

**KEYED NOTES - NEW WORK**

- 1 PROVIDE (12) NEW 300 FOOT DEEP BORE HOLES, HDPE PIPING AND THERMAL ENHANCE GROUT WELL SYSTEM AS DETAILED AND PIPED FOR THE NEW KITCHEN AND CAFETERIA ADDITION SHOWN ON DRAWINGS. FIELD LOCATE NEW WELL FIELD AND AFTER COMPLETION OF THE WELL FIELD PROVIDE GPS LOCATIONS ON EACH BORE HOLE AND ZONE VALVE LOCATIONS TO OWNER. SEE THIS DRAWING FOR FLUSHING DIRECTIONS FOR BOTH WELL DRILLER AND MECHANICAL CONTRACTORS.
- 2 PROVIDE (12) NEW 300 FOOT DEEP BORE HOLES, HDPE PIPING AND THERMAL ENHANCE GROUT WELL SYSTEM AS DETAILED AND PIPED FOR THE NEW TWO STORY CLASSROOM ADDITION SHOWN ON DRAWINGS. FIELD LOCATE NEW WELL FIELD AND AFTER COMPLETION OF THE WELL FIELD PROVIDE GPS LOCATIONS ON EACH BORE HOLE AND ZONE VALVE LOCATIONS TO OWNER. SEE THIS DRAWING FOR FLUSHING DIRECTIONS FOR BOTH WELL DRILLER AND MECHANICAL CONTRACTORS.
- 3 PROVIDE DIRECTIONAL BORING METHOD TO RUN NEW WELL FIELD GEO SUPPLY AND RETURN PIPE MAINS UNDER EXISTING PAVED DRIVEWAY AND SIDEWALKS. PIPE SHALL BE INSTALLED WITH 48" MINIMUM DEPTH FROM TOP OF PIPE TO FINISH GRADE. BACK FILL IN LIFTS, COMPACT, BRING IN NEW TOP SOIL AND PROVIDE NEW GRASS SEED AS SPECIFIED.
- 4 PROVIDE NEW SUPPLY AND RETURN GEO PIPING FROM NEW WELL FIELD #2. PIPE TO BE BURIED AT 48" DEPTH FROM TOP OF PIPING TO FINISH GRADE. RUN NEW PIPING INTO NEW ADDITION TO SHOWN VALVE TREE. BACK FILL IN LIFTS, COMPACT, BRING IN NEW TOP SOIL AND PROVIDE NEW GRASS SEED AS SPECIFIED.

**GEOTHERMAL PIPING SYSTEM FLUSHING INSTRUCTIONS:**

1. GEO WELL CONTRACTOR (G.W.C.) SHALL COORDINATE WITH M.C. ON CONNECTIONS TO M.C.'S VALVE TREE AND POSITION VALVES TO ISOLATE THE INTERIOR LOOP PIPING SYSTEM. AFTER CONNECTING G.W.C. SHALL PROVIDE PUMP, FILTER, PIPING, CONTROLS AND WATER SUPPLY TO COMPLETE THE NUMBER OF FLUSHING PROCESSES OF THE LOOP PIPING SYSTEMS (2) FROM THE VALVE TREE OUT TO THE WELL FIELDS. FLUSHING VELOCITY SHALL BE MAINTAINED AT A LEVEL TO FULLY CLEAN OUT THE EXTERIOR LOOP PIPING SYSTEM OF ALL DEBRIS AND MEETS RECOGNIZED IGSHA REQUIREMENTS. AFTER FLUSHING OF EXTERIOR LOOP PIPING, G.W.C. SHALL PROVIDE A REPORT OF FLUSHING PROCEDURES WITH PRESSURES, GPM FLOWS AND VELOCITIES MAINTAINED AND PHOTOS OF REMOVED DEBRIS. FINAL FLUSHING WILL BE SCHEDULED WITH ENGINEER TO BE PRESENT FOR THE FINAL FLUSHING PROCESS. PROVIDE 72 HOUR NOTICE TO ENGINEER FOR FINAL FLUSH PERIOD DATE AND TIME.
2. MECHANICAL CONTRACTOR (M.C.) SHALL AFTER THE COMPLETION AND APPROVAL OF THE EXTERIOR LOOP PIPING FLUSHING, SHALL NOT CONNECT HOSES TO THE HEAT PUMPS, BUT COMPLETE CONNECTING HOSE KITS TOGETHER TO FLOW WATER BY PASSING THE HEAT PUMP UNITS AND BEGIN THE INTERIOR FLUSHING PROCESS WITH THE VALVE TREE. VALVES POSITIONED TO ONLY FLUSH THE INTERIOR LOOP PIPING SYSTEM. FLUSHING SHALL CONTINUE UNTIL WATER DISCHARGE IS CLEAN. PROVIDE 72 HOUR NOTICE TO ENGINEER FOR FINAL FLUSH PERIOD DATE AND TIME FOR THE ENGINEER TO BE PRESENT. AFTER APPROVAL OF THE INTERIOR AND EXTERIOR FLUSHING, THE M.C. SHALL REPOSITION VALVE TREE VALVES AND COMPLETE A FULL SYSTEM (INDOORS AND OUTDOORS) FLUSH WITH HOSE KITS STILL LOOPED IN BY-PASS OF THE HEAT PUMP UNITS AND CONTINUE FLUSHING UNTIL ALL DISCHARGE WATER IS CLEAR AND INSPECTION APPROVED. M.C. SHALL COMPLETE A CLEANING OF ALL PUMP STRAINERS AND HEAT PUMP UNITS STRAINERS. M.C. SHALL PROVIDE HOSES, VALVES, AND CONNECTIONS FOR LOOPING HEAT PUMP HOSE KITS TOGETHER AND WATER SUPPLY TO COMPLETE THE FLUSHING PROCESSES. HOSE KITS WILL NOT BE CONNECTED TO THE HEAT PUMP UNITS UNTIL FINAL FLUSHING HAS BEEN REVIEWED AND APPROVED. AFTER CONNECTING HOSES TO UNITS, M.C. SHALL CIRCULATE THE WATER WITH ALL CONTROL VALVES FULLY OPENED FOR A PERIOD OF TWO WEEKS AND RETURN TO COMPLETE A CLEANING OF ALL SYSTEMS STRAINERS. OPERATION OF HEAT PUMP UNITS DURING THE TWO WEEKS CIRCULATION WILL BE DETERMINED BASED ON THE TIME OF THE YEAR AND OCCUPANCY SCHEDULE OF THE NEW ADDITIONS BY THE A/E.

**1 SITE UTILITY PLAN - NEW WORK**  
 SCALE: 1" = 30'-0"  
 0 15' 30' 60' 90'

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**EDISON ELEMENTARY SCHOOL 2019 ADDITION**  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455

**ANDREW J. KEENE**  
 002-048350  
 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

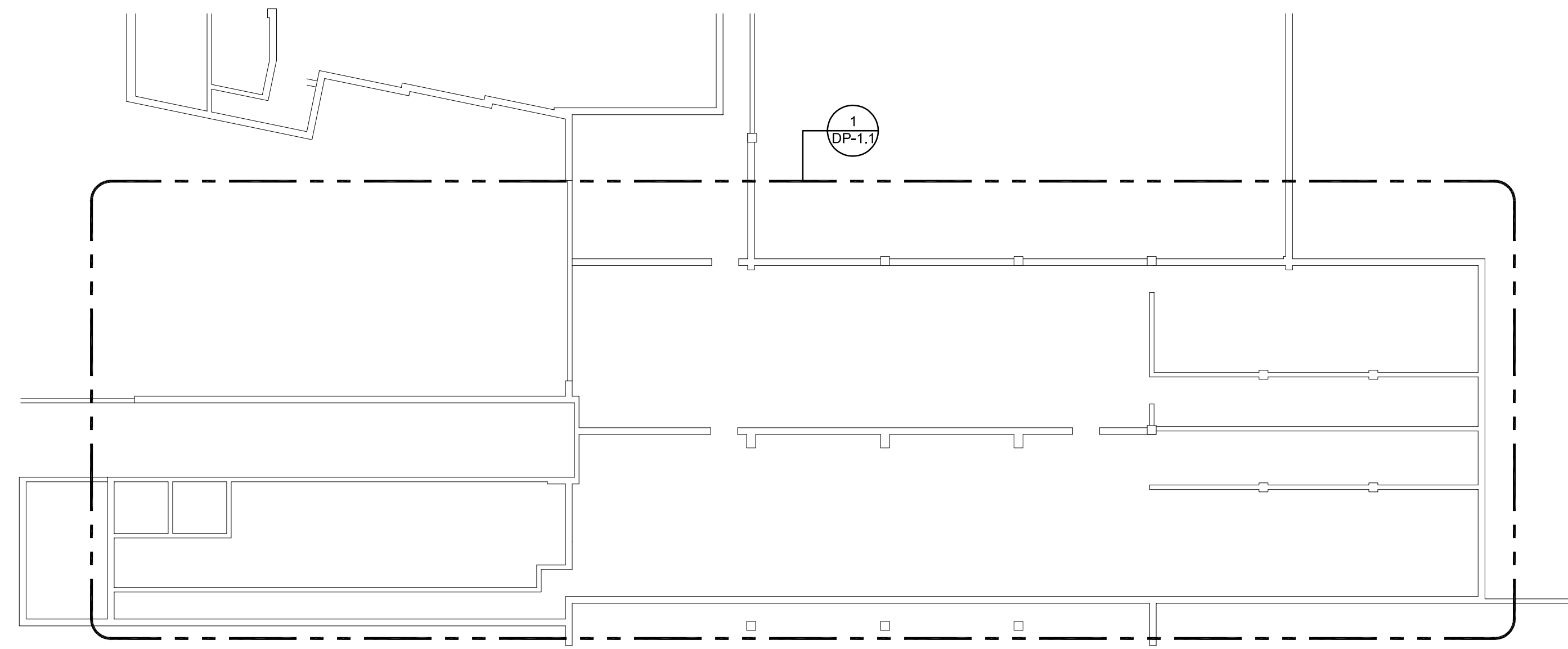
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**ELECTRICAL CRAWLSPACE PIPING PLAN - NEW WORK**

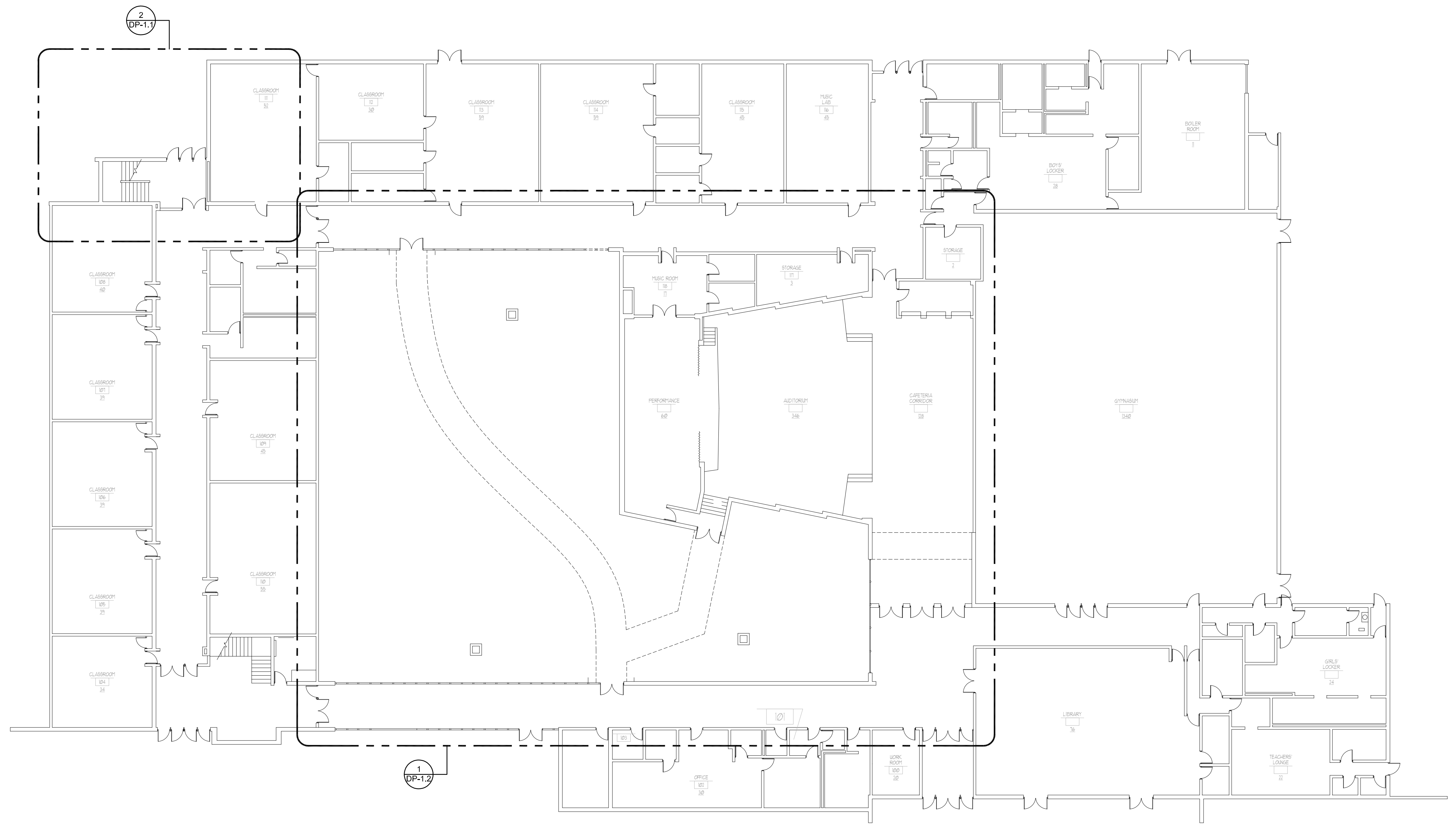
NO.	DATE	REVISIONS	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

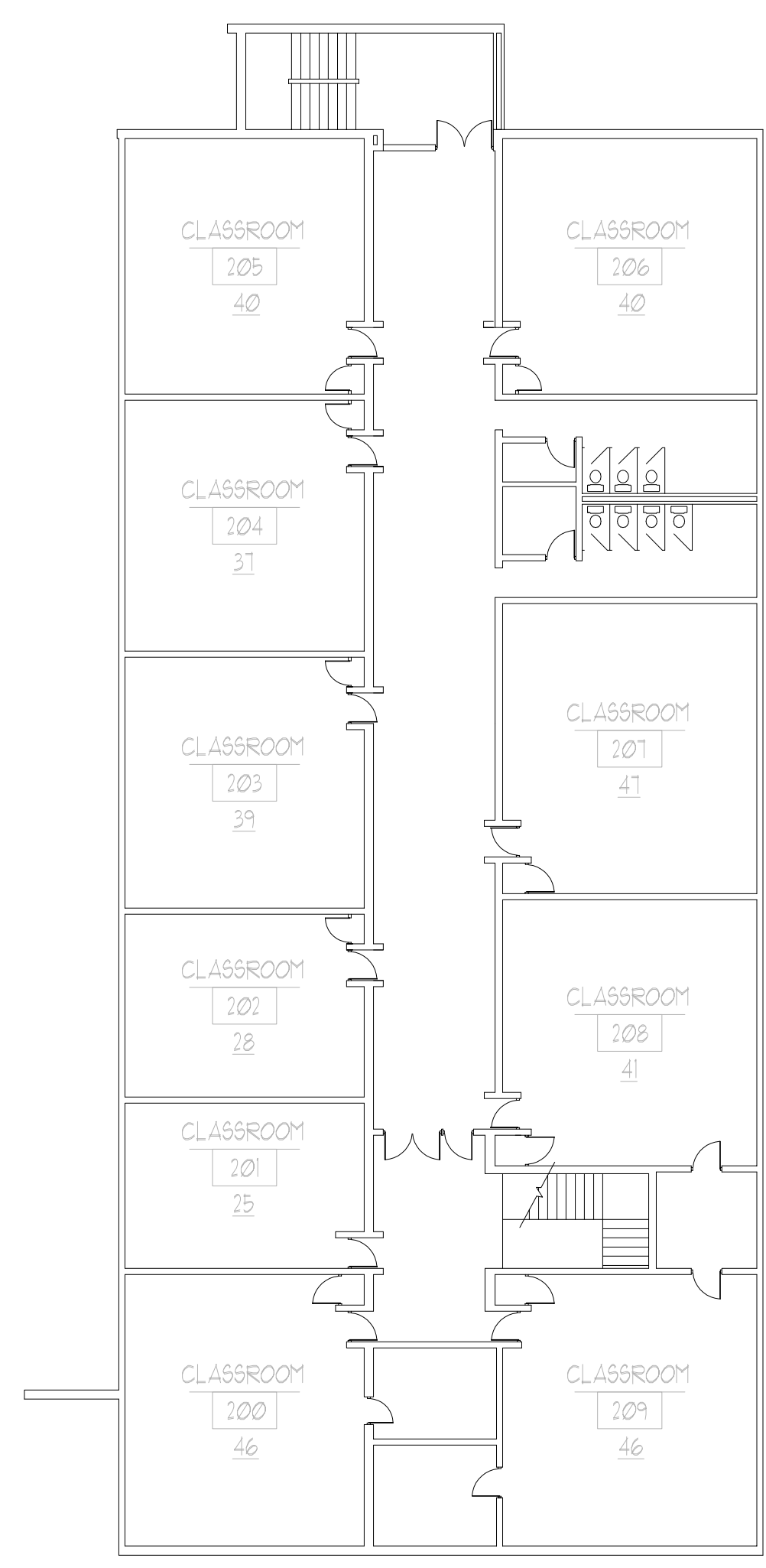
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 OF 91 SHEETS



**1 CRAWL SPACE PLUMBING PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'



**2 FIRST FLOOR PLUMBING PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'



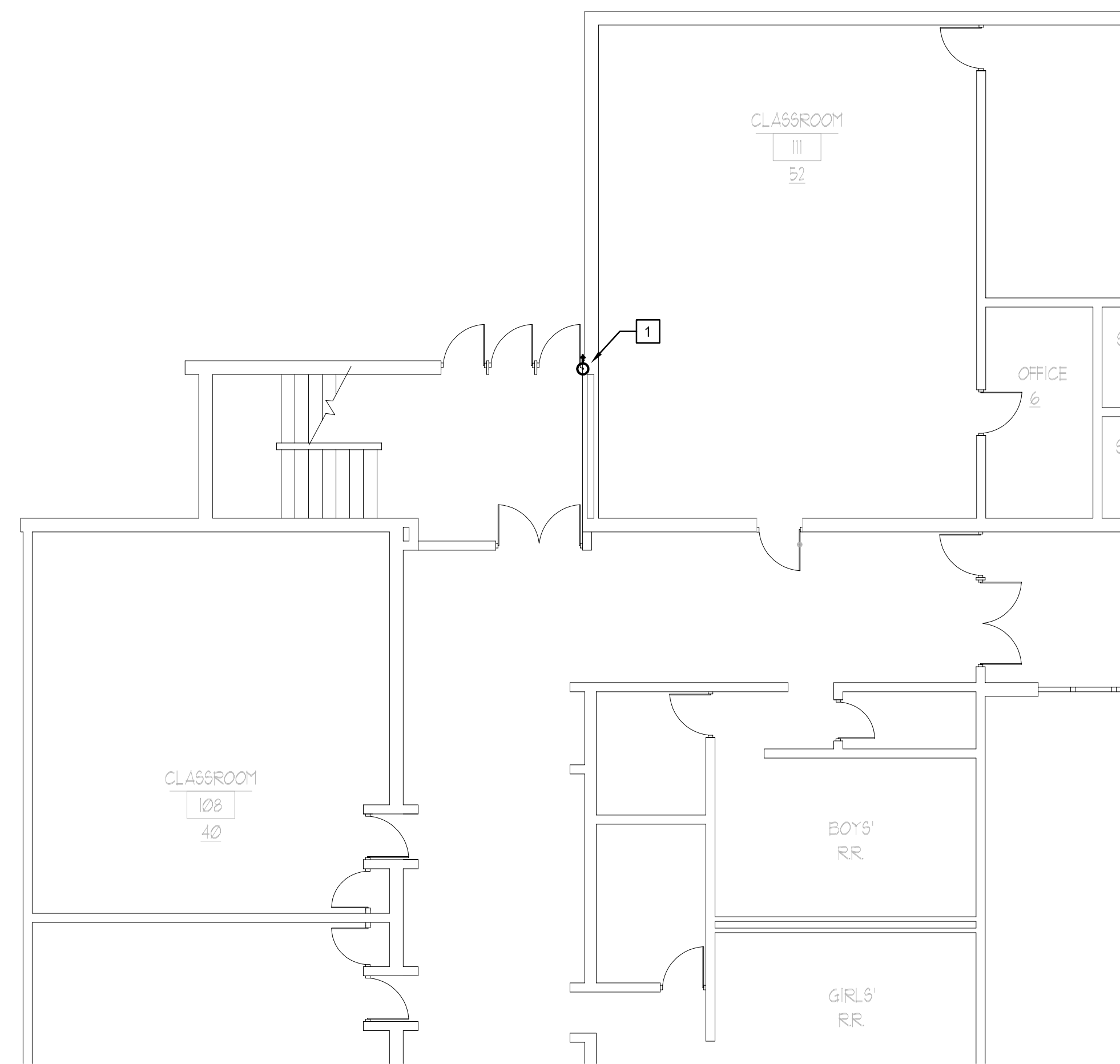
**3 SECOND FLOOR PLUMBING PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'

NO.	DATE	REMARKS

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KEYED DEMOLITION NOTES - (2/DP-1.1)

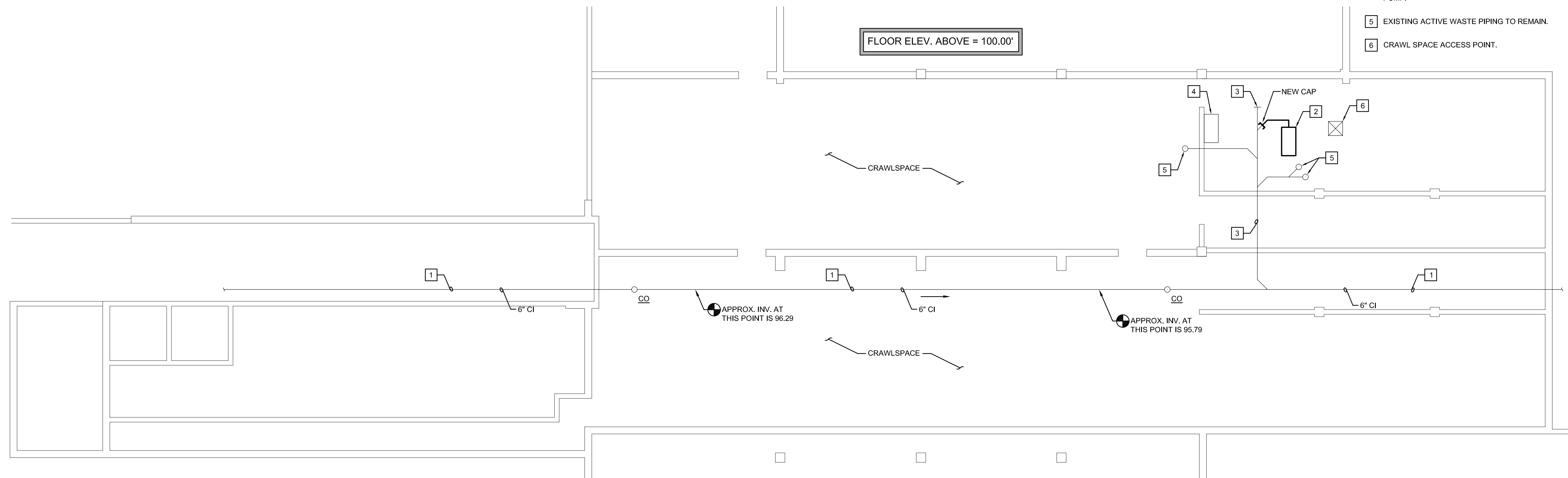


1 REMOVE EXISTING HOSE BIBB. REMOVE PIPING TO ABOVE CEILING AND CAP. ABANDON PIPING IN PLACE.

2 PARTIAL FIRST FLOOR PLUMBING PLAN - DEMOLITION  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

KEYED DEMOLITION NOTES - (1/DP-1.1)

- 1 EXISTING 6" CAST IRON WASTE MAIN TO REMAIN. SEE NEW WORK PLAN FOR CONNECTING NEW WASTE INTO EXISTING WASTE IN THE CRAWL SPACE.
- 2 EXISTING GREASE TRAP TO BE DISCONNECTED AND REMOVED. REMOVE WASTE AND VENT PIPING BACK TO WASTE AND VENT MAINS AND CAP.
- 3 EXISTING WASTE PIPE CLEAN OUT AND PIPING TO REMAIN.
- 4 EXISTING CONDENSATE PUMP TO BE DISCONNECTED AND REMOVED AFTER NEW CONDENSATE PUMP IS INSTALLED AND COMMISSIONED. SEE NEW WORK FOR NEW CONDENSATE PUMP.
- 5 EXISTING ACTIVE WASTE PIPING TO REMAIN.
- 6 CRAWL SPACE ACCESS POINT.



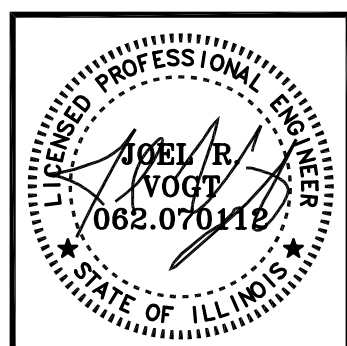
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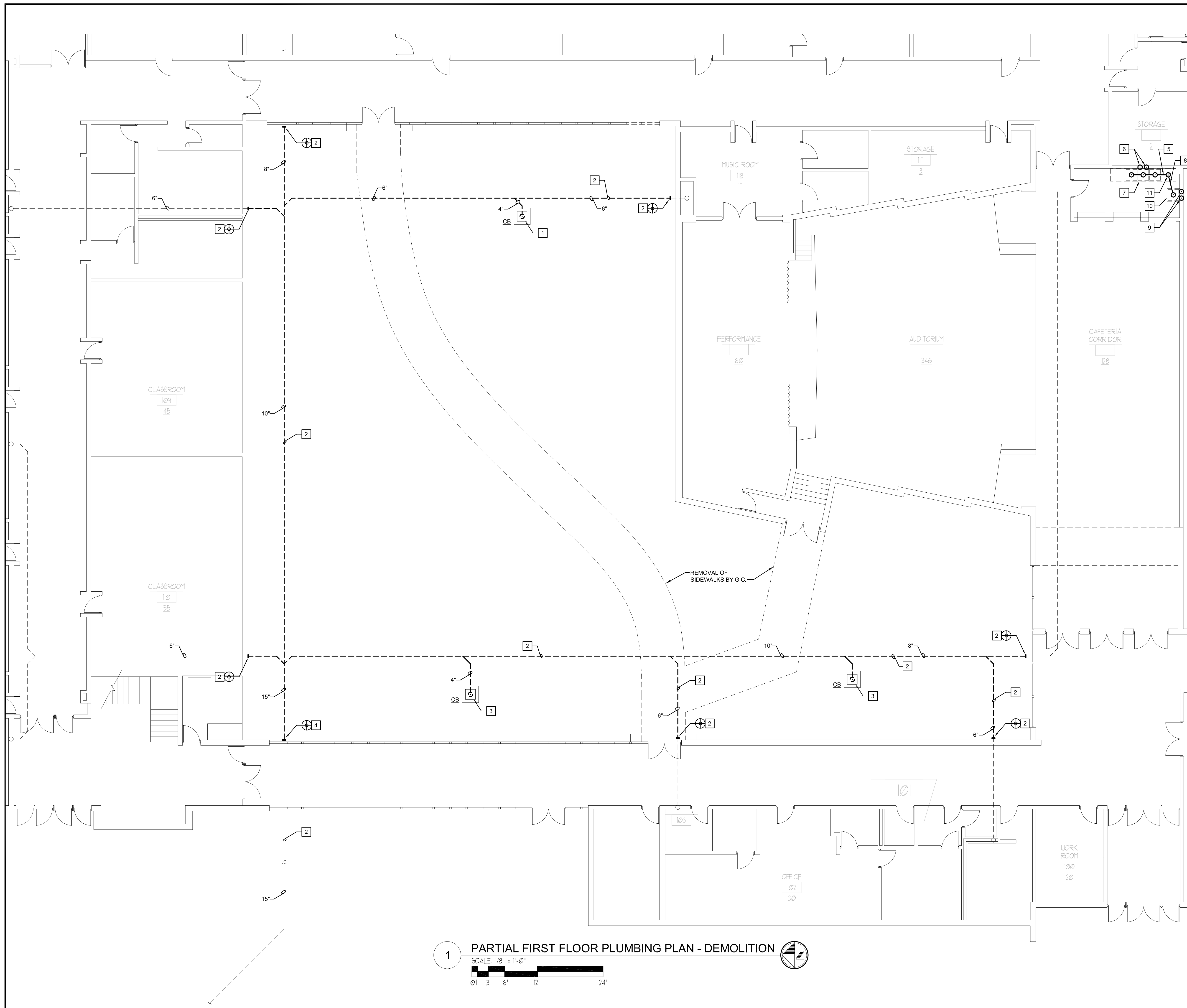


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PLUMBING CRAWLSPACE & FIRST FLOOR PIPING PLAN - DEMO

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PROJECT NO. 22750211  
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**KEYED NOTES - DEMOLITION**

- 1 DISCONNECT AND REMOVE EXISTING AREA DRAIN ASSEMBLY AND GRATE. REMOVE BRANCH STORM DRAIN PIPE BACK TO STORM MAIN.
- 2 DISCONNECT AND REMOVE EXISTING STORM MAIN PIPING AND BRANCHES SHOWN. REMOVE BRANCH MAINS TO EXISTING STORM PIPING LEAVING THE BUILDING WHERE SHOWN. PROVIDE FIELD MEASURED INVERTS OF THE MAIN DRAIN LINES AT LOCATES UNCOVERED DURING DEMOLITION AND NEW CONSTRUCTION AND PRESENT INFORMATION TO A/E TO BE ADDED TO AS BUILT DRAWINGS. SEE NEW WORK FOR RECONNECTING EXISTING STORM PIPES THAT LEAVE THE BUILDING.
- 3 DISCONNECT AND REMOVE EXISTING AREA DRAIN ASSEMBLY. REMOVE BRANCH STORM DRAIN PIPE BACK TO MAIN SEE NEW WORK PLAN FOR NEW STORM PIPING AND NEW CATCH BASINS AND AREA DRAINS.
- 4 DISCONNECT AND REMOVE EXISTING 15" STORM MAIN PIPING BACK TO NEAR FOUNDATION WALL WHERE STORM PIPING LEAVES THE COURTYARD AND RUNS UNDER THE BUILDING. SEE NEW WORK FOR RECONNECTING THE EXISTING STORM PIPE THAT LEAVE THE COURTYARD.
- 5 DISCONNECT AND REMOVE EXISTING DRAIN PIPE FROM THREE POT SINK TO FLOOR DRAIN FUNNEL. REMOVE FUNNEL.
- 6 DISCONNECT AND REMOVE CW AND HW SUPPLIES FROM THREE POT SINK AND CAP AT WALL. REMOVE VALVES AND FLEX HOSES.
- 7 REMOVE EXISTING THREE POT SINK WITH SIDE BOARDS. VERIFY WITH OWNER IF THEY WANT THIS SINK, IF NOT REMOVE FROM SITE.
- 8 DISCONNECT AND REMOVE EXISTING DRAIN PIPE FROM WALL MOUNTED SINK TO FLOOR DRAIN FUNNEL.
- 9 DISCONNECT AND REMOVE CW AND HW SUPPLIES FROM WALL MOUNTED SINK AND CAP AT WALL. REMOVE VALVES AND FLEX HOSES.
- 10 DISCONNECT AND REMOVE WALL MOUNTED SINK AND WALL HANGER.
- 11 EXISTING FLOOR DRAIN TO REMAIN.

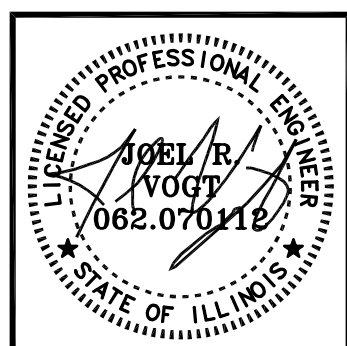
**1 PARTIAL FIRST FLOOR PLUMBING PLAN - DEMOLITION**  
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**PARTIAL PLUMBING WASTE & VENT PIPING PLAN - DEMO**

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PROJECT NO. 22150211  
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## PLUMBING SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DIRECTION OF FLOW OR SLOPE	ADA	AMERICANS WITH DISABILITIES ACT
	DOMESTIC COLD WATER (CW)	AFF	ABOVE FINISHED FLOOR
	DOMESTIC HOT WATER (HW)	AFG	ABOVE FINISHED GRADE
	DOMESTIC HOT WATER CIRCULATING (HWC)	CA	COMPRESSED AIR
	SANITARY SEWER (S)	CB	CATCH BASIN
	SANITARY SEWER BELOW SLAB (S)	CFH	CUBIC FEET PER HOUR
	VENT (V)	CI	CAST IRON
	STORM SEWER (ST)	CO	CLEANOUT
	STORM SEWER BELOW SLAB (ST)	DCP	DOMESTIC CIRCULATING PUMP
	EMERGENCY OVERFLOW	DN	DOWN
	COMPRESSED AIR (CA)	DWV	DRAIN WASTE VENT
	RISE OR UP	(E)	EXISTING
	DROP OR DOWN	EMES	EMERGENCY EYE WASH/SHOWER
	BRANCH CONNECTION - TOP	ET	EXPANSION TANK
	BRANCH CONNECTION - BOTTOM	EWC	ELECTRIC WATER COOLER
	CLEANOUT	FCO	FLOOR CLEANOUT
	CAP / PLUG	FLA	FULL LOAD AMPS
	FIXTURE TRAP	GPH	GALLONS PER HOUR
	BALL VALVE	GPM	GALLONS PER MINUTE
	CHECK VALVE	HB	HOSE BIBB
	STRAINER	I.E. OR INV. ELEV.	INVERT ELEVATION
	BALANCING VALVE	IW	INDIRECT WASTE
	UNION	LA	LAVATORY
		MB	MOP BASIN
		N.C.	NORMALLY CLOSED
		OB	OUTLET BOX
	DOMESTIC CIRCULATING PUMP (DCP)	RY	ROOF HYDRANT
	PRESSURE/TEMPERATURE RELIEF VALVE	RL	ROOF LEADER
		SH	SHOWER
	DOUBLE CHECK BACKFLOW PREVENTER (BFP)	SK	SINK
	REDUCED PRESSURE BACKFLOW PREVENTER (RPZ)	SQ. FT.	SQUARE FEET
		SS	SERVICE SINK
	FLOOR DRAIN (FD)	TD	TRENCH DRAIN
		TMV	THERMOSTATIC MIXING VALVE
	FLOOR CLEANOUT (FCO)	TYP	TYPICAL
		UR	URINAL
	FLOOR DRAIN (RD)	VTR	VENT THRU ROOF
		WB	WASHER BOX
	KEYED NOTE	WC	WATER CLOSET
		WCO	WALL CLEANOUT
	DISCONNECT & REMOVE MATERIAL TO THIS POINT	WH	WALL HYDRANT
		WHA	WATER HAMMER ARRESTOR
	CONNECT TO EXISTING	YCO	YARD CLEAN OUT
	MISCELLANEOUS EQUIPMENT TAG	YH	YARD HYDRANT

\*NOTE: NOT ALL SYMBOLS/ABBREVIATIONS USED FOR THIS PROJECT.

### GENERAL NOTES

1. EACH CONTRACTOR SHALL REVIEW ALL BID DOCUMENTS FOR INFORMATION PERTAINING TO EACH TRADE FOR FULL KNOWLEDGE OF THE SCOPE OF WORK TO BETTER COORDINATE AND UNDERSTAND THE COMPLETE SCOPE OF THE PROJECT.
2. COORDINATION BETWEEN EACH TRADE IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES ON THE PROJECT. SPACE ALLOCATIONS AND INSTALLATION OF ALL WORK SHALL BE CLOSELY COORDINATED. FAILURE TO DO SO WILL NOT CREATE ADDITIONAL COST TO THE OWNER.
3. ALL CONTRACTORS ARE REQUIRED TO ASK THE A/E QUESTIONS WHEN THERE IS ANY UNKNOWN INFORMATION OR CLEAR DIRECTION OF THE INTENT OF THE SCOPE OF WORK. FAILURE TO ASK BEFORE WORK IS COMPLETED AND WHAT IS INSTALLED CREATES A PROBLEM WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO CORRECT.
4. WHERE THERE IS A DISCREPANCY ON THE DRAWINGS THE CONTRACTOR SHALL BASE THEIR BID ON THE HIGHER COST CALLED FOR SCOPE OF WORK OR PIECE OF EQUIPMENT OR MATERIAL OR QUANTITY OR DIMENSION(S).
5. EACH CONTRACTOR SHALL ASK QUESTIONS WHEN THERE ARE DISCREPANCIES ON THE DRAWINGS, BEFORE INITIATING INSTALLATION OR PREPARATION OF WORK CALLED FOR.
6. CONTRACTORS SHALL HAVE READILY AVAILBLE ON SITE A COMPLETE SET OF BID SET DRAWINGS AND SPECIFICATIONS FOR ALL TRADES TO SEE AND USE.
7. CONTRACTORS SHALL MAINTAIN ACCURATE AS BUILT MARKUPS AND MAKE AVAILABLE FOR PERIODIC INSPECTIONS BY THE A/E.
8. IF THERE IS A DUPLICATION OF EQUIPMENT DESIGNATIONS, CONTRACTOR SHALL PROVIDE THE NUMBER OF UNITS SHOWN ON DRAWINGS AND CONTACT THE A/E FOR CLARIFICATION OF CAPACITY OR SIZING REQUIRED.

### GENERAL NOTES - PLUMBING

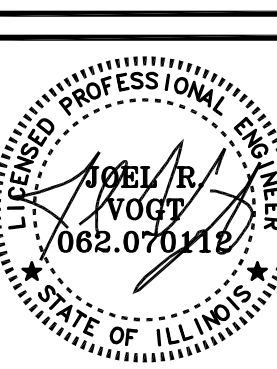
- A. PLANS ARE DIAGRAMMATIC IN NATURE, SINCE THEY REFLECT AVAILABLE INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DRAWINGS AND INFORMATION RECEIVED FROM THE OWNER. EXACT LOCATION OF EXISTING EQUIPMENT AND MATERIAL MAY DEVIATE FROM LOCATION(S) SHOWN ON DOCUMENTS. CONTRACTOR SHALL BE PREPARED TO MAKE ALTERATIONS OF SERVICES TO FIT ACTUAL JOB CONDITIONS.
- B. PIPING ROUTING SHALL BE CONSIDERED SCHEMATIC AND DO NOT INDICATE ALL CHANGES IN DIRECTION OR ELEVATION. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED TO COMPLETE THE INSTALLATION OF PIPED SYSTEMS. CLEARANCES FOR INSTALLATION OF PIPE INSULATION, VALVES AND OTHER RELATED MATERIAL AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE AND OTHER TRADES INSTALLATION.
- C. CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS AND SIZES OF SITE UTILITIES BEFORE PROCEEDING WITH WORK.
- D. ALL PIPE SIZES SHOWN ARE MINIMUMS.
- E. ALL PLUMBING FIXTURES SHALL BE PIPED, VENTED, TRAPPED AND INSTALLED IN ACCORDANCE WITH THE STATE OF ILLINOIS PLUMBING CODE (IPC-2014) AND INTERNATIONAL BUILDING CODE (2009) (2012).
- F. ALL WALL, FLOOR AND CEILING OPENINGS SHALL BE PATCHED AND FINISHES APPLIED TO MATCH EXISTING CONSTRUCTION BY THIS CONTRACTOR, OR SHALL COORDINATE WITH THE GC AND HAVE THE GC COMPLETE THE PATCH AND FINISH REQUIRED.
- G. CONTRACTOR SHALL PROTECT EXISTING FINISHES OF ALL SURFACES IN THE BUILDING AND SHALL MINIMIZE DAMAGE TO EXTERIOR SITE, PLANTINGS AND OR SITE IMPROVEMENTS.
- H. CONTRACTOR SHALL PROVIDE SUPPLY STOP SHUT-OFF VALVES AT EACH PLUMBING FIXTURE. PROVIDE WATER HAMMER ARRESTORS AS SHOWN ON DRAWINGS. INSTALL SERVICE VALVES IN ACCESSIBLE LOCATIONS AND SHALL PROVIDE ACCESS DOORS TO CONCEALED VALVES IN WALLS OR ABOVE CEILINGS THAT ARE SHEETROCKED OR PLASTER FINISHED.
- I. CONTRACTOR SHALL PROVIDE CLEANOUTS TO WASTE PIPING AND STORM PIPING WITH FLOOR OR WALL TYPE CLEAN OUTS AS SHOWN ON DRAWINGS. MOUNTING HEIGHT OF WALL CLEANOUTS FOR WATER CLOSETS SHALL BE ABOVE RIM OF W.C. PROVIDE A DRAIN HOSE BIBB ABOVE ALL STORM WATER VERTICAL DRAIN PIPES CLEAN OUTS AS DETAILED ON DRAWINGS.
- J. CONTRACTOR SHALL VERIFY ALL PLUMBING WATER SUPPLY VALVES ARE LEFT IN THE OPEN POSITION BEFORE LEAVING THE JOB SITE. CONTRACTOR SHALL VERIFY ALL BALANCING VALVES HAVE BEEN SET AND PROPER RECIRCULATION HOT WATER FLOWS MEET THE DESIGNED GPM FLOW. SUBMIT TEST AND BALANCE REPORT IS REQUIRED.
- K. CONTRACTOR SHALL PROVIDE EQUIPMENT AND FIXTURE DRAINS FOR KITCHEN, MECAHNICAL ROOMS AND WATER HEATERS, RUNNING DRAIN PIPING TO NEAREST FLOOR DRAIN OR DEDICATED FLOOR SINK. PROVIDE INDIRECT DRAIN PIPING TO SHOWN FLOOR DRAINS AND OR FLOOR SINKS.
- L. DOMESTIC WATER HEATER TEMPERATURE SETTING SHALL BE 140 DEGREES F AND TEMPERATURE MIXING VALVE LEAVING WATER TEMPERATURE SHALL BE SET AT 112 DEGREE F.
- M. ALL PIPING SHALL BE INSTALLED CONCEALED ABOVE CEILINGS, INSIDE WALL CAVITIES AND BELOW FLOOR WHERE SHOWN OR NOTED.
- N. PLUMBING FIXTURE SCHEDULE ON DRAWINGS SHALL INDICATE SUPPLY, WASTE AND VENT PIPE CONNECTION SIZES.
- O. FIRE RATED CONSTRUCTED WALLS, FLOORS AND CEILINGS SHALL HAVE SPECIFIED SLEEVE AND FIRE CAULKING PROVIDED AT EACH PENETRATION. 3M FIRE BARRIER 2000, SPECSEAL SSS OR HILTI CFS-S-SIL-GG SILICONE FIRE SEALANTS SHALL BE USED.
- P. HOUSE KEEPING PADS FOR PLUMBING EQUIPMENT SHALL BE MINIMUM 4" THICK WITH #4 REBAR INSTALLED ON 12" CENTERS IN EACH DIRECTION AND EDGES OF PADS FINISHED WITH A CANT. PADS SHALL BE PINNED TO MAIN CONCRETE FLOOR.
- Q. ALL WALL, FLOOR AND CEILING PENETRATIONS SHALL HAVE A SLEEVE AND SHALL BE CAULKED TO CONTROL SOUND TRANSMISSION. SEE SPECIFICATIONS FOR MATERIAL TYPES OF SLEEVES.
- R. ROOF DRAINS, FLOOR DRAINS, FLOOR SINKS INDICATED AND LOCATED ON DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH ALL TRADES AND EQUIPMENT SUPPLIERS BEFORE INSTALLATION BEGINS. THESE ITEMS NOT INSTALLED CORRECTLY OR NOT COORDINATED WITH TRADES SHALL BE CORRECTED AT CONTRACTORS EXPENSE.
- S. PIPE INVERT ELEVATIONS SHOWN ARE BASE ON A FLOOR ELEVATION OF 100.0' OR AS INDICATED ON DRAWINGS WITH ACTUAL TOPO ELEVATION.
- T. VENT THRU ROOF (VTR) PIPING SHALL BE INSTALLED WITH A MINIMUM DISTANCE OF 12' FROM AIR INTAKES AND 12' ABOVE THE FINISH ROOF. COORDINATE WITH MECHANICAL TRADES ON THIS PLACEMENT OF VTR'S. REUSE EXISTING VENTS WHERE POSSIBLE.
- U. RETURN AIR PLENUMS ABOVE CEILING SHALL HAVE PIPING MATERIAL INSTALLED WITH 25/50 SMOKE/FLAME SPREAD RATING. PVC PIPING MATERIAL IS NOT ALLOWED IN RETURN AIR PLENUMS. WASTE AND VENT PIPING SHALL BE CAST IRON MATERIAL AND FITTINGS. GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL AND DOMESTIC WATER PIPING OF POLYPROPYLENE MATERIAL SHALL HAVE INSULATION WITH 25/50 RATING INSTALLED ON 100% OF THE MATERIAL, FITTINGS AND VALVES.
- V. PROVIDE ALL FINAL PLUMBING UTILITY CONNECTIONS TO PLUMBING FIXTURES AND TO WASTE SPECIALTY ITEMS AND EQUIPMENT. UTILITY CONNECTIONS INCLUDE WATER, WASTE, VENT, DRAIN, GAS AND ELECTRICAL SERVICES.
- W. UNLESS OTHERWISE INDICATED ALL EXCAVATION, BEDDING, BACKFILL, COMPACTION AND LEVELING BELOW SLAB SHALL BE THIS CONTRACTORS RESPONSIBILITY.
- X. CONTRACTOR SHALL START THE WASTE AND STORM PIPING AT NO LESS THAN 1'-6" BELOW FINISHED SLAB ELEVATION OR AS INDICATED ON DRAWINGS.
- Y. EXPOSED PLUMBING PIPING IN FINISHED ROOMS OR SPACES SHALL BE PAINTED TO MATCH ROOM FINISHES OF A COLOR SELECTED BY THE ARCHITECT AND AS SPECIFIED BY THE ARCHITECT.
- Z. OWNER SHALL HAVE FIRST RIGHTS TO FIXTURES, MATERIAL OR EQUIPMENT SCHEDULED FOR REMOVAL. OWNER SHALL RECEIVE ITEM FROM CONTRACTOR FOR REMOVAL FROM SITE. REMAINING REMOVED EQUIPMENT AND MATERIAL TO BE REMOVED FROM SITE BY THIS CONTRACTOR.

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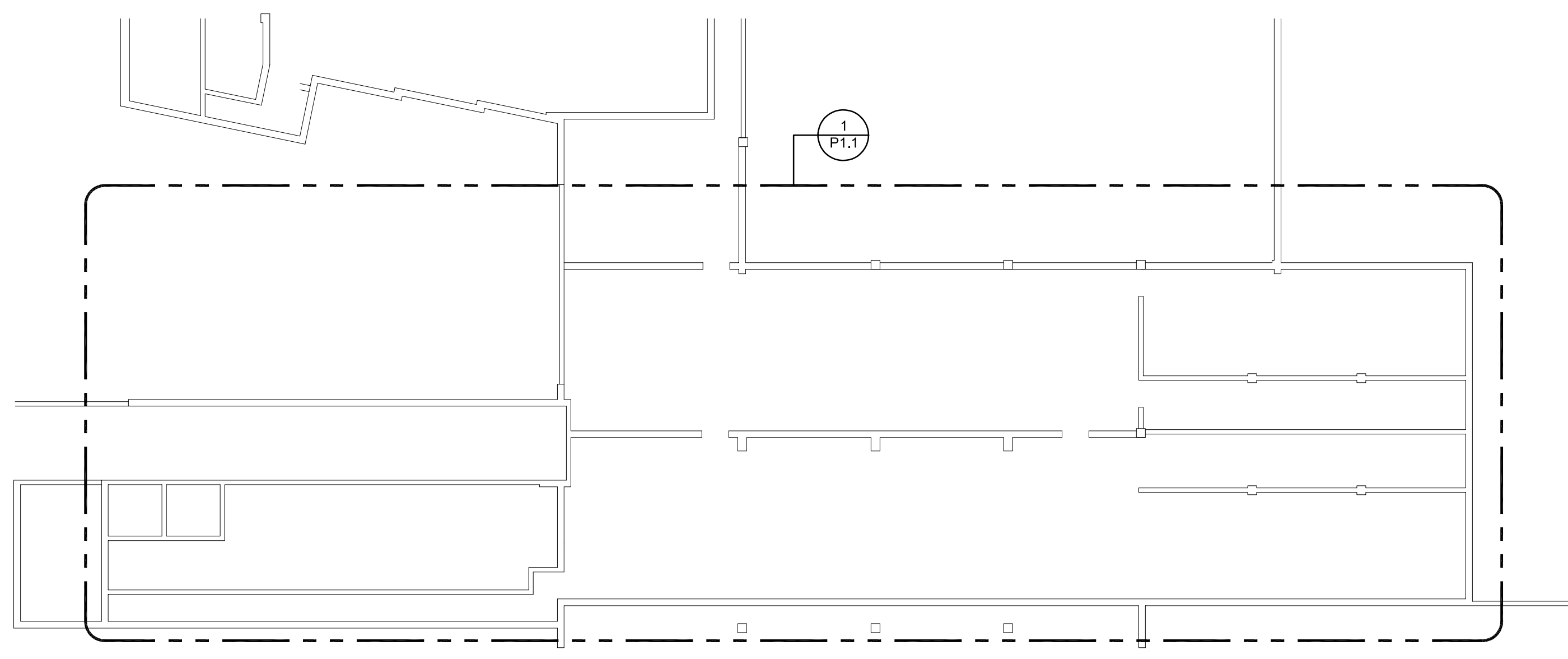
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 SHEET P-0.0  
 OF 91 SHEETS

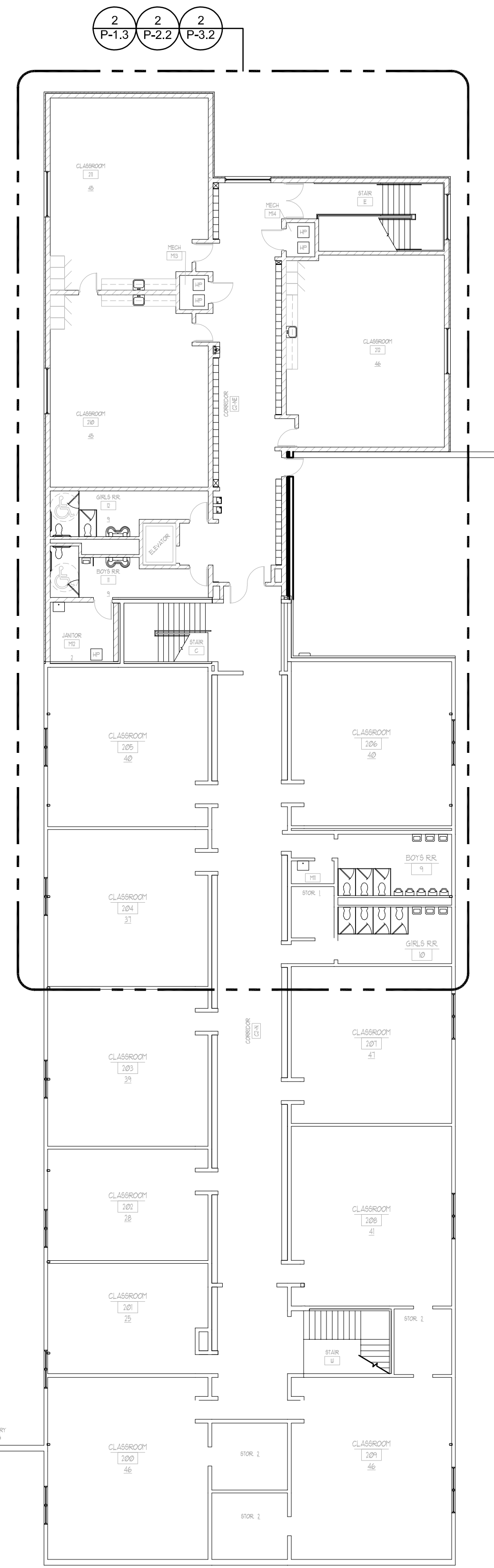


NO.	DATE	REMARKS

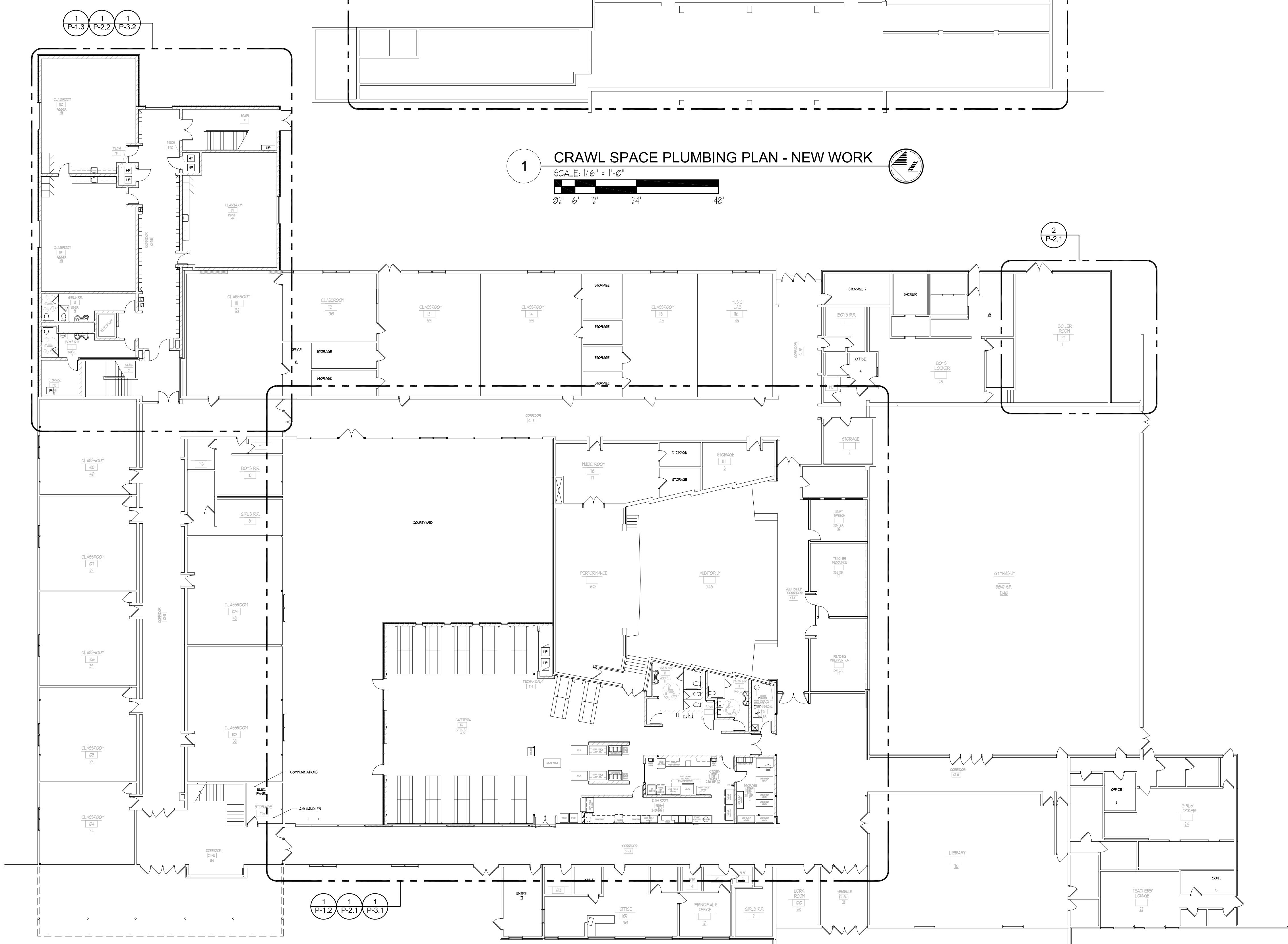
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**1 CRAWL SPACE PLUMBING PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



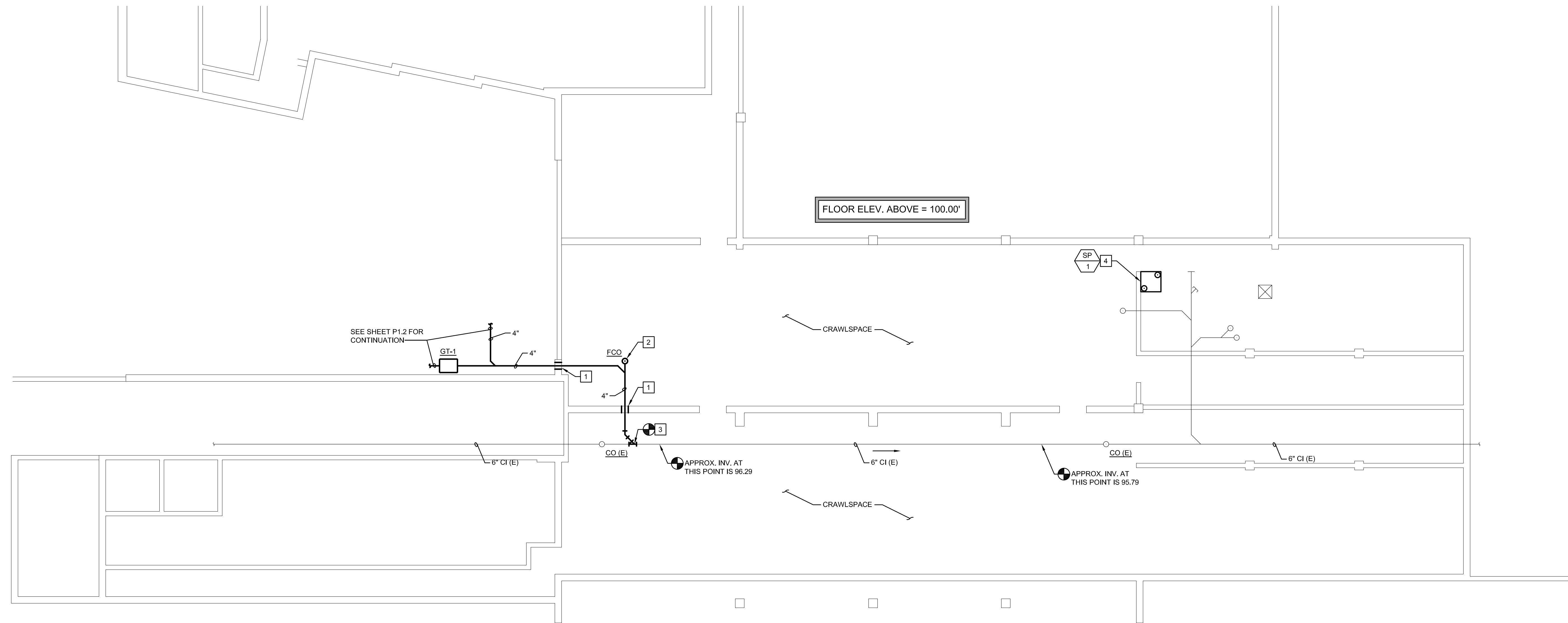
**3 SECOND FLOOR PLUMBING PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



**2 FIRST FLOOR PLUMBING PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'

**KEYED NOTES - NEW WORK**

- 1 PROVIDE NEW WALL SLEEVES THRU EXISTING FOUNDATION AND STRUCTURAL WALLS FOR NEW SEWER PIPE PENETRATIONS.
- 2 PROVIDE AND EXTEND NEW 4" CLEAN OUT PIPE UP THRU EXISTING FLOOR TO A NEW FLOOR CLEAN OUT.
- 3 PROVIDE NEW "Y" FITTING IN EXISTING 6" CI WASTE PIPE FOR NEW 4" WASTE FROM NEW KITCHEN. FIELD DETERMINE ACTUAL INVERT ELEVATION OF EXISTING SEWER PIPE AND ADJUST INVERT AND ELEVATION OF NEW WASTE PIPING.
- 4 PROVIDE NEW 4" REINFORCED CONCRETE PAD (24"x24") FOR NEW CONDENSATE RECEIVER AND SUMP PUMP UNIT (SP-1). CONNECT NEW 3/4" DISCHARGE PIPE TO EXISTING CONNECTION POINT WHERE REMOVED CONDENSATE UNIT WAS CONNECTED. PROVIDE NEW COMPACTED 6" THICK CA6 SUB-BASE FOR NEW CONCRETE PAD.



**1 PARTIAL CRAWL SPACE WASTE & VENT PIPING PLAN - NEW WORK**

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

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**EDISON ELEMENTARY SCHOOL 2019 ADDITION**  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
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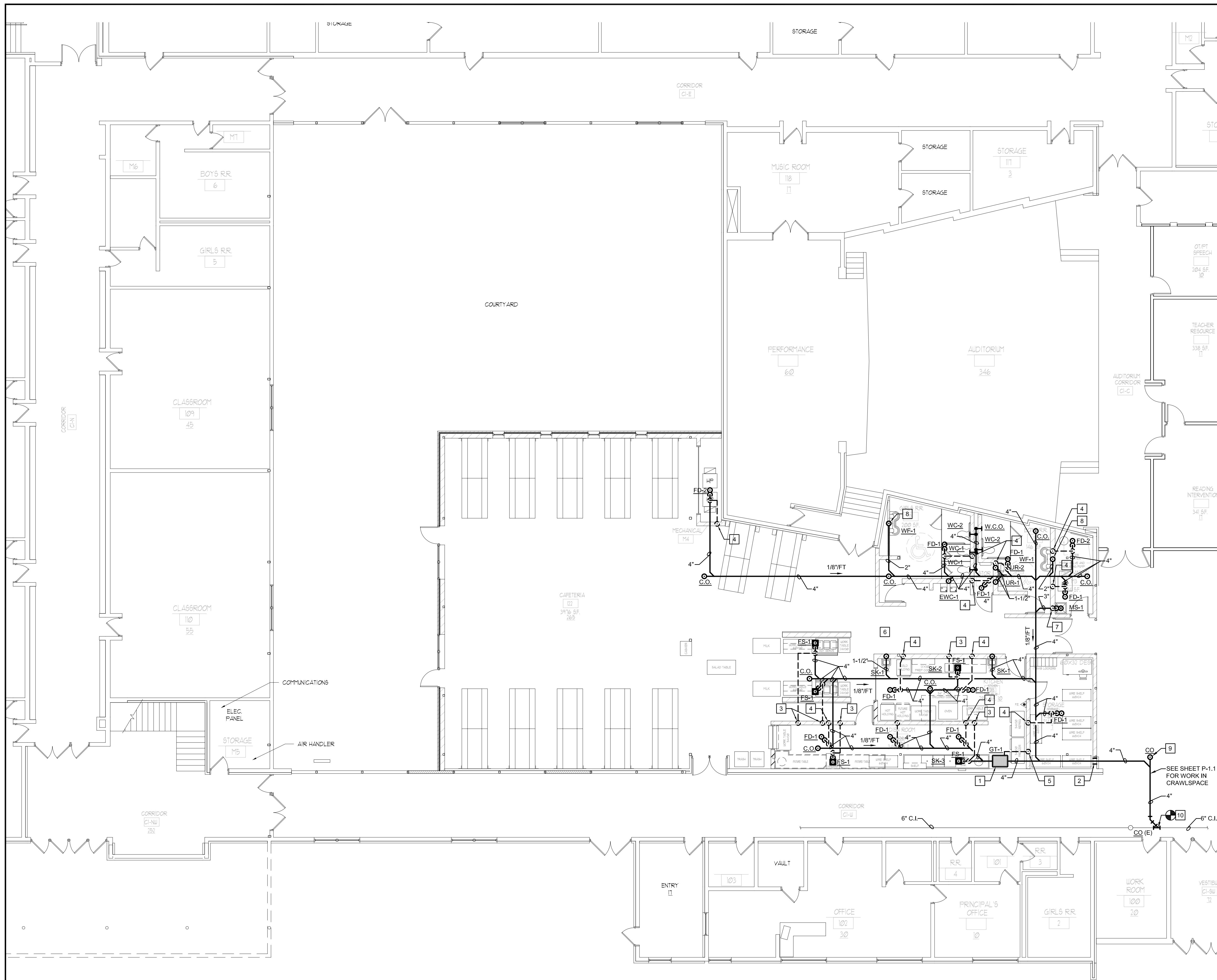
EXPIRATION 11/30/19  
 SIGNED 02/15/19

**PARTIAL CRAWLSPACE WASTE & VENT PIPING PLAN - NEW WORK**

NO.	DATE	REMARKS

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PROJECT NO. 22750211  
 ISSUE DATE 02/15/2019  
 SHEET P-1.1  
 OF 91 SHEETS



**KEYED NOTES - NEW WORK**

- 1 PROVIDE NEW RECESSED GREASE INTERCEPTOR FLUSH WITH FLOOR ELEVATION. PROVIDE 2" VENT PIPE FROM GT-1 TO NEARBY WALL. SEE NOTE #5.
- 2 PROVIDE CORE DRILL THRU EXISTING FOUNDATION WALL AND SLEEVE FOR NEW 4" WASTE PIPE TO PENETRATE INTO THE CRAWLSPACE AREA BELOW THE FLOOR. SEE SHEET P-1.1 FOR CONTINUATION INTO CRAWLSPACE.
- 3 PROVIDE 2" VENT FROM NEW FLOOR SINK UP IN NEW CHASE WALL OR NEW PARTITION CONSTRUCTION. RUN VENT UP TO ABOVE NEW CEILING AND COLLECT AND RUN UP THRU NEW ROOF AS SHOWN ON PIPING RISER DETAIL.
- 4 PROVIDE 2" VENT FROM NEW FLOOR DRAIN UP IN NEW CHASE WALL OR NEW PARTITION CONSTRUCTION. RUN VENT UP TO ABOVE NEW CEILING AND COLLECT AND RUN UP THRU NEW ROOF AS SHOWN ON PIPING RISER DETAIL.
- 5 PROVIDE NEW 2" VENT FROM NEW GREASE INTERCEPTOR UP IN NEW WALL CONSTRUCTION TO ABOVE CEILING AND COLLECT AND RUN UP THRU NEW ROOF AS SHOWN ON PIPING RISER DETAIL.
- 6 ALL NEW WASTE AND VENT PIPING TO BE INSTALLED BELOW FLOOR. PROVIDE TRENCHING, BACKFILL AND COMPACTION TO MEET SPECIFICATIONS.
- 7 PROVIDE 2" VENT FROM THREE INCH WASTE PIPE FROM NEW MOP SINK UP IN WALL CAVITY AND OVER TO COMMON 4" VENT THRU ROOF.
- 8 PROVIDE 2" WASTE PIPE UP TO WASH FOUNTAIN AND RUN 1.5" VENT UP TO COMMON 4" VENT THRU ROOF. SEE PIPING RISER.
- 9 EXTEND 4" WASTE PIPE UP TO EXISTING FLOOR ELEVATION AND PROVIDE A NEW FLOOR CLEAN OUT IN EXISTING FLOOR.
- 10 CONNECT NEW 4" WASTE INTO EXISTING 6" CAST IRON WASTE PIPE RUN EXPOSED IN CRAWLSPACE.
- 11 EXISTING 6" CAST IRON WASTE PIPE RUN BELOW HALLWAY TO REMAIN. SEE SHEET

**1 PARTIAL FIRST FLOOR WASTE & VENT PIPING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL WASTE & VENT PIPING PLAN - NEW WORK**

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET P-1.2  
 OF 91 SHEETS

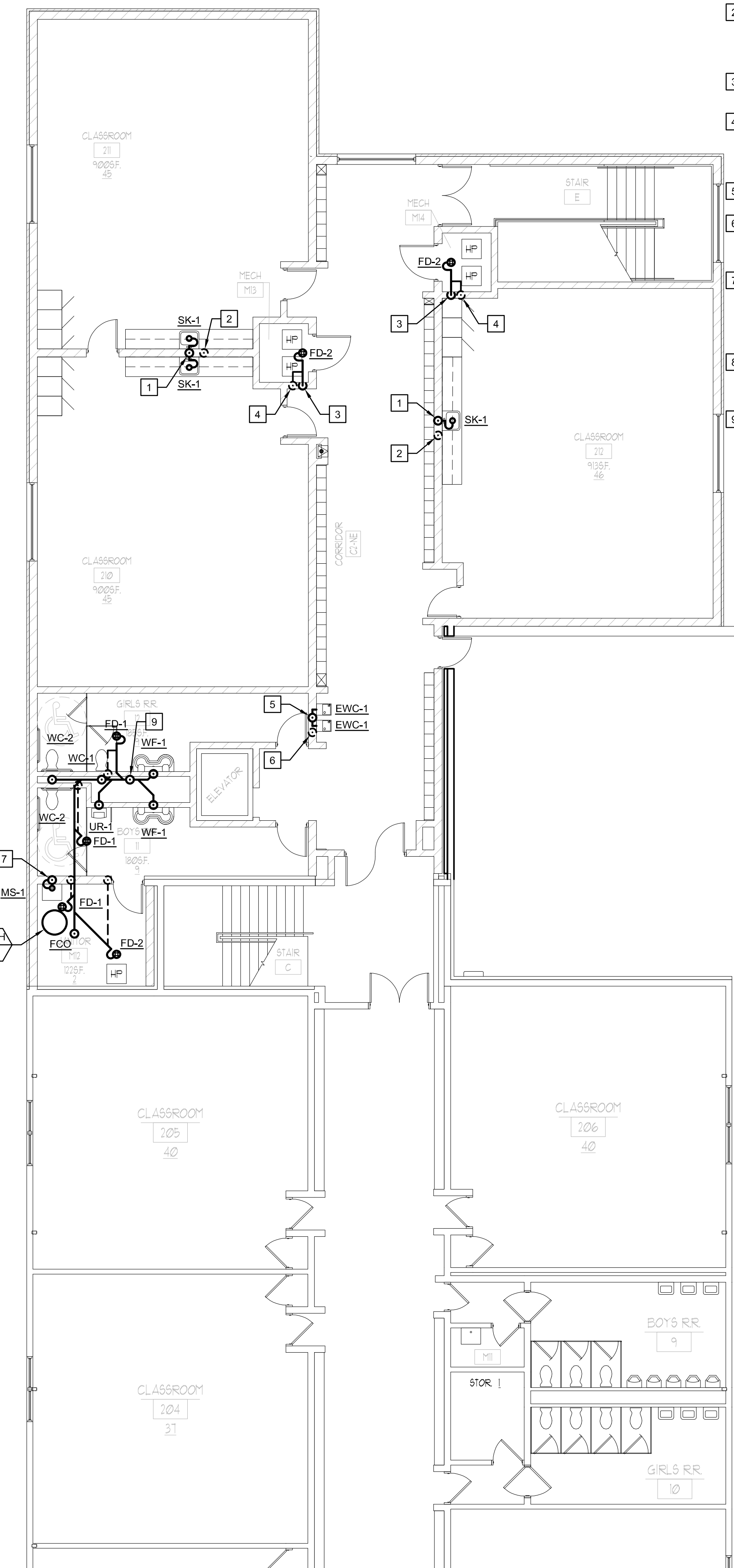
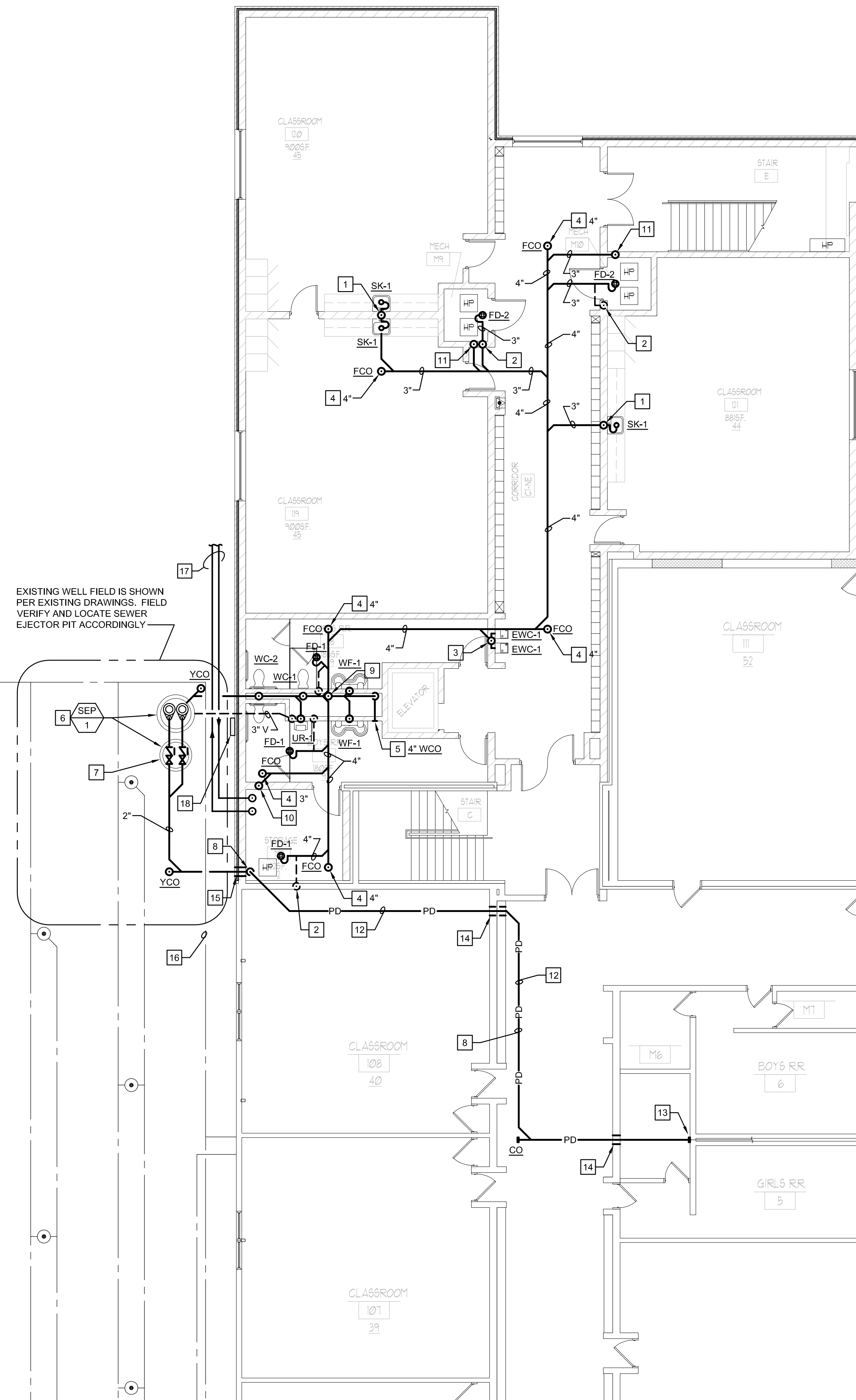


KEYED NEW WORK NOTES - (1/P1.3)

- 1 PROVIDE 2" WASTE RISER FOR NEW SINKS ON FIRST AND SECOND FLOORS. RUN SEPARATE 1.5" VENT UP IN WALL ASSEMBLY UP FROM FIRST FLOOR SINKS AND SECOND FLOOR SINKS AND UP THRU ROOF. SEE PLUMBING RISER DETAILS.
- 2 RUN 2" VENT PIPE UP IN WALL ASSEMBLY FROM NEW 3" FLOOR DRAIN WASTE PIPE. SEE SECOND FLOOR PLAN FOR CONTINUATION.
- 3 PROVIDE 2" WASTE UP TO PICK UP EWC'S ON FIRST AND SECOND FLOORS. RUN SEPARATE 1.5" VENT UP IN WALL ASSEMBLY UP FROM FIRST FLOOR EWC AND PICK UP SECOND FLOOR EWC'S AND UP THRU ROOF. SEE PLUMBING RISER DETAILS.
- 4 PROVIDE NOTED SIZE FLOOR CLEAN OUT.
- 5 PROVIDE NOTED SIZE WALL CLEAN OUT. MOUNT WALL CLEAN OUT ABOVE FLOOD RIM OF WATER CLOSETS.
- 6 PROVIDE NEW 48" DIAMETER X 60" DEEP SEWAGE EJECTOR PIT WITH DUAL GRINDER PUMPS. LID TO BE SOLID AND FULLY GASKETED HATCH WITH A CLASP AND LOCKING METHOD. PIT TO HAVE OPENINGS FOR VENT PIPE AND FOR THE TWO PUMP DISCHARGE PIPES GOING THRU THE VALVE PIT ASSOCIATED WITH THE SEWAGE PIT ASSEMBLY. PROVIDE CONTROL PANEL WITH ON/OFF/HIGH WATER LEVEL FLOATS AND ALTERNATING STARTER CONTROL ON PUMP OPERATIONS. SEE EQUIPMENT SCHEDULE AND PIPING DETAIL 2/P-4.2.
- 7 RUN NEW 2" PUMP DISCHARGE PIPE THRU NEW VALVE PIT ENCLOSURE WITH ACCESS HATCH WITH CLAPS AND LOCKING METHOD. SEE PIT AND VALVE BOX DETAIL.
- 8 PIPE PUMP DISCHARGE PIPE THRU FOUNDATION WALL AND UP IN CORNER OF ROOM TO ABOVE THE EXISTING CLASSROOM CEILING. PIPE OVER ABOVE EXISTING LAY-IN CEILING SYSTEMS AND CONNECT TO EXISTING 4" WASTE CLEAN OUT LOCATED IN THE ROOM SHOWN. EXTEND WALL CLEAN OUT AND PROVIDE A 4" RISER TO CONNECT NEW PUMPED DISCHARGE PIPE TO UP AT CEILING.
- 9 4" WASTE RISER UP TO SECOND FLOOR AND 4" VENT RISER UP THRU SECOND FLOOR TO TOILET ROOMS. SEE PLUMBING PIPE RISER DETAIL.
- 10 3" WASTE PIPE DOWN FROM SECOND FLOOR MOP SINK.
- 11 2" WASTE DOWN IN WALL ASSEMBLY FROM FLOOR DRAIN IN MECHANICAL CLOSET.
- 12 REMOVE AND REINSTALL EXISTING LAY-IN CEILING TILES TO INSTALL NEW PUMPED DISCHARGE PIPING AND FITTINGS. INSULATE PUMPED DISCHARGE PIPE WITH 1.5" FIBERGLASS INSULATION AND LABEL THIS PIPE.
- 13 REMOVE EXISTING WALL CLEAN OUT ASSEMBLY AND EXTEND 4" WASTE PIPE UP EXPOSED ON THE WALL TO ELEVATION TO ALLOW PUMPED DISCHARGE PIPE TO BE CONNECTED.
- 14 PROVIDE NEW WALL SLEEVES FOR PUMPED DISCHARGE THRU EXISTING WALLS ABOVE THE CEILING. SEAL PENETRATIONS ALONG HALLWAY WITH FIRE SEALANT.
- 15 PROVIDE WALL SLEEVE THRU NEW WALL FOUNDATION FOR PUMPED DISCHARGE PIPE FROM SEWAGE EJECTOR PIT. SEAL AND GROUT THIS WALL PENETRATION.
- 16 FIELD LOCATE EXISTING GEO WELL FIELD PIPING AND RUN NEW 2" PUMP DISCHARGE AT 36" DEPTH TO AVOID EXISTING GEO PIPING WHICH SHOULD BE AT 48" DEPTH. PROVIDE A TRACEABLE WARNING WIRE PLACED AT 12" ABOVE NEW PUMP DISCHARGE PIPE.
- 17 SEE MECHANICAL DRAWINGS FOR NEW GEO SUPPLY AND RETURN PIPING MAINS. COORDINATE NEW LIFT STATION LOCATION WITH THESE NEW BURIED PIPES.
- 18 NEW PUMP CONTROL PANEL.

KEYED NEW WORK NOTES - (2/P1.3)

- 1 RUN 2" WASTE DOWN TO FIRST FLOOR FOR NEW SINK.
- 2 RUN NEW 1.5" VENT PIPE UP FROM FIRST FLOOR AND CONNECT TO SECOND FLOOR SINK VENT. RUN 1.5" VENT FROM BOTH SINKS OVER TO NEW 4" VTR. SEE PLUMBING WASTE AND VENT RISER DETAIL.
- 3 RUN 3" WASTE FROM NEW FLOOR DRAIN IN MECHANICAL CLOSET DOWN TO FIRST FLOOR.
- 4 RUN 2" VENT UP FROM FIRST FLOOR MECHANICAL FLOOR DRAIN AND CONNECT TO SECOND FLOOR MECHANICAL ROOM FLOOR DRAIN 2" VENT AND COMBINE. RUN 2" VENT UP TO ABOVE CEILING AND OVER TO NEW 4" VTR.
- 5 RUN 2" WASTE FROM EWC'S DOWN TO FIRST FLOOR.
- 6 RUN 1.5" VENT UP FROM FIRST FLOOR EWC'S AND CONNECT TO SECOND FLOOR EWC'S 1.5" VENT AND RUN UP TO ABOVE CEILING AND OVER TO MAIN 4" VENT FROM TOILET ROOMS.
- 7 RUN 3" WASTE FROM MOP SINK DOWN TO FIRST FLOOR AND SEE SHEET P-1.3 FOR CONTINUATION. RUN 1.5" VENT OFF NEW WASTE PIPE AND RUN UP TO ABOVE CEILING AND OVER TO MAIN 4" VENT FROM TOILET ROOMS. SEE PLUMBING WASTE AND VENT RISER DETAIL.
- 8 PROVIDE NEW ELECTRIC DOMESTIC WATER HEATER. PROVIDE BALL VALVES, EXPANSION TANK, T & P RELIEF VALVE AND THERMOMETERS AS DETAILED.
- 9 RUN 4" MAIN WASTE UP THRU ROOF TO A 4" VTR. CONNECT NEARBY VENTS FROM INDIVIDUAL PLUMBING FIXTURES NOTED.



