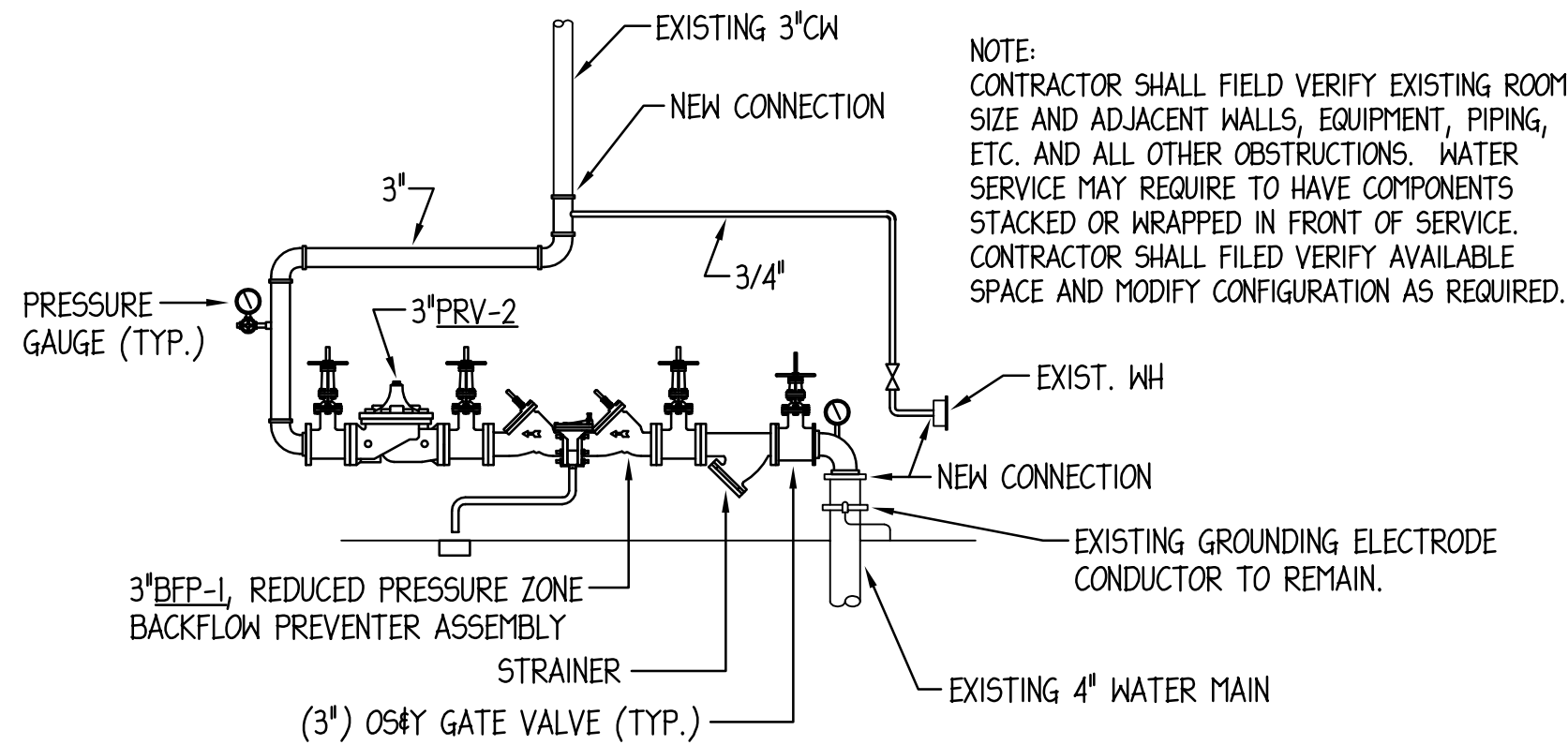
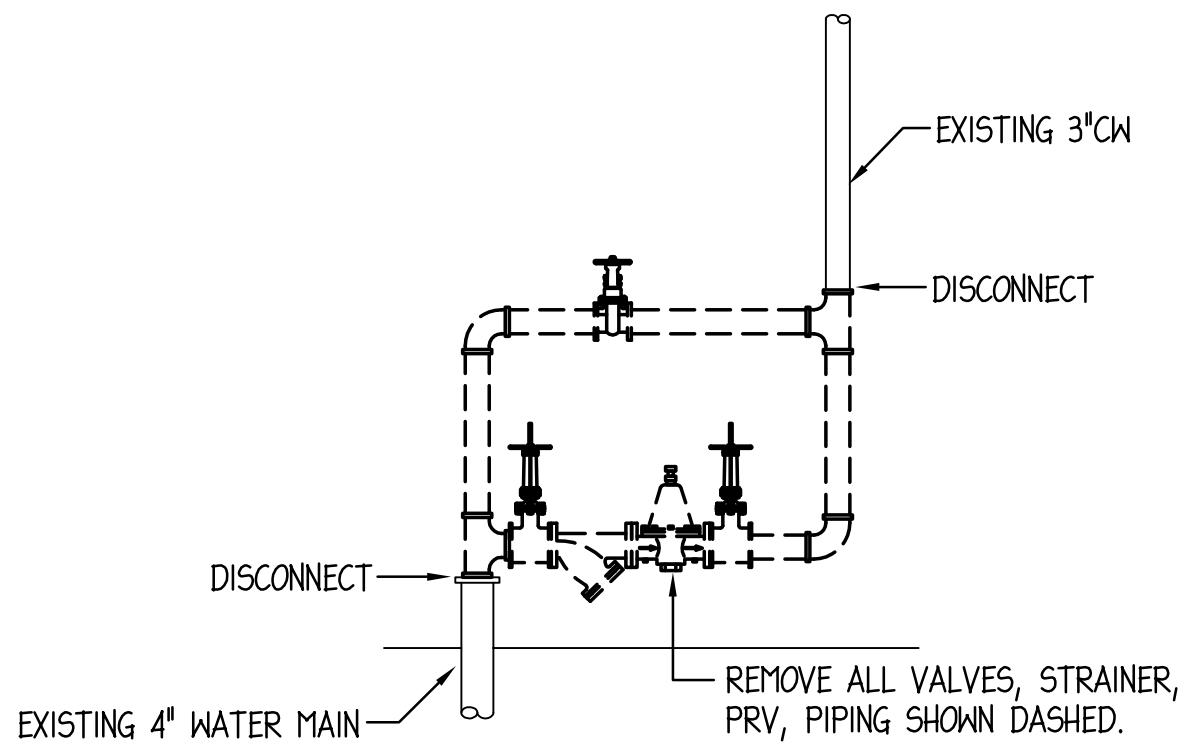


