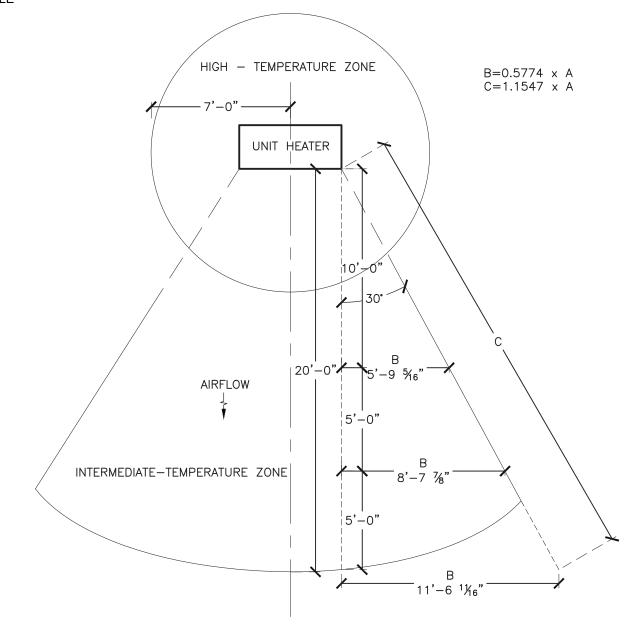
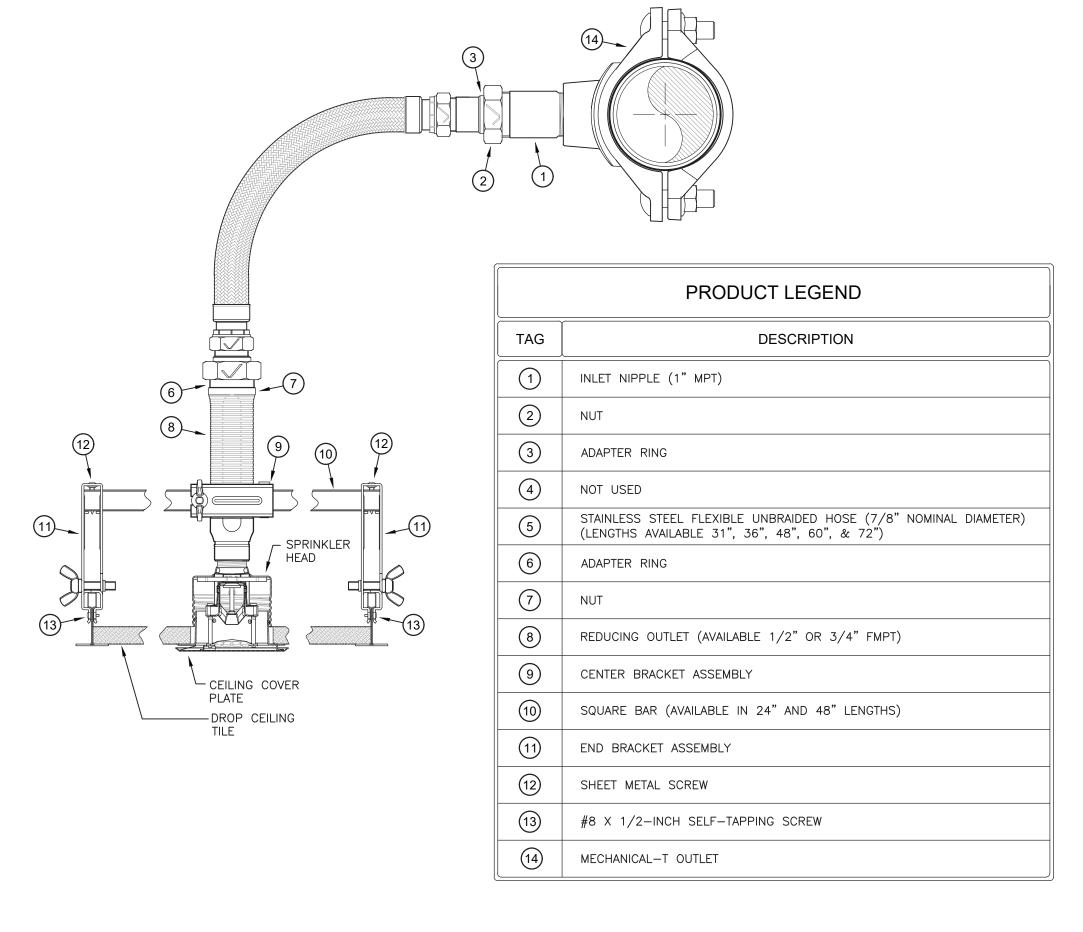