1 PARTIAL FIRST FLOOR WASTE & VENT PIPING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"

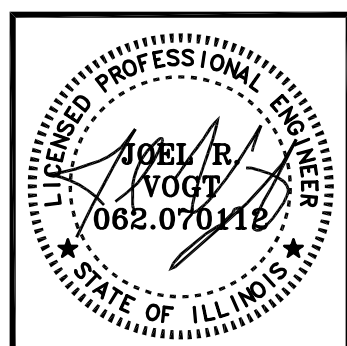
2 PARTIAL SECOND FLOOR WASTE & VENT PIPING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"

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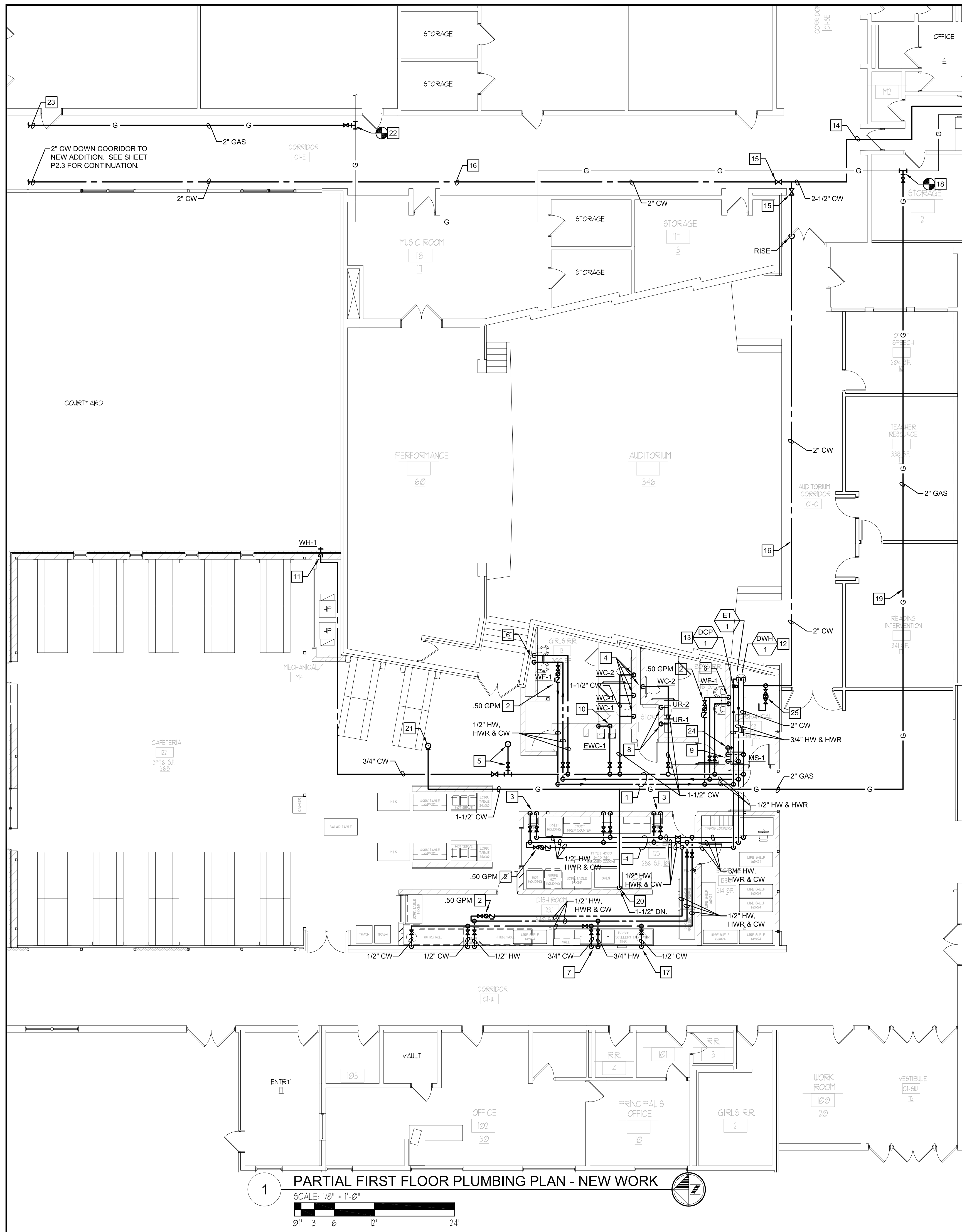
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PARTIAL FIRST & SECOND FLOOR PLANS WASTE & VENT PIPING PLAN - NEW WORK

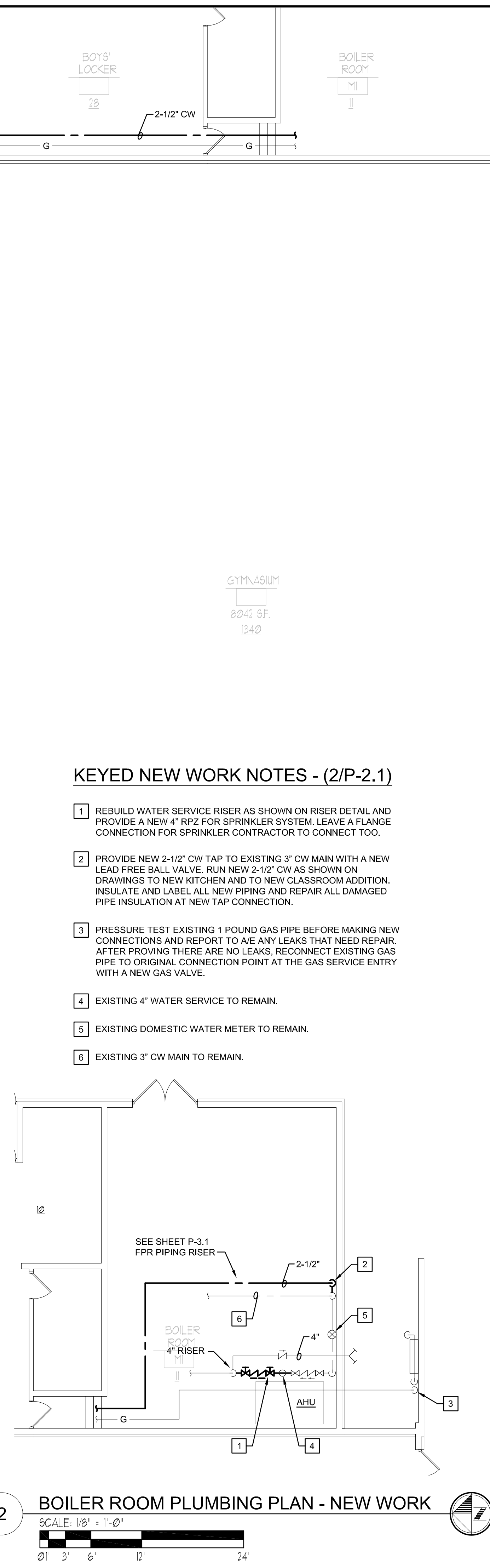
NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET P-1.3  
OF 91 SHEETS



**1 PARTIAL FIRST FLOOR PLUMBING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'



**2 BOILER ROOM PLUMBING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

**KEYED NEW WORK NOTES - (1/P-2.1)**

- 1 RUN NEW DOMESTIC WATER PIPING ABOVE NEW LAY-IN CEILING SYSTEM. COORDINATE PATH AND ELEVATION WITH OTHER TRADES MATERIAL AND EQUIPMENT.
- 2 PROVIDE BALL, CHECK AND BALANCE VALVES FOR HOT WATER RETURN LOOP AND BALANCE WATER FLOW TO GPM'S NOTED.
- 3 DROP 1/2" CW AND HW DOWN TO NEW HAND SINK IN WALL CONSTRUCTION. PROVIDE NEW TMV-2 VALVE AND PIPE AS DETAILED. SET TMV AT 120 DEGREES F.
- 4 DROP 1-1/4" CW DOWN IN WALL TO NEW WATER CLOSET.
- 5 PROVIDE NEW 3/4" CW UP TO NEW ROOF HYDRANT (RH-1) SECURED TO ROOF STRUCTURE AND BRACED TO STOP ANY MOTION. PROVIDE A STOP AND WASTE BALL VALVE ABOVE CEILING ON THIS BRANCH CW PIPE. MODEL INCLUDES A STORAGE TANK TO DRAIN HYDRANT, IF ANOTHER MODEL IS APPROVED THAT DOES NOT HAVE THE STORAGE TANK, CONTRACTOR WILL PIPE DRAIN TO NEAREST APPROVED DRAINING LOCATION.
- 6 DROP 3/4" CW AND HW DOWN IN WALL TO NEW WASH FOUNTAIN. PROVIDE SERVICE VALVES ON EACH SUPPLY. WASH FOUNTAIN WILL HAVE AN INTERNAL TMV AND WILL BE SET FOR 110 DEGREES.
- 7 DROP 3/4" CW AND HW DOWN IN WALL TO NEW THREE POT SINK. PROVIDE SERVICE VALVES ON EACH SUPPLY. PROVIDE NEW TMV-4 AND SET AT 140 DEGREES.
- 8 DROP 3/4" CW DOWN IN WALL CAVITY TO EACH NEW URINAL WITH A SERVICE VALVE.
- 9 DROP 3/4" CW AND HW DOWN IN WALL TO NEW MOP SINK. PROVIDE SERVICE VALVE ON EACH SERVICE. PROVIDE NEW TMV-3 AND SET AT 140 DEGREES.
- 10 DROP 1/2" CW DOWN IN WALL CAVITY TO NEW HI/LO ELECTRIC WATER COOLER (EWC-1). PROVIDE LEAD FREE BALL SERVICE VALVE.
- 11 DROP 3/4" CW DOWN IN WALL CAVITY TO WALL HYDRANT (WH-1). PROVIDE SERVICE VALVE.
- 12 PROVIDE NEW ELECTRIC DOMESTIC WATER HEATER, BALL VALVES, EXPANSION TANK, T & P RELIEF VALVE AND THERMOMETERS AS DETAILED.
- 13 PROVIDE NEW IN-LINE DOMESTIC CIRCULATION PUMP WITH BALL VALVES AND THERMOMETER AS DETAILED.
- 14 PROVIDE NEW 2-1/2" CW MAIN AND RUN ABOVE CORRIDOR CEILING AND THRU EXISTING BAR JOIST WEBBING. REMOVE AND REINSTALL CEILING TILES NEEDED TO INSTALL NEW CW MAIN. INSULATE CW MAIN AND LABEL ON 25' SPACING AS SPECIFIED.
- 15 PROVIDE NEW LEAD FREE BALL VALVES AND TAG AS SPECIFIED.
- 16 PROVIDE NEW 2" CW MAIN TO NEW KITCHEN AND NEW 2 STORY ADDITION AND RUN ABOVE CORRIDOR CEILING. REMOVE AND REINSTALL CEILING TILES NEEDED TO INSTALL NEW CW MAINS. INSULATE CW MAIN AND LABEL ON 25' SPACING AS SPECIFIED.
- 17 PROVIDE A 1/2" CW SUPPLY DOWN TO GARBAGE DISPOSAL TO FEED RIM. INSTALL A PROVIDED SOLENOID VALVE IN THE 1/2" CW SUPPLY AND WIRE TO GARBAGE DISPOSAL CONTROL PANEL TO ACTIVATE AND FLOW WASHING WATER TO DISPOSAL. PROVIDE A LEAD FREE BALL VALVE IN THIS SUPPLY AND PROVIDE A VACUUM BREAKER MOUNTED AT AN ELEVATION ABOVE THE FLOOD RIM OF THE COUNTER. ALL EXPOSED PIPING AND FITTINGS ABOVE THE COUNTER SHALL BE CHROME PLATED.
- 18 TAP EXISTING 2" GAS MAIN AND RUN NEW 2" GAS SUPPLY TO NEW KITCHEN AND NEW DOAS-1 UP ON ROOF.
- 19 RUN NEW GAS PIPE ABOVE NEW CEILING AND ACROSS EXISTING CEILINGS. RUN PIPING THRU BAR JOIST WEBBING.
- 20 DROP 1-1/4" GAS SUPPLY DOWN TO NEW DOUBLE STACKED OVENS. PROVIDE A GAS AUTOMATIC SHUT DOWN VALVE WIRED TO THE FIRE ALARM SYSTEM TO CLOSE IN THE EVENT OF A FIRE. PROVIDE A MANUAL SHUT OFF VALVE AND INSTALL NO HIGHER THAN 6" IN THE DROP PIPE. AT EACH OVEN PROVIDE A STAINLESS STEEL FLEXIBLE PIPE TO ALLOW OVENS TO BE MOVED FOR CLEANING. PROVIDE A GAS REGULATOR SIZED FOR 180 MBH FLOW TO DROP GAS PRESSURE FROM 1 POUND TO 7"-9". VENT GAS REGULATOR UP THRU ROOF WITH A PIPE BOOT FLASHED INTO THE NEW ROOF SYSTEM. PROVIDE TWO 90 DEGREE ELBOWS WITH AN INSECT SCREEN IN THE TURNED DOWN ELBOW.
- 21 RUN A 1-1/4" GAS SUPPLY PIPE UP TO NEW DOAS-1 UNIT ON ROOF. PROVIDE A GAS REGULATOR SIZED TO DROP THE 1 POUND GAS PRESSURE DOWN TO 7"-9" PRESSURE. PROVIDE A GAS VALVE AHEAD OF THE REGULATOR, A UNION CONNECTION AND DIRT LEG PIPED TO NEW DOAS-1. GAS SUPPLY TO DOAS-1 IS 100 MBH.
- 22 TAP EXISTING 2" GAS MAIN AND RUN NEW 2" GAS SUPPLY TO NEW DOAS-2 UP ON ROOF OF NEW CLASSROOM ADDITION.
- 23 RUN NEW GAS PIPE ABOVE EXISTING CEILING. RUN PIPING THRU BAR JOIST WEBBING. REMOVE AND REPLACE EXISTING CEILING TILES AND GRID TO COMPLETE NEW PIPING INSTALLATIONS AND REINSTALL REMOVED MATERIAL.
- 24 PROVIDE A NEW HOSE BIBB NEXT TO MOP SINK AND CONNECT 3/4" COLD WATER THAT SUPPLIES MOP SINK. HOSE BIBB TO HAVE A VACUUM BREAKER. HOSE BIBB TO BE EQUAL TO WOODFORD MODEL 26/B26, ZURN MODEL Z1341 OR MIFAB MODEL MHY-9041-NPB.
- 25 PROVIDE 3/4" CW MAKE-UP SUPPLY WATER WITH BALL VALVES AND A 3/4" WATER METER. CONNECT TO MAKE-UP WATER VALVE ASSEMBLY PROVIDED BY THE M.C.

**KEYED NEW WORK NOTES - (2/P-2.1)**

- 1 REBUILD WATER SERVICE RISER AS SHOWN ON RISER DETAIL AND PROVIDE A NEW 4" RPZ FOR SPRINKLER SYSTEM. LEAVE A FLANGE CONNECTION FOR SPRINKLER CONTRACTOR TO CONNECT TOO.
- 2 PROVIDE NEW 2-1/2" CW TAP TO EXISTING 3" CW MAIN WITH A NEW LEAD FREE BALL VALVE. RUN NEW 2-1/2" CW AS SHOWN ON DRAWINGS TO NEW KITCHEN AND TO NEW CLASSROOM ADDITION. INSULATE AND LABEL ALL NEW PIPING AND REPAIR ALL DAMAGED PIPE INSULATION AT NEW TAP CONNECTION.
- 3 PRESSURE TEST EXISTING 1 POUND GAS PIPE BEFORE MAKING NEW CONNECTIONS AND REPORT TO A/E ANY LEAKS THAT NEED REPAIR. AFTER PROVING THERE ARE NO LEAKS, RECONNECT EXISTING GAS PIPE TO ORIGINAL CONNECTION POINT AT THE GAS SERVICE ENTRY WITH A NEW GAS VALVE.
- 4 EXISTING 4" WATER SERVICE TO REMAIN.
- 5 EXISTING DOMESTIC WATER METER TO REMAIN.
- 6 EXISTING 3" CW MAIN TO REMAIN.

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**PARTIAL FIRST FLOOR HW & CW PLAN - NEW WORK**

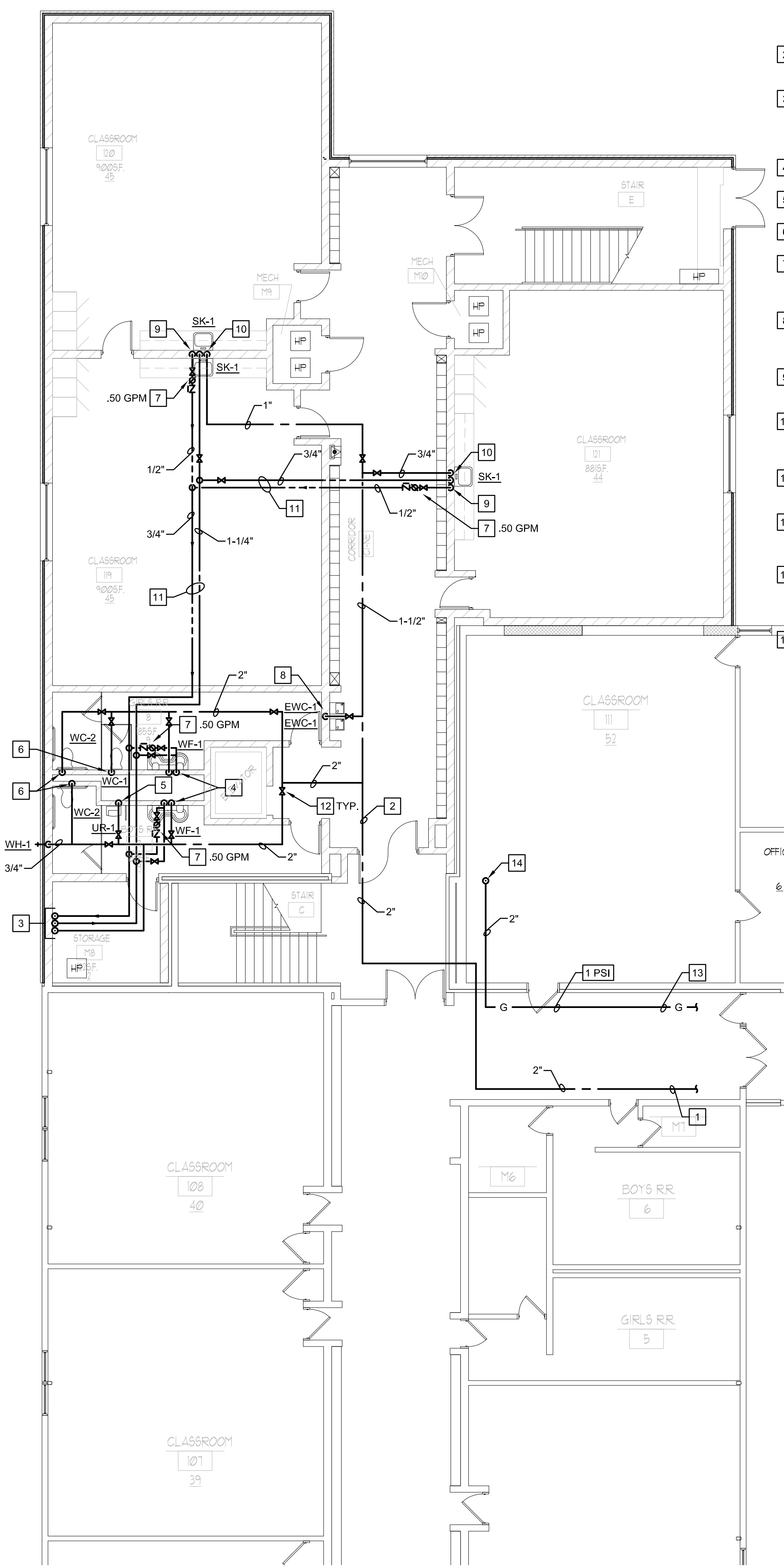
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 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/P-2.2)

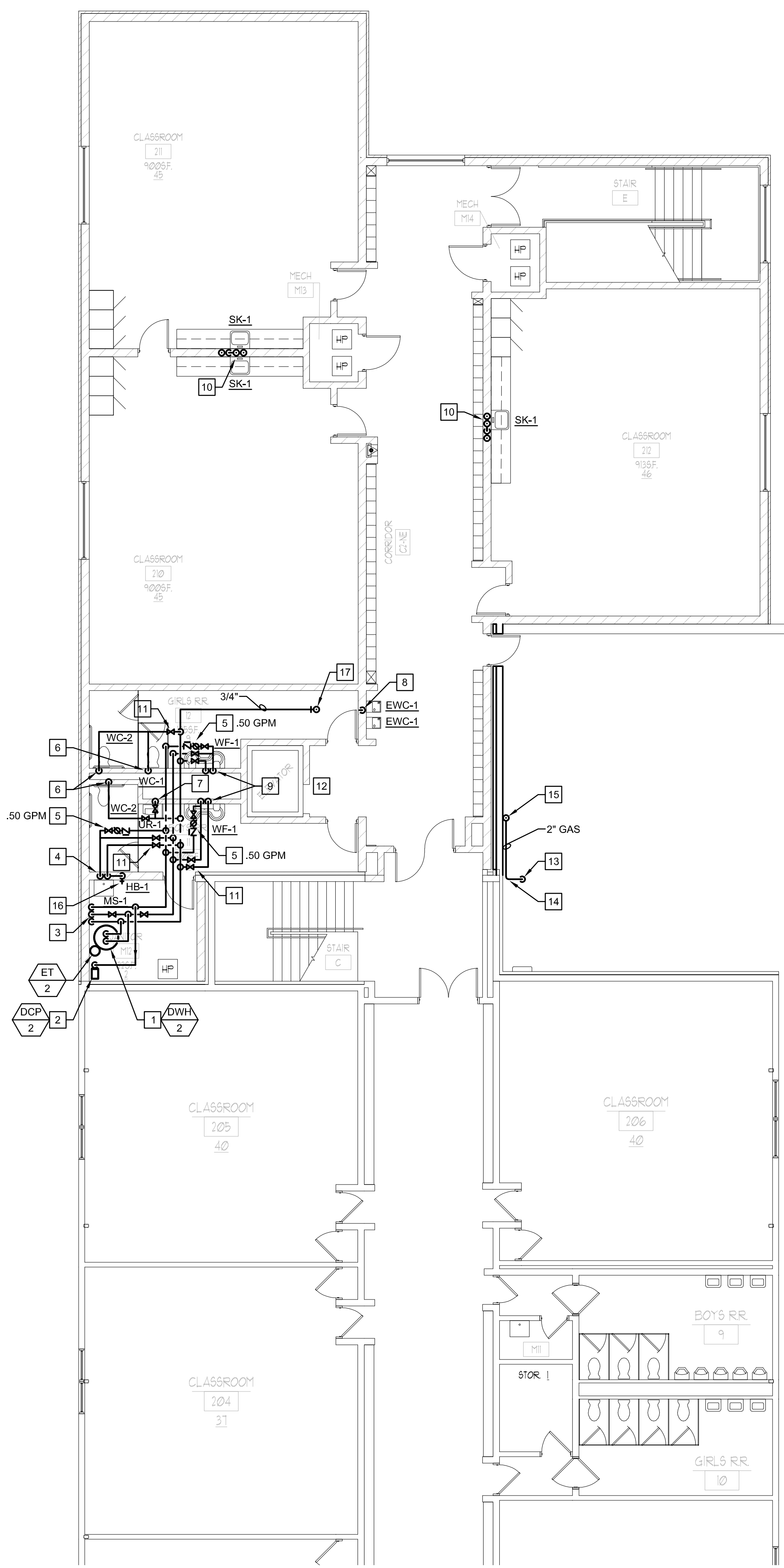
- 1 RUN NEW 2" CW MAIN ABOVE EXISTING CORRIDOR CEILING SYSTEM. REMOVE AND REINSTALL EXISTING CEILING TILES REQUIRED TO INSTALL NEW CW MAIN. INSULATE AND LABEL THIS NEW CW MAIN AT 25 FOOT SPACING.
- 2 RUN NEW 2" CW MAIN ABOVE NEW CEILING SYSTEM, INSULATE AND LABEL AS SPECIFIED.
- 3 RUN NEW CW, HW AND HWR PIPING UP TO SECOND FLOOR DOMESTIC WATER HEATER AND TO SECOND FLOOR PLUMBING FIXTURES AS SHOWN ON 2/P-2.2. INSULATE AND LABEL EACH PIPING SYSTEM AS SPECIFIED.
- 4 DROP 3/4" CW AND HW DOWN TO NEW WASH FOUNTAINS.
- 5 DROP 3/4" CW DOWN TO NEW URINAL.
- 6 DROP 1" CW DOWN TO NEW WATER CLOSET(S).
- 7 PROVIDE BALL VALVE, CHECK VALVE AND BALANCING VALVE IN HW RECIRCULATION PIPE AND BALANCE FLOW AS NOTED. PROVIDE BALANCE REPORT TO A/E FOR REVIEW.
- 8 RUN 3/4" CW INTO WALL CAVITY AND DROP A 1/2" DOWN TO EWC ON FIRST FLOOR AND RUN 1/2" CW UP TO EWC ON SECOND FLOOR.
- 9 RUN 1/2" HWR PIPE UP TO SECOND FLOOR AND CONNECT TO HW PIPE SUPPLYING THE SECOND FLOOR SINK.
- 10 RUN 3/4" CW AND HW INTO WALL CAVITY. RUN 1/2" CW AND HW DOWN TO SINK ON FIRST FLOOR AND RUN 1/2" CW AND HW UP TO SECOND FLOOR SINK.
- 11 RUN NEW DOMESTIC PIPING ABOVE CEILING SYSTEM. REMOVE AND REINSTALL CEILING SYSTEM TO INSTALL NEW PIPING.
- 12 PROVIDE LEAD FREE BALL VALVES TO PROVIDE ISOLATION OF EACH TOILET ROOM PLUMBING FIXTURE WATER SUPPLIES AS SHOWN.
- 13 RUN NEW 2" GAS PIPE ABOVE EXISTING CEILING AND RUN PIPING THRU BAR JOIST WEBBING. SEE SHEET P-2.1 FOR CONTINUATION. REMOVE AND REINSTALL CEILING SYSTEM TO INSTALL NEW PIPING.
- 14 RUN NEW GAS PIPE UP THRU EXISTING ROOF. PROVIDE A NEW ROOF BOOT AND FLASH INTO EXISTING ROOFING SYSTEM. MAKE PENETRATION WATER TIGHT. ROOM CLASSROOM CEILING MATERIAL REQUIRED TO COMPLETE THIS WORK. REINSTALL REMOVED CEILING MATERIAL.



1 PARTIAL FIRST FLOOR PLUMBING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"

KEYED NEW WORK NOTES - (2/P-2.2)

- 1 PROVIDE NEW ELECTRIC DOMESTIC WATER HEATER WITH LEAD FREE BALL VALVES, P & T RELIEF VALVE AND EXPANSION TANK AS DETAILED.
- 2 PROVIDE NEW IN-LINE DOMESTIC CIRCULATION PUMP WITH LEAD FREE BALL VALVES FOR SERVICE AND A 9" THERMOMETER.
- 3 RUN NEW CW, HW AND HWR PIPING DOWN TO FIRST FLOOR PLUMBING FIXTURES AS SHOWN ON 1/P-2.2. INSULATE AND LABEL EACH PIPING SYSTEM AS SPECIFIED.
- 4 DROP 3/4" CW AND HW DOWN TO NEW MOP SINK.
- 5 PROVIDE BALL VALVE, CHECK VALVE AND BALANCING VALVE IN HW RECIRCULATION PIPE AND BALANCE FLOW AS NOTED. PROVIDE BALANCE REPORT TO A/E FOR REVIEW.
- 6 DROP 1" CW DOWN TO NEW WATER CLOSET(S).
- 7 DROP 3/4" CW DOWN TO NEW URINAL.
- 8 RUN 1/2" DOWN FROM EWC ON SECOND FLOOR TO THE 3/4" CW EWC ON FIRST FLOOR AS NOTED ON 1/P-2.2.
- 9 RUN 3/4" CW AND HW DOWN TO NEW WASH FOUNTAIN.
- 10 RUN 1/2" CW AND HW TO NEW SINK UP FROM FIRST FLOOR. SEE 1/P-2.2 FOR CONTINUATION.
- 11 PROVIDE LEAD FREE BALL VALVES TO PROVIDE ISOLATION OF EACH TOILET ROOM PLUMBING FIXTURE WATER SUPPLIES AS SHOWN.
- 12 SEE PIPING RISER DETAIL FOR CW, HW AND HWR PIPE SIZES.
- 13 PROVIDE NEW ROOF PIPE PENETRATION BOOT AND FLASH INTO EXISTING ROOFING SYSTEM. RUN NEW 2" GAS PIPE EXPOSED OVER TO WALL ON ROOF PIPE SUPPORTS. LABEL GAS PIPING AS SCHEDULED.
- 14 RUN NEW GAS PIPE TO WALL, TURN AND RUN OVER TO NOTE #15.
- 15 RUN NEW GAS PIPE UP NEW WALL AND UP TO NEW DOAS-2 UNIT ON NEW ROOF. PRIME AND PAINT EXPOSED GAS PIPE A COLOR TO MATCH THE NEW WALL MATERIAL. SUBMIT PAINT COLOR SAMPLES TO ARCHITECT FOR SELECTION OF THE COLOR HE WANTS. SEE ROOF PLAN FOR PIPE CONTINUATION.
- 16 PROVIDE A NEW HOSE BIBB NEXT TO MOP SINK AND CONNECT 3/4" COLD WATER THAT SUPPLIES MOP SINK. HOSE BIBB TO HAVE A VACUUM BREAKER. HOSE BIBB TO BE EQUAL TO WOODFORD MODEL 26/626, ZURN MODEL Z1341 OR MIFAB MODEL MHY-9041-NPB.
- 17 PROVIDE NEW 3/4" CW UP TO NEW ROOF HYDRANT (RH-1) SECURED TO ROOF STRUCTURE AND BRACED TO STOP ANY MOTION. PROVIDE A STOP AND WASTE BALL VALVE ABOVE CEILING ON THIS BRANCH CW PIPE. MODEL INCLUDES A STORAGE TANK TO DRAIN HYDRANT. IF ANOTHER MODEL IS APPROVED THAT DOES NOT HAVE THE STORAGE TANK, CONTRACTOR WILL PIPE DRAIN TO NEAREST APPROVED



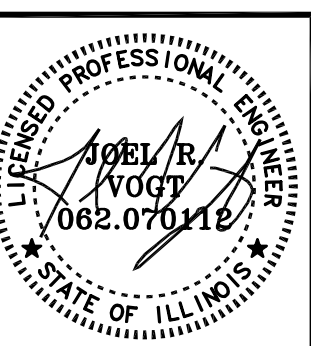
2 PARTIAL SECOND FLOOR PLUMBING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"

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TEL: 317.979.9807

EDISON ELEMENTARY SCHOOL, 2019 ADDITION  
at 521 S. Pearl Street - Macomb, Illinois 61455  
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MACOMB District Office - 323 W. Washington Street  
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EXPIRATION 11/30/19  
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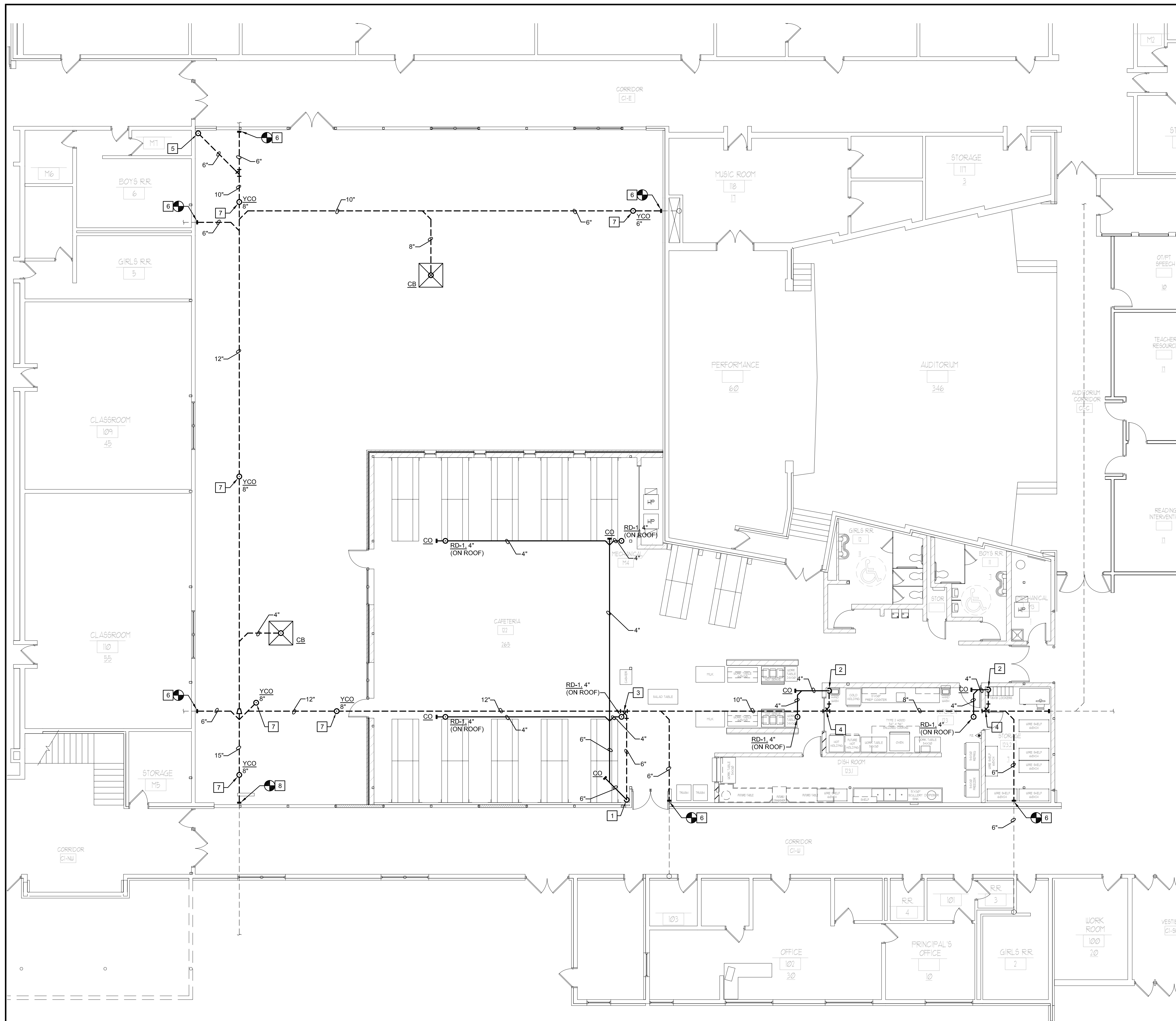
PARTIAL FIRS & SECOND FLOOR HW & CW PIPING PLAN - NEW WORK

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET P-2.2  
OF 91 SHEETS

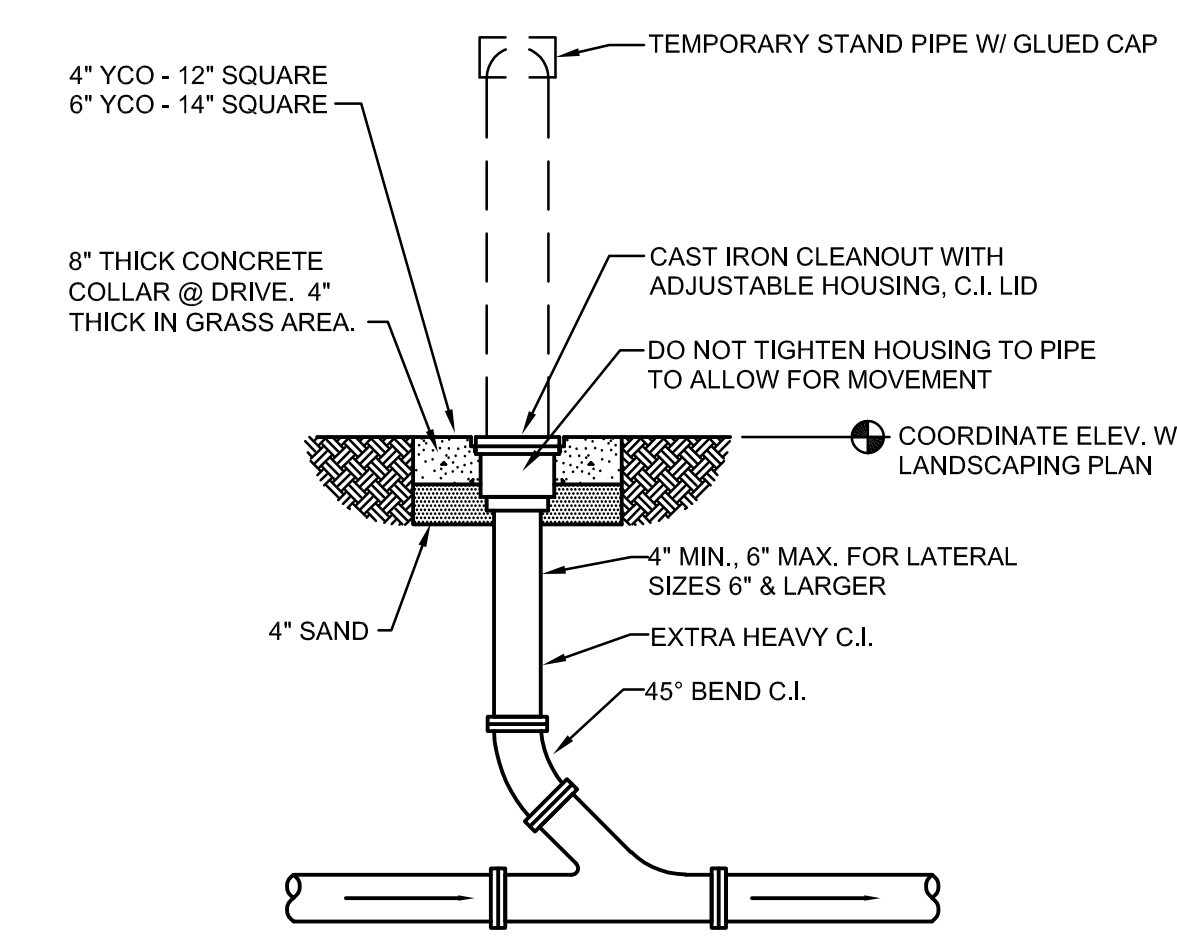




**KEYED NOTES - NEW WORK**

- 1 DROP 6" ROOF LEADER DOWN IN CORNER AND NEW PIPE CHASE. PROVIDE A CLEANOUT NEAR THE BOTTOM WITH AN ACCESS DOOR AND A DRAIN HOSE BIBB AS DETAILED.
- 2 DROP 4" ROOF LEADER DOWN IN CORNER AND NEW PIPE CHASE. PROVIDE A CLEANOUT NEAR THE BOTTOM WITH AN ACCESS DOOR AND A DRAIN HOSE BIBB AS DETAILED.
- 3 PROVIDE NEW 6" CONNECTION TO NEW 12" STORM PIPE. FIELD LOCATE EXISTING 6" STORM PIPE INVERT AND NOTE ON AS BUILTS THIS PIPE'S INVERT.
- 4 PROVIDE NEW 4" CONNECTION TO NEW 8" OR 10" STORM PIPE AS SHOWN. FIELD LOCATE EXISTING STORM PIPE'S INVERT AND NOTE ON AS BUILTS THIS PIPE'S INVERT.
- 5 RUN NEW 6" ROOF DRAIN PIPE DOWN EXTERIOR WALL AND UNDER GROUND TO A DEPTH TO ALLOW CONNECTION TO NEW 10" STORM PIPE. FIELD DETERMINE EXISTING REMOVED STORM PIPING AND MATCH THIS INVERT TO RECONNECT TO EXISTING 15" STORM THAT LEAVES THE COURTYARD AREA AT NOTE #8.
- 6 RECONNECT NEW 6" STORM PIPE TO EXISTING 6" STORM THAT LEAVES THE BUILDING AND PIPE AND CONNECT TO NEW MAIN STORM PIPE. FIELD LOCATE EXISTING 6" STORM PIPE INVERT AND NOTE ON AS BUILTS THIS PIPE'S INVERT.
- 7 PROVIDE NEW 8" YARD CLEANOUTS WHERE SHOWN AND CONNECT TO NEW STORM PIPING MAIN. SEE YARD CLEANOUT DETAIL ON THIS SHEET.
- 8 CONNECT NEW 15" STORM TO EXISTING 15" STORM THAT LEAVES THE COURTYARD. NOTE THIS PIPE'S INVERT ON THE AS-BUILT DRAWINGS.

NOTE:  
P.C. SHALL INSTALL GLUED ON CAPS IF TEMPORARY STAND PIPE ARE INSTALLED UNTIL FINAL GRADE IS KNOWN OR ESTABLISHED TO PROTECT SEWER OR STORM FROM DEBRIS FALLING IN



**1 PARTIAL FIRST FLOOR ROOF DRAIN PIPING PLAN - NEW WORK**  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

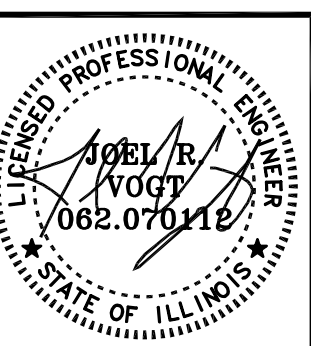
**2 YARD CLEANOUT DETAIL**  
NOT TO SCALE

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**KITCHEN/CAFETERIA ROOF PIPING PLAN - NEW WORK**

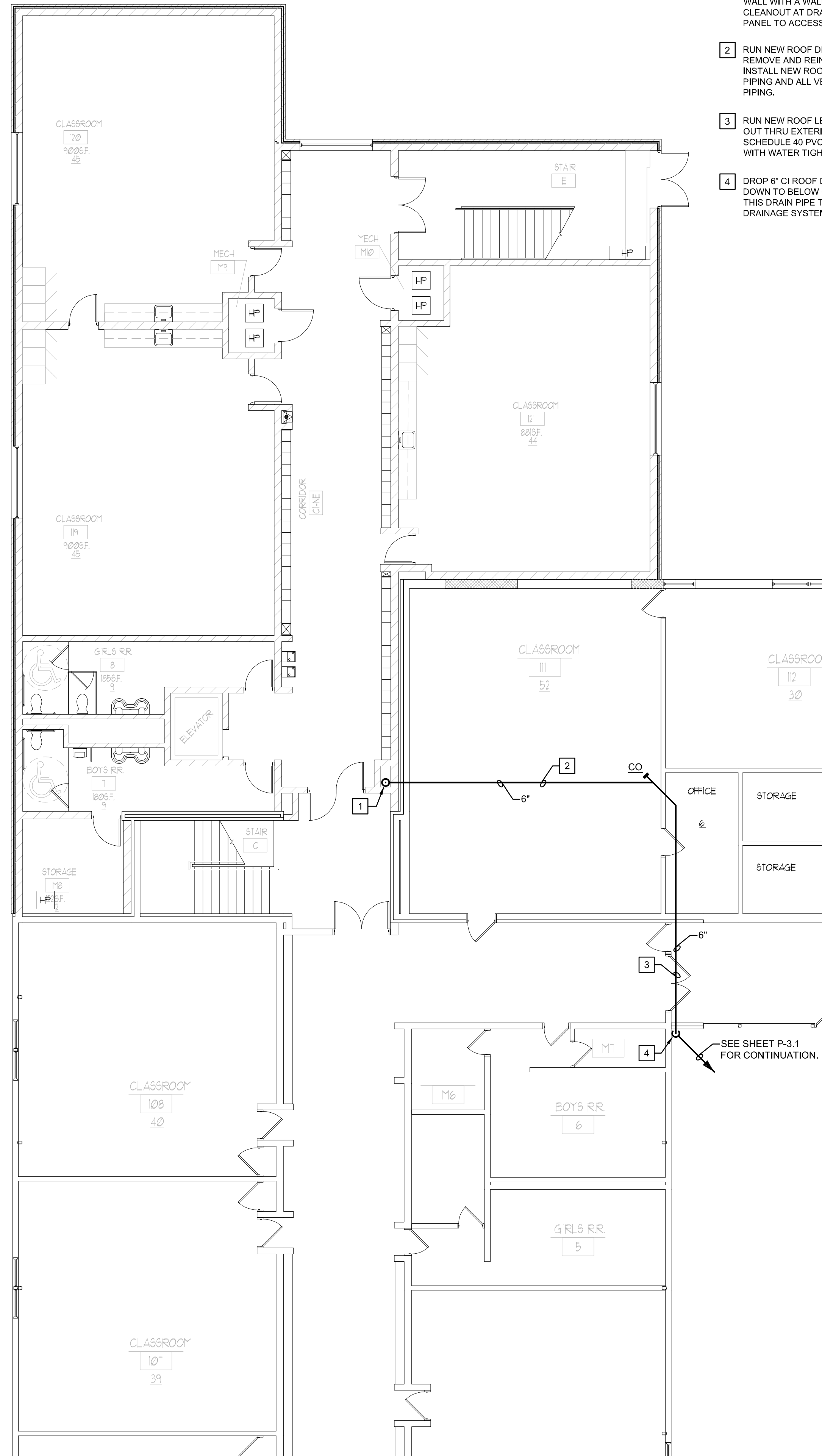
NO.	DATE	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET P-3.1  
OF 91 SHEETS

KEYED NEW WORK NOTES - (1/P-3.2)

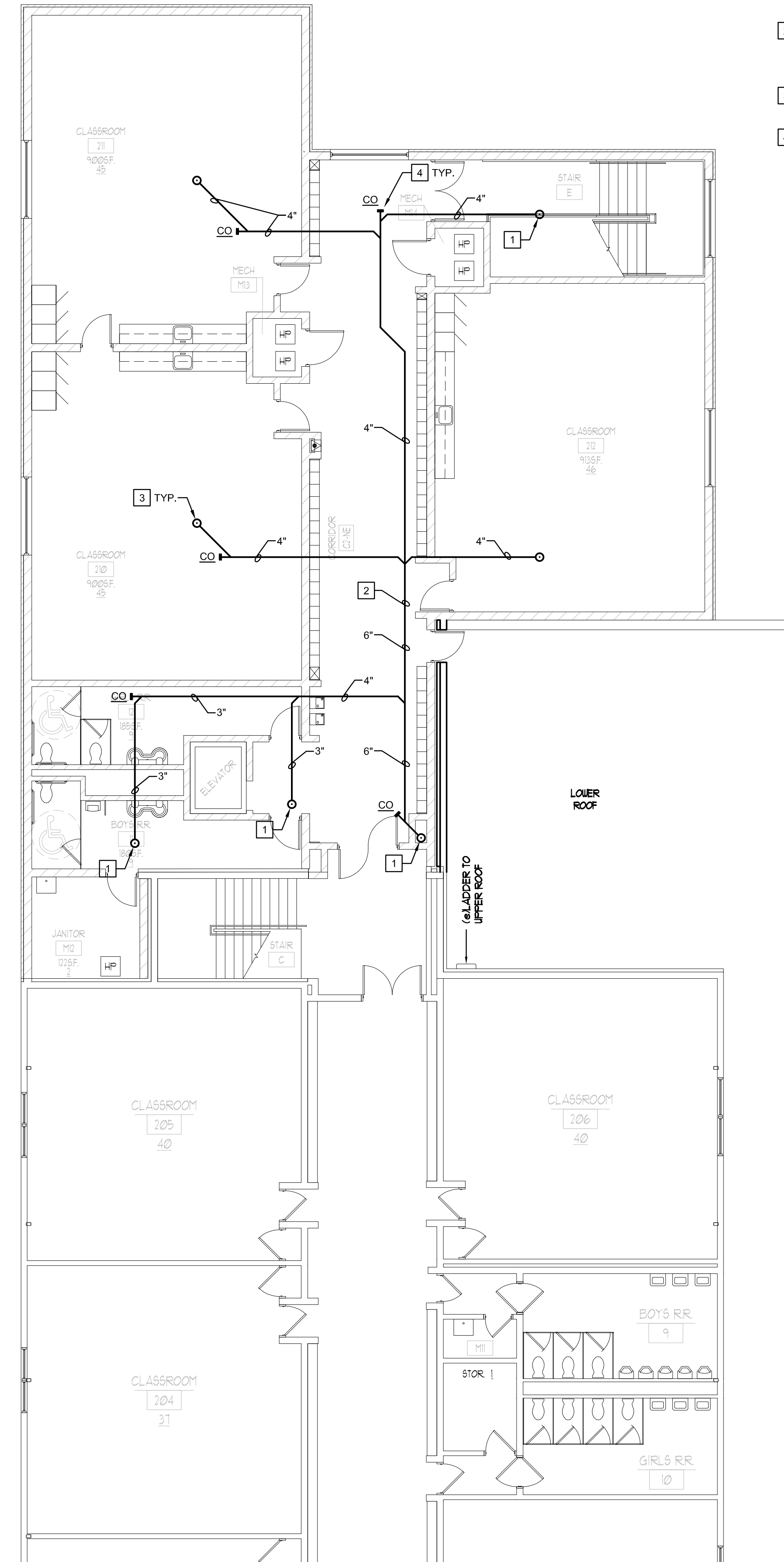
- 1 DROP 6" ROOF LEADER DOWN FROM SECOND FLOOR TO ABOVE FIRST FLOOR CEILING SYSTEM ELEVATION AND TURN THRU EXISTING WALL WITH A WALL SLEEVE AND FIRE SEALANT. PROVIDE A CLEANOUT AT DRAIN TURNING THRU THE WALL. PROVIDE AN ACCESS PANEL TO ACCESS THE CLEAN OUT.
- 2 RUN NEW ROOF DRAIN PIPING ABOVE EXISTING CEILING SYSTEM. REMOVE AND REINSTALL CEILING TILES AND TRACK REQUIRED TO INSTALL NEW ROOF DRAIN PIPING. INSULATE ALL HORIZONTAL DRAIN PIPING AND ALL VERTICAL ROOF DRAIN PIPING. LABEL ROOF DRAIN PIPING.
- 3 RUN NEW ROOF LEADER ACROSS CORRIDOR ABOVE CEILING AND OUT THRU EXTERIOR WALL. CHANGE PIPE MATERIAL FROM SCHEDULE 40 PVC TO CAST IRON PIPE MATERIAL. SLEEVE AND SEAL WITH WATER TIGHT SEALANT.
- 4 DROP 6" CI ROOF DRAIN PIPE DOWN EXPOSED TIGHT TO WALL AND DOWN TO BELOW GRADE. SEE SHEET P-3.1 FOR CONTINUATION OF THIS DRAIN PIPE TO CONNECT TO THE NEW COURT YARD STORM DRAINAGE SYSTEM.



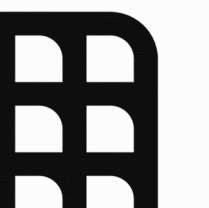
1 PARTIAL FIRST FLOOR ROOF DRAIN PIPING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

KEYED NEW WORK NOTES - (2/P-3.2)

- 1 DROP 6" ROOF LEADER DOWN IN NEW PIPE CHASE. RUN DOWN TO ABOVE FIRST FLOOR CEILING ELEVATION. SEE FIRST FLOOR PLAN FOR CONTINUATION.
- 2 RUN NEW ROOF DRAIN PIPING THRU OR UP BETWEEN ROOF STRUCTURAL BAR JOIST. INSULATE ALL HORIZONTAL DRAIN PIPING, ROOF DRAIN BODY AND ALL VERTICAL ROOF DRAIN PIPING. LABEL ROOF DRAIN PIPING.
- 3 CONNECT NEW ROOF DRAINS TO COLLECTION DRAIN PIPING SYSTEM WITH A CLEAN OUT AT END OF BRANCH DRAIN PIPE RUN.
- 4 PROVIDE CLEAN OUT AT EACH END AND CHANGE IN DIRECTION.

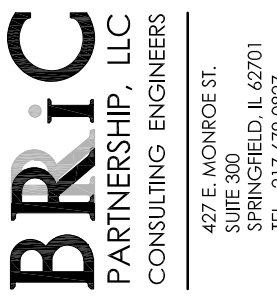


2 PARTIAL SECOND FLOOR ROOF DRAIN PIPING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'



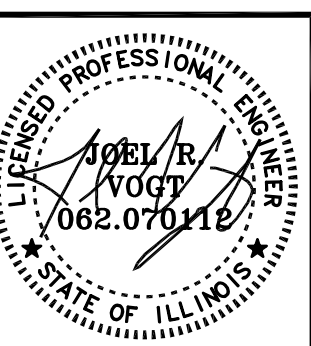
MIDDLETON ASSOCIATES, INC. ARCHITECTS  
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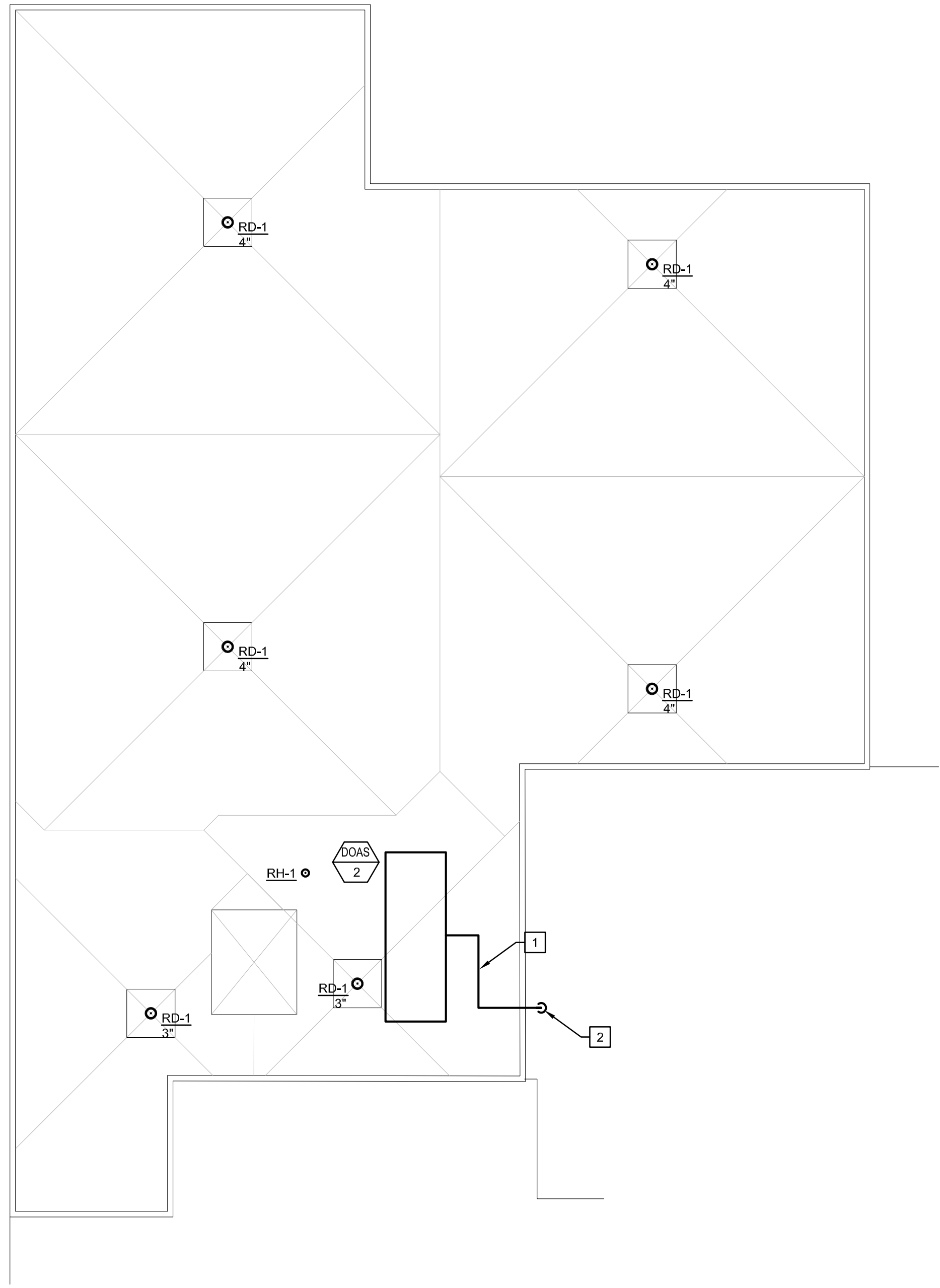
EXPIRATION 11/30/19  
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SECOND FLOOR ROOF PIPING PLAN - NEW WORK

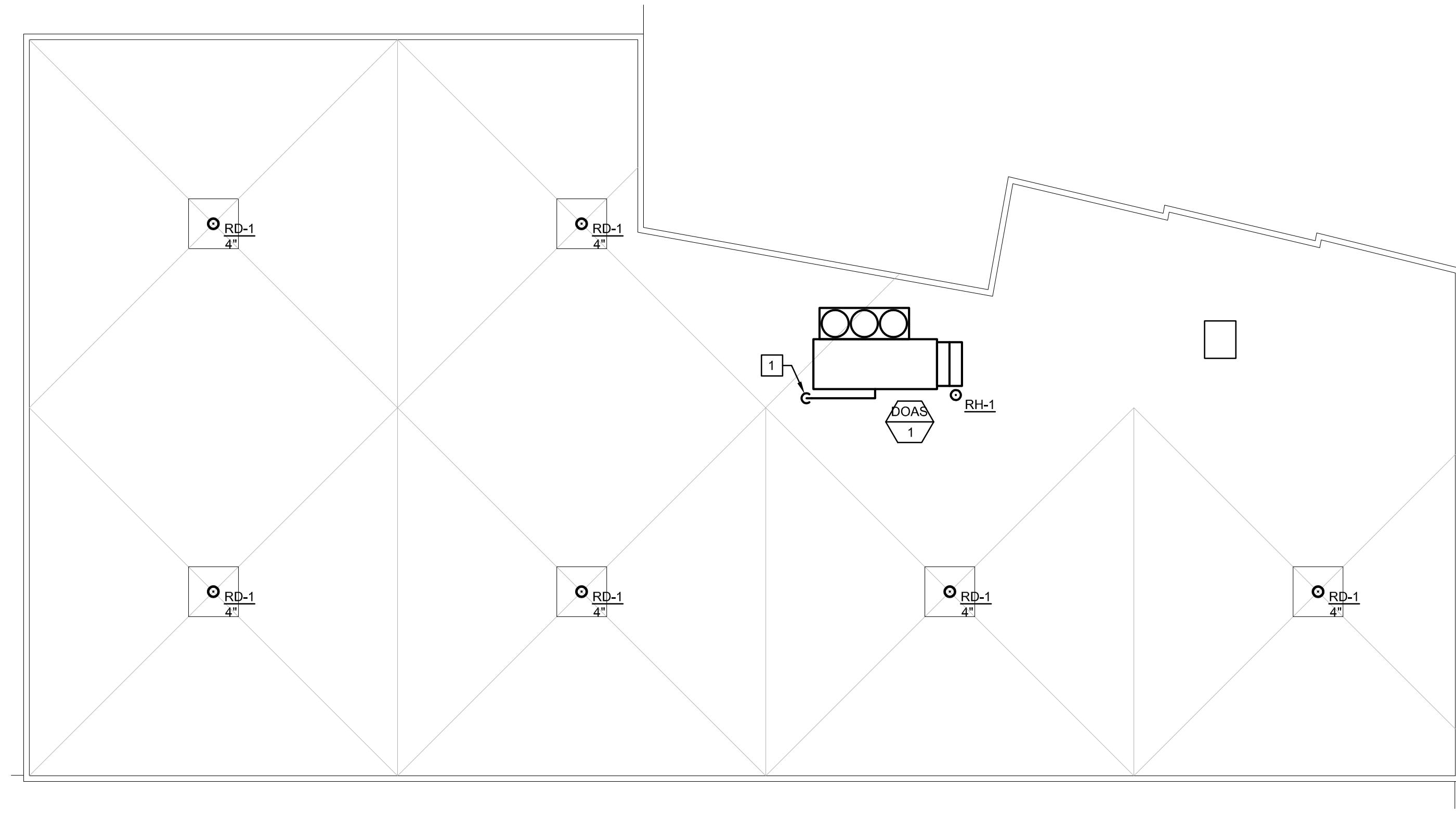
NO.	DATE	REMARKS

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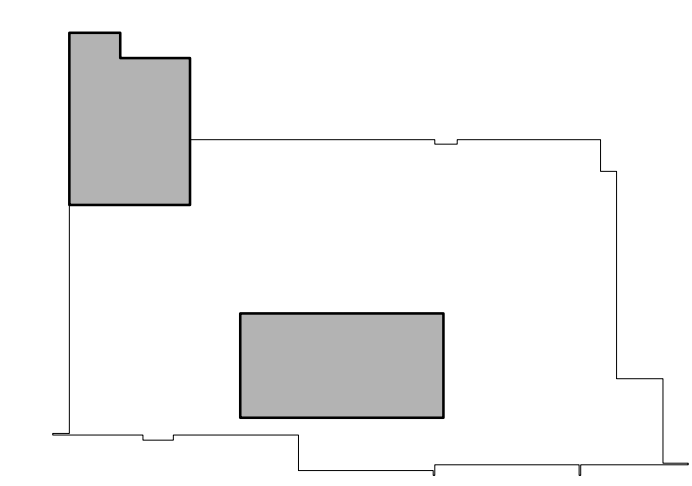
PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET P-3.2  
OF 91 SHEETS



**1 PARTIAL ROOF DRAIN PIPING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'



**2 PARTIAL ROOF DRAIN PIPING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'



**KEY PLAN**  
 NOT TO SCALE

**KEYED NOTES - NEW WORK**

- 1 PROVIDE AT EACH NEW DOAS UNIT A MANUAL GAS VALVE, UNION FITTING, DIRT LEG AND A GAS REGULATOR TO DROP SUPPLY PRESSURE FROM 1 POUND TO 7-9" PSI. REGULATORS ARE TO BE SIZED TO SUPPLY 100MBH TO DOAS-1 AND 400 MBH TO DOAS-2.
- 2 RUN NEW 2" GAS PIPE UP NEW SECOND FLOOR WALL, UP AND OVER ROOFS EDGE, PROVIDE ROOF PIPE SUPPORTS EQUAL TO MIFAB "C", CADDY PYRAMID "ST" OR DURA BLOCK "DB6".

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EXPIRATION 11/30/19  
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**NEW ROOF PLANS - NEW WORK**

NO.	DATE	REVISIONS	REMARKS
THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN ON ANY PART OF THE DRAWINGS SHALL APPLY TO THE WORK UNLESS SET FORTH OTHERWISE.			

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **P-3.3**  
 OF 91 SHEETS

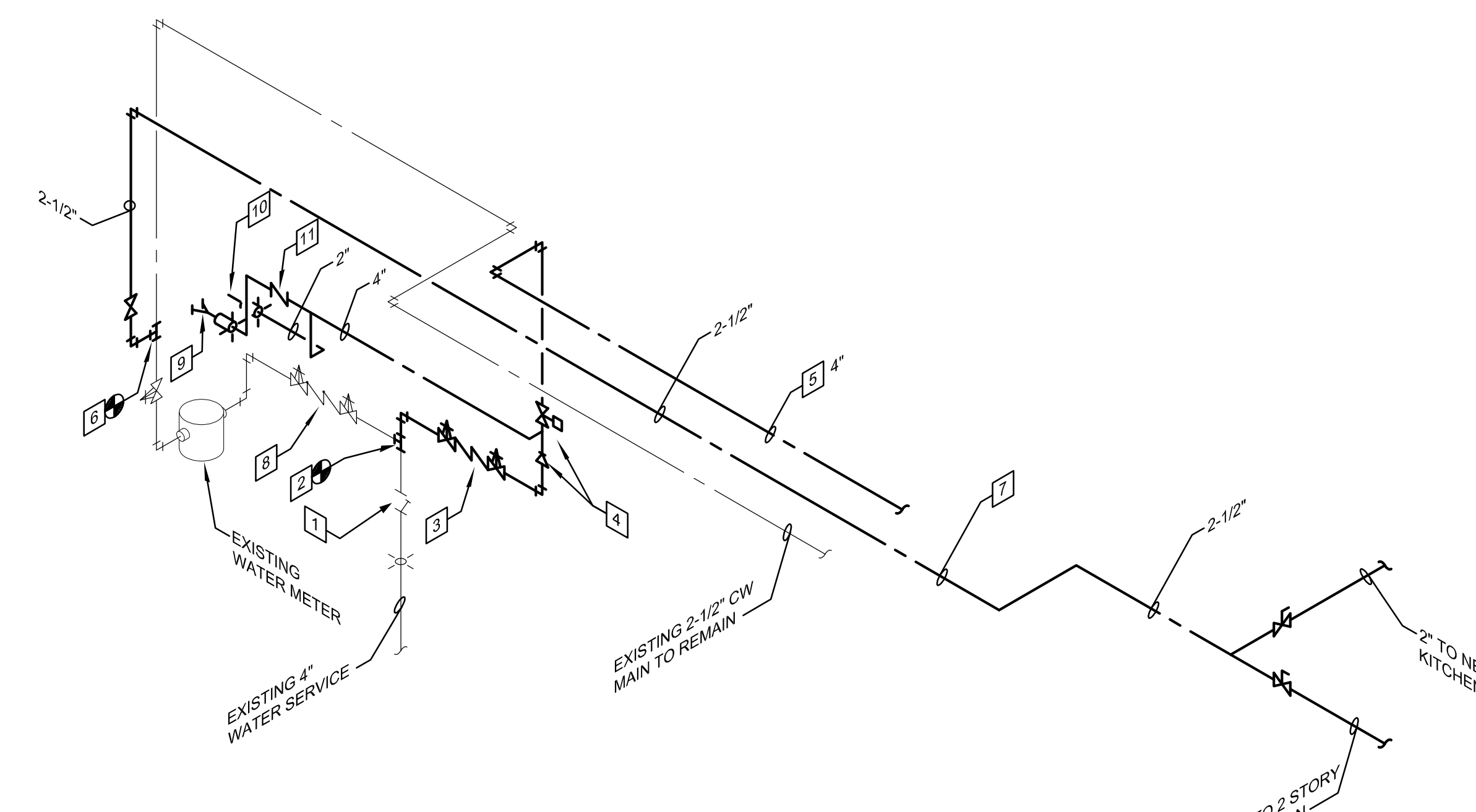


NO.	DATE	REMARKS

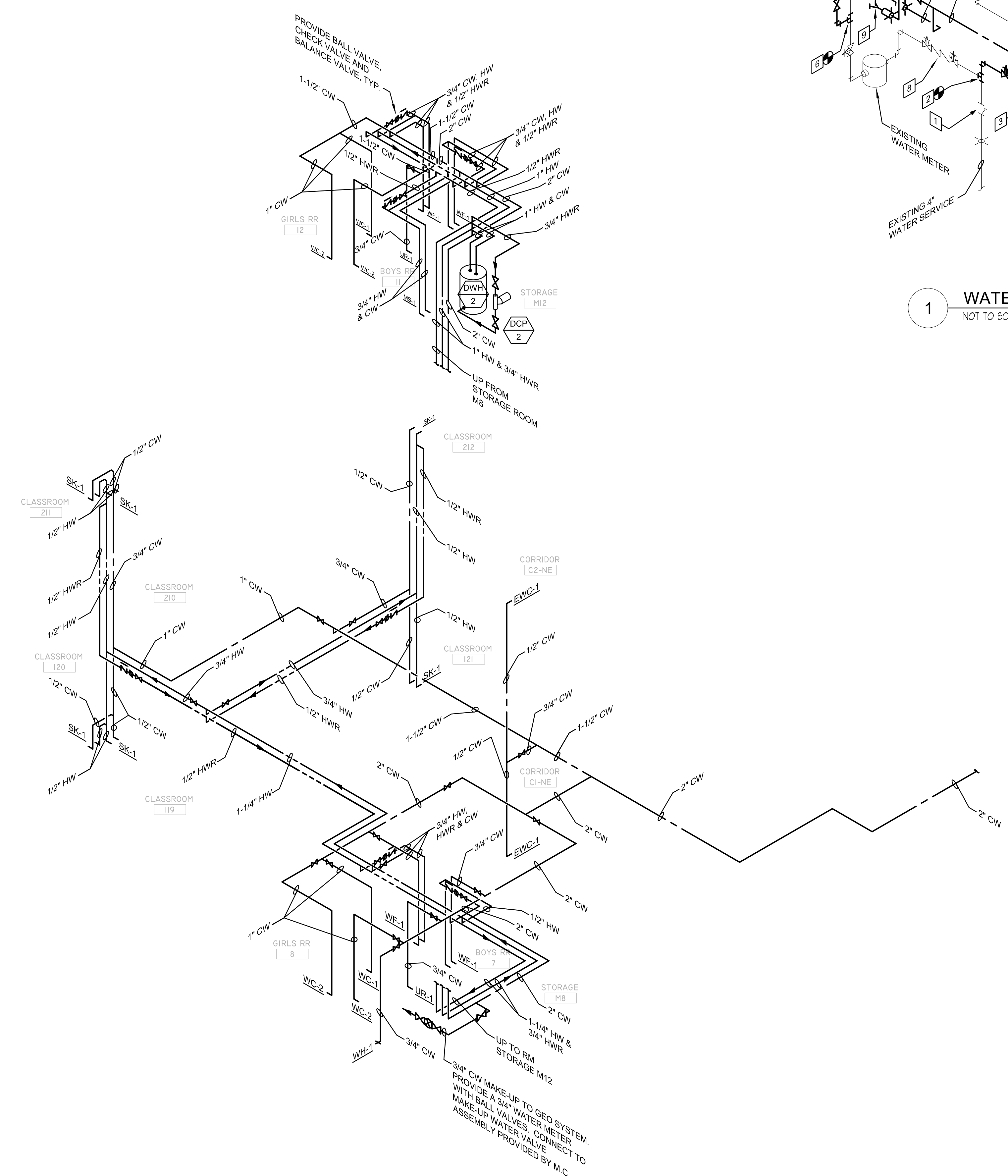
THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

**KEYED NOTES - (1/P-4.1)**

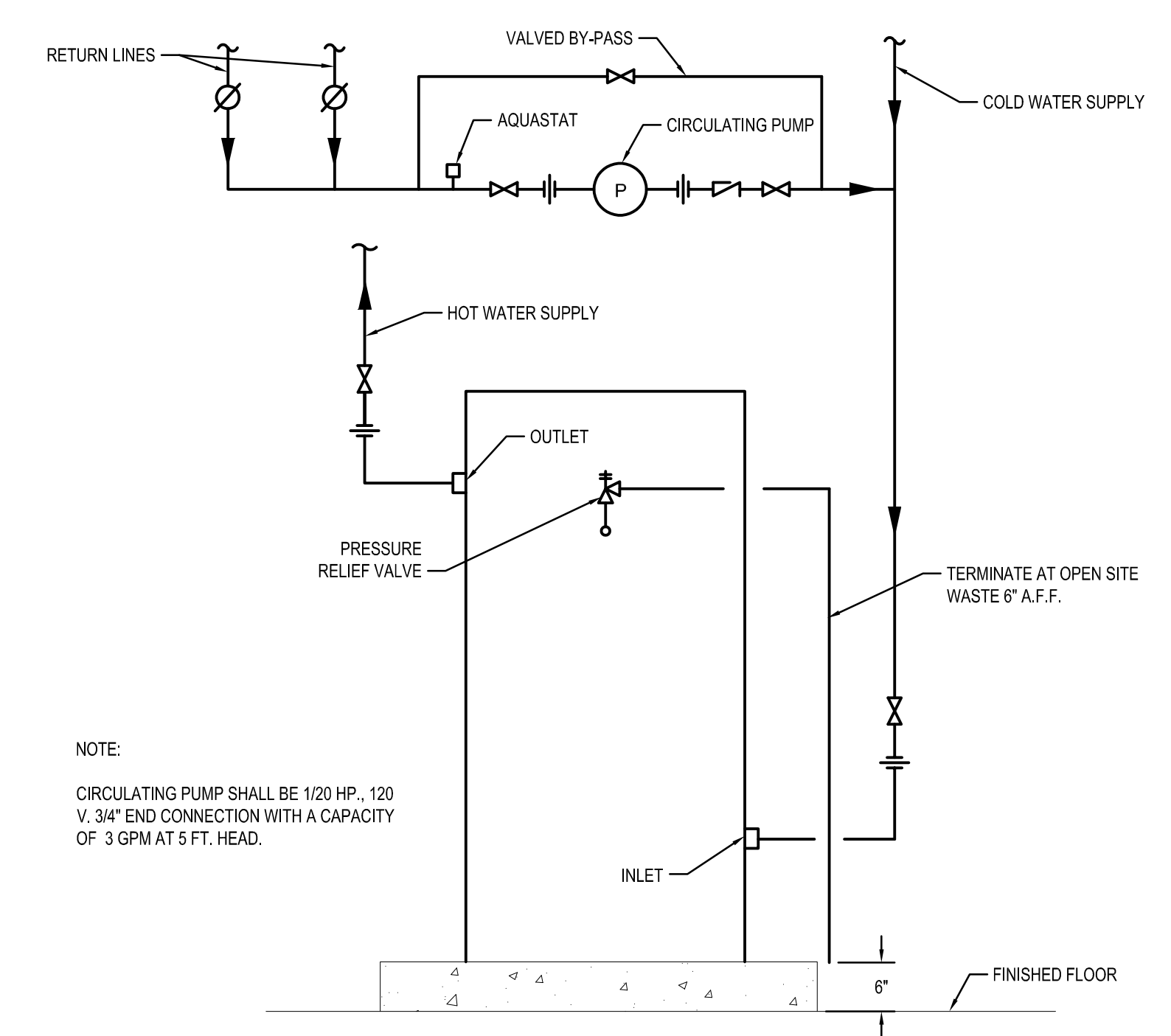
- 1 EXISTING 4" WATER SERVICE WITH EXISTING STRAINER FITTING.
- 2 PROVIDE NEW 4" COPPER "T" FITTING TO EXTEND EXISTING WATER SERVICE TO SUPPLY NEW SPRINKLER MAIN AS SHOWN.
- 3 PROVIDE NEW 4" RPZ ASSEMBLY WITH ALL SURFACES, INSIDE AND OUT COATED WITH EPOXY. VALVES SHALL BE O & Y VALVES WITH TAMPER SWITCHES FOR ELECTRICIAN TO WIRE TO FACP.
- 4 PROVIDE NEW WET SPRINKLER ALARM VALVE WITH FLOW SWITCH.
- 5 RUN NEW 4" SPRINKLER MAIN AS SHOWN ON FLOOR PLANS.
- 6 PROVIDE NEW 2-1/2" CW TAP INTO EXISTING 3" CW MAIN WITH NEW 2-1/2" LEAD FREE BALL VALVE.
- 7 RUN NEW 2" CW MAIN TO NEW ADDITION AS SHOWN ON FLOOR PLANS. RUN NEW PIPING ABOVE HALLWAY LAY-IN CEILING SYSTEM. REMOVE AND REINSTALL CEILING SYSTEM AS REQUIRED TO INSTALL NEW PIPING.
- 8 EXISTING RPZ. INTERIORS HAVE BEEN REMOVED DUE TO LOW CITY WATER PRESSURE.
- 9 PROVIDE NEW 4" SIAMESE CONNECTION WITH PROPER WALL PLATE INFORMATION. MOUNT SIAMESE AT ELEVATION APPROVED BY THE LOCAL FIRE DEPARTMENT. PROVIDE WALL SLEEVE AND SEAL PIPE PENETRATION WEATHER TIGHT.
- 10 PROVIDE A 2" SPRINKLER SYSTEM DRAIN VALVE DISCHARGE PIPE OUT THRU WALL. PROVIDE WALL SLEEVE AND SEAL PIPE PENETRATION WEATHER TIGHT.
- 11 PROVIDE CHECK VALVE IN SIAMESE PIPE.



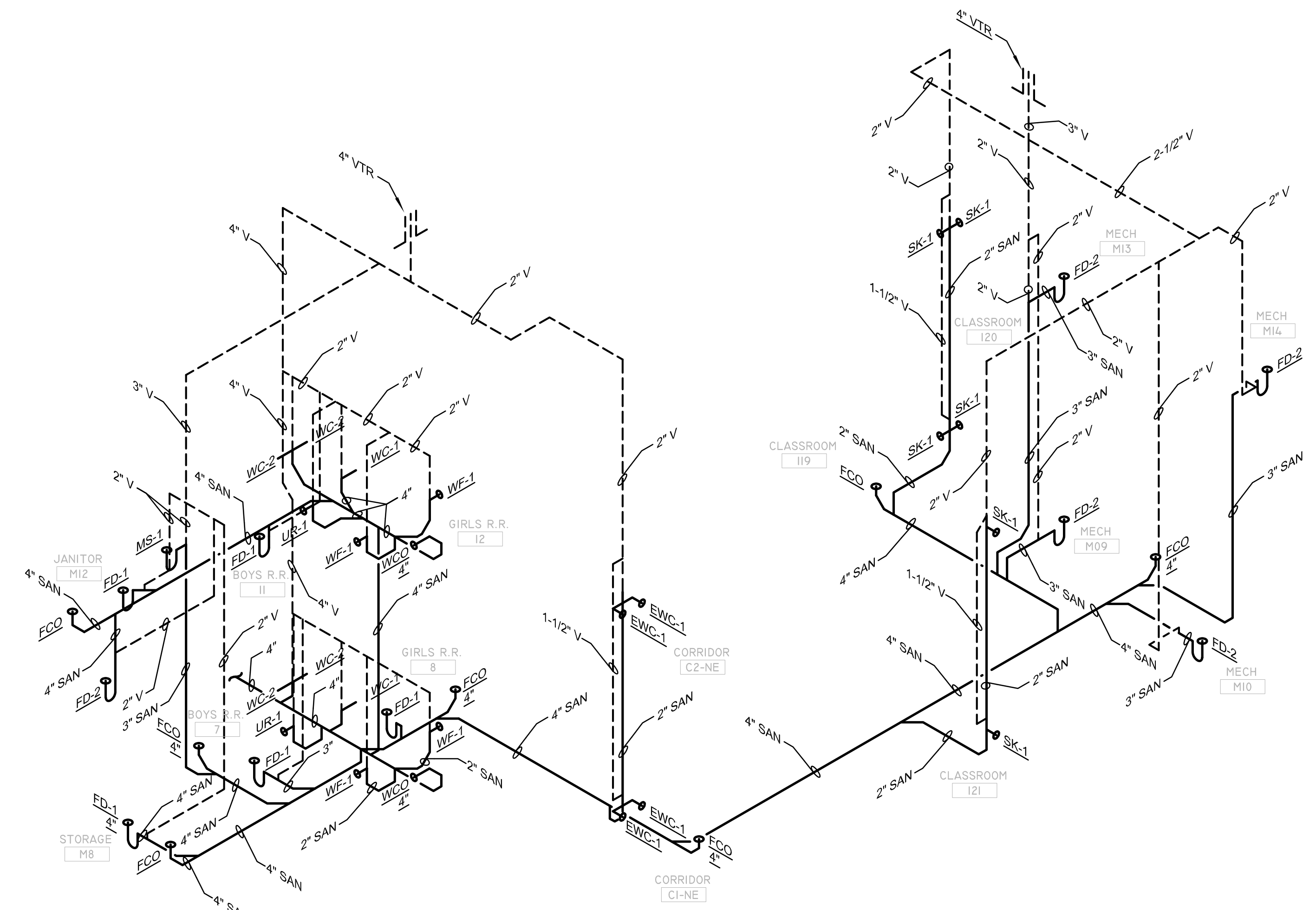
**1 WATER SERVICE PIPING RISER DIAGRAM - NEW WORK**  
 NOT TO SCALE



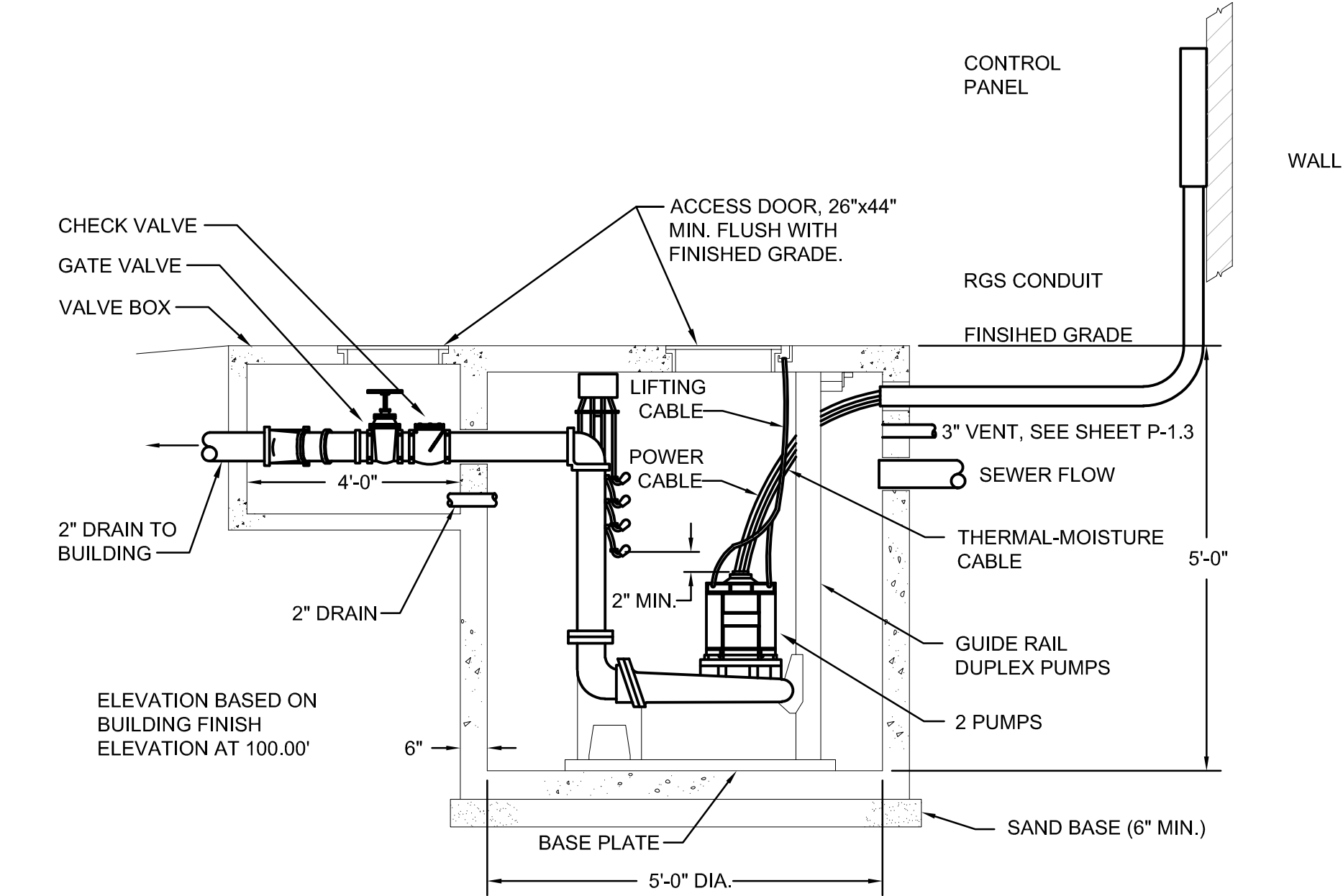
**2 FIRST & SECOND FLOOR CLASSROOM HW & CW PIPING RISER DIAGRAM**  
 NOT TO SCALE



**3 ELECTRIC WATER HEATER SCHEMATIC**  
 NOT TO SCALE



**1 FIRST & SECOND FLOOR CLASSROOM WASTE & VENT PIPING FLOOR PLAN**  
NOT TO SCALE



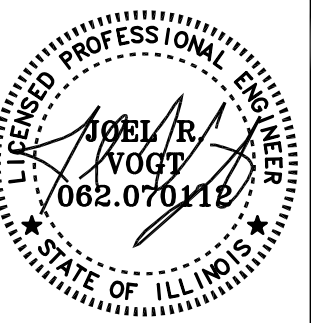
**2 SEWAGE EJECTOR SCHEMATIC (SE-1)**  
NOT TO SCALE

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**PLUMBING RISER DIAGRAMS**

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SHEET **P-4.2**  
OF 91 SHEETS

PIPING MATERIAL SCHEDULE					
SERVICE	TEMPERATURE RATING	LOCATION	PIPE MATERIAL	SCHEDULE OR TYPE	CONNECTIONS METHOD
WASTE	N/A	BELOW GRADE	PVC/CI	40/HEAVY	CHEMICALLY/BELL
VENT	N/A	BELOW GRADE	PVC/CI	40/HEAVY	CHEMICALLY/BELL
WASTE	N/A	ABOVE GRADE	PVC	40	CHEMICALLY
VENT	N/A	ABOVE GRADE	PVC	40	CHEMICALLY
FORCED MAIN	N/A	BELOW AND ABOVE GRADE	PVC	80	CHEMICALLY
WATER	55 F.	INSIDE	COPPER	"L"	95/5- PRO PRESS
WATER	140 F.	INSIDE	COPPER	"L"	95/5- PRO PRESS
STORM	N/A	ABOVE/BELOW GRADE	PVC	40	CHEMICALLY
NAT GAS PIPING	N/A	ABOVE GROUND	BLACK STEEL	SCHEDULE 40	THREADED/WELDED

FOOD SERVICE EQUIPMENT CONNECTION SCHEDULE																				
PLAN MARK ①	DESCRIPTION	PROVIDED BY	UTILITY CONNECTIONS BY	COLD WATER	HOT WATER (110° F) TMV	HOT WATER (140° F)	WASTE	IN-DIRECT WASTE	VENT	GAS CONNECTION	GAS PRESSURE	MBTU	ELECTRICAL						COMMENTS	
													VOLTS	PHASE	KW	HP	FLA	MOCP		DISC SW. *
1	3 POT SCULLERY SINK	G.C.	P.C.	3/4"	—	3/4"	2"	NO	2"	—	—	—	—	—	—	—	—	—	—	
1A	GARB. DISPOSER	G.C.	P.C. & E.C.	3/4"	—	—	2"	NO	2"	—	—	—	208	3	—	1-1/2	5.98	20	—	3
1B	DRYING SHELF	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	PREP SINK	G.C.	P.C.	1/2"	—	1/2"	2"	NO	1.5"	—	—	—	—	—	—	—	—	—	—	—
3	TRIPLE STEAM TABLE	G.C.	P.C. & E.C.	—	—	—	3"	YES	2"	—	—	—	120	1	3.0	—	18.8	30	—	2
3A	TRIPLE STEAM TABLE	G.C.	P.C. & E.C.	—	—	—	3"	YES	2"	—	—	—	120	1	3.0	—	18.8	30	—	2
4	COLD HOLDING	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	DIRTY SHELF	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	ROLL-UP DOOR	G.C.	E.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
6A	ROLL-UP DOOR	G.C.	E.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
7	SHELVING	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8A	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8B	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8C	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8D	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8E	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8F	WORK TABLE	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	DOUBLE STACK OVEN	OWNER	P.C. & E.C.	—	—	—	—	—	—	1"	7"-9"	180	120	1	—	—	8.5	20	—	—
10	HOT HOLDING	OWNER	E.C.	—	—	—	—	—	—	—	—	—	120	1	2.0	—	25.1	30	—	—
10A	HOT HOLDING	FUTURE	E.C.	—	—	—	—	—	—	—	—	—	120	1	2.0	—	25.1	30	—	—
11	REFRIGERATOR	G.C.	E.C.	—	—	—	—	—	—	—	—	—	120	1	2.0	—	8.9	20	—	—
12	FREEZER	G.C.	E.C.	—	—	—	—	—	—	—	—	—	120	1	2.0	—	11.2	20	—	—
13	MILK COOLER	OWNER	E.C.	—	—	—	—	—	—	—	—	—	120	1	—	—	12	20	—	—
13A	MILK COOLER	OWNER	E.C.	—	—	—	—	—	—	—	—	—	120	1	—	—	12	20	—	—
14	TRASH	OWNER	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	MICROWAVE	OWNER	E.C.	—	—	—	—	—	—	—	—	—	120	1	—	—	14.5	20	—	—
16	LOCKERS	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	DESK	OWNER	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	TYPE 2 HOOD	M.C.	MC. & E.C.	—	—	—	—	—	—	—	—	—	208	3	—	1.0	4.14	20	—	—
19	SALAD TABLE	OWNER	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20	CASHIER	OWNER	—	—	—	—	—	—	—	—	—	—	120	1	—	—	10	20	—	—
21	HAND SINK	P.C.	P.C.	1/2"	1/2"	—	2"	NO	1.5"	—	—	—	—	1	—	—	—	—	—	—
21A	HAND SINK	P.C.	P.C.	1/2"	1/2"	—	2"	NO	1.5"	—	—	—	—	—	—	—	—	—	—	—
22	WALL CABINET	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22A	WALL CABINET	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23	FIRST AID KIT	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	FIRE EXTINGUISHER	G.C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	GREASE INTERCEPTOR	P.C.	P.C.	—	—	—	4"	NO	2"	—	—	—	—	—	—	—	—	—	—	—
FUTURE	DISHWASHER	FUTURE	FUTURE	—	—	3/4"	4"	YES	2"	—	—	—	208	3	—	—	—	—	—	—
FUTURE	DISHWASHER HOOD	FUTURE	FUTURE	—	—	—	—	—	—	—	—	—	120	1	—	—	—	—	—	—

\* SEE ELECTRICAL EQUIPMENT SCHEDULE FOR SPECIFICS


FOOD SERVICE GENERAL NOTES	
1.	CONTRACTOR SHALL VERIFY ALL LEFT TO RIGHT AND TOP TO BOTTOM DIMENSIONS WITH FOOD SERVICE EQUIPMENT CONTRACTORS SHOP DRAWINGS PRIOR TO INSTALLING PIPING AND ROUGH INS OR CONNECTIONS.
2.	CONTRACTOR SHALL PROVIDE ALL PIPING FITTINGS, PARTS ETC. REQUIRED TO MAKE PLUMBING RELATED FOOD SERVICE EQUIPMENT OPERATIONAL.
3.	CONTRACTOR SHALL SEAL ALL CEILING, WALL AND FLOOR PIPE PENETRATIONS WATER AND VERMIN PROOF.
4.	CONTRACTOR SHALL PROVIDE INSULATED TYPE "L" COPPER DWV PIPE AND FITTINGS FOR ALL INDIRECT WASTE EXTENSIONS FROM ICE BIN AND ICE MAKERS TO FLOOR DRAIN OR FLOOR SINK AS SHOWN ON DRAWINGS.
5.	CONTRACTOR SHALL RECEIVE, FROM FOOD SERVICE EQUIPMENT CONTRACTOR, AND PROVIDE ALL GAS PRESSURE REGULATORS, VALVES, CONNECTIONS AND DIRT LEG FITTINGS FOR CONNECTION TO GAS SUPPLIED EQUIPMENT.
6.	CONTRACTOR SHALL PROVIDE 45 DEGREE CUTS ON ALL INDIRECT WASTE TERMINATIONS ABOVE FLOOR DRAIN OR FLOOR SINK.
7.	ALL EXPOSED WATER PIPING SHALL BE CHROME PLATED. EXPOSED PIPING SHALL BE HELD AWAY FROM WALL SURFACE 1" TO MAX OF 3" TO ALLOW FOR CLEANING.
8.	ALL SUPPLIES, STOP VALVES, TRAPS, TAIL PIECES, ETC., NOT SUPPLIED BY FOOD SERVICE CONTRACTOR, SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR.

