



**Carmina  
Wood  
Morris**

487 Main Street Suite 500  
Buffalo, New York 14203  
P 716.842.3165  
F 716.816.8143

PROFESSIONAL SEAL

REVISIONS:  
No. Description Date  
1 Addendum 1 02/08/19

PROJECT NAME:  
**New Construction:  
The West End**  
240-260 Lakefront Blvd  
Buffalo Ny, 14202

Issued for Permit: 01.23.2019  
Drawn By: TAG  
Checked By: RKS

DRAWING NAME:  
**Specifications -  
Fire Protection**

DRAWING NO.  
**F-600**

Project No: 18.122

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. THE NATURE OF THE WORK REQUIRES COORDINATION WITH OTHER TRADES. SHOP FABRICATION SHALL BE DONE AT THE CONTRACTOR'S TRADES. SHOP FABRICATION SHALL BE DONE AT THE CONTRACTOR'S CONTRACTOR'S RISK. RELOCATION OF PIPING AND COMPONENTS TO AVOID OBSTRUCTIONS MAY BE NECESSARY. RELOCATION, IF REQUIRED, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
- B. THE INSTALLATION SHALL BE PERFORMED IN A WORKMANLIKE MANNER AS DETERMINED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AND SUBMITTED AND OWNER'S REPRESENTATIVE REVIEWED DRAWINGS.
- 1. PIPING SHALL NOT PASS DIRECTLY OVER ELECTRIC PANEL BOARDS, SWITCHBOARDS, MOTOR CONTROL CENTERS, AND SIMILAR ELECTRIC EQUIPMENT. HOWEVER, PROTECTION FOR THESE SPACES SHALL BE PROVIDED.
- 2. PIPING SHALL BE INSTALLED CONCEALED ABOVE FINISH CEILING'S AREA WITH THE SPRINKLERS LOCATED IN THE CENTER OR QUARTER POINTS OF CEILING TILES WHERE TILES ARE USED.
- 3. PROVIDE A READILY REMOVABLE FLUSHING CONNECTION CONSISTING OF A CAP AT EACH END OF CROSS MAINS.
- 4. PROVIDE MECHANICAL GUARDS FOR SPRINKLERS IN MECHANICAL AND STORAGE SPACES, LESS THAN 8 FT. ABOVE FINISHED FLOOR SUBJECT TO MECHANICAL DAMAGE.
- 5. PIPE BALL DRIP VALVES TO DISCHARGE AT A FLOOR DRAIN OR TO THE EXTERIOR. PIPE 2 IN MAIN DRAINS AND WATER MOTOR GONGS DRAINS TO DISCHARGE TO THE EXTERIOR AT APPROXIMATELY 24 IN. ABOVE FINISHED GRADE.
- 6. SECURELY INSTALL THE SPARE SPRINKLER CABINET TO THE BUILDING WALL AT THE MAIN RISER.
- 7. INSPECTOR'S TEST VALVES SHALL BE INSTALLED 7FT. OR LESS ABOVE THE FINISHED FLOOR.
- 8. UPRIGHT SPRINKLERS DIRECTLY ON BRANCH LINES SHALL BE INSTALLED WITH THEIR PARALLEL TO THE PIPING.
- 9. PROVIDE SPRINKLER PROTECTION UNDER DUCTWORK, GROUPS OF DUCTWORK AND OTHER OBSTRUCTIONS TO WATER SPRAY AND DISTRIBUTION. USE INTERMEDIATE LEVEL SPRINKLERS IF SUBJECT TO WATER SPRAY FROM ABOVE.

