



# KOHLER ARCHITECTURE

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REGISTERED:  
MICHIGAN  
OHIO

MEMBER:  
A.I.A.  
N.C.A.R.B.

## ADDENDUM #1

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PROJECT: Domestic Water Replacement & Related Work  
at Cantrick Elementary School  
for Monroe Public Schools  
#26109

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The above plans and specifications are modified, corrected, augmented or supplemented as follows and this Addendum is hereby made a part of the contract documents. Contractor shall note on the Proposal Form that he has received this Addendum.

### ITEM 1: SPECIFICATIONS

- A. Division 00, Section 001200 – Proposal Form (RE-ISSUED HEREIN):
  - a. Deleted UNIT PRICE U-1.
  - b. Added ALTERNATE #1 for the use of press fittings.

### ITEM 2: ARCHITECTURAL DRAWINGS

- A. T0.00 – TITLE SHEET (NOT RE-ISSUED):
  - 1. Contact information for Mechanical Engineer of Record:
    - a. KLEINFELDER  
5201 LEVIS COMMONS BLVD, STE 5201  
PERRYSBURG, OH 43551

CONTACT:  
RYAN D. GRAMLING  
E: [RGRAMLING@KLEINFELDER.COM](mailto:RGRAMLING@KLEINFELDER.COM)  
T: 419.352.7537

### ITEM 3: PLUMBING DRAWINGS

- A. Refer to Drawing P1.01 PLUMBING SPECIFICATIONS AND DETAILS (RE-ISSUED HEREIN):
  - 1. Added Fire Protection Specifications applicable to the fire protection work indicated on Detail 'B' Domestic Cold Water Entry Elevation on Sheet P2.01.
  - 2. Revised Piping Specifications Section 2.02
  - 3. Added Alternate 1 Specification Section 1.13.

- B. Refer to Drawing P2.01 TUNNEL AND BOILER ROOM DOMESTIC WATER PLAN (RE-ISSUED HEREIN):
- a. Added piping not previously shown.
  - b. Added shutoff valves.
  - c. Clarified hanger and support requirements.
  - d. Clarified shutoff valve requirements.
  - e. Added New Copper to Existing Galvanized Steel Pipe Connection Detail.

**-END-**

Distribution: Monroe Public Schools  
Kleinfelder

**PROPOSAL FORM**  
(Submit in Duplicate)

To: Secretary of the School Board:

Having carefully examined the Instructions to Bidders, the Specifications and Drawings, including Addendum No. \_\_\_\_\_, all entitled, "Domestic Water Replacement & Related Work, at Cantrick Elementary School, 1008 Riverview Avenue, Monroe, MI. 48162, File #26109, for Monroe Public Schools, 1275 North Macomb Street, Monroe, MI. 48162", as well as the premises and the conditions affecting the work, the undersigned agrees to furnish all labor and materials to perform the work, including All Trades, and agrees to accept in payment therefore, the sum of:

**PROPOSAL A** (Base Bid)

\_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

**ALTERNATE #1** (Deduct) \_\_\_\_\_ Dollars

(\$\_\_\_\_\_ ) For all material, labor and equipment necessary for the use of press fittings on the domestic water piping in lieu of soldered or brazed fittings, as described in Specifications Section 2.02 A.1.c located on Sheet P1.01.

The following form of bid guarantee, as indicated below, is herewith enclosed, representing 5% of the amount of the Total Bid, including Alternates, payable to the Owner:

Certified Check \_\_\_\_\_ Bid Bond \_\_\_\_\_

It is agreed that this bid may not be withdrawn for a period of 60 days. The Owner reserves the right to waive any irregularities, reject any or all bids or accept the bid that in the opinion of the Owner will serve the best interest of the Owner.

Guaranteed Maximum percentage of mark-up values on change orders including Overhead, profit, bond, insurance, wage rates, and equipment rates for BOTH prime contractors and subcontractors will not more than \_\_\_\_\_%.

The undersigned agrees, if awarded the contract, to commence construction immediately and to complete work as noted in Division #1. (Notes: See Supplemental and Special conditions for Liquidated Damages and Instructions to Bidders for Architect's Inspections and Additional Services.)

**PROPOSAL FORM**  
(Submit in Duplicate)

**SUB-CONTRACTORS** - The undersigned submits for your approval herewith as a condition of being awarded the contract, the **separately attached list** of Contractors to whom it is proposed to let portions of this work, agreeing in every way to be responsible for the work, materials, equipment and supplies furnished by each and all of them. **A tentative list shall be submitted with bid and confirmed/verified no later than 24 hours after bid opening.**

**SUBSTITUTIONS** - The following is a list of manufacturers or trade names of substitute materials and equipment, which the undersigned submit for consideration, guaranteeing the same to conform to exact requirements of the specifications. The additions, deductions or no-charge figures indicated are separate from and not part of the proposal. **A tentative list shall be submitted with bid and confirmed/verified no later than 24 hours after bid opening.**

Item	Substitute Mfr./Trade Name	Add	Deduct	No Charge
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**FAMILIAL DISCLOSURE** – As required by the State of Michigan, and included as part of this proposal, shall be an Affidavit for Statement Regarding Familial Relationship, completely filled out and signed.

**IRAN ECONOMIC SANCTIONS ACT COMPLIANCE** - As required by the State of Michigan, and included as part of this proposal, shall be an Affidavit of Compliance of the Iran Economic Sanctions Act, Michigan Public Act No. 515 of 2012, completely filled out and signed.

**BIDDER'S COMPLIANCE ASSURANCE**- Sign in the space provided below to confirm that you have read, understand, and will comply with the requirements as stated in this project manual, including, but not limited to the sections dealing with the following: (1) criminal/security checks/records and, (2) Qualification of Bidders.

(PLEASE PRINT OR TYPE)

Date _____	Firm _____
Address _____	By _____
_____	Signature _____
Phone _____	Title _____
Email _____	Fed. Tax ID _____

## FIRE PROTECTION SPECIFICATIONS

### PART 1 GENERAL

**1.01 PURPOSE**  
THESE OUTLINE SPECIFICATIONS ARE NOT INTENDED TO COVER NECESSARY ITEMS, BUT TO SERVE AS A GUIDE TO FURNISH AND INSTALL A COMPLETE FIRE PROTECTION SYSTEM AS DESCRIBED HEREIN.

