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FIRE PROTECTION SPECIFICATIONS

PART 1 - GENERAL

- 1.01 GENERAL REQUIREMENTS:
A. PROVIDE AUTOMATIC SPRINKLER SYSTEMS THROUGHOUT THE ENTIRE PROJECT, AS SPECIFIED HEREIN AND SHOWN ON THE PLANS.
B. SPRINKLER COVERAGE SHALL BE AS INDICATED IN THE SPRINKLER SYSTEM DESIGN CRITERIA.
C. THE BUILDING SHALL BE PROTECTED BY A WET PIPE SYSTEM IN ACCORDANCE WITH NFPA.
D. WHEN THE ABOVE WORK HAS BEEN COMPLETED ACTIVATE THE SYSTEM FOR FIRE PROTECTION DURING CONSTRUCTION.
E. ACTIVATE HEAT TO INSURE THAT NO PIPING SHALL BE ROUTED IN ANY AREA OR LOCATION SUBJECT TO FREEZING.
F. GENERAL CONDITIONS APPLY TO THIS SECTION WITH THE ADDITIONS AND MODIFICATIONS SPECIFIED HEREIN. THE FIRE PROTECTION SYSTEM INCLUDES THE DESIGNING, FURNISHING OF MATERIALS, AND INSTALLATION OF AN APPROVED FIRE PROTECTION SYSTEMS AS HEREIN DESCRIBED FOR THE FOLLOWING AREAS.
G. THE DESIGN, HYDRAULIC CALCULATIONS, EQUIPMENT, MATERIALS, INSTALLATION, AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH NFPA 13 CODES AND STANDARDS EXCEPT AS SPECIFIED OTHERWISE HEREIN. THE SYSTEM INSTALLATION SHALL INCLUDE ALL MATERIALS, ACCESSORIES AND EQUIPMENT NECESSARY FOR AN APPROVED FIRE PROTECTION SYSTEM COMPLETE AND READY FOR USE. THE SYSTEM DESIGN AND INSTALLATION, AS WELL AS ALL RELATED AND NECESSARY CONSTRUCTION EQUIPMENT SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR. THE SPRINKLER SYSTEM SHALL BE FREE OF OPERATING AND MAINTENANCE DISTURBANCES. THE INSTALLATION SHALL BE AS PER DETAILED DRAWINGS TO BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE ARCHITECT AND/OR ENGINEER. DEVICES AND EQUIPMENT SHALL BE NEW AND FREE OF DEFECTS AND SHALL BE OF MAKE AND TYPE LISTED BY UNDERWRITERS LABORATORIES INC. OR APPROVED BY FACTORY MUTUAL LABORATORIES.

- 1.02 CONTRACTOR'S QUALIFICATION:
A. THE FIRE PROTECTION CONTRACTOR SHALL BE CERTIFIED, REGISTERED AND HAVE A MINIMUM OF FOUR (4) YEARS EXPERIENCE IN THE FIELD OF FIRE PROTECTION SYSTEM DESIGN AND INSTALLATION.

- 1.03 DRAWINGS AND SPECIFICATIONS:
A. THE COMMENCEMENT OF WORK UNDER THIS SECTION INDICATES THAT THE CONTRACTOR HAS EXAMINED AND HAS KNOWLEDGE OF THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL, PLUMBING, AND SITE WORK DRAWINGS AND SPECIFICATIONS. THE FAILURE OF THE CONTRACTOR TO ACQUAINT HIMSELF WITH ALL AVAILABLE INFORMATION SHALL NOT RELIEVE HIM OF ANY RESPONSIBILITY FOR PERFORMING HIS WORK PROPERLY.

