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NEW STATION FOR PUTNAM VALLEY FIRE STATION #1

OSCAWANA LAKE ROAD
PUTNAM VALLEY, NEW YORK

REVISION HISTORY		
DATE	DESCRIPTION	

SPRINKLER: EQUIPMENT SCHEDULES

SCALE: AS NOTED
DWS BY: KC
DWS DATE: 8/14/2020
STATUS: BID DRAWINGS

SPK300

GENERAL SPRINKLER NOTES

- CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND OPERATIVE AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM, INCLUDING MAIN VALVES AND TIE-INS WITH FIRE ALARM SYSTEM AS NECESSARY TO COMPLY WITH NFPA 13 SPRINKLER SYSTEM.
- ALL SPRINKLER SYSTEM AND FIRE PUMP WORK SHALL BE INSTALLED IN ACCORDANCE WITH 2020 FIRE, BUILDING AND PLUMBING CODE OF THE STATE OF NEW YORK, NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 13, 20, 22, 12, AND ALL APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPING, VALVES, SPRINKLER HEADS, 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.
- CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL PIPING, SPRINKLER HEADS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID CONFLICTS.
- CONTRACTOR SHALL SEAL AROUND ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS AND CEILING WITH MILI INTUMESCENT FIRE STOP MATERIALS TO MAINTAIN FIRE AND SMOKE RATINGS.
- 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 AT NO ADDITIONAL COST TO OWNER DURING THE GUARANTEE PERIOD.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING ALL EQUIPMENT, SPRINKLER HEADS AND PIPING WITH HYDRAULIC CALCULATIONS TO ENGINEER AND LOCAL FIRE INSPECTOR FOR APPROVAL PRIOR TO INSTALLATION.
- DEMONSTRATE NEW SPRINKLER SYSTEM TO OWNER AND REVIEW MAINTENANCE PROCEDURES, SUBMIT (2) EQUIPMENT MANUALS TO ENGINEERS. PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH WALL, FLOORS, AND CEILING IN FINISHED AREAS.
- CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF ALL PIPING IN FINISHED AREAS TO ENSURE CONCEALMENT OF ALL PIPING IN WALLS, FLOORS AND CEILING.
- CONTRACTOR SHALL PAY FOR ALL PERMITS AND INSPECTIONS FEES REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL NOT DRILL OR CUT ANY STRUCTURAL MEMBERS WITHOUT PERMISSION OF ARCHITECT.
- CONTRACTOR IS RESPONSIBLE FOR CUTTING, PATCHING AND PAINTING ASSOCIATED WITH SPRINKLER WORK. SEE ARCHITECT'S SPECIFICATIONS AND GENERAL CONDITIONS FOR APPROVED MATERIALS AND METHODS.
- EXACT LOCATION OF FIRE DEPARTMENT CONNECTION, TYPE AND SPRINKLER SYSTEM TEST/DRAIN SHALL BE APPROVED BY LOCAL FIRE DEPARTMENT CHIEF, LOCAL FIRE INSPECTOR OR AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OBSERVE ALL CLEARANCES.
- ALL CONTROL WIRING SHALL BE IN ACCORDANCE WITH N.E.C. ELECTRICAL CODE AND ALL LOCAL CODES. ALL CONDUCTORS SHALL BE COPPER (20V) - MINIMUM CONDUCTOR SIZE #12, 24V MINIMUM CONDUCTOR SIZE #10. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION METHODS.
- CONTRACTOR SHALL OBSERVE CLEARANCES TO OBSTRUCTIONS.
- CONTRACTOR SHALL CHAIN CONTROL VALVE IN THE OPEN POSITION.
- CONTRACTOR SHALL FURNISH SHOP DRAWINGS INDICATING LOCATIONS OF ALL EQUIPMENT AND DEVICES.
