

SPRINKLER DRAWING INDEX		DATE:					
●	NEW OR REVISED ISSUE						
○	NON REVISED ISSUE						
		ISSUE:					
NUMBER	NAME						
FP-001	SPRINKLER COVER SHEET						
FP-101	SPRINKLER FIRST FLOOR REFLECTED CEILING PLAN						
FP-102	SPRINKLER SECOND FLOOR REFLECTED CEILING PLAN						
FP-103	SPRINKLER ATTIC PLAN						
FP-301	SPRINKLER SPECIFICATION						
FP-401	SPRINKLER DETAILS						
FP-501	SPRINKLER RISER						

SYMBOLS	
— F —	FIRE MAIN
— SP —	SPRINKLER MAIN
— DR —	DRAIN PIPE
— FSP —	COMBINED FIRE STANDPIPE SPRINKLER
— DSP —	DRY STANDPIPE
— WSP —	WET STANDPIPE
	BALL VALVE
	HOSE VALVE
	FLOOR CONTROL VALVE ASSEMBLY
	CHECK VALVE
	CONTROL VALVE (OS & Y)
	PRESSURE REDUCING VALVE
	ALARM CHECK VALVE ASSEMBLY
	DRY PIPE VALVE ASSEMBLY
	OUTSIDE WALL HYDRANT
	OUTSIDE GROUND HYDRANT
	NON FREEZE WALL HYDRANT
	HOSE BIBB
	FIRE DEPARTMENT CONNECTION (SIAMESE)
	FIRE DEPARTMENT TEST HEADER
	FIRE HYDRANT
	FIRE HOSE VALVE
	ALARM GONG
	POST INDICATOR VALVE
	PRE-ACTION VALVE
	OPENING THROUGH STEEL
	TERMINATION POINT OF DEMOLITION AND CAP
	CONNECT NEW TO EXISTING
	HYDRAULIC CALCULATION POINT INDICATOR
	FIRE HOSE RACK/CABINET
	FIRE HOSE VALVE
	PUMPS: 1. HOUSE PUMP (AKA FILL PUMP) 2. FIRE PUMP (SHOW GPM & MANUAL OR AUTOMATIC) 3. BOOSTER PUMP (SHOW GPM)
	TAMPERS
	WATER FLOW SWITCH
	EXISTING SPRINKLER PIPING TO REMAIN
	NEW SPRINKLER PIPING
	EXISTING SPRINKLER PIPING TO BE REMOVED
	DETAIL REFERENCE: DETAIL NUMBER
	DETAIL REFERENCE: DRAWING NUMBER
	RISER CALLOUT: RISER TYPE
	RISER CALLOUT: RISER NUMBER
	RISER CONTROL VALVE
	EXTENDED COVERAGE PENDENT SPRINKLER HEAD NUMBER INDICATES WIDTH X THROW IN FEET EX: 1820 = (18" X 20")

NOTE : SYMBOL LIST AND ABBREVIATIONS PROVIDED FOR CONVENIENCE ONLY. NOT EVERY SYMBOL OR ABBREVIATION IS NECESSARY USED.

ABBREVIATIONS	
ABV	ABOVE
ABD	AUTOMATIC BALL DRIP
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACK FLOW PREVENTER
BLDG	BUILDING
BLW	BELOW
BSMT	BASEMENT
CI	CAST IRON
CL	CENTER LINE
CLG	CEILING
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CV	CHECK VALVE
°C	DEGREES CENTIGRADE
DIA	DIAMETER
DIAG	DIAGRAM
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
ELEV	ELEVATION
ENT	ENTERING
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EX	EXISTING
EXT	EXTERNAL
°F	DEGREES FAHRENHEIT
FAI	FRESH AIR INLET
FD	FLOOR DRAIN
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FL	FLANGE
FLX	FLEXIBLE
FLR	FLOOR
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HC	HUNG CEILING
HD	HEAD
HR	HOUR
HTR	HEATER
ID	INTERNAL DIAMETER
INCL	INCLUDING
JP	JOCKEY PUMP
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
(N)	NEW
NAS	NO AUTOMATIC SPRINKLERS
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
No	NUMBER
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
NOM	NOMINAL
NTS	NOT TO SCALE
OPG	OPENING
OS&Y	OUTSIDE SCREW & YOKE
OZ	OUNCE
PART	PARTIAL
PERF	PERFORATED
PEX	CROSS LINKED POLYETHYLENE TUBING
PH	PHASE
PIV	POST INDICATOR VALVE
PO	PLUGGED OUTLET
POS	POSITIVE
PRESS	PRESSURE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RCV	RISER CONTROL VALVE
REQD	REQUIRED
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SCH	SCHEDULE
SCV	SPRINKLER CONTROL VALVE
SPEC	SPECIFICATION
STD	STANDARD
SUP	SUPPLY
SYS	SYSTEM
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
V	VENT
VO	VALVED OUTLET
W	WASTE
WF	WATER FLOW SWITCH
WM	WATER METER

