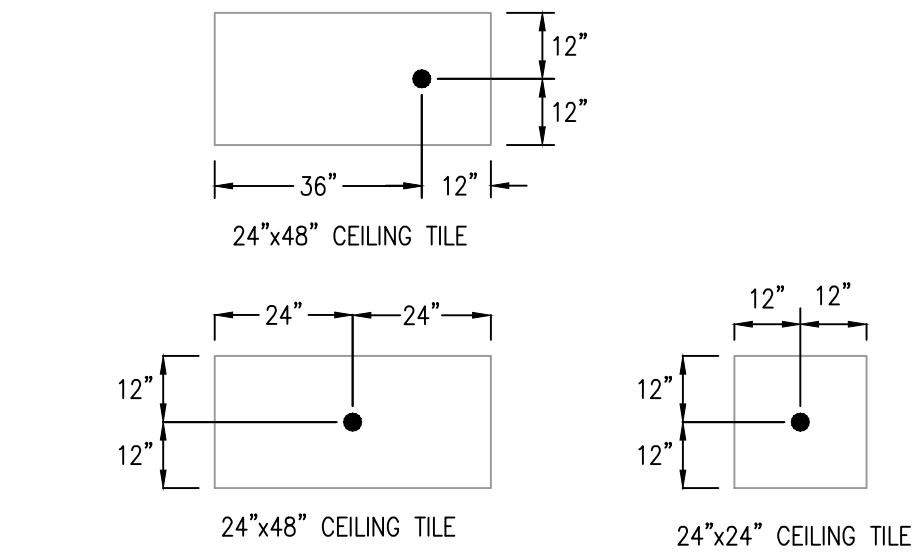
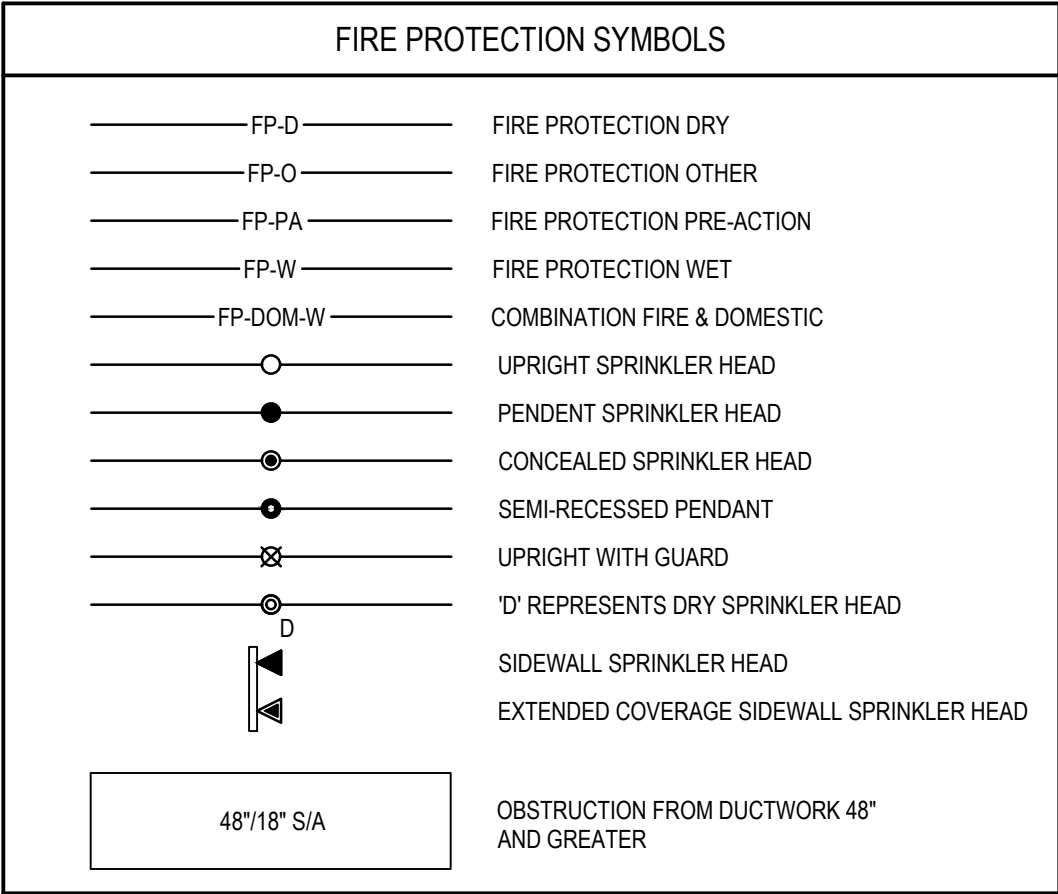
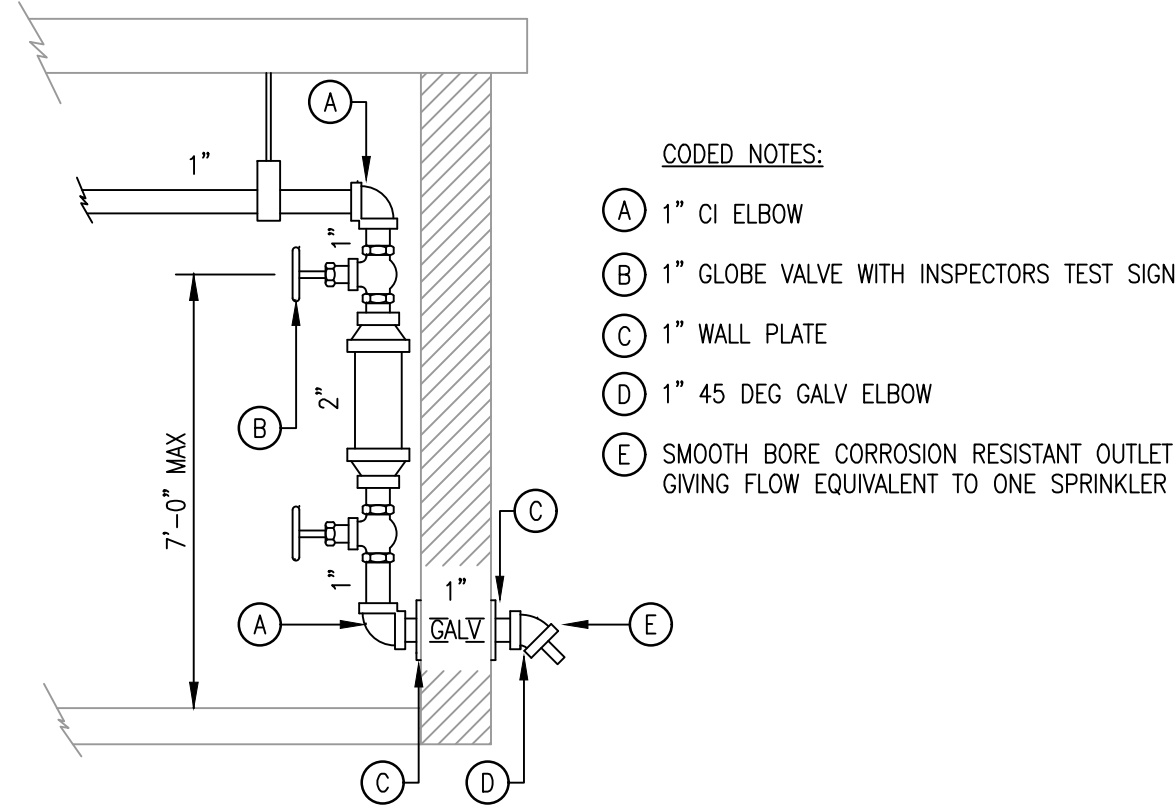