- CONTRACTOR SHALL FURNISH 4 INSTALL 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.
- CONTRACTOR SHALL FURNISH 4 INSTALL KNOX BOX AND EXTERIOR INDICATING LIGHTS AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL FURNISH COORDINATED SHOP DRAWINGS INDICATING LOCATIONS OF ALL EQUIPMENT AND DEVICES INSTALLED IN CEILING. THESE DRAWINGS SHALL BE APPROVED BY ALL CONTRACTORS PRIOR TO INSTALLING ANY EQUIPMENT IN CEILING. CONTRACTORS THAT DO NOT FOLLOW SHOP DRAWINGS SHALL BEAR ALL COSTS FOR RELOCATING DEVICES AND EQUIPMENT IN CONFLICT WITH OTHER EQUIPMENT.
- CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR ALL VALVES CONCEALED IN INACCESSIBLE CEILING AND WALLS. SEE ARCHITECT'S SPECIFICATIONS FOR APPROVED MANUFACTURERS AND TYPES. ACCESS DOORS SHALL HAVE (1) PRIME COAT AND (2) COATS OF FINISHED PAINT, COLOR AS DIRECTED BY ARCHITECT. ACCESS DOOR SHALL HAVE APPROPRIATE FIRE RATING TO MAINTAIN INTEGRITY OF CEILING AND WALL.
- CONTRACTOR MAY USE EXTENDED COVERAGE SPRINKLER HEADS WHERE PRESSURE AND FLOW PERMIT BASED ON HYDRAULIC CALCULATIONS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING SPRINKLER 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 RESIDUAL FLOW TEST PERFORMED BY THIS CONTRACTOR. SUBMIT SHOP DRAWINGS WITH HYDRAULIC CALCULATION TO ENGINEER FOR APPROVAL. SHOP DRAWINGS THEN SHALL BE SUBMITTED TO BUILDING DEPARTMENT, LOCAL FIRE DEPARTMENT AND INSURANCE CARRIER FOR APPROVAL.
- WHEN INSTALLING SPRINKLER HEADS, THE CONTRACTOR SHALL PROVIDE THE SHORTEST HYDRAULIC PIPE LENGTH BETWEEN THE FINAL SPRINKLER HEAD LOCATION AND THE BRANCH LINE CONNECTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING AND FILLING THE NEW SYSTEM AS REQUIRED FOR COMPLETION OF WORK.
- PROVIDE (2) 2 1/2 GALLON PRESSURIZED WATER AND (1) 10 POUND ABC DRY CHEMICAL EXTINGUISHERS FOR EMERGENCY USE DURING CONSTRUCTION.
- CONTRACTOR SHALL SUPPLY WATER FOR INITIAL FILL OF WATER TANK FROM A DELIVERY COMPANY. TANKS SHALL NOT BE FILLED FROM WELL SYSTEM.
- 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.
- SPRINKLER HEADS INSTALLED IN HUNG CEILING WILL BE POSITIONED WITH TOLERANCE OF 1/8" 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 1/8" IS UNACCEPTABLE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING START-UP OF ALL NEW EQUIPMENT, CONTROLS, AND ETC. TO ENSURE CORRECT OPERATION OF INSTALLED DEVICES.
- CONTRACTOR SHALL PROVIDE OWNER WITH CATALOG DATA, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, AND RECORD (AS-BUILT) DRAWINGS OF ALL COMPLETED WORK.
- 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.
- ALL NEW HOLES IN WALLS AND FLOORS SHALL BE CORE DRILLED BY THIS CONTRACTOR. PRIOR TO CORE DRILLING FLOORS, RADAR SCAN FLOOR SLABS. USE CAUTION WHEN CORE DRILLING TO AVOID DAMAGE TO EQUIPMENT, SYSTEMS, STRUCTURE AND ETC. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED SIGNAGE FOR FIRE PROTECTION SYSTEM.
- CONTRACTOR SHALL SEAL AROUND ALL PIPING AND SENSOR PENETRATIONS IN CONCRETE WATER STORAGE TANK WATER TIGHT. PIPE SEALING METHODS SHALL BE IN ACCORDANCE WITH TANK MANUFACTURER'S RECOMMENDATIONS.