**1.02 DELEGATED DESIGN SUBMITTAL**  
FOR FIRE SUPPRESSION SYSTEMS INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA, SHALL BE SIGNED AND SEALED BY THE QUALIFIED FIRE PROTECTION SYSTEM DESIGNER RESPONSIBLE FOR THE CONTRACTOR'S COORDINATED SHOP DRAWING PREPARATION.

**1.03 SCOPE OF WORK**  
THE WORK INCLUDED IN THESE SPECIFICATIONS SHALL INCLUDE THE FURNISHING OF ALL LABOR MATERIALS AND EQUIPMENT REQUIRED FOR, OR REASONABLY INCIDENTAL TO, THE COMPLETE INSTALLATION OF THE FIRE PROTECTION SYSTEM AS HEREINAFTER SPECIFIED AND AS INDICATED ON THE DRAWINGS.

IN GENERAL, THE WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING ITEMS:

- ALTERATION OF EXISTING LIMITED AREA FIRE SUPPRESSION SPRINKLER SYSTEM AS INDICATED, COMPLETE WITH PIPE, FITTINGS AND HANGERS.
- COORDINATION OF WORK TO MINIMIZE DOWN TIME ON EXISTING FIRE PROTECTION SYSTEMS.
- PROVIDING AND INSTALLING PLUGS OR ENDCAPS ON ALL LINES DURING PERIODS WHEN THEY WOULD OTHERWISE BE OPEN ENDED, UNTIL CONNECTED TO THE SYSTEM.
- PERMIT, INSPECTION, TEST AND PLAN APPROVAL FEES RELATED TO THIS WORK.
- FLUSHING, TESTING, AND FINAL INSPECTION.
- EQUIPMENT SUBMITTALS OF MAJOR ITEMS.
- OPERATION/MAINTENANCE MANUALS WITH WRITTEN INSTRUCTIONS FOR OWNER'S PERSONNEL.
- SYSTEM WARRANTY.

**1.04 REFERENCED STANDARDS**  
ALL WORK IN THIS SECTION SHALL COMPLY WITH AND BE SUBJECT TO THE APPROVAL OF THE INDUSTRIAL RISK INSURERS (I.R.I.), (GALVANIZED PIPE ON DRY SYSTEM NOT REQUIRED), CITY OF MONROE FIRE PREVENTION BUREAU AND STATE FIRE MARSHAL.

THE INSTALLATION SHALL COMPLY WITH NFPA STANDARDS RELATED TO THE INSTALLATION AND MAINTENANCE OF SPRINKLER SYSTEMS, WITH THE REQUIREMENTS OF ALL LOCAL ORDINANCES AND STATE BUILDING CODES.

FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED APPROVALS.

THIS FIRE PROTECTION CONTRACTOR SHALL OBTAIN APPROVAL FROM THE DIVISION OF FACTORY AND BUILDINGS.

**1.05 ADDITIONAL REQUIREMENTS**  
REFER TO PLUMBING SPECIFICATIONS SECTIONS 1.03 THROUGH 1.11 FOR ADDITIONAL APPLICABLE REQUIREMENTS.

**1.06 QUALITY ASSURANCE**  
ALL WORK, MATERIALS, AND EQUIPMENT SHALL COMPLY WITH THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS, OWNERS PERFORMANCE STANDARDS, REQUIREMENTS, LOCAL, COUNTY, AND STATE BUILDING CODES.

WHEN THE WORK HAS BEEN COMPLETED, TESTED, AND APPROVED, THE FIRE PROTECTION CONTRACTOR SHALL FURNISH THE ARCHITECT WITH FOUR (4) SETS OF RECORD PRINTS SHOWING THE TRUE PIPING AND EQUIPMENT.

FIRE PROTECTION CONTRACTOR SHALL PERFORM WORK IN THE PROPER SEQUENCE TO COORDINATE WITH THE OWNER'S REQUIRED USE OF EACH AREA.

THE FIRE PROTECTION CONTRACTOR MUST BE CERTIFIED IN THE STATE TO DO FIRE PROTECTION WORK AND SHALL REGULARLY BE ENGAGED IN THE INSTALLATION OF FIRE SUPPLY SYSTEMS EMPLOYING STATE CERTIFIED "AUTOMATIC SPRINKLER SYSTEM DESIGNERS AND INSTALLERS" CERTIFIED FOR THE DESIGN AND INSTALLATION OF FIRE PROTECTION SYSTEMS.

**1.07 FINAL ACCEPTANCE**  
WHEN THE FIRE PROTECTION CONTRACTOR BELIEVES THAT THE FIRE SUPPRESSION SYSTEM IS SATISFACTORILY INSTALLED AND CAPABLE OF OPERATION AS INTENDED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR CONDUCTING A FINAL OBSERVATION OF THE INSTALLATION. AFTER CORRECTION OF ANY PUNCH LIST ITEMS, THE FIRE PROTECTION CONTRACTOR SHALL NOTIFY THE AUTHORITY HAVING JURISDICTION AND MAKE ARRANGEMENTS FOR FINAL TEST AND OBSERVATION OF THE INSTALLATION. FINAL ACCEPTANCE WILL BE CONTINGENT UPON THE OPERATION AND INSTALLATION PROVIDING SATISFACTORILY TO THE ARCHITECT, OWNER'S INSURANCE UNDERWRITER, LOCAL BUILDING AND FIRE DEPARTMENT, AND THE OWNER'S REPRESENTATIVE.

BEFORE FINAL ACCEPTANCE THE FIRE PROTECTION CONTRACTOR MUST FURNISH TO OWNER A CURRENT COPY OF NFPA STANDARD 25, ALONG WITH OPERATION/MAINTENANCE MANUALS, COPIES OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATES AND SYSTEM WARRANTY.