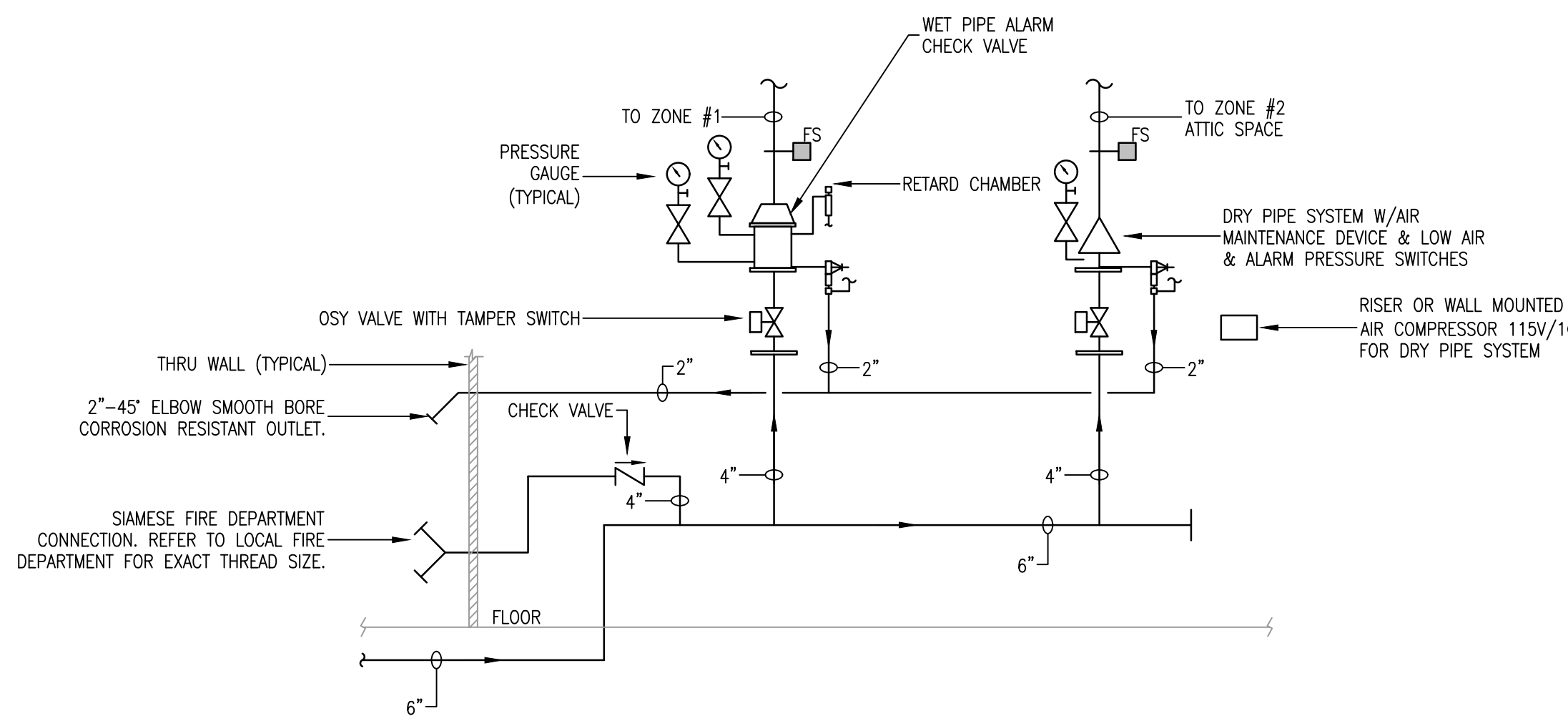
FIRE PROTECTION GENERAL NOTES	
GENERAL REQUIREMENTS	
1.	FIRE PROTECTION WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, STANDARDS, AND AUTHORITIES HAVING JURISDICTION, INCLUDING THE VIRGINIA CONSTRUCTION CODE, VIRGINIA BUILDING AND FIRE CODE, NFPA STANDARDS, AND ALL OTHER APPLICABLE REQUIREMENTS.
2.	THE FIRE PROTECTION SYSTEM IS A DELEGATED DESIGN SYSTEM. FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO ESTABLISH THE GENERAL SCOPE OF WORK, DESIGN INTENT, HAZARD CLASSIFICATIONS, AND PERFORMANCE REQUIREMENTS.
3.	THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN, LAYOUT, HYDRAULIC CALCULATIONS, PERMITTING, FABRICATION, AND INSTALLATION OF THE FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH APPLICABLE CODES, NFPA STANDARDS, THE CONTRACT DOCUMENTS, AND AUTHORITY HAVING JURISDICTION REQUIREMENTS.
4.	FIRE PROTECTION SHOP DRAWINGS, HYDRAULIC CALCULATIONS, AND SUPPORTING DOCUMENTATION SHALL BE PREPARED, SIGNED, AND SEALED AS REQUIRED BY APPLICABLE CODE AND AUTHORITY HAVING JURISDICTION REQUIREMENTS.
5.	INSTALL ALL FIRE PROTECTION EQUIPMENT, MATERIALS, AND APPURTENANCES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
6.	VERIFY CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION, ORDERING, OR INSTALLATION OF PIPING, EQUIPMENT, AND APPURTENANCES. REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
7.	COORDINATE ALL WORK WITH THE OWNER'S OPERATIONS AND CONSTRUCTION PHASING REQUIREMENTS. PERFORM WORK IN OCCUPIED OR OPERATIONAL AREAS ONLY AT TIMES APPROVED BY THE OWNER.
8.	PROVIDE ALL HANGERS, SUPPORTS, SEISMIC BRACING, OFFSETS, FITTINGS, FLEXIBLE CONNECTIONS, APPURTENANCES, AND ACCESSORIES REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM WHETHER OR NOT SPECIFICALLY INDICATED.
9.	COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL FIRE PROTECTION EQUIPMENT WITH THE ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS.
COORDINATION REQUIREMENTS	
10.	COORDINATE THE INSTALLATION OF ALL FIRE PROTECTION WORK WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, CEILING, AND OTHER TRADES. PIPING ROUTING, SPRINKLER LOCATIONS, AND EQUIPMENT LOCATIONS ARE DIAGRAMMATIC UNLESS DIMENSIONED. PROVIDE REQUIRED OFFSETS AND COORDINATION FOR A COMPLETE INSTALLATION.
11.	DO NOT CUT, NOTCH, DRILL, OR OTHERWISE ALTER STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT/ENGINEER.
12.	COORDINATE SPRINKLER HEAD LOCATIONS WITH ARCHITECTURAL FEATURES, CEILING TYPES, LIGHTING, DIFFUSERS, SOFFITS, STRUCTURE, AND OTHER CEILING MOUNTED DEVICES PRIOR TO FABRICATION AND INSTALLATION.
13.	COORDINATE CEILING SPACE REQUIREMENTS AND ACCESS CLEARANCES FOR FIRE PROTECTION VALVES, INSPECTOR'S TEST CONNECTIONS, DRAINS, FIRE DEPARTMENT CONNECTIONS, BACKFLOW PREVENTERS, FIRE PUMPS, AND OTHER COMPONENTS REQUIRING SERVICE OR MAINTENANCE.
