUNTING BRACKET ASSEMBLY. PUMP SHALL BE POWERED BY FAN COIL.
 - ELECTRICAL TO PROVIDE DISCONNECT.
 - SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.

PACKAGED AIR CONDITIONING SCHEDULE BID ALT#2																								
SYMBOL	AREA SERVED	NOM. TONS	SUPPLY FAN				COOLING CAPACITY 95°OSA, 80°EDB, 62°EWB				GAS HEATING CAPACITY			RTU ELECTRICAL			ELECTRICAL POWER EXHAUST			OSA CFM	MIN. SEER / EER	OPER. WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
			CFM	ESP	BRAKE BHP	DRIVE	STAGES	TOTAL MBH	SENS. MBH	INPUT MBH	OUTPUT MBH	MCA	MOC	V/Ø	HP	MCA	MOC	V/Ø						
RTU-1.13	HALLWAYS	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	280	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.14	CLASS ROOMS	10	4000	.50	2.4	DIRECT ECM	2	117.0	113.4	180.0 / 224.0	146.0 / 181.0	45.0	60	208/3	2	8.0	14.4	208/3	1110	11.0 EER	2000	CARRIER 48FC-12 STANDARD EFFICIENCY	1, 2, 4, 5, 6	
RTU-1.15	LIBRARY	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 150.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	740	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.16	CLASS ROOMS	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 150.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	740	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.17	CLASS ROOMS	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 150.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	740	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.18	CLASS ROOMS	10	4000	.50	2.4	DIRECT ECM	2	117.0	113.4	180.0 / 224.0	146.0 / 181.0	45.0	60	208/3	2	8.0	14.4	208/3	1110	11.0 EER	2000	CARRIER 48FC-12 STANDARD EFFICIENCY	1, 2, 4, 5, 6	
RTU-1.19	CLASS ROOMS	6	2400	.50	1.31	DIRECT ECM	2	66.9	66.5	120.0 / 150.0	96.0 / 120.0	33.0	50	208/3	0.5	2.9	5.2	208/3	740	11.2 EER	1350	CARRIER 48FC-07 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.20	HALLWAY	4	1600	.50	.72	DIRECT ECM	1	42.8	41.3	120.0 / 150.0	96.0 / 120.0	24.0	30	208/3	0.5	2.9	5.2	208/3	275	14.0	1100	CARRIER 48FC-05 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.21	CLASS ROOM	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	400	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.22	CLASS ROOM	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	400	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.23	CLASS ROOM	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	400	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.24	CLASS ROOM	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	400	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	
RTU-1.25	CLASS ROOM	3	1200	.50	.44	DIRECT ECM	1	30.9	29.9	82.0 / 110.0	65.0 / 93.0	19.0	25	208/3	0.5	2.9	5.2	208/3	400	14.0	1100	CARRIER 48FC-04 STANDARD EFFICIENCY	1, 2, 3, 5, 6	

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: DAIKIN, TRANE, LENNOX, AND YORK.
 - PROVIDE UNIT WITH TERMINAL STRIP FOR DDC CONTROL. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.
 - PROVIDE UNIT WITH MANUFACTURER'S ROOF CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), HAIL GUARDS, LOW AMBIENT CONTROLS (TO 0°F), FLUE EXTENDER, HIGH ALTITUDE KIT, THRU-THE-BOTTOM OF CURB ELECTRICAL CONNECTION KIT, HINGED ACCESS PANELS, MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS, AND MICROMETL CENTRIFUGAL POWER EXHAUST (100% RELIEF) WITH WIRING HARNESS. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - PROVIDE UNIT WITH MICROMETL WELDED SPRING ISOLATION CURB (SEE DETAIL FOR SEISMIC RESTRAINTS), MANUFACTURER HAIL GUARDS, LOW AMBIENT CONTROLS (TO 0°F), FLUE EXTENDER, HIGH ALTITUDE KIT, THRU-THE-BOTTOM OF CURB ELECTRICAL CONNECTION KIT, HINGED ACCESS PANELS, MICROMETL GEAR DRIVEN INTEGRATED DRY BULB ECONOMIZER WITH BELIMO LOGIC ACTUATORS, AND MICROMETL CENTRIFUGAL POWER EXHAUST (100% RELIEF) WITH WIRING HARNESS. ELECTRICAL CONTRACTOR TO PROVIDE THE POWER CONNECTION BETWEEN RTU AND THE POWER EXHAUST AND PROVIDE FUSED DISCONNECT AS REQUIRED.
 - MAXIMUM "A-WEIGHTED" SUPPLY AIR SOUND RATINGS FOR UNITS 2-18 TONS = 95 DB @ 125 HZ, 90 DB @ 250 HZ, PER ARI STANDARDS 270 & 370.
 - PROVIDE 2" PLEATED MERV 8 FILTER AND FILTER RACK WITH 4 EXTRA SETS PER UNIT.

DUCTLESS SPLIT CEILING CASSETTE COOLING & HEATING UNIT SCHEDULE																
SYMBOL	AREA SERVED	NOMINAL TONS	UNIT TYPE	SUPPLY FAN			COOLING REQUIRED AT 95°F OSA, 80°F EDB, 62°F EWB		HEATING REQUIRED AT 32°F OSA, 69°F EDB.	ELECTRICAL OUTDOOR UNIT			MINIMUM SEER / HSPF	INDOOR / OUTDOOR OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
				CFM	HP	V/Ø	TOTAL MBH	SENSIBLE MBH	TOTAL MBH	MCA	MOC	V/Ø				
DFC-1.2 DHP-1.2	PREP ROOM 179	1.5	CEILING CASSETTE COOL/HEAT UNIT	290-420	.061	THROUGH OUTDOOR UNIT	19.0	12.5	22.5	18	25	208/1	20.0/10.5	45/120	CARRIER INDOOR UNIT MODEL 40MBC018 CARRIER OUTDOOR UNIT MODEL 38MBRQ18	1, 2, 3, 4, 5, 6, 7

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: LENNOX, MITSUBISHI, PANASONIC, SAMSUNG, LG, DAIKIN, OR APPROVED EQUAL BY ENGINEER.
 - CONTROL UNIT WITH MANUFACTURER'S HARD-WIRED WALL MOUNTED 7 DAY PROGRAMMABLE THERMOSTAT WITH AUTO CHANGE OVER.
 - PROVIDE MANUFACTURERS CRANKCASE HEATER, LOW AMBIENT CONTROLS & (TO -13°F COOLING TO -22°F HEATING) WIND BAFFLES, REFRIGERATION LINE SET SIZED BY MANUFACTURER AND TAMPER PROOF PORT CAPS.
 - PROVIDE WITH MIRO IND. OR BIG FOOT HEAVY DUTY MECHANICAL ROOF SUPPORT WITH ADJUSTABLE SUPPORT LEGS. SUPPORT SHALL EXTEND A MINIMUM OF 6" BEYOND EQUIPMENT IN EACH DIRECTION. BOLT EQUIPMENT TO MECHANICAL SUPPORT.
 - PROVIDE WITH MANUFACTURERS CONDENSATE PUMP, OR LITTLE GIANT MINI CONDENSATE PUMP, CONCEAL PUMP BEHIND UNIT WITHIN MOUNTING BRACKET ASSEMBLY. ELECTRICAL CIRCUIT FOR PUMP SHALL BE INTEGRATED TO FAN COIL.
 - ELECTRICAL TO PROVIDE DISCONNECT AND HEAT TRACE BENEATH UNIT AND TO ROOF DRAIN.
 - SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.

ENERGY RECOVERY UNIT SCHEDULE									
SYMBOL	SUPPLY		EXHAUST		ELECTRICAL		WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
	CFM	ESP	CFM	ESP	WATTS	V/Ø			
ERV-1.1	65	.40	85	.40	100	120/1	45	PANASONIC FV-10VEC2	1, 2, 3

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: UPON PRIOR APPROVAL OF ENGINEER.
 - PROVIDE WITH EXHAUST ONLY FROST PREVENTION CONTROLS, HI/LOW SPEED, ADJUSTABLE SUPPLY AND EXHAUST FLOW DIALS, MERV 8 FILTERS IN EACH AIR STREAM, 6 YEAR WARRANTY, VIBRATION ISOLATORS ON EACH HANGING ROD, FLEXIBLE DUCT CONNECTIONS, HINGED ACCESS PANELS, AND FILTER ALARM. PROVIDE UNIT WITH UL APPROVAL LISTING.
 - ELECTRICAL TO PROVIDE DISCONNECT AND SPECIAL CONNECTION, UNIT IS EQUIPMENT WITH WALL PLUG.



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ELECTRIC HEATER SCHEDULE													
SYMBOL	AREA SERVED	UNIT TYPE	FAN			ELECTRICAL				MANUFACTURER AND MODEL	REMARKS		
			CFM	RPM	HP	KW	STEPS	V/Ø	AMPS				
EH-1.1	RAMP 190	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.2	VESTIBULE 182	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.3	RISER	SURFACE MOUNTED	245	1400	1/8	2	1	208/1	9.6	MARKEL MODEL 3420 SERIES	1, 2, 3, 4		
EH-1.4	VESTIBULE 164	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.5	HALL ENTRY	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.6	VESTIBULE	CEILING SURFACE MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH SURFACE ENCLOSURE	1, 2, 3		
EH-1.7	VESTIBULE	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.8	VESTIBULE	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.9	VESTIBULE	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		
EH-1.10	VESTIBULE	CEILING RECESS MOUNTED	300	1400	1/8	2	1	208/1	9.6	QMARK MODEL CDF SERIES WITH RECESSED ENCLOSURE	1, 3		

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: BRASCH, QMARK, MARKEL, INDECO, OUELLET, AND CHROMALOX.
 - PROVIDE SURFACE MOUNTING KIT.
 - PROVIDE UNIT WITH AN INTEGRAL THERMOSTAT. THERMOSTAT SHALL BE COVERED WITH A TAMPER-PROOF ACCESS COVER.
 - MOUNT UNIT 12" ABOVE FINISHED FLOOR.

DESTRATIFICATION FAN SCHEDULE											
SYMBOL	AREA SERVED	FAN		ELECTRICAL			WEIGHT LBS.	MAXIMUM dBA	MAXIMUM MOUNTING HEIGHT	MANUFACTURER AND MODEL	REMARKS
		CFM	RPM	V/Ø	WATTS	AMPS					
DSF-1.1	GYM	1128	2700	120/1	175	1.48	14	64	45'	AIRIUS MODEL AIR PEAR A-45-P2	1, 2, 3, 4, 5
DSF-1.2	GYM	1128	2700	120/1	175	1.48	14	64	45'	AIRIUS MODEL AIR PEAR A-45-P2	1, 2, 3, 4, 5

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: WITH PRIOR APPROVAL OF ENGINEER.
 - PROVIDE UNIT WITH PCS MOTOR, SEALED BEARINGS, Ø CORD, GUARD GRILLE, STATOR, Ø STEEL SAFETY CABLE AND HANGING BRACKET.
 - CONTROL UNIT WITH MANUFACTURERS WALL MOUNTED (TRIAC-120-1.5 FOR PCS MOTOR) SPEED CONTROLLER, IN ADDITION TO THE SPEED CONTROLLER, CONTROL SCHEDULE OF USE BY DDC.
 - PROVIDE OFF WHITE COLOR.
 - FAN SHALL BE INTEGRATED TO THE FIRE CONTROL PANEL. INCLUDES A 10-30 VDC PILOT RELAY FOR SEAMLESS FIRE CONTROL PANEL INTEGRATION. THE PILOT RELAY CAN BE WIRED NORMALLY OPEN OR NORMALLY CLOSED IN THE FIELD.

EXHAUST FAN SCHEDULE												
SYMBOL	AREA SERVED	UNIT TYPE	BLOWER				ELECTRICAL		MAXIMUM SONES	OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
			CFM	ESP	MAXIMUM RPM	DRIVE	HP/W	V/Ø				
EF-1.4	FACULTY RR	CEILING CABINET	100	.375	1075	DIRECT	46.5 W	115/1	2.5	15	COOK MODEL GC-148	1, 2, 4
EF-1.5	MECHANICAL ROOM	CEILING CABINET	75	.375	900	DIRECT	36.2 W	115/1	1.5	15	COOK MODEL GC-146	1, 2, 4
EF-1.6	BACK STAGE RR	ROOFTOP UPBLAST	250	.375	1550	DIRECT	1/8 HP	115/1	4.5	55	COOK MODEL ACRU-D-90R	1, 3, 4
EF-1.7	RESTROOMS 122/123	ROOFTOP UPBLAST	1000	.375	1725	BELT	1/6 HP	115/1	9.9	125	COOK MODEL ACRU-B-135R	1, 3, 4
EF-1.8	RESTROOM 139	ROOFTOP UPBLAST	700	.375	1725	BELT	1/6 HP	115/1	10.4	75	COOK MODEL ACRU-B-100R	1, 3, 4
EF-1.9	RESTROOM 141 & JAN 140	ROOFTOP UPBLAST	875	.375	1725	BELT	1/4 HP	115/1	12.6	75	COOK MODEL ACRU-B-100R	1, 3, 4
EF-1.10	RESTROOM 193	ROOFTOP UPBLAST	400	.375	1725	BELT	1/6 HP	115/1	7.9	75	COOK MODEL ACRU-B-100R	1, 3, 4
EF-1.11	RESTROOM 194	ROOFTOP UPBLAST	400	.375	1725	BELT	1/6 HP	115/1	7.9	75	COOK MODEL ACRU-B-100R	1, 3, 4
EF-1.12	FACULTY	CEILING CABINET	100	.375	1075	DIRECT	46.5 W	115/1	2.5	15	COOK MODEL GC-148	1, 2, 4

- REMARKS:
- APPROVED ALTERNATE MANUFACTURERS: ACME, GREENHECK, PENNBARRY, TWIN CITY FAN COMPANY, SOLER & PALAU
 - PROVIDE UNIT WITH MANUFACTURER'S ALUMINUM ROOF CAP (FLAT ROOF) EQUAL TO COOK MODEL PR (W/ INTEGRAL BIRD SCREEN AND ROOF CURB); MANUFACTURER'S STEEL ROOF JACK (SLOPED ROOF) EQUAL TO COOK MODEL RJ (W/ INTEGRAL BIRD SCREEN, FLASHING FLANGE AND BLACK EPOXY FINISH); BACKDRAFT DAMPER, OUTLET FLEX DUCT CONNECTION, STANDARD PLUG DISCONNECT, PRE-WIRED FAN SPEED CONTROLLER, THERMAL OVERLOAD PROTECTION, HANGING VIBRATION ISOLATORS, AND WHITE ALUMINUM GRILLE.
 - PROVIDE UNIT WITH MANUFACTURER'S ROOF CURB W/ DAMPER TRAY AND BACKDRAFT DAMPER, THERMAL OVERLOAD PROTECTION (120 VOLT ONLY), PRE-WIRED NEMA 3R ELECTRICAL DISCONNECT SWITCH, AND INTEGRAL BIRD SCREEN.
 - SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.

EXHAUST HOOD SCHEDULE												
SYMBOL	TYPE	HOOD DIMENSIONS		EXHAUST AIR			MAKE-UP AIR			WEIGHT LBS.	MANUFACTURER AND MODEL	REMARKS
		LENGTH	DEPTH	AIRFLOW CFM	DUCT CONNECTION	MAX S.P. LOSS	AIRFLOW CFM	DUCT CONNECTION	PLENUM WIDTH			
H-1.1	TYPE II EXHAUST HOOD (MAIN) (FRONT PSP MAKE-UP)	14'-0"	60"	2800	(2)14"Ø	-0.173"	2240	28"X12"	14"	850	CAPTIVEAIRE MODEL 6024 VHB-G-PSP-F TYPE 2 HOOD. WITH DEMAND VENTILATION.	1, 2, 3, 4
H-1.2	TYPE II EXHAUST HOOD (MAIN) (FRONT PSP MAKE-UP)	14'-0"	60"	2800	(2)14"Ø	-0.173"	2240	28"X12"	14"	850	CAPTIVEAIRE MODEL 6024 VHB-G-PSP-F TYPE 2 HOOD. WITH DEMAND VENTILATION.	1, 2, 3, 4
H-1.3	TYPE II DISHWASHER HOOD	3'-6"	48"	525	10"Ø	-0.069"	N/A	N/A	N/A	200	CAPTIVEAIRE MODEL 4824 VHB-G-ND	3

- REMARKS:
- HOOD SYSTEM(S) SHALL BE BY THE SAME MANUFACTURER.
 - PROVIDE WITH REMOTE MOUNTED CONTROLS (INCLUDING VFDs, HMI CABLE, CONTACTORS, AND TEMPERATURE SENSOR) AND ENERGY MANAGEMENT SYSTEM OVERRIDE.
 - PROVIDE HOOD WITH STAINLESS STEEL CEILING WRAP, EXHAUST COLLAR, FULL CONDENSATE CHANNEL AND DRAIN CONNECTION.
 - PROVIDE HOOD WITH STAINLESS STEEL END PANELS AND PERFORATED SUPPLY PLENUMS WITH COLLARS.

GAS FIRED MAKE-UP AIR UNIT SCHEDULE																				
SYMBOL	AREA SERVED	TYPE	SUPPLY FAN				ELECTRICAL		TEMP RISE (°F)	GAS HEATING		EVAP. FLOW RATE (GAL/HR)	EVAP. COOLER EDB TEMP.	EVAP. COOLER LDB TEMP.	EVAP. COOLER LWB TEMP.	WEIGHT (LBS)	SONES	MANUFACTURER AND MODEL	REMARKS	
			MAX CFM	ESP	HP	RPM	V/Ø	MCA		MOCP	INPUT MBH									OUTPUT MBH
MAU-1.1	TYPE II HOODS	OUTDOOR, DIRECT GAS FIRED	4480	.50	5.0	1860	208/3	18.8	30	78.0	341.0	314.4	6.22	91.0°F	72.0°F	63.0°F	1550	17	CAPTIVEAIRE MODEL A2-D-500-200 WITH DEMAND VENTILATION	1, 2, 3, 4, 5

- REMARKS:
- MAKE UP AIR UNIT SHALL BE THE SAME MANUFACTURER AS THE HOOD(S).
 - PROVIDE UNIT WITH STAINLESS STEEL BURNER, EVAPORATIVE COOLING SECTION WITH FREEZE PROTECTION DRAIN DOWN VALVE KIT, FILTER RACK AND FILTERS, INSULATED DOWNTURN PLENUM CABINET, MOTORIZED BACKDRAFT DAMPER, 100% OSA SCREENED INLET AIR HOOD AND FULL ROOF CURB.
 - PROVIDE UNIT WITH TOTALLY ENCLOSED PREMIUM EFFICIENCY MOTORS FOR VFD.
 - UNIT SHALL BE CONTROLLED BY HOOD CONTROL PANEL. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.
 - ELECTRICAL TO PROVIDE SEPARATE 120V/1Ø CIRCUIT FOR PLUMBING CONTROLS VALVES AT UNIT.

KITCHEN EXHAUST FAN SCHEDULE													
SYMBOL	AREA SERVED	UNIT TYPE	BLOWER				ELECTRICAL		MAXIMUM SONES	OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS	
			CFM	ESP	MAXIMUM RPM	DRIVE	HP	V/Ø					
EF-1.1	HOOD H-1.1	ROOF MOUNTED UP BLAST	2800	.50	1097	DIRECT	1.0	208/3	13.9	200	CAPTIVEAIRE MODEL DU180HFA WITH DEMAND VENTILATION	1, 2, 3	
EF-1.2	HOOD H-1.2	ROOF MOUNTED UP BLAST	2800	.50	1097	DIRECT	1.0	208/3	13.9	200	CAPTIVEAIRE MODEL DU180HFA WITH DEMAND VENTILATION	1, 2, 3	
EF-1.3	DISH HOOD H-1.3	ROOF MOUNTED UP BLAST	525	.50	1326	DIRECT	.33	115/1	12.2	125	CAPTIVEAIRE MODEL DU33HFA	1, 2, 4	

- REMARKS:
- EXHAUST FANS SHALL BE THE SAME MANUFACTURER AS THE HOOD(S).
 - PROVIDE UNIT WITH MANUFACTURER'S ROOF CURB W/ DAMPER TRAY AND BACKDRAFT DAMPER, THERMAL OVERLOAD PROTECTION (120 VOLT ONLY), PRE-WIRED NEMA 3R ELECTRICAL DISCONNECT SWITCH, AND INTEGRAL BIRD SCREEN.
 - CONTROL FAN WITH HOOD CONTROL SYSTEM. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.
 - ELECTRICAL SHALL PROVIDE WALL SWITCH WITH PILOT LIGHT TO CONTROL FAN. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.

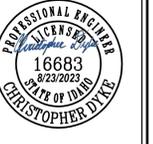
NOTE:
THE HOOD OVER THE COOKING EQUIPMENT IS A TYPE 2 BECAUSE THE KITCHEN WILL BE USED FOR REHEATING FOOD.



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Revisions	Date
#1	05/11/2023
#2	05/16/2023

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT # -
REVISIONS:

DRAWN BY: JM/CD
CHECKED BY: BC

Agency Review

DRAWING NO.

M-6.1
HVAC SCHEDULE

SUPPLY GRILLE SCHEDULE				
SYMBOL	NOMINAL SIZE	NECK / RUNOUT SIZE	CFM RANGE	REMARKS
	6X6	6X6	0-180	1, 2, 3, 4
	12X8	12X8	180-450	1, 2, 3, 4
	14X10	14X10	400-700	1, 2, 3, 4

REMARKS:

1. WALL GRILLE SIZES BASED ON TITUS MODEL 272F, DOUBLE DEFLECTION ADJUSTABLE BLADES, 3/4" SPACING, WHITE FINISH. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, CARNES, J&J REGISTER, TUTTLE & BAILEY, NAILOR, METAL-AIRE, KRUEGER, PRICE, AND UNITED ENERTECH.
2. SIZES BASED ON A MAXIMUM NC LEVEL OF 25.
3. ALL OF THE GRILLES SHOWN IN THIS SCHEDULE MAY NOT BE USED. REFERENCE THE HVAC PLAN FOR GRILLE CALL-OUTS AND THE QUANTITY OF EACH SIZE REQUIRED.
4. WHENEVER THERE IS A DISCREPANCY BETWEEN THE RUNOUT DUCT SIZE SHOWN ON THE PLANS AND THAT SHOWN IN THE SCHEDULE, ALWAYS USE THE LARGER OF THE TWO DUCT SIZES.

DIFFUSER SCHEDULE				
SYMBOL	NOMINAL SIZE	NECK / RUNOUT SIZE	CFM RANGE	REMARKS
	6X6	6"Ø	0 - 90	1, 2, 3, 4, 5, 6, 7
	9X9	8"Ø	90 - 200	1, 2, 3, 4, 5, 6, 7
	12X12	10"Ø	200 - 350	1, 2, 3, 4, 5, 6, 7
	15X15	12"Ø	300 - 500	1, 2, 3, 4, 5, 6, 7
	15X15	14"Ø	400 - 650	1, 2, 3, 4, 5, 6, 7
	18X18	16"Ø	600 - 900	1, 2, 3, 4, 5, 6, 7
	21X21	21X21	900 - 1400	1, 2, 3, 4, 5, 6, 7
	48" (3)-3/4" SLOT, 8" OVAL	8"Ø	0 - 175	2, 4, 5, 6, 7, 8
	48" (3)-3/4" SLOT, 12" OVAL	12"Ø	0 - 240	2, 4, 5, 6, 7, 8
	72" (3)-3/4" SLOT, 10" OVAL	10"Ø	0 - 275	2, 4, 5, 6, 7, 8
	72" (3)-3/4" SLOT, 12" OVAL	12"Ø	250 - 360	2, 4, 5, 6, 7, 8
	24X24 MODULE 8"Ø NECK	8"Ø"	0 - 200	2, 4, 5, 6, 7, 9
	24X24 MODULE 10"Ø NECK	10"Ø"	100 - 400	2, 4, 5, 6, 7, 9
	40"Ø	18"Ø	700 - 1075	2, 4, 5, 6, 7, 10

REMARKS:

1. SIZES BASED ON TITUS MODEL TDCA SERIES, HORIZONTAL TO VERTICAL ADJUSTABLE DISCHARGE. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, J&J REGISTER, NAILOR, METAL-AIRE, TUTTLE & BAILEY, KRUEGER, PRICE, AND UNITED ENERTECH.
2. SIZES BASED ON A MAXIMUM NC LEVEL OF 25.
3. ALL DIFFUSERS LOCATED IN LAY-IN CEILING AREAS SHALL BE BORDER TYPE 3 AND BE MOUNTED IN MANUFACTURER PROVIDED 24"X24" PANELS. ALL DIFFUSERS LOCATED IN HARD CEILING AREAS SHALL BE BORDER TYPE 6 (BEVELED) SURFACE MOUNTED. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF VARIOUS CEILING TYPES.
4. SEE HVAC FLOOR PLANS FOR DIRECTIONAL THROW REQUIREMENTS FOR EACH DIFFUSER.
5. ALL OF THE DIFFUSERS SHOWN IN THIS SCHEDULE MAY NOT BE USED. REFERENCE THE HVAC PLAN FOR DIFFUSER CALL-OUTS AND THE QUANTITY OF EACH SIZE REQUIRED.
6. WHENEVER THERE IS A DISCREPANCY BETWEEN THE RUNOUT DUCT SIZE SHOWN ON THE PLANS AND THAT SHOWN IN THE SCHEDULE, ALWAYS USE THE LARGER OF THE TWO DUCT SIZES.
7. WHITE FINISH.
8. SIZES BASED ON TITUS MODEL ML-38 WITH PLENUM MP-38. DIFFUSERS LOCATED IN LAY-IN CEILING AREAS SHALL BE BORDER TYPE 3 AND HARD CEILING AREAS SHALL BE BORDER TYPE 6. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF VARIOUS CEILING TYPES. HARD CEILING APPLICATION SHALL BE CLIP TYPE AND NO SCREWS SHALL BE USED ON DIFFUSER. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, J&J REGISTER, NAILOR, METAL-AIRE, TUTTLE & BAILEY, KRUEGER AND PRICE.
9. SIZES BASED ON TITUS MODEL PCS-DF SERIES, 4-WAY ADJUSTABLE DEFLECTORS (PATTERN CONTROLLER), VERTICAL/HORIZONTAL WITH HINGED DROP PERFORATED FACE. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, J&J REGISTER, NAILOR, METAL-AIRE, TUTTLE & BAILEY, KRUEGER, PRICE, AND UNITED ENERTECH.
10. SIZES BASED ON TITUS MODEL TMRA, TYPE 3, ROUND CEILING DIFFUSER, STEEL CONSTRUCTION. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, J&J REGISTER, NAILOR, METAL-AIRE, TUTTLE & BAILEY, KRUEGER, PRICE, AND UNITED ENERTECH.

