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SPRINKLER DESIGN CRITERIA

- THE SPRINKLER SYSTEM IN THIS BUILDING SHALL BE IN ACCORDANCE WITH NJ STATE BUILDING CODE 2021 AND NFPA-13 2019.
- THE PROPOSED HYDRAULIC DEMAND OF THE SYSTEM IS EQUAL TO, OR LESS THAN, THE HYDRAULIC DEMAND OF THE EXISTING SYSTEM.
- OCCUPANCY CRITERIA
 - LIGHT HAZARD - OFFICES, DAY ROOMS, TOILET ROOMS, CARE ROOMS, EXAM ROOMS, RECEPTION AREA, CORRIDORS, TRIAGE, EMPLOYEE BREAK ROOM, HUMAN RESOURCE OFFICES AND CONFERENCE ROOMS; DENSITY 0.10 GPM/ SQ. FT. WITH 1500 SQ. FT MOST HYDRAULICALLY REMOTE AREA, MAXIMUM COVERAGE PER SPRINKLER HEAD 225 SQ. FT. 52,000 SQ.FT. MAXIMUM AREA LIMITATION PER FLOOR CONTROL VALVE.
 - ORDINARY HAZARD GROUP 1 - MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, MEDICAL RECORDS AND STORAGE ROOMS, KITCHEN; DENSITY 0.16 GPM PER SQ. FT WITH 1500 SQ. FT MOST HYDRAULICALLY REMOTE AREA, MAXIMUM COVERAGE PER SPRINKLER HEAD 130 SQ. FT. 52,000 SQ. FT. MAXIMUM AREA LIMITATION PER FLOOR CONTROL VALVE.
- MINIMUM PRESSURE AND WATER DISCHARGE:
 - LIGHT HAZARD: AS PER MANUFACTURER'S RECOMMENDATION FOR LISTED/SPECIFIED SPRINKLER HEAD.
 - ORDINARY HAZARD GROUP 1: AS PER MANUFACTURER'S RECOMMENDATION FOR LISTED/SPECIFIED SPRINKLER HEAD.
- HYDRAULIC CALCULATIONS SHALL BE PROVIDED BY FIRE PROTECTION CONTRACTOR AND SHALL MEET THE FOLLOWING CRITERIA:
 - EXACT LOCATION OF SPRINKLER HEADS IN FINISHED AREAS WITH SUSPENDED CEILINGS SHALL BE AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS FIRE PROTECTION DWGS WITH HEADS IN CENTER OF TILES. ANY CHANGES TO BE REVIEWED AND COORDINATED WITH ARCHITECT.
 - WHENEVER ROLLED GROOVED CONNECTIONS ARE USED, ALLOWANCE FOR ADDITIONAL PRESSURE LOSS AT GROOVES SHALL BE MADE AS FOLLOWS:
 - FOR EACH COUPLING ON STRAIGHT RUN INCLUDING STRAIGHT FLOW THROUGH TEE OR CROSS: ADD 1 EQUIVALENT FOOT OF PIPE.
 - FOR EACH COUPLING AT ELBOW, TEE OR CROSS WHERE DIRECTION OF FLOW CHANGES: ADD 2 EQUIVALENT FEET OF PIPE.
 - EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA STANDARD NO. 13, 2019 AS REFERENCED BY THE NJ STATE IBC, WHEREVER FITTINGS ARE USED IN CONJUNCTION WITH SCHEDULE 40 PIPE, EQUIVALENT FITTING LENGTHS INDICATED IN NFPA 13 SHALL BE INCREASED BY 30%
 - DISCHARGE FROM EACH SPRINKLER HEAD SHALL NOT BE LESS THAN REQUIRED FOR AREA COVERED BY THE HEAD, AREA COVERAGE PER HEAD SHALL BE DETERMINED IN ACCORDANCE WITH NFPA 13 2019, PARAGRAPH 14.4.4.1, AS REFERENCED BY NJ STATE.
 - HYDRAULIC CALCULATIONS SHALL BE BROUGHT BACK TO CONNECTION TO WATER SUPPLY.
 - FLOW VELOCITY IN PIPING SHALL NOT EXCEED 20 FPS.
- FLOW TEST DATA:
 - CONTRACTOR SHALL OBTAIN FLOW DATA INDICATING RESIDUAL PRESSURES ASSOCIATED WITH BUILDING SYSTEM AND SUBMIT DATA WITH HYDRAULIC CALCULATIONS.
 - THESE HYDRAULIC CALCULATIONS ALONG WITH PUMP OR WATER FLOW TEST ARE TO BE SUBMITTED FOR APPROVAL TO THE ENGINEER AND TO THE INSURANCE UNDERWRITER HYDRAULIC CALCULATIONS SHALL BE BROUGHT BACK TO THE LOCATION OF THE PUMP OR WATER FLOW TEST.
 - CONSTRUCTION MAY ONLY BEGIN WHEN APPROVALS ARE GRANTED.
 - RESULT OF HYDRAULIC CALCULATIONS SHALL INDICATE MINIMUM 10% PRESSURE SAFETY MARGIN, I.E., EXCESS OF PRESSURE AVAILABLE OVER PRESSURE REQUIRED.

GENERAL SPRINKLER NOTES

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS AND SHALL REPORT TO ENGINEER ANY DISCREPANCIES OR OMISSIONS THAT WOULD INTERFERE WITH SATISFACTORY COMPLETION OF THE WORK.
- COORDINATE THE FIRE PROTECTION SYSTEM WITH WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING A FULL SET OF BID DOCUMENTS AND VISIT THE SITE TO MAKE HIMSELF AWARE OF THE TOTAL JOB BEFORE SUBMITTING HIS PRICE. FAILURE TO COMPLY SHALL NOT HOLD THE OWNER RESPONSIBLE FOR ANY ADDITIONAL COST. CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING WITH FACILITY'S BUILDING MANAGEMENT FOR HANDLING MATERIALS, AS WELL AS FOR ALLOWABLE WORKING HOURS AND DELIVERIES.
- CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS AND MANUFACTURERS' CUTS AND SAMPLES TO ARCHITECT PRIOR TO COMMENCEMENT OF SUCH WORK.
- THE CONTRACTOR SHALL INDICATE ON HIS SHOP DRAWING THAT ALL PIPING LAYOUTS ARE COORDINATED WITH THE MEP AND STRUCTURAL CONDITIONS, INCLUDE ON EACH WORKING DRAWING LAYOUT CERTIFICATE, THAT ALL RELATED CONDITIONS HAVE BEEN CHECKED, AND THAT NO CONFLICT EXISTS. SUBMISSION WILL NOT BE APPROVED WITHOUT SUCH CERTIFICATION.
- CONTRACTOR SHALL SUBMIT SPRINKLER HYDRAULIC CALCULATIONS FOR THE ENGINEER'S REVIEW TO VERIFY THE ADEQUACY OF THE INDICATED PIPE SIZES.
- SPRINKLER CONTRACTOR SHALL CONDUCT A HYDRANT FLOW TEST OR OBTAIN FLOW TEST DATA TO VERIFY THE AVAILABLE WATER SUPPLY PRESSURE AND FLOW RATE ON THE INCOMING FIRE SERVICE.
- DRAWINGS ARE NOT TO BE SCALED.
- CONTRACTOR SHALL COMPLY WITH ALL LAKEHURST NJ AND MANCHESTER NJ BUILDING DEPARTMENT AND RELATED REGULATORY AGENCIES AND CODE REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS AND APPROVALS OF ALL TRADES.
- CONTRACTOR SHALL CARRY AND DOCUMENT LIABILITY, ACCIDENT AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY COOPERATIVE CORPORATION AND OBSERVE THEIR PERMITTED HOURS FOR WORK.
- CONTRACTOR SHALL EXERCISE EXTREME CARE IN PROTECTING AREAS ADJACENT TO CONSTRUCTION AREAS SHALL FULLY PROTECT THEM FROM ANY DAMAGE RESULTING FROM CONTRACTOR'S WORKMEN, SUBCONTRACTORS OR AGENTS, AND SHALL BE RESPONSIBLE FOR REPAIRING, CLEANING OR REPLACING ANY SUCH DAMAGE.
- ALL DIMENSIONS GIVEN ARE FINISH DIMENSIONS UNLESS OTHERWISE STATED.
- UNLESS SPECIFICALLY STATED OTHERWISE, CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, APPURTENANCES, EQUIPMENT AND SERVICES TO COMPLETE ALL WORK AS INDICATED ON DRAWINGS AND/OR SPECIFIED ON NOTES.
- UNLESS SPECIFICALLY STATED OTHERWISE, CONTRACTOR SHALL FOLLOW MANUFACTURER'S DIRECTIONS, INSTRUCTIONS AND RECOMMENDATIONS FOR ALL MATERIALS AND PROCESSES USED IN THIS CONTRACT.
- RELOCATE ALL EXISTING SPRINKLER MAIN AND BRANCH PIPING IN THE AREA OF WORK THAT IS IN CONFLICT WITH THE LIGHTING FIXTURES, HVAC DUCTWORK AND PIPING.
- THE CONTRACTOR SHALL ALLOW FOUR (4) ADDITIONAL SPRINKLERS PER BRANCH TO BE INSTALLED BELOW AND ABOVE THE DUCTS IN MECHANICAL ROOMS/AREAS WITH EXPOSED CEILINGS.
- SPRINKLER HEADS SHALL NOT BE LOCATED DIRECTLY OVER ANY ELECTRICAL AND TELEPHONE EQUIPMENT.
- ELECTRICAL AND TELEPHONE EQUIPMENT SHALL BE PROTECTED BY A SHIELD TO DEFLECT WATER AWAY FROM SUCH EQUIPMENT. SHIELD SHALL BE GALVANIZED STEEL, ALUMINUM OR BRASS.
- ACCESS DOORS ARE TO BE PROVIDED ADJACENT TO ALL VALVES.
- SPRINKLERS IN MECHANICAL AND ELECTRICAL ROOMS SHALL HAVE A TEMPERATURE RATING OF 212°F. IN LOCATIONS, NECESSARY FOR INSPECTION AND MAINTENANCE.
- SPRINKLER PIPING SHALL BE INSTALLED AS PER APPROVED SHOP DRAWINGS.
- CONTRACTOR SHALL BASE ALL HYDRAULIC CALCULATIONS ON THE AVAILABLE PRESSURE AND WATER FLOW DATA.
- EACH CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL PENETRATIONS, CUTTING, PATCHING, SLEEVES, AND FIRESTOPPING REQUIRED TO COMPLETE THE INSTALLATION OF ALL WORK INCLUDED UNDER THEIR CONTRACT IN ACCORDANCE WITH THE FIRE EGRESS AND SECURITY PLAN DRAWINGS.
- ALL UPRIGHT SPRINKLER HEADS IN MECHANICAL AND STORAGE ROOMS SHALL HAVE HEAD GUARDS.
- PROVIDE HYDRAULICALLY DESIGNED SPRINKLER SYSTEM.
- LOCATE ALL HORIZONTAL PIPING ABOVE SUSPENDED CEILING, UNLESS THERE IS NO CEILING.
- AUTOMATIC SPRINKLERS INSTALLATION IN ELEVATOR MACHINE ROOMS SHALL BE AS REQUIRED AS BY NEW JERSEY BUILDING CODE.
- PROVIDE SPRINKLER HEADS UNDER DUCTS OVER 4'-0" IN WIDTH IN AREAS WITHOUT HUNG CEILING.
- UPON COMPLETION OF THE WORK, CONTRACTOR SHALL COMPLETELY CLEAN THE CONSTRUCTION AREA SUITABLE FOR THE OWNER'S USE, INCLUDING REMOVAL OF ALL LABELS (AFTER ARCHITECT'S INSPECTION), CLEANING OF ALL THE EQUIPMENT, CONSTRUCTION WORK, WINDOWS AND OTHER WORK, NEW AND OLD, IN THAT CONSTRUCTION AREA.
- BUILDING DEPARTMENT APPROVED PLANS SHALL BE TURNED OVER TO OWNER AT THE COMPLETION OF THE JOB.
- AT THE FINAL COMPLETION OF THE JOB, CONTRACTOR SHALL SUBMIT TO THE OWNER AND TO ENGINEER A NOTARIZED AFFIDAVIT STATING COMPLIANCE WITH ALL PROVISIONS OF THIS CONTRACT, INCLUDING ALL NOTES, EXCEPT FOR THOSE CHANGES SPECIFICALLY APPROVED IN WRITING BY THE ARCHITECT/OWNER.
- CONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED UNDER THIS CONTRACT FOR ONE YEAR, STARTING FROM DATE OF FINAL ACCEPTANCE OF ALL WORK.
- CONTRACTOR SHALL PROVIDE ALL FITTINGS AND PIPING REQUIRED TO MODIFY EXISTING SPRINKLER MAIN TO ALLOW FOR INSTALLATION OF HVAC DUCT WORK/PIPING AND LIGHTING FIXTURES.
- THE MINIMUM SPRINKLER BRANCH PIPE SIZE SHALL BE 1".
- SPRINKLER HEADS SHALL BE ± 1/2" FROM CENTER OF TILE CONTRACTOR SHALL ALLOW FOR ALL REQUIRED FITTINGS TO ACHIEVE THIS GOAL AND INCLUDE IT IN HIS CONTRACT PRICE.
- ALL DRY TYPE SPRINKLER HEADS SHALL BE INSTALLED IN TEE TYPE FITTINGS ONLY.
- CONTRACTOR SHALL NOTIFY LOCAL FIRE DEPT/FIRE MARSHAL OF FIRE PROTECTION SYSTEM DISCONNECTION BY SUBMITTING A LETTER OF NOTIFICATION.
- IN AREAS OF WORK IF ANY EXISTING SPRINKLERS ARE TO REMAIN, THE NEW SPRINKLERS ARE TO MATCH THE EXISTING MANUFACTURER, TYPE, TEMPERATURE AND RESPONSE.

SPRINKLER ABBREVIATIONS

ABD	AUTOMATIC BALL DRIP
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
BFP	BACK FLOW PREVENTER
BOP	BOTTOM OF PIPE
CL	CENTERLINE
CLG	CEILING
COMB	COMBINATION
CP	CONTROL PANEL
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCV	DOUBLE CHECK VALVE
DN	DOWN
DPS	DRY PIPE SYSTEM
DPV	DRY PIPE VALVE
DR	DRAIN
DWG	DRAWING
EL	ELEVATION
EX	EXISTING
F	FIRE SERVICE
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FFE	FINISHED FLOOR ELEVATION
FHV	FIRE HOSE VALVE
FP	FIRE PUMP
FS	FLOW SWITCH
FSP	FIRE STAND PIPE
FT	FOOT, FEET
HB	HOSE BIBB
HDS	HEADS
HR	HOUR
IE	INVERT ELEVATION
INV	INVERT
JP	JOCKEY PUMP
JS	JANITORS SINK
MS	MOP SINK
MTD	MOUNTED
NTS	NOT TO SCALE
OS&Y	OUTSIDE SCREW & YOKE
RCV	RISER CONTROL VALVE
SQ.FT.	SQUARE FOOT (FEET)
SPECS	SPECIFICATIONS
SPK	SPRINKLER
STD	STANDARD
TEMP	TEMPERATURE
TS	TAMPER SWITCH
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES

ABBREVIATIONS LIST IS PROVIDED FOR CONVENIENCE ONLY. NOT ALL SYMBOLS OR ABBREVIATIONS ARE NECESSARILY USED IN THIS PROJECT.