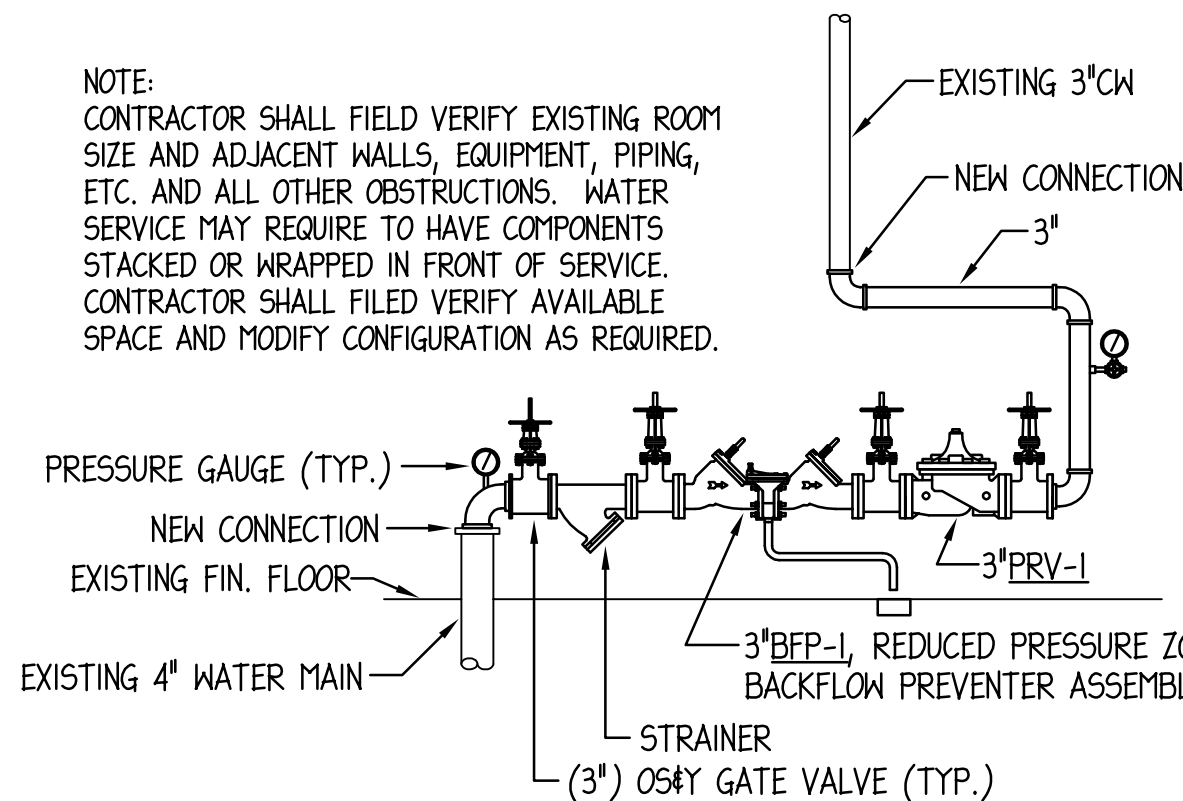
BUILDING D - DOMESTIC WATER SERVICE - DEMOLITION
NO SCALE



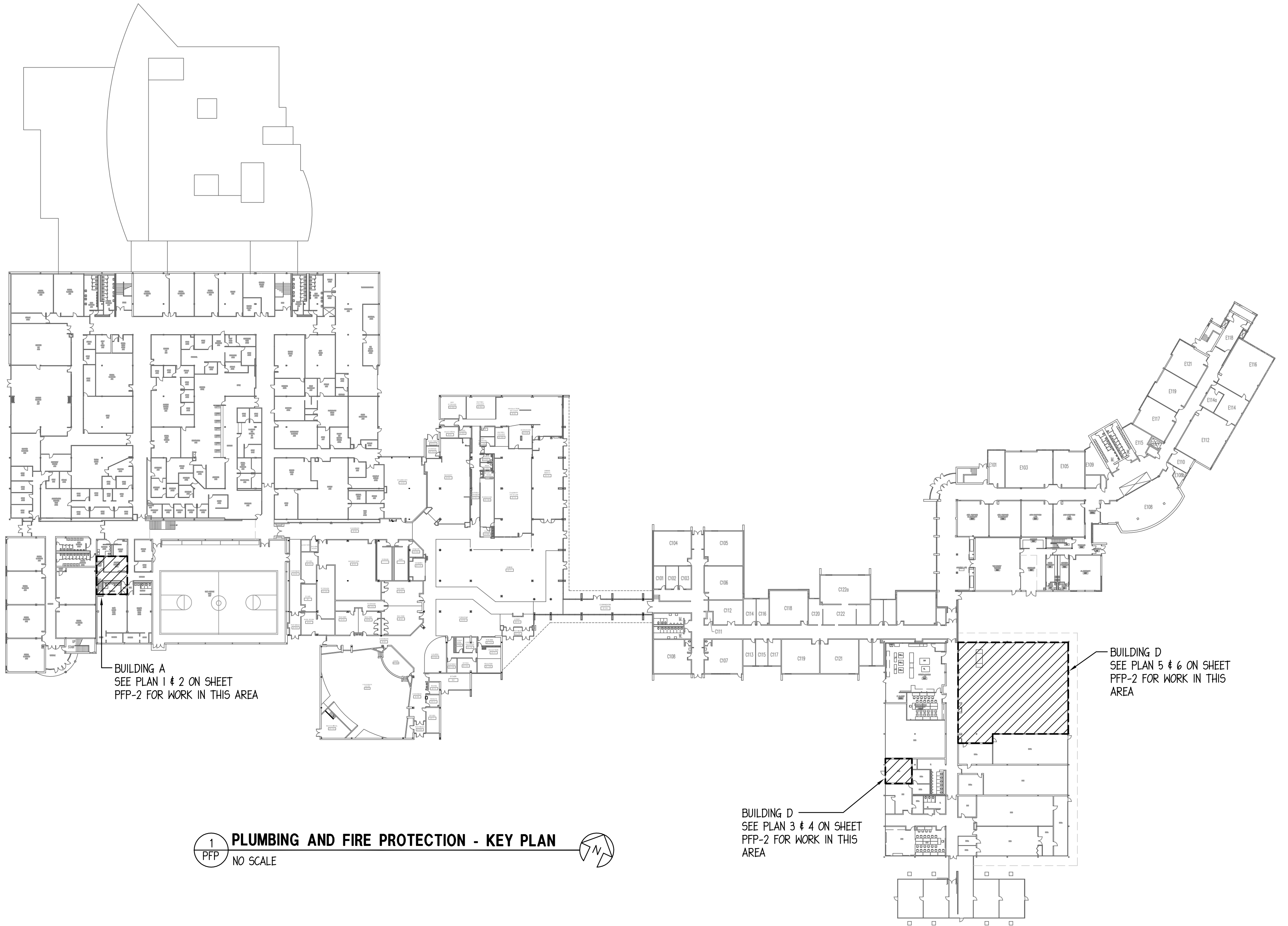
BUILDING D - DOMESTIC WATER SERVICE - NEW WORK
NO SCALE



BUILDING A - DOMESTIC WATER SERVICE - DEMOLITION
NO SCALE



BUILDING A - DOMESTIC WATER SERVICE - NEW WORK
NO SCALE



1 PLUMBING AND FIRE PROTECTION - KEY PLAN
NO SCALE

PLUMBING/FIRE PROTECTION EQUIPMENT SCHEDULE					
PLUMBING FIXTURE TAG	TYPE	MANUFACTURER AND MODEL	DESCRIPTION	OTHER ACCEPTABLE MANUFACTURERS	NOTES
BFP-1	BACKFLOW PREVENTER	WATTS MODEL OSY-LF909-S	ASSE 1013; REDUCED PRESSURE ZONE BACKFLOW PREVENTER WITH STRAINER AND OS&Y GATE VALVES. BFP SHALL BE LEAD FREE AND HAVE PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. SIZE AS INDICATED ON DRAWING.	WILKINS-ZURN, FEBCO, CONBRACO	1
BFP-2	BACKFLOW PREVENTER	WATTS MODEL OSY-994RFDA	ASSE 1047; REDUCED PRESSURE DETECTOR ASSEMBLY BACKFLOW PREVENTER AND OS&Y GATE VALVES. BFP SHALL HAVE PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. SIZE AS INDICATED ON DRAWING.	WILKINS-ZURN, FEBCO, CONBRACO	1
PRV-1	PRESSURE REDUCING VALVE	CLA-VAL MODEL 90-01	PRESSURE REDUCING VALVE, NSF/ANSI 61, INLET PRESSURE OF 125 PSI, OUTLET PRESSURE OF 65 PSI, WORKING PRESSURE OF 125 PSI, NORMAL FLOW RATE 160 GPM.	WATTS	2
PRV-2	PRESSURE REDUCING VALVE	CLA-VAL MODEL 90-01	PRESSURE REDUCING VALVE, NSF/ANSI 61, INLET PRESSURE OF 125 PSI, OUTLET PRESSURE OF 65 PSI, WORKING PRESSURE OF 125 PSI, NORMAL FLOW RATE 160 GPM.	WATTS	2
NOTES: 1. PIPE RELIEF TO NEAREST FLOOR DRAIN. 2. PROVIDE FACTORY REPRESENTATIVE FOR START-UP SERVICE, INSPECTION AND NECESSARY ADJUSTMENTS.					

**McHENRY COUNTY
COLLEGE
2016 IMPROVEMENTS**

8900 US HWY 14
CRYSTAL LAKE, IL 60012

4/20/16 100% ISSUED FOR BIDDING
DATE DESCRIPTION
Mechanical - Electrical Engineers
1216 Tower Road
Schaumburg, Illinois 60173
847.882.2010
Fax 847.882.2201