- 1.04 ORDINANCES, PERMITS AND CODES:
A. IT SHALL BE THE CONTRACTOR'S DUTY TO PROVIDE ALL THE LABOR AND MATERIALS COVERED BY THESE SPECIFICATIONS IN CONFORMANCE WITH ALL ORDINANCES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION.
B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CONNECTIONS, AND SPECIFICATION FEES AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE FIRE PROTECTION SYSTEMS.
C. ALL WORK HEREIN SHALL CONFORM TO ALL APPLICABLE LOCAL ORDINANCES AND REGULATIONS OF THE LOCAL UTILITY COMPANY.
D. THE WORK SHALL BE IN ACCORDANCE WITH AND NOT LIMITED TO, THE REQUIREMENTS OF:
1. NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET EDITION AS CURRENTLY ADOPTED BY THE LOCAL JURISDICTION.
2. LOCAL FIRE DEPARTMENT ORDINANCES.
3. OWNER'S INSURANCE POLICY WRITER.
E. CODES AND REGULATIONS REFERRED TO ARE MINIMUM STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THESE SPECIFICATIONS EXCEPT WHERE THE CODES AND REGULATIONS, PERMITS, ORDINANCES AND SPECIFICATIONS GOVERN.

- COORDINATION AND CONFLICTS:
WHERE MINOR DEVIATIONS FROM PLANS ARE REQUIRED IN ORDER TO CONFORM TO SPACE LIMITATIONS, SUCH CHANGES SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.
PRIOR TO ANY WORK ON THIS PROJECT, THE SPRINKLER CONTRACTOR SHALL BECOME FAMILIAR WITH THE TYPE OF CONSTRUCTION OF FLOORS, ROOF AND WALLS (POST TENSION, FLAT PLATE, PAN JOIST, ETC.), ALL STEEL ROOFS, POST TENSION CABLES AND BEAMS SHALL BE LOCATED BEFORE DRILLING HOLES FOR PIPE OR USING POWER-DRIVEN STUDS, SELF-DRILLING ANCHORS, OR EXPANSION SHIELDS, ECT. FOR PIPE HANGERS, THE CONTRACTOR IS TOTALLY LIABLE FOR ANY AND ALL PROBLEMS OR DAMAGES CAUSED BY FAILURE TO COMPLY WITH THE ABOVE.
1.06 SPECIAL CONDITIONS:
A. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ANY DEBRIS RESULTING FROM HIS WORK. ANY AREAS IN WHICH THE CONTRACTOR HAS PERFORMED WORK SHALL BE LEFT BROOM CLEAN UNLESS A MORE THOROUGH CLEANING IS REQUIRED BY ANOTHER SECTION OF THESE SPECIFICATIONS.
1.07 WARRANTY:
A. ALL EQUIPMENT SHALL BE STARTED, TESTED, ADJUSTED, AND PLACED IN SATISFACTORY OPERATING CONDITION BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE COVERED BY WARRANTY FOR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY AND THE CONTRACTOR SHALL FURNISH THE OWNER WITH A COPY OF ALL MANUFACTURER'S GUARANTEES AND WARRANTIES.
B. ALL EQUIPMENT FURNISHED SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE (1) YEAR FROM DATE OF OWNER'S ACCEPTANCE.
1.08 RECORD DOCUMENTS:
A. CONTRACTOR SHALL FURNISH AT THE TIME OF REQUEST FOR FINAL PAYMENT, BROCHURES CONTAINING THE FOLLOWING INFORMATION CALLED FOR IN THESE SPECIFICATIONS:
1. LETTERS OF GUARANTEE.
2. OPERATING INSTRUCTIONS.
3. MANUFACTURERS' PART DATA AND SERVICE INSTRUCTIONS ON ALL ITEMS OF EQUIPMENT.
4. MANUFACTURERS' GUARANTEES AND WARRANTIES.
1.09 ELECTRICAL WORK:
(NOTE: THE REFERENCE TO A CONTROL PANEL IS ONLY APPLICABLE WHERE ONE EXISTS. IF THERE IS NOT A CONTROL PANEL, THEN SUPERVISE THE VALVES WITH LOCKS AND PROVIDE AN ALARM MOTOR COILS).
A. FLOW SWITCHES TO BE WIRED TO A LOCAL CONTROL PANEL.
B. TAMPER SWITCHES TO BE WIRED TO A LOCAL CONTROL PANEL FOR LOCAL TROUBLE ALARM ONLY.
C. ALL CONTROL WIRING SHALL BE FURNISHED AND INSTALLED UNDER THIS SECTION.
D. POWER WIRING TO THE JUNCTION BOX AT THE ALARM VALVE SHALL BE FURNISHED AND INSTALLED UNDER THE ELECTRICAL OR ON THE FIRE PROTECTION DRAWINGS.

