ABBREVIATIONS

AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BLDG	BUILDING
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
COL	COLUMN
CF	CUBIC FEET
CLG	CEILING
CU	COPPER
CU FT	CUBIC FEET
CV	CHECK VALVE
CW	COLD WATER
DAF	DISSOLVED AIR FLOTATION
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER
DFU	DRAINAGE FIXTURE UNIT
DIP	DUCTILE IRON
DIA	DIAMETER
DN	DOWN TO FLOOR BELOW
DWV	DRAIN, WASTE AND VENT
DROP	DROP IN CURRENT VIEW
EL	ELEVATION
FACP	FIRE ALARM CONTROL PANEL
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FT	FEET
FIN	FINISH
FLG	FLANGED
FS	FLOW SWITCH
GPM	GALLONS PER MINUTE
GAL	GALLON
GC	GENERAL CONTRACTOR
GV	GATE VALVE
HP	HORSEPOWER
IN	INCH
IW	INDIRECT WASTE
LB	POUND
MAX	MAXIMUM
MIN	MINIMUM
MSB	MOP SERVICE BASIN
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NPW	NON POTABLE WATER
NRS	NON RISING STEM
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OSY	OUTSIDE SCREW AND YOKE
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
PW	POTABLE WATER
RISE	RISE IN CURRENT VIEW
RPM	REVOLUTIONS PER MINUTE
SAN	SANITARY
SCH	SCHEDULE
SF	SQUARE FOOT
SS	SANITARY SEWER
TYP	TYPICAL
UP	UP TO FLOOR ABOVE
UL	UNDERWRITERS LABORATORY
UR	URINAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEAN OUT
FS	FLOW SWITCH
WT	WEIGHT

LINETYPES

NEW (FIRE PROTECTION)

NEW - BELOW GRADE OR FLOOR SLAB (FIRE PROTECTION)

NEW (NON-FIRE PROTECTION)

SPRINKLER SYSTEM DESIGN CRITERIA

WET SYSTEM - ORDINARY HAZARD GROUP 2

SPRINKLER DESIGN CRITERIA:

A. SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY DESIGNED AND CALCULATED. USE THE RESULTS OF THE HYDRANT FLOW TEST TO PROCUDE THE SYSTEM WATER SUPPLY CURVE. WHEN PERFORMING THE HYDRAULIC CALCULATION, REDUCE THE WATER SUPPLY CURVE BY THE GREATER OF 10 PSI OR 10%.
B. PROVIDE 7 PSI MINIMUM PRESSURE AT SPRINKLER HEADS, OR THE MINIMUM PRESSURE REQUIRED BY THE SPRINKLER HEAD MANUFACTURER, COMPLY WITH ALL UNDERWRITERS' AND CODE AUTHORITIES REQUIREMENTS.
C. WATER FLOW VELOCITY AT THE DESIGN FLOW CONDITION SHALL NOT EXCEED 10 FEET PER SECOND IN ANY PORTION OF THE SYSTEM.
D. PROVIDE THEAPPLICABLE OUTDOOR HOSESTREAM ALLOWANCE FOR THE HAZARD CALCULATED. NO INDOOR HOSE STREAMS ARE REQUIRED.
E. ADD AN ADDITIONAL 500 GPM OF PROCESS WATER DEMAND TO THE HOSE STREAM ALLOWANCE.
F. THE FIRE PROTECTION ENGINEER IS RESPONSIBLE FOR IDENTIFYING REQUIRED DESIGN AREA AND SPRINKLER SPACING/DENSITY ADJUSTMENTS BASED ON THE CEILING TYPE AND LOCAL OBSTRUCTIONS AS REQUIRED BY NFPA 13.
G. NO DESIGN AREA REDUCTIONS ARE PERMITTED BELOW THE MINIMUMS IDENTIFIED ON THIS SHEET (EVEN IF PERMITTED BY NFPA 13).

ORDINARY HAZARD GROUP 2 REQUIRES A MINIMUM SPRINKLER DENSITY OF:
0.2 GPM/SQ.FT OVER 1,500 SQ. FT.

TOTAL DEMAND: 0.2 GPM/SF x 1,500 SF	300 GPM
ESTIMATED HYDRAULIC BUILDUP/OVERAGE (10%)	30 GPM
TOTAL SPRINKLER DEMAND	330 GPM
HOSE STREAM ALLOWANCE	250 GPM
PROCESS WATER DEMAND	500 GPM
TOTAL FLOW DEMAND	1080 GPM
AVAILIBLE PRESSURE AT FLOW DEMAND (BASED ON PRELIMINARY HYDRANT FLOW CURVE)	70 PSIG
AVAILIBLE WITH 10 PSI SUPPLY CURVE REDUCTION	60 PSIG

BUILDING HEIGHT IS 35'-0" WHICH REQUIRES 15 PSIG TO OVERCOME GRAVITY.

TYPICAL SPRINKLER LOSS IS ESTIMATED AT 30 PSIG.

TOTAL FRICTION AND ELEVATION PRESSURE LOSS ESTIMATED AT 45 PSIG.

ADD 5 PSIG CUSHION FOR DESIGN.

TOTAL PRESSURE REQUIRED	50 PSIG

PRELIMINARY HYDRANT FLOW TEST DATA

TEST DATE: 06/17/2021
TEST PERFORMED BY: WESTCHESTER JOINT WATER WORKS

	HYDRANT NUMBER	LOCATION	STATIC PRESSURE (PSIG)	RESIDUAL PRESSURE (PSIG)	FLOW (GPM)
TEST HYDRANT	3503	PURCHASE STREET	80	52	-
FLOW HYDRANT	3504	PURCHASE STREET	-	-	1,918

CALCULATED FLOW AVAILABLE AT 20PSI: 2,895 GPM

NOTES:
1. THE PURCHASE STREET BOOSTER PUMPS WERE ON WHILE THE HYDRANT FLOW TEST WAS BEING PERFORMED.
2. FLOW TEST DATA PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CURRENT FLOW TEST DATA. THE CONTRACTOR SHALL SCHEDULE AND PAY ALL ASSOCIATED FEES FOR A NEW FLOW TEST.