14.	COORDINATE FIRE DEPARTMENT CONNECTION LOCATIONS, RISER LOCATIONS, VALVE CABINETS, AND OTHER FIRE PROTECTION COMPONENTS WITH ARCHITECTURAL, CIVIL, STRUCTURAL, AND LANDSCAPE REQUIREMENTS PRIOR TO INSTALLATION.
15.	COORDINATE ALL REQUIRED PIPE ROUTING, ELEVATIONS, BRACING, AND CLEARANCES WITH OTHER BUILDING SYSTEMS PRIOR TO FABRICATION AND INSTALLATION.
INSTALLATION REQUIREMENTS	
16.	SEAL ALL PENETRATIONS THROUGH WALLS, FLOORS, ROOFS, AND RATED ASSEMBLIES CAUSED BY FIRE PROTECTION WORK. PROVIDE FIRESTOPPING SYSTEMS AT RATED CONSTRUCTION IN ACCORDANCE WITH CODE AND LISTED ASSEMBLY REQUIREMENTS.
17.	INSTALL FIRE PROTECTION PIPING WITH ADEQUATE CLEARANCE FROM OTHER BUILDING SYSTEMS AND WITH PROPER ALLOWANCES FOR EXPANSION, CONTRACTION, DEFLECTION, SEISMIC MOVEMENT, AND SUPPORT.
18.	INSTALL FIRE PROTECTION PIPING TRUE TO LINE AND GRADE WITH PROPER DRAINAGE AND WITHOUT EXCESSIVE SAGGING, DEFLECTION, OR OFFSET.
19.	PROVIDE ALL REQUIRED CONTROL, VALVES, CHECK VALVES, DRAINS, INSPECTOR'S TEST CONNECTIONS, FLEXIBLE COUPLINGS, ESCUTCHEONS, SLEEVES, AND ACCESSORIES REQUIRED BY CODE, NFPA STANDARDS, AND THE CONTRACT DOCUMENTS.
20.	INSTALL SPRINKLER HEADS IN ACCORDANCE WITH NFPA REQUIREMENTS FOR SPACING, LOCATION, OBSTRUCTIONS, AND HAZARD CLASSIFICATION.
21.	PROVIDE PIPE SUPPORTS, HANGERS, AND SEISMIC BRACING IN ACCORDANCE WITH NFPA REQUIREMENTS AND APPLICABLE BUILDING CODE REQUIREMENTS.
22.	MAINTAIN REQUIRED CLEARANCES AROUND ELECTRICAL EQUIPMENT, MECHANICAL EQUIPMENT, ACCESS PANELS, AND OTHER BUILDING COMPONENTS AS REQUIRED BY CODE.
23.	PROVIDE IDENTIFICATION SIGNS, VALVE TAGS, AND SYSTEM LABELING AS REQUIRED BY CODE, NFPA STANDARDS, AND PROJECT SPECIFICATIONS.
TESTING AND CLOSEOUT	
24.	TEST ALL FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH NFPA STANDARDS, AUTHORITY HAVING JURISDICTION REQUIREMENTS, AND PROJECT SPECIFICATIONS. REPAIR LEAKS, DEFECTS, AND DEFICIENCIES AND RETEST UNTIL ACCEPTABLE RESULTS ARE OBTAINED.
25.	FLUSH, CLEAN, AND PLACE FIRE PROTECTION SYSTEMS IN OPERATION PRIOR TO SUBSTANTIAL COMPLETION.
26.	PROVIDE ALL REQUIRED HYDRAULIC CALCULATIONS, TEST CERTIFICATES, INSPECTION REPORTS, ABOVEGROUND AND UNDERGROUND MATERIAL TEST CERTIFICATES, VALVE SCHEDULES, RECORD DRAWINGS, AND CLOSEOUT DOCUMENTATION AS REQUIRED BY CODE, NFPA STANDARDS, AND PROJECT SPECIFICATIONS.
27.	PROVIDE OWNER TRAINING FOR SYSTEM OPERATION, VALVE LOCATIONS, INSPECTOR'S TEST CONNECTIONS, DRAINS, FIRE PUMP OPERATION, AND OTHER FIRE PROTECTION SYSTEM COMPONENTS AS APPLICABLE.
28.	FINAL FIRE PROTECTION SYSTEM DESIGN AND INSTALLATION SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE AUTHORITY HAVING JURISDICTION. REVIEW OF SHOP DRAWINGS OR CALCULATIONS BY THE ENGINEER DOES NOT RELIEVE THE FIRE PROTECTION CONTRACTOR OF RESPONSIBILITY FOR COMPLETE CODE COMPLIANCE AND SYSTEM PERFORMANCE.



