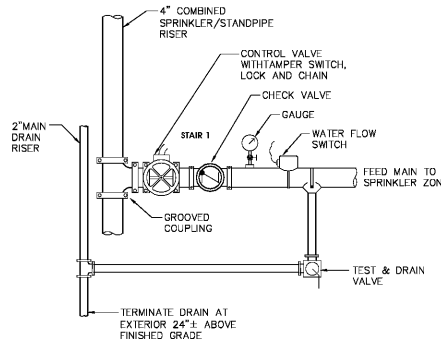
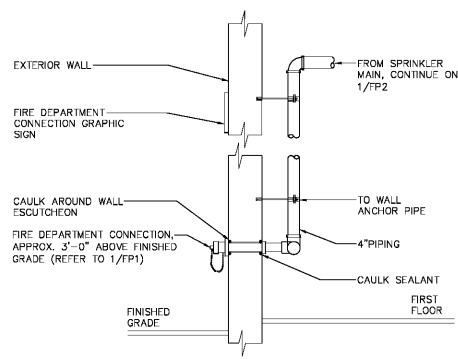


1 SPRINKLER CLEARANCE SECTION SCHEMATIC
 FPI.0 SCALE: NONE



2 SPRINKLER ZONE VALVE DETAIL
 FPI.0 SCALE: NONE



3 FIRE DEPARTMENT CONNECTION DETAIL
 FPI.0 SCALE: NONE

GENERAL NOTES:

- A. CONTRACTORS ARE RESPONSIBLE FOR PROPER FIELD FITTING AND QUANTITY OF WORK. ALL CONTRACTORS SHALL TAKE FIELD MEASUREMENTS AS REQUIRED AND BE RESPONSIBLE FOR FITTING NEW CONSTRUCTION. ALL CONTRACTORS SHALL BE RESPONSIBLE TO REPAIR ANY EXISTING CONDITIONS DISTURBED OR DAMAGED DURING CONSTRUCTION (TO MATCH EXISTING).
- B. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR SITE INVESTIGATION PRIOR TO START OF WORK TO REVEAL CONDITIONS.
- C. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND REPAIRING OF MATERIALS AND FINISHES THAT ARE DISTURBED BY THEIR RESPECTIVE TRADES.
- D. THE FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE STARTING INSTALLATION.
- E. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE CONSTRUCTION OF ALL FIRE PROTECTION WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DUMENS/DRAWINGS.
- F. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED.

