MECHANICAL LEGEND

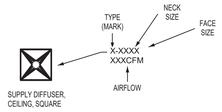
SYMBOL	DESCRIPTION
	PIPE NOTATION
SD	STORM DRAIN LINE (UNDER SLAB)
RD	ROOF DRAIN LINE (ABOVE CEILING)
OFRD	OVERFLOW ROOF DRAIN LINE (ABOVE CEILING)
	SUBSURFACE DRAIN LINE
F	FIRE LINE
G	NATURAL GAS LINE
W	WATER LINE
	SANITARY WASTE LINE
SS	SANITARY SEWER LINE
V	VENT LINE
AW	ACID WASTE
AV	ACID VENT
–	DOMESTIC COLD WATER LINE
– –	DOMESTIC HOT WATER LINE
– – –	DOMESTIC HOT WATER RETURN LINE
CDWS	CHILLED DRINKING WATER SUPPLY
CDWR	CHILLED DRINKING WATER RETURN
HWS	HEATING WATER SUPPLY LINE
HWR	HEATING WATER RETURN LINE
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
S_	STEAM LINE (WITH PRESSURE INDICATED)
SCR	STEAM CONDENSATE RETURN
SV	STEAM VENT
RS	REFRIGERANT SUCTION
RL	REFRIGERANT RETURN
N	NITROGEN
O2	OXYGEN
VAC	VACUUM
MA	MEDICAL AIR
N2O	NITROUS OXIDE
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN LINE
	PIPE FITTINGS
	90° ELBOW- PLAN
	45° ELBOW- PLAN
	ELBOW UP
	ELBOW DOWN
	TEE- PLAN
	TEE- UP
	TEE- DOWN
	CROSS
	BRANCH- UP
	BRANCH- DOWN
	CAP
	UNION
	VALVES
	BUTTERFLY VALVE
	BALL VALVE
	GATE VALVE
	STRAINER
	THREE WAY VALVE
	CHECK VALVE
	GAS COCK
	PLUG TEE
	PRESSURE RELIEF VALVE
	PRESSURE REDUCING VALVE

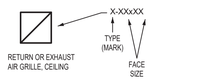
SYMBOL	DESCRIPTION
	VALVES
	CONTROL VALVE
	STRAINER W/ DRAIN
	STEAM TRAP
	AIR VENT
	AUTOMATIC AIR VENT
	PIPING EQUIPMENT (SCHEMATIC)
	PRESSURE GAUGE
	PRESSURE GAUGE W/ GAGE COCK
	TEMPERATURE GAUGE
	REDUCER
	AUTOFLOW
	FLEX CONNECTOR
	PUMP
	DRAINS
	FLOOR SINK
	FLOOR DRAIN
	RECTANGULAR DUCT ELBOWS
	MITERED 45° - 90°
	REDUCING 90°
	SMOOTH RADIUS 45° - 90°
	ROUND DUCT ELBOWS
	5 GORE 45° - 90°
	7 GORE 45° - 90°
	MITERED 45° - 90°
	PLEATED 45° - 90°
	SMOOTH 45° - 90°
	OVAL DUCT ELBOWS
	5 GORE 45° - 90°
	7 GORE 45° - 90°
	MITERED 45° - 90°
	MITERED 45° - 90°

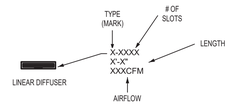
SYMBOL	DESCRIPTION
	RECTANGULAR DUCT ELBOWS UP & DOWN
	SUPPLY, OUTDOOR & MAKEUP AIR UP
	SUPPLY, OUTDOOR & MAKEUP AIR DOWN
	RETURN UP
	RETURN DOWN
	EXHAUST UP, RELIEF
	EXHAUST DOWN, RELIEF
	ROUND DUCT ELBOWS UP & DOWN
	SUPPLY, OUTDOOR & MAKEUP AIR UP
	SUPPLY, OUTDOOR & MAKEUP AIR DOWN
	RETURN UP
	RETURN DOWN
	EXHAUST UP, RELIEF
	EXHAUST DOWN, RELIEF
	OVAL DUCT ELBOWS UP & DOWN
	SUPPLY, OUTDOOR & MAKEUP AIR UP
	SUPPLY, OUTDOOR & MAKEUP AIR DOWN
	RETURN UP
	RETURN DOWN
	EXHAUST UP, RELIEF
	EXHAUST DOWN, RELIEF
	DUCT FITTINGS
	CONICAL LATERAL TRANSITION WYE (ROUND)
	TRANSITION (ROUND TO ROUND OR RECTANGULAR TO RECTANGULAR)
	TRANSITION (ROUND TO RECTANGULAR)
	RISE
	DROP
	CAP
	90° VANED ELBOW (RECTANGULAR DUCT)
	ROUND TAP ON ROUND DUCT
	BRANCH ON ROUND DUCT
	TAP ON RECTANGULAR DUCT
	BRANCH ON RECTANGULAR DUCT
	ROUND DUCT TAP ON RECTANGULAR DUCT
	OFFSET (RECTANGULAR)
	ROUND DOUBLE WALL DUCT
	RECTANGULAR LINED DUCT
	FLAT OVAL DOUBLE WALL DUCT
	RECTANGULAR LINED DUCT

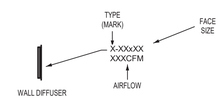
SYMBOL	DESCRIPTION
	GRILLES & DIFFUSERS & ACCESSORIES
	SUPPLY DIFFUSER CEILING
	RETURN GRILLE CEILING
	ROUND DIFFUSER OR GRILLE
	LINEAR DIFFUSER
	WALL DIFFUSER OR GRILLE
	SUPPLY ARROW
	RETURN ARROW
	FIRE DAMPER (RECTANGULAR DUCT)
	FIRE DAMPER (ROUND DUCT)
	DAMPER
T	THERMOSTAT
H	HUMIDISTAT
S	SENSOR
FD	FIRE DAMPER (RECTANGULAR DUCT)
M	MOTORIZED DAMPER
R	REMOTE ACTUATED DAMPER

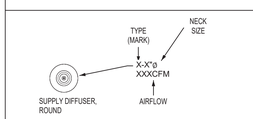
AIR DEVICE IDENTIFICATION











NOTE: ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A.F.F.	ABOVE FINISHED FLOOR	VAV	VARIABLE AIR VOLUME
AHU	AIR HANDLING UNIT	VTR	VENT THRU ROOF
C	CONDENSATE	WH	WATER HEATER
CFM	CUBIC FEET PER MINUTE	X"ø	ROUND DUCT
CHWP	CHILLED WATER PUMP	X"xX"ø	OVAL DUCT
CHR	CHILLED WATER RETURN	△T	TEMPERATURE DIFFERENCE
CHS	CHILLED WATER SUPPLY		CONNECT TO EXISTING
C.O.	CLEANOUT		
CP	CONDENSATE PUMP		
CR	CONDENSER WATER RETURN		
CS	CONDENSER WATER SUPPLY		
CU	CONDENSING UNIT		
CV	CONTROL VALVE		
CW	COLD WATER		
CWP	CONDENSER WATER PUMP		
CWR	CONDENSER WATER RETURN		
CWS	CONDENSER WATER SUPPLY		
D	DRAIN		
DW	DOMESTIC WATER		
EF	EXHAUST FAN		
ELEV.	ELEVATION		
EXTG	EXISTING		
FCU	FAN COIL UNIT		
FD	FLOOR DRAIN		
F.F.	FINISHED FLOOR		
FL	FLOW LINE		
F.S.	FLOOR SINK		
GAL.	GALLON		
GPM	GALLONS PER MINUTE		
HC	HEATING COIL		
HP	HORSEPOWER		
HW	HOT WATER		
HHWP	HEATING HOT WATER PUMP		
HWS	HOT WATER SUPPLY		
HWR	HOT WATER RETURN		
HX	HEAT EXCHANGER		
MIN.	MINIMUM		
MW	MAKEUP WATER		
N.C.	NOISE CRITERIA		
NO.	NUMBER		
NTS	NOT TO SCALE		
O.A.	OUTSIDE AIR		
PLS	PLACES		
PRV	PRESSURE REDUCING VALVE		
RA	RETURN AIR		
REF	REFERENCE		
RF	RELIEF FAN		
RD	ROOF DRAIN		
RPM	REVOLUTIONS PER MINUTE		
S	STEAM		
SA	SUPPLY AIR		
SCH.	SCHEDULE		
STD	STANDARD		
SP	STATIC PRESSURE		
SV	STEAM VENT		
TYP	TYPICAL		
UH	UNIT HEATER		
UV	UNIT VENTILATOR		

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REGISTERED PROFESSIONAL ENGINEER — Heath Q. McKee — 23872 — 03/04/2021 — OKLAHOMA

KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

MECHANICAL LEGEND & ABBREVIATIONS

REVISIONS		
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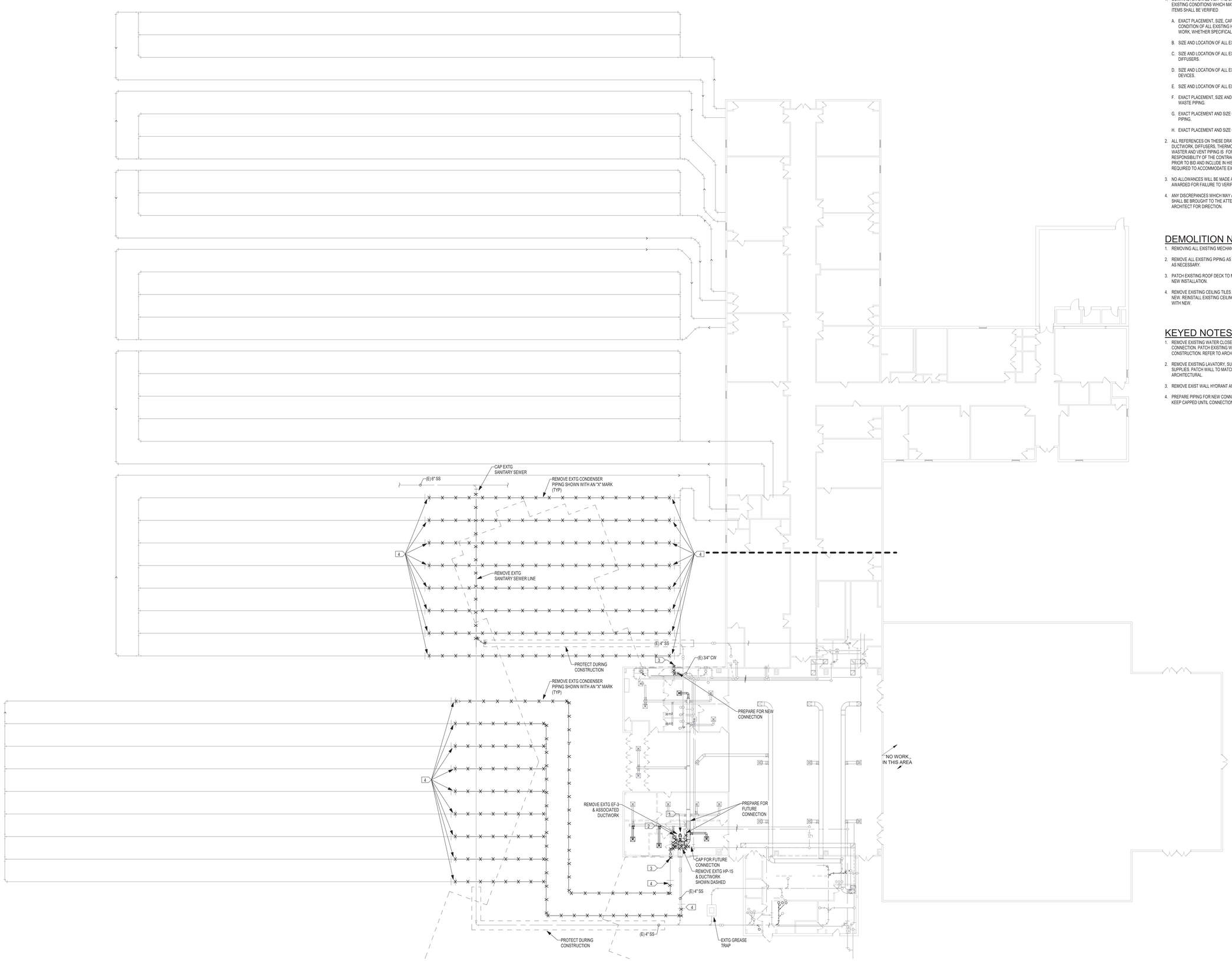

A HIGH SCHOOL DEMOLITION PLAN
SCALE: 1/16" = 1'-0"

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

FIELD VERIFICATION NOTES:

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO FIELD VERIFY ALL EXISTING CONDITIONS WHICH MAY AFFECT HIS BID. THE FOLLOWING ITEMS SHALL BE VERIFIED
   A. EXACT PLACEMENT, SIZE, CAPACITY, MANUFACTURER AND CONDITION OF ALL EXISTING HVAC EQUIPMENT WITHIN SCOPE OF WORK, WHETHER SPECIFICALLY SHOWN OR NOT.
   B. SIZE AND LOCATION OF ALL EXISTING DUCTWORK.
   C. SIZE AND LOCATION OF ALL EXISTING GRILLES REGISTERS AND DIFFUSERS.
   D. SIZE AND LOCATION OF ALL EXISTING THERMOSTATIC CONTROL DEVICES.
   E. SIZE AND LOCATION OF ALL EXISTING HYDRONIC PIPING.
   F. EXACT PLACEMENT, SIZE AND INVERT ELEVATION OF ALL EXISTING WASTE PIPING.
   G. EXACT PLACEMENT AND SIZE OF ALL EXISTING COLD WATER PIPING.
   H. EXACT PLACEMENT AND SIZE OF ALL EXISTING VENT PIPING.
2. ALL REFERENCES ON THESE DRAWINGS TO EXISTING EQUIPMENT, DUCTWORK, DIFFUSERS, THERMOSTATS, PIPING, EXISTING WASTE, WASTER AND VENT PIPING IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL THESE ITEMS PRIOR TO BID AND INCLUDE IN HIS BID ANY AND ALL AMOUNTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
3. NO ALLOWANCES WILL BE MADE AFTER THE PROJECT HAS BEEN AWARDED FOR FAILURE TO VERIFY EXISTING CONDITIONS.
4. ANY DISCREPANCES WHICH MAY AFFECT THE CONTRACTORS BID SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND ARCHITECT FOR DIRECTION.

DEMOLITION NOTES:

1. REMOVING ALL EXISTING MECHANICAL EQUIPMENT SHOWN SHADED.
2. REMOVE ALL EXISTING PIPING AS INDICATED B AN "X" MARK. CAP OR PLUG AS NECESSARY.
3. PATCH EXISTING ROOF DECK TO MATCH EXISTING AS REQUIRED FOR NEW INSTALLATION.
4. REMOVE EXISTING CEILING TILES AS REQUIRED FOR DEMOLITION AND NEW. REINSTALL EXISTING CEILING TILES. REPLACE ANY TILES BROKEN WITH NEW.

KEYED NOTES:

1. REMOVE EXISTING WATER CLOSET AND FLUSH VALVE. CAP EXISTING WASTE CONNECTION. PATCH EXISTING WALL AND FLOOR TO MATCH NEW CONSTRUCTION. REFER TO ARCHITECTURAL.
2. REMOVE EXISTING LAVATORY, SUPPLY STOPS, AND WASTE. CAP EXISTING SUPPLIES. PATCH WALL TO MATCH NEW CONSTRUCTION. REFER TO ARCHITECTURAL.
3. REMOVE EXIST WALL HYDRANT AND PIPING TO POINT INDICATED.
4. PREPARE PIPING FOR NEW CONNECTION. CAP DURING CONSTRUCTION AND KEEP CAPPED UNTIL CONNECTION TO NEW PIPING.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGHSCHOOL DEMOLITION PLAN

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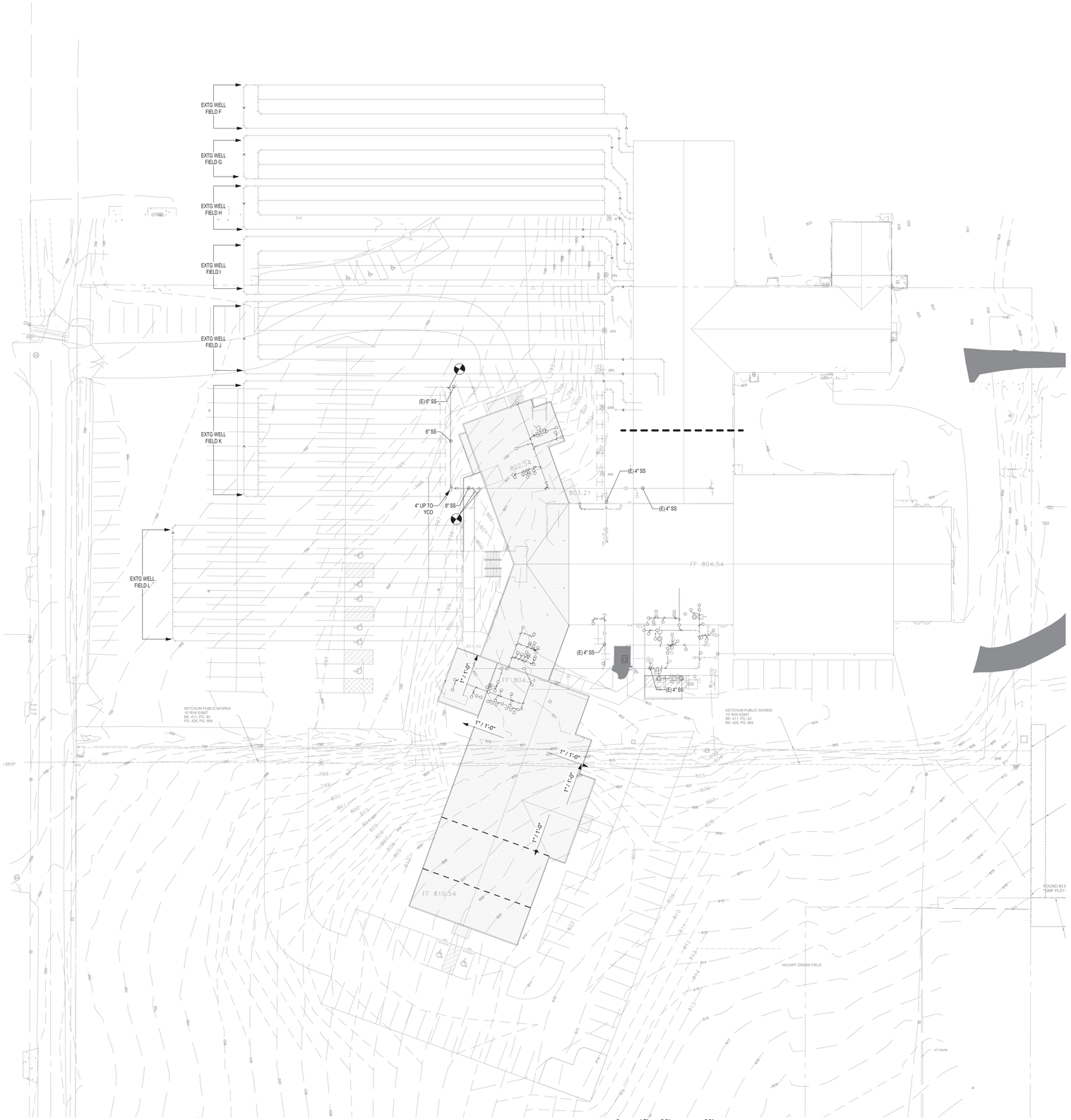

A MECHANICAL SITE PLAN
SCALE: 1" = 30'-0"

0 15' 30' 60'
SCALE: 1" = 30'

GENERAL SITE UTILITY NOTES:

1. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON EXISTING PLANS, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF EXISTING UTILITIES ON SITE OR IN RIGHT-OF-WAY.
2. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINES. CONTRACTOR SHALL COORDINATE AND SCHEDULE TIE-INS/CONNECTIONS WITH ALL UTILITY COMPANIES.
3. ALL UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED, AND APPROVED PRIOR TO BACKFILLING.
4. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
5. GENERAL CONTRACTOR IS TO COORDINATE WITH THE PHYSICAL PLANT AND APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES AS DESIGNATED ON PLANS.
6. THRUST BLOCKING SHALL BE PROVIDED AT ALL BENDS, TEES, AND FIRE HYDRANTS.
7. DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE OR FITTING.
8. ALL WATERLINES & SANITARY SEWER, AND WATERLINES & STORM SEWERS SHOULD BE KEPT TEN FEET (10') APART (PARALLEL) OR WHEN CROSSING 24" VERTICAL CLEARANCE (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
9. THE CONTRACTOR SHALL INCLUDE IN THE BID PRICE ALL MATERIAL AND LABOR ASSOCIATED WITH THE TESTING OF THE WATER AND SEWER LINES REQUIRED BY THE LOCAL AND/OR STATE AGENCIES.
10. TOPS OF EXISTING MANHOLES SHOULD BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, AND MANHOLES IN UNPAVED AREAS ARE TO BE 1" ABOVE FINISHED GROUND ELEVATIONS WITH WATER TIGHT LIDS.
11. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
12. ALL MATERIALS, CONSTRUCTION, AND INSPECTION FOR WATER AND SANITARY SEWER SHALL BE PER CITY STANDARD SPECIFICATIONS.

FIELD VERIFICATION NOTES:

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO FIELD VERIFY ALL EXISTING CONDITIONS WHICH MAY AFFECT HIS BID. THE FOLLOWING ITEMS SHALL BE VERIFIED
   - A. EXACT PLACEMENT, SIZE, CAPACITY, MANUFACTURER AND CONDITION OF ALL EXISTING HVAC EQUIPMENT WITHIN SCOPE OF WORK, WHETHER SPECIFICALLY SHOWN OR NOT.
   - B. SIZE AND LOCATION OF ALL EXISTING DUCTWORK.
   - C. SIZE AND LOCATION OF ALL EXISTING GRILLES REGISTERS AND DIFFUSERS.
   - D. SIZE AND LOCATION OF ALL EXISTING THERMOSTATIC CONTROL DEVICES.
   - E. SIZE AND LOCATION OF ALL EXISTING HYDRONIC PIPING.
   - F. EXACT PLACEMENT, SIZE AND INVERT ELEVATION OF ALL EXISTING WASTE PIPING.
   - G. EXACT PLACEMENT AND SIZE OF ALL EXISTING COLD WATER PIPING.
   - H. EXACT PLACEMENT AND SIZE OF ALL EXISTING VENT PIPING.
2. ALL REFERENCES ON THESE DRAWINGS TO EXISTING EQUIPMENT, DUCTWORK, DIFFUSERS, THERMOSTATS, PIPING, EXISTING WASTE, WASTER AND VENT PIPING IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL THESE ITEMS PRIOR TO BID AND INCLUDE IN HIS BID ANY AND ALL AMOUNTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
3. NO ALLOWANCES WILL BE MADE AFTER THE PROJECT HAS BEEN AWARDED FOR FAILURE TO VERIFY EXISTING CONDITIONS.
4. ANY DISCREPANCES WHICH MAY AFFECT THE CONTRACTORS BID SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND ARCHITECT FOR DIRECTION.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
MECHANICAL SITE PLAN

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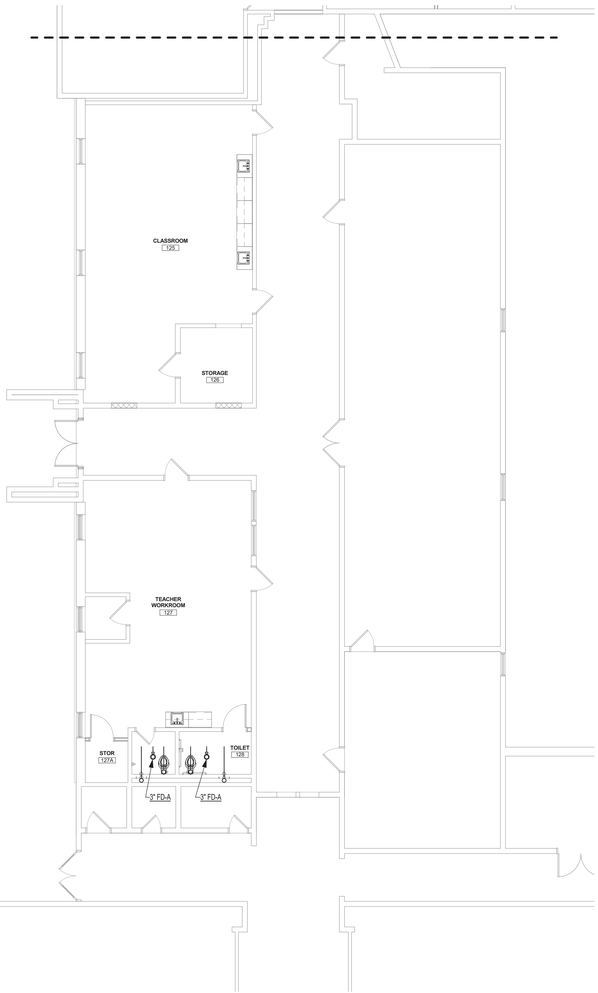
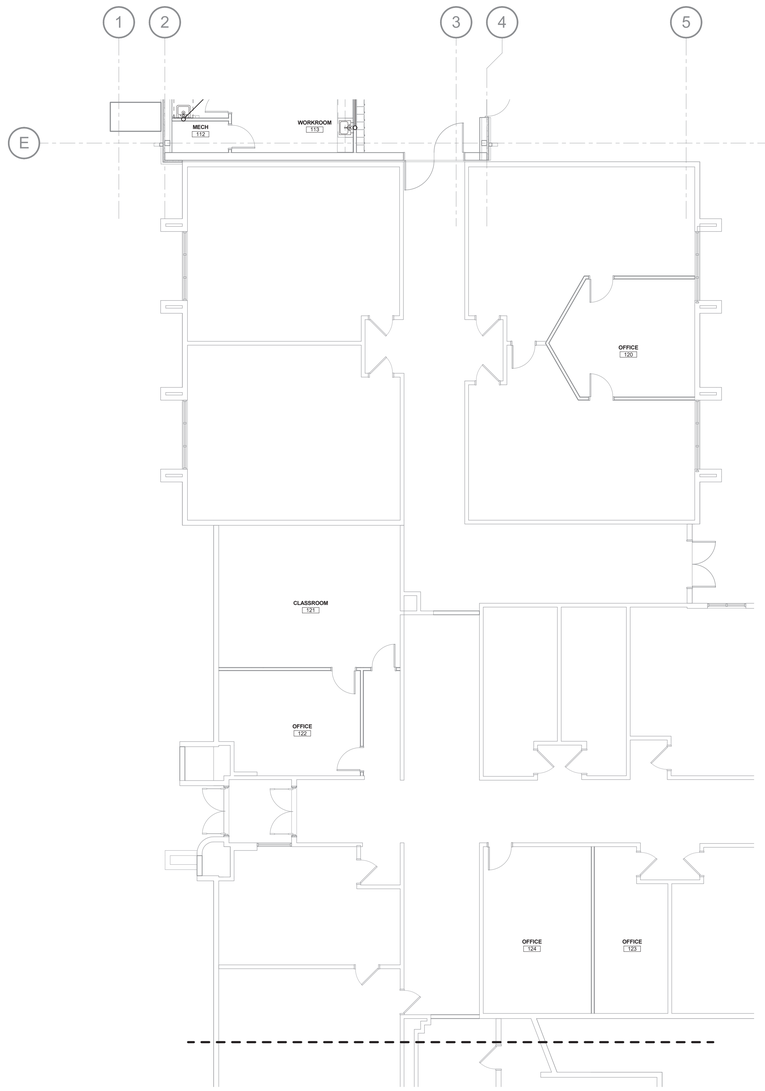


