

**PLUMBING GENERAL NOTES**

**PART 1 GENERAL**

**1.01 PURPOSE**

THESE OUTLINE SPECIFICATIONS ARE NOT INTENDED TO COVER ALL NECESSARY ITEMS, BUT TO SERVE AS A GUIDE TO FURNISH AND INSTALL A COMPLETE PLUMBING SYSTEM AS DESCRIBED HEREIN.

**1.02 SCOPE OF WORK**

FURNISH AND INSTALL THE PLUMBING SYSTEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- A. CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
- B. REMOVALS AS REQUIRED AND/OR AS INDICATED.
- C. DOMESTIC WATER SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT, VALVES, BACKFLOW PREVENTER, WATER HEATER, CIRCULATING PUMPS, ETC.
- D. INSULATION FOR PIPING.
- E. NATURAL GAS SYSTEM INCLUDING PIPING TO ALL EQUIPMENT, REGULATORS, VALVES, ETC.
- F. FIRE STOP INCLUDING SLEEVES THRU RATED WALLS AND FLOORS.
- G. ALL VALVES, FITTINGS, HANGERS, SLEEVES, ESCUTCHEON PLATES, ANCHORS, GUIDES, ETC., REQUIRED FOR THE PLUMBING SYSTEM INSTALLATION.
- H. CALORINATION, TESTING, ADJUSTMENT AND CLEANING OF ALL SYSTEMS AND EQUIPMENT.
- I. TEST THE SANITARY, VENT, STORM PIPING SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM). TESTING WITH COMPRESSED AIR OR GAS MAY RESULT IN INJURY OR DEATH.
- J. PROVIDE OPERATING MANUALS AND COMPLETE INSTRUCTION OF OWNERS' PERSONNEL ON OPERATIONS AND MAINTENANCE PROCEDURES FOR ALL EQUIPMENT.
- K. PERMITS, APPLICATIONS, TESTS AND ANY OTHER FEES RELATED TO THIS WORK.

**1.03 CONTRACT DRAWINGS**

IN GENERAL, DRAWINGS ARE SCHEMATIC IN NATURE AND ARE INTENDED AS A GUIDE TO THE CONTRACTOR, BUT DO NOT NECESSARILY SHOW ALL DETAILS, OFFSETS, ETC. ALL DRAWINGS ARE TO BE THOROUGHLY INSPECTED. THE CONTRACTOR'S WORK SHALL CONFORM TO THE INFORMATION CONTAINED IN THIS SPECIFICATION AND/OR AS INDICATED IN THE LATEST REVISION OF THE DRAWINGS REFERRED TO THEREIN. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER REGARDING ALL QUESTIONS ON WHICH HE MAY BE IN DOUBT BEFORE PROCEEDING WITH FABRICATION OF PARTS AFFECTED. THE CONTRACTOR SHALL PREPARE ALL ADDITIONAL DETAIL OR FIELD INSTALLATION DRAWINGS NECESSARY AT HIS OWN EXPENSE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE ENGINEER'S LAYOUT DRAWINGS AND DETERMINE IF ANY CHANGES ARE REQUIRED IN PIPING RUNS, DRAINS, ETC., TO AVOID INTERFERENCE. MAJOR CHANGES SHALL NOT BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. WHILE THE DRAWINGS ARE TO BE ADHERED TO AS CLOSELY AS POSSIBLE, THE CONTRACTOR HAS THE RIGHT TO VARY THE RUN OF CONDUITS, PIPING AND/OR DUCTS DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGINEER.

