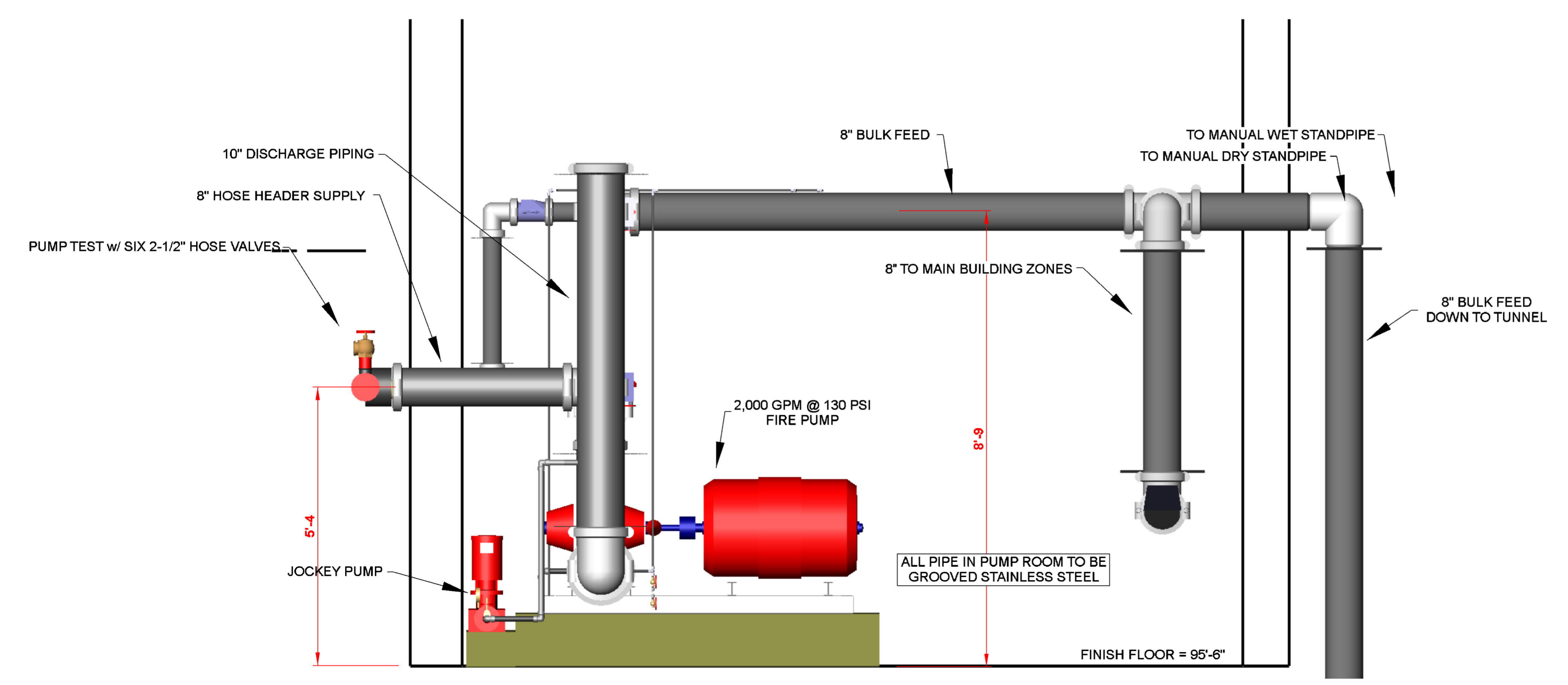
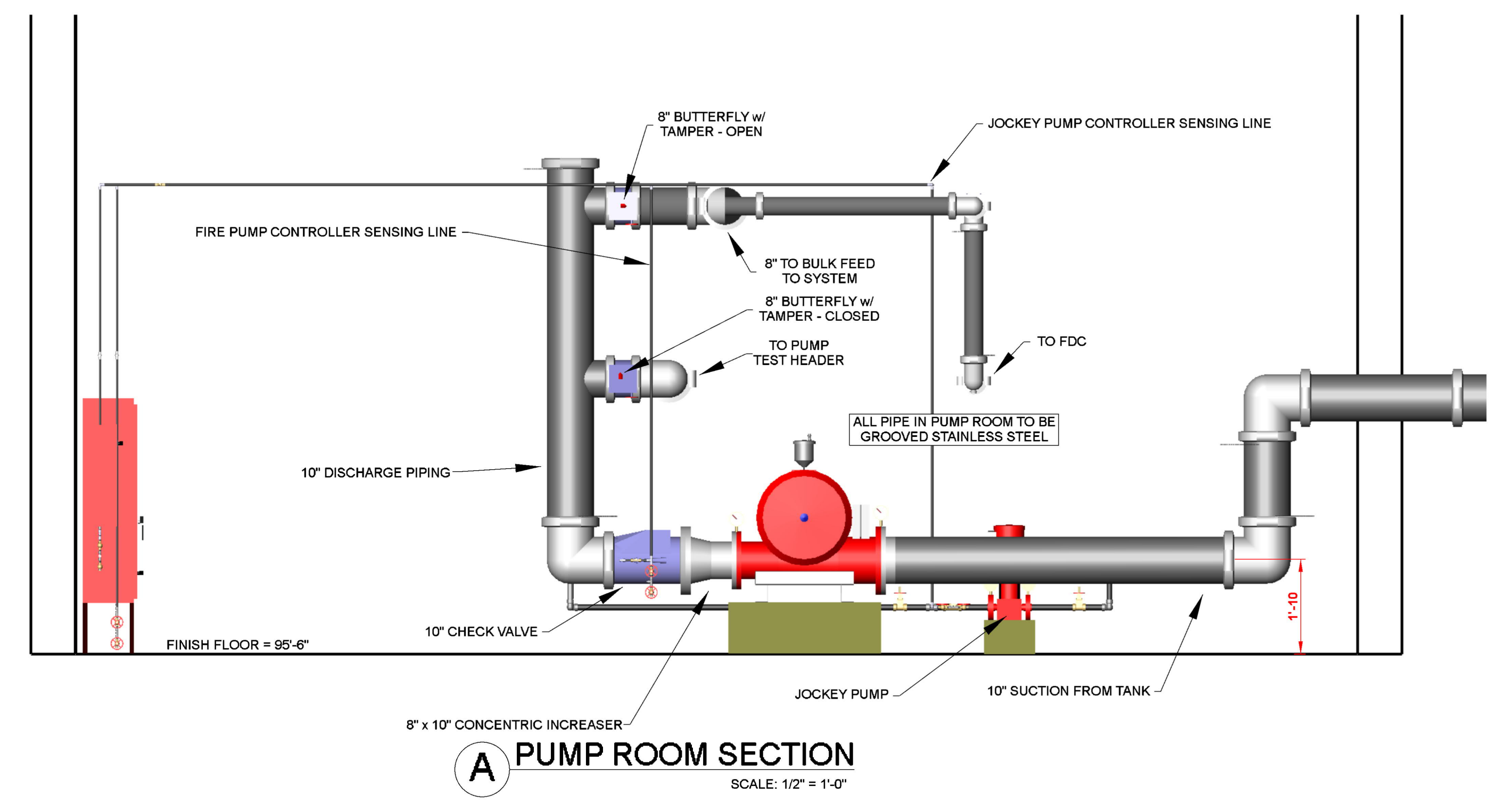


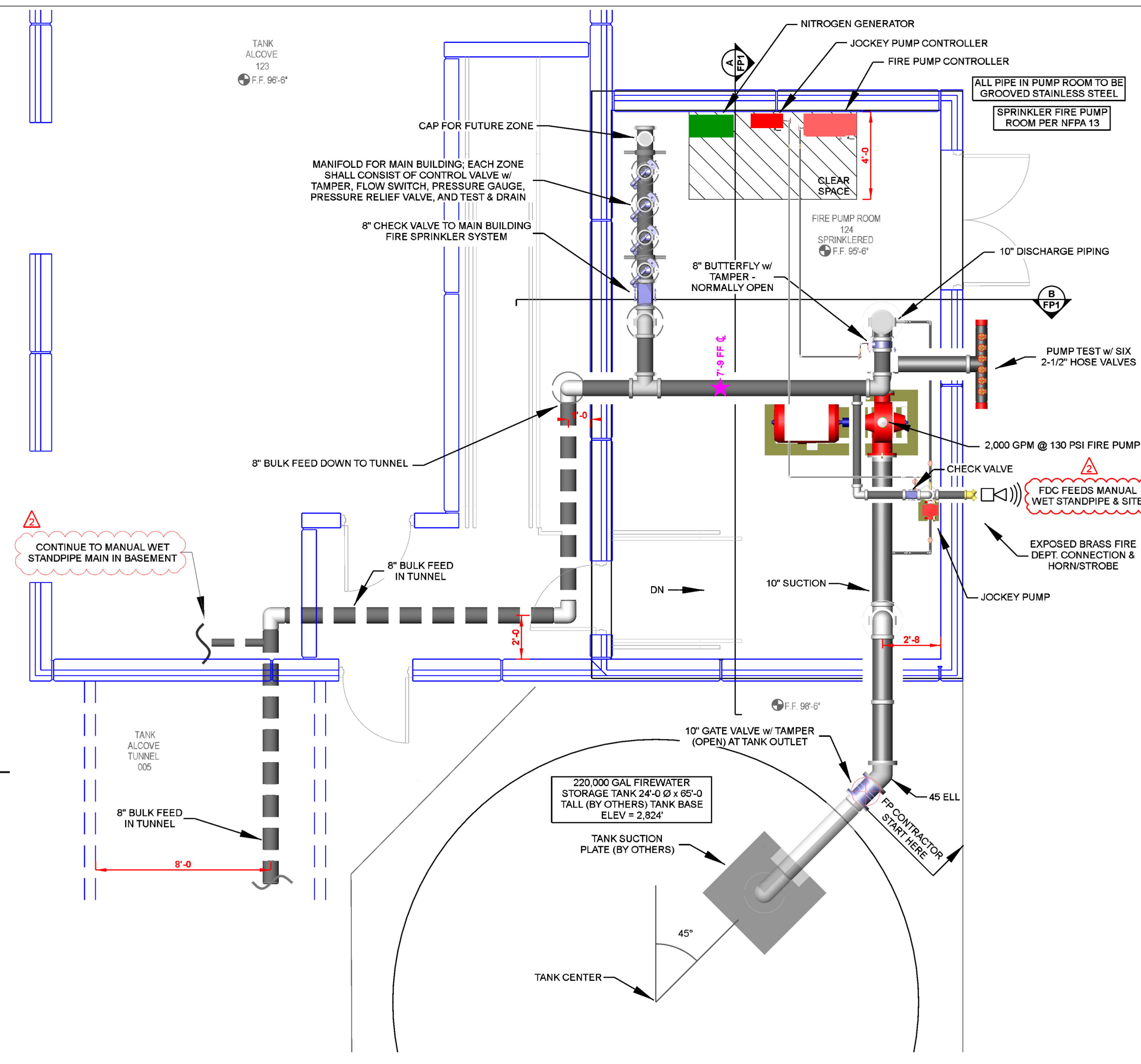
ISOMETRIC PUMP VIEW FROM SW
SCALE: 1/2" = 1'-0"



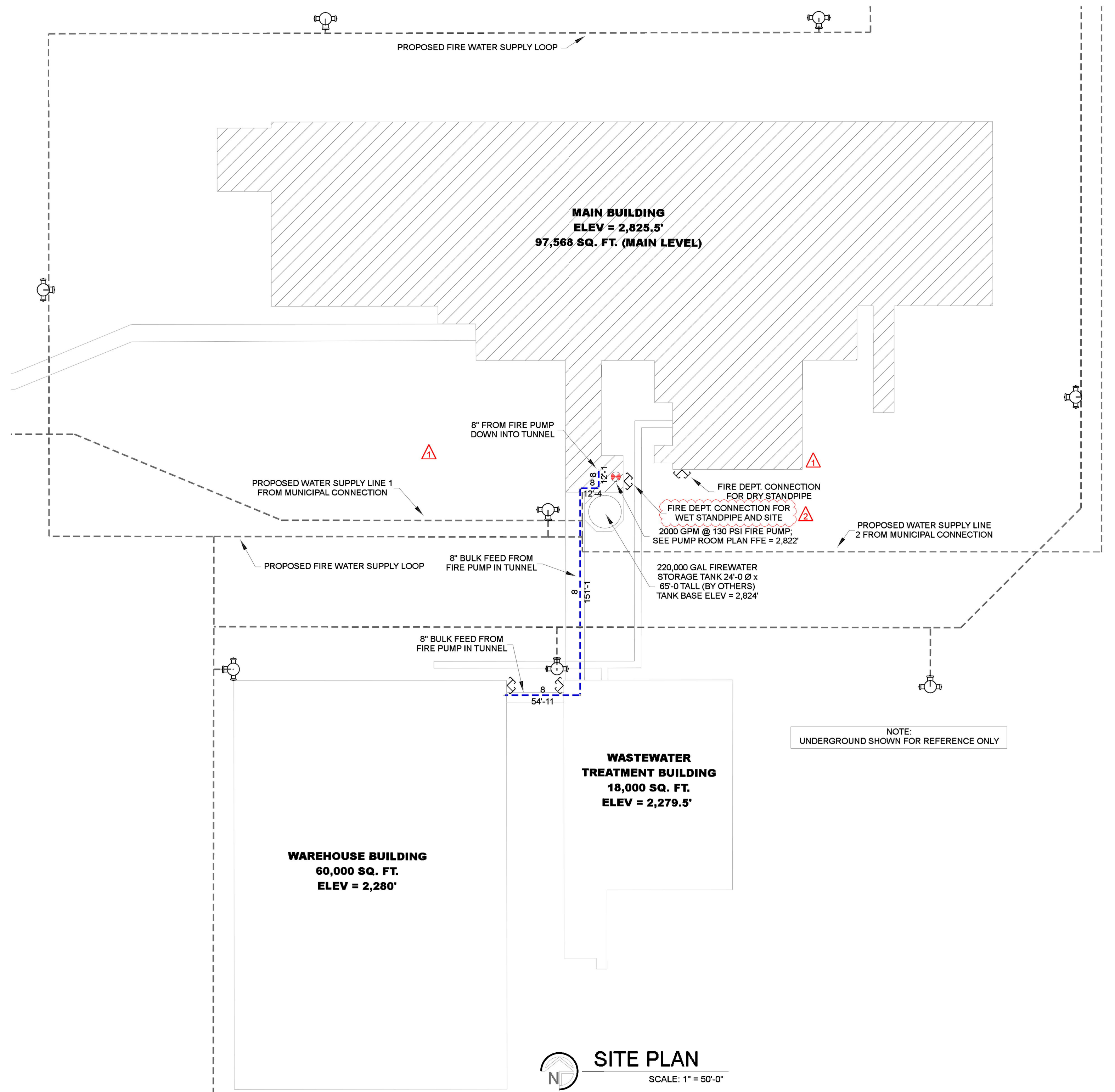
B PUMP ROOM SECTION
SCALE: 1/2" = 1'-0"