SPRINKLER SYMBOL LIST

	FIRE MAIN
	EXISTING FIRE MAIN
	FIRE STAND PIPE
	EXISTING FIRE STAND PIPE
	SPRINKLER PIPING
	EXISTING SPRINKLER PIPING
	DRAIN PIPING
	EXISTING DRAIN PIPING
	REMOVE EXISTING PIPING
	FIRE PROTECTION RISER TAG
	DETAIL TAG REFERENCE
	POINT OF DISCONNECT
	CONNECT NEW PIPING TO EXISTING
	AREA, FLOOR OR ROOF DRAIN
	PRESSURE REDUCING VALVE (PRV)
	DIRECTION OF FLOW
	PIPE UP
	PIPE DROP
	NEW TEE CONNECTION
	NEW ELBOW CONNECTION
	NEW CONNECTION POINT
	PIPE DROP OR RISE
	TOP CONNECTION
	BOTTOM CONNECTION
	CAPPED CONNECTION
	BREAK
	UNION
	WATER-PROOF PIPE SLEEVE
	PIPE SLEEVE
	VALVE ON RISE
	CONCEALED PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	EXISTING SPRINKLER HEAD TO BE RELOCATED
	EXISTING SPRINKLER HEAD
	DOUBLE CHECK DETECTOR ASSEMBLY
	CHECK VALVE
	GATE VALVE
	PRESSURE GAUGE
	FIRE HOSE VALVE
	FLOW SWITCH
	PUMP
	STRAINER
	OS&Y VALVE WITH TAMPER SWITCH
	OS&Y VALVE
	FIRE DEPARTMENT CONNECTION
	FIRE PUMP TEST HEADER (FLUSH TYPE)
	FLOOR CONTROL VALVE ASSEMBLY

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04-13-26 PERMIT SET
PROJECT ADDRESS:
108-114 NORTH 7TH STREET
PATERSON, NJ
BLOCK: 414 LOTS: 1 & 21
DRAWING NAME :
SPRINKLER NOTES,
ABBREVIATIONS AND
SYMBOLS
BLDG DEPT REF.# SCALE:
AS NOTED
SIGNATURE & SEAL
ALEXEY WAPILIS
ENGINEER
N.J. LIC. No. GE56570
DATE:
12/10/2021
DRAWING #
SP-001
PROJECT # : 2021.09.02

FIRE PROTECTION SPECIFICATIONS

PART I – GENERAL

1. APPLICABLE STANDARDS, CODES AND PUBLICATIONS

A. THIS ENTIRE INSTALLATION SHALL BE MANUFACTURED, TESTED AND INSTALLED TO CONFORM, AS A MINIMUM, TO APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS EXCEPT WHERE STRICTER REQUIREMENTS ARE SPECIFIED ELSEWHERE HEREIN OR SHOWN ON THE CONTRACT DRAWINGS:

- 1) BUILDING CODE OF THE STATE OF NEW JERSEY.
- 2) RULES AND REGULATIONS OF THE TOWNSHIP.
- 3) NFPA-13 (NATIONAL FIRE PROTECTION ASSOCIATION.)
- 4) UNDERWRITERS' LABORATORIES, INC.
- 5) OSHA AND ALL AGENCIES HAVING JURISDICTION.
- 6) BUILDING MANAGEMENT STANDARDS FOR BUILDING ALTERATIONS AND CONSTRUCTION.

2. REQUIREMENTS

A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE STATE OF NEW JERSEY.

B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH THE STRUCTURAL LAYOUT OF THE EXISTING STRUCTURE IN RELATIONSHIP TO THE NEW AND EXISTING HVAC DUCT AND PIPING LAYOUT, NEW LIGHTING FIXTURES, ELECTRICAL CABLES, HUNG CEILING HEIGHTS AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF CHANGES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

C. UPON REVIEW OF SPRINKLER DRAWINGS PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER INSTALLATION. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.

D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH THE BUILDING OWNER, WITH OTHER CONTRACTORS AND WITH THE CLIENT.

E. NECESSARY SHUT-DOWNS OF INCOMING SERVICES BASE MUST BE COORDINATED WITH THE FIRE MARSHALL, OWNER AND ARCHITECT SHALL BE NOTIFIED.

3. WORK INCLUDED

A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED FOR THE CLIENT.

1) ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE STATE OF NEW JERSEY BUILDING CODE AND ALL AUTHORITIES HAVING JURISDICTION.

2) WORK SHALL ALSO INCLUDE THE REMOVAL OF EXISTING SPRINKLER PIPING, HEADS, VALVES AND SUPPORTS AS REQUIRED

B. SPRINKLER HEAD LAYOUT SHALL BE BASED ON THE LOCATIONS INDICATED ON THE PLANS, AND SHALL BE INSTALLED WITH NO TOLERANCE FROM THE CENTER OR CEILING TILE. THE SPRINKLER CONTRACTOR SHALL COORDINATE HIS WORK WITH EXISTING CONDITIONS AND WITH WORK OF ALL OTHER CONTRACTORS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS IN WRITING BETWEEN THE OTHER TRADES BEFORE INSTALLATION OF THE SPRINKLER SYSTEM.

C. SPRINKLER SYSTEM SHALL BE:

1) A HYDRAULICALLY DESIGNED SYSTEM IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE STATE OF NEW JERSEY BUILDING CODE AND ALL AUTHORITIES HAVING JURISDICTION.

2) DESIGN SYSTEM TO CONFORM WITH BUILDING STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS, EITHER EXISTING OR PROPOSED.

D. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS. FOR EXACT LOCATIONS, MOUNTING HEIGHTS, ETC., REFER TO ARCHITECTURAL DRAWINGS AND DETAILS. ALL DIMENSIONS, ETC., SHALL BE VERIFIED BY FIELD CHECK.

4. SUBMITTALS

A. GENERAL

1) INCLUDE ON EACH LAYOUT WORKING DRAWING, A CERTIFICATION THAT ALL RELATED CONDITIONS HAVE BEEN CHECKED WITH ALL TRADES, AND THAT NO CONFLICT EXISTS. WORKING DRAWING SUBMISSIONS WILL NOT BE APPROVED WITHOUT SUCH CERTIFICATION.

2) SUBMIT TO THE ENGINEER, FOR APPROVAL, A LIST OF ALL MATERIAL AND EQUIPMENT MANUFACTURERS WHOSE PRODUCTS ARE PROPOSED, INCLUDING ALL DELIVERY DATES.

3) MAKE ALL SUBMITTALS SUFFICIENTLY IN ADVANCE OF FIELD REQUIREMENTS TO ALLOW AMPLE TIME FOR CHECKING. NO CLAIM FOR EXTENSION OF TIME WILL BE GRANTED BY REASON OF FAILURE IN THIS RESPECT AND NO WORK IN THE FIELD MAY BE STARTED WITHOUT APPROVED SHOP DRAWINGS AND THE ENGINEER'S APPROVAL.

4) APPROVAL OF ANY SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF FURNISHING MATERIALS AND SYSTEMS OF PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITIES, QUALITY AND INSTALLATION DETAILS, TO EFFICIENTLY PERFORM THE REQUIREMENTS AND INTENT OF THE CONTRACT DOCUMENTS. SUCH APPROVAL SHALL NOT RELIEVE THIS CONTRACTOR FROM THE RESPONSIBILITY FOR ERRORS IN SUBMITTALS.

5) IF THE SUBMITTALS DIFFER FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, MAKE SPECIFIC MENTION OF SUCH DIFFERENCE IN LETTERS OF TRANSMITTAL, WITH A REQUEST FOR SUBSTITUTION, TOGETHER WITH REASONS THEREFORE, SO THAT, IF ACCEPTABLE, SUITABLE ACTION MAY BE TAKEN FOR PROPER ADJUSTMENT. FAILING THIS, THE CONTRACTOR WILL NOT BE RELIEVED OF THE RESPONSIBILITY FOR EXECUTING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

B. SHOP DRAWINGS

1) SPRINKLER AND PIPING LAYOUT

2) HYDRAULIC CALCULATIONS FOR EVERY SYSTEM ON EACH FLOOR, INCLUDING CALCULATION DATA PLATES.

3) COORDINATION DRAWINGS

C. CATALOG CUTS AND BROCHURES

1) PIPE AND FITTINGS

2) SPRINKLER HEADS

3) HANGERS AND SUPPORTS

4) VALVES, O.S. & Y. FLOOR CONTROL VALVE, AND PRESSURE RELIEF VALVE

5) PRESSURE GAUGE

6) TAMPER SWITCH AND FLOW ALARM

7) SLEEVES AND ESCUTCHEONS

D. AS BUILT DRAWINGS

1) FURNISH TO THE ENGINEER A REPRODUCIBLE COPY OF EACH APPLICABLE CONTRACT DRAWING NEATLY MARKED UP INDICATING THE ACTUAL FINAL INSTALLATION INCLUDING ALL DEVIATIONS OR

REVISIONS NOT SHOWN ON THE ISSUED SET.

5. BUILDING DEPARTMENT FILING, PERMITS, AND CERTIFICATES

A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND SPECIFICATIONS WITH THE TOWN OF LAKEHURST AND MANCHESTER NJ DEPARTMENT OF BUILDINGS AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVALS AND PERMITS.

B. THIS CONTRACTOR SHALL SUBMIT THE REQUIRED FORMS WITH THE FIRE MARSHALL AND OBTAIN ALL FINAL APPROVALS. IN ADDITION THIS CONTRACTOR IS TO SUBMIT TO THE FIRE DEPARTMENT FOR THEIR APPROVAL A SHOP DRAWING INDICATING ALL OF THE SYSTEMS COMPONENTS. THIS DRAWING SHALL INCLUDE ALL OF THE NECESSARY SYMBOLS, NOTES AND WIRING DIAGRAMS AS REQUIRED FOR APPROVAL. THIS DRAWING IS TO BE SIGNED AND SEALED BY THE CONTRACTOR'S LICENSED ENGINEER AS REQUIRED FOR THE FINAL BUILDING AND FINAL FIRE DEPARTMENT APPROVALS.

6. MATERIALS, DELIVERY, STORAGE AND HANDLING

A. DELIVER MATERIALS IN MANUFACTURER'S ORIGINAL UNOPENED PROTECTIVE PACKAGING.

B. STORE MATERIALS IN ORIGINAL PACKAGING IN A MANNER TO PREVENT SOILING, PHYSICAL DAMAGE, WETTING OR CORROSION PRIOR TO INSTALLATION.

C. HANDLE IN A MANNER TO PREVENT DAMAGE TO FINISHED SURFACES.

D. WHERE POSSIBLE, MAINTAIN PROTECTIVE COVERINGS UNTIL INSTALLATION IS COMPLETE AND REMOVE SUCH COVERS AS PART OF FINAL CLEAN-UP.

E. TOUCH-UP ANY DAMAGE TO FINISHES TO MATCH ADJACENT SURFACES TO SATISFACTION OF ENGINEER.

7. UNIT PRICES

A. GENERAL

a. CONTRACTOR SHALL PROVIDE UNIT PRICES FOR ALL EQUIPMENT, MATERIALS, AND ACCESSORIES LISTED BELOW.

b. AMOUNTS INDICATED SHALL BE FOR FULLY INSTALLED EQUIPMENT, MATERIALS, AND ACCESSORIES, COMPLETE WITH ALL ASSOCIATED COMPONENTS INCLUDING, BUT NOT LIMITED TO, LABOR, CONNECTIONS, FITTINGS, HANGERS, ESCUTCHEONS, AND FIRE STOPPING. AMOUNT INDICATED SHALL BE BINDING FOR THE DURATION OF THE CONTRACT.

c. UNIT PRICES SHALL INCLUDE ALL RELATED GENERAL CONDITIONS, OVERHEAD, PROFIT, INSURANCES, LABOR, ENGINEERING MATERIALS, SUPERVISIONS, AND FRINGS REQUIRED.

d. UNIT PRICES TO BE TAKEN EQUALLY FOR ALL ADDS AND DEDUCTS TO THE CONTRACT DOCUMENTS.

e. UNIT PRICES ARE TO BE OF MAXIMUM PRICE, NOT TO EXCEED COST UNDER ANY CIRCUMSTANCES.

B. LIST OF UNIT PRICES

- a. SPRINKLER HEADS (\$/UNIT)
 - FLUSH TYPE CONCEALED PENDANT SPRINKLER HEADS
 - UPRIGHT SPRINKLER HEADS
 - SEMI-RECESSED SIDEWALL SPRINKLER HEADS
 - CONCEALED SIDE WALL SPRINKLER HEADS
- b. SPRINKLER/STANDPIPE PIPING – BLACK STEEL SCHEDULE 40 (\$/LIN. FT.)
 - SIZES: 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"
- c. VALVES (\$/UNIT)
 - 2", 2 1/2", 3", 4", 5", 6" GATE VALVE
 - 2", 2 1/2", 3", 4", 5", 6" GATE VALVE W/ TAMPER SWITCH
 - 1 1/2", 2", 2 1/2", 3", 4" BALL VALVE
 - 3", 4", 5", 6" CHECK VALVE
 - 3", 4", 5", 6" CHECK VALVE W/ AUTOMATIC BALL DRIP
 - 2 1/2" FIRE HOSE VALVE
 - 2", 2 1/2", 3", 4", 5", 6" PRESSURE REDUCING VALVE

PART 2 – MATERIALS

1. GENERAL

A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPE, FITTINGS, VALVES, DRAINAGE SYSTEM AND VALVES, SPRINKLER HEADS, HANGERS AND SUPPORTS, ALSO MISCELLANEOUS WORK ITEMS, SUCH AS, SIGNS AS REQUIRED, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS, AND MATERIAL ITEMS NECESSARY FOR COMPLETE, SATISFACTORY OPERATING AND APPROVED TYPE SYSTEM.

B. ALL PIPE FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE STATE OF NEW JERSEY BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES, AND INSTALLATION EXCEPT THAT NO FACE OR FLUSH BUSHING SHALL BE USED. REDUCING FITTINGS SHALL BE PROVIDED IN LIEU OF BUSHINGS.

2. SPRINKLER PIPING

A. ALL SPRINKLER PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE. ALL FITTINGS AND FLANGES SHALL BE AMERICAN STANDARD BLACK CAST IRON SPRINKLER FITTINGS, FLANGED OR SCREWED AS REQUIRED, DESIGNED AND MANUFACTURED FOR A WATER WORKING PRESSURE OF 175 POUNDS.

B. MANUFACTURER'S NAME AND NUMBERS ARE USED TO IDENTIFY THE TYPE AND QUALITY OF PRODUCTS REQUIRED, HOWEVER, PRODUCTS OF OTHER MANUFACTURERS WHICH ARE EQUAL MAY BE SUBMITTED FOR APPROVAL.