RETURN & EXHAUST GRILLE SCHEDULE				
SYMBOL	NOMINAL SIZE	NECK / RUNOUT SIZE	CFM RANGE	REMARKS
	8X8	6"Ø	0-80	1, 2, 3, 4, 5, 6
	10X10	8"Ø	80-180	1, 2, 3, 4, 5, 6
	12X12	10"Ø	180-300	1, 2, 3, 4, 5, 6
	22X10	6"Ø	0-80	1, 2, 3, 4, 5, 6
	22X10	8"Ø	80-180	1, 2, 3, 4, 5, 6
	22X10	10"Ø	180-300	1, 2, 3, 4, 5, 6
	22X22	12"Ø	300-500	1, 2, 3, 4, 5, 6
	22X22	14"Ø	500-750	1, 2, 3, 4, 5, 6
	22X10	22X10	500-1100	1, 2, 3, 4, 5, 6
	22X22	22X22	1100-2000	1, 2, 3, 4, 5, 6
	22X22	16"Ø	1100-1300	1, 2, 3, 4, 5, 6
	22X22	18"Ø	1100-1700	1, 2, 3, 4, 5, 6
	10X10	10X10	0-200	1, 2, 3, 4, 5, 6
	10X6	10X6	0-180	2, 4, 5, 6, 8
	12X6	12X6	0-200	2, 4, 5, 6, 7
	36X24	36X24	0-2500	2, 4, 5, 6, 8
	18X14	18X14	0-1000	2, 4, 5, 6, 8
	12X12	12X12	0-500	2, 4, 5, 6, 8
	8X8	8X8	0-400	2, 4, 5, 6, 7
	12X8	12X8	0-160	2, 4, 5, 6, 8
	24X8	24X8	0-250	2, 4, 5, 6, 8

REMARKS:

1. SIZES BASED ON TITUS MODEL 50F, ALUMINUM EGGRATE RETURN GRILLE, 1/2" x 1/2" x 1" SPACING (SINGLE CORE). PROVIDE SQUARE TO ROUND TRANSITION (WHERE ROUND RUN-OUT INDICATED). APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, CARNES, PRICE, NAILOR, METAL-AIRE, TUTTLE & BAILEY, KRUEGER, J&J REGISTER, AND UNITED ENERTECH.
2. SIZES BASED ON A MAXIMUM NC LEVEL OF 25.
3. ALL GRILLES LOCATED IN LAY-IN CEILING AREAS SHALL HAVE BORDER #3, UNLESS OTHERWISE INDICATED. ALL GRILLES LOCATED IN HARD CEILING AREAS SHALL HAVE BORDER #1, UNLESS OTHERWISE INDICATED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF VARIOUS CEILING TYPES. SHEET METAL DUCTWORK VISIBLE BEHIND GRILLE SHALL BE PAINTED FLAT BLACK.
4. ALL OF THE GRILLES SHOWN IN THIS SCHEDULE MAY NOT BE USED. REFERENCE THE HVAC PLAN FOR GRILLE CALL-OUTS AND THE QUANTITY OF EACH SIZE REQUIRED.
5. WHENEVER THERE IS A DISCREPANCY BETWEEN THE RUNOUT DUCT SIZE SHOWN ON THE PLANS AND THAT SHOWN IN THE SCHEDULE, ALWAYS USE THE LARGER OF THE TWO DUCT SIZES.
6. WHITE FINISH.
7. LOW WALL GRILLE SIZES BASED ON TITUS MODEL 33R, HEAVY DUTY STEEL, 14 GAUGE BLADES, 1/2" SPACING, 38" DEFLECTION, ALL-WELDED CONSTRUCTION. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, CARNES, J&J REGISTER, NAILOR, TUTTLE & BAILEY, KRUEGER, PRICE, AND UNITED ENERTECH.
8. HIGH WALL GRILLE SIZES BASED ON TITUS MODEL 355 RL, STEEL BAR GRILLE, FIXED BLADES, 1/2" SPACING, 35" DEFLECTION, ADJUSTABLE OPPOSED BLADE DAMPER. APPROVED ALTERNATE MANUFACTURERS INCLUDE ANEMOSTAT, CARNES, J&J REGISTER, NAILOR, TUTTLE & BAILEY, KRUEGER, PRICE, AND UNITED ENERTECH.



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#	Description	Date
		05/11/2023
Addendum #1	Addendum #2	Date

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT # -
REVISIONS:

DRAWN BY: JM/CD
CHECKED BY: BC

Agency Review

DRAWING NO.

M-6.2
HVAC SCHEDULE

CONTROLS LEGEND	
SYMBOL	DESCRIPTION
	ANALOG INPUT
	DIGITAL INPUT
	ANALOG OUTPUT
	DIGITAL OUTPUT
	CONTROL ELEMENT TAG
	3-WAY, 2-WAY CONTROL VALVE
	PARALLEL BLADE CONTROL DAMPER
	OPPOSED BLADE CONTROL DAMPER
	OPPOSED BLADE CONTROL DAMPER

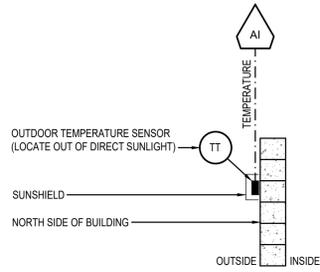
CONTROLS LEGEND	
SYMBOL	DESCRIPTION
	MOTOR
	THERMOWELL
	CURRENT SENSING RELAY
	CONTROL RELAY
	AIRFLOW MEASURING STATION (EBTRON GOLD SERIES) BY CONTROL CONTRACTOR
	DX REFRIGERANT COOLING COIL
	CHILLED WATER COOLING COIL
	HOT WATER HEATING COIL
	HEAT RECOVERY COIL
	HOT WATER PREHEAT COIL
	HOT WATER REHEAT COIL
	GAS-FIRED HEAT EXCHANGER
	THERMOSTAT
	SPACE TEMPERATURE SENSOR
	SPACE HUMIDITY SENSOR
	SPACE CARBON MONOXIDE SENSOR
	SPACE PRESSURE TRANSMITTER
	LOW VOLTAGE SIGNAL
	LINE VOLTAGE POWER

NOTES:
 1. ALL DATA THAT IS NOTED TO BE "ADJUSTABLE" ON THE FOLLOWING CONTROL SHEETS SHALL MADE BOTH ADJUSTABLE AND LOCKABLE FROM THE OPERATOR'S WORKSTATION AND IN PARTICULAR, THE GRAPHICAL USER INTERFACE (GUI).
 2. GLOBAL CALENDAR SCHEDULING SHALL BE PROVIDED.

CONTROLS LEGEND	
SYMBOL	DESCRIPTION
APS	AIRFLOW PROVING SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BCV	BYPASS CONTROL VALVE
C	CONDENSATE
CFL	CONDENSATE FLOAT LEVEL SWITCH
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CR	CONTROL RELAY
CSR	CURRENT SENSING RELAY
D	DAMPER
DA	DAMPER ACTUATOR
DDC	DIRECT DIGITAL CONTROLS
DP	DEW POINT TRANSMITTER
DPT	DAMPER POSITION TRANSMITTER
FM	FLOW METER (TURBINE STYLE)
FS	FLOW SWITCH
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HL	HUMIDITY HIGH LIMIT SWITCH
HT	HUMIDITY TRANSMITTER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LS	LIMIT SWITCH
PDS	PRESSURE DIFFERENTIAL SWITCH
PDT	PRESSURE DIFFERENTIAL TRANSMITTER
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
RS	ROTATION SENSOR
SV	SOLENOID VALVE
TT	TEMPERATURE TRANSMITTER
TV	TEMPERATURE CONTROL VALVE
WL	WATER LEVEL SWITCH

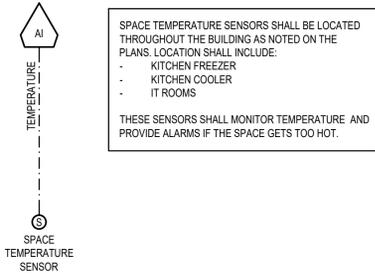
GENERAL:
 ONE OUTSIDE AIR TEMPERATURE SENSOR SHALL BE INSTALLED ON THE NORTH SIDE OF THE BUILDING TO PROVIDE A CONTINUOUS READING OF THE OUTSIDE AIR TEMPERATURE.

OUTSIDE AIR TEMPERATURE SEQUENCE OF OPERATION



OUTSIDE AIR TEMPERATURE CONTROL SCHEMATIC

GENERAL SPACE TEMPERATURE SENSORS

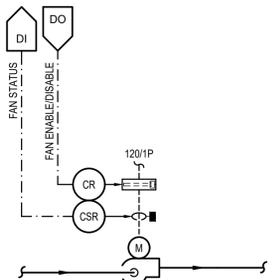


GENERAL:
 THE DOMESTIC HOT WATER RECIRCULATION PUMPS SHALL OPERATE FROM THE DDC SYSTEM.

OPERATION:
 THE DDC SYSTEM SHALL ENABLE THE DOMESTIC HOT WATER RETURN PUMP BASED ON THE OCCUPIED BUILDING SCHEDULE. IF THE PUMP IS SIGNALLED ON AND DOES NOT PROVIDE PROOF OF OPERATION, THE CONTROL SYSTEM SHALL GENERATE AN ALARM AT THE CENTRAL OPERATOR'S WORKSTATION.

DOMESTIC HOT WATER PUMP SYSTEM SEQUENCE OF OPERATION

(ALL DOMESTIC HOT WATER RECIRCULATION PUMPS)



DOMESTIC HOT WATER PUMP CONTROL SCHEMATIC

(ALL DOMESTIC HOT WATER RECIRCULATION PUMPS)

GENERAL:
 THE CONTROL CONTRACTOR SHALL PROVIDE A NEW DDC CONTROL PACKAGE FOR THE UPBLAST EXHAUST FAN SYSTEM.

THE EXHAUST FAN SHALL START AND STOP ON THE MASTER WEEKLY AND HOLIDAY SCHEDULE SET AT THE OPERATOR'S WORKSTATION.

OCCUPIED MODE:
 WHEN THE UNIT IS SCHEDULED INTO THE OCCUPIED MODE THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

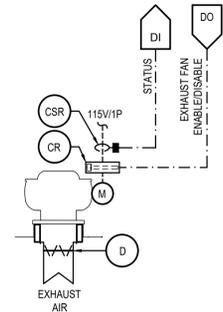
1. SEND AN ENABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE EXHAUST FAN FAILS TO START, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

UNOCCUPIED MODE:
 WHEN THE UNIT IS SCHEDULED INTO THE UNOCCUPIED MODE THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE EXHAUST FAN FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

UPBLAST EXHAUST FAN SEQUENCE OF OPERATION

(EF-1.6, EF-1.7, EF-1.8, EF-1.9, EF-1.10, & EF-1.11)



UPBLAST EXHAUST FAN CONTROL SCHEMATIC

(EF-1.6, EF-1.7, EF-1.8, EF-1.9, EF-1.10, & EF-1.11)

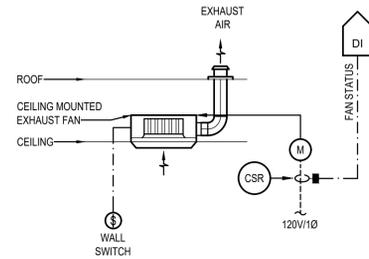
GENERAL:
 THE CEILING CABINET EXHAUST FAN SYSTEM SHALL CONSIST OF A CEILING-MOUNTED EXHAUST FAN AND A WALL SWITCH. THE CONTROL CONTRACTOR SHALL PROVIDE A NEW DDC CONTROL PACKAGE.

THE EXHAUST FAN SHALL BE CONTROLLED THROUGH A WALL SWITCH.

THE DDC CONTROLLER SHALL MONITOR THE STATUS OF THE EXHAUST FAN. IF THE FAN IS ON DURING NORMALLY UNOCCUPIED HOURS, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

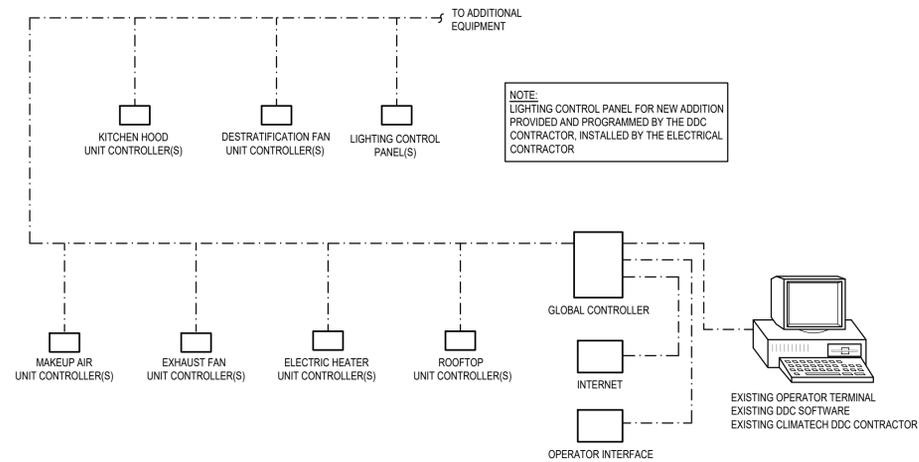
CEILING CABINET EXHAUST FAN SEQUENCE OF OPERATION

(EF-1.4, EF-1.5, & EF-1.12)



CEILING CABINET EXHAUST FAN CONTROL SCHEMATIC

(EF-1.4, EF-1.5, & EF-1.12)



CONTROL SYSTEM ARCHITECTURE



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Revisions	Date
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Addendum #2	

Jefferson Elementary School
 Addition and Remodel
 600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
 LKV PROJECT #: -
 REVISIONS:

DRAWN BY: JM/CD
 CHECKED BY: BC

Agency Review

DRAWING NO.

M-7.0
 DDC CONTROLS

GENERAL:
 THE PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) CONTROL SHALL CONSIST OF AN OUTSIDE AIR INTAKE W/ MODULATING DAMPERS, A RETURN AIR INTAKE W/ MODULATING DAMPERS, A CONSTANT VOLUME EXHAUST FAN, A SUPPLY FAN, A GAS-FIRED HEAT EXCHANGER, A DX COOLING COIL, AND A SPACE TEMPERATURE SENSOR. THE RTU'S THAT SERVE MULTIPLE AREAS SHALL INCLUDE AVERAGING TEMPERATURE SENSORS (SEE FLOOR PLAN FOR QUANTITY). THE CONTROL CONTRACTOR SHALL PROVIDE A NEW DDC CONTROL PACKAGE DEDICATED TO THE COMPLETE OPERATION OF THE UNIT.

THE SUPPLY FAN SHALL START AND STOP ON THE MASTER WEEKLY AND HOLIDAY SCHEDULE SET AT THE OPERATOR'S WORKSTATION.

ALL PARAMETERS SHALL BE REMOTELY ADJUSTABLE FROM THE BUILDING AUTOMATION SYSTEM.

MORNING WARM-UP / COOLDOWN:
 MORNING WARM-UP / COOLDOWN SHALL BE CONTROLLED BY AN OPTIMUM START / STOP MODE PROVIDED BY THE DDC CONTROLLER THAT AIDS IN THE REDUCTION OF ENERGY COSTS DURING A BUILDING'S TRANSITION FROM UNOCCUPIED TO OCCUPIED OR OCCUPIED TO UNOCCUPIED. THIS SCENARIO IS ACCOMPLISHED BY TURNING ON THE PRE-HEATING / PRE-COOLING AS LATE AS POSSIBLE TO REACH COMFORT LEVELS PRIOR TO OCCUPANCY AND TURNING OFF THE HEATING / COOLING AS EARLY AS POSSIBLE WHILE STILL MAINTAINING OCCUPIED ZONE COMFORT UNTIL THE ZONE IS VACANT.

THE DDC CONTROLLER OPTIMUM START / STOP MODE SHALL CONTINUOUSLY MONITOR, CALCULATE AND ADJUST THE FOLLOWING VARIABLES IN ORDER TO DETERMINE THE OPTIMAL START / STOP TIMES:

1. OUTSIDE AIR TEMPERATURE
2. OPTIMUM ECONOMIZER POSITION (COOLDOWN).
3. RATE OF WARM-UP / COOL-DOWN IN EACH ZONE AFTER EQUIPMENT START-UP.
4. TEMPERATURE DIFFERENCE BETWEEN THE ZONE TEMPERATURE AND THE HEATING / COOLING SET POINTS.
5. AMOUNT OF TIME REQUIRED TO RAISE OR LOWER THE ZONE TEMPERATURE 1°F.
6. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED DURING THE WARM-UP MODE.

OCCUPIED MODE:
 WHEN THE UNIT IS SCHEDULED INTO THE OCCUPIED MODE THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE TO PROVIDE THE MINIMUM AMOUNT OF OUTSIDE AIRFLOW (AS INDICATED IN THE ROOFTOP UNIT SCHEDULE).
 - b. VALIDATE THE POSITION THROUGH THE DAMPER POSITION TRANSMITTER.
 - 1) IF THE DAMPERS FAILS TO PROVIDE THE MINIMUM AMOUNT OF OUTSIDE AIR, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
2. SEND AN ENABLE COMMAND TO THE SUPPLY FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN FAILS TO START, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE OCCUPIED MODE SPACE TEMPERATURE COOLING SET POINT SHALL BE SET AT 75°F (ADJUSTABLE). THE OCCUPIED MODE SPACE TEMPERATURE HEATING SET POINT SHALL BE SET AT 70°F (ADJUSTABLE).

UNOCCUPIED MODE:
 WHEN THE UNIT IS SCHEDULED INTO THE UNOCCUPIED MODE THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE TO PROVIDE 100% RETURN AIR.
 - b. VALIDATE THE POSITION THROUGH THE DAMPER POSITION TRANSMITTER.
 - 1) IF THE DAMPERS FAIL TO PROVIDE 100% RETURN AIR, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
2. SEND A DISABLE COMMAND TO THE SUPPLY FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE SUPPLY FAN FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE SUPPLY FAN(S) SHALL CYCLE W/ THE HEATING AND COOLING MODES OF OPERATION TO MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE SET POINTS.

THE UNOCCUPIED MODE SPACE TEMPERATURE COOLING SET POINT SHALL BE SET AT 85°F (ADJUSTABLE). THE UNOCCUPIED MODE SPACE TEMPERATURE HEATING SET POINT SHALL BE SET AT 55°F (ADJUSTABLE).

COOLING MODE OF OPERATION (DRY BULB ECONOMIZER):
 THE DRY BULB ECONOMIZER COOLING MODE OF OPERATION SHALL BE ENABLED WHENEVER ALL OF THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE INCREASES ABOVE THE SPACE TEMPERATURE COOLING SET POINT.
2. THE OUTSIDE AIR TEMPERATURE IS 2°F (ADJUSTABLE) BELOW THE RETURN AIR TEMPERATURE.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE UP TO 100% OUTSIDE AIR TO MAINTAIN THE SPACE TEMPERATURE COOLING SET POINT.

COOLING MODE OF OPERATION (DX COOLING):
 THE DX COOLING MODE OF OPERATION SHALL BE ENABLED WHENEVER ALL THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE INCREASES 1°F (ADJUSTABLE) ABOVE THE SPACE TEMPERATURE COOLING SET POINT.
2. THE OUTSIDE AIR / RETURN AIR DAMPERS ARE POSITIONED AT EITHER THEIR MINIMUM OR MAXIMUM OUTSIDE AIR SETTINGS.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE DX COOLING SYSTEM (COMPRESSORS / CONDENSER FANS).
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE DECREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE DECREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
 - b. THE UNITS CONTROLLER SHALL STAGE THE COMPRESSORS TO MAINTAIN THE SPACE TEMPERATURE COOLING SET POINT.

THE COOLING MODE OF OPERATION SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE DECREASES 1°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE COOLING SET POINT FOR A PERIOD OF 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN THE ABOVE CONDITION IS MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE DX COOLING SYSTEM (COMPRESSORS / CONDENSER FANS).
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE INCREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE INCREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

HEATING MODE OF OPERATION (GAS-FIRED):
 THE HEATING MODE OF OPERATION (GAS-FIRED) SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE DECREASES 1°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE HEATING SET POINT.

WHEN THE ABOVE CONDITION IS MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO STAGE #1 (LOW FIRE) OF THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE INCREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE INCREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

IF THE SPACE TEMPERATURE DECREASES 2°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE HEATING SET POINT, THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO STAGE #2 (HIGH FIRE) OF THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE INCREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE INCREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE SPACE TEMPERATURE HEATING MODE OF OPERATION (GAS-FIRED) SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE INCREASES 1°F (ADJUSTABLE) ABOVE THE SPACE TEMPERATURE HEATING SET POINT.

WHEN THE ABOVE CONDITION IS MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE DECREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE DECREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

INDOOR AIR QUALITY (IAQ) OPERATION:

WHENEVER THE ROOFTOP UNIT IS IN THE OCCUPIED MODE AND THE SUPPLY FAN IS ON, THE DDC CONTROLLER SHALL CONTINUOUSLY CALCULATE THE MINIMUM DAMPER POSITION NECESSARY TO MAINTAIN THE SPACE CO2 SET POINT (DEMAND CONTROLLED VENTILATION OR DCV), AS THE CO2 LEVEL INCREASES ABOVE THE SET POINT, THE ROUTINE SHALL INCREASE THE OUTSIDE AIR REQUIREMENT AND AS THE CO2 LEVEL FALLS BELOW THE SET POINT, THE ROUTINE SHALL DECREASE THE CALCULATED VALUE. THE MINIMUM AND MAXIMUM OUTSIDE AIR DAMPER POSITIONS SHALL BE EQUAL TO THE OUTSIDE AIRFLOWS LISTED IN THE ROOFTOP UNIT SCHEDULE.

THE MAXIMUM SPACE CO₂ SET POINT SHALL BE SET AT 1,100 PPM (ADJUSTABLE).

THE MINIMUM CO₂ SET POINT SHALL BE SET AT 0 PPM (ADJUSTABLE).

THE MAXIMUM OUTSIDE AIR DAMPER POSITION IN DCV MODE SHALL BE SET TO THE AIRFLOW LISTED IN THE RTU SCHEDULE.

IAQ SHALL BE SUSPENDED AND THE OUTSIDE AIR DAMPERS SHALL BE RESET TO THEIR MINIMUM OUTSIDE AIRFLOW SETTINGS FOR A PERIOD OF 10 MINUTES (ADJUSTABLE) WHENEVER THE AVERAGE SPACE TEMPERATURE INCREASES 3°F (ADJUSTABLE) ABOVE THE SPACE COOLING SET POINT OR 3°F (ADJUSTABLE) BELOW THE SPACE HEATING SET POINT.