### PART 2 PRODUCTS

**2.01 PIPING INSTALLATION**  
ALL CHANGES IN PIPE DIAMETER SHALL BE MADE WITH REDUCING FITTINGS. NO BUSHINGS SHALL BE USED.

**2.02 PIPE HANGERS**  
SPACING, ANCHORS, ROD SIZES, ANGLES, RISER CLAMPS AND TYPE OF HANGER SHALL BE ACCEPTABLE BY APPLICABLE NFPA STANDARDS AND AS REQUIRED BY PROJECT CONSTRUCTION DESIGN.

**2.05 AUTOMATIC SPRINKLER SYSTEM PIPING**  
PIPE SHALL BE NEW, DESIGNED FOR 175 PSI COLD WATER WORKING PRESSURE, CONFORMING TO ASTM SPECIFICATIONS, AND HAVE THE MANUFACTURER'S NAME OR BRAND, ALONG WITH THE APPLICABLE ASTM STANDARD, MARKED ON EACH LENGTH OF PIPE.

PIPE 2" AND SMALLER BE SCHEDULE 40, BLACK STEEL IN ACCORDANCE WITH SPECIFICATIONS ASTM A-53, OR A-135 AND A-795.

PIPE SHALL BE JOINED BY SCREWED JOINTS IN ACCORDANCE WITH SPECIFICATION ANSI B 2.1, BY WELDED JOINTS IN ACCORDANCE WITH SPECIFICATION ANSI B31.10, ANSI B 31.10A AND ANSI B 31.10B, OR BY MECHANICAL GROOVED COUPLINGS JOINED BY A UL AND FM APPROVED COMBINATION OF COUPLINGS, GASKETED AND GROOVED GROOVES MAY BE ROLLED AND SHALL BE DIMENSIONALLY COMPATIBLE WITH THE COUPLING. NO CUT GROOVES WILL BE ALLOWED.

WELDING METHODS THAT COMPLY WITH ALL OF THE REQUIREMENTS OF AWS D10.9 SPECIFICATION FOR QUALIFICATION OF WELDING PROCEDURES AND WELDERS FOR PIPING AND TUBING, LEVEL AS-3, ARE ACCEPTABLE MEANS OF JOINING FIRE PROTECTION PIPING.

SCREWED FITTINGS SHALL BE BLACK CAST IRON, 125 POUND CLASS SATURATED STEAM PRESSURE, IN ACCORDANCE WITH ANSI B 16.1. GASKETS SHALL BE 150 POUND CLASS SATURATED STEAM PRESSURE, BLACK, IN ACCORDANCE WITH ANSI B 16.3.

FLANGED FITTINGS SHALL BE BLACK CAST IRON, SHORT BODY CLASS 125 SATURATED STEAM PRESSURE, IN ACCORDANCE WITH ANSI B 16.1. GASKETS SHALL BE FULL FACE OF 1/8" MINIMUM THICKNESS RED SHEET RUBBER. FLANGED BOLTS SHALL BE HEXAGON HEAD MACHINE BOLTS WITH HEAVY SEMI-FINISHED HEXAGON HEAD NUTS, CADMIUM PLATED, HAVING DIMENSIONS IN ACCORDANCE WITH ANSI B 18.2.

WELD FITTINGS SHALL BE BLACK STEEL, STANDARD WEIGHT, IN ACCORDANCE WITH ANSI B 16.9, ANSI B 16.25, ASTM A-234, ANSI B 16.5, OR ANSI B 16.11.

STANDARD GROOVED COUPLINGS 2-1/2" THROUGH 8" SHALL BE MALLEABLE IRON, FOR MAXIMUM 350 PSI WORKING PRESSURE IN ACCORDANCE WITH ASTM A-47, COUPLING GASKETS SHALL BE GRADE "E" EPDM RUBBER.

NON-FLEX GROOVED COUPLINGS 2-1/2" THROUGH 8" SHALL BE DUCTILE IRON 175 PSI WORKING PRESSURE IN ACCORDANCE WITH ASTM A-536. COUPLINGS GASKET MATERIAL SHALL BE GRADE "E" (TYPE "A") EPDM RUBBER.

FITTINGS FOR GROOVED END STEEL PIPE SHALL BE CAST OF DUCTILE IRON CONFORMING TO ASTM A-536 OR MALLEABLE IRON CONFORMING TO ASTM A-47, OR FORGED STEEL CONFORMING TO ASTM A-234 (A-106, GR. B), WITH GROOVED OR SHOULDERED ENDS FOR CORRECT CONNECTION INTO GROOVED PIPING SYSTEMS, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PIPE 2-1/2" AND LARGER: SCHEDULE 10 BLACK STEEL, IN ACCORDANCE WITH ASTM A-135 OR A-795 WITH ROLLED GROOVED ENDS.

PIPE SHALL BE IN ACCORDANCE WITH SPECIFICATION ANSI B 31.10, ANSI B 31.10A, AND ANSI B 31.10B, AND JOINED BY UL AND FM APPROVED GROOVED TYPE COUPLINGS. GROOVES SHALL BE ROLLED GROOVED TYPE ONLY (CUT GROOVING WILL NOT BE ALLOWED) AND SHALL BE DIMENSIONALLY COMPATIBLE WITH THE COUPLING. PIPE END PREPARATION FOR THE GROOVED TYPE COUPLINGS WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

### PART 3 EXECUTION

- TESTING - ALL NEW PIPE SHALL BE HYDROSTATICALLY TESTED UNDER A PRESSURE OF 200 PSI FOR A PERIOD OF NOT LESS THAN TWO HOURS WITH NO DROP IN PRESSURE. LEAKS, IF EVIDENT AS A RESULT OF TESTING, SHALL BE CORRECTED IN AN APPROVED MANNER. CAULKING WILL NOT BE APPROVED. TEST SHALL BE INITIATED PRIOR TO PAINTING AND BEFORE REQUEST FOR FINAL INSPECTION.
- THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST 48 HOURS IN ADVANCE OF ANY TEST.
- ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASED ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.
- THE FIRE PROTECTION CONTRACTOR SHALL INSTALL ALL FIRE PROTECTION EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.
- THE FIRE PROTECTION CONTRACTOR SHALL NOT KNOWINGLY INSTALL WORK THAT IS IN ERROR.
- PROVIDE ONE (1) YEAR WARRANTY ON ALL LABOR AND MATERIALS UNLESS NOTED OTHERWISE.
- THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES REQUIRED FOR HIS WORK.
- THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF HIS COMPLETED WORK.
- THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES ON THE PROJECT.