A PUMP ROOM SECTION
SCALE: 1/2" = 1'-0"



PUMP ROOM PLAN
SCALE: 1/4" = 1'-0"



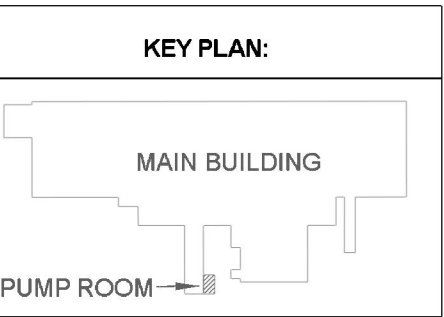
SITE PLAN
SCALE: 1" = 50'-0"

FIRE PROTECTION GENERAL NOTES

- THIS PROJECT WILL INCLUDE FOUR WET FIRE SPRINKLER SYSTEMS, ZONED PER FLOOR, DESIGNED AND INSTALLED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (2018), INTERNATIONAL FIRE CODE (2018), NFPA 13, 14, & 20 (2019), AND STATE & LOCAL CODES.
 - THE SPRINKLER SYSTEMS PROTECTING THE MAIN BUILDING WILL BE SUPPLIED BY THE FIRE PUMP IN THIS BUILDING. THE FIRE PUMP WILL TAKE SUCTION FROM A FIRE PROTECTION WATER STORAGE TANK (BY OWNER).
 - THE FIRE PROTECTION (FP) CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERABLE SYSTEMS COMPLYING WITH NFPA 13, 14, & 20.
 - DESIGN AND INSTALLATION SHALL COMPLY WITH NFPA 13, 14, & 20.
 - ALL MATERIALS SHALL BE NEW AND LISTED PER NFPA 13. DESIGN AND INSTALLATION SHALL COMPLY WITH CODES LISTED IN NOTE "A".
 - FP CONTRACTOR IS PERMITTED TO ALTER/MODIFY THE SYSTEMS AS SHOWN ON THESE PLANS EXCEPT AS SPECIFICALLY NOTED. ANY CHANGES ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER.
 - THE EXACT NUMBER, TYPE, COVERAGE, ETC. OF SPRINKLERS AND THE SYSTEM LAYOUT SHALL BE DETERMINED BY THE FP CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND ENGINEER.
 - ALL PIPE PENETRATING EXTERIOR WALLS TO BE STAINLESS AND THE ANNULAR SPACE WILL BE SEALED AT EACH SIDE OF THE WALL.
 - FIRE DEPARTMENT CONNECTION TO BE BRASS, INSTALLED MIN. OF 18" TO A MAX OF 48" ABOVE FINAL EXTERIOR GRADE, AND READILY ACCESSIBLE AT ALL TIMES WITH A 36" CLEARANCE. THE HOSE CONNECTION THREADS TO MATCH THE LOCAL FIRE DEPARTMENT.
 - AUXILIARY AND LOW POINT DRAINS PROVIDED WHERE REQUIRED BY NFPA 13 AND WILL DISCHARGE TO THE BUILDING EXTERIOR OR A FLOOR DRAIN TO FACILITATE PURGING OF AIR WHEN FILLING THE SYSTEM.
 - ALL CONTROL VALVES AND FLOW SWITCHES TO BE LOCALLY AND CENTRALLY MONITORED.
 - HANGER SPACING TO BE INSTALLED IN ACCORDANCE WITH NFPA 13.
 - NEW UNDERGROUND PIPING AND/OR FEED MAIN PIPING IN TUNNEL SHALL BE TESTED AND FLUSHED IN ACCORDANCE WITH NFPA 24 (BY ITS INSTALLING CONTRACTOR). TEST DOCUMENTATION WILL BE REQUIRED PRIOR TO FP CONTRACTOR CONNECTING THE FIRE SPRINKLER SYSTEM.
 - ALL SPRINKLERS WILL BE PROTECTED DURING PAINTING.
 - A STOCK OF SPARE SPRINKLERS WILL BE PROVIDED ON SITE ALONG WITH ONE SPRINKLER WRENCH FOR EACH TYPE OF SPRINKLER IN ACCORDANCE WITH NFPA 13.
 - ALL REQUIRED SYSTEM TESTING WILL BE PERFORMED IN ACCORDANCE WITH NFPA 25 EXCEPT AS MODIFIED BELOW.
 - SHOP DRAWINGS, HYDRAULIC CALCULATIONS, AND MATERIAL DATA, ALL CONFORMING TO NFPA 13, SHALL BE SUBMITTED TO AHJ AND ENGINEER PROMPTLY UPON AWARD OF CONTRACT. FP CONTRACTOR SHALL OBTAIN APPROVAL FROM ALL REVIEWING AUTHORITIES PRIOR TO FABRICATION AND INSTALLATION.
 - MINIMUM 1-HOUR RATED WALLS FOR FIRE PUMP ROOM WALLS.
 - FP CONTRACTOR TO COORDINATE WITH OWNER AND FIRE ALARM CONTRACTOR AS NECESSARY.
 - COORDINATE FIRE PUMP ROOM PIPING WITH TANK FILL LINE (INSTALLED BY OWNER).
 - PRIMARY AND SECONDARY TANK HEAT PROVIDED TO PREVENT TANK FROM FREEZING.
 - FIRE SPRINKLER PIPING SHALL TRANSITION TO STAINLESS STEEL BEFORE EXITING FIRE PUMP ROOM.
 - PROTECT ELEVATOR HOISTWAYS PER NFPA 13 SEC. 9.3.6.
- ALTERNATES**
- PIPE & FITTINGS:
BASE BID - ALL WELDED STAINLESS STEEL SCHEDULE 40S PIPE AND FITTINGS MEETING ASTM A312/A312M PER NFPA 13.
ALTERNATE - STAINLESS STEEL SCHEDULE 40S PIPE W/ GROOVED STAINLESS STEEL FITTINGS TO INCLUDE REDUCING FITTINGS AT MAIN OUTLETS FOR BRANCH LINES AND MECHANICAL TEE BRANCH OUTLETS FOR SPRINKLERS.
- VALVES:
BASE BID - STAINLESS STEEL VALVES AND RISER MANIFOLDS AS AVAILABLE. PLEASE ADVISE REGARDING AVAILABILITY.
ALTERNATE - REGULAR PAINTED DUCTILE IRON VALVES AND RISER MANIFOLDS.
- NITROGEN GENERATOR:
BASE BID - NITROGEN GENERATOR TO PROVIDE SUPERVISORY NITROGEN FOR DRY STANDPIPE AND WET PIPE NITROGEN INERTING FOR SPRINKLER SYSTEM.
ALTERNATE - AIR COMPRESSOR TO PROVIDE SUPERVISORY AIR FOR DRY STANDPIPE ONLY.
- DESIGN CRITERIA**
- AREAS SHALL BE DESIGNED AS LIGHT HAZARD UNLESS NOTED OTHERWISE ON THESE PLANS
 - REQUIRED SYSTEM PRESSURE SHALL BE GREATER THAN THAT WHICH IS AVAILABLE AT SPRINKLER SYSTEM DEMAND
 - DISCHARGE DENSITIES SHALL BE:
LIGHT HAZARD = 0.10 GPM/SF
ORDINARY HAZARD (GROUP 1) = 0.15 GPM/SF
ORDINARY HAZARD (GROUP 2) = 0.20 GPM/SF
 - DESIGN AREA SHALL 1500 SF PER NFPA 13
 - REMOTE AREA REDUCTIONS SHALL BE PERMITTED PER NFPA 13



PROJECT TITLE:
**MAIN BUILDING
EMPIRICAL FOODS, INC.
GARDEN CITY, KS**



SHEET TITLE:
**FIRE PUMP ROOM
AND DETAILS**

ISSUES / REVISIONS

NO.	DATE	DESCRIPTION
1	1/19/23	STANDPIPE LOCATIONS
2	1/19/23	MOVE DRN ETC

PROJECT STATUS:
FOR PRICING

PROJECT NO: 68061
DRAWN BY: ADK
PROJECT MANAGER: DS

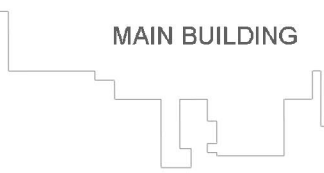
SHEET NO:
FP1



PROJECT TITLE:

MAIN BUILDING
EMPIRICAL FOODS, INC.
GARDEN CITY, KS

KEY PLAN:



SHEET TITLE:

MAIN BUILDING
FIRE SPRINKLER PLAN

ISSUES / REVISIONS

MARK	DATE	DESCRIPTION
2	1/16/23	STANDPIPE LOCATIONS
1	12/7/22	MOVE DRY FDC

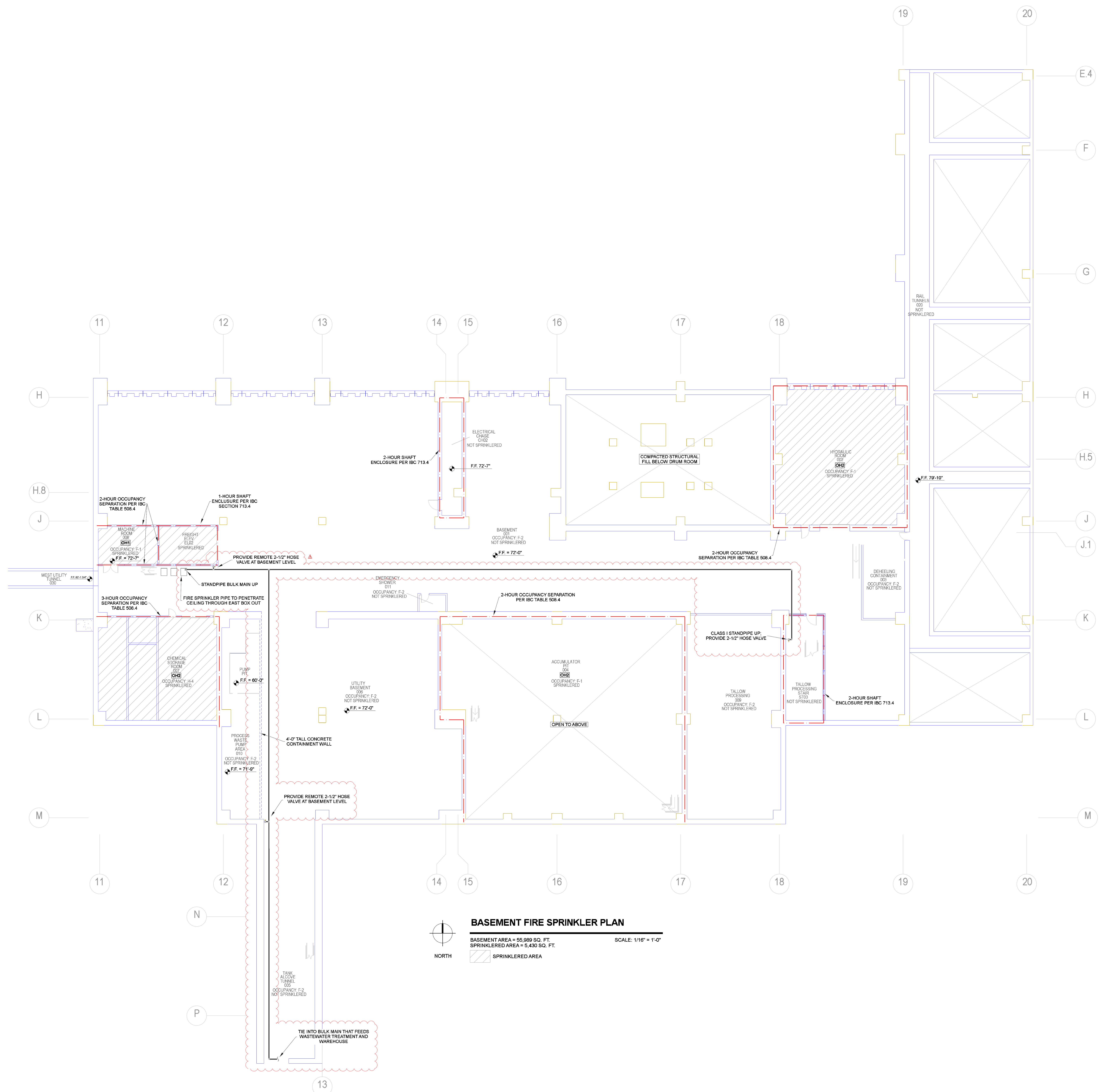
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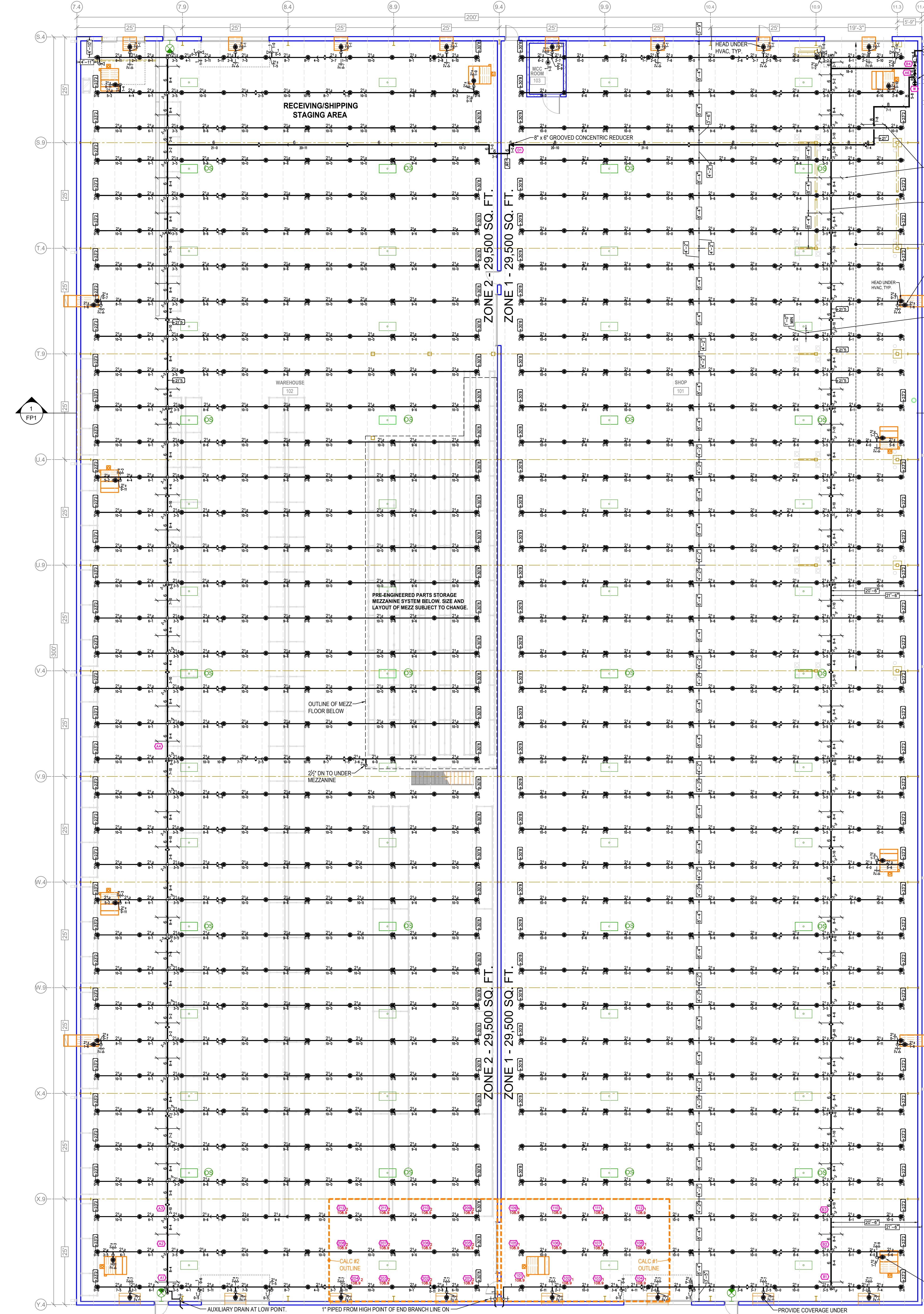
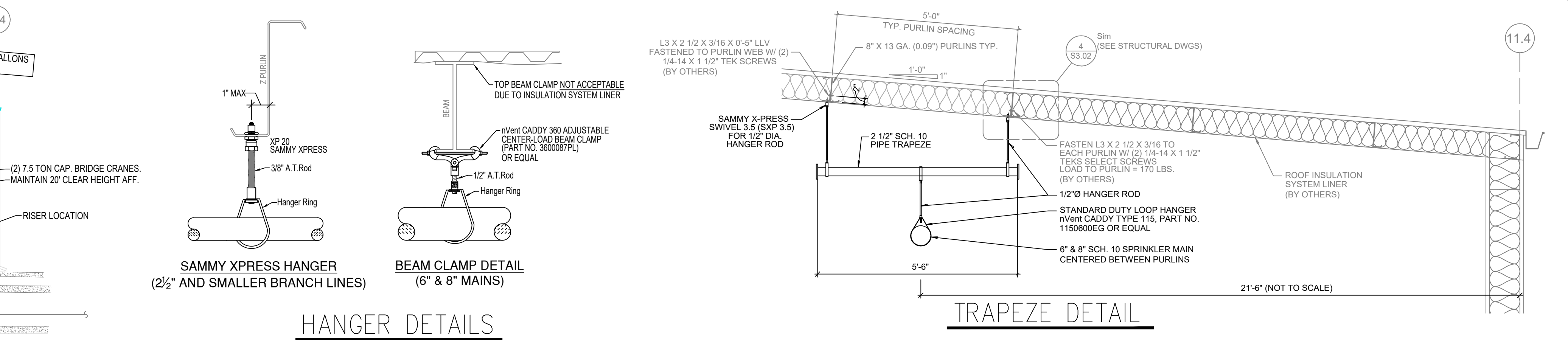
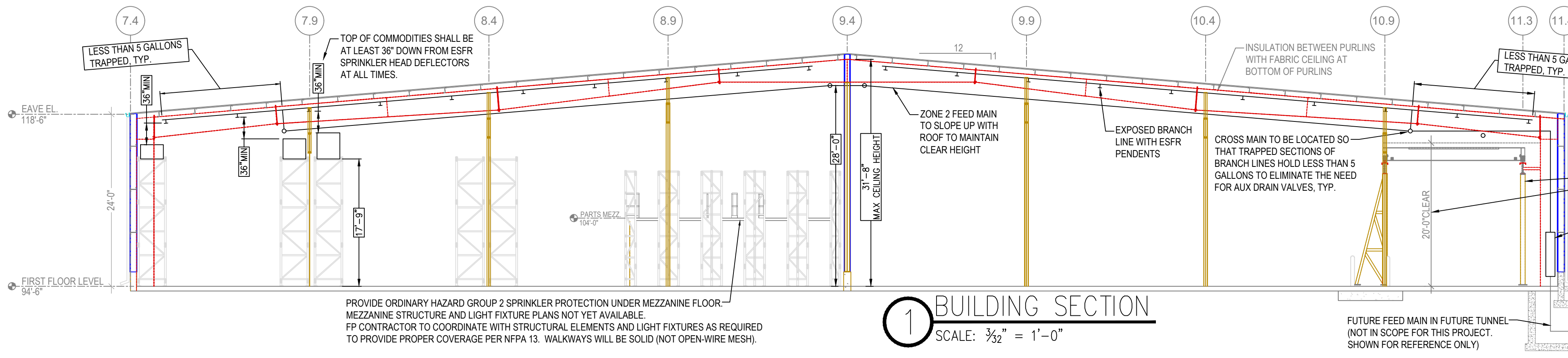
PROJECT NO: 68061
DRAWN BY: ADK
PROJECT MANAGER: DS

SHEET NO:

FP2



BASEMENT FIRE SPRINKLER PLAN
 BASEMENT AREA = 55,989 SQ. FT.
 SPRINKLERED AREA = 5,430 SQ. FT.
 SCALE: 1/16" = 1'-0"
 SPRINKLERED AREA



1 BUILDING SECTION
SCALE: 3/8" = 1'-0"

LESS THAN 5 GALLONS TRAPPED, TYP.
TOP OF COMMODITIES SHALL BE AT LEAST 30" DOWN FROM ESFR SPRINKLER HEAD DEFLECTORS AT ALL TIMES.
ZONE 2 FEED MAIN TO BE LOCATED WITH MAINTAIN CLEAR HEIGHT
EXPOSED BRANCH LINE WITH ESFR PENDENTS
CROSS MAIN TO BE LOCATED SO THAT TRAPPED SECTIONS OF BRANCH LINES HOLD LESS THAN 5 GALLONS TO ELIMINATE THE NEED FOR AUX DRAIN VALVES, TYP.
INSULATION BETWEEN PURLINS WITH FABRIC CEILING AT BOTTOM OF PURLINS
MAINTAIN 2' CLEAR HEIGHT AFF.
RISER LOCATION
FUTURE FEED MAIN IN FUTURE TUNNEL (NOT IN SCOPE FOR THIS PROJECT SHOWN FOR REFERENCE ONLY)

PROVIDE ORDINARY HAZARD GROUP 2 SPRINKLER PROTECTION UNDER MEZZANINE FLOOR. MEZZANINE STRUCTURE AND LIGHT FIXTURE PLANS NOT YET AVAILABLE. FP CONTRACTOR TO COORDINATE WITH STRUCTURAL ELEMENTS AND LIGHT FIXTURES AS REQUIRED TO PROVIDE PROPER COVERAGE PER NFPA 13. WALKWAYS WILL BE SOLID (NOT OPEN WIRE MESH)

TRAPEZE HANGERS REQUIRED FOR 8" & 8" MAINS WHEN HANGING FROM PURLINS. SEE TRAPEZE HANGER DETAIL THIS SHEET.
TWO TRAPEZE HANGERS SHALL BE PROVIDED IN EACH BAY SPACED AT 8'-0" INTERVALS (EQUAL DISTANCE BETWEEN BEAMS), TYP.
CROSS MAIN TO BE LOCATED SO THAT TRAPPED SECTIONS OF BRANCH LINES HOLD LESS THAN 5 GALLONS TO ELIMINATE THE NEED FOR AUX DRAIN VALVES, TYP. SEE BUILDING SECTION THIS SHEET.
(2) 7.5 TON CAP BRIDGE CRANES MAINTAIN 20' CLEAR HEIGHT AFF TO AVOID INTERFERENCE. SEE BUILDING SECTION THIS SHEET.
PROVIDE COVERAGE UNDER OBSTRUCTIONS AS REQUIRED. TYP. MAINTAIN 20' CLEAR HEIGHT IN THE VICINITY OF THE CRANE.
PRELIMINARY COORDINATION WITH LIGHT FIXTURES HAS BEEN DONE. FP CONTRACTOR SHALL PERFORM FINAL COORDINATION WITH ALL MEP AND STRUCTURAL COMPONENTS TO ENSURE THAT INSTALLATION COMPLIES WITH NFPA 13 OBSTRUCTION GUIDELINES. TYPICAL FOR LIGHT FIXTURES AND ALL OTHER POTENTIAL OBSTRUCTIONS TO SPRINKLER HEAD DISCHARGE.

FDX HORN STROBE ALARM
WATER SERVICE ENTRANCE LOCATION AND RISER LOCATION. SEE RISER DETAIL THIS SHEET.
FUTURE WATER SERVICE LINE IN FUTURE TUNNEL. SEE SITE PLAN FOR CONTINUATION.
SEE SHEET 52.03 FOR MORE DETAIL ON FUTURE PIPE TUNNEL ENTRANCE.

STORAGE COMMODITY INFORMATION

- WAREHOUSE WILL BE USED FOR THE STORAGE OF ORDINARY COMBUSTIBLES INCLUDING CLASS I+II COMMODITIES AND GROUP A PLASTICS AS DEFINED BY INTERNATIONAL FIRE CODE (IFC) SECTION 3003 AND NFPA 13.
- SOME CLASS III LIQUIDS (GROUSE AND OIL) MAY ALSO BE STORED IN THE RACKS OR ON PALLETS ON THE FLOOR. THESE ARE CONSIDERED CLASS III LIQUIDS, WHICH HAVE AN UNLIMITED MW IN A SPRINKLERED BUILDING AND CAN BE PROTECTED USING THE SAME CRITERIA AS THE ORDINARY COMBUSTIBLES.
- NO FOOD PRODUCTS WILL BE STORED.

DESIGN CRITERIA FROM NFPA 13 (2019):

PALLETTIZED AND SOLID PALETTIZED

- TABLE 23.1.1 FOR CLASS I+II COMMODITIES OR NONENCAPSULATED, AND TABLE 23.1.2 FOR CARTONED EXPANDED, UNEXPANDED, AND CARTONED EXPANDED GROUP A PLASTICS

RACK STORAGE

- 25' MAX STORAGE HEIGHT ON RACKS IN A 32' MAX BUILDING
- TABLE 23.1.1 FOR CLASS I+II COMMODITIES OR NONENCAPSULATED, AND TABLE 23.1.2 FOR CARTONED EXPANDED, UNEXPANDED, AND CARTONED EXPANDED GROUP A PLASTICS

TWELVE K-118 ESFR SPRINKLERS @ 42 PSI ALLOWED FOR ALL OF THE ABOVE. NO IN-RACK SPRINKLERS REQUIRED.