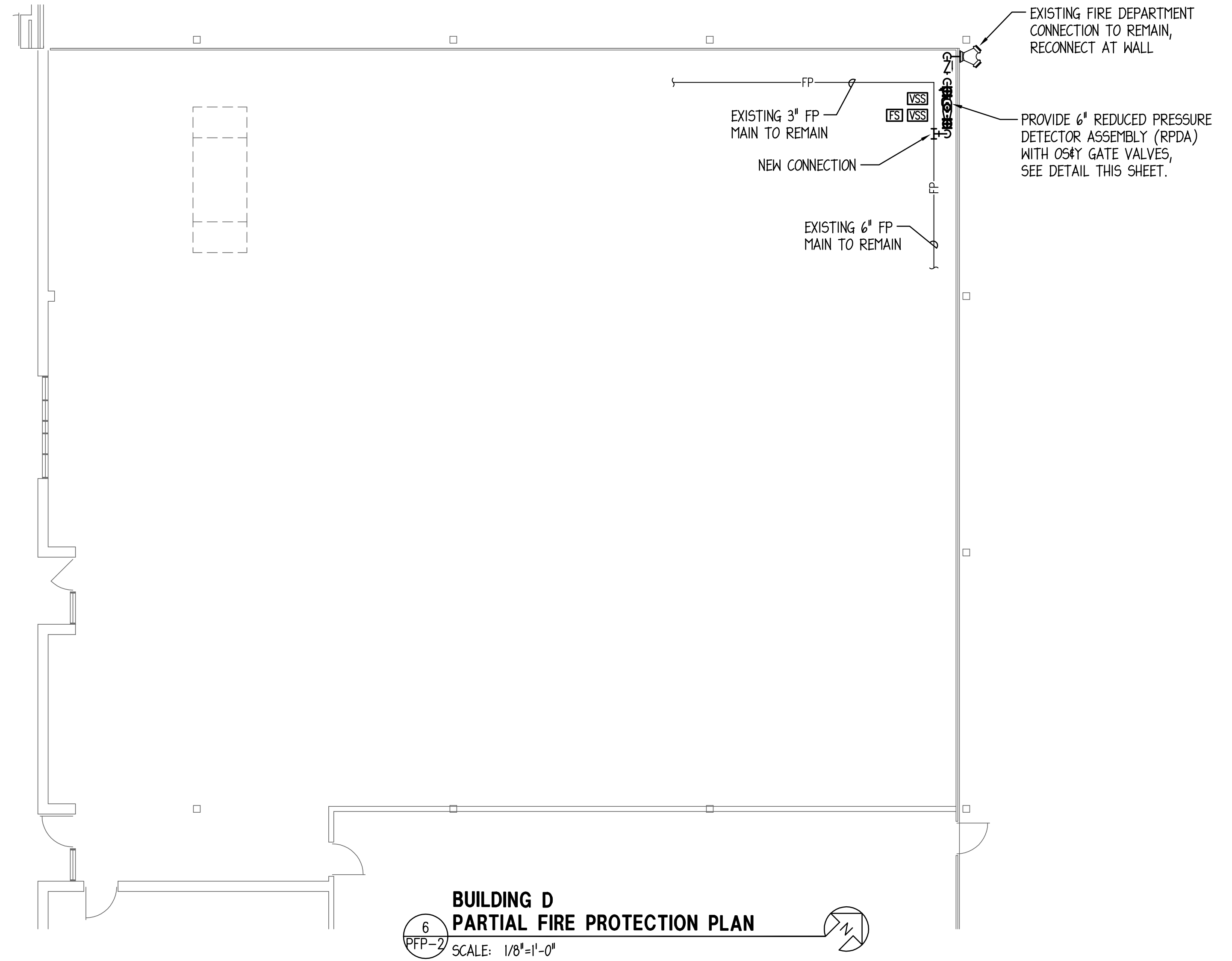
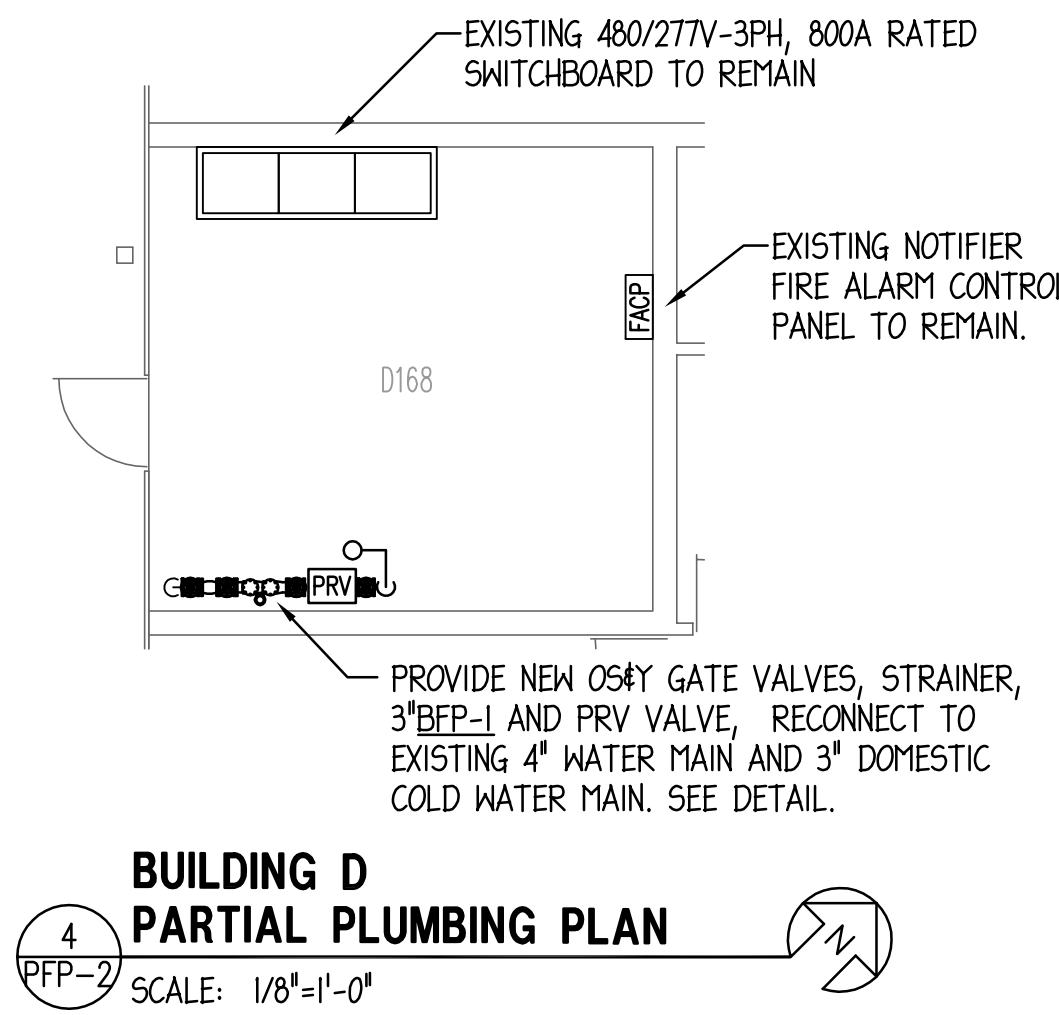
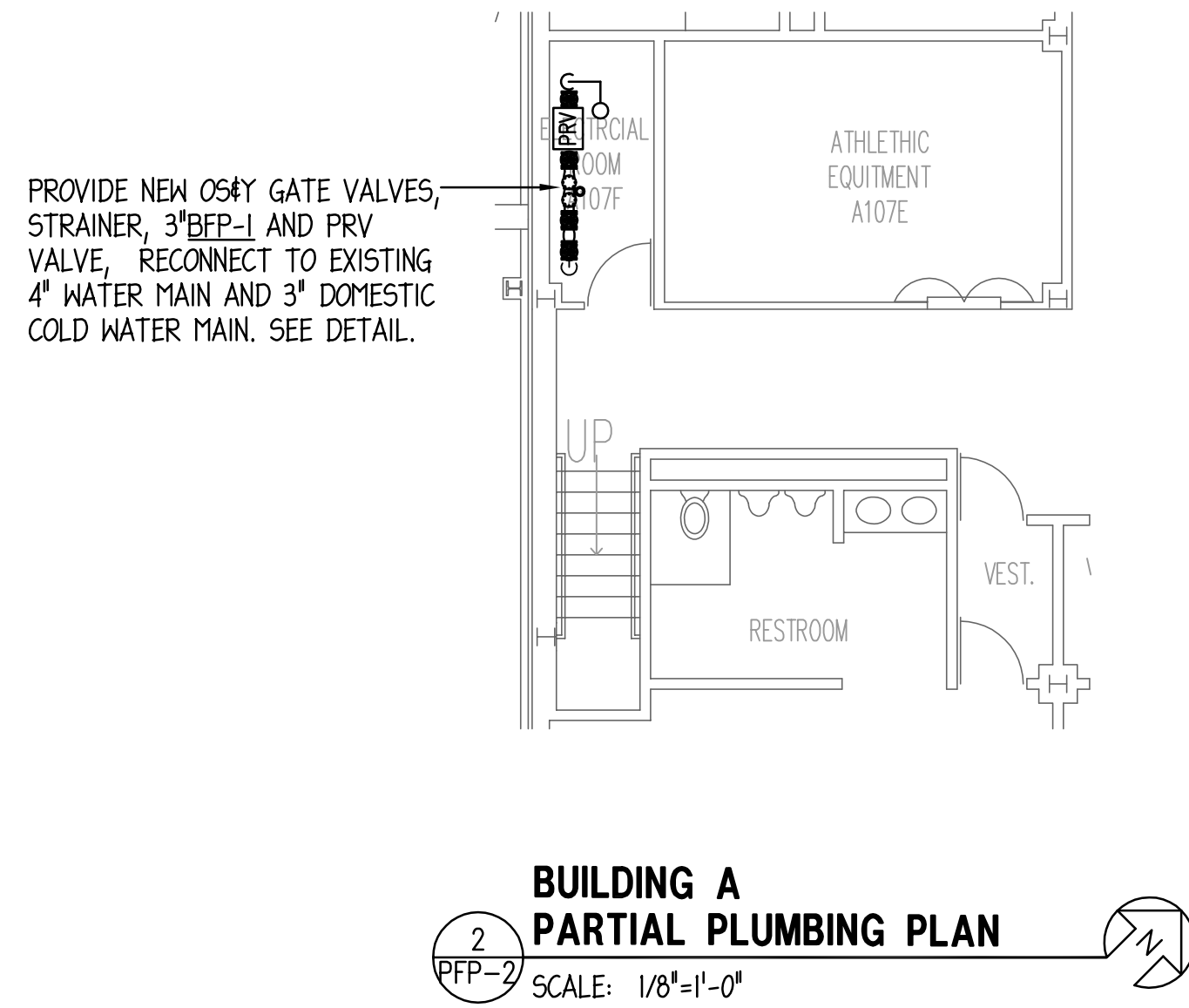