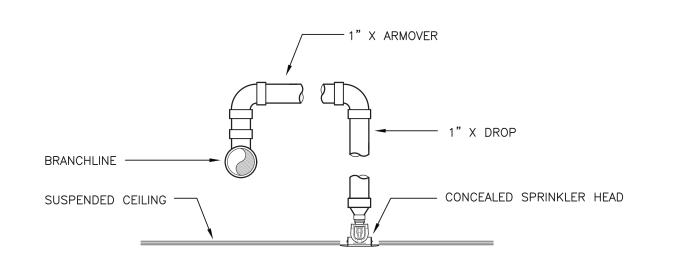
### EXTERIOR WALL PIPE PENETRATION DETAIL



# SPRINKLER TEMPERATURE ZONES AT



## TYPICAL FLEXIBLE HOSE SPRINKLER ASSEMBLIES FOR CONCEALED PENDANT SPRINKLERS





FP6.01 NOT TO SCALE

SCOTT

Revisions:

UNAUTHORIZED ALTERATIONS OF ADDITIONS TO THIS DOCUMENT I A VIOLATION OF SECTION 7209 ( THE NEW YORK STATE EDUCATIO

WITHOUT THE WRITTEN CONSE OF THE ENGINEER.

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Job No. **4.**1552.01 File No. 4155201 FP60

