DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 3 TO PROJECT NO. Q1882

HVAC, FIRE PROTECTION AND ELECTRICAL WORK
REMOVE FIRE SUPPRESSION SYSTEMS, VARIOUS LOCATIONS
VARIOUS ITS FACILITIES

November 19, 2025

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

BIDDING REQUIREMENTS – COMMON DOCUMENTS

1. DOCUMENT 001114 ADVERTISEMENT FOR BIDS: The last date for receipt of bids is changed from Wednesday, November 19, 2025, to Wednesday, December 10, 2025.

FIRE PROTECTION WORK SPECIFICATIONS

2. SECTION 211313 WET-PIPE SPRINKLER SYSTEMS: Discard the section bound in the Project Manual and substitute the accompanying Section (Pages 211313-1 through 211313-14), noted "Revised 11/18/2025".

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 211313 - WET-PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Pipes, fittings, and specialties.
2. Sprinklers.
3. Alarm devices.
4. Pressure gauges.

1.3 DEFINITIONS

A. Standard-Pressure Sprinkler Piping: Wet-pipe sprinkler system piping designed to operate at working pressure of 175-psig maximum.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Fire Protection Engineer Qualification:

1. Where required by this specification or the project drawings to provide the services of a professional Engineer, the professional Engineer shall be a licensed Fire Protection Engineer, who is actively licensed in the State of New York.
2. A licensed Fire Protection Engineer shall be defined as a registered professional (P.E.) who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES) or who has obtained a B.S. or M.S. Degree in “Fire Protection Engineering” from an accredited engineering program at a recognized University or Institute.

E. Product Data: For each type of product: catalog sheets, specifications and installation instructions indicating UL listing or FM approval for each product.

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

F. Shop Drawings: For wet-pipe sprinkler systems per NFPA 13 "Standard for the Installation of Sprinkler Systems" Plans and Calculations.

1. Include plans, elevations, sections, and attachment details.
2. Include Hydraulic Calculations, computer generated and referenced to remote areas on plans.
3. The shop drawings shall be developed by and the hydraulic calculations shall be performed by person(s) meeting one of the following minimum qualification levels (without substitution):

    a. National Institute for Certification in Engineering Technologies (NICET) Level III for Water-Based Fire Protection Systems certified technicians, OR
    b. A licensed Professional Fire Protection Engineer, licensed in the State of New York, and as defined by this specification.

4. Where a NICET Level III or IV Technician in "Water-Based Fire Protection System Layout" performs the shop drawings and hydraulic calculations, the drawings and hydraulic calculations shall bear the seal and signature of the NICET Technician.
5. Where a licensed Professional Fire Protection Engineer performs the shop drawings and hydraulic calculations, the drawings and hydraulic calculations shall bear the seal and signature of the licensed Professional Fire Protection Engineer.

G. Quality Control Submittals:

1. Design Data: All portions of the sprinkler system shall be sized in accordance with NFPA requirements for Hydraulically Designed Systems. Submit Drawings and hydraulic calculations for approval.
2. Certificates: As required under Quality Assurance Article.
3. Company Field Advisor Data: Include:

    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
    c. Services and each product for which authorization is given by the Company, listed specifically for the project.
    d. Copy of:

        1) NICET Letter of Approval of advisor indicating Level III for Water-Based Fire Protection Systems certification or
        2) NICET Letter of Approval of advisor indicating Level IV for Water-Based Fire Protection Systems certification OR
        3) Licensure certificate for Professional Engineering in the State of New York, AND National Council of Examiners for Engineering and Surveying (NCEES) record/certificate for verification of completion of the Principles of Practice of Fire Protection Engineering Exam of copy of certified B.S. or M.S. degree from an accredited Fire Protection Engineering program.

e. Contractor's Qualifications Data:

1) Contractor's name, business address and telephone number
2) Names and addresses of 3 similar projects that each person has worked on during the past 5 years.
3) Name of Project Manager for the project that is National Institute for Certification in Engineering Technologies (NICET) certified as Level III or IV for Water-Based Fire Protection Systems. Provide a copy of Project Manager's:

    a) NICET Letter of Approval indicating Level III for Water-Based Fire Protection Systems certification, OR
    b) NICET Letter of Approval indicating Level IV for Water-Based Fire Protection Systems certification OR
    c) Licensure certificate for Professional Engineering in the State of New York, AND National Council of Examiners for Engineering and Surveying (NCEES) record/certificate for verification of completion of the Principles of Practice of Fire Protection Engineering Exam or copy of certified B.S. or M.S. degree from an accredited Fire Protection Engineering program.