C. PIPE FITTING AND FLANGE SCHEDULE

SYSTEM – WET SPRINKLER
PIPE – BLACK STEEL ASTM A795/A53 SCHEDULE 40

FITTING AND FLANGES

- A) BLACK CAST IRON ANSI B16.4 OR MALLEABLE CAST IRON AWWA C110, 300 LBS CLASS, 500 PSI W.W.P. THREADED
- B) COMPANION FLANGES CAST IRON ANSI B16.1, 300 LBS CLASS
- C) DUCTILE IRON ASTM A536, GROOVED MECHANICAL TYPE COUPLING AND GASKETS, 300 LBS CLASS REDUCING VALVE SPECIFIED HERE-IN-BEFORE. PRESSURE RELIEF VALVE SHALL BE ZURN MANUFACTURING CORP., #P1000A OR APPROVED OTHER.

1) SCHEDULE 40 PIPE AND FITTING SHALL BE SCREWED, STANDARD WEIGHT, CAST IRON, UL AND FM APPROVED. MECHANICAL GROOVE COUPLINGS, VICTAULIC STYLE 75, OR AS APPROVED, MAY BE USED IN LIEU OF SCREWED FITTINGS. WHEN USED WITH SCHEDULE 10 PIPE, COUPLINGS SHALL BE ROLLED GROOVE. EITHER ROLL OR CUT GROOVE MAY BE USED WITH SCHEDULE 40 PIPE.

2) FOR PIPING 2 INCHES AND LARGER, VICTAULIC STYLE 920 MECHANICAL-T WITH LOCATING COLLAR ENGAGING INTO THE PIPE MAY BE USED FOR LESS THAN FULL SIZE BRANCH CONNECTIONS.

3) FITTINGS SIMILAR TO VICTAULIC STYLE 921 AND HOOKER FITTINGS WILL NOT BE APPROVED.

3. SPRINKLER HEADS

A. SEE SPRINKLER SCHEDULE ON DRAWINGS.

A. FLUSH SPRINKLER HEADS – UL LISTED, ADJUSTABLE TYPE. HEADS SHALL BE 1/2" STANDARD ORIFICE WITH 1/2" NPT THREAD, 165 DEG. TEMPERATURE RATING.

B. PENDENT SPRINKLER HEADS WITH PROTECTIVE CAGE – UL LISTED, ADJUSTABLE TYPE. HEADS SHALL BE 1/2" STANDARD ORIFICE WITH 1/2" NPT THREAD, 165 DEG. TEMPERATURE RATING, AND BE CHROME PLATED MODEL C1 SPRINKLER GUARD. MODEL B ESCUTCHEONS.

C. UPRIGHT SPRINKLER HEADS – FM APPROVED AND UL LISTED, ADJUSTABLE TYPE. HEADS SHALL BE 1/2" STANDARD ORIFICE WITH 1/2" NPT THREAD, 165 DEG. TEMPERATURE RATING, AND BE CHROME PLATED MODEL C1 SPRINKLER GUARD. MODEL B ESCUTCHEONS.

D. SPRINKLER HEADS WITHIN THE MECHANICAL, ELECTRICAL, BOILER, TELEPHONE AND ELEVATOR MACHINE ROOMS, UNDER SKYLIGHTS AND OTHER AREAS AS SPECIFIED BY NFPA 13, WHERE INDICATED SHALL BE 212' RATED HEADS.

4. TAMPER SWITCHES

A. WHERE INDICATED ON THE DRAWINGS, FURNISH AND INSTALL VALVE TAMPER SWITCHES FOR SUPERVISION OF O.S. & Y. SHUT OFF VALVES. TAMPER SWITCHES SHALL BE ADT, ITT GRINNELL CORP., AUTO-CALL OR APPROVED OTHER.

5. WATER FLOW DETECTOR

A. WHERE INDICATED ON THE DRAWINGS FURNISH AND INSTALL WATER FLOW ALARMS. WATER FLOW ALARMS SHALL BE PADDLE TYPE NON-CODED, RATED AT 120 VOLTS AD, 10 AMPS NORMALLY

CLOSED SWITCH, "SYSTEM SENSOR" WFD SERIES OR APPROVED OTHER.

7. DROP NIPPLE

F. PROVIDE 'MERIT' ADJUSTABLE DROP NIPPLES FOR SPRINKLERS.

B. INSERTS, HANGERS, ETC.

A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY NEW JERSEY BUILDING CODE, ALL AUTHORITIES HAVING JURISDICTION AND FACTORY MUTUAL.

B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE,

C. FLAT IRON TYPE OR CLEVIS TYPE, UL LISTED.

D. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON-SYSTEM COMPONENTS.

E. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER-FILLED PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING.

F. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.

G. WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.

H. MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1-1/4 IN. SIZES NOR 15 FT. FOR SIZES 1-1/2 IN. AND LARGER.

I. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAY BE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS. IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4 IN. OR LESS IN DIAMETER.

J. IF THE BUILDING IS LOCATED IN SEISMIC ZONE 2 AND HAS AN OCCUPANCY IMPORTANCE FACTOR OF 1.0, PIPING SHALL BE RESTRICTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW JERSEY BUILDING CODE.

K. FURNISH, FOR INSTALLATION BY SPRINKLER CONTRACTOR'S ELECTRICIAN, THE FOLLOWING:

a. TO BE SEMI-FLUSH MOUNTED ABOVE THE CONTROL PANEL IN THE PROTECTED ROOM AND LABELED APPROPRIATELY: 10" ALARM BELL – WHEELOCK NO. MB-010-24R (MANUAL PULL STATION DETECTOR, WATERFLOW), 6" SUPERVISORY ALARM BELL – WHEELOCK NO. MB-66-24R (TAMPER SWITCH, LOW/HIGH AIR PRESSURE) TROUBLE HORN – WHEELOCK EH-EL1-R.

b. TO BE SEMI-FLUSH MOUNTED ABOVE THE DOOR OUTSIDE THE PROTECTED AREA AND LABELED APPROPRIATELY: COMBINATION ALARM BELL/STROBE – WHEELOCK NO. MBS-G10-24-W-HF-R (MANUAL PULL STATION, DETECTOR, WATERFLOW), 6" COMBINATION SUPERVISORY ALARM BELL/STROBE – WHEELOCK NO. MBS-06-24-W-HF-R (TAMPER SWITCH, LOW/HIGH AIR PRESSURE)

L. WIRING BETWEEN DEVICES REQUIRED UNDER THIS SECTION SHALL BE INSTALLED BY THE SPRINKLER CONTRACTOR'S ELECTRICIAN.

M. POWER SUPPLY SHALL BE 120 VAC, 1.2 A MAX., 50/60 HZ, SUPPLIED BY ELECTRICAL SECTION.

N. APPARATUS SHALL BEAR LABELS OF THE UNDERWRITER'S LABORATORIES AND, BEFORE REQUESTING FINAL PAYMENT, FURNISH TO THE ARCHITECT A CERTIFICATE OF APPROVAL FOR THE ENTIRE SPRINKLER ALARM INSTALLATION FROM THE AUTHORITIES HAVING JURISDICTION.

21. FIRE DEPARTMENT CONNECTION

O. SIAMESE BODY SHALL BE CROKER, OR APPROVED OTHER, MODEL No. 6030 BOTTOM OUTLET, CAST BRASS BODY WITH TWO INLETS. INLET SIZES AND THREADS TO CONFORM TO LOCAL FIRE DEPARTMENT STANDARD.

P. SIAMESE WALL PLATE SHALL BE POLISHED CHROME PLATED CAST BRASS WITH CAST BRASS DOUBLE FEMALE SNOOTS WITH RIGID END 3" NPT x 2-1/2" PIN LUG HOSE THREAD, PIN LUG CAPS AND CHAINS.

Q. WALL PLATE SHALL BE LETTERED ACCORDINGLY.

22. AUTOMATIC BALL DRIP

A. WHERE INDICATED ON THE DRAWINGS, FOR SIAMESE CONNECTIONS, PROVIDE A 3/4" AUTOMATIC BALL DRIP, INSTALLED BETWEEN THE FIRE DEPARTMENT SIAMESE CONNECTION AND THE CHECK VALVE TO PREVENT LINE FROM FREEZING, DRAIN TO RECEPTACLE.

B. AUTOMATIC BALL DRIP SHALL BE CROKER No. 6781, OR APPROVED OTHER.

23. ALARM CHECK VALVE

A. FOR THE WET PIPE SPRINKLER SYSTEM, PROVIDE RELIABLE AUTOMATIC SPRINKLER CO., OR APPROVED OTHER, MODEL "E" ALARM CHECK VALVE COMPLETE WITH VERTICAL ALARM TRIM PACKAGE AND A MODEL "E-1" RETARD CHAMBER.

24. DETECTOR CHECK VALVE

A. WHERE INDICATED ON THE DRAWINGS, PROVIDE AMES COMPANY, INC., OR APPROVED OTHER, DETECTOR CHECKS VALVE WITH 1" BY-PASS METER. METER SHALL BE APPROVED BY THE LOCAL WATER AUTHORITY.

B. DETECTOR CHECK VALVE SHALL BE PRECEDED AND FOLLOWED BY O.S. & Y. GATE VALVES.

25. PRESSURE RELIEF VALVE

A. WHERE INDICATED ON THE DRAWINGS, PROVIDE NEW JERSEY AND F.M. APPROVED WATER PRESSURE RELIEF VALVE SET TO RELIEVE AT 10 P.S.I. ABOVE THE SETTING OF THE PRESSURE REDUCING VALVE SPECIFIED HERE-IN-BEFORE. PRESSURE RELIEF VALVE SHALL BE ZURN MANUFACTURING CORP., #P1000A OR APPROVED OTHER.

26. PRESSURE GAUGE

A. ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-200 P.S.I. RANGE, 20 P.S.I. INTERVALS.

27. ESCUTCHEONS

A. PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW AND FIRE RESISTIVE METHODS.

28. LADDERS

A. STEEL LADDERS SHALL BE PROVIDED FOR ACCESS TO SPRINKLER AND FIRE STANDPIPE VALVES LOCATED OVER 7'-0" FROM THE FINISH FLOOR AS REQUIRED BY NFPA #13 AND #14. LADDERS SHALL BE 12" WIDE AND BE SECURELY FASTENED.

PART 3 – EXECUTION

1. INSPECTION AND TESTING

A. ALL MATERIALS AND EQUIPMENT DELIVERED TO THE SITE SHALL BE INSPECTED. MATERIAL AND EQUIPMENT THAT IS DEFECTIVE OR FAILS TO CONFORM TO THE REQUIREMENTS OF THESE SPECIFICATIONS SHALL BE REMOVED IMMEDIATELY FROM THE CONSTRUCTION SITE AND REPLACED WITH NEW MATERIAL AND EQUIPMENT SATISFACTORY TO THE ENGINEER.

B. ARRANGE FOR ALL INSPECTIONS WITH AUTHORITIES HAVING JURISDICTION AND REQUIRED FEES.

C. MATERIAL AND EQUIPMENT DESIGNATED FOR "CONTROLLED INSPECTION" UNDER THE PROVISIONS OF THE NEW JERSEY BUILDING CODE SHALL BE INSPECTED, TESTED AND WITNESSED BY OR UNDER THE SUPERVISION OF A LICENSED ENGINEER OR A LICENSED ARCHITECT, EMPLOYED BY THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR FILING PROPERLY EXECUTED BUILDING DEPARTMENT FORM TR-1.

D. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW JERSEY BUILDING CODE AND ALL AUTHORITIES HAVING JURISDICTION.

E. BEFORE SPRINKLER SYSTEM IS CONCEALED, THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR INSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR

SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT.

F. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF TWO HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER NFPA.

G. THE STANDPIPE SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF ONE HOUR AT A PRESSURE OF AT LEAST 300 PSIG.

2. PREACTION INSPECTION AND TESTING

A. THE PRE-ACTION SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW JERSEY BUILDING CODE.

AIR PRESSURE TEST:

a. SUBJECT THE PREACTION SYSTEM TO AN AIR PRESSURE LEAKAGE TEST AT 40 PSIG.
b. ALLOW THE SYSTEM TO STAND FOR A PERIOD OF 24 HOURS, WITHOUT APPLYING ANY ADDITIONAL PRESSURE.
c. MONITOR AND RECORD THE TEST PRESSURE AT 4 HOURS INTERVALS FOR THE DURATION OF THE TEST.

d. ANY LEAKAGE THAT RESULTS IN A LOSS OF PRESSURE IN EXCESS OF 1- 1/2 PSIG DURING TEST PERIOD CONSTITUTE SYSTEM DEFECTS WHICH MUST BE FOUND AND REPAIRED USING ONLY NEW MATERIALS. THE AIR PRESSURE TEST SHALL THAN BE REPEATED UNTIL SUCH TIME THAT A TEST RESULTS IN NO LOSS OF SYSTEM PRESSURE.

SYSTEM DRAIN TEST:

a. FULLY OPEN THE AUXILIARY DRAIN VALVE AT DELUGE VALVE INLET.
b. VERIFY THAT NO BACK PRESSURE IN DRAIN PIPING EXISTS WHICH AFFECTS THE PROPER OPERATION OF THE PREACTION SYSTEM.

AIR SUPPLY TEST:

a. DISCHARGE ALL AIR FROM PREACTION SYSTEM.
b. CONFIRM THAT AFTER TOTAL DISCHARGE, NORMAL SYSTEM AIR PRESSURE IS RESTORED BY AIR COMPRESSOR WITHIN 30 MINUTES.

3. CUTTING AND PATCHING

A. WHERE CUTTING AND PATCHING OF CONSTRUCTION PERFORMED UNDER THIS CONTRACT BECOMES NECESSARY BECAUSE OF FAILURE TO PROPERLY COORDINATE THE MECHANICAL INSTALLATION WITH OTHER CONSTRUCTION, ARRANGE FOR PATCHING TO BE PERFORMED BY THE VARIOUS TRADES INVOLVED AND IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS HEREIN SO AS TO MATCH ADJACENT SURFACES.

B. PERFORM ALL PATCHING TO MATCH EXISTING ADJACENT CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER AND USING THE BEST POSSIBLE WORKMANSHIP OF THE VARIOUS TRADES INVOLVED.

4. FLUSHING

A. ALL FIRE PROTECTION PIPING SHALL BE FLUSHED OUT IN ACCORDANCE WITH REQUIREMENT OF THE NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET NO. 13 AND 14, LATEST EDITION.

5. PROTECTION AND CLEANING

A. PROTECT ENTIRE INSTALLATION FROM DAMAGE DURING CONSTRUCTION AND BE RESPONSIBLE FOR ALL DAMAGE UNTIL FINAL ACCEPTANCE OF THE WORK. ALL PIPES SHALL BE PROTECTED WITH SUITABLE COVERINGS AS SOON AS THEY ARE SET. ALL OPEN ENDS OF PIPES SHALL BE CLOSED BY A PLUG FITTING TO PREVENT OBSTRUCTION AND DAMAGE.

B. ALL OPENINGS IN FLOORS SHALL BE COVERED AND PROTECTED DURING THE COURSE OF CONSTRUCTION.

C. BEFORE FINAL CONNECTIONS ARE MADE AND BEFORE OPERATION OF EQUIPMENT AND PIPING, ALL PIPING SHALL BE THOROUGHLY BLOWN OUT, RODDED OUT, OR WASHED OUT AT LEAST TWICE IN A MANNER AS DIRECTED AND/OR APPROVED BY THE ENGINEER, TO REMOVE ALL ACCUMULATION OF DIRT, CHIPS OR OTHER DELETERIOUS MATERIAL. MAKE ALL TEMPORARY CONNECTIONS AND FURNISH ALL APPLIANCES REQUIRED FOR THE PURPOSE OF CLEANING.