FP6.01

- 1. ALL SPRINKLER SYSTEM WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 FIRE CODE OF NEW YORK STATE, BUILDING CODE OF NEW YORK STATE, NFPA 13, NFPA 20, AND ALL LOCAL CODES AND GENERALLY ACCEPTED STANDARDS.
- 2. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPING, SPRINKLER HEADS, PUMPS, TESTS, HANGERS, FITTINGS AND MISCELLANEOUS COMPONENTS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE SPRINKLER SYSTEM COMPLETE, OPERABLE, AND IN ACCORDANCE WITH APPLICABLE CODES AND GENERALLY ACCEPTED INDUSTRY STANDARDS. WHERE NECESSARY ALL MATERIALS, EQUIPMENT, AND ETC. SHALL BE UL LISTED AND FM APPROVED.
- 3. PLUMBING CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL PIPING, SPRINKLER HEADS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID CONFLICTS. FURNISH TO OTHER AFFECTED TRADES ALL NECESSARY INFORMATION, WORKING DRAWINGS OR MATERIALS REQUIRED FOR INSTALLATION AND COMPLETION OF ALL WORK.
- 4. PLUMBING CONTRACTOR SHALL SEAL AROUND ALL PIPE PENETRATIONS THROUGH WALLS, FLOORS AND CEILINGS WITH. FOR PENETRATIONS THROUGH FIRE RATED CONSTRUCTION SEAL WITH FIRE-STOPPING MATERIAL SIMILAR TO HILTI INTUMESCENT FIRE STOP MATERIAL TO MAINTAIN FIRE AND SMOKE RATINGS.
- 5. PLUMBING CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIAL INSTALLED UNDER THIS CONTRACT FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION AND ACCEPTANCE BY THE OWNER, AND AGREES TO REPLACE DEFECTIVE WORK (INCLUDING ALL REQUIRED LABOR AND MATERIALS) AT NO ADDITIONAL COST TO OWNER DURING THE GUARANTEE PERIOD.
- 6. PLUMBING CONTRACTOR SHALL DEMONSTRATE NEW FIRE PROTECTION SYSTEM TO OWNER AND REVIEW MAINTENANCE PROCEDURES.
- 7. PLUMBING CONTRACTOR SHALL PERFORM ALL REQUIRED TESTS BY NFPA, ENGINEER, BUILDING DEPARTMENT AND FIRE DEPARTMENT TO THEIR SATISFACTION.
- 8. PLUMBING CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF ALL PIPING IN FINISHED AREAS TO ENSURE CONCEALMENT OF ALL PIPING. NOTIFY ARCHITECT WHEN CONFLICTS EXIST PRIOR TO INSTALLING PIPING.
- 9. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING (24V) & (120V) FOR SYSTEMS SHOWN ON THE DRAWINGS, INCLUDING ALL RELAYS, TRANSFORMERS, CONDUIT, JUNCTION BOXES, CONDUCTORS, APPURTENANCES AND ALL NECESSARY EQUIPMENT TO MAKE SYSTEMS COMPLETE AND OPERABLE.
- 10. PLUMBING CONTRACTOR SHALL PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- 11. PLUMBING CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OBSERVE ALL CLEARANCES.
- 12. ALL CONTROL WIRING SHALL BE IN ACCORDANCE WITH N.E.C. ELECTRICAL CODE AND ALL LOCAL CODES. ALL CONDUCTORS SHALL BE COPPER WITH THHN INSULATION IN EMT CONDUIT. 120V/1 — MINIMUM CONDUCTOR SIZE #12. 24V — MINIMUM CONDUCTOR SIZE #18. MINIMUM CONDUIT SIZE SHALL BE ¾". CONDUIT INSTALLED OUTDOORS SHALL BE GÁLVANIZED. SEE ELECTRICAL DRAWÎNGS AND SPECIFICATIONS FOR APPROVED MATERIALS AND METHODS OF INSTALLATION.
- 13. PLUMBING CONTRACTOR SHALL NOT DRILL OR CUT ANY STRUCTURAL MEMBERS WITHOUT PERMISSION OF ARCHITECT OR STRUCTURAL ENGINEER.
- 14. PLUMBING CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CUTTING, PATCHING, AND PAINTING ASSOCIATED WITH PLUMBING WORK WITH THE GENERAL CONTRACTOR, WHO SHALL PERFORM THE WORK. PLUMBING CONTRACTOR SHALL PROVIDE ACCESS DOORS, WHERE REQUIRED, FOR ALL CONCEALED SYSTEM COMPONENTS. ACCESS DOORS SHALL HAVE APPROPRIATE FIRE RATING TO MAINTAIN FIRE RATING OF WALL ON CEILING. ACCESS DOORS TO BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
- 15. PLUMBING CONTRACTOR SHALL OBSERVE CLEARANCES TO OBSTRUCTIONS.
- 16. PLUMBING CONTRACTOR SHALL PROVIDE METAL VALVE TAGS FOR ALL VALVES INSTALLED ON THE FIRE PROTECTION SYSTEM AND ALL OTHER REQUIRED IDENTIFICATION
- LABELS AND SIGNAGE. PROVIDE (2) MANUALS LISTING TAG NUMBER, LOCATIONS OF VALVE AND EQUIPMENT/PIPING SERVED BY VALVE.