- COMMENTS:
- E.C. TO CONNECT ROLL-UP DOOR RELEASE MECHANISM TO FACP SYSTEM FOR RELEASE UPON DETECTOR ACTIVATION.
  - PROVIDE 30 AMP RECEPTACLE WITH L14-30P RECEPTACLE.
  - EC SHALL WIRE UP GARBAGE DISPOSAL CONTROL PANEL AND WIRE UP CW SOLENOID VALVE TO OPEN WHEN DISPOSAL IS ENERGIZED.



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at 521 S. Pearl Street - Macomb, Illinois 61455  
for MACOMB CUSD #185  
MACOMB District Office - 323 W. Washington Street  
Macomb, Illinois 61455



Professional Engineer  
Noel R. Vogt  
062.070118  
STATE OF ILLINOIS

EXPIRATION 11/30/19  
SIGNED 02/15/19

PLUMBING SCHEDULES

NO.	DATE	REMARKS

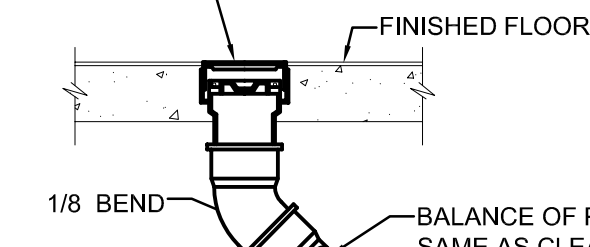
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PROJECT NO.  
22150211  
ISSUE DATE  
02/15/2019  
SHEET  
P-5.1  
OF 91 SHEETS

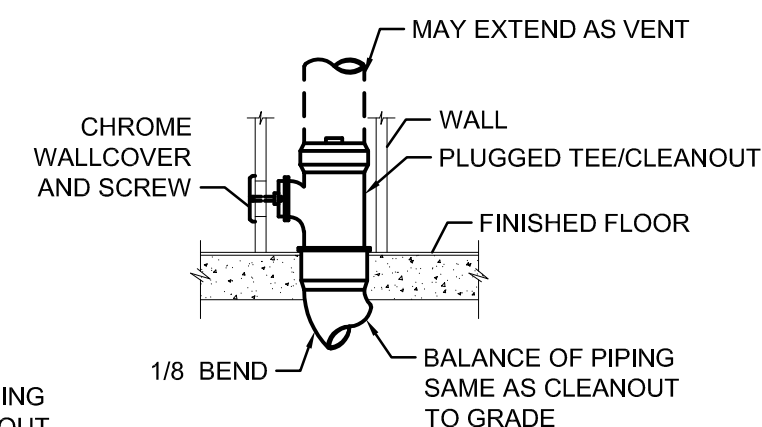




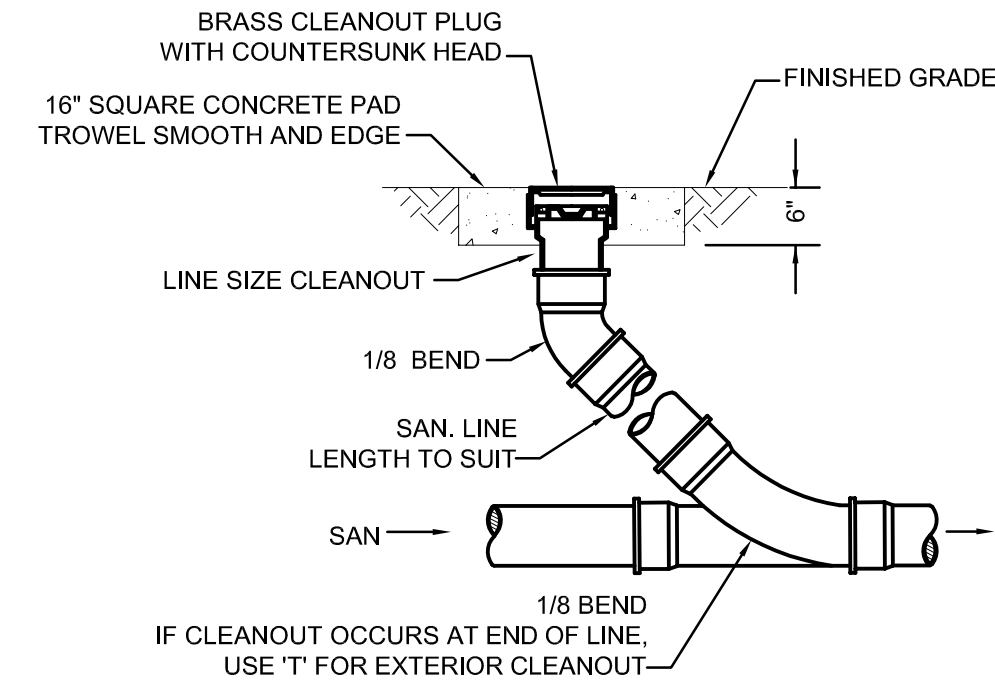
CLEANOUT AND NICKEL BRONZE ACCESS COVER WITH COUNTERSUNK HEAD. TOP OF COVER TO BE FLUSH WITH TOP OF FLOOR AND COMPATIBLE WITH FLOORING MATERIAL



**FLOOR CLEAN OUT (FCO)**

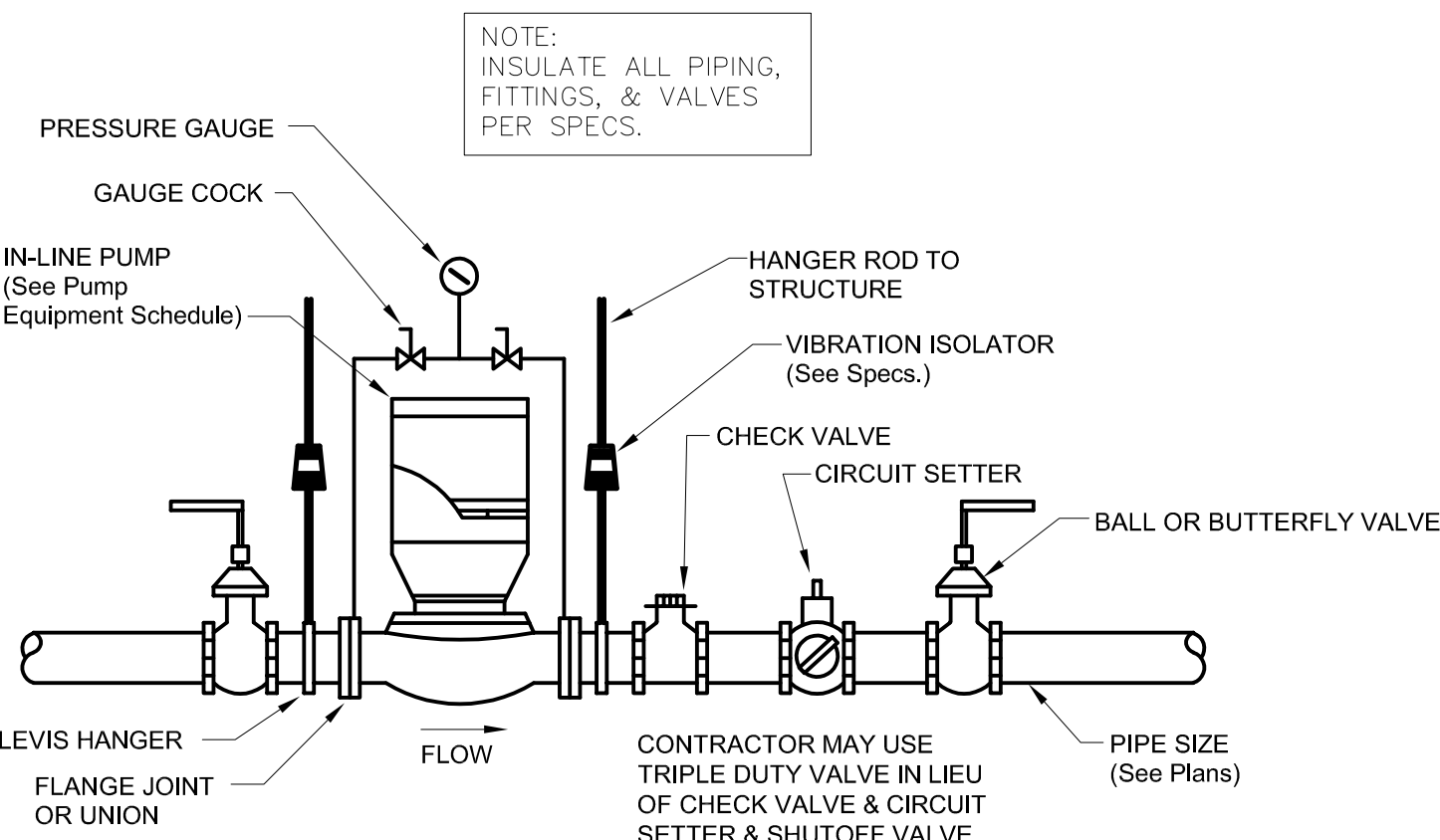


**WALL CLEAN OUT (WCO)**



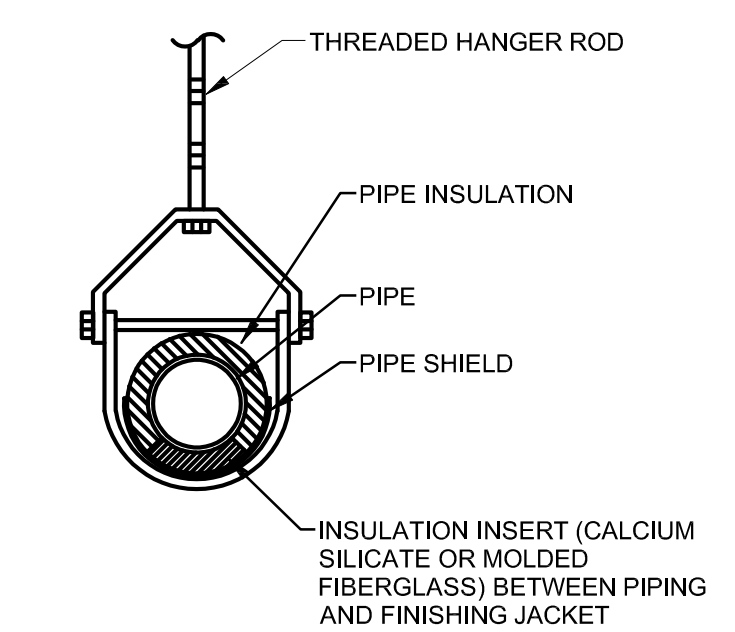
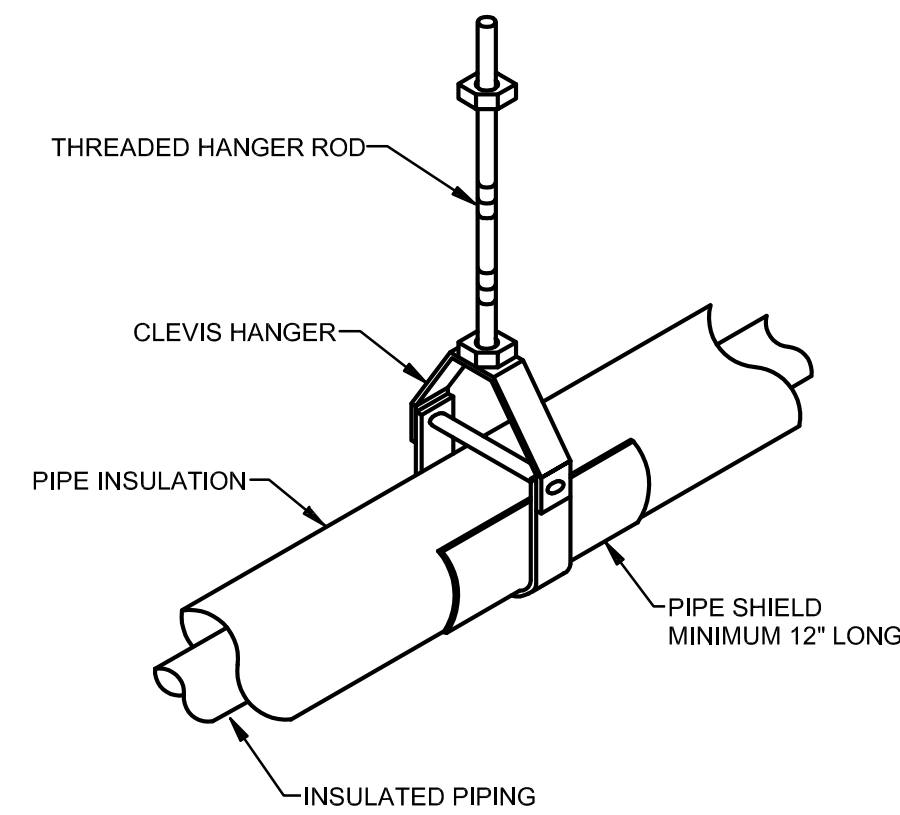
**CLEANOUT TO GRADE (YCO)**

**1 TYPICAL CLEANOUT DETAILS**  
NOT TO SCALE



NOTE: INSULATE ALL PIPING, FITTINGS, & VALVES PER SPECS.

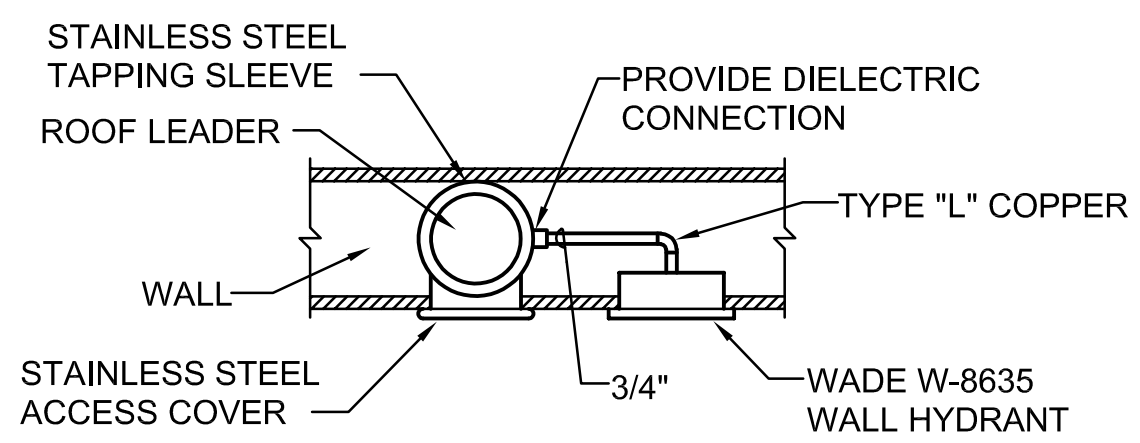
**2 IN-LINE PUMP PIPING DETAIL**  
NOT TO SCALE



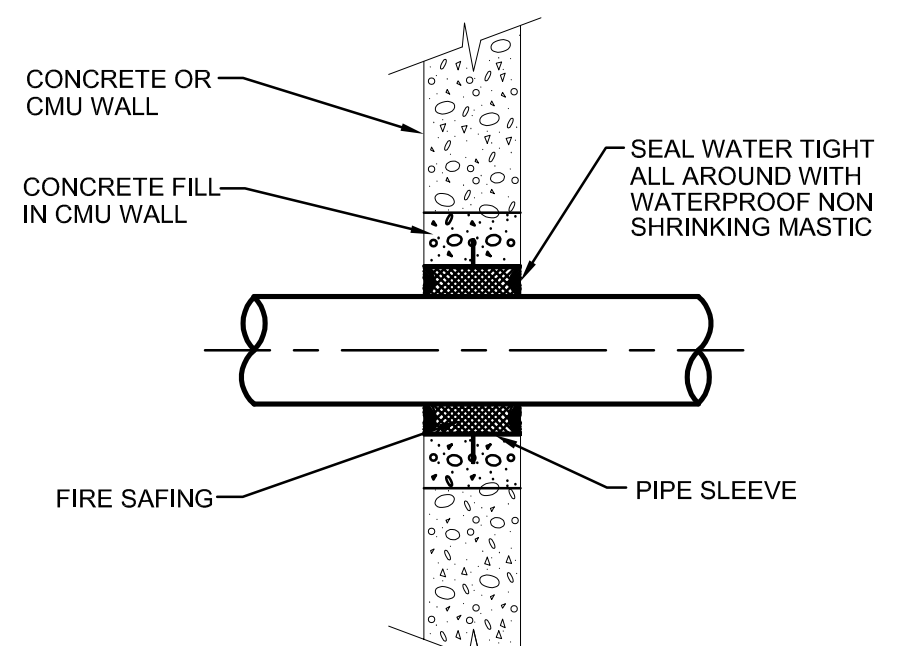
**SECTION THRU HANGER**

REFER TO SPECS FOR INSULATION AND HANGER SUPPORTS.

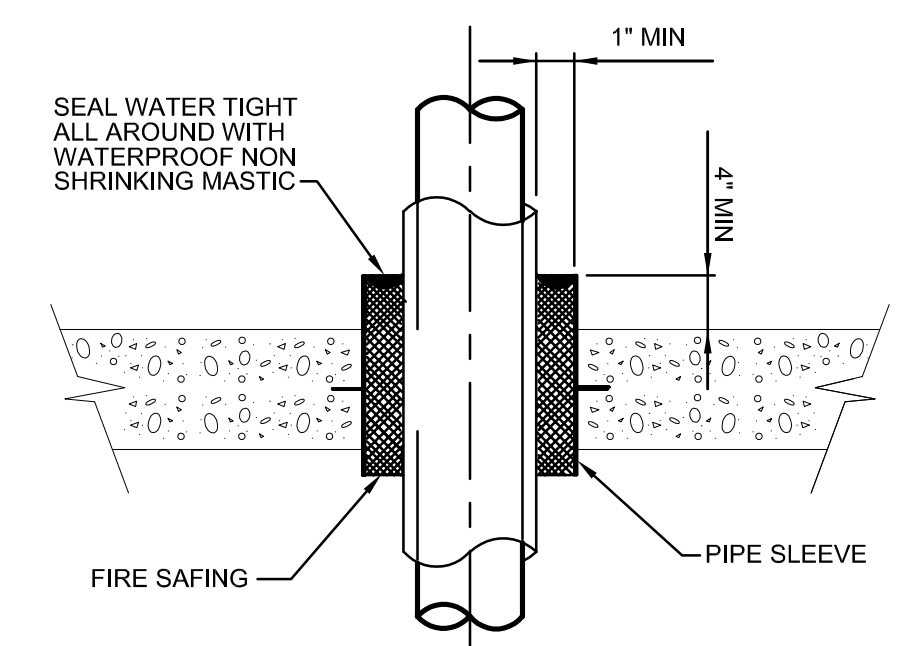
**3 INSULATED PIPE HANGER SUPPORT DETAIL**  
NOT TO SCALE



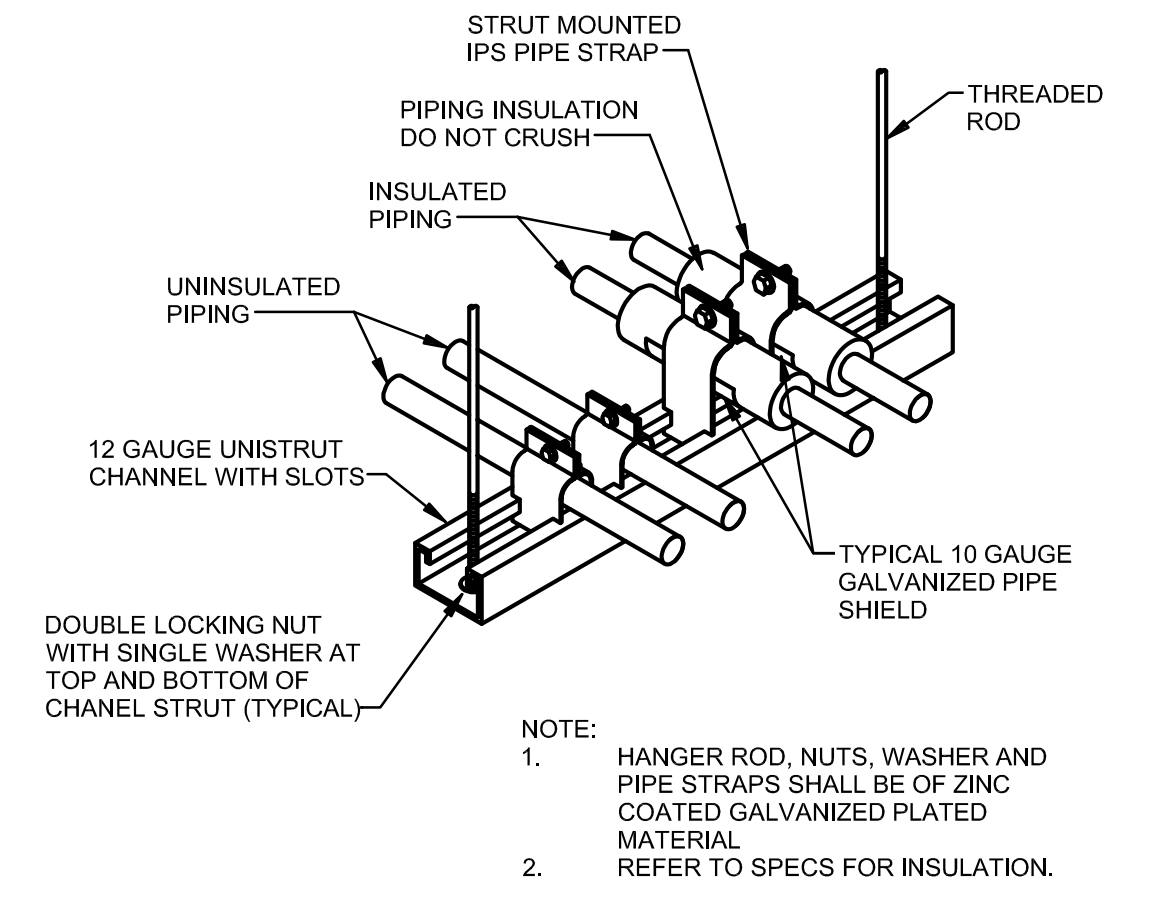
**4 ROOF LEADER DRAIN DETAIL**  
NOT TO SCALE



**5 PIPE PENETRATION THRU WALL**  
NOT TO SCALE

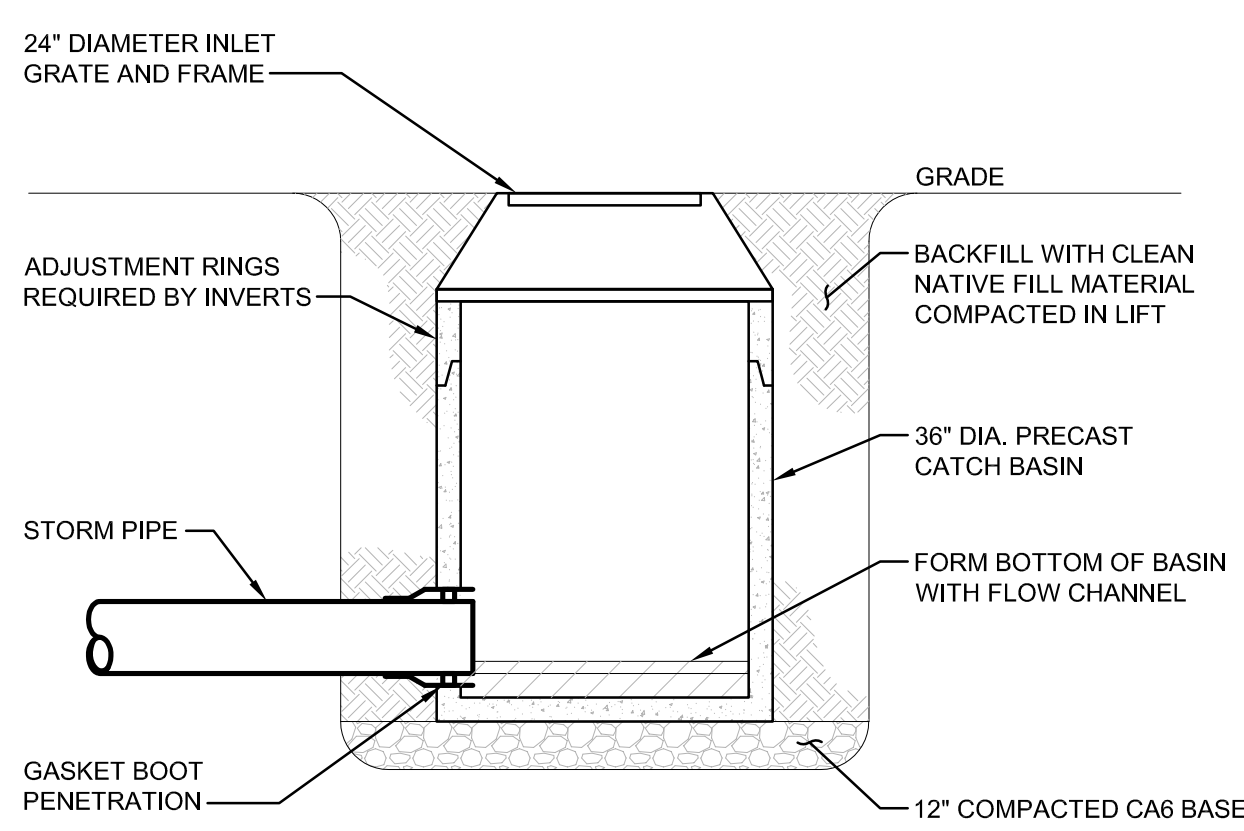


**6 PIPE PENETRATION THRU FLOOR**  
NOT TO SCALE

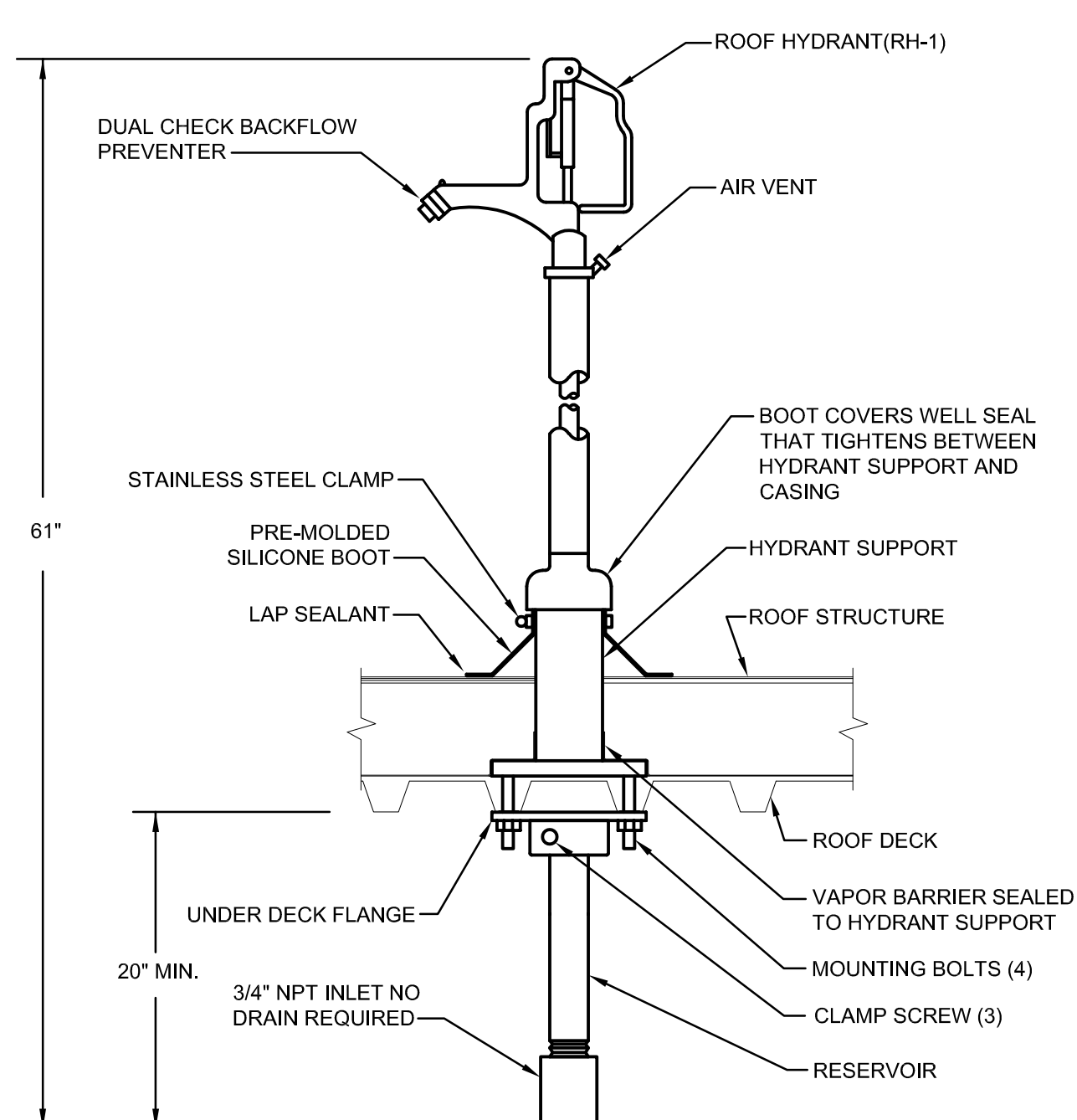


- NOTE:
- HANGER ROD, NUTS, WASHER AND PIPE STRAPS SHALL BE OF ZINC COATED GALVANIZED PLATED MATERIAL. REFER TO SPECS FOR INSULATION.
  -

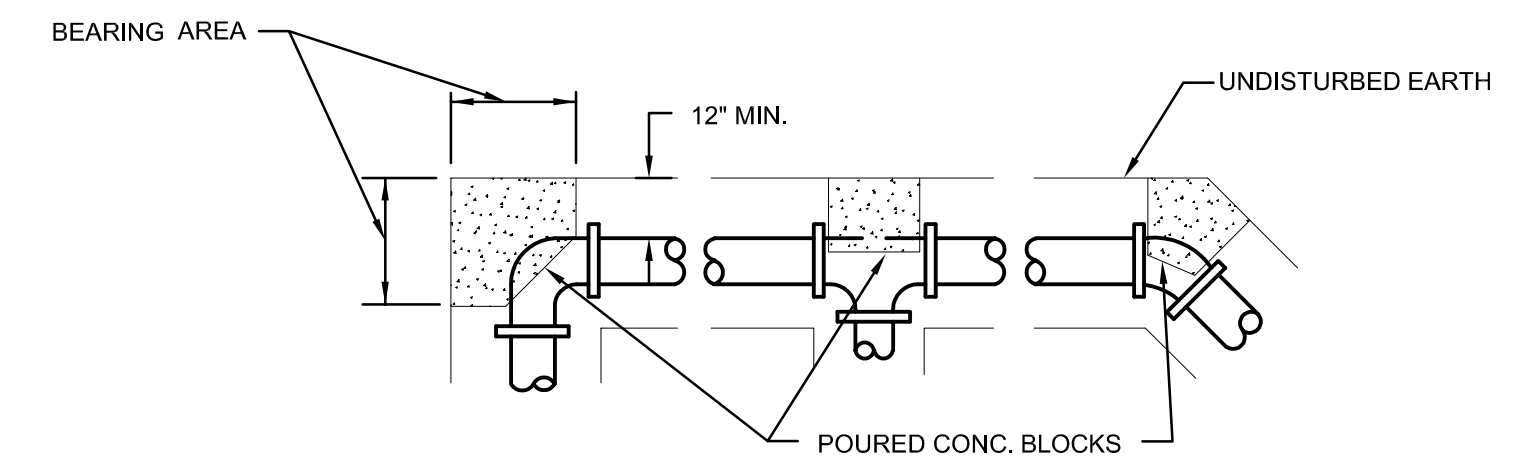
**7 TRAPEZE PIPE SUPPORT DETAIL**  
NOT TO SCALE



**8 CATCH BASIN DETAIL**  
NOT TO SCALE



**9 ROOF HYDRANT DETAIL**  
NOT TO SCALE

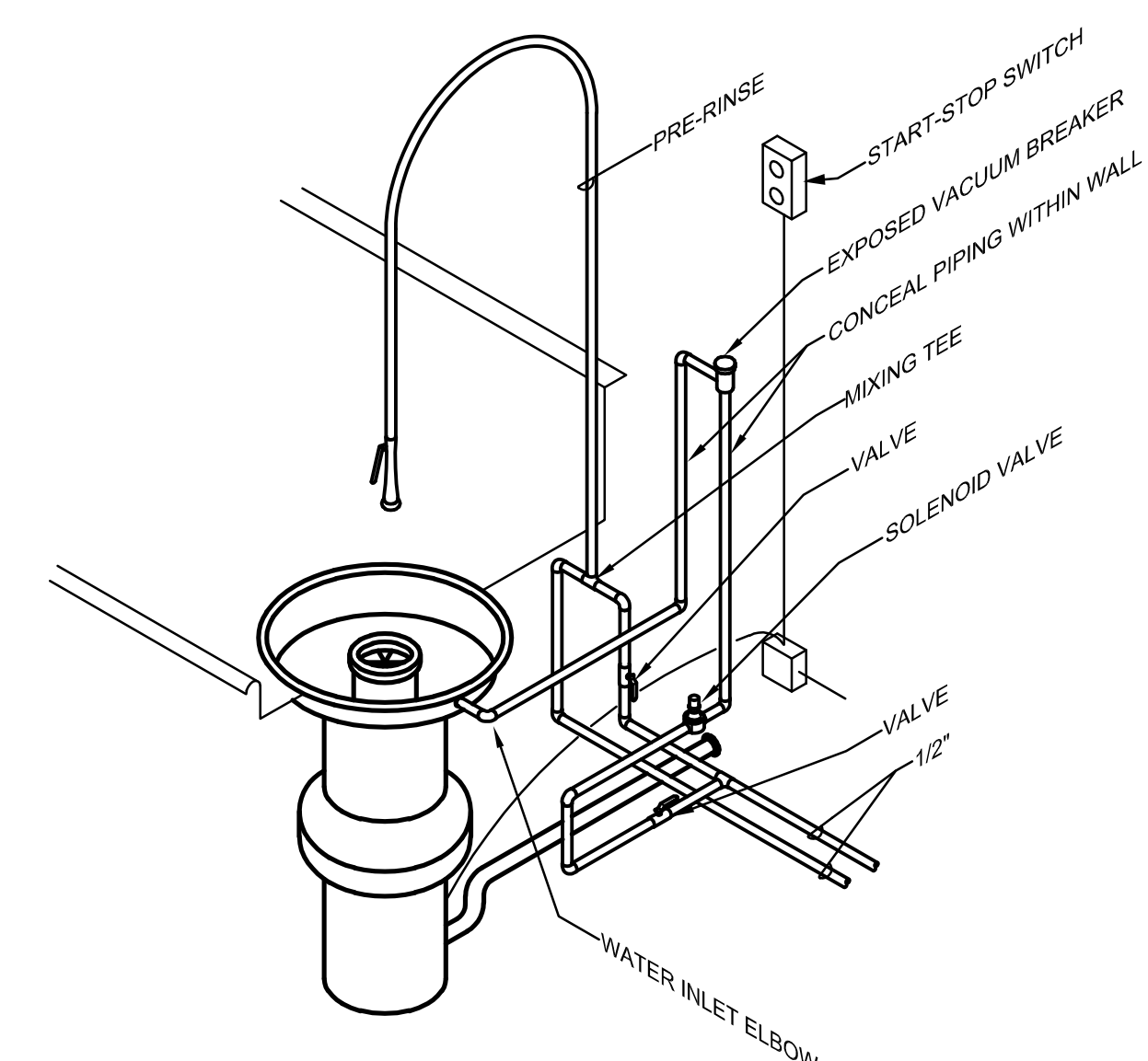


BEARING AREA OF BLOCK IN SQ.FT.				
FITTING SIZES	90° BEND	45° BEND	22 1/2° BEND	TEE, VALVES, DEAD ENDS
2"	0.34	0.24	0.13	0.4
2 1/2"	0.55	0.38	0.21	0.6
4"	1.63	1.15	0.63	1.30
6"	2.99	2.12	1.15	2.9
8"	5.12	3.62	1.96	5.1

SOIL TYPE	MULTIPLIER
SOFT CLAY	2.0
SILT	1.33
SAND	1.0
SAND AND GRAVEL	.67
SAND, GRAVEL, WITH CLAY	.50
HARD PAN	.20

BASED ON 100 P.S.I. WATER PRESSURE.  
\* THESE SIZES CALCULATED FOR A FIRE PROTECTION OR COMBINED SERVICE, THEREFORE CALCULATIONS BASED ON 500 GPM.

**10 THRUST BLOCK SCHEMATIC & SCHEDULE**  
NOT TO SCALE



**11 DISPOSAL DETAIL**  
NOT TO SCALE

NO.	DATE	REMARKS

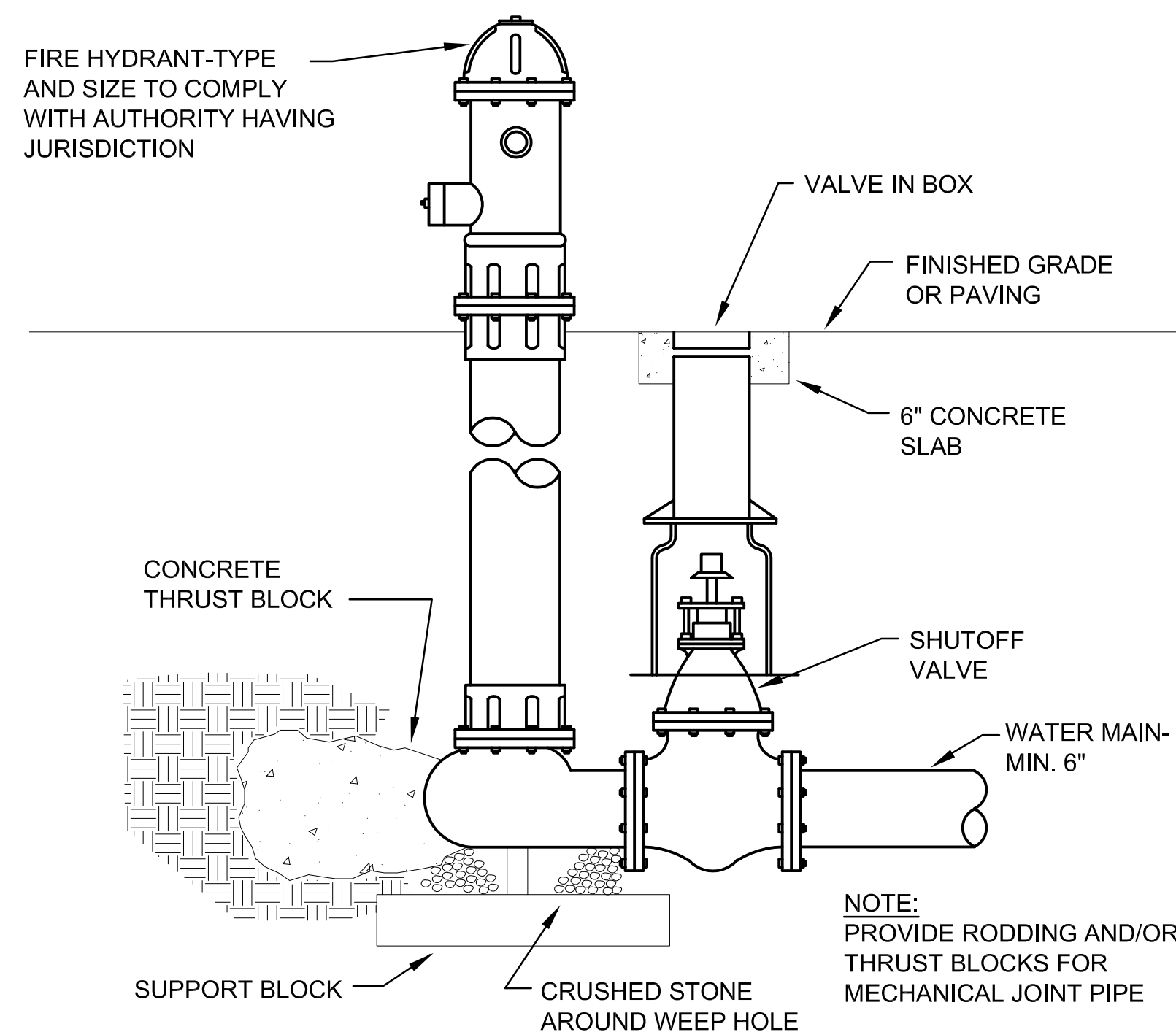
SPRINKLER DESIGN CRITERIA								
AREA OR ROOM NAME/TYPE	NFPA OCCUPANCY CLASSIFICATION	DENSITY & AREA	SPRINKLER STYLE	CEILING TYPE	TEMPERATURE	RESPONSE	FINISH	SYSTEM TYPE
CLASSROOMS	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET
CORRIDORS	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET
JANITORS	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	SHEETROCK	155° F	QUICK	WHITE	WET
MECHANICAL	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	SHEETROCK	155° F	QUICK	WHITE	WET
STAIRS	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET
CAFETERIA	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET
TOILET ROOMS	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET
KITCHEN	ORDINARY GROUP 1	.15GPM/SF	CONCEALED PENDANT	LAY-IN	200° F	QUICK	WHITE	WET
DISH ROOM	LIGHT HAZARD	.10GPM/SF	CONCEALED PENDANT	LAY-IN	175° F	QUICK	WHITE	WET
STORAGE	ORDINARY GROUP 1	.15GPM/SF	CONCEALED PENDANT	LAY-IN	155° F	QUICK	WHITE	WET

FIRE PROTECTION EQUIPMENT SCHEDULE				
DESCRIPTION	LOCATION	QUANTITY	INFORMATION	REMARKS
FDC	SEE SHEET FP101	1	NEW	WALL MOUNTED SIAMESE CONNECTION
CHECK VALVE	IN WATER SERVICE ROOM	1	—	EXISTING 4" CHECK VALVE ON DOMESTIC CONNECTION SIDE
RPZ	IN WATER SERVICE ROOM	1	NEW	NEW 4" WITH OS & Y VALVES
TAMPER SWITCHES	IN WATER SERVICE ROOM	2	NEW	NEW INSTALLED ON OS & Y VALVES
FLOW SWITCH	IN WATER SERVICE ROOM	1	NEW	NEW 4" ZONE RISER
ZONE CONTROL VALVE	IN WATER SERVICE ROOM	1	NEW	NEW ZONE FOR NEW CLASSROOM AND KITCHEN ADDITION

SPRINKLER SYSTEM DESIGN REQUIREMENTS						
ROOM MARK	OCCUPANCY	DENSITY	CEILING TYPE	HEIGHT	SPRINKLER STYLE	NOTES
A	LIGHT	0.10 GPM/SF	2X4 LAY-IN	9'	CONCEALED	CENTER OF TILE
B	ORD. HAZ. GRP. 1	0.15 GPM/SF	2X4 LAY-IN	9'	CONCEALED	CENTER OF TILE
C	ORD. HAZ. GRP. 2	0.20 GPM/SF	2X4 LAY-IN	SEE DRWGS	CONCEALED	CENTER OF TILE

SPRINKLER SYSTEM MATERIALS		
SERVICE	PIPE MATL.	FITTINGS
WATER SERVICE	EXISTING	EXISTING
MAIN	SCH 40 BLK	THREADED
CROSS MAIN	SCH 40 BLK	THREADED
BRANCH	SCH 40 BLK	THREADED

APPROVED CPVC MANUFACTURERS:  
 BLAZEMASTER - TYCO  
 FLAME GUARD - SPEARS  
 APPROVED EQUAL



1 FIRE HYDRANT & UNDERGROUND VALVE & BOX DETAIL  
 NOT TO SCALE

## FIRE PROTECTION SYMBOLS & ABBREVIATIONS

SYMBOL	DESCRIPTION
— F —	FIRE PROTECTION PIPING
→	DIRECTION OF FLOW/SLOPE
— F —	EXISTING FIRE PROTECTION PIPING
— SPK —	SPRINKLER PIPING
■ □	O S & Y VALVE W/ TAMPER SWITCH
■ □	O S & Y VALVE AND FLOW SWITCH
— — —	CHECK VALVE
— — —	BACKFLOW PREVENTER
□	PRESSURE SWITCH
— — —	ANGLE DRAIN VALVE
— — —	SOLENOID SHUT OFF VALVE
— — —	SIAMESE FIRE DEPARTMENT CONNECTION (FDC)
■	NOTED AREA
□	ZONE CONTROL VALVE (ZCV)
∩	PIPING DROP
∪	PIPING RISE
⊕	FLOW SWITCH (FS)
■ ⊕	TAMPER/SUPERVISORY SWITCH (TS)
1	KEYED NOTE
— — —	MATCHLINE
— — —	CONTINUATION
— — —	CAP FOR CONTINUATION OR FUTURE CONNECTION
⊙	RECESSED SPRINKLER HEAD
●	CONCEALED SPRINKLER HEAD
○	EXISTING UPRIGHT SPRINKLER HEAD
●	EXISTING PENDENT SPRINKLER HEAD
◁	EXISTING SIDEWALL SPRINKLER HEAD
◀	CONCEALED SIDEWALL SPRINKLER HEAD
⊕	CONNECTION TO EXISTING SYSTEM
⊕	REMOVE MATERIALS TO THIS POINT
BFP	BACKFLOW PREVENTER
FDC	FIRE DEPARTMENT CONNECTION
FPC	FIRE PROTECTION CONTRACTOR

\*NOTE: NOT ALL SYMBOLS/ABBREVIATIONS USED FOR THIS PROJECT.

## GENERAL WORK NOTES

- EACH CONTRACTOR SHALL REVIEW ALL BID DOCUMENTS FOR INFORMATION PERTAINING TO EACH TRADE FOR FULL KNOWLEDGE OF THE SCOPE OF WORK TO BETTER COORDINATE AND UNDERSTAND THE COMPLETE SCOPE OF THE PROJECT.
- COORDINATION BETWEEN EACH TRADE IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES ON THE PROJECT. SPACE ALLOCATIONS AND INSTALLATION OF ALL WORK SHALL BE CLOSELY COORDINATED. FAILURE TO DO SO WILL NOT CREATE ADDITIONAL COST TO THE OWNER.
- ALL CONTRACTORS ARE REQUIRED TO ASK THE A/E QUESTIONS WHEN THERE IS ANY UNKNOWN INFORMATION OR CLEAR DIRECTION OF THE INTENT OF THE SCOPE OF WORK. FAILURE TO ASK BEFORE WORK IS COMPLETED AND WHAT IS INSTALLED CREATES A PROBLEM WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO CORRECT.
- WHERE THERE IS A DISCREPANCY ON THE DRAWINGS THE CONTRACTOR SHALL BASE THEIR BID ON THE HIGHER COST CALLED FOR SCOPE OF WORK OR PIECE OF EQUIPMENT OR MATERIAL OR QUANTITY OR DIMENSION(S).
- CONTRACTORS SHALL HAVE READILY AVAILABLE ON SITE A COMPLETE SET OF BID SET DRAWINGS AND SPECIFICATIONS FOR ALL TRADES TO SEE AND USE.

## GENERAL FIRE PROTECTION NOTES

- THE WORK COVERED CONSIST OF FURNISHING LABOR AND MATERIALS REQUIRED TO INSTALL, COMPLETE AND READY FOR CONTINUOUS OPERATION. THE FIRE PROTECTION SYSTEMS, APPARATUS AND EQUIPMENT FOR THIS PROJECT, AS SHOWN ON DRAWINGS AND AS REQUIRED BY NFPA-13, IBC AND AUTHORITY HAVING JURISDICTION.
- DRAWINGS ARE GENERALLY DIAGRAMMATIC. EACH CONTRACTOR SHALL MAKE REQUIRED MODIFICATIONS FROM THE GENERAL ROUTING SHOWN ON DRAWINGS SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE COMPLETED WITHOUT ADDITIONAL COST TO THE OWNER.
- IT IS INTENDED THAT ALL APPARATUS SHALL BE LOCATED SYMMETRICALLY WITH ARCHITECTURAL ELEMENTS, NOT WITH STANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLARITY OF PRESENTATION.
- EACH CONTRACTOR SHALL CHECK DRAWINGS OF ALL TRADES TO VERIFY SPACE IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM AND SPACE CONDITIONS APPEAR INADEQUATE NOTIFY A/E FOR DIRECTION BEFORE PROCEEDING WITH THE INSTALLATION.
- PROVIDE TO EACH CONTRACTOR ADVANCED INFORMATION ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENING NEEDED FOR WORK. PROVIDE COPIES OF SHOP DRAWINGS TO OTHER TRADES TO PERMIT EACH CONTRACTOR TO INSTALL THEIR MATERIAL WITH OUT DELAY.
- WHERE THERE IS EVIDENCE THAT WORK OF ONE CONTRACTOR WILL INTERFERE WITH WORK OF ANOTHER CONTRACTOR(S), EACH CONTRACTOR SHALL ASSIST IN WORKING OUT THE SPACE CONDITIONS TO MAKE SATISFACTORY ADJUSTMENTS.
- EQUIPMENT REQUIRING ELECTRICAL POWER SHALL HAVE EQUIPMENT FURNISHED BY THE SPRINKLER CONTRACTOR, BUT SHALL BE WIRED BY THE E.C. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH E.C. BY PROVIDING THE ELECTRICAL INFORMATION FOR THEIR USE.
- PIPE INSTALLATION SHALL COMPLY WITH NEC AS IT PERTAINS TO CLEARANCES ABOVE AND OVERHEAD OF ELECTRICAL PANELS AND SWITCHGEAR.
- FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR REMOVAL, STORAGE AND CUTTING OF CEILING TILES TO ACCOMMODATE SPRINKLER INSTALLATION. REINSTALLATION OF CEILING TILES IS THIS CONTRACTORS RESPONSIBILITY.
- FIRE PROTECTION CONTRACTOR SHALL PROVIDE COMPLETE SPRINKLER DESIGN DRAWINGS BEARING THE SEAL OR NICET CERTIFICATION OF THE ENGINEER OR DESIGNER, HYDRAULIC CALCULATIONS AND EQUIPMENT AND MATERIAL SUBMITTALS TO A/E FOR REVIEW.
- FIRE PROTECTION CONTRACTOR SHALL PROVIDE AS BUILT DRAWINGS AT COMPLETION OF INSTALLATION.
- FIRE PROTECTION CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS, ETC. AS REQUIRED BY LOCAL CITY REQUIREMENTS OR AHJ FOR HIS WORK.
- FIRE PROTECTION CONTRACTOR SHALL UPON COMPLETION SHALL SUBMIT ALL REPORTS, TEST, AND CERTIFICATIONS TO A/E AND COPIES SHALL BE INCLUDED IN THE O & M MANUALS.
- FIRE PROTECTION CONTRACTOR SHALL WARRANTY THE SYSTEM FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION ISSUED BY THE ARCHITECT.
- FIRE PROTECTION CONTRACTOR SHALL PROVIDE 200 LB PSI HYDRAULIC PRESSURE TEST ON COMPLETED PIPING SYSTEM, AFTER SYSTEM HAS BEEN COMPLETELY FLUSHED, WITH SIGN OFF BY ENGINEER OR SELECTED PERSON.
- SPRINKLERS INSTALL IN AREA WHERE IMPACT MAY OCCUR SHALL PROVIDE HEAVY DUTY WIRE GUARDS ON EACH SPRINKLER, THIS INCLUDES LOW MOUNTED SPRINKLERS BELOW 7'-6".
- CONCEAL ALL SPRINKLER PIPING ABOVE CEILING WHERE CEILING SYSTEMS ARE INSTALLED. CENTER SPRINKLER IN CENTER OF CEILING TILES.
- WHERE SPRINKLER PIPING IS INSTALLED EXPOSED, COORDINATE WITH GENERAL CONTRACTOR ON AREAS WHERE PIPING WILL BE PAINTED TO PROTECT SPRINKLERS FROM PAINT.
- INSTRUCT OWNER ON OPERATION OF SYSTEM AND WHERE SHUT OFF VALVES ARE LOCATED.
- CONTRACTOR TO REMOVE AND REINSTALL CEILING TILES AND GRID TO INSTALL NEW SPRINKLER PIPING ABOVE EXISTING CEILING SYSTEMS TO INSTALL PIPES TO NEW ADDITIONS.

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 CONSULTING ENGINEERS  
 427 E. MONROE ST.  
 SPRINGFIELD, IL 62701  
 TEL. 317.279.9827

EDISON ELEMENTARY SCHOOL, 2019 ADDITION  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455

PROFESSIONAL SEAL  
 State of Illinois  
 No. 062.070118  
 Date: 11/30/19

EXPIRATION 11/30/19  
 SIGNED 02/15/19

FIRE PROTECTION SYMBOLS & ABBREVIATIONS

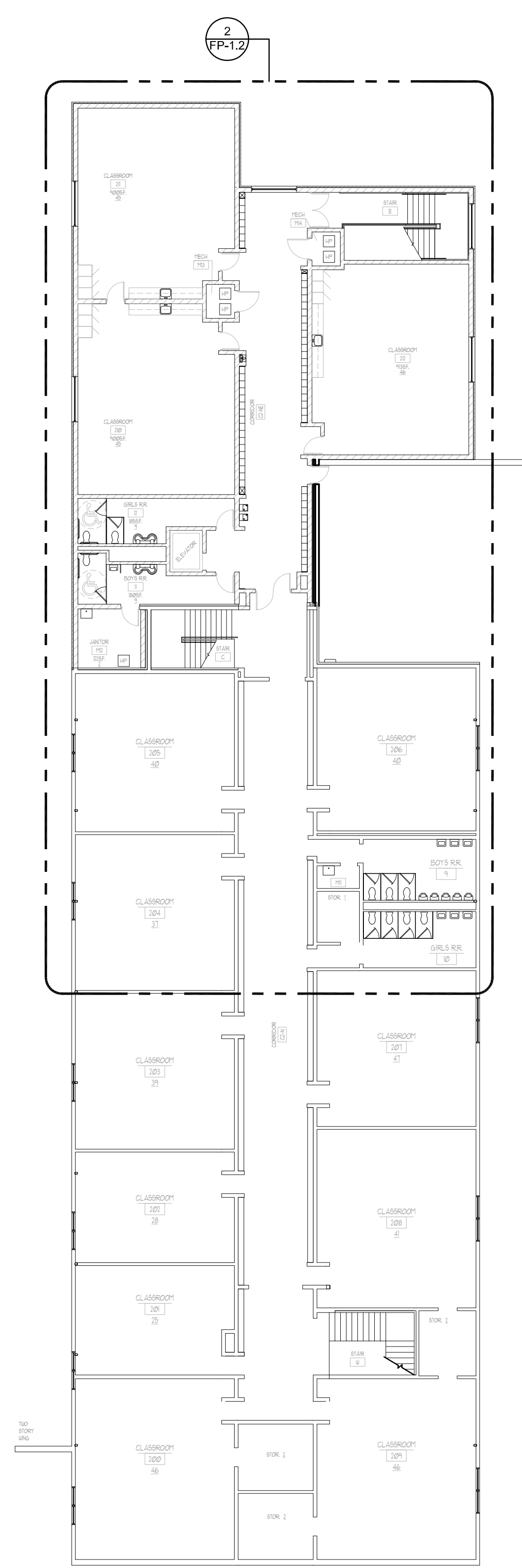
NO.	DATE	REMARKS

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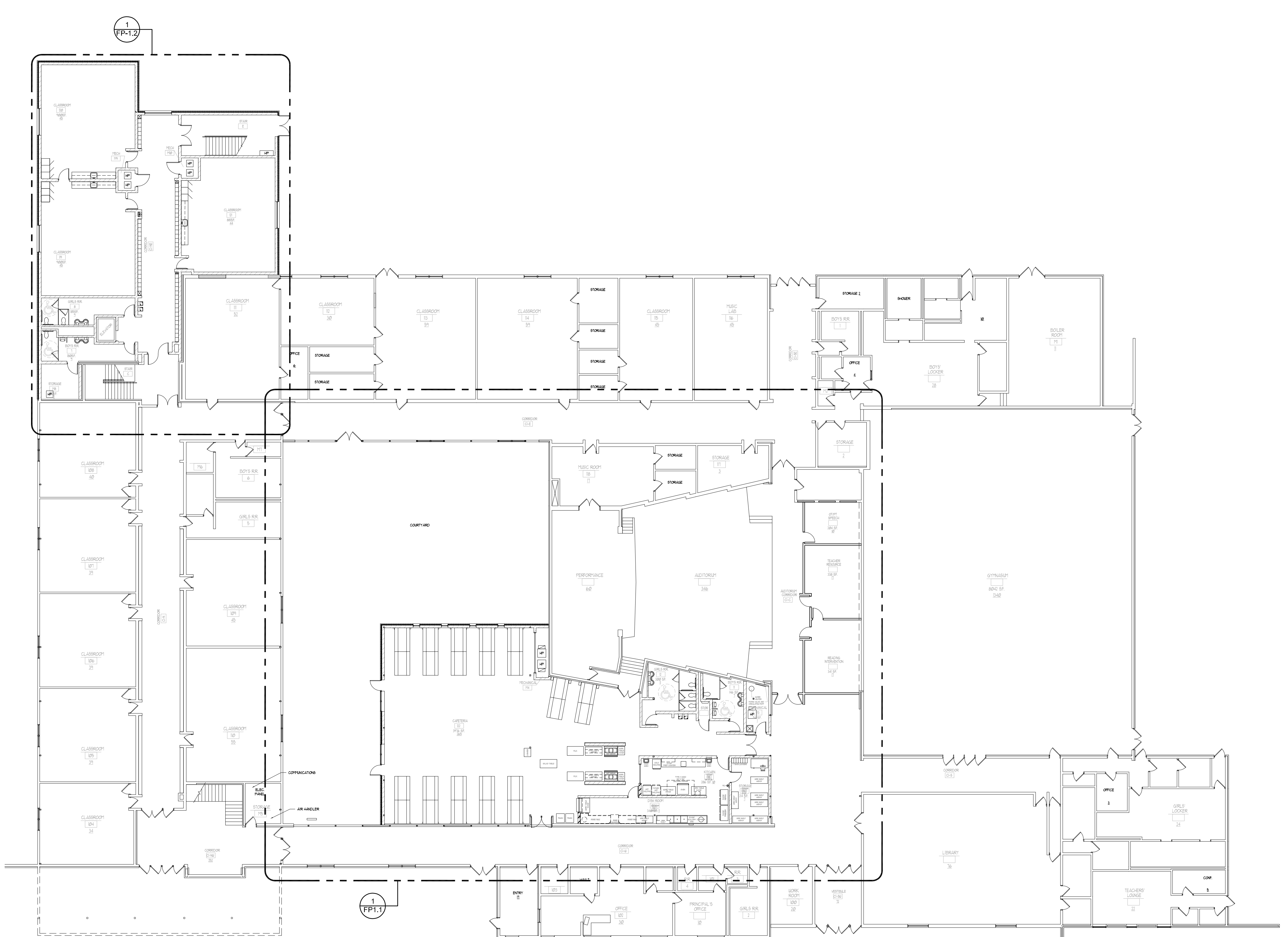
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET FP-0.0  
 OF 91 SHEETS

NO.	DATE	REMARKS

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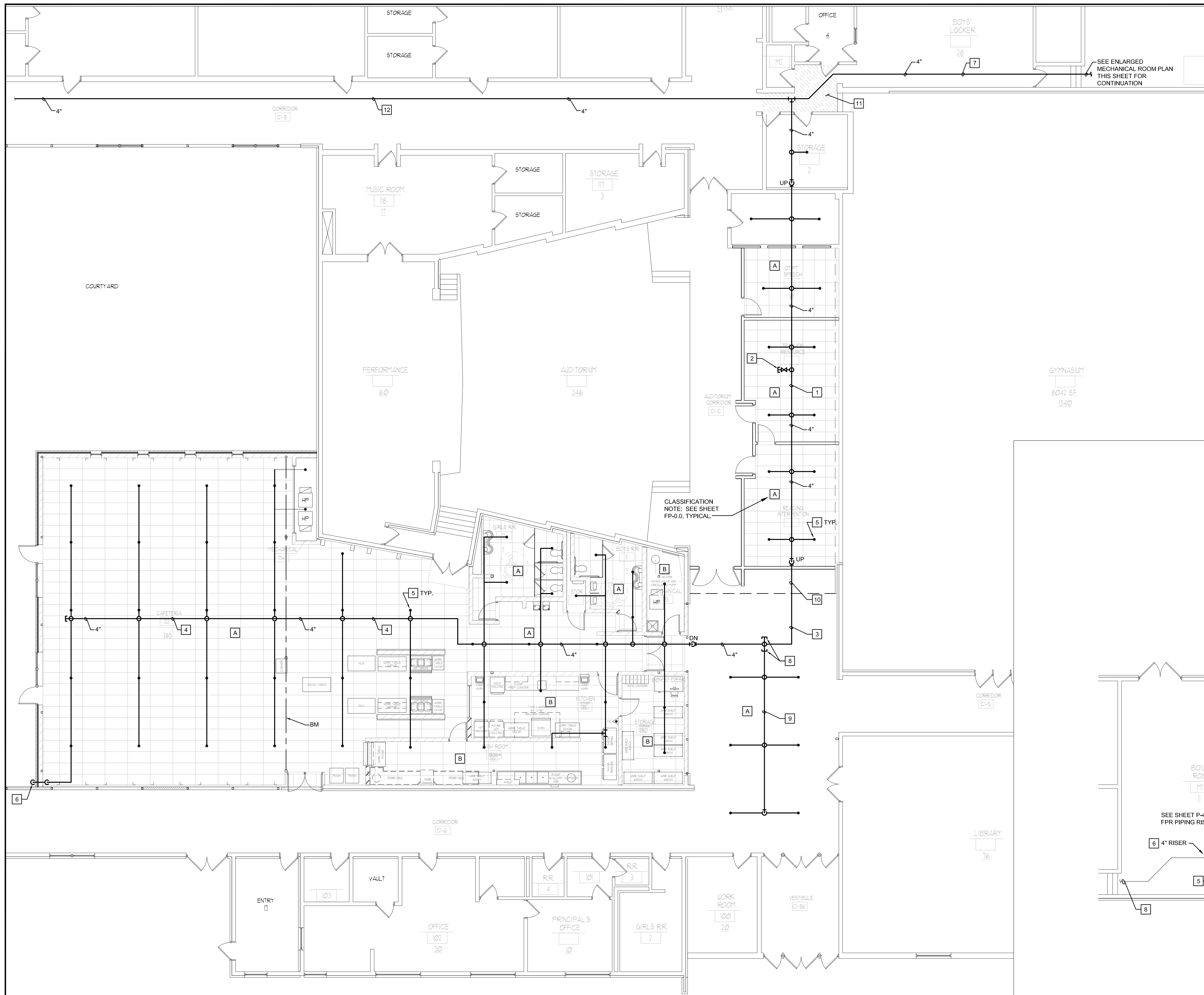


**2 SECOND FLOOR SPRINKLER PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 6" 12" 24" 48"



**1 FIRST FLOOR SPRINKLER PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 6" 12" 24" 48"



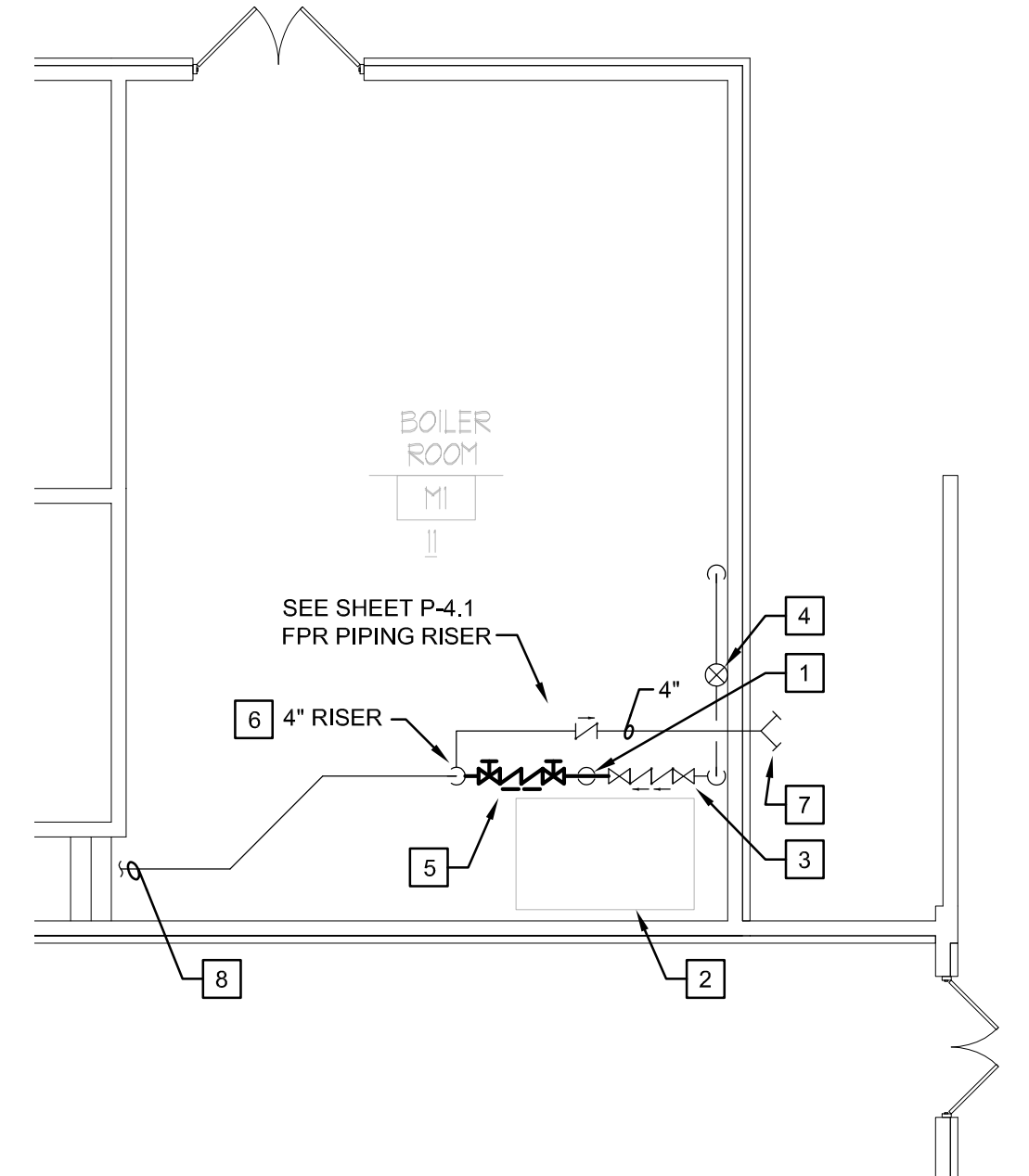


**KEYED NEW WORK NOTES - (1/FP-1.1)**

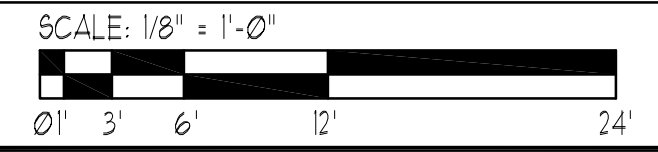
- 1 RUN NEW SPRINKLER MAIN ABOVE NEW CEILING SYSTEM, BUT UP HIGH ENOUGH TO RUN NEW MAIN ABOVE EXISTING CEILINGS. RUN NEW SPRINKLER PIPING DOWN THIS CORRIDOR (C-E) WITH PIPING RUN THRU THE BAR JOIST WEBBING.
- 2 PROVIDE A NEW O/S BY VALVE AND CAP VALVE FOR FUTURE EXTENSION OF NEW SPRINKLER SYSTEM INTO AUDITORIUM.
- 3 REMOVE AND REINSTALL CEILING TILES AND GRID SECTIONS REQUIRED TO INSTALL NEW SPRINKLER MAIN. RUN NEW SPRINKLER PIPING MAIN THRU BAR JOIST WEBBING THROUGH THIS AREA.
- 4 RUN NEW SPRINKLER MAIN AND BRANCH PIPING ABOVE CEILING SYSTEM AND COORDINATE WITH ALL TRADES OF FINAL ELEVATION AND ROUTING TO MISS STRUCTURAL MEMBERS, DUCTWORK, LIGHT FIXTURES AND OTHER MATERIAL.
- 5 PROVIDE RECESSED STYLE SPRINKLERS AND LOCATE SPRINKLER IN CENTER OF CEILING TILES.
- 6 PROVIDE INSPECTORS TEST STATION WITH VALVE ABOVE CEILING AND SIGNAGE FOR THE TEST VALVE LOCATION.
- 7 RUN NEW 4" SPRINKLER MAIN EXPOSED THRU LOCKER ROOM SPACE.
- 8 PROVIDE CAPPED PIPE RUNS FOR FUTURE EXPANSION OF SPRINKLER SYSTEM.
- 9 DASHED PIPING SHOWS FUTURE EXPANSION OF SPRINKLER SYSTEM.
- 10 PIPE WILL RUN THRU MASONRY WALL CONSTRUCTION, CORE DRILL WILL BE REQUIRED.
- 11 CEILING IN THIS SPACE IS PLASTER, WILL HAVE TO BE REMOVED TO ALLOW INSTALLATION OF NEW SPRINKLER MAIN.
- 12 RUN NEW SPRINKLER PIPING DOWN THIS CORRIDOR (C-E) WITH PIPING RUN THRU THE BAR JOIST WEBBING.

**KEYED NEW WORK NOTES - (2/FP-1.1)**

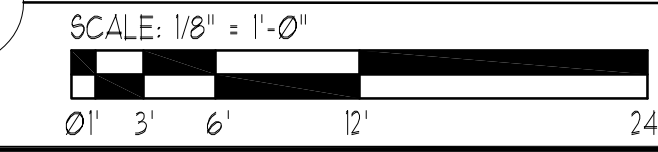
- 1 EXISTING 4" WATER SERVICE TO REMAIN.
- 2 EXISTING AIR HANDLING UNIT FOR THE GYMNASIUM TO REMAIN.
- 3 EXISTING RPZ TO REMAIN.
- 4 EXISTING DOMESTIC WATER METER TO REMAIN.
- 5 NEW 4" RPZ WITH OS & Y VALVE ASSEMBLY. PIPE DISCHARGE PIPE TO FLOOR DRAIN.
- 6 NEW 4" SPRINKLER RISER WITH ZONE VALVE AND FLOW SWITCH.
- 7 NEW 4" SIAMESE FIRE DEPARTMENT CONNECTION. PIPE 4" PIPE WITH NEW CHECK VALVE FROM NEW 4" SPRINKLER RISER AND RUN OUT THRU WALL CONSTRUCTION WITH A WALL SLEEVE AND SEAL WEATHER TIGHT. SIAMESE TO BE EQUAL TO A ELKHART MODEL 156 WITH ESCUTCHEON PLATE, DOUBLE CLAPPERS, POLISHED BRASS, CHAINS AND PLUGS, AUTO SPRINKLER LETTERING OR EQUAL MANUFACTURERS CROKER OR AMERICAN HOSE AND CABINET.
- 8 RUN NEW 4" SPRINKLER MAIN UP TIGHT TO STRUCTURE.