PART 1 GENERAL

- A. GENERAL PROVISIONS:
 1. COMPLY WITH INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE, NFPA 13, OSHA, AND LOCAL AUTHORITY. EQUIPMENT SHALL BE UL LISTED AND FM APPROVED.
 2. PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES TO PERFORM OPERATIONS REQUIRED FOR COMPLETE INSTALLATION OF SPRINKLER WORK AS SHOWN.
 3. PLANS SHOW THE GENERAL DESIGN ARRANGEMENTS; INSTALL WORK AS INDICATED AND FIELD VERIFY EXACT LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION OR ROUGH-IN OF ANY SPRINKLER WORK. THOROUGHLY COORDINATE ALL WORK WITH ALL OTHER TRADES AND THE OWNER'S REPRESENTATIVE.
 4. MAKE NECESSARY CHANGES AS REQUIRED TO ACCOMMODATE THE NEW WORK. INCLUDE ALL OFFSETS, CHANGES IN ELEVATION, INTERFERENCES, ETC. ENCOUNTERED; FIELD MEASURE ALL WORK LOCATIONS.
 5. INSTALL ALL WORK TO MAINTAIN PROPER CLEARANCE AND SPACE FOR MAINTENANCE OF EQUIPMENT.
 6. CONTRACTOR USE OF PREMISES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES UNTIL WORK IS FULLY ACCEPTED. REPLACE ALL DAMAGED EQUIPMENT AND MATERIAL.
 7. CUTTING AND PATCHING:
 - a. PERFORM ALL CUTTING AND PATCHING REQUIRED TO COMPLETE SPRINKLER INSTALLATION.
 - b. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES, AND ADJACENT MATERIALS. PROVIDE AND MAINTAIN TEMPORARY PARTITIONS OR DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT AREAS.
 - c. PATCH FINISHED SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS MATCHING FINISHED CONDITIONS.
 8. PROTECTION:
 - a. PROVIDE AS PART OF CONTRACT, ALL SHIELDING, DUST/FUME PROTECTION, MECHANICAL/ELECTRICAL PROTECTION BARRIERS, OR ANY OTHER SAFETY FEATURES REQUIRED FOR ALL WORKMEN AND SITE VISITORS.
 9. SEALING AND FIRESTOPPING:
 - a. SEAL WHERE PIPE PASSES THROUGH GENERAL CONSTRUCTION.
 - b. PROVIDE FIRESTOPPING FOR OPENINGS THROUGH FIRE AND SMOKE BARRIERS, MAINTAINING MINIMUM REQUIRED RATING OF FLOOR, CEILING OR WALL ASSEMBLY.
- B. SUBMITTALS:
 1. SHOP DRAWINGS. PROVIDE SIX (6) SETS OF SUBMITTAL DRAWINGS ALL ITEMS OF EQUIPMENT AND MATERIALS PROVIDED.
 2. PRODUCT DATA: CATALOG SHEETS, SPECIFICATIONS, AND INSTALLATION INSTRUCTIONS. EACH PRODUCT (SPRINKLER MATERIALS) SHALL BE UL LISTED AND FM APPROVED.
 3. QUALITY CONTROL SUBMITTALS:
 - a. SPRINKLER CONTRACTOR TO PROVIDE COMPUTER HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13, ORDINARY HAZARD GROUP I (20 GPM/SQ.FT. @ 100 SQ.FT. HEAD) WITH 20 GPM MINIMUM SPRINKLER DISCHARGE. IN NO CASE SHALL THE PIPE SIZE BE SMALLER THAN INDICATED. MUST INCLUDE BACKFLOW PREVENTER AND WATER METER. THE CALCULATIONS, MAXIMUM COVERAGE AREA PER HEAD SHALL BE 130 SQ.FT.
 - b. SUBMIT ALL QUALIFICATION CERTIFICATES.
 - c. INSTALLERS WELDERS QUALIFICATION DATA:
 - NAME OF EACH PERSON WHO WILL BE PERFORMING THE WORK.
 - UPON REQUEST, FURNISH NAMES AND ADDRESSES OF THE REQUIRED NUMBER OF SIMILAR PROJECTS THAT EACH PERSON HAS WORKED ON TO MEET THE EXPERIENCE.
 - WELDING CERTIFICATE, WELDING PROCEDURE QUALIFICATION, PERFORMANCE AND COMPLIANCE WITH NFPA 13, 3.2.5 AND AWS B2.1.
 - d. CONTRACTOR CLOSEOUT SUBMITTALS:
 - o OPERATION AND MAINTENANCE MANUAL. DELIVER 2 COPIES TO THE OWNER'S REPRESENTATIVE. (UPDATE) INSTRUCTION MANUAL DESCRIBING THE OPERATION AND MAINTENANCE OF THE SYSTEM.
 - o PARTS LIST FOR EACH MECHANICAL AND ELECTRICAL DEVICE.
 - o (UPDATE) PUBLICATION NFPA 25, INSPECTION, TESTING, AND MAINTENANCE OF SPRINKLER SYSTEMS.
 - e. RECORD DRAWINGS AND COMPUTER HYDRAULIC CALCULATIONS.
 - f. NON-CORROSIVE HYDRAULIC DESIGN PLACARDS.
 - g. WELDING CERTIFICATE.
 5. SUBMITTALS SHALL BE SEALED AND STAMPED BY A VIRGINIA STATE LICENSED ENGINEER OR NICET LEVEL 3 OR HIGHER.
- C. QUALITY ASSURANCE:
 1. QUALIFICATIONS: THE PERSONS EMPLOYED TO PERFORM THE WORK OF THIS SECTION AND THEIR SUPERVISOR 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 SPRINKLER SYSTEMS.
 - a. UPON REQUEST, FURNISH TO THE ARCHITECT AND ENGINEER THE NAMES AND ADDRESSES OF FIVE SIMILAR PROJECTS WHICH THE FOREGOING PEOPLE HAVE WORKED ON DURING THE PAST 3 YEARS.
 2. REGULATORY REQUIREMENTS:
 - a. MATERIALS FOR THE WORK OF THIS SECTION SHALL BE UNDERWRITER'S LABORATORIES LISTED, AND FACTORY MUTUAL APPROVED.
 3. WELDING SHALL BE IN ACCORDANCE WITH AWS B2.1 AND NFPA 13 8-5.2.5.
 4. SPRINKLER WORK SHALL BE SIGNED AND SEALED BY A VIRGINIA LICENSED ENGINEER OR NICET LEVEL 3 OR HIGHER.
- D. ACCEPTABLE MANUFACTURERS:
 1. WATTS, AMES, WILKINS
 2. VIKING, RELIABLE, TYCO
 3. KENNEDY, CENTRAL, MILWAUKEE
 4. VICTAULIC, STOCKHOLM
 5. DOW, 3M METACAULK
 6. ALLIED, BULL MOOSE, WHEATLAND
 7. SETON
 8. GLIDDEN