## PLUMBING SPECIFICATIONS

### 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:

- CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
- REMOVALS AS REQUIRED AND/OR AS INDICATED.
- DOMESTIC WATER SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT, VALVES, REVERSE WATER METER SETTING, BACKFLOW PREVENTER, ETC.
- MODIFICATIONS TO EXISTING ELECTRICAL DOMESTIC HOT WATER HEATER SERVING THE KITCHEN.
- INSULATION FOR PIPING.
- ALL VALVES, FITTINGS, HANGERS, SLEEVES, ESCUTCHEON PLATES, ANCHORS, GUIDES, ETC., REQUIRED FOR THE PLUMBING SYSTEM INSTALLATION.
- CHLORINATION, TESTING, ADJUSTMENT AND CLEANING OF SYSTEMS AND EQUIPMENT AS NOTED.
- INSTRUCTION OF OWNERS' PERSONNEL AND OPERATING MANUALS FOR ALL EQUIPMENT.
- PERMITS, APPLICATIONS, TESTS AND ANY OTHER FEES RELATED TO THIS WORK.

**1.03 CONTRACT DRAWINGS**  
CONTRACTOR SHALL PROVIDE 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 BY 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 CONDUNITS, 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 IT 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 DETERMINED 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 BE 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 WIRING, PIPING CONTROLS, ETC., IS REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAME IN HIS PRICE. DIMENSIONS, ELEVATIONS AND RELATIVE LOCATIONS OF EXISTING EQUIPMENT, SEWERS, PIPES, DUCTS, CONDUNTS, ETC., IN PLACE AS SHOWN ON THE DRAWINGS, ARE TAKEN FROM AS-BUILT AND RECORD DRAWINGS AND ARE DEEMED RELIABLE UNLESS 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 CONDUNIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

**1.05 SITE VISIT**  
ALL CONTRACTORS BIDDING THE WORK INDICATED THROUGHOUT THESE CONTRACT DOCUMENTS ARE REQUIRED TO VISIT, AND THOROUGHLY EXAMINE THE PROJECT SITE AND ITS ASSOCIATED CONDITIONS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS UNDER WHICH THIS WORK MUST BE PERFORMED. ALL CONTRACTORS SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO SUBMITTING A BID PROPOSAL. FAILURE TO DO SO SHALL BE DEEMED AS ACCEPTANCE OF EXISTING CONDITIONS. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR ANY DEVIATIONS OR DISCREPANCIES TO THESE PLANS AFTER A CONTRACTOR HAS BEEN SELECTED.

**1.06 GUARANTEE**  
THE CONTRACTOR GUARANTEES BY HIS ACCEPTANCE OF THE CONTRACT THAT ALL WORK WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND/OR MATERIALS AND THAT ALL APPARATUS WILL DEVELOP CHARACTERISTICS SPECIFIED, SHOULD ANY DEFECTS IN WORKMANSHIP, AND/OR MATERIALS REQUIRE REVISION OF ANY PART OF THE ELECTRICAL, MECHANICAL, PLUMBING, OR ARCHITECTURAL LAYOUT, ALL SUCH REVISIONS AND ALL NEW DRAWINGS AND DETAILING REQUIRED HEREOF SHALL, WITH THE APPROVAL OF THE ARCHITECT, BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE. WHERE SUCH APPROVED REVISIONS REQUIRE A DIFFERENT QUALITY AND ARRANGEMENT OF DUCTWORK, PIPING, WRING, CONDUIT AND/OR EQUIPMENT FROM THAT SPECIFIED OF DETAILED ON THE DRAWINGS WITH THAT APPROVAL OF THE ARCHITECT, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH MATERIAL AND/OR EQUIPMENT REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

**1.07 SUBMITTALS**  
AFTER RECEIVING APPROVAL OF EQUIPMENT MANUFACTURERS AND PRIOR TO DELIVERY OF ANY MATERIAL TO JOB SITE AND SUFFICIENTLY IN ADVANCE OF THE REQUIREMENTS TO ALLOW ARCHITECT AMPLE TIME FOR CHECKING, SUBMIT FOR REVIEW DETAILED DIMENSIONED DRAWINGS AND/OR EQUIPMENT OUT SHEETS SHOWING CONSTRUCTION SIZE, ARRANGEMENT, ORANGES, PERFORMANCE CHARACTERISTICS AND CAPACITY OF MATERIAL AND EQUIPMENT. SHOP DRAWINGS SHALL SHOW THE RATINGS OF ITEMS AND SYSTEMS AND HOW THE COMPONENTS OF AN ITEM AND SYSTEM ARE ASSEMBLED, FUNCTION TOGETHER AND HOW THEY WILL BE INSTALLED ON THE PROJECT. DATA AND SHOP DRAWINGS FOR COMPONENT PARTS OF AN ITEM OR SYSTEM SHALL BE COORDINATED AND SUBMITTED AS A UNIT. IT IS THE INTENT OF THESE CONTRACT DRAWINGS TO HAVE THE MECHANICAL CONTRACTOR PREPARE "AS-BUILT" RECORD DRAWINGS IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS.