**1.04 VERIFICATION**

BEFORE RUNNING ANY PIPING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THEY CAN BE INSTALLED AS CONTEMPLATED WITHOUT TRAPPING OR INTERFERING WITH COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR ADJUSTMENT BEFORE LINES ARE RUN, AT NO INCREASE IN CONTRACT PRICE. OF NECESSITY, OPENINGS, SUPPORTING STEEL, FIELD-BUILT CURBS, SPACE REQUIREMENTS, ETC., WERE DESIGNED AROUND SPECIFIC PARAMETERS. WHEN THE CONTRACTOR DETERMINES THE MAKE OF EQUIPMENT TO BE PROVIDED FOR THE JOB, IT SHALL BE HIS RESPONSIBILITY TO VERIFY AND COORDINATE UNIT DIMENSIONS WITH THE GENERAL CONTRACTOR AND ALL OTHER INTERESTED CONTRACTORS ON THE JOB. IT SHALL ALSO BECOME THE CONTRACTOR'S RESPONSIBILITY TO CHANGE AS NECESSARY, THROUGH THE ENGINEER, ALL REQUIRED DIMENSIONS SO THAT OPENINGS, SUPPORTING STEEL, CURBS, ELECTRICAL DATA, ETC., WILL FIT THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR. IN ADDITION, ELECTRICAL POWER, INTERLOCK AND CONTROL DIAGRAMS AND PIPING ARRANGEMENTS WERE DESIGNED AROUND ONE SPECIFIC MANUFACTURER. IF ADDITIONAL WRING, PIPING CONTROLS, ETC., IS REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL INCLUDE THE COST OF THE SAME IN HIS PRICE. DIMENSIONS, ELEVATIONS AND RELATIVE LOCATIONS OF EXISTING EQUIPMENT, SEMERS, PIPES, DUCTS, CONDUITS, ETC., IN PLACE AS SHOWN ON THE DRAWINGS, ARE TAKEN FROM AS-BUILT AND RECORD DRAWINGS AND ARE DEEMED RELIABLE ONLY INsofar AS GENERAL LAYOUT IS CONCERNED. SUCH DIMENSIONS SHALL NOT BE USED FOR LAYOUT DRAWINGS OR DETAILING OF COMPONENTS. THE RESPONSIBILITY FOR CHECKING IN PLACE ITEMS WILL BE THE CONTRACTOR'S. ALL MEASUREMENTS, THE EXACT DETERMINATION OF RELATIVE ELEVATIONS OR LOCATIONS, THE ASCERTAINING OF ACCURACY OF ALL GIVEN ELEVATIONS AND DIMENSIONS AND THE OBTAINING OF ALL NECESSARY ADDITIONAL INFORMATION TO INSURE THE PROPER FIT AND COORDINATION OF ALL CONDUIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

**1.05 CONNECTIONS TO EXISTING WORK**

PLAN THE INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH THE REGULAR OPERATION OF THE EXISTING FACILITIES. SUBMIT TO THE ARCHITECT, FOR HIS APPROVAL, A PROGRESS SCHEDULE INDICATING ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS WILL NOT INTERFERE WITH REGULAR OPERATION OF THE EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL FROM THE ARCHITECT.

**1.06 NEW WORK**

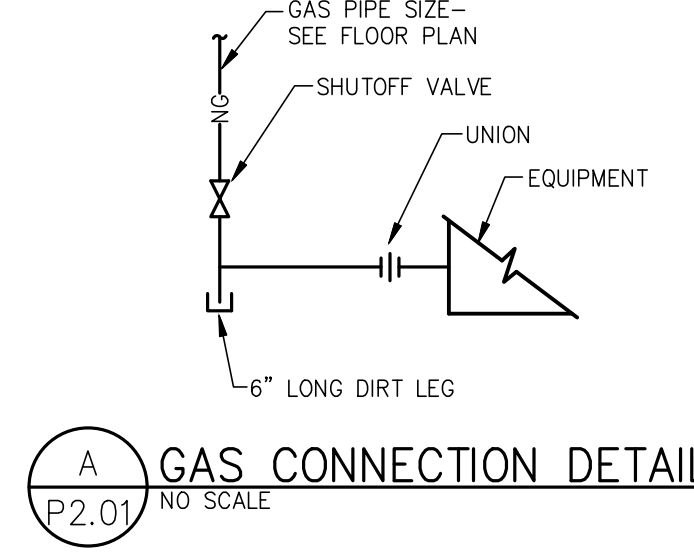
UNLESS OTHERWISE NOTED, ALL WORK INDICATED THROUGHOUT THESE DRAWINGS SHALL BE CONSIDERED TO BE NEW WORK AND SHALL BE INCLUDED AS AN INTEGRAL PART OF THIS CONTRACT.