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DESIGN CRITERIA	
1.	SPRINKLER SYSTEM LAYOUT AND CALCULATIONS SHALL COMPLY WITH IBC 2018 WITH AMENDMENTS, N.J.A.C. 5:70 UNIFORM FIRE CODE, NFPA 13 (2016) AS MODIFIED BY NJ ADMINISTRATIVE CODE, OWNER'S INSURANCE COMPANY REQUIREMENTS AND GOOD ENGINEERING PRACTICE.
2.	THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED BASED ON COORDINATED SHOP DRAWINGS.
3.	SPACE OCCUPANCY CLASSIFICATION: AS PER NFPA STANDARD IS: LIGHT HAZARD IN RESIDENTIAL AREAS AND ATTIC, ORDINARY HAZARD GROUP I IN PARKING GARAGE AREAS AND MECHANICAL ROOMS, AND ORDINARY HAZARD GROUP II IN STORAGE DEDICATED SPACES.
4.	SPRINKLERS PROTECTION SHALL PROVIDE A MINIMUM DENSITY OF DISCHARGE OF 0.1 GPM / SQ.FT. IN LIGHT HAZARD AREAS, 0.15 GPM / SQ.FT. IN OHI AREAS AND 0.2 GPM / SQ.FT. IN OH2 AREAS. DESIGN AREA FOR WET SYSTEMS IS 1500 SQ.FT.; DESIGN AREA FOR DRY SYSTEM IN THE GARAGES IS 1950 SQ.FT. AND DESIGN AREA FOR THE DRY SYSTEM IN THE ATTIC IS 2535 SQ.FT.
5.	SPRINKLER COVERAGE IS 225 SQ.FT. FOR LIGHT HAZARD AREAS AND 130 SQ.FT. FOR ORDINARY HAZARD LOCATIONS.
6.	RESIDENTIAL SPRINKLER HEADS ARE PERMITTED TO PROTECT THE DWELLING UNITS. REQUIRED DENSITY SHALL BE 0.1 GPM/SQ.FT. IN THE DWELLING UNITS. RESIDENTIAL SPRINKLER COVERAGE SHALL BE AS PER THE MANUFACTURER'S TABLES.
7.	MINIMUM PRESSURE AT ANY SPRINKLER HEAD SHALL BE 7 PSI OR THE MANUFACTURER'S RECOMMENDED PRESSURE WHICHEVER IS THE HIGHEST.

HYDRANT FLOW TEST DATA	
STATIC: 110 PSI	RESIDUAL: 96 PSI @ 1121 GPM
TEST PERFORMED BY: SUEZ WATER NEW JERSEY JERRY ARGUELLO 60 DeVoe PLACE, HACKENSACK, NJ 07601	
DATE: 09/03/2020	

PERFORMANCE SPECIFICATION CRITERIA	
SPRINKLER PLANS AS SHOWN ARE FOR BIDDING PURPOSES ONLY. SPRINKLER CONTRACTOR IS TO OBTAIN CURRENT HYDRANT FLOW TEST DATA AND PROVIDE HYDRAULIC CALCULATIONS FOR SYSTEM PIPE SIZING IN ACCORDANCE WITH NFPA 13. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS INDICATING HYDRAULIC CALCULATIONS, PIPING LAYOUT & SIZING. SHOP DRAWINGS AND CALCULATIONS ARE TO BE SIGNED & SEALED BY A PROFESSIONAL ENGINEER, AND REVIEWED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. ALL WORK IS TO BE DONE IN ACCORDANCE WITH NFPA 13, NFPA 14, NFPA 20, INTERNATIONAL BUILDING CODE 2018 - NJ EDITION, AND ALL OTHER STATE, LOCAL, GOVERNING AND APPLICABLE CODES.	