- 1.10 ELECTRICAL ROOMS:
A. SPRINKLER PIPE MAY EXTEND INTO, BUT NOT PASS THROUGH, ELECTRICAL ROOMS.
1.11 STANDARDS FOR MATERIAL AND WORKSHIP:
A. ALL MATERIALS USED IN THIS WORK SHALL BE NEW, LISTED AND LABELED BY THE UNDERWRITER'S LABORATORIES INC. AND/OR HAVE BEEN APPROVED AS KNOWN TO ITS STANDARDS, WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL. IN QUESTION, ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER, AND SHALL PRESENT A NEAT AND MECHANICAL APPEARANCE WHEN COMPLETED. THE ARCHITECT AND/OR ENGINEER WILL JUDGE THE QUALITY OF WORKMANSHIP.
1.12 SUBMITTALS:
A. ALL MATERIALS AND EQUIPMENT THE CONTRACTOR PROPOSES TO FURNISH SHALL BE SUBMITTED FOR REVIEW WITHIN 30 DAYS AFTER THE CONTRACT HAS BEEN AWARDED. DATA SHALL BE COMPLETE IN ALL RESPECTS AND SHALL REFERENCE, WHERE APPLICABLE, THE UNIT SYMBOL UTILIZED ON THE DRAWINGS AND SPECIFICATIONS.
B. SUBMITTAL REVIEW IS CONSIDERED AS A GENERAL ACCEPTANCE OF THE BASIC APPLICABILITY OF THE EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF THE EQUIPMENT WITHIN A GIVEN SPACE. WHEN THE CONTRACTOR DESIRES TO USE SUBSTITUTED EQUIPMENT, HE SHALL BE RESPONSIBLE FOR PRODUCING HIS OWN COORDINATED WORK DRAWINGS WHICH DEPICT THE SUBSTITUTED EQUIPMENT ACCOMMODATED IN THE SPACE. WHERE THE SUBSTITUTED EQUIPMENT CREATES THE NEED FOR ALTERATIONS IN ANY PORTION OF THE WORK DEPICTED IN THE CONTRACT DOCUMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASSUME ANY ADDITIONAL COST TO THE CONTRACT CREATED BY SUBSTITUTED EQUIPMENT.
C. SUBSTITUTED EQUIPMENT IS CONSIDERED TO BE ANY

- EQUIPMENT OTHER THAN NAMED ITEMS IN THE SPECIFICATIONS OR ON THE DRAWINGS.
D. CONTRACTOR FURTHER AGREES THAT IF OMISSIONS, DISCREPANCIES OR CONFLICTS BETWEEN THE SHOP DRAWINGS AND SPECIFICATIONS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWING AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED. REVIEW OF SUBMITTAL DATA SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS DUTY TO PERFORM ALL WORK AND PROVIDE ALL EQUIPMENT IN STRICT COMPLIANCE WITH THE REQUIREMENTS SET FORTH ON THE DRAWINGS HEREIN.
E. SUBMIT FOR REVIEW COMPLETE DATA AND DRAWINGS ON THE FOLLOWING ITEMS (ALL MATERIALS MUST BE SUBMITTED SIMULTANEOUSLY OR THE ENTIRE PACKAGE MAY BE REJECTED WITHOUT REVIEW):
1. COMPLETE SET OF SHOP (WORKING) DRAWINGS BEARING EVIDENCE OF REGISTRATION AND CERTIFICATION, THE UNDERWRITER'S LETTER OF APPROVAL AND/OR COMMENTS.
2. HYDRAULIC CALCULATIONS.
3. EQUIPMENT (SPRINKLERS, SHAWMEE CONNECTIONS, WATER MOTOR ALARM, ETC.)
4. VALVES
5. HANGERS
6. FITTINGS
7. PIPING
F. ELECTRONIC SUBMITTALS MUST BE PACKAGED INTO FILES AS FOLLOWS:
1. ONE COMBINED FILE WITH THE BUILDING SPRINKLER PLANS (SHOP DRAWINGS) BEARING EVIDENCE OF REGISTRATION AND CERTIFICATION, THE UNDERWRITER'S LETTER OF APPROVAL AND/OR COMMENTS.
2. ONE COMBINED FILE CONTAINING THE HYDRAULIC CALCULATIONS.
3. ONE COMBINED FILE WITH PRODUCT DATA FOR ALL EQUIPMENT, VALVES, HANGERS, FITTINGS, PIPING, ETC. WHERE THE PROJECT CONSISTS OF MULTIPLE BUILDINGS, ONE OF EACH TYPE OF FILE LISTED ABOVE MAY BE PROVIDED ON A PER BUILDING BASIS.
4. FAILURE TO PROVIDE ELECTRONIC SUBMITTALS IN THE FORMATS INDICATED ABOVE MAY PREVENT THE REJECTION OF THE SUBMITTAL WITH REVIEW.
G. THE DRAWINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR RECORDING AS SPECIFIED IN NFPA 13, CHAPTER 14. DIMENSIONS AND CALCULATIONS SHALL INCLUDE ALL APPLICABLE DATA AS DESCRIBED HEREIN, AND WORK SHALL BEGIN UNTIL THE OBTAINMENT OF THE SERVICES AND THE VARIOUS COMPONENTS HAVE BEEN PROVIDED.