CLEAN AGENT SYSTEMS DESIGN CRITERIA

CLEAN AGENT VOLUME REQUIREMENTS

ROOM	HAZARD HEIGHT	TEMPERATURE	ROOM AREA	ROOM VOLUME	SAFETY FACTOR	DESIGN CONCENTRATION	TOTAL REQUIRED	AGENT
ELECTRICAL ROOM 119	13' - 0"	50-80°F	1160 SF	15080 CU FT	1.35	6.1%	890 LB	FK-5-1-12
ELECTRICAL ROOM 203	14' - 4"	50-80°F	880 SF	12620 CU FT	1.35	6.1%	740 LB	FK-5-1-12
SCADA ROOM 207	14' - 4"	68-72°F	250 SF	3590 CU FT	1.35	6.1%	210 LB	FK-5-1-12

GENERAL NOTES

1. CONTRACTOR TO ENSURE COMPLIANCE WITH THE REQUIREMENTS OF NFPA, STATE BUILDING/FIRE/PLUMBING CODES, AND THOSE OF ANY CITY, STATE, OR FEDERAL AGENCY HAVING JURISDICTION OVER THIS PROJECT AND FIRE MARSHALL. ALL REFERENCES TO THE FOLLOWING STANDARDS IN THE CONTRACT DOCUMENTS SHALL REFER TO THE APPLICABLE DATES AND VERSIONS BELOW WHERE THEY ARE NOT EXPLICITLY STATED. NOTE THAT THE FOLLOWING LIST IS NOT COMPREHENSIVE AND IS PROVIDED FOR REFERENCE ONLY:
   A. NFPA 13-2016
   B. NFPA 25-2017
   C. NFPA 2001-2015
   D. 2020 BUILDING CODE OF NEW YORK STATE
   E. 2020 FIRE CODE OF NEW YORK STATE
   F. 2020 PLUMBING CODE OF NEW YORK STATE
2. WHERE USED IN THE CONTRACT DOCUMENTS, "DESIGN ENGINEER" SHALL MEAN THE PROFESSIONAL ENGINEER OF RECORD FOR THE BID-PHASE CONTRACT DOCUMENTS. "FIRE PROTECTION ENGINEER" SHALL MEAN THE CONTRACTOR'S PROFESSIONAL ENGINEER OF RECORD FOR THE CONSTRUCTION-PHASE DOCUMENTS. THE FIRE PROTECTION ENGINEER SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK WITH SUFFICIENT EXPERIENCE IN THE DESIGN OF THE SYSTEMS INCLUDED IN THE CONTRACT DOCUMENTS.
3. THE SPRINKLER SYSTEM INCLUDING INSTALLATION, COMPONENTS, SIZING, SPACING, LOCATION, CLEARANCES, POSITION, AND TYPE OF SYSTEMS SHALL CONFORM TO NFPA 13.
4. PLANS INDICATE GENERAL SCOPE OF WORK. REFER TO CONTRACT DOCUMENTS AND SPECIFICATIONS FOR DETAILS ON ENTIRE SCOPE OF WORK. LOCATIONS OF SPRINKLER OUTLETS, BRANCH LINES AND FEED MAINS ARE DIAGRAMMATIC. THE DRAWINGS ARE NOT MEANT TO SHOW ALL OFFSETS AND PIPING ELEVATIONS TO INSTALL THE PROPOSED SPRINKLER SYSTEM. THE CONTRACTOR SHALL PROVIDE AND INSTALL FINAL SPRINKLER OUTLETS, BRANCHES AND FEED MAINS AS REQUIRED BY APPLICABLE CODES AND THE AHJ.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WORK TO THE EXISTING AND/OR NEW FIELD CONDITIONS.
6. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND DESIGN/BUILDER, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF WORK. ANY SIZES OF NEW PIPING SHOWN ON THE PLAN ARE MEANT TO BE A GUIDE FOR ESTIMATING THE WORK.
7. THE FIRE PROTECTION CONTRACTOR SHALL SUBMIT AT LEAST TWO (2) SETS OF FABRICATION DRAWINGS. A PRELIMINARY SET OF FABRICATION DRAWINGS SHALL BE SUBMITTED TO SHOW THE INTENDED DETAILED LAYOUT OF THE SYSTEMS. AN AS-BUILT SET OF FABRICATION DRAWINGS SHALL BE SUBMITTED TO SHOW ANY DEVIATIONS IN THE SYSTEMS FROM THE PRELIMINARY SET. ALL FABRICATION DRAWINGS SHALL BE SIGNED AND SEALED BY THE FIRE PROTECTION ENGINEER.
8. THE FIRE PROTECTION CONTRACTOR SHALL SUBMIT AT LEAST TWO (2) SETS OF ALL CALCULATIONS REQUIRED BY BUILDING CODE AND/OR APPLICABLE NFPA STANDARDS FOR ALL SYSTEMS INCLUDED IN THE CONTRACT DOCUMENTS. A SET OF PRELIMINARY AND AS-BUILT CALCULATIONS SHALL BE SUBMITTED ALONG WITH THE RESPECTIVE FABRICATION DRAWINGS. HYDRAULIC NODES USED IN THE CALCULATIONS SHALL BE SHOWN ON THE FABRICATION DRAWINGS. ALL CALCULATIONS SHALL BE SIGNED AND SEALED BY THE FIRE PROTECTION ENGINEER.
9. FABRICATION DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION AND INSURANCE UNDERWRITERS PRIOR TO SUBMITTING TO THE DESIGN ENGINEER FOR REVIEW. CONSTRUCTION SHALL NOT COMMENCE UNTIL THE PRELIMINARY FABRICATION DRAWINGS AND CALCULATIONS HAVE BEEN APPROVED BY BOTH THE AHJ AND THE DESIGN ENGINEER.
10. PROVIDE ONE (1) NEW TWO-HYDRANT FLOW TEST AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND NFPA. THE HYDRANT FLOW TEST SHALL BE PROVIDED BEFORE CONSTRUCTION BEGINS AND WITHIN A YEAR OF PROJECT CLOSE-OUT UNLESS THE AUTHORITY HAVING JURISDICTION REQUIRES A TEST WITHIN A SHORTER TIMEFRAME. IF MORE THAN A YEAR ELAPSES AFTER THE INITIAL FLOW TEST, THE CONTRACTOR SHALL PROVIDE A NEW FLOW TEST AND UPDATED HYDRAULIC CALCULATIONS SUBJECT TO THE SAME REQUIREMENTS AS THE ORIGINAL DOCUMENTS.