1 SPRINKLER HEAD LOCATION DETAIL
Scale: NTS

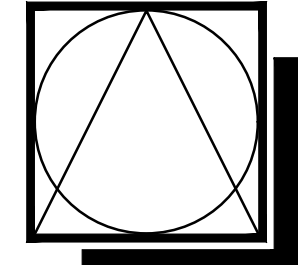


2 INSPECTORS TEST CONNECTION
NTS



3 SPRINKLER RISER DIAGRAM
NTS

SECTION 21 0500 - COMMON WORK RESULTS FOR FIRE SUPPRESSION	
PART 1 - GENERAL	
SUMMARY	
1.01	A. This Section includes the following: 1. Piping materials and installation instructions common to most piping systems. 2. Mechanical sleeve seals. 3. Sleeves. 4. Escutcheons. 5. Fire-suppression demolition. 6. Supports and anchorages.
DEFINITIONS	
1.02	A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe chases, unheated spaces immediately below roof, spaces above ceilings, uncravated spaces, crawlspaces, and tunnels. B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms. C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations. D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in chases. E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
1.03 SUBMITTALS	
A. Welding certificates.	
1.04 QUALITY ASSURANCE	
A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code-Steel." B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications." 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping." 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current. C. Electrical Characteristics for Fire-Suppression Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.	
PART 2 - PRODUCTS	
2.01 PIPE, TUBE, AND FITTINGS	
A. Refer to individual Division 21 piping Sections for pipe, tube, and fitting materials and joining methods. B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.	
2.02 JOINING MATERIALS	
A. Refer to individual Division 21 piping Sections for special joining materials not listed below. B. Pipe-Flange Gasket Materials: ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated. C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813. D. Brazing Filler Metals: AWS A5.8, BCuP Series or BAg1, unless otherwise indicated. E. Welding Filler Metals: Comply with AWS D10.12.	
2.03 MECHANICAL SLEEVE SEALS	
A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve. B. Sealing Elements: EPDM interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe. C. Pressure Plates: Carbon steel. Include two for each sealing element. D. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.	
2.04 SLEEVES	
A. Galvanized-Steel Sheet: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint. B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends. C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated. D. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing. 1. Underdeck Clamp: Clamping ring with set screws.	
2.05 ESCUTCHEONS	
A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening. B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish. C. One-Piece, Cast-Brass Type: With set screw. 1. Finish: Polished chrome-plated and rough brass. D. Split-Casting, Cast-Brass Type: With concealed hinge and set screw. 1. Finish: Polished chrome-plated and rough brass.	
PART 3 - EXECUTION	
3.01 FIRE-SUPPRESSION DEMOLITION	
A. Refer to Division 01 Section "Cutting and Patching" and Division 02 Section "Selective Structure Demolition" for general demolition requirements and procedures. B. Disconnect, demolish, and remove fire-suppression systems, equipment, and components indicated to be removed. 1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material. 2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material. 3. Equipment to Be Removed: Disconnect and cap services and remove equipment. 4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational. 5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner. C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.	
3.02 PIPING SYSTEMS - COMMON REQUIREMENTS	
A. Install piping according to the following requirements and Division 21 Sections specifying piping systems. B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings. C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas. D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal. F. Install piping to permit valve servicing. G. Install piping at indicated slopes. H. Install piping free of sags and bends. I. Install fittings for changes in direction and branch connections. J. Install piping to allow application of insulation. K. Select system components with pressure rating equal to or greater than system operating pressure. L. Install escutcheons for penetrations of walls, ceilings, and floors. M. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs. N. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Division 07 Section "Penetration Firestopping" for materials. O. Verify final equipment locations for roughing-in. P. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.	
3.03 PIPING JOINT CONSTRUCTION	
A. Join pipe and fittings according to the following requirements and Division 21 Sections specifying piping systems. B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe. C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly. D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32. E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8. F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows: 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified. 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds. G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article. H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.	
3.04 ERECTION OF METAL SUPPORTS AND ANCHORAGES	
A. Refer to Division 05 Section "Metal Fabrications" for structural steel. B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor fire-suppression materials and equipment. C. Field Welding: Comply with AWS D1.1.	
3.05 ERECTION OF WOOD SUPPORTS AND ANCHORAGES	
A. Cut, fit, and place wood grounds, nailers, blocking, and anchorages to support, and anchor fire-suppression materials and equipment. B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members. C. Attach to substrates as required to support applied loads.	
END OF SECTION	



DSC
ARCHITECTS
401 FRONT STREET
BEREA, OHIO 44017
PHONE: 440.835.3957
mail@dscarchitects.com

DATE: 06.19.26
PERMIT SUBMISSION:

BENNETT'S CREEK
HEALTH & REHABILITATION CENTER
1931/1915 BRIDGE ROAD (HIGHWAY 17)
SUFFOLK, VIRGINIA



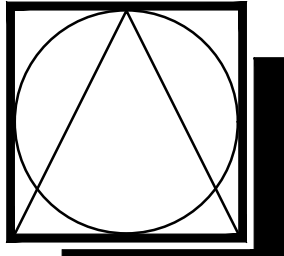
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DRAWING NAME
FIRE PROTECTION
LEGEND AND
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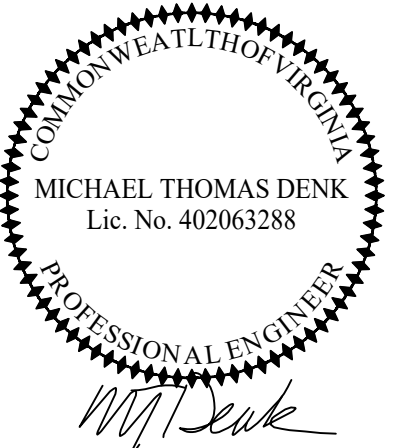
PART 1 - GENERAL		SECTION 21 1313 - WET-PIPE SPRINKLER SYSTEMS	
1.01	SUMMARY		
A.	Section Includes:		
	1. Pipes, fittings, and specialties.		
	2. Fire-protection valves.		
	3. Fire-department connections.		
	4. Sprinklers.		
	5. Alarm devices.		
	6. Pressure gages.		
B.	Related Sections:		
	1. Division 21 Section "Common Work Results for Fire Suppression".		
1.02	SYSTEM DESCRIPTIONS		
	1. Wet-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing water and that is connected to water supply through alarm valve. Water discharges immediately from sprinklers when they are opened. Sprinklers open when heat melts fusible link or destroys frangible device. Hose connections are included if indicated.		
1.03	SYSTEM COMPLIANCE		
A.	Sprinkler system shall be designed and installed per the latest adopted standards including, but not limited to:		
	1. NFPA-13, NFPA 101, NFPA 70.		
	2. Local Fire Department requirements		
	3. Virginia Construction Code		
	4. Local rules and regulations adopted by the local Authority Having Jurisdiction.		
1.04	PERFORMANCE REQUIREMENTS		
	1. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.		
	2. Delegated Design: Design sprinkler systems), including comprehensive engineering analysis by a qualified sprinkler designer, using performance requirements and design criteria indicated.		
	3. Sprinkler system design shall be approved by authorities having jurisdiction.		
	1. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.		
	2. Sprinkler Occupancy Hazard Classifications:		
	a. Building Service Areas: Ordinary Hazard, Group 1.		
	b. General Storage Areas: Ordinary Hazard, Group 1.		
	c. Mechanical Equipment Rooms: Ordinary Hazard, Group 1.		
	d. Office and Public Areas: Light Hazard.		
	e. Apartments: Light Hazard.		
	3. Minimum Density for Automatic-Sprinkler Piping Design:		
	a. Light-Hazard Occupancy: 0.10 gpm over 1500-sq. ft. area.		
	b. Ordinary-Hazard, Group 1 Occupancy: 0.12 gpm over 3000-sq. ft. area.		
	c. Ordinary-Hazard, Group 2 Occupancy: 0.20 gpm over 1500-sq. ft. area.		
	d. Extra-Hazard, Group 1 Occupancy: 0.30 gpm over 2500-sq. ft. area.		
	e. Extra-Hazard, Group 2 Occupancy: 0.40 gpm over 2500-sq. ft. area.		
	Special Occupancy Hazard: As determined by authorities having jurisdiction.		
	4. Maximum Protection Area per Sprinkler:		
	a. Office Spaces: 225 sq. ft.		
	b. Storage Areas: 130 sq. ft..		
	c. Mechanical Equipment Rooms: 130 sq. ft..		
	d. Electrical Equipment Rooms: 130 sq. ft.		
	e. Other Areas: According to NFPA 13 recommendations unless otherwise indicated.		
	5. Total Combined Hose-Stream Demand Requirement: Most restrictive according to NFPA 13 and FM Global unless otherwise indicated:		
	a. Light-Hazard Occupancies: 100 gpm for 30 minutes.		
	b. Ordinary-Hazard Occupancies: 250 gpm for 60 to 80 minutes.		
	c. Extra-Hazard Occupancies: 500 gpm for 90 to 120 minutes.		
D.	Seismic Performance: Sprinkler piping shall withstand the effects of earthquake motions determined according to NFPA 13.		
1.05	SUBMITTALS		
	1. Product Data: For each type of product indicated.		
	2. Shop Drawings: For wet-pipe sprinkler systems. Include plans, elevations, sections, details, and attachments to other work.		
	1. Wiring Diagrams: For power, signal, and control wiring.		
	3. Delegated-Design Submittal: For sprinkler systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.		
	4. Qualification Data: For qualified installer and certified sprinkler designer.		
E.	Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable. Approval shall include submission to the following:		
	1. Authority Having Jurisdiction.		
	2. Owner's Property Insurer.		
	3. Architect and Engineer.		
F.	Welding certificates.		
G.	Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping."		
H.	Field quality-control reports.		
I.	Operation and maintenance data.		
1.06	QUALITY ASSURANCE		
A.	Installer Qualifications:		
	1. Installer's responsibilities include designing, fabricating, and installing sprinkler systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test.		
	a. Engineering Responsibility: Preparation of working plans, calculations, and field test reports by a qualified professional engineer.		
B.	Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.		
C.	Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.		
D.	NFPA Standards: Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with the following:		
	1. NFPA 13, "Installation of Sprinkler Systems."		
	2. NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances."		
PART 2 - PRODUCTS			
2.01	PIPING MATERIALS		
	1. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.		
2.02	STEEL PIPE AND FITTINGS		
A.	Standard Weight, Galvanized- and Black-Steel Pipe: ASTM A 53/A 53M, Type E, Grade B. Pipe ends may be factory or field formed to match joining method.		
B.	Schedule 30, Galvanized- and Black-Steel Pipe: ASTM A 135; ASTM A 795/A 795M, Type E; or ASME B36.10M, wrought steel; with wall thickness not less than Schedule 30 and not more than Schedule 40. Pipe ends may be factory or field formed to match joining method.		
C.	Thinwall Galvanized- and Black-Steel Pipe: ASTM A 135 or ASTM A 795/A 795M, threadable, with wall thickness less than Schedule 30 and equal to or greater than Schedule 10. Pipe ends may be factory or field formed to match joining method.		
D.	Galvanized- and Black-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard-weight, seamless steel pipe with threaded ends.		
E.	Galvanized and Uncoated, Steel Couplings: ASTM A 865, threaded.		
F.	Galvanized and Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.		
G.	Malleable- or Ductile-Iron Unions: UL 860.		
H.	Cast-Iron Flanges: ASME B16.1, Class 125.		
I.	Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.		
J.	Steel Welding Fittings: ASTM A 234/A 234M and ASME B16.9.		
K.	Grooved-Joint, Steel-Pipe Appurtenances:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Anvil International, Inc.		