**3.2 TESTS**

**A. GENERAL:**

- 1. PIPE INSTALLATION SHALL BE INSPECTED BY OWNER'S REPRESENTATIVE PRIOR TO BEING COVERED BY BUILDING CONSTRUCTION OR BACKFILL.
- 2. GIVE THE OWNER'S REPRESENTATIVE ADVANCE NOTICE OR FINAL TESTS. PERFORM TESTS IN A SAFE MANNER. PROVIDE WRITTEN CERTIFICATION THAT TESTS HAVE BEEN SUCCESSFULLY COMPLETED.
- 3. CORRECT SYSTEM LEAKS PRIOR TO FINAL TEST. DO NOT UTILIZE WATER ADDITIVES, CAULKING, ETC., TO CORRECT LEAKS. PROVIDE APPLIANCES, EQUIPMENT INSTRUMENTS, DEVICES AND PERSONNEL.
- B. FLUSHING: FOLLOW CONTRACTS DOCUMENTS AND UTILIZE OPEN END PIPE SECTIONS IF POSSIBLE.
- C. PRESSURE TESTS:
  - 1. HYDROSTATIC TESTS: MINIMUM 200 PSI AND IN ACCORDANCE WITH NFPA 13 FOR TWO HOURS.
    - a. EACH SPRINKLER ZONE SHALL BE TESTED INDIVIDUALLY WITH CONTROL VALVES CLOSED.
    - b. AIR TEST NOT ACCEPTED AS FINAL TEST.
  - 2. DO NOT SUBJECT EXISTING SYSTEMS TO EXCESS PRESSURES.
- D. ALARM TEST:
  - 1. DEMONSTRATE ACTIVATION OF ALARMS.

**3.3 SYSTEM TURNOVER**

- A. PRIOR TO FINAL ACCEPTANCE, INSTRUCT THE OWNER'S REPRESENTATIVE AND LOCAL FIRE DEPARTMENT IN THE PROPER OPERATION, MAINTENANCE, TESTING, INSPECTION AND EMERGENCY PROCEDURES FOR ALL SYSTEMS FURNISHED FOR A PERIOD OF TIMES AS NEEDED.
- B. PROVIDE ONE NEW ORIGINAL PAMPHLET OF NFPA 25. INDICATE IN WRITING TO THE OWNER'S REPRESENTATIVE THE PROVISIONS FOR PROPER MAINTENANCE, TESTING AND INSPECTION OF THE SYSTEMS REQUIRED BY LOCAL FIRE CODES.
- C. NOTIFY LOCAL FIRE DEPARTMENT IN WRITING THE PERMANENT SYSTEM IS OPERATIONAL.
- D. END OF SECTION 211300.

**PART 2 - PRODUCTS (CONT.)**

**2.7 SPRINKLER EQUIPMENT**

- A. MANUFACTURERS: VIKING, GEM, RELIABLE OR APPROVED EQUAL.
- B. SPRINKLERS: RESIDENTIAL QUICK RESPONSE TYPE BRASS OR BRONZE 1/2 IN. ORIFICE, 1/2 IN. NPT. 165 F ORDINARY TEMPERATURE CLASSIFICATION FOR LIGHT AND ORDINARY HAZARDS WITHIN DWELLING UNITS, CORRIDORS, LOBBIES, AND LOUNGES. USE 286F SPRINKLERS IN MECHANICAL, AND ELECTRICAL ROOMS; IN VICINITY OF HEAT EQUIPMENT/SOURCES, AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- 1. FINISHED CEILING AREAS: CHROME PLATED FINISH SPRINKLERS WITH MATCHING TWO PIECE ADJUSTABLE SEMI-RECESSED, EQUAL TO VIKING OR RELIABLE CORP RESIDENTIAL/F-1 ESCUTCHEON FOR ALL AREAS OR EQUAL.
- 2. SIDEWALL HEADS: VIKING MICROFAST RESIDENTIAL HWS SPRINKLER OR FLAT EXPANDED TO STEEL-PIPE OD.
- 3. UNFINISHED CEILING AREAS: QUICK RESPONSE/NATURAL BRASS/BRONZE FINISH PENDENT OR UPRIGHT SPRINKLERS AS REQUIRED.
- 4. ASPRINKLERS SHALL NOT HAVE ANY PORTION OF THE FUSIBLE/FRANGIBLE ELEMENT RECESSED OR COVERED.
- C. MECHANICAL GUARDS FOR SPRINKLERS:
  - 1. DESIGN EQUIPMENT: VIKING MODEL D-1 OR APPROVED EQUAL.
- D. SPRINKLER CABINETS AND SPARE SPRINKLERS:
  - 1. STEEL OR ALUMINUM CONSTRUCTION WITH SHELVES AND SHELF HOLES TO ACCOMMODATE SPARE SPRINKLERS.
  - 2. RED HINGED FRONT DOOR LABEL.
  - 3. WITH SPRINKLER WRENCHES COMPATIBLE FOR EACH TYPE USED.
  - 4. PROVIDE A STOCK OF SPARE SPRINKLERS FOR EACH SYSTEM, OF THE TYPE AND PROPORTION TO THOSE USED IN EACH SYSTEM.
- E. TEST AND DRAIN MODULE:
  - 1. COMBINED TEST AND DRAIN VALVES, SIGHT GLASS, AND INTERCHANGEABLE RESTRICTING ORIFICE, SIZED FOR SMALLER ORIFICE SPRINKLER ZONE.
  - 2. MANUFACTURERS: VICTAULIC TEST MASTER STYLE 718, AGF MANUFACTURING "TEST AND DRAIN".