SPRINKLER SYSTEM NOTES

1. THE ENTIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13 AND NFPA 25.
2. AS PER CHAPTER 6 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00, ONLY APPROVED MATERIALS SHALL BE USED.
3. DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO CHAPTER 23 OF NFPA 13.
4. SPRINKLERS SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER SECTION 10.5 OF NFPA 13.
5. INSPECTIONS AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER SECTIONS 10.10.2.2.1 AND 24.2.1.1 OF NFPA 13.
6. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH CHAPTER 5 OF NFPA 13 SHALL BE THOSE SPECIFIED ON THE PLANS.
7. MULTIPLE INSPECTOR'S TEST CONNECTIONS OR MULTIPLE FLOOR CONTROL VALVES SHALL BE PROVIDED TO TEST EACH WATERFLOW ALARM DEVICE FOR EACH SYSTEM IN ACCORDANCE WITH SECTION 8.17.4.2.1, FIGURE A.8.17.4.2(a) AND FIGURE A.8.17.4.2(b) OF NFPA 13.
8. PIPING, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION DAMAGE, FITTINGS, VALVES, HANGERS, SPRINKLERS, GUARDS AND SHIELDS SHALL BE IN ACCORDANCE WITH CHAPTERS 6 & 9 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00.
9. STOCK OF SPARE SPRINKLERS AND A SPECIAL SPRINKLER WRENCH SHALL BE FURNISHED AS PER SECTION 6.2.9 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00 (REQUIRED FOR EACH TEMPERATURE RATING).
10. SPRINKLER ALARMS SHALL BE IN ACCORDANCE WITH SECTIONS 6.9 AND 8.17 OF NFPA 13, SPECIFICATION SECTION 21 10 00 AND SECTION 903.4 OF THE BUILDING CODE.
11. ALL CONCEALED SPACES ENCLOSED WHOLLY OR PARTIALLY BY EXPOSED COMBUSTIBLE CONSTRUCTION OR ARE USED FOR THE STORAGE OF COMBUSTIBLE MATERIALS, OR CONTAIN COMBUSTIBLES ASSOCIATED WITH BUILDING SYSTEM FEATURES SUCH AS LARGE BUNDLES OF COMPUTER WIRING OR LARGE QUANTITIES OF NON-METALLIC PIPING, ETC. SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY SECTIONS 8.15.1.2.1 THROUGH 8.15.1.2.15 OF NFPA 13.
12. ALL PIPING PASSING THROUGH FIRE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL COMPLY WITH SECTION 712 OF THE BUILDING CODE.
13. DISTANCE OF SPRINKLERS FROM HEAT SOURCES SHALL BE IN ACCORDANCE WITH SECTION 8.3.2 OF NFPA 13.
14. ALL PIPING PASSING THROUGH FOUNDATION WALLS SHALL BE PROTECTED WITH PIPE SLEEVES HAVING CLEARANCES AS PER SECTION 9.3.4 OF NFPA 13.
15. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY SECTIONS 6.7.4, 8.16.1.1.8 AND 8.16.1.4.3 OF NFPA 13.
16. DRAINAGE SYSTEM TO CONFORM TO SECTION 8.16.2 OF NFPA 13.
17. PROVIDE ACCESS PANELS AND SIGNAGES FOR CONCEALED SHUT-OFF VALVES.
18. PROVIDE SEAL AGAINST WATER INTRUSION AT PIPE ENTRANCE.

CLEAN AGENT SYSTEM NOTES

1. THE ENTIRE SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 2001.
2. AS PER CHAPTER 4 OF NFPA 2001 AND SPECIFICATION SECTION 21 22 00, ONLY APPROVED MATERIALS SHALL BE USED.
3. INSPECTIONS AND TESTS OF CLEAN AGENT SYSTEMS SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF NFPA 2001AND SPECIFICATION SECTION 21 22 00.
4. THE DESIGN AGENT CONCRENTRATION SHALL BE AS REQUIRED BY NFPA 2001 CHAPTER 5 FOR THE ASSOCIATED HAZARDS PRESENT IN THE PROTECTED AREA.
5. PIPING, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION DAMAGE, FITTINGS, VALVES, HANGERS, NOZZLES AND SILENCERS SHALL BE IN ACCORDANCE WITH CHAPTER 4 OF NFPA 2001 AND SPECIFICATION SECTION 21 22 00.
6. ALARMS SHALL BE IN ACCORDANCE WITH SECTION 4.3 OF NFPA 2001, AND SPECIFICATION SECTION 21 22 00.
7. ALL PIPING PASSING THROUGH FIRE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL COMPLY WITH SECTION 712 OF THE BUILDING CODE.
8. ALL WARNING AND INSTRUCTION SIGNS SHALL BE PROVIDED AS REQUIRED BY SECTION 4.3.5.5 OF NFPA 2001 AND SPECIFICATION SECTION 21 22 00. PROVIDE IDENTIFICATION SIGNS FOR ALL VALVES AND MAJOR COMPONENTS IN THE SYSTEM.
9. PROVIDE ACCESS PANELS AND SIGNAGES FOR CONCEALED SHUT-OFF VALVES.