A ELEMENTARY SCHOOL AREA B UNDERFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"



B ELEMENTARY SCHOOL AREA A UNDERFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL CLASSROOM AREA A AND B PLUMBING UNDERFLOOR PLAN

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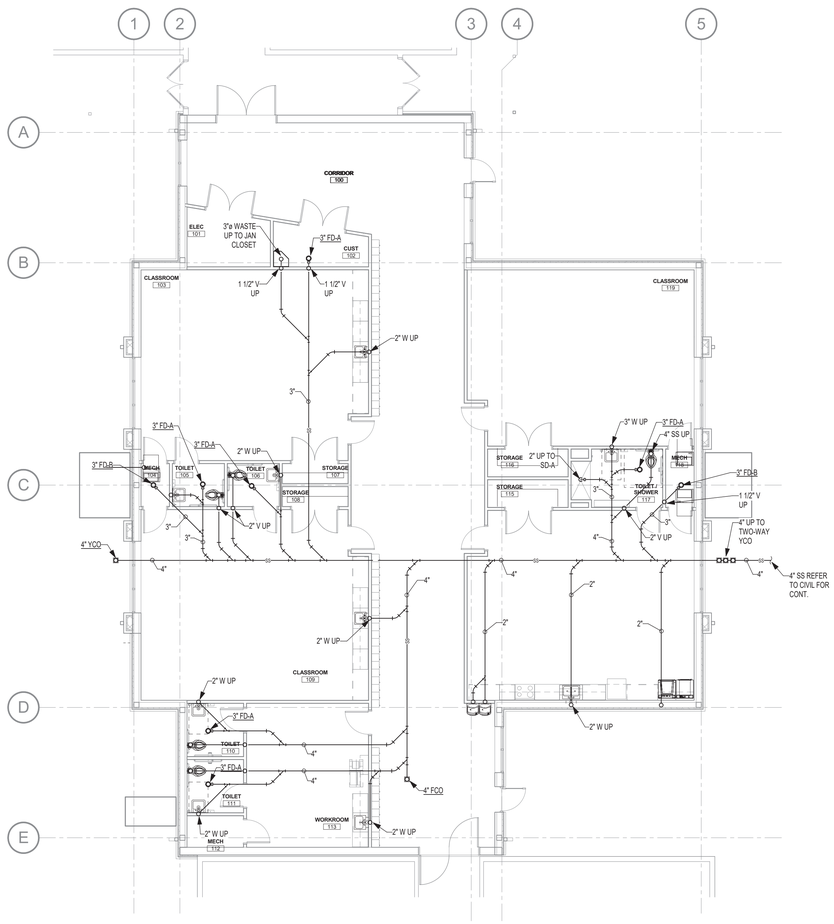
GENERAL PLUMBING NOTES:

1. UNLESS NOTED OTHERWISE THE FOLLOW NOTES SHALL APPLY TO ALL MECHANICAL AND PLUMBING SHEETS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE: CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
4. PROVIDE ACCESS PANELS IN WALLS OR SUSPENDED CEILINGS OTHER THAN LAY-IN TYPE FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. UNLESS NOTED OR SHOWN OTHERWISE ALL CONDENSATE, NATURAL GAS, AND ELECTRICAL CONNECTIONS TO ROOF MOUNTED EQUIPMENT SHALL BE ROUTED THROUGH THE BASE OF THE EQUIPMENT. ANY UNNECESSARY ROOF PENETRATIONS WILL BE REQUIRED TO REMOVED AND RE-ROUTED THROUGH THE BASE OF THE EQUIPMENT.
6. PROVIDE FINAL CONNECTION TO ALL FOOD SERVICE AND/OR EQUIPMENT INDICATED AS BEING PROVIDED BY "OTHERS" OR "OWNER". REFER TO FOOD SERVICE AND ARCHITECTURAL DOCUMENTS FOR MORE INFORMATION.
7. SAW CUT EXISTING CONCRETE FLOOR AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND PLUMBING. PATCH FLOOR TO MATCH EXISTING.
8. PROVIDE EQUIPMENT CONNECTIONS WITH ISOLATION VALVES AND UNIONS OR FLANGED CONNECTIONS TO ALLOW FOR REMOVAL WITHOUT SHUTTING DOWN MAIN PIPING.
9. CONTRACTOR SHALL MAINTAIN FIRE RATING AND WEATHER PROOFING INTEGRITY OF ALL PIPING PENETRATIONS THROUGH ROOFS, WALLS, OR FLOORS.
10. EQUIP VALVES IN INSULATED LINES WITH 2 INCH EXTENSION NECKS.
11. PIPING SHALL BE RUN PARALLEL WITH THE LINES OF THE BUILDING UNLESS DISTINCTLY SHOWN OR NOTED OTHERWISE. AMPLE CLEARANCE FOR INSULATION SHALL BE PROVIDED BETWEEN ADJACENT PIPE AND BETWEEN PIPING AND OTHER WORK. ENDS OF PIPE SHALL BE TEMPORARILY PLUGGED WHILE WORK IS IN PROGRESS TO PREVENT DEBRIS FROM ENTERING THE PIPES.
12. CONTRACTOR SHALL MAKE NECESSARY OFFSETS IN PIPING WHERE REQUIRED TO AVOID CONSTRUCTION, DUCTS, OR REQUIRED TO PRESENT A NEAT APPEARANCE, OR NECESSARY TO ALLOW FOR EXPANSION. ESCUTCHEONS SHALL BE INSTALLED ON EXPOSED PIPING WHERE LINES PASS THROUGH BUILDING CONSTRUCTION. PIPING SHALL BE OFFSET TO REMAIN CONCEALED IN FINISHED SPACES, UNLESS DISTINCTLY SHOWN OR OTHERWISE NOTED.
13. REFER TO PLUMBING FIXTURE SCHEDULE(S) FOR ADDITIONAL INFORMATION REGARDING CONNECTION SIZES TO PLUMBING FIXTURES OR EQUIPMENT.
14. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW ALL OFFSETS, TRANSITIONS, OR ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
15. NEGATIVE PRESSURE ACTIVATED VENTS OR AIR ADMITTANCE VALVES ARE STRICTLY FORBIDDEN. ALL SANITARY VENT PIPING SHALL TERMINATE OUTSIDE OF THE BUILDING.



A ELEMENTARY SCHOOL ADDITION UNDERFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

BWA ARCHITECTS

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28072
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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL CLASSROOM ADDITION PLUMBING UNDERFLOOR PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M112

3/22/2021 12:30:38 PM

GENERAL PLUMBING NOTES:

1. UNLESS NOTED OTHERWISE THE FOLLOW NOTES SHALL APPLY TO ALL MECHANICAL AND PLUMBING SHEETS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE: CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
4. PROVIDE ACCESS PANELS IN WALLS OR SUSPENDED CEILINGS OTHER THAN LAY-IN TYPE FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. UNLESS NOTED OR SHOWN OTHERWISE ALL CONDENSATE, NATURAL GAS, AND ELECTRICAL CONNECTIONS TO ROOF MOUNTED EQUIPMENT SHALL BE ROUTED THROUGH THE BASE OF THE EQUIPMENT. ANY UNNECESSARY ROOF PENETRATIONS WILL BE REQUIRED TO REMOVED AND RE-ROUTED THROUGH THE BASE OF THE EQUIPMENT.
6. PROVIDE FINAL CONNECTION TO ALL FOOD SERVICE AND/OR EQUIPMENT INDICATED AS BEING PROVIDED BY "OTHERS" OR "OWNER". REFER TO FOOD SERVICE AND ARCHITECTURAL DOCUMENTS FOR MORE INFORMATION.
7. SAW CUT EXISTING CONCRETE FLOOR AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND PLUMBING. PATCH FLOOR TO MATCH EXISTING.
8. PROVIDE EQUIPMENT CONNECTIONS WITH ISOLATION VALVES AND UNIONS OR FLANGED CONNECTIONS TO ALLOW FOR REMOVAL WITHOUT SHUTTING DOWN MAIN PIPING.
9. CONTRACTOR SHALL MAINTAIN FIRE RATING AND WEATHER PROOFING INTEGRITY OF ALL PIPING PENETRATIONS THROUGH ROOFS, WALLS, OR FLOORS.
10. EQUIP VALVES IN INSULATED LINES WITH 2 INCH EXTENSION NECKS.
11. PIPING SHALL BE RUN PARALLEL WITH THE LINES OF THE BUILDING UNLESS DISTINCTLY SHOWN OR NOTED OTHERWISE. AMPLE CLEARANCE FOR INSULATION SHALL BE PROVIDED BETWEEN ADJACENT PIPE AND BETWEEN PIPING AND OTHER WORK. ENDS OF PIPE SHALL BE TEMPORARILY PLUGGED WHILE WORK IS IN PROGRESS TO PREVENT DEBRIS FROM ENTERING THE PIPES.
12. CONTRACTOR SHALL MAKE NECESSARY OFFSETS IN PIPING WHERE REQUIRED TO AVOID CONSTRUCTION, DUCTS, OR REQUIRED TO PRESENT A NEAT APPEARANCE, OR NECESSARY TO ALLOW FOR EXPANSION. ESCUTCHEONS SHALL BE INSTALLED ON EXPOSED PIPING WHERE LINES PASS THROUGH BUILDING CONSTRUCTION. PIPING SHALL BE OFFSET TO REMAIN CONCEALED IN FINISHED SPACES, UNLESS DISTINCTLY SHOWN OR OTHERWISE NOTED.
13. REFER TO PLUMBING FIXTURE SCHEDULE(S) FOR ADDITIONAL INFORMATION REGARDING CONNECTION SIZES TO PLUMBING FIXTURES OR EQUIPMENT.
14. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW ALL OFFSETS, TRANSITIONS, OR ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
15. NEGATIVE PRESSURE ACTIVATED VENTS OR AIR ADMITTANCE VALVES ARE STRICTLY FORBIDDEN. ALL SANITARY VENT PIPING SHALL TERMINATE OUTSIDE OF THE BUILDING.

A HIGH SCHOOL FIRST FLOOR AREA A UNDERFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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Heath Q. McKee 23872 03/04/2021 OKLAHOMA

KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL FIRST FLOOR AREA A PLUMBING UNDERFLOOR PLAN

REVISIONS		
NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

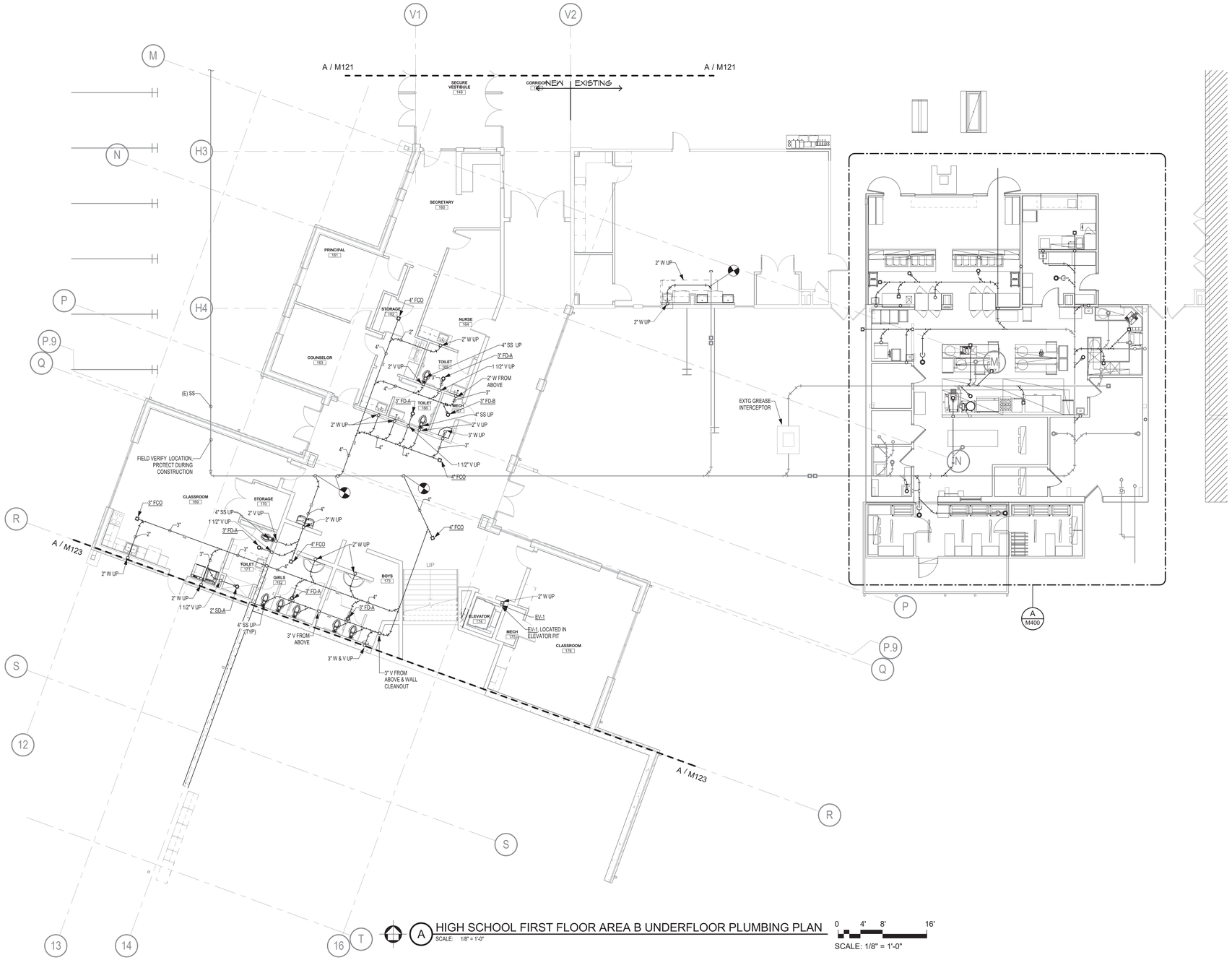
PROJECT NO.
T19055

SHEET NO.
M121

3/22/2021 12:30:40 PM

GENERAL NOTES:

1. SEE GENERAL PLUMBING NOTE ON SHEET M121.



A HIGH SCHOOL FIRST FLOOR AREA B UNDERFLOOR PLUMBING PLAN

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

0 4' 8' 16'

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

3/22/2021 12:30:43 PM

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL FIRST FLOOR AREA B PLUMBING UNDERFLOOR PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M122

A HIGH SCHOOL SECOND FLOOR AREA B UNDERFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

3/22/2021 12:30:46 PM

BWA ARCHITECTS

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL SECOND FLOOR AREA B UNDERFLOOR PLUMBING PLAN

REVISIONS

NO.	DESCRIPTION	DATE

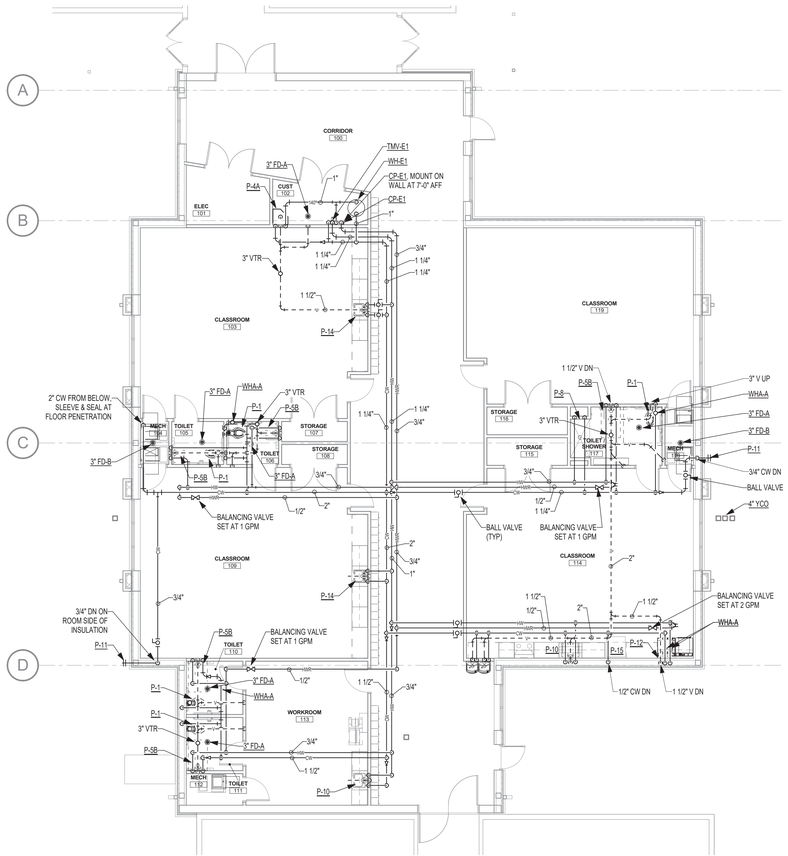
ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M123

GENERAL PLUMBING NOTES:

1. REFER TO GENERAL PLUMBING NOTE ON SHEETM111.



A ELEMENTARY SCHOOL ADDITION ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

3/22/2021 12:30:50 PM

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL CLASSROOM ADDITION PLUMBING ABOVEFLOOR PLAN

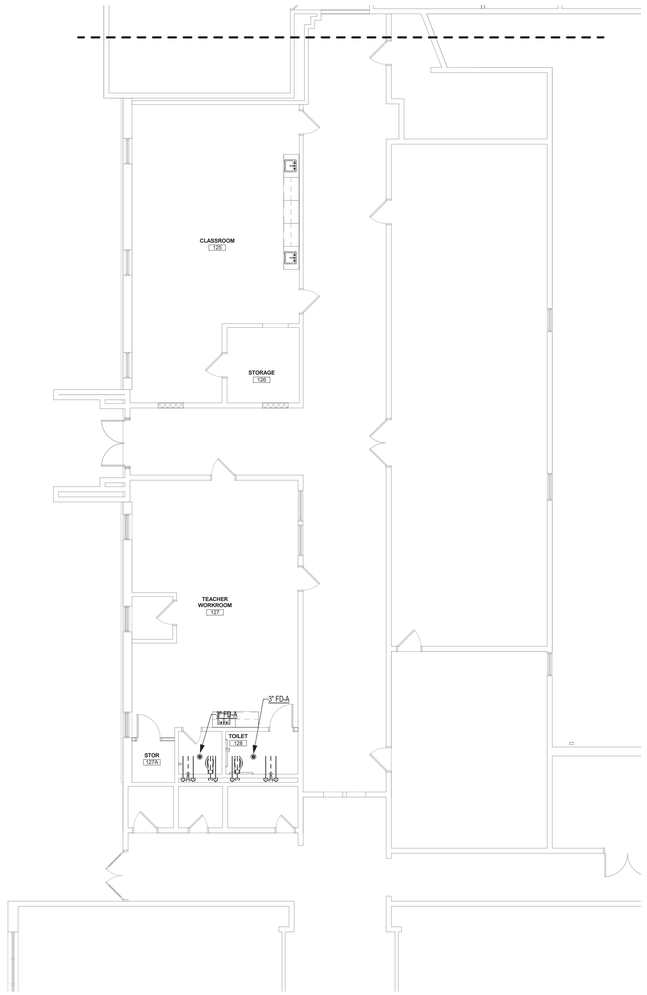
REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

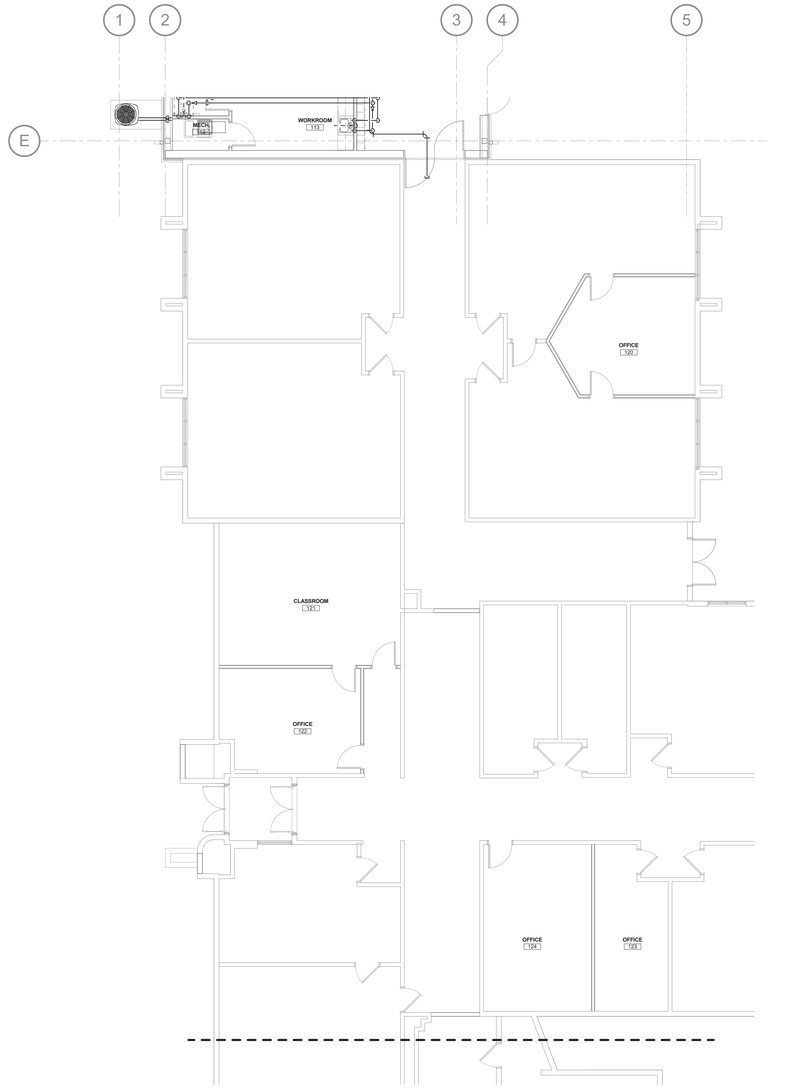
PROJECT NO.
T19055

SHEET NO.
M211



A ELEMENTARY SCHOOL AREA B ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"



B ELEMENTARY SCHOOL AREA A ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

3/22/2021 12:30:52 PM

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL CLASSROOM AREA A AND B PLUMBING ABOVEFLOOR PLAN

REVISIONS		
NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M212

GENERAL PLUMBING NOTES:

1. UNLESS NOTED OTHERWISE THE FOLLOW NOTES SHALL APPLY TO ALL MECHANICAL AND PLUMBING SHEETS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
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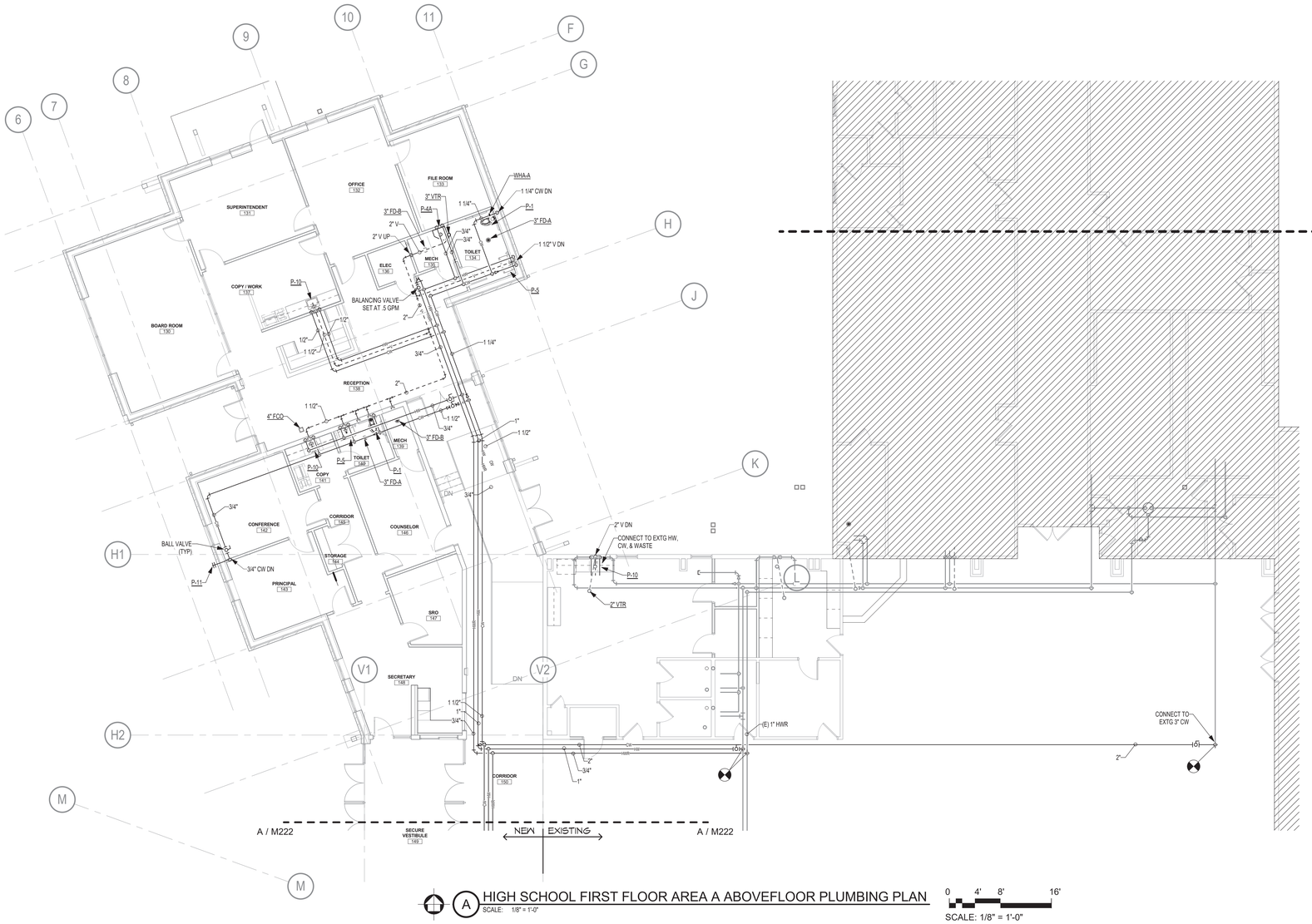