**2.8 ALARM EQUIPMENT**

- A. ELECTRIC TAMPER SWITCHES: SUPERVISE VALVES CONTROLLING SUPPLIES IN THE OPEN/PROPER POSITION. INTEGRAL WITH THE VALVE OR SEPARATE WITH PROVISIONS TO ACTUATE A SUPERVISORY ALARM UPON VALVE MOVEMENT AND UPON REMOVAL OF THE DEVICE COVER. WITH MOUNTING BRACKETS AND HARDWARE.
  - 1. 24 VDC, S.P.D.T. CONTACTS.
- D. DESIGN EQUIPMENT: POTTER ELECTRIC MODEL OSYSU-A FOR OS&Y VALVES AND MODEL PVSU-A FOR BUTTERFLY VALVES.
- B. RISER MANIFOLD ASSEMBLY: VERTICAL STYLE, GROOVED END, CAST IRON BODY AND STEEL CONSTRUCTION.
  - a. RESIDENTIAL RISER MANIFOLD ASSEMBLIES 1-1/2" FOR NFPA 13D AND NFPA 13R RESIDENTIAL FIRE SPRINKLER SYSTEMS. INTEGRAL TEST PORT ALLOWS HYDROSTATIC TESTING WITHOUT DRAINING THE SYSTEM. RESIDENTIAL ASSEMBLIES INCLUDE PRESSURE GAUGES, POTTER FLOW SWITCHES, 3-WAY GAUGE CONTROL VALVE AND 1" DRAIN VALVE. GAUGES WITH GAUGE COCKS. BASIS OF DESIGN: VIKING DN 32, OR APPROVED EQUAL.
- C. WATER PRESSURE GAUGE: ANODIZED ALUMINUM CASE, 3-1/2 IN. DIAMETER, GLASS LENS, BRASS MOVEMENT, 1/4 IN. NPT MALE BOTTOM CONNECTION WITH GAUGE COCK.
  - 1. GALVANIZED PIPE AND TRIM FITTINGS.

**2.9 SYSTEM COMPONENT IDENTIFICATION**

- A. CONTROL DRAIN AND SECTIONAL VALVES SHALL BE PROVIDED WITH PERMANENTLY MARKED IDENTIFICATION SIGNS OF BAKED ENAMEL SUBSTANTIAL METAL CONSTRUCTION. THE SIGNS SHALL BE PERMANENTLY MOUNTED ON THE PIPING OR WALL AT THE VALVE, OR ON THE VALVE, BUT SHALL NOT BE HUNG ON THE VALVE WITH WIRES OR CHAINS WHICH PERMITS EASY REMOVAL OF THE SIGN.
- B. THE SIGN SHALL CLEARLY INDICATE THE VALVE'S PURPOSE AND WHAT PORTION OF THE STRUCTURE IT SERVES.
- C. PROVIDE ADDITIONAL SIGNS AS REQUIRED SUCH AS FOR FIRE DEPARTMENT USE ONLY, PRESSURE EXCEEDS 150 PSI AT THIS VALVE, ETC., AND DECALS IDENTIFYING CONTENTS OF EACH CABINET ASSEMBLY.
- D. ADDITIONAL SIGNS SHALL BE PROVIDED AT EACH SECTIONAL FLOOR CONTROL AND ALARM VALVE TO CLEARLY INDICATE HYDRAULIC CALCULATION DATA.