PART 2 SPRINKLER PRODUCTS (UL/FM APPROVED) AND EXECUTION.

- A. DOUBLE CHECK DETECTOR BACKFLOW PREVENTER:
 1. 4" DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER, CONFORMING TO ASSE STANDARD 1048, AWWA CSA CERTIFIED, UL CLASSIFIED ULC LISTED, FM APPROVED.
 2. 175 PSI, STANDARD WITH TWO FULL PORT GROOVED BY FLANGED END OS&Y GATE VALVES, VALVE BODY SHALL BE STAINLESS STEEL, BY-PASS, ASSEMBLY CONSISTS OF A 3/4" WATER METER IN SERIES WITH "BIP" MODULAR POPPET DESIGN. LEAD-FREE ENGINEERED PLASTIC AND STAINLESS STEEL.
 3. MAKE: WATTS MODEL 774 DODA VERTICAL OR ACCEPTED EQUAL.
- B. SPRINKLER HEADS:
 1. QUICK RESPONSE PENDENT SPRINKLER, 1/2" (5.6K), 150T/200T CHROME WITH GUARD.
 2. STANDARD SIDEWALL SPRINKLER, 1/2" (5.6), 200T, CHROME.
 3. MAKE: TYCO OR ACCEPTED EQUAL.
- C. IDENTIFICATION:
 1. UL/FM APPROVED IDENTIFICATION FOR SPRINKLER SYSTEM (PIPE MARKERS, TAGS, LABEL, SIGNS, PLATES, ETC.). SIGNS FOR: DRAIN VALVES, FLOOR CONTROL ASSEMBLIES, MAIN SHUTOFF VALVE, FIRE DEPARTMENT CONNECTION.
 2. MAKE: SETON OR ACCEPTED EQUAL.
- D. PIPE AND FITTINGS:
 1. STEEL PIPE AND FITTINGS:
 - a. 2" AND SMALLER: COMPLY WITH ASTM A-135, A-53, SCHED. 40, THREAD 175 PSI BLACK STEEL. FITTINGS SHALL BE IN ACCORDANCE WITH ASTM A-128 GRADE A SCREWED CAST IRON, ANSI B2.1 THREAD.
 - b. 2-1/2" AND LARGER: SCHED. 10, 175 PSI BLACK STEEL, ASTM A-135, ASTM A-795, ROLL GROOVED. GROOVED END FITTINGS WITH STANDARD VICTAULIC GROOVED COUPLINGS, 175 PSI.
 - c. MAKE: BULLMOOSE TUBE OR ACCEPTED EQUAL.

FIRE PROTECTION SPECIFICATIONS

E. HANGERS AND SUPPORTS:

1. PIPING SHALL BE SUPPORTED USING SUPPORT METHODS COMPARABLE TO THOSE REQUIRED BY NFPA 13. PROVIDE SUPPORT FOR ARMORER GREATER THAN 24".
 - a. HANGERS - ELECTRO GALVANIZED FINISHED, SWIVEL RING TYPE.
 - b. HANGER ROOFS
 - c. C-CLAMPS
 - d. CONCRETE ANCHORS
 - e. INSETS AND EXPANSION SHIELD
2. MAKE: PHD OR ACCEPTED EQUAL.