4) Installer's Qualifications Data:

    a) Name of each person will be performing the Work and their employer's name, business address and telephone number.
    b) Names and addresses of 3 similar projects that each person has worked on during the past 5 years.

5) Working Drawing/Hydraulic Calculation Preparer Qualification Data. Working drawings and hydraulic calculations shall be prepared by either a:

    a) National Institute for Certification in Engineering Technologies (NICET) certified as Level III for Water-Based Fire Protection Systems technician.
    b) National Institute for Certification in Engineering Technologies (NICET) certified as Level IV for Water-Based Fire Protection Systems technician.
    c) A licensed Professional Fire Protection Engineer, licensed in the State of New York, and as defined by this specification.
    d) Name of each person who will be preparing working drawings/hydraulic calculations, required for the Work.
    e) Upon request, furnish names and addresses of the required number of similar projects that each person has worked on which meet the experience criteria.

6) For the Working Drawing/Hydraulic Calculation Preparer qualification data, provide a copy of:

    a) NICET Letter of Approval of supervisor indicating Level III for Water-Based Fire Protection Systems certification OR
    b) NICET Letter of Approval of supervisor indicating Level IV for Water-Based Fire Protection Systems certification OR.
    c) Licensure certificate for Professional Engineering in the State of New York, AND National Council of Examiners for Engineering and Surveying (NCEES) record/certificate for verification of completion of the Principles of Practice of Fire Protection Engineering Exam or copy of certified B.S. or M.S. degree from an accredited Fire Protection Engineering program.

H. Certifications:

1. Certified NICET Level III or IV Technician for "Water-Based Fire Protection Layout".
2. NYS registered Professional Fire Protection Engineer. (minimum 3 years of experience having the ability to assess and design water-based fire suppression systems.

I. Fire-hydrant flow test report. As per NFPA 13 "Standard for the Installation of Sprinkler Systems", test shall be conducted no more than 12 months prior to the working plan submittal.

J. Field Test Reports: Test Certificates and Test Forms to be used for projects. Each report chosen to which is applicable for each project specific. NFPA 13-Contractor's Material and Test Certificate for Aboveground Piping.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wet-pipe sprinkler systems and specialties to include in emergency, operation, maintenance manuals, parts list for mechanical and electric devices, and Publication NFPA 25 "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems" Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. Submit one (1) set of copies to the Director's Representative and a second set of copies to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.

B. Warranty Information: Providing one-year parts and labor warranty certificate. Submit one copy to the Director's Representative and provide a second copy to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.

C. As-Built Drawings and Hydraulic Calculations: After final acceptance of the system, all drawings and calculations shall have the NICET level III or IV Technician stamp or a seal and signature by a NYS Registered Professional Fire Protection Engineer. Submit one (1) set of copies to the Director's Representative as a hard copy electronically and as a .pdf and .dwg. files. Then provide a second set of hard copies to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.As per IFC follow requirements in 901.2.1 Statement of compliance. Before requesting final approval of the installation, the installing contractor shall furnish a written statement to the fire code official that the subject fire protection system has been installed in accordance with approved plans and has been tested in accordance with the manufacture's specifications and the appropriate installation standard. Any deviation from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement. Submit pdf copy to the Director's Representative and provide a second hard copy and pdf to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.

D. As per IFC follow requirements in 901.2.1 Statement of compliance. Before requesting final approval of the installation, the installing contractor shall furnish a written statement to the fire code official that the subject fire protection system has been installed in accordance with approved plans and has been tested in accordance with the manufacture's specifications and the appropriate installation standard. Any deviation from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement. Submit pdf copy to the Director's Representative and provide a second hard copy and pdf to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.