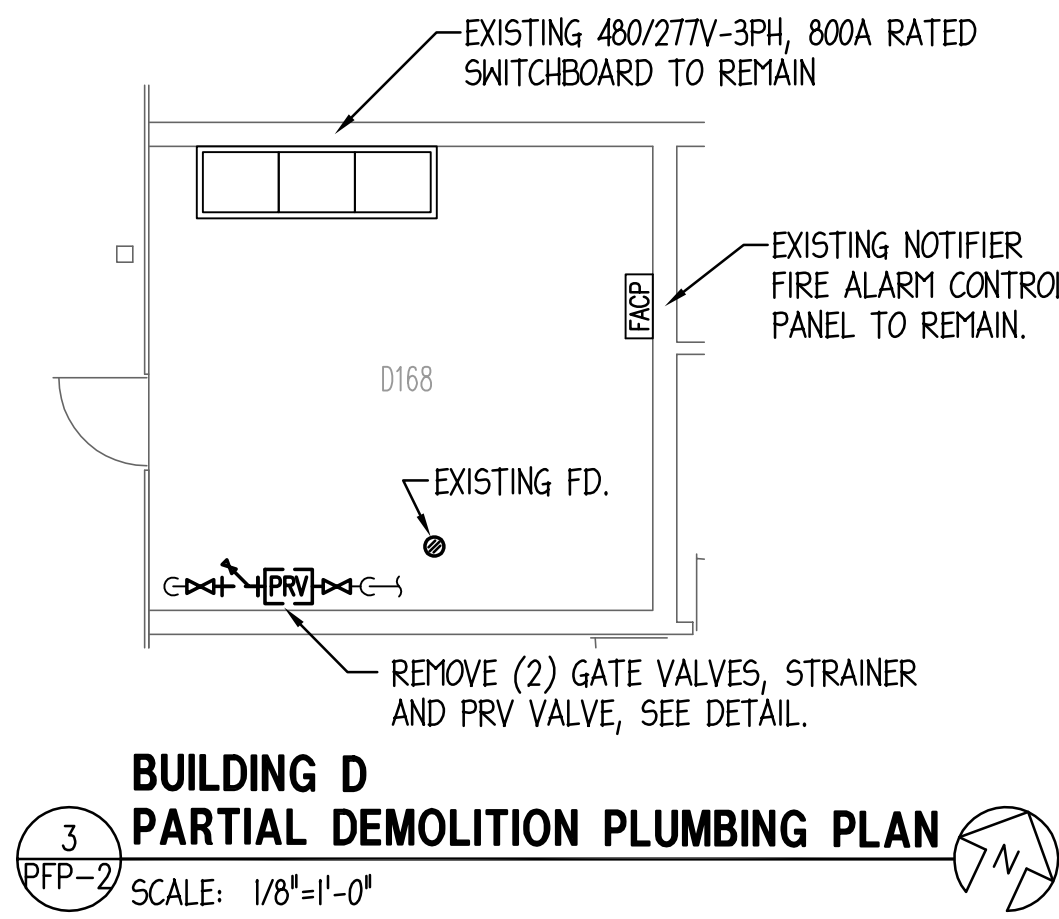
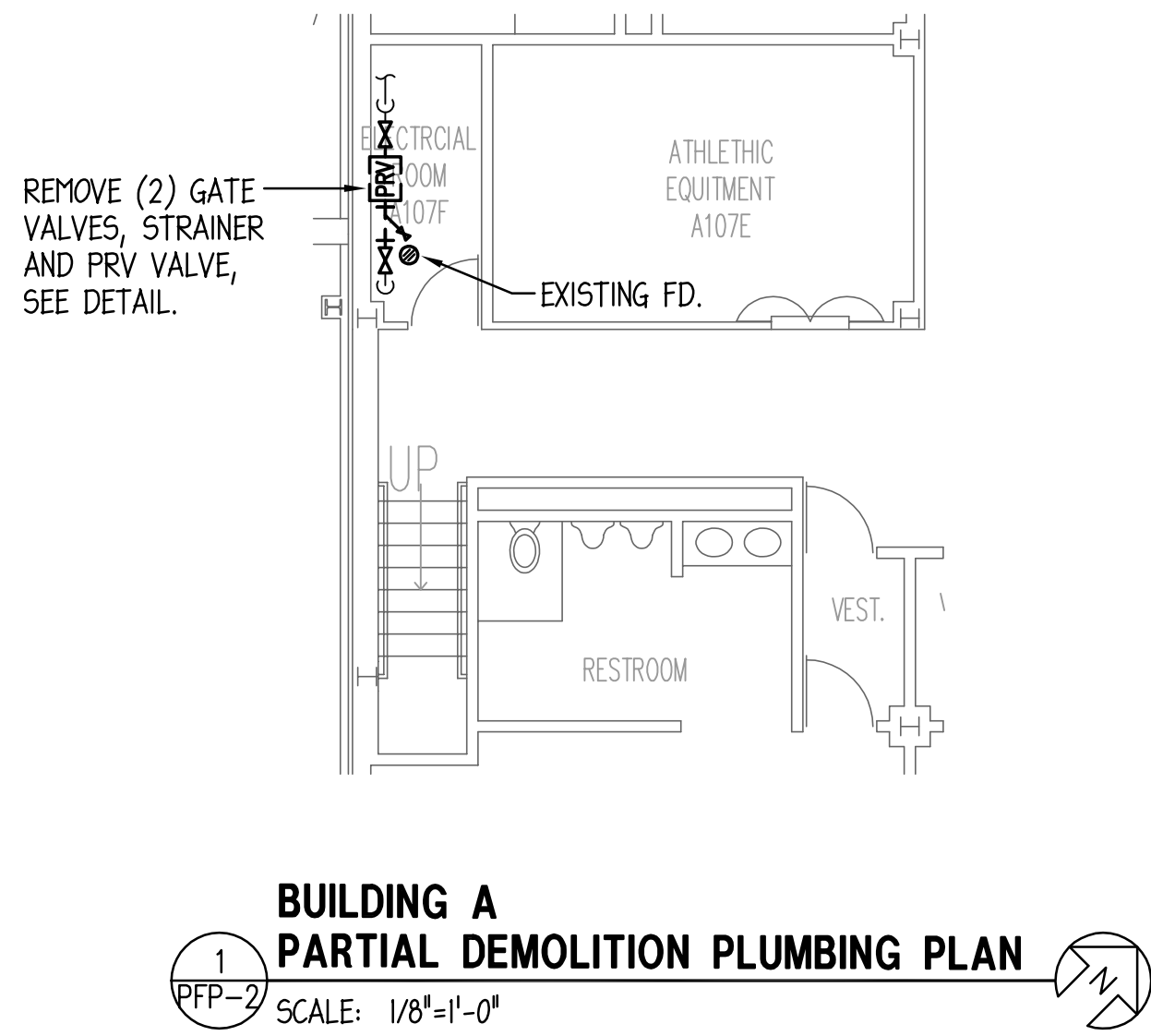
**2016 ENGINEERING
GROUP LLC**