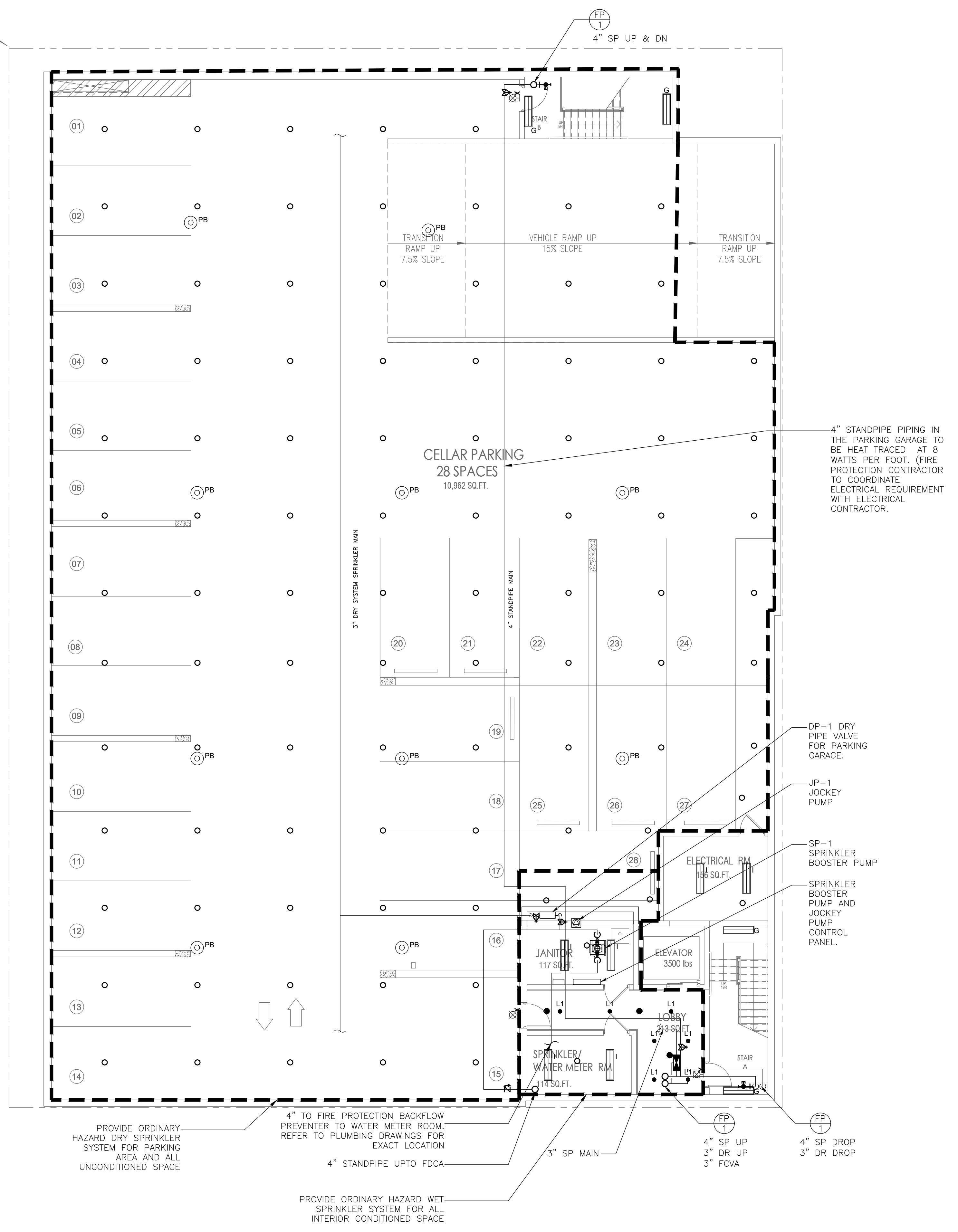
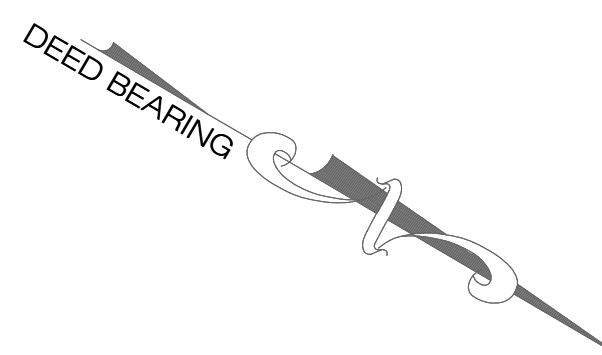
D. UPON COMPLETION OF THE INSTALLATION AND WHEN DIRECTED BY THE ENGINEER REMOVE ALL PROTECTION MATERIALS, ALL SCALE, DIRT, GREASE, STAINS AND THE LIKE, AND LEAVE IN A CLEAN CONDITION FOR PAINTING.

6. GUARANTEE

A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITHIN THE PERIOD OF THE GUARANTEE.



ARCHITECT:
AK ARCHIT



1 SPRINKLER FLOOR PLAN - CELLAR FLOOR
1/8" = 1'-0"



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OWNER / APPLICANT :

MEP ENGINEER:
MAE Engineering, PLLC
81 Serrell Ave
Staten Island, NY 10312
917.855.5050 - 646.643.8104

04-13-26 PERMIT SET
PROJECT ADDRESS:
108-114 NORTH 7TH STREET
PATERSON, NJ
BLOCK: 414 LOTS: 1 & 21

DRAWING NAME:
SPRINKLER CELLAR PLAN

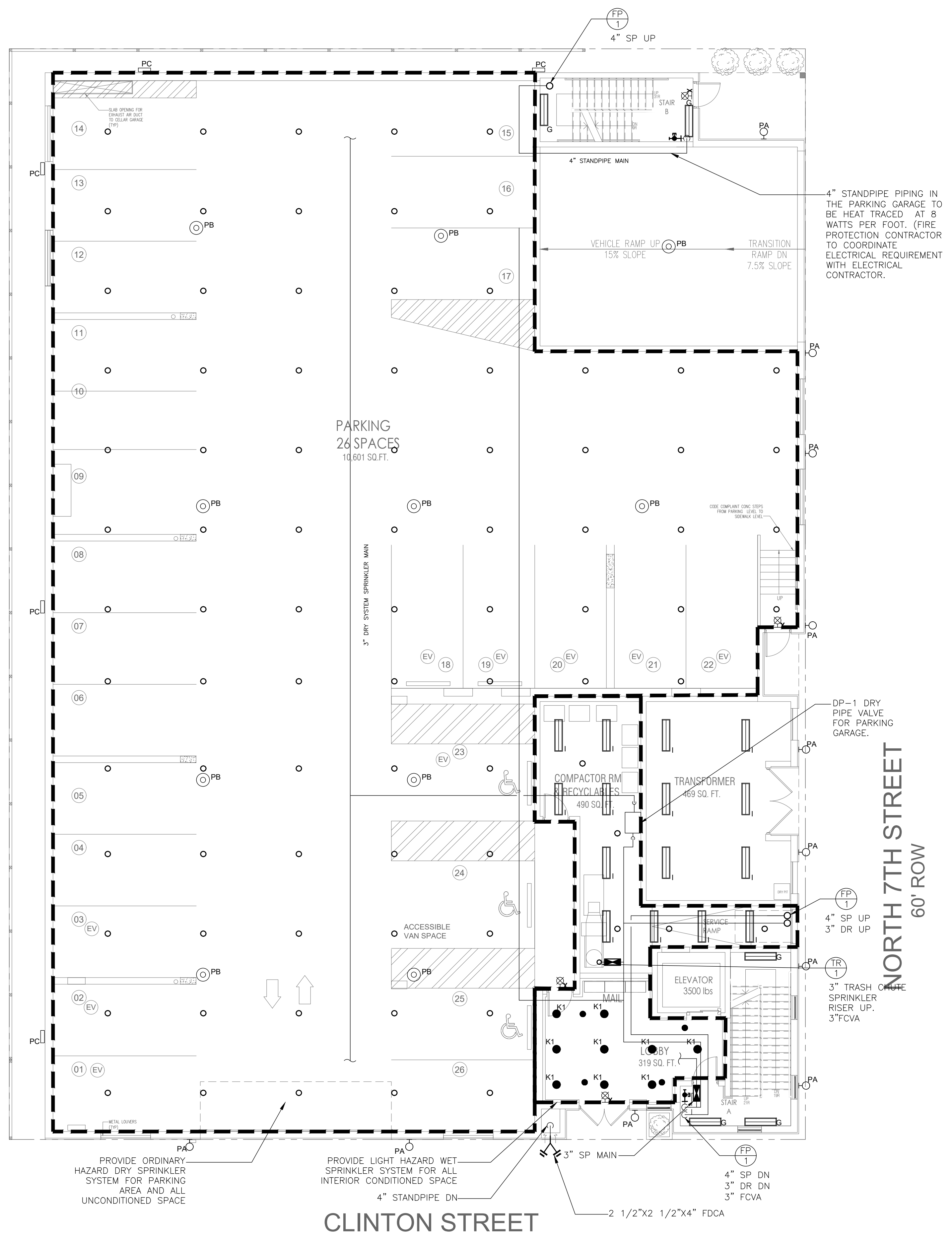
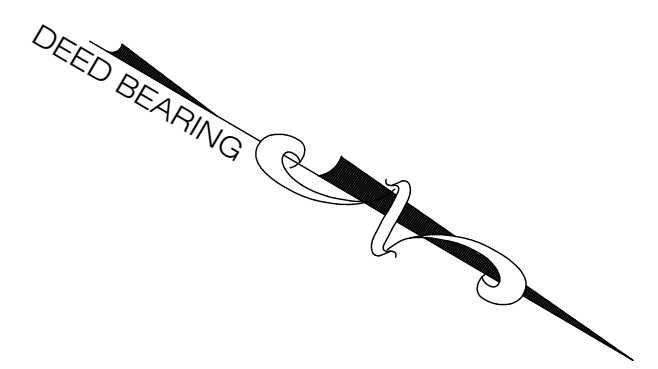
BLDG DEPT REF.# SCALE:
AS NOTED

SIGNATURE & SEAL
ALEXEY WAPILIS
ENGINEER
N.J. LIC. No. GE56570

DATE:
12/10/2021

DRAWING #
SP-100

PROJECT # : 2021.09.02



4" STANDPIPE PIPING IN THE PARKING GARAGE TO BE HEAT TRACED AT 8 WATTS PER FOOT. (FIRE PROTECTION CONTRACTOR TO COORDINATE ELECTRICAL REQUIREMENT WITH ELECTRICAL CONTRACTOR.)

DP-1 DRY PIPE VALVE FOR PARKING GARAGE.

4" SP UP
3" DR UP

3" TRASH SPRINKLER RISER UP.
3" FCVA

4" SP UP
3" DR DN
3" FCVA

2 1/2"x2 1/2"x4" FDCA

4" STANDPIPE DN

PROVIDE LIGHT HAZARD WET SPRINKLER SYSTEM FOR ALL INTERIOR CONDITIONED SPACE

PROVIDE ORDINARY HAZARD DRY SPRINKLER SYSTEM FOR PARKING AREA AND ALL UNCONDITIONED SPACE

1 PLUMBING FLOOR PLAN - 1ST FLOOR
1/8" = 1'-0"

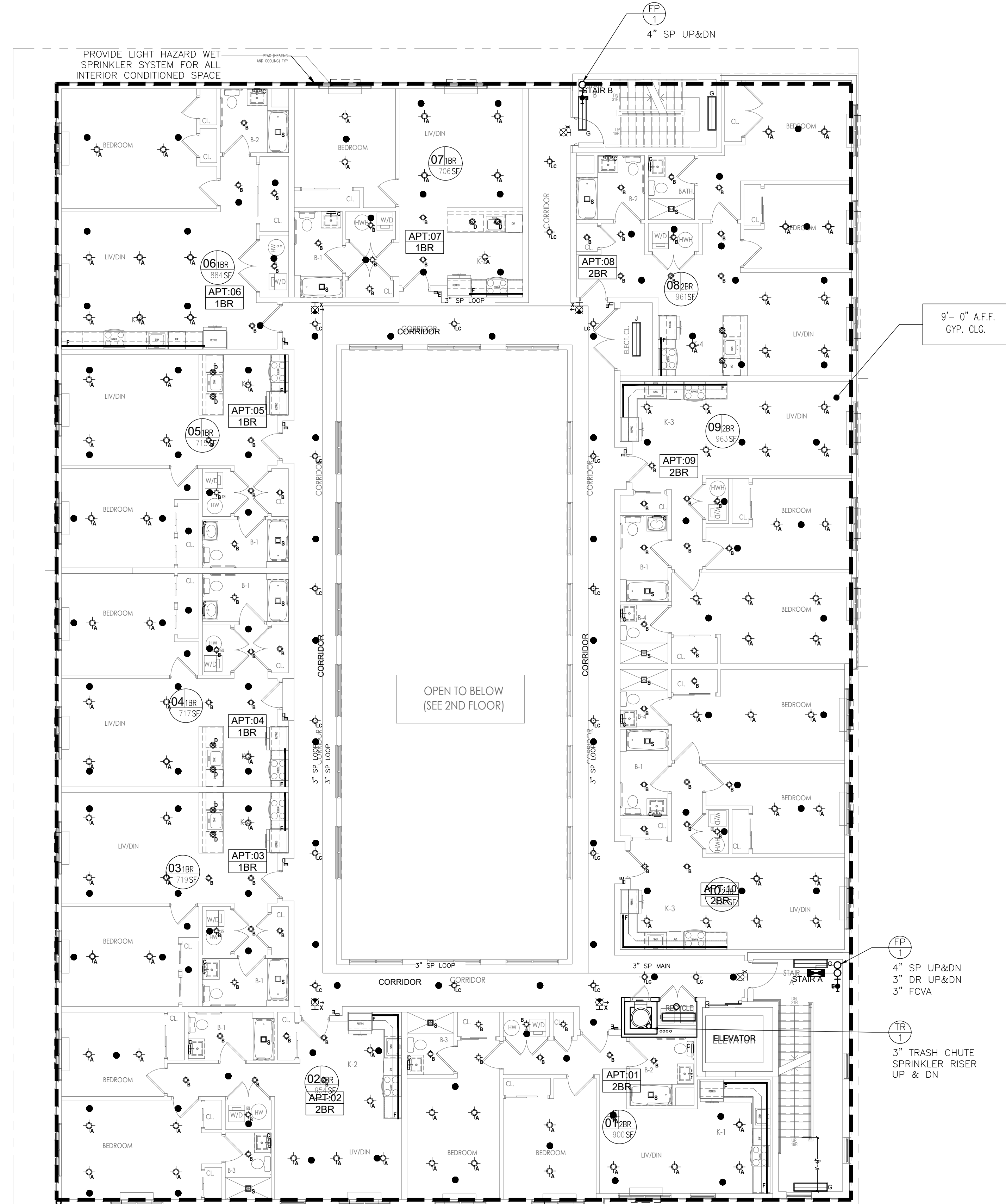
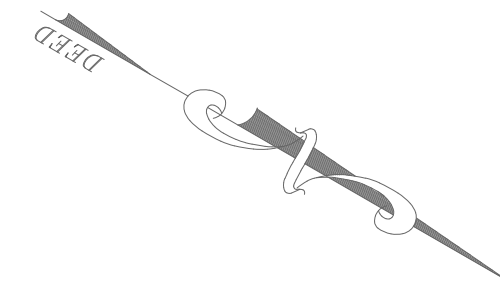