E. Field Test Reports: Completed NFPA Test Certificates and Test Forms signed by Installing Contractor and witnessed by Director's Representative including their signature. Submit all related test reports in

pdf to the Director's Representative and provide the same related test reports in hard copy and pdf to be inserted into the AS Built Drawing Cabinet located in the Fire Sprinkler Riser Room.

1. 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", NFPA 24 "Contractor's Material and Test Certificate for Underground Piping", and NYSDOH Form 1013-Report on Test and Maintenance of Backflow Prevention Device.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Spare Parts: Furnish the following items and deliver to the Director's Representative for storage in spare sprinkler head cabinets:

1. Spare sprinkler heads of required temperature range as follows:

   a. Standard upright: Six per building where provided.
   b. Standard pendent: Six per building where provided.

2. One sprinkler head wrench to fit each type sprinkler head listed above.

B. An AS Built Drawing Cabinet shall be installed at each project that has a new Fire Sprinkler System, alteration and fit-up which shall be located in the Fire Sprinkler Riser Room. All close out submittals for the project record documents shall be stored in the AS Built Drawing Cabinet.

1. AS Built Drawing Cabinet:

   a. Rigid 16 gage steel construction/ Red powder coat finish.
   b. Dimensions: 26.35"H x 14.25" W x 4" H.
   c. Full-length, stainless steel piano hinge w/Boston lock
   d. Surface mount w/ wall mount holes.

C. Laminated 11x17 paper: Emergency and Working Procedures and System Riser Diagram: Fasten to wall located in the Fire Sprinkler Riser Room.

1. Start-up procedures.
2. Shut-down procedures.
3. Riser diagram showing valve locations and equipment with brass identification tags.
4. Alarm Co. & Monitoring Co. contact information.
5. Installing Contractors information.

D. Laminated 11x17 Building Map: Fasten to wall located in Fire Sprinkler Room.

1. Showing Riser Detail Location: Include Main Control Valves, Main Drains, Low Point Drains, Inspectors Test Stations, Fire Alarm Control Panel, and Annunciator Panel.
2. Each System numbered and color coded in what areas they cover of the building.

1.7 QUALITY ASSURANCE

A. Company Field Advisor with qualifications identified above. Secure the services of a Company Field Advisor for the following:

1. Rend advice regarding installation and final adjustment of the system.
2. Witness final system test and then certify with an affidavit that the system is installed in accordance with the Contract Documents and is operating properly.
3. Train facility personnel in operation, and routine maintenance of the system.
4. The Company Field Advisor shall be certified per:

    a. National Institute for Certification in Engineering Technologies (NICET) Level III for Water-Based Fire Protection Systems certified technicians, OR
    b. National Institute for Certification in Engineering Technologies (NICET) Level IV for Water-Based Fire Protection Systems certified technicians.
    c. A licensed Professional Fire Protection Engineer, licensed in the State of New York, and as defined by this specification.

B. Contractor Qualifications: The Contractor performing the Work of this Section shall be experienced in sprinkler work and shall have been regularly engaged in the installation of sprinkler systems for a minimum of 10 years and shall, upon request, furnish to the Director's Representative the names and addresses of 5 similar projects which the Contractor worked on during the last 5 years.

1. The Project Manager employed to supervise the Work shall be National Institute for Certification in Engineering Technologies (NICET) certified as Level III or IV for Water-Based Fire Protection Systems OR shall be a professional Fire Protection Engineer (as defined by this specification) licensed in the State of New York The services of a Project Manager shall include, but are not limited to, the following:

    a. Attendance at meetings during construction.
    b. Render advice regarding installation and final adjustment of the system.
    c. Witness final system test and then certify with an affidavit that the system is installed in accordance with the Contract Documents and is operating properly.
    d. Performance of hydraulic calculations and development of Working Drawings.

C. Installer Qualifications: The workers and supervisors performing the Work of this Section shall be personally experienced in sprinkler systems Work and shall have been regularly employed by a company engaging in the installation of sprinkler systems for a minimum of 5 years and shall, upon request, furnish to the Director's Representative the names and addresses of 5 similar projects which they have worked on during the last 5 years.