SCHEDULE OF SPRINKLER HEADS												
SYMBOL	MFR.	MODEL	SIN	TYPE	LOCATION	FINISH & REMARKS	TEMP. RATING	'K' FACTOR	HEAD COVERAGE	MIN. FLOW	MIN. PRESS.	LISTINGS
	RELIABLE	G5-56	RA3415	QUICK RESPONSE CONCEALED PENDENT	THROUGHOUT THE FACILITY IN AREAS WITH SUSPENDED CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	165°F	5.6	-	-	7 PSI	
	RELIABLE	F1FR-56	RA1425	QUICK RESPONSE UPRIGHT	THROUGHOUT THE FACILITY IN AREAS WITHOUT SUSPENDED CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	155°F	5.6	-	-	7 PSI	
	VIKING	RESIDENTIAL	VK474	RESIDENTIAL CONCEALED PENDENT	THROUGHOUT THE FACILITY IN RESIDENTIAL AREAS WITH SUSPENDED CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	165°F	5.8	-	AS LISTED	AS LISTED	
	VIKING	QR HSW	VK305	QUICK RESPONSE HORIZONTAL SIDEWALL	FOR THE PROTECTION OF THE ELEVATOR PIT AND ROOF ACCESS CLOSEST	AS SELECTED BY ARCHITECT	165°F	5.6	-	-	7 PSI	
	VIKING	QR DRY HSW	VK182	QUICK RESPONSE DRY HORIZONTAL SIDEWALL	FOR THE PROTECTION OF ENTRY OVERHANG	AS SELECTED BY ARCHITECT	165°F	5.6	-	-	7 PSI	
	VIKING	SPECIFIC APPLICATION "COIN"	VK950	QUICK RESPONSE UPRIGHT SPECIFIC APPLICATION (MAX. SPACING: 16"x16")	THROUGHOUT THE FACILITY IN COMBUSTIBLE CONCEALED SPACES ABOVE FLOOR CEILINGS	AS SELECTED BY ARCHITECT	200°F	5.6	-	-	7 PSI	

NOTES:

- SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S REQUIREMENT.
- PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE AND SPRINKLER HEADS LOCATED UNDER HVAC DUCTS IN MECHANICAL EQUIPMENT ROOMS WHEN LOCATED LOWER THAN 7'-0" A.F.F. ETC.
- ALL SPRINKLER HEADS THROUGHOUT THE FACILITY SHALL BE OF THE ORDINARY TEMPERATURE RATING EXCEPT AS FOLLOWS:
 - SPRINKLER HEADS IN SHOWERS SHALL BE OF INTERMEDIATE TEMPERATURE RATING (175' TO 225').
 - SPRINKLER HEADS LOCATED CLOSE TO HEATERS, SHALL BE OF THE TEMPERATURE RATING AS REQUIRED BY NFPA 13.
- ALL HEAT GENERATING EQUIPMENT WHICH CAN AFFECT THE TEMPERATURE RATING OF THE SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS PRIOR TO SUBMISSION FOR APPROVAL.
- SPRINKLER HEADS MINIMUM FLOW & MINIMUM PRESSURE REQUIREMENTS TO BE BASED ON HYDRAULIC CALCULATION DESIGN DENSITIES.
- ALL SPRINKLER HEAD FINISHES TO BE APPROVED BY ARCHITECT.

FIRE PROTECTION MATERIAL SCHEDULE				
SYSTEM	PIPE	FITTINGS	JOINTS	REMARKS
BURIED BUILDING FIRE SERVICE	DUCTILE IRON CAST IRON WATER PIPE	DUCTILE IRON	MECH. JOINT	
FIRE STANDPIPE	STEEL SCHED 40 STEEL SCHED 80 BLACK	MALLEABLE IRON VICTAULIC	THREADED VICTAULIC COUPLINGS	STANDPIPE PRESSURE SHALL NOT EXCEED 300 PSI
SPRINKLER	STEEL SCHED 40 BLACK	MALLEABLE IRON CAST IRON	THREADED FLANGED	TO BE USED DOWNSTREAM OF SPRINKLER FLOOR CONTROL VALVE. ASSEMBLY, PIPE SIZE 2" & SMALLER.
SPRINKLER	STEEL SCHED 40 BLACK	MALLEABLE IRON CAST IRON VICTAULIC	THREADED FLANGED VICTAULIC	TO BE USED ON RISERS AND MAINS, PIPE SIZES 2 1/2" AND LARGER.
SPRINKLER DRY SYSTEM AND DRAIN PIPE	STEEL SCHED 40 GALVANIZED	GALVANIZED	THREADED	