A HIGH SCHOOL FIRST FLOOR AREA A ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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OKLAHOMA

KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL FIRST FLOOR AREA A ABOVEFLOOR PLUMBING PLAN

REVISIONS		
NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

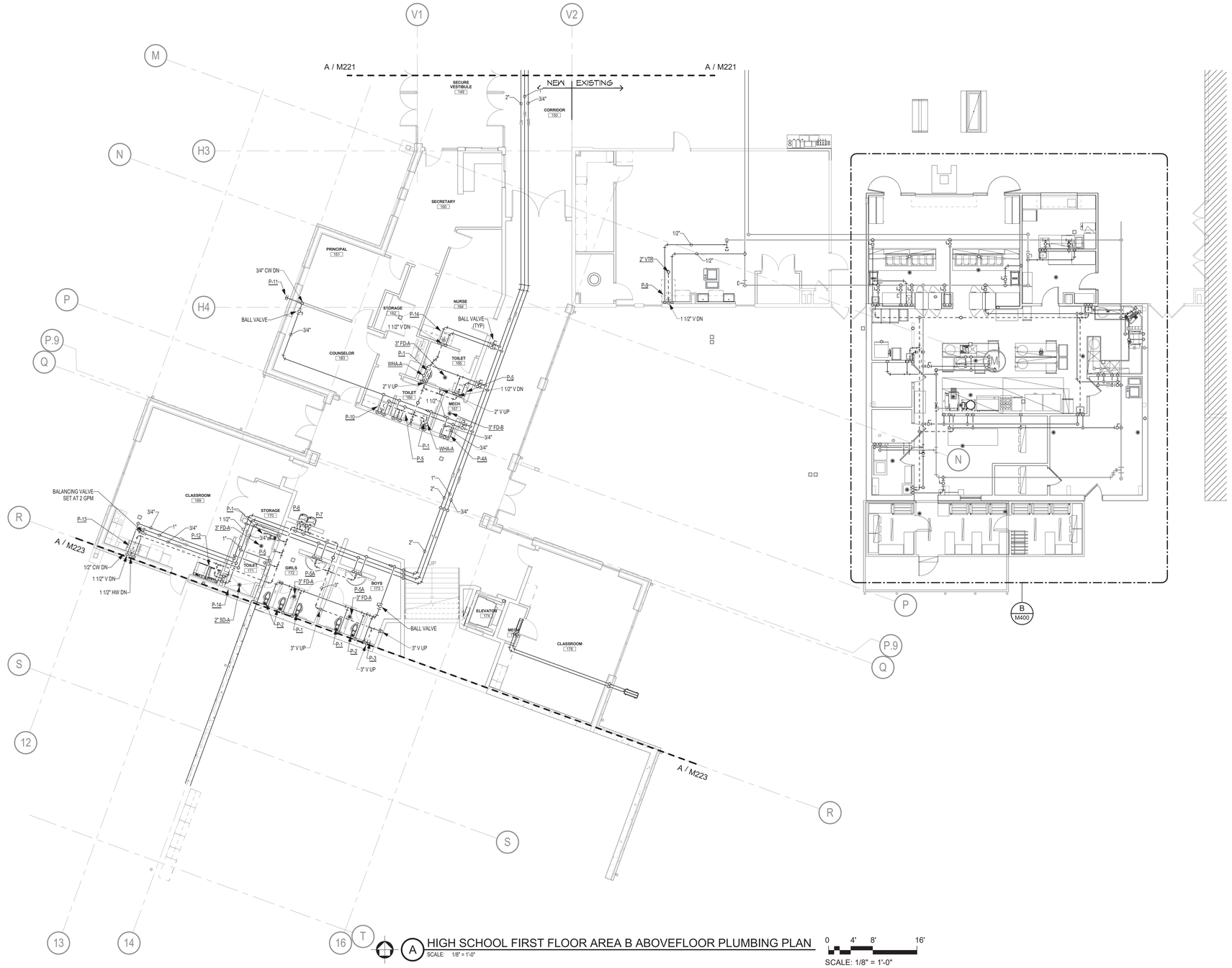
PROJECT NO.
T19055

SHEET NO.
M221

3/22/2021 12:30:54 PM

GENERAL NOTES:

1. SEE GENERAL PLUMBING NOTE ON SHEET M111.



A HIGH SCHOOL FIRST FLOOR AREA B ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

3/22/2021 12:30:58 PM

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL FIRST FLOOR AREA B ABOVEFLOOR PLUMBING PLAN

REVISIONS

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ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M222

A HIGH SCHOOL SECOND FLOOR AREA B ABOVEFLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. SEE GENERAL PLUMBING NOTE ON SHEET M112.

KEYED NOTES: P

1. PROVIDE ICC-500 COMPLIANT REINFORCING FOR SAFE ROOM/TORNADO SHELTER PENTRATIONS. REFER TO STRUCTURAL.

GENERAL STORM SHELTER NOTES:

1. ANY PENETRATION EXCEEDING 3 1/2" SQUARE INCHES OR 2 1/16" DIAMETER INTO OR OUT OF STORM SHELTERS SHALL BE PROVIDED WITH FEMA AND ICC-500 COMPLIANT REINFORCING. REF: STRUCTURAL.
2. ANY PENETRATION OF STORM SHELTER WALLS SHALL HAVE A MINIMUM 2 HR FIRE RATING MAINTAINED.

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KETCHUM PUBLIC SCHOOLS
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HIGH SCHOOL ADDITION & RENOVATION

HIGH SCHOOL SECOND FLOOR AREA B ABOVEFLOOR PLUMBING PLAN

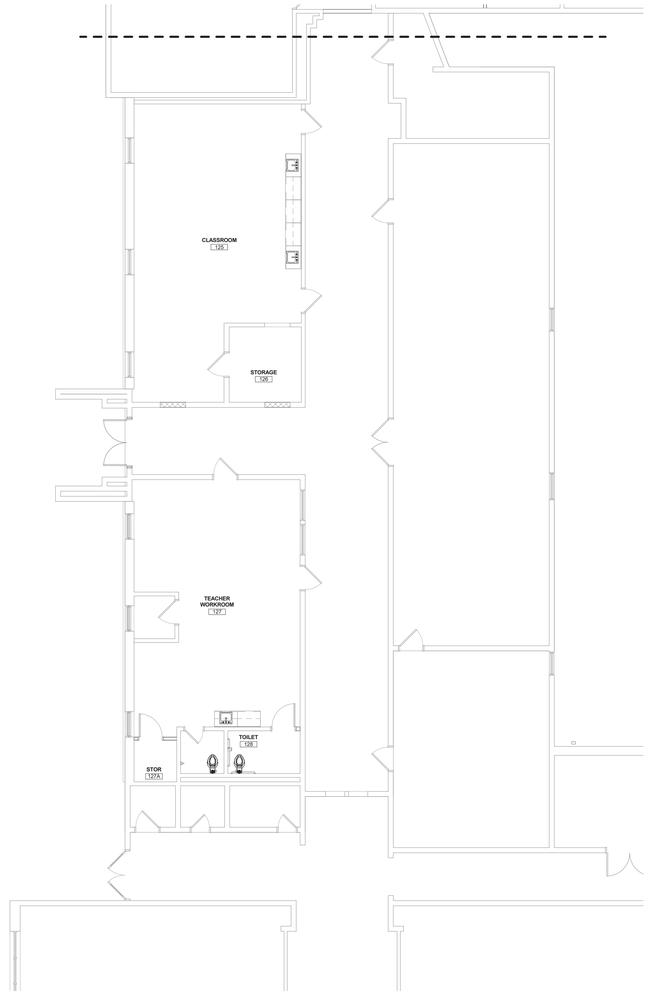
REVISIONS		
NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

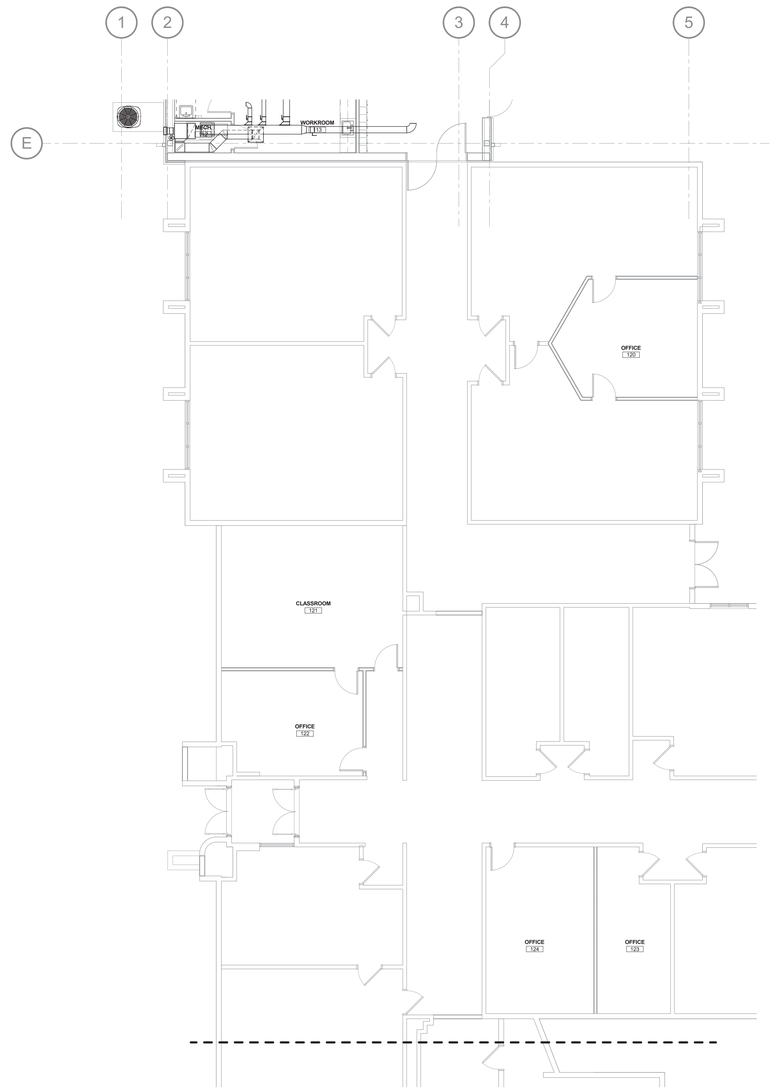
SHEET NO.
M223

3/22/2021 12:31:00 PM



A ELEMENTARY SCHOOL AREA B MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"



B ELEMENTARY SCHOOL AREA A MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

3/22/2021 12:31:01 PM

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ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL CLASSROOM AREA A AND B MECHANICAL FLOOR PLAN

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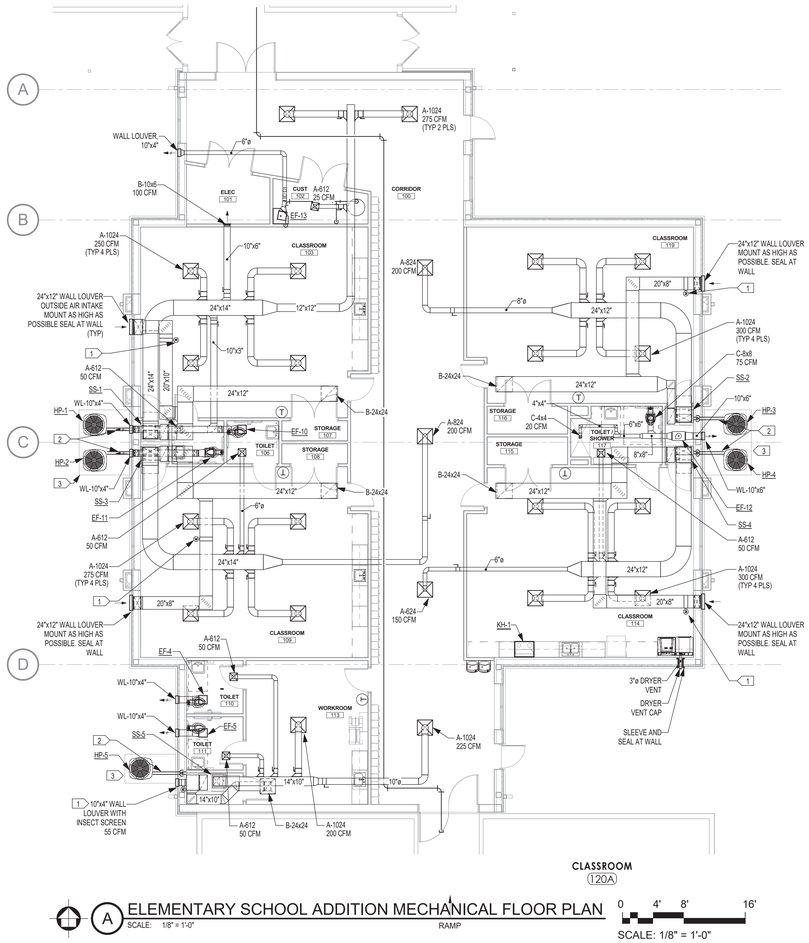
PROJECT NO.
T19055

SHEET NO.
M311



A ELEMENTARY SCHOOL ADDITION MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. UNLESS OTHERWISE NOTED THE FOLLOWING NOTES SHALL APPLY TO ALL MECHANICAL SHEETS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE: CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
4. PROVIDE A 24"x24" ACCESS PANEL IN CEILINGS OTHER THAN LAY-IN TYPE FOR ALL TERMINAL AIR BOXES, BALANCING DAMPERS, HUMIDIFIERS, VALVES, TRAPS, CLEAN OUTS, CONTROLS, FIRE DAMPERS, AND ANY OTHER EQUIPMENT REQUIRING TO BE SERVICED. CLOSELY COORDINATE LOCATION OF ACCESS PANELS WITH INSTALLED EQUIPMENT TO ACHIEVE GREATEST ACCESSIBILITY FOR MAINTENANCE PURPOSES. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. COORDINATE EXACT LOCATION OF CEILING MOUNTED AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING PLANS. CONTRACTOR SHALL ADJUST LOCATION OF AIR DISTRIBUTION DEVICES AS REQUIRED TO AVOID CONFLICTS.
6. ALL DUCT DIMENSIONS SHOWN ON PLANS ARE NET FREE AREA'S. SHEET METAL SIZES SHALL BE INCREASED AS NECESSARY FOR LINING OR INSULATION.
7. DUCT SYSTEMS SHALL BE CONSTRUCTED AND SEALED FOR THE SPECIFIC PRESSURE CLASSIFICATION AS INDICATED BY THE SPECIFICATIONS. IF NOT INDICATED IN THE SPECIFICATIONS DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR +/- 2" W.G. AND BE SEALED TO SMACNA CLASS A. DUCT TAPE SHALL NOT BE ALLOWED FOR DUCT SEALING ON ANY SYSTEM.
8. ALL LOW PRESSURE FLEXIBLE DUCT SHALL BE PROPERLY SUPPORTED WITH NO KINKS OR HARD BENDS. 5'-0" MAXIMUM LENGTH. FLEXIBLE DUCT IS ONLY ALLOWED WHERE SPECIFICALLY INDICATED ON DRAWINGS OR DETAILS. NO FLEXIBLE DUCT SHALL BE INSTALLED IN RETURN, EXHAUST, OR OUTSIDE AIR DUCTWORK.
9. EXCLUDED LOW PRESSURE DUCT FITTINGS: SQUARE THROAT RADIUSED HEEL FITTINGS/ELBOWS ARE STRICTLY FORBIDDEN. IF FOUND THEY WILL BE REMOVED AND REPLACED WITH AN APPROVED ELBOW.
10. ALL RUN-OUTS TO SUPPLY AIR DEVICES SHALL BE THE SAME SIZE AS THE DIFFUSER NECK AND HAVE A MANUAL VOLUME DAMPER FOR BALANCING. IN AREAS WITH GYP BOARD OR ARCHITECTURAL CEILINGS THE CONTRACTOR SHALL PROVIDE A CABLE ACTUATED BALANCING DAMPER AND ROUTE THE REMOTE DAMPER ACTUATOR TO AN ACCESSIBLE AREA. PROVIDE CONCEALED CEILING TERMINATION KITS WITH PAINTABLE COVERPLATE FOR ALL REMOTE DAMPERS.
11. UNLESS NOTED OTHERWISE ON PLANS. ALL DUCTWORK THAT HAS TO BE OFFSET DUE TO AN OBSTRUCTION, SHALL BE OFFSET AT A MAX 30 DEGREE SLOPE. OR OFFSET WITH TWO 45 DEG. ELBOWS WHERE SPACE DOES NOT ALLOW 30 DEGREE SLOPE.
12. CLOSELY COORDINATE LOCATIONS OF INSTALLED EQUIPMENT TO ACHIEVE THE GREATEST ACCESSIBILITY FOR MAINTENANCE PURPOSES.
13. ALL THERMOSTATS SHALL BE INSTALLED AT A HEIGHT OF 48" A.F.F.
14. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW ALL OFFSETS, TRANSITIONS OR ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
15. DUCTWORK INSTALLATION SHALL BE FREE FROM RATTLES, VIBRATION AND MOVEMENT WHEN IN OPERATION. ALL RECTANGULAR DUCTWORK SHALL BE CROSS BROKEN OR BEADED.
16. ALL DUCTWORK PENETRATING A FIRE RATED WALL SHALL BE A MINIMUM OF 26 GAUGE. ANY DUCT OR AIR DEVICE TERMINATING IN A RATED WALL SHALL BE PROVIDED WITH A FIRE DAMPER.
17. MEDIUM PRESSURE SUPPLY DUCT FITTINGS:
    A. TAKE-OFFS TO TERMINAL AIR BOXES (VAV'S) SHALL BE BEVELED 45 DEG. HIGH EFFICIENCY TAP. TAKE-OFFS SHALL BE ONE NOMINAL SIZE LARGER THAN VAV BOX INLET SIZE UNLESS OTHERWISE NOTED. REDUCE TO VAV INLET SIZE FOR A DISTANCE OF 4 TIMES THE INLET DUCT DIA. PRIOR TO MAKING FINAL CONNECTION TO VAV BOX. REFER TO DETAILS.
    B. UNLESS NOTED OTHERWISE, ALL ELBOWS IN MEDIUM PRESSURE DUCTWORK SHALL HAVE A RADIUS TO DIAMETER RATIO OF 1.5.
18. UNLESS NOTED OTHERWISE, ALL LOW PRESSURE DUCTWORK IMMEDIATELY DOWNSTREAM OF A VAV BOX SHALL BE LINED AND HAVE THE SAME NET FREE AREA AS THE DISCHARGE CONNECTION SIZE. (EXAMPLE: 12"x8" CONNECTION SHALL HAVE A 15"x11" DUCT WITH 1.5" DUCT LINER.)

KEYED NOTES:

1. PROVIDE MOTORIZED DAMPER IN OUTSIDE AIR DUCT. INTERLOCK WITH UNIT. NORMALLY CLOSED, OPEN WHEN UNIT RUNS.
2. ROUTE RS/RL THRU WALL TO UNIT. SLEEVE AND SEAL AT WALL PENETRATION.
3. PROVIDE 6" THICK CONCRETE PAD. PAD SHALL BE 6" LARGER ALL AROUND THE UNIT. TOP OF PAD SHALL BE 2" HIGHER THAN GRASS.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
ELEMENTARY SCHOOL CLASSROOM ADDITION MECHANICAL FLOOR PLAN

REVISIONS		
NO.	DESCRIPTION	DATE

ISSUE DATE
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T19055

SHEET NO.
M312

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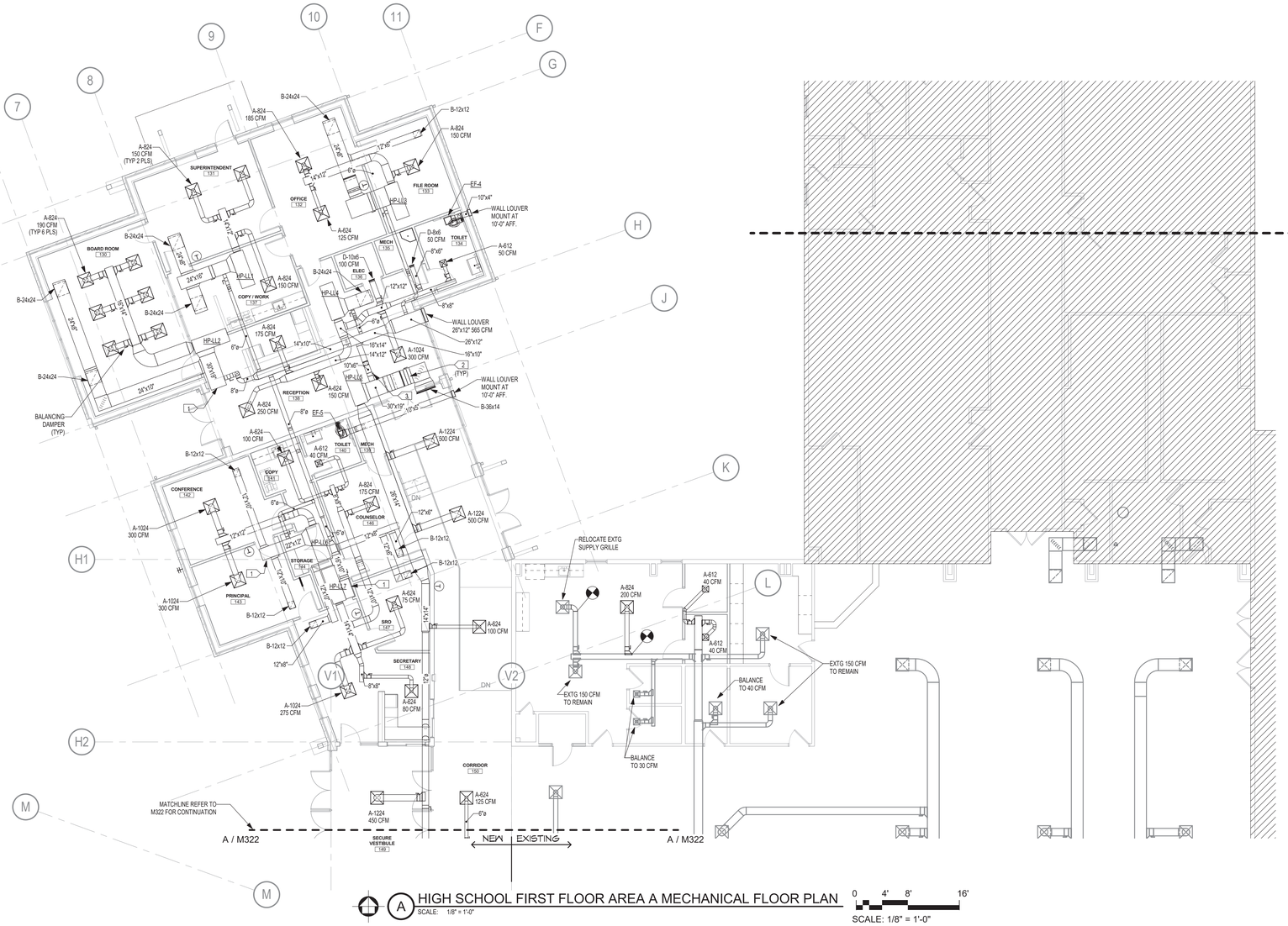

A HIGH SCHOOL FIRST FLOOR AREA A MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

1. UNLESS OTHERWISE NOTED THE FOLLOWING NOTES SHALL APPLY TO ALL MECHANICAL SHEETS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
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4. PROVIDE A 24"x24" ACCESS PANEL IN CEILINGS OTHER THAN LAY-IN TYPE FOR ALL TERMINAL AIR BOXES, BALANCING DAMPERS, HUMIDIFIERS, VALVES, TRAPS, CLEAN OUTS, CONTROLS, FIRE DAMPERS, AND ANY OTHER EQUIPMENT REQUIRING TO BE SERVICED. CLOSELY COORDINATE LOCATION OF ACCESS PANELS WITH INSTALLED EQUIPMENT TO ACHIEVE GREATEST ACCESSIBILITY FOR MAINTENANCE PURPOSES. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. COORDINATE EXACT LOCATION OF CEILING MOUNTED AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING PLANS. CONTRACTOR SHALL ADJUST LOCATION OF AIR DISTRIBUTION DEVICES AS REQUIRED TO AVOID CONFLICTS.
6. ALL DUCT DIMENSIONS SHOWN ON PLANS ARE NET FREE AREA'S. SHEET METAL SIZES SHALL BE INCREASED AS NECESSARY FOR LINING OR INSULATION.
7. DUCT SYSTEMS SHALL BE CONSTRUCTED AND SEALED FOR THE SPECIFIC PRESSURE CLASSIFICATION AS INDICATED BY THE SPECIFICATIONS. IF NOT INDICATED IN THE SPECIFICATIONS DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR +/- 2" W.G. AND BE SEALED TO SMACNA CLASS A. DUCT TAPE SHALL NOT BE ALLOWED FOR DUCT SEALING ON ANY SYSTEM.
8. ALL LOW PRESSURE FLEXIBLE DUCT SHALL BE PROPERLY SUPPORTED WITH NO KINKS OR HARD BENDS. 5'-0" MAXIMUM LENGTH. FLEXIBLE DUCT IS ONLY ALLOWED WHERE SPECIFICALLY INDICATED ON DRAWINGS OR DETAILS. NO FLEXIBLE DUCT SHALL BE INSTALLED IN RETURN, EXHAUST, OR OUTSIDE AIR DUCTWORK.
9. EXCLUDED LOW PRESSURE DUCT FITTINGS: SQUARE THROAT RADIUSED HEEL FITTINGS/ELBOWS ARE STRICTLY FORBIDDEN. IF FOUND THEY WILL BE REMOVED AND REPLACED WITH AN APPROVED ELBOW.
10. ALL RUN-OUTS TO SUPPLY AIR DEVICES SHALL BE THE SAME SIZE AS THE DIFFUSER NECK AND HAVE A MANUAL VOLUME DAMPER FOR BALANCING. IN AREAS WITH GYP BOARD OR ARCHITECTURAL CEILINGS THE CONTRACTOR SHALL PROVIDE A CABLE ACTUATED BALANCING DAMPER AND ROUTE THE REMOTE DAMPER ACTUATOR TO AN ACCESSIBLE AREA. PROVIDE CONCEALED CEILING TERMINATION KITS WITH PAINTABLE COVER PLATE FOR ALL REMOTE DAMPERS.
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15. DUCTWORK INSTALLATION SHALL BE FREE FROM RATTLES, VIBRATION AND MOVEMENT WHEN IN OPERATION. ALL RECTANGULAR DUCTWORK SHALL BE CROSS BROKEN OR BEADED.
16. ALL DUCTWORK PENETRATING A FIRE RATED WALL SHALL BE A MINIMUM OF 26 GAUGE. ANY DUCT OR AIR DEVICE TERMINATING IN A RATED WALL SHALL BE PROVIDED WITH A FIRE DAMPER.