**1 PARTIAL FIRST FLOOR SPRINKLER PLAN - NEW WORK**



**2 PARTIAL FIRST FLOOR SPRINKLER PLAN - BOILER ROOM M1**



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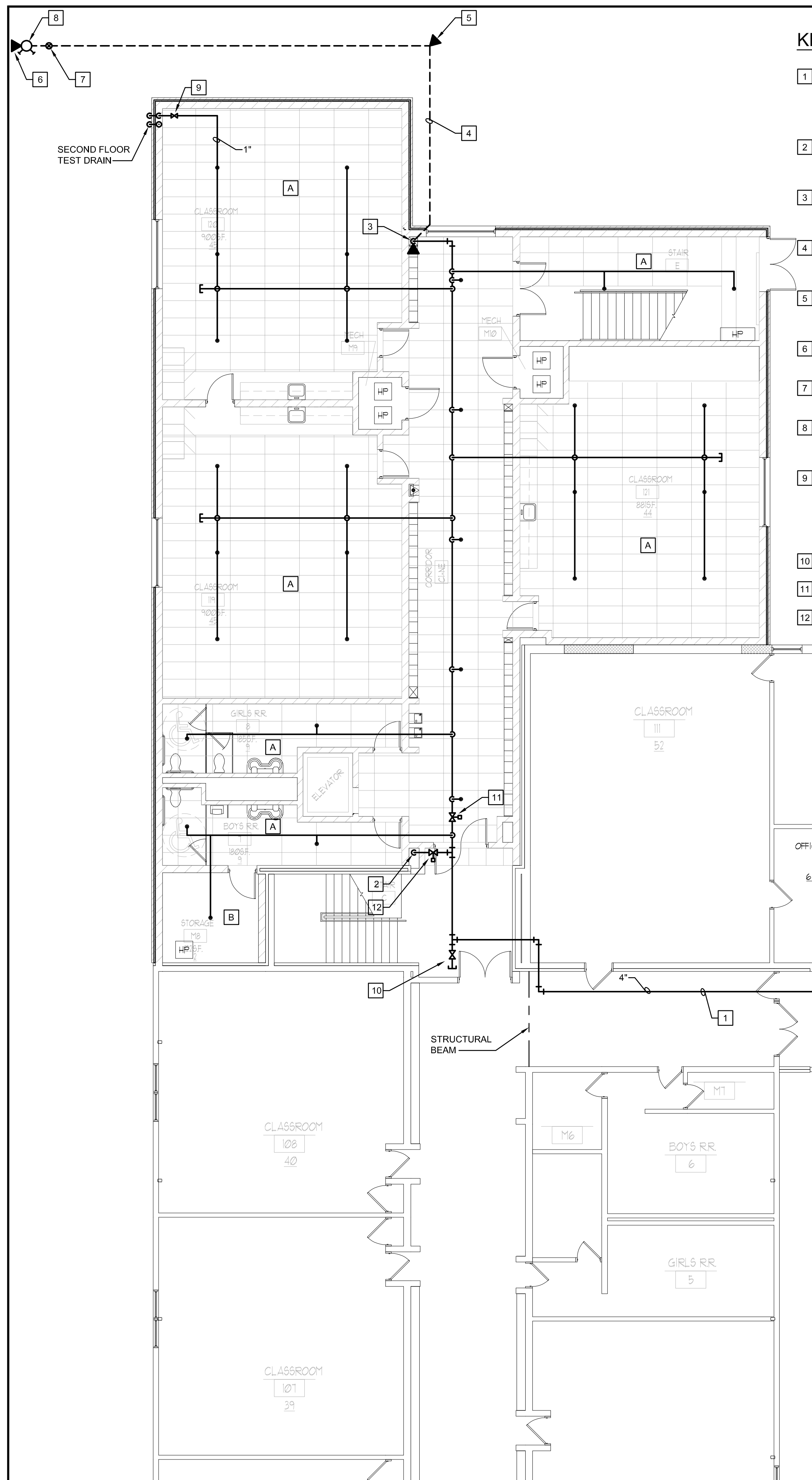
**PARTIAL FIRST FLOOR SPRINKLER PLAN - NEW WORK**

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **FP-1.1**  
 OF 91 SHEETS

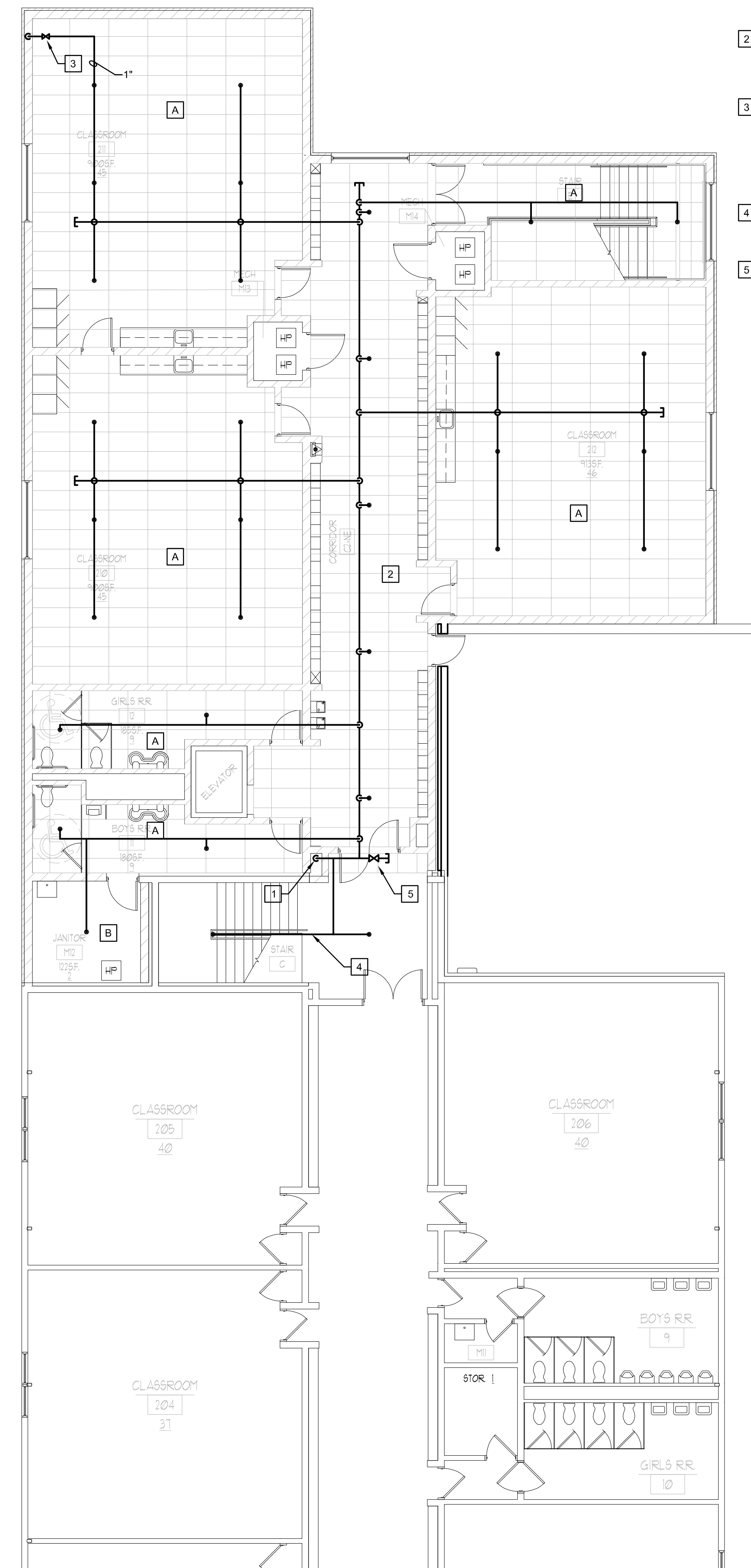
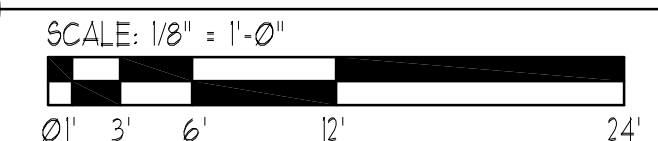




**KEYED NEW WORK NOTES - (1/FP-1.2)**

- 1 PROVIDE NEW 4" SPRINKLER/WATER MAIN ABOVE CEILING SYSTEM. REMOVE AND REINSTALL EXISTING CEILING SYSTEM TO INSTALL NEW PIPING. LABEL PIPING ON 2" CENTERS AS SCHEDULED. SEE SHEET FP-1.1 FOR CONTINUATION BACK TO BOILER ROOM.
- 2 RUN NEW 4" SPRINKLER MAIN UP IN NEW CHASE TO SECOND FLOOR. SEE SHEET 2/FP.3 FOR CONTINUATION. SLEEVE AND FIRE SEAL FLOOR PENETRATION.
- 3 DROP NEW 4" WATER SUPPLY PIPE DOWN IN WALL CHASE TO BELOW FOUNDATION TO A DEPTH OF 48" TO TOP OF PIPE. PROVIDE A THRUST BLOCK AT ELBOW BELOW GRADE.
- 4 RUN NEW 4" WATER SUPPLY, BURIED AT 48" DEPTH AS SHOWN ON DRAWING. PROVIDE A TRACEABLE WARNING TAPE AT 12" ABOVE NEW WATER PIPE.
- 5 PROVIDE CONCRETE THRUST BLOCK AT ELBOW FITTING. SEE THRUST BLOCK DETAIL FOR SIZE AND QUANTITY OF THE BLOCKING.
- 6 PROVIDE CONCRETE THRUST BLOCK AT NEW FIRE HYDRANT. SEE HYDRANT DETAIL.
- 7 PROVIDE NEW 4" SERVICE VALVE AND SERVICE BUFFALO BOX. SEE HYDRANT DETAIL.
- 8 PROVIDE NEW 4" HYDRANT WITH (2) PROPERLY SIZED CONNECTIONS AND THREAD COUNT TO MEET THE MACOMB'S FIRE DEPARTMENTS REQUIREMENTS.
- 9 PROVIDE SPRINKLER INSPECTORS TEST VALVE ABOVE THE CEILING AND PROVIDE A TEST VALVE SIGNAGE AT CEILING LOCATION. PIPE TEST DRAIN PIPE DOWN IN WALL AND OUT TO EXTERIOR SURFACE WITH A 1/8" FITTING AND PAINT EXPOSED PIPE COLOR AS DIRECTED BY THE FIRE DEPARTMENT. SLEEVE AND SEAL WALL PENETRATION WEATHER TIGHT.
- 10 PROVIDE A 4" VALVE AND CAP FOR FUTURE EXTENSION.
- 11 PROVIDE ZONE FLOW SWITCH FOR FIRST FLOOR ZONE.
- 12 PROVIDE ZONE FLOW SWITCH FOR SECOND FLOOR ZONE.

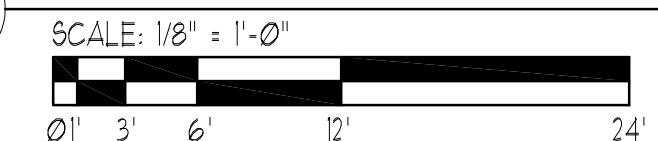
**1 PARTIAL FIRST FLOOR SPRINKLER PLAN - NEW WORK**



**KEYED NEW WORK NOTES - (2/FP-1.2)**

- 1 RUN NEW 4" SPRINKLER MAIN DOWN IN NEW CHASE TO FIRST FLOOR. SEE SHEET FP1.0 FOR CONTINUATION. SLEEVE AND FIRE SEAL FLOOR PENETRATION.
- 2 RUN NEW 4" WATER SUPPLY ABOVE CEILING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR INSTALLING THIS NEW PIPE AMONG THE DUCTWORK AND ELECTRICAL SYSTEMS.
- 3 PROVIDE SPRINKLER INSPECTORS TEST VALVE ABOVE THE CEILING AND PROVIDE A TEST VALVE SIGNAGE AT CEILING LOCATION. PIPE TEST DRAIN PIPE DOWN IN WALL AND OUT TO EXTERIOR SURFACE WITH A 1/8" FITTING NEXT TO FIRST FLOOR DRAIN PIPE AND PAINT EXPOSED PIPE COLOR AS DIRECTED BY THE FIRE DEPARTMENT. SLEEVE AND SEAL WALL PENETRATION WEATHER TIGHT.
- 4 PROVIDE NEW SPRINKLERS IN EXISTING STAIRWAY. REMOVE CEILING TILES TO INSTALL NEW PIPING. REPLACE CEILING TILES WHEN COMPLETE.
- 5 PROVIDE A 4" VALVE AND CAP FOR FUTURE EXTENSION OF SPRINKLER SYSTEM.

**2 PARTIAL SECOND FLOOR SPRINKLER PLAN - NEW WORK**



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**PARTIAL FIRST & SECOND FLOOR SPRINKLER PLAN - NEW WORK**

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **FP-1.2**  
 OF 91 SHEETS



**KEYED NOTES - NEW WORK**

- 1 REINSTALL EXISTING WALL MOUNTED BEAM DETECTOR FROM WHERE IT WAS REMOVED AS SHOWN ON DEMOLITION PLAN. REWORK CABLING AND RECONNECT TO DETECTOR.
- 2 REINSTALL EXISTING BEAM REFLECTOR PLATE AND REALIGN TO EXISTING OPPOSITE MOUNTED BEAM DETECTOR.
- 3 ALL VISUAL DEVICES SHOWN SHALL HAVE BOTH VISUAL AND SPEAKER ASSEMBLY. RUN AUDIO AND SIGNAL CABLES IN CONDUIT TO ACCESSIBLE CEILING SYSTEM AND CONNECT TO NEW FACP IN BOILER ROOM.
- 4 ALL DEVICES SHOWN WITH VISUAL AND HORN SYMBOLS WILL HAVE A SPEAKER ASSEMBLY. RUN AUDIO AND SIGNAL CABLES IN CONDUIT TO ACCESSIBLE CEILING SYSTEM AND CONNECT TO NEW FACP IN BOILER ROOM.
- 5 REMOVE EXISTING FACP AND PROVIDE A NEW FIRE COMMAND PANEL WITH AUTOMATIC VOICE MESSAGING AND ADDRESSABLE CIRCUITING TO BALL NEW DEVICES AND RECONNECT ALL EXISTING DEVICES AND ZONE. REPROGRAM NEW FACP TO COMPLETE THE NEW SYSTEM. THE NEW FACP WILL HAVE THE CAPACITY TO ADD ADDITIONAL SPEAKERS TO COMPLETELY COVER THE EXISTING BUILDING AND NEW ADDITIONS. COMPLETE THE SPRINKLER DEVICES AND CONNECT TO NEW FACP. THE TWO STORY ADDITION WILL BE ZONE SEPARATELY.
- 6 CONNECT SPRINKLER MAIN FLOW SWITCH TO NEW FACP.
- 7 CONNECT NEW TAMPER SWITCHES ON SPRINKLER SYSTEM TO NEW FACP.
- 8 CONNECT NEW DUCT MOUNTED SMOKE DETECTORS FROM DOAS UNIT TO NEW FACP. DOAS UNIT SHALL BE SHUT OFF DURING ANY ALARM INITIATION OF THE FACP. DURING TESTING OF FIRE ALARM SYSTEM THE DOAS UNIT WILL NOT SHUT OFF.
- 9 PROVIDE NEW ANNUNCIATOR WITH NEW SYSTEM INFORMATION AND ZONES. RUN INTERCONNECTING CABLING BACK TO NEW FACP IN BOILER ROOM IN NEW EMT CONDUIT RUN ABOVE EXISTING CEILING.
- 10 PROVIDE A ZONE FLOW SWITCH CONNECTION TO KITCHEN/CAFETERIA SPRINKLER ZONE AND WIRE TO NEW FACP.
- 11 PROVIDE NEW DOOR HOLD OPEN DEVICE AND WIRE THRU SHOWN SMOKE DETECTORS TO RELEASE DOORS WHEN FIRE ALARM SYSTEM GOES INTO ALARM. WIRE DEVICES BACK TO NEW FACP.
- 12 CONNECT FIRE ALARM SYSTEM TO NEW GAS SHUT OFF VALVE THAT FEEDS THE DOUBLE STACK OVENS. VALVE TO CLOSE IF FIRE ALARM SYSTEM IS ACTIVATED. TESTING OF FIRE ALARM SYSTEM WILL NOT CLOSE VALVE.
- 13 CONNECT FIRE ALARM SYSTEM TO ROLL-UP DOOR SYSTEM. UPON ACTIVATION OF FIRE ALARM SYSTEM DOOR SHALL CLOSE. TESTING OF FIRE ALARM SYSTEM WILL NOT CLOSE DOOR.

**1 PARTIAL FIRST FLOOR FIRE ALARM PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

**2 PARTIAL FIRST FLOOR FIRE ALARM PLAN - BOILER ROOM M1**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL FIRST FLOOR FIRE ALARM PLAN - NEW WORK**

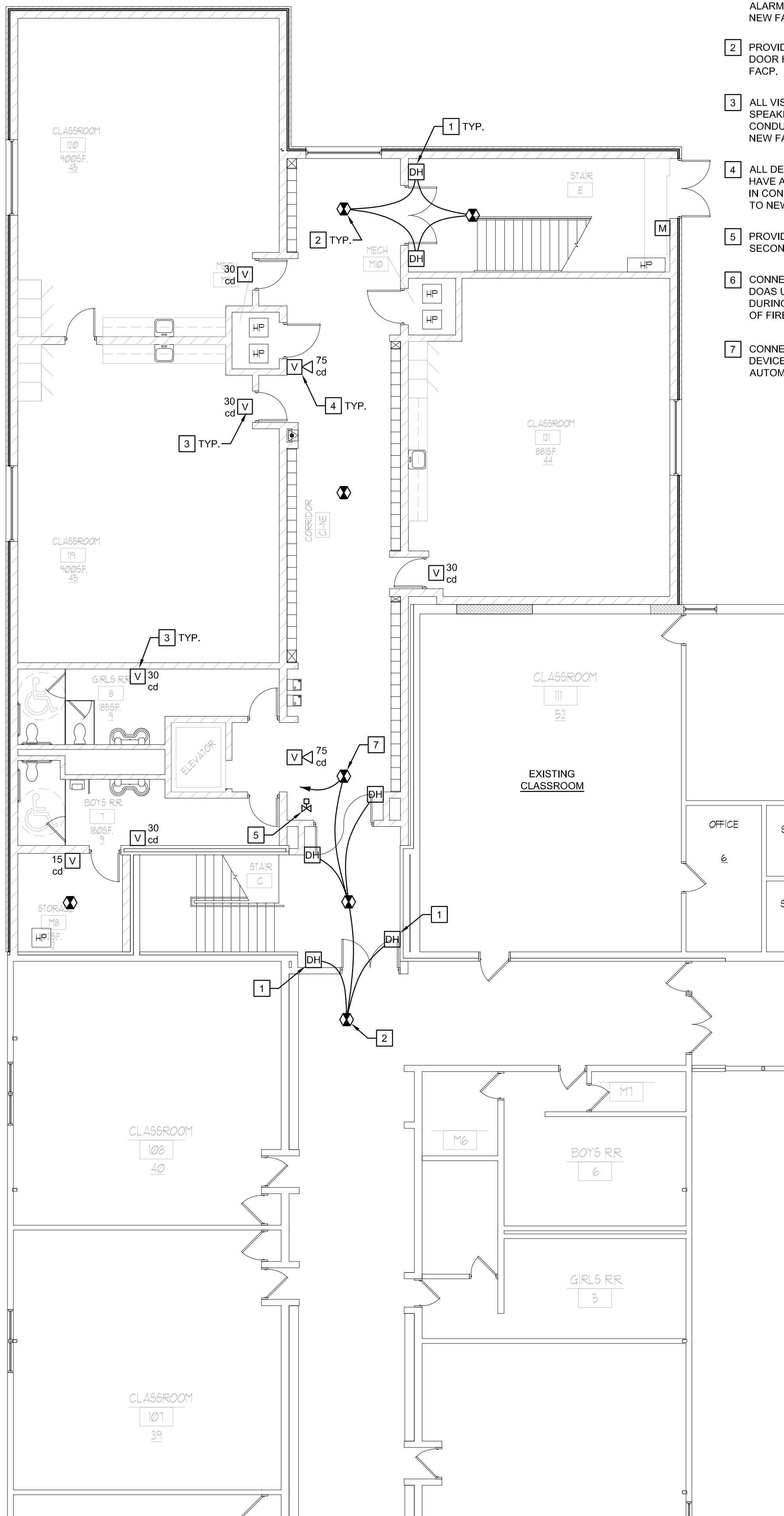
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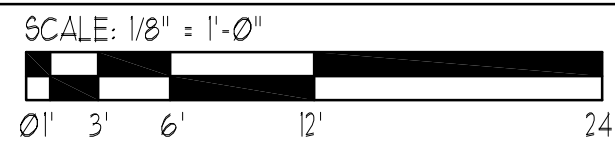
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **FA-1.1**  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/FA1.2)

- 1 PROVIDE NEW DOOR HOLD OPEN DEVICE AND WIRE THRU SHOWN SMOKE DETECTORS TO RELEASE DOORS WHEN FIRE ALARM SYSTEM GOES INTO ALARM. WIRE DEVICES BACK TO NEW FACP.
- 2 PROVIDE NEW SMOKE DETECTOR AND WIRE TO OPERATE DOOR HOLD OPEN DEVICES. WIRE DEVICES BACK TO NEW FACP.
- 3 ALL VISUAL DEVICES SHOWN SHALL HAVE BOTH VISUAL AND SPEAKER ASSEMBLY. RUN AUDIO AND SIGNAL CABLES IN CONDUIT TO ACCESSIBLE CEILING SYSTEM AND CONNECT TO NEW FACP IN BOILER ROOM.
- 4 ALL DEVICES SHOWN WITH VISUAL AND HORN SYMBOLS WILL HAVE A SPEAKER ASSEMBLY. RUN AUDIO AND SIGNAL CABLES IN CONDUIT TO ACCESSIBLE CEILING SYSTEM AND CONNECT TO NEW FACP IN BOILER ROOM.
- 5 PROVIDE NEW ZONE FLOW SWITCH CONNECTION TO FIRST AND SECOND FLOOR SPRINKLER ZONES AND WIRE TO NEW FACP.
- 6 CONNECT NEW DUCT MOUNTED SMOKE DETECTORS FROM DOAS UNIT TO NEW FACP. DOAS UNIT SHALL BE SHUT OFF DURING ANY ALARM INITIATION OF THE FACP. DURING TESTING OF FIRE ALARM SYSTEM THE DOAS UNIT WILL NOT SHUT OFF.
- 7 CONNECT THIS SMOKE DETECTOR TO BOTH DOOR HOLD OPEN DEVICES AND TO ELEVATOR FIRE ALARM CONTROL FOR AUTOMATIC RECALL CONTROL OF ELEVATOR CAB.

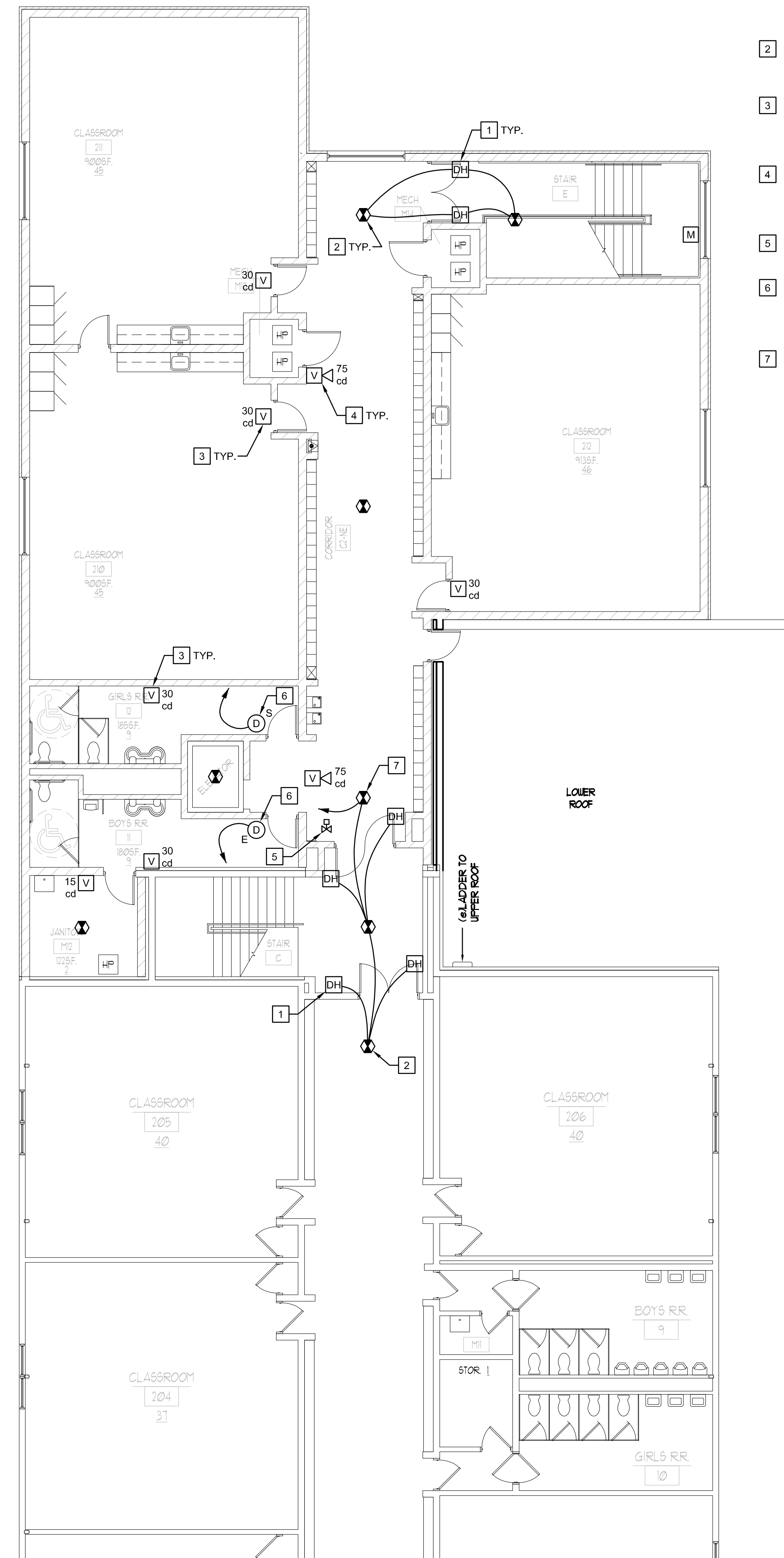


1 PARTIAL FIRST FLOOR FIRE ALARM PLAN - NEW WORK

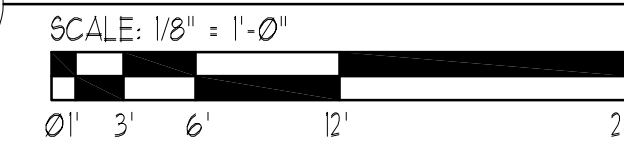


KEYED NEW WORK NOTES - (2/FA1.2)

- 1 PROVIDE NEW DOOR HOLD OPEN DEVICE AND WIRE THRU SHOWN SMOKE DETECTORS TO RELEASE DOORS WHEN FIRE ALARM SYSTEM GOES INTO ALARM. WIRE DEVICES BACK TO NEW FACP.
- 2 PROVIDE NEW SMOKE DETECTOR AND WIRE TO OPERATE DOOR HOLD OPEN DEVICES. WIRE DEVICES BACK TO NEW FACP.
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- 7 CONNECT THIS SMOKE DETECTOR TO BOTH DOOR HOLD OPEN DEVICES AND TO ELEVATOR FIRE ALARM CONTROL FOR AUTOMATIC RECALL CONTROL OF ELEVATOR CAB.



2 PARTIAL SECOND FLOOR FIRE ALARM PLAN - NEW WORK



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 OF 91 SHEETS



VENTILATION SYMBOLS		HEATING SYMBOLS		ABBREVIATIONS	
	SA SOUND ATTENUATOR		CV CHECK VALVE	F.F.E.	FINISH FLOOR ELEVATION
	FC FLEXIBLE CONNECTION		GLV GLOBE VALVE	A.F.F.	ABOVE FINISH FLOOR
	SPLITTER DAMPER		BLV BALL VALVE	T.E	TOP ELEVATION
	VD MANUAL VOLUME DAMPER		STR STRAINER	B.E	BOTTOM ELEVATION
	TV TURNING VANES		U UNION	F.L	FLOW LINE
	RETURN/TRANSFER/COMBUSTION AIR DISCHARGE DUCT UP		BC BALANCING COCK	INV.	INVERT ELEVATION
	RETURN/TRANSFER/COMBUSTION AIR DISCHARGE DUCT DOWN		SOC SHUT-OFF COCK	CL	CENTER LINE
	SUPPLY AIR/COMBUSTION AIR INTAKE UP		SLV SOLENOID VALVE	G.C.	GENERAL CONSTRUCTION CONTRACTOR
	SUPPLY AIR/COMBUSTION AIR INTAKE DOWN		BFV BUTTERFLY VALVE	M.C.	HEATING CONTRACTOR
	EXHAUST/OUTDOOR AIR DUCT UP		FS FLOW SWITCH	P.C.	PLUMBING CONTRACTOR
	EXHAUST/OUTDOOR AIR DUCT DOWN		VSV VALVE W/ SUPERVISORY SWITCH	E.C.	ELECTRICAL CONTRACTOR
	ROUND DUCT DN		FCV FLOW CONTROL VALVE (GPM INDICATED)	S.C.	SPRINKLER CONTRACTOR (FIRE)
	ROUND DUCT UP		T&PR TEMPERATURE AND PRESSURE RELIEF VALVE		
	INCLINED DROP IN THE DIRECTION OF AIR FLOW		PG PRESSURE GAUGE		
	INCLINED RISE IN THE DIRECTION OF AIR FLOW		TH THERMOMETER (TUBE OR DIAL AS INDICATED)		
	ECCENTRIC DUCT TRANSITION		PRV PRESSURE REDUCING VALVE		
	CONCENTRIC DUCT TRANSITION		CS CIRCUIT SETTER		
	RECTANGULAR DUCT TO ROUND DUCT TRANSITION		MV MOTORIZED VALVE		
	FIRE DAMPER (FD) SMOKE DAMPER (SD) FIRE/SMOKE (FSD)		CV CONTROL VALVE		
	MD MOTORIZED DAMPER (ELECTRIC OR PNEUMATIC)		TCV THREE-WAY CONTROL VALVE		
	FXD FLEXIBLE DUCT		LPV LUBRICATED VALVE		
	CEILING AIR DEVICE		HEV HOSE END VALVE		
	AIR DEVICE THROW DESIGNATION: (HATCHING DESIGNATES ZERO THROW)		SWV STOP AND WASTE VALVE		
	SUPPLY DIFFUSER		TWV 3-WAY VALVE (MIXING OR BY-PASS AS INDICATED)		
	RETURN AIR DEVICE		PETES PLUG		
	EXHAUST AIR DEVICE		AV AIR VENT		
	SIDEWALL AIR DEVICE		CCR CONCENTRIC REDUCER		
	150% TAKE-OFF W/ DAMPERED SHOE DUCT TAP FROM RECT. MAIN		TEE (SIDE OUTLET UP)		
	150% TAKE-OFF W/ SHOE DUCT TAP FROM RECT. MAIN		TEE (SIDE OUTLET DOWN)		
	150% TAKE-OFF W/ 45° DAMPERED DUCT TAP		ELBOW (TURNED UP)		
	150% TAKE-OFF W/ 45° DUCT TAP		ELBOW (TURNED DOWN)		
	SADDLE TAP		ECR ECCENTRIC REDUCER		
	STRAIGHT RECT. DUCT TAP FROM ROUND MAIN		EX EXPANSION JOINT		
	(AIR DEVICE TYPE) - (SCHEDULE NUMBER)		FC FLEXIBLE PIPE CONNECTION		
	(AIR FLOW IN CFM)		DIRECTION OF FLOW		
	DUCT SIZE DESIGNATION: 1st FIGURE SIDE SHOWN. (SIDE SHOWN IS SHEET METAL SIZE. ALLOWANCE HAS NOT BEEN MADE FOR INTERIOR INSULATION WHERE SPECIFIED.)		ANCHORS		
	DUCT SYSTEM TYPE DESIGNATION:		PIPE GUIDES		
	S - SUPPLY AIR		H HUMIDISTAT		
	RA - RETURN AIR		T THERMOSTAT		
	EA - EXHAUST AIR		TN THERMOSTAT NITE		
	TA - TRANSFER AIR		RS REMOTE TEMPERATURE SENSOR		
	OA - OUTDOOR AIR		CO CARBON MONOXIDE DETECTOR		
			CO2 CARBON DIOXIDE DETECTOR		
			MUW MAKE - UP WATER LINE		
			D DRAIN LINE (OTHER THAN PLUMBING)		
			V VENT LINE (OTHER THAN PLUMBING)		
			L/S LIQUID/ SUCTION REFRIGERANT LINE		
			G GAS (NATURAL OR LP)		
			CHWS CHILLED WATER SUPPLY		
			CHWR CHILLED WATER RETURN		
			GSS GROUND SOURCE SUPPLY		
			GSR GROUND SOURCE RETURN		
			GSSR GROUND SOURCE REVERSE RETURN		

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED.

### GENERAL NOTES

- EACH CONTRACTOR SHALL REVIEW ALL BID DOCUMENTS FOR INFORMATION PERTAINING TO EACH TRADE FOR FULL KNOWLEDGE OF THE SCOPE OF WORK TO BETTER COORDINATE AND UNDERSTAND THE COMPLETE SCOPE OF THE PROJECT.
- COORDINATION BETWEEN EACH TRADE IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES ON THE PROJECT. SPACE ALLOCATIONS AND INSTALLATION OF ALL WORK SHALL BE CLOSELY COORDINATED. FAILURE TO DO SO WILL NOT CREATE ADDITIONAL COST TO THE OWNER.
- ALL CONTRACTORS ARE REQUIRED TO ASK THE A/E QUESTIONS WHEN THERE IS ANY UNKNOWN INFORMATION OR CLEAR DIRECTION OF THE INTENT OF THE SCOPE OF WORK. FAILURE TO ASK BEFORE WORK IS COMPLETED AND WHAT IS INSTALLED CREATES A PROBLEM WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO CORRECT.
- WHERE THERE IS A DISCREPANCY ON THE DRAWINGS THE CONTRACTOR SHALL BASE THEIR BID ON THE HIGHER COST CALLED FOR SCOPE OF WORK OR PIECE OF EQUIPMENT OR MATERIAL OR QUANTITY OR DIMENSION(S).
- EACH CONTRACTOR SHALL ASK QUESTIONS WHEN THERE ARE DISCREPANCIES ON THE DRAWINGS, BEFORE INITIATING INSTALLATION OR PREPARATION OF WORK CALLED FOR.
- CONTRACTORS SHALL HAVE READILY AVAILABLE ON SITE A COMPLETE SET OF BID SET DRAWINGS AND SPECIFICATIONS FOR ALL TRADES TO SEE AND USE.
- CONTRACTORS SHALL MAINTAIN ACCURATE AS BUILT MARKUPS AND MAKE AVAILABLE FOR PERIODIC INSPECTIONS BY THE A/E.
- IF THERE IS A DUPLICATION OF EQUIPMENT DESIGNATIONS, CONTRACTOR SHALL PROVIDE THE NUMBER OF UNITS SHOWN ON DRAWINGS AND CONTACT THE A/E FOR CLARIFICATION OF CAPACITY OR SIZING REQUIRED.

### MISCELLANEOUS SYMBOLS

- EQUIPMENT DESIGNATION
- (RISER INDICATION)
  - RISER DESIGNATION
  - (RISER NUMBER)
  - (DETAIL NUMBER)
  - DETAIL DESIGNATION
  - (SHEET NUMBER WHERE DETAIL IS FOUND)
  - (SECTION NUMBER)
  - SECTION DESIGNATION
  - (SHEET NUMBER WHERE SECTION IS FOUND)
- KEYED NOTES
- REVISIONS
- AP ACCESS PANEL
- NEW CONNECTION AT THIS POINT
- DEMO/ REMOVAL OF MATERIAL TO THIS POINT

### GENERAL NOTES - MECHANICAL

- THESE PLANS ARE DIAGRAMMATIC IN NATURE SINCE THEY REFLECT ONLY THE AVAILABLE INFORMATION OBTAINED FROM EXISTING PLANS, SPECIFICATIONS, AND FIELD SURVEYS. THE EXACT LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT MAY DEVIATE FROM THE LOCATION INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT ACTUAL JOB CONDITIONS.
- THE SPACE ALLOWED FOR MECHANICAL (HVAC, PLUMBING, FIRE PROTECTION) AND ELECTRICAL WORK ABOVE THE SUSPENDED CEILING IS CRITICAL AND REQUIRES COORDINATION BETWEEN TRADES. CONTRACTORS SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS PRIOR TO FABRICATION OR INSTALLATION OF ANY MATERIALS. DUCTWORK SHALL BE HUNG AS CLOSE AS POSSIBLE TO THE STRUCTURE ABOVE UNLESS INDICATED OTHERWISE. REWORK OF PIPING, DUCTWORK, EQUIPMENT LOCATION, CONDUIT, ETC. AS A RESULT OF POOR PLANNING, COORDINATION OR SCHEDULING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY HOLES LEFT IN EXISTING WALL CONSTRUCTION DUE TO DEMOLITION OR NEW WORK SHALL BE PATCHED TO MATCH EXISTING CONDITIONS.
- CONTRACTOR TO FIRESTOP ALL PENETRATIONS THROUGH FIRE-RATED FLOORS AND WALLS CREATED BY DEMOLITION OR NEW WORK WITH "SPECSEAL SSS" OR EQUAL.
- PROVIDE GALVANIZED SHEET METAL DRAIN PAN WITH HIGH WATER SWITCH UNDER EACH HEAT PUMP. INTERLOCK SWITCH WITH HEAT PUMP TO TURN OFF UNIT IF DRAIN PAN IN THE UNIT IS LEAKING.
- PROVIDE OPENING IN DRY WALL ABOVE CEILING TO ALLOW SUPPLY AIR TO RETURN TO HEAT PUMPS OR AIR HANDLERS.
- REFRIGERANT PIPING TO BE SIZED BY EQUIPMENT MANUFACTURER AND INSTALLED PER THE MANUFACTURER'S INSTALLER'S GUIDE. CONTRACTOR TO SUBMIT DRAWINGS SHOWING ROUTING. SEE SPECIFICATIONS.
- THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. TO THE TOP OF THERMOSTAT UNLESS NOTED OTHERWISE.
- INSTALL H.V.A.C. SYSTEM IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ANY FRAMING REVISIONS, EQUIPMENT LOCATIONS, ADDITION OF CONTROLS, ELECTRICAL CIRCUITING REVISIONS, ETC. THAT RESULT FROM USING EQUIPMENT OTHER THAN INDICATED ON THE DRAWINGS. APPROVAL OF THE SHOP DRAWINGS BY THE ENGINEER WILL NOT WAIVE THE CONTRACTOR OF THIS RESPONSIBILITY.
- THE CONTRACTOR SHALL HAVE THE FINAL RESPONSIBILITY FOR SYSTEM START UP AND TURN OVER TO THE OWNER.
- ALL ITEMS INCLUDED ON THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS OR IS NOT SURE OF THEIR MEANING, THE CONTRACTOR SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION PRIOR TO BID TIME. THE CONTRACTOR WILL BE HELD TO THE INTERPRETATION OF THE ENGINEER.
- MOUNT ROOM TEMPERATURE SENSORS 4'-0" ABOVE FINISHED FLOOR. DO NOT MOUNT IN DIRECT SUNLIGHT OR NEAR HEAT PRODUCING EQUIPMENT.
- FIRE CAULK ALL PENETRATIONS THRU FIRE RATED PARTITIONS TO MAINTAIN FIRE RATING OF PARTITION.
- CAULK ALL PENETRATIONS THRU WALLS TO MINIMIZE SOUND PENETRATION THRU WALLS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL TEMPERATURE CONTROL SYSTEM REQUIREMENTS.
- ROUTE LINE SIZE PVC CONDENSATE DRAIN PIPING FROM AIR HANDLING UNIT TO NEAREST FLOOR DRAIN. PROVIDE TRAP AT CONNECTION TO AIR HANDLING UNIT.
- ANY DAMAGE TO THE SITE (SIDEWALKS, CURBS, ETC) OR TO THE BUILDING AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE FIXED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF ROOFS/WALLS/FLOORS AND CORE DRILLS REQUIRED TO COMPLETE THEIR RESPECTIVE WORK.
- THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THE CONTRACTORS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY FENCING AROUND THE LIFT SITE DURING LIFTS.
- OWNER SHALL BE RESPONSIBLE FOR REMOVING ALL ASBESTOS-CONTAINING MATERIAL ASSOCIATED WITH THIS PROJECT.
- PROVIDE FLEXIBLE CONNECTIONS ON ALL PIPING PENETRATIONS BACK TO BACK 2 HOUR RATED FIRE WALLS TO ALLOW FOR EXPANSION BETWEEN THE WALLS.
- NOTE, ALL HEATING EQUIPMENT SHALL COMPLY WITH THE STATE OF ILLINOIS STEEL PRODUCTS PROCUREMENT ACT (30 ILCS 565/1). CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION FROM EQUIPMENT MANUFACTURER THAT THE EQUIPMENT IS IN COMPLIANCE WITH THE STATE OF ILLINOIS STEEL PRODUCTS PROCUREMENT ACT. THE WRITTEN VERIFICATION SHALL BE INCLUDED WITH THE SHOP DRAWING SUBMITTAL.
- ALL GEO SUPPLY AND RETURN PIPING SHALL BE FLUSHED CLEAN BEFORE FINAL CONNECTIONS TO HEAT PUMP EQUIPMENT IS MADE. PROVIDE CONNECTORS TO LOOP THE FLEX HOSE KITS TO ONE ANOTHER TO FLUSH THE PIPE SYSTEM. A/E IS TO BE CALLED AND PRESENT FOR THE FLUSHING PROCESS OF BOTH BURIED PIPING AND INDOOR BUILDING PIPING. FAILURE TO COMPLETE THE FLUSHING PROCESS AND SIGN OFF FROM A/E WILL REQUIRE THE CONTRACTOR TO EXTEND THE 1 YEAR STANDARD WARRANTY TO TWO YEARS TO RETURN AND CLEAN OUT STRAINERS AND OTHER EQUIPMENT DUE TO DEBRIS. A SIGN OFF FORM WILL BE PROVIDED BY THE A/E AND COPIES SUBMITTED TO OWNER AND CONTRACTOR(S).

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State of Illinois Professional Design Firm Number 184.000267

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 TEL. 317.979.9827

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 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455

**ANDREW J. KENNEDY**  
 002-048350  
 LICENSED PROFESSIONAL ENGINEER  
 OF ILLINOIS

EXPIRATION 11/30/19  
 SIGNED 02/15/19

**MECHANICAL SYMBOLS & ABBREVIATIONS**

NO.	DATE	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN ON THESE DRAWINGS IS TO BE USED AS A GUIDE TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

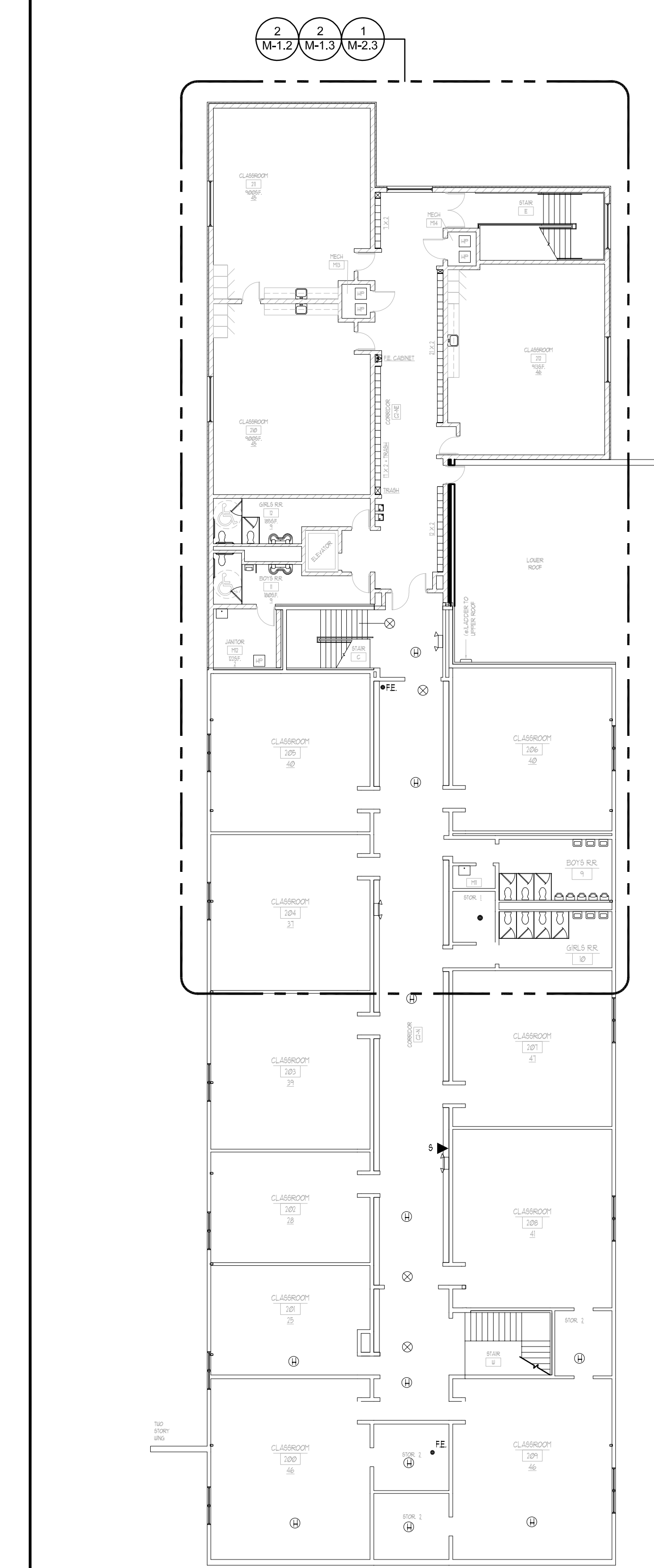
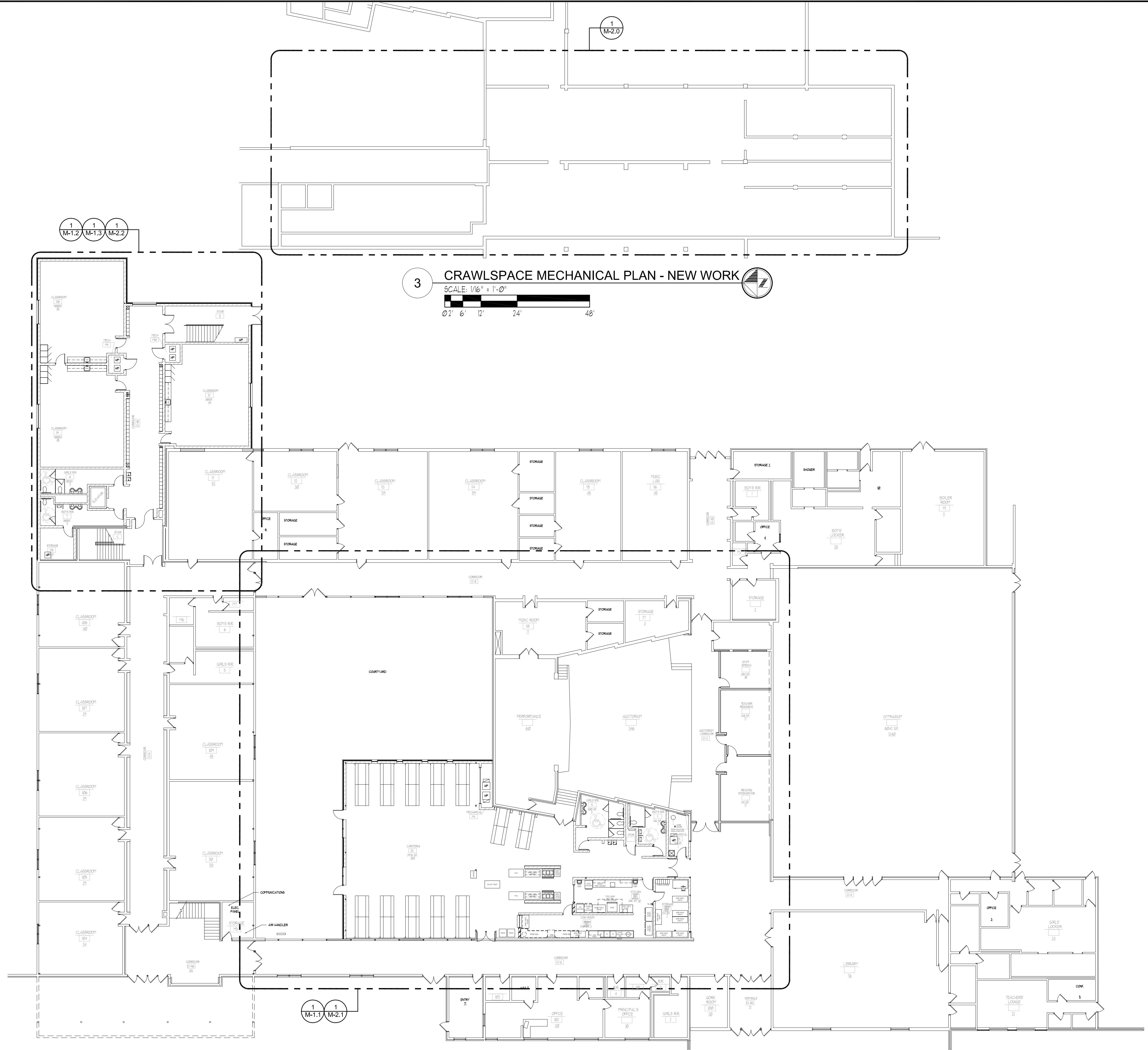
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET M-0.0  
 OF 91 SHEETS



NO.	DATE	REMARKS

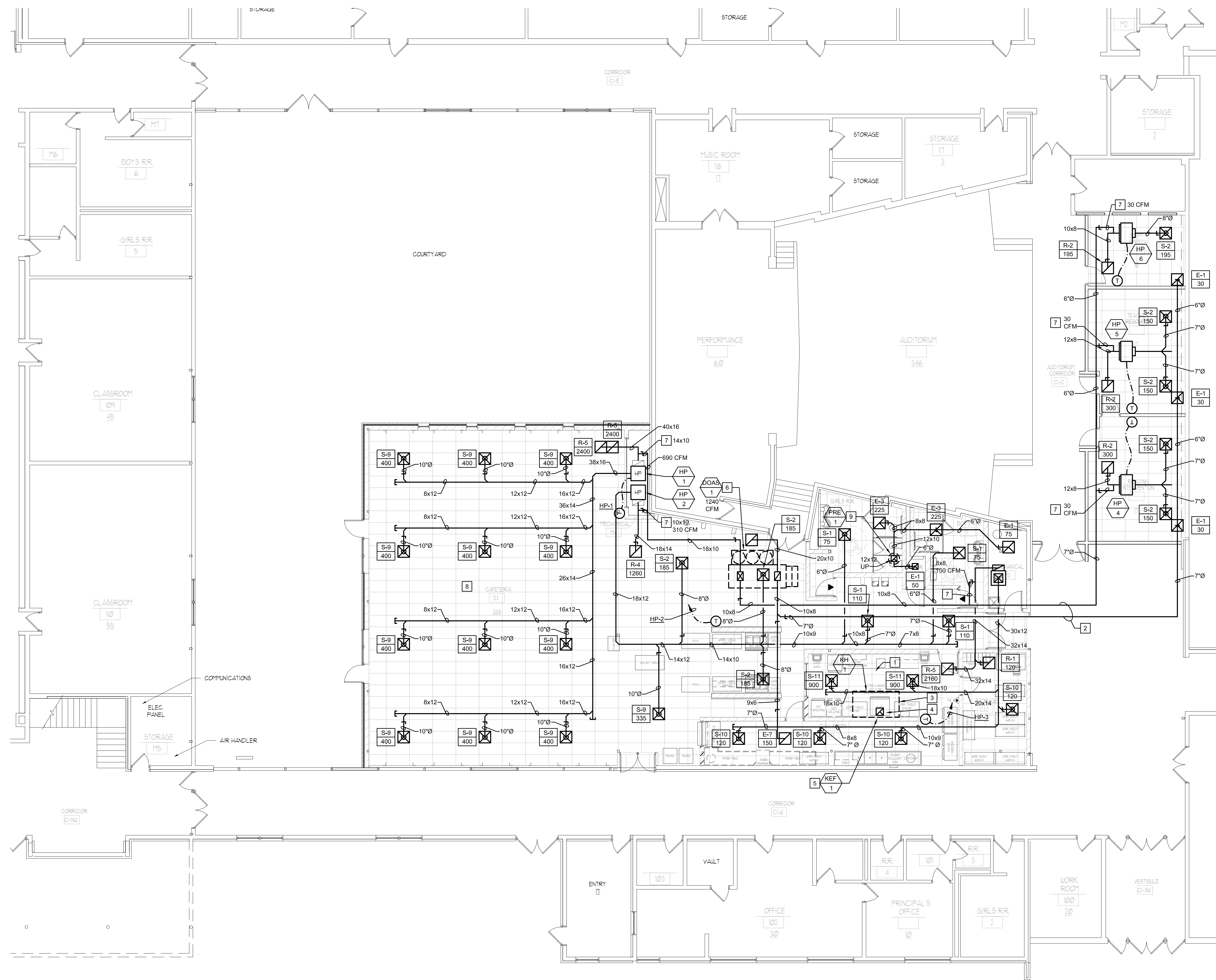
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**3 CRAWLSPACE MECHANICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



**2 SECOND FLOOR MECHANICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'

**1 FIRST FLOOR MECHANICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



**KEYED NOTES - NEW WORK**

- 1 PROVIDE NEW KITCHEN HOOD MAKEUP AIR UNIT AND SET ON NEW INSULATED ROOF CURB ANCHORED TO NEW ROOF. FLASH CURB INTO NEW ROOFING SYSTEM.
- 2 REMOVE AND REINSTALL EXISTING CEILING TILES AND GRID REQUIRED TO INSTALL NEW DUCTWORK. REPLACE ALL DAMAGED CEILING TILES AND OR GRID.
- 3 PROVIDE NEW KITCHEN HOOD TYPE 2 WITH STAINLESS STEEL POLISHED COWL TO CLOSE UP GAP BETWEEN THE TOP OF THE HOOD AND THE CEILING ELEVATION.
- 4 PROVIDE A 14" X 14" WELDED BLACK STEEL 18 GA. EXHAUST DUCT FROM HOOD CONNECTION UP TO KEF-1 WITH A BACK DRAFT DAMPER.
- 5 PROVIDE NEW KEF-1, NEW INSULATED AND VENTILATED ROOF CURB. SEE DETAIL.
- 6 PROVIDE NEW DOAS UNIT. SEE EQUIPMENT SCHEDULE AND ALL ACCESSORIES SCHEDULED. UNIT TO BE CONNECTED TO THE BUILDING'S BAS AS SPECIFIED AND NOTED ON DRAWINGS.
- 7 PROVIDE VENTILATION SUPPLY AIR DUCTWORK TO SHOWN RETURN AIR DUCT OF THE SIZE NOTED WITH A BALANCING DAMPER.
- 8 INSTALL NEW DUCTWORK UP ABOVE CEILING SYSTEM. PROVIDE OFFSET FITTINGS TO INSTALL UNDER STRUCTURAL MEMBERS AND HOLD DUCTWORK UP TIGHT TO ROOF STRUCTURE.

**1 PARTIAL FIRST FLOOR MECHANICAL PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL FIRST FLOOR MECHANICAL PLAN - NEW WORK**

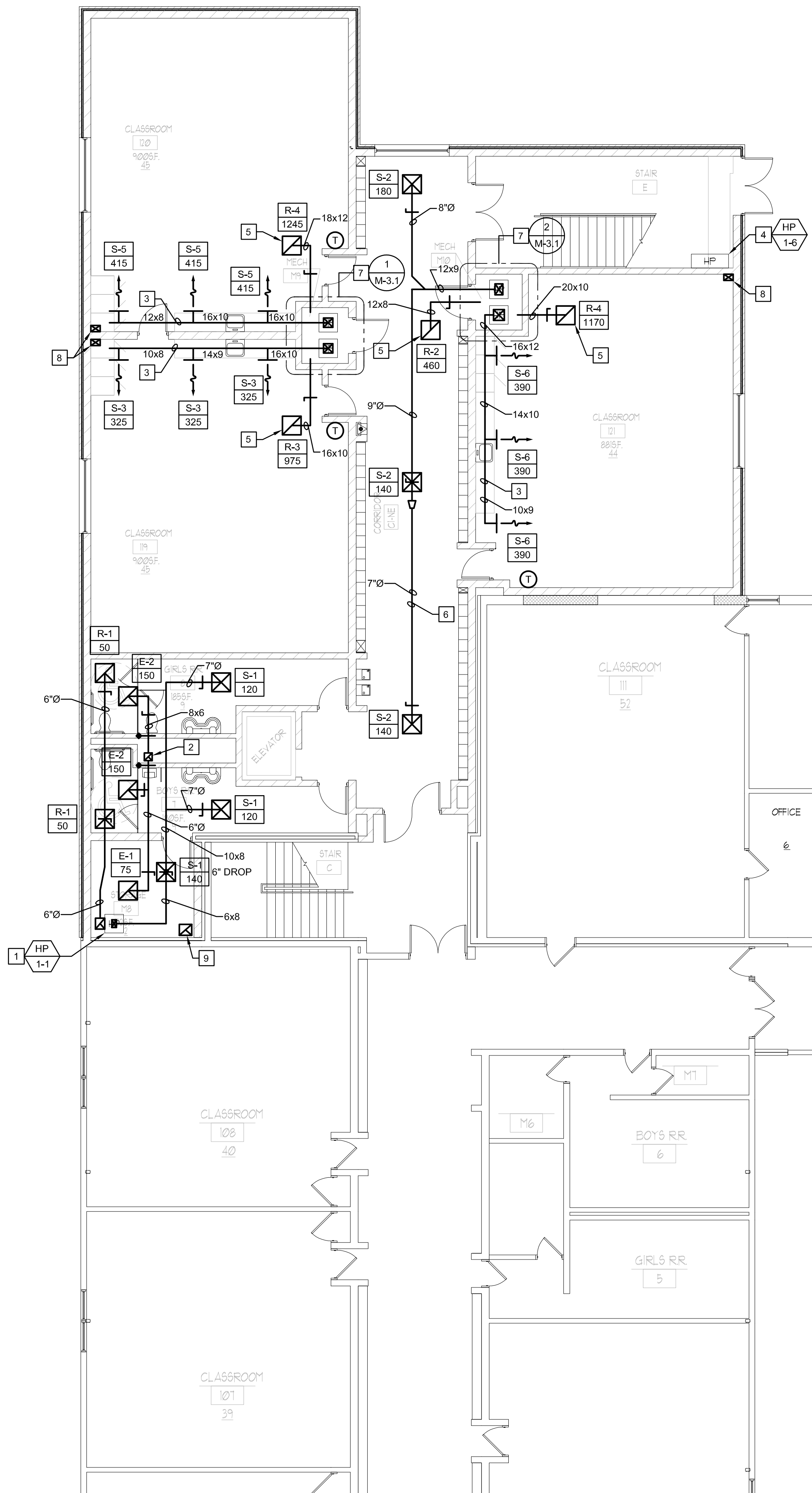
NO.	DATE	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **M-1.1**  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/M1-2)

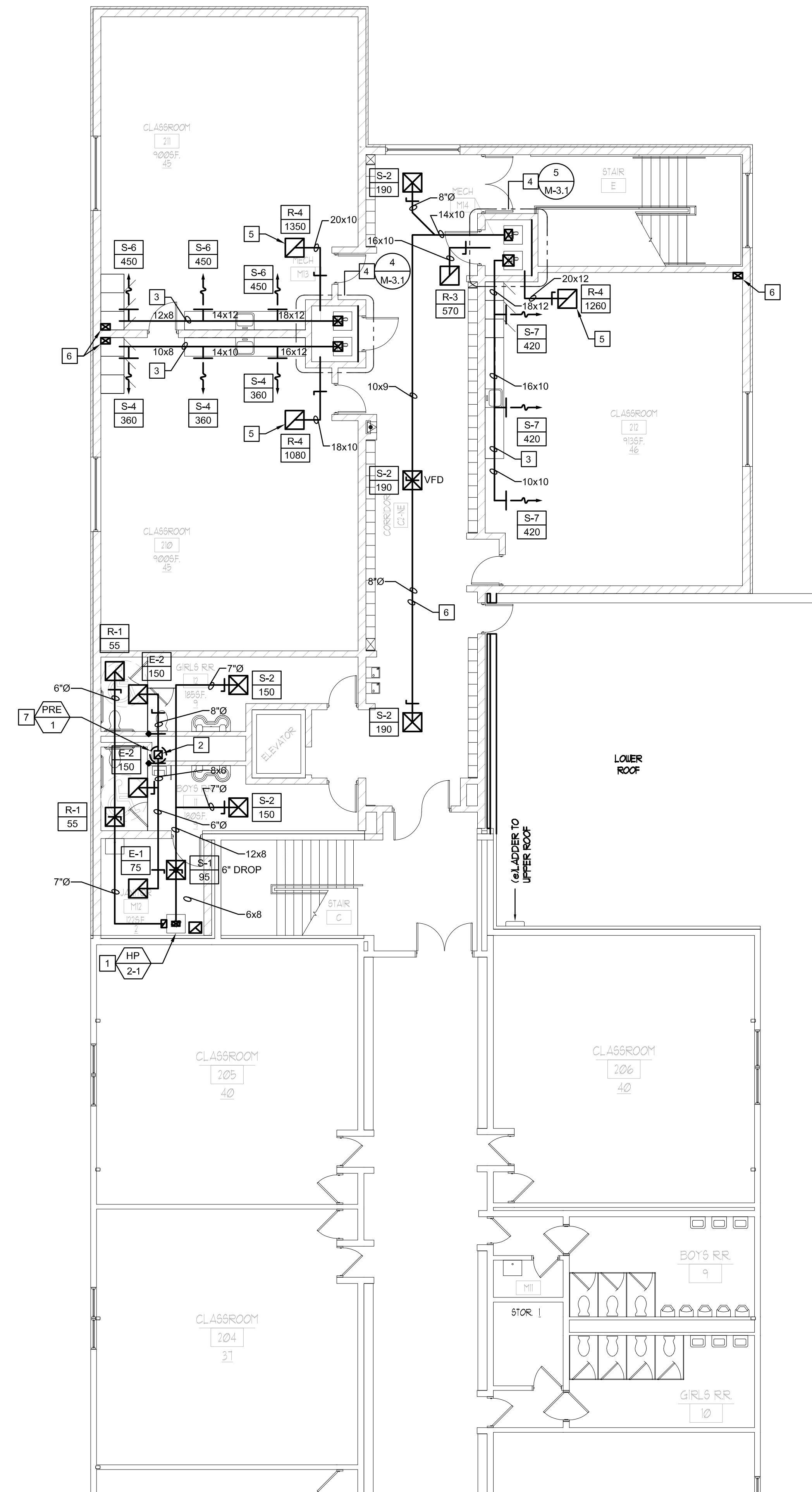
- 1 PROVIDE NEW GEO HEAT PUMP VERTICAL UNIT. SET EACH UNIT ON (4) 4" X 4" X 1" RUBBER/CORK PADS. PIPE CONDENSATE DRAIN PIPE TO NEARBY FLOOR DRAIN. INSULATE FLEX DUCT CONNECTIONS ON UNIT WITH 1" RUBBER INSULATION. SEE PIPING DRAWINGS FOR PIPING CONNECTIONS. SEE PLUMBING DRAWINGS FOR FLOOR DRAIN LOCATIONS. SEE VERTICAL HEAT PUMP INSTALLATION DETAIL.
- 2 RUN 10" X 10" EXHAUST DUCT UP THRU SECOND FLOOR WITH 1 HOUR FIRE DAMPER IN PLUMBING CHASE WALL CONSTRUCTION. PROVIDE ACCESS PANEL IN DUCT FOR FIRE DAMPER ACCESS.
- 3 RUN NEW LINED INSULATED SUPPLY DUCTWORK UP IN NEW SOFFIT CONSTRUCTION. PROVIDE SUPPLY AIR GRILLE AND SPREAD VANES FOR MAXIMUM DISTRIBUTION.
- 4 PROVIDE NEW GEO HEAT PUMP CABINET UNIT. MOUNT TO WALL AND FLOOR. SEE PIPING DRAWINGS FOR CONNECTIONS.
- 5 PROVIDE RETURN AIR GRILLE IN LAY-IN CEILING. DUCT RETURN AIR BACK INTO MECHANICAL ROOM BY STUBBING DUCT INTO MECHANICAL ROOM, WHICH WILL BE A RETURN AIR PLENUM CONNECTION.
- 6 RUN NEW SUPPLY AIR DUCT ABOVE LAY-IN CEILING SYSTEM. COORDINATE DUCT PLACEMENT WITH SPRINKLER PIPING AND LIGHT FIXTURES.
- 7 SEE 1/4" MECHANICAL ROOM PLANS ON NOTED SHEET FOR INSTALLATION REQUIREMENTS.
- 8 SEE VENTILATION SYSTEM FLOOR PLANS FOR VENTILATION DUCT IN THESE NEW DUCT CHASES.



1 PARTIAL FIRST FLOOR MECHANICAL PLAN - NEW WORK  
 SCALE: 1/8" = 1'-0"

KEYED NEW WORK NOTES - (2/M1-2)

- 1 PROVIDE NEW GEO HEAT PUMP VERTICAL UNIT. SET EACH UNIT ON (4) 4" X 4" X 1" RUBBER/CORK PADS. PIPE CONDENSATE DRAIN PIPE TO NEARBY FLOOR DRAIN. INSULATE FLEX DUCT CONNECTIONS ON UNIT WITH 1" RUBBER INSULATION. SEE PIPING DRAWINGS FOR PIPING CONNECTIONS. SEE PLUMBING DRAWINGS FOR FLOOR DRAIN LOCATIONS. COORDINATE HEAT PUMP UNIT LOCATION WITH EXHAUST DUCT SHOWN FOR VENTILATION SYSTEM ON FLOOR PLAN. SEE VERTICAL HEAT PUMP DETAIL.
- 2 RUN 10" X 10" EXHAUST DUCT DOWN TO FIRST FLOOR AND RUN 14" X 14" EXHAUST DUCT UP THRU ROOF TO PRE-1. PROVIDE 1 HOUR FIRE DAMPERS IN PLUMBING CHASE WALL CONSTRUCTION. PROVIDE ACCESS PANEL IN DUCT FOR FIRE DAMPER ACCESS.
- 3 RUN NEW LINED INSULATED SUPPLY DUCTWORK UP IN NEW SOFFIT CONSTRUCTION. PROVIDE SUPPLY AIR GRILLE AND SPREAD VANES FOR MAXIMUM DISTRIBUTION.
- 4 SEE 1/4" MECHANICAL ROOM PLANS ON NOTED SHEET FOR INSTALLATION REQUIREMENTS.
- 5 PROVIDE RETURN AIR GRILLE IN LAY-IN CEILING. DUCT RETURN AIR BACK INTO MECHANICAL ROOM BY STUBBING DUCT INTO MECHANICAL ROOM, WHICH WILL BE A RETURN AIR PLENUM CONNECTION.
- 6 SEE VENTILATION SYSTEM FLOOR PLANS FOR VENTILATION DUCT DROPS IN THESE NEW DUCT CHASES.
- 7 PROVIDE NEW PRE-1 ON ROOF WITH INSULATED ROOF CURB AND ACCESSORIES AS SCHEDULED.



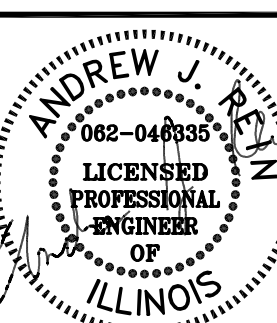
2 PARTIAL SECOND FLOOR MECHANICAL PLAN - NEW WORK  
 SCALE: 1/8" = 1'-0"



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PARTIAL FIRST FLOOR SECOND FLOOR MECHANICAL PLAN - NEW WORK

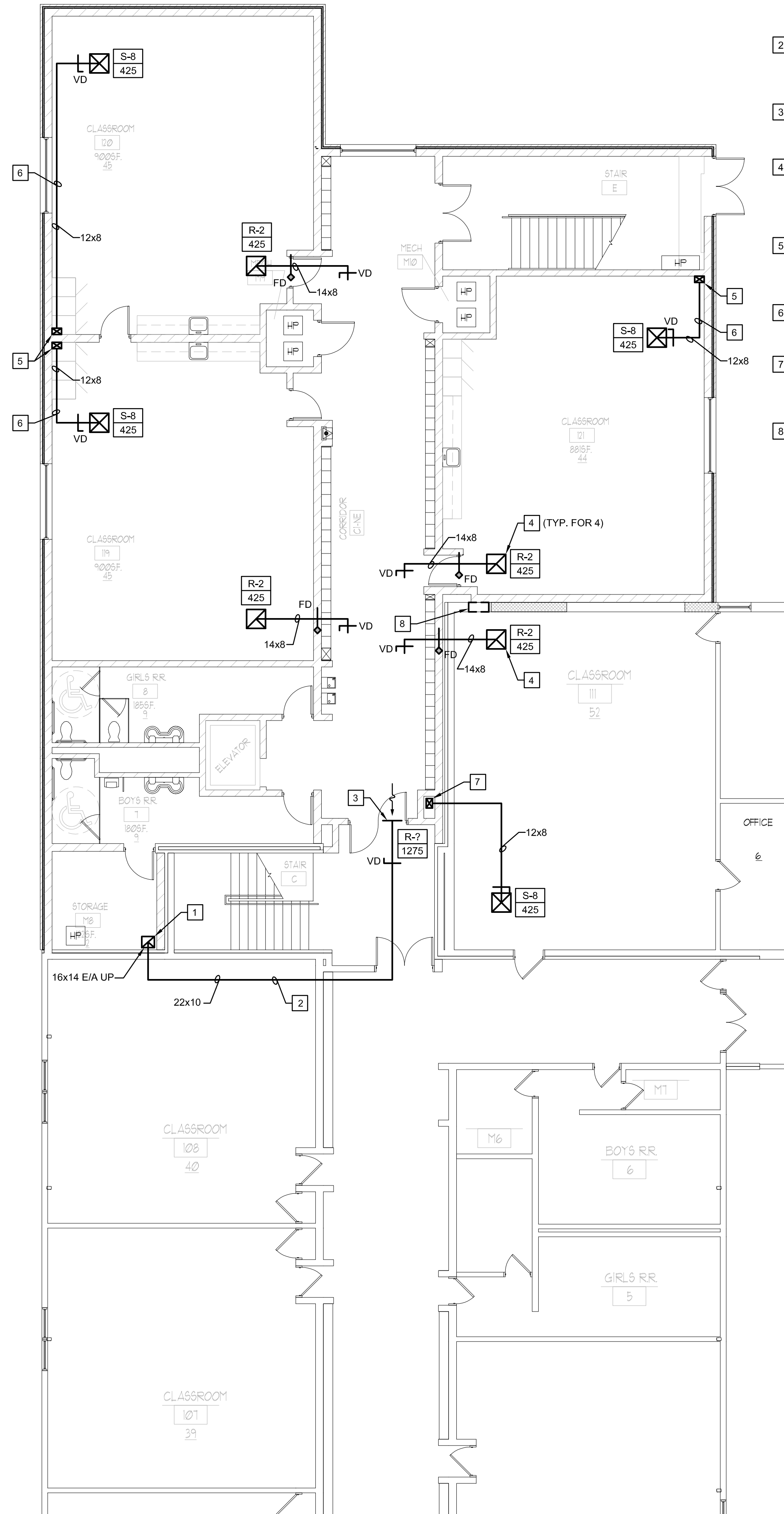
NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET M-1.2  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/M-1.3)

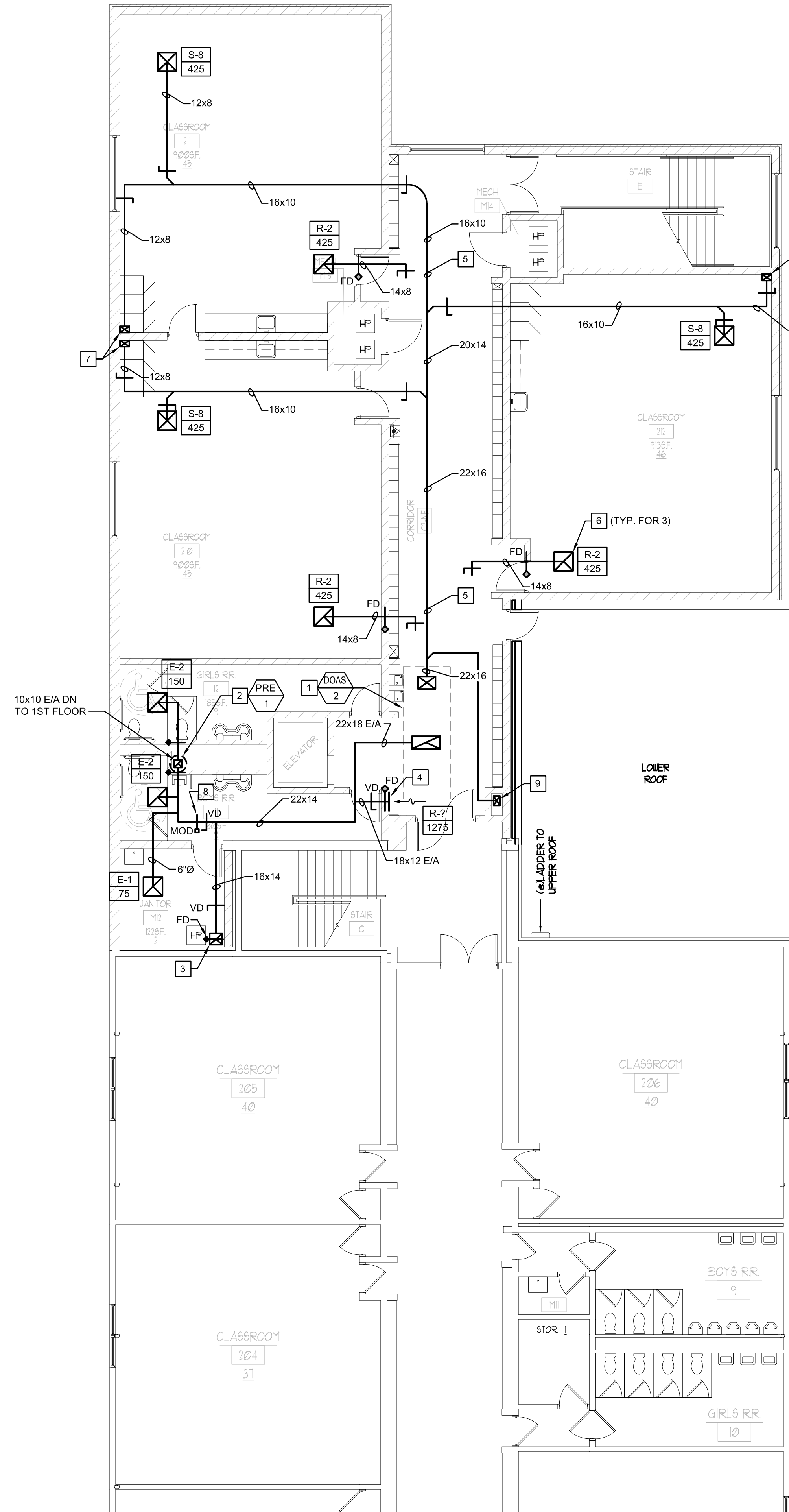
- 1 PROVIDE NEW VENTILATION EXHAUST AIR DUCTWORK RISER UP THRU SECOND FLOOR WITH A 1 HOUR FIRE DAMPER AT THE FLOOR PENETRATION. PROVIDE ACCESS DOOR TO ACCESS FIRE DAMPER.
- 2 RUN NEW 22" X 10" VENTILATION EXHAUST DUCT ABOVE EXISTING CLASSROOM CEILING SYSTEM. REMOVE AND REINSTALL CEILING ASSEMBLY TO INSTALL NEW DUCTWORK. REPLACE ALL DAMAGED CEILING TILES WITH MATCHING.
- 3 PROVIDE NEW VENTILATION EXHAUST AIR WALL GRILLE ABOVE CEILING SYSTEM FOR DOAS SYSTEM. ABOVE CEILING SYSTEM IS A PLENUM ZONE.
- 4 PROVIDE VENTILATION EXHAUST AIR GRILLE IN LAY-IN CEILING. RUN DUCT EXHAUST DUCT THRU HALLWAY WALL. TURN 90 DEGREE DUCT ELBOW AND PROVIDE A BALANCING DAMPER. LINE THIS DUCT WITH 1" ACOUSTIC DUCT LINER. PROVIDE 1 HOUR FIRE DAMPER IN EXHAUST DUCT AT WALL PENETRATION.
- 5 PROVIDE VENTILATION SUPPLY AIR DUCT DROP DOWN THRU SECOND FLOOR WITH A 1 HOUR FIRE DAMPER AND ACCESS DOOR TO FIRE DAMPER. SEE SECOND FLOOR ON THIS SHEET FOR CONTINUATION.
- 6 FROM VENTILATION SUPPLY AIR DUCT DROP RUN NEW CONNECTION DUCTWORK TO CEILING SUPPLY DIFFUSER. SEE DUCT DETAIL FOR THESE AIR DEVICES.
- 7 PROVIDE 12x8 VENTILATION AIR DUCT DOWN FROM SECOND FLOOR IN NEW CHASE. COORDINATE WITH SPRINKLER PIPING THAT ALSO RUNS IN THE CHASE. RUN DUCT INTO CLASSROOM ABOVE CEILING AND OVER TO NEW SUPPLY DIFFUSER.
- 8 DISCONNECT AND REMOVE EXISTING INTAKE LOUVER FROM EXISTING HEAT PUMP UNIT AND CAP INTAKE DUCT.



1 PARTIAL FIRST FLOOR VENTILATION PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

KEYED NEW WORK NOTES - (2/M-1.3)

- 1 PROVIDE NEW DOAS UNIT UP ON ROOF. PROVIDE INSULATED ROOF CURB. COORDINATE DUCT DROP LOCATIONS WITH CONCRETE CORE ROOF DECKING SYSTEM. SEE DOAS EQUIPMENT SCHEDULE.
- 2 PROVIDE NEW ROOF MOUNTED POWER ROOF EXHAUST FAN, INSULATED CURB AND MOTORIZED DAMPER. SEE PRE DETAIL AND EXHAUST FAN EQUIPMENT SCHEDULE.
- 3 PROVIDE 16" X 14" VENTILATION SYSTEM EXHAUST DUCT DROP DOWN TO FIRST FLOOR THRU FLOOR PENETRATION. PROVIDE 1 HOUR HORIZONTAL FIRE DAMPER AT FLOOR PENETRATION WITH ACCESS DOOR.
- 4 PROVIDE 18" X 12" DUCT PENETRATION THRU CORRIDOR WALL WITH A 1 HOUR VERTICAL FIRE DAMPER.
- 5 RUN NEW VENTILATION SUPPLY DUCT ABOVE CEILING SYSTEM.
- 6 PROVIDE VENTILATION EXHAUST AIR GRILLE IN CEILING. PROVIDE EXHAUST AIR DUCT THRU CORRIDOR WALL WITH A 1 HOUR FIRE DAMPER. PROVIDE A BALANCING DAMPER AND LINE DUCT WITH 1" ACOUSTIC DUCT LINER.
- 7 PROVIDE 12" X 6" VENTILATION SUPPLY AIR DUCT DROP DOWN IN CHASE TO FIRST FLOOR. PROVIDE A 1 HOUR HORIZONTAL FIRE DAMPER AT FLOOR PENETRATION WITH AN ACCESS DOOR.
- 8 PROVIDE A MOTORIZED DAMPER IN EXHAUST DUCT THAT RUNS TO DOAS. THIS DAMPER WILL BE OPEN AND PRE-1 DAMPER CLOSED DURING OCCUPIED HOURS TO RECOVER ENERGY FROM TOILET ROOM EXHAUST. DURING UNOCCUPIED HOURS, IF TOILET ROOMS ARE USED, THE PRE-1 WILL BE ENERGIZED BY OCCUPANCY SENSORS THAT CONTROL THE LIGHTING IN EACH SPACE.
- 9 PROVIDE 12X8 VENTILATION AIR DUCT DOWN FROM SECOND FLOOR IN NEW CHASE. COORDINATE WITH SPRINKLER PIPING THAT ALSO RUNS IN THE CHASE. RUN DUCT INTO CLASSROOM ABOVE CEILING AND OVER TO NEW SUPPLY DIFFUSER.
- 10 DISCONNECT AND REMOVE EXISTING INTAKE LOUVER FROM EXISTING HEAT PUMP UNIT AND CAP INTAKE DUCT.



2 PARTIAL SECOND FLOOR VENTILATION PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

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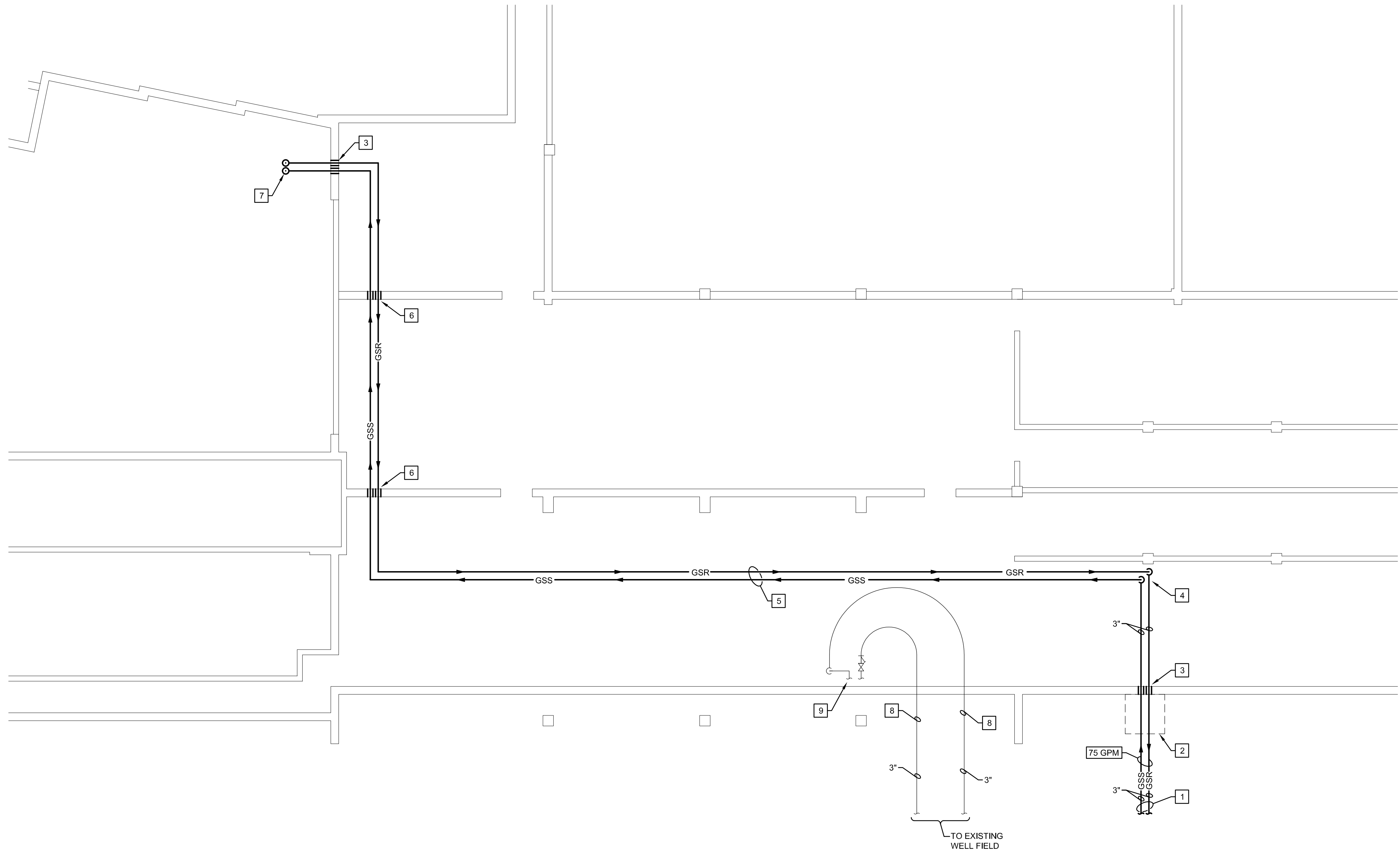
PARTIAL FIRST & SECOND FLOOR VENTILATION PLAN - NEW WORK

NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET M-1.3  
OF 91 SHEETS





1 PARTIAL CRAWLSPACE MECHANICAL PIPING PLAN - NEW WORK  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

**KEYED NOTES - NEW WORK**

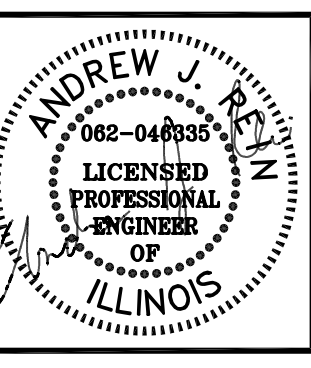
- 1 NEW GROUND SOURCE SUPPLY AND RETURN PIPING TO AND FROM NEW GEO FIELD. SEE SITE PLAN FOR NEW GEO FIELD LAYOUT AND LOCATION. NEW PIPING SHALL BE HDPE SDR 11, AS SPECIFIED AND SCHEDULED. PIPING SHALL BE BURIED 48" BELOW GRADE FROM TOP OF PIPE. SEE PIPING TRENCH DETAIL.
- 2 REMOVE SECTION OF EXISTING CONCRETE SIDEWALK TO INSTALL NEW GEO PIPING BELOW. NEW GEO PIPING SHALL BE DIRECTIONALLY BORED UNDER PAVEMENT TO BUILDING FOUNDATION AND THEN RUN UNDER OR THRU FOUNDATION DEPENDING FOUNDATION DEPTH.
- 3 PROVIDE FOUNDATION PIPE SLEEVES. CORE DRILL CONCRETE FOUNDATION AND INSTALL NEW PVC SLEEVES. SEAL AROUND PIPING WITH LINKAGE ASSEMBLY AND GROUT IN REMAINING VOID AREA FLUSH TO FOUNDATION WALL.
- 4 EXCAVATE IN CRAWLSPACE TO MAINTAIN NEW GEO PIPING DEPTH AND TURN UP TO BOTTOM OF STRUCTURAL BAR JOIST IN CRAWLSPACE. BACK FILL WITH CLEAN MATERIAL.
- 5 PROVIDE CLEVIS PIPE HANGERS AND RUN NEW GEO PIPING UP AT BOTTOM OF JOIST. INSULATE THE NEW GEO PIPING AND FITTINGS AS SCHEDULED. LABEL ALL NEW PIPING AS SCHEDULED.
- 6 PROVIDE CORE DRILLINGS AND PVC SLEEVES THRU FOUNDATION WALLS IN CRAWLSPACE. INSULATION SHALL RUN CONTINUOUSLY THRU WALL PENETRATIONS.
- 7 TURN NEW GEO SUPPLY AND RETURN PIPING UP THRU FLOOR INTO MECHANICAL ROOM. SEE FIRST FLOOR PLAN FOR CONTINUATION.
- 8 EXISTING 3" HDPE GEO PIPING TO REMAIN.
- 9 EXISTING GEO PIPING MAINS IN CRAWLSPACE TO REMAIN.