NOTES:

- NO EXPOSED EXPANDED GROUP A PLASTICS
- RACKS WILL NOT HAVE SOLID SHELVES
- NO OPEN TOP CONTAINERS

HYDRAULIC CALCULATION INFORMATION

Design Area #	HAZARD	Storage
Zone 1 <td>Warehouse <td>Warehouse</td> </td>	Warehouse <td>Warehouse</td>	Warehouse
Flowing Outlets:	12	
Density:	1.1	Remote Area 966
Req'd:	1339 gpm @ 114.9 psi	
Calculation Safety:	18.7 psi	
Includes:	0 gpm Hose allowance	
Zone 2 <td>Warehouse <td>Warehouse</td> </td>	Warehouse <td>Warehouse</td>	Warehouse
Flowing Outlets:	12	
Density:	1.1	Remote Area 966
Req'd:	1339 gpm @ 121.9 psi	
Calculation Safety:	12.2 psi	
Includes:	0 gpm Hose allowance	
Zone 3 <td>Warehouse <td>Mezz</td> </td>	Warehouse <td>Mezz</td>	Mezz
Flowing Outlets:	19	
Density:	0.20	Remote Area 1500
Req'd:	483 gpm @ 117.4 psi	
Calculation Safety:	31.3 psi	
Includes:	0 gpm Hose allowance	

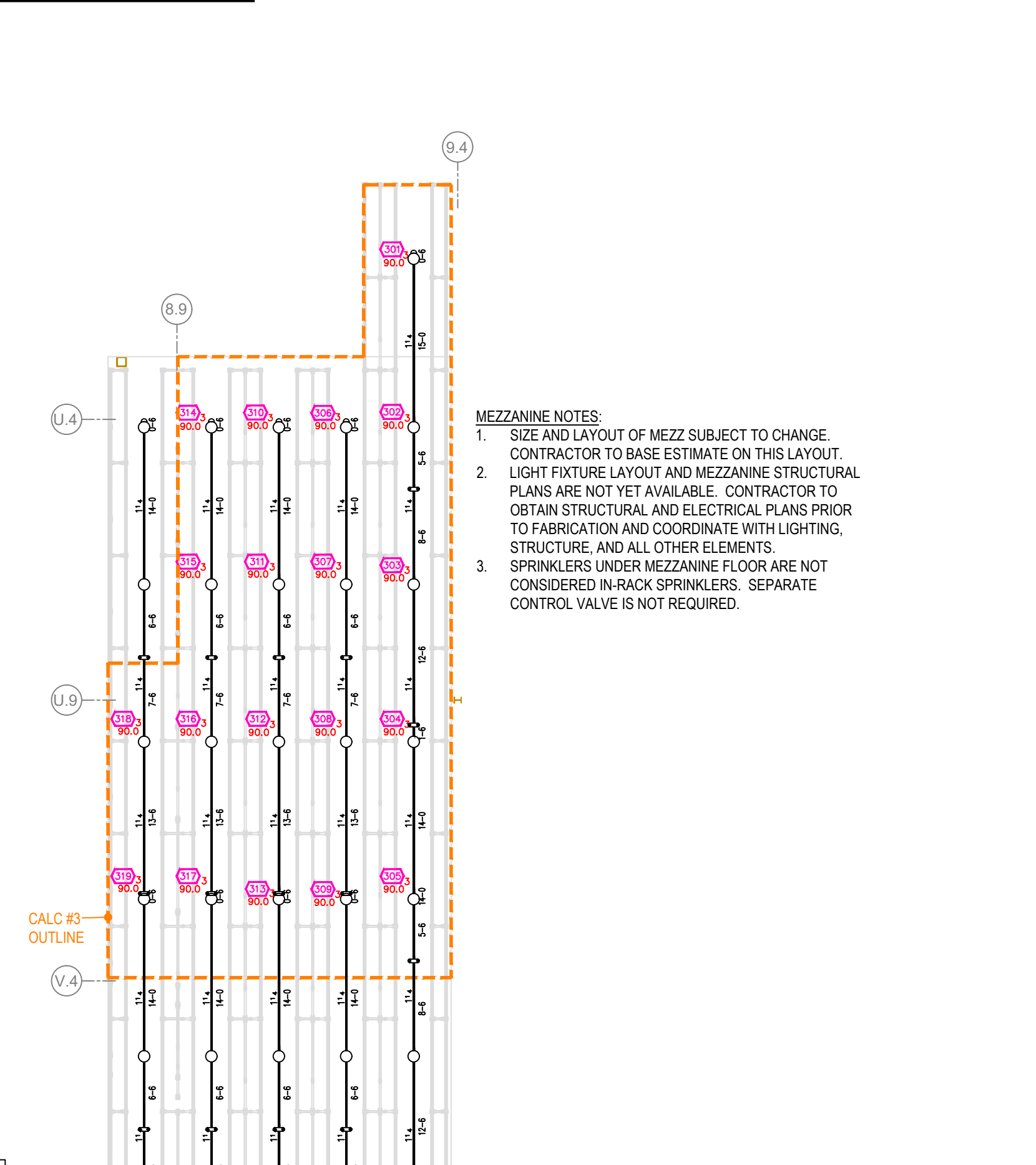
NOTES REGARDING HOSE ALLOWANCE: SPRINKLER WATER WILL COME FROM A FUTURE STORAGE TANK BOOSTED BY A FIRE PUMP. HOSE ALLOWANCE WATER WILL COME FROM NEARBY HYDRANTS, WHICH ARE CONNECTED TO THE UNDERGROUND FIRE WATER MAINS BY THE CITY WATER DISTRIBUTION SYSTEM. OUTSIDE HOSE ALLOWANCE IS NOT REQUIRED TO BE INCLUDED IN SPRINKLER HYDRAULIC CALCULATIONS. INSIDE HOSE STATIONS ARE NOT REQUIRED BY AHJ AND NO INSIDE HOSE ALLOWANCE IS REQUIRED.

NOTES REGARDING WATER SUPPLY: HYDRAULIC CALCULATIONS SHOWN ABOVE ARE BASED ON A TYPICAL FIRE PUMP CURVE FOR A 2000 GPM @ 105 PSI HORRONTAL SPLIT CASE ELECTRIC PUMP. FIRE PUMP CHURN PRESSURE BOOST IS ASSUMED TO BE 120% OF THE RATED PRESSURE. ON 150 PSI, THE SET TANK STORAGE TANK IS FULL (60 HIGH WATER), THE ADDITIONAL 28 PSI OF HEAD PRESSURE FROM THE TANK WILL PUSH THE CHURN PRESSURE AT THE PUMP DISCHARGE UP TO 150 PSI. WATER PUMP PRESSURE AND FLOW HAS BEEN SELECTED TO PROVIDE ADEQUATE FLOW RATE AND TO MAXIMIZE THE AVAILABLE PRESSURE FOR FUTURE CONSTRUCTION (WHILE ELIMINATING THE NEED FOR PRESSURE REDUCING VALVES) FOR THIS PROJECT. ELEVATION CHANGES BETWEEN THE PUMP AND WAREHOUSE HAVE BEEN TAKEN INTO ACCOUNT. SEE SCHEMATIC ELEVATION DETAIL THIS SHEET. FIRE PUMP CURVE WILL BE SELECTED TO AVOID PRESSURE REDUCING VALVES FOR THE WAREHOUSE AND ALL ZONE FOR STANDARD TESTED SPRINKLERS. ALL VALVES, FITTINGS, PIPING, AND OTHER APPURTENANCES BELOW THE LEVEL OF THE SPRINKLERS IN THE WAREHOUSE SHALL BE TESTED FOR PRESSURES IN EXCESS OF 175 PSI AS REQUIRED BY ELEVATION PRESSURES AT PUMP CHURN WITH A FULL STORAGE TANK. ALTHOUGH THE FIRE PUMP FLOW AND PRESSURE DATA POINTS USED FOR THE CALCULATIONS SHOWN ABOVE ARE BELIEVED TO BE ACCURATE, THE ACTUAL PUMP CURVE IS SUBJECT TO SLIGHT CHANGES AND WILL NOT BE KNOWN UNTIL AFTER THE ACTUAL PUMP HAS BEEN ORDERED AND MANUFACTURED. HYDRAULIC CALCULATIONS SHALL ASSUME THAT THE WATER STORAGE TANK IS NEARLY EMPTY AND NOT TAKE ANY ADVANTAGE OF HEAD PRESSURE IN THE TANK. PIPE SIZES SHALL NOT BE REDUCED FROM HOSE SHOWN ON THIS PLAN. FP CONTRACTOR'S HYDRAULIC CALCULATIONS SHALL PROVIDE 10% SAFETY FACTOR AT A MINIMUM.

NOTES REGARDING HOSE ALLOWANCE: SPRINKLER WATER WILL COME FROM A FUTURE STORAGE TANK BOOSTED BY A FIRE PUMP. HOSE ALLOWANCE WATER WILL COME FROM NEARBY HYDRANTS, WHICH ARE CONNECTED TO THE UNDERGROUND FIRE WATER MAINS BY THE CITY WATER DISTRIBUTION SYSTEM. OUTSIDE HOSE ALLOWANCE IS NOT REQUIRED TO BE INCLUDED IN SPRINKLER HYDRAULIC CALCULATIONS. INSIDE HOSE STATIONS ARE NOT REQUIRED BY AHJ AND NO INSIDE HOSE ALLOWANCE IS REQUIRED.

NOTES REGARDING WATER SUPPLY: HYDRAULIC CALCULATIONS SHOWN ABOVE ARE BASED ON A TYPICAL FIRE PUMP CURVE FOR A 2000 GPM @ 105 PSI HORRONTAL SPLIT CASE ELECTRIC PUMP. FIRE PUMP CHURN PRESSURE BOOST IS ASSUMED TO BE 120% OF THE RATED PRESSURE. ON 150 PSI, THE SET TANK STORAGE TANK IS FULL (60 HIGH WATER), THE ADDITIONAL 28 PSI OF HEAD PRESSURE FROM THE TANK WILL PUSH THE CHURN PRESSURE AT THE PUMP DISCHARGE UP TO 150 PSI. WATER PUMP PRESSURE AND FLOW HAS BEEN SELECTED TO PROVIDE ADEQUATE FLOW RATE AND TO MAXIMIZE THE AVAILABLE PRESSURE FOR FUTURE CONSTRUCTION (WHILE ELIMINATING THE NEED FOR PRESSURE REDUCING VALVES) FOR THIS PROJECT. ELEVATION CHANGES BETWEEN THE PUMP AND WAREHOUSE HAVE BEEN TAKEN INTO ACCOUNT. SEE SCHEMATIC ELEVATION DETAIL THIS SHEET. FIRE PUMP CURVE WILL BE SELECTED TO AVOID PRESSURE REDUCING VALVES FOR THE WAREHOUSE AND ALL ZONE FOR STANDARD TESTED SPRINKLERS. ALL VALVES, FITTINGS, PIPING, AND OTHER APPURTENANCES BELOW THE LEVEL OF THE SPRINKLERS IN THE WAREHOUSE SHALL BE TESTED FOR PRESSURES IN EXCESS OF 175 PSI AS REQUIRED BY ELEVATION PRESSURES AT PUMP CHURN WITH A FULL STORAGE TANK. ALTHOUGH THE FIRE PUMP FLOW AND PRESSURE DATA POINTS USED FOR THE CALCULATIONS SHOWN ABOVE ARE BELIEVED TO BE ACCURATE, THE ACTUAL PUMP CURVE IS SUBJECT TO SLIGHT CHANGES AND WILL NOT BE KNOWN UNTIL AFTER THE ACTUAL PUMP HAS BEEN ORDERED AND MANUFACTURED. HYDRAULIC CALCULATIONS SHALL ASSUME THAT THE WATER STORAGE TANK IS NEARLY EMPTY AND NOT TAKE ANY ADVANTAGE OF HEAD PRESSURE IN THE TANK. PIPE SIZES SHALL NOT BE REDUCED FROM HOSE SHOWN ON THIS PLAN. FP CONTRACTOR'S HYDRAULIC CALCULATIONS SHALL PROVIDE 10% SAFETY FACTOR AT A MINIMUM.

HIGH TEMP ESFR SPRINKLERS ARE NOT AVAILABLE. POSITION INTERMEDIATE TEMP SPRINKLERS NEAR HEAT PRODUCING DEVICES SO THEY COMPLY WITH SECTION 14.2 OF NFPA 13 (2019), TYP.