KEYED NOTES:

1. RETURN DUCT, FULL SIZE OF UNIT CONNECTION. TYPICAL.
2. PROVIDE BALANCING DAMPER IN RETURN, BALANCE TO OBTAIN CORRCT OUTSIDE AIRFLOW. TYPICAL EACH HEAT PUMP.
3. MOTORIZED BALANCING DAMPER INTERLOCKED WITH HEAT PUMP. OPEN WHEN IN OCCUPIED MODE, CLOSED WHEN OFF. TYPICAL EACH HEAT PUMP.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
HIGH SCHOOL FIRST FLOOR AREA A MECHANICAL FLOOR PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M321

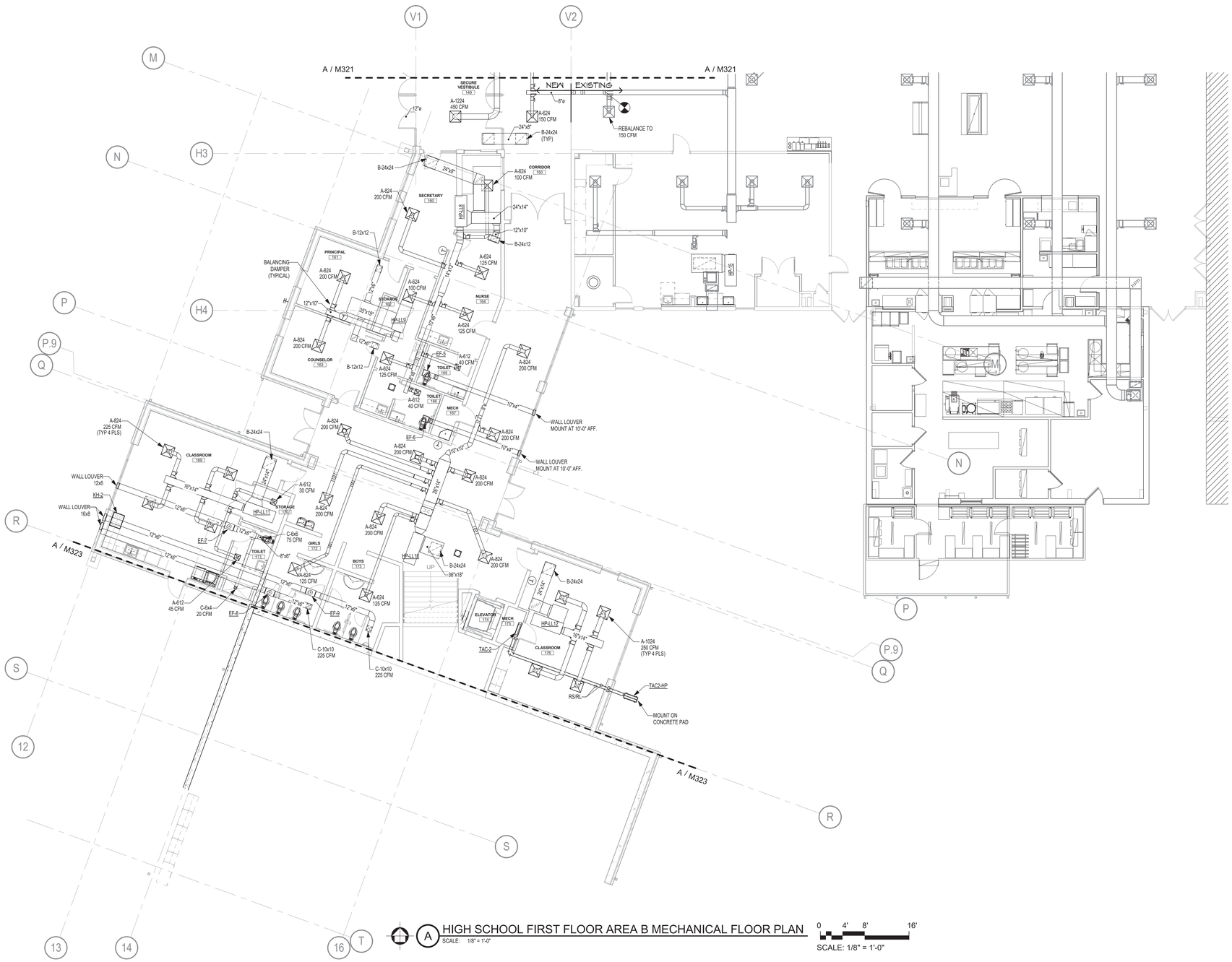
3/22/2021 12:31:09 PM

GENERAL NOTES:

1. REFER TO GENERAL DUCTWORK NOTES ON SHEET M321.

KEYED NOTES:

1. RETURN DUCT, FULL SIZE OF UNIT CONNECTION. TYPICAL.
2. PROVIDE BALANCING DAMPER IN RETURN, BALANCE TO OBTAIN CORRCT OUTSIDE AIRFLOW. TYPICAL EACH HEAT PUMP.
3. MOTORIZED BALANCING DAMPER INTERLOCKED WITH HEAT PUMP. OPEN WHEN IN OCCUPIED MODE, CLOSED WHEN OFF. TYPICAL EACH HEAT PUMP.



A HIGH SCHOOL FIRST FLOOR AREA B MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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HIGH SCHOOL FIRST FLOOR AREA B MECHANICAL FLOOR PLAN

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SHEET NO.
M322

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A HIGH SCHOOL SECOND FLOOR AREA B MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL DUCTWORK NOTES:

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3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE: CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
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5. COORDINATE EXACT LOCATION OF CEILING MOUNTED AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELECTRICAL LIGHTING PLANS. CONTRACTOR SHALL ADJUST LOCATION OF AIR DISTRIBUTION DEVICES AS REQUIRED TO AVOID CONFLICTS.
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16. ALL DUCTWORK PENETRATING A FIRE RATED WALL SHALL BE A MINIMUM OF 26 GAUGE. ANY DUCT OR AIR DEVICE TERMINATING IN A RATED WALL SHALL BE PROVIDED WITH A FIRE DAMPER.

KEYED NOTES:

1. LOUVER TO BE MOUNTED NO LESS THAN 10' ABOVE FINISHED GRADE.
2. MOTORIZED DAMPER TO BE INTERLOCKED TO ASSOCIATED EXHAUST FAN. WHEN FAN IS ON, MOTORIZED DAMPER SHALL BE OPEN. CONNECT TO EMERGENCY POWER CIRCUIT, REFER TO ELECTRICAL.
3. MOTORIZED DAMPER TO BE INTERLOCKED WITH EMERGENCY VENTILATION WALL SWITCH AND CONNECTED TO EMERGENCY POWER CIRCUIT, REFER TO ELECTRICAL.
4. EMERGENCY VENTILATION WALL SWITCH TO SIMULTANEOUSLY POWER ON EF-1 AND EF-2. OPEN ASSOCIATED MOTORIZED DAMPERS AND OPEN MOTORIZED DAMPER ASSOCIATED WITH LV-1. SWITCH TO BE PROVIDED WITH EMERGENCY POWER. REFER TO ELECTRICAL.
5. PROVIDE 1CC-500 APPROVED REINFORCING FOR SAFEROOM/TORNADO SHELTER PENETRATIONS. REFER TO STRUCTURAL.
6. PROVIDE FIRE DAMPER & ACCESS PANEL. REFER TO 7/5M1.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
HIGH SCHOOL SECOND FLOOR AREA B MECHANICAL FLOOR PLAN

REVISIONS

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PROJECT NO.
T19055

SHEET NO.
M323

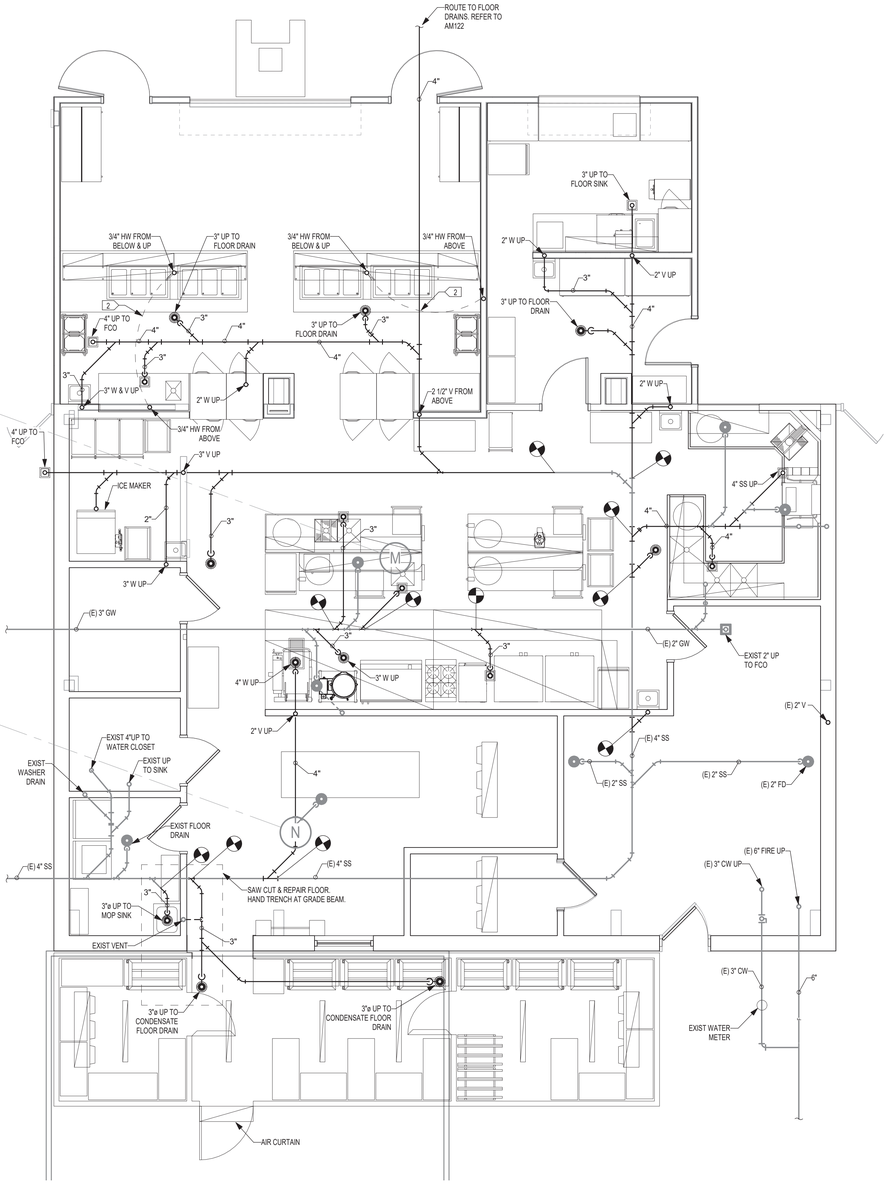
3/22/2021 12:31:17 PM

GENERAL NOTES:

1. THE PLUMBING CONTRACTOR SHALL ROUGH IN FROM THE FOOD SERVICE CONTRACTORS ROUGH IN DRAWINGS. THE PLUMBING CONTRACTOR MUST REUSE ROUGH IN LOCATIONS IF FOOD SERVICE CONTRACTOR PLANS ARE NOT USED. TIS WILL BE AT CONTRACTORS EXPENSE.

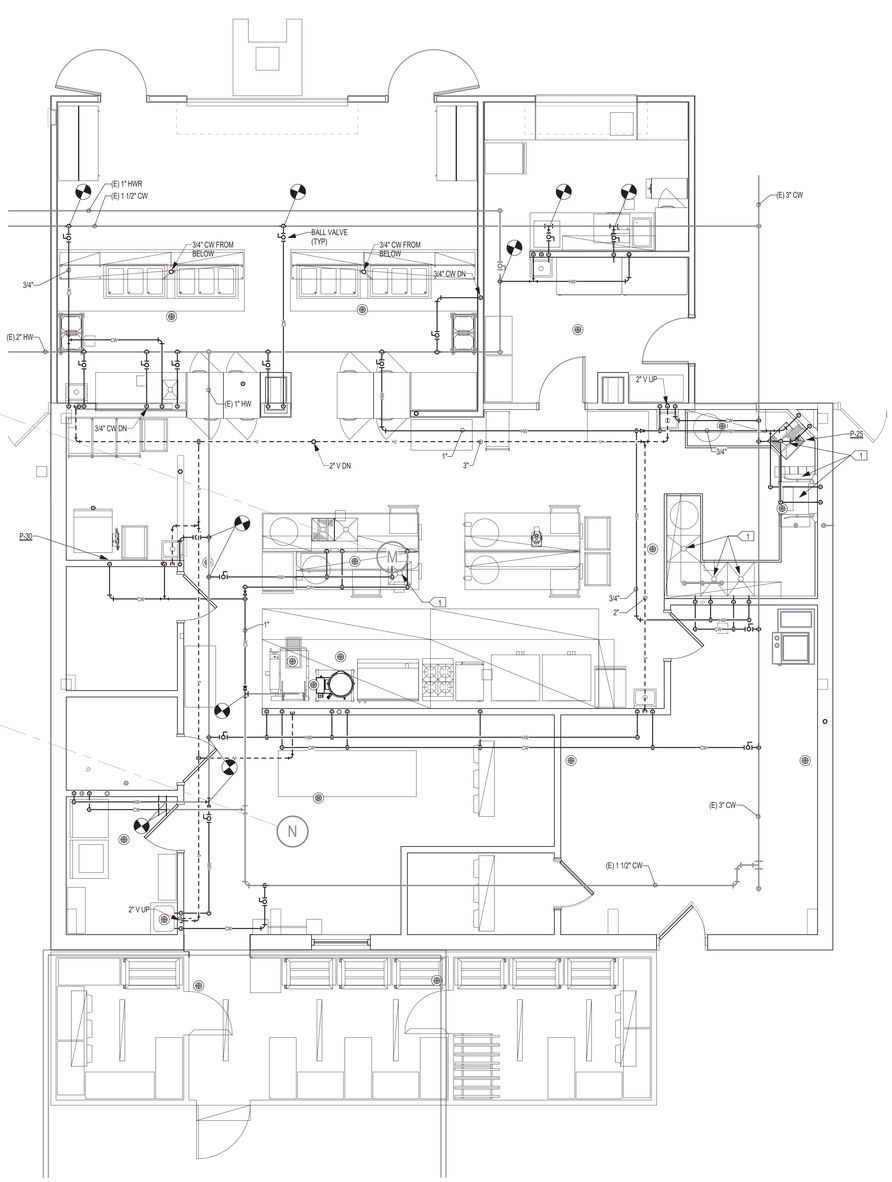
KEYED NOTES: (#)

1. ROUTE INDIRECT WASTE LINE TO ABOVE FLOOR SINK OR FLOOR DRAIN. REFER TO FS3.1 FOR SIZES AND LOCATIONS.
2. ROUTE 3/4" HW IN 2" PVC FLEXIBLE PIPE INSTALL TO BE REMOVABLE. ROUTE SLEEVE TO 1" ABOVE FINISH FLOOR.



A ENLARGED UNDERFLOOR PLUMBING PLAN - KITCHEN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"



B ENLARGED ABOVEFLOOR PLUMBING PLAN - KITCHEN
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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HIGH SCHOOL ADDITION & RENOVATION

ENLARGED PLUMBING FLOOR PLANS

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M400

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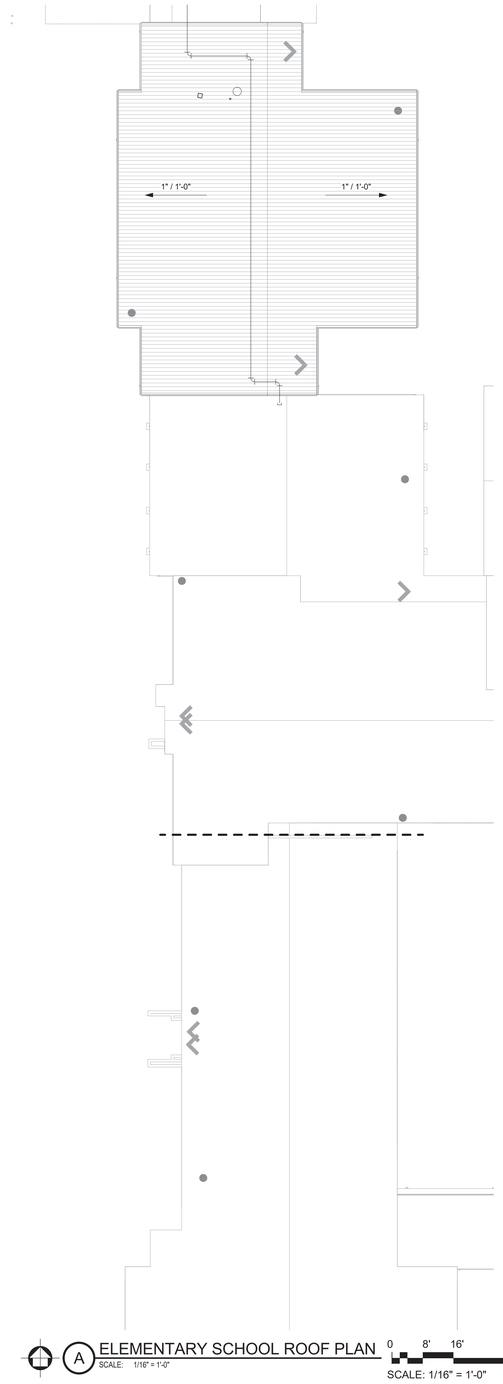

A ELEMENTARY SCHOOL ROOF PLAN
SCALE: 1/16" = 1'-0"

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

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28072
03/04/2021
OKLAHOMA

KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL MECHANICAL ROOF PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M500

A HIGH SCHOOL ROOF PLAN
SCALE: 1/16" = 1'-0"

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

3/22/2021 12:31:21 PM

BWA ARCHITECTS

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HIGH SCHOOL MECHANICAL ROOF PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M510

Heat Pump Unit Schedule (Area A)

Mark	Fan Data						Cooling Data								Heating Data								Electrical Data						
	Air Flow CFM	Dual Air Flow CFM	O.A. CFM	ESP	Motor HP	Blower Option	Total Capacity MBTUH	Sensible Capacity MBTUH	Dual Total Capacity MBTUH	Dual Sensible Capacity MBTUH	EAT DB F	EAT WB F	LAT DB F	Fluid	Flow Rate GPM	Dual Flow Rate GPM	PD FT/HD	EWT F	LWT F	Heat Rejection MBTUH	EER	Dual EER	Total Capacity MBTUH	Dual Total Capacity MBTUH	EAT F	LAT F	EWT F	LWT F	Heat Extraction MBTUH	COP	Dual COP	Voltage	Unit FLA	MCA	Max Fuse	Operating Weight	Manufacturer	Model
HP-LL1	460	0	45	0.5"	1/2	ECM	16.09	9.95	0.0	0.0	80.0	67.0	61.6	20% Propylene Glycol	4	0.0	7.6	85.0	94.85	19.7	15.0	0.0	15.79	0.0	70.0	99.2	50.0	44.4	11.2	3.5	0.0	265/60/1	9.7	11.1	15.0	210 lbs	Water Furnace	NBH018E
HP-LL2	1130	850	150	0.5"	1/2	ECM	34.77	26.88	24.35	17.84	77.0	63.0	54.4	20% Propylene Glycol	6	4.0	4.0	85.0	99.33	43.0	14.4	17.3	31.21	20.67	70.0	96.3	50.0	42.1	23.7	4.1	4.1	265/60/1	17.1	20.4	30.0	368 lbs	Water Furnace	NBV038T
HP-LL3	460	0	45	0.5"	1/2	ECM	16.09	9.95	0.0	0.0	80.0	67.0	61.6	20% Propylene Glycol	4	0.0	7.6	85.0	94.85	19.7	15.0	0.0	15.79	0.0	70.0	99.2	50.0	44.4	11.2	3.5	0.0	265/60/1	9.7	11.1	15.0	210 lbs	Water Furnace	NBH018E
HP-LL4	1080	700	45	0.5"	1/2	ECM	26.1	23.44	18.62	14.25	77.0	63.0	57.3	20% Propylene Glycol	7	5.0	8.3	85.0	94.23	32.3	14.4	17.6	24.47	17.07	70.0	90.6	50.0	44.51	19.2	4.6	4.6	265/60/1	13.2	15.5	20.0	303 lbs	Water Furnace	NBH026T
HP-LL5	2000	1500	150	0.75"	1	ECM	65.14	50.41	47.16	32.97	77.0	63.0	54.8	20% Propylene Glycol	16	12.0	11.8	85.0	95.3	82.4	12.9	14.3	65.41	44.08	70.0	98.8	50.0	43.9	48.8	3.9	3.7	460/60/3	15.4	17.5	25.0	478 lbs	Water Furnace	NBH072T
HP-LL6	600	0	60	0.5"	1/2	ECM	17	11	0.0	0.0	80.0	67.0	58.5	20% Propylene Glycol	4	0.0	7.6	85.0	94.85	17.5	15.0	0.0	12.8	0.0	70.0	95	50.0	44.4	11.2	3.5	0.0	265/60/1	9.7	11.1	15.0	210 lbs	Water Furnace	NBH018E
HPLL-7	760	600	70	0.5"	1/2	ECM	24.83	19.56	17.85	12.95	77.0	63.0	54.4	20% Propylene Glycol	5	3.0	4.8	85.0	97.24	30.6	14.7	15.9	22.42	15.64	70.0	96.0	50.0	43.2	17.0	4.1	4.0	265/60/1	13.2	15.5	20.0	305 lbs	Water Furnace	NBH026E
			565												46.0																					

Notes:
1. ECM motors on 460/60/3 volt units require 4-wire wye-type wire arrangement. Requires 1 hot AND 1 neutral wire to obtain proper voltage operation. This information should be given to the electrical contractor prior to wiring.
2. Provide motorized water valve, interlocked to open when unit running.
3. Units shall be provided with anti-rotation control on the fan motor. ECM motor control shall include 4-speed operation on dual capacity units and 3-speed operation on single capacity units.
   Factory program to: Unoccupied - Off, Occupied - CFM set at O.A. CFM, Low Capacity - CFM as listed above (Dual capacity only), High Capacity - CFM as listed above.
4. Units shall be furnished with a disconnect switch.
5. Units shall be provided with autoflow balancing valve, strainer and 24" stainless steel braided hoses.
6. Units shall communicate to the BAS via BACnet protocol.
7. Provide 24 volt opposed blade, motorized isolation damper in the unit return air ductwork between the outside air and relief air duct connection. Interlock to unit (open when unit runs, close when unit fan is off.)
8. Minimum size of condenser water supply and return lines shall be full size of unit connection, or 3/4" if the unit connection is smaller, unless otherwise noted on plans.

Heat Pump Unit Schedule (Area B)

Mark	Fan Data						Cooling Data								Heating Data								Electrical Data						
	Air Flow CFM	Dual Air Flow CFM	O.A. CFM	ESP	Motor HP	Blower Options	Total Capacity MBTUH	Sensible Capacity MBTUH	Dual Total Capacity MBTUH	Dual Sensible Capacity MBTUH	EAT DB F	EAT WB F	LAT DB F	Fluid	Flow Rate GPM	Dual Flow Rate GPM	PD FT/HD	EWT F	LWT F	Heat Rejection MBTUH	EER	Dual EER	Total Capacity MBTUH	Dual Total Capacity MBTUH	EAT F	LAT F	EWT F	LWT F	Heat Extraction MBTUH	COP	Dual COP	Voltage	Unit FLA	MCA	Max Fuse	Operating Weight	Manufacturer	Model
HPLL-8	760	600	70	0.5"	1/2	ECM	24.83	19.56	17.85	12.95	77.0	63.0	54.4	20% Propylene Glycol	5	3	4.8	85.0	97.24	30.6	14.7	15.9	22.42	15.64	70.0	96.0	50.0	43.2	17.0	4.1	4.0	265/60/1	13.2	15.5	20.0	305 lbs	Water Furnace	NBH026E
HP-LL9	600	0	35	0.5"	1/2	ECM	17	11	0.0	0.0	80.0	67.0	58.5	20% Propylene Glycol	4	0	7.6	85.0	94.85	17.5	15.0	0.0	12.8	0.0	70.0	95	50.0	44.4	11.2	3.5	0.0	265/60/1	9.7	11.1	15.0	210 lbs	Water Furnace	NBH018E
HP-LL10	2000	1500	100	0.75"	1	ECM	65.14	50.41	47.16	32.97	77.0	63.0	54.8	20% Propylene Glycol	16	12	11.8	85.0	95.3	82.4	12.9	14.3	65.41	44.08	70.0	98.8	50.0	43.9	48.8	3.9	3.7	460/60/3	15.4	17.5	25.0	478 lbs	Water Furnace	NBH072E
HP-LL11	1550	1000	300	0.75"	1	ECM	47.75	34.94	34.08	21.91	80.0	67.0	59.8	20% Propylene Glycol	11	6	7.4	85.0	95.73	59.0	14.5	14.9	43.74	28.86	70.0	95.3	50.0	43.98	33.1	4.1	3.8	460/60/3	13.3	14.9	20.0	418 lbs	Water Furnace	NBH049E
HPLL-12	1120	900	300	0.75"	1	ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9	5	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038E
HP-15	2625	0	375	0.5"	1.5	SS	88.92	67.42	0.0	0.0	80.0	67.0	59.2	20% Propylene Glycol	22.0	0.0	14.9	85.0	94.97	109.7	14.6	0.0	81.64	0.0	70.0	95.2	50.0	44.36	62.0	4.2	0.0	208/60/3	36.3	39.7	50	796 lbs	Water Furnace	NXH095E
			505												45																					

Notes:
1. ECM motors on 460/60/3 volt units require 4-wire wye-type wire arrangement. Requires 1 hot AND 1 neutral wire to obtain proper voltage operation. This information should be given to the electrical contractor prior to wiring.
2. Provide motorized water valve, interlocked to open when unit running.
3. Units shall be provided with anti-rotation control on the fan motor. ECM motor control shall include 4-speed operation on dual capacity units and 3-speed operation on single capacity units.
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4. Units shall be furnished with a disconnect switch.
5. Units shall be provided with autoflow balancing valve, strainer and 24" stainless steel braided hoses.
6. Units shall communicate to the BAS via BACnet protocol.
7. Provide 24 volt opposed blade, motorized isolation damper in the unit return air ductwork between the outside air and relief air duct connection. Interlock to unit (open when unit runs, close when unit fan is off.)
8. Minimum size of condenser water supply and return lines shall be full size of unit connection, or 3/4" if the unit connection is smaller, unless otherwise noted on plans.