- NOTES:
- ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE LOCAL AUTHORITIES.
 - USE OF ANY PIPING OR TUBING WITH ID & OD OTHER THEN SCHEDULE 40 & SCHEDULE 80 IS NOT PERMITTED.
 - SCH. 10 STEEL PIPE IS PERMITTED TO BE USE ONLY WHEN JOINED BY ROLL GROOVED VICTAULIC COUPLINGS FOR SPRINKLER MAINS 2 1/2" AND LARGER (NOT ALLOWED FOR STANDPIPE OR UNDERGROUND PIPE).

SPECIALTY EQUIPMENT					
TYPE	DESCRIPTION	SIZE	MANUFACTURER	MODEL NUMBER	NOTES
DRY	DRY VALVE ASSEMBLY	6"	RELIABLE	MODEL D	PROVIDE BASIC TRIM, MODEL A-2 AUTOMATIC PRESSURE MAINTENANCE DEVICE AND TANK MOUNTED AIR COMPRESSOR
DRY	PRESSURE MAINTENANCE DEVICE	-	General Air Products	AMD2	
DRY	AIR COMPRESSOR	31" X 17" X 17.75"	General Air Products	L1600300A	ELECTRICAL REQUIREMENTS: 3 HP, 230V, 1 PHASE, 15.8 RUNNING AMPS. PROVIDE PRESSURE SWITCH, BASE MOUNTED.
AUX. DRAIN	AUXILIARY CONDENSATE DRAIN	1"	RELIABLE	ACD	PROVIDE SIGHT GLASS

Paterson Habitat For Humanity
146 North 1st Street
Paterson, NJ 07522

PROJECT NAME

**135 SUMMER STREET
PASSAIC, NJ**

CHEN O'NEIL ARCHITECTS, PLLC

29 GANUNG DRIVE
OSSING, NY 10562
646-812-5566

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2	100% PERMIT SET	2/02/2021
1	80% DD SET	1/08/2021
ISSUE/REVISION	DATE	

DRAWING TITLE

**SPRINKLER
COVER SHEET**

DRAWING NO.

FP-001

DATE: 12/01/20
SCALE: AS NOTED

STAMP & SIGNATURE

ARMEN KHACHATRIAN, P.E. - NJ LICENSE #21285
NJ CERTIFICATE OF AUTHORIZATION #246428034700



SPRINKLER SECOND FLOOR REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"



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DRAWING TITLE
 SPRINKLER
 SECOND FLOOR
 REFLECTED CEILING PLAN

DRAWING NO.
FP-102

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 ARMIN KHACHATRIAN, P.E. - NJ LICENSE #21295
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SPRINKLER
ATTIC PLAN

DRAWING NO.