**1.07 REFERENCED STANDARDS**

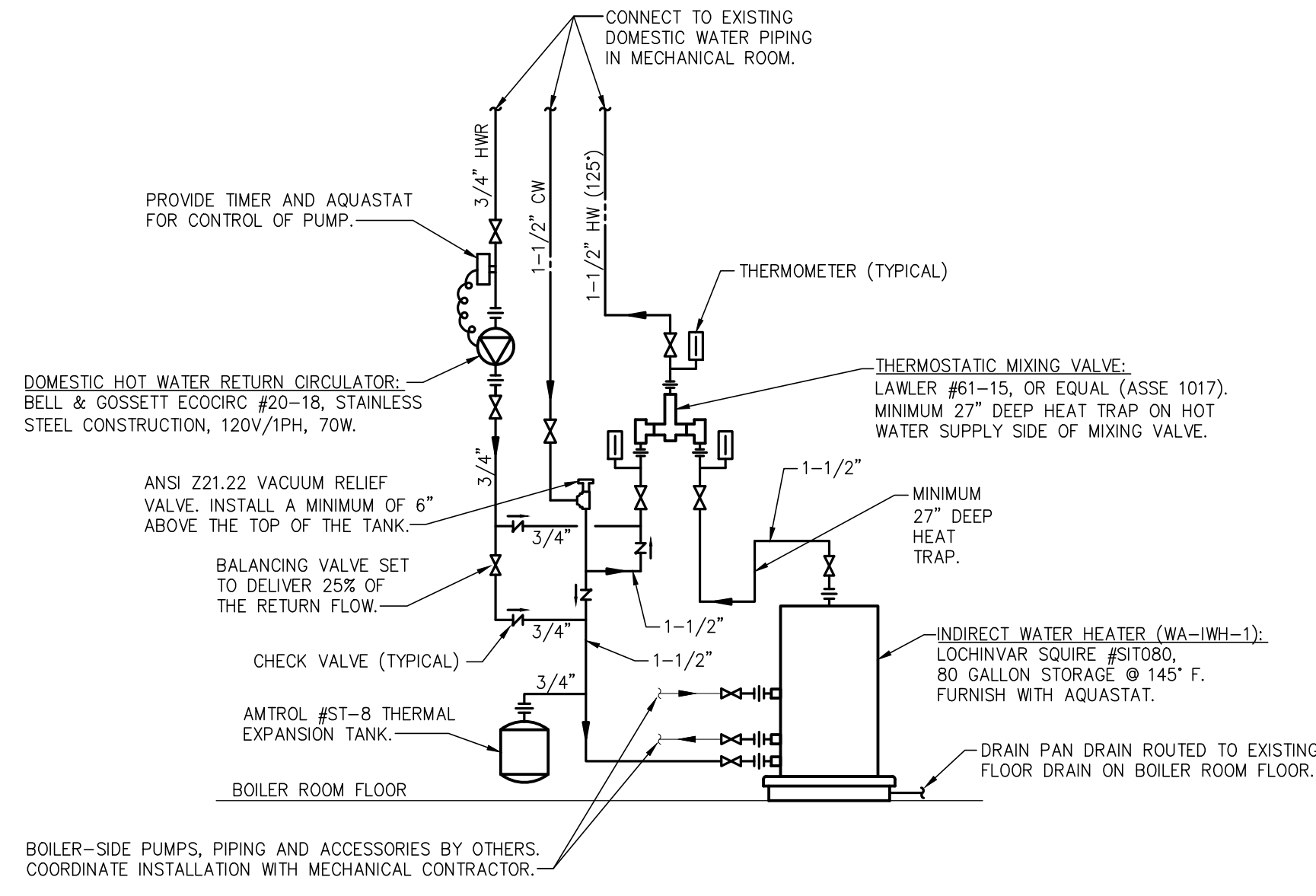
- 2018 MICHIGAN PLUMBING CODE
- 2015 MICHIGAN BUILDING CODE
- 2015 MICHIGAN ENERGY CODE
- 2015 INTERNATIONAL FUEL GAS CODE
- NFPA-NATIONAL FIRE PROTECTION ASSOCIATION