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04-13-26 PERMIT SET	
PROJECT ADDRESS: 108-114 NORTH 7TH STREET PATERSON, NJ BLOCK: 414 LOTS: 1 & 21	
DRAWING NAME: SPRINKLER 1ST FLOOR PLAN	
BLDG DEPT REF. #	SCALE: AS NOTED
SIGNATURE & SEAL ALEXEY MARHUS ENGINEER N.J. LIC. No. GE56570	DATE: 12/10/2021
	DRAWING # SP-101
PROJECT #: 2021.09.02	



1 SPRINKLER FLOOR PLAN - 2ND THRU 4TH TYPICAL FLOOR
1/8" = 1'-0"

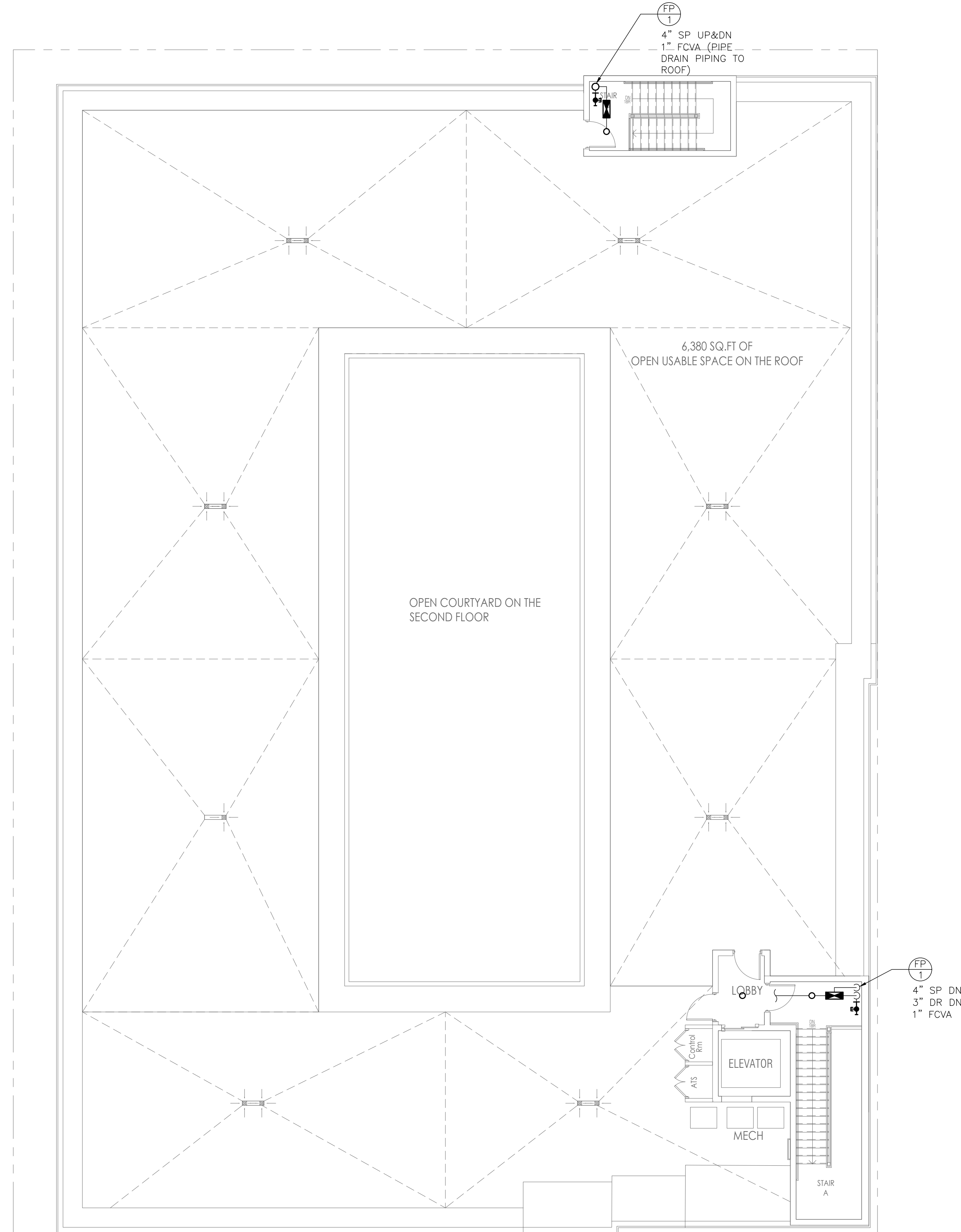
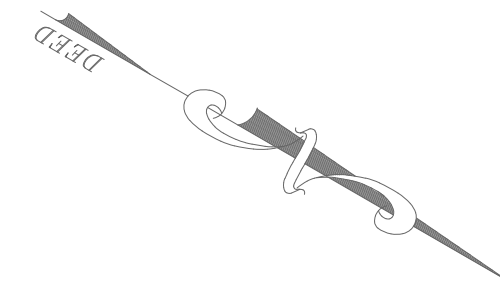


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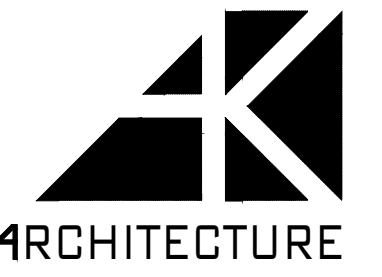
OWNER / APPLICANT :

MEP ENGINEER:
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04-13-26 PERMIT SET	
PROJECT ADDRESS: 108-114 NORTH 7TH STREET PATERSON, NJ BLOCK: 414 LOTS: 1 & 21	
DRAWING NAME: SPRINKLER 2ND-4TH TYPICAL FLOOR PLAN	
BLDG DEPT REF. #	SCALE: AS NOTED
SIGNATURE & SEAL ALEXEY MAHLIS ENGINEER N.J. LIC. No. GE56570	DATE: 12/10/2021
	DRAWING # SP-102
PROJECT #: 2021.09.02	



① SPRINKLER FLOOR PLAN - ROOF
1/8" = 1'-0"



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04-13-26 PERMIT SET

PROJECT ADDRESS:
108-114 NORTH 7TH STREET
PATERSON, NJ
BLOCK: 414 LOTS: 1 & 21

DRAWING NAME:
SPRINKLER
ROOF PLAN

BLDG DEPT REF. # SCALE:
AS NOTED

SIGNATURE & SEAL
ALEXEY MARULIS
ENGINEER
N.J. LIC. No. GE56570 DATE:
12/10/2021

DRAWING #

PROJECT # : 2021.09.02

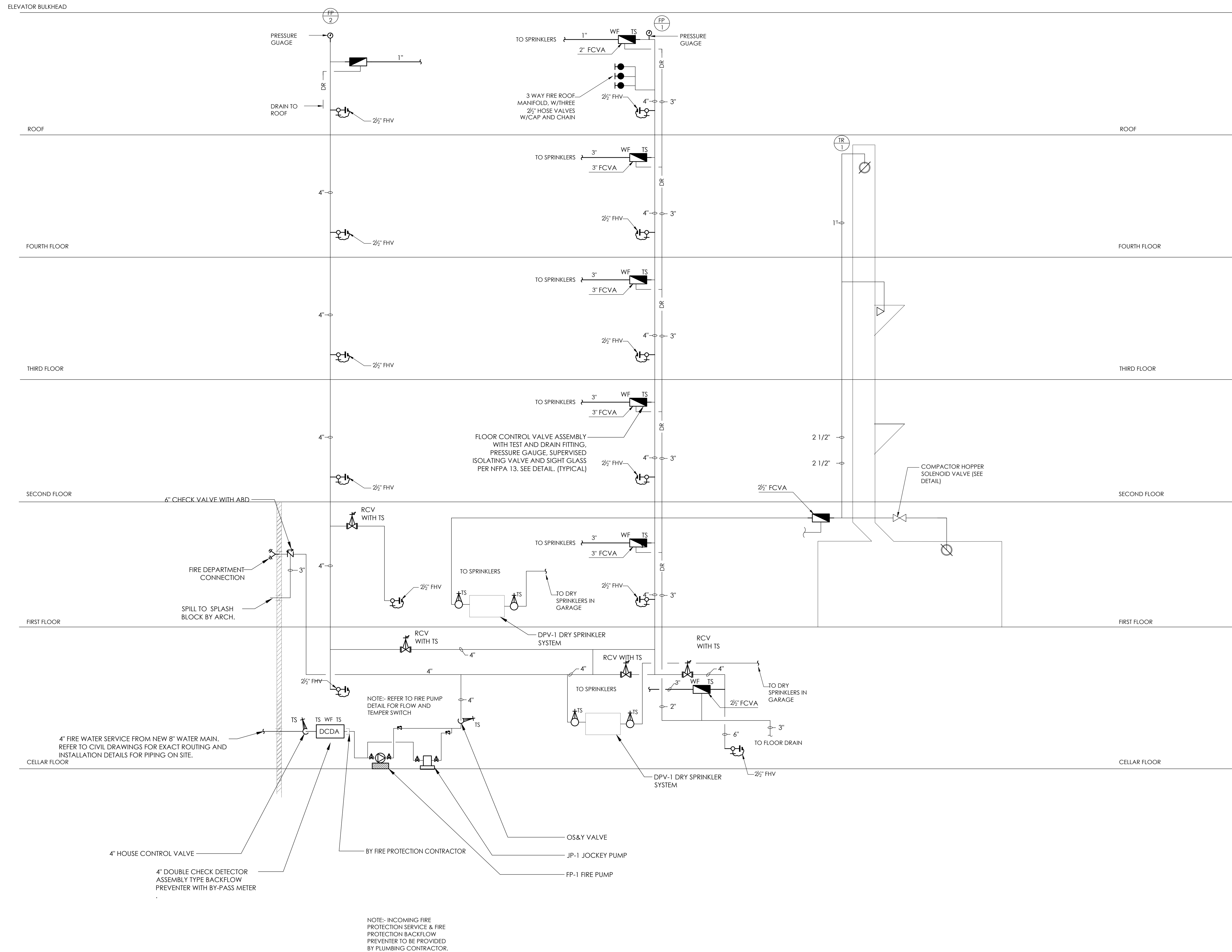
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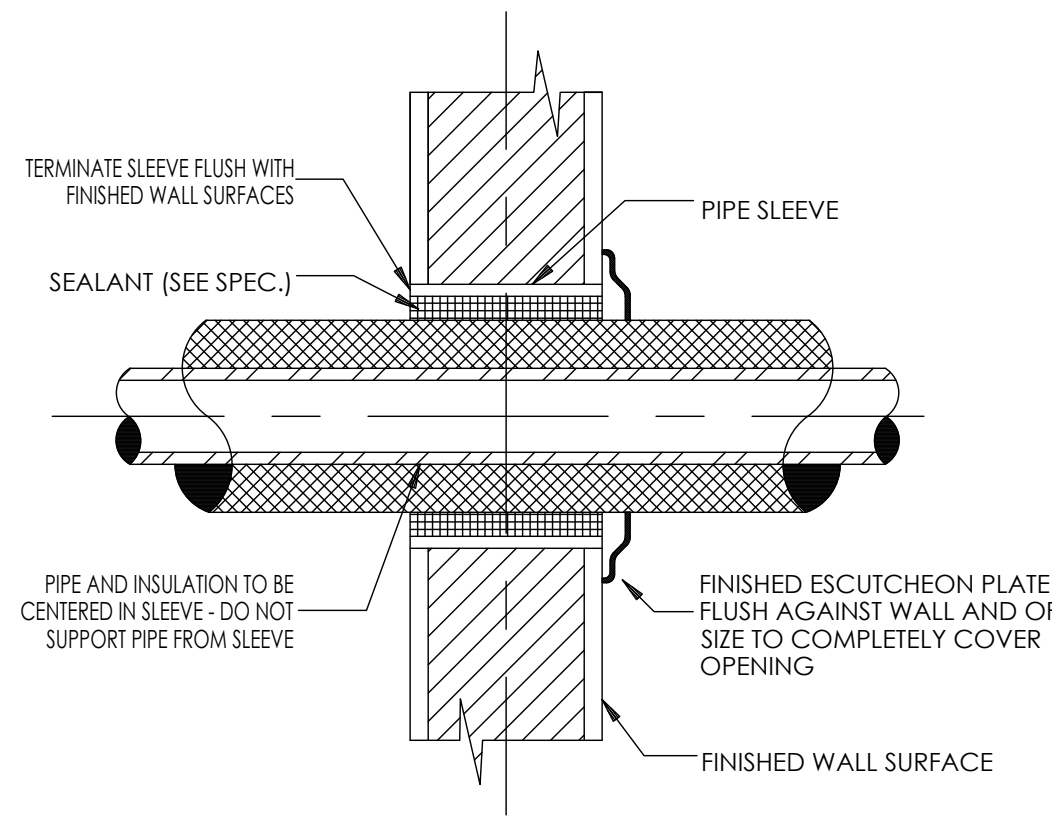
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OWNER / APPLICANT :