EXHAUST SYSTEM:

THE EXHAUST SYSTEM SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITIONS EXIST:

1. THE SUPPLY FAN IS ENABLED.
2. THE ECONOMIZER DAMPER END SWITCH REACHES 50% OPEN (ADJUSTABLE).

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL ENABLE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN FAILS TO START, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE EXHAUST SYSTEM SHALL BE DISABLED WHENEVER ONE OF THE FOLLOWING CONDITIONS EXISTS:

1. THE SUPPLY FAN IS OFF.
2. THE ECONOMIZER DAMPER END SWITCH DROPS BELOW 50% OPEN (ADJUSTABLE).

WHEN ONE OF THE ABOVE CONDITIONS IS MET THE DDC CONTROLLER SHALL ENABLE THE FOLLOWING:

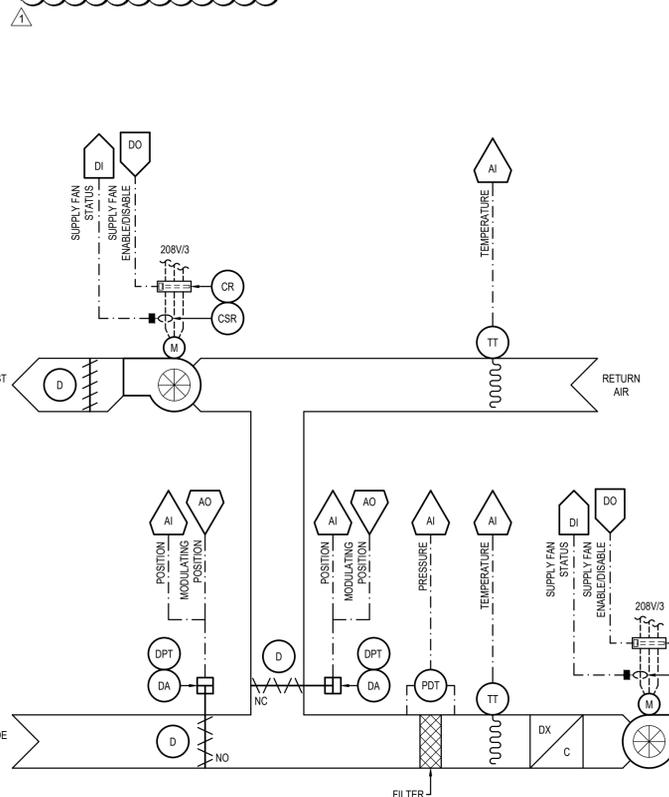
1. SEND A DISABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) SUPPLY & EXHAUST FAN CARBON DIOXIDE CONTROL SEQUENCE OF OPERATION

RTU-1.1, RTU-1.2, RTU-1.4, RTU-1.6, RTU-1.8, RTU-1.9, RTU-1.10, RTU-1.11, RTU-1.12, RTU-1.13, RTU-1.14, RTU-1.15, RTU-1.16, RTU-1.17, RTU-1.18, RTU-1.19, RTU-1.20, RTU-1.21, RTU-1.22, RTU-1.23, RTU-1.24, & RTU-1.25

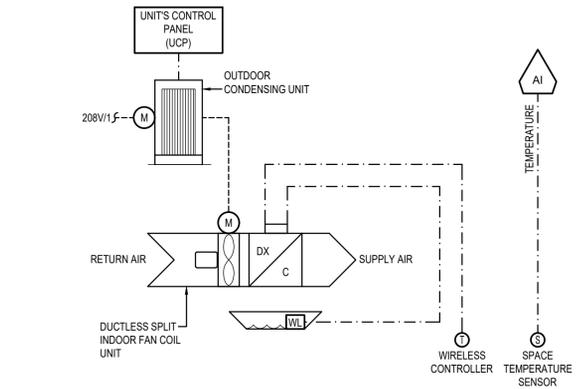
DUCTLESS SPLIT SYSTEM SEQUENCE OF OPERATION

(DFC-1.1/DCU-1.1, DFC-1.2/DHP-1.2, & DFC-1.3/DCU-1.3)



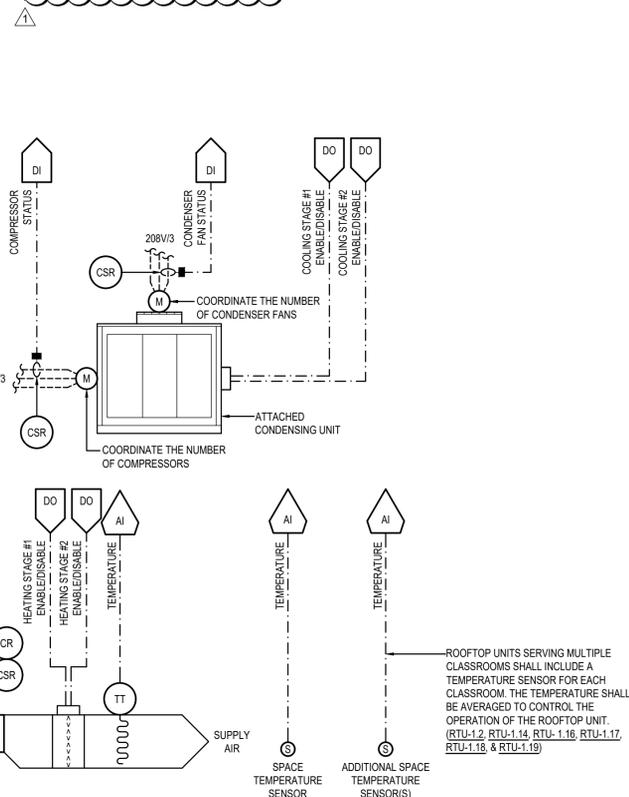
PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) SUPPLY & EXHAUST CARBON DIOXIDE CONTROL SYSTEM SCHEMATIC

RTU-1.1, RTU-1.2, RTU-1.4, RTU-1.6, RTU-1.8, RTU-1.9, RTU-1.10, RTU-1.11, RTU-1.12, RTU-1.13, RTU-1.14, RTU-1.15, RTU-1.16, RTU-1.17, RTU-1.18, RTU-1.19, RTU-1.20, RTU-1.21, RTU-1.22, RTU-1.23, RTU-1.24, & RTU-1.25



DUCTLESS SPLIT SYSTEM CONTROL SCHEMATIC

(DFC-1.1/DCU-1.1, DFC-1.2/DHP-1.2, & DFC-1.3/DCU-1.3)



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Revisions	Date
#1	08/11/2023
#2	08/16/2023

Jefferson Elementary School
 Addition and Remodel
 600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
 LKV PROJECT #: -
 REVISIONS:

DRAWN BY: JM/CD
 CHECKED BY: BC

Agency Review

DRAWING NO.

M-7.1
 DDC CONTROLS

GENERAL:
THE PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) AND CARBON DIOXIDE CONTROL SHALL CONSIST OF AN OUTSIDE AIR INTAKE W/ MODULATING DAMPERS, A RETURN AIR INTAKE, AN EXHAUST FAN W/ MODULATING DAMPERS AND A VFD, A SUPPLY FAN, A GAS-FIRED HEAT EXCHANGER, A DX COOLING COIL, AND A CARBON DIOXIDE SENSOR. THE DDC CONTRACTOR SHALL PROVIDE A NEW DDC CONTROL PACKAGE DEDICATED TO THE COMPLETE OPERATION OF THE UNIT.

THE SUPPLY FAN SHALL START AND STOP ON THE MASTER WEEKLY AND HOLIDAY SCHEDULE SET AT THE OPERATOR'S WORKSTATION.

THE TEMPERATURE SENSOR SHALL SIGNAL THE DDC CONTROLLER ITS TEMPERATURE AND THE TEMPERATURE OF THE HEATING AND COOLING SET POINTS.

THE CARBON DIOXIDE SENSOR SHALL SIGNAL THE DDC CONTROLLER THE SPACE CO₂ LEVEL.

THERE SHALL BE NO SPACE TEMPERATURE OR CO₂ LEVELS DISPLAYED.

THE DDC CONTROLLER SHALL BE CAPABLE OF BEING MANUALLY RESET TO THE OCCUPIED MODE FOR A 2-HOUR TIME PERIOD (ADJUSTABLE) UPON A SIGNAL FROM AN OVERRIDE BUTTON LOCATED ON THE TEMPERATURE SENSOR.

ALL PARAMETERS SHALL BE REMOTELY ADJUSTABLE FROM THE BUILDING AUTOMATION SYSTEM.

MORNING WARM-UP / COOLDOWN:
MORNING WARM-UP / COOLDOWN SHALL BE CONTROLLED BY AN OPTIMUM START / STOP MODE PROVIDED BY THE DDC CONTROLLER THAT AIDS IN THE REDUCTION OF ENERGY COSTS DURING A BUILDING'S TRANSITION FROM UNOCCUPIED TO OCCUPIED OR OCCUPIED TO UNOCCUPIED. THIS SCENARIO IS ACCOMPLISHED BY TURNING ON THE PRE-HEATING / PRE-COOLING AS LATE AS POSSIBLE TO REACH COMFORT LEVELS PRIOR TO OCCUPANCY AND TURNING OFF THE HEATING / COOLING AS EARLY AS POSSIBLE WHILE STILL MAINTAINING OCCUPIED ZONE COMFORT UNTIL THE ZONE IS VACANT.

THE DDC CONTROLLER OPTIMUM START / STOP MODE SHALL CONTINUOUSLY MONITOR, CALCULATE AND ADJUST THE FOLLOWING VARIABLES IN ORDER TO DETERMINE THE OPTIMAL START / STOP TIMES:

1. OUTSIDE AIR TEMPERATURE
2. OPTIMUM ECONOMIZER POSITION (COOLDOWN)
3. RATE OF WARM-UP / COOL-DOWN AFTER EQUIPMENT START-UP
4. TEMPERATURE DIFFERENCE BETWEEN THE ZONE TEMPERATURE AND THE HEATING / COOLING SET POINTS.
5. AMOUNT OF TIME REQUIRED TO RAISE OR LOWER THE ZONE TEMPERATURE 1°F.
6. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED DURING THE WARM-UP MODE.

OCCUPIED MODE:
WHEN THE UNIT IS SCHEDULED INTO THE OCCUPIED MODE THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE TO PROVIDE THE MINIMUM AMOUNT OF OUTSIDE AIRFLOW (AS INDICATED IN THE ROOFTOP UNIT SCHEDULE).
 - b. VALIDATE THE POSITION THROUGH THE DAMPER POSITION TRANSMITTER.
 - 1) IF THE DAMPERS FAIL TO PROVIDE THE MINIMUM AMOUNT OF OUTSIDE AIR, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
2. SEND AN ENABLE COMMAND TO THE SUPPLY FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN FAILS TO START, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE OCCUPIED MODE SPACE TEMPERATURE COOLING SET POINT SHALL BE SET AT 75°F (ADJUSTABLE). THE OCCUPIED MODE SPACE TEMPERATURE HEATING SET POINT SHALL BE SET AT 70°F (ADJUSTABLE).

UNOCCUPIED MODE:
WHEN THE UNIT IS SCHEDULED INTO THE UNOCCUPIED MODE, THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE TO PROVIDE 100% RETURN AIR.
 - b. VALIDATE THE POSITION THROUGH THE DAMPER POSITION TRANSMITTER.
 - 1) IF THE DAMPERS FAIL TO PROVIDE 100% RETURN AIR, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
2. SEND A DISABLE COMMAND TO THE SUPPLY FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE SUPPLY FAN FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE SUPPLY FAN SHALL CYCLE W/ THE HEATING AND COOLING MODES OF OPERATION TO MAINTAIN THE UNOCCUPIED SPACE TEMPERATURE SET POINTS.

THE UNOCCUPIED MODE SPACE TEMPERATURE COOLING SET POINT SHALL BE SET AT 85°F (ADJUSTABLE). THE UNOCCUPIED MODE SPACE TEMPERATURE HEATING SET POINT SHALL BE SET AT 55°F (ADJUSTABLE).

COOLING MODE OF OPERATION (DRY BULB ECONOMIZER):
THE DRY BULB ECONOMIZER COOLING MODE OF OPERATION SHALL BE ENABLED WHENEVER ALL OF THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE INCREASES ABOVE THE SPACE TEMPERATURE COOLING SET POINT.
2. THE OUTSIDE AIR TEMPERATURE IS 2°F (ADJUSTABLE) BELOW THE RETURN AIR TEMPERATURE.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE OUTSIDE AIR / RETURN AIR DAMPERS.
 - a. THE DAMPERS SHALL MODULATE UP TO 100% OUTSIDE AIR TO MAINTAIN THE SPACE TEMPERATURE COOLING SET POINT.

COOLING MODE OF OPERATION (DX COOLING):
THE DX COOLING MODE OF OPERATION SHALL BE ENABLED WHENEVER ALL THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE INCREASES 1°F (ADJUSTABLE) ABOVE THE SPACE TEMPERATURE COOLING SET POINT.
2. THE OUTSIDE AIR / RETURN AIR DAMPERS ARE POSITIONED AT EITHER THEIR MINIMUM OR MAXIMUM OUTSIDE AIR SETTINGS.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE DX COOLING SYSTEM (COMPRESSORS / CONDENSER FANS).
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE DECREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE DECREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
 - b. THE UNIT'S CONTROLLER SHALL STAGE THE COMPRESSORS TO MAINTAIN THE SPACE TEMPERATURE COOLING SET POINT.

THE COOLING MODE OF OPERATION SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE DECREASES 1°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE COOLING SET POINT FOR A PERIOD OF 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN THE ABOVE CONDITION IS MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE DX COOLING SYSTEM (COMPRESSORS / CONDENSER FANS).
 - a. VALIDATE THE RUNNING STATUS OF THE DX COOLING SYSTEM THROUGH THE UNIT'S CONTROLLER.
 - 1) IF THE DX COOLING SYSTEM FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

HEATING MODE OF OPERATION (GAS-FIRED - SECOND STAGE OF HEAT IN GYM):
THE HEATING MODE OF OPERATION (GAS-FIRED) SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE DECREASES 1°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE HEATING SET POINT.
2. THE ASSOCIATED DESTRATIFICATION FANS HAVE BEEN IN OPERATION FOR 15 MINUTES (ADJUSTABLE). SEE DESTRATIFICATION FAN CONTROL SCHEMATIC FOR FIRST STAGE OF HEAT.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO STAGE #1 (LOW FIRE) OF THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE INCREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE INCREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

IF THE SPACE TEMPERATURE DECREASES 2°F (ADJUSTABLE) BELOW THE SPACE TEMPERATURE HEATING SET POINT, THE DIGITAL CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO STAGE #2 (HIGH FIRE) OF THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE INCREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE INCREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE SPACE TEMPERATURE HEATING MODE OF OPERATION (GAS-FIRED) SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE INCREASES 1°F (ADJUSTABLE) ABOVE THE SPACE TEMPERATURE HEATING SET POINT.

WHEN THE ABOVE CONDITION IS MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE GAS-FIRED HEATING SYSTEM.
 - a. VALIDATE THE RUNNING STATUS THROUGH A TEMPERATURE DECREASE OF 5°F (ADJUSTABLE) IN THE SUPPLY AIR TEMPERATURE.
 - 1) IF A TEMPERATURE DECREASE CANNOT BE DETECTED FOR A PERIOD OF 2 CONSECUTIVE MINUTES (ADJUSTABLE), AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
2. ALLOW THE UNIT TO ENTER BACK INTO THE OCCUPIED / STANDBY / UNOCCUPIED MODE OF OPERATION.

INDOOR AIR QUALITY (IAQ) OPERATION:
WHENEVER THE ROOFTOP UNIT IS IN THE OCCUPIED MODE AND THE SUPPLY FAN IS ON, THE DDC CONTROLLER SHALL CONTINUOUSLY CALCULATE THE MINIMUM DAMPER POSITION NECESSARY TO MAINTAIN THE SPACE CO₂ SET POINT (DEMAND CONTROLLED VENTILATION OR DCV). AS THE CO₂ LEVEL INCREASES ABOVE THE SET POINT, THE ROUTINE SHALL INCREASE THE OUTSIDE AIR REQUIREMENT AND AS THE CO₂ LEVEL FALLS BELOW THE SET POINT, THE ROUTINE SHALL DECREASE THE CALCULATED VALUE. THE MINIMUM AND MAXIMUM OUTSIDE AIR DAMPER POSITIONS SHALL BE EQUAL TO THE OUTSIDE AIRFLOWS LISTED IN THE ROOFTOP UNIT SCHEDULE.

THE MAXIMUM SPACE CO₂ SET POINT SHALL BE SET AT 1,100 PPM (ADJUSTABLE).

THE MINIMUM CO₂ SET POINT SHALL BE SET AT 0 PPM (ADJUSTABLE).

THE MAXIMUM OUTSIDE AIR DAMPER POSITION IN DCV MODE SHALL BE SET TO THE AIRFLOW LISTED IN THE RTU SCHEDULE.

IAQ SHALL BE SUSPENDED AND THE OUTSIDE AIR DAMPERS SHALL BE RESET TO THEIR MINIMUM OUTSIDE AIRFLOW SETTINGS FOR A PERIOD OF 10 MINUTES (ADJUSTABLE) WHENEVER THE AVERAGE SPACE TEMPERATURE INCREASES 3°F (ADJUSTABLE) ABOVE THE SPACE COOLING SET POINT OR 3°F (ADJUSTABLE) BELOW THE SPACE HEATING SET POINT.

EXHAUST SYSTEM:
THE EXHAUST SYSTEM SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITIONS EXIST:

1. THE SUPPLY FAN IS ENABLED.
2. THE SPACE STATIC PRESSURE INCREASES TO THE DIFFERENTIAL PRESSURE SET POINT OF (POSITIVE) +0.01" W.G. (ADJUSTABLE) FOR A PERIOD OF 5 CONSECUTIVE SECONDS (ADJUSTABLE) WITH RESPECT TO THE OUTDOOR PRESSURE.

WHEN THE ABOVE CONDITIONS ARE MET THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE VFD CONTROL INTERFACE.
 - b. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN FAILS TO START, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.
 - c. THE DDC CONTROLLER SHALL MODULATE THE VFD TO MAINTAIN THE SPACE STATIC PRESSURE SET POINT.

THE EXHAUST SYSTEM SHALL BE DISABLED WHENEVER ONE OF THE FOLLOWING CONDITIONS EXISTS:

1. THE SUPPLY FAN IS OFF.
2. THE SPACE PRESSURE DECREASES TO (NEGATIVE) -0.01" W.G. (ADJUSTABLE) FOR 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN ONE OF THE ABOVE CONDITIONS IS MET, THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE EXHAUST FAN.
 - a. VALIDATE THE RUNNING STATUS THROUGH THE VFD CONTROL INTERFACE.
 - b. VALIDATE THE RUNNING STATUS THROUGH THE CURRENT SENSING RELAY.
 - 1) IF THE FAN(S) FAILS TO STOP, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

GENERAL:
THE DESTRATIFICATION FAN SYSTEM CONSISTS OF A CEILING MOUNTED FAN, TWO SPACE TEMPERATURE SENSORS, AND A WALL-MOUNTED OVERRIDE SWITCH. THE CONTROL CONTRACTOR SHALL PROVIDE A NEW DDC CONTROL PACKAGE. A SEPARATE SYSTEM SHALL BE INSTALLED IN THE GYM AND THE CAFETERIA.

THE NEW SPACE TEMPERATURE SENSORS SHALL SIGNAL THE DDC CONTROLLER THEIR TEMPERATURES AND THE TEMPERATURE OF THE HEATING SET POINT.

DESTRATIFICATION MODE OF OPERATION:
THE DESTRATIFICATION FAN SYSTEM SHALL BE ENABLED AND THE FANS SHALL MODULATE WHENEVER THE FOLLOWING CONDITION EXISTS BASED ON INTERVALS OF TEMPERATURE RISE:

1. THE HIGH SPACE TEMPERATURE RISES ABOVE THE LOW SPACE TEMPERATURE BY:
 - a. 0-3°F (ADJUSTABLE) - 50% FAN SPEED
 - b. 3-6°F (ADJUSTABLE) - 75% FAN SPEED
 - c. 6°F+ (ADJUSTABLE) - 100% FAN SPEED

WHEN THE ABOVE CONDITION EXISTS THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING BASED ON INTERVALS OF TEMPERATURE RISE:

1. SEND AN ENABLE COMMAND TO THE DESTRATIFICATION FANS.
 - a. VALIDATE THE STATUS OF THE FANS THROUGH THE CURRENT SENSING RELAYS.
 - 1) IF ANY FAN FAILS TO ENABLE, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE DESTRATIFICATION FAN SHALL CONTINUE TO MODULATE TO MAINTAIN THE ABOVE MENTIONED TEMPERATURE INTERVALS.

THE DESTRATIFICATION MODE OF OPERATION SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE HIGH SPACE TEMPERATURE IS EQUAL TO OR BELOW THE LOW SPACE TEMPERATURE.

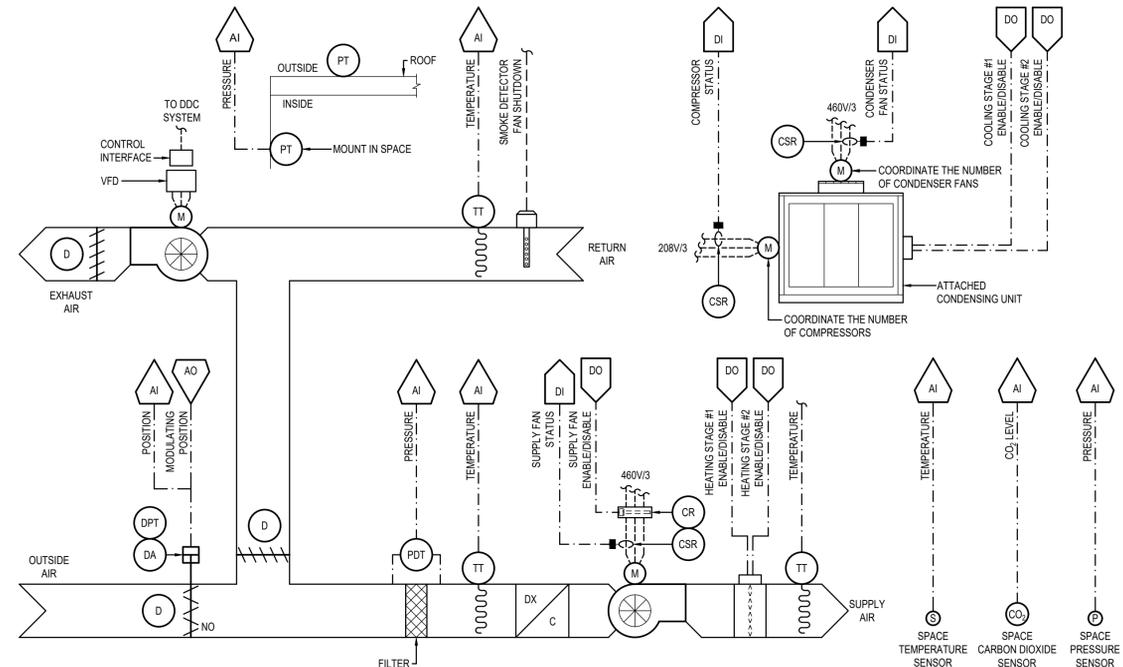
WHEN THE ABOVE CONDITION EXISTS THE DDC CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE DESTRATIFICATION FANS.
 - a. VALIDATE THE STATUS OF THE FANS THROUGH THE CURRENT SENSING RELAYS.
 - 1) IF ANY FAN FAILS TO DISABLE, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

THE OVERRIDE SWITCHES SHALL ENERGIZE EACH FAN AT 100% SPEED (ADJUSTABLE) REGARDLESS OF THE CURRENT STATE OF THE FAN. THIS OVERRIDE SHALL LAST FOR (2) HOURS (ADJUSTABLE). AFTERWARDS THE FAN CONTROL SHALL REVERT BACK TO THE ORIGINAL OPERATION.

DESTRATIFICATION FAN SEQUENCE OF OPERATION

(DSF-1 & DSF-2)



PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) SUPPLY & VARIABLE

VOLUME (V) EXHAUST CARBON DIOXIDE CONTROL SYSTEM SCHEMATIC

(RTU-1.5A, RTU-1.5B, RTU-1.7A, & RTU-1.7B)

PACKAGED ROOFTOP UNIT W/ CONSTANT VOLUME (CV) SUPPLY & VARIABLE

VOLUME (V) EXHAUST CARBON DIOXIDE CONTROL SEQUENCE OF OPERATION

(RTU-1.5A, RTU-1.5B, RTU-1.7A, & RTU-1.7B)



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Revisions	Date	Description
#1	05/11/2023	Addendum #1
#2	05/16/2023	Addendum #2

Jefferson Elementary School
Addition and Remodel
600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

DRAWN BY: JM/CD
CHECKED BY: BC

Agency Review

DRAWING NO.

M-7.2
DDC CONTROLS

Revisions	Date
Description	05/11/2023
Addendum #1	05/16/2023
Addendum #2	

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Addition and Remodel
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Agency Review

DRAWING NO.

M-7.3
DDC CONTROLS

GENERAL:
THE KITCHEN HOOD EXHAUST SYSTEM SHALL CONSIST OF (2) EXHAUST FANS. A MAKE-UP AIR UNIT FURNISHED WITH A GAS-FIRED HEAT EXCHANGER AND A DISCHARGE DAMPER (OPEN / CLOSE), AND TWO HOODS. THE MECHANICAL CONTRACTOR SHALL PROVIDE A COMPLETE CONTROL SYSTEM. THE DDC CONTRACTOR SHALL MONITOR POINTS ONLY.

THE SPACE TEMPERATURE SENSOR SHALL SIGNAL THE HOOD CONTROLLER ITS TEMPERATURE.

THE EXHAUST TEMPERATURE SENSOR SHALL SIGNAL THE HOOD CONTROLLER ITS TEMPERATURE. THE HOOD SHALL INCLUDE AUTOMATIC CONTROL OF THE EXHAUST FANS AND MAKEUP AIR UNITS BASED ON A TEMPERATURE DIFFERENTIAL BETWEEN THE SPACE TEMPERATURE SENSOR AND EXHAUST DUCT TEMPERATURE SENSOR. THE HOOD CONTROLLER SHALL BE PROGRAMMED AS A DYNAMIC SYSTEM TO MODULATE THE EXHAUST AND SUPPLY FANS AS REQUIRED TO MAINTAIN THE SET TEMPERATURE DIFFERENTIAL.

INTERLOCK:
THE MAKE-UP AIR UNIT SHALL BE INTERLOCKED TO THE EXHAUST FANS. WHEN THE EXHAUST FANS ARE ENABLED, THE MAKE-UP AIR UNIT SHALL BE ENABLED. WHEN THE EXHAUST FAN IS DISABLED, THE MAKE-UP AIR UNIT SHALL BE DISABLED.

OPERATION:
THE KITCHEN HOOD EXHAUST SYSTEM SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE TEMPERATURE IN THE EXHAUST DUCT INCREASES TO THE KITCHEN HOOD EXHAUST SYSTEM ENABLE SET POINT OF 10°F ABOVE THE SPACE TEMPERATURE SET POINT (ADJUSTABLE) FOR A PERIOD OF 10 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN THE ABOVE CONDITION IS MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE EXHAUST FANS.
2. SEND AN OPEN COMMAND TO THE MAKE-UP AIR UNIT DISCHARGE DAMPER.
3. SEND AN ENABLE COMMAND TO THE MAKE-UP AIR UNIT SUPPLY FAN.