SPRINKLER EQUIPMENT SCHEDULE			
SYMBOL	MANUFACTURER	CATALOG #	DESCRIPTION
K	TYCO	SERIES TY-FRB	SIDEWALL SPRINKLER, QUICK RESPONSE, K=5.6 - "INTERMEDIATE" TEMPERATURE CLASSIFICATION (175°F). RECESSED WHITE ESCUTCHEON PLATE.
⊙	TYCO	SERIES RFI	CONCEALED PENDENT SPRINKLER, QUICK RESPONSE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (155°F). COLOR WHITE.
⊙A	TYCO	SERIES RFI	CONCEALED PENDENT SPRINKLER, QUICK RESPONSE, K=5.6 -"INTERMEDIATE" TEMPERATURE CLASSIFICATION (200°F). COLOR WHITE.
⊙B	TYCO	SERIES TY-FRB	UPRIGHT/PENDANT SPRINKLER, QUICK RESPONSE, K=5.6 -"INTERMEDIATE" TEMPERATURE CLASSIFICATION (175°F). NATURAL BRASS, CHROME OR COLOR AS DIRECTED BY OWNER. WITH METAL WIRE GUARD
⊙C	TYCO	SERIES TY-FRB	UPRIGHT/PENDANT SPRINKLER, QUICK RESPONSE, K=5.6 -"ORDINARY" TEMPERATURE CLASSIFICATION (155°F). NATURAL BRASS, CHROME OR COLOR AS DIRECTED BY OWNER. WITH METAL WIRE GUARD
△	RELIABLE	CVE	RISER CHECK VALVE, UL LISTED, FM APPROVED, SPRING LOADED CHECK VALVE WITH RATED WORKING PRESSURE OF 300 PSI. VALVE BODY AND COVER CONSTRUCTION SHALL CONSIST OF GRAY IRON PER ASTM-A48 CLASS 30A. CHECK VALVE SHALL HAVE A THREADED-IN, ONE PIECE SEAT OF BRONZE CONSTRUCTION FOR EASE OF MAINTENANCE, AND O-RING SEALS TO PREVENT CORROSION AND LEAKAGE. CLAPPER ASSEMBLY SHALL BE DUCTILE IRON CASTING WITH BRASS BUSHING ASSEMBLY, WITH EPDM RUBBER FACING SEAL AND STAINLESS STEEL CLAMPING RING. END CONNECTIONS TO BE GROOVED. THE VALVE BODY SHALL HAVE A REMOVABLE FACEPLATE FOR EASE OF INSPECTION AND MAINTENANCE AS REQUIRED BY NFPA 25. THE RISER CHECK VALVE SHALL BE FACTORY TAPPED WITH ONE 1/2" AND TWO 2" NPT PLUGGED CONNECTIONS. BASIC RISER CHECK VALVE TRIM SHALL CONSIST OF GALVANIZED AND BRASS TRIM COMPONENTS, INCLUDING 2 INCH MAIN DRAIN, AND BOTH SYSTEM AND SUPPLY WATER PRESSURE GAUGES.
—SP—	_____	_____	UNDERGROUND SPRINKLER PIPING DUCTILE IRON ANSI/AWWA C151/A21.51 THICKNESS CLASS 52 350 PSI WORKING PRESSURE (CLASS 350). JOINTS/FITTINGS DUCTILE IRON ASTM A536 350 PSI WORKING PRESSURE (CLASS 350)
—W—	_____	_____	WET SYSTEM SPRINKLER PIPING, SCHEDULE 40 BLACK STEEL WITH SCREWED JOINTS UP TO AND INCLUDING 2" AND USE SCHEDULE 10 WITH MECHANICAL GROOVE COUPLING OVER 2".
—NFC—	_____	_____	NON-POTABLE TRUCK FILL/SUPPLY WATER PIPING, COPPER TYPE "L" WITH LEADFREE SOLDER JOINTS ABOVE GRADE AND COPPER TYPE "K" FOR UNDERGROUND PIPING. NO JOINTS PERMITTED BELOW GRADE. INSULATE UNDERGROUND WITH 1" THICK ELASTOMERIC INSULATION. INSULATE ALL ABOVE GROUND PIPING WITH 1/2" THICK FIBERGLASS PIPE INSULATION WITH VAPOR PROOF JACKET, TAPED JOINTS AND PVC FITTING COVERS. EXPOSED PIPING SHALL BE COVERED WITH PVC PIPE COVER AND PAINTED. (1) - COAT PRIMER, (2) COATS - PAINT. COLOR AS DIRECTED BY ARCHITECT
—DP—	_____	_____	SPRINKLER TANK DRAIN/OVERFLOW/NONPOTABLE WATER PIPING, COPPER TYPE "L" WITH LEADFREE SOLDER JOINTS ABOVE GRADE AND BRAZED JOINTS* FOR UNDERGROUND PIPING. INSULATE ALL ABOVE GROUND PIPING WITH 1/2" THICK FIBERGLASS PIPE INSULATION WITH VAPOR PROOF JACKET, TAPED JOINTS AND PVC FITTING COVERS. EXPOSED PIPING SHALL BE COVERED WITH PVC PIPE COVER AND PAINTED. (1) - COAT PRIMER, (2) COATS - PAINT. COLOR AS DIRECTED BY ARCHITECT