Sheet Title
**PLUMBING AND FIRE
PROTECTION**

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PFP-1

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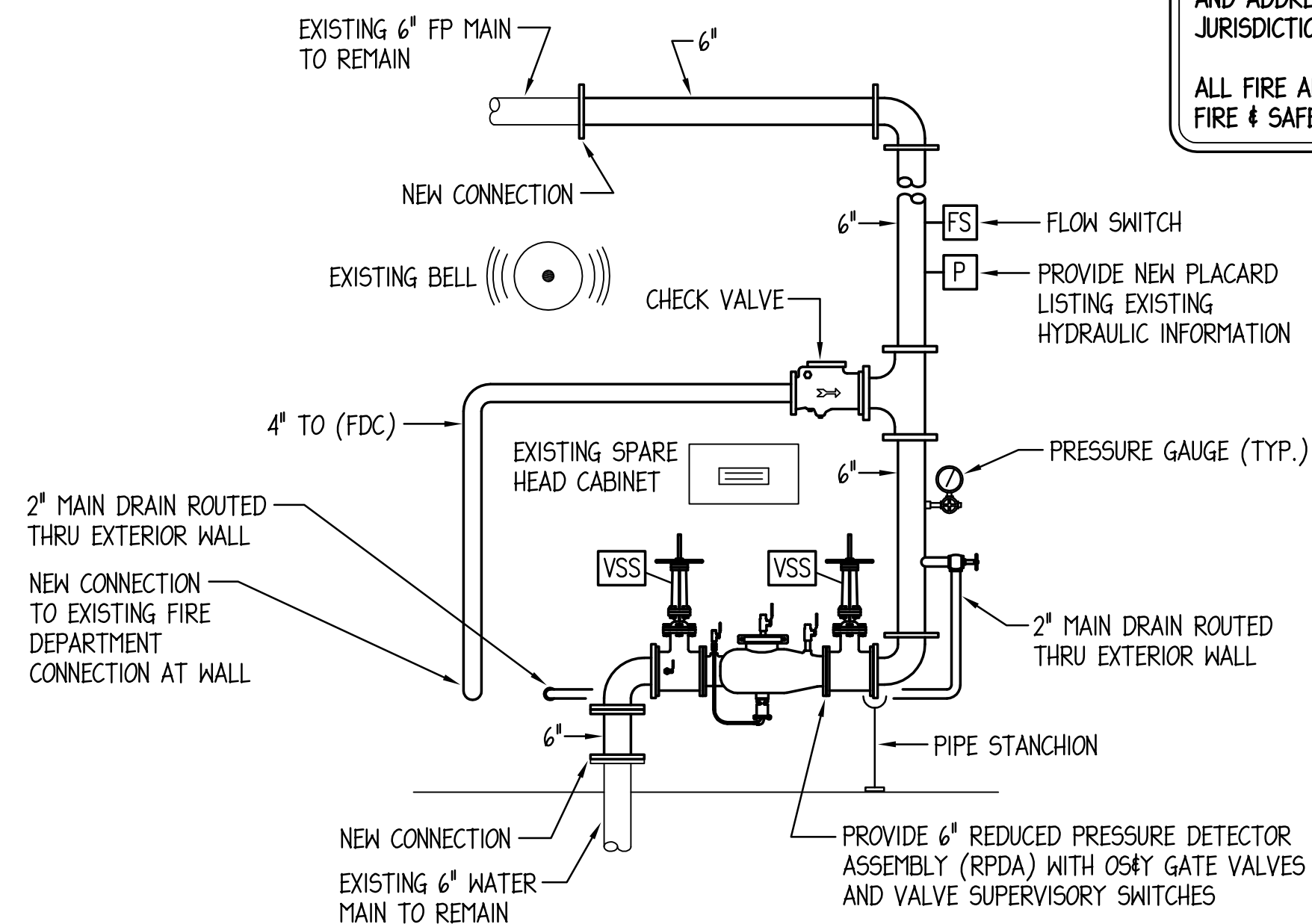
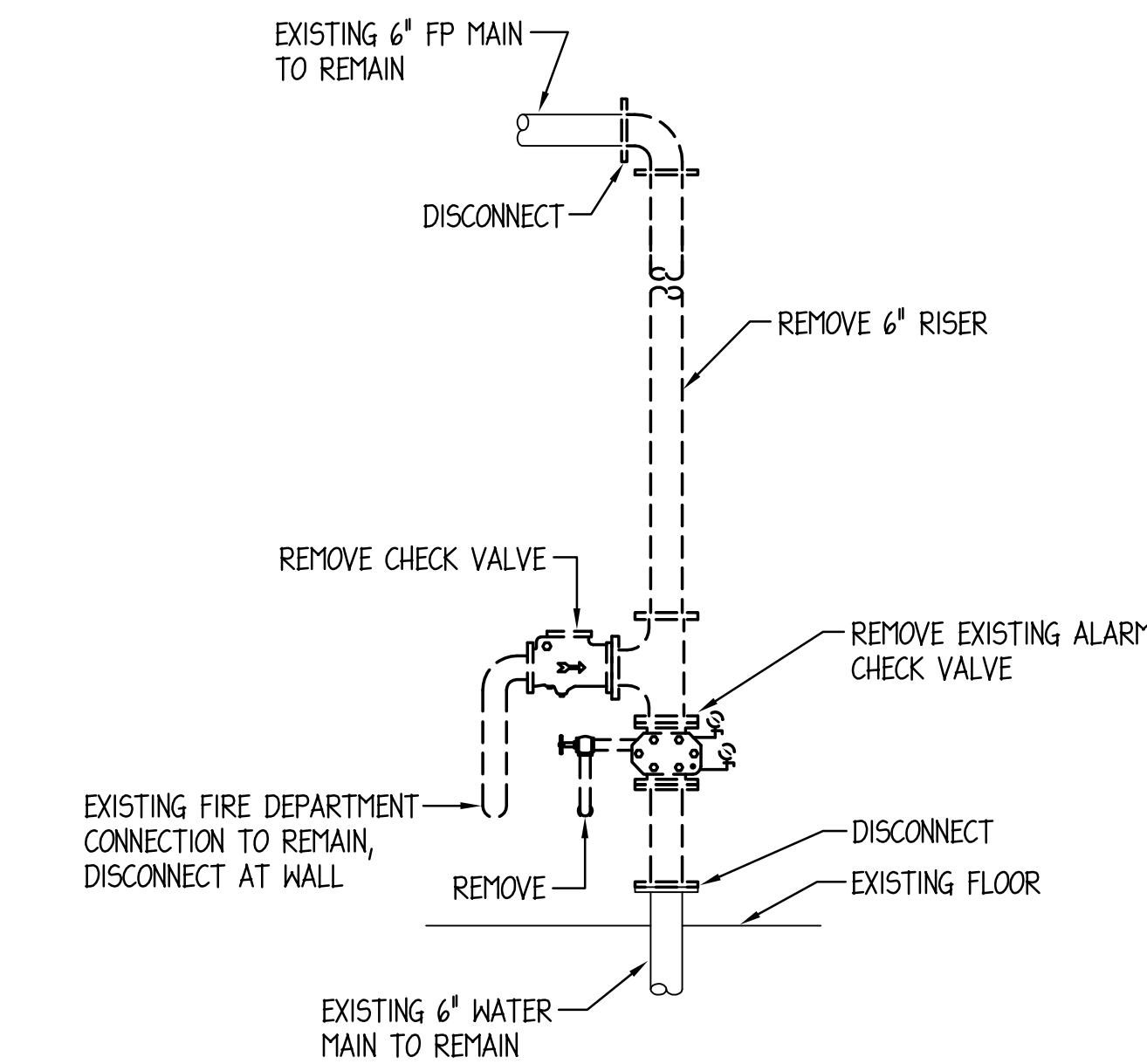
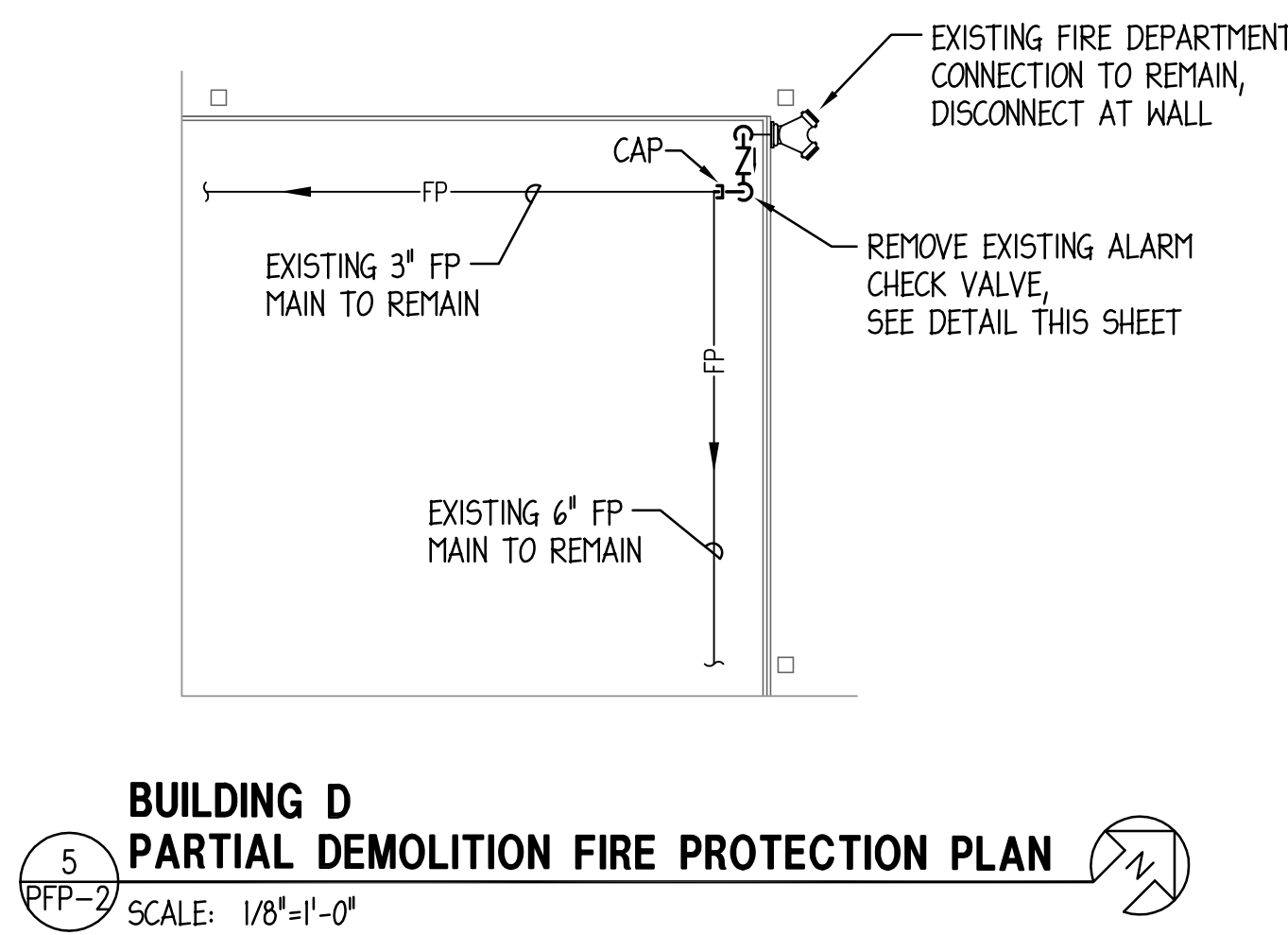