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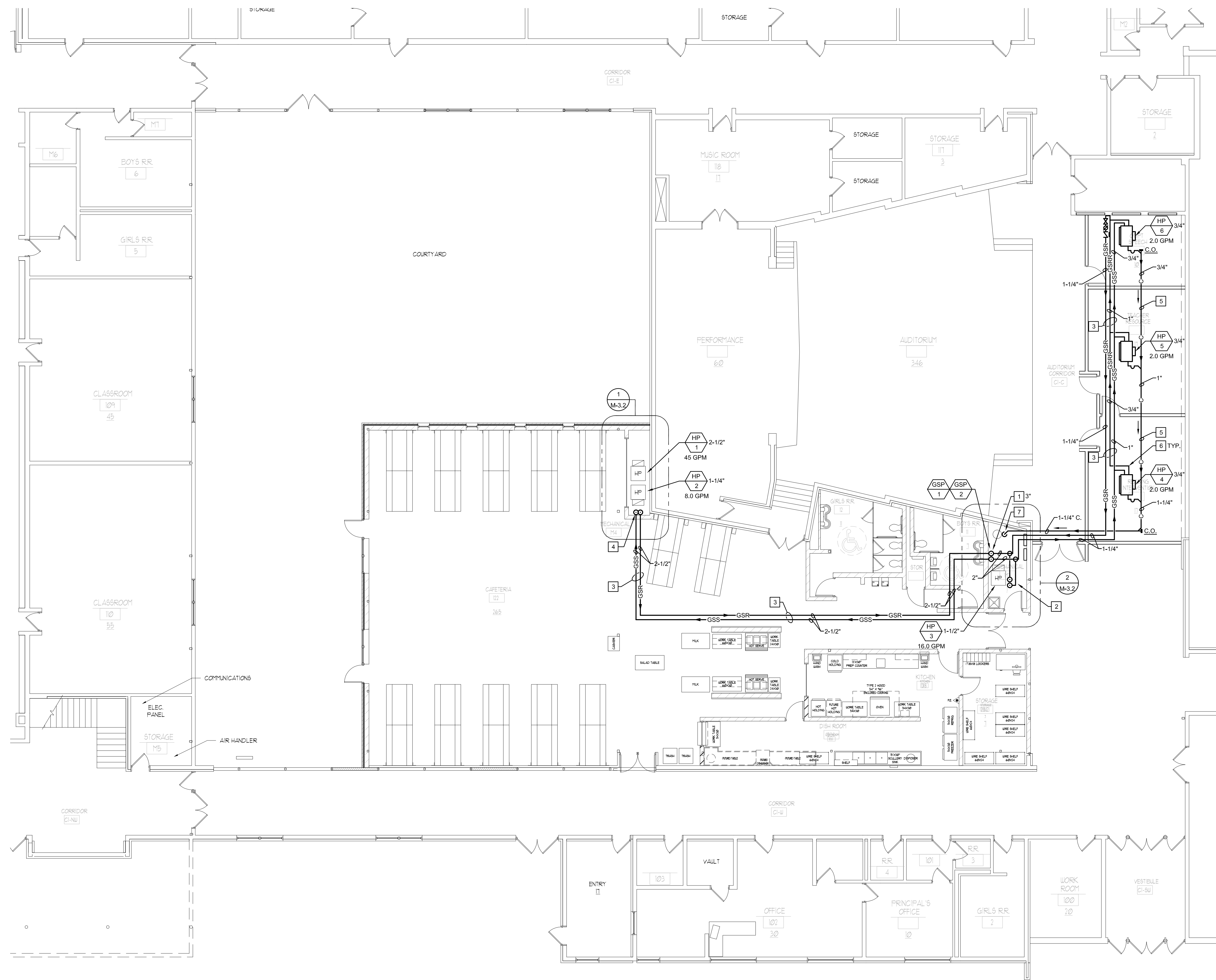
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**PARTIAL CRAWLSPACE MECHANICAL PIPING PLAN - NEW WORK**

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PROJECT NO. 22750211  
 ISSUE DATE 02/15/2019  
 SHEET M-2.0  
 OF 91 SHEETS



**KEYED NOTES - NEW WORK**

- 1 RUN NEW GEO SUPPLY AND RETURN PIPING UP FROM CRAWLSPACE. SEE CRAWLSPACE PLAN FOR CONTINUATION. SLEEVE FLOOR PENETRATIONS AND SEAL LIQUID TIGHT. PROVIDE (2) IN-LINE CIRC PUMPS AND VALVE TREE AS DETAILED. USE THIS VALVE TREE TO FLUSH EXTERIOR PIPING AND INTERIOR PIPING SEPARATELY BEFORE CONNECTION PIPES TO EQUIPMENT.
- 2 CONNECT NEW GEO SUPPLY AND RETURN PIPING TO NEW HEAT PUMP UNIT HP-3. PIPE CONDENSATE DRAIN FROM HP-23 TO NEARBY FLOOR DRAIN.
- 3 RUN NEW GEO SUPPLY AND RETURN PIPING ABOVE CEILING SYSTEM. INSULATE AND LABEL AS SCHEDULED ON DRAWINGS.
- 4 DROP NEW GEO SUPPLY AND RETURN PIPING DOWN TO NEW HEAT PUMP UNITS. SEE PIPING RISER FOR MORE INFORMATION AND BRANCH PIPING TO EACH HEAT PUMP.
- 5 RUN NEW HEAT PUMP CONDENSATE DRAIN PIPING ABOVE NEW CEILING SYSTEM. INSULATE AND LABEL AS SCHEDULED. PITCH PIPE TO DRAIN AT 1/8"/FT.
- 6 CONNECT GEO SUPPLY AND RETURN PIPING TO EACH HEAT PUMP WITH STAINLESS STEEL FLEX PIPE CONNECTION WITH BALL VALVES, CIRCUIT SETTERS AND STRAINERS. SEE GEO HEAT PUMP PIPING DETAIL.
- 7 PIPE CONDENSATE DRAIN TO FLOOR DRAIN IN MECHANICAL ROOM. LABEL CONDENSATE DRAIN PIPING AFTER INSULATING THE PIPE.

**1 PARTIAL FIRST FLOOR MECHANICAL PIPING PLAN - NEW WORK**  
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 002-04830  
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**PARTIAL FIRST FLOOR MECHANICAL PIPING PLAN - NEW WORK**

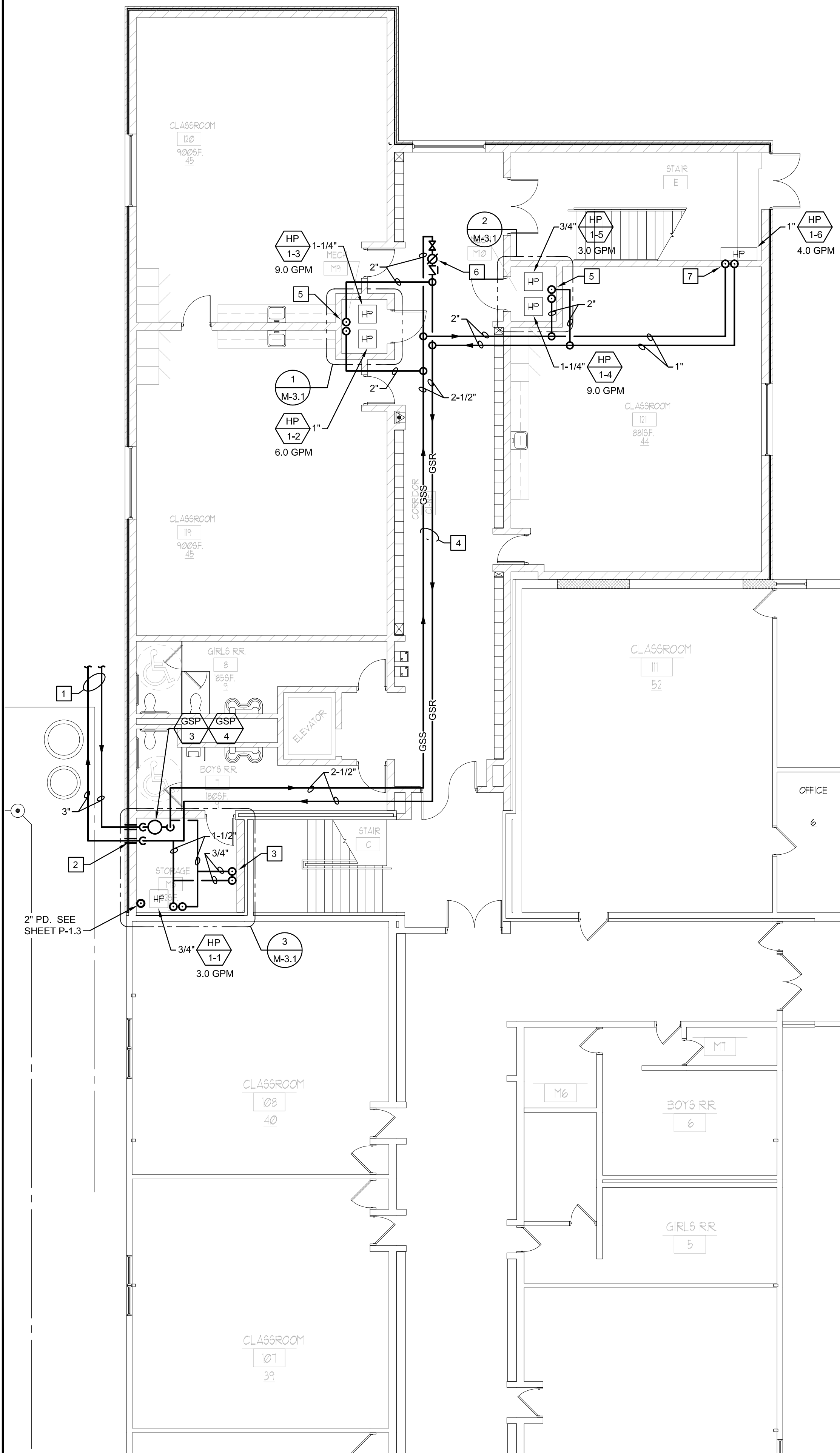
NO.	DATE	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET M-2.1  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/M-2.2)

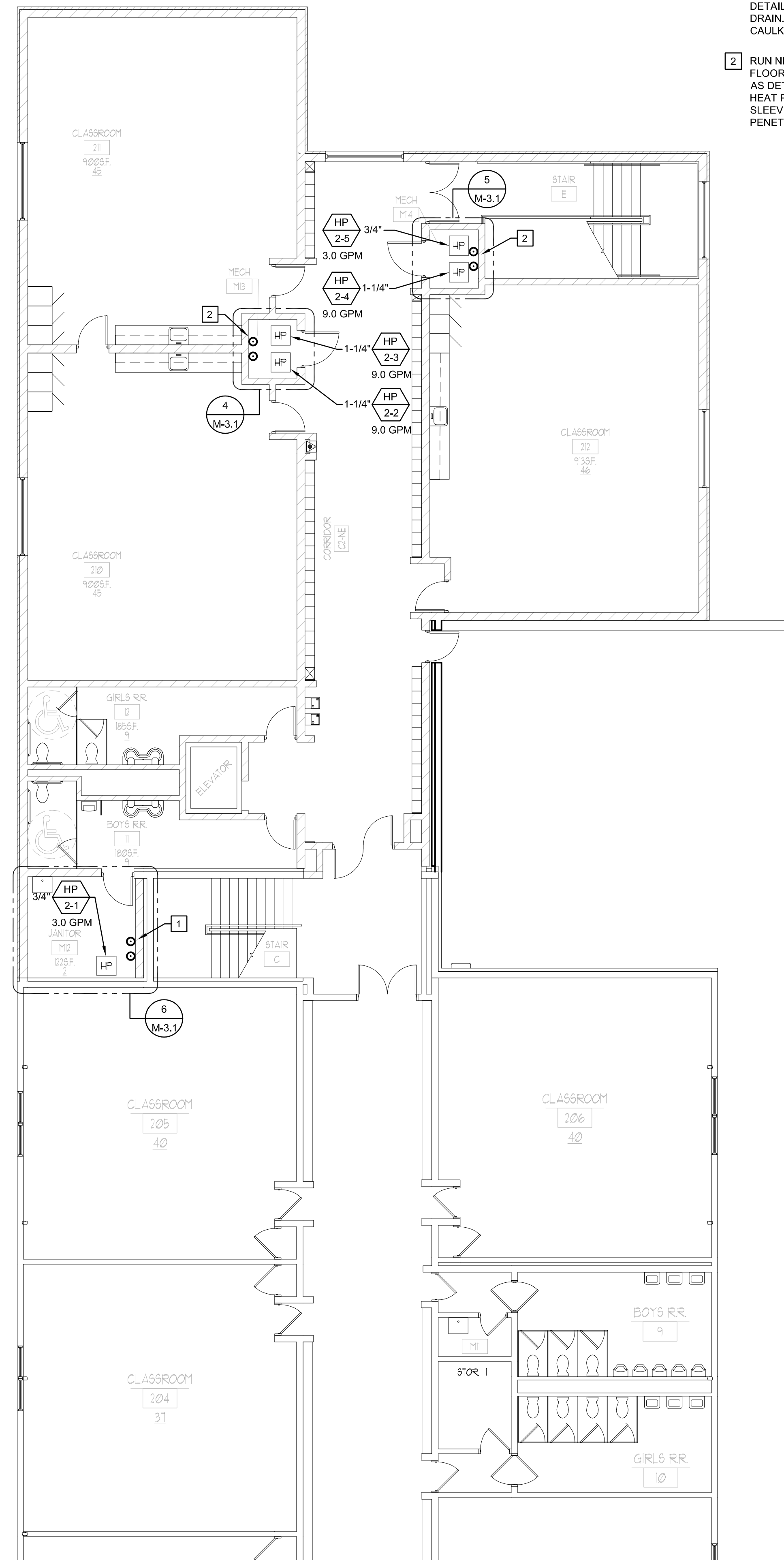
- 1 NEW GROUND SOURCE SUPPLY AND RETURN PIPING TO AND FROM NEW GEO FIELD. SEE SITE PLAN FOR NEW GEO FIELD #2 LAYOUT AND LOCATION. NEW PIPING SHALL BE HDPE SDR 11, AS SPECIFIED AND SCHEDULED. PIPING SHALL BE BURIED 48" BELOW GRADE FROM TOP OF PIPE. SEE TRENCH PIPING DETAIL.
- 2 RUN NEW GEO SUPPLY AND RETURN PIPING THRU NEW FOUNDATION WALL AND TURN UP THRU FIRST FLOOR TO (2) NEW IN-LINE CIRCULATION PUMPS. SEE VALVE TREE AND PUMP DETAIL. PROVIDE WALL PENETRATION SLEEVES AND SEAL WITH LINK-SEAL ASSEMBLY AND FILL IN VOID WITH NON-SHRINK GROUT FLUSH WITH FOUNDATION WALL SURFACE.
- 3 CONNECT NEW GEO SUPPLY AND RETURN PIPING TO NEW HEAT PUMP UNIT HP1-1. PIPE CONDENSATE DRAIN FROM HP1-1 TO NEARBY FLOOR DRAIN. SEE VERTICAL HP DETAIL.
- 4 RUN NEW GEO SUPPLY AND RETURN PIPING ABOVE CEILING SYSTEM. INSULATE AND LABEL AS SCHEDULED ON DRAWINGS.
- 5 DROP PIPING DOWN AND PIPING TURNED UP THRU SECOND FLOOR FOR NEW GEO SUPPLY AND RETURN PIPES TO BE CONNECT TO FIRST FLOOR AND SECOND FLOOR HEAT PUMP UNITS. SEE RISER DETAIL FOR MORE INFORMATION.
- 6 PROVIDE A BALL VALVE, BALANCING VALVE AND CHECK VALVE IN GEO RETURN PIPING TO COMPLETE THE LOOP FLOW DESIGN (STATION #2). SET CIRCUIT SETTER TO A GPM FLOW AS SCHEDULED.
- 7 RUN NEW GEO SUPPLY AND RETURN PIPING DOWN IN WALL CAVITY TO FLOOR MOUNTED CABINET HEAT PUMP UNIT AND CONNECT AS DETAILED.



1 PARTIAL FIRST FLOOR MECH. PIPING PLAN - NEW WORK  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

KEYED NEW WORK NOTES - (2/M-2.2)

- 1 RUN NEW GEO SUPPLY AND RETURN PIPING UP FROM FIRST FLOOR AND CONNECT TO NEW VERTICAL HEAT PUMP AS DETAILED. PIPE CONDENSATE DRAIN PIPE TO NEARBY FLOOR DRAIN. PROVIDE FLOOR SLEEVES AND SEAL WITH FIRE RATED CAULKING AT FLOOR PENETRATIONS.
- 2 RUN NEW GEO SUPPLY AND RETURN PIPING UP FROM FIRST FLOOR AND CONNECT TO (2) NEW VERTICAL HEAT PUMP UNITS AS DETAILED. PIPE CONDENSATE DRAIN PIPES FROM EACH HEAT PUMP UNIT TO NEARBY FLOOR DRAIN. PROVIDE FLOOR SLEEVES AND SEAL WITH FIRE RATED CAULKING AT FLOOR PENETRATIONS.



2 PARTIAL SECOND FLOOR MECH. PIPING PLAN - NEW WORK  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'



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State of Illinois Professional Design Firm Number 184,000267

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**EDISON ELEMENTARY SCHOOL, 2019 ADDITION**  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455

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**ANDREW J. KESTEL, P.E.**  
 662-048360  
 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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EXPIRATION 11/30/19  
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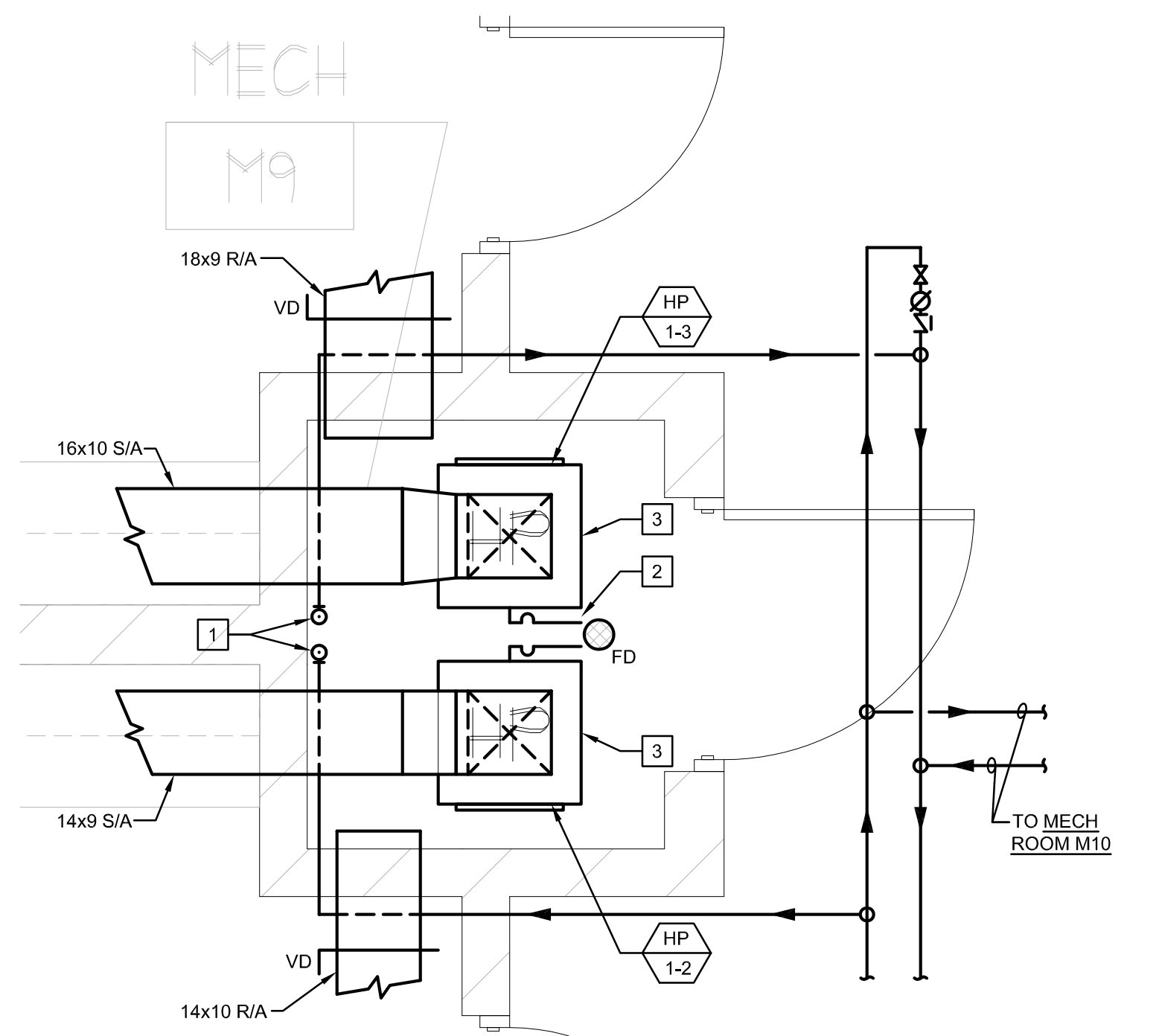
**PARTIAL FIRST FLOOR SECOND FLOOR MECH. PIPING PLANS - NEW WORK**

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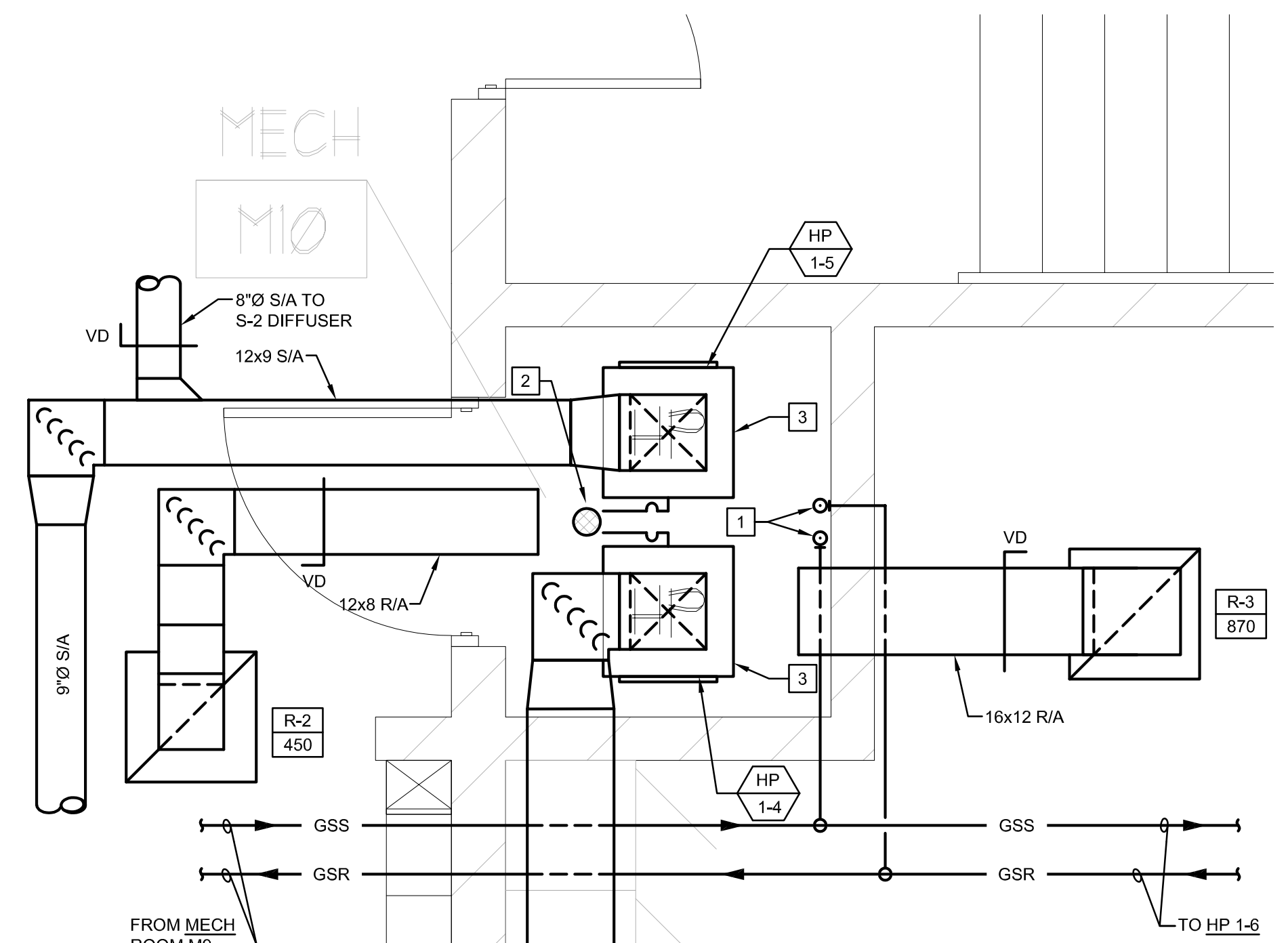
NO.	DATE	REMARKS

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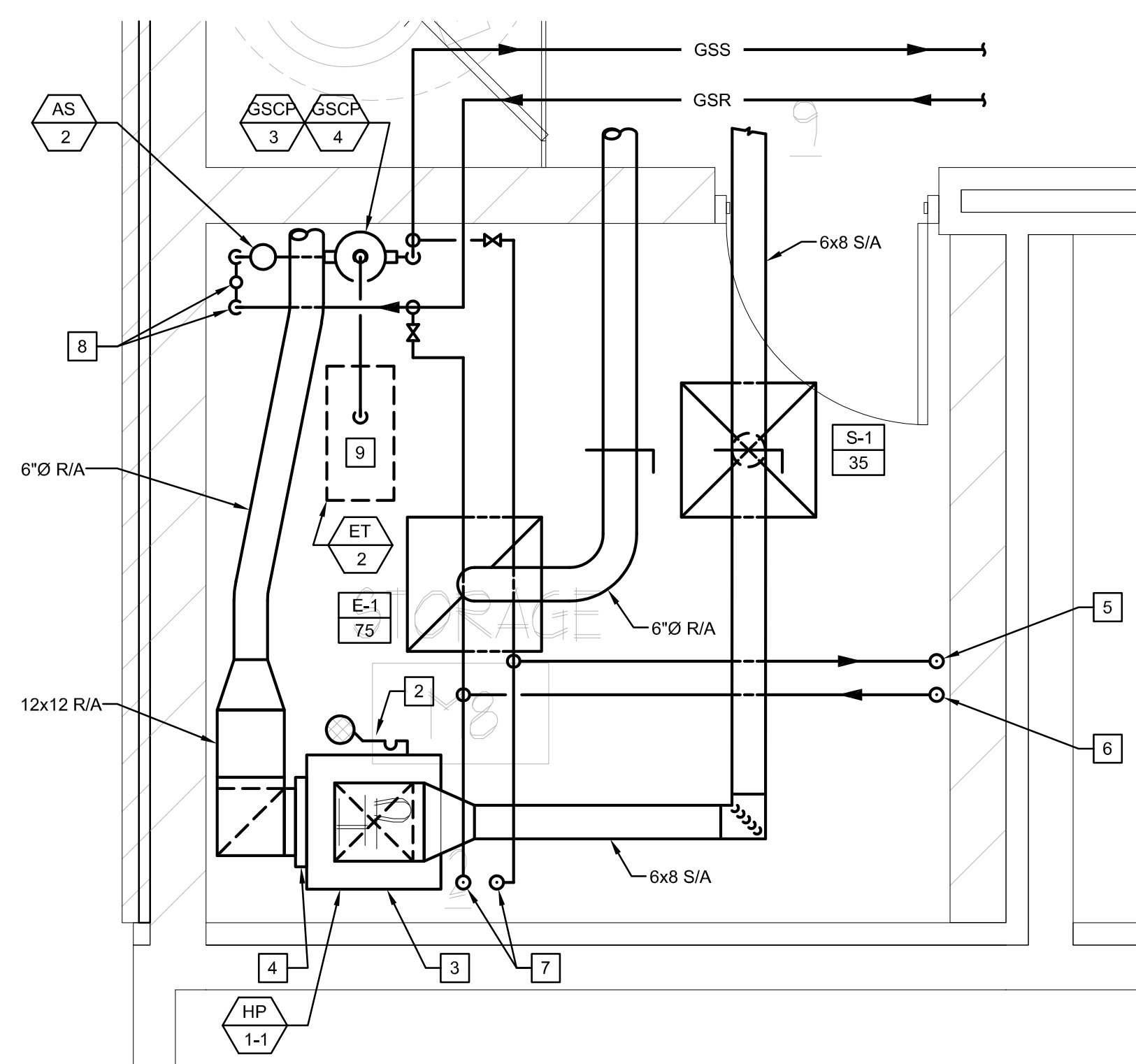
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET M-2.2  
 OF 91 SHEETS



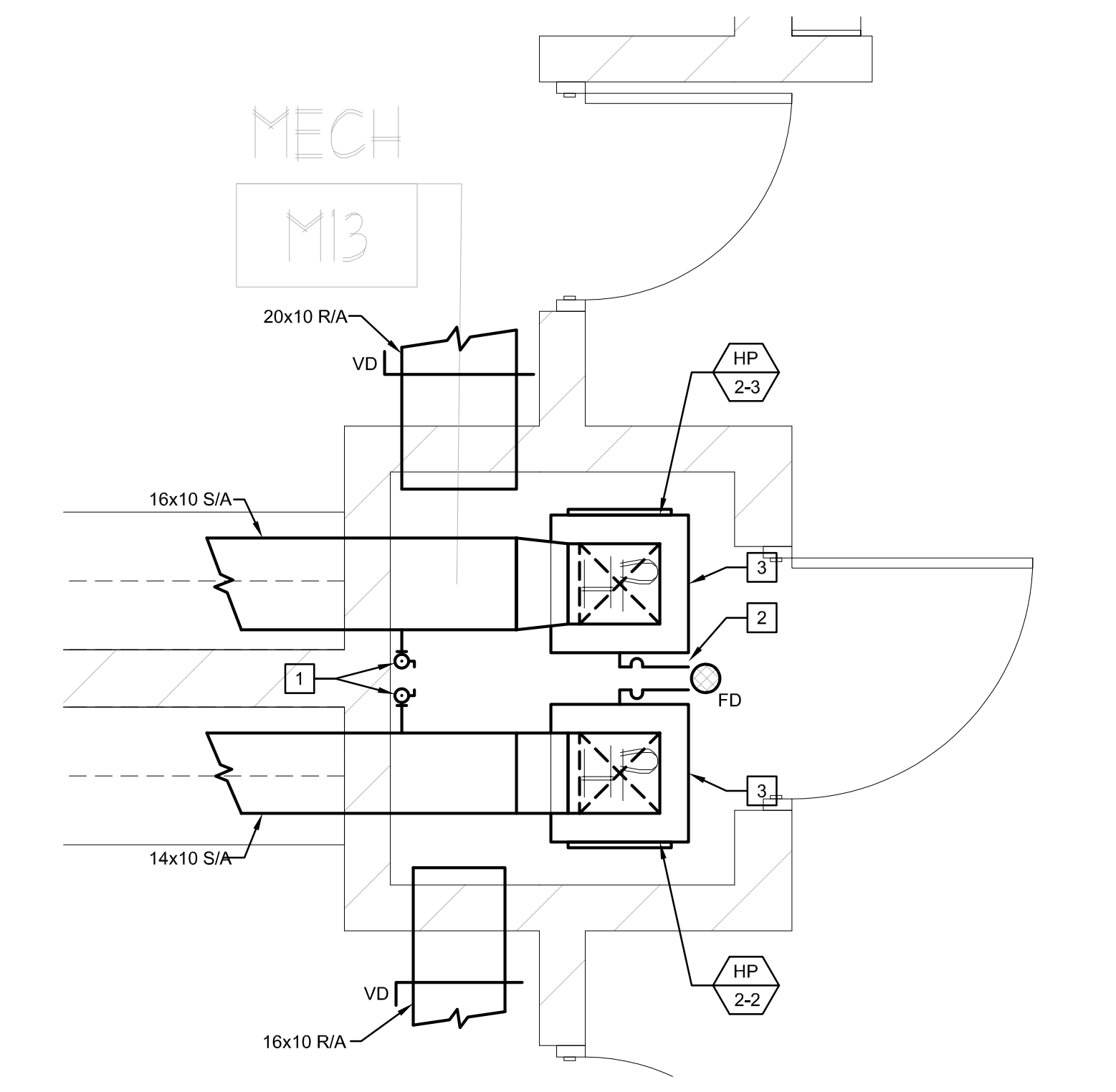
**1 ENLARGED MECHANICAL ROOM M9 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6



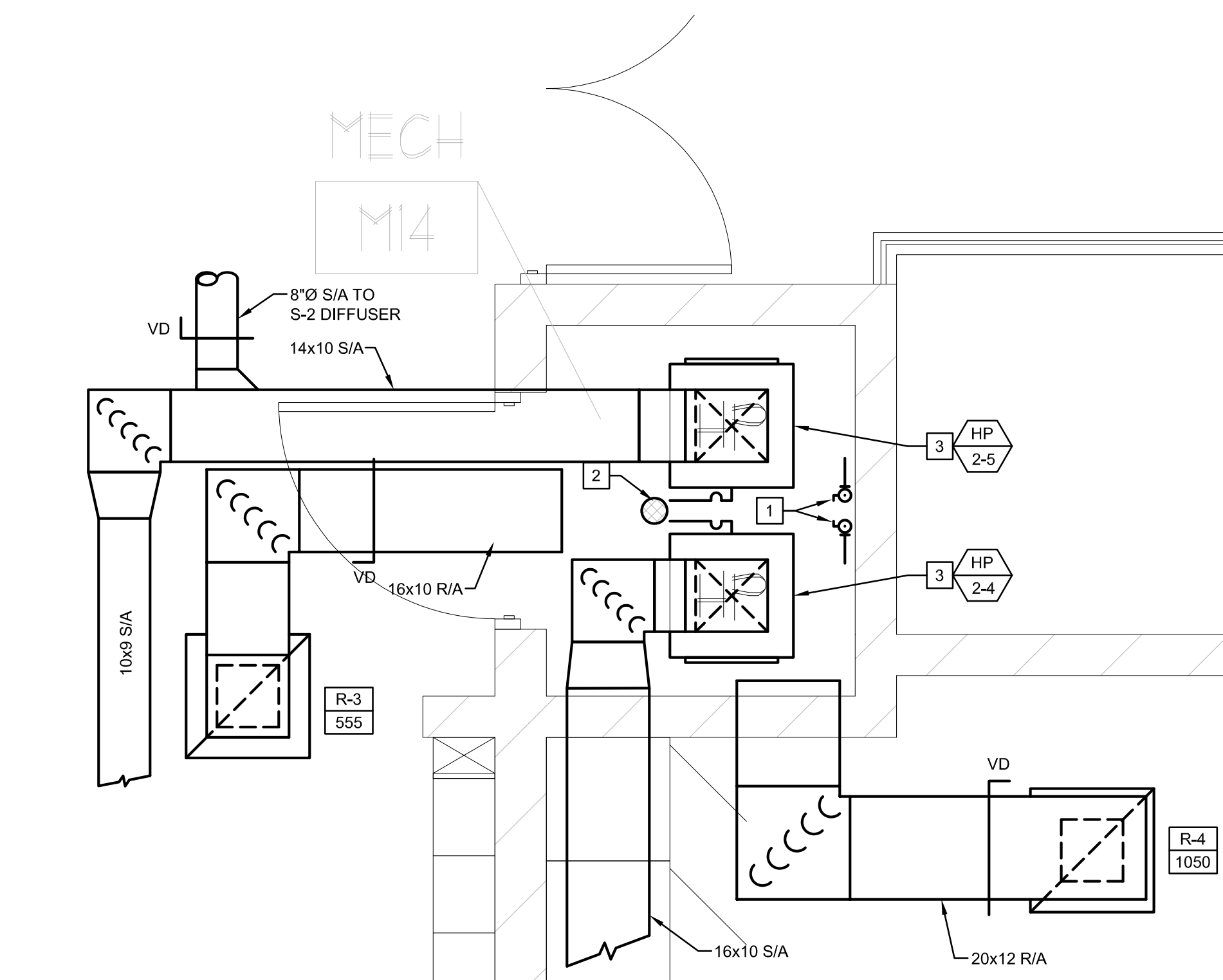
**2 ENLARGED MECHANICAL ROOM M10 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6



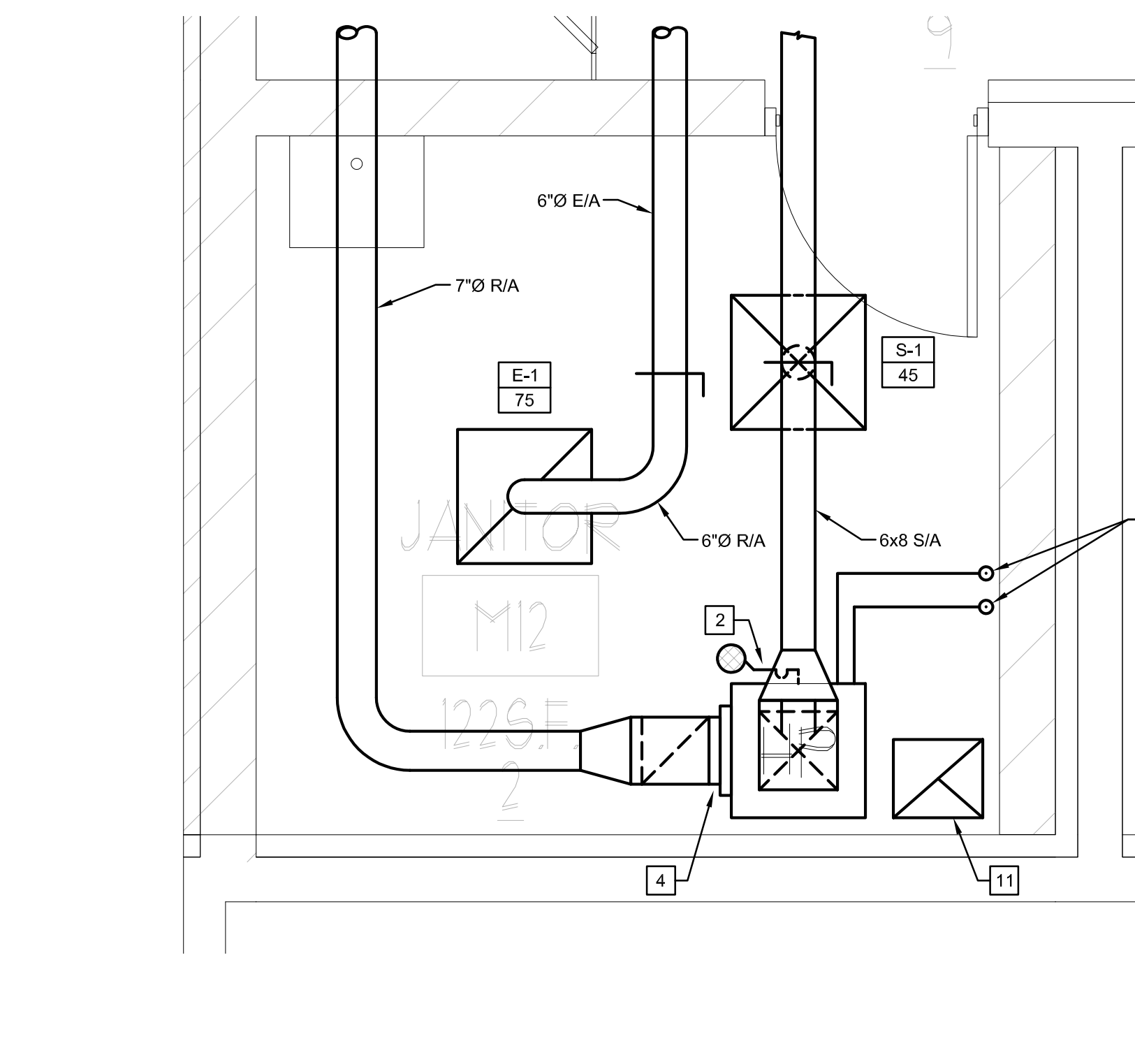
**3 ENLARGED STORAGE ROOM M8 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6



**4 ENLARGED MECHANICAL ROOM M13 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6



**5 ENLARGED MECHANICAL ROOM M14 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6



**6 ENLARGED JANITOR ROOM M12 - NEW WORK**  
 SCALE: 1/2" = 1'-0"  
 0 1 2 4 6

**KEYED NOTES - NEW WORK**

- 1 GSS AND GSR PIPING. SEE GEO PIPING RISERS FOR MECHANICAL ROOMS FOR DETAILS.
- 2 PIPE CONDENSATE DRAINS FROM EACH HEAT PUMP UNIT TO FLOOR DRAIN. USE TYPE "L" COPPER FOR DRAIN PIPING WITH SOLDERED FITTINGS.
- 3 PROVIDE NEW VERTICAL HEAT PUMP UNIT AND SET ON (4) 1" X 4" X 4" RUBBER/CORK PADS. SET AND LEVEL EACH UNIT. PROVIDE FLEX DUCT CONNECTIONS ON DUCTED SUPPLY AND RETURN DUCTWORK TO UNIT.
- 4 PROVIDE 1" FILTER RACK FOR A 1" MERV 8 FILTER. PROVIDE A HINGED ACCESS PANEL WITH CLASP CLOSERS. PROVIDE (1) SPARE FILTER FOR EACH NEW HEAT PUMP UNIT. PROVIDE A SHEET LIST WITH ALL NEW FILTER SIZES FOR OWNER AND WHICH HP UNIT THEY GO TOO.
- 5 RUN NEW GSS BRANCH PIPING UP THRU SECOND FLOOR TO HP-2-1. SEE DETAIL 6/M3.1 FOR CONTINUATION.
- 6 RUN NEW GSR BRANCH PIPING UP THRU SECOND FLOOR TO HP-2-1. SEE DETAIL 6/M3.1 FOR CONTINUATION.
- 7 CONNECT NEW BRANCH GSS AND GSR TO HEAT PUMP UNIT PER HEAT PUMP DETAIL.
- 8 GSS AND GSR MAINS UP FROM BELOW FLOOR FROM WELL FIELD. SEE PIPING RISER FOR MORE INFORMATION.
- 9 PROVIDE EXPANSION TANK ET-2 AND MOUNT UP AT CEILING. PROVIDE TRAPEZE HANGERS AND ANTI-SWAY BAR.
- 10 PROVIDE GSS AND GSR BRANCH PIPING UP FROM FIRST FLOOR AND PIPE TO HEAT PUMP UNIT PER DETAIL.
- 11 VENTILATION EXHAUST DUCT RISER. SEE SHEET M-1.3.

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 for MACOMB CUSD #185  
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**ANDREW J. KEENE**  
 002-048360  
 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

EXPIRATION 11/30/19  
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**ENLARGED MECHANICAL FLOOR PLANS**

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **M-3.1**  
 OF 91 SHEETS



**KEYED NOTES - NEW WORK**

- 1 GSS AND GSR PIPING. SEE GEO PIPING RISERS FOR MECHANICAL ROOMS FOR DETAILS.
- 2 PIPE CONDENSATE DRAINS FROM EACH HEAT PUMP UNIT TO FLOOR DRAIN. USE TYPE "L" COPPER FOR DRAIN PIPING WITH SOLDERED FITTINGS.
- 3 PROVIDE NEW VERTICAL HEAT PUMP UNIT AND SET ON (4) 1" X 4" X 4" RUBBER/CORK PADS. SET AND LEVEL EACH UNIT. PROVIDE FLEX DUCT CONNECTIONS ON DUCTED SUPPLY AND RETURN DUCTWORK TO UNIT.
- 4 PROVIDE 1" FILTER RACK FOR A 1" MERV 8 FILTER. PROVIDE A HINGED ACCESS PANEL WITH CLASP CLOSERS. PROVIDE (1) SPARE FILTER FOR EACH NEW HEAT PUMP UNIT. PROVIDE A SHEET LIST WITH ALL NEW FILTER SIZES FOR OWNER AND WHICH HP UNIT THEY GO TOO.
- 5 CONNECT NEW BRANCH GSS AND GSR TO HEAT PUMP UNIT PER HEAT PUMP DETAIL.
- 6 GSS AND GSR MAINS UP FROM BELOW FLOOR FROM WELL FIELD. SEE PIPING RISER FOR MORE INFORMATION.

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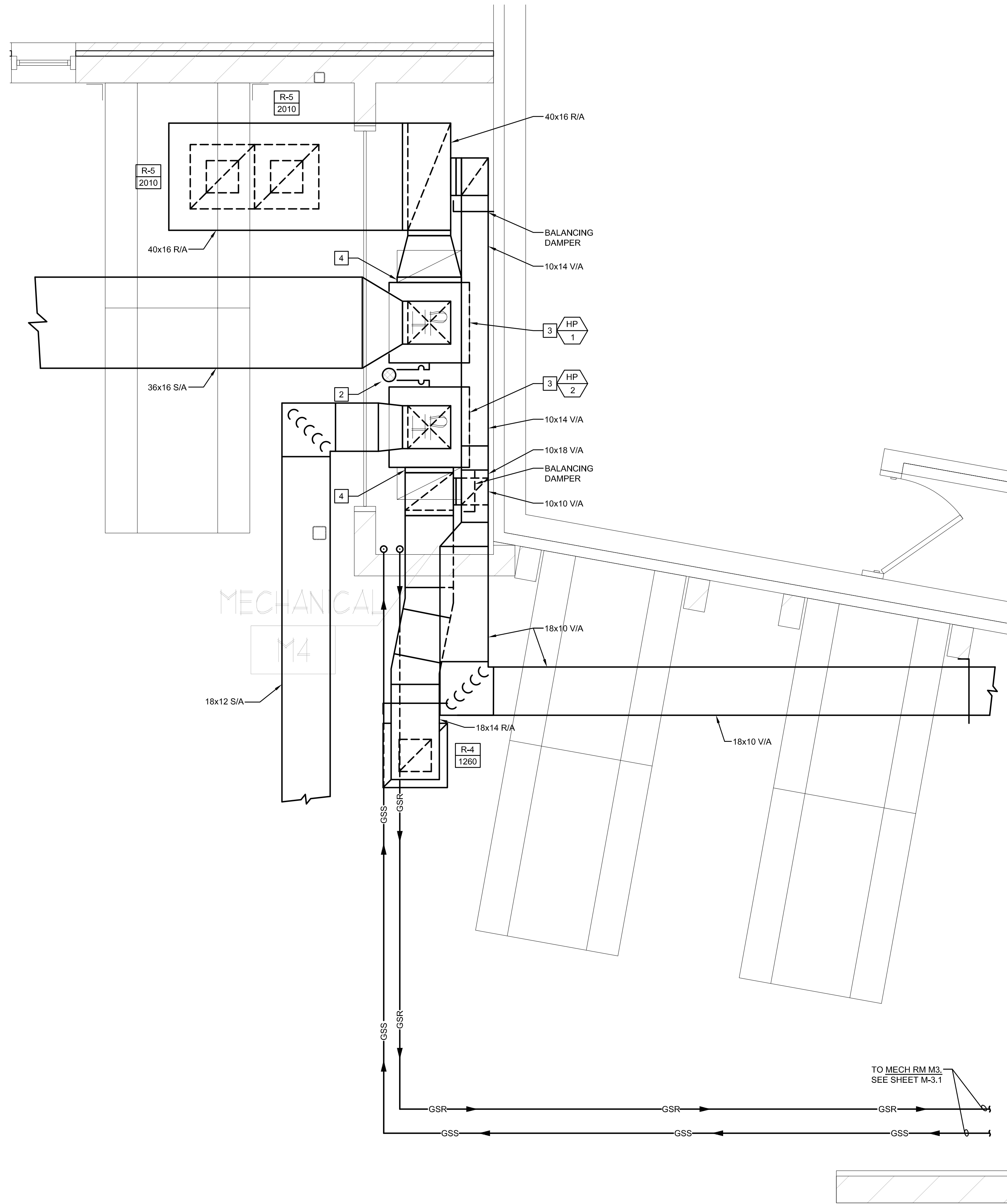
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**ENLARGED MECHANICAL FLOOR PLANS**

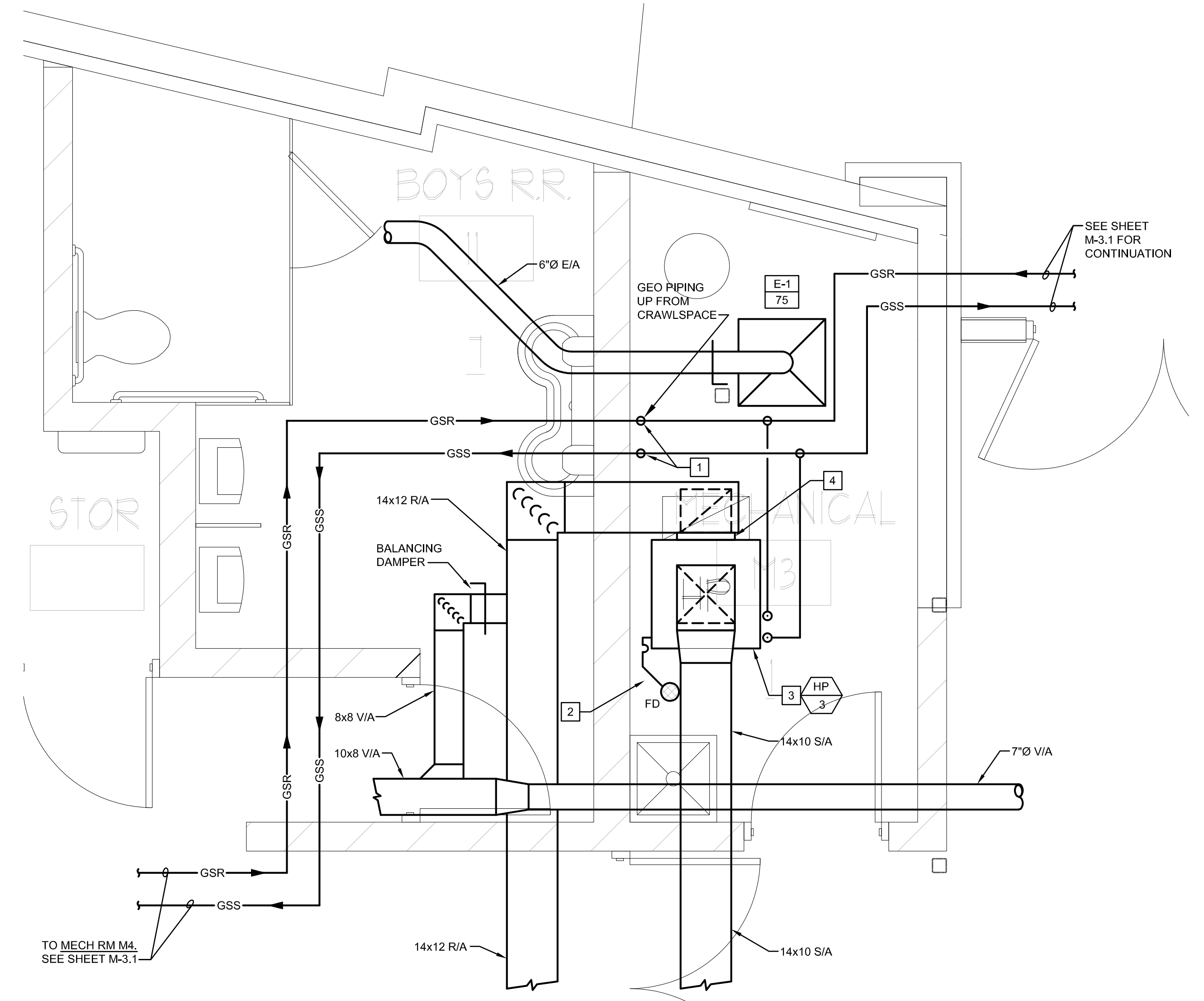
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 SHEET **M-3.2**  
 OF 91 SHEETS



**1 ENLARGED MECHANICAL ROOM M4 - NEW WORK**  
 SCALE: 1/2" = 1'-0"



**2 ENLARGED MECHANICAL ROOM M3 - NEW WORK**  
 SCALE: 1/2" = 1'-0"

HVAC DUCTWORK MATERIAL SCHEDULE												
SERVICE	TEMPERATURE RATING	LOCATION	CONFIGURATION	DUCT MATERIAL	INSULATION/LINER	QUALITY	PRESSURE CLASS	SEAL CLASS	GAUGE	SEAM CONSTRUCTION	JOINT CONNECTIONS	NOTES
SUPPLY AIR	55-92 F. DEGREES	CONCEALED	SQUARE/RECTANGLE	GALVANIZED	1"	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
RETURN AIR	74-82 F. DEGREES	CONCEALED	SQUARE/RECTANGLE	GALVANIZED	1"	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
EXHAUST AIR	75 F. DEGREES	CONCEALED	SQUARE/RECTANGLE	GALVANIZED	NONE	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
OUTSIDE AIR	MINUS 5 TO 95	CONCEALED	SQUARE/RECTANGLE	GALVANIZED	2" EXTERIOR BD.	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
MOIST EXH. AIR	74 F. DEGREES	CONCEALED	SQUARE/RECTANGLE	ALUMINUM	NONE		LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-4
SUPPLY AIR	55-92 F. DEGREES	EXPOSED	ROUND	PAINT GRIP GALV.	1-1/2" WRAP	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
RETURN AIR	74-82 F. DEGREES	EXPOSED	ROUND	PAINT GRIP GALV.	1-1/2" WRAP	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
SUPPLY AIR	55-92 F. DEGREES	EXPOSED	ROUND DOUBLE WALL INSULATED	PAINT GRIP GALV.	1"	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
RETURN AIR	74-82 F. DEGREES	EXPOSED	ROUND DOUBLE WALL INSULATED	PAINT GRIP GALV.	1"	G90	LOW 2"	B	PER SMACNA	PITTSBURGH LOCK	SLIP/DRIVE, TDF, STANDING S	1-5
GREASE HOOD TYPE 1	400-600 F. DEGREES	CONCEALED/EXPOSED	SQUARE/RECTANGLE	BLACK STEEL/STAINLESS	3 HR FIRE WRAP		MED 3"	A	16 GA/18 GA	WELDED	WELDED	
HEAT HOOD TYPE 11	250-400 F. DEGREES	CONCEALED/EXPOSED	SQUARE/RECTANGLE	BLACK STEEL/STAINLESS	NONE		MED 3"	A	16 GA/18 GA	WELDED	WELDED	

**NOTES:**

- SEE DRAWINGS FOR SIZES AND FITTINGS.
- PROVIDE BALANCING DAMPERS ON EACH TAKE OFF FOR SUPPLY, RETURN OR EXHAUST.
- PROVIDE DOUBLE WALL TURNING VANES WHERE SHOWN.
- SEAL ALL SEAMS AND JOINTS ON CONCEALED DUCTS WITH APPROVED DUCT SEALANT MATERIAL. SUBMIT PRODUCT INFORMATION.
- BRANCH TAKE OFF DUCTS OF FLEXIBLE INSULATED DUCTWORK SHALL BE NO LONGER THAN 6'.

FIRST FLOOR										
HEAT PUMP CONNECTION SCHEDULE										
ROOM NO.	HEAT PUMP NO.	GPM FLOW	PIPE SIZES			CONDENSAT E PUMP	MOUNTING	STYLE		
			HPS	HPR	COND.					
CLRM	HP1-1	3.0	3/4"	3/4"	3/4"	NO	FLOOR	VERTICAL		
CLRM	HP1-2	6.0	1"	1"	3/4"	NO	FLOOR	VERTICAL		
CLRM	HP1-3	12.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
CLRM	HP1-4	9.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
CLRM	HP1-5	3.0	3/4"	3/4"	3/4"	NO	FLOOR	VERTICAL		
STAIRWAY	HP1-6	4.0	1"	1"	3/4"	NO	FLOOR	CABINET		

SECOND FLOOR										
HEAT PUMP CONNECTION SCHEDULE										
ROOM NO.	HEAT PUMP NO.	GPM FLOW	PIPE SIZES			CONDENSAT E PUMP	MOUNTING	STYLE		
			HPS	HPR	COND.					
CLRM	HP2-1	3.0	3/4"	3/4"	3/4"	NO	FLOOR	VERTICAL		
CLRM	HP2-2	9.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
CLRM	HP2-3	9.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
CLRM	HP2-4	9.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
CLRM	HP2-5	3.0	3/4"	3/4"	3/4"	NO	FLOOR	VERTICAL		

KITCHEN/CAFETERIA FLOOR										
HEAT PUMP CONNECTION SCHEDULE										
ROOM NO.	HEAT PUMP NO.	GPM FLOW	PIPE SIZES			CONDENSAT E PUMP	MOUNTING	STYLE		
			HPS	HPR	COND.					
CAFETERIA	HP-1	45.0	2-1/2"	2-1/2"	1"	NO	FLOOR	VERTICAL		
SERVING	HP-2	8.0	1-1/4"	1-1/4"	1"	NO	FLOOR	VERTICAL		
KITCHEN	HP-3	16.0	1-1/2"	1-1/2"	1"	NO	FLOOR	VERTICAL		
READING	HP-4	2.0	3/4"	3/4"	3/4"	NO	SUSPENDED	HORIZONTAL		
RESOURCE	HP-5	2.0	3/4"	3/4"	3/4"	NO	SUSPENDED	HORIZONTAL		
OT/PT	HP-6	2.0	3/4"	3/4"	3/4"	NO	SUSPENDED	HORIZONTAL		

DOAS ROOF TOP EQUIPMENT SCHEDULE																									
PLAN MARK	MANUFACTURER	MODEL NO.	SUPPLY CFM	EXHAUST CFM	OUTSIDE CFM	SUPPLY TSP IN WC	RETURN TSP IN WC	TOTAL CLG CAPACITY MBH	TOTAL HTG CAPACITY MBH	HGRH CAP. MBH	E.A.T. WB/DB	L.A.T. WB/DB	COND. MEDIA	NATURAL GAS HEAT			SUPPLY HP	RET./EXH. HP	ELECTRICAL					NOTES	
														E.A.T.	INPUT	OUTPUT			L.A.T.	VOLTS	PHASE	HZ	MCA		MOCP
DOAS-1	VALENT	VPRE-110-5F-101-A-1GE	1240	1240	1240	2.634	1.303	68.7	42.6	32.5	79.8/66.9	74.5/59.1	410A	54.8" F	100 MBH	80 MBH	114.3" F	1	0.5	208	3	60	40.9	60	
DOAS-2	VALENT	VPRE-210-10C-401-A-1DA	3300	3300	3300	3.618	1.425	133.9	90.2	49.9	79.8/66.9	70.6/60.4	410A	55.5	400 MBH	320 MBH	144.9	5	0.75	208	3	60	75.3	90	

**NOTES:**

- UNIT MOUNTED DISCONNECT SWITCH.
- ENERGY RECOVERY MODULE.
- INSULATED FLOOR PAN.
- INSULATED DRAIN PAN.
- OA DAMPER MODULATING ACTUATOR.
- RA DAMPER MODULATING ACTUATOR.
- EA DAMPER MODULATING ACTUATOR.
- SIGHT GLASSES.
- SINGLE POINT WIRING.
- COMPRESSOR ISOLATION VALVES.
- FAN VIBRATION ISOLATORS.
- 65KA SCCR RATING.
- MERV 8 2" FILTERS.
- 1 YEAR FULL WARRANTY, 5 YEARS COMPRESSORS WARRANTY.
- INSULATED SOLID BOTTOM ROOF CURB, MIN 14" TALL.

**APPROVED MANUFACTURERS:**

PRE APPROVAL REQUIRED BEFORE BID DATE.

VALENT PHYSICAL DIMENSIONS				
PLAN MARK	LENGTH	WIDTH	HEIGHT	WEIGHT
DOAS-1	158"	48"	58"	2205 LBS
DOAS-2	168"	60"	65"	3644 LBS

NOTE: OTHER MANUFACTURER UNITS PHYSICAL DIMENSIONS MAY VARY.

GROUND SOURCE HEAT PUMP SCHEDULE																									
PLAN MARK	MANUFACTURER	MODEL No.	STYLE	COOLING TOTAL MBH	SENSIBLE TOTAL MBH	EWT/LWR DEG F COOLING	COOLING L.A.T.	HEATING CAPACITY (MBH)	EWT/LWR DEG F HEATING	HEATING L.A.T.	CFM	E.S.P. (IN H2O)	FAN SPEED	GPM	MAX. WPD (IN FT HEAD)	EER	VOLT	PHASE	HZ	MCA	MOCP	FAN HP	FAN MOTOR TYPE		
HP-1	WATER FURNACE	UVV180TR	VERTICAL	161.88	116.98	90/99.67	56.8	110.5	45/39.94	103.9	4800		VAR	45.0	14.4	9.9	208	3	60	56.7	90	5.0	ECM		
HP-2	WATER FURNACE	NBV042TR	VERTICAL	40.46	33.81	90/102.58	60.3	35.9	45/38.15	90.9	1260		MED	8.0	4.2	14	208	1	60	24.4	40	0.5	PSC		
HP-3	WATER FURNACE	UVV072TR	VERTICAL	57.68	46.68	90/99.06	60.9	61.0	45/39.25	94.9	2280		VAR	16.0	11.8	13.3	208	1	60	38.2	60	1.0	ECM		
HP-4	WATER FURNACE	NBH009TR	HORIZONTAL	9.33	6.48	90/101.9	61.6	8.6	45/38.8	94.2	300		MED LOW	2.0	7.2	12.3	208	1	60	5.7	15	0.5	PSC		
HP-5	WATER FURNACE	NBH009TR	HORIZONTAL	9.33	6.48	90/101.9	61.6	8.6	45/38.8	94.2	300		MED LOW	2.0	7.2	12.3	208	1	60	5.7	15	0.5	PSC		
HP-6	WATER FURNACE	NBH009TR	HORIZONTAL	9.05	5.84	90/101.5	60.0	8.5	45/39.1	99.0	195.0		LOW	2.0	7.2	12.4	208	1	60	5.7	15	0.5	PSC		
HP1-1	WATER FURNACE	NVB015TR	VERTICAL	14.11	10.61	90/100.2	63.2	13.3	45/38.4	91.0	440		LOW	3.0	2.7	12.2	208	1	60	8.9	15	0.5	PSC		
HP1-2	WATER FURNACE	NVB030TR	VERTICAL	27.19	21.44	90/101.2	60.3	25.5	45/38.43	93.5	975		MED	6.0	5.1	14.5	208	1	60	17.5	30	0.8	PSC		
HP1-3	WATER FURNACE	UVV036TR	VERTICAL	40.01	31.05	90/95.67	58.4	39.3	45/43.29	97.4	1245		VAR	9.0	4.8	17.2	208	1	60	25.2	40	0.5	ECM		
HP1-4	WATER FURNACE	UVV036TR	VERTICAL	38.28	29.21	90/100.31	57.8	37.0	45/38.82	98.1	1170		VAR	9.0	4.6	16	208	1	60	25.6	40	0.5	ECM		
HP1-5	WATER FURNACE	NBV015TR	VERTICAL	14.11	10.61	90/102.0	63.2	13.3	45/38.47	91.0	460		LOW	3.0	3.7	12.3	208	1	60	8.9	15	0.5	PSC		
HP1-6	WATER FURNACE	NCS18TR	CABINET FLOOR	15.58	9.96	90/99.8	63.2	15.4	45/39.35	91.0	1200		HIGH	4.0	8.5	12.2	208	1	60	10.9	15	0.3	PSC		
HP2-1	WATER FURNACE	NBV015TR	VERTICAL	14.11	10.61	90/102	63.2	13.3	45/38.47	91.0	440		LOW	3.0	3.7	12.3	208	1	60	8.9	15	0.5	PSC		
HP2-2	WATER FURNACE	UVV036TR	VERTICAL	37.7	27.64	90/100.13	56.7	36.6	45/38.98	100.8	1080		VAR	9.0	4.6	16.2	208	1	60	25.2	40	0.5	ECM		
HP2-3	WATER FURNACE	UVV036TR	VERTICAL	38.7	30.7	90/100.47	58.6	37.4	45/38.69	96.0	1350		VAR	9.0	4.6	15.8	208	1	60	25.2	40	0.5	ECM		
HP2-4	WATER FURNACE	UVV036TR	VERTICAL	38.7	30.7	90/100.47	58.6	37.4	45/38.69	96.0	1260		VAR	9	4.6	15.8	208	1	60	25.2	40	0.5	ECM		
HP2-5	WATER FURNACE	NBV015TR	VERTICAL	14.11	10.61	90/102	63.2	13.3	45/38.47	91.0	570		LOW	3	3.7	12.3	208	1	60	8.9	15	0.5	PSC		

**EQUAL MANUFACTURERS:**

FHP  
McQUAY  
CLIMATE MASTER

**GROUND SOURCE DESIGN LOOP TEMPERATURES:**

SUMMER COOLING 90 DEGREES F.  
WINTER HEATING 45 DEGREES F.

**NOTES:**

- R-410A REFRIGERANT
- DISCONNECT SWITCH ON EACH UNIT.
- FLOOR MODELS TO HAVE TOE RETURN AIR GRILLES.
- VERTICAL MODELS SHALL HAVER FLOOR PADS.
- STAINLESS STEEL BRAIDED HOSE KITS WITH SERVICE AND AUTO BALANCING VALVES.



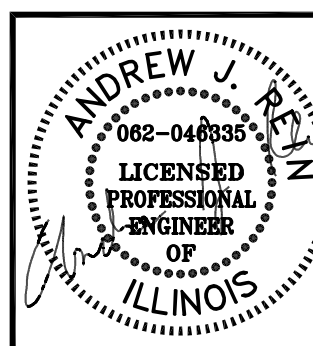
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EXPIRATION 11/30/19  
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MECHANICAL SCHEDULES

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PROJECT NO. 22150211  
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SHEET M-4.1  
OF 91 SHEETS

KITCHEN HOOD MAKE UP AIR UNIT																								
PLAN MARK	MANUFACTURER	MODEL	TYPE	HOUSING	O/A	FUEL	BTU INPUT CAPACITY	BTU OUTPUT CAPACITY	TEMPERATURE RISE	BURNER EFF.	SUPPLY CFM	ESP	FAN HP	RPM	BLOWER FAN SIZE	VOLTS	PHASE	FLA	MOCP	SONES	CONTROLS	DIMENSIONS	WEIGHT LBS	ACCESSORIES
MAU-1	CAPTIVEAIRE	A1-D500-G10	INDIRECT	A1-D500	100%	N.G.	105,183	96,768	70 DEG. F.	92%	1280	0.25	1/2	720	10"	208	3	3.9	15	9.2	A	71" X 28" X 30"	593	1-8
<b>ACCESSORIES</b>															<b>CONTROLS-A</b>									
1. INSULATED ROOF CURB FOR KEF AND MAU. 14" TALL															HOOD MOUNTED SWITCH TO ENERGIZE KEF AND MAU.									
2. ALUMINUM MESH FILTER WEATHERHOOD.															LEAVING AIR TEMPERATURE SENSOR TO MODULATE BURNER TO DELIVER 70°									
3. LOW LEAK OUTDOOR AIR DAMPERS AND SUPPLY DAMPER. 120 VOLT ACTUATORS.															OUTDOOR DAMPER TO CLOSE WHEN UNIT IS DEENERGIZED.									
4. V-BANK FILTERS SECTION. MERV 8															<b>NOTE:</b>									
5. INDIRECT GAS FIRED HEATER MODULATING 4:1 BURNER CONTROLLER.															SUPPLY AIR DUCT TO HAVE 1" DUCT LINER									
6. CONTROL CENTER WITH DISCONNECT SWITCH, MOTOR STARTERS FOR MAU AND KEF, CONTROL TRANSFORMER, SERVICE RECEPTACLE.																								
7. DOWNFLOW DISCHARGE SECTION.																								
8. STAINLESS STEEL HEAT EXCHANGER.																								
9. VIBRATION ISOLATORS.																								
10. PERFORATED SUPPLY PLENUM WITH (2) 10" X 24" GRILLES, 640 CFM EACH, 1" LINED PLENUM.																								

BY-PASS POT FEEDER SCHEDULE										
PLAN MARK	MANUFACTURER			TANK VOLUME	DIAMETER	HEIGHT	WT. LBS	MOUNTING	SERVING	NOTES
	WESSEL	GRISWALD	NEPTUNE							
PF-1	CPFTA-5	ES-5	DBF-5HV	5 GAL	10-1/2"	19-1/2"	35	1	GEO LOOP 1	1,2
PF-2	CPFTA-5	ES-5	DBF-5HV	5 GAL	10-1/2"	19-1/2"	35	1	GEO LOOP 2	1,2

**MOUNTING:**  
1. WALL BRACKET OR A FLOOR SUPPORT FRAME

**NOTES:**  
1. PIPE 1" PIPE TO SUCTION SIDE AND DISCHARGE SIDE OF PIPING SYSTEM.  
2. PROVIDE BALL VALVES AND SIGHT GLASS IN OUTLET SIDE OF FEEDER.

HVAC PIPING MATERIAL SCHEDULE					
SERVICE	TEMPERATURE RATING	LOCATION	PIPE MATERIAL	SCHEDULE OR TYPE	CONNECTIONS METHOD
GEO SUPPLY/RETURN	100 F. DEGREES	BURIED	HDPE	SDR 11	FUSION
GEO SUPPLY/RETURN	100 F. DEGREES	IN BUILDING	HDPE/SCH 80 PVC	SDR 11	FUSION/GLUED
REFRIGERANT	N/A	IN/OUTDOORS	TYPE ARC COPPPER	"K"	BRAZED
MAKE UP WATER	55 F. DEGREES	IN BUILDING	COPPER	"L"	SOLDERED
CONDENSATE DRAIN	50 F. DEGREES	ABOVE CEILINGS	COPPER	"L"	SOLDERED
GAS PIPING	N/A	ABOVE GROUND	BLACK STEEL	SCHEDULE 40	THREADED/WELDED

MECHANICAL MATERIAL IDENTIFICATION SCHEDULE										
SYSTEM	SERVICE	MATERIAL		LABELS				TAGS		
		PIPE	DUCT	ABBR. LETTERS	BACKGROUND COLOR	LETTER COLOR	SPACIN G	ABBR. LETTERS	BACKGROUND COLOR	LETTER COLOR
MECHANICAL	GAS PIPING	X	—	GAS	YELLOW	BLACK	25'	GAS	BRASS	BLACK
	GROUND SOURCE SUPPLY	X	—	GSS	BLUE	WHITE	25'	GSS	BRASS	BLUE
	GROUND WATER RETURN	X	—	GSR	BLUE	WHITE	25'	GSR	BRASS	BLUE
	CONDENSATE DRAIN	X	—	COND.	WHITE	BLACK	25'	COND.	BRASS	BLACK
VENTILATION	SUPPLY AIR DUCTWORK	—	X	S/A	WHITE	BLACK	25'	—	—	—
	RETURN AIR DUCTWORK	—	X	R/A	WHITE	BLACK	25'	—	—	—
	EXHAUST AIR DUCTWORK	—	X	E/A	WHITE	BLACK	25'	—	—	—

KITCHEN EXHAUST HOOD SCHEDULE													
PLAN MARK	HOOD TYPE	MANUFACTURER	MODEL	HOOD DIMENSIONS	EXHAUST DUCT CONNECTION SIZE	MAX. COOKING TEMP.	TOTAL EXHAUST CFM	VELOCITY	TOTAL SUPPLY CFM	LIGHTING	VOLTS	FLA	NOTES
KH-1	CLASS II	CAPTIVEAIRE	5424 VHB-PSP-F	96" X 54" X 24"	16" X 16" X 4"	700 DEG. F	1600	900 FPM	1280	LED	120	2.5	1-8

**NOTES:**  
1. 302 POLISHED 18 GAUGE STAINLESS STEEL WELDED CONSTRUCTION.  
2. VAPOR PROOF ENCLOSED LIGHT FIXTURES. LED LAMPS.  
3. HOOD MOUNTED SWITCHES FOR HOOD LIGHTS AND HOOD EXHAUST FAN/MAU.  
4. 302 STAINLESS STEEL COWL ENCLOSURE FROM TOP OF HOOD TO CEILING.  
5. EXHAUST AND SUPPLY DUCT COLLARS  
6. GREASE FILTER RACK AND FILTERS.  
7. SUPPLY AIR PLENUM ON FRONT OF HOOD.  
8. HOOD DESIGN FOR HEAT REMOVAL.

KITCHEN HOOD EXHAUST FAN SCHEDULE																		
PLAN MARK	MANUFACTURE & MODEL No.			CFM	E.S.P. (IN W.C.)	RPM	MOTOR DATA				FAN TYPE	DRIVE	LBS WT.	ROOF OPENING SIZE	DAMPER SIZE	ACCESSORIES	CONTROLS	ROOM NUMBER
	CAPTIVEAIRE	GREENHECK	COOK				HP	V/PH	Hz.	FLA								
KEF-1	DU50HFA	EQUAL	EQUAL	1600	0.35	1443	1/2	120/1	60	8.4	C	DIRECT	76	16" X 16"	NONE	1,3,4,5,8	1	123

**FAN TYPE:**  
A SPUN ALUMINUM ROOF MOUNTED CENTRIFUGAL EXHAUST FAN.  
B CEILING MOUNTED EXHAUST FAN WITH EXHAUST DUCT UP TO ROOF  
C KITCHEN EXHAUST FAN, UP BLAST, SPUN ALUMINUM.

**ACCESSORIES:**  
1. INSULATED ROOF CURB. SLOPED OR FLAT, SEE DRAWINGS.  
2. MOTORIZED DAMPER WITH GASKETED BLADES, 120 VOLT ACTUATOR.  
3. BIRD SCREEN  
4. DISCONNECT SWITCH.  
5. HINGED CURB CAP.  
6. VIBRATION ISOLATORS.  
7. ROOF VENT CAP WITH BACK DRAFT DAMPER AND BIRD SCREEN MODEL  
8. GREASE TRAP AND VENTILATED EXTENSION SECTION.  
9. VARIABLE SPEED VFD DRIVE AND RATED MOTOR.  
10. BACK DRAFT DAMPER.  
11. TIME DELAY RELAY.

**CONTROLS:**  
1. MANUAL SWITCH  
2. OCCUPANCY SENSOR  
3. BUILDING AUTOMATION SYSTEM (B.A.S.)  
4. TIME SCHEDULE B.A.S.  
5. REVERSE ACTING WALL THERMOSTAT

AIR DEVICE SCHEDULE																	
PLAN MARK	MANUFACTURE & MODEL No.			MAX. CFM RANGE	NECK SIZE	NOMINAL FACE SIZE	PANEL SIZE	THROW	SP.	NC	FINISH	MOUNTING	CEILING TYPE	NECK DAMPER	SERVICE	CONSTR.	REMARKS
	PRICE	TITUS	CARNES														
S1	AMD	TDC-AA	SKT40	35-120	6X6/6"ø	12x12	24X24	4-6-12	0.006	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S2	AMD	TDC-AA	SKT40	135-190	9x9/8"ø	12x12	24X24	6-9-16	0.006	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S3	620	300FL	RADMH	325	12x8	14x10	N/A	10-15-21	0.016	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S4	620	300FL	RADMH	360	12x8	14x10	N/A	13-19-27	0.022	≤20	WHITE	WALL	N/A	NO	S/A	ALUM	
S5	620	300FL	RADMH	415	14x8	16x10	N/A	14-21-30	0.022	≤20	WHITE	WALL	N/A	NO	S/A	ALUM	
S6	620	300FL	RADMH	390-450	16X10	18X12	N/A	14-20-31	0.016	≤20	WHITE	WALL	N/A	NO	S/A	ALUM	
S7	620	300FL	RADMH	420	14X10	16X12	N/A	12-18-27	0.018	≤20	WHITE	WALL	N/A	NO	S/A	ALUM	
S8	AMD	TDC-AA	SKT40	425	15X15	24X24	24X24	10-15-21	0.036	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S9	AMD	TDC-AA	SKT40	400	15X15	24X24	24X24	10-15-21	0.036	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S10	AMD	TDC-AA	SKT40	115-130	9X9/7"ø	12X12	24X24	6-9-16	0.006	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
S11	AMD	TDC-AA	SKT40	900	18X18	24X24	24X24	16-19-27	0.065	≤20	WHITE	LAY-IN	2X4	NO	S/A	ALUM	
R1	PDR	PAR-AA	SLJB	50-280	10X10	24X24	24X24	—	0.002	≤20	WHITE	LAY-IN	2X4	NO	R/A	ALUM	
R2	PDR	PAR-AA	SLJB	460	14X14	24X24	24X24	—	0.021	≤20	WHITE	LAY-IN	2X4	NO	R/A	ALUM	
R3	PDR	PAR-AA	SLJB	570-975	18X18	24X24	24X24	—	0.033	≤20	WHITE	LAY-IN	2X4	NO	R/A	ALUM	
R4	PDR	PAR-AA	SLJB	1080-1350	22X22	24X24	24X24	—	0.033	≤20	WHITE	LAY-IN	2X4	NO	R/A	ALUM	
R5	PDR	PAR-AA	SLJB	2400	46X22	48X24	48X24	—	0.033	≤20	WHITE	LAY-IN	2X4	NO	R/A	ALUM	
E1	PDR	PAR-AA	SLJB	75	10X10	24X24	24X24	—	0.006	≤20	WHITE	LAY-IN	2X4	NO	E/A	ALUM	
E2	PDR	PAR-AA	SLJB	150	14X14	24X24	24X24	—	0.009	≤20	WHITE	LAY-IN	2X4	NO	E/A	ALUM	
E3	PDR	PAR-AA	SLJB	225	14X14	24X24	24X24	—	0.019	≤20	WHITE	LAY-IN	2X4	NO	E/A	ALUM	

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**ANDREW J. KERN**  
062-040350  
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

EXPIRATION 11/30/19  
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DUCTWORK INSULATION SCHEDULE										
TRADE	SYSTEM	SHAPE	DUCT MATERIAL	INSULATION MATERIAL	PLACEMENT	APPLIED	INSULATION TYPE	THICKNESS	DENSITY (LBS/CU FT)	THERMAL CONDUCTIVITY (BTU/HR/FT 2/IN/F)
MECHANICAL	SUPPLY AIR DUCT	RECTANGLE	GALV.	FIBERGLASS	LINER	SHOP	D-1	1"	1.5	4.3
	RETURN AIR DUCT	RECTANGLE	GALV.	FIBERGLASS	LINER	SHOP	D-1	1"	1.5	4.3
	SUPPLY AIR DUCT	ROUND	GALV.	FIBERGLASS WRAP	EXTERIOR	FIELD	D-2	1.5"	1.5	6.2
	RETURN AIR DUCT	ROUND	GALV.	FIBERGLASS WRAP	EXTERIOR	FIELD	D-2	1"	1.5	4.3
	OUTSIDE AIR DUCT	RECTANGLE	GALV.	FIBERGLASS BOARD	EXTERIOR	FIELD	D-3	2"	3	8.7
	EXHAUST HOOD DUCT	RECTANGLE	16 GA. BLK STL	FIREWRAP 2 HR	EXTERIOR	FIELD	D-4	1.5"	6	7.2
	EXHAUST AIR DUCT	ROUND	GALV.	FIBERGLASS WRAP	EXTERIOR	FIELD	D-2	1"	1.5	4.3
	EXHAUST AIR DUCT	RECTANGLE	GALV.	FIBERGLASS	EXTERIOR	FIELD	D-3	1"	1.5	6.0

**INSULATION TYPE:**

- D - 1: COATED FIBERGLASS LINER MATERIAL.
- D - 2: DUCT WRAP WITH ASJ JACKET FOR PAINTING LOCATIONS, FSK JACKET IN CONCEALED AREAS.
- D - 3: FIBERGLASS BOARD INSULATION WITH FSK JACKET.
- D - 4: FIRE BLANKET TYPE INSULATION, RATED FOR 2 HOURS, FyreWrap, 3M OR APPROVED MAN

EXPANSION TANK SCHEDULE													
PLAN MARK	MFTR & MODEL No.			SERVES	SYSTEM VOLUME	TANK VOLUME	ACCEPTANCE VOLUME (GAL)	DIAMETER	LENGTH	APPROX. WEIGHT DRY	ASME PRESSURE RATING	INITIAL (PSI)	FINAL (PSI)
	B & G	TACO	ARMSTRONG										
XT-1	D-40	EQUAL	EQUAL	GEO LOOP #1	855.1	12.4	3.2	16.25"	29.5"	90 LBS	125 PSI	12	36
XT-2	D-40	EQUAL	EQUAL	GEO LOOP #2	670.1	9.7	2.5	16.25"	29.5"	90 LBS	125 PSI	12	37

**NOTES:**

SUSPEND EXPANSION TANK FROM STRUCTURE WITH ALL TREAD RODS AND CROSS BRACING FOR ANTI-SWAY CONTROL.

AIR SEPARATOR SCHEDULE												
PLAN MARK	MFTR & MODEL No.			SERVES	SIZE	GPM	PD (IN FT OF HD)	DIAMETER	HEIGHT	APPROX. WEIGHT	ASME PRESSURE RATING	ACCESSORIES
	B & G	TACO	WHEATLY									
AS-1	R-3	4903A	TASS030	KITCHEN	3"	75	1	10-3/4"	26-7/8"	130 LBS	125 PSI	1, 2, 3
AS-2	R-3	4803A	TASS030	CLASSROOMS	3"	70	1	10-3/4"	26-7/8"	130 LBS	125 PSI	1, 2, 3

**ACCESSORIES**

- 1. START UP SCREEN.
- 2. AUTOMATIC AIR VENT.
- 3. ISOLATION VALVES.