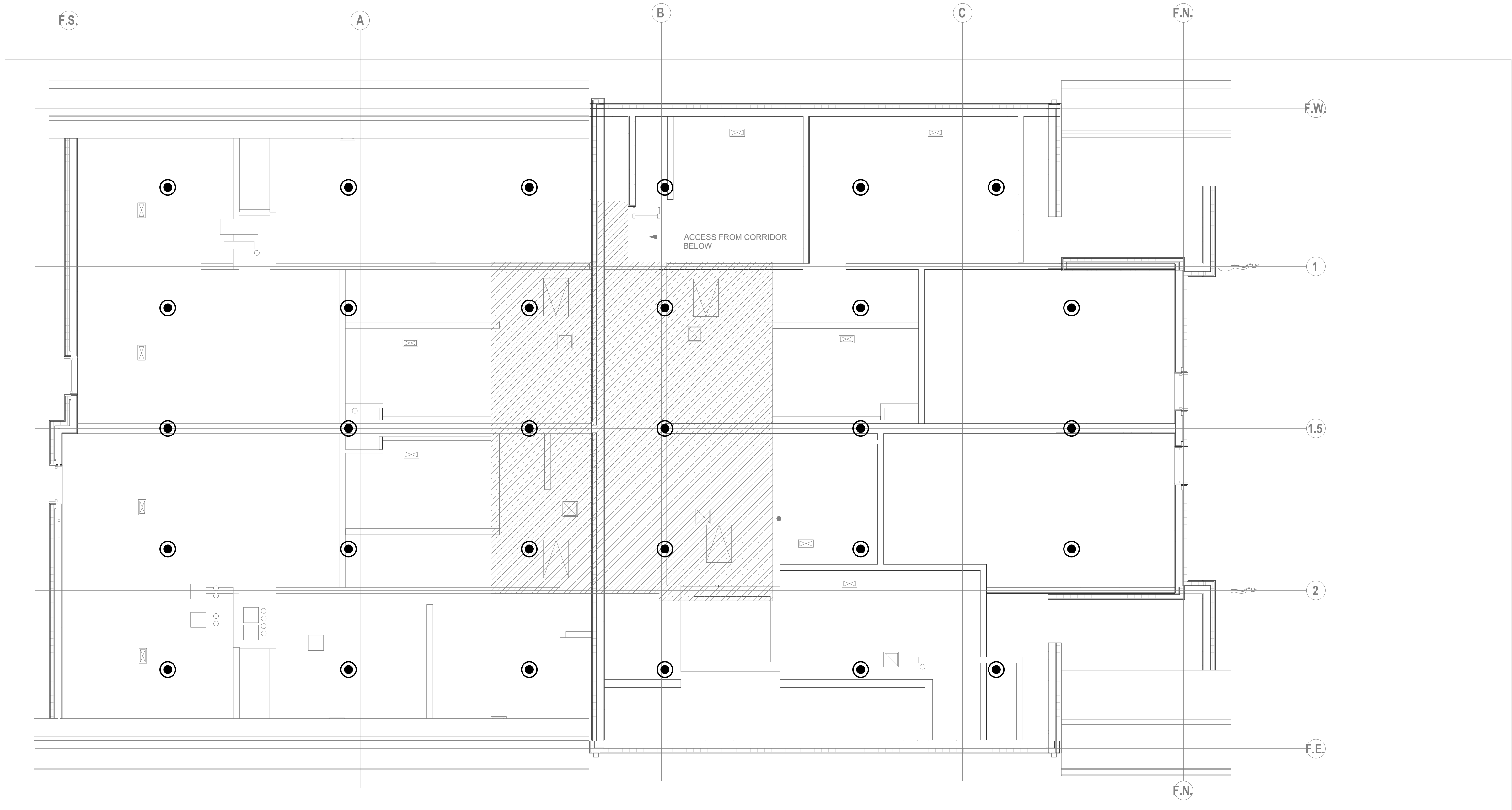
FP-103

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SCALE: AS NOTED

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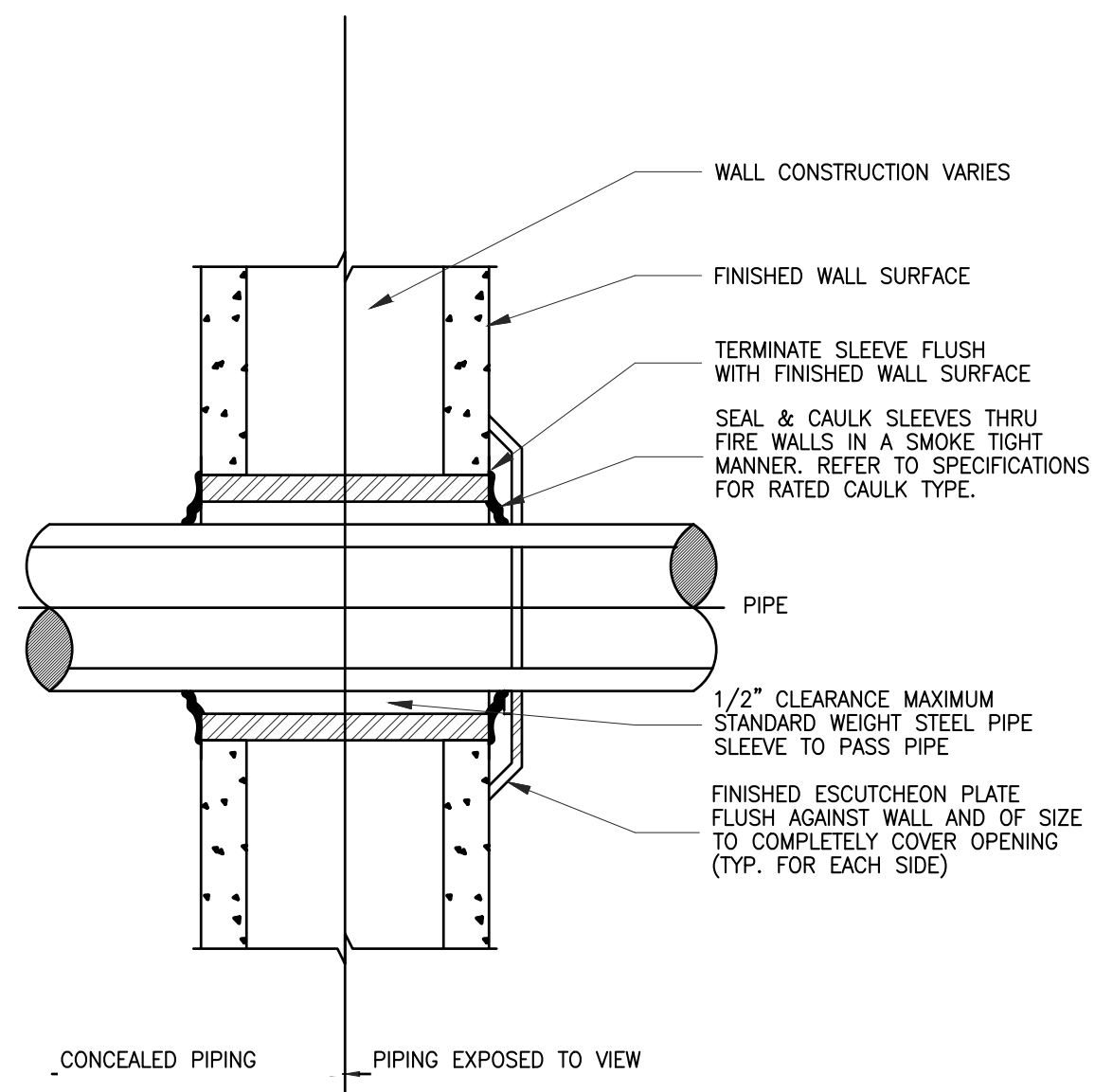