- NOTES:**
- SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE.
 - 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.
 - SPRINKLER CONTRACTOR SHALL FURNISH 4 INSTALL SHIELDS ON SPRINKLERS THAT CANNOT BE SUFFICIENTLY SPACED TO AVOID DISCHARGE INTERACTION.
 - FINAL K-FACTOR OF SPRINKLER HEADS BASED UPON HYDRAULIC CALCULATION REQUIREMENTS.

SPRINKLER SYSTEM REQUIREMENTS	
OCCUPANCY CLASSIFICATIONS	
1.	NFPA 13 LIGHT HAZARD OCCUPANCY: OFFICE & MEETING
2.	NFPA 13 ORDINARY GROUP 1: BOILER ROOM, APPARATUS ROOM, KITCHEN PREP AREA, AND STORAGE AREAS.
WET SPRINKLER SERVICE REQUIREMENTS	
1.	NFPA 13 ORDINARY HAZARD.
A.	MINIMUM WATER SUPPLY (1500 SQFT. x .15 GPM/SQFT.)
B.	TOTAL COMBINED INSIDE AND OUTSIDE HOSE STREAMS. (PRIVATE WATER TANK)
	225 GPM
	0 GPM
	MINIMUM 225 GPM
	FINAL FLOW BASED ON APPROVED HYDRAULIC CALCULATIONS
SPRINKLER SYSTEM REQUIREMENTS	
1.	MINIMUM PRESSURE AT SPRINKLER HEAD SHALL BE 7 PSI UNLESS NOTED OTHERWISE.
2.	FLOW VELOCITY IN PIPING SHALL NOT EXCEED 20 FPS.
3.	EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA 13.
4.	LIGHT HAZARD MAXIMUM SPRINKLER HEAD PROTECTION AREA: 225 SQFT.
5.	ORDINARY GROUP 1 & II MAXIMUM SPRINKLER HEAD PROTECTION AREA: 130 SQFT.
6.	MAXIMUM FLOOR AREA PROTECTION LIMIT: LIGHT & ORDINARY HAZARD 52,000 SQFT.
WATER STORAGE REQUIREMENTS	
	NFPA 13 ORDINARY HAZARD GROUP I: 330 GPM @ 60 MINUTES = 19,800 GALLONS
	COMBINED SPRINKLER/TRUCK FILL WATER STORAGE (30,000 GALLONS)
	SPRINKLER = 20,000 GALLONS
	TRUCK FILL = 10,000 GALLONS

SPRINKLER SYSTEM TESTS	
1.	HYDROSTATIC - 200 PSI FOR 2 HOURS WITHOUT LOSS OF PRESSURE.
2.	SYSTEM OPERATIONAL TESTS - WATER FLOW DETECTING DEVICES.
3.	MAIN DRAIN VALVE - STATIC AND RESIDUAL PRESSURES.
4.	CONTRACTOR SHALL PERFORM ALL SPRINKLER SYSTEM TESTS REQUIRED BY 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.