CIRCULATION PUMP SCHEDULE																		
PLAN MARK	MANUFACTURE	MODEL	SIZE	TYPE	SERVICE	LOCATION	GPM	INLET SIZE	OUTLET SIZE	HEAD (IN FT)	MOTOR HP	PUMP RPM	VOLT	PHASE	EFF.	FLA	IMPELLER SIZE	NOTES
GSCP-1	B & G	e90	1.25AAB	IN-LINE	GEO LOOP 1	MECH RM	75	1.5"	1.5"	65.4'	3.0	3172	208	3	65.1	11.0	4.75"	1,2,3
GSCP-2	B & G	e90	1.25AAB	IN-LINE	GEO LOOP 1	MECH RM	75	1.5"	1.5"	65.4'	3.0	3172	208	3	65.1	11.0	4.75"	1,2,3
GSCP-3	B & G	e90	1.25AAB	IN-LINE	GEO LOOP 2	STORAGE	70	1.5"	1.5"	60.13'	3.0	3438	208	3	64.3	11.0	4.25"	1,2,3
GSCP-4	B & G	e90	1.5AAB	IN-LINE	GEO LOOP 2	STORAGE	70	1.5"	1.5"	60.13'	3.0	3438	208	3	64.3	11.0	4.25"	1,2,3

GROUND SOURCE SYSTEM WILL HAVE ONLY SOFTENED WATER INSTALLED, THERE IS NO E.G. TO BE ADDED.

PUMP DIMENSIONS				
MARK	LENGTH	WIDTH	HT.	WT LBS
GSCP-1	11"	7.5"	18"	66
GSCP-2	11"	7.5"	18"	66
GSCP-3	11"	7.5"	18"	66
GSCP-4	11"	7.5"	18"	66

**APPROVED MANUFACTURERS**

- TACO
- ARMSTRONG

**NOTES:**

- 1. SUCTION DIFFUSER.
- 2. START UP AND RUNNING SCREENS.
- 3. SEE PUMP DETAIL ON DRAWINGS.

EXHAUST FAN SCHEDULE																		
PLAN MARK	MANUFACTURE & MODEL No.			CFM	E.S.P. (IN W.C.)	RPM	MOTOR DATA			TYPE	DRIVE	LBS WT.	ROOF OPENING SIZE	DAMPER SIZE	ACCESSORIES	CONTROLS	ROOM SERVED	
	GREENHECK	COOK	CARNES				HP	V/PH	Hz.									
PRE-1	G-133-VG	EQUAL	EQUAL	750	0.38	878	1/4	120/1	60	A	DIRECT	47	14.5"X14.5"	14"X14"	1,2,3,4,5,6	4	TOILETS	
PRE-2	G-123-C	EQUAL	EQUAL	575	0.28	777	1/8	120/1	60	A	DIRECT	56	14.5"X14.5"	14"X14"	1,2,3,4,5,6	4	TOILETS	

**FAN TYPE:**

- A SPUN ALUMINUM ROOF MOUNTED CENTRIFUGAL EXHAUST FAN.
- B CEILING MOUNTED EXHAUST FAN WITH EXHAUST DUCT UP TO ROOF
- C KITCHEN EXHAUST FAN, UP BLAST, SPUN ALUMINUM.

**CONTROLS:**

- 1. MANUAL SWITCH
- 2. OCCUPANCY SENSOR
- 3. BUILDING AUTOMATION SYSTEM (B.A.S.)
- 4. TIME SCHEDULE B.A.S.
- 5. REVERSE ACTING WALL THERMOSTAT

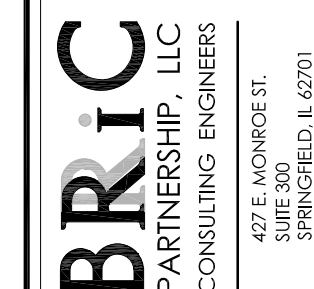
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- 3. BIRD SCREEN.
- 4. DISCONNECT SWITCH.
- 5. HINGED CURB CAP.
- 6. HOOD HASP.
- 7. ROOF VENT CAP WITH BACK DRAFT DAMPER AND BIRD SCREEN MODEL
- 8. GREASE TRAP AND EXTENSION SECTION
- 9. VARIABLE SPEED VFD DRIVE AND RATED MOTOR.
- 10. BACK DRAFT DAMPER
- 11. TIME DELAY RELAY



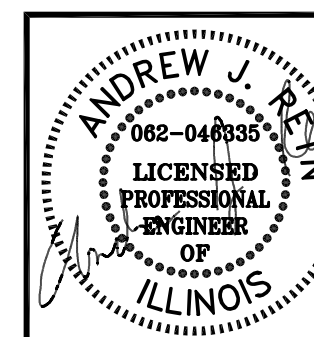
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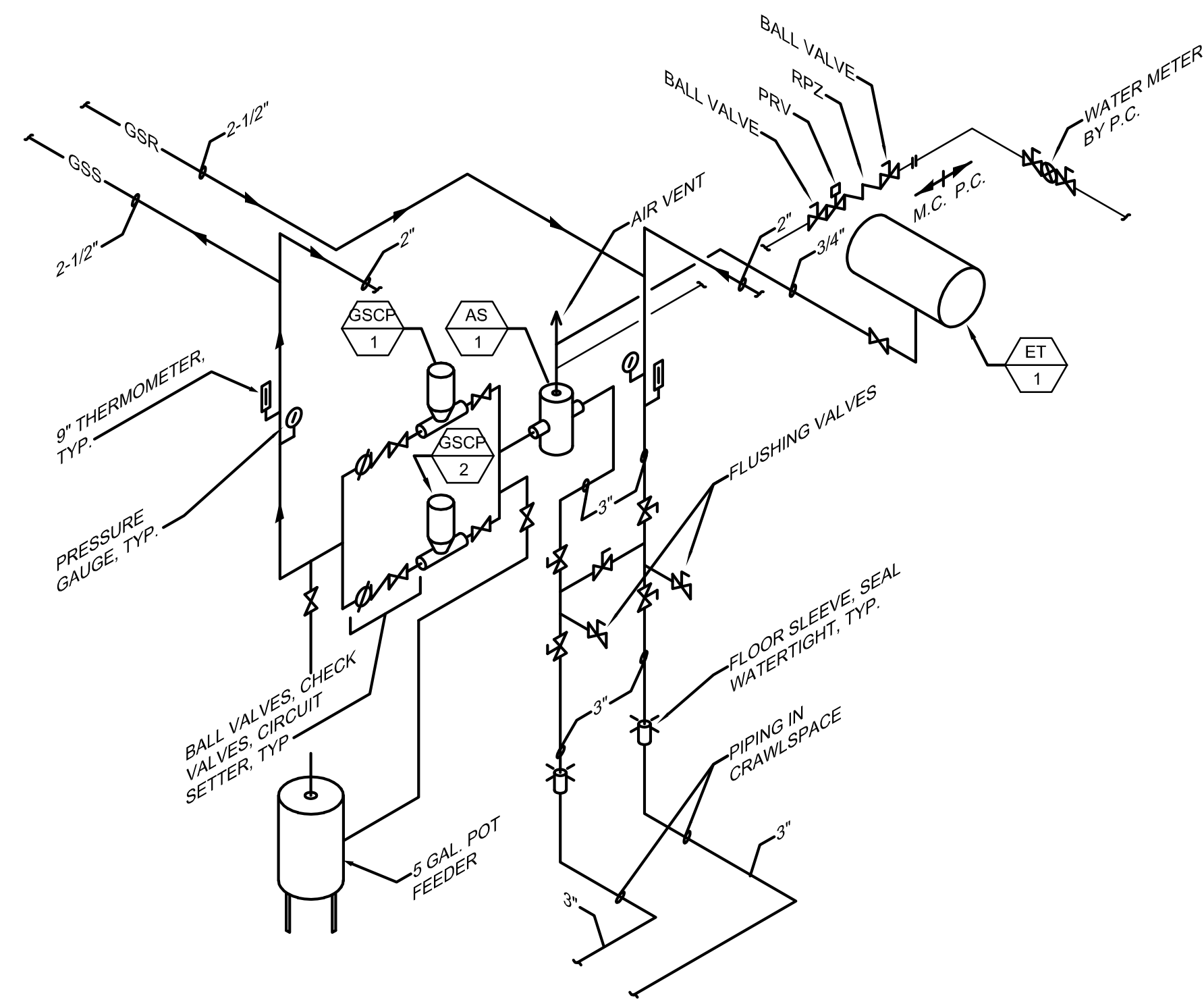
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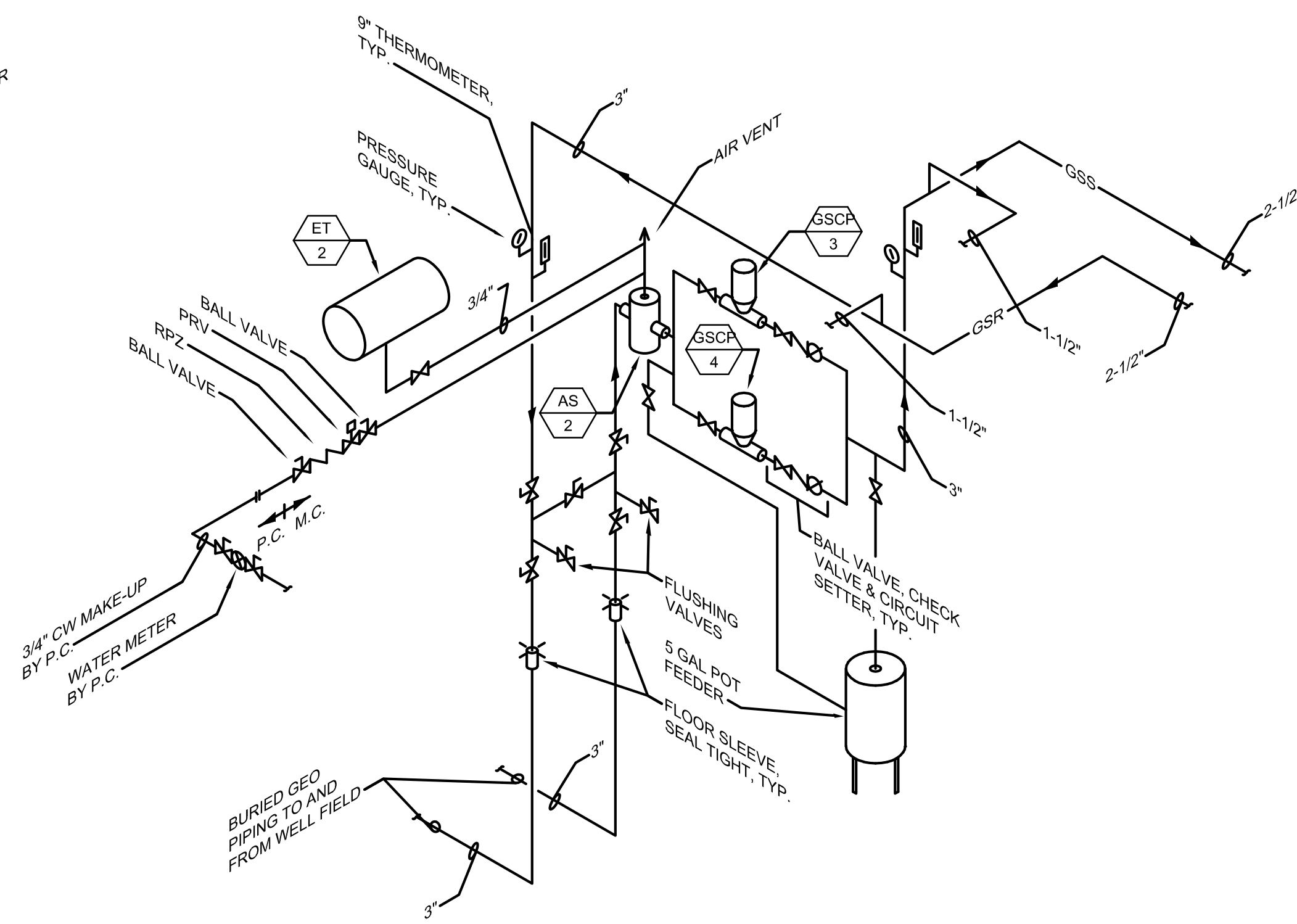
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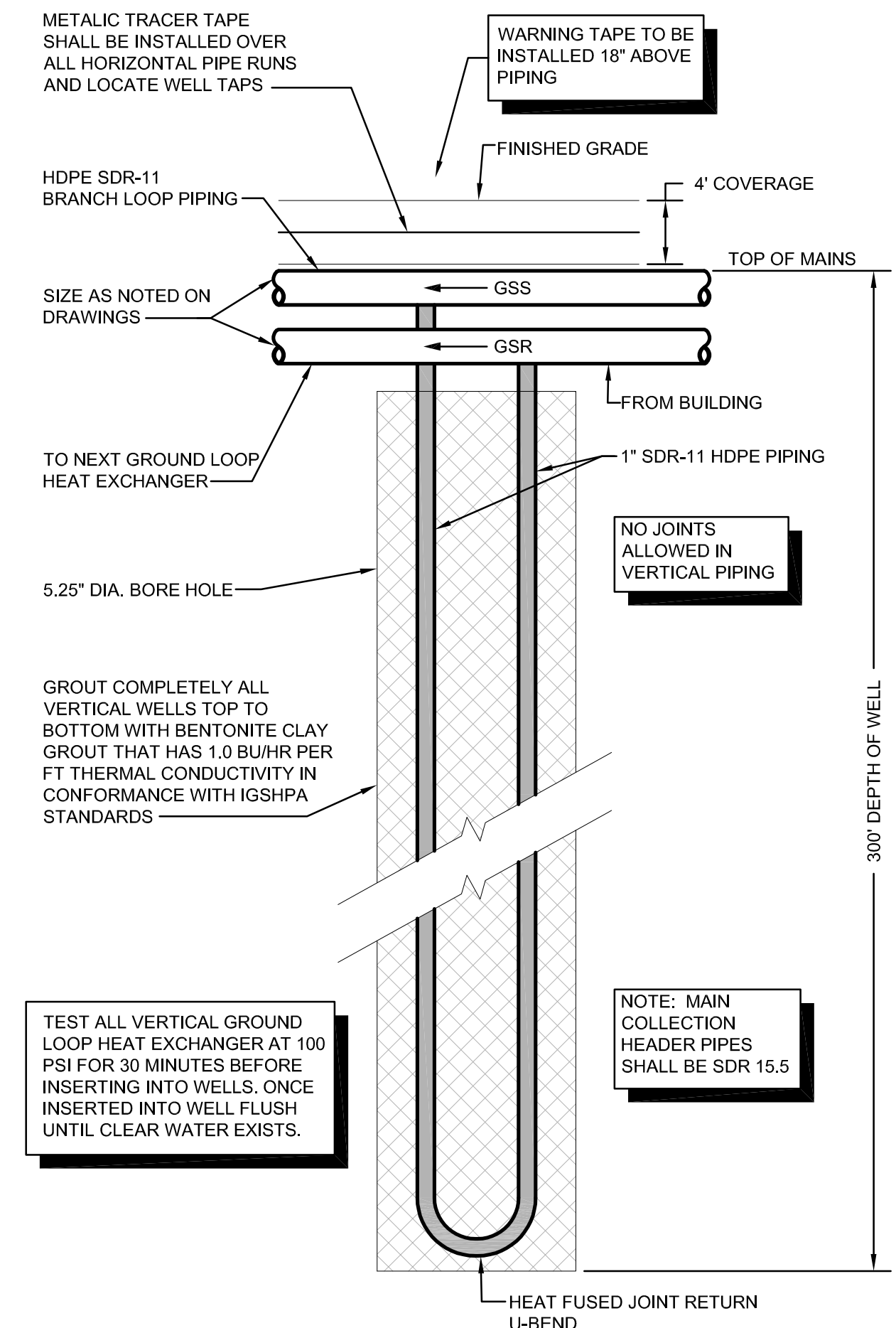




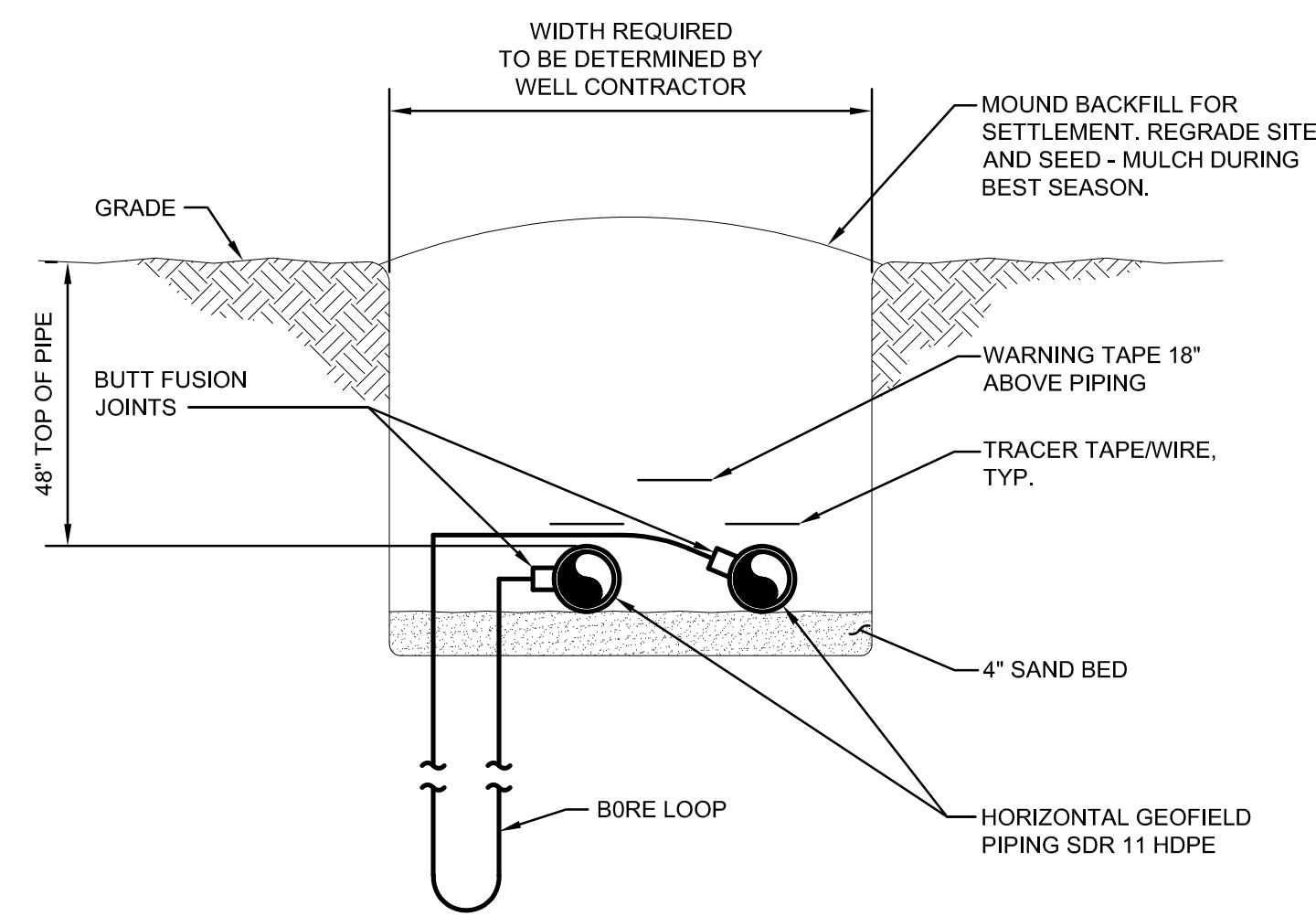
**1** GEO PIPING TREE DETAIL - MECH RM M3  
NOT TO SCALE



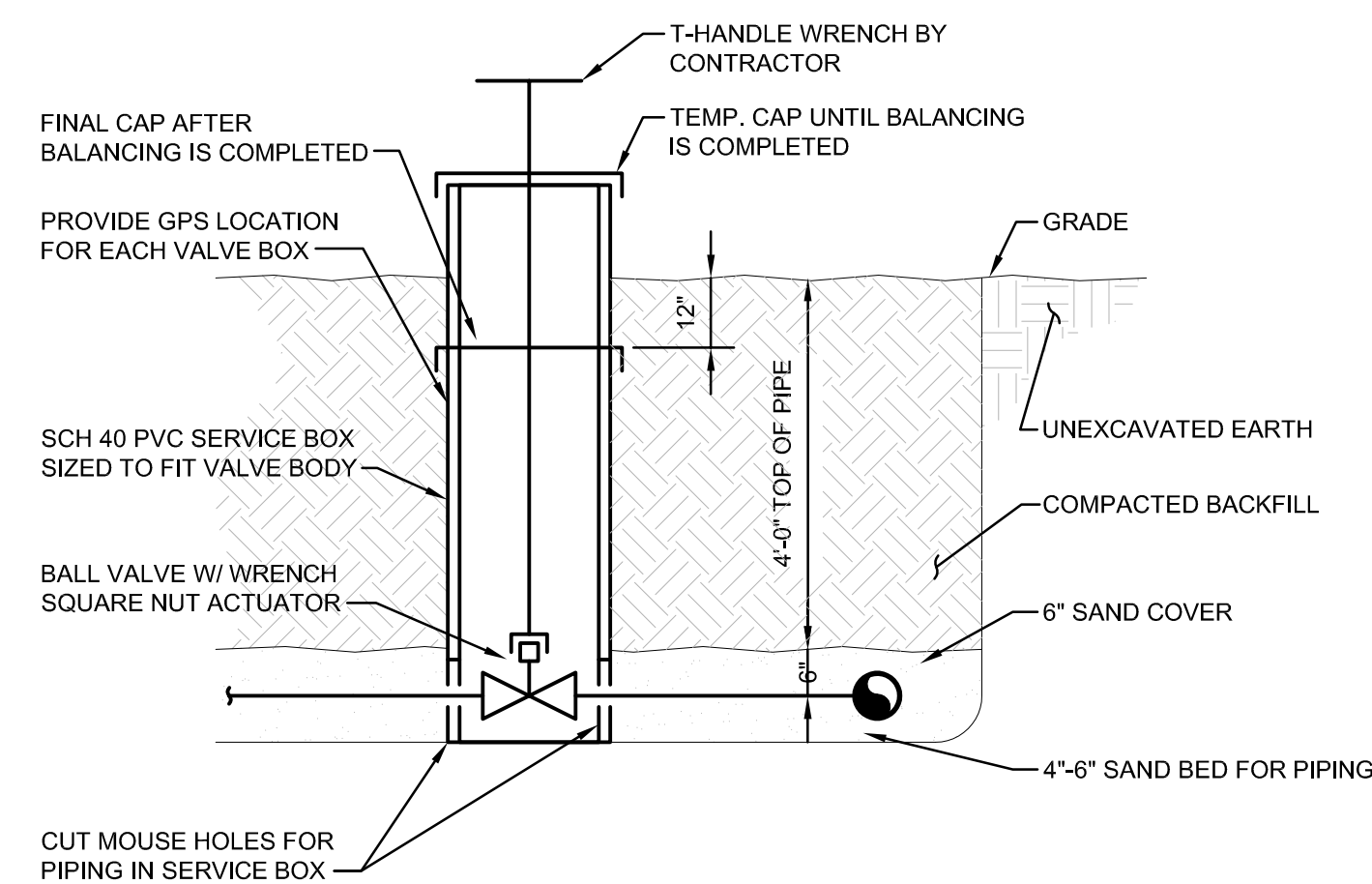
**2** GEO PIPING TREE DETAIL - JANITOR RM M2  
NOT TO SCALE



**3** VERTICAL GROUND LOOP HEAT EXCHANGER DETAIL  
NOT TO SCALE



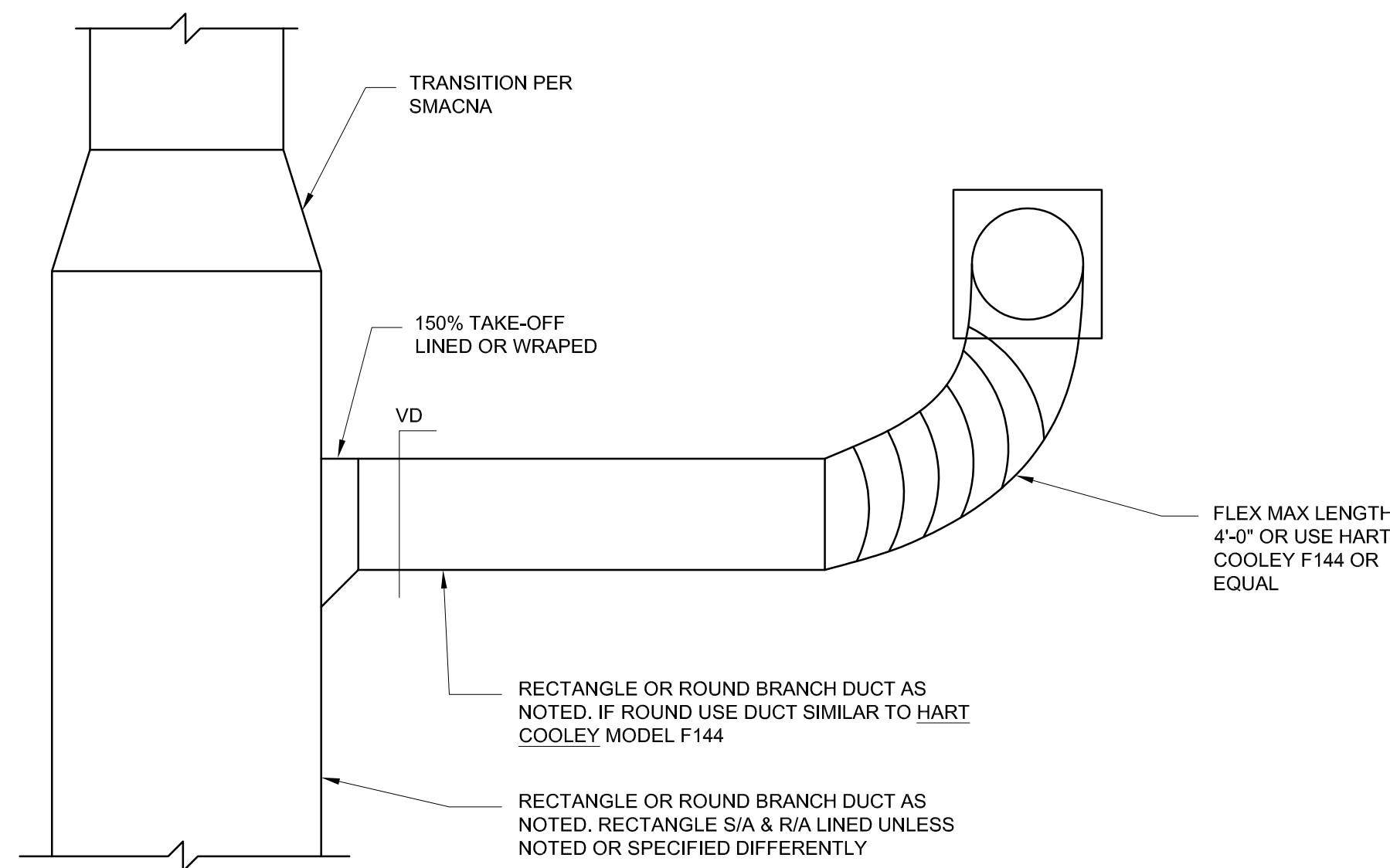
**4** HORIZONTAL TRENCH DETAIL  
NOT TO SCALE



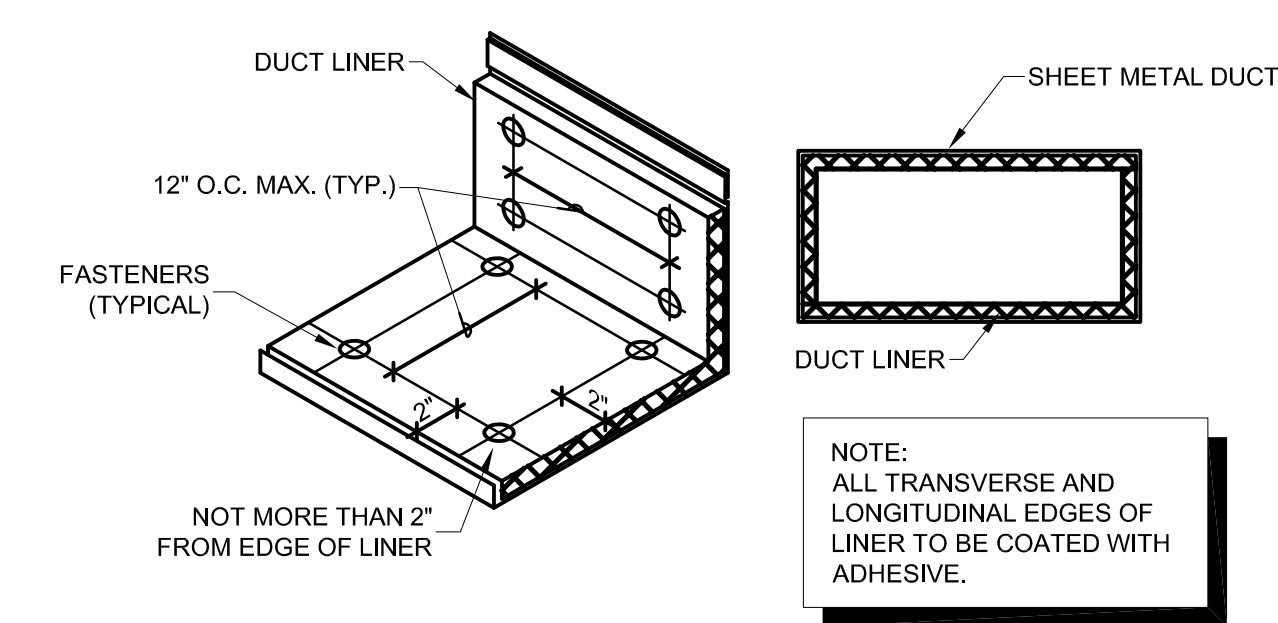
**5** WELL FIELD VALVE DETAIL  
NOT TO SCALE

NO.	DATE	REVISIONS	REMARKS

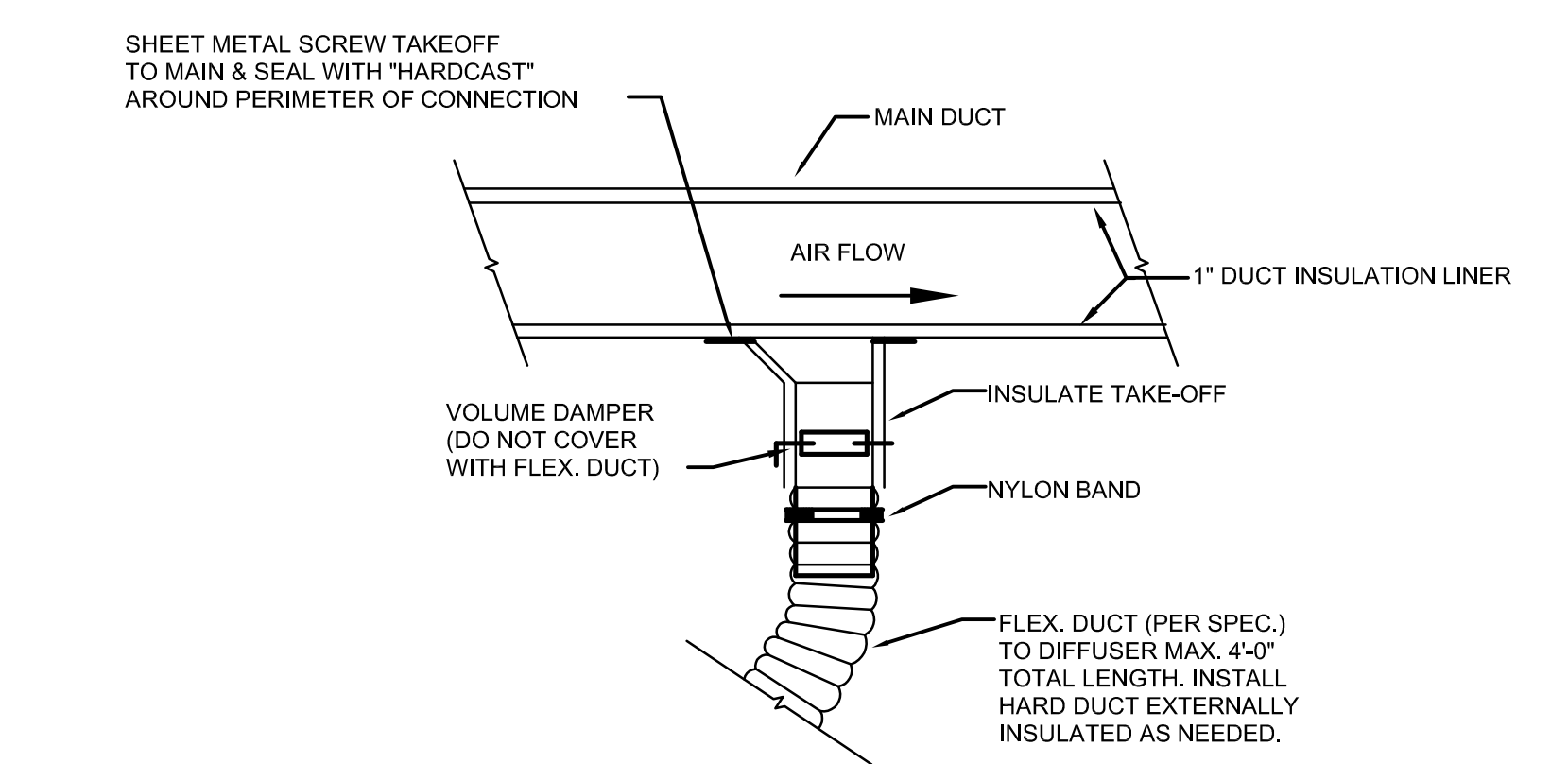
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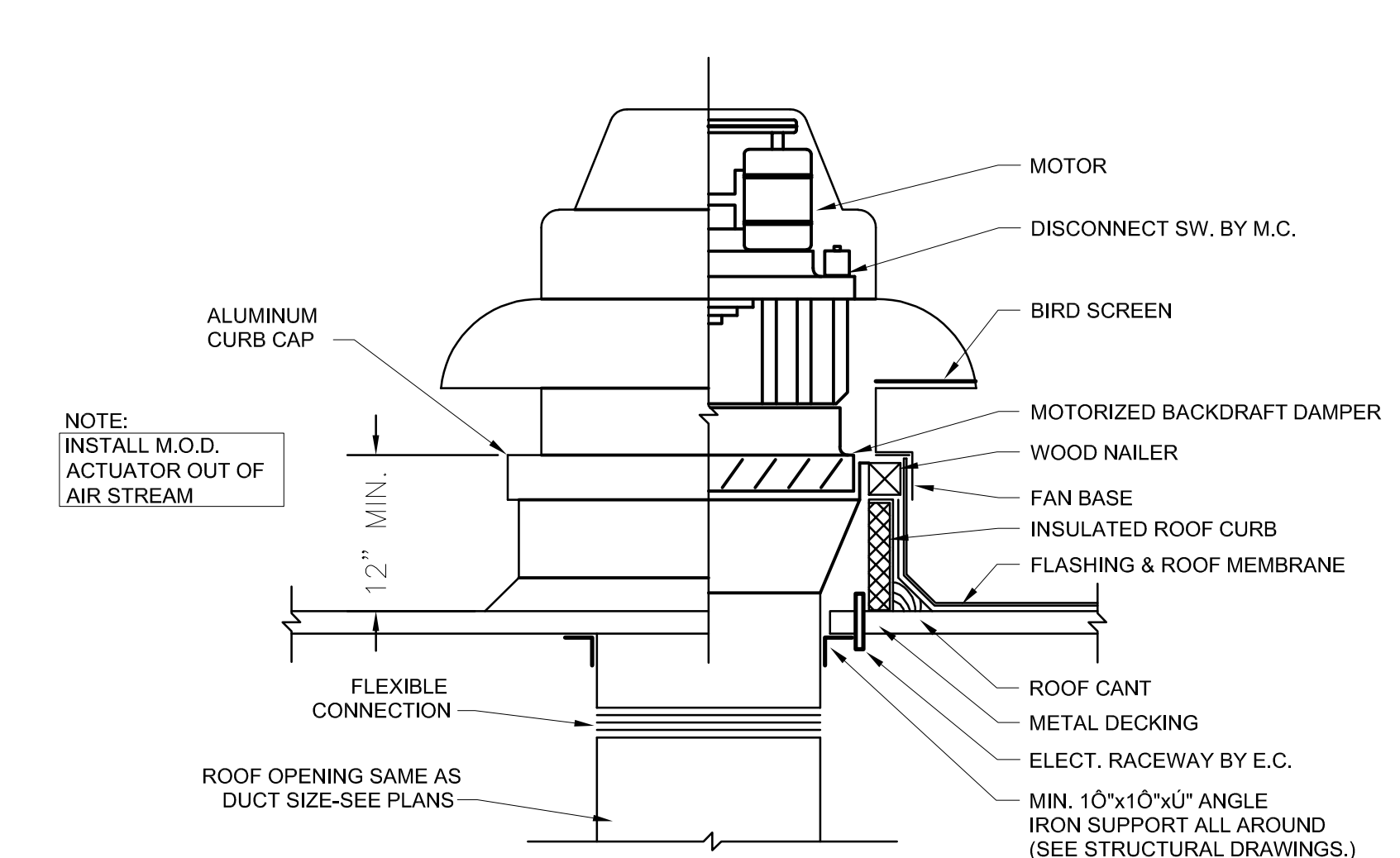
1 DUCT DETAIL  
NOT TO SCALE



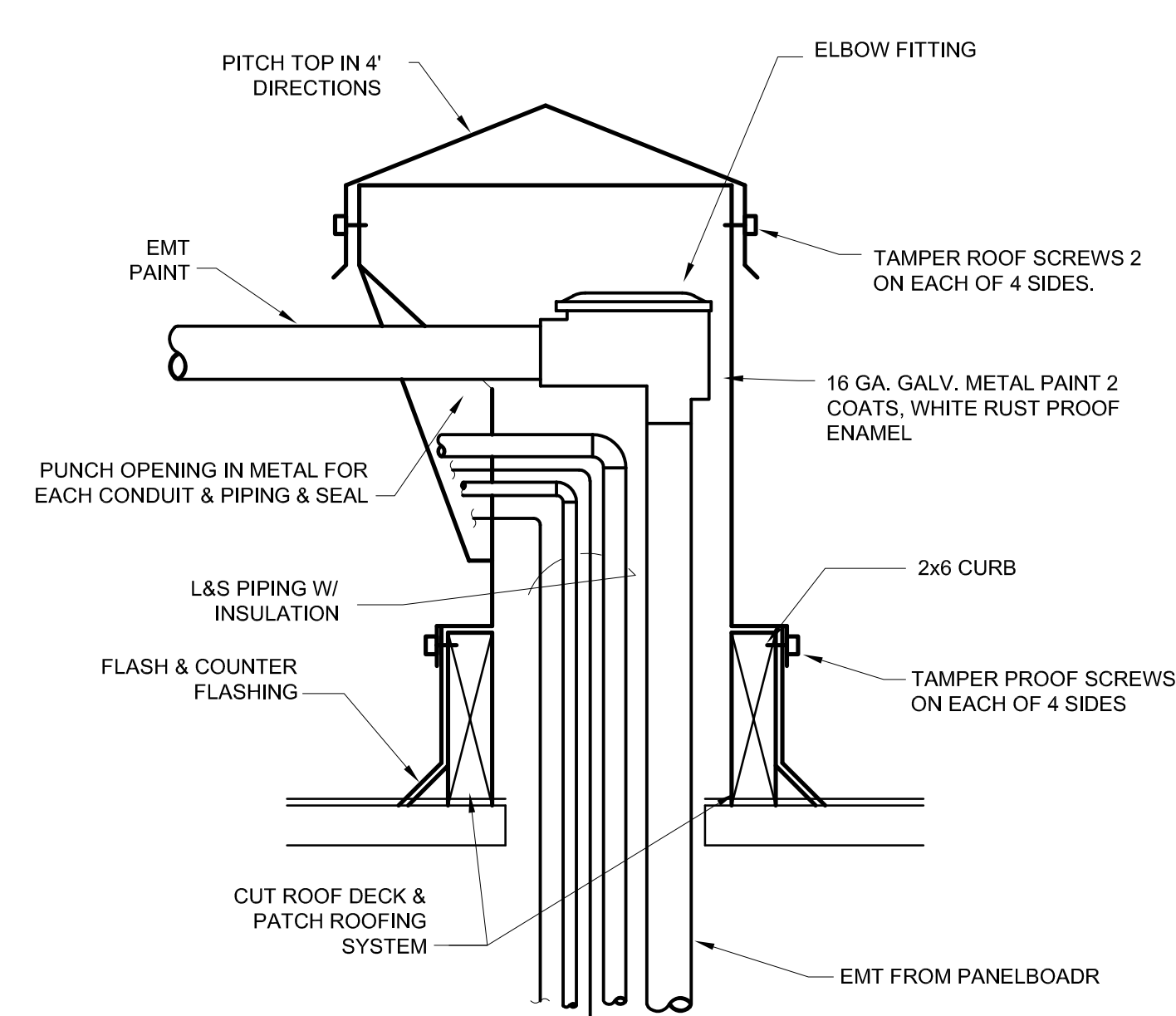
2 DUCT LINER DETAIL  
NOT TO SCALE



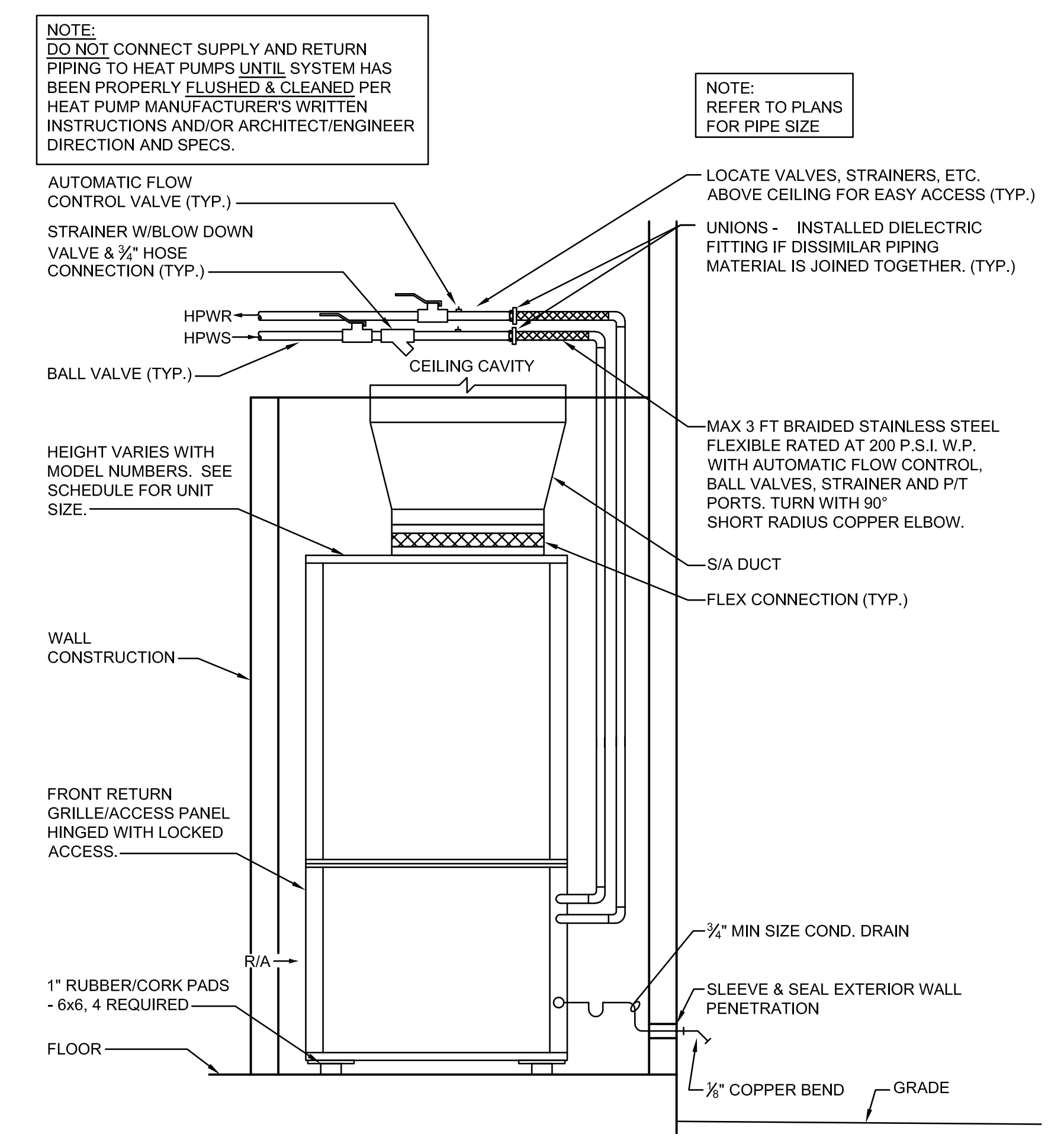
3 FLEX-DUCT TAKEOFF DETAIL  
NOT TO SCALE



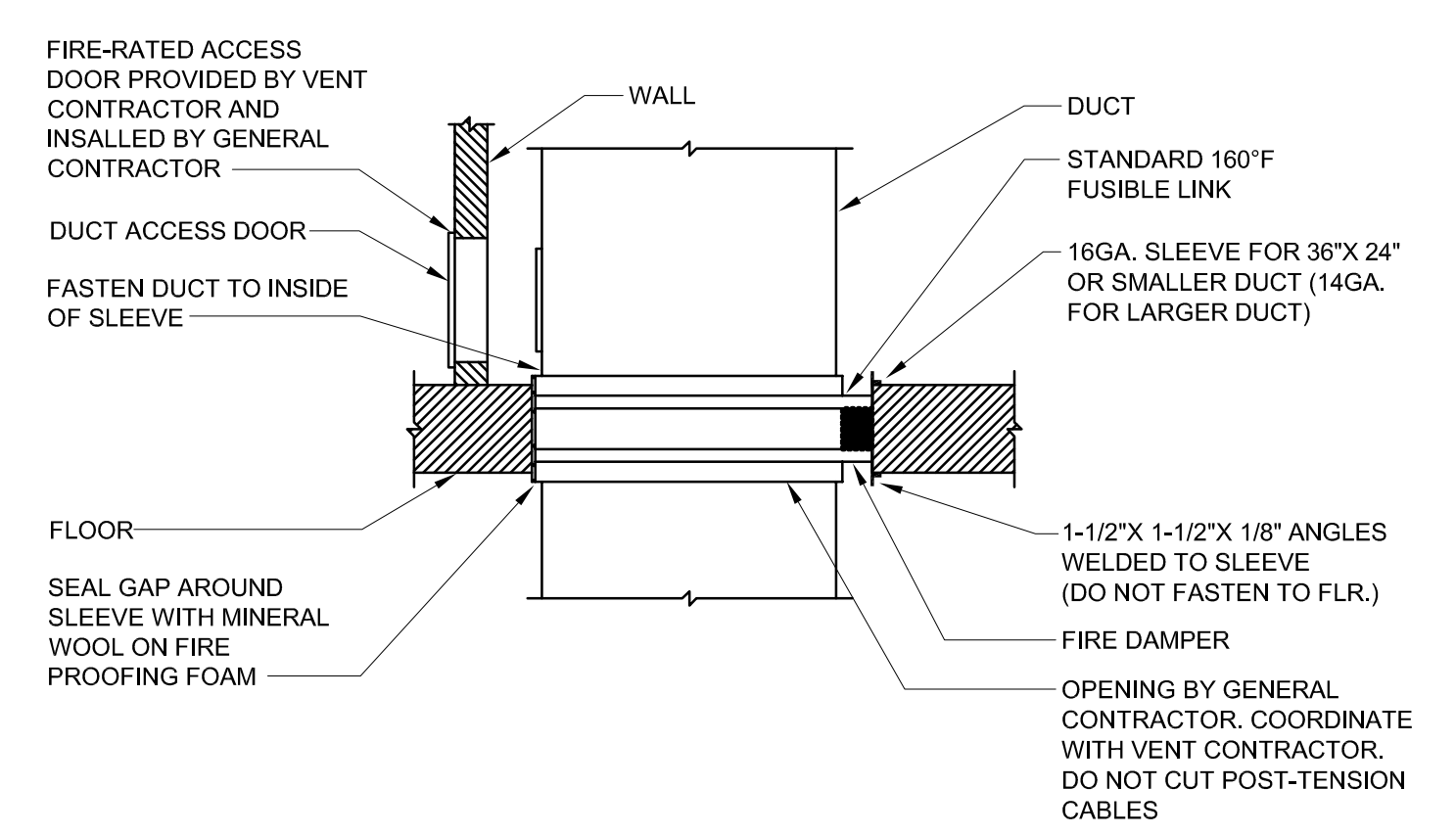
4 POWER ROOF EXHAUST FAN  
NOT TO SCALE



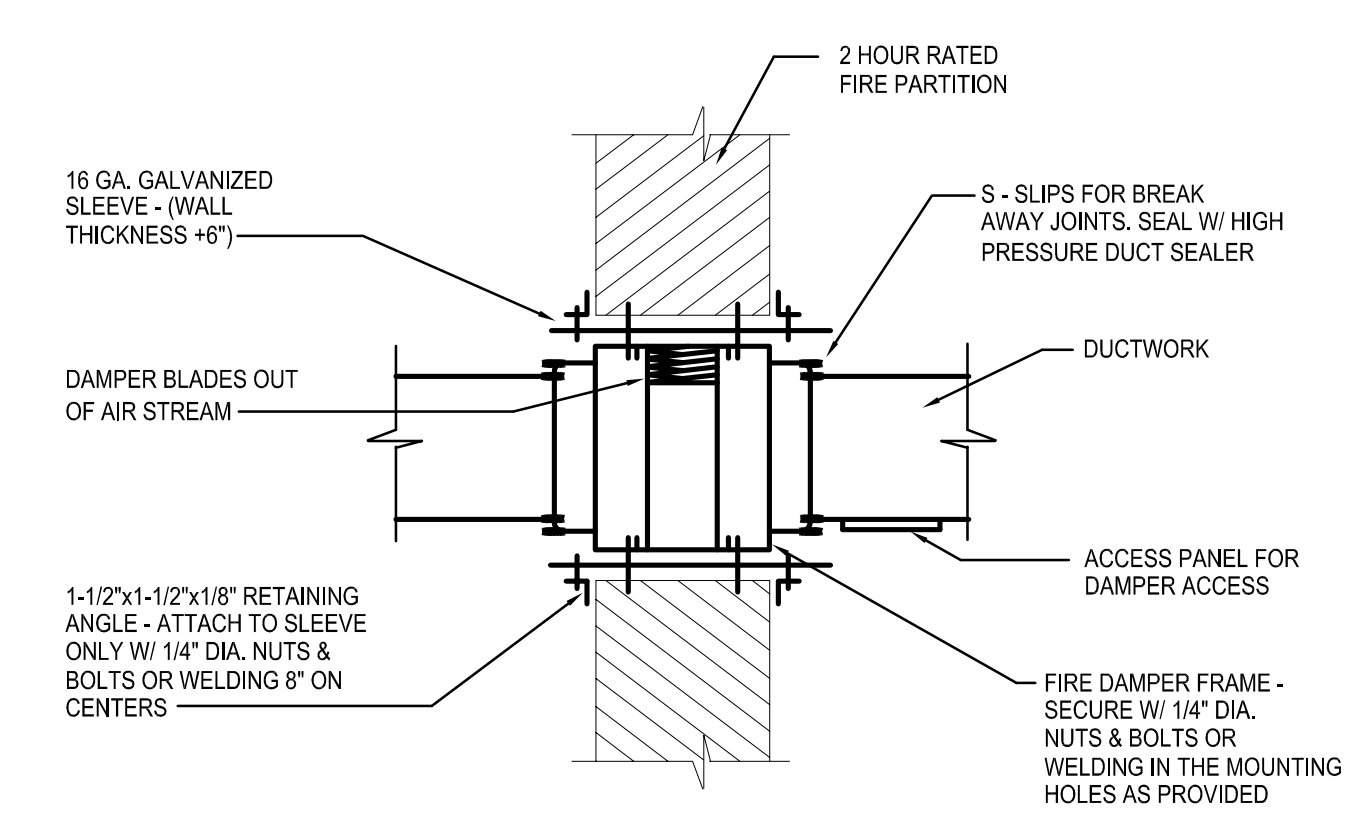
5 ROOF CONDUIT & REFRIGERATION PIPING PENETRATION DETAIL  
NOT TO SCALE



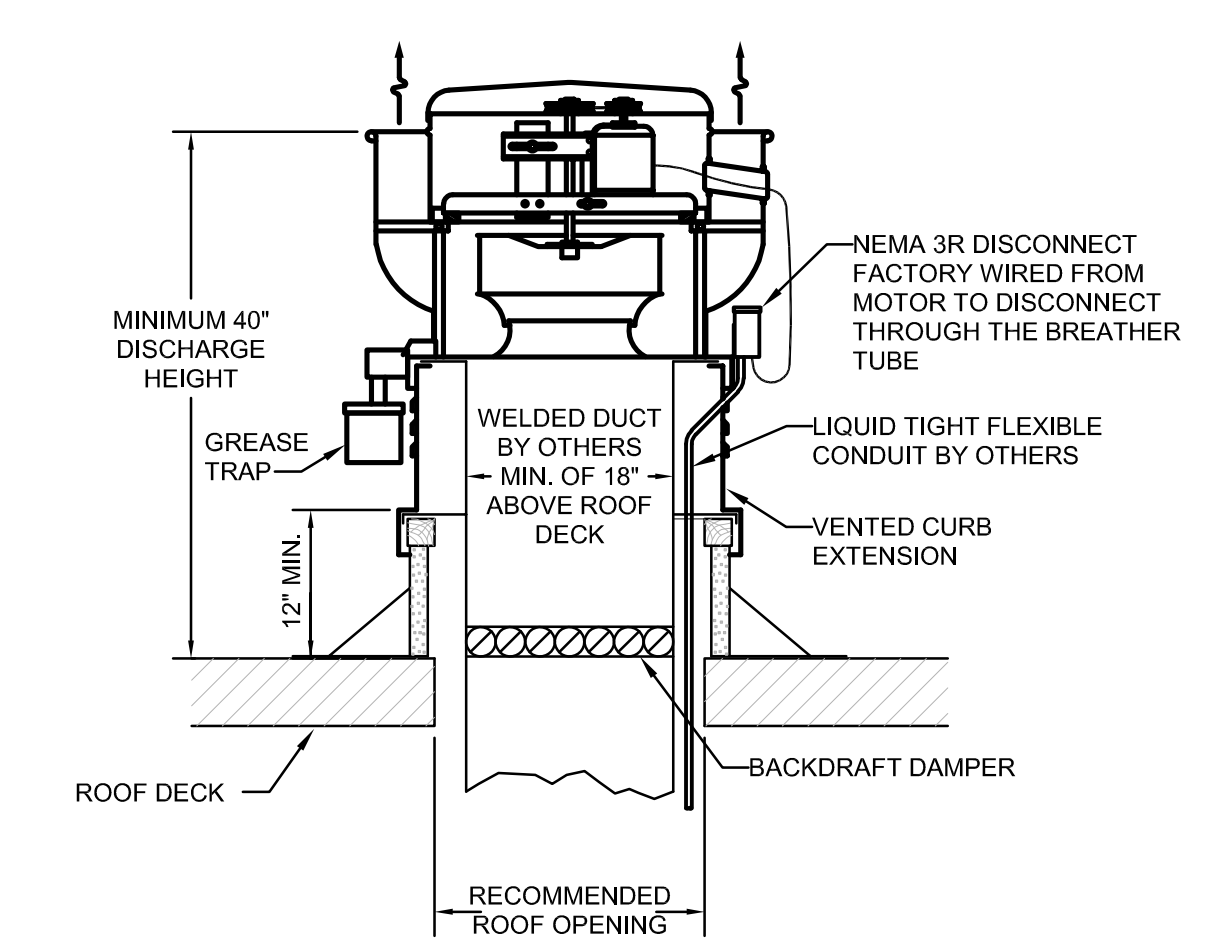
6 VERTICAL HEAT PUMP DETAIL  
NOT TO SCALE



7 FIRE DAMPER DETAIL AT FLOOR  
NOT TO SCALE



8 FIRE DAMPER DETAIL AT FLOOR  
NOT TO SCALE



9 KITCHEN HOOD EXHAUST FAN DETAIL  
NOT TO SCALE

**MIDDLETON ASSOCIATES, INC. ARCHITECTS**  
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State of Illinois Professional Design Firm Number 184,000267

**BRIC PARTNERSHIP, LLC**  
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TEL: 317.279.8207

**EDISON ELEMENTARY SCHOOL, 2019 ADDITION**  
at 521 S. Pearl Street - Macomb, Illinois 61455  
for MACOMB CUSD #185  
MACOMB District Office - 323 W. Washington Street  
Macomb, Illinois 61455

**ANDREW J. KENNY**  
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

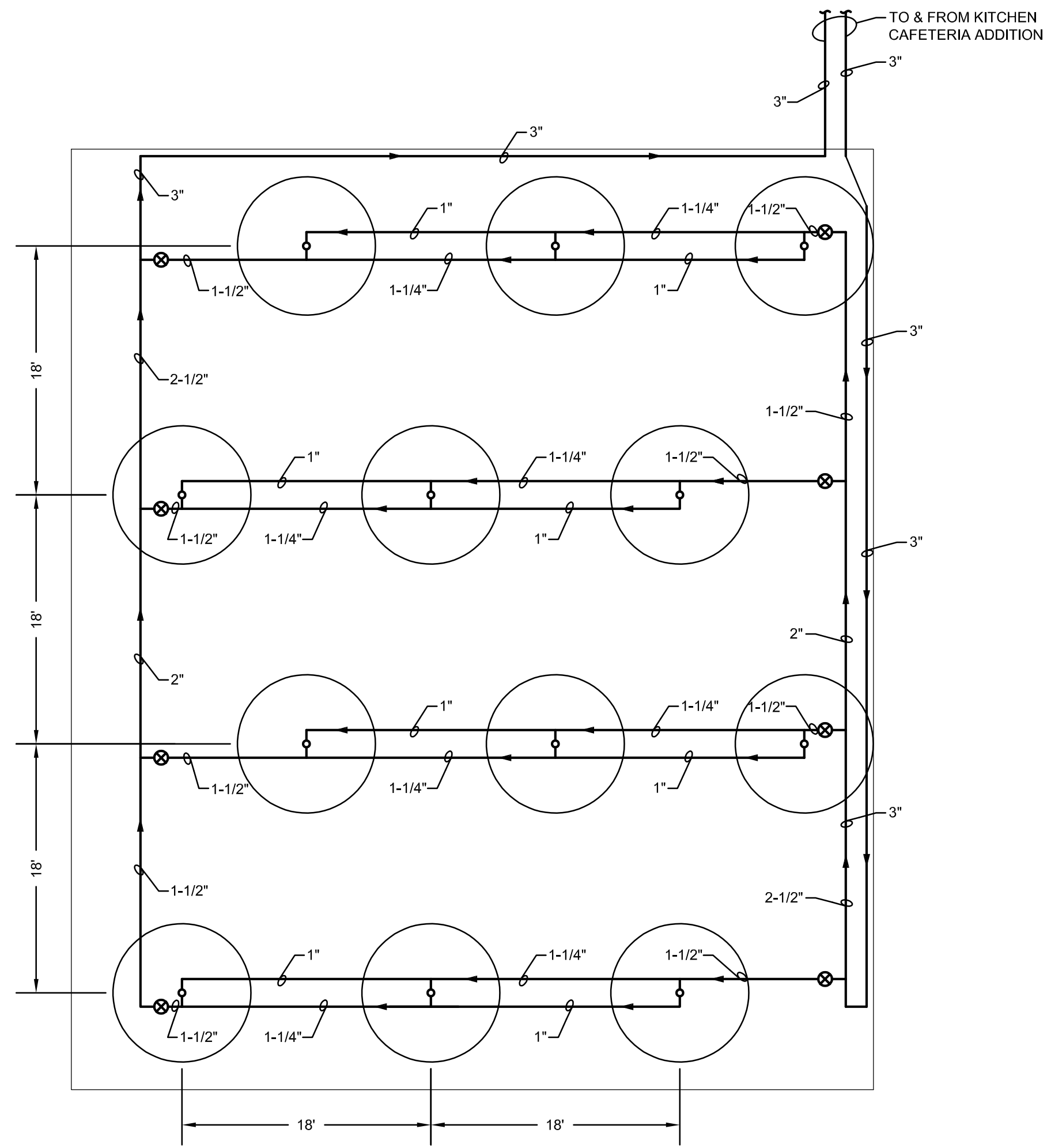
EXPIRATION 11/30/19  
SIGNED 02/15/19

**MISC. MECHANICAL DETAILS**

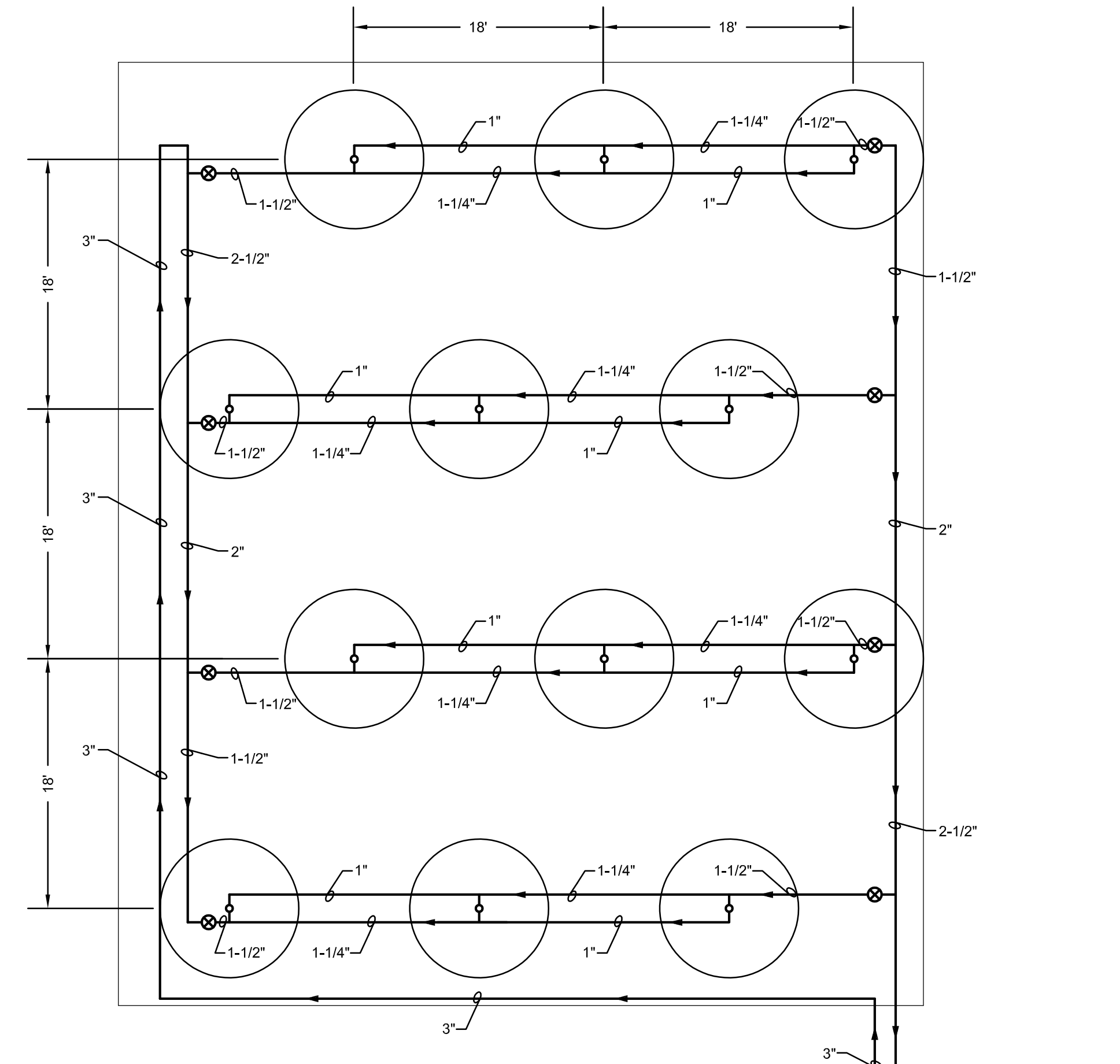
NO.	DATE	REVISIONS	REMARKS

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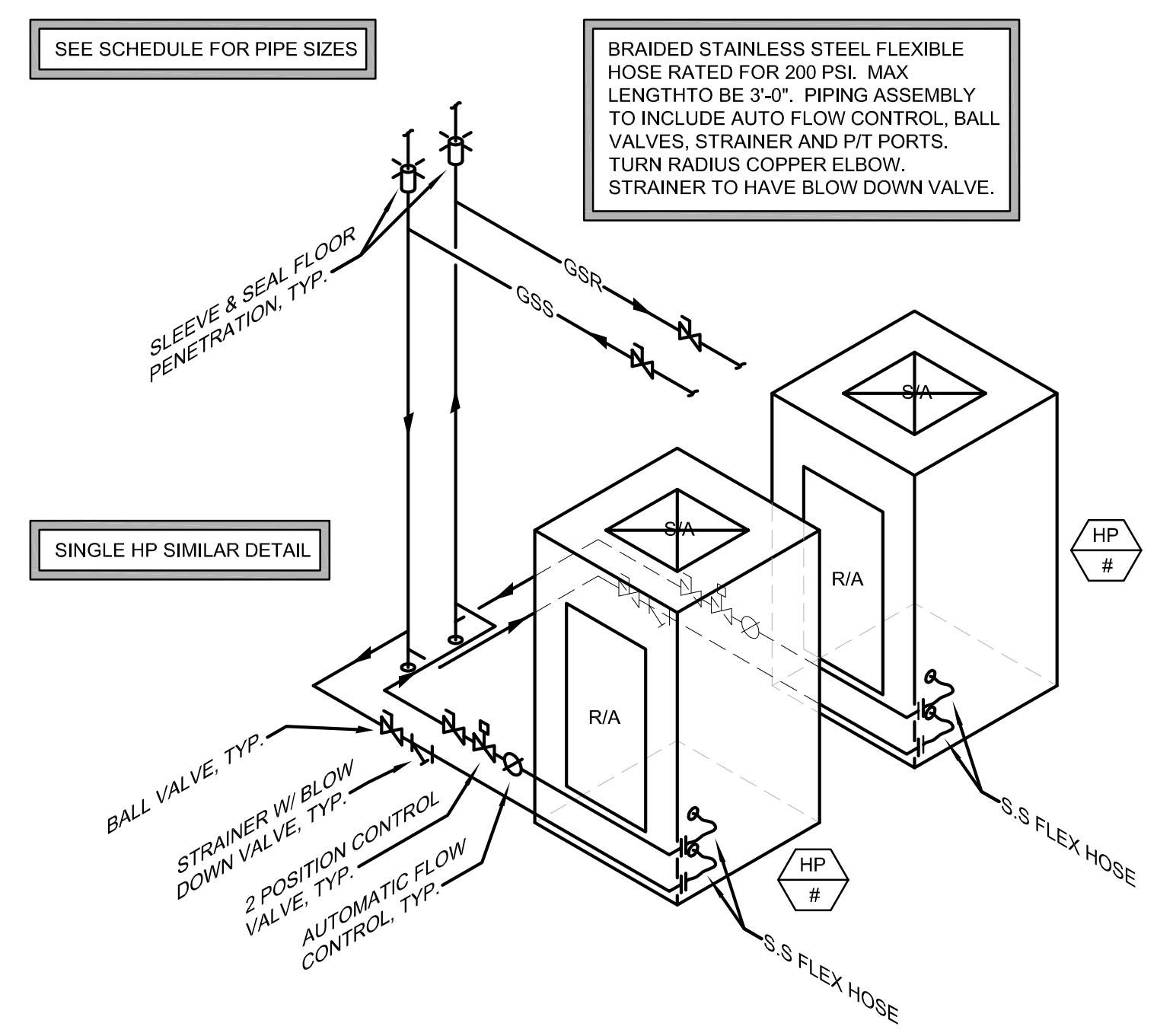
PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET M-5.1  
OF 91 SHEETS



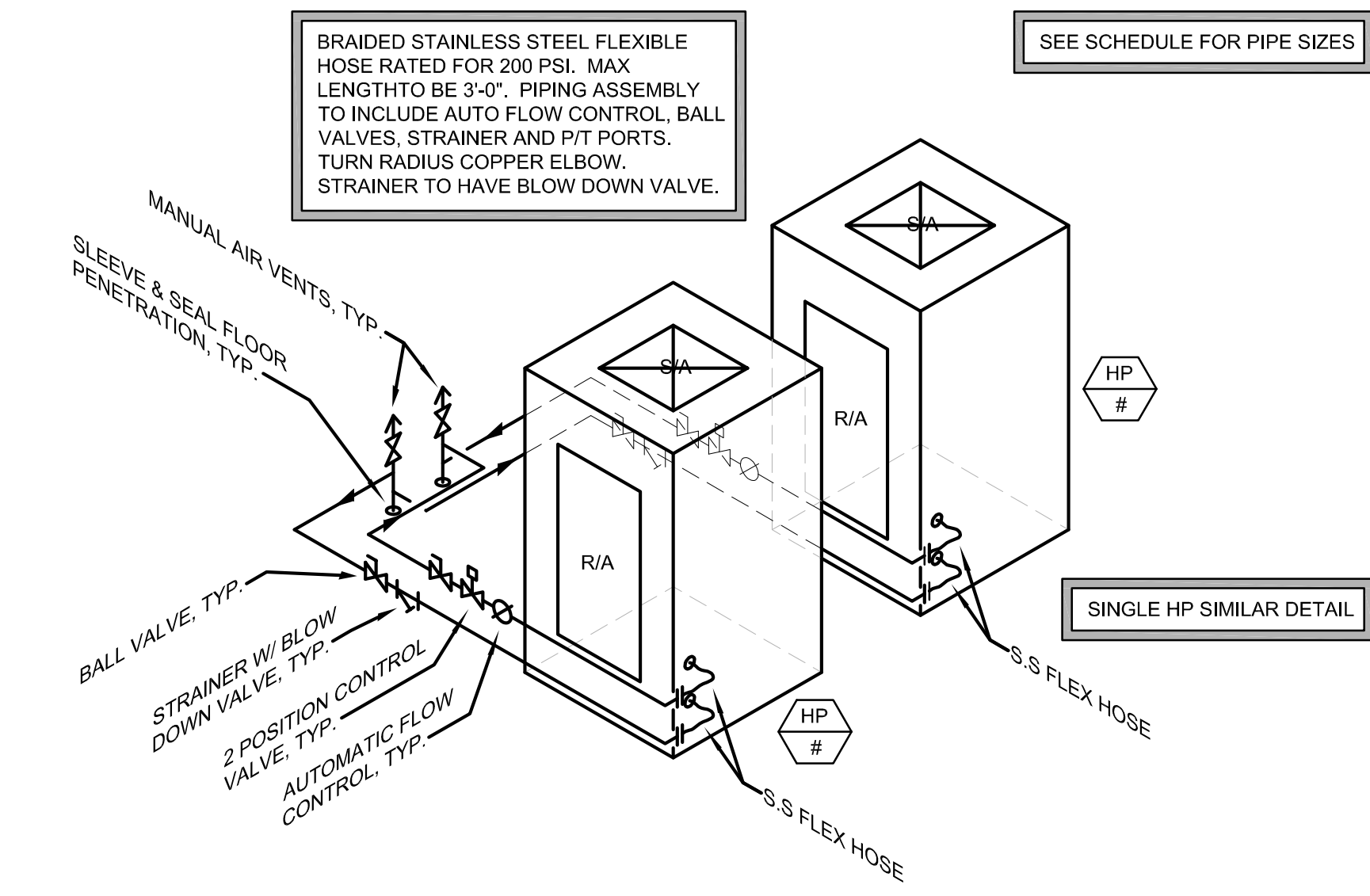
**1 GEO FIELD #1 DETAIL**  
APPROX. SCALE: 1/8" = 1'-0"



**2 GEO FIELD #2 DETAIL**  
APPROX. SCALE: 1/8" = 1'-0"



**3 FIRST FLOOR HP PIPING DETAIL**  
NOT TO SCALE



**4 SECOND FLOOR HP PIPING DETAIL**  
NOT TO SCALE

SEE SCHEDULE FOR PIPE SIZES

BRAIDED STAINLESS STEEL FLEXIBLE HOSE RATED FOR 200 PSI. MAX LENGTH TO BE 3'-0". PIPING ASSEMBLY TO INCLUDE AUTO FLOW CONTROL, BALL VALVES, STRAINER AND P/T PORTS. TURN RADIUS COPPER ELBOW. STRAINER TO HAVE BLOW DOWN VALVE.

SINGLE HP SIMILAR DETAIL

SEE SCHEDULE FOR PIPE SIZES

SINGLE HP SIMILAR DETAIL

NO.	DATE	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

**Geo Loop Monitor and Pumps (typical of 2 Sets) (GSCP-1 & 2, GSCP-3 & 4)**

Water Source Heat Pump Loop Monitor - Run Conditions:  
The loop monitor shall run whenever:

- Any zone is occupied.
- OR exterior temperature calls for pumps to energize.

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 43°F (adj.).

Alarms shall be provided as follows:

- High Loop Water Supply Temp: If the loop water supply temperature is greater than 95°F (adj.).
- Low Loop Water Supply Temp: If the loop water supply temperature is less than 40°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.

The designated lead pump shall rotate upon one of the following conditions (user selectable):

- manually through a software switch
- 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.
- VFD Fault.

- Loop Water Pump 2
- Failure: Commanded on, but the status is off.
- Running in Hand: Commanded off, but the status is on.
- VFD Fault.

Loop Water Differential Pressure Control:  
The controller shall measure loop water differential pressure and modulate the loop water pump VFD's 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 12lb/in<sup>2</sup> (adj.). The VFD minimum speed shall not drop below 20% (adj.).

On dropping loop water differential pressure, the VFDs shall stage on and run to maintain setpoint as follows:

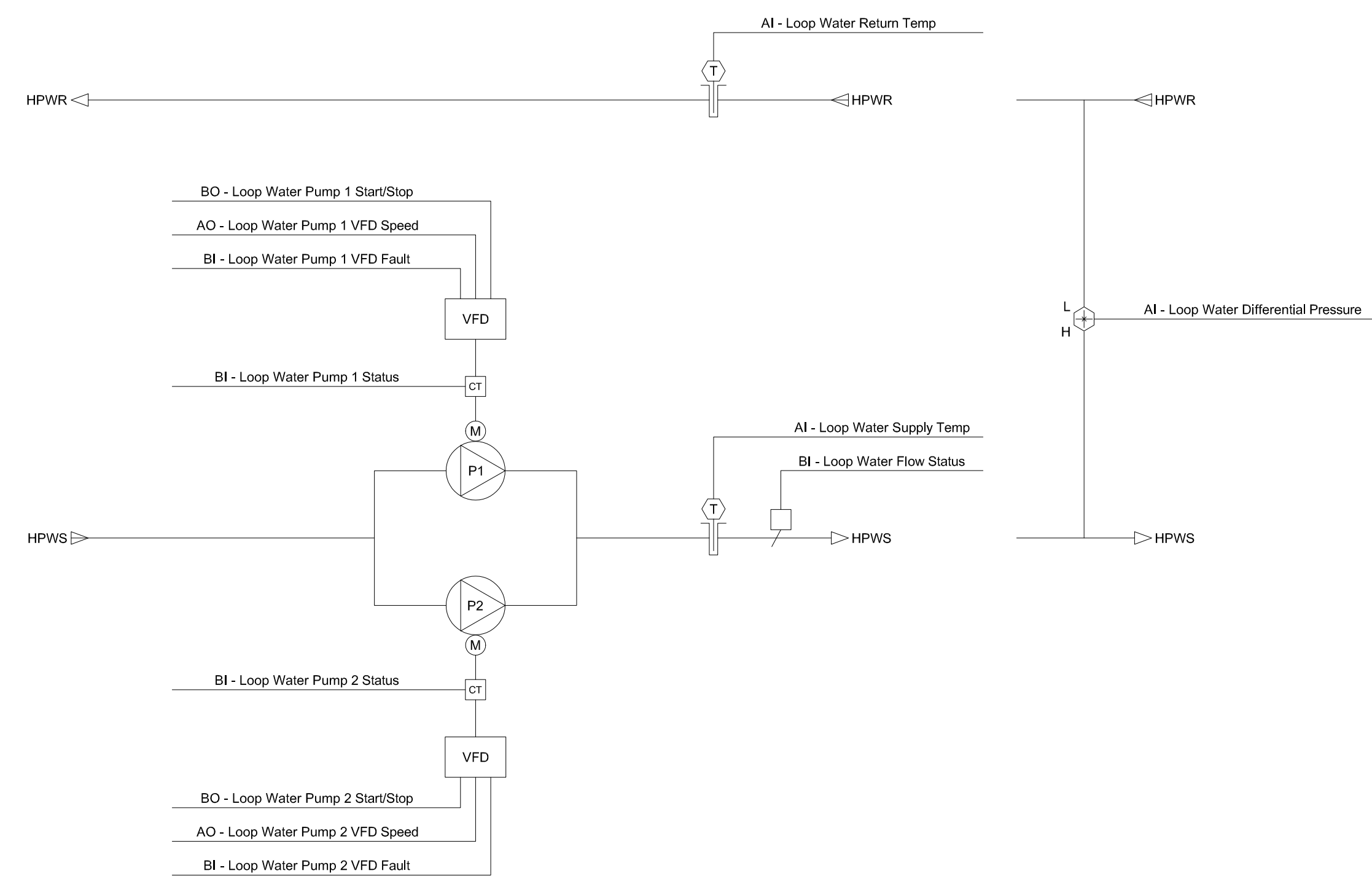
- The controller shall modulate the lead VFD to maintain setpoint.

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.

Point Name	Hardware Points					Software Points				Show On Graphic	
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend		Alarm
Loop Water Differential Pressure	x								x		x
Loop Water Return Temp	x								x		x
Loop Water Supply Temp	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 Status			x						x		x
Loop Water Pump 1 VFD Fault			x							x	x
Loop Water Pump 2 Status			x						x		x
Loop Water Pump 2 VFD Fault			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
Outside Air Temp					x						x
High Loop Water Differential Pressure										x	
High Loop Water Supply Temp										x	
High Loop Water Supply Temp Shutdown										x	
Loop Water Pump 1 Failure										x	
Loop Water Pump 1 Running In Hand										x	
Loop Water Pump 2 Failure										x	
Loop Water Pump 2 Running In Hand										x	
Low Loop Water Differential Pressure										x	
Low Loop Water Supply Temp										x	
Low Loop Water Supply Temp Shutdown										x	
No Loop Flow											x



**1** LOOP PUMPS CONTROL SCHEMATIC  
(TYPICAL FOR GSCP 1 & 2 AND GSCP 3 & 4)  
NOT TO SCALE

**Exhaust Fan - On/Off (typical of 2) (PRE-1 and PRE-2)**

Run Conditions - Scheduled:  
The fan shall run according to a user definable schedule.

Fan:  
The fan shall have a user definable (adj.) minimum runtime.

Exhaust Air Damper:  
The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 15 sec (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.

Damper Status:

The fan shall be enabled after the damper status has proven.

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.

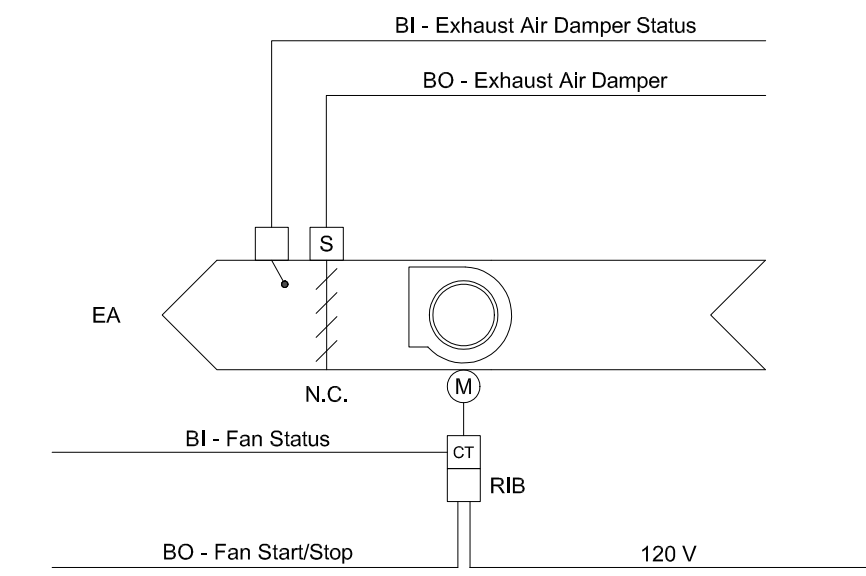
Fan Status:

The controller shall monitor the fan status.

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.

Point Name	Hardware Points					Software Points				Show On Graphic	
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend		Alarm
Exhaust Air Damper Status			x							x	x
Fan Status			x							x	x
Exhaust Air Damper				x						x	x
Fan Start/Stop				x						x	x
Schedule								x			
Exhaust Air Damper Failure											x
Exhaust Air Damper In Hand											x
Fan Failure											x
Fan In Hand											x



**2** PRE CONTROL SCHEMATIC  
NOT TO SCALE



State of Illinois Professional Design Firm Number 184,000267



EDISON ELEMENTARY SCHOOL - 2019 ADDITION  
at 521 S. Pearl Street - Macomb, Illinois 61455  
for MACOMB CUSD #185  
MACOMB District Office - 323 W. Washington Street  
Macomb, Illinois 61455



EXPIRATION 11/30/19  
SIGNED 02/15/19

TEMPERATURE CONTROLS

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET TC-1.1  
OF 91 SHEETS



**Geo Source Heat Pump** (typical of 17) (HP-#)

**Run Conditions - Scheduled:**

The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
  - A 75°F (adj.) cooling setpoint
  - A 70°F (adj.) heating setpoint
- Unoccupied Mode (night setback): The unit shall maintain
  - A 80°F (adj.) cooling setpoint.
  - A 65°F (adj.) heating setpoint.

**Alarms shall be provided 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 with in a 4 degree range, 2 plus, 2 minus of set points.

**Zone Optimal Start:**

The unit shall use an optimal start algorithm for morning start-up. This algorithm shall minimize the unoccupied warm-up or cool-down period while still achieving comfort conditions by the start of scheduled occupied period.

**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 schedule.

**Emergency Shutdown:**

The heat pump unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

**Fan:**

The fan shall run anytime the unit is commanded to run, unless shutdown on safeties.

**Heating and Cooling - 1 Compressor Stage:**

The controller for Constant performing heat pump units with PSC fan shall receive a signal from the loop water source monitor indicating that there is water flow and that the water temperature is within acceptable limits.