Heat Pump Unit Schedule (Second Floor Area B)

Mark	Fan Data						Cooling Data								Heating Data								Electrical Data						
	Air Flow CFM	Dual Air Flow CFM	O.A. CFM	ESP	Motor HP	Blower Option	Total Capacity MBTUH	Sensible Capacity MBTUH	Dual Total Capacity MBTUH	Dual Sensible Capacity MBTUH	EAT DB F	EAT WB F	LAT F	Fluid	Flow Rate GPM	Dual Flow Rate GPM	PD FT/HD	EWT F	LWT F	Heat Rejection MBTUH	EER	Dual EER	Total Capacity MBTUH	Dual Total Capacity MBTUH	EAT F	LAT F	EWT F	LWT F	Heat Extraction MBTUH	COP	Dual COP	Voltage	Unit FLA	MCA	Max Fuse	Operating Weight	Manufacturer	Model
HPA-1	1600	1000	350	0.75"	1	ECM	60.76	45.69	43.82	30.01	77.0	63.0	52.8	20% Propylene Glycol	14.0	8.0	11.6	85.0	95.84	75.9	13.7	15.6	55.65	37.65	70.0	99.4	50.0	44.0	42.0	4.1	4.3	460/60/3	14.1	15.9	20.0	463 lbs	Water Furnace	NBV064T
HP-A2	1450	1000	300	0.75"	1	High Static ECM	45.13	36.13	32.22	22.64	77.0	63.0	56.1	20% Propylene Glycol	11.0	6.0	7.4	85.0	95.25	56.4	13.7	14.1	43.74	28.86	70.0	95.3	50.0	43.98	33.1	4.1	3.8	460/60/3	13.3	14.9	20.0	423 lbs	Water Furnace	NBH049E
HP-A3	1400	1100	300	0.5"	1/2	ECM	36.74	31.33	25.63	20.32	77.0	63.0	56.3	20% Propylene Glycol	9.0	6.0	7.8	85.0	95.07	45.3	14.6	18.3	33.39	22.01	70.0	92.1	50.0	44.2	26.1	4.6	4.9	265/60/1	17.1	20.4	30.0	368 lbs	Water Furnace	NBH038T
HP-A4	1400	1100	300	0.5"	1/2	ECM	36.74	31.33	25.63	20.32	77.0	63.0	56.3	20% Propylene Glycol	9.0	6.0	7.8	85.0	95.07	45.3	14.6	18.3	33.39	22.01	70.0	92.1	50.0	44.2	26.1	4.6	4.9	265/60/1	17.1	20.4	30.0	368 lbs	Water Furnace	NBH038T
HP-A5	1120	900	300	0.75"	1	High Static ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9.0	5.0	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038T
HP-A6	1120	900	300	0.75"	1	High Static ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9.0	5.0	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038T
HP-A7	1120	900	135	0.75"	1	High Static ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9.0	5.0	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038T
HP-A8	1120	900	300	0.75"	1	High Static ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9.0	5.0	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038T
HP-A9	2000	1500	400	0.75"	1	ECM	65.14	50.41	47.16	32.97	77.0	63.0	54.8	20% Propylene Glycol	16.0	12.0	11.8	85.0	95.3	82.4	12.9	14.3	65.41	44.08	70.0	98.8	50.0	43.9	48.8	3.9	3.7	460/60/3	15.4	17.5	25.0	478 lbs	Water Furnace	NBH072T
HP-A10	1120	900	300	0.75"	1	High Static ECM	36.5	30.22	25.14	19.42	77.0	63.0	55.5	20% Propylene Glycol	9.0	5.0	7.8	85.0	94.98	44.9	14.9	17.8	33.15	21.44	70.0	93.6	50.0	44.29	25.7	4.5	4.6	265/60/1	20.0	16.3	25.0	368 lbs	Water Furnace	NBH038T

Notes:
1. ECM motors on 460/60/3 volt units require 4-wire wye-type wire arrangement. Requires 1 hot AND 1 neutral wire to obtain proper voltage operation. This information should be given to the electrical contractor prior to wiring.
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7. Provide 24 volt opposed blade, motorized isolation damper in the unit return air ductwork between the outside air and relief air duct connection. Interlock to unit (open when unit runs, close when unit fan is off.)
8. Minimum size of condenser water supply and return lines shall be full size of unit connection, or 3/4" if the unit connection is smaller, unless otherwise noted on plans.

Exhaust Fan Schedule

MARK	TYPE	CFM	RPM	E.S.P. INCHES	HP WATTS	VOLTAGE PH, HZ	CONTROL	SONES MAX	WEIGHT LBS	MANUFACTURER/ MODEL NO.	REMARKS	NOTES
EF-1	INLINE EXHAUST FAN	760	1130	0.7	301 WATTS	120/1/60	INTERLOCK WITH LIGHTS AND EMERGENCY VENT SWITCH	5	69	GREENHECK/ CSP-A1750	PROVIDE DUCT FLANGES, DISCONNECT SWITCH, 4 MOUNTING GROMLETS AND FAN SPEED CONTROL	1, 2, 4 and 5.
EF-2	INLINE EXHAUST FAN	750	1130	0.7 0.65	301 WATTS	120/1/60	INTERLOCK WITH LIGHTS AND EMERGENCY VENT SWITCH	5	69	GREENHECK/ CSP-A1750	PROVIDE DUCT FLANGES, DISCONNECT SWITCH, 4 MOUNTING GROMLETS AND FAN SPEED CONTROL	1, 2, 4 and 5.
EF-3	INLINE EXHAUST FAN	200	1050	0.65	85 WATTS	120/1/60	PROVIDE WALL SWITCH W/PILOT	3	24	GREENHECK/ CSP-A1750	PROVIDE DUCT FLANGES, DISCONNECT SWITCH, 4 MOUNTING GROMLETS AND FAN SPEED CONTROL	1, 2, 4 and 5.
EF-4	CEILING EXHAUST FAN	75	669	0.35	128 WATTS	120/1/60	INTERLOCK WITH ROOM LIGHTS	1.3	11	GREENHECK SP-B150		1, 2, 3, 4 5 & 6
EF-5 EF-5A	CEILING EXHAUST FAN	75	669	0.35	128 WATTS	120/1/60	INTERLOCK WITH ROOM LIGHTS	1.3	11	GREENHECK SP-B150		1, 2, 3, 4 5 & 6
EF-6	CEILING EXHAUST FAN	75	669	0.35	128 WATTS	120/1/60	INTERLOCK WITH ROOM LIGHTS	1.3	11	GREENHECK SP-B150		1, 2, 3, 4 5 & 6
EF-7	INLINE EXHAUST FAN	100	1400	0.4	- 44	120/1/60	THERMOSTAT TO MAKE ON RISE	2.5	16	GREENHECK CSP-A190		1, 2, 3, 4 5 & 6
EF-8	INLINE EXHAUST FAN	225	1163	0.65	71 WATTS	120/1/60	INTERLOCK WITH LIGHTS AND EMERGENCY VENT SWITCH	3	24	GREENHECK/ CSP-A390	PROVIDE DUCT FLANGES, DISCONNECT SWITCH, 4 MOUNTING GROMLETS AND FAN SPEED CONTROL	1, 2, 4 and 5.
EF-9	INLINE EXHAUST FAN	225	1163	0.65	71 WATTS	120/1/60	INTERLOCK WITH LIGHTS AND EMERGENCY VENT SWITCH	3	24	GREENHECK/ CSP-A390	PROVIDE DUCT FLANGES, DISCONNECT SWITCH, 4 MOUNTING GROMLETS AND FAN SPEED CONTROL	1, 2, 4 and 5.
EF-10 & EF-11	CEILING EXHAUST FAN	75	669	0.35	128 WATTS	120/1/60	INTERLOCK WITH ROOM LIGHTS	1.3	11	GREENHECK SP-B150		1, 2, 3, 4 5 & 6
EF-12	INLINE EXHAUST FAN	100	1400	0.4	- 44	120/1/60	THERMOSTAT TO MAKE ON RISE	2.5	16	GREENHECK CSP-A190		1, 2, 3, 4 5 & 6
EF-13	KILN ROOM VENTILATON	500	1550	0.35	1/15	120/1/60	THERMOSTAT TO MAKE ON RISE	7.4	42	GREENHECK/ G-090-D		1, 2, 3, 4 5 & 6
EF-14	KILN VENTILATION SYSTEM	140	--	--	--	120/1/60	PROVIDE ENVIROLINK CONTROL INTERLOCK TO KILN	--	17	SHUIT/ ENVIROVENT 2	PROVIDE ENVIROLINK CONTROL INTERLOCK TO KILN	
DF-1	INLINE FAN DRYER BOOSTER	188	2175	0.1	64 WATTS	120/1/60	PRESSURE SENSOR SWITCH	2	10	FANTECH DBF 4XL		

NOTE:
1. PROVIDE STARTER RELAY TO INTERLOCK WITH LIGHTS, VERIFY LIGHTING VOLTAGE FOR RELAY.
2. PROVIDE INTERNAL WIRING PIGTAIL WITH 9' OF FLEXIBLE METAL CONDUIT. ELECTRICAL SHALL CONNECT IN CEILING SPACE OR OPEN AREA.
3. PROVIDE MOTOR STARTER AND WALL SWITCH, TRANSFORMER (277-230V TO 115V). CONTRACTOR SHALL WIRE TRANSFORMER TO LOUVERS, WALL SWITCH AND FANS.
4. PROVIDE DISCONNECT SWITCH AND FAN SPEED CONTROLLER.
5. PROVIDE TRANSFORMER (277-230V TO 115V). CONTRACTOR SHALL WIRE TRANSFORMER TO FAN.
6. PROVIDE FACTORY MOUNTED AND WIRED DISCONNECT.

Air Device Schedule

MARK	TYPE	FUNCTION	MOUNTING	BLADE DEFLECTION	MAX NC	DAMPER	FINISH	MANUFACTURER MODEL NO.	REMARKS
A	SQUARE DIFFUSER	SUPPLY	CEILING	--	25	DUCT	MATCH CEILING	TITUS OMNI-AA	PROVIDE DIFFUSER BLANKET
B	LOUVERED GRILLE	RETURN	CEILING / WALL	--	25	OPPOSED BLADE	REFER TO ARCHITECTURAL	TITUS 355 RL	
C	LOUVERED GRILLE	EXHAUST	CEILING	--	25	OPPOSED BLADE	REFER TO ARCHITECTURAL	TITUS 355 RL	
D	GRILLE	SUPPLY	DUCT	22.5	25	OPPOSED BLADE	REFER TO ARCHITECTURAL	TITUS 300RS	
E	GRILLE	SUPPLY	DUCT	22.5	25	OPPOSED BLADE	REFER TO ARCHITECTURAL	TITUS S300FS	
F	ROUND DIFFUSER	SUPPLY	DUCT	--	25	NONE	REFER TO ARCHITECTURAL	TITUS TMR	PROVIDE DIFFUSER BLANKET
G	DRUM LOUVER	SUPPLY	DUCT	--	25	NONE	REFER TO ARCHITECTURAL	TITUS DL	
H	LINEAR SLOT	SUPPLY AIR	CEILING	--	25	OPPOSED BLADE	MATCH CEILING	TITUS ML-38-TZ	PROVIDE INSULATED PLENUM FULL LENGTH OF DIFFUSER. PROVIDE 1 OR 2: 3/4" SLOTS AS NOTED ON PLANS.
I	LINEAR SLOT	RETURN TRANSFER	CEILING	--	25	NONE	MATCH CEILING	TITUS MLR-38-NT	PROVIDE INSULATED PLENUM FULL LENGTH OF DIFFUSER. PROVIDE 1 OR 2: 3/4" SLOTS AS NOTED ON PLANS.
J	DRUM LOUVER	SUPPLY	DUCT	--	25	NONE	REFER TO ARCHITECTURAL	TITUS DL	PROVIDE INSULATED PLENUM FULL LENGTH OF DIFFUSER. PROVIDE 1 OR 2: 3/4" SLOTS AS NOTED ON PLANS.
K	LINEAR SLOT	SUPPLY AIR	FLOOR	--	25	OPPOSED BLADE	MATCH CEILING	TITUS CT-PP-3	PROVIDE INSULATED PLENUM FULL LENGTH OF DIFFUSER. PROVIDE SIDE TAP, SECURE TO FLOOR.

Variable Refrigerant Flow Terminal Air Conditioner Schedule

MARK	TYPE	OUTSIDE AIR CFM	FAN DATA CFM	VOLTAGE	MCA	MOCP	NOMINAL COOLING CAPACITY	47 DEGREE AMB HEATING CAPACITY	COOLING EAT	HEATING CAPACITY -13 AMB	HEATING EAT DB	PIPE SIZE LIQUID	PIPE SIZE SUCTION GAS	PIPE SIZE CONDENSATE	WEIGHT LBS	MANUFACTURER MODEL	NOTES
TAC-1	WALL MOUNTED	30	194–225–261–305–376	208/230 60/1	.65	15	14,000 BTUH	24,000 BTUH	80/67 DB/WB	14,400 BTUH	70	1/4"	1/2"	1 1/4"	29	MITSUBISHI MSZ-FS15NA	1, 2 & 3
TAC-2	WALL MOUNTED	30	194–225–261–305–376	208/230 60/1	.65	15	14,000 BTUH	24,000 BTUH	80/67 DB/WB	14,400 BTUH	70	1/4"	1/2"	1 1/4"	29	MITSUBISHI MSZ-FS15NA	1, 2 & 3

NOTES:
1. PROVIDE HARD WIRED CONTROLLER.
2. PROVIDE CONDENSATE PUMP.
3. VERIFY THE EXACT REFRIGERANT PIPE SIZE WITH MANUFACTURER.
4. COOLING CAPACITY AT 95 DEGREE AMBIENT

Heat Pump Unit Schedule

MARK	SYSTEM TYPE	COOLING CAPACITY BTUH	HEATING CAPACITY BTUH	HEATING CAPACITY BTUH	HEATING CAPACITY BTUH	VOLTAGE PHASE	MCA	MOCP	PIPE CONNECTION SIZE LIQUID	PIPE CONNECTION SIZE GAS	SEER/ IEER	COP	WEIGHT LBS	MANUFACTURER MODEL	NOTES
TAC1-HP	HEAT PUMP HEAT/COOL	14,000 95 DEGREE F	24,000 47 DEGREE F	22,730 17 DEGREE F	14,400 -13 DEGREE F	208-230 1/60	18	20	1/4"	1/2"	22.2/ 14	4.06 AT 47	118	MITSUBISHI MUZ-FS15NAH	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12
TAC2-HP	HEAT PUMP HEAT/COOL	14,000 95 DEGREE F	24,000 47 DEGREE F	22,730 17 DEGREE F	14,400 -13 DEGREE F	208-230 1/60	18	20	1/4"	1/2"	22.2/ 14	4.06 AT 47	118	MITSUBISHI MUZ-FS15NAH	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12

NOTES:
1. PROVIDE ROOF EQUIPMENT CURB AND MOUNT UNIT ON ROOF CURB. PROVIDE PIPE PORTAL FOR RS/RL PIPING DOWN THRU ROOF.
2. PROVIDE RS/RL LINES W/CLOSED CELL INSULATION, ROUTE TO AND CONNECT TO COOLING COIL ON INDOOR UNIT.
3. SLEEVE RS,RL PIPING AT ROOF AND WALL PENETRATIONS AND SEAL WEATHERTIGHT.
4. PROVIDE CLOSED CELL SEALED INSULATION ON RS AND RL LINES.
5. PROVIDE ADDITONAL REFRIGERANT AS NEEDED FOR RS AND RL LINE LENGTH.
6. NOMINAL COOLING CAPACITY BASED ON INDOOR COIL EAT OF 80/67 DB/WB, OUTDOOR OF 95 F DB.
7. NOMINAL HEATING CAPACITY BASED ON INDOOR COIL EAT OF 70 DB, OUTDOOR OF 43 F DB.
8. PROVIDE HAIL GUARD ON CONDENSER COIL.
9. REFRIGERANT R-410a.
10. PROVIDE M-NET CONTROL ADAPTER AND CONNECTION TO INDOOR UNITS.
11. PROVIDE LOW AMBIENT TO OPERATE UNIT DOWN TO 0 DEGREES F.
12. ROUTE REFRIGERANT PIPING TO INDOOR TAC UNITS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

Kitchen Hood Schedule

MARK	TYPE	MANUFACTURER/ MODEL NO.	CAPTURE SIZE	EXHAUST CFM	SP IN W.C.	HOOD CONTROLLER	AMPS	VOLTAGE	AIR SUPPLY CURTAIN	NOTES
KH-1 & 2	WALL CANOPY TYPE 1	DENLAR (ELECTRIC) D1030-F(NFPA101)	30"x19.5"	500 CFM (RECIRC)	-	DENLAR INTEGRAL TO HOOD	20	120 / 1 / 60	-	1,2, 3, 4 & 5

NOTES:
1. PROVIDE UL LISTED EXHAUST / GREASE DUCT.
2. PROVIDE INTERLOCK AND ALL CONTROL WIRING TO EXHAUST FANS.
3. PROVIDE INTERLOCK TO ELECTRICAL SHUNTS AND FIRE SUPPRESSION CONTROLLER. MOUNT CONTROLS IN ACCORDANCE WITH ADA.
4. HOOD TO BE PROVIDED WITH INTEGRAL FIRE SUPPRESSION SYSTEM.
5. PROVIDE FAN SWITCH, LIGHT SWITCH, AND TEMPERATURE INTERLOCK HEAT SENSOR.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
MECHANICAL SCHEDULES

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE 03.04.21

PROJECT NO. T19055

SHEET NO. M600

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Water Heater Schedule

MARK	TYPE	STORAGE GALLONS	INPUT	STORAGE TEMP (°F)	RECOVERY @ 90°F RISE	WARRANTY	MANUFACTURER MODEL	NOTES
WH-1	TANK TYPE ELECTRIC	50	4.5 KW @ 208 / 1 / 60	140	21 GPH	10 YEAR	AO SMITH PNT-50	1 THRU 3
WH-E1	TANK TYPE ELECTRIC	50	4.5 KW @ 208 / 1 / 60	140	21 GPH	10 YEAR	AO SMITH PNT-50	1 THRU 3

NOTES:
1. PROVIDE PRESSURE AND TEMPERATURE RELIEF VALVE.
2. PROVIDE MANUFACTURERS RECOMMENDED EXPANSION TANK.
3. PROVIDE EMERGENCY DRAIN PAN.

Water Hammer Arrestor Schedule

MARK	TYPE	SERVICE	FIXTURE UNITS	CONN SIZE	MATERIAL	MANUFACTURER MODEL
WHA-A	BELLOWS	DOMESTIC WATER	1 to 11	3/4"	STAINLESS	WATTS SS-A
WHA-B	BELLOWS	DOMESTIC WATER	12 to 32	1"	STAINLESS	WATTS SS-B
WHA-C	BELLOWS	DOMESTIC WATER	30 to 60	1"	STAINLESS	WATTS SS-C

Plumbing Fixture Schedule

MARK	FIXTURE	MANUFACTURER/ MODEL	SIZE/MOUNT	ROUGH-IN SCHEDULE CW	HW	WASTE	VENT	GAS	ELEC CONN	FITTINGS & REMARKS
P-1	WATER CLOSET ADA	KOHLER/ K-4368	FLOOR MOUNT ADA HEIGHT	1"	-	4"	2"	-	YES	PROVIDE SLOAN ROYAL 111 ESS-1.6-TMO-HW FLUSH VALVE, EL-451 HARDWIRED TRANSFORMER, AND KOHLER K-4666-SC SEAT,
P-2	WATER CLOSET	KOHLER/ K-4406	FLOOR MOUNT	1"	-	4"	2"	-	YES	PROVIDE SLOAN ROYAL 111 ESS-1.6-TMO-HW FLUSH VALVE, EL-451 HARDWIRED TRANSFORMER, AND KOHLER K-4666-SC SEAT,
P-3	URINAL	KOHLER/ K-4960-ET	WALL HUNG	3/4"	-	3"	1 1/2"	-	YES	PROVIDE SLOAN ROYAL 186 ESS-0.5-TMO-HW FLUSH VALVE, EL-451 HARDWIRED TRANSFORMER, AND FLOOR MOUNTED FIXTURE CARRIER.
P-4	SERVICE SINK	STERN WILLIAMS/ SB-700	FLOOR 32"X32"X12"	3/4"	3/4"	3"	1 1/2"	-		T & S BRASS B-0665-BSTR FAUCET OR EQUAL, PROTECT WALLS AROUND OP SINK AT LEAST 6' HIGH AND 1' LATERALLY PAST THE EDGE OF THE SINK WITH STAINLESS STEEL WALL GUARD SHEETS.
P-4A	SERVICE SINK	STERN WILLIAMS/ CORlow SBC-1725	FLOOR 32"X32"X12"	3/4"	3/4"	3"	1 1/2"	-		T & S BRASS B-0665-BSTR FAUCET OR EQUAL, PROTECT WALLS AROUND OP SINK AT LEAST 6' HIGH AND 1' LATERALLY PAST THE EDGE OF THE SINK WITH STAINLESS STEEL WALL GUARD SHEETS.
P-5	LAVATORY SOLID SURFACE 1 STATION	SLOAN/SLOANSTONE ELGR-81000-ENC	WALL HUNG	1/2"	1/2"	1 1/2"	1 1/2"	-		FLOOR MOUNTED CARRIER, SLOAN EAF-200-ISM SENSOR-ACTIUATED FAUCET, HARDWIRED, .35 GPM, SLOAN MIX-70-A, SUPPLY STOPS, DRAIN ASSEMBLY, P-TRAP W/CLEANOUT. PROVIDE IPS TRUEBRO LAV SHIELD.
P-5A	WASH STATION	BRADLEY SS-2N-IR-NSD-WH-TMA	WALL HUNG	1/2"	1/2"	1 1/2"	1 1/2"	-		STAINLESS STEEL MOUNTING BRACKET, INFRARED SENSOR, THERMOSTATIC MIXING VALVE, SUPPLY STOPS, TAILPIECE AND P-TRAP.
P-5B	LAVATORY HANDICAPPED	KOHLER K-2006-8	WALL HUNG	1/2"	1/2"	1 1/2"	1 1/2"	-		CHICAGO 1100 GN2AE35-317ABCP FAUCET, SUPPLY STOPS & SUPPLY LINES, TRAP CONNECTORS, W/ OFFSET P-TRAP, GRID STRAINER, FLOOR CARRIER & TRUEBRO 102/105 INSULATION KIT. ACORN MODEL ST70 ASSE 1070 MIXING VALVE
P-6	WATER COOLER	ELKAY LZVR8S	WALL HUNG	1/2"	-	1 1/2"	1 1/4"	-		8 GPH CAPACITY @ 50 DEGREE WATER, 120V/1PH, 370 WATTS, 5.0 AMP. PROVIDE STAINLESS STEEL CABINET, P-TRAP, SUPPLY STOP & WALL HANGER.
P-7	ADA WATER COOLER W/ BOTTLE FILLER	ELKAY LZS8WS(VR)SP	WALL HUNG ADA	1/2"	-	1 1/2"	1 1/4"	-		8 GPH CAPACITY EACH @ 50 DEGREE WATER, 120V/1PH, 370 WATTS, 4.2 AMP. PROVIDE STAINLESS STEEL CABINET, P-TRAP, SUPPLY STOP & WALL HANGER, PROVIDE WATER FILTERS
P-8	SHOWER ADA	CHICAGO FAUCETS SH-PB1-1-I-D14	WALL	3/4"	3/4"	2"	2"	-		PROVIDE 1910-VONF PRESSURE BALANCING VALVE WITH INTEGRAL STOPS AND CHECKS, 1910-XJKNF VALVE CARTRIDGE, 600-CP SHOWER HEAD, 2.5 GPM HAND SPRAY WITH 59" STAINLESS STEEL HOSE, 36" WALL MOUNTED ADA GRAB BAR WITH HAND SPRAY HOLDER, AND DIVERTER VALVE.
P-9	THREE COMPARTMENT SINK (SCIENCE ROOM)	ADVANCE TABCO 19-FM-60EFADA	60" LENGTH STAINLESS STEEL LEGS & CROSS BRACING	3/4" TWO PLACES	3/4" TWO PLACES	3"	2"	-		PROVIDE K-6 STRAINER, THREE K-175 ELECTRONIC FAUCETS AND CABINET MOUNTED EYEWASH. PROVIDE WADE 5750 SLOIDS INTERCEPTOR PLASTER TRAP W/CLEANOUT AND TRAP CONNECTORS. PROVIDE THREE ACORN MODEL ST70 ASSE 1070 MIXING VALVES MOUNT MIXING VALVE BELOW COUNTER, MOUNT EYEWASH ON LEFT HAND SIDE OF SINK. CONNECT TO CW/HW BELOW COUNTER.
P-10	SINGLE COMPARTMENT SINK ADA	ELKAY LRDA191965P	19.5"x19"x6" COUNTER	1/2"	1/2"	2"	1 1/2"	-		LKD24898BHC FAUCET, LK-18B STRAINER, SUPPLY STOPS & SUPPLY LINES. OFFSET P-TRAP W/CLEANOUT AND TRAP CONNECTORS.
P-11	WALL HYDRANT FREEZE PROOF	WOODFORD B-65P	WALL	3/4"	-	-	-	-		MOUNT AT 30" ABOVE GRADE, PROVIDE TEE KEY TO OWNER.
P-12	WASHER BOX	GUY GRAY SSWB1	WALL RECESSED	3/4"	3/4"	2"	1 1/2"	-		PROVIDE 1/4 TURN VALVES AND STAINLESS STEEL HOSES. MAKE ALL FINAL CONNECTIONS TO WASHER. WASHER BOX IS TO BE STAINLESS STEEL "AS LISTED".
P-13	2 COMPARTMENT SINK	ELKAY LRADQ332265PD	COUNTER	3/4"	3/4"	2"	1 1/2"	-		ELKAY LKD2453 FAUCET, PROVIDE SUPPLY STOPS,WASTE CONNECTION INSINKERATOR MODEL BADGER500 #203144509 DISPOSER.
P-14	SINGLE COMPARTMENT SINK W/ BUBBLER	ELKAY DRKAD222060C	22"x19.5" COUNTER	1/2"	1/2"	2"	1 1/2"	-		LKD2447BH FAUCET, LK1141A BUBBLER, LK-35B STRAINER, SUPPLY STOPS & SUPPLY LINES, P-TRAP W/CLEANOUT AND TRAP CONNECTORS.
P-15	REFRIGERATOR ICE MAKER CONNECTION	GUY GRAY SSIB1	WALL RECESSED STAINLESS STEEL	1/2"	-	-	-	-		MOUNT AT 12" ABOVE FINISH FLOOR, CONNECT TO REF ICEMAKER. 1/4 TURN SUPPLY STOP WITH 1/4" COMPRESSION OUTLET.
P-16	DISHWASHER	GUY GRAY SSIB1	WALL RECESSED STAINLESS STEEL	-	1/2"	3/4"	-	-		PROVIDE SUPPLY STOP, CONNECT TO HW LINE AT WALL BOX. SECURE 3/4" DRAIN TO BOTTOM SIDE OF COUNTER. ROUTE FROM DISHWASHER TO GARBAGE DISPOSAL AT P-16 SINK THAT IS LOCATED TO THE RIGHT SIDE.
P-17	CONDENSATE WASHER BOX	GUY GRAY T SERIES	WALL RECESSED	-	-	2"	1 1/2"	-		PROVIDE COVER PLATE AND AIR GAP FITTING. MAKE ALL FINAL CONNECTIONS
P-18	HOSE BIBB W/VACUUM BREAKER	WOODFORD MODEL 24P	WALL	3/4"	-	-	-	-		MOUNT AT 40" ABOVE FINISH FLOOR, SECURE TO WALL. PROVIDE VACCUM BREAKER . AND BALL VALVE.
THE FOLLOWING ITEMS MAY BE FURNISHED BY FOOD SERVICE EQUIPMENT AND TO BE INSTALLED BY THE PLUMBING CONTRACTOR. REFER TO FS-1										
P-28	DISPOSAL	FURNISHED BY OTHERS CONTRACTOR INSTALLED	COUNTER	1/2"	1/2"	2"	1 1/2"	-		REFER TO FOOD SERVICE PLANS, PROVIDE SUPPLY STOPS, INDIRECT WASTE CONNECTION MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-29	DISH WASHER	PROVIDED BY OTHERS		-	1" 140	-	-	-		PROVIDE PRESSURE REGULATOR, LINE FILTER AND SUPPLY STOP, ROUTE DRAIN LINE TO ABOVE FLOOR SINK. CENTER ABOVE OPENING IN GRATE ON FLOOR SINK.
P-30	STEAMER	FURNISHED BY OTHERS CONTRACTOR INSTALLED	FLOOR	1/2"	-	-	-	-		REFER TO FOOD SERVICE PLANS, PROVIDE GAS COCK,, SUPPLY STOPS, INDIRECT WASTE CONNECTION, MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-31	KETTLE	FURNISHED BY OTHERS CONTRACTOR INSTALLED	FLOOR	1/2"	1/2"	-	-	3/4"		31 MBH, REFER TO FOOD SERVICE PLANS, PROVIDE GAS COCK,, SUPPLY STOPS, INDIRECT WASTE CONNECTION, MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-32	SIX BURNER RANGE	FURNISHED BY OTHERS CONTRACTOR INSTALLED	FLOOR	-	-	-	-	1 1/2"		286 MBH, REFER TO ARCH AND FOOD SERVICE PLANS, PROVIDE GAS COCK AND FINAL CONNECTION. MAKE FINAL CONNECTIONS AS REQUIRED TO CONNECT EQUIPMENT.
P-33	CONVECTION OVEN	FURNISHED BY OTHERS CONTRACTOR INSTALLED	FLOOR	-	-	-	-	1"		100 MBH, REFER TO FOOD SERVICE PLANS, PROVIDE GAS COCK, MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-34	PRE-RINSE UNIT HOSE REEL	FURNISHED BY OTHERS CONTRACTOR INSTALLED	COUNTER	3/4"	3/4"	-	-	-		REFER TO FOOD SERVICE PLANS, PROVIDE SUPPLY STOPS, MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-35	MIXING HYDRANT	WOODFORD MODEL C22CC	WALL	3/4"	3/4"	-		-		MOUNT AT 36" ABOVE FINISH FLOOR. SECURE TO WALL.
P-36	EMERGENCY SHOWER AND EYE/FACE WASH	BRADLEY S19314DC	WALL	1 1/4" & 1/2"	1/2"	3" FD	1 1/2"	-		WALL BRACKET, S19-2100 EFX25 THERMOSTATIC MIXING VALVE, DUST COVER, SHUT OFF VALVES, P-TRAP. CONNECT 2" DRAIN FROM EYEWASH TO 2 " LINE IN WALL.
P-37	3 COMPARTMENT SINK	FURNISHED BY OTHERS CONTRACTOR INSTALLED	FLOOR	3/4"	3/4"	2"	1 1/2"	-		REFER TO FOOD SERVICE PLANS, PROVIDE SUPPLY STOPS, INDIRECT WASTE CONNECTION MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.
P-38	LAVATORY	KOHLER K-2007	WALL HUNG	1/2"	1/2"	1 1/2"	1 1/2"	-		FLOOR MOUNTED CARRIER, SLOAN EFX-200 SENSOR-ACTIUATED FAUCETS, SLOAN SJS-1750 SENSOR-ACTIVATED FOAM SOAP. HARDWIRED, 1.5 GPM, SLOAN MIX-70-A, SUPPLY STOPS, DRAIN ASSEMBLY, P-TRAP W/CLEANOUT. PROVIDE IPS TRUEBRO LAV SHIELD.
P-11	ICE MAKER	FURNISHED BY OTHERS CONTRACTOR INSTALLED AND FINAL CONNECTIONS	WALL	1/2"	-	-	-	-		REFER TO FOOD SERVICE PLANS, PROVIDE SUPPLY STOP, INDIRECT WASTE CONNECTION TO FLOOR SINK, WATER FILTER, REDUCED PRESSURE BACKFLOW PREVENTER AND PRESSURE REGULATOR. MOUNT ON WALL AT 60"AFF. MAKE ALL CONNECTIONS REQUIRED BY FOOD SERVICE PLANS.