FIRE ALARM NOTE

ALL NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. PROVIDE ALL EXPANSION MODULES, POWER SUPPLIES, WIRING AND LABOR TO EXPAND SYSTEM TO ACCEPT NEW DEVICES SHOWN, INCLUDE ALL PROGRAMMING AND TESTING AS REQUIRED.

INSTALLING CONTRACTOR SHALL SUBMIT PRODUCT DATA, CALCULATIONS AND SHOP DRAWINGS INDICATING DEVICE LOCATIONS AND ADDRESSABLE IDENTIFICATIONS TO LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.

ALL FIRE ALARM WORK SHALL BE CARRIED OUT BY FOX VALLEY FIRE & SAFETY (847-695-5990) LOCATED IN ELGIN, ILLINOIS.



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DATE DESCRIPTION
Mechanical - Electrical Engineers
1216 Tower Road
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**ENGINEERING
GROUP LLC**

Sheet Title
**PLUMBING AND FIRE
PROTECTION**

PROJ. MGR: 20/10
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PFP-2

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GENERAL NOTES - FIRE PROTECTION:

GENERAL

- 1.1 SYSTEMS SHALL CONFORM TO THE DESIGN CRITERIA REQUIRED BY NFPA-13 AND THE LOCAL AUTHORITY HAVING JURISDICTION. WORKING PLANS AND CALCULATIONS SHALL BE SUBMITTED TO LOCAL APPROVAL AGENCIES AND TO OWNER'S FIRE PROTECTION CONSULTANT FOR APPROVAL.
- 1.2 ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF NFPA-13, 2010 EDITION AND ALL LOCAL AMENDMENTS.
- 1.3 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
- 1.4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE LOCAL AUTHORITY HAVING JURISDICTION.
- 1.5 CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP FOR (1) ONE YEAR FROM SUBSTANTIAL COMPLETION OF WORK.
- 1.6 DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE 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 MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- 1.7 ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SPRINKLER SYSTEM COMPONENTS SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION.
- 1.8 THE CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE FIRE SPRINKLER SYSTEM WORK, FOR ANY MATERIAL DAMAGE TO THE WORK OF THE OWNER OR OTHERS, AND TO THE PROPERTY AND MATERIALS OF THE OWNER OR OTHERS, INCLUDING CEILING SPRINKLER TILES, AND INCLUDING DAMAGE CAUSED BY GREASE, OIL, OR LEAKS IN SPRINKLER EQUIPMENT, FITTINGS, OR BY DISCONNECTED PIPES.

HAZARD CLASSIFICATIONS AND HYDRAULIC CALCULATIONS

- 2.1 FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL REQUIRED RETROACTIVE ANALYSIS AND HYDRAULIC CALCULATIONS WHEN NECESSARY OF EXISTING BUILDING BASED REPLACEMENT OF BACKFLOW PREVENTER ASSEMBLY AS LISTED AT MAIN SPRINKLER SERVICE PER THE REQUIREMENTS OF NFPA-13 SEC. 8.17.4.6.2.

SHOP DRAWINGS, SUBMITTALS AND CLOSEOUT DOCUMENTS

- 3.1 SHOP DRAWINGS: PROVIDE A MINIMUM 1/8"=1'-0" SCALE LAYOUT IN ALL AREAS INDICATING SPRINKLER LOCATIONS COORDINATED WITH CEILING INSTALLATION. INDICATE HYDRAULIC CALCULATIONS REFERENCE POINTS, DETAILED PIPE LAYOUT INCLUDING PIPE SIZE, LENGTH, AND ELEVATION, HANGERS AND SUPPORTS, SPRINKLERS, COMPONENTS AND ACCESSORIES. INDICATE SYSTEM CONTROL VALVE, DRAIN VALVE, AUXILIARY DRAIN VALVE, AND INSPECTOR'S TEST LOCATIONS. INDICATE PIPE MATERIALS USED, JOINTING METHODS, SUPPORTS, FLOOR AND WALL PENETRATION SEALS AND REFERENCE ALL REQUIRED CODES. INDICATE SUPPORT DETAILS, REMOTE AREAS IDENTIFIED, SPRINKLER HEAD SUMMARY AND SITE PLAN OF WATER MAIN TO STREET CONNECTION. SUBMIT HYDRAULIC CALCULATIONS FOR EACH ZONE, OCCUPANCY TYPE, HAZARD TYPE, ETC.
- 3.2 PRODUCT DATA: SUBMIT DATA ON SPRINKLERS AND SPECIALTIES, INCLUDING HEADS, PIPING, VALVES, PIPE HANGERS, BACKFLOW PREVENTER, MANUFACTURERS CATALOG INFORMATION. SUBMIT PERFORMANCE RATINGS, ROUGH-IN DETAILS, SUPPORT REQUIREMENTS, AND PIPING CONNECTIONS.
- 3.3 PROJECT RECORD DOCUMENTS: PROVIDE UPDATED VERSION OF MINIMUM 1/8" = 1'-0" SCALE COORDINATION SHOP DRAWINGS INDICATING ACTUAL LOCATIONS OF VALVES, PIPING ABOVE AND BELOW GRADE, SPRINKLER HEADS, AUXILIARY DRAINS, FIRE DEPARTMENT CONNECTIONS, INSPECTOR'S TEST CONNECTIONS, PUMPS, BACKFLOW PREVENTERS, AND ALL OTHER EQUIPMENT INSTALLED BY THIS CONTRACTOR.

PIPE HANGERS AND SUPPORTS

- 4.1 ALL FIRE PROTECTION PIPING SHALL BE SUSPENDED WITH APPROVED/LISTED PIPE HANGERS IN COMPLIANCE WITH NFPA STANDARDS. CUTTING STRUCTURAL MEMBERS TO RUN PIPING, OR TO FACILITATE HANGER FASTENING IS NOT PERMITTED.