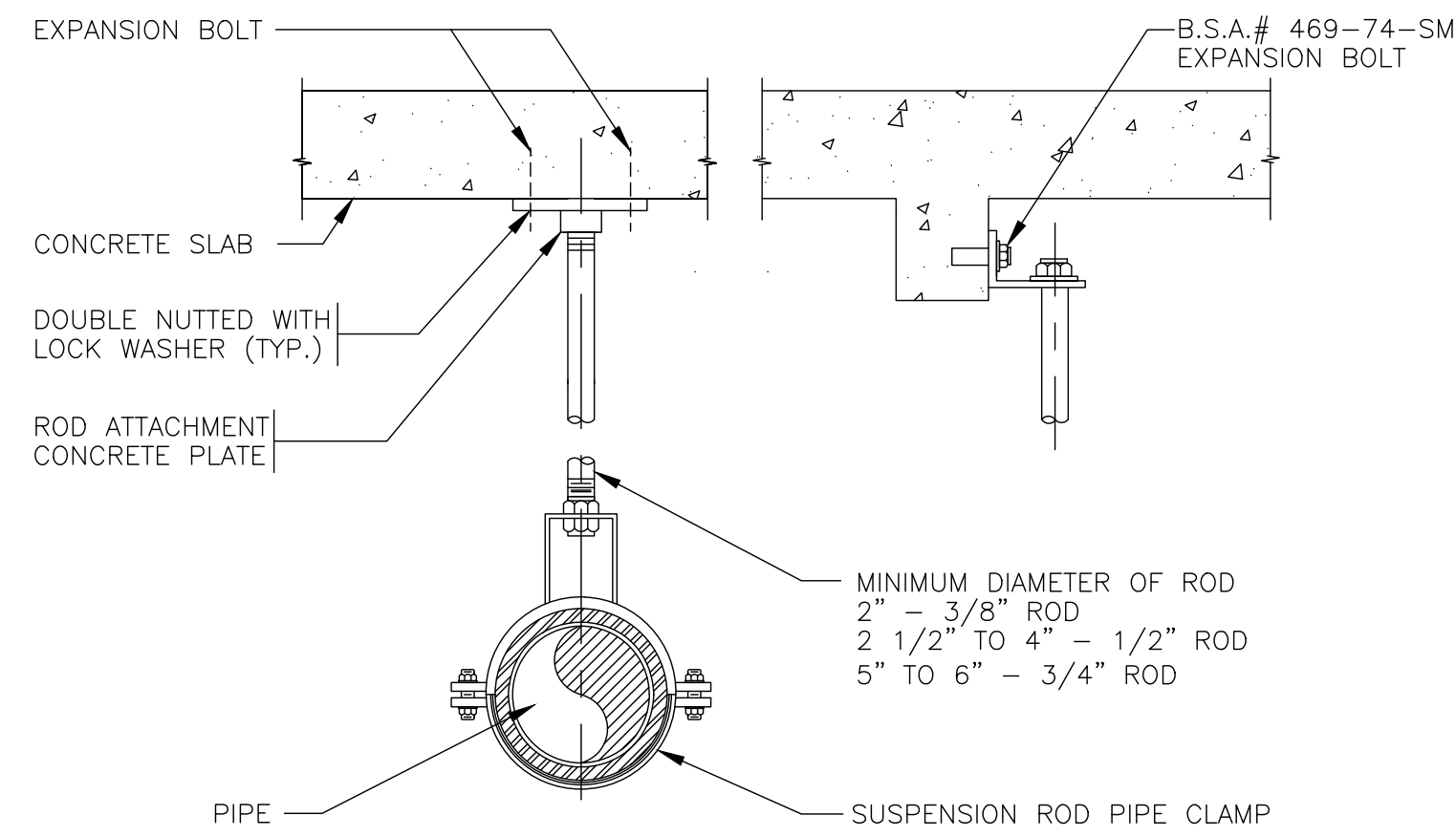
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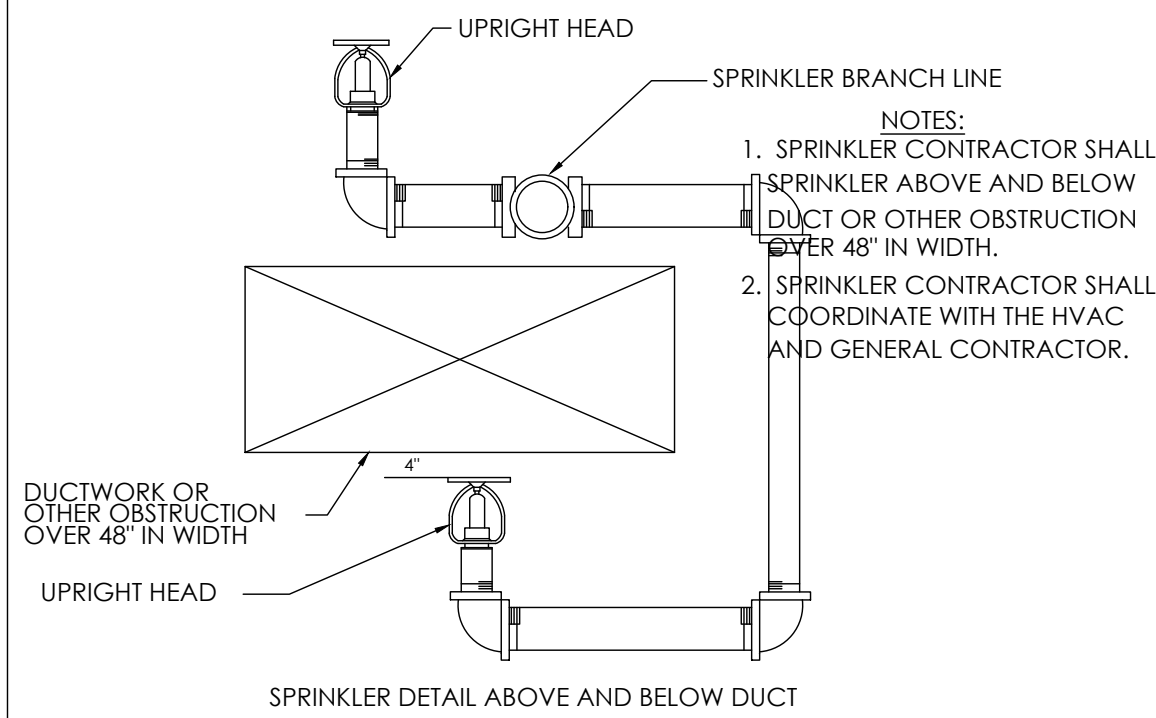
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PROJECT ADDRESS: 108-114 NORTH 7TH STREET PATERSON, NJ BLOCK: 414 LOTS: 1 & 21	
DRAWING NAME: SPRINKLER RISER DIAGRAM	
BLDG DEPT REF. #	SCALE: AS NOTED
SIGNATURE & SEAL ALEXEY WAPLIS ENGINEER N.J. LIC. No. GE56570	DATE: 12/10/2021
	DRAWING # FP-400
PROJECT #: 2021.09.02	



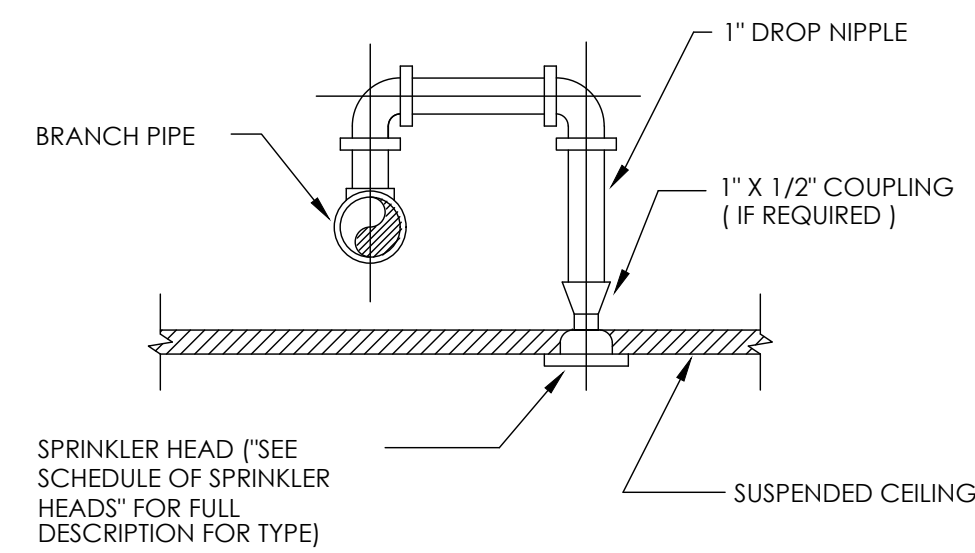
1 PIPE SLEEVE THRU INTERIOR WALL



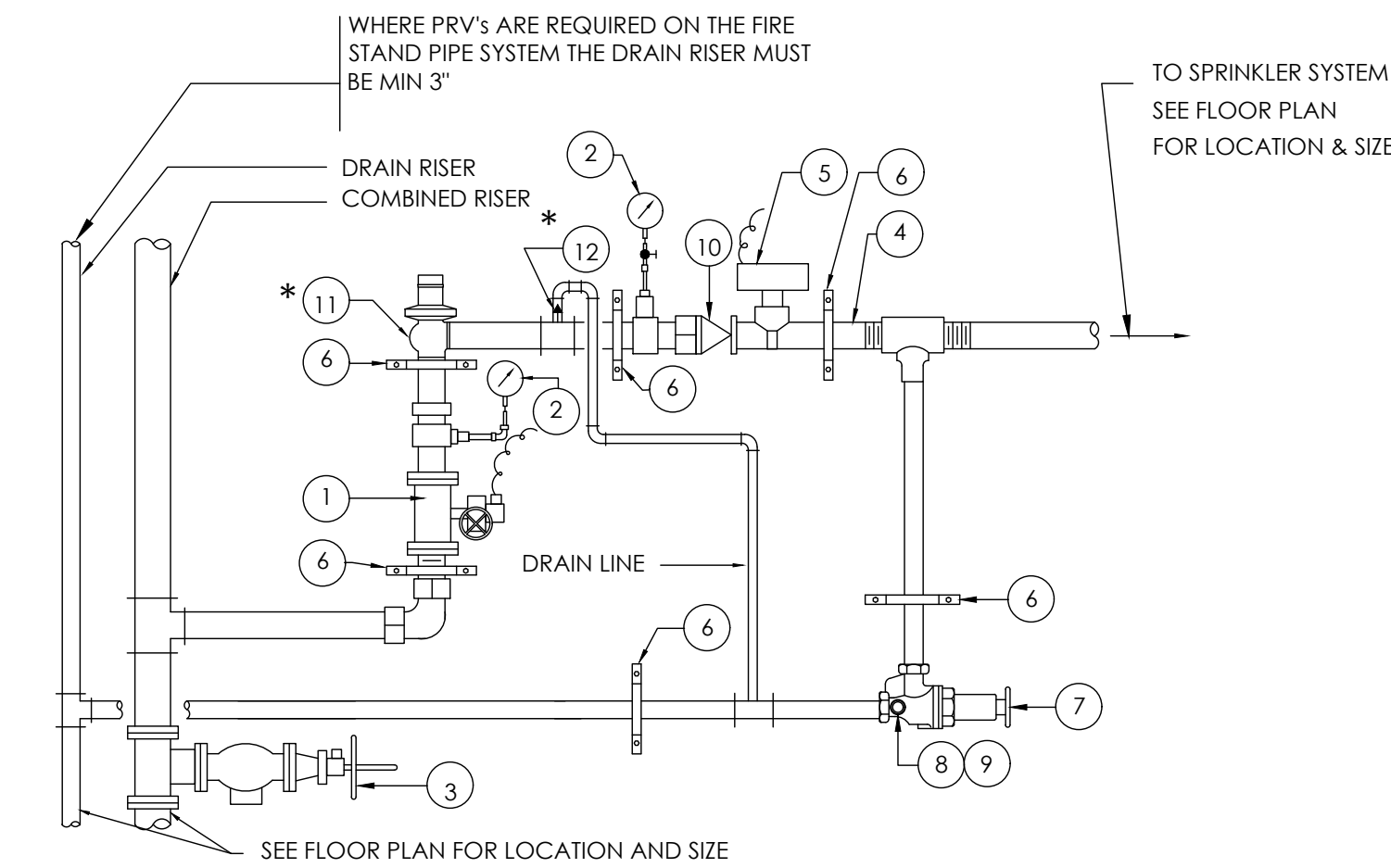
2 HANGER DETAIL



3 SPRINKLER HEAD CONNECTION



4 SPRINKLER HEAD CONNECTION

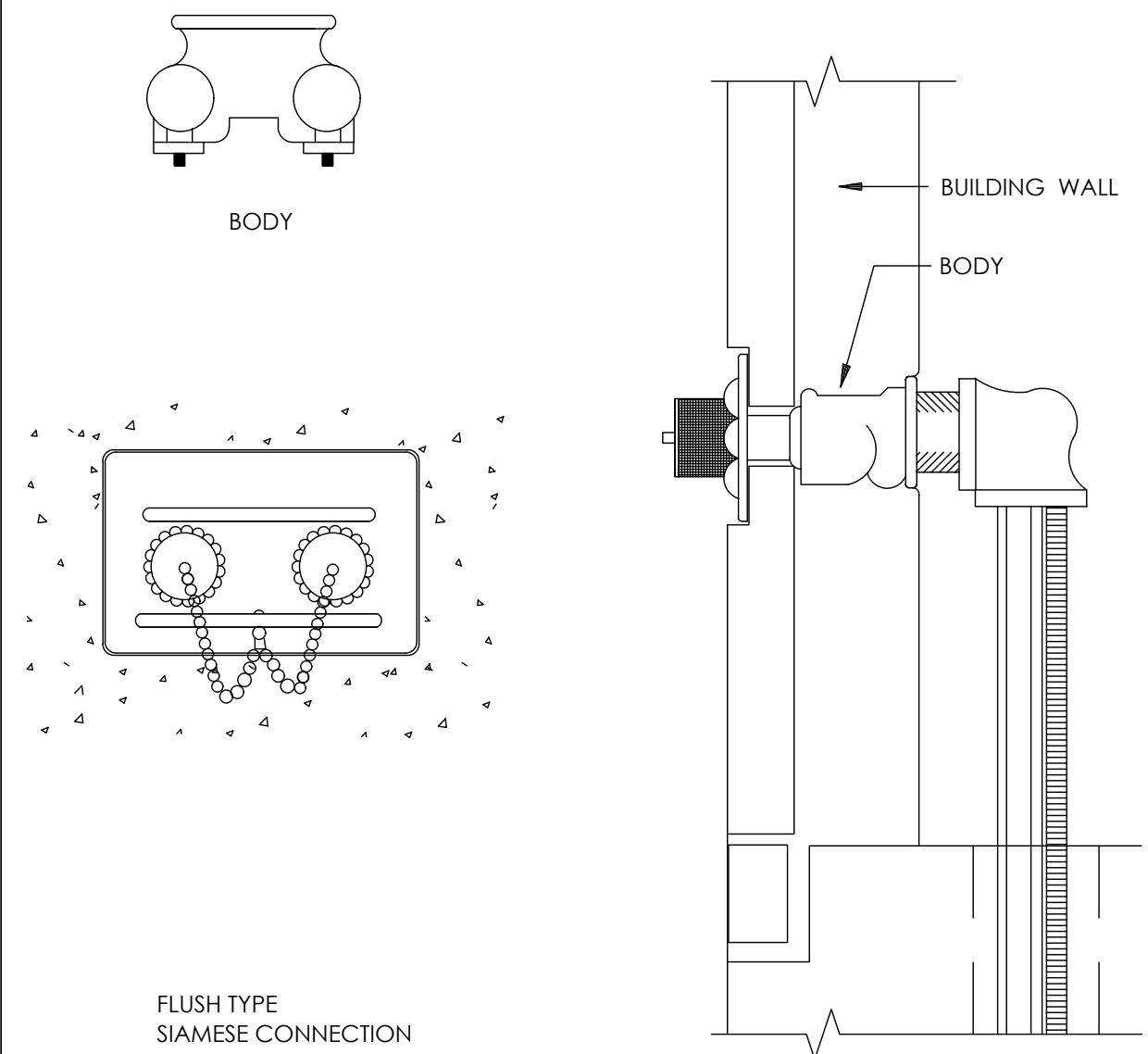


ITEM No.	Name	NOTES	ITEM No.	Name	NOTES
1	BUTTERFLY VALVE WITH TAMPER SWITCH	175, 250, & 350 P.S.I. W.W.P. RATED VALVES, VALVE LOCATION AS PER FIRE PROTECTION RISER DIAGRAM.	6	PIPE CLAMP	
2	PRESSURE GAUGE WITH SHUTOFF COCK		7	GLOBE VALVE	
3	FIRE HOSE VALVE		8	(TESTMASTER) 1/2\"/>	
4	FEED MAIN		9	SIGHT GLASS	
5	WATERFLOW INDICATOR		10	CHECK VALVE	
			11	PRESSURE REGULATING VALVE (MODIFIED LESS WHEEL HANDLE WITH SECURED CAP - U.L. FM APPROVED TYPE)	
			12	PRESSURE RELIEF VALVE (SET FOR 175 PSI MAX.) WITH FULL LINE SIZE DRAIN LINE	