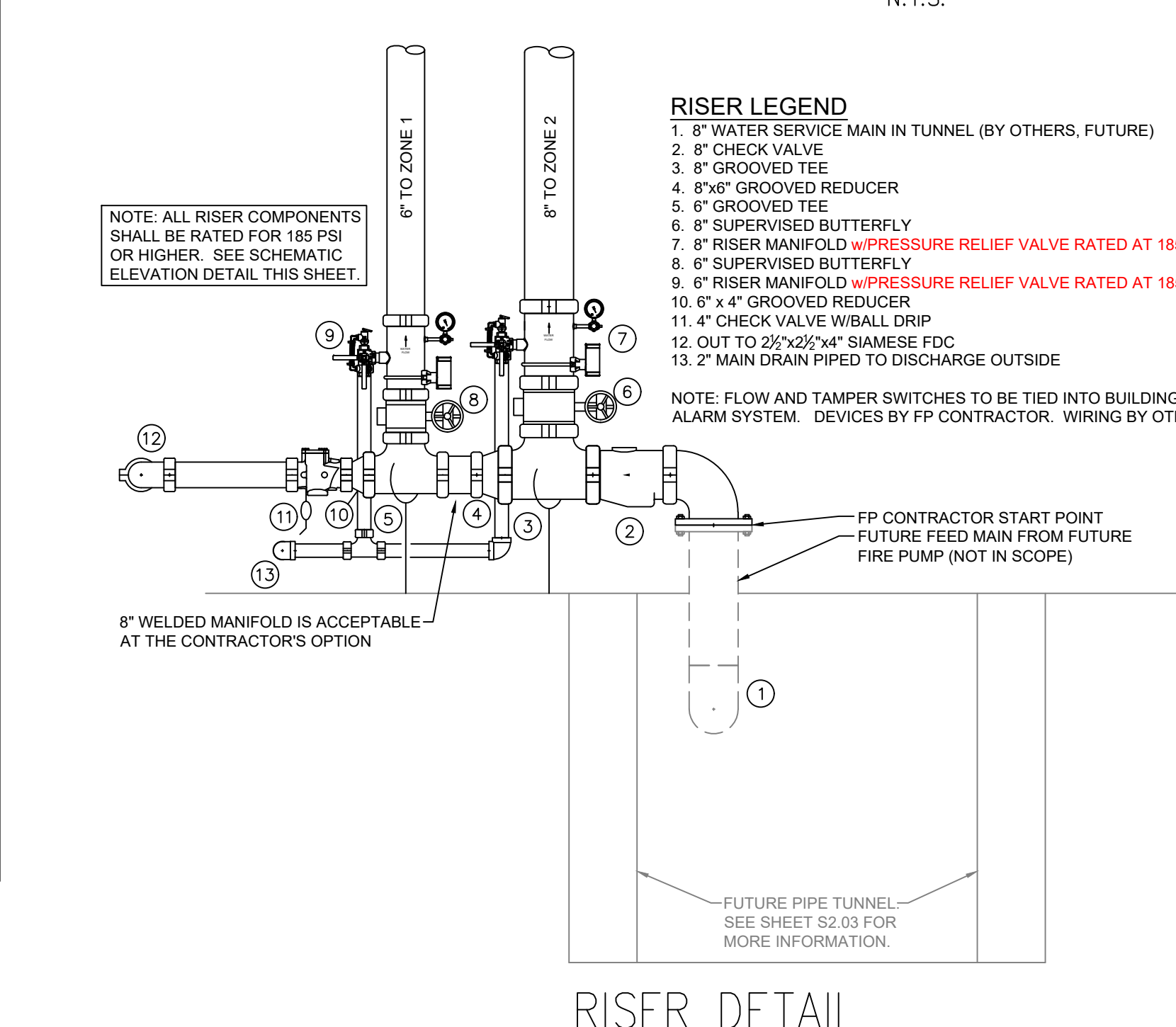
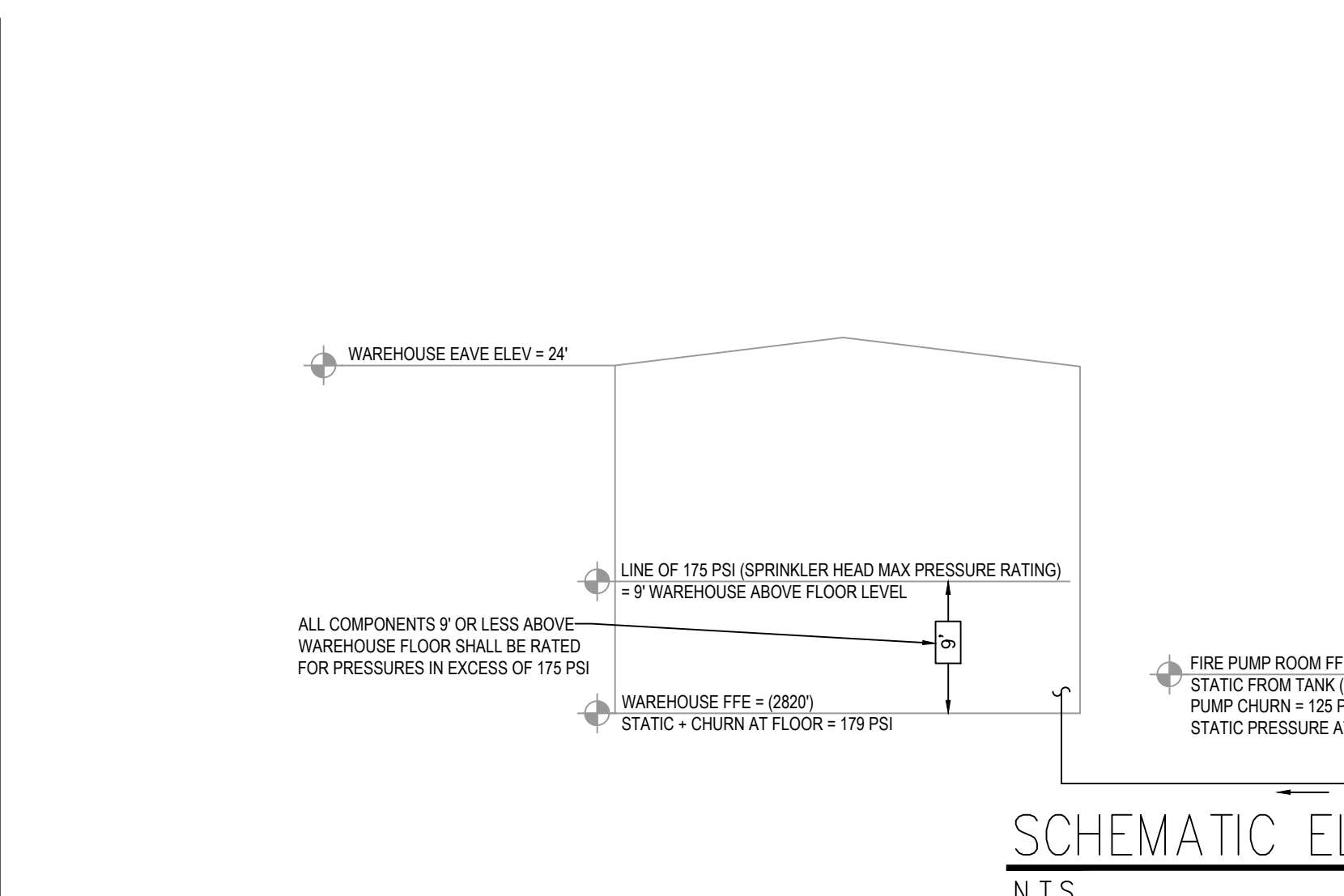


SPRINKLER HEAD LEGEND

SYM	INT	PROTECT	FINISH	TEMP	HT	SN	WFS	MODEL	NOTES
140	PSND	BRASS	2 1/2	160	34"	TY206	Yes	ESFR17	OR EQUAL
31	UPR	BRASS	200	8.60	10"	TY313	Yes	TY-FRB	OR EQUAL
9	SPR	BRASS	200	9.00	10"	TY331	Yes	TY-FRB	OR EQUAL
11	PSND	CHROME	200	9.60	10"	TY333	Yes	TY-FRB	OR EQUAL

NOTES:

- SPRINKLER HEAD QUANTITIES ARE SHOWN FOR REFERENCE ONLY.
- IF NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM PER NFPA 13, THE CONTRACTOR TO PROVIDE ADDITIONAL SPRINKLERS, PIPE, AND FITTINGS AS REQUIRED AT NO ADDITIONAL CHARGE.
- EQUAL SPRINKLERS FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED AT THE CONTRACTOR'S OPTION.



FIRE PROTECTION GENERAL NOTES

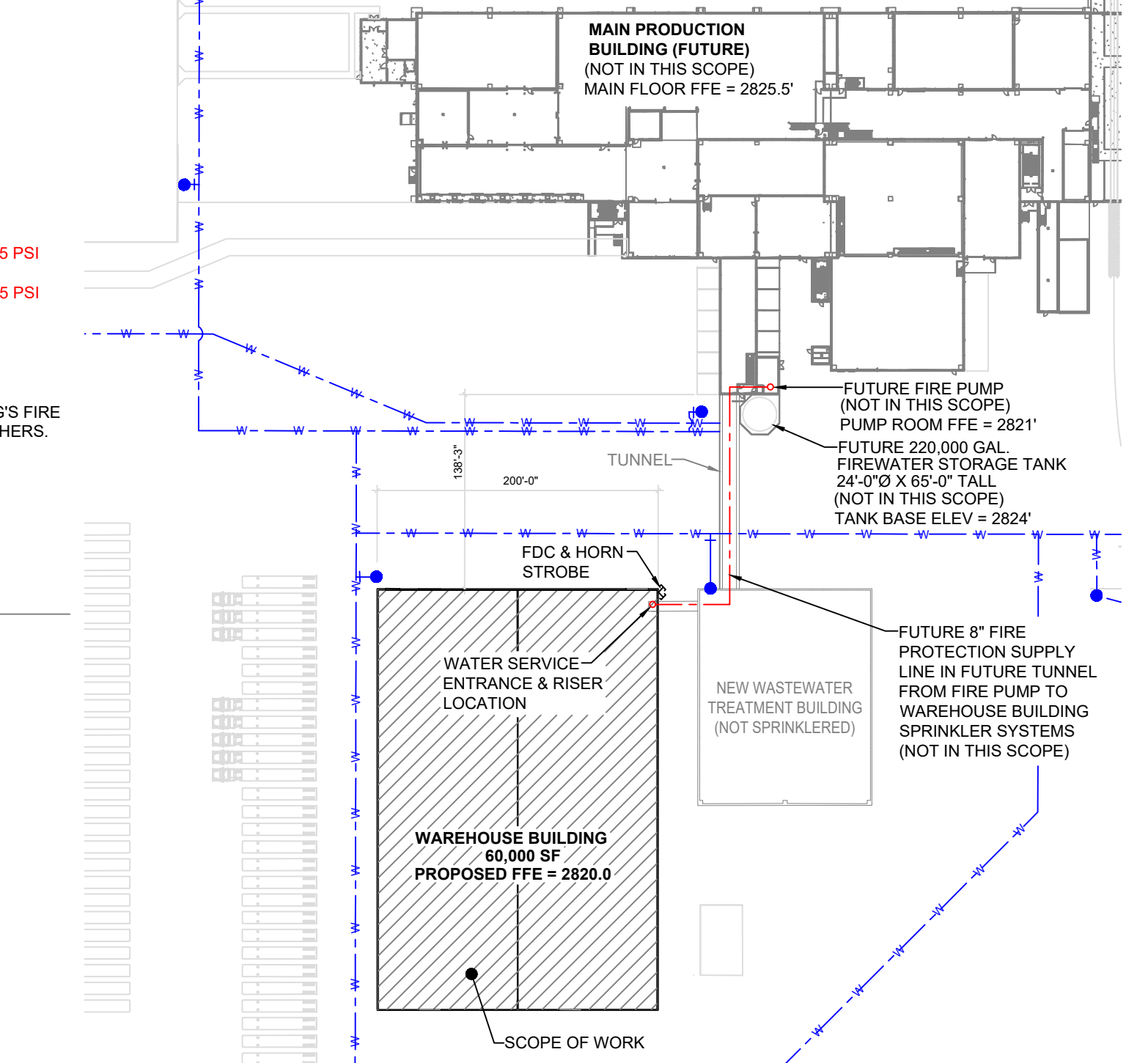
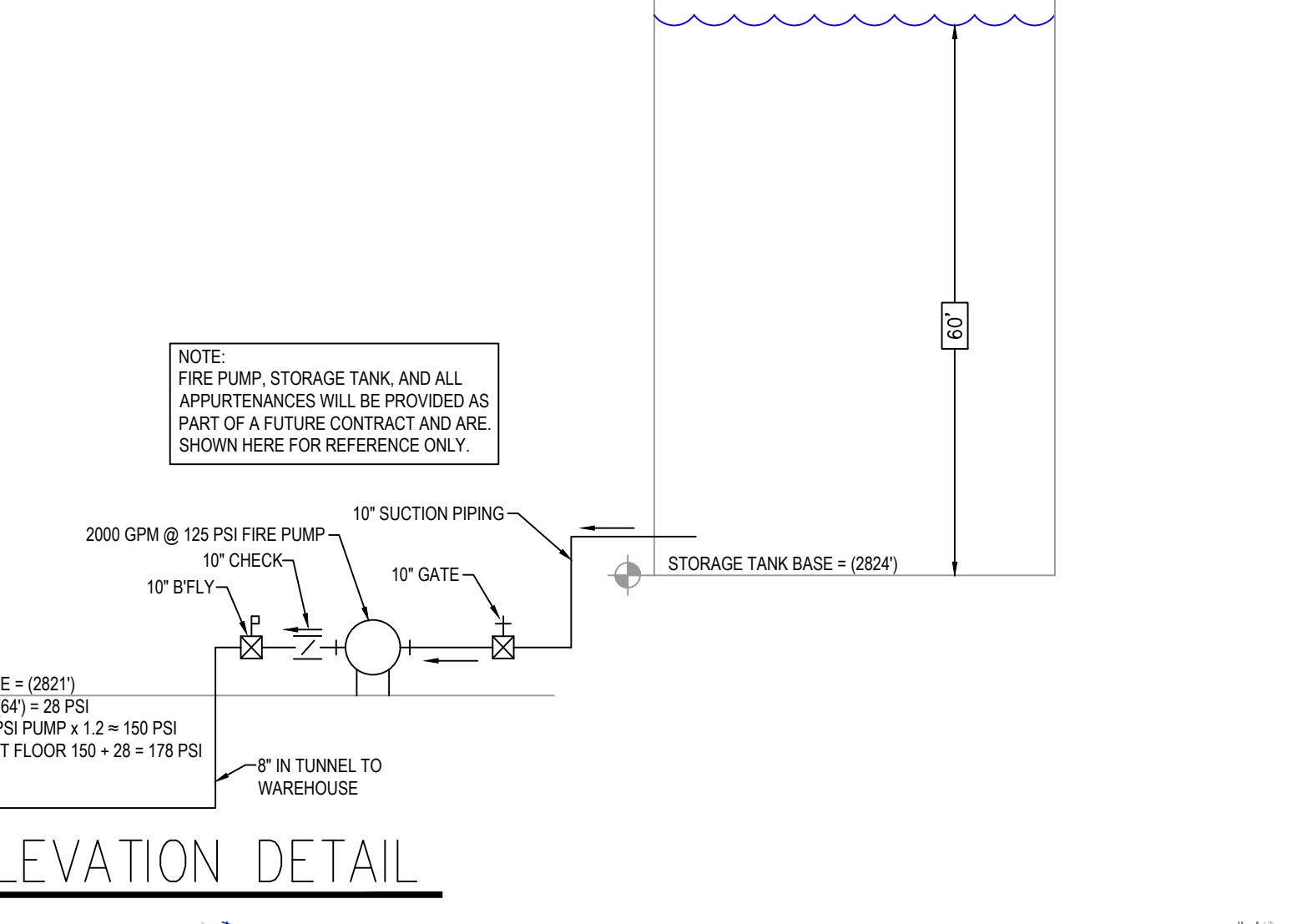
- THIS PROJECT INCLUDES TWO WET FIRE SPRINKLER SYSTEMS DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13 (2019 ED.) AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
- THE SPRINKLER SYSTEMS PROTECTING THE WAREHOUSE BUILDING WILL ULTIMATELY BE SUPPLIED BY AN 8" WATER SERVICE LINE RUNNING IN A PIPE TUNNEL BETWEEN THE MAIN PRODUCTION BUILDING AND THE WAREHOUSE. A FUTURE FIRE PUMP IN THE PRODUCTION BUILDING WILL TAKE DUCTION FROM A FUTURE FIRE PROTECTION WATER STORAGE TANK. THE STORAGE TANK, FIRE PUMP, AND TUNNEL PIPING ARE NOT IN THE SCOPE OF WORK FOR THIS PROJECT.
- THE FIRE PROTECTION (FP) CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERABLE SYSTEMS COMPLYING WITH NFPA 13 AND ALL APPLICABLE STATE AND LOCAL CODES. ALL MATERIALS SHALL BE NEW AND LISTED PER NFPA 13. DESIGN AND INSTALLATION SHALL COMPLY WITH NFPA 13.
- FP CONTRACTOR IS PERMITTED TO ALTER/MODIFY THE SYSTEMS AS SHOWN ON THESE PLANS EXCEPT AS SPECIFICALLY NOTED AND CHANGES ARE SUBJECT TO APPROVAL OF THE OWNER AND DOCKNEY & ASSOCIATES. A FUTURE FIRE PUMP IN THE PRODUCTION BUILDING WILL TAKE DUCTION FROM A FUTURE FIRE PROTECTION WATER STORAGE TANK. THE STORAGE TANK, FIRE PUMP, AND TUNNEL PIPING ARE NOT IN THE SCOPE OF WORK FOR THIS PROJECT.
- THE EXACT NUMBER, TYPE, COVERAGE, ETC. OF SPRINKLERS AND THE SYSTEM LAYOUT SHALL BE DETERMINED BY THE FP CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND ENGINEER.
- FIRE SIZES SHOWN ON THIS PLAN CAN BE USED FOR ESTIMATING PURPOSES. FP CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN INCLUDING HYDRAULIC CALCULATIONS.
- WATER FILLED MANIFOLD SHALL BE INSTALLED IN AREAS SUBJECT TO FREEZING. FP CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ARCHITECT AND ENGINEER OF AREAS WITH POTENTIAL FREEZING CONCERNS.
- GROUNDED WIRING SHALL BE SCHEDULE 40 MINIMUM.
- THREADED SPRING SHALL BE SCHEDULE 40 MINIMUM.
- THREADED FITTINGS SHALL BE DUCTILE IRON.
12. C/PV SCREW IS NOT PERMITTED.
13. ALL PIPE PENETRATING EXTERIOR WALLS SHALL BE GALVANIZED AND THE ANNULAR SPACE SHALL BE SEALED AT EACH SIDE OF THE WALL.
14. FIRE DEPARTMENT CONNECTION SHALL BE BRASS, INSTALLED MIN. OF 18" TO A MAX OF 48" ABOVE FINISH EXTERIOR GRADE, AND READILY ACCESSIBLE AT ALL TIMES. CLEARANCE THE HOSE CONNECTION THREADED SHALL MATCH THE LOCAL FIRE DEPARTMENT.
15. AUTOMATICALLY OPERATING SPRINKLER SHALL BE PROVIDED WHERE REQUIRED BY NFPA 13 AND SHALL DISCHARGE TO THE BUILDING EXTERIOR TO FACILITATE PURGING OF AIR WHEN FLUING THE SYSTEM.
16. SPRINKLER PROTECTING BELOW AND ABOVE AREAS SHALL BE PROVIDED BY NFPA 13 WHETHER SPECIFICALLY SHOWN ON THIS PLAN OR NOT. IT IS THE RESPONSIBILITY OF THE FP CONTRACTOR TO BECOME FAMILIAR WITH THE ENTIRE SET OF BID DOCUMENTS INCLUDING ALL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, AND MECHANICAL ELECTRICAL PLUMBING (MEP) PRIOR TO BID AND TO INCLUDE ANCHOR AND ALL LABOR AND MATERIALS NECESSARY TO PROVIDE AND INSTALL A COMPLETE AND OPERABLE CODE COMPLIANT SYSTEM WITH REGARD TO OBSTRUCTIONS, OFFSETS, AND ALL OTHER ASPECTS OF CONSTRUCTION. NO ALLOWANCES FOR MATERIALS OR METHODS SHALL BE MADE BY CONTRACTOR.
17. ALL CONTROL VALVES AND FLOW SWITCHES TO BE LOCALLY AND CENTRALLY MONITORED.
18. HANDLERS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13. ALL HANDLERS SHALL BE TESTED AND FLUSHED IN ACCORDANCE WITH NFPA 24 (BY ITS INSTALLING CONTRACTOR). DOCUMENTATION SHALL BE OBTAINED BY THE FP CONTRACTOR PRIOR TO CONNECTING THE FIRE SPRINKLER SYSTEM.
20. ALL HOLES FOR PIPING SHALL BE DRILLED OR CORE DRILLED. NO BREAKING OF CONCRETE OR C.M.U. SHALL BE PERMITTED.
21. ALL SPRINKLERS SHALL BE PROTECTED DURING PAINTING BY THE FIRE SPRINKLER CONTRACTOR.
22. A STOCK OF SPARE SPRINKLERS SHALL BE PROVIDED ON SITE ALONG WITH ONE SPRINKLER WRENCH FOR EACH TYPE OF SPRINKLER IN ACCORDANCE WITH NFPA 13.
23. ALL REQUIRED SYSTEM TESTING IS THE RESPONSIBILITY OF THE FP CONTRACTOR AND SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 25 EXCEPT AS MODIFIED BELOW.
24. BECAUSE THE WATER SERVICE WILL NOT BE COMPLETE AT THE TIME OF INSTALLATION OF THESE SYSTEMS, THE FIRE SPRINKLER SYSTEMS SHOWN ON THIS PLAN ARE TO BE AIR TESTED PER NFPA 13 FOR PER SECTIONS 28.2.1.4 AND 28.2.1.1. UPON COMPLETION OF INSTALLATION.
25. THE SYSTEM WILL BE MADE LIVE AT A LATER DATE AFTER CONSTRUCTION OF THE WATER STORAGE TANK, FIRE PUMP, AND PIPE TUNNEL BETWEEN THE MAIN BUILDING AND THE WAREHOUSE ARE COMPLETE. HYDROSTATIC AND ALARM TESTING OF THE SYSTEMS SHOWN ON THIS PLAN IS THE RESPONSIBILITY OF THE FP CONTRACTOR AND IS TO TAKE PLACE AT A LATER DATE UPON COMPLETION OF THE WATER SERVICE.
26. THIS PROJECT DOES NOT INCLUDE:
 - FIRE PUMP OR ANY ITS APPURTENANCES
 - WATER STORAGE TANK
 - PIPING FROM FIRE PUMP TO WAREHOUSE BUILDING
27. FP CONTRACTOR SHALL COMPLETE THE DESIGN AND HYDRAULIC CALCULATIONS FOR THE FIRE SPRINKLER SYSTEMS SHOWN ON THIS PLAN. THE ITEMS LISTED BELOW WILL BE PROVIDED AND INSTALLED AS PART OF A HYDRAULIC CALCULATION WATER STORAGE TANK CONTAINING 607 OF WATER FOR CHURN PRESSURE.
 - 2000 gpm @ 125 psi HORIZONTAL SPLIT CASE ELECTRIC FIRE PUMP WITH ALL REQUIRED VALVES
 - 65" TALL 22000 GALLON WATER STORAGE TANK CONTAINING 607 OF WATER FOR CHURN PRESSURE
 - CALCULATIONS
 - 2000 PSI HEAD PRESSURE FROM THE STORAGE TANK (FLOODED SUCTON ONLY) FOR HYDRAULIC CALCULATIONS
 - 300' OF 8" SCHEDULE 40 STEEL PIPE AND 10' N 90 DEGREE ELBOWS
 - SEE SITE PLAN AND SCHEMATIC SECTION DETAIL ON THIS SHEET FOR SIZES OF VARIOUS COMPONENTS
28. SHOP DRAWINGS, HYDRAULIC CALCULATIONS, AND MATERIALS DATA ALL CONFORMING TO NFPA 13 SHALL BE SUBMITTED TO AHJ AND REVIEWER PROMPTLY UPON AWARD OF CONTRACT. FP CONTRACTOR SHALL OBTAIN APPROVAL FROM ALL RELEVANT AUTHORITIES PRIOR TO FABRICATION AND INSTALLATION.