- 17. PLUMBING CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING ALL FIRE PROTECTION SYSTEM PIPING, EQUIPMENT AND HEAD LOCATIONS WITH HYDRAULIC CALCULATIONS. COORDINATE SPRINKLER HEAD LOCATIONS WITH OTHER CONTRACTORS TO AVOID CONFLICTS. RELOCATE SPRINKLER HEADS TO MEET FIELD CONDITIONS. SHOP DRAWINGS SHALL SHOW SPRINKLER PIPE SIZES, PIPE HANGER REQUIREMENTS, FIRESTOPPING AND NECESSARY DETAILS REQUIRED FOR BUILDING DEPARTMENT AND INSURANCE CARRIER APPROVAL. HYDRAULIC CALCULATIONS SHALL BE BASED ON HYDRANT FLOW TEST PERFORMED BY THIS CONTRACTOR. SUBMIT SHOP DRAWINGS WITH HYDRAULIC CALCULATION TO ENGINEER FOR APPROVAL. SHOP DRAWINGS AN HYDRAULIC CALCULATIONS SHALL BE SIGNED BY A NYS PROFESSIONAL ENGINEER.
- 18. PLUMBING CONTRACTOR SHALL FURNISH & INSTALL NEW SPRINKLER CABINET WITH MINIMUM SIX SPARE SPRINKLER HEADS AND WRENCH. INCLUDE SEPARATE CABINET WITH SPRINKLERS AND WRENCH FOR EACH TYPE OF HEAD ON PROJECTION IN ACCORDANCE WITH NFPA 13.
- 19. WHEN INSTALLING SPRINKLER HEADS, THE PLUMBING CONTRACTOR SHALL PROVIDE THE SHORTEST HYDRAULIC PIPE LENGTH BETWEEN THE FINAL SPRINKLER HEAD LOCATION AND THE BRANCH LINE CONNECTION.
- 20. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING AND FILLING THE NEW SYSTEM AS REQUIRED FOR COMPLETION OF WORK. PROVISIONS SHALL BE MADE FOR COMPLETE DRAINAGE OF THE SYSTEM.
- 21. PROVIDE (2) 21/2 GALLON PRESSURIZED WATER AND (1) 10 POUND ABC DRY CHEMICAL EXTINGUISHERS FOR EMERGENCY USE DURING CONSTRUCTION.
- 22. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND OPERATING AUTOMATIC FIRE PROTECTION SYSTEM TO COMPLY WITH NFPA 13 AND NFPA 20.
- 23. PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH WALL, FLOORS, AND CEILING IN FINISHED AREAS.
- 24. SPRINKLER SYSTEM PIPING SHALL BE ALTERED AS NEEDED TO ACCOMMODATE CEILING HEIGHTS, DUCTWORK, LIGHTS AND OTHER PIPING. PROVIDE ALL REQUIRED PIPING AND FITTINGS AS NEEDED TO OFFSET SPRINKLER SYSTEM TO AVOID STRUCTURAL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL INTERFERENCES, WHETHER SHOWN ON THE DRAWINGS OR NOT.
- 25. SPRINKLER HEADS INSTALLED IN HUNG CEILING WILL BE POSITIONED WITH TOLERANCE OF ±½" OF THE CENTERLINE OF THE TILES. INSTALL SPRINKLER HEADS TIGHT TO THE BOTTOM OF THE HUNG CEILING, WITH CARE THAT THE FINISH IS NOT DAMAGED. WHEN CONCEALED TYPE SPRINKLER HEADS ARE USED, THE COVER PLATES SHALL BE FLUSH WITH THE CEILING PLANE, TOLERANCE GREATER THAN ±1/4" IS UNACCEPTABLE.
- 26. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING START-UP OF ALL NEW EQUIPMENT, CONTROLS, AND ETC. TO ENSURE CORRECT OPERATION OF INSTALLED DEVICES. FACTORY AUTHORIZED REPRESENTATIVES SHALL PROVIDE START-UP FOR FIRE PUMP SYSTEM.
- 27. PLUMBING CONTRACTOR SHALL PROVIDE OWNER WITH CATALOG DATA, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, AND RECORD (AS-BUILT) DRAWINGS OF ALL COMPLETED WORK.
- 28. PLUMBING CONTRACTOR SHALL PROVIDE ADDITIONAL SPRINKLER HEADS AROUND ALL OBSTRUCTIONS SUCH AS LIGHTS, EQUIPMENT, COLUMNS, AND ETC. AS REQUIRED TO PROVIDE COMPLETE COVERAGE IN ACCORDANCE WITH NFPA 13.
- 29. ALL FLOW. TAMPER AND ALARM DEVICES MUST BE TIED INTO THE BUILDING'S FIRE ALARM SYSTEM. THIS CONTRACTOR SHALL COORDINATE WITH THE FIRE ALARM CONTRACTOR. THIS CONTRACTOR SHALL FURNISH AND INSTALL TAMPER-SWITCHES ON ALL SHUT-OFF VALVES.
- 30. ALL PRESSURE GAUGES SHALL BE LOCATED SO THEY ARE EASILY READABLE FROM THE FLOOR. MINIMUM ¼" GAUGE COCKS SHALL BE PROVIDED BETWEEN PIPING AND ALL GAUGES. INSTRUMENTS SHALL BE SELECTED SO THAT THE NORMAL RANGE OF OPERATING PRESSURE FALLS WITHIN THE MIDDLE-THIRD OF THE INSTRUMENT
- 31. ALL VALVES SHALL BE FULL LINE SIZE UNLESS OTHERWISE NOTED. SCREWED VALVES SHALL BE OF BRONZE CONSTRUCTION AND FLANGED VALVES OF CAST IRON CONSTRUCTION WITH BRONZE TRIM.