F. FIRESTOPPING:

1. PROVIDE UL OR FM DESIGN FIRESTOPPING ASSEMBLY FOR PIPING PENETRATIONS THRU RATED FLOOR/WALLS. PROVIDE WATERSTOPPING SEAL FOR PIPING PENETRATIONS THRU NON RATED FLOOR/WALLS.
2. PROVIDE STEEL SLEEVES.
3. MAKE: DOW OR ACCEPTED EQUAL.

G. GATE VALVES: GROOVED (INDICATING TYPE):

1. 2-1/2" AND OVER, IRON BODY, BRONZE MOUNTED, OS&Y, 150T/200T WATER TIGHT SHOCK 175 LBS.
2. THREAD END, 2" AND SMALLER, BRONZE BODY, BRONZE MOUNTED, 175 LBS.
3. MAKE: KENNEDY OR ACCEPTED EQUAL.

H. CHECK VALVE: GROOVED

1. IRON, BRONZE, 175 PSI, SWING TYPE.
2. MAKE: VIKING OR ACCEPTED EQUAL.

I. SYSTEM RISER ATTACHMENTS:

1. 2" IN VALVE AND 2" DRAIN TO DRAIN OUTSIDE. FLOOR SWITCH (NICET 2K).
2. FOR CONDUIT ASSEMBLY:
 1. RELEASE SERIES WITH FLOW SWITCH, PRESSURE GAUGES, ALARM TEST, ORIFICE CHECK VALVE, GATE VALVE (OS&Y) WITH TAMPER SWITCH, DRAIN CONNECTION AND SHOT GLASS. FULLY INTEGRATED ONE-PIECE CAST DUCTILE IRON ASSEMBLY.
 2. GROOVED CONNECTIONS, HORIZONTAL INSTALLATION, PRESSURE UP TO 300 PSI.
 3. MAKE: VICTAULIC OR ACCEPTED EQUAL.

K. WATER FLOW ALARM DEVICES:

1. VANE TYPE SWITCH FOR MOUNTING HORIZONTAL OR VERTICAL WITH TWO SETS OF SPOT (FORM C) CONTACTS RATED MINIMUM 10 AMP AT 24 VOLTS DC RESISTIVE.
2. DIE-CAST ALUMINUM HOUSING, GASKETED NEMA 4 RATED ENCLOSURE.
3. ADJUSTABLE PNEUMATIC RETARD.
4. UL LISTED FM APPROVED. CONNECTION TO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL.
5. MAKE: POTTER ROEMER OR ACCEPTED EQUAL.

L. FIRE DEPARTMENT CONNECTION:

1. TYPE: TWO WAY FREE STANDING FIRE DEPARTMENT CONNECTION, BRASS BODY CONNECTION WITH CLAPPERS.
2. OUTLETS: TWO WAY (2-1/2") WITH THREAD TO MATCH FIRE DEPARTMENT THREAD; THREADED DUST CAP AND CHAIN OF MATCHING MATERIAL AND FINISH.
3. DRAIN: 3/4" AUTOMATIC DRIP AT BASE OF RISER.
4. IDENTIFICATION NAME PLATE: "FDC"
5. MAKE: POTTER ROEMER OR ACCEPTED EQUAL.

M. VALVE TAMPER SWITCH:

1. SHALL BE HOUSED IN CAST ALUMINUM CASE WITH RED ENAMEL WRINKLE FINISH. ALL PARTS ARE PLATED TO RESIST CORROSION. SWITCHES ARE SPOT (FORM C) CONTACTS: RATED 15 AMPS & 120 VAC OR 2.5 AMPS & 30 VDC. CONNECTION TO BUILDING FIRE ALARM BY ELECTRICAL.
2. MAKE: POTTER ROEMER OR ACCEPTED EQUAL.

N. SPRINKLER GUARDS FOR SPRINKLERS:

1. WELDED STEEL WIRE CAGE WITH CAST OR PRESSED STEEL BASE PLATE AND SUITABLE RETAINING CLAMPS.
2. FINISH: PAINT TO MATCH SPRINKLER PIPING

O. SPARE SPRINKLER HEAD CABINET:

1. STEEL WITH HINGED COVER, CONSTRUCTED OF MINIMUM 20 GAUGE MATERIAL AND FITTED WITH 15 GAUGE STEEL FRAMES DESIGNED TO HOLD QUANTITIES AND TYPES OF SPARE SPRINKLER HEADS AND SPRINKLER HEAD WRENCHES.
2. FINISH: BRIGHT RED, BAKED ON ENAMEL.