The controller for Variable performing heat pump units shall receive a signal from the loop water source monitor indicating there is flow and that the water temperature is within acceptable limits shall modulate the ECM fan speed and the compressor operation to maintain room set point.

The controller shall measure the zone temperature and cycle the compressor to maintain its setpoint. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime. The compressor shall run subject to its own internal safeties and controls.

**The heating shall be enabled whenever:**

- Outside air temperature is less than 65°F (adj.).
- AND the fan is on.
- AND the reversing valve is in heat mode.

**The cooling shall be enabled whenever:**

- Outside air temperature is greater than 60°F (adj.).
- AND the fan is on.
- AND the reversing valve is in cool mode.

On mode change, the compressor shall be disabled and remain off until after the reversing valve has changed position.

**Alarms shall be provided as follows:**

- Unit shut down on safeties.

**Discharge Air Temperature:**

The controller shall monitor the discharge air temperature.

**Alarms shall be provided as follows:**

- High Discharge Air Temp: If the discharge air temperature is greater than 120°F (adj.).
- Low Discharge Air Temp: If the discharge air temperature is less than 40°F (adj.).

**Fan Status:**

The controller shall monitor the fan status.

**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.

**Zone Carbon Dioxide (CO2) Concentration Monitoring:**

The controller shall measure the zone CO2 concentration.

**Alarms shall be provided as follows:**

- High Zone Carbon Dioxide Concentration: If the zone CO2 concentration is greater than 1000ppm (adj.) when in the occupied mode.

**Zone Humidity:**

The controller shall monitor the zone humidity.

**Alarms shall be provided as follows:**

- High Zone Humidity: If the zone humidity is greater than 62% (adj.).

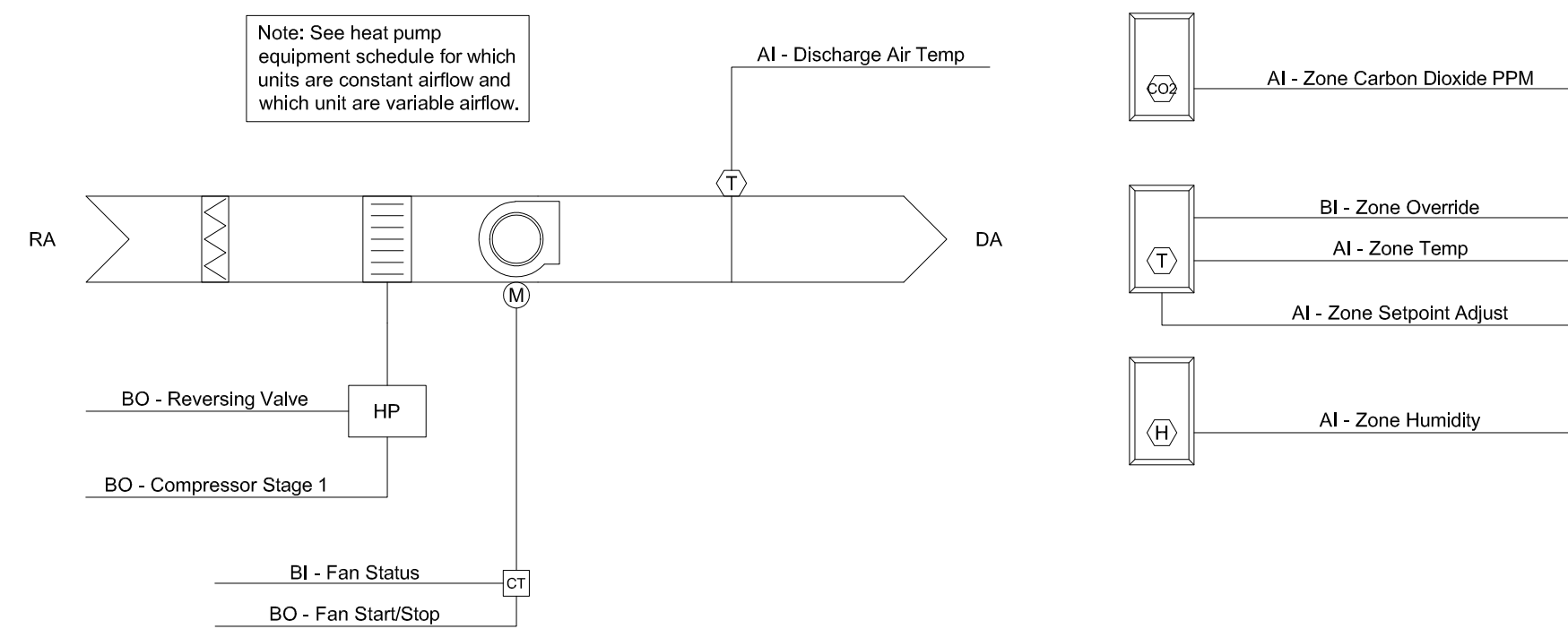
**Geo Heat Pumps**

Point Name	Hardware Points				Software Points						
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic
Discharge Air Temp	x								x		x
Zone Carbon Dioxide PPM	x								x		x
Zone Humidity	x								x		x
Zone Setpoint Adjust	x										x
Zone Temp	x								x		x
Emergency Shutdown			x						x	x	x
Fan Status			x						x		x
Zone Override			x						x		x
Compressor Start/Stop				x					x		x
Fan Start/Stop				x					x		x
Reversing Valve				x							x
Cooling Setpoint					x				x		x
Variable speed compressor unit	x								x	x	x
Variable speed ECM fan unit	x								x	x	x
Heating Setpoint					x				x		x
Percent of Time Satisfied					x				x		
Compressor Soft Shutdown						x					x
Schedule								x			
Fan Failure										x	
Fan in Hand										x	
Filter Change Required										x	
High Discharge Air Temp										x	
High Zone Carbon Dioxide Concentration										x	
High Zone Humidity										x	
High Zone Temp										x	
Low Discharge Air Temp										x	
Low Zone Humidity										x	
Low Zone Temp										x	

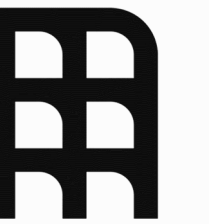
**Variable Frequency Drive Interface** (typical of 4) (GSCP's 1,2,3 and 4)

Variable Frequency Drive (VFD) Interface Monitor:  
Current VFD status and operating conditions shall be monitored through its communications interface port. The interface shall monitor and trend the points as shown on the Points List.

Point Name	Hardware Points				Software Points						
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic
Motor Current Amps					x				x		x
Motor Frequency Hertz					x				x		x
Motor Speed RPM					x				x		x
In Bypass						x			x	x	x
In Fault Condition						x			x	x	x
VFD Status						x			x		x



**1 HEAT PUMP UNIT CONTROL SCHEMATIC**  
NOT TO SCALE

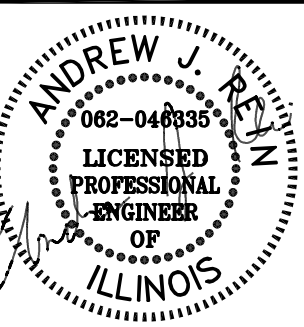


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Macomb, Illinois 61455



EXPIRATION 11/30/19  
SIGNED 02/15/19

**TEMPERATURE CONTROLS**

NO.	DATE	REMARKS

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PROJECT NO.  
22150211  
ISSUE DATE  
02/15/2019  
SHEET  
**TC-1.2**  
OF 91 SHEETS

**Dedicated Outdoor Air Units** - Supply Air Temp (typical of 2)  
(DOAS-1 and DOAS-2)

Run Conditions - Interlocked:  
The DOAS unit - shall be interlocked to run whenever building occupancy is scheduled to run unless shutdown on safeties.

Emergency Shutdown:  
The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

Freeze Protection:  
The unit shall shut down and generate an alarm upon receiving a freeze status.

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

Outside Air Damper:  
The outside air damper shall modulate open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Exhaust Air Damper:  
The exhaust air damper shall modulate open anytime the unit runs and shall close anytime the unit stops. The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 4sec (adj.) after the supply fan stops.

Supply and Exhaust Air Fans:  
The supply and exhaust fans shall energize and modulate in unison to provide required quantity of outdoor ventilation air to maintain a level of CO2 below 900 PPM (adj.). The supply and exhaust fans shall start only after all of the dampers status has proven the damper is open and operable. The all dampers shall close 4sec (adj.) after the fans stop.

Alarms shall be provided as follows:

- Outside, Exhaust Air Dampers Failure: Commanded open, but the status is closed.
- Outside, Exhaust Air Dampers In Hand: Commanded closed, but the status is open.

Heat Recovery Wheel - Variable Speed:  
The controller shall modulate the heat wheel for energy recovery as follows.

Cooling Recovery Mode:  
The controller shall measure the heat wheel discharge air temperature and modulate the heat wheel speed to maintain a setpoint 2°F (adj.) less than the unit supply air temperature setpoint. The heat wheel shall run for cool recovery whenever:

- Unit return air temperature is 5°F (adj.) or more below the outside air temperature.
- AND the unit is in a cooling mode.
- AND the supply and exhaust fans are on.

Heating Recovery Mode:  
The controller shall measure the heat wheel discharge air temperature and modulate the heat wheel speed to maintain a setpoint 2°F (adj.) greater than the unit supply air temperature setpoint. The heat wheel shall run for heat recovery whenever:

- Unit return air temperature is 5°F (adj.) or more above the outside air temperature.
- AND the unit is in a heating mode.
- AND the supply and exhaust fans are on.

Periodic Self-Cleaning:  
The heat wheel shall run at 5% speed (adj.) for 10sec (adj.) every 4hrs (adj.) the unit runs.

Frost Protection:  
The heat wheel shall run at 5% speed (adj.) whenever:

- Outside air temperature drops below 15°F (adj.)
- OR whenever exhaust air temperature drops below 20°F (adj.).

The bypass dampers will open whenever the heat wheel is disabled.

Alarms shall be provided as follows:

- Heat Wheel Rotation Failure: Commanded on, but the status is off.
- Heat Wheel in Hand: Commanded off, but the status is on.
- Heat Wheel VFD in Fault

Supply Fan:  
The supply fan shall run anytime the unit is commanded to run. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime, unless shutdown on safeties.

Alarms shall be provided as follows:

- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan In Hand: Commanded off, but the status is on.

Exhaust Fan:  
The exhaust fan shall run whenever the supply fan runs, unless shutdown on safeties.

Alarms shall be provided as follows:

- Exhaust Fan Failure: Commanded on, but the status is off.
- Exhaust Fan In Hand: Commanded off, but the status is on.

Supply Air Temperature Setpoint - Fixed:  
The controller shall monitor the supply air temperature and shall maintain a fixed supply air temperature setpoint of 70°F (adj.).

Cooling Stages:  
The controller shall measure the supply air temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:

- Outside air temperature is greater than 60°F (adj.).
- AND the supply air temperature is above cooling setpoint.
- AND the fan status is on.

Hot Gas Reheat

- Hot gas reheat shall be enabled to provide dehumidification cycle to maintain a humidity level in the building at 50% and no higher than 55%. A return/exhaust air humidity sensor will be used to provide this cycle.

Gas Heating Stages:  
The controller shall measure the supply air temperature and modulate the gas heating to maintain its heating setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The heating shall be enabled whenever:

- Outside air temperature is less than 65°F (adj.).
- AND the supply air temperature is below heating setpoint.
- AND the fan status is on.

Supply Air Temperature:  
The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:

- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

Point Name	Hardware Points						Software Points						Show On Graphic
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm			
Exhaust Air Temp	x								x				x
Heat Wheel Discharge Air Temp	x								x				x
Outside Air Temp	x								x				x
Return Air Temp	x								x				x
Supply Air Temp	x								x				x
Heat Wheel VFD Speed		x							x				x
Exhaust Fan Status		x							x				x
Freezestat			x						x	x			x
Heat Wheel Status		x							x				x
Heat Wheel VFD Fault		x							x	x			x
Outside Air Damper Status	x								x				x
Smoke Detector		x							x	x			x
Exhaust air damper	x								x				x
Supply Fan Start/Stop			x						x				x
Supply Fan Status		x							x				x
Supply Fan VFD Speed		x							x				x
Supply Fan VFD Fault			x						x				x
Cooling Stage 1				x					x				x
Cooling Stage 2				x					x				x
Cooling Stage 3				x					x				x
Cooling Stage 4				x					x				x
Exhaust Fan Start/Stop				x					x				x
Exhaust Fan VFD Speed		x							x				x
Exhaust Fan Status		x							x				x
Exhaust Fan VFD Fault			x						x				x
Heat Wheel Bypass Dampers			x						x				x
Heat Wheel Start/Stop			x						x				x
Heating Stage 1				x					x				x
Heating Stage 2				x					x				x
Heating Stage 3				x					x				x
Heating Stage 4				x					x				x
Outside Air Damper			x						x				x
Exhaust Air Damper			x						x				x
Supply Air Temp Setpoint					x				x				x
Emergency Shutdown						x			x	x			x
Exhaust Fan Failure									x				x
Exhaust Fan in Hand									x				x
Exhaust Fan Runtime Exceeded									x				x
Heat Wheel in Hand									x				x
Heat Wheel Rotation Failure									x				x
High Supply Air Temp									x				x
Low Supply Air Temp									x				x
Outside Air Damper Failure									x				x
Exhaust Air Damper Failure									x				x
Outside Air Damper In Hand									x				x
Exhaust Air Damper In Hand									x				x
Supply Fan Failure									x				x
Supply Fan in Hand									x				x

**Domestic Water Circ Pump** - On/Off (typical of 2) (DCP-1 and DCP-2)

Run Conditions - Scheduled:  
The pump shall run according to a user definable schedule.

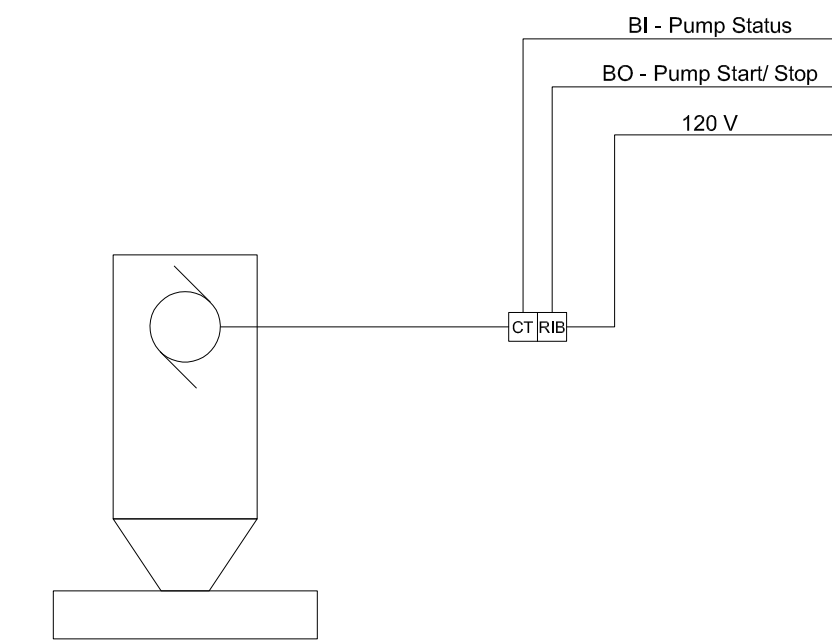
Pump Status:  
The pump shall have a user definable (adj.) minimum runtime.

Pump Status:  
The controller shall monitor the pump status.

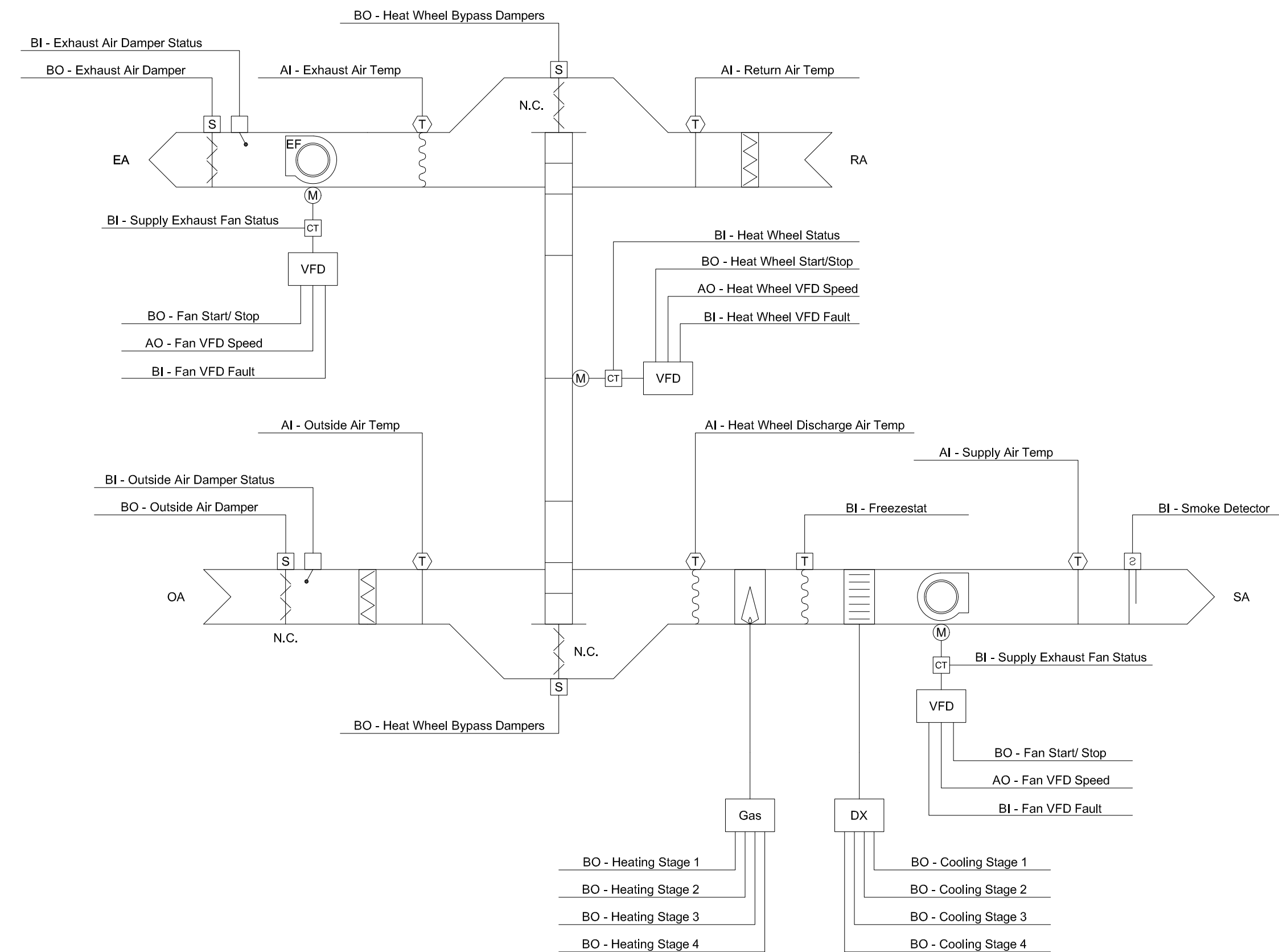
Alarms shall be provided as follows:

- Pump Failure: Commanded on, but the status is off.

Point Name	Hardware Points						Software Points				Show On Graphic	
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm		
Pump Status			x						x			x
Pump Start/ Stop				x					x			x
Schedule								x				
Pump Failure										x		



2 IN-LINE DOMESTIC CIRCULATOR PUMP (DCP-1 AND DCP-2)  
NOT TO SCALE



1 DOAS UNIT CONTROL SCHEMATIC  
NOT TO SCALE

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EDISON ELEMENTARY SCHOOL - 2019 ADDITION  
at 521 S. Pearl Street - Macomb, Illinois 61455  
for MACOMB CUSD #185  
MACOMB District Office - 323 W. Washington Street  
Macomb, Illinois 61455

**ANDREW J. KENNY**  
662-048350  
LICENSED PROFESSIONAL ENGINEER  
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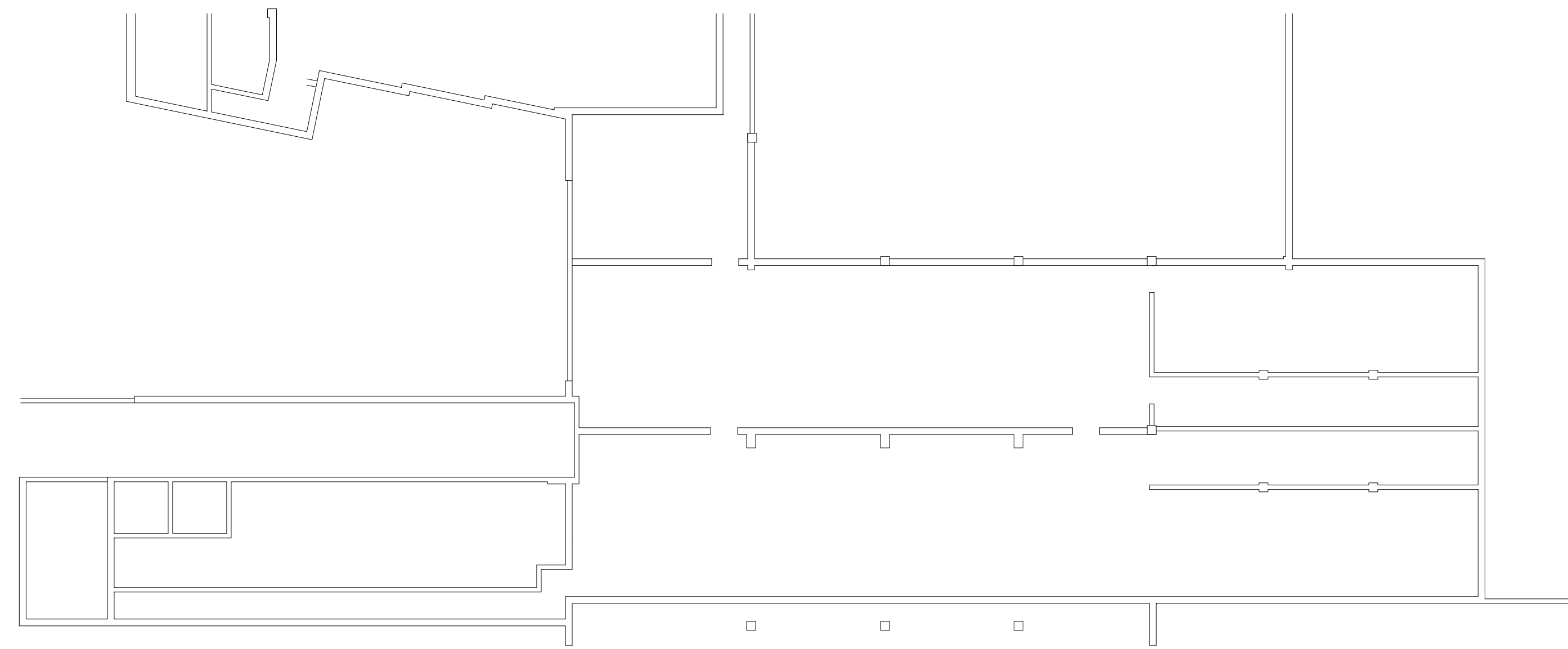
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TEMPERATURE CONTROLS

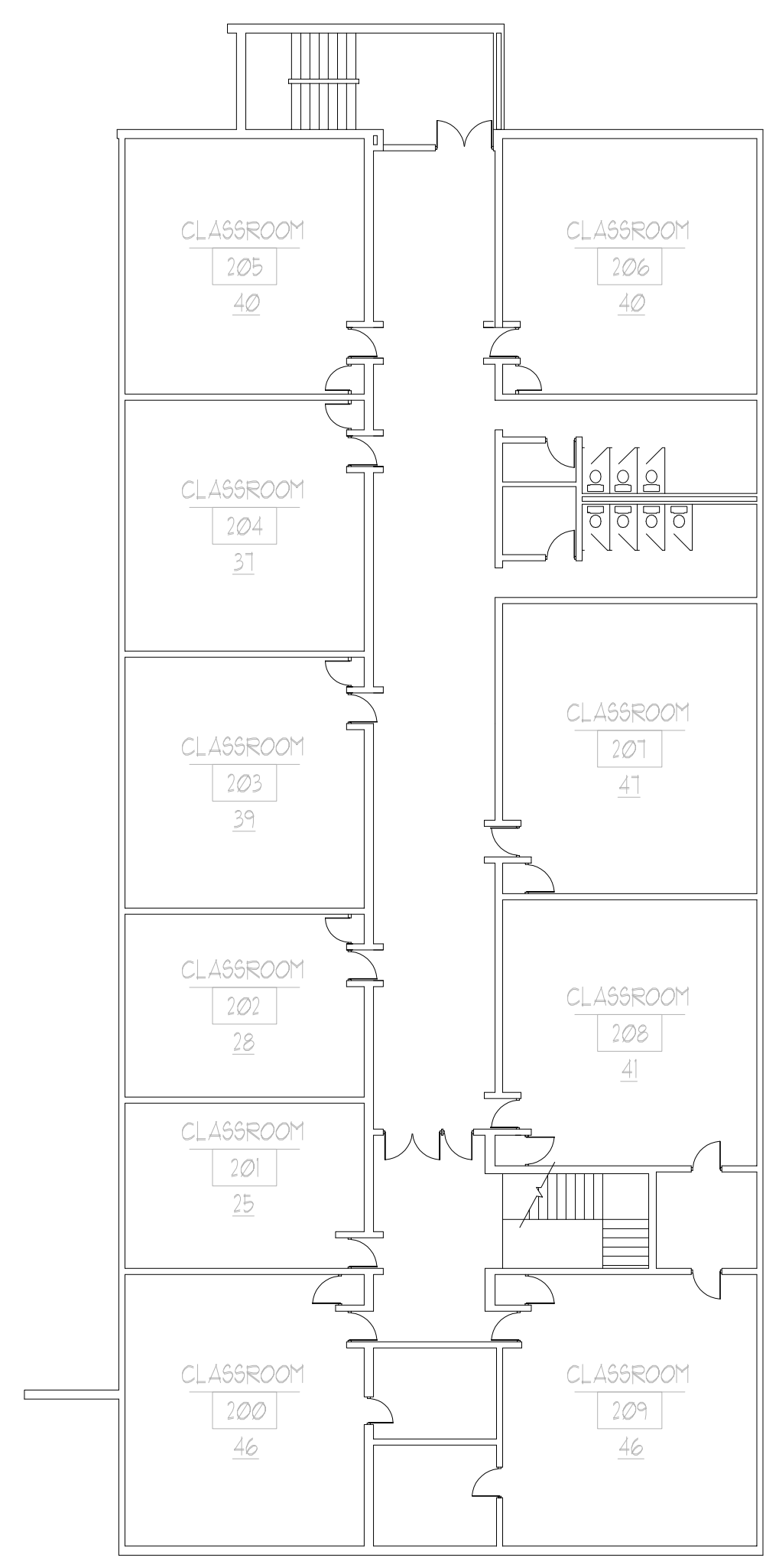
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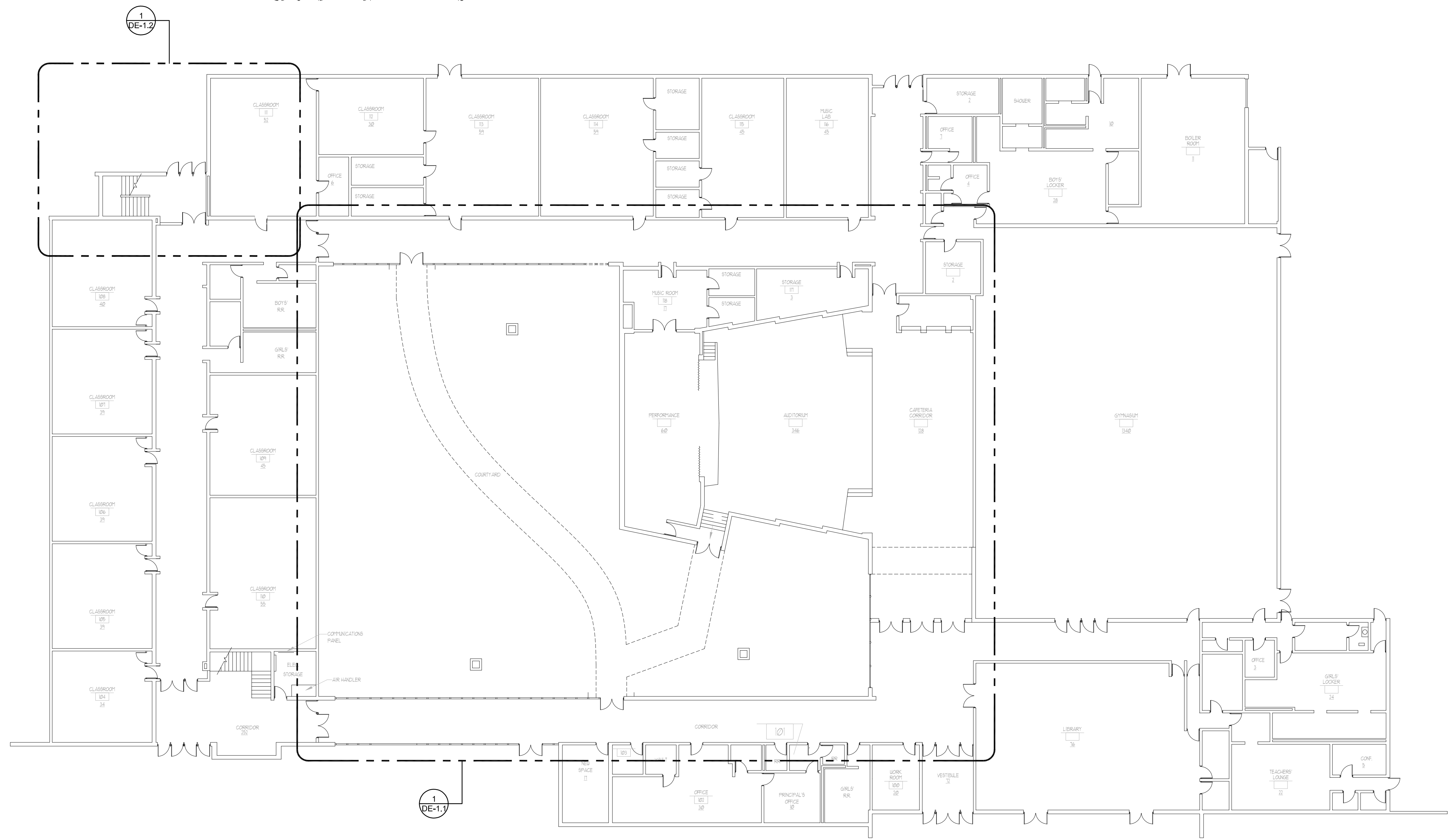
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OF 91 SHEETS



**1 CRAWL SPACE ELECTRICAL PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'



**3 SECOND FLOOR ELECTRICAL PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'



**2 FIRST FLOOR ELECTRICAL PLAN - DEMOLITION**  
 SCALE: 1/16" = 1'-0"  
 0' 6' 12' 24' 48'

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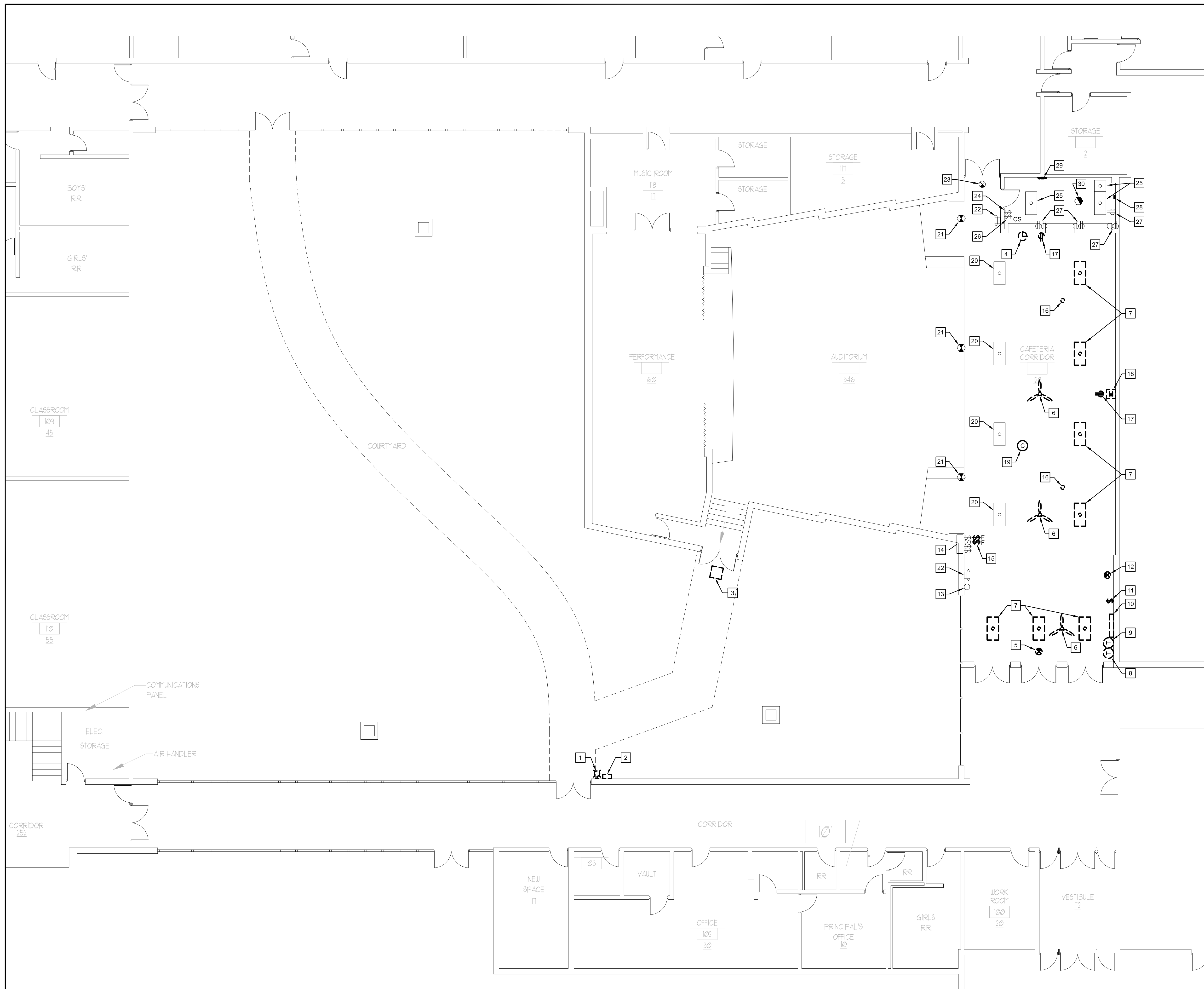
LICENSE EXPIRES 11/30/19  
 DATE SIGNED 02/15/19

**ELECTRICAL FLOOR PLAN - DEMO**

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
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**KEYED NOTES - DEMOLITION**

- 1 DISCONNECT EXISTING WALL MOUNTED LIGHT FIXTURE. REMOVE CONDUCTORS, BOX AND ACCESSIBLE CONDUIT BACK TO FIELD DETERMINED LOCATION OR BACK TO PANEL OF ORIGIN.
- 2 DISCONNECT EXISTING WALL MOUNTED WALLPACK LIGHT FIXTURE. REMOVE CONDUCTORS, BOX AND ACCESSIBLE CONDUIT BACK TO FIELD DETERMINED LOCATION OR BACK TO PANEL OF ORIGIN.
- 3 DISCONNECT EXISTING CANOPY RECESSED LIGHT FIXTURE. REMOVE CONDUCTORS, BOX AND ACCESSIBLE CONDUIT BACK TO FIELD DETERMINED LOCATION OR BACK TO PANEL OF ORIGIN.
- 4 DISCONNECT AND REMOVE EXISTING WALL CLOCK UNIT AND CENTRAL WIRING BACK TO FIELD DETERMINE TERMINATION POINT.
- 5 DISCONNECT AND REMOVE CEILING PENDANT MOUNTED EXIT LIGHT FIXTURE AND REMOVE WIRING AND CONDUIT BACK TO FIELD DETERMINED LOCATION.
- 6 DISCONNECT AND REMOVE EXISTING CEILING FAN. REMOVE WIRING AND RACEWAY SYSTEM BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 7 DISCONNECT AND REMOVE EXISTING RECESSED MOUNTED LIGHT FIXTURES. REMOVE CONDUCTORS AND RACEWAY BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 8 DISCONNECT AND REMOVE EXISTING WALL MOUNTED THERMOSTAT. REMOVE CONTROL WIRING BACK TO UNIT CONTROLLED AND RACEWAY BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 9 DISCONNECT AND REMOVE EXISTING WALL MOUNTED THERMOSTAT. REMOVE CONTROL WIRING BACK TO HEAT PUMP UNIT CONTROLLED AND RACEWAY BACK TO HEAT PUMP UNIT.
- 10 DISCONNECT AND REMOVE EXISTING FLOOR MOUNTED HEAT PUMP BRANCH CIRCUIT. REMOVE POWER WIRING AND RACEWAY BACK TO PANEL OF ORIGIN.
- 11 DISCONNECT AND REMOVE EXISTING WALL SWITCH AND WIRING BACK TO CONTROL PIECE OF EQUIPMENT. REMOVE CONDUCTORS AND ACCESSIBLE RACEWAY BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 12 DISCONNECT AND REMOVE EXISTING WALL MOUNTED EXIT LIGHT FIXTURE AND REMOVE WIRING AND CONDUIT BACK TO FIELD DETERMINED LOCATION.
- 13 EXISTING RECEPTACLE TO REMAIN. MAIN BRANCH CIRCUIT IF DEMOLITION REMOVES THIS BRANCH CIRCUIT.
- 14 EXISTING (4) LIGHT SWITCHES TO REMAIN.
- 15 DISCONNECT AND REMOVE (2) EXISTING FAN CONTROL SWITCHES. REMOVE CONTROL CONDUCTORS AND RACEWAY UP TO CEILING FANS.
- 16 DISCONNECT AND REMOVE EXISTING RECESSED DOWN LIGHT FIXTURE. REMOVE RACEWAY AND CONDUCTORS BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 17 DISCONNECT AND REMOVE EXISTING WALL RECEPTACLE, BOX, SURFACE METAL RACEWAY AND CONDUCTORS BACK TO PANEL OF ORIGIN OR TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 18 DISCONNECT AND REMOVE EXISTING MANUAL FIRE ALARM PULL STATION. REMOVE SURFACE METAL RACEWAY AND CONDUITS AND CONDUCTORS BACK TO FIELD DETERMINED LOCATION AND TERMINATE CONDUCTORS.
- 19 DISCONNECT AND REMOVE EXISTING CEILING MOUNTED SECURITY CAMERA ASSEMBLY AND HOUSING. REMOVE CABLE BACK TO POINT TO ALLOW THIS CAMERA TO BE REINSTALLED WHERE SHOWN ON NEW WORK PLANS. STORE REMOVED CAMERA SAFELY.
- 20 EXISTING RECESSED LIGHT FIXTURES TO REMAIN. MAINTAIN LIGHTING CIRCUIT AND SWITCH CONTROL, IF DEMOLITION IMPACTS THIS BRANCH CIRCUIT.
- 21 EXISTING FIRE ALARM SMOKE DETECTORS TO REMAIN.
- 22 EXISTING WALL MOUNTED EMERGENCY LIGHT FIXTURE TO REMAIN.
- 23 EXISTING EXIT SIGN FIXTURE TO REMAIN.
- 24 EXISTING LIGHT SWITCH TO REMAIN.
- 25 EXISTING LIGHT FIXTURES TO REMAIN.
- 26 EXISTING CALL IN SWITCH AND SPEAKER TO REMAIN.
- 27 EXISTING WALL MOUNTED RECEPTACLE TO REMAIN.
- 28 DISCONNECT AND REMOVE EXISTING WALL MOUNTED J-BOX. CONDUCTORS AND CONDUIT BACK UP TO ABOVE CEILING TO THE NEAREST J-BOX AND TERMINATE.
- 29 DISCONNECT AND REMOVE EXISTING WALL MOUNTED J-BOX. CONDUCTORS AND CONDUIT BACK UP TO ABOVE CEILING TO THE NEAREST J-BOX AND TERMINATE AND REMOVE CONNECTED CONDUITS AND CONDUCTORS ASSOCIATED TO THIS WALL J-BOX.
- 30 EXISTING HEAT DETECTOR TO REMAIN.

**1 PARTIAL FIRST FLOOR ELECTRICAL PLAN - DEMOLITION**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL ELECTRICAL FLOOR PLAN - DEMO**

NO.	DATE	REVISIONS	REMARKS

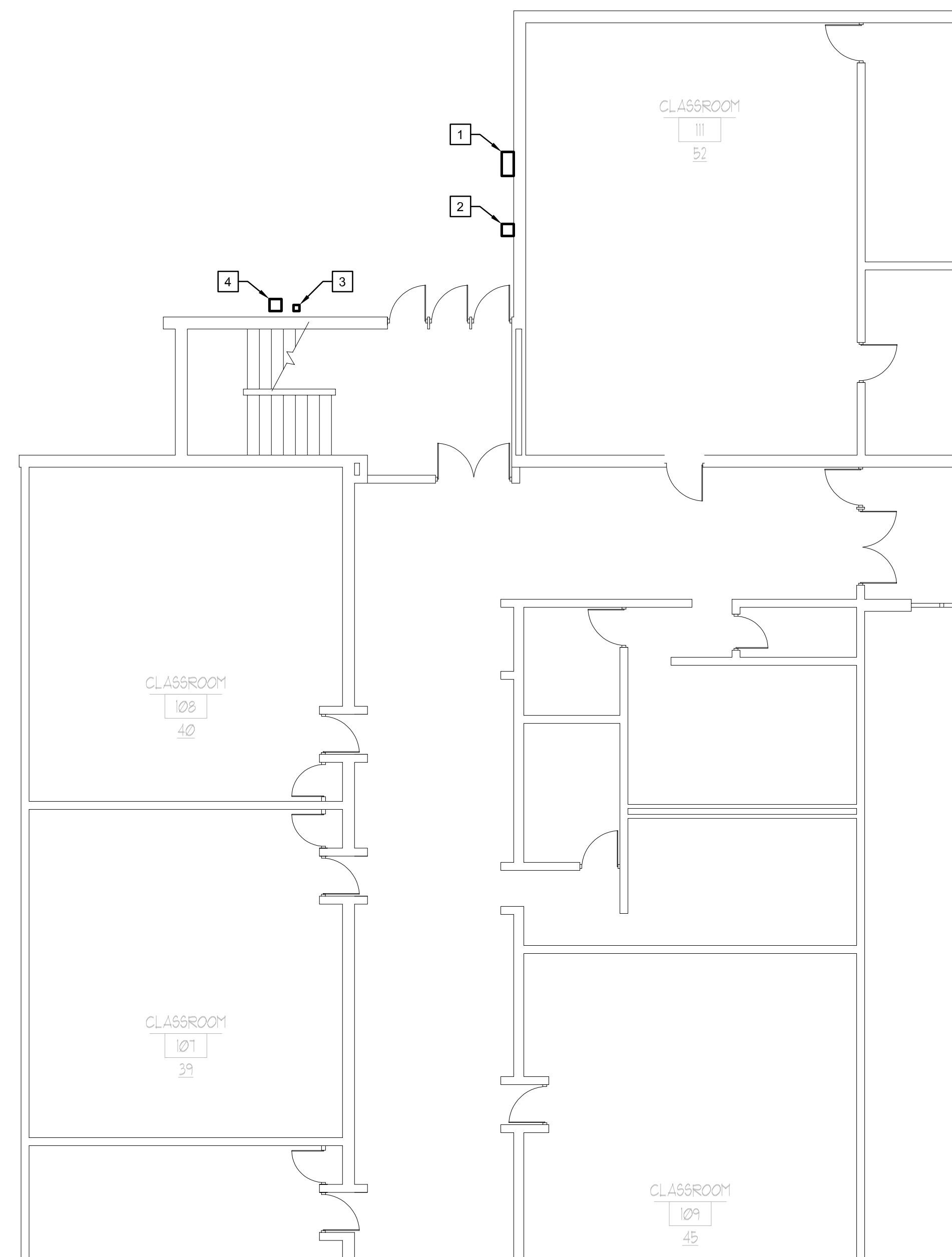
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 OF 91 SHEETS



**KEYED NOTES - DEMOLITION**

- 1 DISCONNECT EXISTING WALL MOUNTED WALLPACK LIGHT FIXTURE. REMOVE CONDUCTORS, BOX AND ACCESSIBLE CONDUIT BACK TO FIELD DETERMINED LOCATION OR BACK TO PANEL OF ORIGIN.
- 2 DISCONNECT AND REMOVE A WALL MOUNTED WIRE INSULATOR.
- 3 DISCONNECT AND REMOVE EXISTING CABLE TV SERVICE CABLING AND CONDUIT SYSTEM BACK TO POINT OF ORIGIN. COORDINATE WITH CABLE COMPANY ON THIS REMOVAL.
- 4 DISCONNECT AND REMOVE EXISTING UTILITY PEDISTAL AND ASSOCIATED CABLING BACK TO POWER POLE.



1 PARTIAL FIRST FLOOR ELECTRICAL PLAN - DEMOLITION  
 SCALE: 1/8" = 1'-0"



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**PARTIAL ELECTRICAL FLOOR PLAN - DEMO**

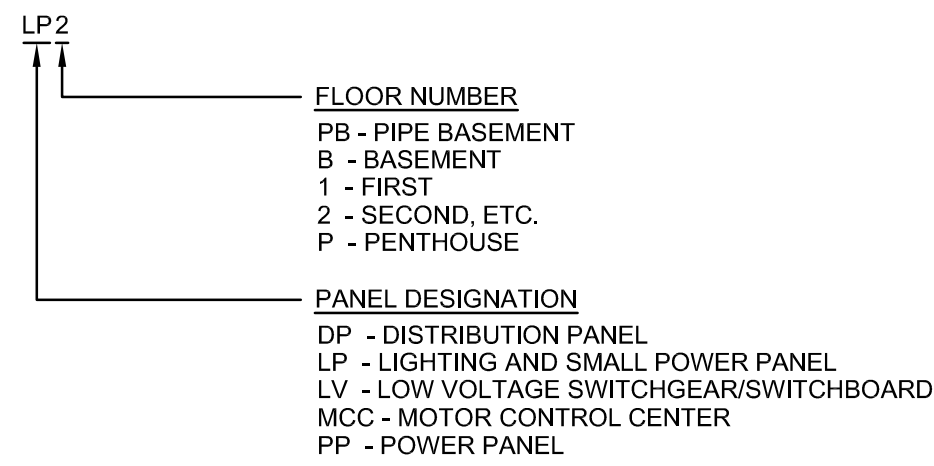
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ELECTRICAL SYMBOLS AND ABBREVIATIONS

BRANCH PANEL NUMBERING SCHEME



ABBREVIATIONS FOR ELECTRICAL EQUIPMENT MOUNTING

ELECTRICAL EQUIPMENT SHALL BE MOUNTED AT HEIGHTS INDICATED IN SPECIFICATIONS, SYMBOL SCHEDULES, HEIGHTS MARKED AT OUTLETS, AND AS FOLLOWS: HEIGHTS ARE TO CENTERLINES OF DEVICES.

WIRING DEVICE SUBSCRIPTS

- AC ABOVE COUNTER OUTLET; BOTTOM OF OUTLET BOX TO OCCUR 6" ABOVE COUNTER OR 1" ABOVE HIGHEST ELEMENT OF COUNTER (I.E. BACKSPLASH, OR COUNTER TOP IF NO BACKSPLASH).
- CR CASEWORK RECESSED OUTLET. MOUNT BOX IN CASEWORK VERTICAL SURFACE. BOTTOM OF BOX 1" ABOVE WORKING SURFACE. PROVIDE JUNCTION BOX AND INTERCONNECTION BOXES WITH FLEXIBLE CONDUIT.
- E DEVICE WITH EMERGENCY CIRCUIT
- EQ EQUIPMENT OUTLET. FINAL TERMINATION METHOD AND EXACT LOCATION TO BE DETERMINED FROM EQUIPMENT MANUFACTURER'S SHOP DRAWINGS.
- (E) EXISTING DEVICE TO REMAIN
- S SURFACE MOUNTED DEVICE

MISCELLANEOUS ABBREVIATIONS

- |  |   |
|--|---|
| AFF ABOVE FINISHED FLOOR               | PB PULL BOX                             |
| C CONDUIT                              | PC PLUMBING CONTRACTOR                  |
| CB CIRCUIT BREAKER                     | PWCP PREWIRED CONTROL PANEL             |
| CCTV CLOSED CIRCUIT TELEVISION         | REF REFRIGERATOR                        |
| CTTS CLOSED TRANSITION TRANSFER SWITCH | RT RAINLIGHT (NEMA 3R)                  |
| DT DUSTTIGHT (NEMA 5)                  | SC SPRINKLER CONTRACTOR                 |
| EC ELECTRICAL CONTRACTOR               | SF SYSTEM FURNITURE                     |
| EMGY EMERGENCY                         | SWBD SWITCHBOARD                        |
| EO ELECTRICALLY OPERATED               | SWGR SWITCHGEAR                         |
| EWC ELECTRIC WATER COOLER              | TBD TO BE DETERMINED                    |
| F.B.O. FURNISHED BY OTHERS             | TEL TELEPHONE                           |
| FC FLEXIBLE CONDUIT                    | TGB TELECOMM, GROUND BAR                |
| FPC FIRE PROTECTION CONTRACTOR         | TS TIMESWITCH                           |
| FS FUSIBLE SWITCH                      | TV TELEVISION SYSTEM                    |
| G GROUND CONDUCTOR                     | UCR UNDERCOUNTER                        |
| GB GROUND BAR                          | REFRIGERATOR                            |
| GFI GROUND FAULT INTERRUPTING          | UNG UNDERGROUND                         |
| GRC GALVANIZED RIGID STEEL             | VFD VARIABLE FREQUENCY DRIVE            |
| MC MECHANICAL CONTRACTOR               | VT VAPORTIGHT (NEMA 12)                 |
| MCB MAIN CIRCUIT BREAKER               | WP WEATHERPROOF                         |
| MCC MOTOR CONTROL CENTER               | WT WATERTIGHT STAINLESS STEEL (NEMA 4X) |
| MH MOUNTING HEIGHT                     | XFMR TRANSFORMER                        |
| MLO MAIN LUG ONLY                      |   |
| MTS MANUAL TRANSFER SWITCH             |   |
| NC NORMALLY CLOSED                     |   |
| NF NON-FUSED                           |   |
| NO NORMALLY OPEN                       |   |

WIRING DEVICES

- \$ 2 \$ 3 \$ 4 SWITCHES - SINGLE POLE, 2 POLE, 3 WAY, 4 WAY LOWER CASE LETTER INDICATES SWITCH LEG MH = 48" A.F.F. TO TOP OF DEVICE U.N.O. (TYPICAL ALL WALL MOUNTED SWITCHES)
- \$ WS=# WALL LIGHT CONTROL STATION
- \$ K \$ 3 KEY SWITCHES - SINGLE POLE, 3 WAY, ETC.
- ⊕ SINGLE RECEPTACLE - 120V GROUNDING TYPE MH = 15" A.F.F. TO BOTTOM OF DEVICE U.N.O. (TYPICAL ALL WALL MOUNTED RECEPTACLES)
- ⊕ USB SINGLE RECEPTACLE W/ TWO USB PORTS
- ⊕ GFI DUPLEX RECEP. - 120V GROUNDING TYPE
- ⊕ TVSS TRANSIENT SURGE SUPPRESSION RECEPTACLE
- ⊕ DOUBLE DUPLEX (QUAD) RECEP. - 120V GROUND, TYPE
- ⊕ SPECIAL RECEPTACLE - SEE NOTE ON DRAWING FOR VOLTAGE

POWER EQUIPMENT

- ⊕ MOTOR - SEE EQUIPMENT DATA SCHEDULE
- ⊕ DISCONNECT SWITCH OR INDIVIDUALLY MOUNTED CIRCUIT BREAKER
- ⊕ STARTERS (MANUAL, MAGNETIC & COMB. STARTER-DISC.)
- ⊕ PANELBOARD (SEE PANEL NUMBERING SCHEME)

GENERAL SYMBOLS

- # KEYED NOTE

WIRING DEVICES - continued

- FB1 FLOORBOX FB-1. POWER: (2) 5-20R DUPLEX RECEPTACLES COMMUNICATIONS: (2) DATA OUTLETS (RJ-45)
- FB2 FLOORBOX FB-2. POWER: (4) 5-20R DUPLEX RECEPTACLES COMMUNICATIONS: (4) DATA OUTLETS (RJ-45)
- FLOOR BOX - ROUGH IN ONLY
- RELAY
- CLOCK HANGER OUTLET, WITH SINGLE RECEPTACLE M - FOR FUTURE MANUALLY CORRECTED INDICATOR CLOCK C - COMPLETE WITH MANUALLY CORRECTED INDICATOR CLOCK
- PHOTOCELL
- TIMECLOCK

LIGHTING FIXTURES

- A DOWNLIGHT - FIRST LETTER DENOTES FIXTURE TYPE NUMBER DENOTES CIRCUIT NUMBER SMALL LETTER DENOTES SWITCH LEG (TYPICAL FOR ALL LIGHT FIXTURES)
- A 1a DOWNLIGHT WALL WASHER
- A 1a 2' x 2' LIGHT
- A 1a 2' x 4' LIGHT
- EXIT LIGHT (CEILING MOUNTED) PROVIDE ARROWS WHERE SHOWN
- BATTERY OPERATED EMERGENCY LIGHT (CIRCLES DENOTE QUANTITY OF LAMPS)
- LIGHTING FIXTURE - POLE MOUNTED (SHADED CIRCLE DENOTES POLE) (OPEN CIRCLE DENOTES QUANTITY OF LUMINAIRES)
- LIGHTING FIXTURES ON EMERGENCY SERVICE
- STRIP LIGHTING FIXTURE
- STRIP LIGHTING FIXTURE ON EMERGENCY SERVICE
- CEILING MOUNTED JUNCTION BOX (4"x4"x1-1/2" MIN.)
- WALL MOUNTED JUNCTION BOX (4"x4"x1-1/2" MIN.)
- CONDUIT UP; CONDUIT DOWN; CONDUIT UP AND DOWN
- MODULAR WIRING INTERCONNECTING CABLE, FLEXIBLE METAL CONDUIT OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
- CONDUIT AND WIRE CONTINUED
- CONDUIT WITH INSULATED BUSHING OR CAP AS APPROPRIATE.
- CONDUIT CONCEALED ABOVE CEILING OR IN WALL - CURVED LINE
- CONDUIT CONCEALED IN OR BELOW FLOOR OR IN WALL CURVED LINE
- CONDUIT CONCEALED IN CASEWORK UNIT - CURVED LINE
- CONDUIT EXPOSED - STRAIGHTLINE
- HOME RUN CONDUIT - SHORT STROKES INDICATE PHASE OR SWITCHED WIRES, LONG STROKES INDICATE NEUTRAL, LONG STROKES WITH DOT INDICATE GROUND CONDUCTORS, CURVED STROKES INDICATE ISOLATED GROUND. 2N INDICATES 200% NEUTRAL
- GROUND
- GROUND ROD

INTERCOM SYSTEM

- ⊕ SPEAKER (CEILING MOUNTED)
- ⊕ CS CALL SWITCH

SECURITY DEVICES

- ⊕ SINGLE CAMERA
- ⊕ TWO CAMERAS
- ⊕ THREE CAMERAS

FIRE ALARM SYSTEM DEVICES

- ⊕ FIRE ALARM - CHIME & STROBE - MH = 7'-6" A.F.F. TO BOTTOM OF DEVICE
- M MANUAL PULLSTATION - MH = 48" A.F.F. TO TOP OF DEVICE U.N.O.
- ⊕ FIRE ALARM BELL - MH = 7'-6" A.F.F. TO BOTTOM OF DEVICE
- ⊕ FIRE ALARM SPEAKER (CEILING MOUNTED)
- V FIRE ALARM VISUAL NOTIFICATION APPLIANCE MH = 7'-6" A.F.F. TO BOTTOM OF DEVICE
- V FIRE ALARM COMBINED VISUAL/AUDIBLE NOTIFICATION APPLIANCE MH = 7'-6" A.F.F. TO BOTTOM OF DEVICE
- A S FIRE ALARM VISUAL/ SPEAKER NOTIFICATION MH = 7'-6" A.F.F. TO BOTTOM OF DEVICE
- HEAT DETECTOR (CEILING MOUNTED), RATE-OF-RISE
- SMOKE DETECTOR ON CEILING OR AT DAMPER
- DUCT-TYPE SMOKE DETECTOR S = SUPPLY, R = RETURN
- CARBON MONOXIDE DETECTOR
- FIRE ALARM ADDRESSABLE CONTROL MODULE
- FIRE ALARM ADDRESSABLE MONITOR MODULE
- 24V ELECTRIC DOOR HOLDER; DIV 16 PROVIDES LOW VOLTAGE TRANSFORMER
- TAMPER/SUPERVISORY SWITCH M = WITH ADDRESSABLE MONITOR MODULE
- WATER FLOW ALARM SWITCH M = WITH ADDRESSABLE MONITOR MODULE
- FIRE ALARM CONTROL PANEL
- FIRE ALARM ANNUNCIATOR PANEL

ONE-LINE DIAGRAM

- DRAWOUT POWER CIRCUIT BREAKER (FRAME/TRIP)
- CIRCUIT BREAKER (FRAME/TRIP)
- METAL-CLAD DRAWOUT CIRCUIT BREAKER (FRAME/TRIP)
- SWITCH AND FUSE
- KIRK-KEY INTERLOCK
- MOTOR STARTER OR CONTACTOR
- METER
- CURRENT TRANSFORMER (CT)
- POTENTIAL TRANSFORMER (PT)
- GENERATOR
- GROUND BUS
- NEUTRAL BUS
- TRANSFORMER
- SURGE ARRESTOR
- TRANSFER SWITCH

TELECOMMUNICATION DEVICES

- W A PROVIDE 4" SQUARE BOX WITH 1-GANG COVER PLATE MOUNTED AT 15" A.F.F TO BOTTOM OF DEVICE. UNLESS NOTED OTHERWISE, PROVIDE 3/4" CONDUIT ROUTED AS SHOWN OR INTO AN ACCESSIBLE CEILING SPACE. PROVIDE BUSHING. 'A' INDICATES CABLING REQUIREMENTS (SEE BELOW), NO CABLING REQUIREMENT INDICATES FUTURE LOCATION. PROVIDE BLANK FACEPLATE. "W" INDICATES 48" MOUNTING HEIGHT TO TOP OF DEVICE.
- W A PROVIDE 4" SQUARE BOX WITH 2-GANG COVER PLATE MOUNTED AT 15" A.F.F. TO BOTTOM OF DEVICE. UNLESS NOTED OTHERWISE, PROVIDE 3/4" CONDUIT ROUTED AS SHOWN OR INTO AN ACCESSIBLE CEILING SPACE. PROVIDE BUSHING. 'A' INDICATES CABLING REQUIREMENTS (SEE BELOW), NO CABLING REQUIREMENT INDICATES FUTURE LOCATION. PROVIDE BLANK FACEPLATE. "W" INDICATES 48" MOUNTING HEIGHT TO TOP OF DEVICE.
- CABLING REQUIREMENTS:  
"A" - (1) TELEPHONE CABLE  
"B" - (1) DATA CABLE  
"C" - (1) DATA CABLE AND (1) TELEPHONE CABLE  
"D" - (2) DATA CABLES AND (1) TELEPHONE CABLE  
"E" - (2) DATA CABLES AND (2) TELEPHONE CABLES  
"F" - (2) DATA CABLES  
"G" - (4) DATA CABLES  
"H" - (2) DATA CABLES AND (3) TELEPHONE CABLES  
"J" - (4) DATA CABLES AND (1) TELEPHONE CABLE
- COMMUNICATION POKE-THRU DEVICE. PROVIDE ADAPTER PLATE FOR FLEXIBLE CONDUIT CONNECTION. "B" INDICATES CABLING REQUIREMENTS (SEE ABOVE). PROVIDE APPLICABLE NUMBER OF CONNECTORS PER CABLING REQUIREMENTS. COORDINATE WITH MANUFACTURER.
- PLYWOOD BACKBOARD FOR TELEPHONE EQUIPMENT (NORMALLY 4' X 8')

GENERAL NOTES

- EACH CONTRACTOR SHALL REVIEW ALL BID DOCUMENTS FOR INFORMATION PERTAINING TO EACH TRADE FOR FULL KNOWLEDGE OF THE SCOPE OF WORK TO BETTER COORDINATE AND UNDERSTAND THE COMPLETE SCOPE OF THE PROJECT.
- COORDINATION BETWEEN EACH TRADE IS THE RESPONSIBILITY OF ALL CONTRACTORS AND TRADES ON THE PROJECT. SPACE ALLOCATIONS AND INSTALLATION OF ALL WORK SHALL BE CLOSELY COORDINATED. FAILURE TO DO SO WILL NOT CREATE ADDITIONAL COST TO THE OWNER.
- ALL CONTRACTORS ARE REQUIRED TO ASK THE A/E QUESTIONS WHEN THERE IS ANY UNKNOWN INFORMATION OR CLEAR DIRECTION OF THE INTENT OF THE SCOPE OF WORK. FAILURE TO ASK BEFORE WORK IS COMPLETED AND WHAT IS INSTALLED CREATES A PROBLEM WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO CORRECT.
- WHERE THERE IS A DISCREPANCY ON THE DRAWINGS THE CONTRACTOR SHALL BASE THEIR BID ON THE HIGHER COST CALLED FOR SCOPE OF WORK OR PIECE OF EQUIPMENT OR MATERIAL OR QUANTITY OR DIMENSION(S).
- EACH CONTRACTOR SHALL ASK QUESTIONS WHEN THERE ARE DISCREPANCIES ON THE DRAWINGS, BEFORE INITIATING INSTALLATION OR PREPARATION OF WORK CALLED FOR.
- CONTRACTORS SHALL HAVE READILY AVAILBLE ON SITE A COMPLETE SET OF BID SET DRAWINGS AND SPECIFICATIONS FOR ALL TRADES TO SEE AND USE.
- CONTRACTORS SHALL MAINTAIN ACCURATE AS BUILT MARKUPS AND MAKE AVAILABLE FOR PERIODIC INSPECTIONS BY THE A/E.
- IF THERE IS A DUPLICATION OF EQUIPMENT DESIGNATIONS, CONTRACTOR SHALL PROVIDE THE NUMBER OF UNITS SHOWN ON DRAWINGS AND CONTACT THE A/E FOR CLARIFICATION OF CAPACITY OR SIZING REQUIRED.

GENERAL ELECTRICAL NOTES

- PLANS ARE DIAGRAMMATIC IN NATURE, SINCE THEY REFLECT AVAILABLE INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DRAWINGS AND INFORMATION RECEIVED FROM THE OWNER. EXACT LOCATION OF EXISTING EQUIPMENT AND MATERIAL MAY DEVIATE FROM LOCATION(S) SHOWN ON DOCUMENTS. CONTRACTOR SHALL BE PREPARED TO MAKE ALTERATIONS OF SERVICES TO FIT ACTUAL JOB CONDITIONS.
- CONDUIT ROUTING SHALL BE CONSIDERED SCHEMATIC AND DO NOT INDICATE ALL CHANGES IN DIRECTION OR ELEVATION. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED TO COMPLETE THE INSTALLATION OF CONDUIT OR RACEWAY SYSTEMS. CLEARANCES FOR INSTALLATION OF CONDUITS, RACEWAYS OR CABLE TRAYS AND OTHER RELATED MATERIAL AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE AND OTHER TRADES INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS AND SIZES OF SITE UTILITIES BEFORE PROCEEDING WITH WORK.
- ALL CONDUIT SIZES SHOWN ARE MINIMUMS.
- ALL EQUIPMENT SHALL BE POWERED, CONTROLLED AND INSTALLED IN ACCORDANCE THE DESIGN DRAWINGS, INDUSTRIAL RECOGNIZED PRACTICES AND MEET ASSOCIATED BUILDING CODES SUCH AS NFPA, AND NEC.
- ALL WALL, FLOOR AND CEILING OPENINGS SHALL BE PATCHED AND FINISHES APPLIED TO MATCH EXISTING CONSTRUCTION BY THIS CONTRACTOR, OR SHALL COORDINATE WITH THE GC AND HAVE THE GC COMPLETE THE PATCH AND FINISH REQUIRED.
- CONTRACTOR SHALL PROTECT EXISTING FINISHES OF ALL SURFACES IN THE BUILDING AND SHALL MINIMIZE DAMAGE TO EXTERIOR SITE, PLANTINGS AND OR SITE IMPROVEMENTS.
- CONTRACTOR SHALL PROVIDE DISCONNECT MEANS AT EACH PIECE OF EQUIPMENT WITH POWER SERVICES.
- CONTRACTOR SHALL VERIFY ALL BREAKERS ARE IN THE ON POSITION BEFORE LEAVING THE JOB SITE.
- CONTRACTOR SHALL PROVIDE AT EACH BRANCH PANELBOARD A MINIMUM OF 3 SPARE 3/4" CONDUITS STUBBED UP TO AN ACCESSIBLE LOCATION FOR FUTURE CIRCUITS
- LIGHTING CONTROL SYSTEMS SHALL BE PROGRAMMED WITH INFORMATION FROM THE OWNER ON FINAL SET UP REQUIREMENTS.
- ALL CONDUITS SHALL BE INSTALLED CONCEALED ABOVE CEILINGS, INSIDE WALL CAVITIES AND BELOW FLOOR WHERE SHOWN OR NOTED.
- FIRE RATED CONSTRUCTED WALLS, FLOORS AND CEILINGS SHALL HAVE SPECIFIED SLEEVE AND FIRE CAULKING PROVIDED AT EACH PENETRATION. 3M FIRE BARRIER 2000, SPECSEAL SSS OR HILTI CFS-S-SIL-GG SILICONE FIRE SEALANTS SHALL BE USED.
- ALL WALL, FLOOR AND CEILING CONDUIT PENETRATIONS SHALL HAVE A SLEEVE AND SHALL BE CAULKED TO CONTROL SOUND TRANSMISSION. SEE SPECIFICATIONS FOR MATERIAL TYPES OF SLEEVES.
- CONDUITS RUN UP THRU ROOF SHALL BE INSTALLED WITH A ROOF PORTAL AND WEATHER SEALED.
- RETURN AIR PLENUMS ABOVE CEILING SHALL HAVE EXPOSED OR OPEN CABLE RUNS INSTALLED WITH 25/50 SMOKE/FLAME SPREAD RATING.
- PROVIDE ALL FINAL EQUIPMENT UTILITY CONNECTIONS. UTILITY CONNECTIONS INCLUDE CONTROLS AND ELECTRICAL SERVICES.
- UNLESS OTHERWISE INDICATED ALL EXCAVATION, BEDDING, BACKFILL, COMPACTION AND LEVELING BELOW SLAB SHALL BE THIS CONTRACTORS RESPONSIBILITY.
- EXPOSED SYSTEM CONDUIT IN FINISHED ROOMS OR SPACES SHALL BE PAINTED TO MATCH ROOM FINISHES OF A COLOR SELECTED BY THE ARCHITECT AND AS SPECIFIED BY THE ARCHITECT.
- RECESSED 2 X 4 LIGHT FIXTURES SHALL HAVE #9 WIRE SUPPORTS SECURED TO TWO (2) OPPOSING CORNERS OF FIXTURE AND SECURED TO BUILDING STRUCTURE. DOWN LIGHTS SHALL HAVE ONE #9 SUPPORT WIRE CONNECTED TO HOUSING AND SECURED TO BUILDING STRUCTURE. SURFACE MOUNTED FIXTURES SHALL BE SECURED TO CEILING GRID SYSTEM AND THEN TWO #9 SUPPORT WIRE CONNECTED TO GRID ANCHOR HARDWARE AND CONNECTED TO BUILDING STRUCTURE.
- PROVIDE SPARE PARTS, KEYS AND MATERIAL SPECIFIED AND TURN OVER TO OWNER WITH A COPY OF TRANSMITTAL SENT TO THE A/E.
- OWNER SHALL HAVE FIRST RIGHTS TO MATERIAL OR EQUIPMENT SCHEDULED FOR REMOVAL. OWNER SHALL RECEIVE ITEM FROM CONTRACTOR FOR REMOVAL FROM SITE. REMAINING REMOVED EQUIPMENT AND MATERIAL TO BE REMOVED FROM SITE BY THIS CONTRACTOR.
- DATA RUNS SHALL BE IN MINIMUM 3/4" CONDUIT WITH IN WALLS AND CONTRACTOR SHALL PROVIDE J-HOOKS AND OR CABLE TRAY, AS SHOWN ON DRAWINGS, TO COLLECT DATA CABLING AND ROUT TO MDF OR IDF ROOM(S) AS SHOWN OR CALLED FOR ON DRAWINGS.
- PROVIDE LABELING OF RECEPTACLE FACE PLATES WITH PANEL AND CIRCUIT DESIGNATION(S).
- PROVIDE FACE PLATE LABELS FOR DATA OULETS, USE NUMBERING SYSTEM AS DIRECTED BY THE OWNER FOR EACH JACK. LABEL DATA CABLING TO MATCH INFORMATION SYSTEM AS DIRECTED BY OWNER.
- ALL RECEPTACLES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER INFORMATION. PRINTED LABELS ARE ACCEPTABLE. PROVIDE A SAMPLE FOR REVIEW TO THE A/E.

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**EDISON ELEMENTARY SCHOOL 2019 ADDITION**  
at 521 S. Pearl Street - Macomb, Illinois 61455  
for MACOMB CUSD #185  
MACOMB District Office - 323 W. Washington Street  
Macomb, Illinois 61455

LICENSED PROFESSIONAL ARCHITECT  
**MICHAEL MITCHELL**  
0621-063142  
STATE OF ILLINOIS

LICENSE EXPIRES 11/30/19  
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**ELECTRICAL SYMBOLS & ABBREVIATIONS**

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET E-0.0  
OF 91 SHEETS

**KEYED NOTES - NEW WORK**

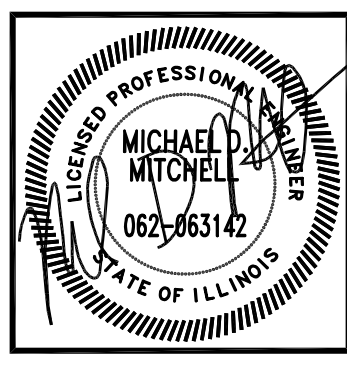
- 1 PROVIDE NEW CEILING MOUNTED SECURITY CAMERA, CAT 6 CABLING, MOUNTING HARDWARE AND TESTING FOR EACH NEW 27 INTERIOR CAMERAS AND 5 EXTERIOR CAMERAS. SEE EQUIPMENT LIST FOR MORE INFORMATION. RUN CAT6 CABLING FROM EACH NEW AND EXISTING CAMERAS LOCATIONS TO EXISTING RACK SHOWN BY KEYED NOTE #2.
- 2 EXISTING SERVER RACK IS LOCATED IN THIS ROOM, PROVIDE NEW HEADEND SECURITY CAMERA EQUIPMENT IN THE EXISTING RACK. COMPLETE TERMINATIONS AND COMPLETE A FULL TEST OF NEW SECURITY SYSTEM. PROVIDE INSTRUCTIONS AND TRAINING TO OWNERS STAFF ON THE NEW SYSTEM.

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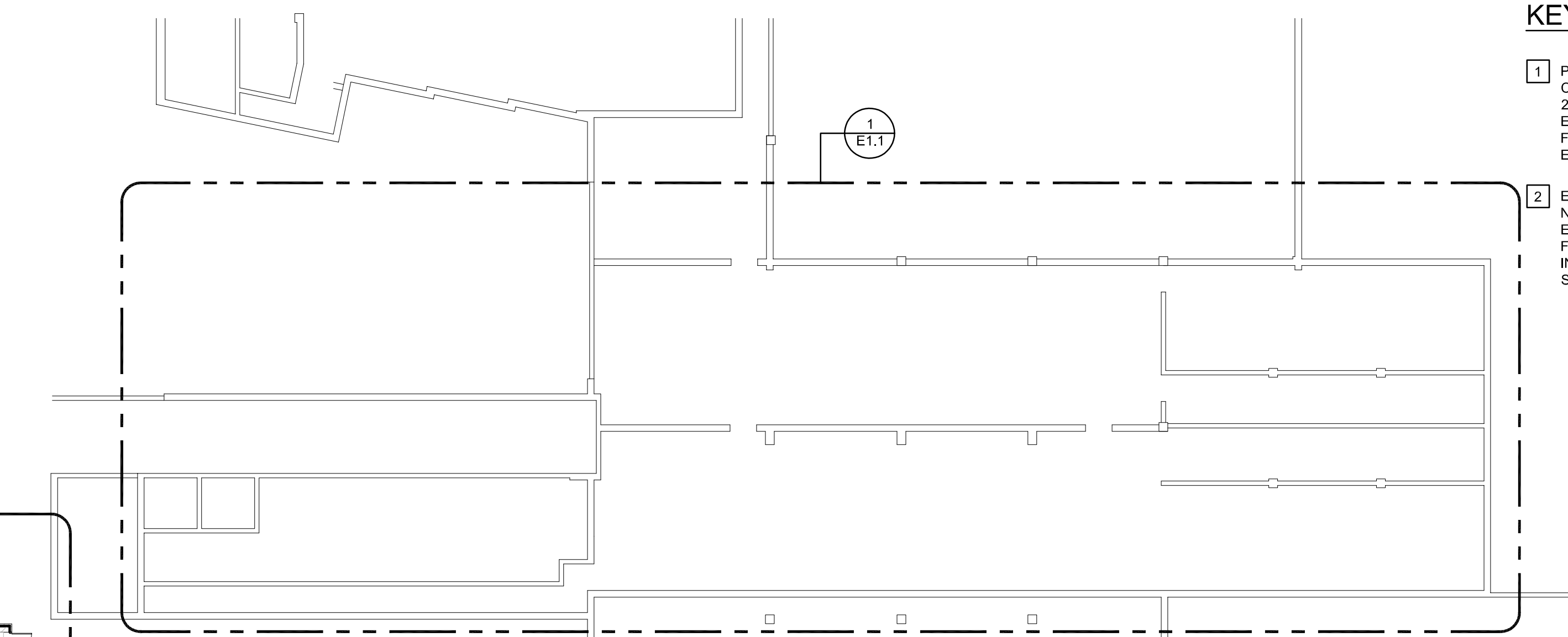
LICENSE EXPIRES 11/30/19  
 DATE SIGNED 02/15/19

**ELECTRICAL FLOOR PLAN - NEW WORK**

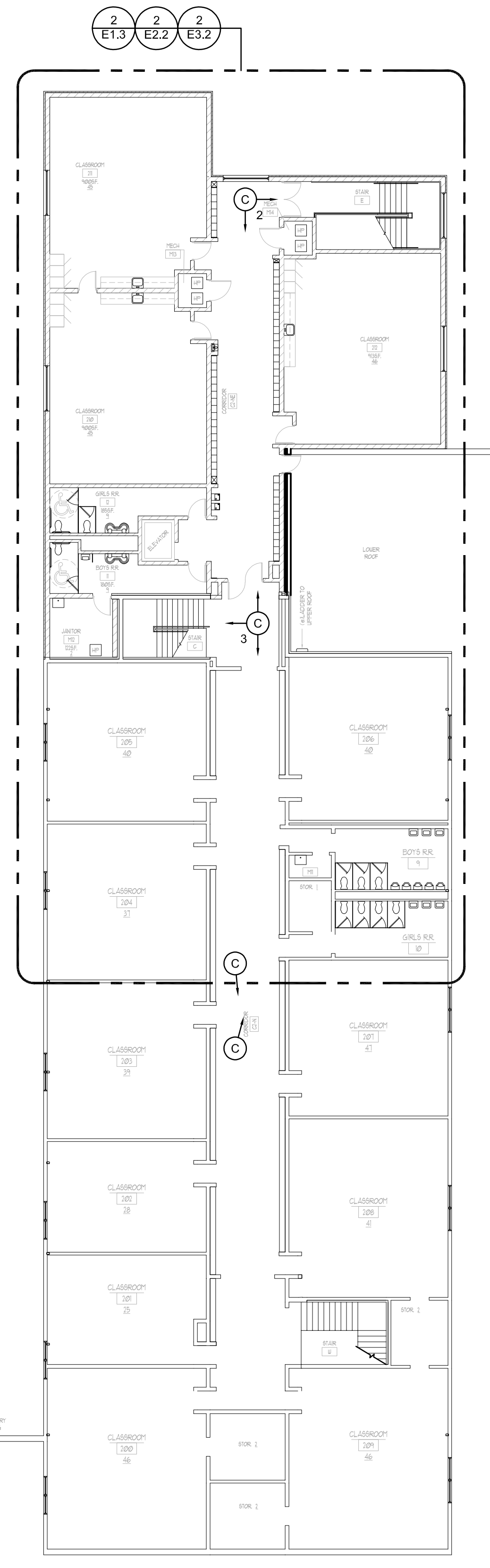
NO.	DATE	REMARKS

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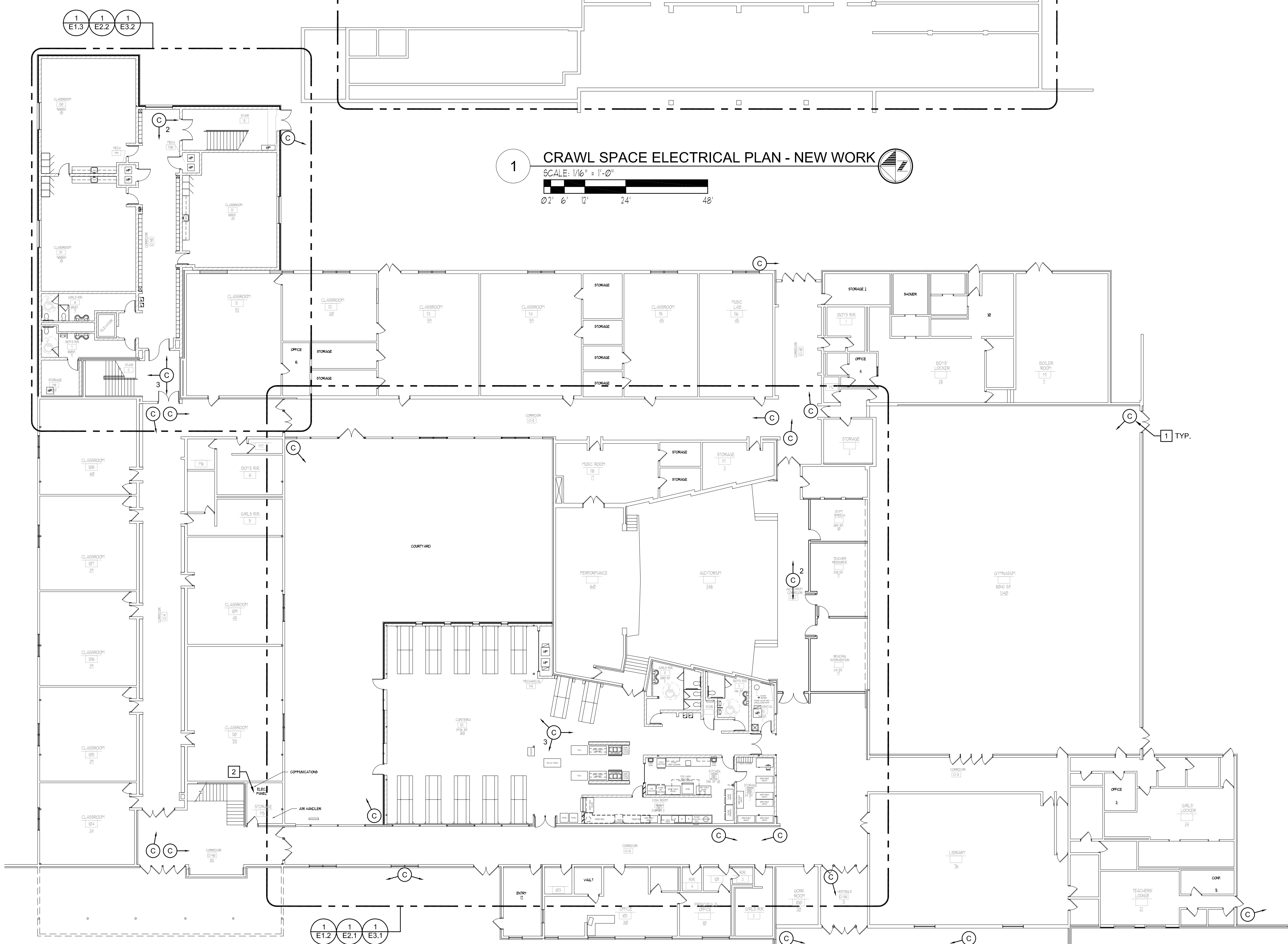
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET E-1.0  
 OF 91 SHEETS



**1 CRAWL SPACE ELECTRICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



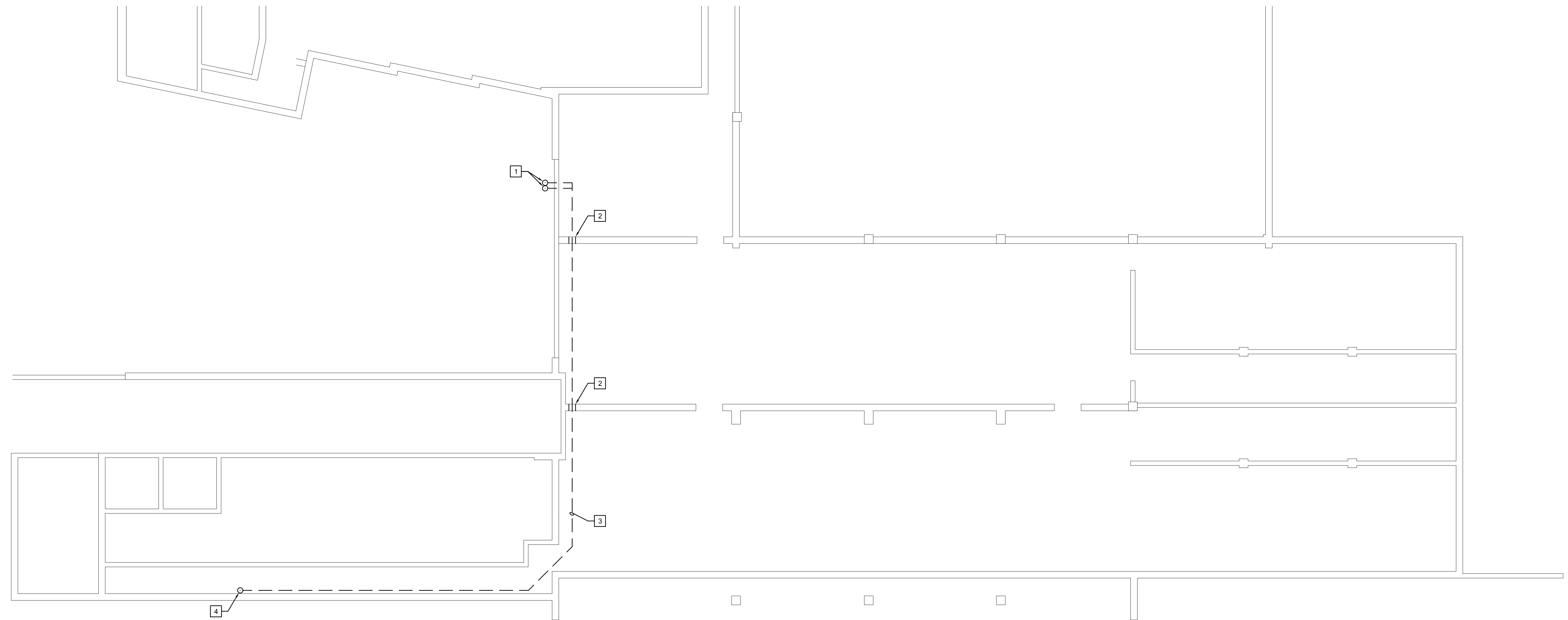
**3 SECOND FLOOR ELECTRICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'



**2 FIRST FLOOR ELECTRICAL PLAN - NEW WORK**  
 SCALE: 1/16" = 1'-0"  
 0' 2' 6' 12' 24' 48'

**KEYED NOTES - NEW WORK**

- 1 PROVIDE (2) 4" PVC CONDUITS DOWN THRU NEW MECHANICAL ROOM TO CRAWLSPACE. SEE SHEET E-2.1 FOR CONTINUATION. PROVIDE LONG SWEEP ELBOW FITTINGS.
- 2 PROVIDE NEW WALL OPENING FOR RUNNING CABLE TRAY THRU EXISTING FOUNDATION WALL.
- 3 PROVIDE NEW 12" X 4" BASKET CABLE TRAY FOR COMMUNICATION CABLING FROM KITCHEN AND CLASSROOM ADDITIONS. SEE SHEETS E-2.1 AND E-2.2 FOR CABLE ROUTINGS.
- 4 PROVIDE (2) 4" CONDUIT SLEEVES UP THRU FLOOR TO RUN COMMUNICATION CABLES UP INTO MAIN OFFICE AND TO EXISTING INTERCOM CONSOLE. SEE SHEET E-2.1 FOR CONTINUATION.