	b. Tyco Fire & Building Products LP.		
	c. Victaulic Company.		
	2. Standard: UL 312.		
	3. Pressure Rating: 250 psig minimum.		
	4. Type: Swing check.		
	5. Body Material: Cast iron.		
	6. End Connections: Flanged or grooved.		
2.05	TRIM AND DRAIN VALVES		
A.	General Requirements:		
	1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.		
	2. Minimum Pressure Rating: 175 psig.		
B.	Ball Valves:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Anvil International, Inc.		
	b. Potter Roemer.		
	c. Tyco Fire & Building Products LP.		
	d. Victaulic Company.		
2.06	SPECIALTY VALVES		
A.	General Requirements:		
	1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.		
	2. Minimum Pressure Rating: 175 psig.		
	3. Body Material: Cast or ductile iron.		
4.	Size: Same as connected piping.		
5.	End Connections: Flanged or grooved.		
B.	Alarm Valves:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Tyco Fire & Building Products LP.		
	b. Victaulic Company.		
	c. Viking Corporation.		
	2. Standard: UL 193.		
	3. Design: For horizontal or vertical installation.		
	4. Drip Cup Assembly: Pipe drain without valves and separate from main drain piping.		
	Automatic (Ball Drop) Drain Valves:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. AFAC.		
	b. Reliable Automatic Sprinkler Co., Inc.		
	c. Tyco Fire & Building Products LP.		
	2. Standard: UL 1726.		
	Pressure Rating: 175 psig minimum.		
	4. Type: Automatic draining, ball check.		
	5. Size: NPS 3/4.		
	6. End Connections: Threaded.		
2.07	SPRINKLER SPECIALTY PIPE FITTINGS		
A.	Branch Outlet Fittings:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Anvil International, Inc.		
	b. Tyco Fire & Building Products LP.		
	c. Victaulic Company.		
	2. Standard: UL 213.		
	3. Pressure Rating: 175 psig minimum.		
	4. Body Material: Ductile-iron housing with EPDM seals and bolts and nuts.		
	5. Type: Mechanical T and cross fittings.		
	6. Configurations: Snap-on and strapless, ductile-iron housing with branch outlets.		
	7. Size: Of dimension to fit onto sprinkler main and with outlet connections as required to match connected branch piping.		
	8. Branch Outlets: Grooved, plain-end pipe, or threaded.		
B.	Flow Detection and Test Assemblies:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Reliable Automatic Sprinkler Co., Inc.		
	b. Tyco Fire & Building Products LP.		
	c. Victaulic Company.		
	2. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.		
	3. Pressure Rating: 175 psig minimum/300 psig.		
	4. Body Material: Cast- or ductile-iron housing with orifice, sight glass, and integral test valve.		
	5. Size: Same as connected piping.		
	6. Inlet and Outlet: Threaded.		
C.	Branch Line Testers:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Potter Roemer.		
	2. Standard: UL 199.		
	3. Pressure Rating: 175 psig minimum.		
	4. Body Material: Brass.		
	5. Size: Same as connected piping.		
	6. Inlet: Threaded.		
	7. Drain Outlet: Threaded and capped.		
	8. Branch Outlet: Threaded, for sprinkler.		
D.	Sprinkler Inspector's Test Fittings:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. AGF Manufacturing Inc.		
	b. Tyco Fire & Building Products LP.		
	c. Victaulic Company.		
	2. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.		
	3. Pressure Rating: 175 psig minimum.		
	4. Body Material: Cast- or ductile-iron housing with sight glass.		
	5. Size: Same as connected piping.		
	6. Inlet and Outlet: Threaded.		
E.	Adjustable Drop Nipples:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. CECA, LLC.		
	b. Corcoran Piping System Co.		
	c. Merit Manufacturing, a division of Anvil International, Inc.		
	2. Standard: UL 1474.		
	3. Pressure Rating: 250 psig minimum.		
	4. Body Material: Steel pipe with EPDM-rubber O-ring seals.		
	5. Size: Same as connected piping.		
	6. Length: Adjustable.		
	7. Inlet and Outlet: Threaded.		
F.	Flexible, Sprinkler Hose Fittings:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Flexthead Industries, Inc.		
	2. Standard: UL 1474.		
	3. Type: Flexible hose for connection to sprinkler, and with bracket for connection to ceiling grid.		
	4. Pressure Rating: 175 psig minimum.		
	5. Size: Same as connected piping, for sprinkler.		
2.08	SPRINKLERS		
A.	Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	1. Central.		
	2. Grinnell.		
	3. Victaulic Company.		
B.	General Requirements:		
	1. Standard: UL's "Fire Protection Equipment Directory" listing or "Approval Guide," published by FM Global, listing.		
	2. Pressure Rating for Residential Sprinklers: 175 psig maximum.		
	3. Pressure Rating for Automatic Sprinklers: 175 psig minimum.		
	4. Pressure Rating for High-Pressure Automatic Sprinklers: 250 psig minimum.		
C.	Automatic Sprinklers with Heat-Responsive Element:		
	1. Early-Suppression, Fast-Response Applications: UL 1767.		
	2. Nonresidential Applications: UL 199.		
	3. Characteristics: Nominal 12-inch orifice with Discharge Coefficient K of 5.6, and for "Ordinary" temperature classification rating unless otherwise indicated or required by application.		
D.	Sprinkler Finishes:		
	1. Chrome plated.		
	2. Bronze.		
	3. Painted.		
E.	Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed, flush, and recessed-type sprinklers are specified with sprinklers.		
	1. Ceiling Mounting: Plastic, white finish, one piece, flat.		
	2. Sidewall Mounting: Chrome-plated steel, one piece, flat.		
F.	Sprinkler Guards:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Central.		
	b. Grinnell.		
	c. Victaulic Company.		
	2. Standard: UL 199.		
	3. Type: Wire cage with fastening device for attaching to sprinkler.		
2.09	ALARM DEVICES		
A.	Alarm-device types shall match piping and equipment connections.		
B.	Water-Flow Indicators:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Potter Electric Signal Company.		
	2. Standard: UL 346.		
	3. Water-Flow Detector: Electrically supervised.		
	4. Components: Two single-pole, double-throw circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; complete with factory-set, field-adjustable retard element to prevent false signals and tamperproof cover if that sends signal if removed.		
	5. Type: Paddle operated.		
	6. Pressure Rating: 250 psig.		