THE KITCHEN HOOD EXHAUST SYSTEM SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE TEMPERATURE IN THE EXHAUST DUCT DECREASE BELOW THE KITCHEN HOOD EXHAUST SYSTEM ENABLE SET POINT FOR A PERIOD OF 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN THE ABOVE CONDITION IS MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

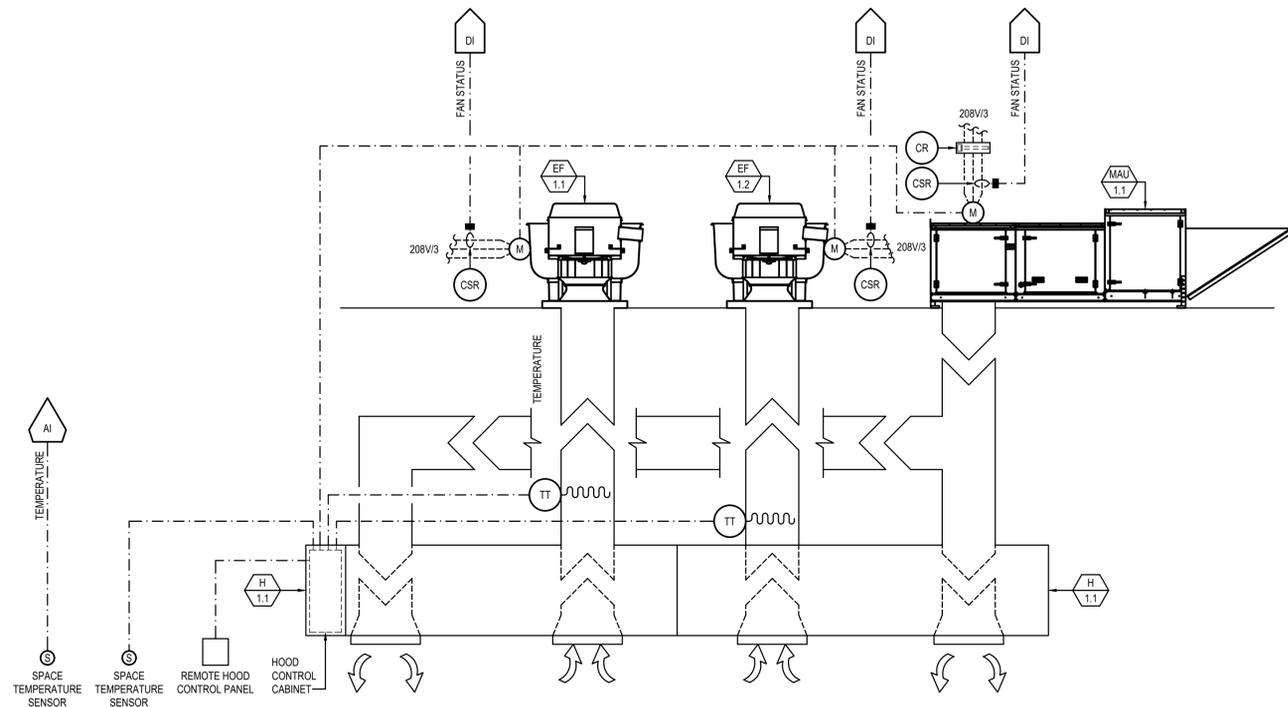
1. SEND A DISABLE COMMAND TO THE MAKE-UP AIR UNIT SUPPLY FAN.
2. SEND A CLOSE COMMAND TO THE MAKE-UP AIR UNIT DISCHARGE DAMPER.
3. SEND A DISABLE COMMAND TO THE EXHAUST FANS.

SUPPLY AIR TEMPERATURE CONTROL HEATING MODE OF OPERATION (GAS-FIRED HEATING SYSTEM):
THE SUPPLY AIR TEMPERATURE CONTROL HEATING MODE OF OPERATION (GAS-FIRED HEATING SYSTEM) SHALL BE ENABLED WHENEVER BOTH OF THE FOLLOWING CONDITIONS EXIST:

1. THE MAKE-UP AIR UNIT SUPPLY FAN IS ENABLED.
2. THE SUPPLY AIR TEMPERATURE DECREASES TO THE MINIMUM SUPPLY AIR TEMPERATURE SET POINT OF 60°F (ADJUSTABLE) FOR A PERIOD OF 10 CONSECUTIVE SECONDS (ADJUSTABLE).

KITCHEN HOOD MAKE-UP AIR / EXHAUST SYSTEM SEQUENCE OF OPERATION

(H-1.1, H-1.2, MAU-1.1, EF-1.1, & EF-1.2)



KITCHEN HOOD MAKE-UP AIR / EXHAUST SYSTEM CONTROL SCHEMATIC

(H-1.1, H-1.2, MAU-1.1, EF-1.1, & EF-1.2)

WHEN THE ABOVE CONDITIONS ARE MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE MAKE-UP AIR UNIT DIRECT GAS-FIRED HEATING SYSTEM.
 - a. THE HOOD CONTROLLER SHALL MODULATE THE GAS-FIRED HEATING SYSTEM TO MAINTAIN THE MINIMUM SUPPLY AIR TEMPERATURE SET POINT.

THE SUPPLY AIR TEMPERATURE CONTROL HEATING MODE OF OPERATION (GAS-FIRED HEATING SYSTEM) SHALL BE DISABLED WHENEVER ONE OF THE FOLLOWING CONDITIONS EXISTS:

1. THE MAKE-UP AIR UNIT SUPPLY FAN IS DISABLED.
2. THE SUPPLY AIR TEMPERATURE INCREASES ABOVE THE MINIMUM SUPPLY AIR TEMPERATURE SET POINT FOR A PERIOD OF 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN ONE OF THE ABOVE CONDITIONS IS MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE MAKE-UP AIR UNIT GAS-FIRED HEATING SYSTEM.

SUPPLY AIR TEMPERATURE CONTROL COOLING MODE OF OPERATION (EVAPORATIVE COOLING SYSTEM):
THE SUPPLY AIR TEMPERATURE CONTROL COOLING MODE OF OPERATION (EVAPORATIVE COOLING SYSTEM) SHALL BE ENABLED WHENEVER BOTH OF THE FOLLOWING CONDITIONS EXIST:

1. THE MAKE-UP AIR UNIT SUPPLY FAN IS ENABLED.
2. THE SUPPLY AIR TEMPERATURE INCREASES TO THE MAXIMUM SUPPLY AIR TEMPERATURE SET POINT OF 75°F (ADJUSTABLE) FOR A PERIOD OF 10 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN THE ABOVE CONDITIONS ARE MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE MAKE-UP AIR UNIT EVAPORATIVE COOLING SYSTEM.
 - a. THE HOOD CONTROLLER SHALL MODULATE THE EVAPORATIVE COOLING SYSTEM TO MAINTAIN THE MAXIMUM SUPPLY AIR TEMPERATURE SET POINT.

THE SUPPLY AIR TEMPERATURE CONTROL COOLING MODE OF OPERATION (EVAPORATIVE COOLING SYSTEM) SHALL BE DISABLED WHENEVER ONE OF THE FOLLOWING CONDITIONS EXISTS:

1. THE MAKE-UP AIR UNIT SUPPLY FAN IS DISABLED.
2. THE SUPPLY AIR TEMPERATURE DECREASES BELOW THE MAXIMUM SUPPLY AIR TEMPERATURE SET POINT FOR A PERIOD OF 30 CONSECUTIVE SECONDS (ADJUSTABLE).

WHEN ONE OF THE ABOVE CONDITIONS IS MET, THE HOOD CONTROLLER SHALL SEQUENCE THE FOLLOWING:

SEND A DISABLE COMMAND TO THE MAKE-UP AIR UNIT EVAPORATIVE COOLING SYSTEM.

ADDITIONAL ITEMS

1. THIS SYSTEM SHALL MEET ALL IECC 403.7.5 REQUIREMENTS.
2. THE DDC CONTRACTOR SHALL MONITOR STATUS OF THE EXHAUST FANS AND SUPPLY FAN OF THE MAKEUP AIR UNIT USING CURRENT SENSING RELAYS. IF THE FANS ARE RUNNING DURING UNOCCUPIED HOURS, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

GENERAL:
THE DISHWASHER HOOD EXHAUST SYSTEM SHALL CONSIST OF AN EXHAUST FAN AND A PILOT LIGHT WALL SWITCH. THE MECHANICAL CONTRACTOR SHALL PROVIDE A COMPLETE CONTROL SYSTEM. THE DDC CONTRACTOR SHALL MONITOR POINTS ONLY.

OPERATION:
THE DISHWASHER HOOD EXHAUST SYSTEM SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE WALL SWITCH IS ENABLED.

WHEN THE ABOVE CONDITION IS MET, THE FAN INTERLOCK SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE EXHAUST FAN.

THE DISHWASHER HOOD EXHAUST SYSTEM SHALL BE DISABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

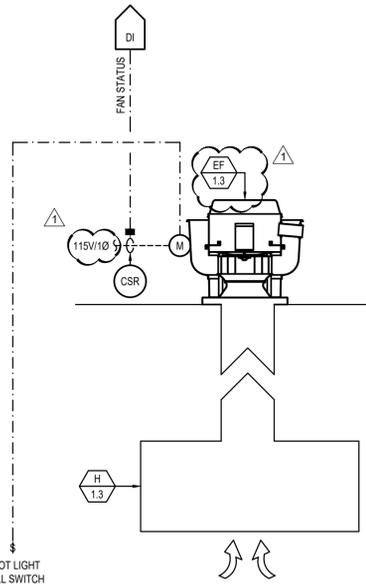
1. THE WALL SWITCH IS DISABLED.

ADDITIONAL ITEMS

1. THE DDC CONTRACTOR SHALL MONITOR STATUS OF THE EXHAUST FAN USING A CURRENT SENSING RELAY. IF THE FAN IS RUNNING DURING UNOCCUPIED HOURS, AN ALARM OF THE EVENT SHALL BE SENT TO THE OPERATOR'S WORKSTATION.

DISHWASHER HOOD EXHAUST SYSTEM CONTROL SEQUENCE OF OPERATION

(H-1.3 & EF-1.3)



DISHWASHER HOOD EXHAUST SYSTEM CONTROL SCHEMATIC

(H-1.3 & EF-1.3)

GENERAL:
THE ELECTRIC HEATER SYSTEM SHALL CONSIST OF A WALL MOUNTED ELECTRIC HEATER, A SUPPLY FAN, AND AN INTEGRAL TEMPERATURE SENSOR. THE MECHANICAL CONTRACTOR SHALL PROVIDE A NEW STANDALONE CONTROL PACKAGE DEDICATED TO THE COMPLETE OPERATION OF THE SYSTEM.

THE INTEGRAL TEMPERATURE SENSOR SHALL SIGNAL THE UNIT CONTROLLER ITS TEMPERATURE AND THE TEMPERATURE OF THE HEATING SET POINT.

HEATING MODE OF OPERATION:
THE HEATING MODE OF OPERATION SHALL BE ENABLED WHENEVER THE FOLLOWING CONDITION EXISTS:

1. THE SPACE TEMPERATURE DECREASES BELOW THE SPACE TEMPERATURE HEATING SET POINT.

WHEN THE ABOVE CONDITION IS MET THE UNIT CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE SUPPLY FAN.
2. SEND AN ENABLE COMMAND TO THE ELECTRIC HEATER.

THE HEATING MODE OF OPERATION SHALL BE DISABLED WHENEVER ONE OF THE FOLLOWING CONDITIONS EXIST:

1. THE SPACE TEMPERATURE INCREASES ABOVE THE SPACE TEMPERATURE HEATING SET POINT.

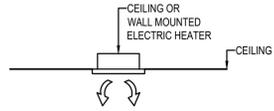
WHEN THE ABOVE CONDITION IS MET THE UNIT CONTROLLER SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE ELECTRIC HEATER.
2. SEND A DISABLE COMMAND TO THE SUPPLY FAN.

THE TYPICAL VESTIBULE/ENTRY SPACE TEMPERATURE HEATING SET POINT SHALL BE 50°F. THE RISER ROOM SPACE TEMPERATURE HEATING SET POINT SHALL BE 60°F.

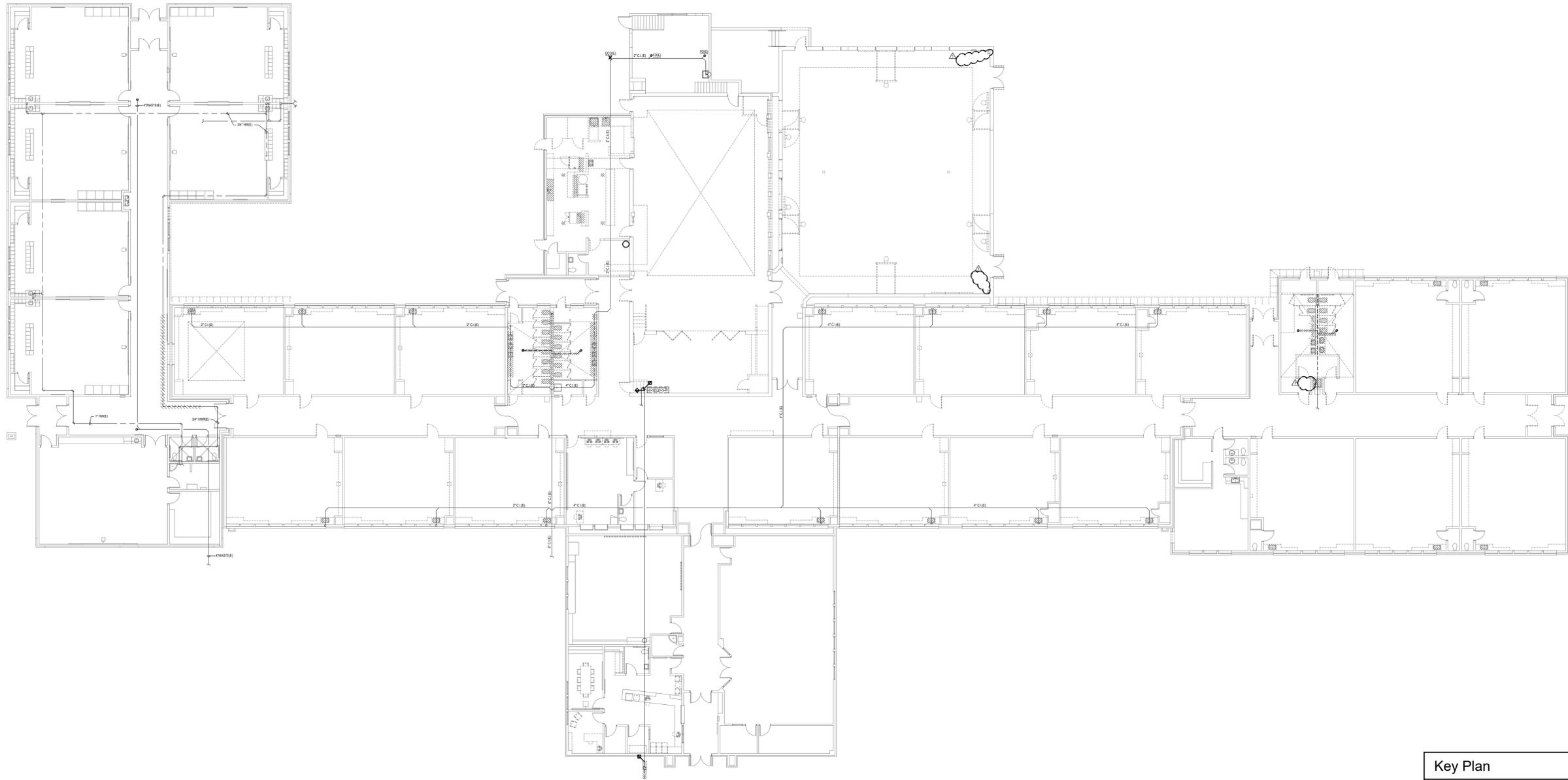
ELECTRIC HEATER SYSTEM SEQUENCE OF OPERATION

(EH-1.1 THROUGH EH-1.10)

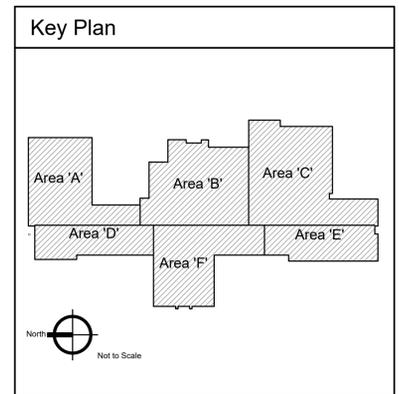


ELECTRIC HEATER SYSTEM CONTROL SCHEMATIC

(EH-1.1 THROUGH EH-1.9)



 Overall Plumbing Demolition Floor Plan
 Scale: 1/16" = 1'-0"



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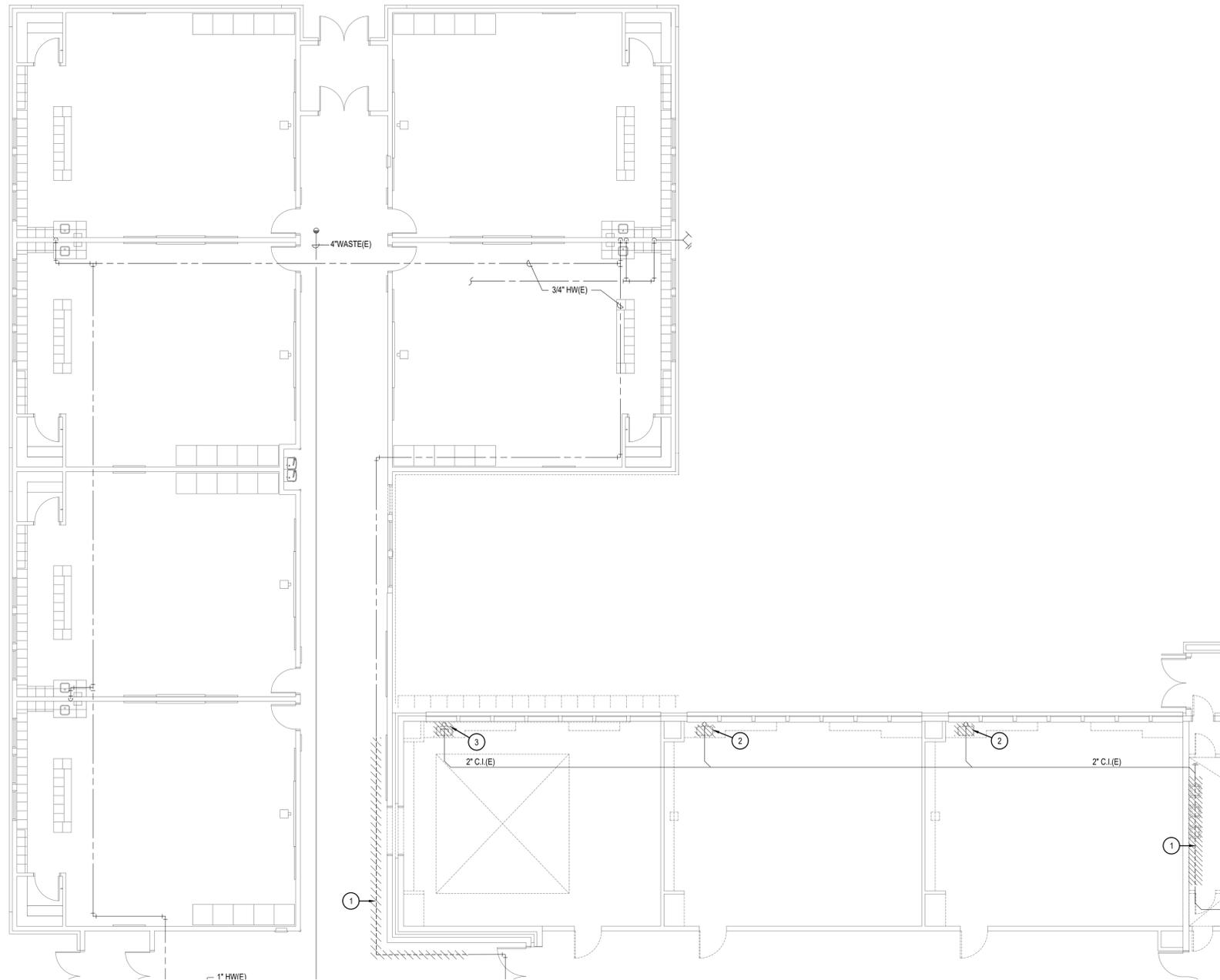
Agency Review

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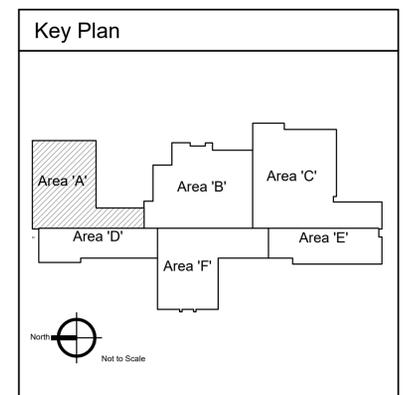
P-1.0
 OVERALL PLUMBING
 DEMOLITION FLOOR PLAN

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. REMOVE SECTION OF PIPING.
- 2. REMOVE SINK AND FAUCET. RETAIN UTILITIES FOR NEW WORK.
- 3. REMOVE SINK AND FAUCET. REMOVE WATER, VENT AND WASTE LINES BACK AND CAP.



1 Plumbing Demolition Plan - Area 'A'
Scale: 1/8" = 1'-0"



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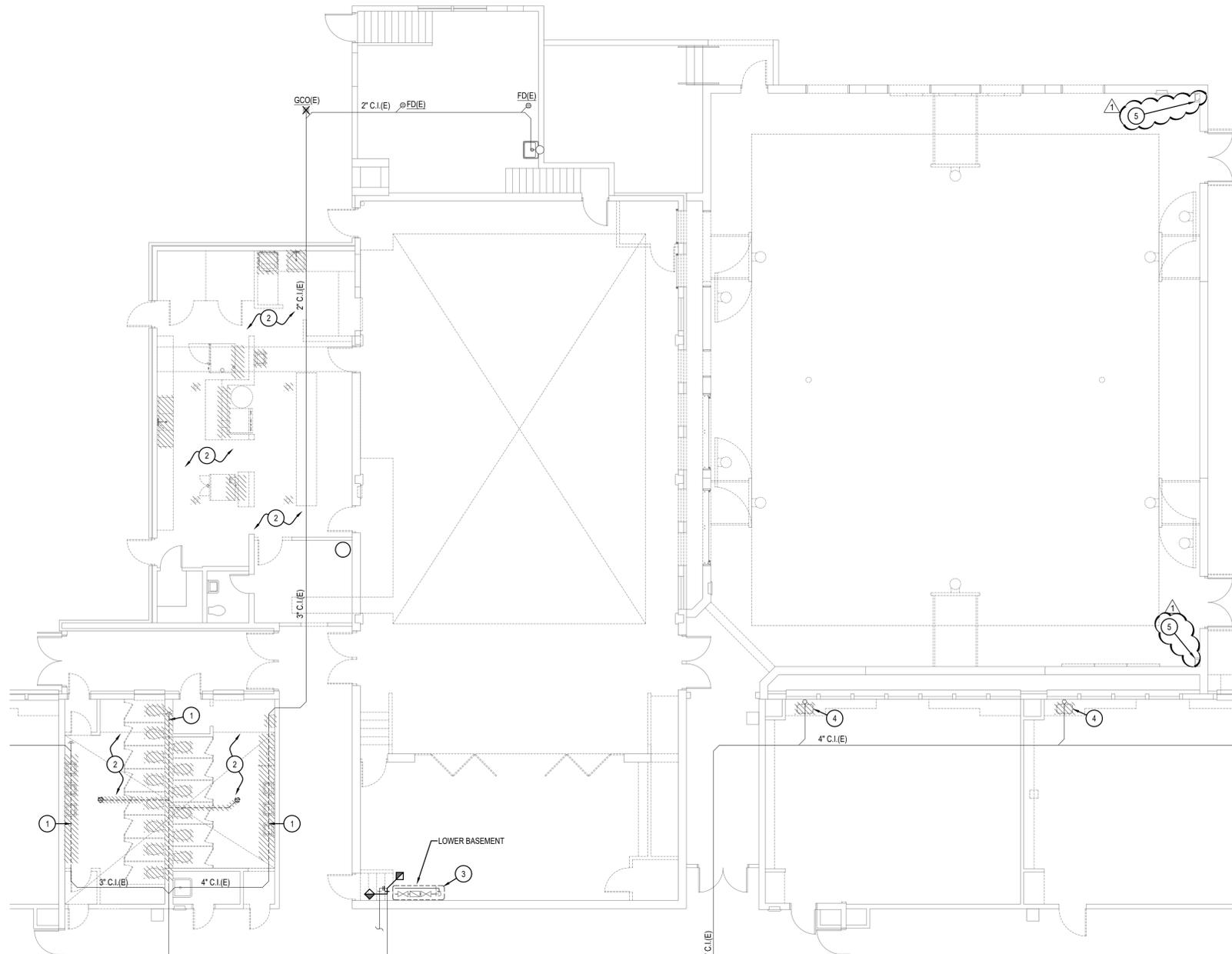
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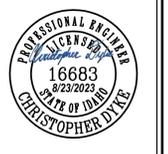
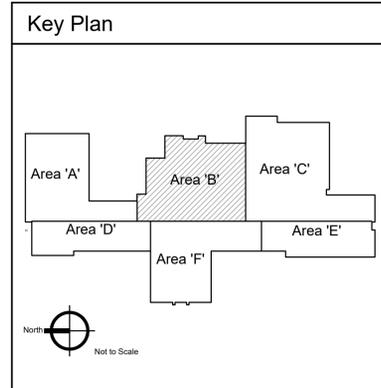
P-1.1
PLUMBING DEMOLITION
PLAN - AREA 'A'

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. REMOVE INDICATED SECTION OF WASTE LINE. SEE NEW WORK FOR CONTINUATION.
- 2. DISCONNECT AND REMOVE ALL EXISTING PLUMBING FIXTURES IN THIS AREA AND ALL RELATED WASTE, VENT, CW, & HW CONNECTIONS.
- 3. REMOVE, RETAIN AND PROTECT EXISTING REDUCED PRESSURE BACKFLOW DEVICE FOR RELOCATION. SEE NEW WORK PLUMBING PLANS FOR NEW LOCATION. THE EXISTING ACTIVE WATER LINE ENDS SHALL BE CONNECTED TOGETHER TO CONTINUE FLOW. MATCH EXISTING PIPE SIZE AND MATERIAL. FIELD VERIFY.
- 4. REMOVE SINK AND FAUCET. RETAIN UTILITIES FOR NEW WORK.
- 5. REMOVE EXISTING ROOF DRAIN PIPING AND OVERFLOW DRAIN PIPING. REMOVE WALL COW TONGUES. PATCH WALL TO MATCH EXISTING. ROOF DRAIN FIXTURE SHALL REMAIN AND BE USED IN NEW WORK.