**PART 2 EXECUTION**

- A. ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASED ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.
- B. THE PLUMBING CONTRACTOR SHALL INSTALL ALL PLUMBING EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.
- C. THE PLUMBING CONTRACTOR SHALL NOT KNOWINGLY INSTALL WORK THAT IS IN ERROR.
- D. PROVIDE TWO (2) YEAR WARRANTY ON ALL LABOR AND MATERIALS UNLESS NOTED OTHERWISE.
- E. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES REQUIRED FOR HIS WORK.
- F. THE PLUMBING CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF HIS COMPLETED WORK.
- G. THE SYSTEMS REPRESENTED IN THESE CONTRACT DOCUMENTS HAVE THE INTENT OF PROVIDING ENERGY-EFFICIENT, SAFETY AND COMFORT FOR THE PROPOSED FACILITY.
- H. THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES ON THE PROJECT.
- I. COORDINATE ALL PIPING TO AVOID REQUIRED OVERHEAD CLEARANCES PERTAINING TO ELECTRICAL PANELS AND EQUIPMENT. ALL MATERIALS AND EQUIPMENT INSTALLED SHALL FULLY COMPLY WITH THE SAFE DRINKING WATER ACT OF 1974, INCLUDING PUBLIC LAW 111-380, COMMONLY REFERRED TO AS THE "NO LEAD LAW".
- J. PROCEDURES FOR FLUSHING AND DISINFECTION
- K. PROCEDURES SHALL MEET THE REQUIREMENTS OF AWWA C651 AND C652 AS WELL AS ALL APPLICABLE LOCAL REGULATIONS.
- 2. DISINFECTION AND FLUSHING SHALL BE COMPLETED WITHIN THREE WEEKS PRIOR TO WHOLE OR PARTIAL BENEFICIAL OCCUPANCY. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED MORE THAN TWO WEEKS BUT LESS THAN FOUR WEEKS AFTER DISINFECTION, FLUSHING OF ALL FIXTURES SHALL AGAIN BE COMPLETED. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED FOUR WEEKS OR MORE AFTER DISINFECTION, THE NEED FOR DISINFECTION AND FLUSHING SHALL BE DETERMINED BY A RISK ASSESSMENT CONDUCTED BY THE WATER PROGRAM TEAM / OWNER.
- 3. CONFIRMATION THAT THE BUILDING WATER SYSTEM PERFORMANCE MEETS DESIGN PERFORMANCE PARAMETERS INDICATED IN THE CONTRACT DOCUMENTS.



**A GAS CONNECTION DETAIL**  
SCALE: NONE



**NOTE:** SYSTEM SHALL BE INSTALLED AND PROGRAMMED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CLOSELY COORDINATED WITH THE MECHANICAL CONTRACTOR.

**B INDIRECT DOMESTIC WATER HEATER DETAIL**  
SCALE: NONE

**PLUMBING LEGEND**

-----	DOMESTIC COLD WATER PIPING (CW)
-----	EXISTING DOMESTIC COLD WATER PIPING
-----	DOMESTIC HOT WATER PIPING (HW)
-----	EXISTING DOMESTIC HOT WATER PIPING
-----	DOMESTIC HOT WATER RETURN PIPING (HWR)
-----	EXISTING DOMESTIC HOT WATER RETURN PIPING
-----	NATURAL GAS PIPING
-----	EXISTING NATURAL GAS PIPING
-----	FLOW DIRECTION
-----	PIPING DEMOLITION
ECO	FLOOR CLEANOUT
COIG	CLEANOUT TO GRADE
WCO	WALL CLEANOUT
A.F.F.	ABOVE FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
I.E.	INVERT ELEVATION
P.C.	PLUMBING CONTRACTOR
G.C.	GENERAL CONTRACTOR
-----	CONNECTION OF NEW TO EXISTING
-----	UNION
-----	SHUTOFF VALVE
-----	CHECK VALVE
-----	3-WAY MIXING VALVE
-----	BACKFLOW PREVENTER
-----	STRAINER
-----	PUMP
-----	PIPING ELBOW DOWN
-----	PIPING ELBOW UP
-----	PIPING TEE DOWN
-----	PIPING TEE UP
-----	PRESSURE GAUGE
-----	THERMOMETER w/RANGE
-----	SAFETY OR RELIEF VALVE