D. Working Drawing/Hydraulic Calculation Preparer Qualifications:

1. The persons employed to prepare these documents for the Work shall be personally experienced in sprinkler work and shall have been regularly performing such work for a minimum of 5 years while in the employ of a company or companies engaged in the installation of fire protection systems.

    a. Upon request, furnish to the Director's Representative the names and addresses of five similar projects which the foregoing people have prepared working drawings/hydraulic calculations on during the past 3 years.
    b. The persons employed to prepare these documents for the Work shall be performed by person(s) meeting one of the following minimum qualification levels (without substitution):

        1) National Institute for Certification in Engineering Technologies (NICET) Level III for Water-Based Fire Protection Systems certified technicians, OR

2) National Institute for Certification in Engineering Technologies (NICET) Level IV for Water-Based Fire Protection Systems certified technicians, OR.
3) A licensed Professional Fire Protection Engineer, licensed in the State of New York, and as defined by this specification.

E. System Acceptance:

1. Comply with NFPA 13 requirements.
2. Complete and sign the Contractor's Material and Test Certifications and provide copies to Director's Representative.
3. Tests shall be witnessed by the Director's Representative.

F. Regulatory Requirements:

1. Materials for the Work of this Section shall be Underwriter's Laboratories listed, and/or Factory Mutual approved.

G. Certification: NFPA Contractor's Material and Test Certificate.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with NFPA 13.

B. Standard-Pressure Piping System Component: Listed for 175-psig minimum working pressure.

C. NICET Level III or IV Technician or NYS Registered Professional Fire Protection Engineer: Provide Water-Based Fire Protection Layout using performance requirements, design criteria, IFC, and NFPA standards that are indicated in this specification and design documentation.

1. Refer to contract drawings for available fire-hydrant flow test information.
2. Sprinkler system design shall be approved by authorities having jurisdiction.

a. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.
b. Sprinkler Occupancy Hazard Classifications: Ordinary Hazard, Group 1.

3. Minimum Density for Automatic-Sprinkler Piping Design:
a. Ordinary-Hazard, Group 1 Occupancy: 0.15 gpm/sq. ft. over entire area.

4. Maximum protection area per sprinkler according to UL listing.
5. Maximum Protection Area per Sprinkler: 130 sq. ft.

2.2 STEEL PIPE AND FITTINGS

A. Schedule 40: ASTM A 53 "Standard Specification for Pipe, Steel, Black and Hot-Dipper, Zinc-Coated, Welded and Seamless", Type E, Grade B; with factory- or field-formed ends to accommodate joining method. As per Part 3-Pipe Schedule.

B. Malleable- or Ductile-Iron Unions: UL 860 “Pipe Unions for Flammable and Combustible Fluids and Fire-Protection Service”.

C. Mechanical-T Bolted Branch Outlets: ASTM A-536 “Standard Specification for Ductile Iron Castings”, ASTM A-449 and ASTM A-183

1. Pressure Rated up to 500psi maximum working pressure.
2. Painted or galvanized
3. Sizes from 2”x1/2” through 8”x4”
4. Grooved outlet or Female threaded outlet.

2.3 AIR VENT

A. Manual Air Vent/Valve:

1. Manufacturers:

a. Apollo Valves; a part of Alberts Integrated Piping Systems.
b. WATTS; A Watts Water Technologies Company.
c. Approved equivalent.

2. Description: Ball valve that requires human intervention to vent air.
3. Body: Forged brass.
4. Ends: Threaded.
5. Minimize Size: 1/2 inch.
6. Minimum Water Working Pressure Rating: 300 psig.

B. Automatic Air Vent:

1. Manufacturers:

a. AGF Manufacturing, Inc.
b. Reliable Automatic Sprinkler Co., Inc.
c. Approved equivalent.

2. Description: Automatic air vent that automatically vents trapped air without human intervention.
3. Standard: UL listed or FM Global approved for use in wet-pipe fire sprinkler systems.
4. Vents oxygen continuously from system.
5. Float valve to prevent water discharge.
6. Minimum Water Working Pressure Rating: 175 psig.