1 Plumbing Demolition Plan - Area 'B'
Scale: 1/8" = 1'-0"



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#1	Addendum #1	05/11/2023
#2	Addendum #2	05/16/2023

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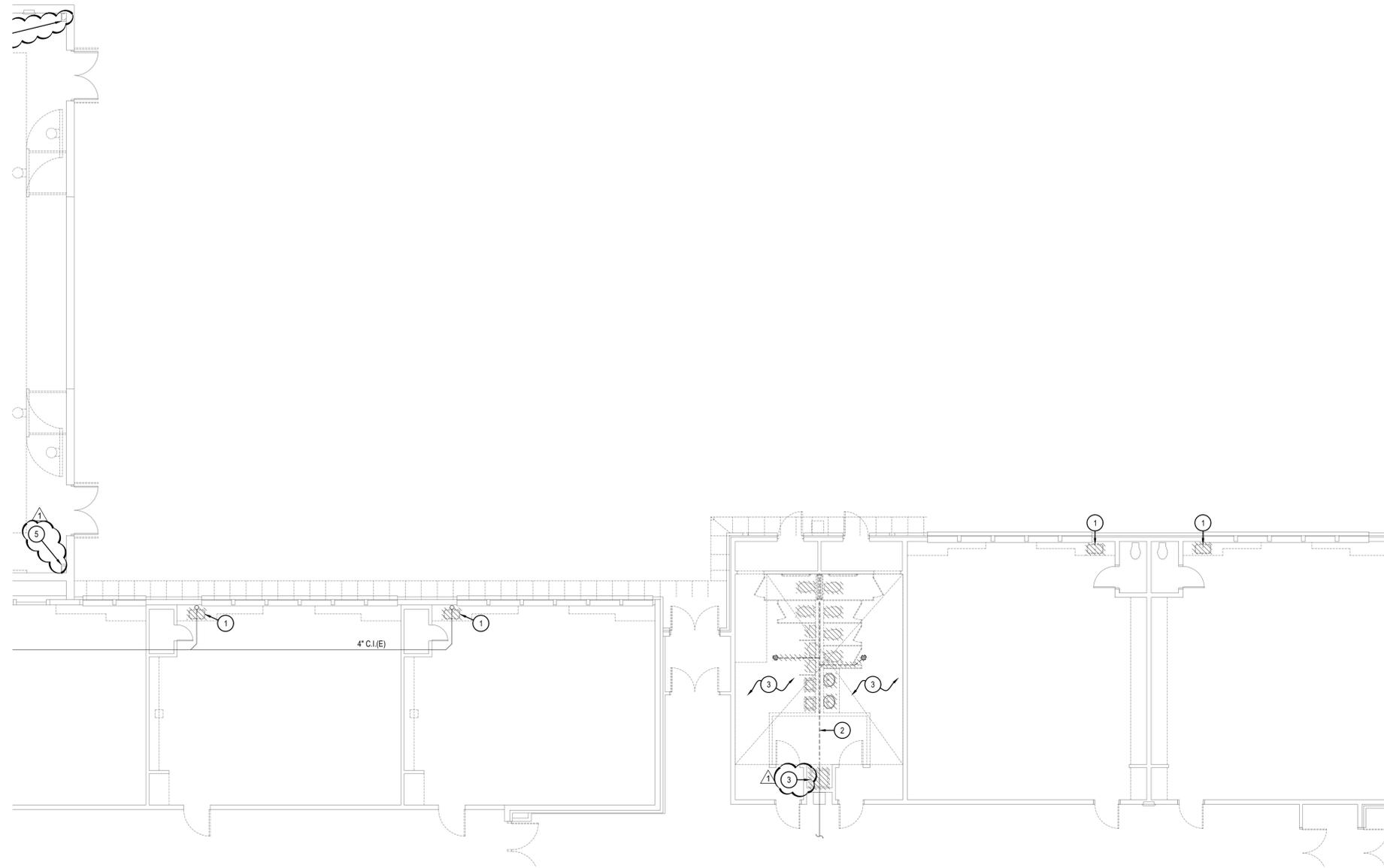
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DRAWING NO.

P-1.2
PLUMBING DEMOLITION
PLAN - AREA 'B'



1 Plumbing Demolition Plan - Area 'C'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1. REMOVE SINK AND FAUCET. RETAIN UTILITIES FOR NEW WORK.
 2. REMOVE INDICATED SECTION OF WASTE LINE. SEE NEW WORK FOR CONTINUATION.
 3. DISCONNECT AND REMOVE ALL EXISTING PLUMBING FIXTURES IN THIS AREA AND ALL RELATED WASTE, VENT, CW, & HW CONNECTIONS.



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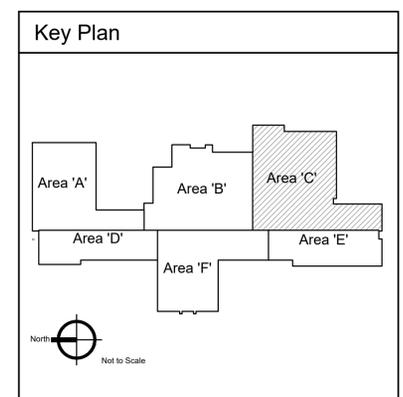
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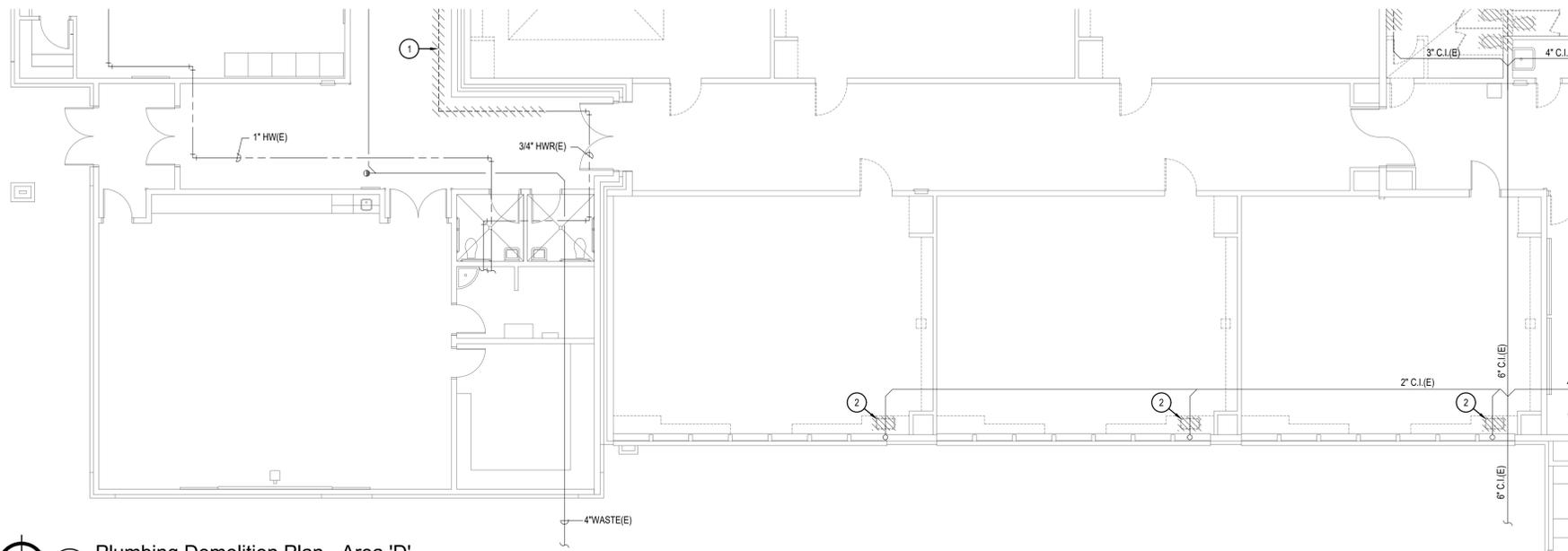
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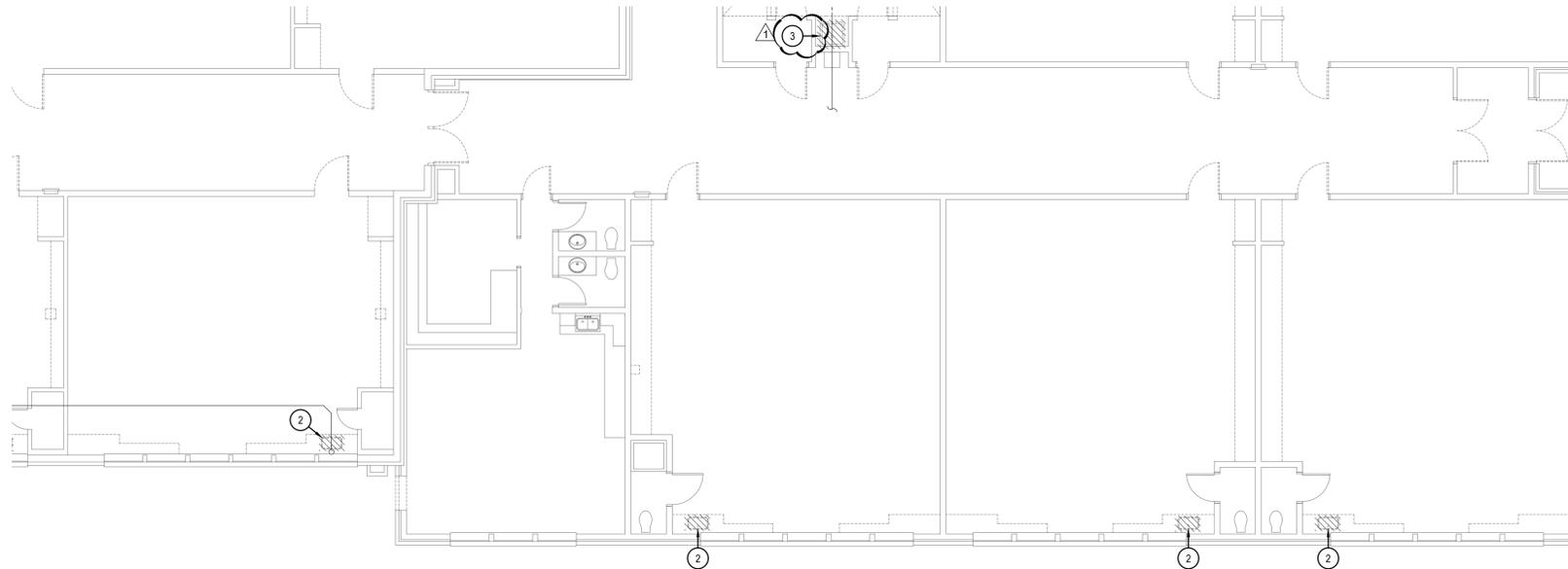
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P-1.3
PLUMBING DEMOLITION
PLAN - AREA 'C'





1 Plumbing Demolition Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Plumbing Demolition Plan - Area 'E'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. REMOVE INDICATED SECTION OF WATER LINE. SEE NEW WORK FOR CONTINUATION.
- 2. REMOVE SINK AND FAUCET. RETAIN UTILITIES FOR NEW WORK.
- 3. REMOVE UTILITY SINK AND ASSOCIATED CONNECTIONS AND CAP.



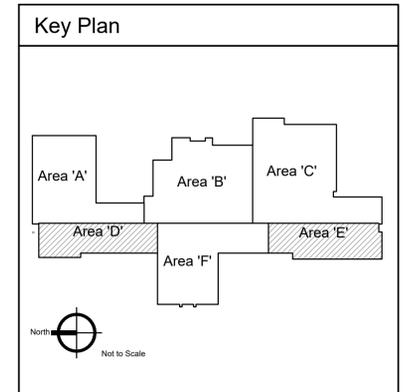
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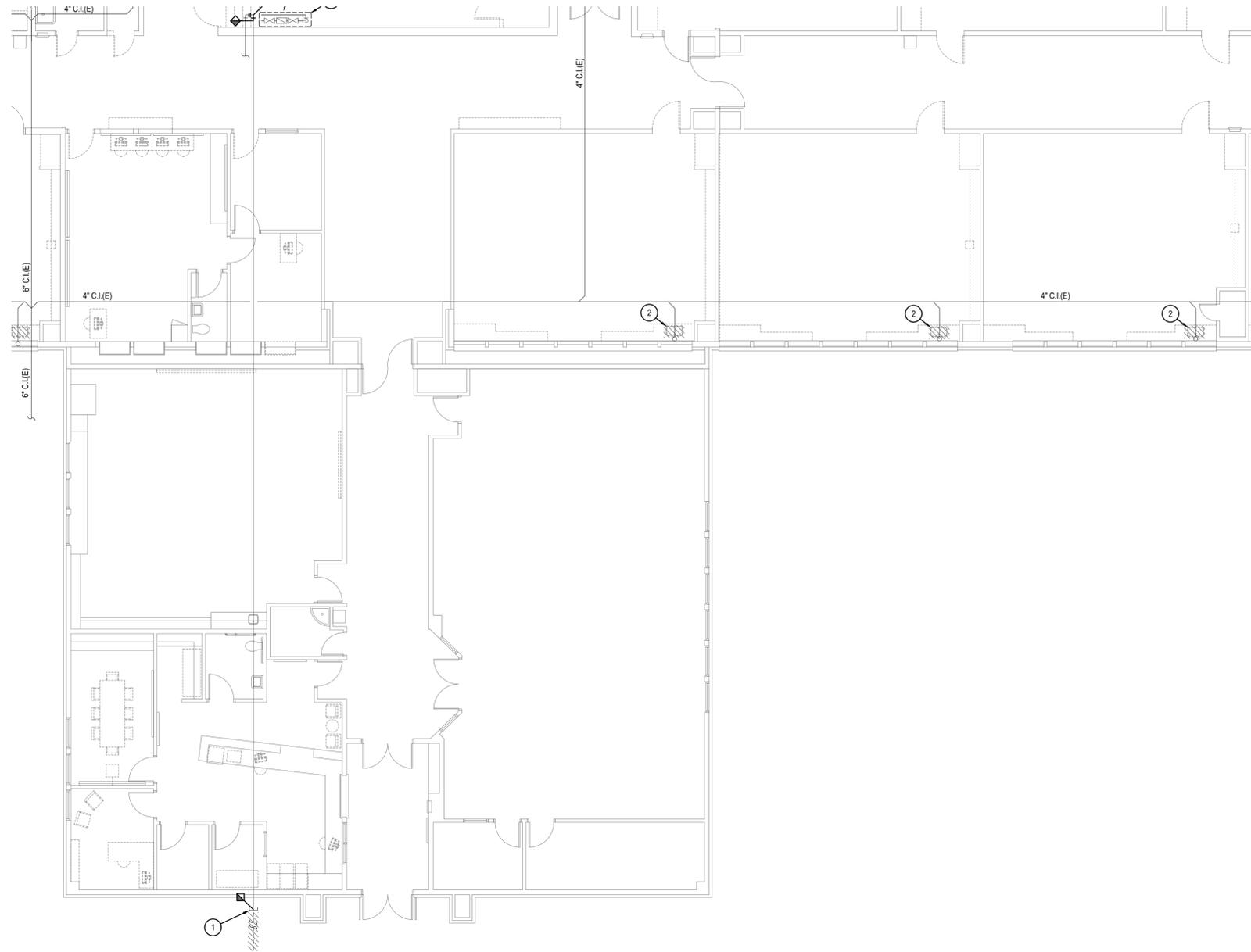
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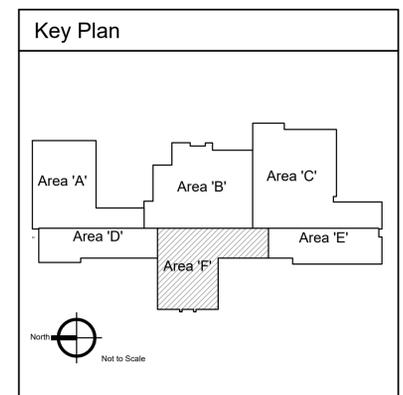
P-1.4
PLUMBING DEMOLITION
PLAN - AREA 'D' & 'E'

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. DISCONNECT AND CAP EXISTING WATER MAIN TO BUILDING. SEE CIVIL PLANS FOR CONTINUATION OF DEMOLITION WORK.
- 2. REMOVE SINK AND FAUCET. RETAIN UTILITIES FOR NEW WORK.



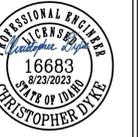
1 Plumbing Demolition Plan - Area 'F'
Scale: 1/8" = 1'-0"



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DRAWING NO.

P-1.5
PLUMBING DEMOLITION
PLAN - AREA 'F'



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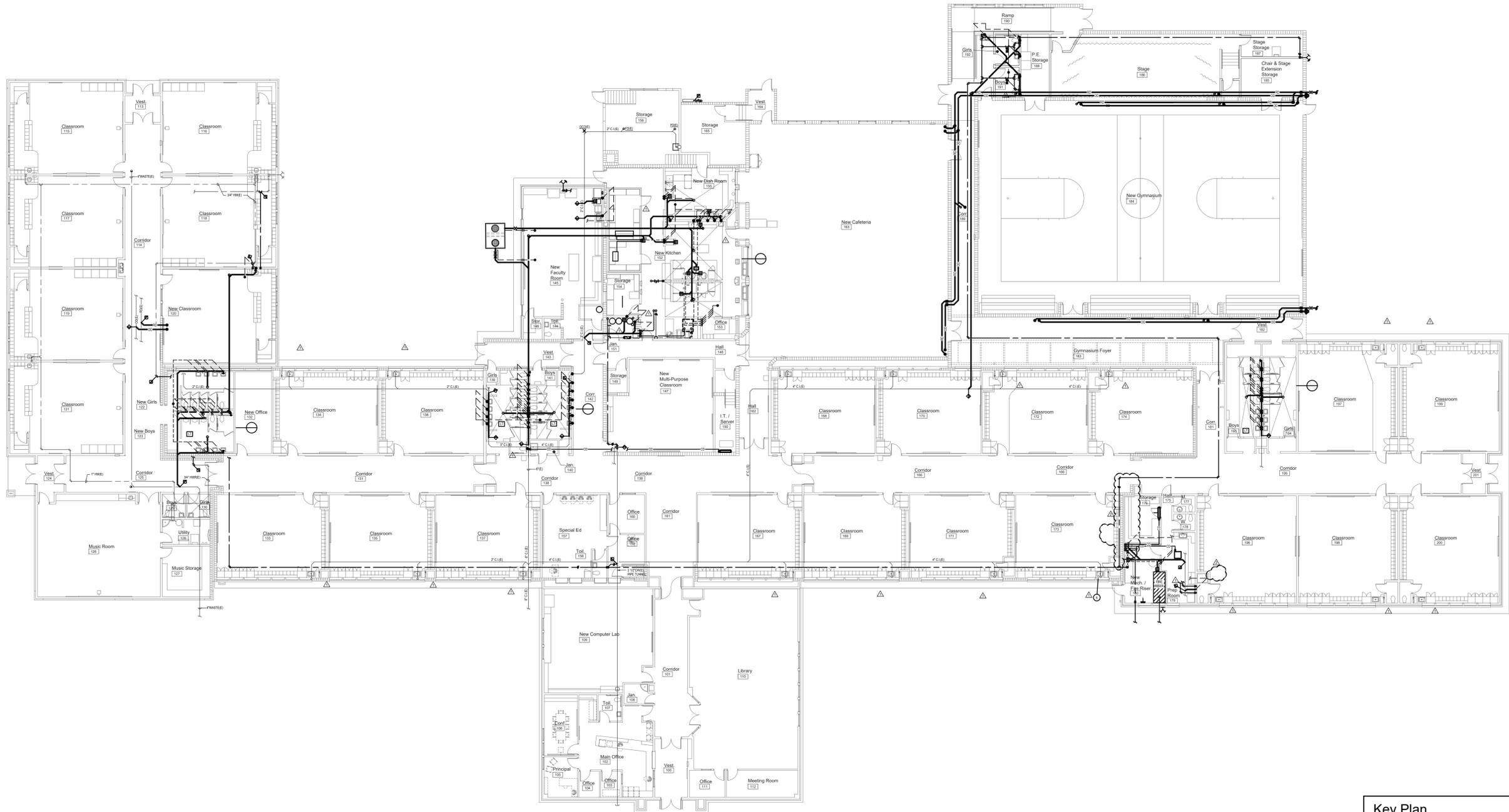
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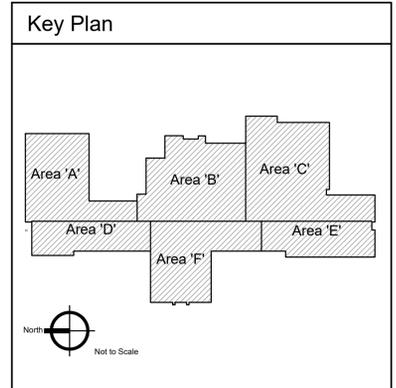
P-2.0

OVERALL PLUMBING
NEW WORK FLOOR PLAN



Overall Plumbing New Work Floor Plan

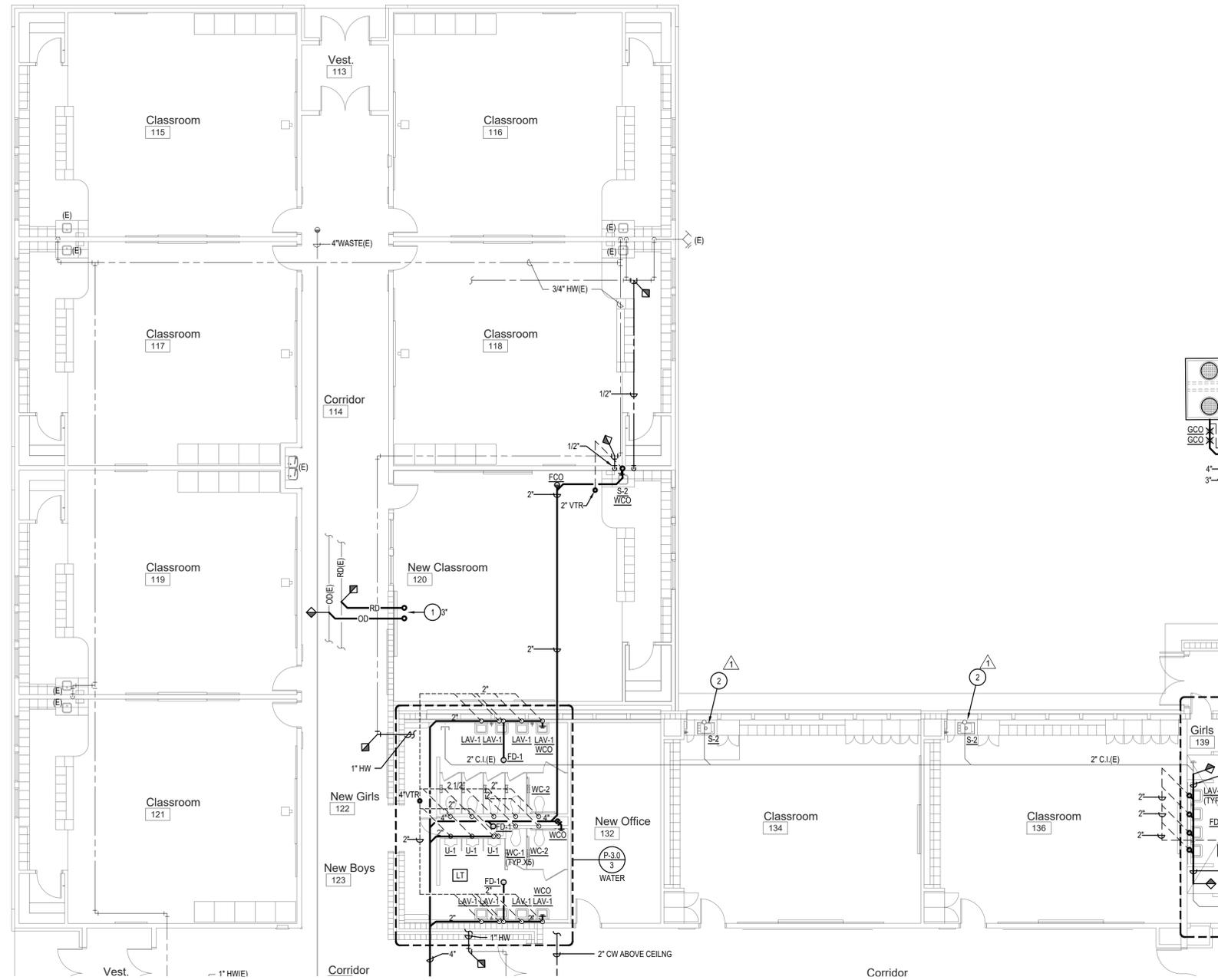
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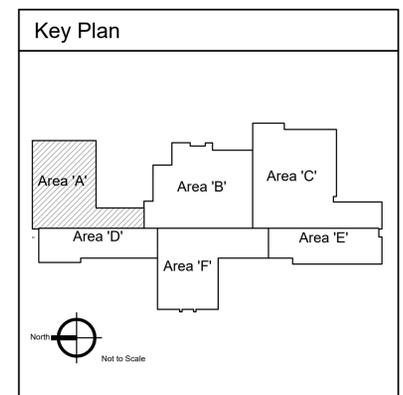
Not to Scale

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
1. CONNECT TO ROOF DRAINS ABOVE.
 2. CONNECT NEW SINK TO EXISTING UTILITIES. PROVIDE NEW TRIM, TYPICAL.