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**MAKE + MAKE**

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07/12/2022  
STATE OF MICHIGAN  
ROBERT T. BRANNAN  
LICENSED PROFESSIONAL ENGINEER  
NO. 35872

DATE	DESCRIPTION
07.12.2022	BIDDING & STATE REVIEW

**MECHANICAL UPDATES & RELATED WORK**

**WATERLOO ELEMENTARY SCHOOL**  
1833 SOUTH CUSTER ROAD, MONROE, MI 48161

**MONROE PUBLIC SCHOOLS**  
1275 N. MACOMB STREET, MONROE, MI 48162

<b>JOB #</b>	<b>22114</b>
<b>DRAWN</b>	MPW
<b>CHECKED</b>	RDG

DWG NO.	TITLE	FILE NO.
P1.01	PLUMBING SPECIFICATIONS	22079P1.01.dwg
P2.01	PLUMBING PLANS	22079P2.01.dwg

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PLUMBING SPECIFICATIONS  
**P1.01**

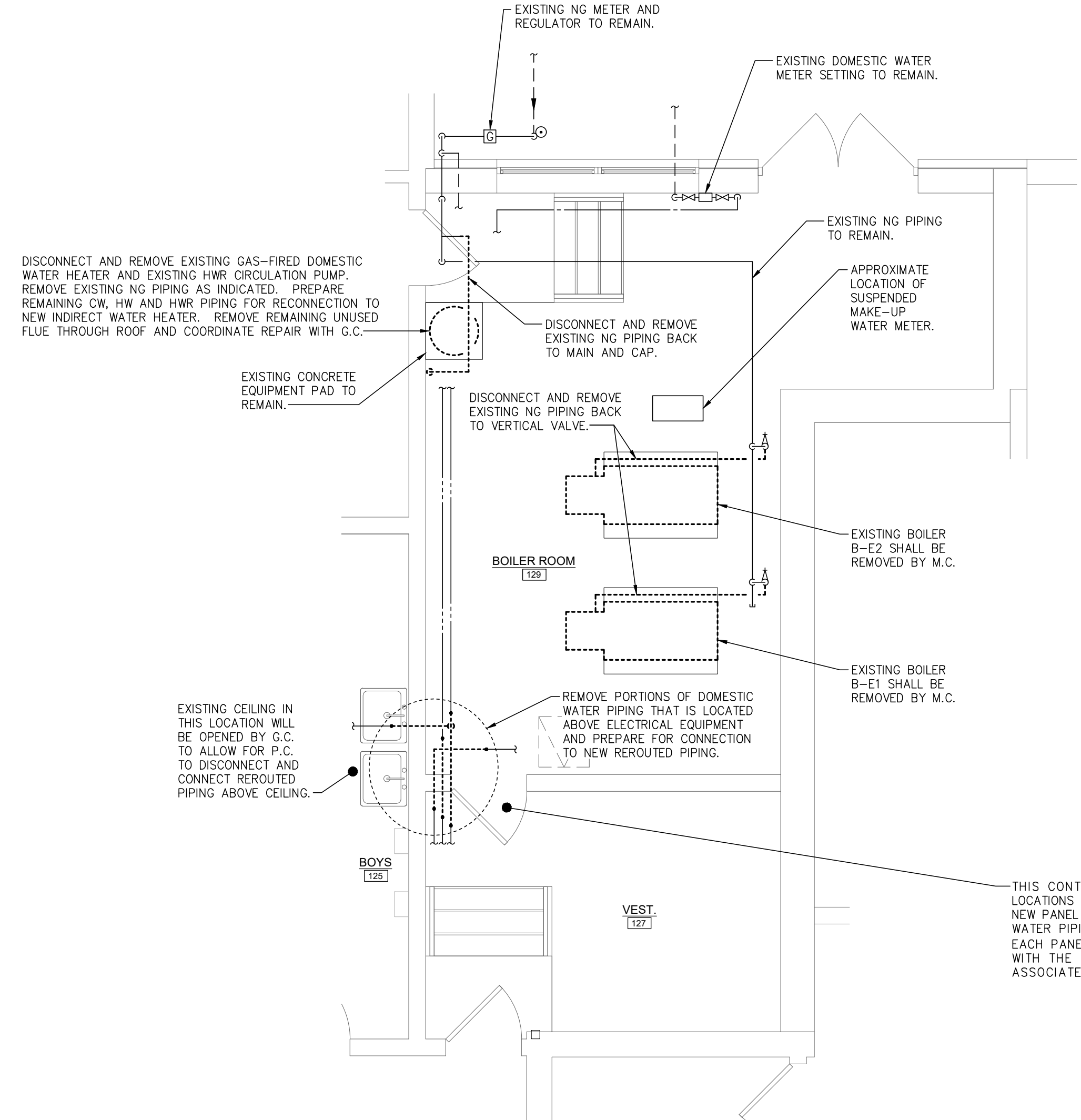
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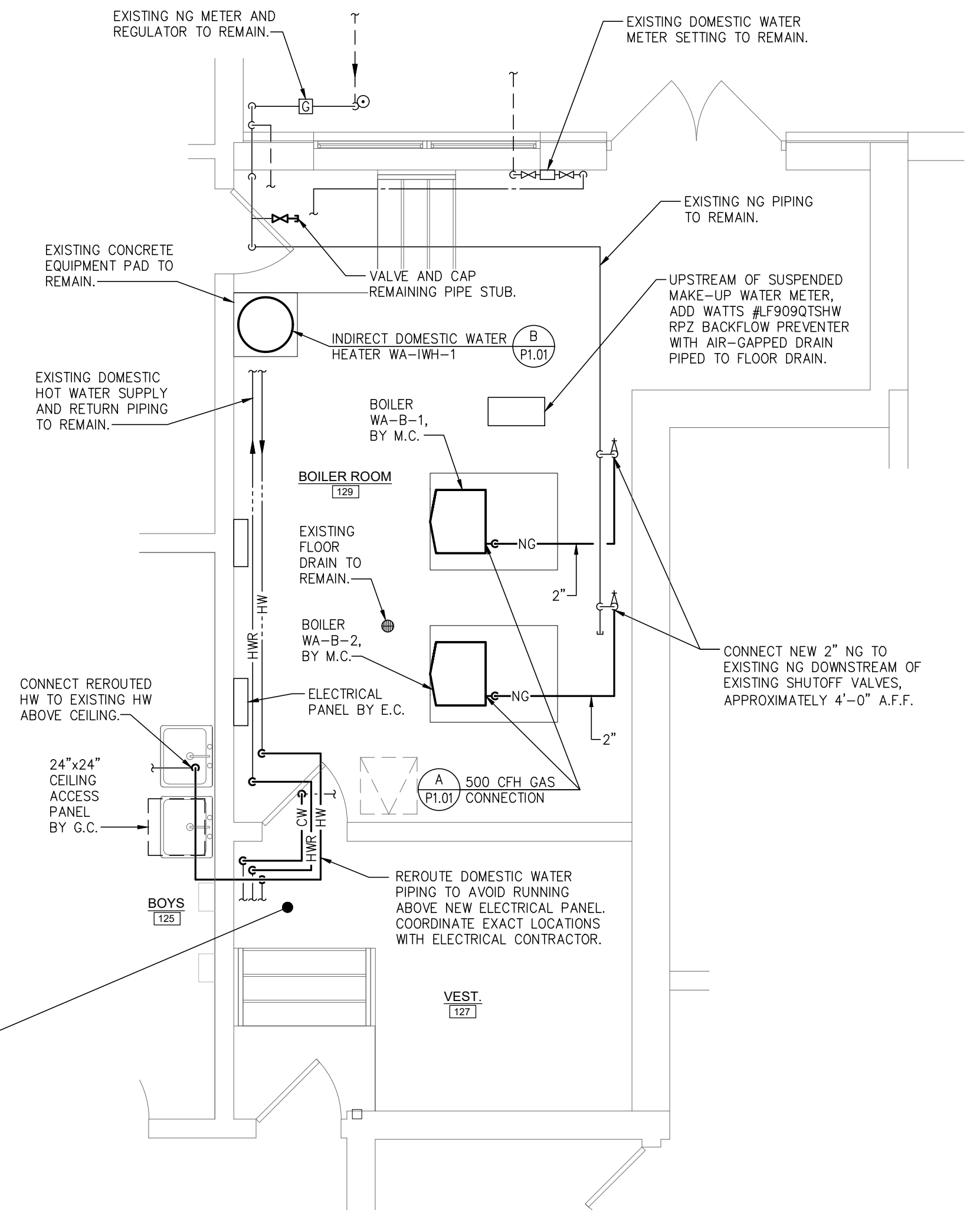
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<b>DRAWN</b>	MPW
<b>CHECKED</b>	RDG