	7. Design Installation: Horizontal or vertical.		
C.	Valve Supervisory Switches:		
	1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	a. Potter Electric Signal Company.		
	2. Standard: UL 346.		
	3. Type: Electrically supervised.		
	4. Components: Single-pole, double-throw switch with normally closed contacts.		
	5. Design: Signals that controlled valve is in other than fully open position.		
2.10	PRESSURE GAGES		
A.	Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	1. AMETEK, U.S. Gauge Division.		
	2. Ashcroft, Inc.		
	3. Brecco Corporation.		
	4. Wika Instrument Corporation.		
	2. Standard: UL 393.		
	3. Dial Size: 3-1/2- to 4-1/2-inch diameter.		
	4. Pressure Gage Range: 0 to 250 psig minimum.		
	E. Water System Piping Gage: Include "WATER" or "AIR/WATER" label on dial face.		
	F. Air System Piping Gage: Include "AIR" or "AIR/WATER" label on dial face.		
2.11	ESCUTCHEONS		
A.	General: Manufactured ceiling, floor, and wall escutcheons and floor plates.		
	B. One-Piece, Cast-Brass Escutcheons: olished chrome-plated rough-brass finish with set-screws.		
	C. One-Piece, Deep-Pattern Escutcheons: Deep-drawn, box-shaped brass with chrome-plated finish.		
	D. One-Piece, Stamped-Steel Escutcheons: Chrome-plated finish with set-screw or spring clips.		
	E. Split-Casting, Cast-Brass Escutcheons: Polished chrome-plated or rough-brass finish with concealed hinge and set-screw.		
	F. Split-Plate, Stamped-Steel Escutcheons: Chrome-plated finish with concealed hinge, set-screw or spring clips.		
	G. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.		
	H. Split-Casting Floor Plates: Cast brass with concealed hinge.		
2.12	SLEEVES		
A.	Cast-Iron Wall Pipe Sleeves: Cast or fabricated of cast iron and equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.		
	B. Galvanized-Steel-Sheet Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.		
	C. Galvanized-Steel-Pipe Sleeves: ASTM A 53/A 53M, Type E, standard weight, zinc coated, plain ends.		
D.	Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.		
	1. Underdeck Clamp: Clamping ring with set-screws.		
2.13	SLEEVE SEALS		
A.	Manufacturers: Subject to compliance with requirements, provide products by one of the following:		
	1. Advance Products & Systems, Inc.		
	2. Calpico, Inc.		
	3. Metreflex, Inc.		
	4. Pipeline Seal and Insulator, Inc.		
B.	Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.		
	1. Sealing Elements: EPDM-rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.		
	2. Pressure Plates: Carbon steel.		
	3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements.		
2.14	GROUT		
	Standard: ASTM C 1107, Grade B, posthardening and volume adjusting, dry, hydraulic-cement grout.		
	B. Characteristics: Nonshrink, and recommended for interior and exterior applications.		
	C. Design Mix: 5000-psi, 28-day compressive strength.		
	D. Packaging: Premixed and factory packaged.		
PART 3 - EXECUTION			
3.01	SERVICE-ENTRANCE PIPING		
A.	Connect sprinkler system to existing building piping at a point of adequate size and pressure to provide the demand flow and pressure required for the extension of the sprinkler system into the new Ambulatory Surgery Center Expansion.		
	Existing backflow preventer shall be forward flow tested by the AHJ per NFPA-13.		
3.02	PIPING INSTALLATION		
A.	Locations and Arrangements: Drawing plans, schematics, and diagrams indicated general location and arrangement of piping. Install piping as indicated, as far as practical.		
	1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with drawings before deviating from approved working plans.		
B.	Piping Standard: Comply with requirements for installation of sprinkler piping in NFPA 13.		
C.	Install seismic restraints on piping. Comply with requirements for seismic-restraint device materials and installation in NFPA 13.		
D.	Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.		
E.	Install unions adjacent to each valve in pipes NPS 2 and smaller.		
F.	Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.		
G.	Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, and sized and located according to NFPA 13.		
H.	Install sprinkler piping with drains for complete system drainage.		
I.	Install sprinkler control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.		
J.	Install automatic (ball drip) drain valve at each check valve for fire-department connection, to drain piping between fire-department connection and check valve. Install drain piping to and spill over floor drain or to outside building.		
K.	Install alarm devices in piping systems.		
L.	Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements for hanger materials in NFPA 13.		
M.	Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they will not be subject to freezing.		
N.	Fill sprinkler system piping with water.		
O.	Provide glycol loop for sprinkler systems subject to freezing. Provide glycol fill cup, fill system with glycol solution and verify concentration.		
3.03	JOINT CONSTRUCTION		
A.	Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.		
B.	Install unions adjacent to each valve in pipes NPS 2 and smaller.		
C.	Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.		
D.	Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.		
E.	Remove scale, slag, mud, and debris from inside and outside of pipes, tubes, and fittings before assembly.		
F.	Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.		
G.	Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:		
	1. Apply appropriate tape or thread compound to external pipe threads.		
	2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.		
H.	Twist-Locked Joints: Insert plain end of steel pipe into plain-end-pipe fitting. Rotate retainer lugs one-quarter turn or tighten retainer pin.		
I.	Steel-Piping, Pressure-Sealed Joints: Join lightweight steel pipe and steel pressure-seal fittings with tools recommended by fitting manufacturer.		
J.	Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.		
K.	Shop weld pipe joints where welded joint is indicated. Do not use welded joints for galvanized-steel pipe.		
L.	Steel-Piping, Cut-Grooved Joints: Cut square-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe joints.		
M.	Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe gro		