SPRINKLER SYSTEM COMPONENTS AND ACCESSORIES

- 5.1 FIRE PROTECTION SYSTEM SHALL INCLUDE ALL ITEMS FOR A COMPLETE SYSTEM. SPECIFICALLY THIS IS TO INCLUDE BUT NOT LIMITED TO: PIPE SUPPORTS, VALVES, GAUGES, TRIM, ALARMS, SPECIALTY DEVICES, CONTROLS, AND ITEMS INCIDENTAL TO A COMPLETE SYSTEM.
- 5.2 A MAIN DRAIN SHALL BE PROVIDED ON EACH SYSTEM RISER WITH A SIGN ATTACHED THERETO.
- 5.3 A FLOW SWITCH SHALL BE PROVIDED ON EACH SYSTEM RISER AND SHALL BE CONNECTED TO A 10" OUTSIDE BELL AND A 6" INSIDE BELL. TAMPER SWITCHES SHALL BE PROVIDED ON ALL CONTROL VALVES. CONNECTION OF ALL ALARM DEVICES TO A CENTRAL STATION SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM SUB-CONTRACTOR.
- 5.4 THE INTERCONNECTION OF THE ALARM SUPERVISORY SIGNALS MUST BE APPROVED BY THE PROPER ALARM REPRESENTATIVE, AND WORKING PLANS INDICATING THE LOCATIONS OF ALL ELECTRICAL COMPONENTS SHALL BE FURNISHED TO THE FIRE ALARM CONTRACTOR.
- 5.5 CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION.
- 5.6 PROVIDE ACCESS TO ALL VALVES AND SYSTEM COMPONENTS REQUIRING ACCESS. ALL PIPING ACCESSORIES AND EQUIPMENT SUCH AS VALVES SHALL BE INSTALLED AT A REASONABLE HEIGHT AND POSITION IN ORDER TO FACILITATE MAINTENANCE.
- 5.6 PROVIDE REDUCED PRESSURE ZONE DETECTOR ASSEMBLY (RPDA) TYPE BACKFLOW PREVENTER AT WATER SERVICE.

FIRE PROTECTION (SPRINKLER) PIPING

- 6.1 SPRINKLER PIPING SHALL NOT BE INSTALLED DIRECTLY OVER ANY ELECTRICAL EQUIPMENT PANELS, TELEPHONE OR LOW VOLTAGE EQUIPMENT OR SIMILAR TYPE OF EQUIPMENT.
- 6.2 ALL PIPE AND FITTINGS SHALL BE INSTALLED IN RUST-FREE CONDITION.
- 6.3 THE USE OF THREADED BUSHINGS WILL NOT BE PERMITTED IN ANY AREA OF THIS INSTALLATION.
- 6.4 ALL PIPING SHALL BE HYDROSTATICALLY TESTED @ 200 PSI FOR NO LESS THAN 2 HOURS. THE FIRE DEPARTMENT SHALL BE NOTIFIED (NO LESS THAN 48 HOURS PRIOR) OF THE DATE AND TIME OF THE TEST AND MAY WITNESS IT IF SO DESIRED OR REQUIRED.
- 6.5 ALL PIPING SHALL BE INSTALLED TO ALLOW FOR PROPER DRAINING OF ENTIRE SYSTEM PER NFPA-13.
- 6.6 SCREWED UNIONS SHALL NOT BE PERMITTED ON PIPING LARGER THAN 2 INCHES.
- 6.7 ALL NEW CONNECTIONS MADE TO AN EXISTING SYSTEM MAIN SHALL BE ACCOMPLISHED WITH A CUT-IN OR TEE FITTING OF EQUAL SIZE TO THAT OF THE EXISTING MAIN.
- 6.8 FIRE PROTECTION PIPING SHALL BE AS FOLLOWS:
- A. (1"-6") STEEL PIPE: ASTM A795; SCHEDULE 40, BLACK
STEEL FITTINGS: ASME B16.5, STEEL FLANGES AND FITTINGS.
CAST IRON FITTINGS: ASME 16.1, FLANGES AND FLANGED FITTINGS; OR ASME B16.4, THREADED FITTINGS.
MALLEABLE IRON FITTINGS: ASME B16.3, THREADED FITTINGS.
- B. (2 1/2"-6") STEEL PIPE: ASTM A795; SCHEDULE 40, BLACK.
GROOVED END FITTINGS: ASTM A536 DUCTILE IRON HOUSING TO ENGAGE AND LOCK.
MECHANICAL GROOVED COUPLINGS: DUCTILE IRON HOUSING CLAMPS TO ENGAGE AND LOCK, "C" SHAPED ELASTOMERIC SEALING GASKET, STEEL BOLTS, NUTS, AND WASHERS.
- C. (2 1/2"-6") STEEL PIPE: ASTM A135, SCHEDULE 10, BLACK.
STEEL FITTINGS: ASME B16.5, STEEL FLANGES AND FITTINGS.
GROOVED END FITTINGS: ASTM A536 DUCTILE IRON HOUSING TO ENGAGE AND LOCK.
MECHANICAL GROOVED COUPLINGS: DUCTILE IRON HOUSING CLAMPS TO ENGAGE AND LOCK, "C" SHAPED ELASTOMERIC SEALING GASKET, STEEL BOLTS, NUTS, AND WASHERS.
- D. CPVC PIPING SHALL NOT BE PERMITTED.

PIPE AND VALVE IDENTIFICATION

- 7.1 PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1. SEE DETAIL FOR ADDITIONAL INFORMATION. PIPE LABELS SHALL BE WRAP AROUND TYPE. SELF ADHESIVE TYPE SHALL NOT BE PERMITTED.

PLUMBING SPECIFICATIONS

GENERAL

- 1.1 ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH ILLINOIS PLUMBING CODE 2014 EDITION, INTERNATIONAL PLUMBING CODE 2012 EDITION AND ALL LOCAL AMENDMENTS TO THE PLUMBING CODE.
- 1.2 IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH STATE PLUMBING INSPECTORS AND THE LOCAL PLUMBING INSPECTOR HAVING JURISDICTION.
- 1.3 EXACT LOCATION OF PLUMBING FIXTURES AND DEVICES SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS, ACTUAL BUILDING WALLS, FLOORS AND CEILING, CABINETRY AND EQUIPMENT SHOP DRAWINGS PRIOR TO STARTING ANY WORK.
- 1.4 DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE 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 MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- 1.5 STERILIZATION: UPON COMPLETION OF TESTING AND FLUSHING OF NEW DOMESTIC WATER PIPING, THE CONTRACTOR SHALL STERILIZE ALL WATER PIPING INCLUDING ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND ALL DOMESTIC COLD WATER PIPING. CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY TAPPINGS, VALVE OPENINGS, DRAIN FITTINGS, ETC., AS REQUIRED TO STERILIZE THE WATER PIPING, INCLUDING ALL REQUIRED EXCAVATION WORK, FITTING AND LABOR. WATER PIPING SHALL BE FLUSHED AND CHLORINATED AS SPECIFIED IN ANWA-C-601-54 STANDARD PROCEDURE FOR DISINFECTING WATER MAINS AND AS REQUIRED BY ILLINOIS DEPARTMENT OF PUBLIC HEALTH. DISINFECTING SHALL NOT BE DEEMED COMPLETED UNTIL SATISFACTORY BACTERIOLOGICAL ANALYSIS REPORTS ARE RECEIVED FOR SAMPLES OF WATER COLLECTED AND TESTED FROM THE NEW WATER PIPING SYSTEM ALL BY PLUMBING CONTRACTOR.
- 1.6 ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SANITARY/STORM LINES, WATER LINES, VENT LINES, VALVES AND ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION.
- 1.7 PLUMBING CONTRACTOR SHALL PROVIDE 100LB AIR TEST OR WATER PRESSURE TEST ON ALL WATER PIPING AT TIME OF ROUGH INSPECTION PER ILLINOIS PLUMBING CODE.
- 1.8 ALL BACKFLOW PREVENTERS SHALL BE LINE SIZED.
- 1.9 ALL REDUCED PRESSURE ZONE (RPZ) ASSEMBLY BACKFLOW PREVENTERS SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCCDI) BEFORE INITIAL OPERATION AND TESTED ANNUALLY THEREAFTER. CERTIFICATION SHALL BE POSTED AT BACKFLOW PREVENTER.

PIPE INSULATION

- 2.1 ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER SUPPLY/RETURN PIPING SHALL BE INSULATED WITH 1" THICK ASTM C547 FIBERGLASS PIPE INSULATION WITH ASTM C136 VAPOR BARRIER JACKET COMPLETE WITH PVC FITTING COVERS. INSULATE ALL DOMESTIC WATER SUPPLY PIPING TO THE FIXTURE CONNECTION. INSULATE ALL WATER SUPPLY PIPING IN CEILINGS, PLUMBING CHASES AND WALLS.
- 2.2 PATCH AND REFINISH ALL DAMAGED INSULATED SURFACES OF ALL EXISTING PLUMBING PIPING AND ASSOCIATED FITTINGS WHERE NEW CONNECTIONS ARE MADE. INCLUDING BUT NOT LIMITED DOMESTIC COLD WATER, HOT WATER SUPPLY/RETURN AND WASTE.

PIPE HANGERS AND SUPPORTS

- 3.1 ALL SANITARY, VENT, STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. ALL HORIZONTAL STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE INSULATED AND REST ON SHEET METAL INSULATION SHIELDS. SEE DETAIL ON MECHANICAL/ELECTRICAL COORDINATION DRAWINGS FOR ADDITIONAL INFORMATION. SKIVEL JOINT HANGERS MAY BE USED ONLY ON WASTE AND VENT PIPING WHEN PIPING IS NOT INSULATED. HANGER MATERIAL SHALL BE OF COMPATIBLE MATERIAL TO PIPING MATERIAL TO PREVENT CORROSION. HANGERS SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS ONLY.