PLUMBING PLANS

**P2.01**



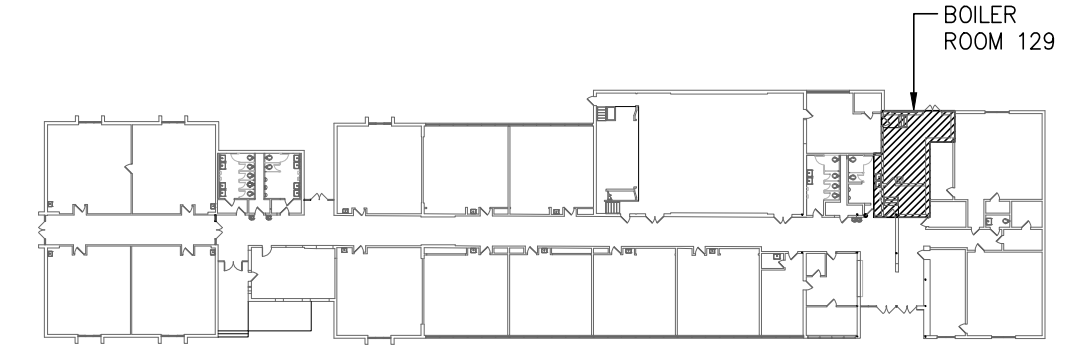
**TOILET ROOMS 121 AND 125 PLUMBING DEMOLITION PLAN**  
 SCALE: 1/4" = 1'-0"



**TOILET ROOMS 121 AND 125 PLUMBING PLAN**  
 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. INSTALL SHUT-OFF VALVES AT ALL DOMESTIC WATER FIXTURE SUPPLY CONNECTIONS.
2. PLUMBING VENTS AND FLUES SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE. COORDINATE VENT AND FLUE LOCATIONS WITH MECHANICAL CONTRACTOR.
3. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ITEMS WITHIN PLUMBING/DUCT CHASES WITH ALL OTHER TRADES.
4. PIPE PENETRATIONS THRU ALL FIRE RATED WALLS SHALL BE SEALED BY THE PLUMBING CONTRACTOR, TO PREVENT SPREAD OF FIRE AND SMOKE AND INGRESS OF MOISTURE.
5. PROVIDE ALL HANGERS, SUPPORTS AND MISCELLANEOUS STEEL REQUIRED FOR THE PROPER INSTALLATION OF ALL PIPING AND EQUIPMENT.
6. COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH ALL OTHER TRADES.
7. MAINTAIN REQUIRED MANUFACTURERS' CLEARANCES ON ALL EQUIPMENT.
8. CONTRACTOR SHALL VERIFY CLEARANCES ABOVE CEILING PRIOR TO INITIATING CONSTRUCTION. COORDINATE EXACT LOCATION OF PIPING WITH ELECTRICAL, MECHANICAL AND GENERAL CONTRACTORS.



**KEY PLAN**  
 NO SCALE

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