#### FIRE PROTECTION SYSTEM REQUIREMENTS

#### FIRE PROTECTION SYSTEM TESTS

- HYDROSTATIC TEST: ALL PIPING AND APPURTENANCES SHALL BE HYDROSTATICALLY TESTED AT MINIMUM OF 200 PSI OR AT 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED IN THE SYSTEM, WHICHEVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE WITHOUT LOSS FOR 2 HOURS.
- 2. SYSTEM OPERATIONAL TESTS WATER FLOW DETECTING DEVICES.
- 3. MAIN DRAIN VALVE STATIC AND RESIDUAL PRESSURES.
- 4. PLUMBING CONTRACTOR SHALL PERFORM ALL FIRE PROTECTION SYSTEM TESTS REQUIRED BY NFPA 13, AND LOCAL FIRE INSPECTOR, OR AUTHORITY HAVING JURISDICTION.
- 5. ALL TESTS SHALL BE WITNESSED BY LOCAL FIRE INSPECTOR OR AUTHORITY HAVING JURISDICTION. SUBMIT REPORT ON ALL TESTS TO LOCAL FIRE INSPECTOR AND ENGINEER FOR APPROVAL.

#### FIRE PROTECTION SYSTEM REQUIREMENTS

### NFPA 13 LIGHT HAZARD:

- A. MINIMUM WATER SUPPLY (1500 SQFT. X 0.10 GPM/SQFT) B. MAXIMUM SPRINKLER HEAD PROTECTION AREA: 225 SQFT.
- NFPA 13 ORDINARY HAZARD II: (BREWERY 105A, BOILER 105B, CRUSHER 105C, COOLER 105D, AND SOUR
- A. MÁXIMUM SPINKLER HEAD PROECTION AREA = 130 SQFT. B. MINIMUM WATER SUPPLY (1500 SQFT. X 0.20 GPM/SQFT.)
- 3. FLOW VELOCITY IN PIPING SHALL NOT EXCEED 20 FPS.
- 4. EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA 13.
- 5. FINAL FLOW REQUIREMENTS BASED ON APPROVED HYDRAULIC CALCULATIONS.