**1.08 CUTTING, PATCHING & FINISHING**  
PROVIDE CUTTING AND PATCHING OF ALL MATERIALS NECESSARY FOR THE INSTALLATION AS INDICATED OR SPECIFIED. NEATLY REMOVE AND LEGALLY DISPOSE OF PLUMBING COMPONENTS AND ITEMS NO LONGER IN USE. PROTECT THE STRUCTURE, FINISHINGS, FINISHES AND MATERIALS ADJACENT TO THE AREA OF CUTTING AND PATCHING. PATCH EXISTING FINISHED SURFACES AND EQUIPMENT USING NEW MATERIALS AND METHODS, TO MATCH ADJACENT WORK, UTILIZING EXPERIENCED INSTALLERS. PATCHING OF FIRE RATED PARTITIONS, CEILING AND OTHER ASSEMBLIES, SHALL MATCH THE RATING OF THE RATED BARRIER WITH MATERIALS LISTED AND IDENTIFIED FOR SUCH USE, AND SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE GENERAL TRADES SPECIFICATIONS. IN AREAS WHERE NEW FINISH WORK BY THE GENERAL CONTRACTOR IS NOT INCLUDED IN THE PROJECT, THIS CONTRACTOR SHALL REPAIR AND/OR RESTORE FINISHES TO MATCH ADJACENT FINISHES. OPENINGS AROUND PIPING OR IN SLEEVES FOR PIPING PENETRATING FIRE-RATED FLOOR SLABS, WALLS, PARTITIONS, CEILING, OR SMOKE PARTITIONS, SHALL BE SEALED AT BOTH SIDES OF THE PENETRATION. INSULATION SHALL NOT EXTEND THROUGH SLEEVES. PACK OPENINGS WITH CALCIUM SULFATE BLOCK, DOW CORNING 3-6548 RTV SILICON FOAM, 3M CP25 CAULK, OR 303 PUTTY FIRE BARRIER SYSTEM OR MATERIAL HAVING THE SAME FIRE RATING AS THE FLOOR OR WALL PENETRATED. FIBERGLASS IS NOT ACCEPTABLE.

**1.09 CONNECTIONS TO EXISTING WORK**  
PLAN THE INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE 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.

**1.10 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.

**1.11 CLOSE-OUT**  
CONTRACTOR SHALL PROVIDE FIELD-TESTING, CHECKOUT AND SYSTEM DEMONSTRATIONS TO OWNER TO ASSURE PROPER PERFORMANCE AND ADJUSTMENT OF ITEMS PROVIDED UNDER THE CONTRACT. REMOVE ALL DEBRIS CREATED BY THE CONSTRUCTION WORK AND CLEAN ALL EQUIPMENT, AIR DEVICES, ETC., INSIDE AND OUTSIDE. PROVIDE HARDBOUND BINDER WHICH INCLUDES: COPIES OF EACH SHOP DRAWING, PREVENTATIVE MAINTENANCE PROCEDURES, OPERATION AND INSTRUCTION MANUALS, LITERATURE SUPPLIED WITH PLUMBING EQUIPMENT, AND A LIST OF ALL CONTRACTOR'S PURCHASE ORDERS WITH SUPPLIERS, NAMES, ADDRESSES AND PHONE NUMBERS. FOR ALL MATERIALS, PROVIDE AT LEAST 2 HOURS OF INSTRUCTION TO PERSONNEL SELECTED BY THE OWNER, TO FAMILIARIZE THEM WITH THE LOCATION OF SIGNIFICANT EQUIPMENT, TRAIN THEM ON EQUIPMENT FUNCTIONS, REVIEW MAINTENANCE PROCEDURES AND COORDINATE INFORMATION AVAILABLE IN THE CLOSE-OUT BINDER.

**1.12 REFERENCED STANDARDS**  
2021 MICHIGAN PLUMBING CODE  
2021 MICHIGAN BUILDING CODE  
2021 MICHIGAN ENERGY CODE  
NFPA-NATIONAL FIRE PROTECTION ASSOCIATION

**1.13 ALTERNATES**  
REQUIREMENTS:  
A. ALTERNATE QUOTED ON BID FORMS WILL BE REVIEWED AND ACCEPTED AT THE OWNER'S OPTION. ACCEPTED ALTERNATE WILL BE IDENTIFIED IN THE OWNER'S CONTRACT AGREEMENT.  
B. COORDINATE AND MODIFY AS NECESSARY RELATED WORK IN ORDER TO INTEGRATE THE WORK OF EACH ALTERNATE.  
C. ALTERNATE #1:  
1. STATE THE AMOUNT TO BE SUBTRACTED FROM THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE USE OF PRESS FITTINGS ON THE DOMESTIC WATER PIPING IN LIEU OF SOLDERED OR BRAZED FITTINGS, AS DESCRIBED IN SPECIFICATIONS SECTION 2.02 A.1-G.

**PART 2 PRODUCTS**  
**2.01 GENERAL**  
THE MANUFACTURERS REFERENCED THROUGHOUT THIS OUTLINE SPECIFICATION ARE INCLUDED AS A BASIS OF DESIGN. SUBMISSION OF ALTERNATE MANUFACTURERS OF SIMILAR EQUIPMENT IS SUBJECT TO ENGINEER APPROVAL. UNITS OF EQUIPMENT, OTHER THAN THOSE LISTED AS THE BASIS OF DESIGN, MUST BE PROVEN TO BE PHYSICALLY ACCEPTABLE, IN ADDITION TO MEETING ALL PERFORMANCE AND EQUIPMENT SPECIFICATIONS. LIABILITY OF NON-CONFORMANCE SHALL LIE WITH THE CONTRACTOR/SUBMITTER.

**2.02 PIPING**  
A. DOMESTIC WATER - INSIDE BUILDING ABOVEGROUND  
1. 4" AND SMALLER- TYPE "L" HARD TEMPER COPPER:  
a. WITH LEAD-FREE SOLDERED JOINTS AND WROUGHT STANDARD WEIGHT PRESSURE RATED FITTINGS.  
b. WITH BRAZED JOINTS AND WROUGHT STANDARD WEIGHT PRESSURE RATED FITTINGS. APPROVED FLUX SHALL BE APPLIED WHERE REQUIRED. JOINT SHALL BE BRAZED WITH A FILLER METAL CONFORMING TO AWS A5.8.  
c. ALTERNATE #1: WITH COPPER PRESS FITTINGS, WHICH SHALL CONFORM TO THE MATERIAL AND SIZING REQUIREMENTS OF ASME B16.18 OR ASME B16.22. O-RINGS FOR COPPER PRESS FITTINGS SHALL BE EPDM. PRESS FITTINGS SHALL BE PROVIDED BY APOLLO, MUELLER, NIBCO OR VEGA AND SHALL BE INSTALLED USING ONLY MANUFACTURER APPROVED TOOLS.  
d. GROOVED FITTINGS AND MECHANICALLY FORMED TEE FITTINGS ARE NOT ACCEPTABLE.