KEY PLAN:

- ENTIRE WAREHOUSE

SHEET TITLE:

FIRE SPRINKLER PLAN



PROJECT TITLE:

NEW WAREHOUSE

empirical foods, inc.

GARDEN CITY, KS

KEY PLAN:

- ENTIRE WAREHOUSE

SHEET TITLE:

FIRE SPRINKLER PLAN

ISSUES / REVISIONS

MARK	DATE	DESCRIPTION
E	3/16/21	SUPPLEMENTAL INFORMATION
D	2/19/21	ISSUED FOR PRICING
C	2/21/21	ISSUED FOR REVIEW
B	1/11/20	ISSUED FOR REVIEW
A	1/15/20	ISSUED FOR REVIEW

PROJECT STATUS:

FOR PRICING

PROJECT NO: 68061-B

DRAWN BY: DS

PROJECT MANAGER: DS

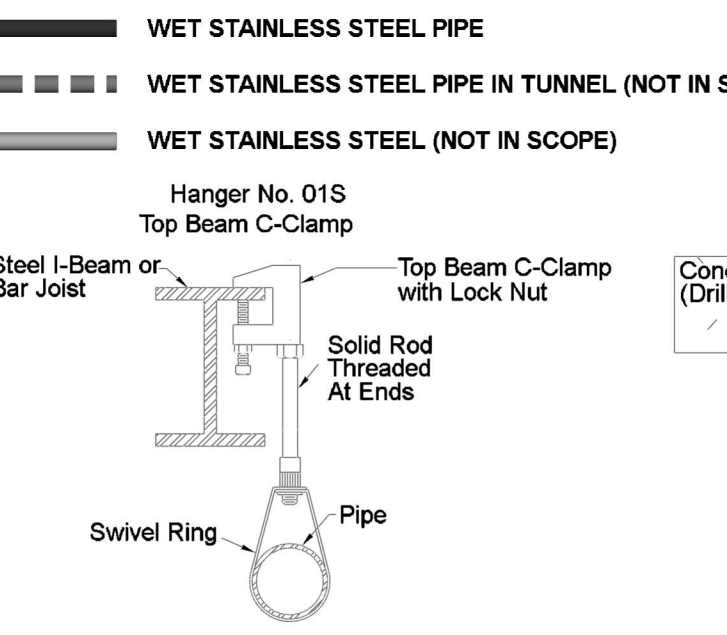
SHEET NO:

FP1

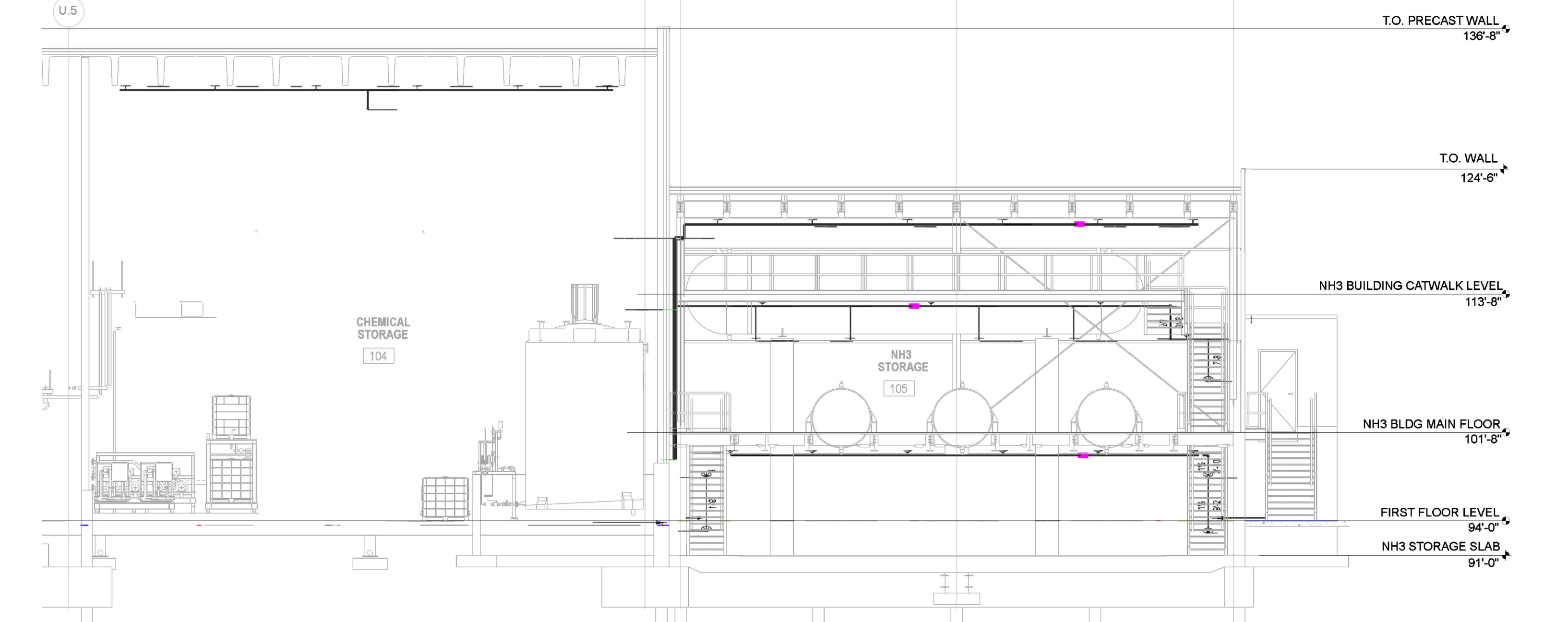
FIRE PROTECTION GENERAL NOTES

- THIS PROJECT INCLUDES ONE WET FIRE SPRINKLER SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) (2018), INTERNATIONAL FIRE CODE (2018), NFPA 13 (2018), AND APPLICABLE STATE AND LOCAL CODES.
- THE SPRINKLER SYSTEM PROTECTING THE WASTEWATER TREATMENT BUILDING WILL ULTIMATELY BE SUPPLIED BY AN 8" WATER SERVICE LINE RUNNING IN A PIPE TUNNEL BETWEEN THE MAIN BUILDING AND THE WAREHOUSE. A FUTURE FIRE PUMP IN THE MAIN BUILDING WILL TAKE SUCTION FROM A FUTURE FIRE PROTECTION WATER STORAGE TANK. THE STORAGE TANK, FIRE PUMP, AND TUNNEL PIPING ARE NOT IN THE SCOPE OF WORK FOR THIS PROJECT.
- THE FIRE PROTECTION (FP) CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERABLE SYSTEMS COMPLYING WITH NFPA 13. DESIGN AND INSTALLATION SHALL COMPLY WITH CODES LISTED IN NOTE 1.
- ALL MATERIALS SHALL BE NEW AND LISTED PER NFPA 13. DESIGN AND INSTALLATION SHALL COMPLY WITH CODES LISTED IN NOTE 1.
- FP CONTRACTOR IS PERMITTED TO ALTER/MODIFY THE SYSTEMS AS SHOWN ON THESE PLANS EXCEPT AS SPECIFICALLY NOTED. ANY CHANGES ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER.
- THE EXACT NUMBER, TYPE, COVERAGE, ETC. OF SPRINKLERS AND THE SYSTEM LAYOUT SHALL BE DETERMINED BY THE FP CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION AND ENGINEER.
- FIRE DEPARTMENT CONNECTION TO BE BRASS, INSTALLED MIN. OF 18" TO A MAX OF 48" ABOVE FINAL EXTERIOR GRADE, AND READILY ACCESSIBLE AT ALL TIMES WITH A 36" CLEARANCE. THE HOSE CONNECTION THREADS TO MATCH THE LOCAL FIRE DEPARTMENT.
- AUXILIARY AND LOW POINT DRAINS PROVIDED WHERE REQUIRED BY NFPA 13 AND WILL DISCHARGE TO THE BUILDING EXTERIOR OR A FLOOR DRAIN TO FACILITATE PURGING OF AIR WHEN FILLING THE SYSTEM.
- ALL CONTROL VALVES AND FLOW SWITCHES TO BE LOCALLY AND CENTRALLY MONITORED.
- HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13.
- NEW UNDERGROUND PIPING AND/OR FEED MAIN PIPING IN TUNNEL SHALL BE TESTED AND FLUSHED IN ACCORDANCE WITH NFPA 24 (BY ITS INSTALLING CONTRACTOR). TEST DOCUMENTATION WILL BE REQUIRED PRIOR TO FP CONTRACTOR CONNECTING THE FIRE SPRINKLER SYSTEM.
- ALL SPRINKLERS WILL BE PROTECTED DURING PAINTING.
- A STOCK OF SPARE SPRINKLERS WILL BE PROVIDED ON SITE ALONG WITH ONE SPRINKLER WRENCH FOR EACH TYPE OF SPRINKLER IN ACCORDANCE WITH NFPA 13.
- ALL REQUIRED SYSTEM TESTING WILL BE PERFORMED IN ACCORDANCE WITH NFPA 25 EXCEPT AS MODIFIED BELOW.
- BECAUSE THE WATER SERVICE WILL NOT BE COMPLETE AT THE TIME OF INSTALLATION OF THESE SYSTEMS, THE FIRE SPRINKLER SYSTEMS SHOWN ON THIS PLAN ARE TO BE AIR TESTED PER NFPA 13 FOR PER SECTIONS 28.2.1.4 AND 28.2.1.1. UPON COMPLETION OF INSTALLATION.
- THE SYSTEM WILL BE MADE LIVE AT A LATER DATE AFTER CONSTRUCTION OF THE WATER STORAGE TANK, FIRE PUMP, AND PIPE TUNNEL BETWEEN THE MAIN BUILDING AND THE WASTEWATER TREATMENT BUILDING ARE COMPLETE. HYDROSTATIC AND ALARM TESTING OF THE SYSTEMS SHOWN ON THIS PLAN WILL TAKE PLACE AT A LATER DATE UPON COMPLETION OF THE WATER SERVICE.
- THIS PROJECT DOES NOT INCLUDE:
 - FIRE PUMP OR ANY OF ITS APPURTENANCES
 - WATER STORAGE TANK
 - PIPING FROM FIRE PUMP TO WASTEWATER TREATMENT BUILDING
- HYDRAULIC CALCULATIONS FOR THE FIRE SPRINKLER SYSTEMS SHOWN ON THIS PLAN ARE BASED ON THE FOLLOWING FUTURE ITEMS:
 - 2,000 gpm @ 130 psi HORIZONTAL SPLIT CASE ELECTRIC FIRE PUMP WITH ALL REQUIRED VALVES
 - 60" TALL 220,000 GALLON WATER STORAGE TANK CONTAINING 60" OF WATER FOR CHURN PRESSURE CALCULATIONS
 - ZERO HEAD PRESSURE FROM THE STORAGE TANK (FLOODED SUCTION ONLY) FOR HYDRAULIC CALCULATIONS
 - APPROXIMATELY 200' OF 8" SCHEDULE 40 STEEL PIPE AND TEN 90 DEGREE ELBOWS
- SEE SITE PLAN FOR FINISH FLOOR ELEVATIONS
- SHOP DRAWINGS, HYDRAULIC CALCULATIONS, AND MATERIAL DATA ALL CONFORMING TO NFPA 13, SHALL BE SUBMITTED TO AHJ AND ENGINEER PROMPTLY UPON AWARD OF CONTRACT. FP CONTRACTOR SHALL OBTAIN APPROVAL FROM ALL REVIEWING AUTHORITIES PRIOR TO FABRICATION AND INSTALLATION.
- ALL PIPING TO BE WELDED STAINLESS STEEL SCHEDULE 40S AND MEET ASTM A312/A312M PER NFPA 13 SECTION 16.3.7.
- SYMBOLS USED ON DRAWINGS:

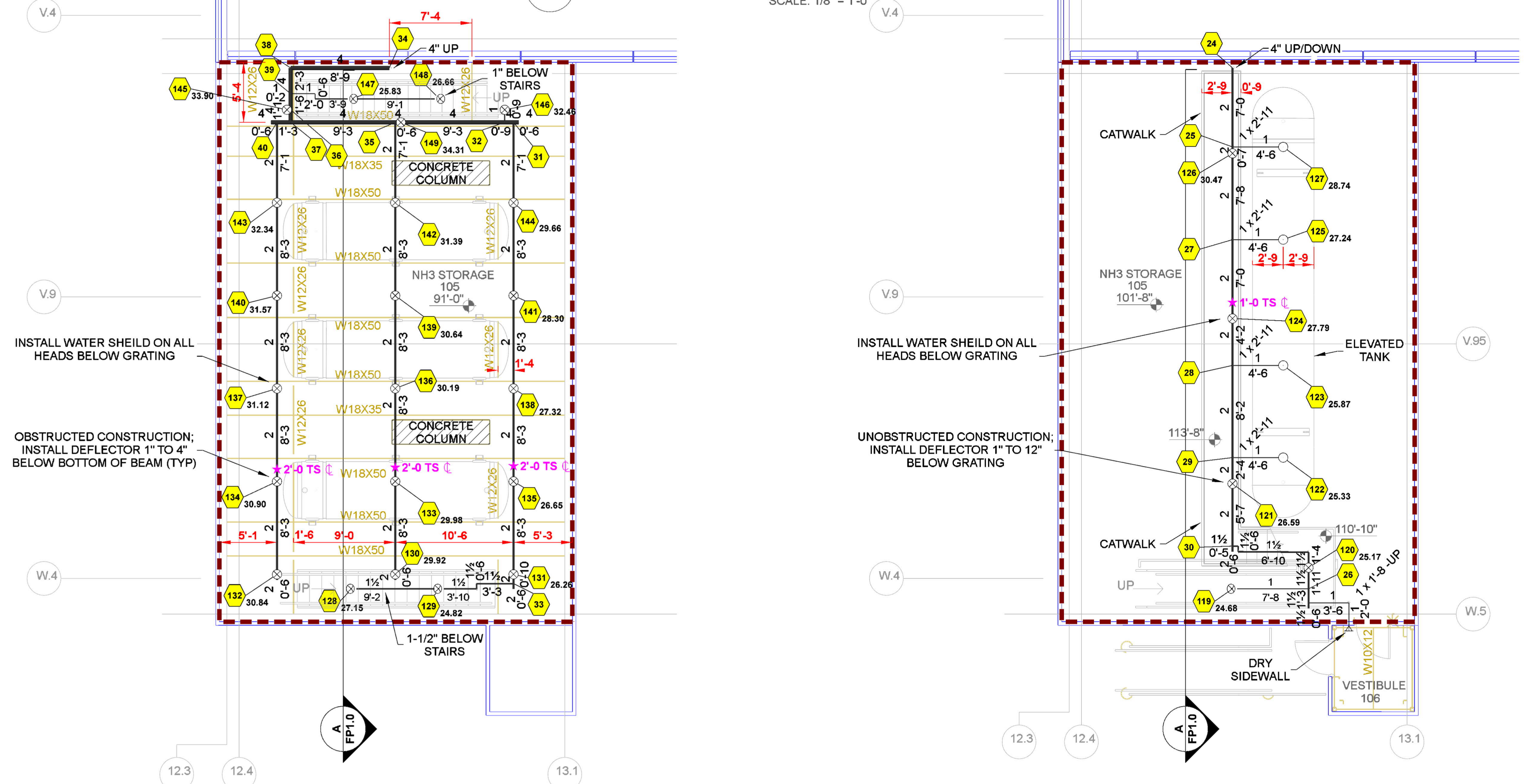
- PIPE ELEVATION A.F.F.
- PIPE ELEVATION BELOW T.O.S.
- HYDRAULIC CALCULATION JUNCTION POINT
- FINISH FLOOR ELEVATION
- WET STAINLESS STEEL PIPE
- WET STAINLESS STEEL PIPE IN TUNNEL (NOT IN SCOPE)
- WET STAINLESS STEEL (NOT IN SCOPE)



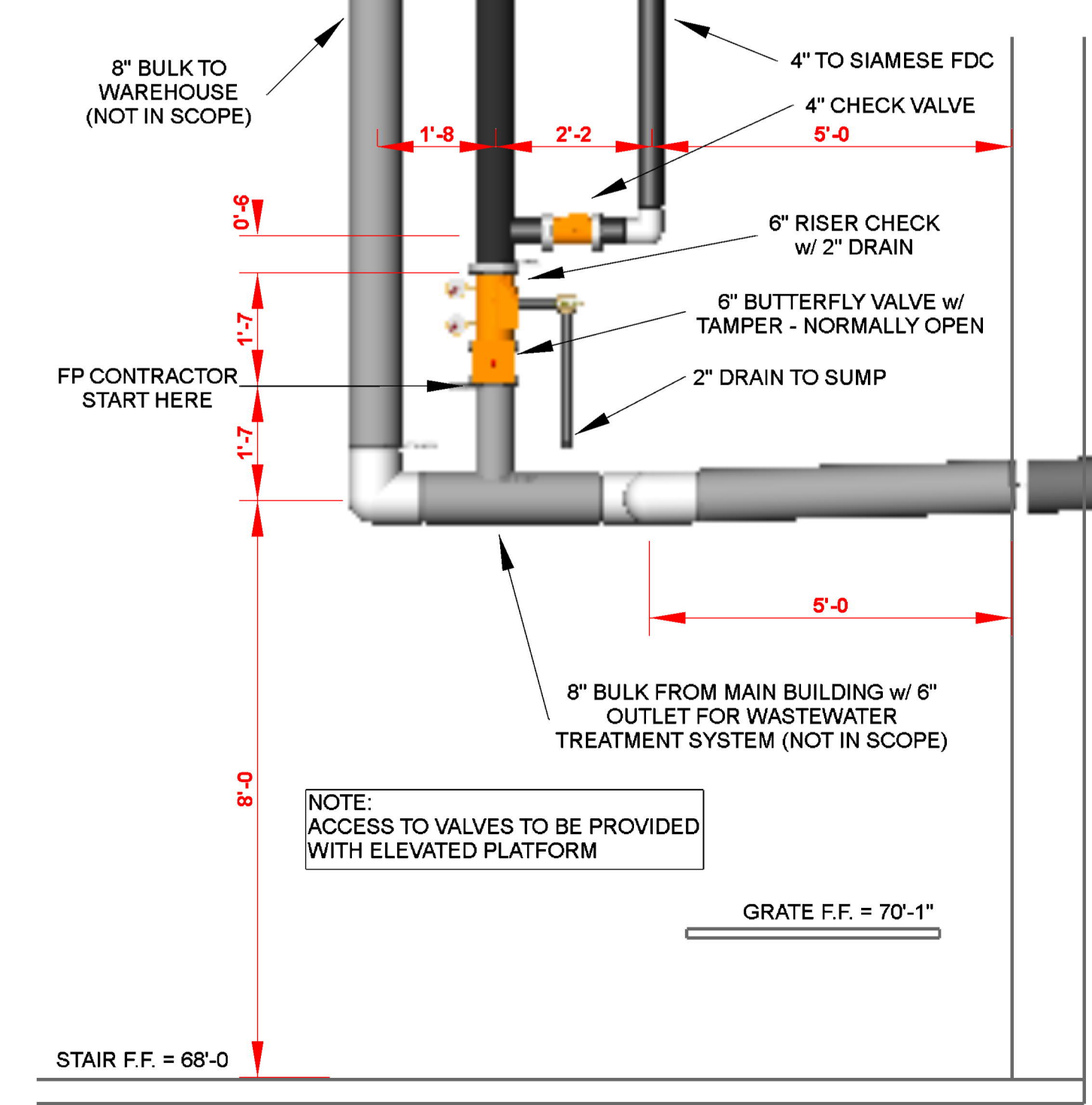
HANGERS



A BUILDING SECTION SCALE: 1/8" = 1'-0"



NH3 STORAGE SLAB FIRE SPRINKLER PLAN SCALE: 1/8" = 1'-0"