P. FIELD QUALITY CONTROL:

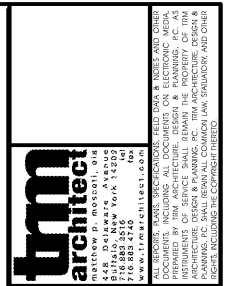
1. INSTALL SPRINKLER SYSTEM PER NATIONAL, STATE, LOCAL CODES AND LATEST NFPA 13.
2. ROUTE PIPING IN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT.
3. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN BACK AT SYSTEM RISER. PROVIDE AUXILIARY DRAIN AS REQUIRED AT ALL LOW POINTS.
4. PREPARE PIPE FOR FINISH PAINTING, SCRAPE BRUSH, CLEAN, AND APPLY ONE (1) COAT RICH PRIMER AND TWO (2) COATS OF OSHA READ PAINT.
5. LOCATED SPRINKLER SPARE CABINET NEXT TO SPRINKLER SYSTEM RISER AND SECURE TO BUILDING WALL.
6. LOCK AND CHAIN ALL GATE VALVES (OS&Y).
7. COORDINATE SPRINKLER WITH DUCTWORK, PIPING, CONDUITS, LIGHT FIXTURES, BEAMS OR STRUCTURE TO AVOID OBSTRUCTIONS. PROVIDE ADDITIONAL SPRINKLER(S) AS REQUIRED.
8. PROVIDE ACCEPTANCE TESTING (HYDRO TEST, FLOW TEST, ETC.), COORDINATE WITH ELECTRICAL DIVISION.
9. BACKFLOW PREVENTER BY SITE CONTRACTOR. COORDINATE.

Q. FLUSHING AND TESTING:

1. TESTS: UNLESS OTHERWISE SHOWN OR SPECIFIED, PERFORM TESTS IN ACCORDANCE WITH NFPA 13 AND NFPA 25.
 - a. FLUSHING: IN ADDITION TO THE REQUIREMENTS OF THE STANDARD, SLUSH NEW PIPING BEFORE MAKING FINAL CONNECTION TO EXISTING SYSTEM AND BEFORE PERFORMING HYDROSTATIC TEST. FLUSH AT RATES OF FLOW PRESCRIBED IN THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE. AFTER MAKING FINAL CONNECTIONS, FLUSH ENTIRE SYSTEM AND INSURE THAT DEBRIS IS REMOVED FROM PIPING AND THERE ARE NO STOPPAGES OR OBSTRUCTIONS IN THE SYSTEM.
 - b. HYDROSTATIC TESTS: HYDROSTATIC TEST ALL NEW WORK @ 200 LBS. FOR TWO HOURS.
 - ANY PIPING LEAKS DETECTED SHALL BE REPAIRED AND SYSTEM RETESTED.
 - c. FLOW TEST (THRU INSPECTOR'S TEST). COORDINATE WITH BUILDING FIRE ALARM SYSTEM.
2. NOTIFY THE ARCHITECT, FIRE MARSHALL, BUILDING FIRE ALARM PERSONNEL AND OWNER'S REPRESENTATIVE, WHEN THE WORK OF THIS SECTION IS READY FOR TESTING A MINIMUM OF 72 HOURS IN ADVANCE.
3. PERFORM THE TESTS AND MUST BE WITNESSED BY COUNTY FIRE INSPECTOR AND CODES ENFORCEMENT OFFICER (LOCAL AUTHORITY), OWNER'S REPRESENTATIVE, ARCHITECT/ENGINEER AND OTHER AUTHORITY HAVING JURISDICTION.

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ISSUE	DATE	REVISIONS
1	1/18/2021	ISSUED FOR CLIENT REVIEW
2	1/18/2021	ISSUED FOR BID
3	1/18/2021	

NOTES AND SCHEDULES
 DRAWN BY: KVID
 SCALE: AS NOTED
 DATE: 1/18/2020
 PROJECT NUMBER: 3771

KEVIN R. O'DONNELL, PE
 10225 Main Street
 Clarence, New York 14031
 Phone: (716) 803-8787
 Fax: (716) 407-0552
 Project # 20-11-02