ARMEN KHACHATURIAN, P.E. - NJ LICENSE #21295
NJ CERTIFICATE OF AUTHORIZATION #246428034700



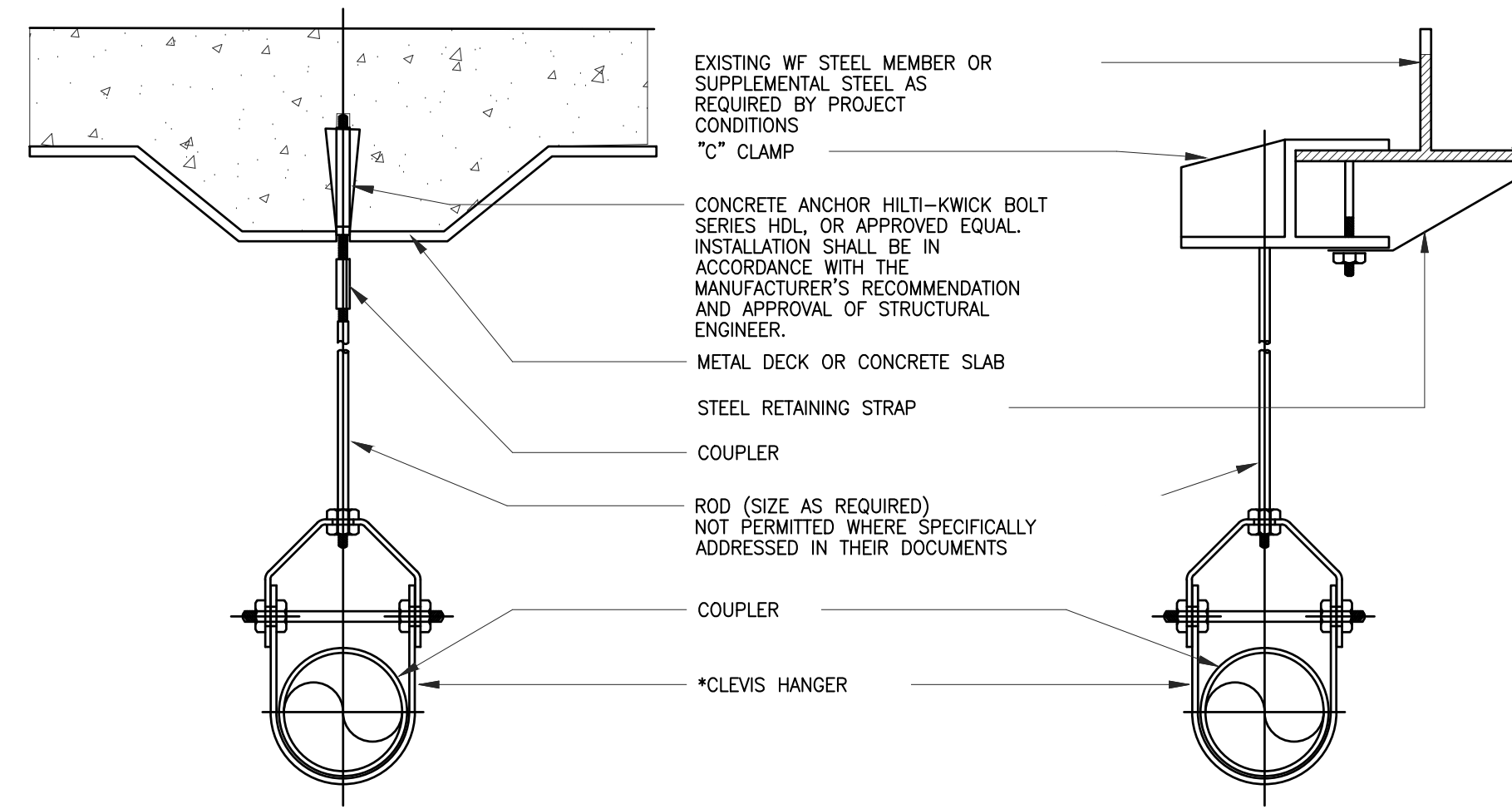
SPRINKLER ATTIC PLAN
SCALE: 1/4" = 1'-0"