DSC
ARCHITECTS
401 FRONT STREET
BEREA, OHIO 44017
PHONE: 440.835.3957
mail@dscarchitects.com

DATE:
PERMIT SUBMISSION: 06.19.26

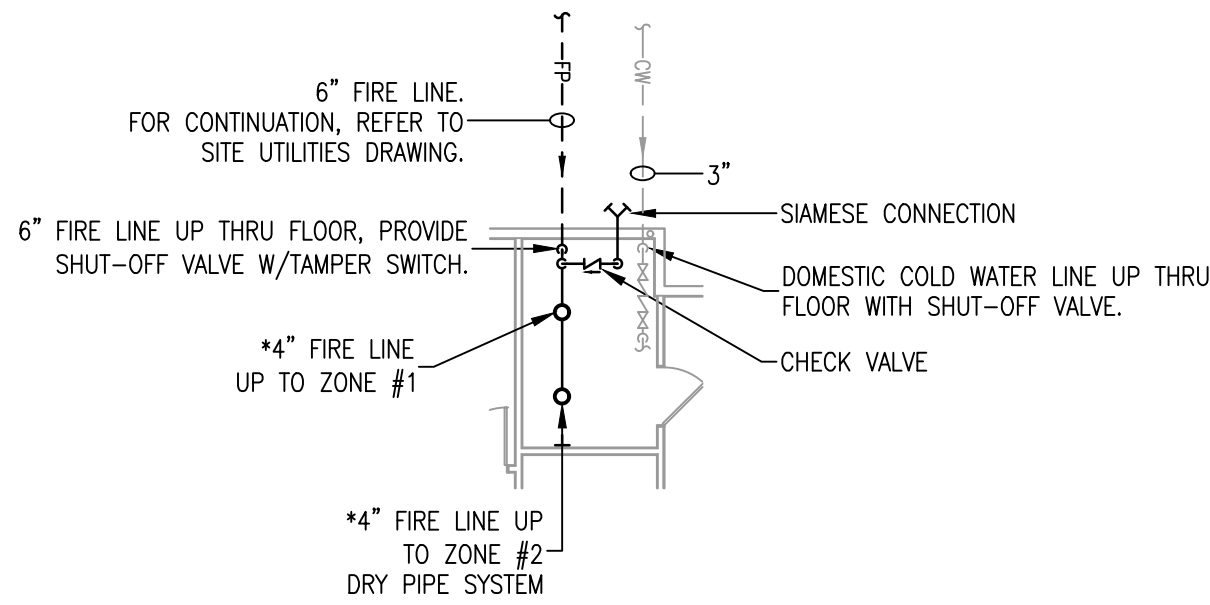
BENNETT'S CREEK
HEALTH & REHABILITATION CENTER
1931/1915 BRIDGE ROAD (HIGHWAY 17)
SUFFOLK, VIRGINIA



DRAWING NAME
FIRE PROTECTION
PLAN

DAI PROJECT NO.
26032

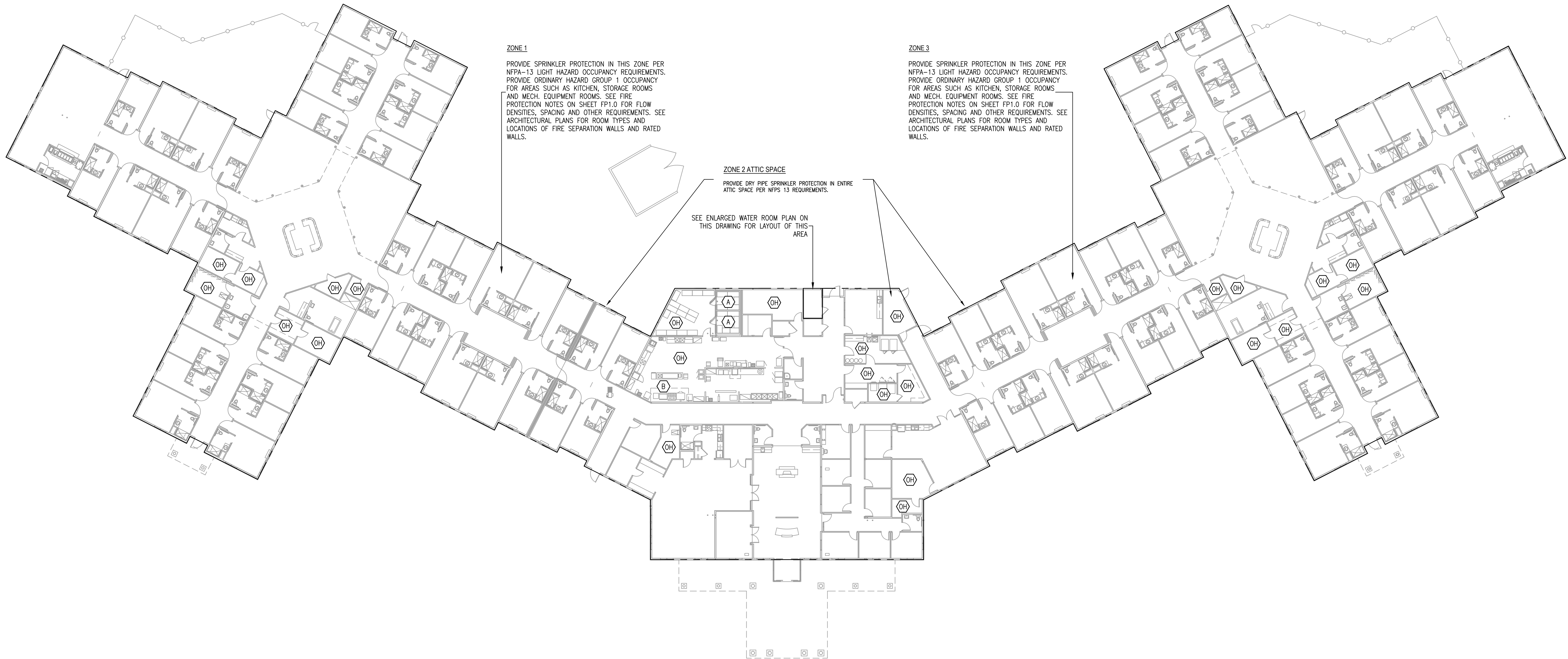
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2 ENLARGED WATER ROOM PLAN

Scale: 1"=1'-0"

* EXACT RISER SIZE TO BE DETERMINED PER HYDRAULIC CALCULATIONS BY THE FIRE PROTECTION CONTRACTOR.



1 FIRE PROTECTION FLOOR PLAN

Scale: 1"=20'-0"

CODED NOTES:

- (A) PROVIDE SPRINKLER COVERAGE WITHIN WALK-IN COOLER AND FREEZER AS REQUIRED.
- (B) TYPE I COMMERCIAL HOOD WITH FIRE SUPPRESSION SYSTEM. SYSTEM PROVIDED WITH HOOD.
- (OH) TYPICAL ORDINARY HAZARD COVERAGE AREA. PROVIDE COVERAGE AND DENSITY AS APPROPRIATE.