CLEAN AGENT SEQUENCE OF OPERATIONS

SYSTEM SEQUENCE OF OPERATION SHALL BE PRE-SET AT THE FACTORY AND PERFORM THE FOLLOWING:

1. DURING NORMAL CONDITIONS, THE RELEASING PANEL SHALL SEND A CONTINUOUS STATUS SIGNAL TO THE BUILDING FACP INDICATING THE STATUS OF THE INERT GAS SYSTEM. THE TWO STATES OF THIS SIGNAL SHALL BE "READY" WHEN NO ISSUE IS DETECTED AND "TROUBLE" WHEN THE PANEL'S TROUBLE RELAY IS ACTIVATED FOR ANY REASON. A TROUBLE SIGNAL SHALL ACTIVATE FOUR SYSTEM IMPAIRMENT ALARMS. THREE SUCH ALARMS SHALL ACTIVATE IN THE PROTECTED SPACES, ONE IN SCADA ROOM (207),ONE IN ELECTRICAL ROOM (203) AND ONE IN ELECTRICAL ROOM (119). A FOURTH ALARM SHALL ACTIVATE LOCAL TO THE RELEASING PANEL IN HVAC ROOM (208). DEACTIVATION OF IMPAIRMENT ALARMS SHALL ONLY BE POSSIBLE BY MANUAL ACKNOWLEDGEMENT AT THE RELEASING PANEL.
2. THE ACTIVATION OF ANY SINGLE AUTOMATIC DETECTION DEVICE ASSOCIATED WITH THE INERT GAS SYSTEM SHALL SEND A SIGNAL TO THE RELEASING PANEL, WHICH SHALL PERFORM THE FOLLOWING OPERATIONS:
   A. ENERGIZE THE PRE-DISCHARGE TIMER (NOT TO EXCEED 30 SECONDS) AND OPERATE AUXILIARY FUNCTIONS
   B. ACTIVATE PRE-DISCHARGE ALARMS LOCAL TO THE RELEASING PANEL IN HVAC ROOM (208). THESE ALARMS SHALL REMAIN ACTIVATED UNTIL THE INERT GAS CHARGE HAS BEEN RELEASED, OR UNTIL MANUALLY DISABLED AT THE RELEASING PANEL.
   C. ACTIVATE EVACUATION ALARMS IN ALL THREE PROTECTED SPACES. THESE ALARMS SHALL REMAIN ACTIVATED UNTIL MANUALLY DISABLED AT THE RELEASING PANEL.
   D. ACTIVATE DISCHARGE WARNING ALARMS AT THE ENTRANCES TO ALL THREE PROTECTED SPACES. THESE ALARMS SHALL REMAIN ACTIVATED UNTIL MANUALLY DISABLED AT THE RELEASING PANEL.
   E. SEND A PRE-DISCHARGE ALARM SIGNAL TO THE FACP.
   F. HVAC EQUIPMENT WITHIN THE PROTECTED SPACE IN WHICH DETECTION EQUIPMENT WAS ACTIVATED, AUTOMATIC DAMPERS, AND AIR HANDLING UNITS SERVING THAT SPACE SHALL BE SHUTDOWN BY OTHER EQUIPMENT.
3. DURING THE PRE-DISCHARGE COUNTDOWN, ACTUATION OF THE ABORT BUTTON(S) ALLOWS THE PRE-DISCHARGE TIMER TO COUNTDOWN NORMALLY, BUT STOPS AND HOLDS AT 10 SECONDS UNTIL THE RELEASE OF THE ABORT. SUCCESSIVE ABORTS ARE POSSIBLE. FULL SYSTEM DEACTIVATION SHALL ONLY BE ACHIEVED BY KEY MAINTENANCE BYPASS SWITCH(ES) WITH KEY REMOVABLE ONLY IN THE NORMAL POSITION. DURING THESE CONDITIONS, THE RELEASING PANEL SHALL PERFORM THE FOLLOWING OPERATIONS:
   A. ACTUATION OF THE ABORT BUTTON(S) SHALL ACTIVATE FOUR SYSTEM IMPAIRMENT ALARMS. THREE SUCH ALARMS SHALL ACTIVATE IN THE PROTECTED SPACES, ONE IN SCADA ROOM (207), ONE IN ELECTRICAL ROOM (203) AND ONE IN ELECTRICAL ROOM (119). A FOURTH ALARM SHALL ACTIVATE LOCAL TO THE RELEASING PANEL IN HVAC ROOM (208). THE RELEASING PANEL SHALL SEND A "RELEASE DELAYED" STATUS SIGNAL TO THE FACP. DEACTIVATION OF IMPAIRMENT ALARMS SHALL ONLY BE POSSIBLE BY MANUAL ACKNOWLEDGEMENT AT THE RELEASING PANEL.
   B. ACTUATION OF THE KEY BYPASS SWITCH SHALL ACTIVATE FOUR SYSTEM IMPAIRMENT ALARMS. THREE SUCH ALARMS SHALL ACTIVATE IN THE PROTECTED SPACES, ONE IN SCADA ROOM (207), ONE IN ELECTRICAL ROOM (203) AND ONE IN ELECTRICAL ROOM (119). A FOURTH ALARM SHALL ACTIVATE LOCAL TO THE RELEASING PANEL IN HVAC ROOM (208). . A FOURTH ALARM SHALL ACTIVATE LOCAL TO THE RELEASING PANEL IN HVAC ROOM (208). THE RELEASING PANEL SHALL SEND A "RELEASE PREVENTED" STATUS SIGNAL TO THE FACP. DEACTIVATION OF IMPAIRMENT ALARMS SHALL ONLY BE POSSIBLE BY MANUAL ACKNOWLEDGEMENT AT THE RELEASING PANEL.
4. IF THE PRE-DISCHARGE TIMER REACHES 0, THE RELEASING PANEL SHALL PERFORM THE FOLLOWING OPERATIONS:
   A. ACTIVATE THE PRIMARY RELEASE UNIT AND ZONE SELECTOR VALVE TO DISCHARGE THE INERT GAS SYSTEM INTO THE SPACE IN WHICH RELEASING OR DETECTION EQUIPMENT WAS ACTUATED..
   B. ACTIVATE DISCHARGE ALARMS IN ROOMS HVAC ROOM (208) AND THE SPACE IN WHICH DETECTION EQUIPMENT WAS ACTIVATED. THESE ALARMS SHALL REMAIN ACTIVATED UNTIL MANUALLY DISABLED AT THE RELEASING PANEL.
   C. SEND A DISCHARGE ALARM SIGNAL TO THE FACP.
   D. OPERATE AUXILIARY FUNCTIONS
5. ACTIVATION OF A MANUAL ACTIVATION STATION SHALL HAVE THE SAME EFFECT AS ACTIVATION OF AN AUTOMATIC DETECTION DEVICE (ITEM 2).