**PART 2 - PRODUCTS**

**2.1 GENERAL**

- A. MIXING OF MANUFACTURERS OR MODELS OF THE SAME OR SIMILAR COMPONENT WILL NOT BE ACCEPTABLE.
- 2.2 FIRE PROTECTION PIPING
  - A. STEEL PIPES IN FIRST SEVEN PARAGRAPHS BELOW ARE ARRANGED IN ORDER OF DECREASING WALL THICKNESS.
  - B. THINWALL STEEL PIPE: ASTM A 135 OR ASTM A 795, THREADABLE, WITH NONSTANDARD OD AND WALL THICKNESS LESS THAN SCHEDULE 10.
  - C. SCHEDULE 5 STEEL PIPE: ASTM A 135 OR ASTM A 795, LIGHTWALL.
  - D. USE STEEL, KEYS COUPLINGS FOR PIPING WITH ENDS EXPANDED TO STEEL-PIPE OD.
  - E. COPPER TUBE: ASTM B 88 TYPE L WATER TUBE. TUBE ENDS MAY BE FACTORY OR FIELD EXPANDED TO STEEL-PIPE OD.
  - F. PIPE BELOW IS AVAILABLE IN NPS 3/4 TO NPS 3.
  - G. CPVC PIPE: ASTM F 442 AND UL 1821, 175-PSIG PRESSURE RATING; AND MADE FOR SPRINKLER SERVICE. INCLUDE "LISTED" AND "CPVC SPRINKLER PIPE" MARKINGS.
- 2.3 PIPE AND TUBE FITTINGS
  - A. RETAIN ONE OF FIRST FOUR PARAGRAPHS BELOW THAT MATCHES DUCTILE-IRON PIPE IN ARTICLE ABOVE. USE ONLY FOR SERVICE-ENTRANCE PIPING.
  - B. DUCTILE-IRON FITTINGS: AWWA C110, DUCTILE-IRON OR CAST-IRON PUSH-ON-JOINT TYPE; OR AWWA C153, DUCTILE-IRON, COMPACT PUSH-ON-JOINT TYPE. INCLUDE CEMENT-MORTAR LINING AND SEAL COAT ACCORDING TO AWWA C104 AND RUBBER GASKETS ACCORDING TO AWWA C111.
  - C. WROUGHT-COPPER FITTINGS: ASME B16.22.
  - D. CAST-BRONZE FLANGES: ASME B16.24.
  - E. USE STEEL, KEYS COUPLINGS FOR PIPING WITH ENDS EXPANDED TO STEEL-PIPE OD.
  - F. COPPER, GROOVED-END FITTINGS: ASTM B 75, COPPER TUBE OR ASTM B 884, BRONZE CASTINGS. FITTINGS MAY BE COPPER TUBE WITH ENDS FACTORY OR FIELD EXPANDED TO STEEL-PIPE OD.
  - G. PROCEDURE IN PARAGRAPH BELOW IS USED FOR COPPER-TUBE TEES INSTEAD OF USING TEE FITTINGS.
  - H. COPPER, MECHANICALLY FORMED TEES: MANUFACTURER'S STANDARD WRITTEN PROCEDURE FOR FORMING T-BRANCH OUTLETS WITH UL 45-LISTED TOOLS.
  - I. CPVC FITTINGS: ASTM F 438 AND UL 1821 FOR NPS 3/4 TO NPS 1-1/2 AND ASTM F 439 AND UL 1821 FOR NPS 2 TO NPS 3 UL-LISTED, 175-PSIG PRESSURE RATING, AND MADE FOR SPRINKLER SERVICE. INCLUDE "LISTED" AND "CPVC SPRINKLER FITTING" MARKINGS.
- 2.4 JOINING MATERIALS
  - A. REFER TO DIVISION 15 SECTION "BASIC MECHANICAL MATERIALS AND METHODS" FOR PIPE-FLANGE GASKET MATERIALS AND WELDING FILLER METALS.
  - B. DUCTILE-IRON, FLANGED JOINTS: AWWA C115, DUCTILE-IRON OR GRAY-IRON PIPE FLANGES, RUBBER GASKETS, AND STEEL BOLTS AND NUTS.
  - C. BRAZING FILLER METALS: AWS A5.8, CLASSIFICATION BCUP-3 OR BCUP-4.
  - D. COPPER, KEYS COUPLINGS: UL 213 AND EQUIVALENT TO AWWA C606, FOR COPPER-TUBE DIMENSIONS. INCLUDE ASTM A 47, MALLEABLE-IRON OR ASTM A 538, DUCTILE-IRON HOUSING WITH COPPER-COLORED ENAMEL FINISH, RUBBER GASKETS, AND STEEL BOLTS AND NUTS.
  - E. CPVC CEMENT: PRIMER AND SOLVENT CEMENT MADE BY PIPE AND FITTING MANUFACTURER FOR JOINING CPVC SPRINKLER PIPING.
  - F. TRANSITION COUPLINGS: AWWA C219, SLEEVE TYPE, OR OTHER MANUFACTURED FITTING THE SAME SIZE AS, WITH PRESSURE RATING AT LEAST EQUAL TO, AND WITH ENDS COMPATIBLE WITH PIPING TO BE JOINED.