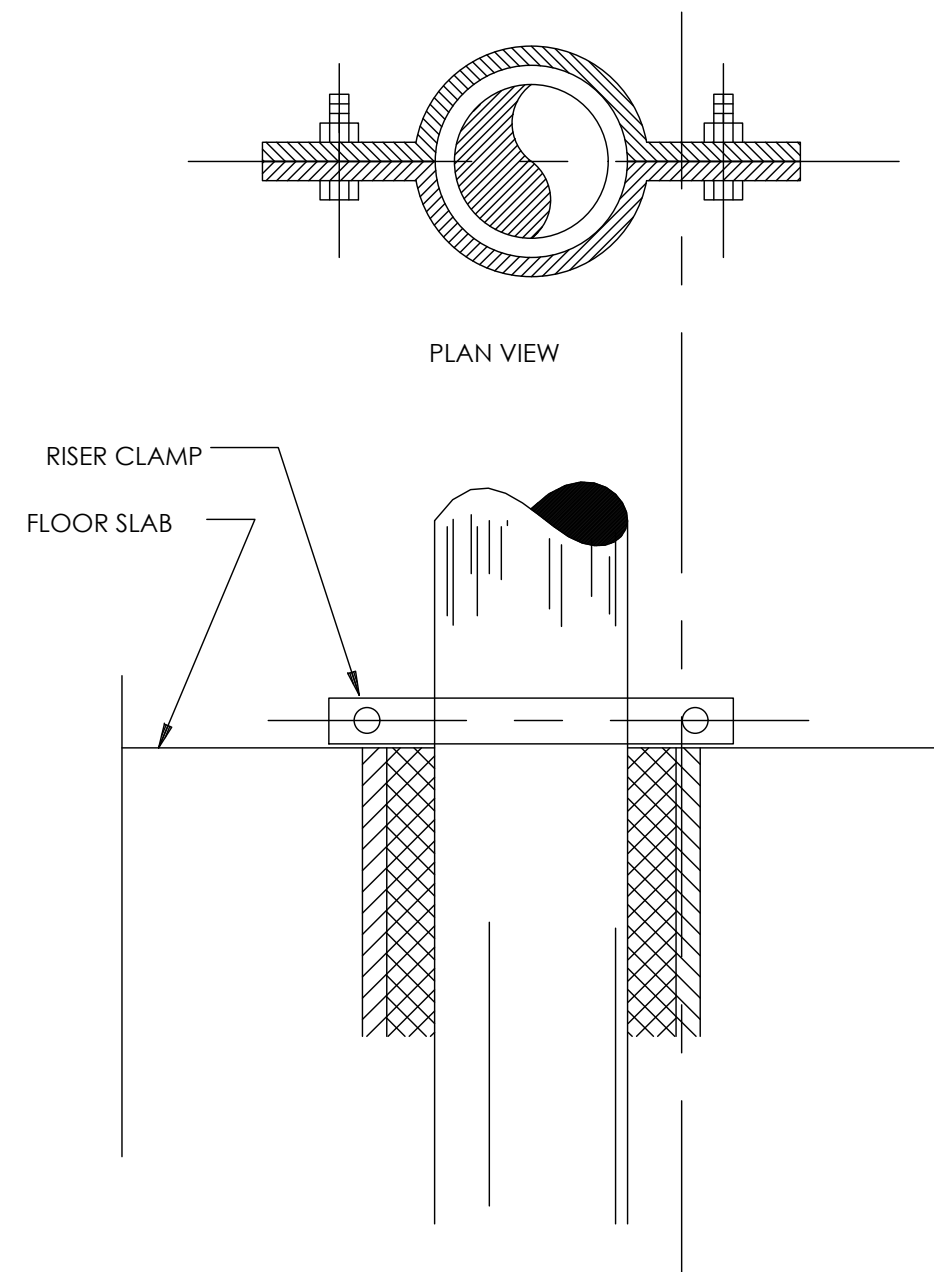
NOTES: * PROVIDE WHEN REQUIRED TO MAINTAIN FIRE RESERVE WATER SUPPLY AND WHEN STATIC PRESSURE EXCEEDS 175 PSI

5 COMBINED RISER WITH SPRINKLER VALVE RIG

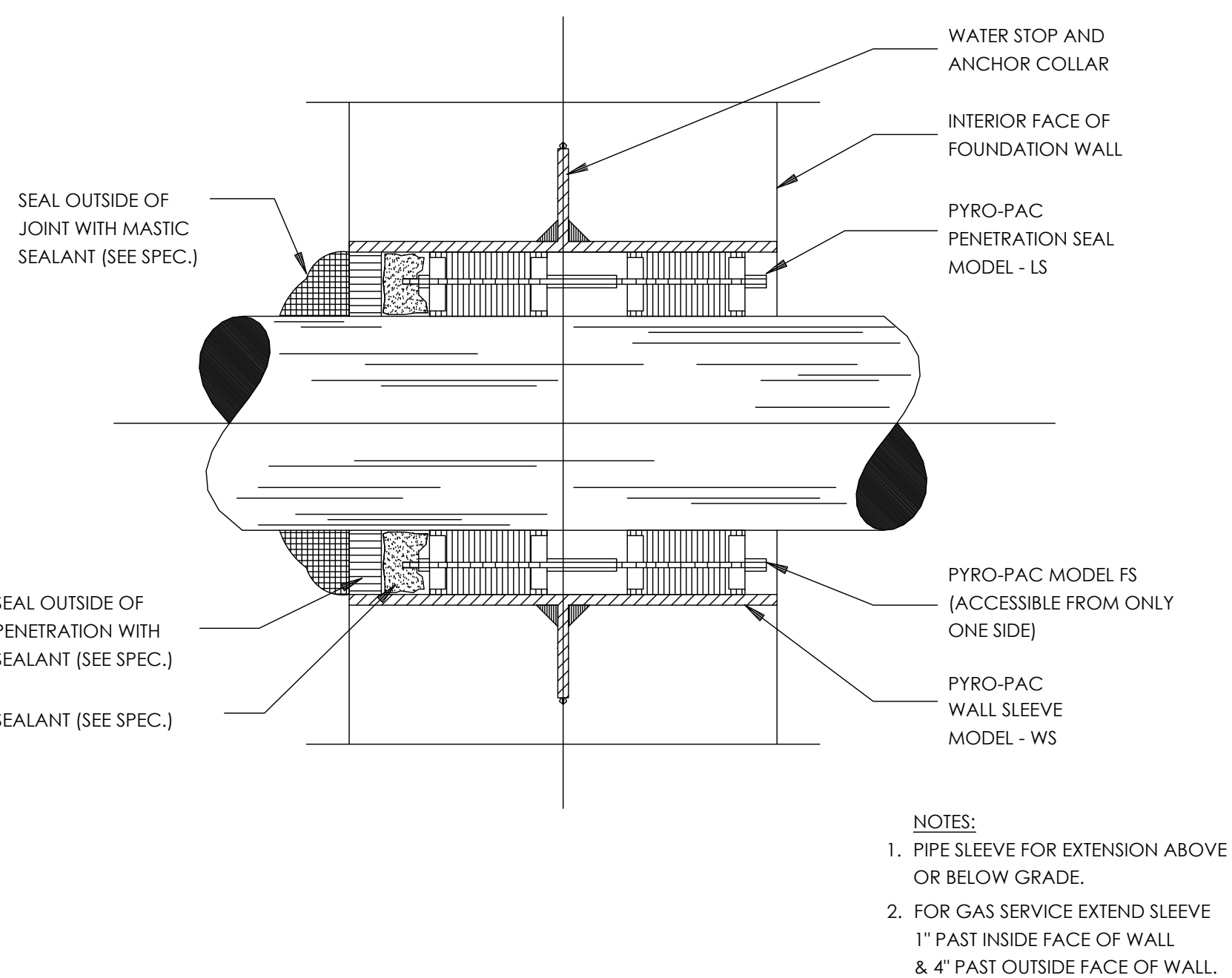
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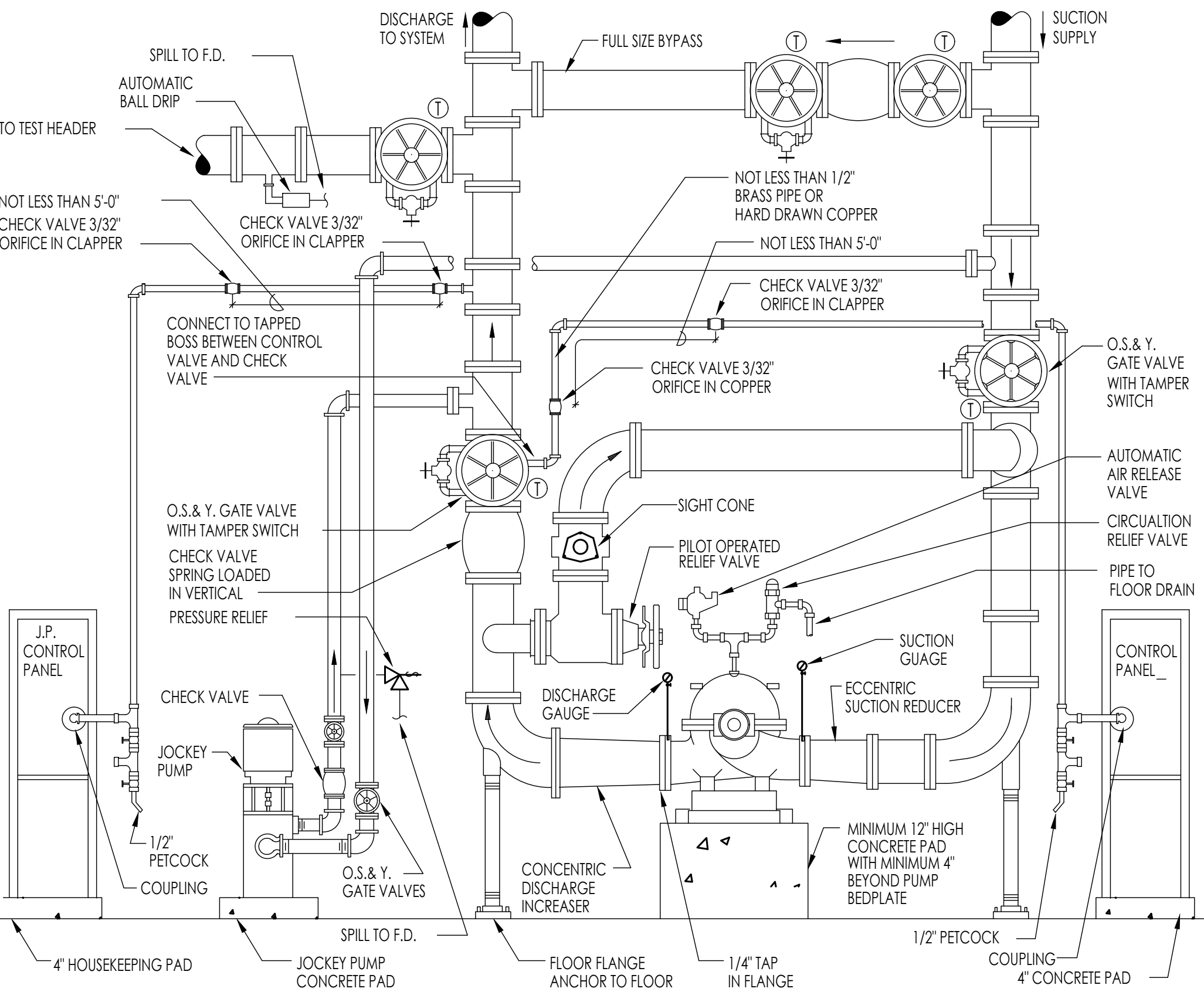
6 FIRE SIAMESE



7 PIPE SLEEVE THRU FLOOR SLAB



8 PIPE SLEEVE THRU EXTERIOR FOUNDATION WALL



9 AUTOMATIC SPRINKLER BOOSTER & JOCKEY PUMP

N.T.S.



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ROCHELLE PARK NJ
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TEL: 201-906-6359
AK@AKARCHUSA.COM

OWNER / APPLICANT :

MEP ENGINEER:
MAE Engineering, PLLC
81 Serrell Ave
Staten Island, NY 10312
917.855.5050 - 646.643.8104

04-13-26 PERMIT SET
PROJECT ADDRESS:
108-114 NORTH 7TH STREET
PATERSON, NJ
BLOCK: 414 LOTS: 1 & 21
DRAWING NAME:
SPRINKLER
DETAIL 1 OF 2