DOUBLE-INTERLOCK PREACTION SPRINKLER SEQUENCE OF OPERATIONS

SYSTEM SEQUENCE OF OPERATION SHALL BE PRE-SET AT THE FACTORY AND PERFORM THE FOLLOWING:

1. THE PREACTION PANEL SHALL SEND A CONTINUOUS STATUS SIGNAL TO THE BUILDING FACP INDICATING THE STATUS OF THE PREACTION SYSTEM.
2. IN THE THE "SET" CONDITION, THE PREACTION VALVE'S PNEUMATIC ACTUATOR SHALL BE HELD CLOSED BY BOTH SUPERVISORY PRESSURE MAINTAINED DOWNSTREAM OF THE PREACTION VALVE AND A NORMALLY CLOSED ELECTRIC SOLENOID VALVE.
3. THE "TROUBLE" CONDITION SHALL INITIATE IF A SPRINKLER OPENS PRIOR TO THE OPERATION OF THE DETECTION SYSTEM, ANY TIME SUPERVISORY PRESSURE DOWNSTREAM OF THE PREACTION VALVE IS LOST OR ANY TIME THE ELECTRIC SOLENOID IS OPENED WITHOUT AN ACTUATION SIGNAL FROM DETECTION DEVICES IN THE PROTECTED SPACES. IN THE "TROUBLE" CONDITION, THE PREACTION VALVE DOES NOT OPEN, AND TWO ALARMS SHALL ACTIVATE.ONE ALARM SHALL ACTIVATE IN THE PROTECTED SPACE SCADA ROOM (207). A SECOND ALARM SHALL ACTIVATE LOCAL TO THE PREACTION PANEL IN HVAC ROOM (208). DEACTIVATION OF TROUBLE ALARMS SHALL ONLY BE POSSIBLE BY MANUAL ACKNOWLEDGEMENT AT THE PREACTION PANEL.
4. THE "FIRE" CONDITION SHALL INITAITE ONLY WHEN BOTH THE SUPERVISORY PRESSURE IS RELIEVED AND THE ELECTRIC SOLENOID VALVE OPENS. THE ACTION OF BOTH OF THESE EVENTS OCCURING AT THE SAME TIME SHALL OPEN THE PREACTION VALVE. THE PREACTION VALVE SHALL OPEN WHETHER THE "FIRE" CONDITION IS PRECEEDED BY A "SET" OR "TROUBLE" CONDITION.
5. THE "MANUAL OPERATION" CONDITION SHALL INITIATE WHEN THE EMERGENCY RELEASE HANDLE IN THE PREACTION PANEL IS PULLED. IN THE "MANUAL OPERATION" CONDITION, THE PREACTION VALVE SHALL OPEN.
6. IN ANY CONDITION, WATER SHALL ONLY FLOW INTO THE PROTECTED SPACE IF ONE OR MORE PREACTION SPRINKLER HEAD IS OPENED AND THE PREACTION VALVE IS OPENED.

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	M. GIORDANO
DRAWN BY:	R. CHIN
CHECKED BY:	R. VAN DYKE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

BID SET

STATE OF NEW YORK · MARC A. GIORDANO · 099858 · PROFESSIONAL ENGINEER

Hazen

HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT
HARRISON, NY

FILTRATION PLANT
FIRE PROTECTION
GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	FP-001