- 3.2 HANGER SPACING SHALL BE AS FOLLOWS.

PIPE MATERIAL	MAX HANGER SPACING	ROD DIAMETER
COPPER TUBE, 1 INCH AND SMALLER	8 FEET	1/2"
COPPER TUBE, 1 1/4 INCH AND LARGER	10 FEET	1/2"

PIPE AND VALVE IDENTIFICATION

- 4.1 PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1.

ELECTRICAL SPECIFICATIONS

1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF NATIONAL ELECTRIC CODE AND ILLINOIS PUBLIC COMMUNITY COLLEGE BUILDING CODE.
2. PROVIDE ALL PERMITS AND INSPECTION FEES.
3. CONTRACTOR SHALL PROVIDE ALL HIS OWN RIGGING, SCAFFOLDING, RUBBISH REMOVAL AND LEAVE SPACE BROOM CLEAN.
4. MINIMUM SIZE CONDUIT SHALL BE 3/4" E.M.T. PROVIDE IMC FOR CONDUITS 2" AND LARGER OR WHERE EXPOSED TO WET OR DAMP LOCATIONS. E.M.T. FITTINGS SHALL BE COMPRESSION TYPE. IMC SHALL BE THREADED CONNECTIONS. TRANSITION TO LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION (LAST 6 FEET MAXIMUM) OF CONDUCTORS SERVING EQUIPMENT SUBJECT TO VIBRATION.
5. CONDUCTOR MATERIAL SHALL BE COPPER ONLY.
6. BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL VISIT THE SITE TO ASCERTAIN ALL WORK INVOLVED IN THE PROJECT.
7. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS ON THE PROJECT.

VALVES

- 5.1 PROVIDE OS&Y GATE VALVES AT ALL WATER SERVICES OF 2 1/2" AND LARGER BEFORE AND AFTER WATER METER. GATE VALVES SHALL BE MILWAUKEE, NIBCO, STOCKHAM, APOLLO, KITZ, WATTS, OR JOMAR; LEAD FREE NSF-61 CERTIFIED, CLASS 125 DUCTILE IRON BODY, OUTSIDE STEM AND YOKE, SOLID WEDGE DISC AND FLANGED ENDS, FULL PORT AND CONFORM TO MSS-970.
- 5.2 STRAINERS SHALL BE WATTS, KECKLEY, LESLIE, WILKINS, KITZ, OR NIBCO; LEAD FREE NSF-61 CERTIFIED, BRONZE BODY, WITH 1/32 INCH STAINLESS STEEL PERFORATED SCREEN AND 3/4" BLOW DOWN VALVE.
- 5.3 INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
- 5.4 INSTALL VALVES WITH CLEARANCE FOR INSTALLATION OF INSULATION AND ALLOWING ACCESS.

WATER SHUT-DOWN

- 6.1 CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION. CONTRACTOR SHALL PROVIDE ALL MEANS TO DRAIN WATER SUPPLY PIPING WHERE REQUIRED TO MODIFY PIPING CONFIGURATION OR MAKE NEW CONNECTIONS TO EXISTING PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WATER DAMAGE CAUSED BY DRAINING OF WATER SUPPLY PIPING. UPON REACTIVATION OF WATER IN PIPING, CONTRACTOR SHALL OPERATE ALL ASSOCIATED FAUCETS, FLUSH VALVES, HOSE VALVES, PLUMBING FIXTURES AND REMOVE ALL REMAINING AIR IN THE SYSTEM.
- 6.2 ALL TIMES OF WATER SHUT-DOWN ARE SUBJECT TO OWNERS DISCRETION AND MAY HAVE RESTRICTIONS BASED ON SCHEDULED EVENTS AT FACILITY. ALL ASPECTS OF WATER SHUT-DOWN SHALL BE COORDINATED WITH OWNER. CONTRACTOR MAY REQUEST TO DEViate FROM SCHEDULED AVAILABLE SHUT-DOWN TIMES HOWEVER OWNER SHALL REVIEW EACH REQUEST AND APPROVE OR DENY ANY SUCH REQUEST.

PIPE ROUTING AND REPLACEMENT

- 7.1 PIPE SIZES INDICATED ON DRAWINGS ARE MINIMUMS. CONTRACTOR SHALL MATCH PIPE SIZE WHEN CONNECTING TO EXISTING PIPING LARGER THAN SIZED LISTED.

- 7.2 NEW PIPING SHALL NOT BE PERMITTED OVER ANY ELECTRICAL PANELS OR EQUIPMENT.

SHOP DRAWINGS, SUBMITTALS AND CLOSE OUT DOCUMENTS

- 8.1 CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES IN (PDF) FORMAT SHOP DRAWINGS OF ALL PIPING, VALVES, PIPE HANGERS, PIPE INSULATION, MISC DEVICES, PUMPS, MIXING VALVES, PLUMBING FIXTURES, ACCESS PANELS, EQUIPMENT, TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY ITEMS OR FABRICATING ANY DUCTWORK. SUBMITTALS SHALL BE RETURNED WITHIN 10 BUSINESS DAYS.
- 8.2 CONTRACTOR SHALL PROVIDE OWNER TRAINING ON ALL EQUIPMENT AND BUILDING SYSTEMS PROVIDED/ALTERED BY HIS WORK. TRAINING SHALL BE ACCOMPLISHED DURING TIME DEDICATED FOR THAT PURPOSE, NOT IN CONJUNCTION WITH SERVICE WORK.
- 8.3 AT COMPLETION OF PROJECT, CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES IN (PDF) FORMAT OF OPERATION AND MAINTENANCE MANUALS FOR ALL WORK PROVIDED BY HIM ON PROJECT. MANUALS SHALL BE CLEARLY ORGANIZED AND CONTAIN COPIES OF APPROVED EQUIPMENT, COMPONENT BREAK-DOWN AND PARTS LISTS, MAINTENANCE/CLEANING AND TROUBLESHOOTING MANUALS, SERVICE CONTACTS, CONTRACTOR AND MANUFACTURER WARRANTIES, AND "AS BUILT" FLOOR PLANS INDICATING ALL APPROVED DEVIATIONS AND REVISIONS TO BIDDING DOCUMENTS.
- 8.4 CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP PROVIDED BY HIM FOR 1 (ONE) YEAR FROM SUBSTANTIAL COMPLETION OF WORK INVOLVED.

PIPE SPECIFICATIONS

PLUMBING PIPING SHALL BE AS FOLLOWS:

WATER PIPING, ABOVE GRADE

- A. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
FITTINGS: ASME B16.18, CAST COPPER ALLOY OR ASME B16.22, WROUGHT COPPER AND BRONZE.
JOINTS: ASTM B32, SOLDER, GRADE #5TA.
- B. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
PRESS FITTINGS: VIEGA PROPRESS; ASME B16.18 CAST COPPER ALLOY, ASME B16.22 WROUGHT COPPER ASME B16.26 FLARED COPPER, EPDM O-RING.
FITTINGS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- C. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
FITTINGS: VICTAULIC GROOVED COUPLING 600 SERIES; ASTM A-345 DUCTILE IRON BODY WITH EPDM GASKET, ASTM B-633 BOLTS/NUTS. FITTINGS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

8. CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS AND ADJUSTMENTS TO ALL ELECTRICAL ITEMS AND EQUIPMENT AS MAY BE REQUIRED BY THIS WORK.
9. ALL NEW FIRE ALARM CABLING SHALL BE PLENUM RATED CABLE OF TYPE COMPATIBLE WITH EXISTING BUILDING FIRE ALARM SYSTEM.
10. ALL NEW FIRE ALARM DEVICE(S) SHALL BE UL LISTED AND OF TYPE AND MANUFACTURER TO MATCH EXISTING. NEW FIRE ALARM DEVICE(S) SHALL BE INTEGRATED INTO EXISTING FIRE ALARM SYSTEM.
11. ALL NEW FIRE ALARM CABLES SHALL BE IN CONDUIT EXCEPT WHERE LOCATED ABOVE ACCESSIBLE CEILINGS. FIRE ALARM CONDUITS SHALL BE 1/2" MINIMUM. JUNCTION BOXES SERVING FIRE ALARM DEVICES SHALL BE RED. PROVIDE #18 AWG MINIMUM SIZE CONDUCTOR FOR INITIATING CIRCUITS AND #12 AWG MINIMUM SIZE CONDUCTOR FOR NOTIFICATION CIRCUITS.

McHENRY COUNTY COLLEGE 2016 IMPROVEMENTS

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Sheet Title
PLUMBING AND FIRE PROTECTION

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