**2.03 VALVES**  
A. DOMESTIC WATER PIPING  
1. BALL: 125 PSI, LEAD-FREE BRONZE BODY, TEFLON TRIM, 2-PIECE, FULL PORT, APOLLO #77CL-A WITH EXTENDED HANDLE SLEEVE FOR INSULATION.  
2. CHECK: 125 PSI, LEAD-FREE BRONZE BODY AND TRIM, APOLLO #611T-LF.  
3. BUTTERFLY: 150 PSI, CAST IRON BODY WITH TAPPED LUGS, EPDM TRIM, GRINNELL SERIES 8000.

B. APPROVED MANUFACTURERS  
1. WATTS, APOLLO, CRANE, GRINNELL, NORDSTROM, NIBCO, STOCKHAM, SMITH, MILWAUKEE.

**2.04 PLUMBING SPECIALTIES**  
A. WATER HAMMER ARRESTER (WHA)

- WATER HAMMER ARRESTER SHALL BE OF LEAD FREE CONSTRUCTION AND SHALL BE EQUIVALENT TO WATTS #LF15M2. SIZE TO CORRESPOND WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD P01 - WH201 AND ASSE #1010 STANDARD.
- REDUCED PRESSURE BACKFLOW PREVENTION DEVICE

- BACKFLOW PREVENTION DEVICE SHALL BE OF LEAD-FREE CONSTRUCTION AND SHALL BE TESTED AND CERTIFIED UNDER ASSE STANDARD #1012 USFCF MANUAL, AWWA STANDARD C511 AND BE APPROVED BY EPA, LOCAL AND STATE CODES.
- WATTS #PVS-7000 FLOOD PROTECTION VALVE STATION, CONSISTING OF WATTS #LF113FP AUTOMATIC SHUTDOWN CONTROL VALVE AND RELAY BOX, WATTS SENTRYPLUS ALERT SENSOR AND WATTS #LF909-OSY-S-FDA-FS, 4" RPZ BACKFLOW PREVENTER WITH STRAINER AND AIR GAP FITTING DRAIN ROUTED TO EXISTING FLOOR DRAIN. REDUCED PRESSURE ZONE PRINCIPLE BACKFLOW PREVENTION DEVICE SHALL INCLUDE SHUTOFF VALVES, STRAINER, TEST COCKS, AND FULL SIZE DRAIN WITH AIR GAP CONNECTION DEVICE.

**2.05 PIPE INSULATION**  
A. GENERAL:

- ALL INSULATION, UNLESS OTHERWISE NOTED, SHALL HAVE A COMPOSITE RATING INCLUDING INSULATION ADHESIVES, JACKET, ETC., AS FOLLOWS: THE COMPOSITE ASSEMBLY SHALL HAVE A FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NOT HIGHER THAN 50.
- INSULATION SHALL BE MANUFACTURED BY OWENS-CORNING, KNAUF OR ARMSTRONG AND THERMALLY EQUIVALENT TO THE OWENS-CORNING MATERIALS SPECIFIED.
- THE PIPING INSTALLATION MATERIAL SHALL BE AN UL-RATED, NON-COMBUSTIBLE PIPE INSULATION RECOMMENDED FOR BOTH HOT AND COLD PIPING. INSULATION SHALL BE HEAVY DENSITY SECTIONAL PIPE INSULATION JACKED WITH AN EMBOSSED VAPOR BARRIER LAMINATED ALL-SERVICE JACKET WITH SELF-SEALING LAP ADHESIVE. LAP AND SEAL ALL JOINTS TO INSURE VAPOR BARRIER. THERMAL CONDUCTIVITY (K) SHALL NOT EXCEED 0.24 BTU SQUARE FOOT F/INCH. INSULATION SHALL EQUAL OWENS-CORNING FIBERGLASS 25 ASI/SSL THICKNESS AS PER TABLES IN OTHER SECTIONS OF THESE SPECIFICATIONS. IF STAPLES ARE USED ON COLD WATER LINES, APPLY WHITE VAPOR BARRIER OVER STAPLES. AT HANGERS, PROVIDE GALVANIZED SHIELD EXTENDING 12" ON EACH SIDE OF HANGER.
- WHERE FIBERGLASS INSULATION ON PIPING IS USED, PIPE FITTINGS SHALL BE COVERED WITH INSULATING CEMENT OF A THICKNESS EQUAL TO ADJACENT PIPE INSULATION AND WRAPPED WITH GLASS CLOTH.
- IN LIEU OF BUILDING UP A FITTING WITH INSULATING CEMENT, A PREFORMED INSULATING FITTING COVER SUCH AS ZESTON 25/50 RATED PVC INSULATED FITTING COVER WITH FIBERGLASS INSERT MAY BE USED. ONLY INSULATING MATERIALS MEETING THE 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATINGS ARE ALLOWABLE IN AIR DUCTS, AIR CHASES OR AIR PLenums.

- PIPING INSULATION THICKNESS
  - DOMESTIC COLD WATER:
    - 1-1/4" AND BELOW - 1/2" THICK.
    - 1-1/2" AND ABOVE - 1" THICK.
  - DOMESTIC HOT WATER AND RECIRCULATION:
    - 1-1/4" AND BELOW - 1" THICK.
    - 1-1/2" AND ABOVE - 1-1/2" THICK.