Autodesk Docs://90388-000_Rye_Lake_Filtration/90388-000-WFP-P.rvt
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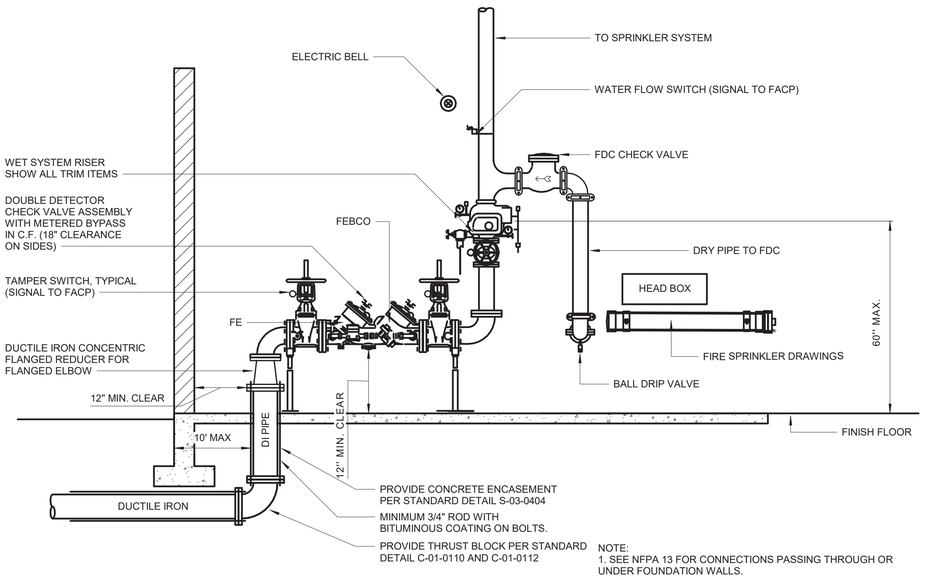
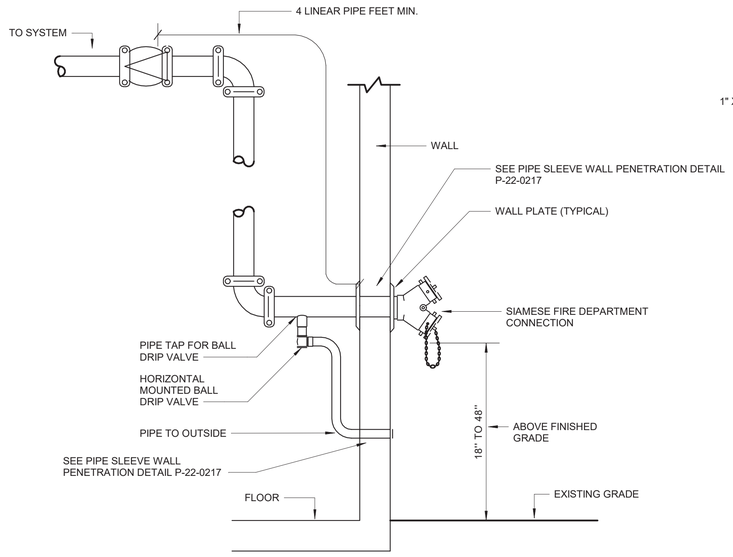


NOTE:
1. SEE NFPA 13 FOR CONNECTIONS PASSING THROUGH OR UNDER FOUNDATION WALLS.