		FIRE	PROTECTION EQUIPMENT SCHEDULE
SYMBOL	MANUFACTURER	CATALOG#	DESCRIPTION
И	TYCO	SERIES TY-FRB	SIDEWALL SPRINKLER, QUICK RESPONSE, K=5.6 - "ORDINARY" TEMPERATURE CLASSIFICATION (135°F). RECESSED WHITE ESCUTCHEON PLATE.
•	TYCO	SERIES RFII	CONCEALED PENDENT SPRINKLER, QUICK RESPONSE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (155°F). COLOR WHITE.
⊕ <sub>A</sub>	TYCO	SERIES RFII	CONCEALED PENDENT SPRINKLER, QUICK RESPONSE, K=5.6 —"INTERMEDIATE" TEMPERATURE CLASSIFICATION (200°F). COLOR WHITE.
⊕ <sub>B</sub>	TYCO	SERIES TY-FRB	UPRIGHT/PENDANT SPRINKLER, QUICK RESPONSE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (135°F). NATURAL BRASS, CHROME OR COLOR AS DIRECTED BY ARCHITECT. WITH METAL WIRE GUARD
⊕c	TYCO	SERIES DS-1	DRY-TYPE, PENDANT SPRINKLER, WITH RECESSED ESCHUTCHEON, STANDARD RESPONSE, STANDARD COVERAGE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (135°F). SPRINKLER AND ESCUTCHEON FINISH: NATURAL BRASS, CHROME OR COLOR AS DIRECTED BY ARCHITECT.
⊕ <sub>D</sub>	TYCO	SERIES DS-1	DRY-TYPE, PENDANT SPRINKLER, WITH STANDARD ESCHUTCHEON, DSB-2 BOOT, STANDARD RESPONSE, STANDARD COVERAGE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (135°F). SPRINKLER AND ESCUTCHEON FINISH: NATURAL BRASS, CHROME OR COLOR AS DIRECTED BY ARCHITECT.
			SPRINKLER PIPING ABOVEGROUND, SCHEDULE 40 STEEL WITH SCREWED JOINTS UP TO 2" AND SCHEDULE 10 ABOVE 2" USE MECHANICAL GROOVE COUPLING.

1. SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

5. FINAL K-FACTOR OF SPRINKLER HEADS BASED UPON HYDRAULIC CALCULATION REQUIREMENTS.

- 2. PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE
- 3. ALL HEAT GENERATING EQUIPMENT WHICH CAN AFFECT THE TEMPERATURE RATING OF THE SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS. COORDINATE HEATING EQUIPMENT LOCATIONS WITH MECHANICAL PLANS.
- 4. SPRINKLER CONTRACTOR SHALL FURNISH & INSTALL SHIELDS ON SPRINKLERS THAT CANNOT BE SUFFICIENTLY SPACED TO AVOID DISCHARGE INTERACTION.

SYMBOLS AND ABBREVIATIONS					
SYMBOL	ABBREVIATION	DESCRIPTION			
	_	POINT OF DISCONNECT/CONNECT			
	NEW	NEW WORK			
<b>®</b>	_	PENDENT OR UPRIGHT SPRINKLER HEAD			
	GPM	GALLONS PER MINUTE			
	MAX.	MAXIMUM			
	MIN.	MINIMUM			
	BFP	BACK FLOW PREVENTION DEVICE			
Î	_	BUTTERFLY VALVE			
FS	FS	FLOW SWITCH			
Т	TS	TAMPER SWICTH			
	PSI	POUNDS PER SQUARE INCH			
_	SQ.FT.	SQUARE FEET			
c—	_	ELBOW DOWN			
<b>←</b>	_	ELBOW UP			
_	V	VOLTS			
Ø		PUMP			
<b>&gt;</b>		TWO-WAY FIRE DEPARTMENT CONNECTION			
		THREE-WAY FIRE PUMP TEST CONNECTION			
$\overline{\mathbb{A}}$		OS&Y GATE VALVE			
$\searrow$		CHECK VALVE			

Revisions:

DDITIONS TO THIS DOCUMENT

W. THESE DOCUMENTS REMA

VIOLATION OF SECTION 7209 THE NEW YORK STATE EDUCAT

IGINEER, AND MAY NOT BE

FOR ANY PURPOSE WHATSO

OF THE ENGINEER.

b No. 4.1552.01

e No. 4155201 FP70