Domestic Circulation & Elevator Sump Pump Schedule

MARK	TYPE	SERVICE	GPM	HEAD FEET	HP	RPM	VOLTAGE	PUMP EFFICIENCY	PUMP WEIGHT	PUMP SIZE	MANUFACTURER MODEL	REMARKS
CP-1	INLINE	DOMESTIC HOT WATER 110	5	20'	1/4	3300	115/1/60	70	13 POUNDS	PL-36	Bell & Gossett PL-36	PROVIDE AQUASTAT CONTROL. PROVIDE UNION OR FLANGED CONNECTION, CHECK VALVE ON INLET AND SHUTOFF VALVES.
EV-1	SUBMERSIBLE	ELEVATOR SUMP	50	20	1/2	1750	120/1/60	---	---		ZOELLER 940-0007	PROVIDE ZOELLER OIL SMART SYSTEM AND ALARM PANEL, CONNECT ALARM TO EMCS
CP-E1	INLINE	DOMESTIC HOT WATER 110	5	20'	1/4	3300	115/1/60	70	13 POUNDS	PL-36	Bell & Gossett PL-36	PROVIDE AQUASTAT CONTROL. PROVIDE UNION OR FLANGED CONNECTION, CHECK VALVE ON INLET AND SHUTOFF VALVES.

Mixing Valve Schedule

MARK	TYPE	FLOW RATE	INLET SIZE	OUTLET SIZE	PRESSURE DROP	FINISH	MANUFACTURER MODEL	NOTES
MV-1	THERMOSTATIC CONTROLLER	14 GPM	3/4"	1"	5 PSI	ROUGH BRONZE	ACORN MV17-2-OTG	1, 2 3 & 4
TMV-E1	THERMOSTATIC CONTROLLER	14 GPM	3/4"	1"	5 PSI	ROUGH BRONZE	ACORN MV17-2-OTG	1, 2 3 & 4

NOTES:
1. PROVIDE WALL MOUNTING BRACKET, BI-METAL DIAL THERMOMETER, UNIONS, AND SHUT-OFF VALVES.
2. MIXING VALVE SHALL HAVE INTEGRAL COLD WATER BYPASS.
3. PROVIDE LOCKABLE BALL VALVE SHUT-OFFS, AND OUTLET TEMPERATURE GAUGE.
4. PROVIDE STAINLESS STEEL WALL BOX. MOUNT RECESSED INSIDE WALL STUDS WHERE POSSIBLE.

Drain Schedule

MARK	TYPE	MANUFACTURER MODEL	BODY MATERIAL	STRAINER MATERIAL	CONNECTION	REMARKS
FD-A	FLOOR DRAIN	WADE 1100-STD5-27	CAST IRON	NICKEL BRONZE	HUB & SPIGOT TY-SEAL	PROVIDE DEEP SEAL P-TRAP W/ TRAP PRIMER CONNECTION. PROVIDE TRAP SEAL DEVICE
FD-B	FLOOR DRAIN	WADE 1210-1-8	CAST IRON	STAINLESS STEEL	HUB & SPIGOT TY-SEAL	SEPARATE DEEP SEAL P-TRAP, SECONDARY STRAINER, PROVIDE TRAP SEAL DEVICE
FD-C	FLOOR DRAIN	WADE 1100-ER5	CAST IRON	NICKEL BRONZE	HUB & SPIGOT TY-SEAL	PROVIDE CONDENSATE RIM GRATE, DEEP SEAL P-TRAP W/ TRAP PRIMER CONNECTION, PROVIDE TRAP SEAL DEVICE.
FS-A	FLOOR SINK	WADE 9140-1	CAST IRON	NICKEL BRONZE	HUB & SPIGOT TY-SEAL	12 x 12 SQ. TOP, SEPARATE DEEP SEAL TRAP, SEDIMENT BUCKET, FULL GRATE
FS-B	FLOOR SINK	WADE 9110-27	PORCELAIN COATED CAST IRON	NICKEL BRONZE	HUB & SPIGOT TY-SEAL	8"x8" SQ. TOP, SEPARATE DEEP SEAL P-TRAP, SEDIMENT BUCKET, COATED FULL GRATE
FS-C	FLOOR SINK	WADE 9170-27	PORCELAIN COATED CAST IRON	NICKEL BRONZE	HUB & SPIGOT TY-SEAL	16"x16" SQ. TOP, SEPARATE DEEP SEAL P-TRAP, SECIMENT BUCKET, 1/2 OR 3/4 COATED GRATE
FS-D	FLOOR SINK	WADE 9140-27	PORCELAIN COATED CAST IRON	NICKEL BRONZE		12"x12" SQ. TOP, SEPARATE DEEP SEAL P-TRAP, SECIMENT BUCKET, 1/2 OR 3/4 GRATE
TD-A	TRENCH DRAIN	GRATING PACIFIC SA-3618-EZ	POURED IN PLACE CONCRETE	STAINLESS STEEL	-	36"x18", SECONDARY STRAINER IN TRENCH, DEEP SEAL P-TRAP, FORM & POUR CONCRETE TRENCH TO FRAME & GRATE SPECIFICATIONS.

Energy Recovery Ventilator Schedule

MARK	SUPPLY FAN CFM	ESP	WATTS	EXHAUST FAN CFM	ESP	WATTS	COOLING DATA - WHEEL TOTAL EFFECTIVENESS	LATENT EFF	SENSIBLE EFF	E.A.T.	L.A.T.	HEATING DATA E.A.T.	L.A.T.	PREHEAT DATA VOLTAGE	KW	MBH	ELECTRICAL DATA - UNIT VOLTAGE	MCA	MOP	WEIGHT LBS	MANUFACTURER MODEL	REMARKS
ERV-1	650	0.5	970	610	0.5	970	67.7% 23.2 MBH	61.6%	74.3% 12.4 MBH	100/78	84/70	5/4.4	61 DB	230/3 60	4.5	15.35	230/3 60	18.7	25	423	SYSTEM AIR TOPVEX FR800-208-3-CAV ERV	MODULATING WHEEL FOR DEFROST, ROTATION SENSOR, DIRTY FILTER SENSORS, INDOOR MODEL, REMOTE MOUNTED CONTROL PANEL
ERV-2	600	0.5	970	610	0.5	970	67.7% 23.2 MBH	61.6%	74.3% 12.4 MBH	100/78	84/70	5/4.4	61 DB	230/3 60	4.5	15.35	230/3 60	18.7	25	423	SYSTEM AIR TOPVEX FR800-208-3-CAV ERV	MODULATING WHEEL FOR DEFROST, ROTATION SENSOR, DIRTY FILTER SENSORS, INDOOR MODEL, REMOTE MOUNTED CONTROL PANEL
ERV-3	900	0.5	1860	900	0.5	1860	72% 31.8 MBH	67%	77.3% 16.6 MBH	100/78	83/69	5/4.4	61 DB				230/3 60	6.8	15	564	SYSTEM AIR TOPVEX FR1600-208-3-CAV ERV	MODULATING WHEEL FOR DEFROST, ROTATION SENSOR, DIRTY FILTER SENSORS, INDOOR MODEL, REMOTE MOUNTED CONTROL PANEL
ERV-4	700	0.5	970	700	0.5	970	67.7% 23.2 MBH	61.6%	74.3% 12.4 MBH	100/78	84/70	5/4.4	61 DB	230/3 60	4.5	15.35	230/3 60	18.7	25	423	SYSTEM AIR TOPVEX FR800-208-3-CAV ERV	MODULATING WHEEL FOR DEFROST, ROTATION SENSOR, DIRTY FILTER SENSORS, INDOOR MODEL, REMOTE MOUNTED CONTROL PANEL

NOTES: 1. PROVIDE MERV 13 FILTERS ON SUPPLY AIR AND MERV 9 FILTERS ON EXTRACT AIR.

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
MECHANICAL SCHEDULES

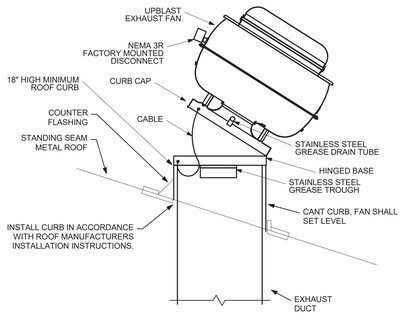
REVISIONS

NO.	DESCRIPTION	DATE

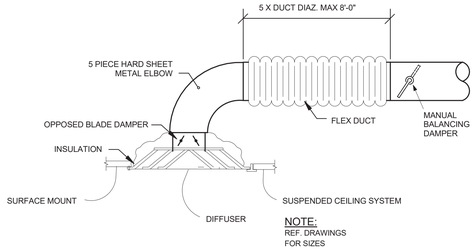
ISSUE DATE 03.04.21

PROJECT NO. T19055

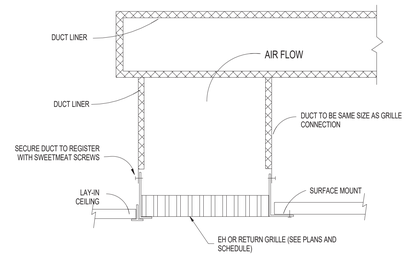
SHEET NO. M610



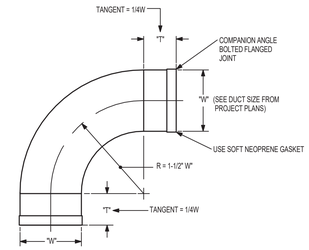
A M700 KITCHEN ROOF EXHAUST FAN
SCALE: NTS



B M700 SUPPLY DIFFUSER DETAIL
SCALE: NTS

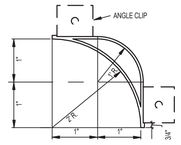


C M700 TYPICAL RETURN OR EXHAUST GRILLE DETAIL
SCALE: NTS

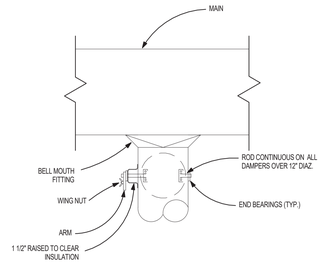


LONG RADIUS 90° ELBOW

D M700 TYPICAL ELBOW DETAIL
SCALE: NTS



E M700 TURNING VANE DETAIL
SCALE: NTS



F M700 ROUND BRANCH TAKEOFF DETAIL
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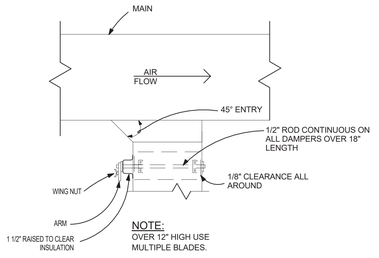

G M700 BRANCH TAKEOFF DETAIL
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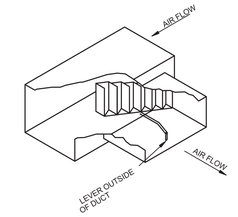
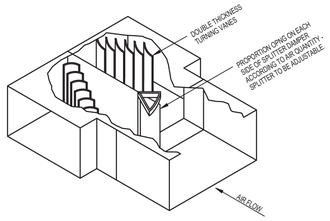


H M700 BRANCH TAKEOFF DETAIL
SCALE: NTS



I M700 SPLITTER DAMPER DETAIL
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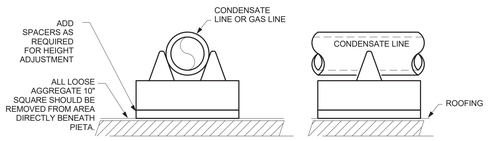
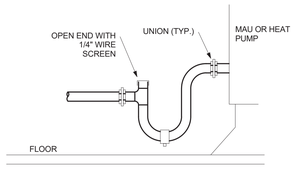
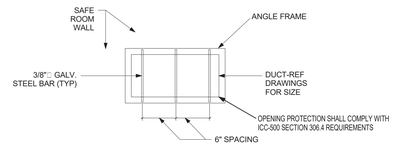


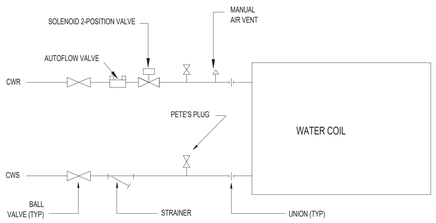
J M700 CONDENSATE PIPE SUPPORT DETAILS
SCALE: NTS



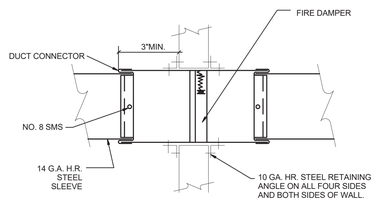
K M700 TYPICAL CONDENSATE DRAIN DETAIL
SCALE: NTS



L M700 DUCT PENETRATION @ SAFE ROOM DETAIL
SCALE: NTS



M M700 HEAT PUMP PIPING CONNECTION DETAIL
SCALE: NTS



N M700 FIRE DAMPER INSTALLATION DETAIL
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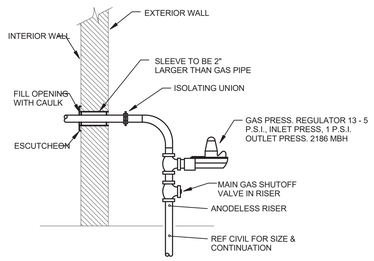
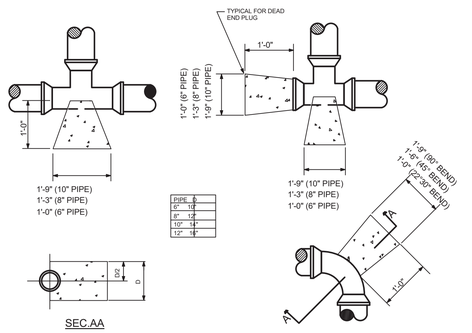


O M700 GAS PIPE ENTRANCE DETAIL
SCALE: NTS



PIPE	D
6"	12"
8"	12"
10"	14"
12"	16"

P M700 ANCHOR BLOCK DETAILS
SCALE: NTS

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03/04/2021
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ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
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M700

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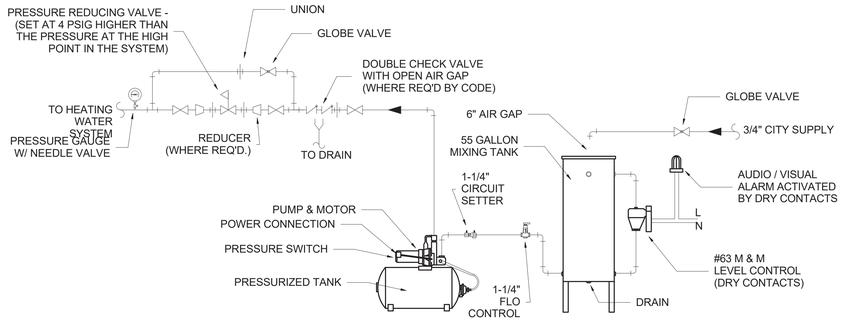
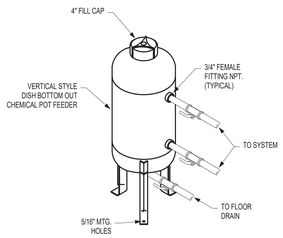


A M710 GLYCOL FEEDER SYSTEM DETAIL
SCALE: NTS



B M710 CHEMICAL POT FEEDER DETAIL
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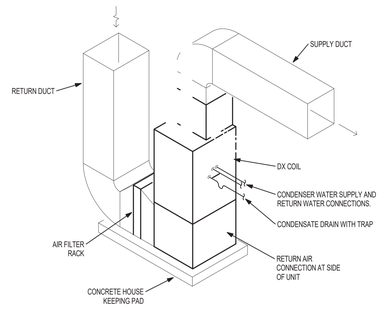

C M710 HEAT PUMP CONNECTIONS DETAIL
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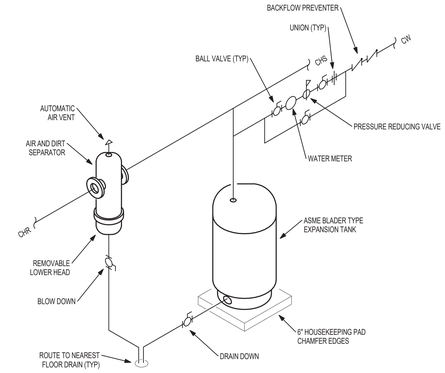
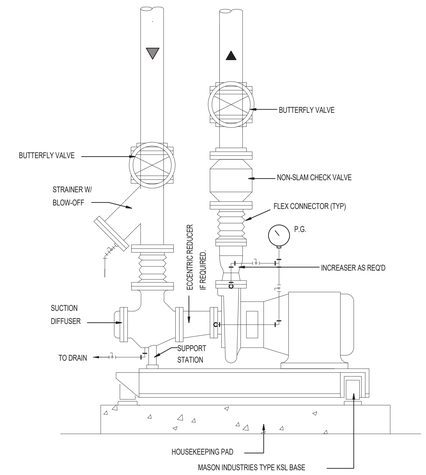


D M710 EXPANSION TANK PIPING DETAIL
SCALE: NTS



E M710 BASE MOUNTED PUMP DETAIL
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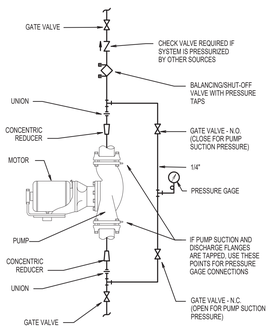
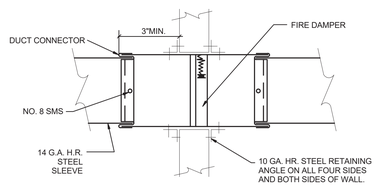


F M710 INLINE CENTRIFUGAL PUMP DETAIL
SCALE: NTS

G M710 WATER COIL PIPING DIAGRAM - MAU'S
SCALE: NTS



H M710 FIRE DAMPER INSTALLATION DETAIL
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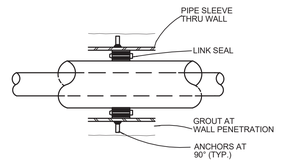

I M710 WALL SLEEVE DETAIL
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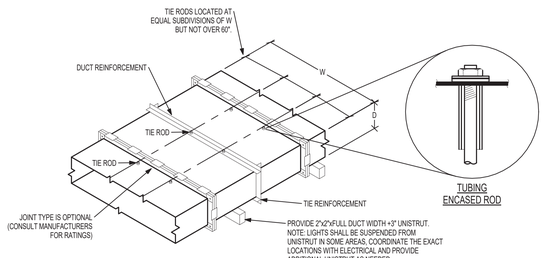

J M710 DUCT REINFORCEMENT DETAILS
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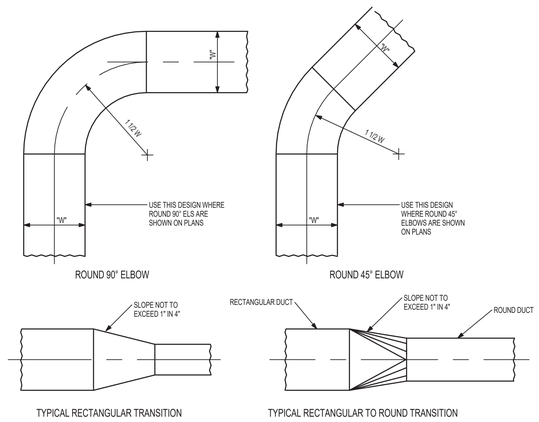
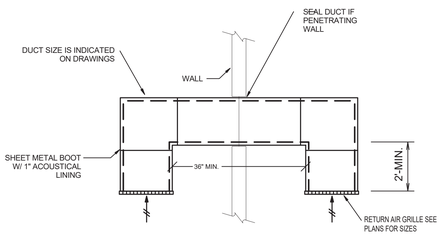


K M710 LOW PRESSURE DUCT FITTINGS
SCALE: NTS



L M710 ROOM TRANSFER DUCT DETAIL
SCALE: NTS

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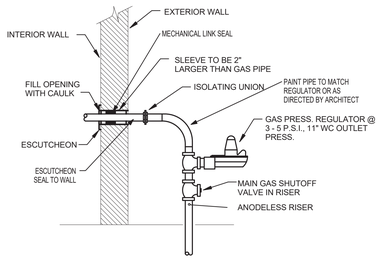

A M720 GAS PIPE ENTRANCE DETAIL
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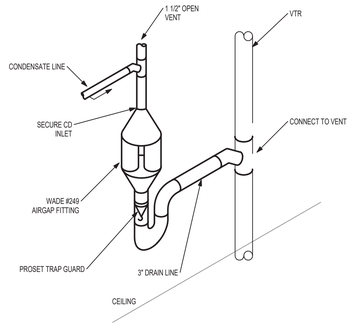