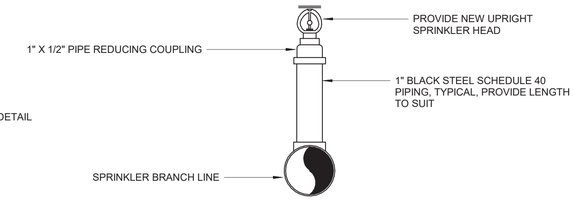
WET SYSTEM SPRINKLER RISER

P-21-0102



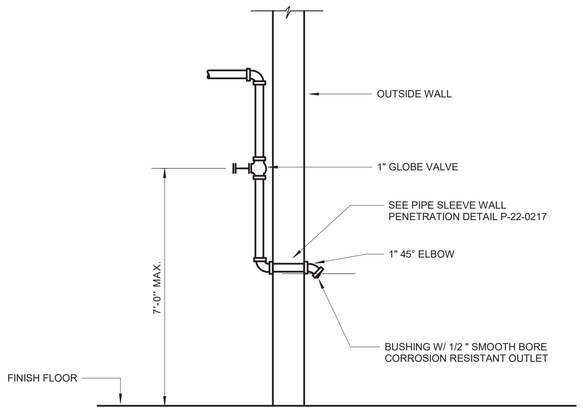
FLUSH FIRE DEPARTMENT CONNECTION

P-21-0105



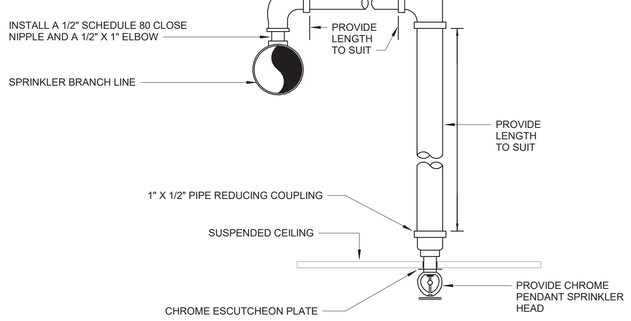
UPRIGHT HEAD

P-21-0113



WET SYSTEM INSPECTOR'S TEST STATION

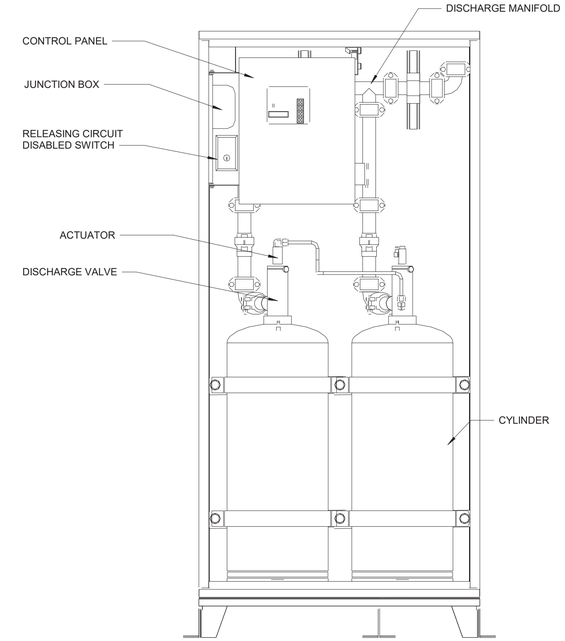
P-21-0117



NOTES:
1. ADJUST SPRINKLER DROPS AS NECESSARY TO CLEAR OBSTRUCTIONS SUCH AS THE CEILING "T" BAR SUSPENSION SYSTEM, LIGHT FIXTURES, ETC. PROVIDE A PIPE HANGER IF THE HORIZONTAL OFFSET LENGTH EXCEEDS 24 INCHES.
2. THIS SPRINKLER HEAD DROP IS APPLICABLE ONLY WHERE IT IS NOT NECESSARY TO RETAIN AN UPRIGHT SPRINKLER FOR PROTECTION OF COMBUSTIBLE CONSTRUCTION ABOVE THE CEILING.

PENDANT & UPRIGHT HEAD

P-21-0114



CLEAN AGENT CABINET

P-21-0115

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	M. GIORDANO
DRAWN BY:	R. CHIN
CHECKED BY:	R. VAN DYKE
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

BID SET

STATE OF NEW YORK · MARC A. GIORDANO · 099858 · PROFESSIONAL ENGINEER

Hazen

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WESTCHESTER JOINT WATER WORKS
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT
HARRISON, NY

FILTRATION PLANT
FIRE PROTECTION
DETAILS - SHEET 1

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	FP-002

Autodesk Docs://90388-000_Rye_Lake_Filtration/90388-000-WFP-P.rvt
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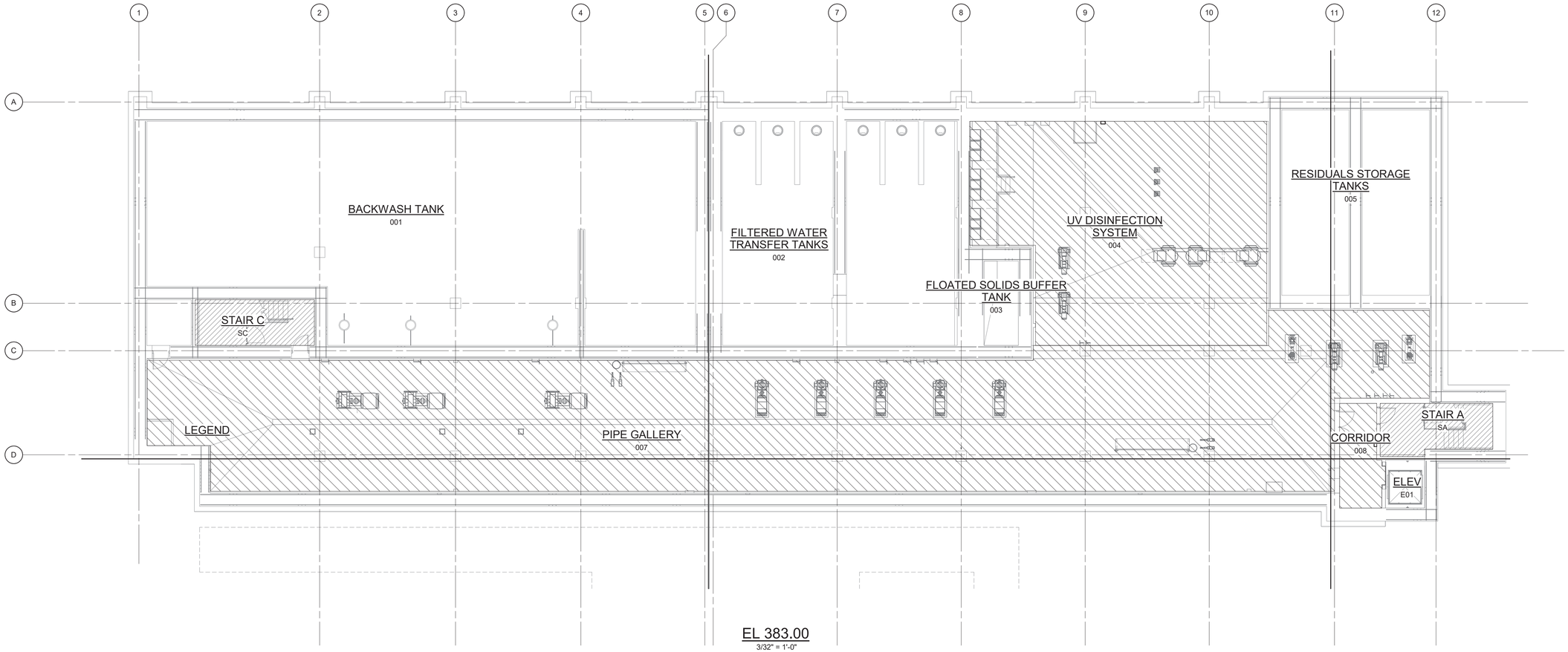
PLANT NORTH

NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONE FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.



EL 383.00
3/32" = 1'-0"

LEGEND

WET SPRINKLER SYSTEM - LIGHT HAZARD OCCUPANCY

WET SPRINKLER SYSTEM - ORDINARY HAZARD GROUP 2 OCCUPANCY

3/32" = 1'-0"

10 8 6 4 2 0 11'

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	M. GIORDANO
DRAWN BY:	R. CHIN
CHECKED BY:	R. VAN DYKE

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

BID SET

Hazen
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT
HARRISON, NY

FILTRATION PLANT FIRE PROTECTION EL. 383.00 - OVERALL PLAN

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	FP-100

PLANT NORTH

NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONE FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.