- 2.06 IDENTIFICATION**  
A. PIPING:  
1. INTERIOR INSTALLED PIPING: STENOILED MARKERS, SHOWING SERVICE AND DIRECTION OF FLOW ON ALL PIPE MAINS.  
2. LETTER SIZE: 1" HIGH LETTERS.  
3. COLOR CODES: COMPLY WITH ASME A13.1, UNLESS OTHERWISE INDICATED.  
4. LOCATION: LOCATE MARKERS AND COLOR BANDS WHERE PIPING IS EXPOSED IN FINISHED SPACES; MACHINE ROOMS; ACCESSIBLE MAINTENANCE SPACES SUCH AS SHAFTS, TUNNELS, AND PLenums; AND OWNER-APPROVED NON-CONCEALED LOCATIONS. LOCATE MARKERS WHERE PIPES ENTER INTO CONCEALED AREAS AND AT MAXIMUM INTERVALS OF 50 FEET IN EACH SPACE WHERE PIPES ARE EXPOSED OR CONCEALED BY REMOVABLE CEILING SYSTEM.

- PART 3 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. 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  
1. 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.  
K. COORDINATE ALL PIPING TO AVOID REQUIRED OVERHEAD CLEARANCES PERTAINING TO ELECTRICAL PANELS AND EQUIPMENT.  
L. PIPING SHALL BE SUPPORTED AT THE FOLLOWING MAXIMUM INTERVAL SPACING:

MATERIAL	HORIZONTAL (FT.)	VERTICAL (FT.)
COPPER PIPE	12	10

## PLUMBING LEGEND

- DOMESTIC COLD WATER PIPING (CW)
- EXISTING DOMESTIC COLD WATER PIPING (CW)
- DOMESTIC HOT WATER PIPING (HW)
- EXISTING DOMESTIC HOT WATER PIPING (HW)
- DOMESTIC HOT WATER RETURN PIPING (HWR)
- EXISTING DOMESTIC HOT WATER RETURN PIPING (HWR)
- NATURAL GAS PIPING
- EXISTING NATURAL GAS PIPING
- SANITARY VENT PIPING
- EXISTING SANITARY VENT PIPING
- SANITARY PIPING BELOW FLOOR
- EXISTING SANITARY PIPING BELOW FLOOR
- SANITARY PIPING ABOVE FLOOR
- CONDENSATE DRAIN
- EXISTING CONDENSATE DRAIN
- FLOOR DIRECTION
- PIPING DEMOLITION
- EQO --- FLOOR CLEANOUT TO GRADE
- EQTB --- 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
- PIPING FLOOR DOWN
- PIPING ELBOW UP
- PIPING TEE DOWN
- PIPING TEE UP
- PRESSURE GAUGE

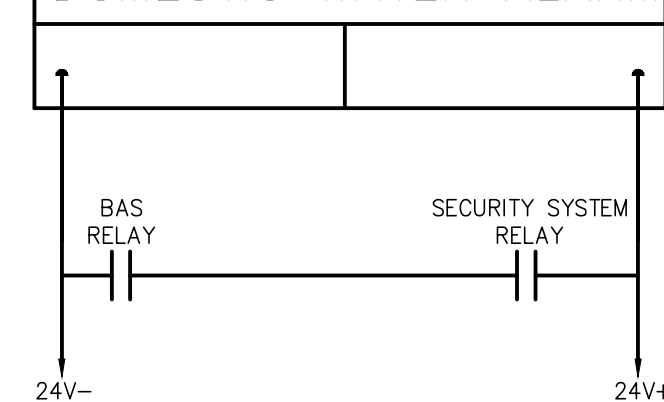
## T.C.C. SCOPE OF WORK

ALL TEMPERATURE CONTROL WORK TO BE PERFORMED BY AUTOMATED LOGIC GREAT LAKES. CONTACT SHANE SPRING AT 419-887-1611.

ALL SECURITY WORK SHALL BE PERFORMED BY HABITEC. CONTACT NICK WERT AT 419-205-1147

- THE TEMPERATURE CONTROL SCOPE SHALL INCLUDE BUT NOT BE LIMITED TO MODIFICATION TO EXISTING BUILDING TEMPERATURE CONTROL SYSTEM TO ADD THE IN ALARM FOR NEW AUTOMATIC SHUTDOWN CONTROL VALVE FOR BUILDING WATER SERVICE.
- SET UP RELAYS FOR SECURITY SYSTEM TO ALSO RECEIVE ALARM POINT.
- COORDINATE ALL SYSTEM ALARMS WITH APPROPRIATE MONROE PUBLIC SCHOOLS PERSONAL FOR PROPER TEXT AND EMAIL CONTACTS.
- THE TEMPERATURE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPERATURE CONTROL AND INTERLOCK WIRING REQUIRED FOR THE PROJECT. ALL EXPOSED TO VIEW 24V AND ALL 120V TEMPERATURE CONTROL WIRING SHALL BE ROUTED IN ITS OWN SEPARATE CONDUIT FOR ENTIRE ROUTING, REFER TO THE ELECTRICAL SPECIFICATIONS FOR CONDUIT MATERIAL AND INSTALLATION REQUIREMENTS.

## DOMESTIC WATER ALARM



## BAS AND SECURITY INTERFACE DIAGRAM

- TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL NECESSARY ITEMS TO ALLOW OWNERS SECURITY SYSTEM TO THE INTO BOILER ALARM.
- TEMPERATURE CONTROL CONTRACTOR SHALL HIRE DIRECT OWNERS SECURITY CONTRACTOR TO PROVIDE FINAL INTERLOCK FROM RELAY TO THEIR CONTROL SYSTEM MEETS.
- SECURITY CONTRACTOR CONTACT IS: NICK WERT AT HABITECH 419-205-1147

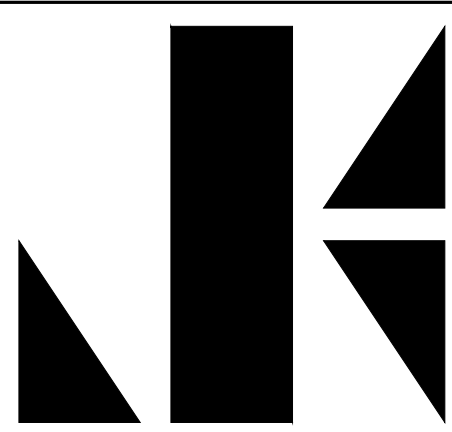
## TEMPERATURE CONTROL SYSTEM POINT LIST