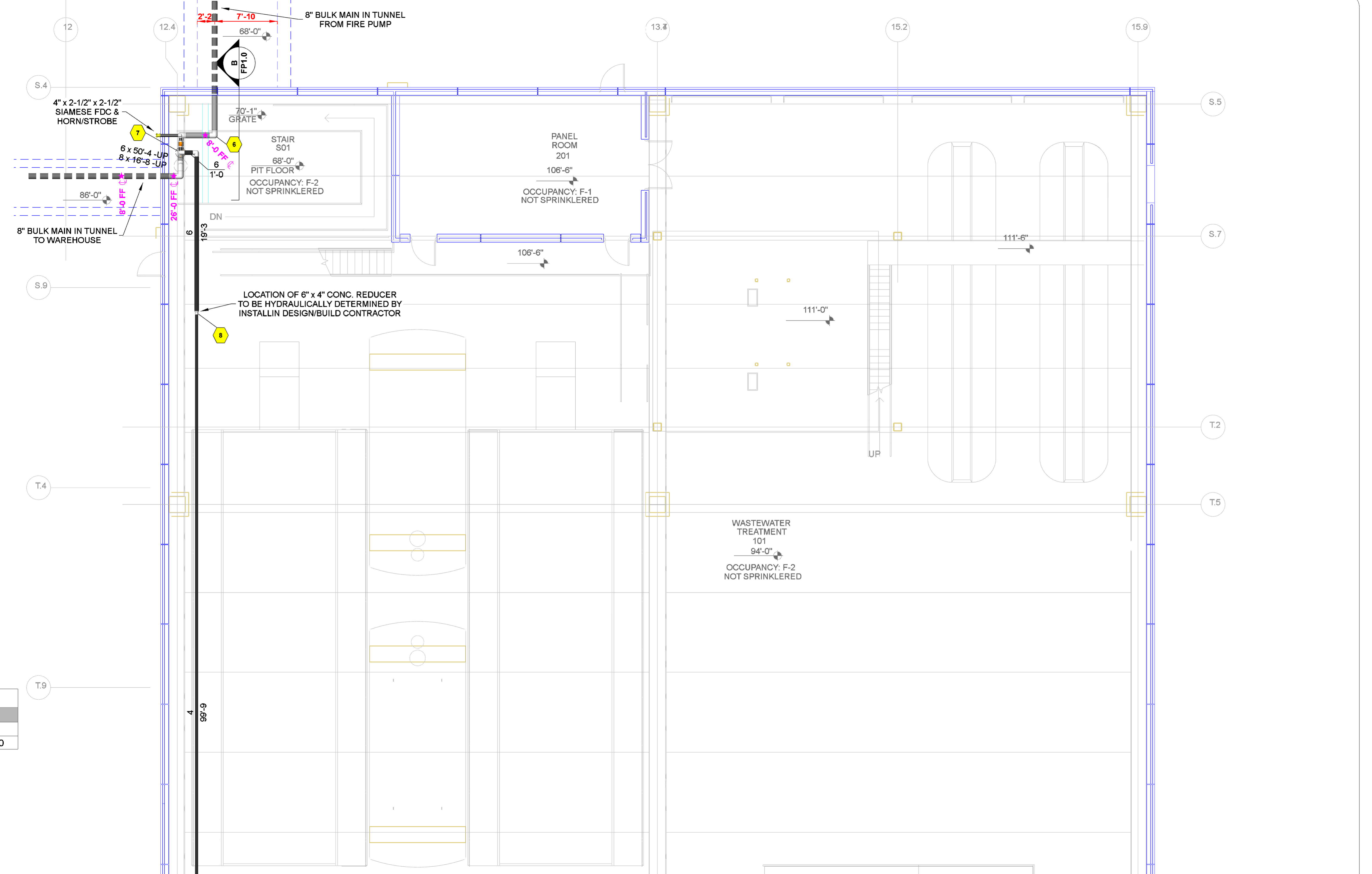
B RISER DETAIL SCALE: 1/2" = 1'-0"

Sprinkler Legend

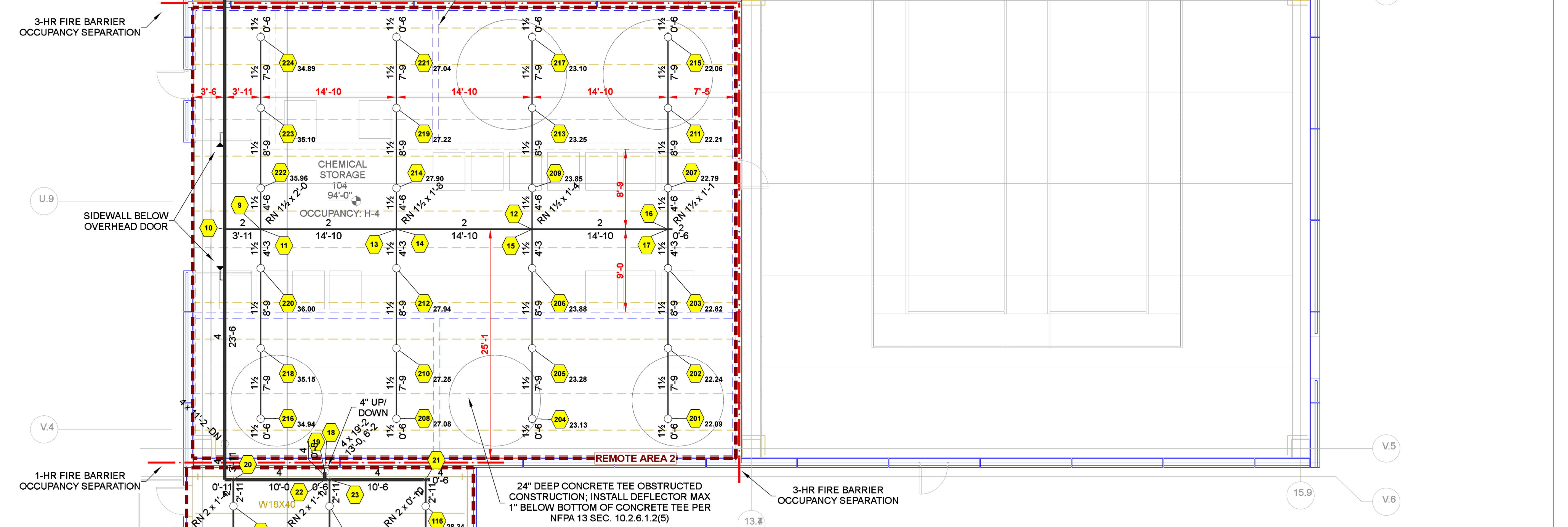
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
⊗	Tyco (or equal)	TY9191	TY-B	27	8	Upright	1/2"	Standard	Stainless	288°F	WATER SHIELD
⊙	Tyco (or equal)	TY 9191	TY-B	46	8	Upright	1/2"	Standard	Stainless	288°F	N/A
○	Tyco (or equal)	TY3337	DS-1	1	6.6	Sidewall	1/2"	Standard	Stainless	200°F	DRY
▶	Tyco (or equal)	TY6381	TY-B	2	6.6	Sidewall	1/2"	Standard	Stainless	200°F	N/A
				Total = 76							

MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)

PIPE SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0



ROOF LEVEL FIRE SPRINKLER PLAN SCALE: 1/8" = 1'-0"



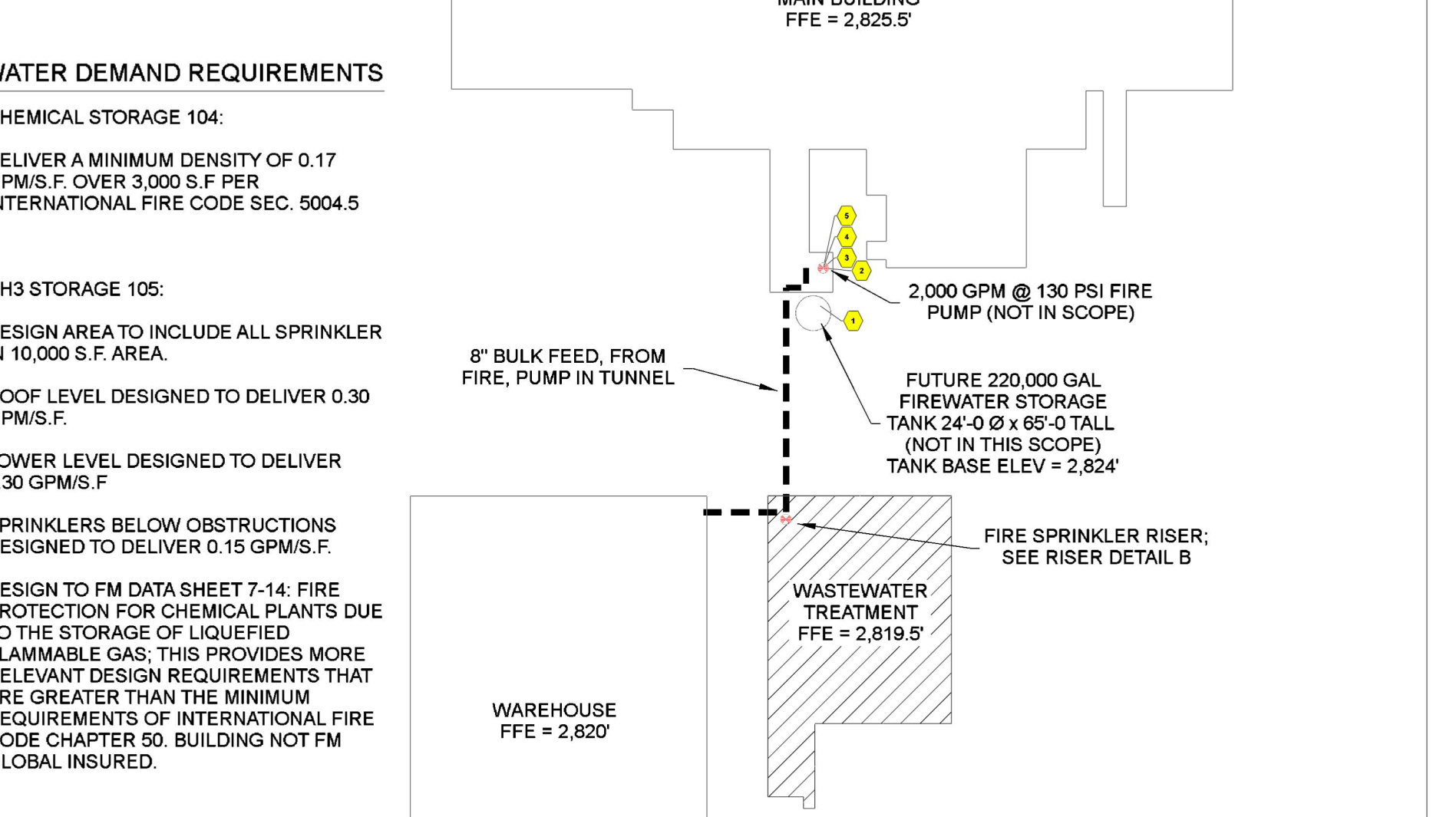
NH3 BLDG MAIN FLOOR FIRE SPRINKLER PLAN SCALE: 1/8" = 1'-0"

CHEMICAL STORAGE 104

Remote Area 2	
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft²)	0.17 for 3000ft² (Actual 2927ft²)
TOTAL HOSE STREAMS	0.00
TOTAL HEADS FLOWING	24
K-FACTOR	8
TOTAL WATER REQUIRED	651.15
TOTAL PRESSURE REQUIRED	-38.946
BASE OF RISER (gpm)	651.15
BASE OF RISER (psi)	113.318
SAFETY MARGIN (psi)	+39.940 (4019.7%)

NH3 STORAGE 105

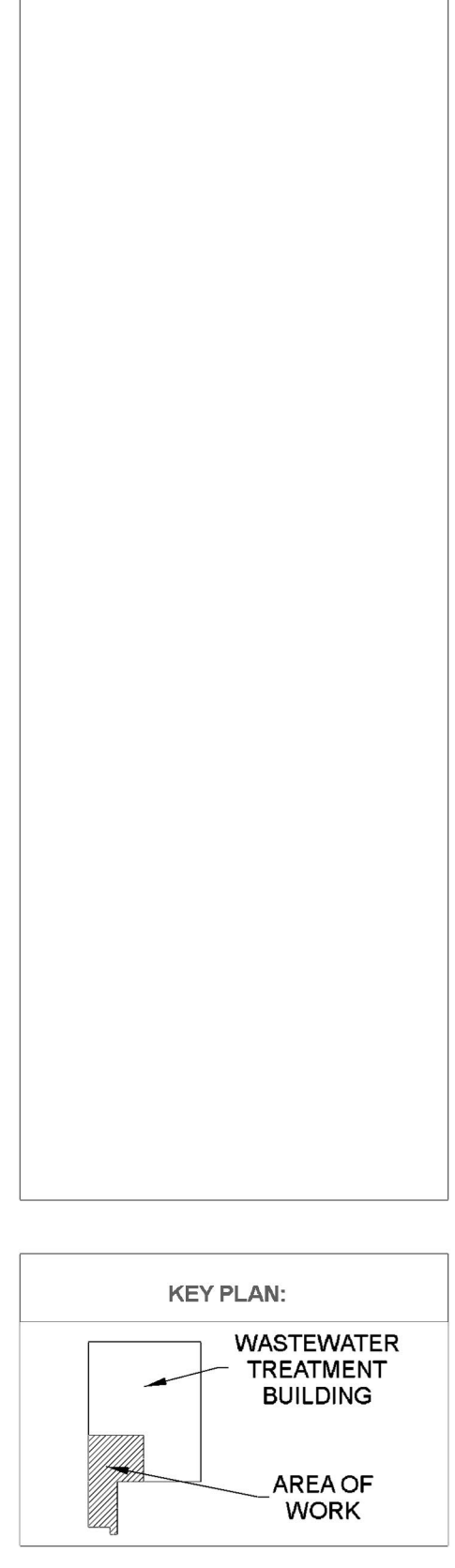
Remote Area 1	
OCCUPANCY CLASSIFICATION	Storage
DENSITY (gpm/ft²)	0.30 for 10000ft² (Actual 1557ft²)
TOTAL HOSE STREAMS	0.00
TOTAL HEADS FLOWING	49
K-FACTOR	8
TOTAL WATER REQUIRED	1421.32
TOTAL PRESSURE REQUIRED	-22.905
BASE OF RISER (gpm)	1421.32
BASE OF RISER (psi)	119.021
SAFETY MARGIN (psi)	+23.878 (2454.2%)



SITE PLAN NOT TO SCALE



PROJECT TITLE:
WASTEWATER TREATMENT FACILITY
 EMPERICAL FOODS, INC.
 GARDEN CITY, KS



ISSUES / REVISIONS

MARK	DATE	DESCRIPTION
A	07/22	ISSUED FOR REVIEW

PROJECT STATUS:
FOR PRICING

PROJECT NO: 68061-B
 DRAWN BY: ADK
 PROJECT MANAGER: DS

SHEET NO:
FP1.0

NOT FOR SUBMITTAL