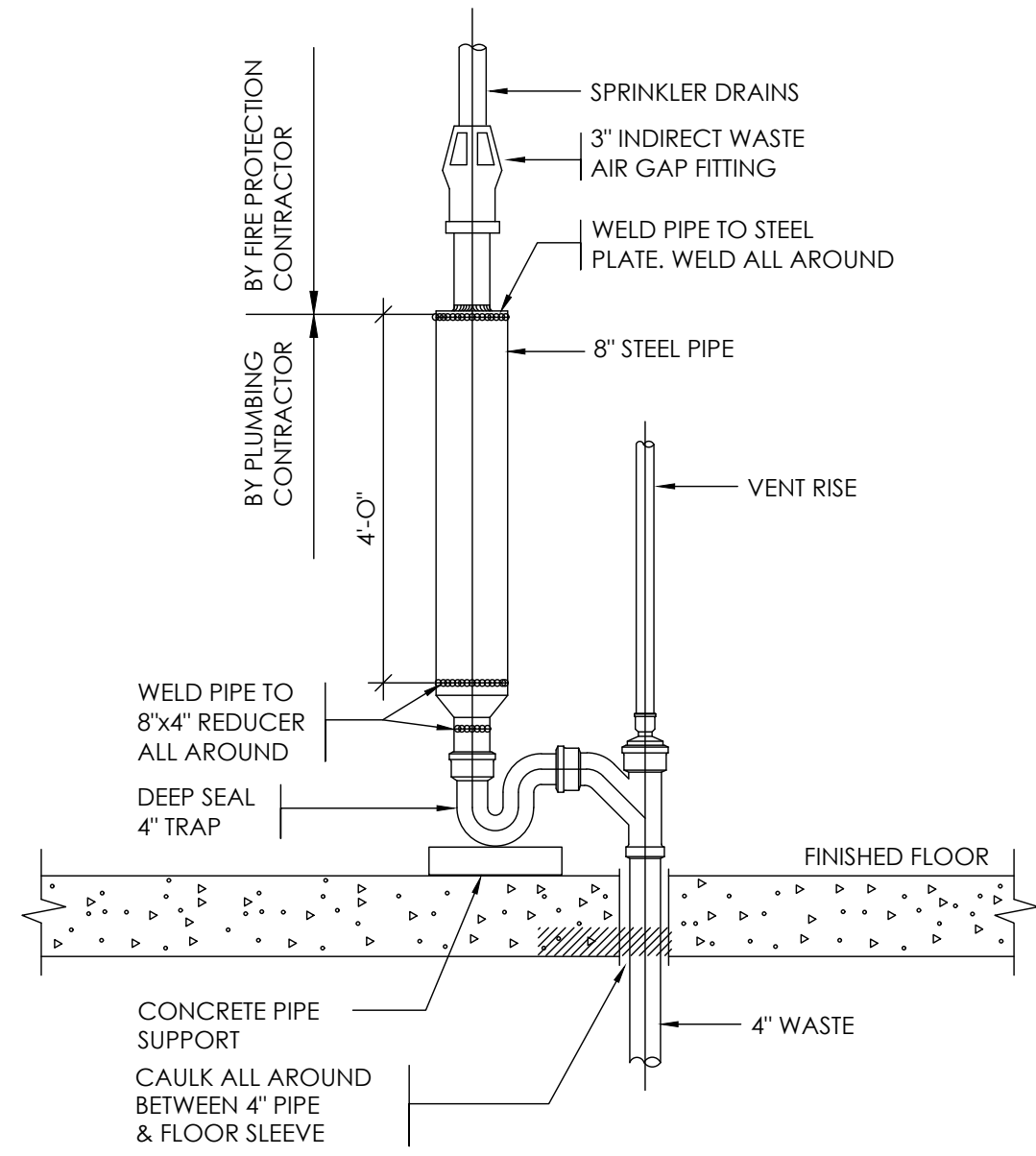
BLDG DEPT REF.# SCALE:
AS NOTED

SIGNATURE & SEAL
ALEXEY MAHLIS
ENGINEER
N.J. LIC. No. GE56570

DATE:
12/10/2021

DRAWING #
SP-600

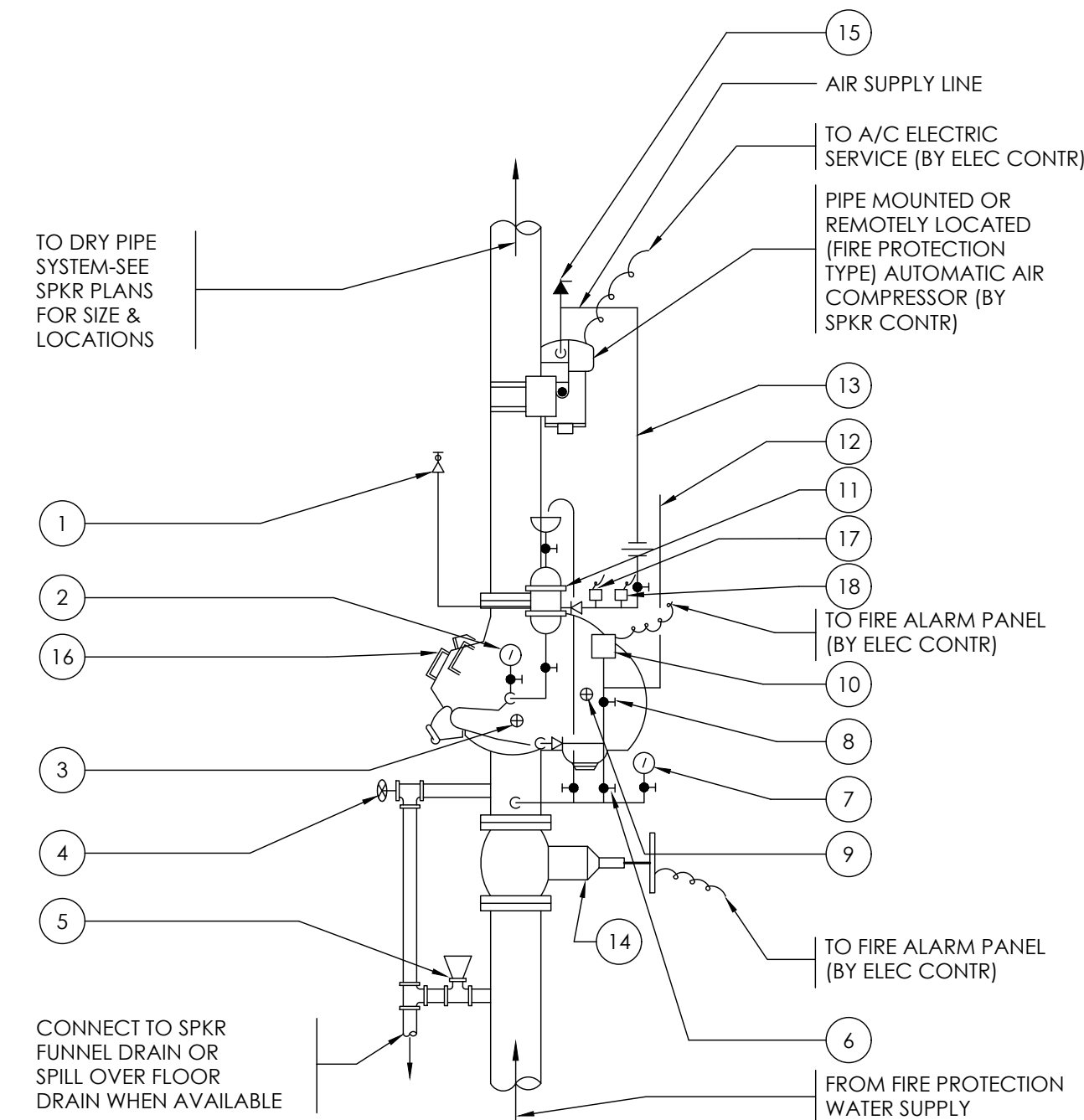
PROJECT #: 2021.09.02



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TYPICAL SPRINKLER FUNNEL DRAIN

N.T.S.



- 1 DRY PIPE VALVE ROOM SPRINKLER HEAD
- 2 AIR PRESSURE GAUGE
- 3 AIR TEST VALVE
- 4 2" DRAIN VALVE
- 5 DRAIN FROM DRIP CUP
- 6 ALARM TEST VALVE (NORMALLY CLOSED)
- 7 WATER PRESSURE GAUGE
- 8 ALARM CONTROL VALVE (NORMALLY CLOSED)
- 9 PRIMING WATER TEST VALVE
- 10 CIRCUIT CLOSER ELEC ALARM PRESSURE SWITCH DEVICE
- 11 PRIMING CHAMBER
- 12 PIPE TO HYDRAULIC WATER MOTOR ALARM (WHEN REQUIRED)
- 13 AIR SUPPLY LINE WITH CONTROL VALVE AND CHECK VALVE
- 14 OS&Y VALVE WITH TAMPER SWITCH
- 15 PRESSURE RELIEF VALVE
- 16 DRY PIPE VALVE TO BE LOCATED WITHIN HEATED ROOM
- 17 LOW AIR PRESSURE SUPERVISORY SWITCH
- 18 HIGH AIR PRESSURE SUPERVISORY SWITCH

DRY PIPE VALVE ASSEMBLY
NOT TO SCALE

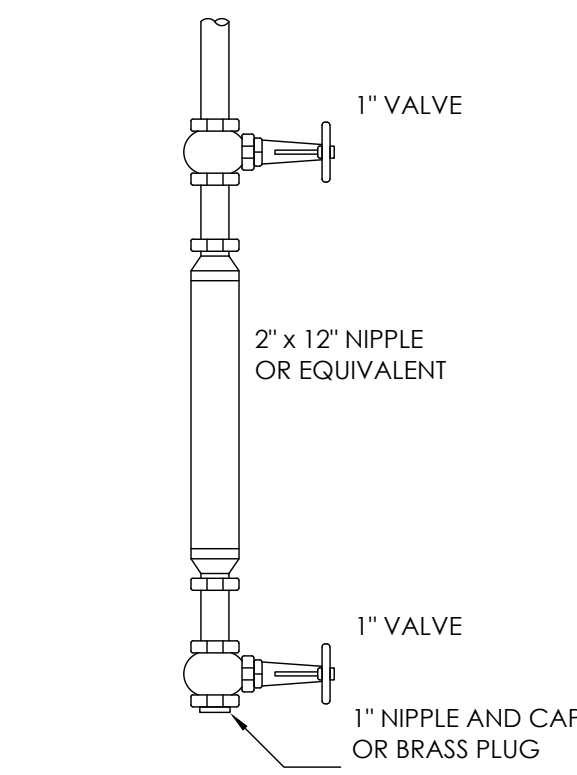
NOTES:

1. DRY PIPE VALVE ASSEMBLY MUST BE COMPLETE AND CONFORM WITH JOB CONDITIONS.
2. AN ACCELERATOR MUST BE PROVIDED (BY THE SPKR. CONTR.) FOR ALL LARGE DRY PIPE SPRINKLER SYSTEM TO COMPLY WITH CODE REQUIREMENTS.
3. AIR MAINTENANCE DEVICE, LOW (AND HIGH, WHERE REQUIRED) AIR PRESSURE SWITCHES, MUST BE PROVIDED ON ALL DRY PIPE SYSTEMS COMPRESSED AIR SUPPLY REQUIRING SAME.
4. ALL SYSTEM PIPING MUST PITCH BACK TO DRY PIPE VALVE ASSEMBLY, OR DRAIN PIPING MUST BE PROVIDED (BY THE SPKR. CONTR.) TO INDIVIDUAL DRY SYSTEM AUXILIARY DRAINS AS PER NFPA # 13 REQUIREMENTS.
5. DRY PIPE VALVE ASSEMBLY PIPING AND TRIM PIPING MUST BE COMPLETE WITH ALL PIPING, VALVES, FITTING, ETC. AS PER MANUFACTURERS REQUIREMENTS AND NFPA # 13 CODE REQUIREMENTS.

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DRY PIPE VALVE ASSEMBLY

N.T.S.

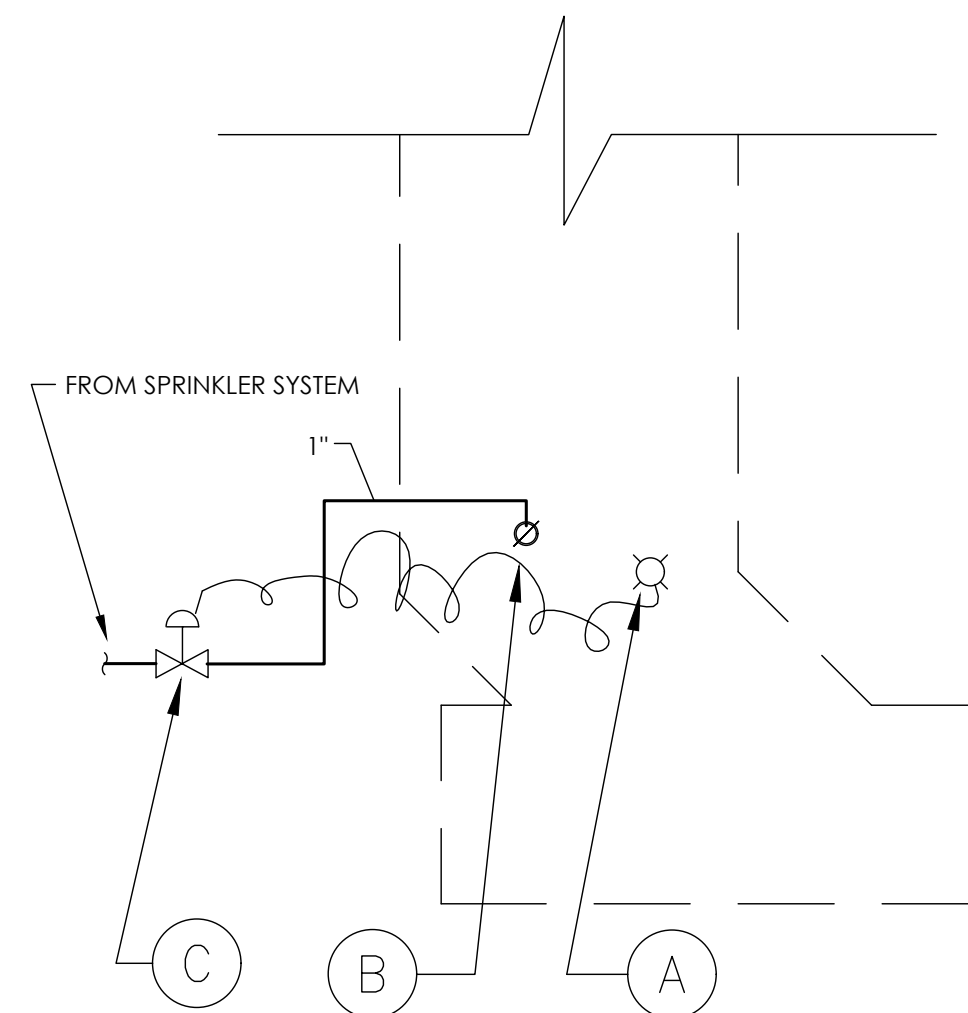


DRY-PIPE SYSTEM AUXILIARY DRAIN DETAIL
NOT TO SCALE

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DRY-PIPE SYSTEM AUXILIARY DRAIN DETAIL

N.T.S.



LEGEND		
ITEM	DESCRIPTION	REMARKS
(A)	SENSORY DEVICE- FEN WALL "DETECT-A-FIRE" 27121 OR OTHER APPROVED	UL LISTED SET AT 140° F. MAX
(B)	1/2" BRONZE SPRINKLER HEAD w/OPEN DEFLECTOR	APPROVED UL LISTED
(C)	SOLENOID VALVE 3/4" AUTO SWITCH CO MODEL 821O-C94 OR OTHER APPROVED	UL LISTED
(D)	3/4" TEST & DRAIN VALVE	

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COMPACTOR HOPPER DETAIL

N.T.S.

DRY PIPE VALVE & EQUIPMENT SCHEDULE

DESIGNATION	NO. REQUIRED	SERVICE	LOCATION	DIAMETER (IN.)	MANUFACTURER & MODEL #	DRAWING NO.	REMARKS
					VITAU LIC		
DP-1	1	DRY PIPE VALVE	1ST FLOOR	4"	FIRE PAC CABINET DN-100	FP2.1	RATED 250 PSI
-	1	AIR MAINTENANCE DEVICE	1ST FLOOR	-	SERIES 757 FIRE LOCK	FP2.1	INSIDE CABINET
-	1	AIR COMPRESSOR	1ST FLOOR	-	VC75A	FP2.1	115V, 60 HZ, 3/4 H.P.
-	1	BUTTERFLY VALVE	1ST FLOOR	4"	DN-100	FP2.1	-
-	1	ELECTRONIC VALVE ACCELERATOR	1ST FLOOR	-	746 LPA	FP2.1	INSIDE CABINET



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151 WEST PASSAIC STREET
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DETAIL 2 OF 2

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SIGNATURE & SEAL
ALEXEY VAPULIS
ENGINEER
N.J. LIC. No. GE56570
DATE:
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DRAWING #

SP-601

PROJECT # : 2021.09.02