SYSTEM POINT DESCRIPTION	HARDWARE POINTS				SOFTWARE POINTS				SHOW ON GRAPHIC		
	AI	AO	BI	BO	AV	BV	LOOP	SCHED		TREND	ALARM
DOMESTIC WATER CONTROL VALVE ALARM										X	X

## PLUMBING DRAWING LIST

DWG NO.	TITLE	FILE NO.
P1.01	PLUMBING SPECIFICATIONS AND DETAILS	26109P1.01.dwg
P2.01	TUNNEL AND BOILER ROOM PLUMBING PLANS	26109P2.01.dwg
P2.02	FIRST FLOOR PLAN (FOR REFERENCE)	26109P2.02.dwg

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DATE: 03.16.2026  
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04.08.2026 ADDENDUM #1

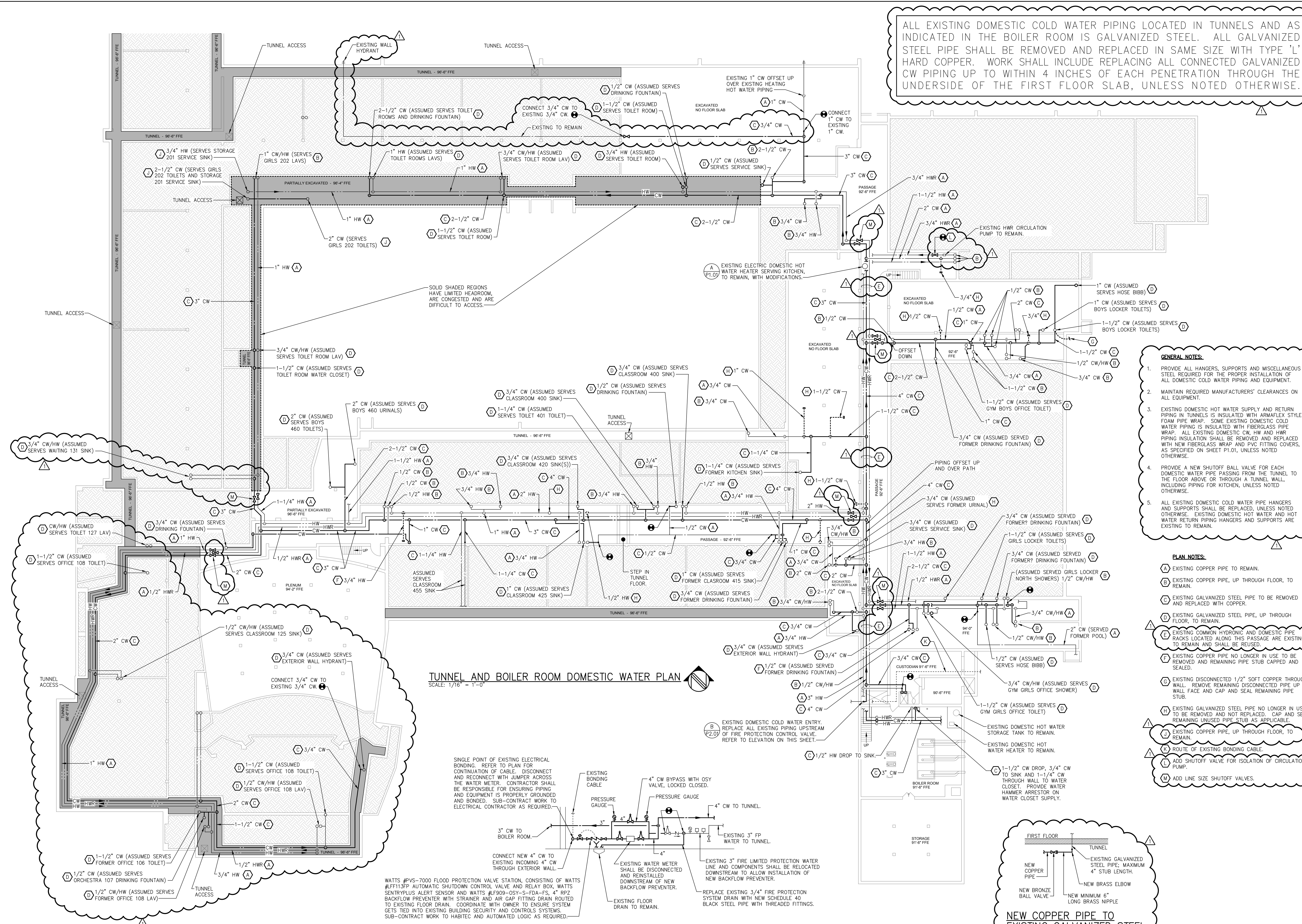
**DOMESTIC WATER REPLACEMENT & RELATED WORK**  
AT  
**CANTRICK ELEMENTARY SCHOOL**  
1008 RIVERVIEW AVENUE, MONROE, MICHIGAN 48162  
FOR  
**MONROE PUBLIC SCHOOLS**  
1275 N. MACOMB STREET, MONROE, MICHIGAN 48162

JOB # 26109

TUNNEL AND BOILER ROOM DOMESTIC WATER PLAN

P2.01

ALL EXISTING DOMESTIC COLD WATER PIPING LOCATED IN TUNNELS AND AS INDICATED IN THE BOILER ROOM IS GALVANIZED STEEL. ALL GALVANIZED STEEL PIPE SHALL BE REMOVED AND REPLACED IN SAME SIZE WITH TYPE 'L' HARD COPPER. WORK SHALL INCLUDE REPLACING ALL CONNECTED GALVANIZED CW PIPING UP TO WITHIN 4 INCHES OF EACH PENETRATION THROUGH THE UNDERSIDE OF THE FIRST FLOOR SLAB, UNLESS NOTED OTHERWISE.



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