- PART PRODUCTS
2.01 CONNECTIONS:
A. MINIMUM THICKNESS OF PIPE SHALL BE SCHEDULE 10 BLACK STEEL CONFORMING TO ASTM A133.
B. SCHEDULE 40 WELDED OR SEAMLESS STEEL PIPE, ASTM A53 AND A133.
1. CLASS 125 AND 250 CAST IRON THREADED FITTINGS, ASME B16.4.
2. CLASS 150 AND 300 MALLEABLE IRON THREADED FITTINGS, ASME B16.3.
3. CLASS 125 AND 250 CAST IRON FLANGED FITTINGS, ASME B16.1.
4. SCHEDULE 40 FORGED STEEL BUTTWELD FITTINGS, ASME B16.9.
5. BROOKED MECHANICAL COUPLINGS AND FITTINGS WITH EPDM GASKET, MALLEABLE IRON OR DUCTILE IRON, 800 PSI MINIMUM RATING, ASTM A47 AND A536, UL LISTED, FM APPROVED.
C. LIGHTWALL WELDED OR SEAMLESS STEEL PIPE, ASTM A53 AND A133.
1. BROOKED MECHANICAL COUPLINGS AND FITTINGS WITH EPDM GASKET, MALLEABLE IRON OR DUCTILE IRON, 800 PSI MINIMUM RATING, ASTM A47 AND A536, UL LISTED, FM APPROVED.
D. CPVC FIRE PROTECTION PIPING MAY BE USED WHERE APPROVED BY THE UL LISTING AUTHORITY AND NFPA 13.

- 2.02 FIRE PROTECTION SYSTEM:
A. THE SPRINKLER SYSTEMS SHALL CONFORM TO NFPA NO. 13 STANDARDS AND CODES. HOSE THREADS SHALL CONFORM TO LOCAL FIRE DEPARTMENT EQUIPMENT. PIPING AND FITTINGS: PIPING SHALL BE AS NOTED IN 2.01, A ABOVE. SYSTEM PIPE AND FITTINGS SHALL BE DESIGNED FOR A MINIMUM 175 PSI WORKING PRESSURE.
2.03 SPRINKLER EQUIPMENT MATERIAL:
A. ALL VALVE HANDWHEELS SHALL BE ORIENTED TO PROVIDE MAXIMUM ACCESSIBILITY FOR OPERATION. VALVES SHALL HAVE