1 Plumbing New Work Plan - Area 'A'
Scale: 1/8" = 1'-0"



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#2	Addendum #2	05/16/2023

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

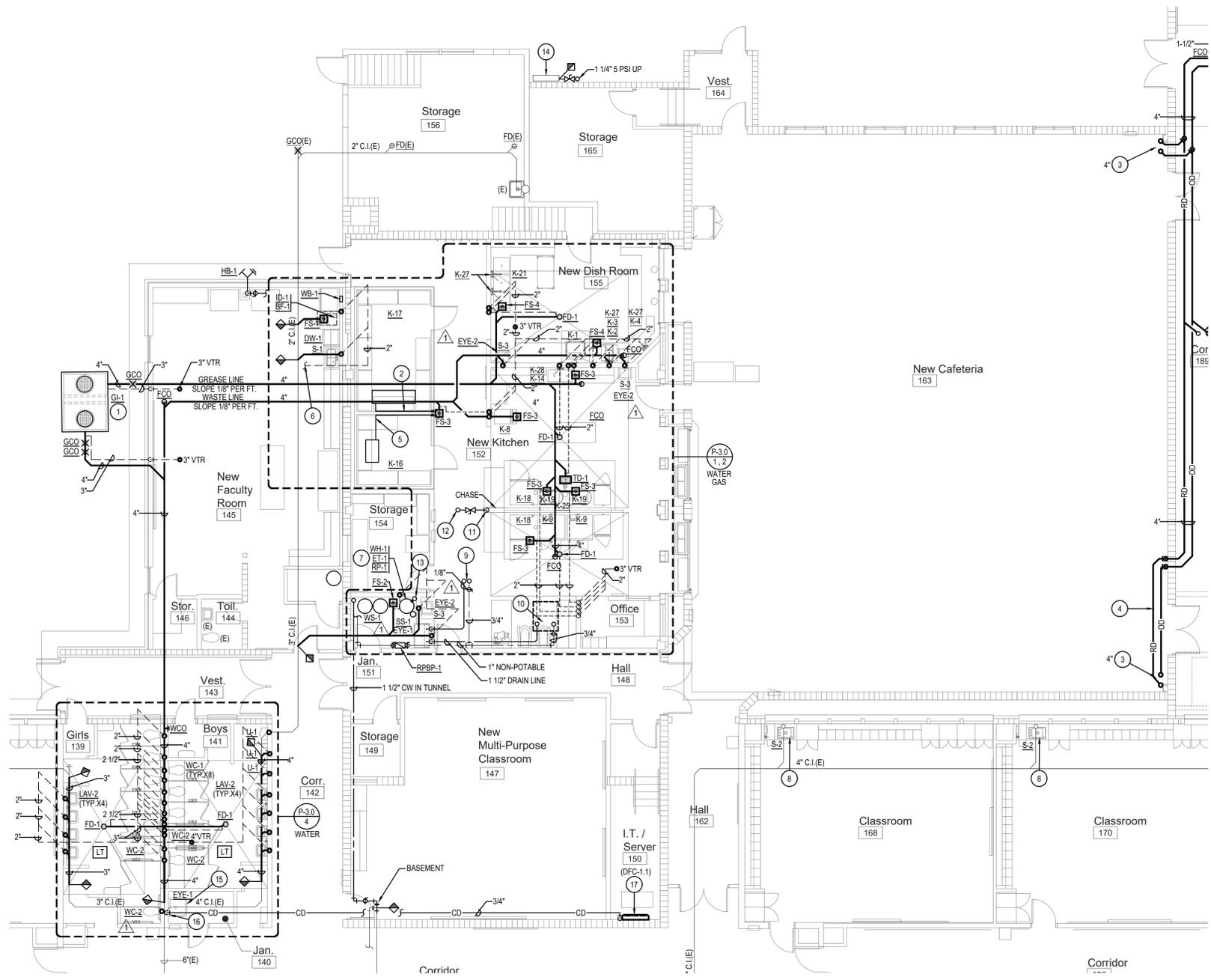
DATE: February 24, 2023
LKV PROJECT #: -
REVISIONS:

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Agency Review

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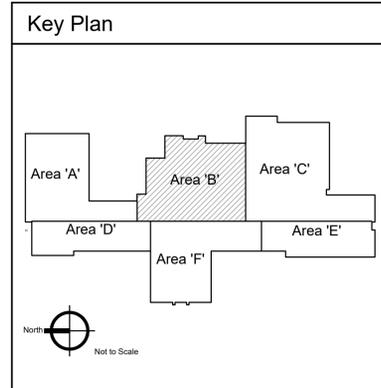
P-2.1
PLUMBING NEW WORK
PLAN - AREA 'A'



KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. SEE GREASE INTERCEPTOR DETAIL.
- 2. ROUTE CONDENSATE DRAIN LINE FROM FREEZER EVAPORATIVE COIL TO FLOOR SINK, HEAT TRACE LINE AND WRAP WITH INSULATION. TERMINATE AT FLOOR SINK.
- 3. CONNECT TO EXISTING ROOF DRAINS ABOVE, SEE ROOF PLAN FOR CONTINUATION.
- 4. ROUTE ROOF DRAIN AND OVERFLOW DRAIN HIGH THROUGH EXISTING STRUCTURE.
- 5. ROUTE CONDENSATE DRAIN LINE FROM COOLER EVAPORATIVE COIL TO FLOOR SINK, TERMINATE AT FLOOR SINK.
- 6. CONNECT NEW VENT PIPE TO EXISTING SAME SIZE OR LARGER VENT PIPE IN THIS AREA. FIELD VERIFY EXACT CONDITIONS.
- 7. SEE WATER HEATER CONNECTION PIPING DETAIL.
- 8. INSTALL NEW CLASSROOM SINK AT PREVIOUS SINK LOCATION, PROVIDE NEW TRIM AND RE-CONNECT TO EXISTING WASTE/VENT AND WATER PIPING.
- 9. CONNECT NON POTABLE AND DRAIN LINE TO ROOF HYDRANT.
- 10. CONNECT NON POTABLE AND DRAIN LINE TO EVAPORATIVE SECTION OF MAU. SEE DETAIL. SET VALVES AT ACCESSIBLE LOCATION NEAR CEILING.
- 11. FOR CONTINUATION SEE COOK LINE GAS RISER.
- 12. FOR CONTINUATION SEE MECHANICAL ROOF PLAN.
- 13. FOR CONTINUATION SEE MECHANICAL ROOF PLAN AND WATER HEATER DETAIL.
- 14. EXISTING 5 PSI METER SET. CONTACT LOCAL GAS COMPANY FOR ADDITIONAL LOAD CONNECTION OF 2346.0 MBH.
- 15. REMOVE EXISTING UTILITY SINK FOR NEW WATER CONNECTION AND RE-INSTALL.
- 16. ROUTE CONDENSATE DRAIN LINE DOWN IN WALL AND TERMINATE AT RIM OF SINK.
- 17. CONNECT CONDENSATE DRAIN LINE TO FAN COIL, FAN COIL IS SPECIFIED WITH PUMP. ROUTE LINE OVER TO SERVICE SINK.

1 Plumbing New Work Plan - Area 'B'
Scale: 1/8" = 1'-0"



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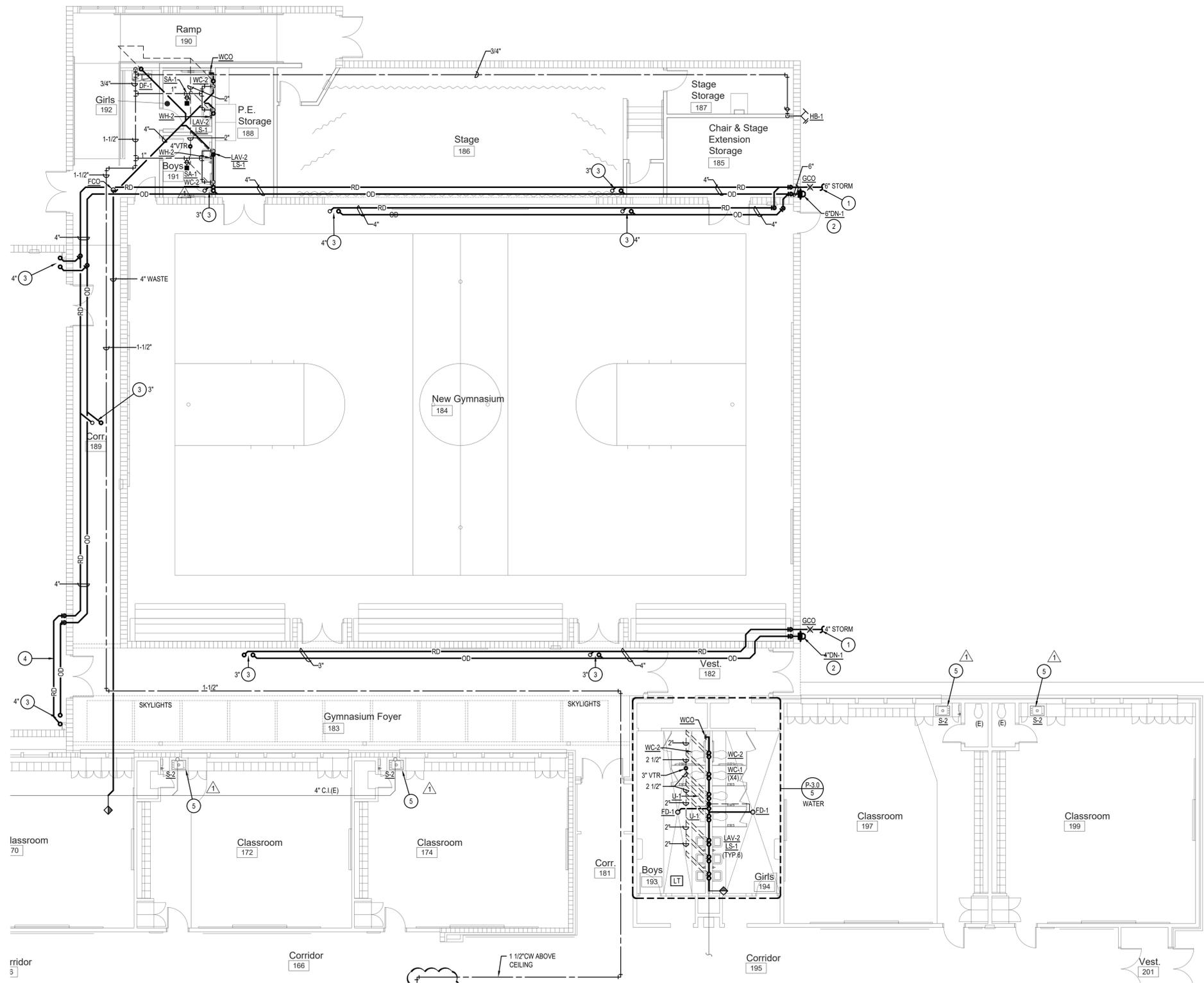
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Revisions	Description	Date
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#2	Addendum #2	05/16/2023

**Jefferson Elementary School
Addition and Remodel**
600 N. Fillmore Street, Jerome, Idaho

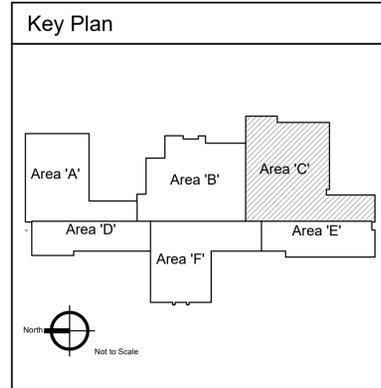
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P-2.2
PLUMBING NEW WORK
PLAN - AREA 'B'



1 Plumbing New Work Plan - Area 'C'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. ROUTE ROOF STORM DRAIN 28" (CENTER) BELOW GRADE THROUGH SECTION OF STEM WALL. FOOTING HAS BEEN LOWERED AT THIS LOCATION TO ACCOMMODATE STORM DRAIN. SEE CIVIL SITE PLAN FOR CONTINUATION.
- 2. TERMINATE OVERFLOW ROOF DRAIN LINE AT SIDE OF BUILDING, 18" AFF. WITH NOZZLE.
- 3. ROOF DRAINS FROM ABOVE, SEE ROOF PLAN FOR CONTINUATION.
- 4. ROUTE ROOF DRAIN AND OVERFLOW DRAIN HIGH THROUGH EXISTING STRUCTURE.
- 5. CONNECT NEW SINK TO EXISTING UTILITIES. PROVIDE NEW TRIM, TYPICAL.



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#1		05/11/2023	05/16/2023
#2			

**Jefferson Elementary School
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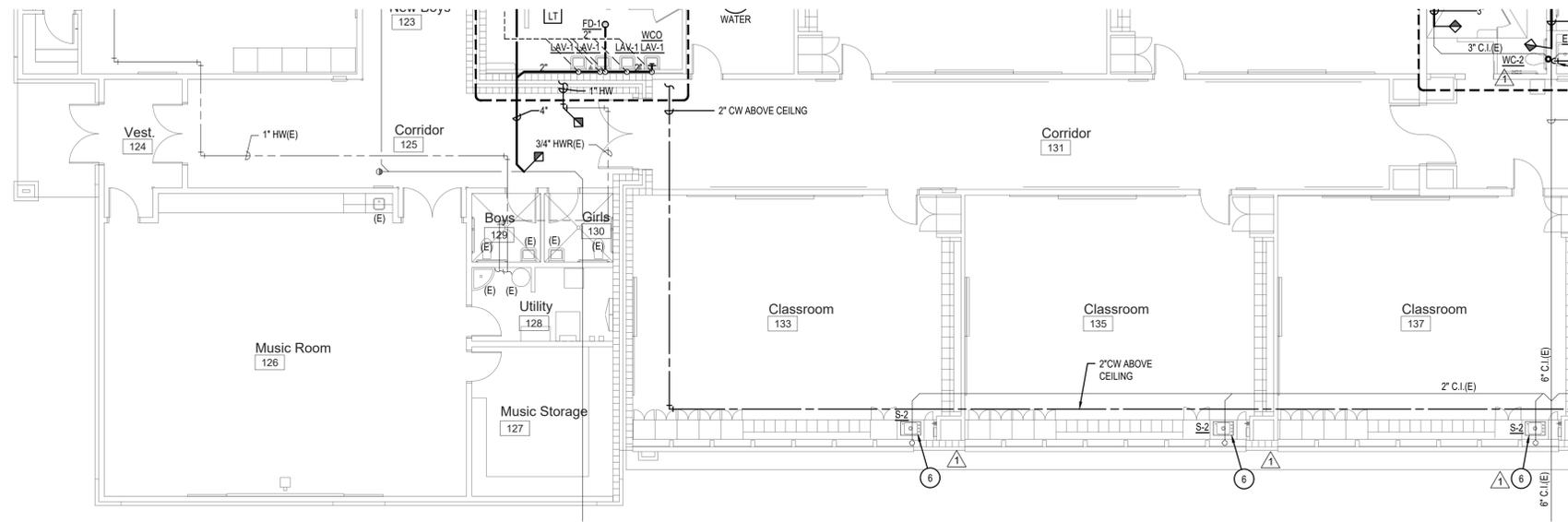
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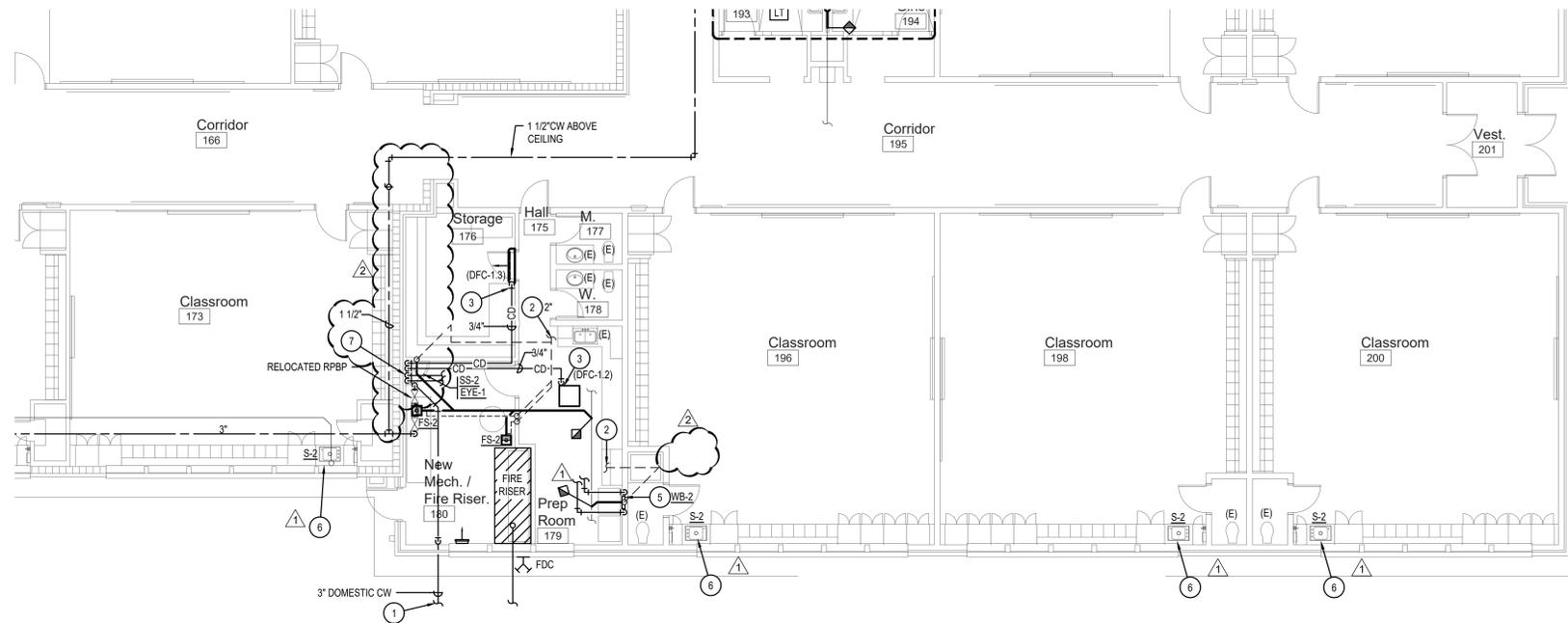
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P-2.3
PLUMBING NEW WORK
PLAN - AREA 'C'



1 Plumbing New Work Plan - Area 'D'
Scale: 1/8" = 1'-0"



2 Plumbing New Work Plan - Area 'E'
Scale: 1/8" = 1'-0"

KEYED NOTES:

- # SYMBOL USED FOR NOTE CALLOUT.
- 1. PROVIDE 3" DOMESTIC WATER LINE AND 3" WATER METER, SEE CIVIL SITE PLAN FOR CONTINUATION.
- 2. CONNECT NEW VENT LINE TO SAME SIZE OR LARGER EXISTING VENT LINE, THIS AREA.
- 3. ROUTE CONDENSATE DRAIN LINE ABOVE CEILING OVER TO SERVICE SINK, DOWN IN WALL AND TERMINATE AT RIM. USE COPPER PIPING IN FIRE RISER ROOM AND FIRE CAULK ALL PENETRATIONS. UNIT IS SPECIFIED WITH PUMP.
- 4. PROVIDE NEW SHOWER INSERT, VALVING AND TRIM. RE-USE EXISTING WASTE, VENT AND WATER SERVICES AND CONNECT.
- 5. PROVIDE CLOTHES WASHER CONNECTION, NEW WASTE - VENT AND CW - HW CONNECTIONS, CONNECT TO NEAREST SERVICE, FIELD VERIFY EXACT CONDITIONS.
- 6. CONNECT NEW SINK TO EXISTING UTILITIES, PROVIDE NEW TRIM, TYPICAL.
- 7. PROVIDE CW AND HW CONNECTIONS TO SS-2 AND EYE-1. CONNECT TO NEAREST SERVICE, FIELD VERIFY EXACT CONDITIONS.



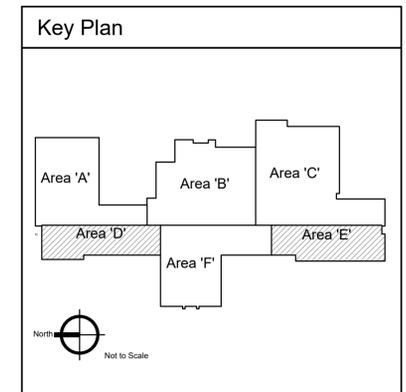
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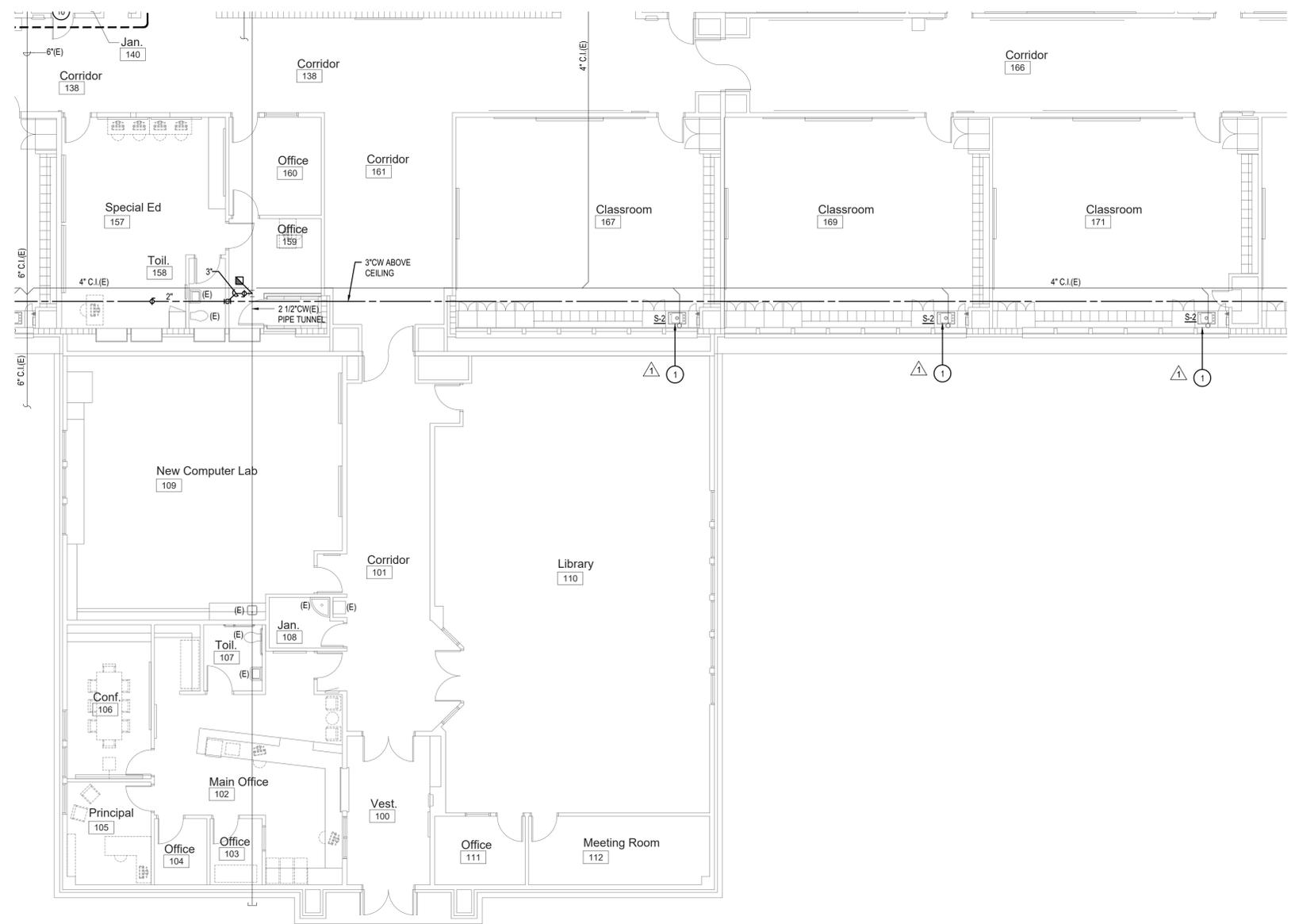
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P-2.4
PLUMBING NEW WORK
PLAN - AREA 'D' & 'E'

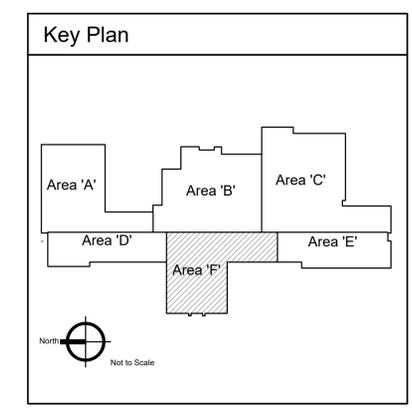
KEYED NOTES:

SYMBOL USED FOR NOTE CALLOUT.

1. CONNECT NEW SINK TO EXISTING UTILITIES. PROVIDE NEW TRIM, TYPICAL.



1 Plumbing New Work Plan - Area 'F'
Scale: 1/8" = 1'-0"





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8/23/2023
STATE OF IDAHO
CHRISTOPHER DYER

Revisions	Description	Date
#1	Addendum #1	05/11/2023
#2	Addendum #2	05/16/2023

**Jefferson Elementary School
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600 N. Fillmore Street, Jerome, Idaho

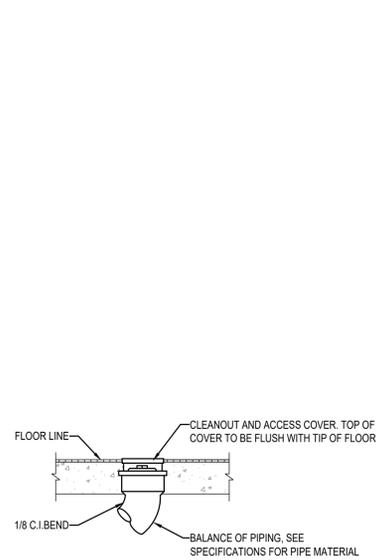
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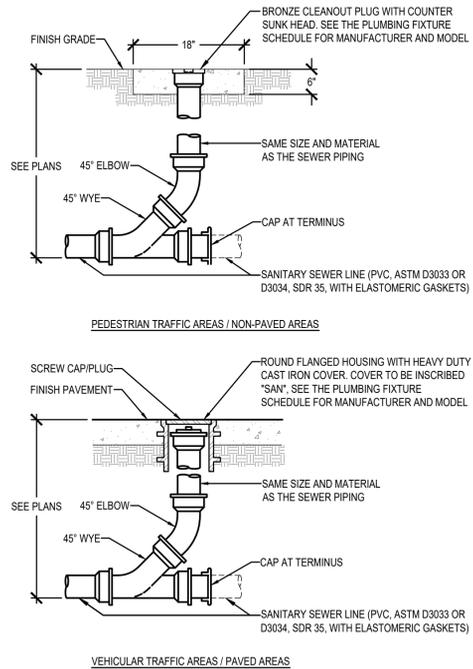
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P-2.5
PLUMBING NEW WORK
PLAN - AREA 'F'

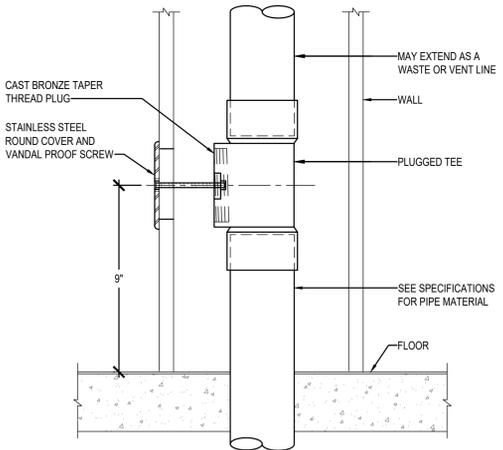


NOTE:
1. CLEANOUTS SHALL BE PROVIDED AT EACH HORIZONTAL DRAINAGE PIPE AT ITS UPPER TERMINAL AND EACH RUN OF PIPING WHICH IS MORE THAN 100 FEET, AND SHALL BE PROVIDED FOR EACH 100 FEET DEVELOPED LENGTH, OR FRACTION THEREOF OF SUCH PIPING. AN ADDITIONAL CLEANOUT SHALL BE PROVIDED FOR EACH AGGREGATE HORIZONTAL CHANGE OF DIRECTION EXCEEDING ONE HUNDRED THIRTY-FIVE DEGREES, PER APPLICABLE PLUMBING CODE. THIS SHALL BE PROVIDED REGARDLESS OF WHAT IS SHOWN ON THE DRAWINGS.