B M720 CONDENSATE DRAIN WITH AIRGAP DETAIL
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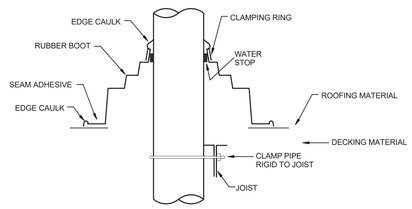
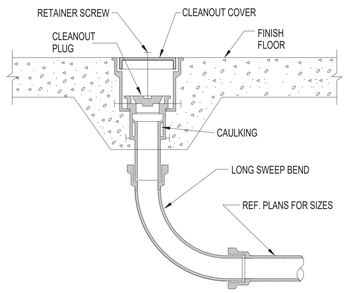


C M720 TYPICAL PIPE OR VENT THRU ROOF
SCALE: NTS



D M720 TYPICAL INTERIOR CLEANOUT DETAIL
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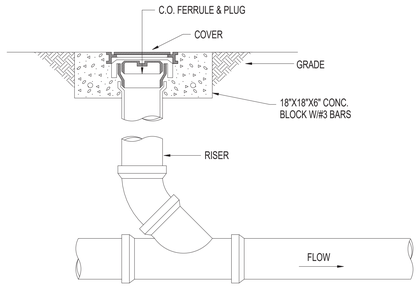
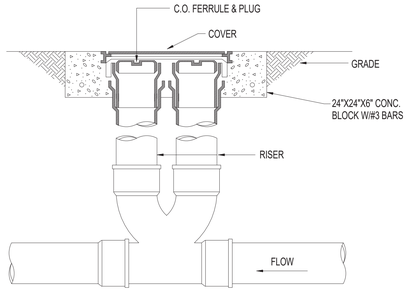
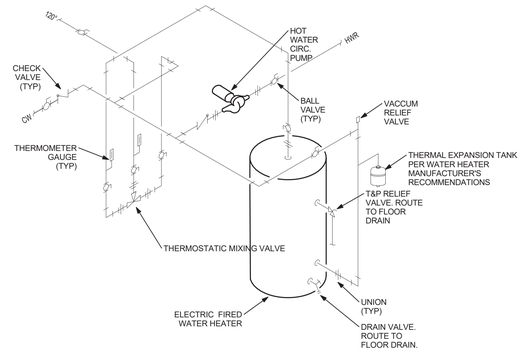


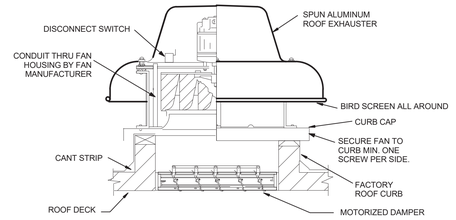
E M720 TYPICAL EXTERIOR CLEANOUT DETAIL
SCALE: NTS



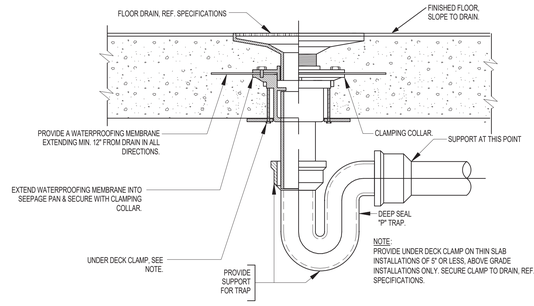
F M720 TYPICAL TWO-WAY CLEANOUT DETAIL
SCALE: NTS



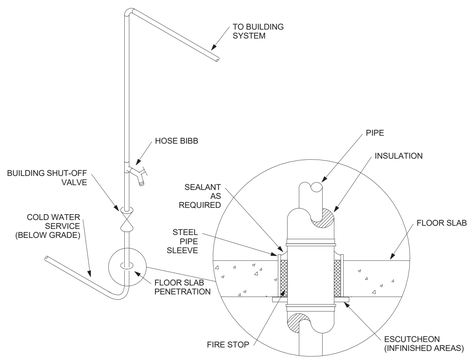
G M720 DOMESTIC HOT WATER PIPING ISOMETRIC
SCALE: NTS



H M720 ROOF EXHAUST FAN DETAIL
SCALE: NTS

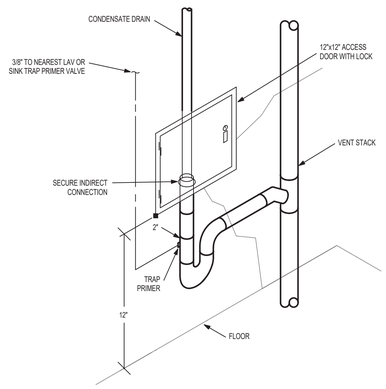


I M720 FLOOR DRAIN/SINK DETAIL
SCALE: NTS



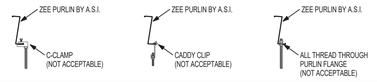
FLOOR PENETRATION

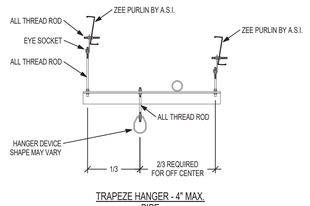
J M720 DOMESTIC WATER ENTRANCE DETAIL
SCALE: NTS



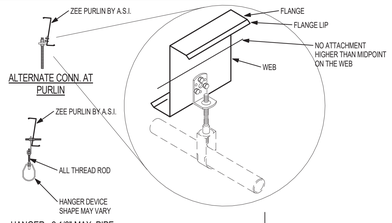
K M720 CONDENSATE DRAIN DETAIL
SCALE: NTS

THE FOLLOWING ARE UNACCEPTABLE CONNECTIONS FOR COLLATERAL LOAD HANGER ATTACHMENTS:

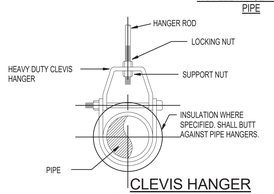




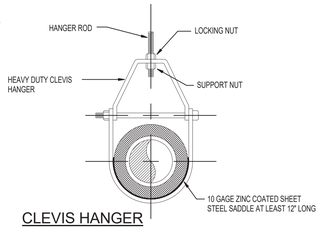
TRAPEZE HANGER - 4" MAX. PIPE



HANGER - 2 1/2" MAX. PIPE



CLEVIS HANGER
SINGLE HORIZONTAL RUNS
NO VAPOR BARRIER INSULATION



CLEVIS HANGER
SINGLE HORIZONTAL RUNS
WITH VAPOR BARRIER INSULATION

L M720 PIPE HANGER CONNECTION DETAILS
SCALE: NTS
(COLLATERAL LOAD HANGER CONNECTIONS - ALL MATERIALS BY OTHERS U.N.O.)

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Heat Pump with Factory Controls and Energy Recovery - Sequence of Operation

HP Interface:
Current HP status and operating conditions will be monitored by BAS through its factory provided HP controller communications interface port. The interface will monitor and trend the points as shown on the Points List.

Run Conditions - Scheduled:
The unit shall run according to a user definable BAS time schedule in the following modes:

- Occupied Mode: The unit shall maintain
  - o A 74°F (adj.) cooling setpoint
- o A 70°F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit shall maintain
  - o A 85°F (adj.) cooling setpoint.
- o A 55°F (adj.) heating setpoint.

Alarms shall be provided though BAS as follows:

- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Zone Setpoint Adjust:
The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor through factory provided HP controller and sensor.

Zone Unoccupied Override:
A timed local override control shall allow an occupant to override the schedule and place the unit into an occupied mode for an adjustable period of time. At the expiration of this time, control of the unit shall automatically return to the BAS schedule.

Zone Humidity:
The HP factory provided controller shall monitor the zone humidity via factory provided zone humidity sensor and use as required for economizer control (if present) or humidity control (if present).

Alarms shall be provided through BAS as follows:

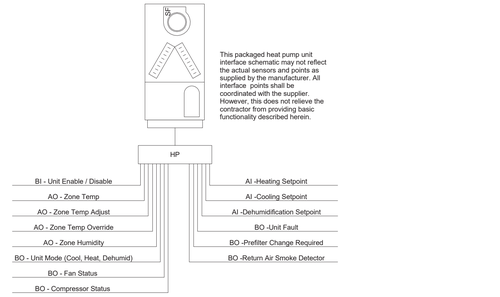
- High Return Air Humidity: If the return air humidity is greater than 70% (adj.).

Supply Air Smoke Detection:
The unit shall shut down and generate an alarm upon receiving a supply air smoke detector status.

Prefilter Differential Pressure Monitor:
The factory provided HP controller shall monitor the differential pressure across the prefilter.

Alarms shall be provided through BAS as follows:

- Prefilter Change Required: Prefilter differential pressure exceeds a user definable limit (adj.).



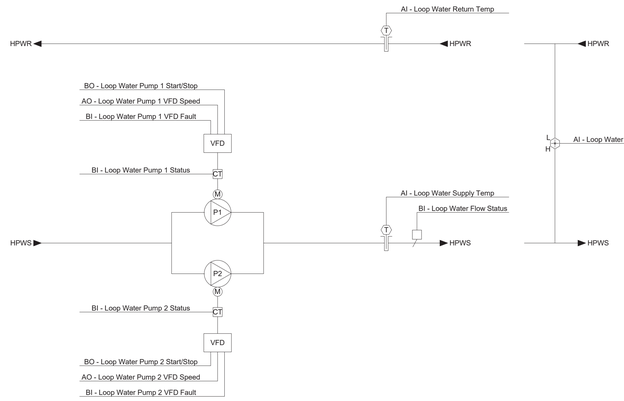
A M800 HP WITH FACTORY CONTROLLER – ELEMENTARY CONTROL DIAGRAM
SCALE: NOT TO SCALE

	Hardware Points				Software Points							
Point Name	**AI**	**AO**	**BI**	**BO**	**AI**	**AO**	**BI**	**BO**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show On Graphic**
Unit Enable/Disable							x						x
Zone Temp						x					x		x
Zone Temp Adjust						x							x
Zone Temp Override						x							x
Zone Humidity						x					x		x
Unit Mode (Cool, Heat, Dehumid)								x					x
Fan Status								x					x
Compressor Status								x			x		x
Schedule										x			
Heating Setpoint					x								x
Cooling Setpoint					x								x
Dehumidification Setpoint					x								x
High Zone Temp												x	x
Low Zone Temp												x	x
High Zone Humidity												x	x
Unit Fault								x				x	x
Prefilter Change Required								x				x	x
Return Air Smoke Detector								x				x	x
Totals	**0**	**0**	**0**	**0**	**3**	**4**	**1**	**6**	**0**	**1**	**3**	**6**	**20**
	Total Hardware (0)										**Total Software (24)**		

WSHP Loop Monitor and Pumps Sequence of Operation

Water Source Heat Pump Loop Monitor - Run Conditions:
The loop monitor shall run whenever:
• Any zone is occupied.
• OR a definable number of unoccupied zones need heating or cooling.
The following loop water conditions shall be monitored:
• Flow status.
• Supply temperature.
• Return temperature.
Alarms and a heat pump shutdown signal shall be generated upon any of the following loop water conditions:
• No Loop Flow.
• High Loop Water Supply Temp Shutdown: If the loop water supply temperature is greater than 92°F (adj.).
• Low Loop Water Supply Temp Shutdown: If the loop water supply temperature is less than 58°F (adj.).
Alarms shall be provided as follows:
• High Loop Water Supply Temp: If the loop water supply temperature is greater than 90°F (adj.).
• Low Loop Water Supply Temp: If the loop water supply temperature is less than 60°F (adj.).
Loop Water Pump Lead/Lag Operation:
The two loop water pumps shall operate in a lead/lag fashion.
• The lead pump shall run first.
• On failure of the lead pump, the lag pump shall run and the lead pump shall turn off.
• On decreasing loop water differential pressure, the lag pump shall stage on and run in unison with the lead pump to maintain loop water differential pressure setpoint.
The designated lead pump shall rotate upon one of the following conditions (user selectable):
• manually through a software switch
• if pump runtime (adj.) is exceeded
• daily
• weekly
• monthly
Alarms shall be provided as follows:
• Loop Water Pump 1
• Failure: Commanded on, but the status is off.
• Running in Hand: Commanded off, but the status is on.
• Runtime Exceeded: Status runtime exceeds a user definable limit.
• VFD Fault.

• Loop Water Pump 2
• Failure: Commanded on, but the status is off.
• Running in Hand: Commanded off, but the status is on.
• Runtime Exceeded: Status runtime exceeds a user definable limit.
• VFD Fault.
Loop Water Differential Pressure Control:
The controller shall measure loop water differential pressure and modulate the loop water pump VFDs in sequence to maintain its loop water differential pressure setpoint. The following setpoints are recommended values. All setpoints shall be field adjusted during the commissioning period to meet the requirements of actual field conditions. The controller shall modulate loop water pump speeds to maintain a loop water differential pressure of 12lbf/in2 (adj.). The VFD minimum speed shall not drop below 15% (adj.).
On dropping loop water differential pressure, the VFDs shall stage on and run to maintain setpoint as follows:
• The controller shall modulate the lead VFD to maintain setpoint.
• If the lead VFD speed is greater than a setpoint of 95% (adj.), the lag VFD shall stage on.
• The lag VFD shall ramp up to match the lead VFD speed and then run in unison with the lead VFD to maintain setpoint.
On rising loop water differential pressure, the VFDs shall stage off as follows:
• If the VFD speeds then drops back to 65% (adj.) below setpoint, the lag VFD shall stage off.
• The lead VFD shall continue to run to maintain setpoint.
Alarms shall be provided as follows:
• High Loop Water Differential Pressure: If the loop water differential pressure is 25% (adj.) greater than setpoint.
Low Loop Water Differential Pressure: If the loop water differential pressure is 25% (adj.) less than setpoint.



B M800 WATER SOURCE HEAT PUMP LOOP CONTROL DIAGRAM
SCALE: NOT TO SCALE

	Hardware Points				Software Points				
Point Name	**AI**	**AO**	**BI**	**BO**	**AV**	**BV**	**Sched**	**Trend**	**Alarm**	**Show On Graphic**
Loop Water Supply Temp	x							x		x
Loop Water Return Temp	x							x		x
Loop Water Differential Pressure	x							x		x
Loop Water Pump 1 VFD Speed		x						x		x
Loop Water Pump 2 VFD Speed		x						x		x
Loop Water Flow Status			x							x
Loop Water Pump 1 VFD Fault			x						x	x
Loop Water Pump 2 VFD Fault			x						x	x
Loop Water Pump 1 Status			x					x		x
Loop Water Pump 2 Status			x					x		x
Loop Water Pump 1 Start/Stop				x						x
Loop Water Pump 2 Start/Stop				x						x
Loop Water Differential Pressure Setpoint					x					x
No Loop Flow									x	
High Loop Water Supply Temp Shutdown									x	
Low Loop Water Supply Temp Shutdown									x	
High Loop Water Supply Temp									x	
Low Loop Water Supply Temp									x	
High Loop Water Differential Pressure									x	
Low Loop Water Differential Pressure									x	
Loop Water Pump 1 Failure									x	
Loop Water Pump 1 Running in Hand									x	
Loop Water Pump 1 Runtime Exceeded									x	
Loop Water Pump 2 Failure									x	
Loop Water Pump 2 Running in Hand									x	
Loop Water Pump 2 Runtime Exceeded									x	
Totals	**3**	**2**	**5**	**2**	**1**	**0**	**0**	**7**	**15**	**13**
	Total Hardware (12)							**Total Software (23)**		

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
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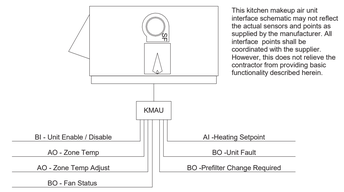
Kitchen MAU with Factory Controls - Sequence of Operation

MAU Interface:
Current MAU status and operating conditions will be monitored by BAS through its factory provided MAU controller communications interface port. The interface will monitor and trend the points as shown on the Points List.
Run Conditions - Switch:
The unit shall run as indicated by kitchen hood switch in the following modes:
• Occupied Mode: The unit shall maintain
o A 70°F (adj.) heating setpoint.
Alarms shall be provided though BAS as follows:
• Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).
Zone Setpoint Adjust:
The occupant shall be able to adjust the zone temperature heating setpoints at the zone sensor through factory provided MAU controller and sensor.
Prefilter Differential Pressure Monitor:
The factory provided MAU controller shall monitor the differential pressure across the prefilter.



This kitchen makeup air unit interface schematic may not reflect the actual sensors and points as supplied by the manufacturer. All interface points shall be coordinated with the supplier. However, this does not relieve the contractor from providing basic functionality described herein.

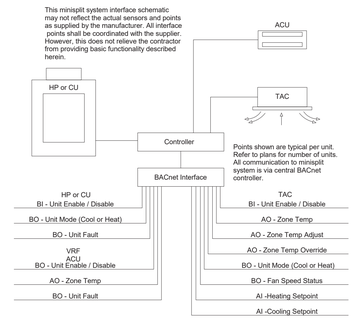
A M810 KITCHEN MAU CONTROL DIAGRAM
SCALE: NOT TO SCALE

	Hardware Points				Software Points								
Point Name	**AI**	**AO**	**BI**	**BO**	**AI**	**AO**	**BI**	**BO**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show On Graphic**
Unit Enable/Disable			x										x
Zone Temp						x					x		x
Zone Temp Adjust						x							x
Fan Status								x					x
Heating Setpoint					x								x
Low Zone Temp												x	x
Unit Fault								x				x	x
Prefilter Change Required								x				x	x
Totals	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**3**	**0**	**1**	**1**	**3**	**8**
			Total Hardware (1)								**Total Software (11)**		

Minisplit Sequence of Operation

Minisplit Interface:
Current unit status and operating conditions will be monitored by BAS through its factory provided unit controller communications interface port. The interface will monitor and trend the points as shown on the Points List.
Run Conditions - Scheduled:
The unit shall run according to a user definable BAS time schedule in the following modes:
• Occupied Mode: The unit shall maintain
o A 74°F (adj.) cooling setpoint
o A 70°F (adj.) heating setpoint.
• Unoccupied Mode (night setback): The unit shall maintain
o A 85°F (adj.) cooling setpoint.
o A 55°F (adj.) heating setpoint.
Alarms shall be provided though BAS as follows:
• High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
• Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).
Zone Setpoint Adjust:
The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor through factory provided unit controller and sensor.
Zone Unoccupied Override:
A timed local override control shall allow an occupant to override the schedule and place the unit into an occupied mode for an adjustable period of time. At the expiration of this time, control of the unit shall automatically return to the BAS schedule.

This minisplit system interface schematic may not reflect the actual sensors and points as supplied by the manufacturer. All interface points shall be coordinated with the supplier. However, this does not relieve the contractor from providing basic functionality described herein.



B M810 MINISPLIT CONTROL DIAGRAM
SCALE: NOT TO SCALE

	Hardware Points				Software Points								
Point Name	**AI**	**AO**	**BI**	**BO**	**AI**	**AO**	**BI**	**BO**	**Loop**	**Sched**	**Trend**	**Alarm**	**Show On Graphic**
TAC - Indoor Unit (Typical per Unit)													
Unit Enable/Disable							x						x
Zone Temp						x					x		x
Zone Temp Adjust						x							x
Zone Temp Override						x							x
Unit Mode (Cool or Heat)								x					x
Fan Speed Status								x					x
Unit Fault								x				x	x
Schedule										x			
Heating Setpoint					x								x
Cooling Setpoint					x								x
High Zone Temp												x	x
Low Zone Temp												x	x
HP or CU - Outdoor Unit (Typical per Unit)													
Unit Enable/Disable							x						x
Unit Mode (Cool or Heat)								x					x
Unit Fault								x				x	x
Totals	**0**	**0**	**0**	**0**	**2**	**3**	**1**	**2**	**0**	**1**	**1**	**6**	**11**
			Total Hardware (0)								**Total Software (16)**		

Emergency Ventilation Exhaust Fans - Sequence of Operation

Run Conditions:
The emergency ventilation fan(s) controller shall be provided with emergency power and shall run both EF-1 and EF-2 as follows.

Emergency Ventilation Switch - SW-1:
The controller shall monitor the status of the emergency ventilation switch SW-1 and responded accordingly:

- "On" Position: Both EF-1 and EF-2 shall run at their respective scheduled airflow.
- "Off" Position: EF-1 shall operate according to a user definable schedule. EF-2 shall be off.

Fan - EF-1:
The fan shall run according to a user definable schedule OR when commanded by the controller via switch SW-1

Exhaust Air Damper 1:
The exhaust air damper shall open anytime the EF-1 runs and shall close anytime EF-1 stops. Exhaust fan shall not be allowed to start until the damper is fully open. The exhaust air damper shall close 10 seconds (adj.) after the fan stops.

Alarms shall be provided as follows:

- Damper Failure: Commanded open, but the status is closed.
- Damper in Hand: Commanded closed, but the status is open.

Fan - EF-2: (Emergency Operation)
The fan shall run when commanded by the controller via switch SW-1.

Exhaust Air Damper 2:
The exhaust air damper shall open anytime the EF-2 runs and shall close anytime EF-2 stops. Exhaust fan shall not be allowed to start until the damper is fully open. The exhaust air damper shall close 10 seconds (adj.) after the fan stops.

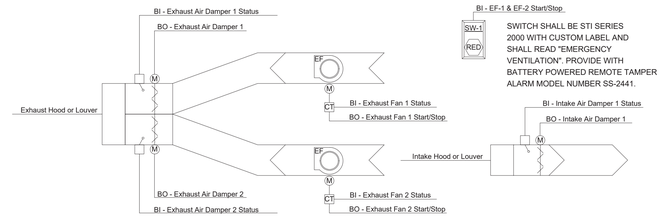
Alarms shall be provided as follows:

- Damper Failure: Commanded open, but the status is closed.
- Damper in Hand: Commanded closed, but the status is open.

Fan Status:
The controller shall monitor each fans status and relay the following information to the BAS.

Alarms shall be provided as follows:

- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).



C M810 EMERGENCY VENTILATION FAN(S) CONTROL DIAGRAM
SCALE: NOT TO SCALE

	Hardware Points				Software Points					
Point Name	**AI**	**AO**	**BI**	**BO**	**AV**	**BV**	**Sched**	**Trend**	**Alarm**	**Show On Graphic**
Emergency Ventilation Switch			X					X		X
Exhaust Fan 1 Status			X					X		X
Exhaust Fan 1 Start/Stop				X				X		X
Exhaust Fan 1 Failure									X	
Exhaust Fan 1 in Hand									X	
Exhaust Fan 1 Runtime Exceeded									X	
Exhaust Air Damper 1				X				X		X
Exhaust Air Damper 1 Status			X							
Exhaust Air Damper 1 Failure									X	
Exhaust Air Damper 1 in Hand									X	
Exhaust Fan 2 Status			X					X		X
Exhaust Fan 2 Start/Stop				X				X		X
Exhaust Fan 2 Failure									X	
Exhaust Fan 2 in Hand									X	
Exhaust Fan 2 Runtime Exceeded									X	
Exhaust Air Damper 2				X				X		X
Exhaust Air Damper 2 Status			X							
Exhaust Air Damper 2 Failure									X	
Exhaust Air Damper 2 in Hand									X	
Intake Air Damper 1				X				X		X
Intake Air Damper 1 Status			X							
Intake Air Damper 1 Failure									X	
Intake Air Damper 1 in Hand									X	
Totals	**0**	**0**	**6**	**5**	**0**	**0**	**0**	**8**	**12**	**8**
			Total Hardware (11)						**Total Software (20)**	

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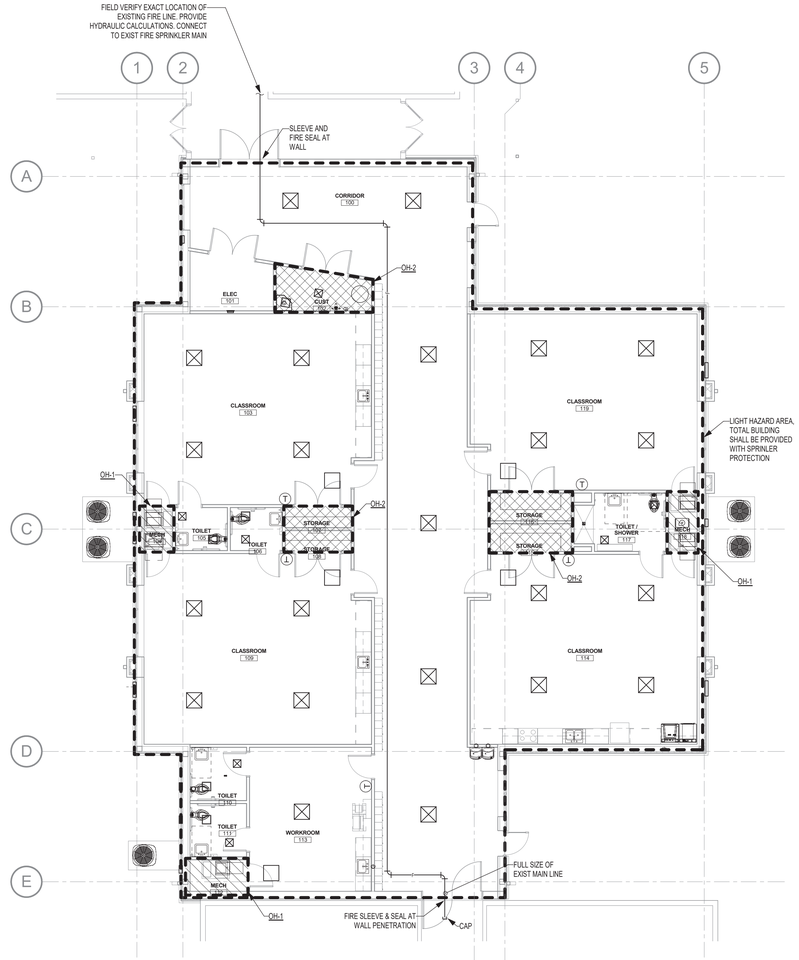

A ELEMENTARY SCHOOL CLASSROOM ADDITION FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

FIRE PROTECTION NOTES:

1. THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF SHOP DRAWINGS AND HYDRAULIC CALCULATIONS.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE. CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
4. PROVIDE ACCESS PANELS IN WALLS OR SUSPENDED CEILINGS OTHER THAN LAY-IN TYPE FOR ALL VALVES, TRAPS, FLOW SWITCHES, CONTROLS, ETC. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. SPRINKLER HEADS SHALL BE UPRIGHT IN AREAS WITHOUT CEILINGS AND CONCEALED TYPE IN AREAS WITH CEILINGS.
6. ALL WORK SHALL COMPLY WITH THE 2015 INTERNATIONAL FIRE CODE, NFPA 13, AND THE LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL VERIFY ALL FIRE DEPARTMENT CONNECTIONS WITH THE LOCATION AUTHORITY HAVING JURISDICTION.
7. CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO APPROVAL BY ARCHITECT/ENGINEER.
8. COORDINATE SPRINKLER HEAD AND PIPING LOCATIONS TO AVOID CONFLICT WITH LIGHTS, GRILLES, AND DUCTWORK. SPRINKLER HEADS SHALL BE CENTERED IN 24"x24" TILES BOTH WAYS. SPRINKLER HEADS SHALL BE CENTERED IN 48"x24" CEILING TILES BOTH DIRECTIONS.
9. COORDINATE ROUTING WITH ALL OTHER TRADES TO MAINTAIN CEILING ELEVATION INDICATED BY ARCHITECT.
10. COORDINATE SPRINKLER HEAD LOCATIONS TO AVOID CONFLICT WITH LIGHTS, GRILLES, AND DUCTWORK.
11. STORAGE CLOSETS SHALL BE CLASSIFIED AS ORDINARY HAZARD GROUP 2, 0.20 GPM PER SQ. FT. MECHANICAL/ELECTRICAL SPACES AND JANITOR CLOSETS SHALL BE CLASSIFIED AS ORDINARY HAZARD GROUP 1, 0.15 GPM PER SQ. FT. ALL OTHER AREAS UNLESS OTHERWISE NOTED SHALL BE CLASSIFIED AS LIGHT HAZARD, 0.10 GPM PER SQ. FT.
12. CONTRACTOR SHALL MAINTAIN REQUIRED CODE CLEARANCES FROM ALL ELECTRICAL EQUIPMENT.
13. SPRINKLER PIPE SHALL BE PAINTED IN ALL AREAS NOT CONCEALED. CONTRACTOR SHALL COORDINATE WITH PANTING CONTRACTOR AND INSURE ALL EXPOSED PIPING IS PAINTED. PAINTING SHALL BE BY THE CONTRACTOR'S PAINTING TRADE PERSONNEL. ALL PAINTING SHALL BE IN ACCORDANCE WITH DIVISION 9. SPRINKLER HEADS SHALL NOT BE FIELD PAINTED, ANY HEADS FIELD PAINTED SHALL BE REPLACED BY THE CONTRACTOR.
14. SPRINKLER HEADS IN MECHANICAL AREAS OR GYMNASIUMS SHALL HAVE HEAD GUARDS.
15. CONTRACTOR SHALL MAKE EVERY EFFORT TO CONCEAL ALL SPRINKLER PIPING.
16. SPRINKLER CONTRACTOR SHALL COORDINATE WITH FIRE ALARM CONTRACTOR, PRIOR TO BID AND SHALL INFORM THE ALARM CONTRACTOR OF ALL ITEMS THAT REQUIRE CONNECTION TO THE FIRE ALARM SYSTEM. COORDINATE WITH ALL OTHER TRADES TO AVOID CONFLICT.
17. CONTRACTOR SHALL ROUTE SPRINKLER PIPING AS TIGHTLY AS POSSIBLE TO STRUCTURAL IN ALL AREAS.
18. CONTRACTOR SHALL COORDINATE ROUTING OF SPRINKLER PIPING WITH DUCT WORK. SPRINKLER PIPING MUST BE ROUTED TO CLEAR DUCTWORK. IF THE SPRINKLER LINE MUST BE OFFSET TO CLEAR DUCTWORK THE SPRINKLER CONTRACTOR MUST OFFSET AND INSTALL AUXILIARY DRAIN.
19. CONTRACTOR SHALL PROVIDE NFPA REQUIRED SIGNAGE FOR FLOOR CONTROL ASSEMBLIES, INSPECTOR TEST AND RISER.