**2.5 PIPING COVER**

- A. PROVIDE COVER FOR ALL EXPOSED SPRINKLER PIPING IN ALL LIVING AREAS. COVER TO BE GYPSUM BOARD SOFFITS. PAINT ALL SOFFITS TO MATCH EXISTING COLORS.
- 2.6 GAUGES
  - A. ACCURACY: ANSI B40.1 GRADE B, 2% OF SPAN; 0 TO 300 PSI STANDARD RANGE.
    - 1. CASE: ANODIZED ALUMINUM, GLASS LENS, COPPER ALLOY TUBE, TIP AND SOCKET, BRASS MOVEMENT.
    - 2. CONNECTION: 1/4 IN. NPT MALE BOTTOM CONNECTION.

**SECTION 211300 - FIRE SUPPRESSION SPRINKLER SYSTEMS**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

**1.2 SUMMARY**

- A. THIS SECTION INCLUDES THE FOLLOWING FIRE-SUPPRESSION PIPING INSIDE THE BUILDING:
  - 1. WET-PIPE SPRINKLER SYSTEM: AUTOMATIC SPRINKLERS ARE ATTACHED TO PIPING CONTAINING WATER AND THAT IS CONNECTED TO WATER SUPPLY. WATER DISCHARGES IMMEDIATELY FROM SPRINKLERS WHEN THEY ARE OPENED. SPRINKLERS OPEN WHEN HEAT MELTS FUSIBLE LINK OR DESTROYS FRANGIBLE DEVICE.
  - 2. CONTRACTOR IS TO FOLLOW ALL RULES, REQUIREMENTS AND RECOMMENDATIONS TO COMPLY WITH THE LATEST CODES, PUBLICATIONS AND STANDARDS: NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    - a. NFPA13D: STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS IN ONE AND TWO FAMILY DWELLING UNITS AND MANUFACTURED HOMES.
    - b. NFPA 22: STANDARD FOR WATER TANKS FIRE PROTECTION.
  - 3. CONTRACTOR IS TO FOLLOW ALL RULES, REQUIREMENTS AND RECOMMENDATIONS TO COMPLY WITH THE LATEST CODES, PUBLICATIONS AND STANDARDS: NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

**1.3 PERFORMANCE REQUIREMENTS**

- A. FIRE-SUPPRESSION SPRINKLER 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. RESIDENTIAL GROUP R-2.

**1.4 SUBMITTALS**

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS FOR EACH ITEM INCLUDING:
  - 1. MANUFACTURER, MODEL NUMBER.
  - 2. MATERIALS, SIZE & CONNECTION TYPE.
  - 3. PRESSURE RATINGS.
  - 4. FM APPROVAL / UL LISTING.
- B. SHOP DRAWINGS: SUBMIT COMPLETE NFPA 13D, AND NFPA 22 SHOP DRAWINGS, HYDRAULIC CALCULATIONS AND WATER SUPPLY DATA. ALL WORK TO BE DONE IN ACCORDANCE BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND DULY STAMPED AND SIGNED BY SAID ENGINEER.
- C. RECORD DRAWINGS: SUBMIT TEST REPORTS, HYDRAULIC CALCULATIONS, RECORD DRAWINGS & TEST CERTIFICATES TO ENGINEER, OWNER & INSURANCE UNDERWRITER.