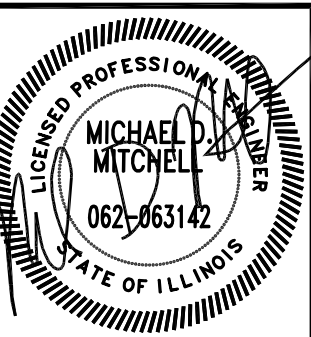
**1 CRAWL SPACE ELECTRICAL PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"

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**ELECTRICAL CRAWLSPACE PLAN - NEW WORK**

NO.	DATE	REMARKS

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PROJECT NO. 22750211  
 ISSUE DATE 02/15/2019  
 SHEET **E-1.1**  
 OF 91 SHEETS





- KEYED NOTES - NEW WORK**
- 1 PROVIDE NEW PHOTO CELL SENSOR AND MOUNT AT 14' A.F.G. WIRE WALL LIGHT FIXTURES THRU THIS SENSOR FOR ACTIVATION.
  - 2 MOUNT EACH NEW WALL MOUNTED LIGHT FIXTURE AT 12' A.F.G. TYPICAL FOR (3) W1 LIGHT FIXTURES ON NEW ONE STORY KITCHEN CAFETERIA ADDITION.

**1 PARTIAL FIRST FLOOR LIGHTING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL FIRST FLOOR LIGHTING PLAN - NEW WORK**

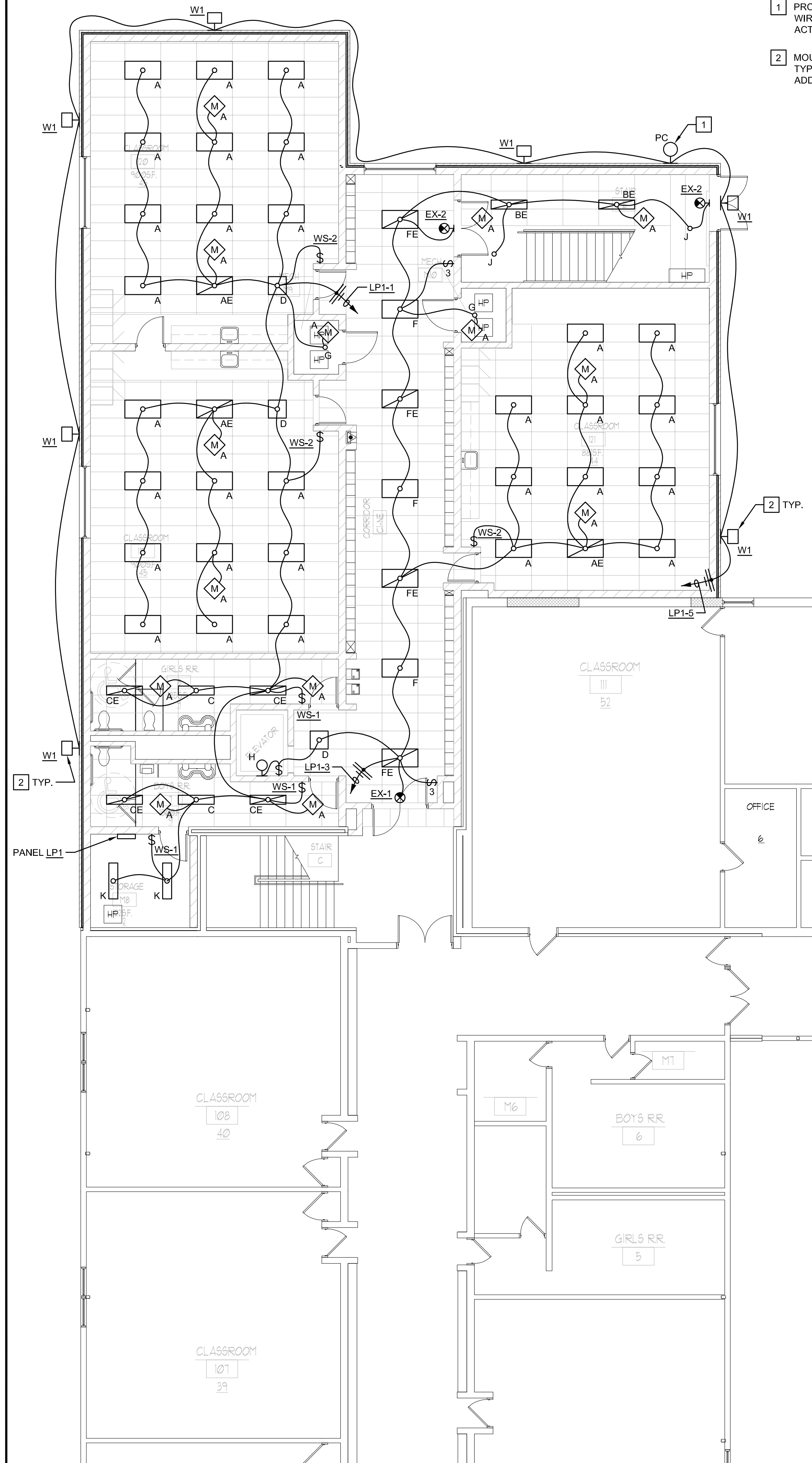
NO.	DATE	REVISIONS	REMARKS

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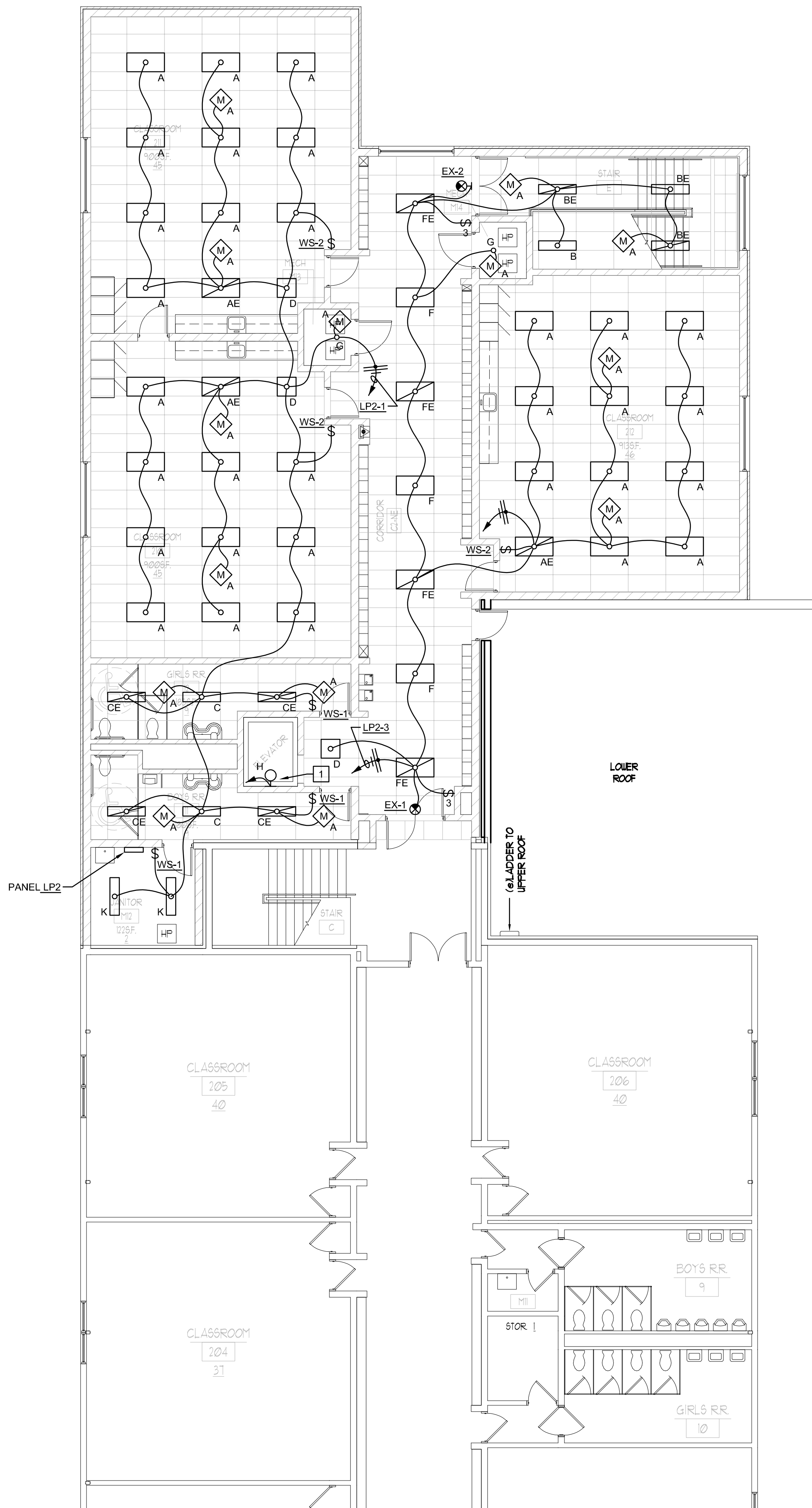
PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **E-1.2**  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/E1.3)

- 1 PROVIDE NEW PHOTO CELL SENSOR AND MOUNT AT 14" A.F.G. WIRE WALL LIGHT FIXTURES THRU THIS SENSOR FOR ACTIVATION.
- 2 MOUNT EACH NEW WALL MOUNTED LIGHT FIXTURE AT 12" A.F.G. TYPICAL FOR 7 W1 LIGHT FIXTURES ON NEW TWO STORY ADDITION.



1 PARTIAL FIRST FLOOR LIGHTING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'



2 PARTIAL SECOND FLOOR LIGHTING PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

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PARTIAL FIRST & SECOND FLOOR LIGHTING PLAN - NEW WORK

NO.	DATE	REMARKS

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PROJECT NO. 22150211  
ISSUE DATE 02/15/2019  
SHEET E-1.3  
OF 91 SHEETS

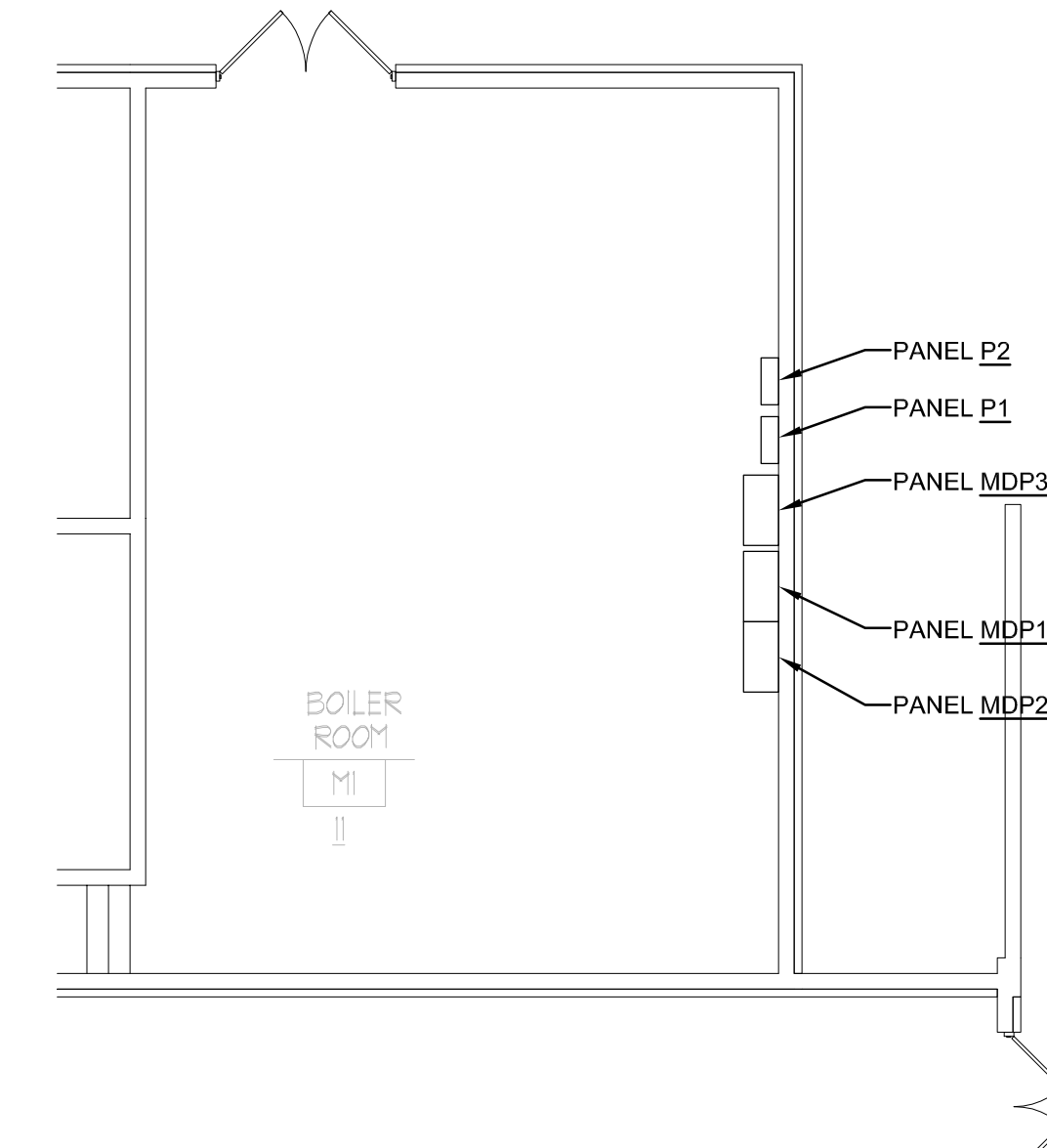


**KEYED NOTES - NEW WORK**

- 1 PROVIDE 120 VOLT 20 AMP BRANCH CIRCUIT TO TYPE 2 KITCHEN EXHAUST HOOD FOR LIGHTS AND KEF-1 CONTROL POWER. WIRE HOOD LIGHT AND FAN SWITCHES. WIRE HOOD MOUNTED FAN SWITCH TO KEF-1.
- 2 PROVIDE REQUIRED NEMA RECEPTACLE FOR NEW DOUBLE STACK OVENS MALE PLUG CONFIGURATION.
- 3 PROVIDE NEMA K14-3P RECEPTACLE FOR HOT WELL STEAM TABLE.
- 4 PROVIDE POWER POLE WITH (2) CHANNELS FOR BRANCH POWER AND DATA CABLING. PROVIDE (2) CAT6 CABLES FROM POLE OUTLET AND RUN TO EXISTING DATA ROOM DOWN EXISTING CORRIDOR AS DIRECTED BY THE OWNER.
- 5 RUN (2) NEW BRANCH PANEL FEEDER CONDUITS ABOVE NEW CEILINGS FROM PANEL LP3 AND PP1 TO EXISTING BOILER ROOM AND CONNECT TO PANEL MDP-1 AS NOTED. SEE ONE LINE POWER RISER FOR CONDUIT AND CONDUCTOR SIZE.
- 6 PROVIDE GFI RECEPTACLE FOR EACH NEW WASH FOUNTAIN FOR POWER TO THIS UNIT.
- 7 WALL MOUNTED ELECTRIC HAND DRYERS, DRYERS PROVIDED BY G.C. AND INSTALLED BY E.C.
- 8 PROVIDE NEW PULL BOX. SIZE SHALL BE 24" X 24" X 8". LABEL PULL BOX COVER WITH PANEL FEED INFORMATION.
- 9 RUN (2) NEW BRANCH PANEL FEEDER CONDUITS ABOVE NEW CEILINGS FROM PANELS LP1 AND LP2 TO EXISTING BOILER ROOM AND CONNECT TO PANEL MDP-1 AS NOTED. SEE ONE LINE POWER RISER FOR CONDUIT AND CONDUCTOR SIZE.
- 10 PROVIDE ANGLED CONDUIT BENDS TO PASS THRU THIS AREA OR PROVIDE A NEW PULL BOX FOR THE OFFSET DISTANCE.
- 11 PROVIDE RIB WIRED INTO BRANCH CIRCUIT FOR DCP-1 FOR TEMPERATURE CONTROLS TO CONTROL PUMP OPERATION THRU THE BAS SCHEDULE.
- 12 NOT USED.
- 13 RUN NEW 4" CONDUIT UP THRU FLOOR UNDER THE OFFICE FURNITURE AND SEAL AROUND PENETRATION. RUN NEW AUDIOINTERCOM CABLING FROM NEW ADDITIONS TO EXISTING BOGEN CONSOLE ON DESK.
- 14 PROVIDE A CABLE MANAGEMENT OPEN WIREWAY CABLE MOUNTED TO WALL UNDER THE DESK FOR ALL NEW CABLES FROM NEW CONDUIT RISER TO UNDER BOGEN CONSOLE. INSTALL CABLING IN RACEWAY.
- 15 PROVIDE NEW 25 STATION SWITCH BACK INTO EXISTING BOGEN MCP35 CONSOLE AND CONNECT TO PROVIDE INDIVIDUAL ROOM COMMUNICATIONS AND ALL CALL FUNCTION TO NEW CALL-IN STATIONS AND SPEAKERS SHOWN ON NEW WORK PLANS. LABEL NEW SWITCHES WITH NEW ROOM NAMES. TEST SYSTEM AND CORRECT ANY AND ALL FAULTS.
- 16 PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE WITH BACKER BOARD AND LOCATE AS DIRECTED BY OWNER.
- 17 CEILING MOUNTED DATA PORT FOR FUTURE PROJECTOR FEED.

**GENERAL DATA CABLING INSTALLATION NOTES:**

1. PROVIDE 3/4" CONDUIT FROM EACH DATA OUTLET SHOWN FROM WALL BOX UP TO ABOVE CEILING SYSTEM. PULL IN THE NUMBER OF CAT6 CABLES NOTED OR AT 0 DESIGNATED DATA OUTLETS INSTALL A PULL CORD FOR FUTURE CABLE INSTALLATION.
2. RUN CAT6 CABLES FROM EACH DESIGNATED DATA OUTLET IN KITCHEN AND READING ROOMS TO EXISTING RACK IN LIBRARY.
3. LABEL EACH DATA CABLE WITH DESIGNATION AS DIRECTED BY THE OWNER ALONG THE CABLES ROUTE ON 25" SPACINGS. LABEL EACH DATA OUTLET FACE PLATE WITH MATCHING CABLE DESIGNATION AS DIRECTED BY OWNER.
4. PROVIDE J-HOOKS AND TIE WIRES TO HANG AND MANAGE THE NUMBER OF DATA CABLES ABOVE CEILING SYSTEMS.



**1 PARTIAL FIRST FLOOR POWER PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

**2 PARTIAL FIRST FLOOR POWER PLAN - BOILER ROOM**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL FIRST FLOOR POWER PLAN - NEW WORK**

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 SHEET **E-2.1**  
 OF 91 SHEETS

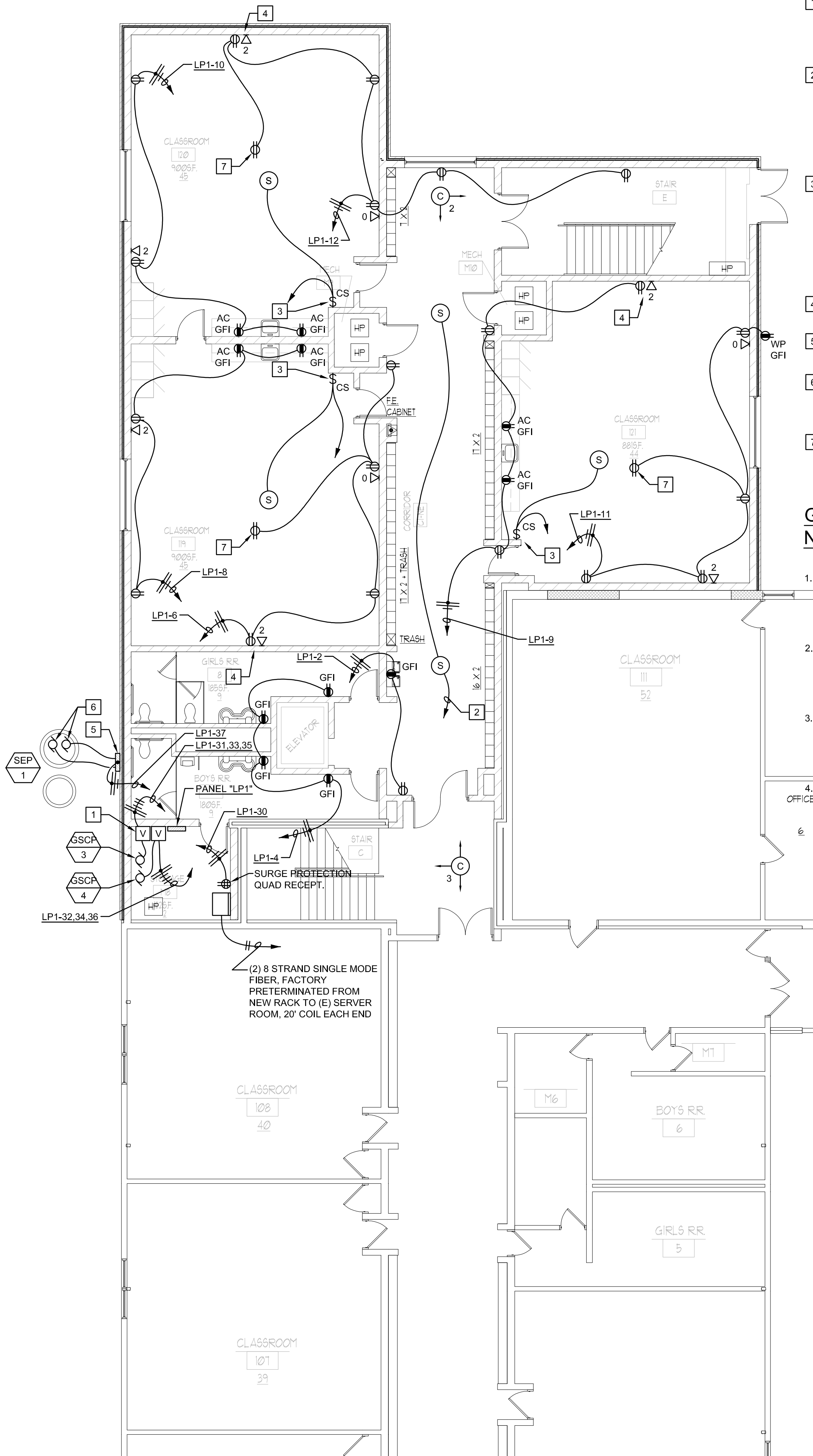


**KEYED NEW WORK NOTES - (1/E2.2)**

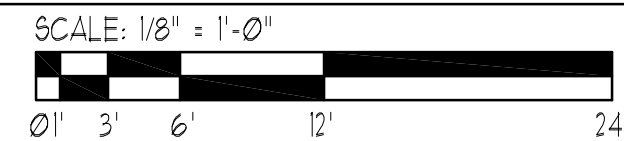
1. INSTALL PROVIDED VFD DRIVES FOR NEW PUMPS. WIRE BRANCH WIRING THRU VFD AND ON TO EACH NEW PUMP. TEMPERATURE CONTROL. CONTRACTOR WILL PROVIDE CONTROL WIRING TO OPERATE THE TWO NEW PUMPS IN A LEAD/LAG FUNCTION.
2. PROVIDE NEW 8" CEILING SPEAKERS, HOUSINGS AND AUDIO CABLES FROM CORRIDOR TO NEW BOGEN 25 STATION SWITCH PANEL AND ALL CALL FUNCTION. RUN PLENUM RATED AUDIO CABLING ABOVE CEILING. COLLECT ALL NEW AUDIO CABLES AND PROVIDE J-HOOKS AND TIE WRAPS TO MANAGE ALL THE NEW CABLES IN A NEAT AND WELL ORGANIZED FASHION AND RUN ABOVE EXISTING AND NEW CEILINGS. LABEL EACH AUDIO CABLE WITH ROOM NUMBER AT 25' SPACING.
3. PROVIDE NEW WALL CALL-IN SWITCH AND NEW 8" CEILING SPEAKER AND HOUSING AND WIRE BACK TO NEW BOGEN 25 STATION SWITCH FOR ALL CALL AND FOR INDIVIDUAL ROOM CALL IN FUNCTION. RUN PLENUM RATED AUDIO CABLING ABOVE CEILING. COLLECT ALL NEW AUDIO CABLES AND PROVIDE J-HOOKS AND TIE WRAPS TO MANAGE ALL THE NEW CABLES IN A NEAT AND WELL ORGANIZED FASHION AND RUN ABOVE EXISTING AND NEW CEILINGS. LABEL EACH AUDIO CABLE WITH ROOM NUMBER AT 25' SPACING.
4. MOUNT RECEPTACLE AND DATA OUTLET FOR PROMETHEAN SMART BOARDS AT ELEVATION AS DIRECTED.
5. MOUNT SEWER LIFT STATION CONTROL PANEL ON WALL AND RUN BRANCH CIRCUIT CONDUIT TO PANEL LP-1
6. PROVIDE BURIED PVC CONDUIT AND CONDUCTORS FROM CONTROL PANEL TO EACH SEWER PUMP AND TO FLOAT CONTROLS. COORDINATE WITH P.C. ON MANUFACTURES WIRING REQUIREMENTS.
7. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE WITH BACKER BOARD AND LOCATE AS DIRECTED BY OWNER.

**GENERAL DATA CABLING INSTALLATION NOTES:**

1. PROVIDE 3/4" CONDUIT FROM EACH DATA OUTLET SHOWN FROM WALL BOX UP TO ABOVE CEILING SYSTEM. PULL IN THE NUMBER OF CAT6 CABLES NOTED OR AT 0 DESIGNATED DATA OUTLETS INSTALL A PULL CORD FOR FUTURE CABLE INSTALLATION.
2. RUN CAT6 CABLES FROM EACH DESIGNATED DATA OUTLET TO NEW RACK SHOWN IN ROOM M8 ON FIRST FLOOR. PROVIDE FLOOR SLEEVES TO RUN CABLES DOWN FROM SECOND FLOOR TO NEW RACK CABINET.
3. LABEL EACH DATA CABLE WITH DESIGNATION AS DIRECTED BY THE OWNER ALONG THE CABLES ROUTE ON 25' SPACING'S. LABEL EACH DATA OUTLET FACE PLATE WITH MATCHING CABLE DESIGNATION AS DIRECTED BY OWNER.
4. PROVIDE J-HOOKS AND TIE WIRES TO HANG AND MANAGE THE NUMBER OF DATA CABLES.



**1 PARTIAL FIRST FLOOR ELECTRICAL PLAN - NEW WORK**

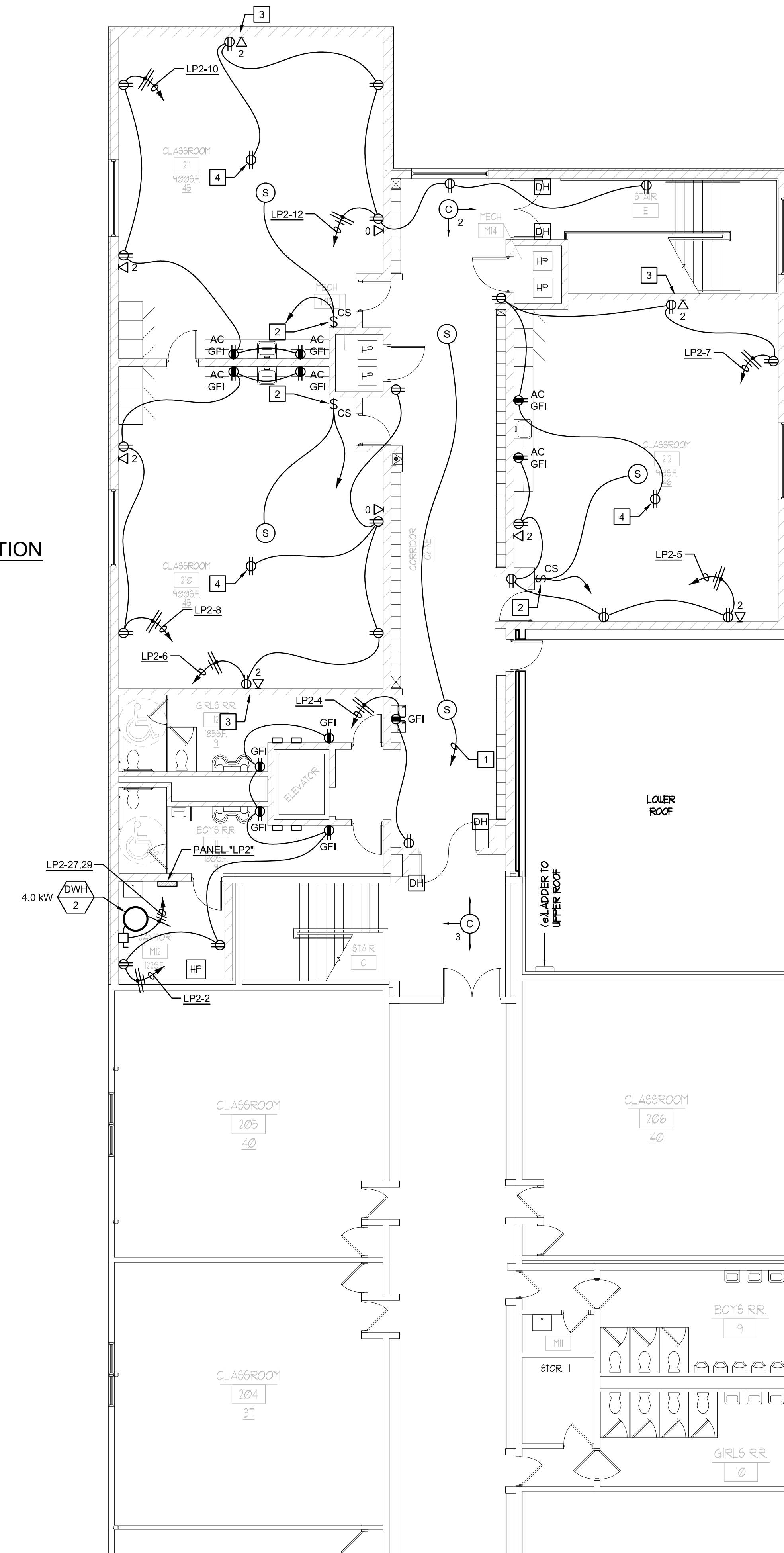


**KEYED NEW WORK NOTES - (2/E2.2)**

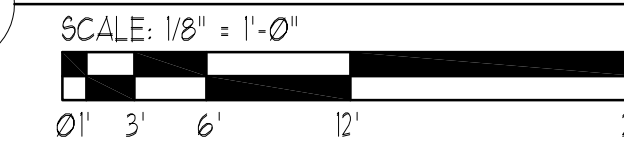
1. PROVIDE NEW 8" CEILING SPEAKERS, HOUSINGS AND AUDIO CABLES FROM CORRIDOR TO NEW BOGEN 25 STATION SWITCH PANEL AND ALL CALL FUNCTION. RUN PLENUM RATED AUDIO CABLING ABOVE CEILING. COLLECT ALL NEW AUDIO CABLES AND PROVIDE J-HOOKS AND TIE WRAPS TO MANAGE ALL THE NEW CABLES IN A NEAT AND WELL ORGANIZED FASHION AND RUN ABOVE EXISTING AND NEW CEILINGS. LABEL EACH AUDIO CABLE WITH ROOM NUMBER AT 25' SPACING.
2. PROVIDE NEW WALL CALL-IN SWITCH AND NEW 8" CEILING SPEAKER AND HOUSING AND WIRE BACK TO NEW BOGEN 25 STATION SWITCH FOR ALL CALL AND FOR INDIVIDUAL ROOM CALL IN FUNCTION. RUN PLENUM RATED AUDIO CABLING ABOVE CEILING. COLLECT ALL NEW AUDIO CABLES AND PROVIDE J-HOOKS AND TIE WRAPS TO MANAGE ALL THE NEW CABLES IN A NEAT AND WELL ORGANIZED FASHION AND RUN ABOVE EXISTING AND NEW CEILINGS. LABEL EACH AUDIO CABLE WITH ROOM NUMBER AT 25' SPACING.
3. MOUNT RECEPTACLE AND DATA OUTLET FOR PROMETHEAN SMART BOARDS AT ELEVATION AS DIRECTED.
4. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE WITH BACKER BOARD AND LOCATE AS DIRECTED BY OWNER.

**GENERAL DATA CABLING INSTALLATION NOTES:**

1. PROVIDE 3/4" CONDUIT FROM EACH DATA OUTLET SHOWN FROM WALL BOX UP TO ABOVE CEILING SYSTEM. PULL IN THE NUMBER OF CAT6 CABLES NOTED OR AT 0 DESIGNATED DATA OUTLETS INSTALL A PULL CORD FOR FUTURE CABLE INSTALLATION.
2. RUN CAT6 CABLES FROM EACH DESIGNATED DATA OUTLET TO NEW RACK SHOWN IN ROOM M8 ON FIRST FLOOR. PROVIDE FLOOR SLEEVES TO RUN CABLES DOWN FROM SECOND FLOOR TO NEW RACK CABINET.
3. LABEL EACH DATA CABLE WITH DESIGNATION AS DIRECTED BY THE OWNER ALONG THE CABLES ROUTE ON 25' SPACING'S. LABEL EACH DATA OUTLET FACE PLATE WITH MATCHING CABLE DESIGNATION AS DIRECTED BY OWNER.
4. PROVIDE J-HOOKS AND TIE WIRES TO HANG AND MANAGE THE NUMBER OF DATA CABLES.



**2 PARTIAL SECOND FLOOR ELECTRICAL PLAN - NEW WORK**



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State of Illinois Professional Design Firm Number 184.000267

**BRIC PARTNERSHIP, LLC**  
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 407 E. MONROE ST.  
 SPRINGFIELD, IL 62701  
 TEL: 317.979.9807

**EDISON ELEMENTARY SCHOOL, 2019 ADDITION**  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455

**MICHAEL MITCHELL**  
 LICENSED PROFESSIONAL ELECTRICAL ENGINEER  
 STATE OF ILLINOIS  
 062-063142

LICENSE EXPIRES 11/30/19  
 DATE SIGNED 02/15/19

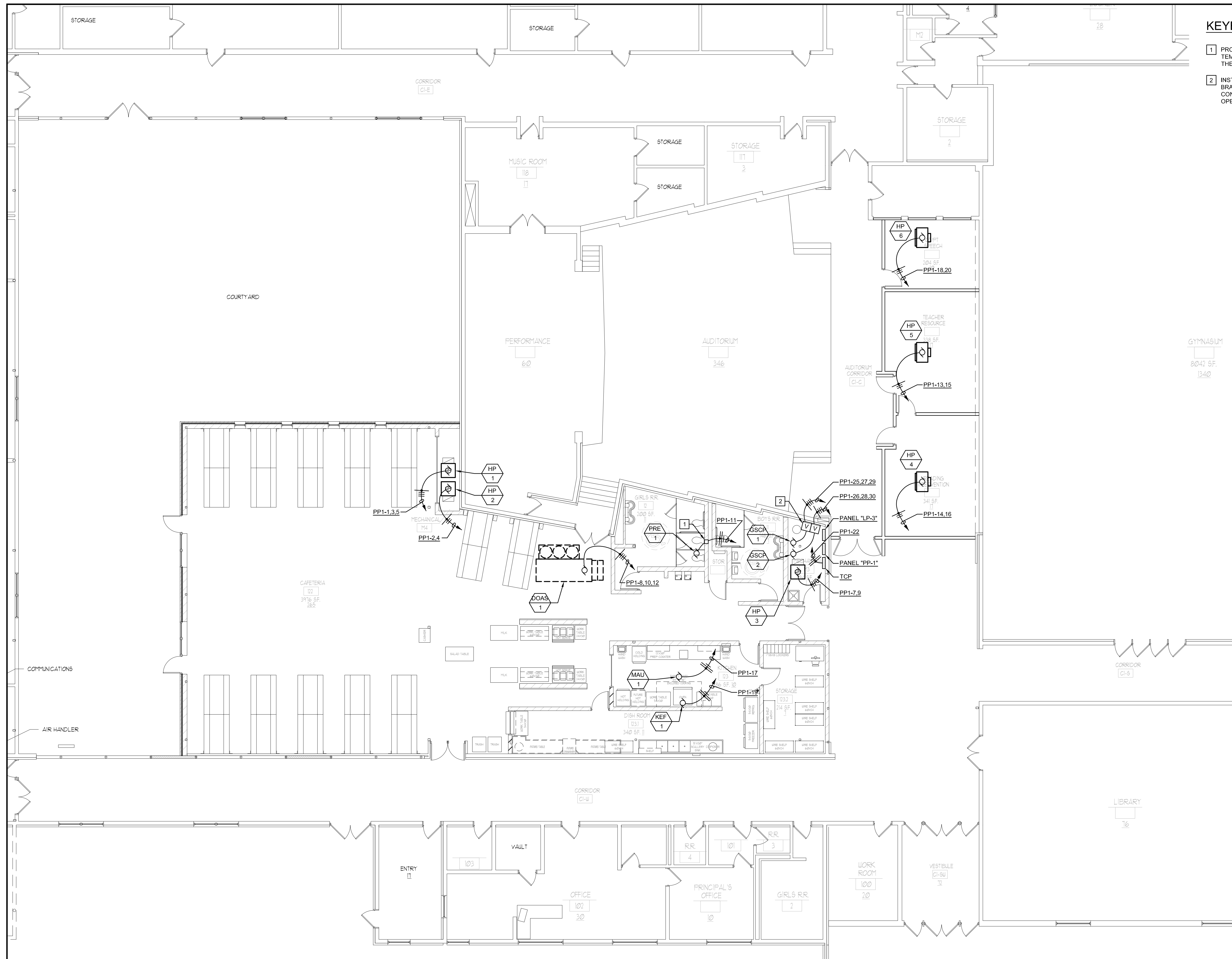
**PARTIAL FIRST & SECOND FLOOR ELECTRICAL PLANS - NEW WORK**

NO.	DATE	REVISIONS	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET **E-2.2**  
 OF 91 SHEETS





**KEYED NOTES - NEW WORK**

- 1 PROVIDE RIB AND WIRE INTO PRE-# CIRCUIT FOR TEMPERATURE CONTROLS TO CONTROL FAN OPERATION THRU THE BAS SCHEDULE.
- 2 INSTALL PROVIDED VFD FOR EACH GSCP PUMP AND WIRE BRANCH CIRCUIT THRU VFD AND ON TO PUMP. TEMPERATURE CONTROL CONTRACTOR WILL PROVIDE CONTROL WIRING TO OPERATE PUMPS IN LEAD/LAG FUNCTION.

**1 PARTIAL FIRST FLOOR MECH. POWER PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"  
 0' 3' 6' 12' 24'

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**PARTIAL FIRST FLOOR MECH POWER PLAN - NEW WORK**

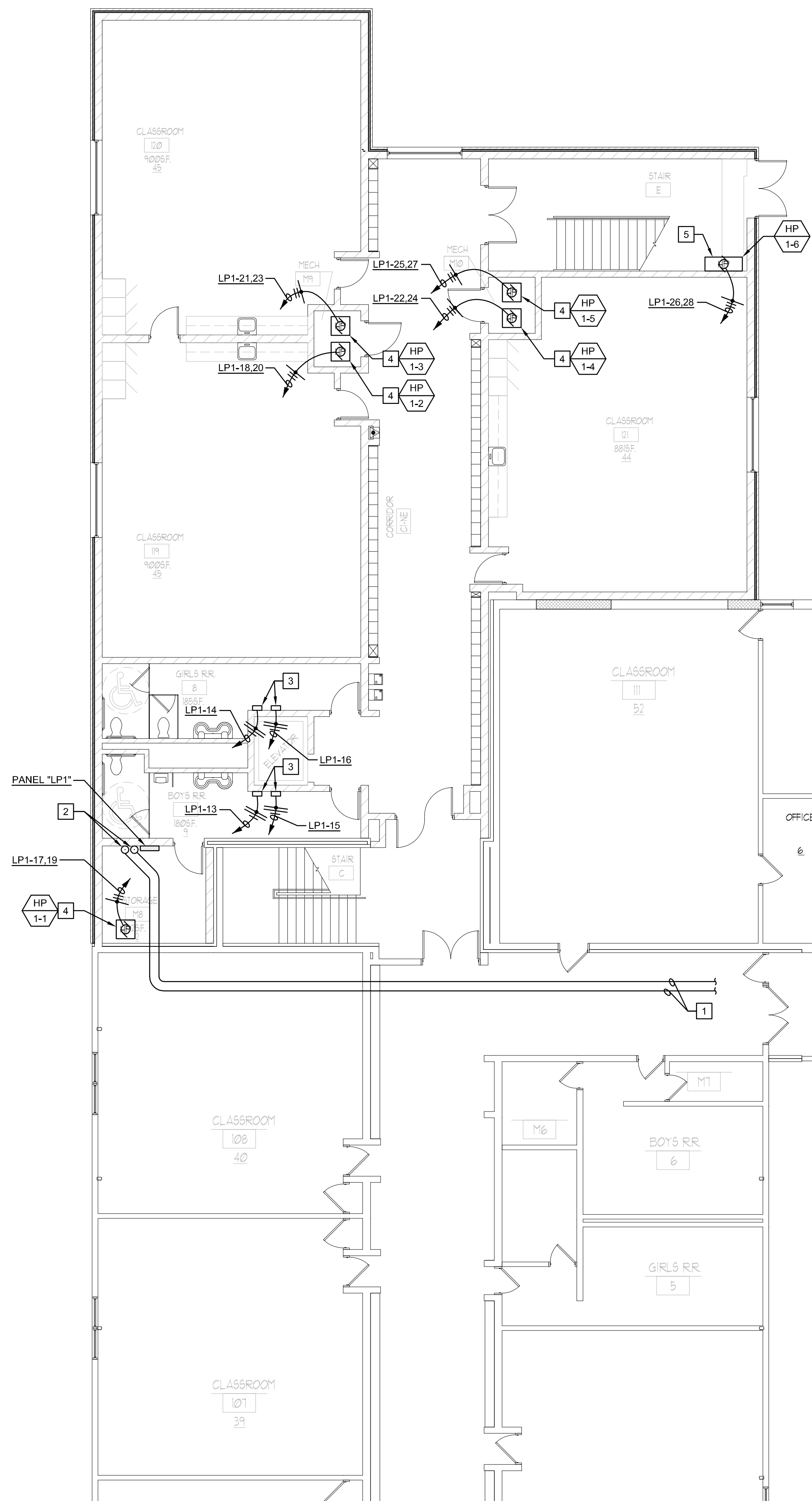
NO.	DATE	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET E-3.1  
 OF 91 SHEETS

KEYED NEW WORK NOTES - (1/E-3.2)

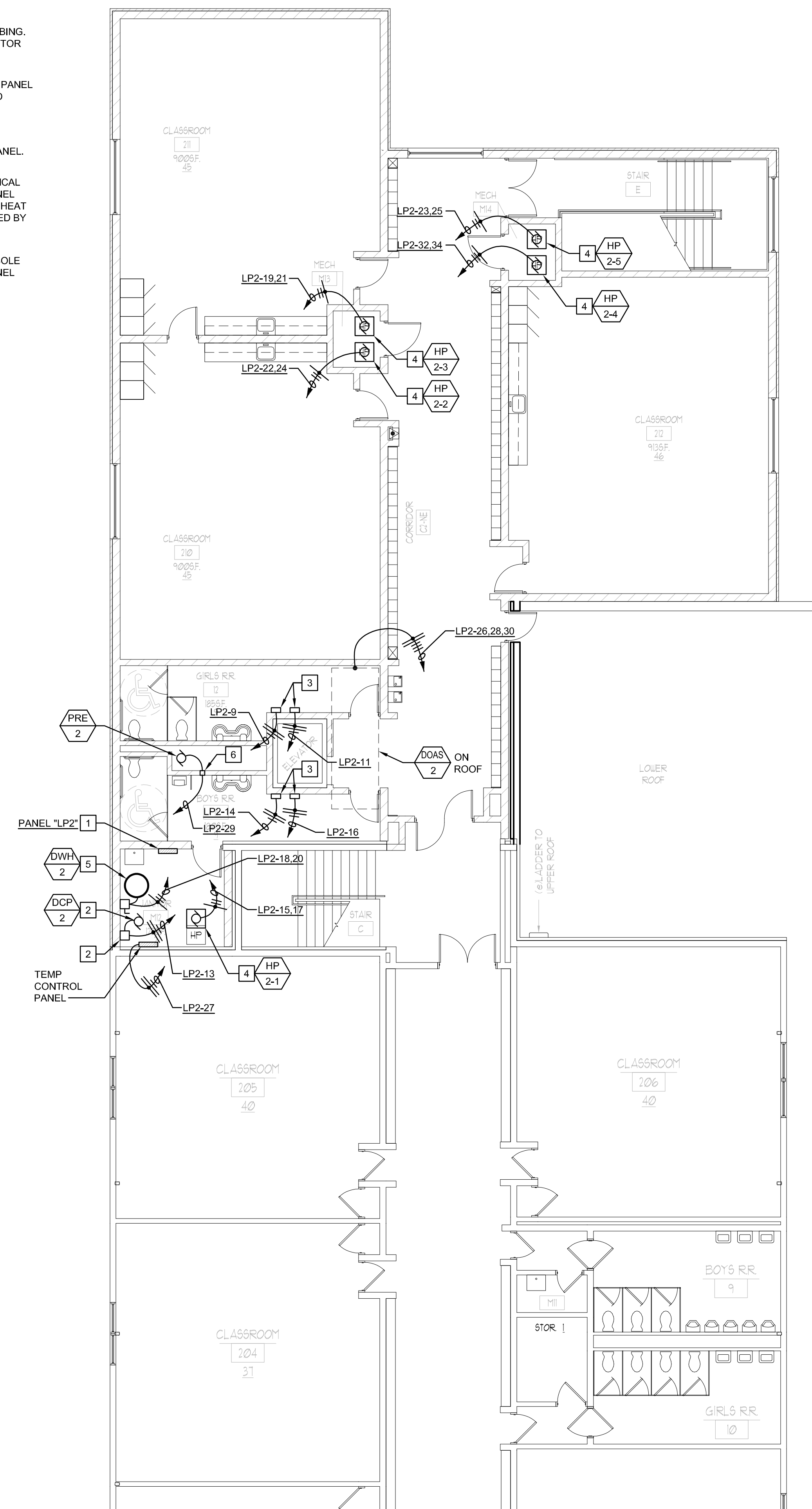
- 1 RUN (2) NEW BRANCH PANEL FEEDER CONDUITS WITH SCHEDULED CONDUCTORS ABOVE EXISTING CEILING SYSTEM. RUN NEW CONDUITS THRU THE BAR JOIST WEBBING. COORDINATE INSTALLATION WITH PLUMBING AND FIRE PROTECTION PIPING RUNNING THRU THE BAR JOIST WEBBING. SEE ONE LINE POWER RISER FOR CONDUIT AND CONDUCTOR SIZES.
- 2 RUN PANEL LP1 DOWN TO NEW BRANCH PANEL AND RUN PANEL LP2 UP THRU FLOOR TO NEW BRANCH PANEL ON SECOND FLOOR. SEE SECOND FLOOR PLAN FOR CONTINUATION.
- 3 PROVIDE BRANCH CIRCUITS FOR ELECTRIC HAND DRYER UNITS. RUN (2) #12, (1) #12 G. IN 3/4" C. TO DESIGNATED PANEL.
- 4 PROVIDE BRANCH CIRCUITS (208/1) FOR EACH NEW VERTICAL HEAT PUMP UNIT TO DESIGNATED PANELBOARD. SEE PANEL SCHEDULE FOR CONDUCTOR AND CONDUIT SIZES. EACH HEAT PUMP WILL HAVE ITS OWN DISCONNECT SWITCH PROVIDED BY THE UNIT MANUFACTURER.
- 5 PROVIDE BRANCH CIRCUITS (208/1) FOR EACH NEW CONSOLE HEAT PUMP UNIT TO DESIGNATED PANELBOARD. SEE PANEL SCHEDULE FOR CONDUCTOR AND CONDUIT SIZES.



1 PARTIAL FIRST FLOOR ELECTRICAL PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

KEYED NEW WORK NOTES - (2/E-3.2)

- 1 RUN PANEL LP2 FEEDER DOWN THRU SECOND FLOOR AND RUN AS SHOWN ON FIRST FLOOR PLAN. SEE FIRST FLOOR PLAN FOR CONTINUATION.
- 2 PROVIDE BRANCH CIRCUIT AND DISCONNECT SWITCH FOR NEW DOMESTIC CIRCULATION PUMP (DCP-1). SEE PANEL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES. PROVIDE INSTALLATION OF RIB FOR BAS TO SCHEDULE DCP RUN TIMES.
- 3 PROVIDE BRANCH CIRCUITS FOR ELECTRIC HAND DRYER UNITS. RUN (2) #12, (1) #12 G. IN 3/4" C. TO DESIGNATED PANEL.
- 4 PROVIDE BRANCH CIRCUITS (208/1) FOR EACH NEW VERTICAL HEAT PUMP UNIT TO DESIGNATED PANELBOARD. SEE PANEL SCHEDULE FOR CONDUCTOR AND CONDUIT SIZES. EACH HEAT PUMP WILL HAVE ITS OWN DISCONNECT SWITCH PROVIDED BY THE UNIT MANUFACTURER.
- 5 PROVIDE BRANCH CIRCUITS (208/1) FOR NEW ELECTRIC WATER HEATER (DWH-1) AND A NON-FUSED DISCONNECT SWITCH, TO DESIGNATED PANELBOARD. SEE PANEL SCHEDULE FOR CONDUCTOR AND CONDUIT SIZES.
- 6 PROVIDE RIB AND WIRE INTO PRE-# CIRCUIT FOR TEMPERATURE CONTROLS TO CONTROL FAN OPERATION THRU THE BAS SCHEDULE.



2 PARTIAL SECOND FLOOR MECH. POWER PLAN - NEW WORK  
SCALE: 1/8" = 1'-0"  
0' 3' 6' 12' 24'

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PARTIAL FIRST & SECOND FLOOR MECH. ELECTRICAL PLANS - NEW WORK

NO.	DATE	REVISIONS	REMARKS

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PROJECT NO. 22150211  
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SHEET E-3.2  
OF 91 SHEETS



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ELECTRICAL SCHEDULES

NO.	DATE	REMARKS

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET E-4.1  
 OF 91 SHEETS

LIGHT FIXTURE SCHEDULE													
TYPE	OPT.	MANUFACTURE & CATALOG No.	VOLTAGE	LAMP SOURCE	LUMENS	WATTS	KELVIN	CEILING	MOUNTING	CONTROL	BODY SIZE	DESCRIPTION & REMARKS	
A	1	LITHONIA: 2BLT4-40L-ADPTLP835-EZ1-N100	120	LED	4000	34.4	3500	2X4	RECESSED	0-10 V	2X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
AE	1	LITHONIA: 2BLT4-40L-ADPTLP835-EZ1-N100-EL14L	120	LED	4000	34.4	3500	2X4	RECESSED	0-10v	2X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
B	1	LITHONIA: BLT4-40L-ADPTLP835	120	LED	4000	34.4	3500	2X4	RECESSED	ON/OFF	1X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
BE	1	LITHONIA: BLT4-40L-ADPTLP835-EL14L	120	LED	4000	34.4	3500	2X4	RECESSED	ON/OFF	1X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
C	1	LITHONIA: BLT4-48L-ADPTLP835	120	LED	4800	38.7	3500	2X4	RECESSED	ON/OFF	1X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
CE	1	LITHONIA: BLT4-48L-ADPTLP835-EL14L	120	LED	4800	38.7	3500	2X4	RECESSED	ON/OFF	1X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
D	1	LITHONIA: 2BLT2-40L-ADPTLP835-EZ1-N100	120	LED	3300	30	3500	2X4	RECESSED	0-10V	2X2	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
F	1	LITHONIA: 2BLT4-48L-ADPTLP835	120	LED	4800	45	3500	2X4	RECESSED	ON/OFF	2X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
FE	1	LITHONIA: 2BLT4-48L-ADPTLP835-EL14L	120	LED	4800	45	3500	2X4	RECESSED	ON/OFF	2X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
G	1	LITHONIA: FMML138	120	LED	1765	28	3000	SHTRK	SURFACE	ON/OFF	13" ROUND	ROUND FIXTURE WITH PRISMATIC LENS.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
H	1	KENDALL: H1212EL	120	LED	2011	24	3500	WALL	WALL	ON/OFF	12"X12"	WALL MOUNTED ELEVATOR PIT HIGH ABUSE DESIGN LENS AND CAST WALL PLATE.	
	2	PRE APPROVAL											
	3	PRE APPROVAL											
J	1	LITHONIA: FMMSQL138-30	120	LED	1000	14.4	3500	SHTRK	SURFACE	ON/OFF	13" ROUND	13" DIAMETER ACYLIC LENS WITH SURFACE MOUNTED BODY.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
K	1	LITHONIA: WL4-30L-LP835-EL14L	120	LED	3095	28.2	3500	SHTRK	SURFACE	ON/OFF	4.75"X48"	CURVED RIBBED LENS WITH TRIM RINGS.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
KE	1	LITHONIA: WL4-30L-LP835-EL14L	120	LED	3095	28.2	3500	SHTRK	SURFACE	ON/OFF	4.75"X48"	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
L	1	LITHONIA: 2BLT2-40L-ADPTLP835-EZ1-N100	120	LED	3300	30	3500	2X4	RECESSED	ON/OFF	2X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
LE	1	LITHONIA: 2BLT2-40L-ADPTLP835-EZ1-N100-EL14L	120	LED	3300	30	3500	2X4	RECESSED	ON/OFF	2X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
N	1	LITHONIA: 2BLT4-30L-ADPTLP835	120	LED	2923	22.7	3500	2X4	RECESSED	0-10V	2X4	CURVED RIBBED LENS WITH TRIM RINGS	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
NE	1	LITHONIA: 2BLT4-30L-ADPTLP835-EL14L	120	LED	2923	22.7	3500	2X4	RECESSED	0-10V	2X4	CURVED RIBBED LENS WITH TRIM RINGS AND EMERGENCY BATTERY AND CHARGER.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
W1	1	LITHONIA: DSXW2-30C-700-40K-TM3-MVOLT-SF-DBXD	120	LED	6536	71	4000	WALL 12" A.F.G.	SURFACE	PHOTO CELL	18"X10"X8"	DIECAST ALUMINUM HOUSING SWITH INTEGRAL HEAT SINK FINS, FUSHING, VANDAL GUARD, ACRYLIC LENS, 5 YEAR WARRANTY.	
	2	WILLIAMS: EQUAL											
	3	PHILLIPS: EQUAL											
EX-1/EX-2	1	LITHONIA: LOCW1/2RELN	120	LED	-	-	-	2X4	EX-1 CEILING EX-2 WALL	ON	12"X9"X2"	CAST ALUMINUM BODY, WHITE FINISH WITH RED 6" TALL LETTERS, NICKLE LEAD BATTERY AND CHARGER, SELF DIAGNOSTICS.	
	2	WILLIAMS: EXIT/CARAFVHEMDC											
	3	PHILLIPS: SCN1/2 RWIC											

PANEL SCHEDULE															
MARK: LP-1		LOCATION: SEE PLANS		MOUNTING: SURFACE MAIN:		225A MLO									
BUS: 225		AMPS @ 120 208		VOLTS		FEEDER: SEE ONE-LINE									
AIC: 22KAIC		3 PH		4 W											
LOAD TYPE	EQUIPMENT SERVED	BRANCH WIRE SIZE	CONNECTED VA			CB TRIP	CKT #	CKT #	CB TRIP	CONNECTED VA			BRANCH WIRE SIZE	EQUIPMENT SERVED	LOAD TYPE
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
L	LIGHTS	(2) #12, (1) #12 IN 3/4" C.	1130			20/1	1	2	20/1	1600		(2) #12, (1) #12 IN 3/4" C.	RECEPT EWC	R	
L	LIGHTS	(2) #12, (1) #12 IN 3/4" C.	860			20/1	3	4	20/1	1600	1600	(2) #12, (1) #12 IN 3/4" C.	RECEPT	R	
R	RECEPT	(2) #12, (1) #12 IN 3/4" C.		1600		20/1	5	6	20/1		1200		SPARE	R	
R	RECEPT	(2) #12, (1) #12 IN 3/4" C.	1600			20/1	7	8	20/1	1600		(2) #12, (1) #12 IN 3/4" C.	RECEPT	R	
R	RECEPT	(2) #12, (1) #12 IN 3/4" C.		1600		20/1	9	10	20/1		1600		RECEPT	R	
R	RECEPT	(2) #12, (1) #12 IN 3/4" C.		1600		20/1	11	12	20/1		1600		RECEPT	R	
H	HAND DRYER	(2) #12, (1) #12 IN 3/4" C.	1200			20/1	13	14	20/1	1200		(2) #12, (1) #12 IN 3/4" C.	HAND DRYER	R	
H	HAND DRYER	(2) #12, (1) #12 IN 3/4" C.		1200		20/1	15	16	20/1		1600	(2) #12, (1) #12 IN 3/4" C.	HAND DRYER	R	
M	HP1-1	(2) #12, (1) #12 IN 3/4" C.	925			15/2	17	18	30/2	1820	1820	(2) #10, (1) #12 IN 3/4" C.	HP1-2	M	
M	HP1-3	(2) #10, (1) #12 IN 3/4" C.		2662		40/2	21	22	40/2		2662	(2) #10, (1) #12 IN 3/4" C.	HP1-4	M	
M	HP1-5	(2) #12, (1) #12 IN 3/4" C.		925		15/2	25	26	15/2		1332	(2) #12, (1) #12 IN 3/4" C.	HP1-6	M	
M	TOP-1	(2) #12, (1) #12 IN 3/4" C.		1200		20/1	29	30	20/1		1600	(2) #12, (1) #12 IN 3/4" C.	DATA RACK RECEPT	M	
M	GSCP-3	(2) #12, (1) #12 IN 3/4" C.	1320			20/3	33	34	20/3	1320	1320	(2) #12, (1) #12 IN 3/4" C.	GSCP-4	M	
M	SEP-1	(2) #12, (1) #12 IN 3/4" C.		0		20/1	37	38	20/1				SPARE	M	
O	SPACE			0		20/1	39	40	20/1				SPARE	O	
O	SPACE			0		20/1	41	42	20/1				SPARE	O	
O	CONNECTED		7100	8567	9307					8872	10114	10202	CONNECTED	O	
O	FUTURE			0	0								FUTURE	O	
O	TOTAL PHASE VA		15972	18681	19509									O	

PANEL SCHEDULE															
MARK: LP-2		LOCATION: SEE PLANS		MOUNTING: SURFACE MAIN:		400A MLO									
BUS: 400		AMPS @ 120 208		VOLTS		FEEDER: SEE ONE-LINE									
AIC: 22KAIC		3 PH		4 W											
LOAD TYPE	EQUIPMENT SERVED	BRANCH WIRE SIZE	CONNECTED VA			CB TRIP	CKT #	CKT #	CB TRIP	CONNECTED VA			BRANCH WIRE SIZE	EQUIPMENT SERVED	LOAD TYPE
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
L	LIGHTS	(2) #12, (1) #12 G. IN 3/4" C.	1130			20/1	1	2	20/1	1600		(2) #12, (1) #12 G. IN 3/4" C.	RECEPT	R	
L	LIGHTS	(2) #12, (1) #12 G. IN 3/4" C.	860			20/1	3	4	20/1	1600	1600	(2) #12, (1) #12 G. IN 3/4" C.	RECEPT	R	
R	RECEPT	(2) #12, (1) #12 G. IN 3/4" C.		1600		20/1	5	6	20/1		1600		RECEPT	R	
R	RECEPT	(2) #12, (1) #12 G. IN 3/4" C.	1600			20/1	7	8	20/1	1600		(2) #12, (1) #12 G. IN 3/4" C.	RECEPT	R	
R	HAND DRYER	(2) #12, (1) #12 G. IN 3/4" C.		1200		20/1	9	10	20/1		1600		RECEPT	R	
R	HAND DRYER	(2) #12, (1) #12 G. IN 3/4" C.		1200		20/1	11	12	20/1		1600	(2) #12, (1) #12 G. IN 3/4" C.	RECEPT	R	
R	DCP-2	(2) #12, (1) #12 G. IN 3/4" C.	450			20/1	13	14	20/1	1200		(2) #12, (1) #12 G. IN 3/4" C.	HAND DRYER	R	
M	HP 2-1	(2) #10, (1) #12 G. IN 3/4" C.		925		15/2	17	18	20/1		1200	(2) #12, (1) #12 G. IN 3/4" C.	HAND DRYER	H	
M	HP 2-3	(2) #8, (1) #10 G. IN 3/4" C.	2620			40/2	19	20	30/2	2000	2000	(2) #10, (1) #10 G. IN 3/4" C.	DWH-2	H	
M	HP 2-5	(2) #10, (1) #12 G. IN 3/4" C.		2620		40/2	21	22	40/2		2620	(2) #8, (1) #10 G. IN 3/4" C.	HP 2-2	M	
M	TOP-2	(2) #12, (1) #12 G. IN 3/4" C.		925		15/2	23	24	40/2		9036	(2) #8, (1) #10 G. IN 3/4" C.	DOAS-2	M	
M	PRE-2	(2) #12, (1) #12 G. IN 3/4" C.	1200			20/1	27	28	90/3		9036	(4) #3, (1) #8 G. IN 1-1/4" C.	DOAS-2	M	
O	SPACE			0		20/1	29	30			9036		DOAS-2	M	
O	SPACE			0		20/1	31	32	40/2	2620	2620	(2) #8, (1) #10 G. IN 3/4" C.	HP 2-4	M	
O	SPACE			0		20/1	33	34					HP 2-4	M	
O	SPACE			0		20/1	35	36	20/1				SPARE	O	



LIGHT CONTROL SCHEDULE				
ROOM NO.	ROOM NAME	EQUIPMENT REQUIRED		SEQUENCE OF OPERATION
		WALL STATION	OCCUPANCY SENSOR	
M8	JANITOR	MANUAL	NO	ON/OFF
7	BOYS TOILET	WS-1	YES	ON/OFF
8	GIRLS TOILET	WS-1	YES	ON/OFF
119	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
120	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
121	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
C1-NE	CORRIDOR 1ST	MANUAL	NO	ON/OFF
E STAIR	STAIR	MANUAL	YES	ON/OFF
M12	JANITOR	MANUAL	NO	ON/OFF
11	BOYS TOILET	WS-1	YES	ON/OFF
12	GIRLS TOILET	WS-1	YES	ON/OFF
210	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
211	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
212	CLASSROOM	WS-2	YES	ON/OFF/DIMMING
C2-NE	CORRIDOR 2ND	MANUAL	NO	ON/OFF
M3	MECHANICAL	MANUAL	NO	ON/OFF
11	BOYS TOILET	WS-1	YES	ON/OFF
12	GIRLS TOILET	WS-1	YES	ON/OFF
122	CAFETERIA	WS-2	YES	ON/OFF/DIMMING
123	KITCHEN	MANUAL	YES	ON/OFF
123.1	DISH RM	MANUAL	YES	ON/OFF
123.2	STORAGE	WS-1	YES	ON/OFF
EXTERIOR	WALL MOUNTED	NO	NO	ON/OFF- PHOTO CELL-TIME CLOCK

WALL STATION SCHEDULE										
WALL STATION DESIGNATION	N-LIGHT MODEL	# OF CHANNELS	BUTTON FUNCTION							
			1	2	3	4	5	6	7	8
WS-1	n.PODM	1	ON	OFF						
WS-2	n.PODM DX	1	ON/OFF	RAISE	LOWER					

**APPROVED MANUFACTURERS:**  
 ACUIY  
 PHILLIPS  
 LEGRAND

OCCUPANCY SENSOR SCHEDULE		
PLAN MARK	TYPE	DESCRIPTION
A	DUAL TECHNOLOGY	CEILING MOUNTED, 360° COVERAGE

OCCUPANCY SENSOR TO MATCH LIGHT CONTROL SYSTEM

**MANUFACTURERS:**  
 NLIGHT  
 LUTRON  
 WATTS  
 PRE-APPROVED

MECHANICAL EQUIPMENT ELECTRICAL DATA SCHEDULE																										
MARK	DESCRIPTION	LOAD CHARACTERISTICS						NEMA ENCL. TYPE	STARTER					DISCONNECT SWITCH				CONTROL DEVICE		FEEDER INFORMATION			REMARKS			
		HORSEPOWER	KW	VOLTAGE	PHASE	FLA	SPEED		FURNISHED BY	INSTALLED BY	TYPE	NEMA SIZE	AUX. CONTS	LOCATION	FURNISHED BY	INSTALLED BY	TYPE	SWITCH FUSE SIZE	LOCATION	FURNISHED BY	INSTALLED BY	PANEL		CCT #	FEEDER SIZE/ RACEWAY	
HP-1	HEAT PUMP	5.0	-	208	3	56.7	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	1,3,5	(4) #2, (1) #8 G. IN 1.25" C.	
HP-2	HEAT PUMP	0.5	-	208	1	24.4	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	2,4	(2) #8, (1) #10 G. IN 3/4" C.	
HP-3	HEAT PUMP	1.0	-	208	1	38.2	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	7,9	(2) #6, (1) #10 G. IN 1" C.	
HP-4	HEAT PUMP	0.5	-	208	1	5.7	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	14,16	(2) #12, (1) #12 G. IN 3/4" C.	
HP-5	HEAT PUMP	0.5	-	208	1	5.7	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	13,15	(2) #12, (1) #12 G. IN 3/4" C.	
HP-6	HEAT PUMP	0.5	-	208	1	5.7	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	18,20	(2) #12, (1) #12 G. IN 3/4" C.	
HP1-1	HEAT PUMP	0.5	-	208	1	8.9	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	17,19	(2) #12, (1) #12 G. IN 3/4" C.	
HP1-2	HEAT PUMP	0.75	-	208	1	17.5	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	18,20	(2) #10, (1) #10 G. IN 3/4" C.	
HP1-3	HEAT PUMP	0.5	-	208	1	25.2	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	21,23	(2) #8, (1) #10 G. IN 3/4" C.	
HP1-4	HEAT PUMP	0.5	-	208	1	25.6	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	22,24	(2) #8, (1) #10 G. IN 3/4" C.	
HP1-5	HEAT PUMP	0.5	-	208	1	8.9	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	25,27	(2) #12, (1) #12 G. IN 3/4" C.	
HP1-6	HEAT PUMP	0.25	-	208	1	10.9	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP1	26,28	(2) #12, (1) #12 G. IN 3/4" C.	
HP2-1	HEAT PUMP	0.5	-	208	1	8.9	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	15,17	(2) #12, (1) #12 G. IN 3/4" C.	
HP2-2	HEAT PUMP	0.5	-	208	1	25.2	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	8,20	(2) #8, (1) #10 G. IN 3/4" C.	
HP2-3	HEAT PUMP	0.5	-	208	1	25.2	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	19,21	(2) #8, (1) #10 G. IN 3/4" C.	
HP2-4	HEAT PUMP	0.5	-	208	1	25.2	VAR	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	22,24	(2) #8, (1) #10 G. IN 3/4" C.	
HP2-5	HEAT PUMP	0.5	-	208	1	8.9	C	1	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	23,25	(2) #12, (1) #12 G. IN 3/4" C.	
PRE-1	POWER ROOF EXHAUST	1/8	-	120	1	3.8	C	3R	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	PP1	11	(2) #12, (1) #12 G. IN 3/4" C.	
PRE-2	POWER ROOF EXHAUST	1/4	-	120	1	5.8	C	3R	-	-	-	-	-	-	-	EM	MC	-	-	ON UNIT	MC	MC	LP2	29	(2) #12, (1) #12 G. IN 3/4" C.	
DOAS-1	DEDICATED OUTDOOR AIR	40.9	-	208	3		VAR	1	-	-	-	-	-	-	-	EM	EM	NF	-	ON UNIT	MC	MC	PP1	8,10,12	(4) #6, (1) #10 G. IN 1" C.	
DOAS-2	DEDICATED OUTDOOR AIR	75.3	-	208	3		VAR	1	-	-	-	-	-	-	-	EM	EM	NF	-	ON UNIT	MC	MC	LP2	26,28,30	(4) #2, (1) #6 G. IN 1.5" C.	
DWH-1	ELECTRIC WATER HEATER	-	15	208	3	42	-	1	-	-	-	-	-	-	-	EC	EC	NF	60	IN MECH RM	EC	EC	PP1	32,34,36	(3) #6, (1) #10 G. IN 1" C.	
DWH-2	ELECTRIC WATER HEATER	-	4.0	208	1	19.2	-	1	-	-	-	-	-	-	-	EC	EC	NF	30	IN MECH RM	EC	EC	LP2	18,20	(2) #10, (1) #10 G. IN 3/4" C.	
DCP-1	DOMESTIC CIRC. PUMP	270W	-	120	1		C	1	-	-	-	-	-	-	-	EC	EC	TOL	20	IN MECH RM	EC	EC	PP1	6	(2) #12, (1) #12 G. IN 3/4" C.	
DCP-2	DOMESTIC CIRC. PUMP	270W	-	120	1		C	1	-	-	-	-	-	-	-	EC	EC	TOL	20	IN MECH RM	EC	EC	LP2	13	(2) #12, (1) #12 G. IN 3/4" C.	
GSCP-1	GEO CIRC PUMP	3.0	-	208	3	11	VAR	1	TCC	EC	VFD	-	MECH RM	TCC	EC	-	-	-	-	TCC	TCC	PP1	25,27,29	(3) #12, (1) #12 G. IN 3/4" C.		
GSCP-2	GEO CIRC PUMP	3.0	-	208	3	11	VAR	1	TCC	EC	VFD	-	MECH RM	TCC	EC	-	-	-	-	TCC	TCC	PP1	26,28,30	(3) #12, (1) #12 G. IN 3/4" C.		
GSCP-3	GEO CIRC PUMP	3.0	-	208	3	11	VAR	1	TCC	EC	VFD	-	JANITOR	TCC	EC	-	-	-	-	TCC	TCC	LP1	31,33,35	(3) #12, (1) #12 G. IN 3/4" C.		
GSCP-4	GEO CIRC PUMP	3.0	-	208	3	11	VAR	1	TCC	EC	VFD	-	JANITOR	TCC	EC	-	-	-	-	TCC	TCC	LP1	32,34,36	(3) #12, (1) #12 G. IN 3/4" C.		
GD-1	GARBAGE DISPOSAL	1.5	-	208	3	5.98	C	3R	-	-	-	-	-	-	-	EM	EC	NF	30	UNDER CAB.	EC	EC	LP3	26,28,30	(3) #12, (1) #12 G. IN 3/4" C.	
KEF-1	KITCHEN HOOD EF	1/2	-	120	1	9.8	C	3R	-	-	-	-	-	-	-	EM	EM	NF	30	ON UNIT	EC	EC	PP1	23	(2) #12, (1) #12 G. IN 3/4" C.	
MAU-1	HOOD MAKE UP AIR UNIT	1/2	-	208	3	3.9	C	3R	-	-	-	-	-	-	-	EM	EM	NF	30	ON UNIT	MC	MC	PP1	17,19,21	(2) #12, (1) #12 G. IN 3/4" C.	

**ABBREVIATIONS**  
 CB CIRCUIT BREAKER  
 EC ELECTRICAL CONTRACTOR  
 EM EQUIPMENT MANUFACTURE  
 FYNR FULL VOLTAGE NON REVERSING  
 FS FUSIBLE SWITCH  
 MC MECHANICAL CONTRACTOR  
 PC PLUMBING CONTRACTOR  
 MSS MANUAL STARTER SWITCH  
 NF NON-FUSED  
 NO/NC (1)NORMALLY OPEN/(1)NORMALLY CLOSED  
 SPST SINGLE POLE SINGLE THROW  
 TCC TEMPERATURE CONTROL CONTRACTOR  
 VAR VARIABLE  
 VFD VARIABLE FREQUENCY DRIVE  
 XFMR TRANSFORMER  
 Y YES  
 TOL THERMAL OVERLOAD SWITCH W/ HEATERS  
 V VARIABLE VFD DRIVE  
 C CONSTANT SPEED

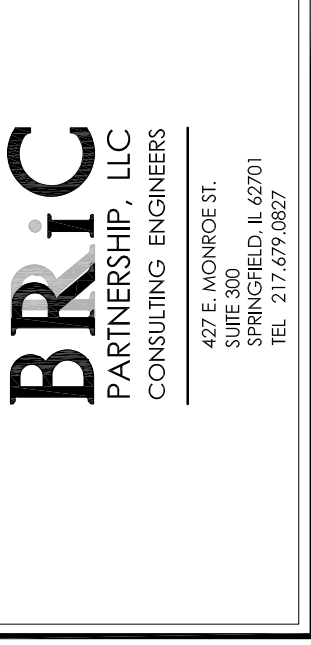
DIGITAL TIME CLOCK EQUIPMENT SCHEDULE												
PLAN MARK	MANUFACTURER	MODEL	DESCRIPTION	VOLTAGE	CONTACTS	24/7 TIMING	HOLIDAYS	BATTERY BACK UP	CASE MATERIAL	MOUNTING	QUANTITY	NOTES
TC-1 & TC-2	INTERMATIC TORK PRE APPROVED	ET1705C GD100A -	DIGITAL TIME CLOCK FOR MOTOR CONTROL	120	DPDT	YES	YES	YES	METAL	WALL 48" A.F.F	12	1

NOTES:  
 1. NEW TIME CLOCK TO CONTROL NEW DOMESTIC CIRCULATION PUMP. SET TIMES FOR ON AND OFF PER THE OWNER DIRECTION.



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State of Illinois Professional Design Firm Number 184.000267



EDISON ELEMENTARY SCHOOL 2019 ADDITION  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455



LICENSE EXPIRES 11/30/19  
 DATE SIGNED 02/15/19

ELECTRICAL SCHEDULES

NO.	DATE	REVISIONS

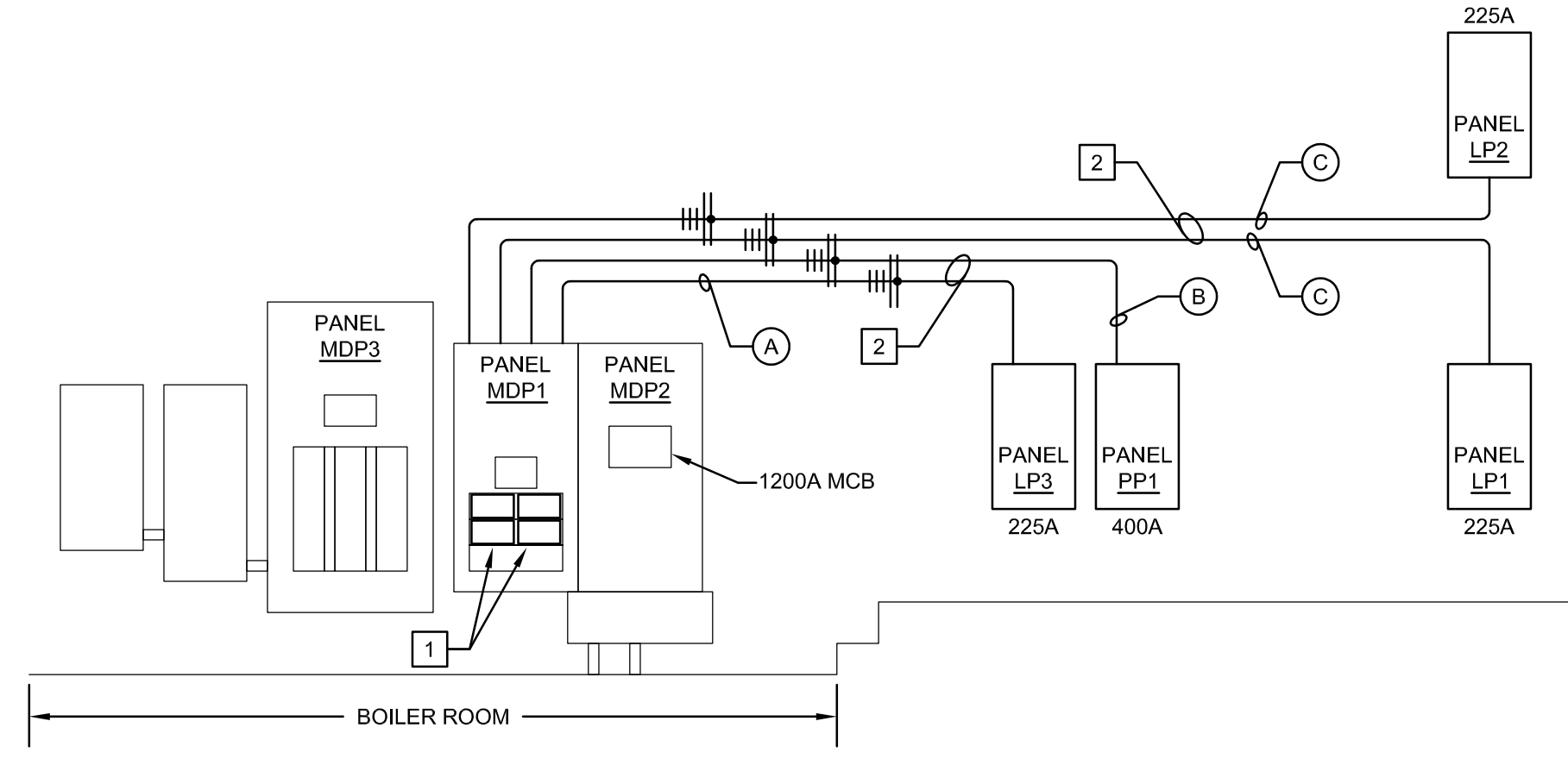
THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET E-4.2  
 OF 91 SHEETS



FEEDER AND WIRING SCHEDULE														
FEEDER TAG	PANEL OR EQUIP. MARK	FED FROM	BREAKER SIZE	AMP CAP.	CONDUIT			CONDUCTORS						NOTES
					SIZE	QUANTITY	TYPE	PHASE WIRE		NEUTRAL WIRE		GROUND WIRE		
								SIZE	QUANTITY	SIZE	QUANTITY	SIZE	QUANTITY	
A	LP1	MDP-1	225	225	3"	1	EMT	300	3	300	1	3	1	1
B	LP2	MDP-1	225	225	3-1/2"	1	EMT	500	3	500	1	2	1	1
C	LP3	MDP-1	225	225	3"	1	EMT	350	3	350	1	3	1	1
C	PP1	MDP-1	400	400	3"	1	EMT	350	3	350	1	3	1	1

**NOTES:**  
 1. PROVIDE PULL BOXES AT POINTS WHERE EXCESS OF (3) 90'S HAVE BEEN USED IN THE RACEWAY RUN. SIZE PULL BOXES PER NEC 314.28.



**1 ONE LINE POWER DISTRIBUTION DETAIL**  
 NOT TO SCALE

**KEYED NOTES - (ONE LINE POWER DETAIL)**

- 1 PROVIDE (3) NEW 225 AMP BREAKERS AND (1) NEW 400 AMP BREAKER AND INSTALL IN EXISTING MDP-1 PANEL. EXISTING PANEL IS A GE SPECTRA SERIES GEAR. REMOVE BLANK OFF PLATES AND INSTALL NEW BREAKERS PER THE EQUIPMENT MANUFACTURERS REQUIREMENTS. SCHEDULE THE POWER OUTAGE WITH THE SCHOOL DISTRICT BEFORE IMPLEMENTING THE INSTALLATION.
- 2 INSTALL NEW BRANCH PANEL FEEDERS AS NOTED ON DRAWINGS. ROUTE NEW FEEDER CONDUITS AND CONDUCTOR THRU THE EXISTING BAR JOIST WEBBING DUE TO SHORT DISTANCE BETWEEN CEILING AND BOTTOM OF BAR JOIST.

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**EDISON ELEMENTARY SCHOOL 2019 ADDITION**  
 at 521 S. Pearl Street - Macomb, Illinois 61455  
 for MACOMB CUSD #185  
 MACOMB District Office - 323 W. Washington Street  
 Macomb, Illinois 61455



LICENSE EXPIRES 11/30/19  
 DATE SIGNED 02/15/19

**ONE LINE POWER PLAN AND MISC. DETAILS**

NO.	DATE	REMARKS

THE CONTRACTOR SHALL VERIFY CONDITIONS & DIMENSIONS ON THE JOB. INFORMATION SHOWN TO SIMILAR CONDITIONS AT OTHER LOCATIONS IN THE WORK UNLESS SET FORTH OTHERWISE.

PROJECT NO. 22150211  
 ISSUE DATE 02/15/2019  
 SHEET E-5.1  
 OF 91 SHEETS