- UL LISTINGS AND FM APPROVAL.
B. GATE VALVES 24" IN SIZE AND LARGER SHALL BE OS&Y TYPE WITH CAST IRON BODY, SOLID WEIJE, AND FLANGED ENDS FOR 175 POUND W.M.F. VALVES SHALL BE UNDERWRITERS LABORATORIES LISTED WITH IDENTIFICATION MARK FOR SUCH STAMPED OR CAST ON VALVE BODY. VALVES SHALL BE:
1. STOCKHAM B-634
2. MUELLER NO. A-2073-6
3. KENNEDY FIG. 68
C. GATE VALVES FOR MECHANICAL JOINT PIPING SHALL BE OS&Y TYPE AND HAVE CAST IRON BODY CONFORMING TO ASTM A-120 AND BE CLASS B, RATED FOR 175 POUND W.M.F. VALVE SHALL HAVE A BRONZE OR COPPER-BLONZ ALLOY STEM CONFORMING TO ASTM B-138 ALLOY 875 AND B-584 ALLOY 875, RESPECTIVELY.
1. STOCKHAM FIG. G-835-0
2. MUELLER NO. A-2050-20
3. KENNEDY FIG. 71X
D. CHECK VALVE 24" IN SIZE AND LARGER SHALL BE HORIZONTAL SWING TYPE WITH CAST IRON BODY, BRONZE DISC, AND FLANGED ENDS FOR 175 POUND W.M.F. VALVES SHALL BE:
1. STOCKHAM B-634
2. MUELLER NO. A-2073-6
3. KENNEDY FIG. 44
E. GLOBE VALVES SHALL BE BRONZE BODY, RISING STEM, COMPRESSION DISC, AND BRONZE ENDS FOR 175 POUND W.M.F. VALVES SHALL BE:
1. STOCKHAM B-23-T
2. HESCO/SCOTT T-311-W
3. KENNEDY FIG. 97
F. GLOBE VALVES SHALL HAVE BRONZE BODY, RISING STEM, COMPRESSION DISC, AND THREADED ENDS FOR 175 POUND W.M.F. VALVES SHALL BE:
1. STOCKHAM B-222
2. HESCO/SCOTT T-311-W
3. KENNEDY FIG. 98
G. SIGHT GLASS: FIREMATIC SIGHT DRAINS.
H. WATER CHECK VALVE: CAST IRON BODY CONFORMING TO ASTM A-26 WITH EITHER CAST BRONZE OR BUNA-N SEATING RING AND STAINLESS STEEL HINGE, MUELLER MODEL NO. A-2102, CENTRAL MODEL "C", MISSION "DUO-CHECK", FIREMATIC SUPER CHECK.
I. BUTTERFLY VALVE: FOR 1" TO 24" PER SIZE, VALVE SHALL HAVE BRONZE BODY, STAINLESS STEEL DISC WITH VITON SEAL, AND WORKING PRESSURE SHALL BE 175 PSI. THE VALVE SHALL HAVE A BUILT-IN SUPERVISORY SWITCH. MANUFACTURE VALVE COMPANY, INC. "BUTTERBALL" MODEL BB-SSC01, NBB00, FIREMATIC BUTTERFLY VALVE WITH TAMPER SWITCH OR APPROVED EQUAL.
J. WET ALARM VALVE: PROVIDE ALARM CHECK VALVE FOR VERTICAL INSTALLATION COMPLETE WITH RETARD CHAMBER, ALARM SWITCH, TESTING BY-PASS, SYSTEM DRAIN, AND ALL NECESSARY PIPE, FITTINGS, GAUGES, AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.
1. CENTRAL MODEL ("T") OR ("G")
2. ORNEL MODEL (F200) OR ("A")
3. FIREMATIC MODEL ("G")
2.04 ACCESSORIES:
A. VALVE TAGS:
1. EACH VALVE SHALL HAVE A VALVE TAG AFFIXED TO THE VALVE BODY. VALVE TAGS SHALL BE A MINIMUM OF 1/4" ROUND WITH 1/2" BLACK FILLED NUMBERS, 18 GAUGE BRASS, A MINIMUM OF 1/4" IN SIZE, AND SHALL HAVE IDENTIFICATION NUMBERS STAMPED INTO THE TAGS. VALVE TAGS SHAPES AND NUMBERING SHALL BE AS FOLLOWS:
A. SETON NAME PLATE COMPANY - NEW HAVEN, CT.
2. EACH VALVE TAG SHALL BE ATTACHED TO THE HANDWHEEL WITH #18 BRASS JACK CHAIN AND "S" HOOKS.
3. A VALVE CHART, FRAMED UNDER GLASS AND WALL MOUNTED, SHALL BE LOCATED IN SPRINKLER RISER VALVE ROOM, AND SHALL LIST EACH VALVE BY IDENTIFICATION NUMBER, ITS LOCATION IN THE PIPING SYSTEM (I.E. ZONE CONTROL VALVE, ETC.) AND ITS FUNCTION.
END OF SECTION

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FPO.2

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