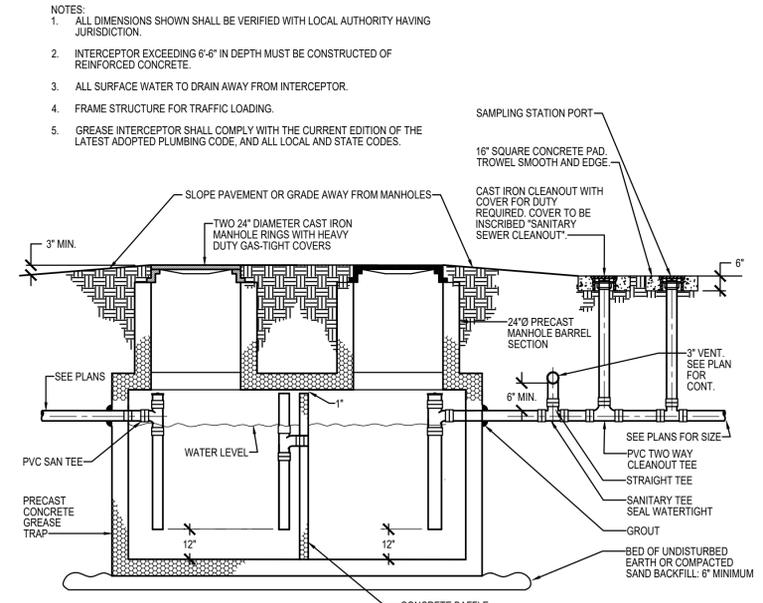
1 FLOOR CLEANOUT (FCO) DETAIL
NOT TO SCALE



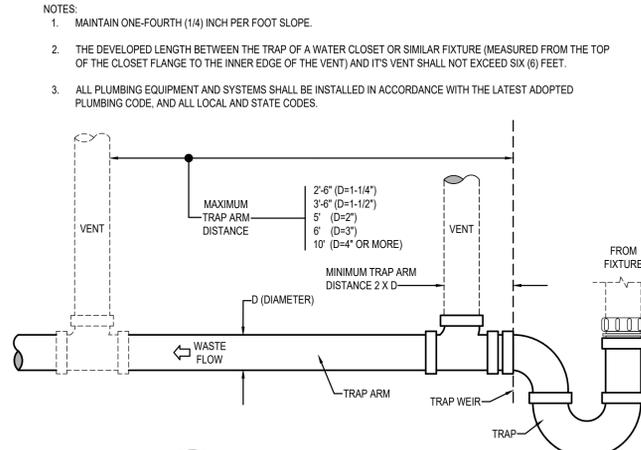
2 GRADE CLEANOUT (GCO) DETAIL
NOT TO SCALE



3 WALL CLEANOUT (WCO) DETAIL
NOT TO SCALE

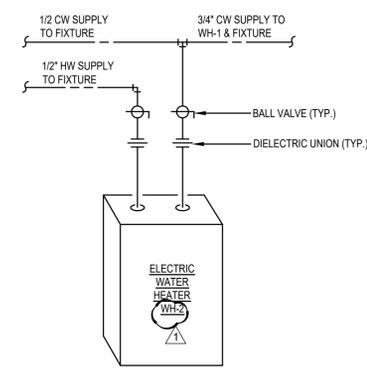


4 GREASE INTERCEPTOR DETAIL (1500 GALLONS)
NOT TO SCALE

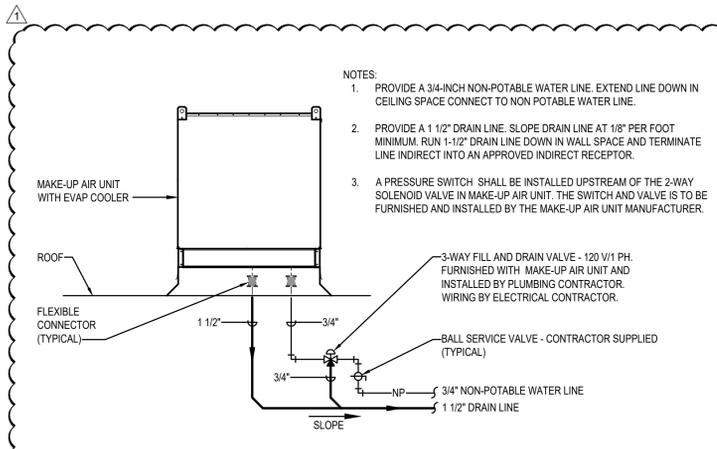


NOTES:
1. MAINTAIN ONE-FOURTH (1/4) INCH PER FOOT SLOPE.
2. THE DEVELOPED LENGTH BETWEEN THE TRAP OF A WATER CLOSET OR SIMILAR FIXTURE (MEASURED FROM THE TOP OF THE CLOSET FLANGE TO THE INNER EDGE OF THE VENT) AND ITS VENT SHALL NOT EXCEED SIX (6) FEET.
3. ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED PLUMBING CODE, AND ALL LOCAL AND STATE CODES.

5 TRAP ARM DETAIL
NOT TO SCALE

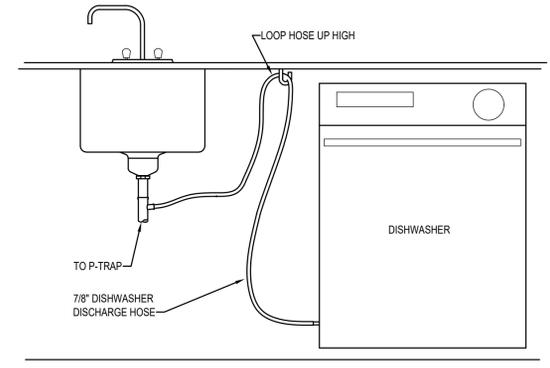


6 POINT OF USE WATER HEATER DETAIL
NOT TO SCALE



NOTES:
1. PROVIDE A 3/4-INCH NON-POTABLE WATER LINE. EXTEND LINE DOWN IN CEILING SPACE CONNECT TO NON POTABLE WATER LINE.
2. PROVIDE A 1 1/2" DRAIN LINE. SLOPE DRAIN LINE AT 1/8" PER FOOT MINIMUM. RUN 1-1/2" DRAIN LINE DOWN IN WALL SPACE AND TERMINATE LINE INDIRECT INTO AN APPROVED INDIRECT RECEPTOR.
3. A PRESSURE SWITCH SHALL BE INSTALLED UPSTREAM OF THE 2-WAY SOLENOID VALVE IN MAKE-UP AIR UNIT. THE SWITCH AND VALVE IS TO BE FURNISHED AND INSTALLED BY THE MAKE-UP AIR UNIT MANUFACTURER.

7 MAKE-UP AIR EVAP COOLER PIPING DETAIL
NOT TO SCALE



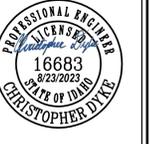
8 DISHWASHER CONNECTION DETAIL
NOT TO SCALE



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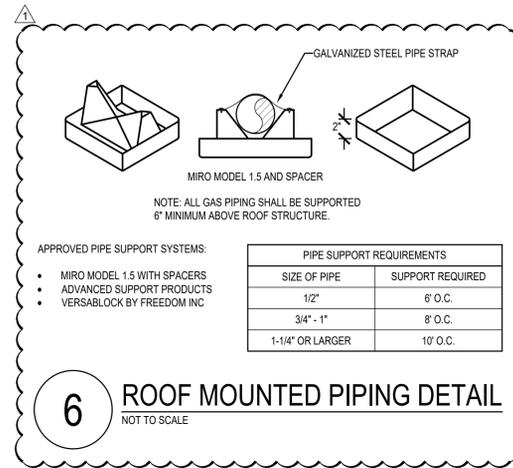
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P-4.0
PLUMBING DETAILS

Revisions	Date	Description
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#2	05/16/2023	Addendum #2

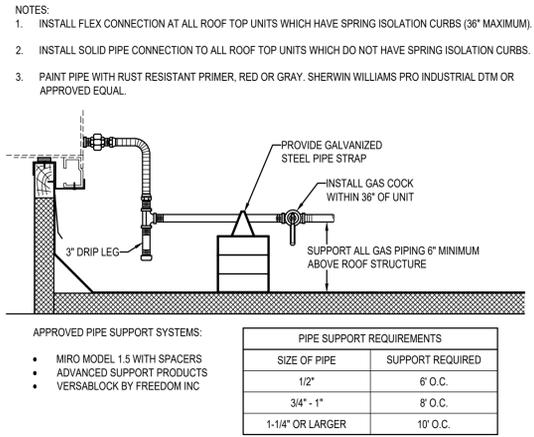


6 ROOF MOUNTED PIPING DETAIL
NOT TO SCALE

APPROVED PIPE SUPPORT SYSTEMS:

- MIRO MODEL 1.5 WITH SPACERS
- ADVANCED SUPPORT PRODUCTS
- VERSABLOCK BY FREEDOM INC

SIZE OF PIPE	SUPPORT REQUIRED
1/2"	6' O.C.
3/4" - 1"	8' O.C.
1-1/4" OR LARGER	10' O.C.

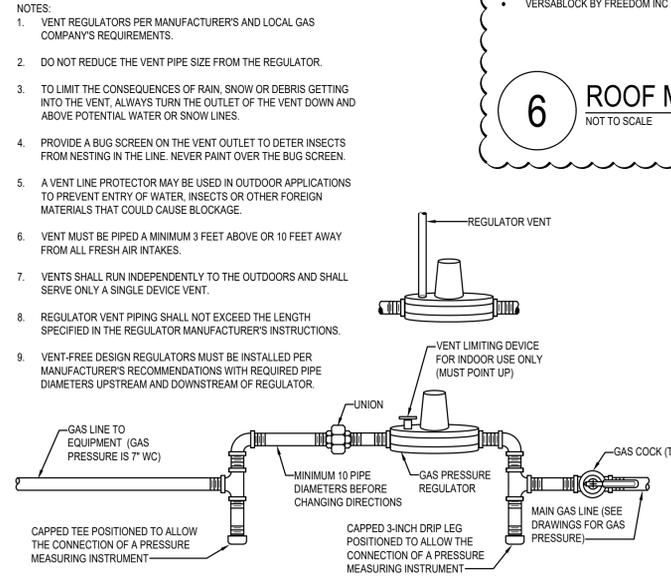


1 ROOFTOP UNIT - GAS PIPING DETAIL
NOT TO SCALE

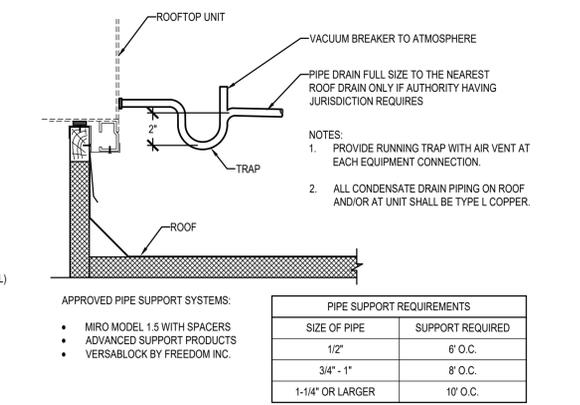
APPROVED PIPE SUPPORT SYSTEMS:

- MIRO MODEL 1.5 WITH SPACERS
- ADVANCED SUPPORT PRODUCTS
- VERSABLOCK BY FREEDOM INC

SIZE OF PIPE	SUPPORT REQUIRED
1/2"	6' O.C.
3/4" - 1"	8' O.C.
1-1/4" OR LARGER	10' O.C.



2 GAS PRESSURE REGULATOR DETAIL
NOT TO SCALE

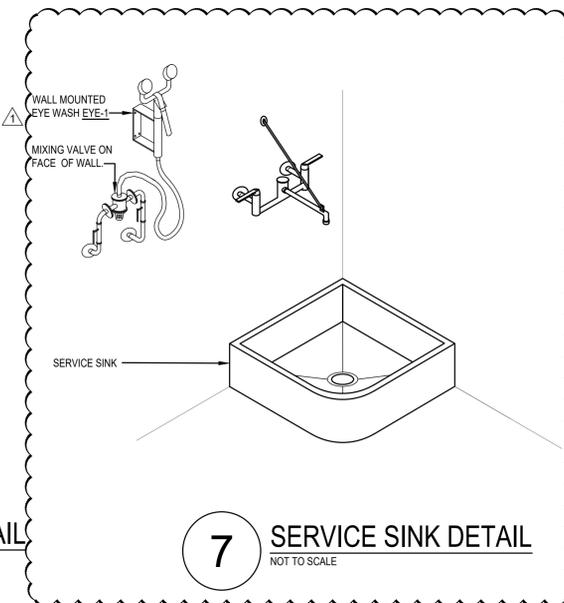


3 ROOFTOP UNIT - CONDENSATE DRAIN DETAIL
NOT TO SCALE

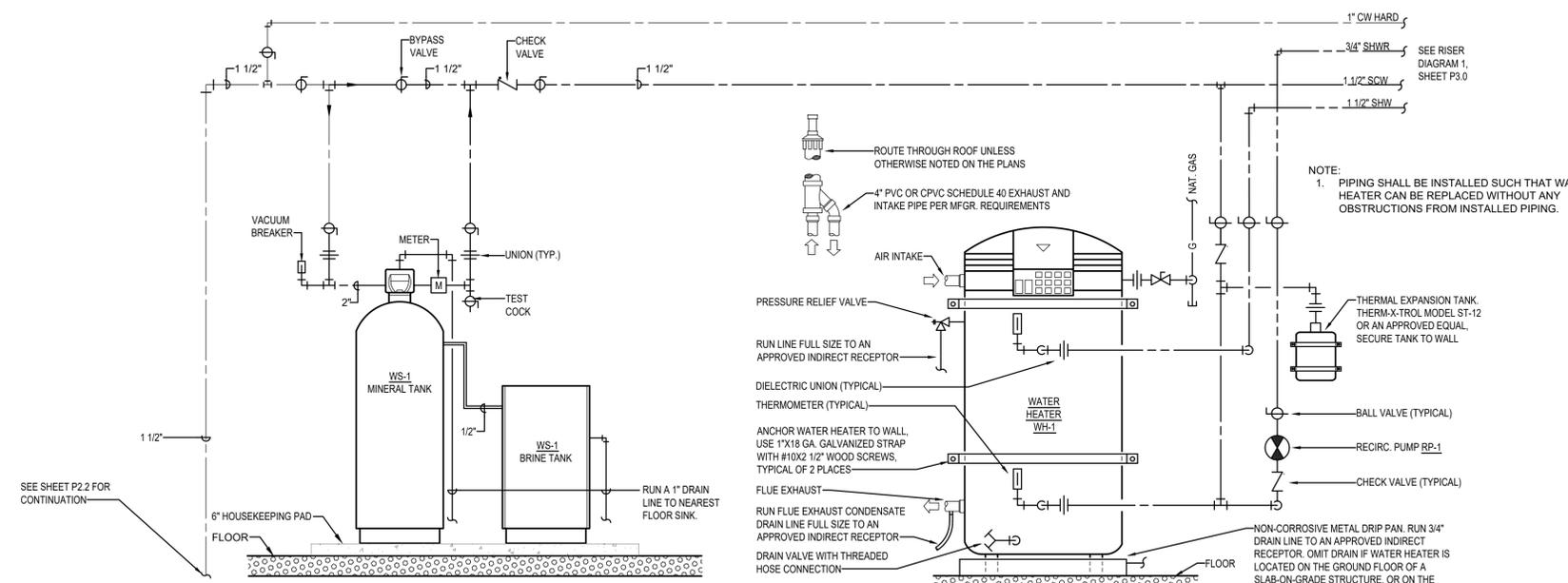
APPROVED PIPE SUPPORT SYSTEMS:

- MIRO MODEL 1.5 WITH SPACERS
- ADVANCED SUPPORT PRODUCTS
- VERSABLOCK BY FREEDOM INC.

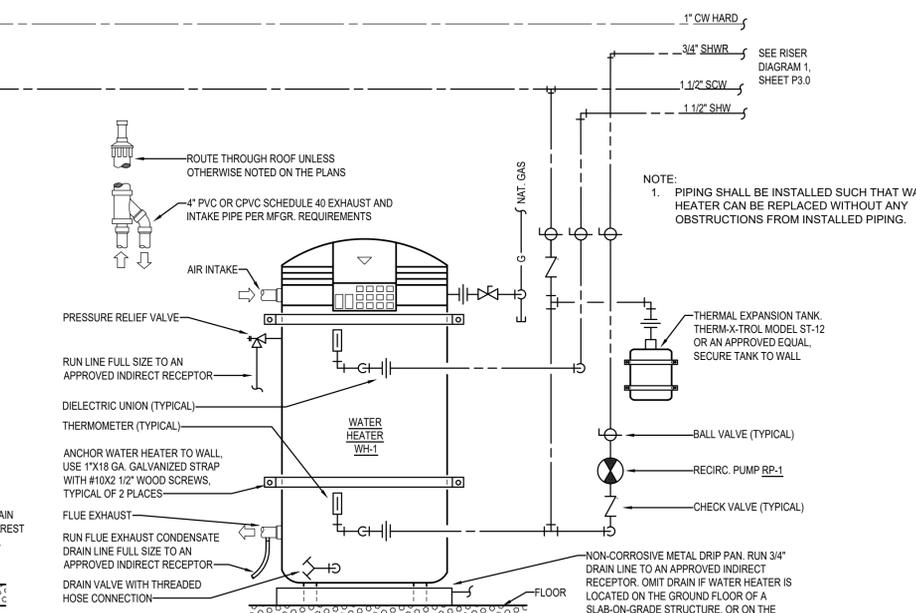
SIZE OF PIPE	SUPPORT REQUIRED
1/2"	6' O.C.
3/4" - 1"	8' O.C.
1-1/4" OR LARGER	10' O.C.



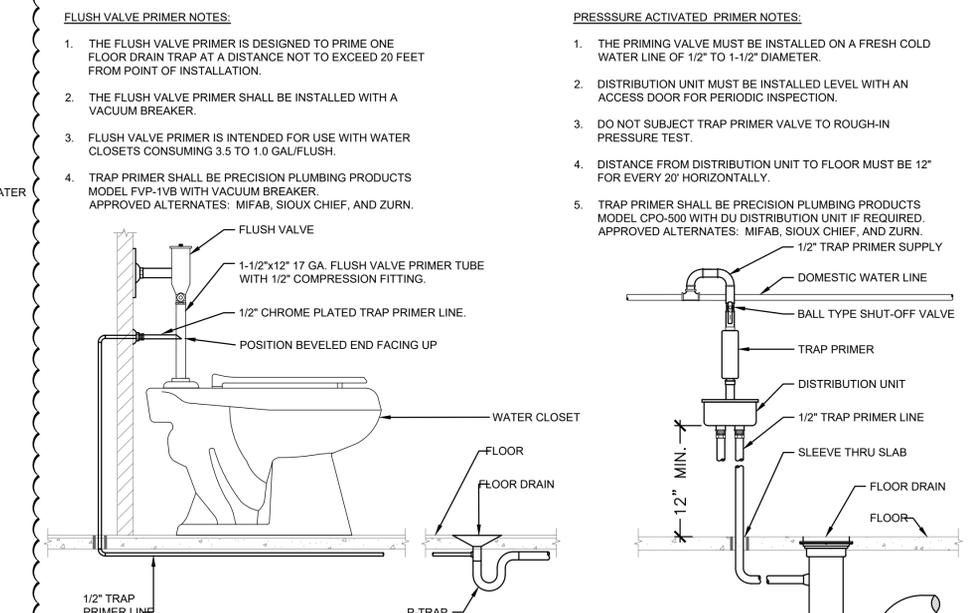
7 SERVICE SINK DETAIL
NOT TO SCALE



4 WATER SOFTENER PIPING DETAIL
NOT TO SCALE



5 HIGH EFFICIENCY WATER HEATER PIPING DETAIL
NOT TO SCALE



8 TRAP PRIMER CONNECTION DETAIL
NOT TO SCALE

FLUSH VALVE PRIMER NOTES:

- THE FLUSH VALVE PRIMER IS DESIGNED TO PRIME ONE FLOOR DRAIN TRAP AT A DISTANCE NOT TO EXCEED 20 FEET FROM POINT OF INSTALLATION.
- THE FLUSH VALVE PRIMER SHALL BE INSTALLED WITH A VACUUM BREAKER.
- FLUSH VALVE PRIMER IS INTENDED FOR USE WITH WATER CLOSETS CONSUMING 3.5 TO 1.0 GAL/FLUSH.
- TRAP PRIMER SHALL BE PRECISION PLUMBING PRODUCTS MODEL FVP-1VB WITH VACUUM BREAKER. APPROVED ALTERNATES: MIFAB, SIOUX CHIEF, AND ZURN.

PRESSURE ACTIVATED PRIMER NOTES:

- THE PRIMING VALVE MUST BE INSTALLED ON A FRESH COLD WATER LINE OF 1/2" TO 1-1/2" DIAMETER.
- DISTRIBUTION UNIT MUST BE INSTALLED LEVEL WITH AN ACCESS DOOR FOR PERIODIC INSPECTION.
- DO NOT SUBJECT TRAP PRIMER VALVE TO ROUGH-IN PRESSURE TEST.
- DISTANCE FROM DISTRIBUTION UNIT TO FLOOR MUST BE 12" FOR EVERY 20' HORIZONTALLY.
- TRAP PRIMER SHALL BE PRECISION PLUMBING PRODUCTS MODEL CPO-500 WITH DU DISTRIBUTION UNIT IF REQUIRED. APPROVED ALTERNATES: MIFAB, SIOUX CHIEF, AND ZURN.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE DESCRIPTION	CONNECTION SIZE					MANUFACTURER / MODEL NUMBER / DESCRIPTION / ADDITIONAL COMMENTS
		WASTE	VENT	TRAP	CW	HW	
BF-1	BACK FLOW DEVICE FOR COFFEE MAKERS AND ICE AND WATER DISPENSERS	--	--	--	1/2	--	WATTS SD-3 DUAL CHECK VALVE
DF-1	DRINKING FOUNTAIN WITH BOTTLE FILLING STATION (INTERIOR DUAL BUBBLERS) (ELECTRIC WATER COOLER) (ADA COMPLIANT) (HIGH/LOW)	1 1/2	1 1/2	1 1/2	1/2	--	MODEL EZSTL8WSVRSK (NON-FILTERED) BI-LEVEL ADA COOLER WITH BOTTLE FILLING STATION FURNISHED WITH FLEXI-GUARD SAFETY BUBBLER. BUBBLER ACTIVATED BY PUSHBAR. BOTTLE FILLER ACTIVATED BY ELECTRONIC SENSOR WITH AUTOMATIC 30-SECOND SHUT-OFF TIMER. 115 VOLT, 5.0 AMPS, 60 HERTZ. PROVIDE WITH JAY R. SMITH 0834 FLOOR MOUNTED SUPPORT CARRIER. OPTION - CANE APRON TO BE INSTALLED ON HIGH COOLER.
DN-1	DOWN SPOUT NOZZLE (CAST IRON)	SEE PLANS	--	--	--	--	JAY R. SMITH FIGURE NUMBER 1770-NB CAST IRON NOZZLE WITH WALL FLANGE, NICKEL-BRONZE FINISH.
DW-1	DISHWASHER	7/8	--	--	--	1/2	PROVIDED BY OTHERS, CONNECT WASTE TO SINK TAILPIECE. SEE DISHWASHER CONNECTION DETAIL.
ET-1	EXPANSION TANK	--	--	--	3/4	--	AMTROL THERMO-TROL ST-12, OR APPROVED EQUAL, NON-ASME SERIES THERMAL EXPANSION ABSORBER, ANTI-MICROBIAL LINER, AND 5 YEAR WARRANTY.
EYE-1	EMERGENCY EYE WASH (WALL MOUNTED w/ RECOIL HOSE) (USED WITH SERVICE SINK)	--	--	--	1/2	1/2	ACORN SAFETY MODEL S0406-CH12-BFP, WALL MOUNTED WITH DUAL 45° ANGLED HEADS AND RECOIL HOSE. PROVIDE WITH FLIP TOP DUST COVERS, UNIVERSAL EMERGENCY SIGN, DOUBLE CHECK VALVE, STAINLESS STEEL 90° WITH SHEET NIPPLE, AND ACORN MODEL ET71-1-BVS-OTG LEAD-FREE EMERGENCY THERMOSTATIC MIXING VALVE WITH 1/2" NPT INLETS & OUTLET, 4 GPM @ 5 PSID. PROVIDE WITH LOCKABLE INLET BALL VALVES, STANDARD OUTLET TEMPERATURE GAUGE, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 95°F.
EYE-2	EMERGENCY EYE WASH (FAUCET MOUNTED)	--	--	--	--	--	HMS MODEL 7620 AXION EYEWASH FAUCET MOUNTED EYEWASH WITH INTERNAL THERMOSTATIC SHUT-OFF VALVE. EYEWASH IS ACTIVATED BY ROTATING HEAD 180° IN EITHER DIRECTION. EYEWASH COMES WITH A STANDARD 55/64-27 THREAD STAINLESS STEEL FAUCET CONNECTION, ALONG WITH FOUR ADDITIONAL ADAPTORS. PROVIDE WITH OPTIONAL 1.0 GPM LAMINAR FLOW FAUCET OUTLET AND UNIVERSAL EYEWASH SIGN. ANSI Z358.1 AND OSHA COMPLIANT.
FCO	FLOOR CLEANOUT	SEE PLANS	--	--	--	--	JAY R. SMITH 4020 SERIES WITH ADJUSTABLE, ROUND NICKEL BRONZE TOP AND ABS PLUG.
FD-1	FLOOR DRAIN (PVC BODY) (CONCRETE FLOOR)	2	2	2	--	--	SIQUX CHIEF SERIES NUMBER 832-2PDR, POST-CONSTRUCTION LEVELING FLOOR DRAIN, NO-HUB OUTLET, 6-1/2" ROUND, ADJUSTABLE NICKEL BRONZE STRAINER AND TRAP PRIMER PORT. INSTALL TOP OF DRAIN 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
FS-1	FLOOR SINK (6" DEEP) (HALF GRATE, FOOT TRAFFIC RATED)	2	2	2	--	--	JAY R. SMITH FIGURE NUMBER 3100Y-12, CAST IRON RECEPTOR, ALUMINUM DOME STRAINER, NICKEL BRONZE GRATE, AND TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
FS-2	FLOOR SINK (10" DEEP) (HALF GRATE, FOOT TRAFFIC RATED)	4	2	4	--	--	JAY R. SMITH FIGURE NUMBER 3160Y-12, CAST IRON RECEPTOR, ALUMINUM DOME STRAINER, NICKEL BRONZE GRATE, AND TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
FS-3	FLOOR SINK (6" DEEP) (HALF GRATE, FOOT TRAFFIC RATED) COMMERCIAL KITCHEN, BAR, OR PROCESSING LOCATIONS	2	2	2	--	--	JAY R. SMITH FIGURE NUMBER 3002Y-12, STAINLESS STEEL RECEPTOR, DOME STRAINER AND GRATE WITH TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
FS-4	FLOOR SINK (10" DEEP) (HALF GRATE, FOOT TRAFFIC RATED) COMMERCIAL KITCHEN, BAR, OR PROCESSING LOCATIONS	4	2	4	--	--	JAY R. SMITH FIGURE NUMBER 3004Y-12, STAINLESS STEEL RECEPTOR, DOME STRAINER AND GRATE WITH TRAP PRIMER. INSTALL TOP OF SINK 1/8" BELOW FINISH FLOOR AND CAULK EDGE.
GCO	GRADE CLEANOUT (NON-PAVED AREAS)	SEE PLANS	--	--	--	--	JAY R. SMITH 4220 SERIES, ROUND EXTRA HEAVY DUTY CAST IRON TOP. FURNISH WITH WITH ABS PLUG. COVER TO BE INSCRIBED "SAN".
GCO	GRADE CLEANOUT (PAVED AREAS) (VEHICULAR TRAFFIC)	SEE PLANS	--	--	--	--	JAY R. SMITH 4250 SERIES, ROUND FLANGED HOUSING WITH HEAVY DUTY CAST IRON COVER. FURNISH WITH ABS PLUG. COVER TO BE INSCRIBED "SAN".
GI-1	GREASE INTERCEPTOR (1500 GALLONS)	4	3	--	--	--	PRE-CAST CONCRETE, 1500 GALLON CAPACITY, GREASE INTERCEPTOR. SEE DRAWING FOR DETAILS. NO SPLIT DESIGN VAULTS WITH GASKETS BELOW FLUID LEVEL ALLOWED.
HB-1	HOSE BIBB (EXTERIOR) (NON-FREEZE)	--	--	--	3/4	--	WOODFORD MODEL 67 - EXPOSED STYLE WITH MODEL 50HA BACKFLOW PREVENTER, 3/4" INLET, AND CHROME PLATED. PROVIDE WITH TEE KEY AND INSTALL AT 18" ABOVE FINISH GRADE.
ID-1	ICE AND WATER DISPENSER	INDIRECT FULL SIZE TO FLOOR SINK			1/2	--	PROVIDED BY OTHERS, ROUGH IN AND CONNECTED BY PLUMBING CONTRACTOR. PROVIDE AND INSTALL WITH BF-1.
LAV-1	MOTION SENSOR LAVATORY (WALL MOUNTED) (ELECTRIC OPERATED) (ADA COMPLIANT)	1 1/2	1 1/2	1 1/4	1/2	1/2	KOHLER KINGSTON MODEL K-2005, VITREOUS CHINA, WALL MOUNTED, HOLES ON 4" CENTERS, AND GRID STRAINER. SLOAN OPTIMA ELECTRONIC HAND WASHING FAUCET MODEL ETF-600 WITH PLUG-IN TRANSFORMER (120 VAC/24 VAC). PROVIDE WITH JAY R. SMITH FIGURE NUMBER 0700-2 SUPPORT WITH CONCEALED ARMS. PROVIDE WITH LS-1 LAV SHIELD.
LAV-2	MOTION SENSOR LAVATORY (WALL MOUNTED) (ELECTRIC OPERATED) (ADA COMPLIANT)	1 1/2	1 1/2	1 1/4	1/2	1/2	KOHLER KINGSTON MODEL K-2005, VITREOUS CHINA, WALL MOUNTED, HOLES ON 4" CENTERS, AND GRID STRAINER. SLOAN OPTIMA ELECTRONIC HAND WASHING FAUCET MODEL ETF-600 WITH PLUG-IN TRANSFORMER (120 VAC/24 VAC). WATTS SERIES LFUSG-B LEAD-FREE, THERMOSTATIC MIXING VALVE, ASSE STANDARD 1070 LISTED, BRONZE BODY, INTEGRAL CHECK VALVES, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 120°F PROVIDE WITH JAY R. SMITH FIGURE NUMBER 0700-2 SUPPORT WITH CONCEALED ARMS. PROVIDE WITH LS-1 LAV SHIELD.
LS-1	LAVATORY SHIELD (WALL MOUNTED SHIELD FOR CONCEALING PIPING, VALVES, AND INSTANTANEOUS WATER HEATERS)	--	--	--	--	--	TRUEBRO "LAV SHIELD" ADA COMPLIANT, TOTAL ENCLOSURE. SINGLE-PIECE CONSTRUCTION, SLOAN OPTISHIELD ETF-529, OR APPROVED EQUAL.
OD-1	OVERFLOW ROOF DRAIN (METAL GRATE)	SEE PLANS	--	--	--	--	JAY R. SMITH FIGURE NUMBER 1070Y GENERAL PURPOSE DRAIN WITH LOW PROFILE DOME. PROVIDE WITH SUMP RECEIVER, UNDERDECK CLAMP, CAST IRON DOME, INTERNAL DAM STANDPIPE, AND RAIN SHIELD.
RD-1	ROOF DRAIN (LOW PROFILE DOME STYLE) (METAL GRATE)	SEE PLANS	--	--	--	--	JAY R. SMITH FIGURE NUMBER 1010Y GENERAL PURPOSE DRAIN WITH LOW PROFILE DOME. PROVIDE WITH SUMP RECEIVER, UNDERDECK CLAMP, AND CAST IRON DOME.
RH-1	ROOF HYDRANT (NON-FREEZE) (DRAIN LINE REQUIRED)	--	--	--	3/4	--	WOODFORD MODEL RHY2-MS NON-FREEZE STYLE ROOF HYDRANT WITH 3/4" HOSE CONNECTION AND INTEGRAL DOUBLE CHECK BACKFLOW PREVENTER. REQUIRES 1/8" DRAIN LINE PIPED TO APPROVED INTERCEPTOR.
RP-1	RECIRCULATION PUMP (HOT WATER RETURN SYSTEM) (MEDIUM SIZED SYSTEM)	--	--	--	--	3/4	BELL AND GOSSETT BRONZE MODEL NBF-22, 115 VOLT, 0.8 AMPS, 92 WATTS, AND SHALL PROVIDE 7 GPM AT 10 FEET HEAD, INCLUDE 7-DAY PROGRAMMABLE ELECTRONIC TIME CLOCK WITH BATTERY BACKUP, INTERMATIC MODEL GM40AVE-RD89. APPROVED ALTERNATE: ARMSTRONG, TACO, GRUNDFOSS.
RPBP-1	REDUCED PRESSURE BACKFLOW PREVENTER NON POTABLE	INDIRECT			1	--	WATTS SERIES LF009 LEAD-FREE REDUCED PRESSURE ZONE ASSEMBLY WITH QUARTER-TURN BALL VALVES, STRAINER, AND AIR GAP. CAST COPPER BODY CONSTRUCTION - 1/2" THRU 2".
S-1	SINK - DOUBLE COMPARTMENT (14" X 14" X 6 1/2" - EACH) (ADA COMPLIANT)	2	1 1/2	1 1/2	1/2	1/2	ELKAY LUSTERTONE MODEL LRAD331969: 6-1/2" DEEP, STAINLESS STEEL SINK, PROVIDE AND INSTALL ELKAY MODEL LK3001R SINGLE LEVER CHROME FAUCET WITH SWING SPOUT AND HOSE SPRAY. ELKAY MODEL LK3S STAINLESS STEEL STRAINER BASKET AND TAILPIECE, AND WATTS SERIES LFUSG-B LEAD-FREE, THERMOSTATIC MIXING VALVE, ASSE STANDARD 1070 LISTED, BRONZE BODY, INTEGRAL CHECK VALVES, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 120°F.

S-2	SINK - CLASSROOM WITH BUBBLER (22"X19 1/2"X5 1/2") (ADA COMPLIANT) (SEE PLANS FOR LEFT AND RIGHT CONFIGURATIONS)	2	1 1/2	1 1/2	1/2	1/2	JUST CLASSROOM SINK # CRA-ADA-1725-A-GR (SEE PLANS FOR LEFT AND RIGHT LEDGES) 2 HOLES ON 4" CENTERS AND 1 BUBBLE HOLE FRONT OPPOSITE SIDE) 5 1/2" DEEP STAINLESS STEEL SINK, JADA-35 STAINLESS STEEL DRAIN WITH STRAINER AND STOPPER, CHICAGO FAUCETS MODEL 2302-ABC/P SINGLE LEVER FAUCET AND SWING SPOUT, CHICAGO FAUCETS MODEL 748-665FHABCP/ BUBBLER, JUST MODEL JSB-10-VR-FLX BUBBLER, SWING SPOUT IS TO BE LOCKED IN PLACE.
S-3	SINK - KITCHEN HANDWASH (18" X 12" X 6") (WALL MOUNTED)	2	1 1/2	1 1/2	1/2	1/2	ELKAY HANDWASH SINK MODEL CHS1716C: 6" DEEP, WALL MOUNTED, STAINLESS STEEL SINK. PROVIDE AND INSTALL ELKAY MODEL LK940GN04L2H HIGH GOOSENECK SPOUT FAUCET WITH 8" CENTERS AND LEVER HANDLES, ELKAY MODEL LK8 GRID STRAINER AND TAILPIECE, ELKAY MODEL LK500 P-TRAP WITH CLEANOUT PLUG, AND WATTS SERIES LFUSG-B LEAD-FREE, THERMOSTATIC MIXING VALVE, ASSE STANDARD 1070 LISTED, BRONZE BODY, INTEGRAL CHECK VALVES, AND SELECTABLE TEMPERATURE RANGE FROM 80°F TO 120°F. PROVIDE WITH FAUCET-MOUNTED EYEWASH EYE-2.
SA-1	SHOCK ABSORBER (WATER HAMMER ARRESTOR)	--	--	--	--	--	JAY R. SMITH FIGURE NUMBER 5005 TO 5050, SIZED PER FIXTURES SERVED. PROVIDE AN ACCESS PANEL AND A BALL TYPE SHUT-OFF VALVE UPSTREAM OF SHOCK ABSORBER.
SHR-1	SHOWER (42" X 36" X 79") (INSERT STYLE - TRANSFER) (ADA COMPLIANT)	2	1 1/2	1 1/2	1/2	1/2	BEST BATH SYSTEMS MODEL LC24238AST, ONE PIECE, FIBERGLASS SHOWER WITH 1/2" THRESHOLD (CLASSIC TILE FINISH). MODULE SHALL BE CONSTRUCTED OF GELCOAT FIBERGLASS WITH FULL INTEGRAL PLYWOOD BACKING IN ALL THE WALLS FOR STRENGTH AND CUSTOMIZED INSTALLATION OF ACCESSORIES. PRE-LEVELLED FLOOR FOR EASY INSTALLATION (LOW THRESHOLD DESIGN REQUIRES 8" X 8" BLOCK OUT CENTERED AT DRAIN PIPE LOCATION). ACCESSORIES: (1) 12" S.S. GRAB BAR, (1) 24" S.S. GRAB BAR, (1) 27" S.S. GRAB BAR, (1) 32"X16" PHENOLIC SLAB, ADA COMPLIANT, SWING-DOWN SEAT WITH LEGS, (1) SURFACE MOUNTED SOAP DISH, (1) SIOUX CHIEF MODEL 827-2B CAULKLESS BRASS DRAIN WITH STAINLESS STEEL STRAINER, (1) TWS COLLAPSIBLE T" SHAPED WATER RETAINER. PROVIDE MOEN MODEL 8346 HAND-HELD SHOWER SYSTEM, PRESSURE BALANCING VALVE WITH 1/4" TURN STOPS, ADJUSTABLE TEMPERATURE LIMIT STOP, HAND-HELD SHOWER HEAD, 69" DOUBLE SWIVEL HOSE ASSEMBLY, 30" SLIDE BAR, VACUUM BREAKER, DROP ELL. PROVIDE STAINLESS STEEL CURTAIN ROD AND WEIGHTED SHOWER CURTAIN.
SS-1	SERVICE SINK (36" X 24" X 10") (FLOOR MOUNTED)	3	2	3	1/2	1/2	ACORN TERRAZZO-WARE MODEL TRH-242410: PROVIDE AND INSTALL WITH MODEL KFC CHROME UTILITY FAUCET, STAINLESS STEEL BUMPER GUARD, DRAIN GASKET, 3/8" HOSE AND WALL HANGER, MOP HANGER, AND (2) STAINLESS STEEL WALL GUARDS. MOUNT FAUCET 36" AFF.
SS-2	SERVICE SINK (28" RADIUS CORNER X 12") (FLOOR MOUNTED)	3	2	3	1/2	1/2	ACORN TERRAZZO-WARE MODEL TCR-28: PROVIDE AND INSTALL WITH MODEL KFC CHROME UTILITY FAUCET, STAINLESS STEEL BUMPER GUARD, DRAIN GASKET, 3/8" HOSE AND WALL HANGER, MOP HANGER, AND (2) STAINLESS STEEL WALL GUARDS. MOUNT FAUCET 36" AFF.
TD-1	TROUGH DRAIN	2	2	2	--	--	EAGLE GROUP FT-1218-SG 12X18 TROUGH DRAIN WITH STAINLESS STEEL GRATING, 14 GAUGE, TYPE 304 STAINLESS STEEL, CENTER BOTTOM DRAIN CONNECTION.
TP-1	TRAP PRIMER (PRESSURE ACTIVATED) (1 TO 4 TRAPS)	--	--	--	1/2"	--	PRECISION PLUMBING PRODUCTS MODEL CPO-500 WITH DU DISTRIBUTION UNIT IF REQUIRED FOR SERVING MORE THAN ONE TRAP.
TP-1	TRAP PRIMER (FLUSH VALVE PRIMER) (1 TRAP)	--	--	--	1/2"	--	PRECISION PLUMBING PRODUCTS MODEL FVP-1VB WITH VACUUM BREAKER. TRAP PRIMER TUBING SHALL BE INSTALLED OFF BACK OF FLUSH VALVE.
U-1	URINAL (MOTION SENSOR / BATTERY OPERATED) (SEE ARCH FOR MOUNTING HEIGHT)	2	1 1/2	INT.	3/4	--	KOHLER BARON MODEL K-4991-ET WALL MOUNTED URINAL WITH 3/4" TOP SPUD. SLOAN REGAL 186 SFSM-0.5 SIDE MOUNT OPERATOR WITH MANUAL OVERRIDE FLUSH BUTTON, 0.5 GPF. INCLUDE BEEHIVE STRAINER AND JAY R. SMITH FIGURE NUMBER 0637 ADJUSTABLE FIXTURE SUPPORT.
WB-1	WALL BOX (WATER SUPPLY TO ICE MAKER)	--	--	--	1/2"	--	QATEY FIREMASTER MODEL 39121 WITH FACEPLATE AND ADJUSTABLE METAL SUPPORT BRACKETS. FIRE-RATED, LOW LEAD, OR APPROVED EQUAL.
WB-2	WALL BOX (SUPPLY DRAIN FOR WASHING MACHINE)	2	1 1/2	2	1/2	1/2	QATEY FIREMASTER MODEL 39478 WITH FACEPLATE, ADJUSTABLE METAL SUPPORT BRACKETS, AND WATER HAMMER ARRESTORS. FIRE RATED, OR APPROVED EQUAL.
WC-1	WATER CLOSET (16-3/16" SEAT HEIGHT) (MOTION SENSOR / HARD WIRED) (FLOOR MOUNTED)	4	2	INT.	1	--	KOHLER WELLCOMME MODEL K-96053 / FLOOR MOUNTED, WITH ELONGATED BOWL. KOHLER LUSTRA MODEL K-4666-C / ELONGATED OPEN FRONT SEAT WITH HINGE. SLOAN ROYAL 186 ESS-1.6-TMO-HW FLUSHOMETER WITH MANUAL OVERRIDE FLUSH BUTTON, 1.6 GPF. PROVIDE WITH EL-154 TRANSFORMER (120 VAC / 24 VAC). EL-485-A FLUSHOMETER ELECTRICAL BOX. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL LOW VOLTAGE WIRING, CONDUIT, BOXES, TRANSFORMERS AND ASSOCIATED PARTS. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V CONNECTION AT TRANSFORMER(S).
WC-2	WATER CLOSET (17-1/2" SEAT HEIGHT) (MOTION SENSOR / HARD WIRED) (FLOOR MOUNTED) (COMFORT HEIGHT / ADA COMPLIANT)	4	2	INT.	1	--	KOHLER HIGHCLIFF ULTRA MODEL K-96057 FLOOR MOUNTED WITH ELONGATED BOWL. KOHLER LUSTRA MODEL K-4666-C ELONGATED OPEN FRONT SEAT WITH HINGE. SLOAN ROYAL 186 ESS-1.6-TMO-HW FLUSHOMETER WITH MANUAL OVERRIDE FLUSH BUTTON, 1.6 GPF. PROVIDE WITH EL-154 TRANSFORMER (120 VAC / 24 VAC). EL-485-A FLUSHOMETER ELECTRICAL BOX. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL LOW VOLTAGE WIRING, CONDUIT, BOXES, TRANSFORMERS AND ASSOCIATED PARTS. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V CONNECTION AT TRANSFORMER(S).
WCO	WALL CLEANOUT	SEE PLANS	--	--	--	--	JAY R. SMITH 4472T SERIES WITH CAST BRONZE TAPER THREAD PLUG, STAINLESS STEEL ROUND COVER, AND A STAINLESS STEEL VANDAL PROOF SCREW.
WH-1	WATER HEATER (NOMINAL 100 GALLON) (NATURAL GAS - HIGH EFFICIENCY)	--	--	--	SEE PLANS	SEE PLANS	BRADFORD WHITE MODEL EF-100T-199E-3N. 199 MBH INPUT, 110V/110, 1.8 AMPS, 28" DIAMETER, 78" TALL WITH SIDE CONNECTIONS. PROVIDE WITH PVC CONCENTRIC INTAKE/VENT KIT AND SEISMIC STRAP. PROVIDE WATER HEATER WITH HEAT TRAP.
WH-2	WATER HEATER (POINT OF USE) (ELECTRIC)	--	--	--	SEE PLANS	SEE PLANS	CHRONOMITE CMI SERIES MODEL CMI-200L208, 208/1, 20 AMPS, 4.2 KW, WITH INTEGRAL MIXING VALVE, MODELKWK-CON DISCONNECT, AND SHALL PROVIDE 57°F TEMPERATURE RISE AT 0.5 GPM. PROVIDE WITH LS-1 LAV SHIELD.
WS-1	WATER SOFTENER (DUPLX SYSTEM)	INDIRECT			2	--	KINETICO COMMERCIAL DUPLX WATER SOFTENER SYSTEM. SHALL MEET THE FOLLOWING CRITERIA: EXCHANGE CAPACITY OF 100-150 GRAINS, 60 GPM @ 15 PSI MAX PRESSURE DROP. 2000 GPD, 7 HOURS PER DAY, 5 DAYS A WEEK. ELECTRICAL SHALL PROVIDE 120V/1Ø PLUG OUTLET.

NOTES:

- ALL ADA COMPLIANT FIXTURES MUST COMPLY WITH ICC/ANSI A117.1. SEE ARCHITECTURAL PLANS FOR HANDICAPPED FIXTURE DESIGNATIONS, LOCATIONS, CLEARANCES, AND MOUNTING HEIGHTS.
- ALL EXPOSED HW PIPING, CW PIPING, AND DRAIN LINES BENEATH ALL LAVATORIES AND ALL ADA COMPLIANT SINKS MUST BE INSULATED TO PREVENT INJURY. REFER TO ARCHITECTURAL PLANS. INSULATE WITH MOLDED CLOSED CELL VINYL INSULATION - TRUEBRO, PLUMBEREX, OR EQUAL.
- PROVIDE P-TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS (TRAP PRIMERS ARE NOT INDICATED ON PLANS - REFERENCE DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION). PROVIDE A BALL TYPE SHUT-OFF VALVE UPSTREAM OF PRIMER VALVE. SEE SPECIFICATIONS.
- SEE SPECIFICATIONS FOR ALTERNATE APPROVED MANUFACTURERS.
- HIGH EFFICIENCY WATER HEATERS: PROVIDE WITH CONDENSATE NEUTRALIZATION KIT BY JIM BOILER WORKS MODEL JM (OR EQUAL), SIZED PER EQUIPMENT CAPACITY.



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Revisions	Date	Description
#1	05/11/2023	Addendum #1
#2	05/16/2023	Addendum #2

**Jefferson Elementary School
Addition and Remodel**

600 N. Fillmore Street, Jerome, Idaho

DATE: February 24, 2023
LKV PROJECT # -
REVISIONS:

DRAWN BY: JM/CJ
CHECKED BY: BC

Agency Review

DRAWING NO.

P-5.0
PLUMBING SCHEDULES



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Revisions	Description	Date
#		
1	Addendum #1	05/11/2023
2	Addendum #2	05/16/2023

SYMBOL	FIXTURE DESCRIPTION	CONNECTION SIZE (INCHES)							MANUFACTURER / MODEL NUMBER / DESCRIPTION / ADDITIONAL COMMENTS	REMARKS
		WASTE	VENT	TRAP	HARD CW	SOFT CW	SOFT HW	NAT. GAS		
K-1	DISH WASHER HIGH TEMP. WITH BUILT ON BOOSTER AND VACUUM BREAKER	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	3/4	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	3, 6
K-2	DISH TABLE WITH TROUGH DRAIN	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-3	GARBAGE DISPOSER - SINK	3	2	3	--	1/2	--	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	1
K-4	PRE-RINSE UNIT	--	--	--	--	1/2	1/2	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	7
K-8	ICE MAKER / ICE BIN	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	1/2	--	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	1
K-9	DOUBLE STACK CONVECTION OVEN	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	3/4 (2)	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-14	COUNTER WITH DBL. SINK	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-16	WALK IN COOLER	ROUTE CONDENSATE LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	--	EQUIPMENT PROVIDED BY OTHERS, CONDENSATE DRAIN LINE ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-17	WALK IN FREEZER	ROUTE CONDENSATE LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	--	EQUIPMENT PROVIDED BY OTHERS, CONDENSATE DRAIN LINE ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	5
K-18	COMBI OVEN WITH WATER FILTER	--	--	--	--	1/2	--	1	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	1, 4
K-19	STEAM KETTLE WITH DRAIN STAND DRAWER	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	3/4	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-21	COUNTER WITH TRIPLE SINK	ROUTE DRAIN LINE FULL SIZE, TERMINATE INDIRECTLY TO FS			--	--	--	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	2
K-25	PEDESTAL POT AND KETTLE FILLER	--	--	--	--	1/2	1/2	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--
K-27	PRE RINSE UNIT	--	--	--	--	1/2	1/2	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	7
K-28	DOUBLE SINK MIXING FAUCET	--	--	--	--	1/2	1/2	--	EQUIPMENT PROVIDED BY OTHERS, ROUGH IN AND CONNECTION BY PLUMBING CONTRACTOR.	--

NOTES: FT = FLOOR TROUGH, FS = FLOOR SINK

- PLUMBING CONTRACTOR TO PROVIDE WITH REDUCED PRESSURE BACKFLOW PREVENTER WATTS, SERIES 009 LEAD FREE REDUCED PRESSURE ZONE ASSEMBLY, MODEL NO. 009 SERIES WITH QUARTER TURN BALL VALVES, BRONZE STRAINER, AND AIR GAP. BRONZE BODY CONSTRUCTION, ROUTE DRAIN FULL SIZE TO FLOOR SINK, TERMINATE INDIRECTLY. SEE POINT OF USE REDUCED PRESSURE BACKFLOW PREVENTER DETAIL.
- PROVIDE SLIDE GATE FOR EACH BASIN DRAIN, MANIFOLD TOGETHER AND ROUTE TO FS.
- PLUMBING CONTRACTOR TO PROVIDE COOL DOWN KIT ON DISH MACHINE DRAIN LINE WITH 1/2" CW LINE AND RPBP WATTS SERIES 009 LEAD FREE REDUCED PRESSURE ZONE ASSEMBLY WITH SHUT OFF VALVES, BRONZE STRAINER, AND AIR GAP. BRONZE BODY CONSTRUCTION- 1/2" THRU 2", ROUTE DRAIN FULL SIZE TO FLOOR SINK, TERMINATE INDIRECTLY. SEE POINT OF USE REDUCED PRESSURE BACKFLOW PREVENTER DETAIL.
- CONNECT FILTER AND FILTER LINE FROM FILTER, FILTER PROVIDED BY OTHERS.
- HEAT TRACE AND INSULATION CONDENSATE DRAIN LINE FROM EVAPORATIVE COOLER COIL IN FREEZER.
- CONNECT BOOSTER TO DISH MACHINE.
- PROVIDE CHECK VALVES ABOVE CEILING ON HOT AND COLD WATER LINES TO FAUCET.

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DATE: February 24, 2023
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P-5.1
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