HYDROFLUOROSILICIC ACID 101

SODIUM HYPOCHLORITE 102

COAGULANT 103

CORROSION INHIBITOR 104

POLYMER/ SOFTENER (FUTURE) 105

SODIUM HYDROXIDE 107

FILTERED WATER PUMPING AND DAF ROOM 106

RESIDUALS STORAGE TANKS 005

DEWATERING ROOM 109

EXIT PASSAGEWAY 124

STAIR C SC

CORRIDOR C02

EQUIPMENT PLATFORM 123

STAIR A SA

FIRE DEPARTMENT CONNECTION

KNOX BOX

FIRE SPRINKLER RISER ROOM 110

FIRE SPRINKLER RISER SEE DETAIL FP-21-0102

ELEV E01

CONFERENCE ROOM 111

LOBBY 112

VESTIBULE 113

MAINT CLO 114

DAF TANKS 122

CORRIDOR C01

WOMENS BATHROOM 115

MENS BATHROOM 117

ELECTRICAL 119

ELECTRICAL 119 IS SERVED BY CLEAN AGENT CABINET IN HVAC ROOM 215

RAW WATER PIPING 120

STAIR B SB

LEGEND

- WET SPRINKLER SYSTEM - LIGHT HAZARD OCCUPANCY
- WET SPRINKLER SYSTEM - ORDINARY HAZARD GROUP 2 OCCUPANCY
- CLEAN AGENT SYSTEM

EL 407.00 - OVERALL PLAN

3/32" = 1'-0"

3/32" = 1'-0"

10 8 6 4 2 0 11'

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	M. GIORDANO
DRAWN BY:	R. CHIN
CHECKED BY:	R. VAN DYKE

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BID SET

STATE OF NEW YORK · MARC A. GIORDANO · 099858 · PROFESSIONAL ENGINEER

Hazen

HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT
HARRISON, NY

FILTRATION PLANT
FIRE PROTECTION
EL. 407.00 - OVERALL PLAN

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	FP-101

Autodesk Docs://90388-000_Rye_Lake_Filtration/90388-000-WFP-P.rvt
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PLANT NORTH

NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONE FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.

HYDROFLUOROSILICIC ACID (OPEN TO LOWER LEVEL)

SODIUM HYPOCHLORITE (OPEN TO LOWER LEVEL)

COAGULANT (OPEN TO LOWER LEVEL)

CORROSION INHIBITOR (OPEN TO LOWER LEVEL)

POLYMER/ SOFTENER (FUTURE) (OPEN TO LOWER LEVEL)

CORRIDOR (OPEN TO LOWER LEVEL)

FILTERED WATER PUMPING AND DAF ROOM (OPEN TO LOWER LEVEL)

SODIUM HYDROXIDE (OPEN TO LOWER LEVEL)

CORRIDOR

STOR RM 216

STAIR S02

HVAC 201

AIR SCOUR 202

ELECTRICAL ROOM 203

PROCESS ANALYSIS ROOM 205

CONTROL ROOM 206

SCADA ROOM 207

HVAC 208

DEWATERING ROOM (OPEN TO LOWER LEVEL)

COPY ROOM 209

STAIR A SA

CHIEF'S OFFICE 210

ELEV E01

CORRIDOR 211

MAINT CLO 212

OPEN OFFICE 214

WC 213

HVAC 215

OPERATING LEVEL 218

CORRIDOR C04

STAIR B SB

RAW WATER PIPING (OPEN TO LOWER LEVEL)

INSPECTOR TEST STATION. SEE DETAIL P-21-0117

INSPECTOR TEST STATION. SEE DETAIL P-21-0117

1x850LBS CYLINDER WITH 611LBS NOVEC 1230 CLEAN AGENT IN 58"x54"x81" CABINET. SERVES ELECTRICAL ROOM 203. SEE DETAIL FP-21-0115. COORDINATE INSTALLTION WITH HVAC DUCTWORK

1x164LB CYLINDER ASSEMBLY WITH 140LBS NOVEC CLEAN AGENT IN 29"x24"x77" CABINET. SERVES SCADA ROOM 207. SEE DETAIL FP-21-0115.

PREACTION SPRINKLER SYSTEM RISER CABINET

2x601 LBS CYLINDER WITH 432LBS NOVEC 1230 CLEAN AGENT PER CYLINDER IN 50"x46"x77" CABINET. SERVES ELECTRICAL ROOM 119. SEE DETAIL FP-21-0115.

LEGEND

- WET SPRINKLER SYSTEM - LIGHT HAZARD OCCUPANCY
- WET SPRINKLER SYSTEM - ORDINARY HAZARD GROUP 2 OCCUPANCY
- CLEAN AGENT SYSTEM
- CLEAN AGENT SYSTEM AND DOUBLE-INTERLOCK PREACTION SPRINKLER SYSTEM - LIGHT HAZARD OCCUPANCY

EL 421.00 - OVERALL PLAN

3/32" = 1'-0"

3/32" = 1'-0" (10 8 6 4 2 0 11')

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	M. GIORDANO
DRAWN BY:	R. CHIN
CHECKED BY:	R. VAN DYKE

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0 1/2" 1")

BID SET

STATE OF NEW YORK · MARC A. GIORDANO · 099858 · PROFESSIONAL ENGINEER

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MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT
HARRISON, NY

FILTRATION PLANT
FIRE PROTECTION
EL. 421.00 - OVERALL PLAN

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	FP-102

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