C. Automatic Air Vent Assembly:

1. Description: Automatic air vent assembly that automatically vents trapped air without human intervention, including Y-strainer and ball valve in a pre-piped assembly.
2. Standard: UL listed or FM Global approved for use in wet-pipe fire sprinkler system.
3. Vents oxygen continuously from system.
4. Float valve to prevent water discharge.
5. Minimum Water Working Pressure Rating: 175 psig.

2.4 SPRINKLER PIPING SPECIALTIES

A. Branch Outlet Fittings:

1. Manufacturers:

   a. AGF Manufacturing, Inc.
   b. Viking
   c. Anvil International
   d. Approved equivalent.

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-tee 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. Floor Control Assembly:

1. UL & FM listed.
2. Design: For horizontal or vertical installation
3. Trim kit with test and drain valve with relief valve, one (1) 3-way globe valve w/ plug, one (1) 300 psi water gauge.
4. Water flow indicator- (Flow Switch)

C. Pressure Reducing Valve:

1. UL listed.
2. Pilot operated
3. 300 psi pressure rating
4. Trim kit with "wye" type strainer, two pressure gauges, hydraulic check valve, restriction fitting, and pressure reducing control valve.
5. Limits pressure on discharge side to no more than 175 psi.

D. Branch Line Testers:

1. Manufacturers:

   a. AGF Manufacturing, Inc.
   b. American Fire Supply
   c. Potter Roemer, Member of Morris Group International
   d. Approved equivalent.

2. Standard: UL 199.
3. Pressure Rating: 175 psig.
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.

E. Test and Drain Valves:

1. Standard UL's "Fire Protection Equipment Directory" or FM Global "Approval Guide."
2. Pressure Rating: 175-psig minimum**.**
3. Body Material: bronze housing with orifice, sight glass, and integral test valve.
4. Include pressure relief.
5. Size: Same as connected piping.
6. Inlet and Outlet: Threaded or grooved.
7. Locking plate kit to prevent unintentional alarms.

F. Valve Locking Devices: Test and Drain Valves shall have padlocking feature in both the open and closed position.

1. Padlock: FPPI Break Shackle Locks-#764.40/keyed alike furnished with 2 keys for each lock.
2. Key Tags: 1-1/2 in. dia., brass, stamped with valve number and service specified in Section 210553.
3. Fasteners: Brass wire link chain with S-hooks.

2.5 SPRINKLERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Globe Fire Sprinkler Corporation.
2. Reliable Automatic Sprinkler Co., Inc. (The).
3. Tyco Fire Products; brand of Johnson Controls International plc, Building Solutions North America.
4. Venus Fire Protection Ltd.
5. Victaulic Company.
6. Viking Corporation.
7. Approved equivalent.

B. Sprinkler Heads: Brass or bronze, with standard ½ inch orifice, and deflector:

1. Upright or Pendent Type: Deflector designed to distribute water downward in a uniform hemispherical spray pattern.

   a. Style A: Flat escutcheon (for rooms with recessed lighting).
   b. Style B: Conical escutcheon (for rooms with surfaced mounted lighting).

2. Markings: Stamp sprinkler type on deflector in addition to NFPA's color code requirements covering temperature classification.
3. Finish: Brass

C. Spare Sprinkler Head Cabinet: Steel, with hinged cover, constructed of minimum 20 gage material and fitted with 16 gage steel racks designed to hold quantities and types of spare sprinkler heads and sprinkler head wrenches.

1. Finish: Bright red, baked on enamel.

2.6 ALARM DEVICES

A. Alarm-device types shall match piping and equipment connections.

B. Water-Flow Indicators:

1. Manufacturers:

    a. Viking Group.
    b. Potter Electric Signal Company, LLC.
    c. Approved equivalent.

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 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:

    a. Fire-Lite Alarms; Honeywell International, Inc.
    b. Kennedy Valve Company; a division of McWane, Inc.
    c. Potter Electric Signal Company, LLC.
    d. System Sensor.
    e. Approved equivalent.

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.
6. 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.