FIRE PROTECTION LEGEND:

- LIGHT HAZARD
- ORDINARY HAZARD GROUP 1
- ORDINARY HAZARD GROUP 2

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ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
ELEMENTARY SCHOOL ADDITION FIRE SPRINKLER PLAN

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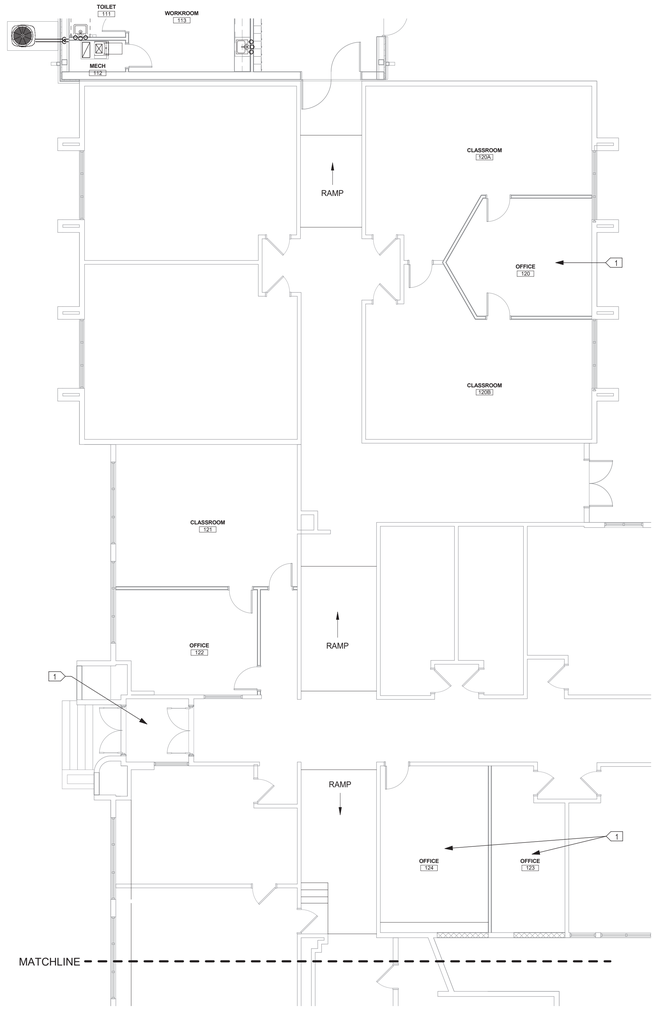
FIRE PROTECTION NOTES:

1. REFER TO M911 FOR FIRE PROTECTION GENERAL NOTES.

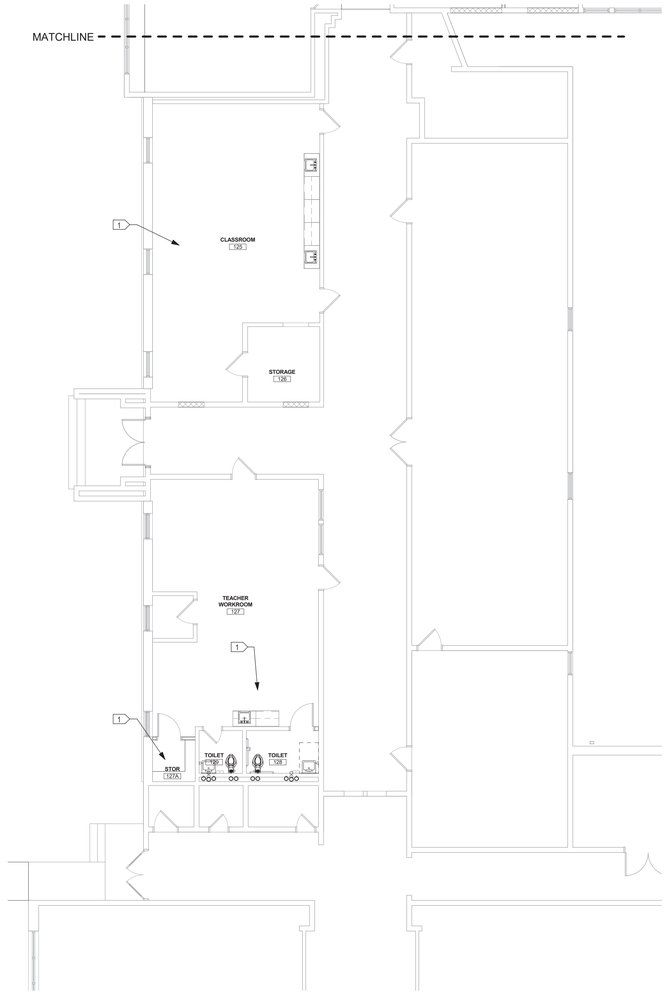
KEYED NOTES: (#)

1. FIELD VERIFY EXACT LOCATION AND LAYOUT OF EXISTING FIRE SPRINKLER SYSTEM. REVISE TO MATCH NEW FLOOR PLAN.



A ELEMENTARY SCHOOL CLASSROOM RENOVATION
AREA B FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"



B ELEMENTARY SCHOOL CLASSROOM RENOVATION
AREA A FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION

ELEMENTARY SCHOOL RENOVATION A & B FIRE SPRINKLER PLAN

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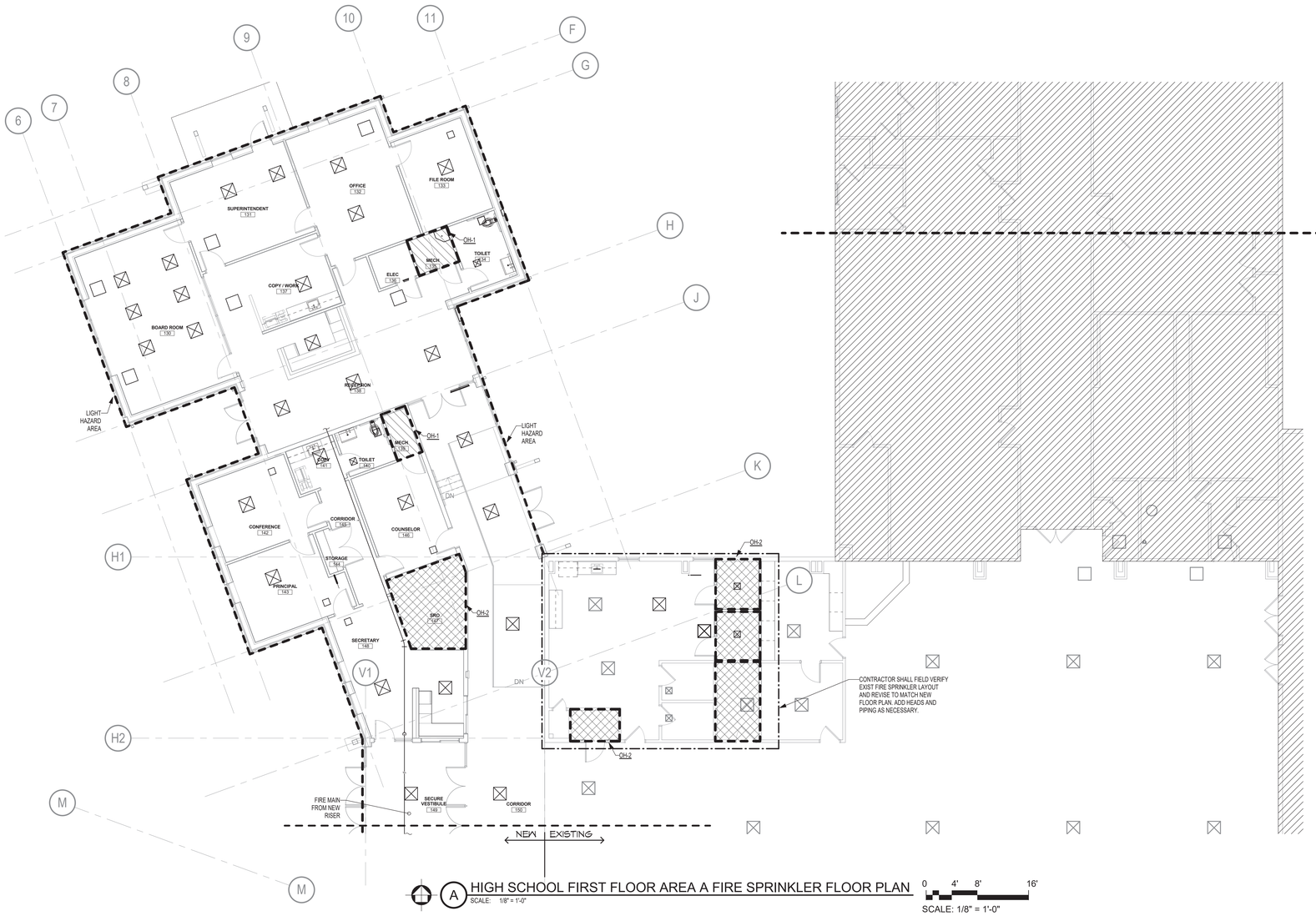

A HIGH SCHOOL FIRST FLOOR AREA A FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

FIRE PROTECTION NOTES:

1. THE CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE SET OF SHOP DRAWINGS AND HYDRAULIC CALCULATIONS.
2. NEW CONSTRUCTION: IN THE NEW ADDITION, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS.
3. RENOVATION: IN THE EXISTING BUILDING, CEILING HEIGHTS ESTABLISHED ON THE DRAWINGS ARE TO BE MAINTAINED. NEW SPRINKLER, ELECTRICAL, PLUMBING AND/OR MECHANICAL PIPING AND EQUIPMENT SHALL BE COORDINATED TO MAINTAIN SPECIFIED CEILING HEIGHTS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE NECESSARY TRADES TO MAINTAIN CEILING HEIGHTS. IF CONFLICTS ARISE BETWEEN THE EXISTING STRUCTURE AND NEW CONSTRUCTION, THE CONTRACTOR WILL TAKE THE NECESSARY MEASURES (IE: CORING BEAMS, REROUTING PIPING, ETC.) TO ENSURE THAT THE SPECIFIED CEILING HEIGHTS ARE MAINTAINED. THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL CONFLICTS AND SUGGESTED SOLUTIONS BEFORE THE CONTRACTOR CORRECTS THE CONFLICT.
4. PROVIDE ACCESS PANELS IN WALLS OR SUSPENDED CEILINGS OTHER THAN LAY-IN TYPE FOR ALL VALVES, TRAPS, FLOW SWITCHES, CONTROLS, ETC. SUBMIT LOCATIONS OF ACCESS PANELS IN CEILINGS TO ARCHITECT FOR REVIEW AND COORDINATION.
5. SPRINKLER HEADS SHALL BE UPRIGHT IN AREAS WITHOUT CEILINGS AND CONCEALED TYPE IN AREAS WITH CEILINGS.
6. ALL WORK SHALL COMPLY WITH THE 2015 INTERNATIONAL FIRE CODE, NFPA 13, AND THE LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL VERIFY ALL FIRE DEPARTMENT CONNECTIONS WITH THE LOCATION AUTHORITY HAVING JURISDICTION.
7. CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO APPROVAL BY ARCHITECT/ENGINEER.
8. COORDINATE SPRINKLER HEAD AND PIPING LOCATIONS TO AVOID CONFLICT WITH LIGHTS, GRILLES, AND DUCTWORK. SPRINKLER HEADS SHALL BE CENTERED IN 24"x24" TILES BOTH WAYS. SPRINKLER HEADS SHALL BE CENTERED IN 48"x24" CEILING TILES BOTH DIRECTIONS.
9. COORDINATE ROUTING WITH ALL OTHER TRADES TO MAINTAIN CEILING ELEVATION INDICATED BY ARCHITECT.
10. COORDINATE SPRINKLER HEAD LOCATIONS TO AVOID CONFLICT WITH LIGHTS, GRILLES, AND DUCTWORK.
11. STORAGE CLOSETS SHALL BE CLASSIFIED AS ORDINARY HAZARD GROUP 2. 0.20 GPM PER SQ. FT. MECHANICAL/ELECTRICAL SPACES AND JANITOR CLOSETS SHALL BE CLASSIFIED AS ORDINARY HAZARD GROUP 1, 0.15 GPM PER SQ. FT. ALL OTHER AREAS UNLESS OTHERWISE NOTED SHALL BE CLASSIFIED AS LIGHT HAZARD, 0.10 GPM PER SQ. FT.
12. CONTRACTOR SHALL MAINTAIN REQUIRED CODE CLEARANCES FROM ALL ELECTRICAL EQUIPMENT.
13. SPRINKLER PIPE SHALL BE PAINTED IN ALL AREAS NOT CONCEALED. CONTRACTOR SHALL COORDINATE WITH PANTING CONTRACTOR AND INSURE ALL EXPOSED PIPING IS PAINTED. PAINTING SHALL BE BY THE CONTRACTOR'S PAINTING TRADE PERSONNEL. ALL PAINTING SHALL BE IN ACCORDANCE WITH DIVISION 9. SPRINKLER HEADS SHALL NOT BE FIELD PAINTED, ANY HEADS FIELD PAINTED SHALL BE REPLACED BY THE CONTRACTOR.
14. SPRINKLER HEADS IN MECHANICAL AREAS OR GYMNASIUMS SHALL HAVE HEAD GUARDS.
15. CONTRACTOR SHALL MAKE EVERY EFFORT TO CONCEAL ALL SPRINKLER PIPING.
16. SPRINKLER CONTRACTOR SHALL COORDINATE WITH FIRE ALARM CONTRACTOR, PRIOR TO BID AND SHALL INFORM THE ALARM CONTRACTOR OF ALL ITEMS THAT REQUIRE CONNECTION TO THE FIRE ALARM SYSTEM. COORDINATE WITH ALL OTHER TRADES TO AVOID CONFLICT.
17. CONTRACTOR SHALL ROUTE SPRINKLER PIPING AS TIGHTLY AS POSSIBLE TO STRUCTURAL IN ALL AREAS.
18. CONTRACTOR SHALL COORDINATE ROUTING OF SPRINKLER PIPING WITH DUCT WORK. SPRINKLER PIPING MUST BE ROUTED TO CLEAR DUCTWORK. IF THE SPRINKLER LINE MUST BE OFFSET TO CLEAR DUCTWORK THE SPRINKLER CONTRACTOR MUST OFFSET AND INSTALL AUXILIARY DRAIN.
19. CONTRACTOR SHALL PROVIDE NFPA REQUIRED SIGNAGE FOR FLOOR CONTROL ASSEMBLIES, INSPECTOR TEST AND RISER.

FIRE PROTECTION LEGEND:

- LIGHT HAZARD
- ORDINARY HAZARD GROUP 1
- ORDINARY HAZARD GROUP 2

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KETCHUM PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
HIGH SCHOOL 1ST FLOOR AREA A FIRE SPRINKLER PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUE DATE
03.04.21

PROJECT NO.
T19055

SHEET NO.
M921

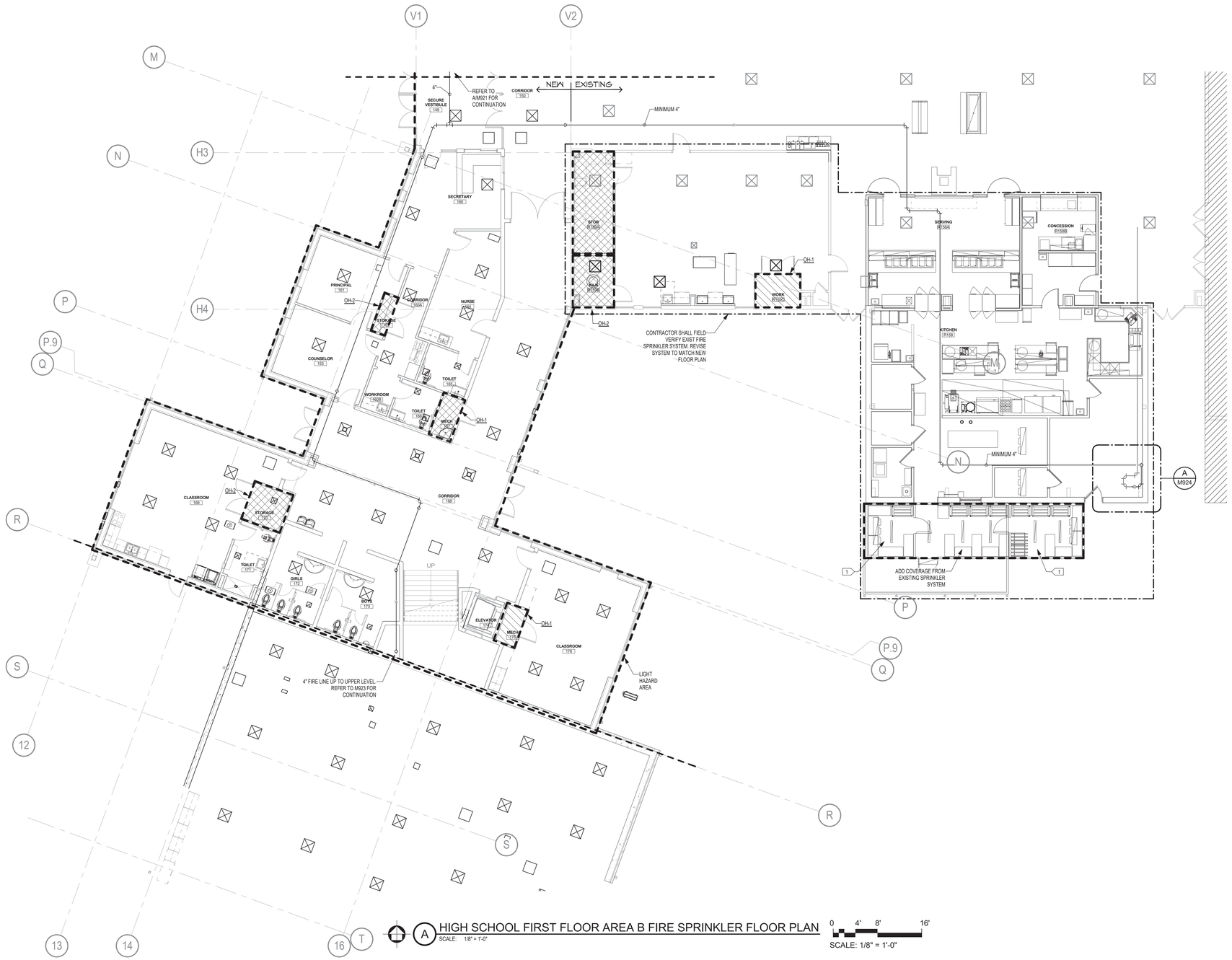
3/22/2021 12:31:31 PM

GENERAL NOTES:

1. REFER TO SHEET M921 FOR FIRE PROTECTION NOTES AND LEGEND.

KEYED NOTES: (F)

1. PROVIDE DRY TYPE FREEZE PROOF NITROGEN CHARGED SPRINKLER HEADS IN SYSTEM COOLER & FREEZER.



A HIGH SCHOOL FIRST FLOOR AREA B FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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HIGH SCHOOL 1ST FLOOR AREA B FIRE SPRINKLER PLAN

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PROJECT NO.
T19055

SHEET NO.
M922

GENERAL NOTES:

1. REFER TO SHEET M921 FOR FIRE PROTECTION NOTES.

KEYED NOTES:

1. PROVIDE ICC 500 APPROVED REINFORCING FOR SAFE ROOM SHELTER PENETRATIONS. REFER TO STRUCTURAL FOR REQUIREMENTS. SLEEVE AND FIRE SEAL FOR 2 HOUR RATING.

GENERAL STORM SHELTER NOTES:

1. ANY PENETRATION EXCEEDING 3 1/2" SQUARE INCHES OR 2 1/16" DIAMETER INTO OR OUT OF STORM SHELTERS SHALL BE PROVIDED WITH FEMA AND ICC-500 COMPLIANT REINFORCING. REF: STRUCTURAL.
2. ANY PENETRATION OF STORM SHELTER WALLS SHALL HAVE A MINIMUM 2 HR FIRE RATING MAINTAINED.

A HIGH SCHOOL SECOND FLOOR AREA B FIRE SPRINKLER FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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ELEMENTARY SCHOOL ADDITION & RENOVATION
HIGH SCHOOL ADDITION & RENOVATION
HIGH SCHOOL 2ND FLOOR AREA B FIRE SPRINKLER PLAN

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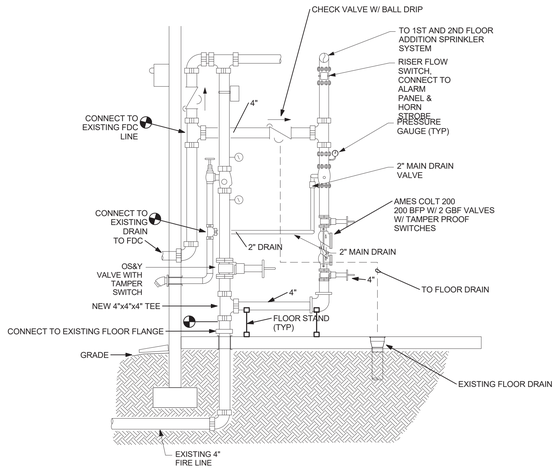
SHEET NO.
M923



1 REVISED ADDED FIRE RISERS DETAIL
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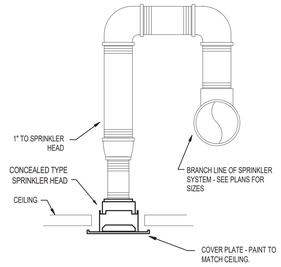

2 CONCEALED SPRINKLER HEAD DETAIL
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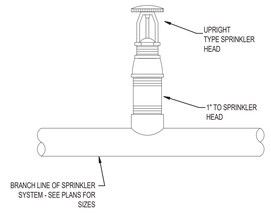

3 UPRIGHT SPRINKLER HEAD DETAIL
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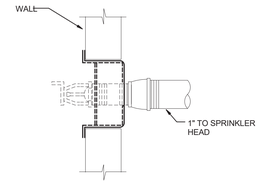

4 SPRINKLER HEAD DETAIL
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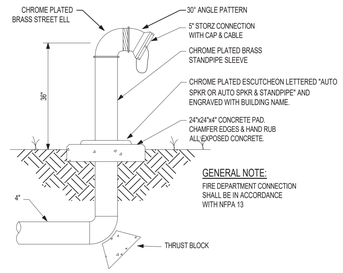

GENERAL NOTE:
FIRE DEPARTMENT CONNECTION SHALL BE IN ACCORDANCE WITH NFPA 13

5 FIRE DEPARTMENT CONNECTION DETAIL
SCALE: NTS
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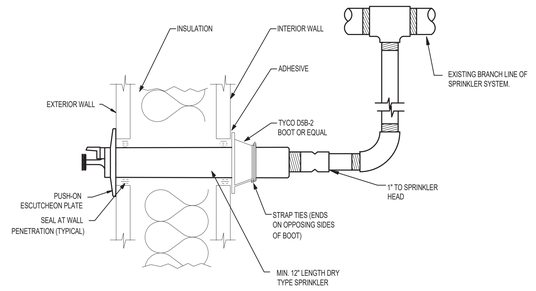

6 FREEZE PROOF SIDEWALL SPRINKLER HEAD DETAIL
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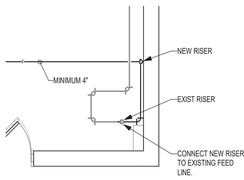

A ENLARGED HIGH SCHOOL FIRST FLOOR AREA B FIRE SPRINKLER FLOOR PLAN
SCALE: 1/4" = 1'-0"

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FIRE PROTECTION DETAILS

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