**1.5 QUALITY ASSURANCE**

- A. PIPING MATERIALS SHALL BEAR THE LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCIES.
- B. SYSTEM DESCRIPTION.
  - 1. THE FIRE PROTECTION SYSTEM SHALL BE WET PIPE AUTOMATIC SPRINKLER
  - 2. CONTRACTOR SHALL OBTAIN CURRENT FLOW TEST DATA WHICH SHALL BE USED AS BASIS IN HYDRAULIC CALCULATIONS. BASIS OF DESIGN FLOWS ARE 72 STATIC/70 RESIDUAL WITH 984 FLOWING FROM A HYDRANT ON THE CORNER OF LAKEFRONT BLVD. AND OJEWVA STREET TRAIL. CONTRACTOR SHALL CONTACT COB WATER TO CONFIRM DATA.
  - 3. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED IN ACCORDANCE WITH ALL PROVISIONS OF THE CONTRACT DOCUMENTS, NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, AND ANY OTHER AUTHORITY HAVING JURISDICTION.
  - 4. THE FOLLOWING MINIMUM REQUIREMENTS SHALL BE PROVIDED AS ACTUALLY INSTALLED IN THE PROTECTED SPACES.
    - a. WATER DENSITY WITHIN DWELLING UNITS 0.05 GPM/SQ. FT.
    - b. MAXIMUM COVERAGE FOR ANY SPRINKLER HEAD SHALL NOT EXCEED NFPA REQUIREMENTS.
    - c. THE SYSTEM SHALL PROVIDE A DISCHARGE OF NOT LESS THAN 13 GPM PER SPRINKLER SIMULTANEOUSLY TO ALL THE DESIGN SPRINKLERS, AND/OR THE SYSTEM SHALL PROVIDE A DISCHARGE OF NOT LESS THAN 18 GPM TO ANY SPRINKLER IN THE SYSTEM. CONTRACTOR SHALL PROVIDE CALCULATIONS FOR BOTH FLOW RATES AT THE HYDRAULICALLY MOST DEMANDING AREA.
  - 5. 10 PSI SAFETY SHALL BE PROVIDED BETWEEN THE AVAILABLE WATER SUPPLY CURVE AND ANY SPRINKLER SYSTEM TOTAL ZONE DEMAND. THE TOTAL SPRINKLER ZONE DEMAND SHALL BE AT THE MUNICIPAL MAIN AND INCLUDE THE SUM OF THE CALCULATED SPRINKLER ZONE DEMAND AT THE RESIDUAL PRESSURE REQUIRED FOR PROPER SYSTEM OPERATION.
  - 6. THE MAXIMUM VELOCITY OF FLOW SHALL NOT EXCEED 20 FT. PER SECOND IN ABOVE GROUND PIPING EXCEPT AS RESULTING FROM THROTTLING OF FLOW IN SPRINKLER RISER/DROP NIPPLES AND 15 FT. PER SECOND IN PIPE SEGMENTS WHICH CONTAIN PADDLE TYPE WATERFLOW INDICATORS.
  - 7. INCLUDE ALLOWANCES IN HYDRAULIC CALCULATIONS FOR HEAD LOSSES THROUGH PADDLE TYPE FLOW SWITCHES AND ROLL GROOVED PIPE SEGMENTS.
  - 8. WATER SUPPLY CONTROL VALVES SHALL BE ELECTRONICALLY SUPERVISED FOR PROPER POSITION. WATERFLOW AND SUPERVISORY CIRCUITS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ELECTRICAL SPECIFICATIONS. ELECTRIC CONNECTIONS TO SPRINKLER SYSTEMS REQUIREMENT SHALL BE BY DIVISION 16. FURNISH WIRING DIAGRAMS FOR ALL EQUIPMENT.

All Rights Reserved. Reuse of these documents without the expressed written permission of Carmina Wood Morris, DPC is prohibited. WARNING: It is a violation of article 145 of the Education Law to reproduce or to alter this drawing. If altered such P.A., P. E. or L.L.S. shall affix his or her seal, signature, the date the revision, altered By, and a specific description of the alteration.

© Carmina Wood Morris DPC

2/8/2019 4:23:03 PM