2.7 PRESSURE GAUGES

A. Manufacturers:

1. AGF Manufacturing, Inc.
2. AMETEK, Inc.
3. Ashcroft Inc.
4. Brecco Corporation.
5. WIKA Instrument Corporation.
6. Approved equivalent.

B. Standard: UL 393.

C. Dial Size: 3-1/2- to 4-1/2-inch diameter.

D. Pressure Gauge Range: 0- to 250-psig minimum.

E. Label: Include "WATER" label on dial face.

PART 3 - EXECUTION

3.1 PREPARATION

A. Perform fire-hydrant flow test according to NFPA 13 and NFPA 291. Use results for system design calculations required in "Quality Assurance" Article.

B. Report test results promptly and in writing.

3.2 FIRE PROTECTION WATER SUPPLY INSIDE AN EXISTING BUILDING

A. Install shutoff valve, check valve, pressure gauge, and drain with in.

3.3 PIPING INSTALLATION

A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated on approved working plans.

1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
2. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

B. Piping Standard: Comply with NFPA 13 requirements for installation of sprinkler piping.

C. Use listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.

D. Install unions adjacent to each valve in pipes NPS 2 and smaller.

E. Install "Inspector's Test Connections" in sprinkler system piping, complete with test and drain valve, and sized and located according to NFPA 13.

F. Install sprinkler piping with drains for complete system drainage.

G. Install sprinkler control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.

H. Install alarm devices in piping systems.

I. Install pressure gauges on riser or feed main, at each sprinkler test connection. Include pressure gauges with connection not less than NPS 1/4 and with soft-metal seated globe valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal and install where they are not subject to freezing.

J. Fill sprinkler system piping with water.

K. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 210517 "Sleeves and Sleeve Seals for Fire-Suppression Piping."

L. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 210518 "Escutcheons for Fire-Suppression Piping."

3.4 JOINT CONSTRUCTION

A. Install 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. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

D. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.

E. 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.

3.5 VALVE AND SPECIALTIES INSTALLATION

A. Install listed fire-protection valves, trim and drain valves, specialty valves and trim, controls, and specialties according to NFPA 13 and authorities having jurisdiction.

B. Install listed fire-protection shutoff valves supervised open, located to control sources of water supply except from fire-department connections. Install permanent identification signs indicating portion of system controlled by each valve.

C. Install check valve in each water-supply connection.

D. Air Vent:

1. Provide at least one air vent at high point in each wet-pipe sprinkler system in accordance with NFPA 13 requirements. Connect vent into top of fire sprinkler piping.
2. Provide dielectric union for dissimilar metals, ball valve, and strainer upstream of automatic air vent.

E. Spare Sprinkler Head Cabinet: Secure to building wall or other permanent structure in vicinity of main valve controlling sprinkler system, unless otherwise directed.

3.6 SPRINKLER INSTALLATION

A. Install sprinklers in suspended ceilings in center of acoustical ceiling panels.

3.7 IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.

3.8 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Leak Test: After installation, charge systems and test for leaks. Repair leaks and retest until no leaks exist.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
3. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
4. Coordinate with fire-alarm tests. Operate as required.

B. Sprinkler piping system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.9 CLEANING

A. Clean dirt and debris from sprinklers.

B. Only sprinklers with their original factory finish are acceptable. Remove and replace any sprinklers that are painted or have any other finish than their original factory finish.

3.10 PIPING SCHEDULE

A. Standard-pressure, wet-pipe sprinkler system, NPS 2 and smaller, shall be the following:

1. Standard-weight, black-steel pipe with threaded ends; uncoated, gray-iron threaded fittings; and threaded joints.

3.11 SPRINKLER SCHEDULE

A. Use sprinkler types in subparagraphs below for the following applications:

1. Rooms without Ceilings: Upright sprinklers.
2. Rooms with Suspended Ceilings: Semi-Recessed Pendent sprinklers.

B. Provide sprinkler types in subparagraphs below with finishes indicated.
1. Recessed Sprinklers: Bright chrome, with bright chrome escutcheon.
2. Upright Sprinklers: Chrome plated in finished spaces exposed to view.

END OF SECTION 211313