SPRINKLER GENERAL NOTES:

- DRY PIPE SYSTEM TO BE PROVIDED TO SERVE ATTIC SPRINKLER SYSTEM.

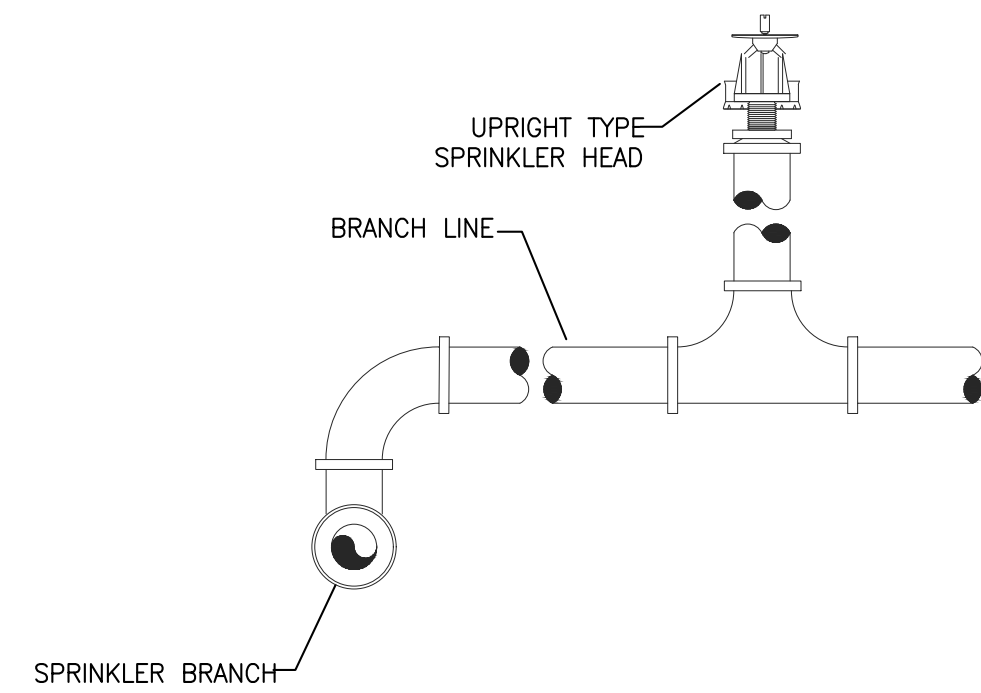


1
FP-401 NTS
**TYPICAL DETAIL OF PIPE
INSTALLATION THROUGH RATED WALL**

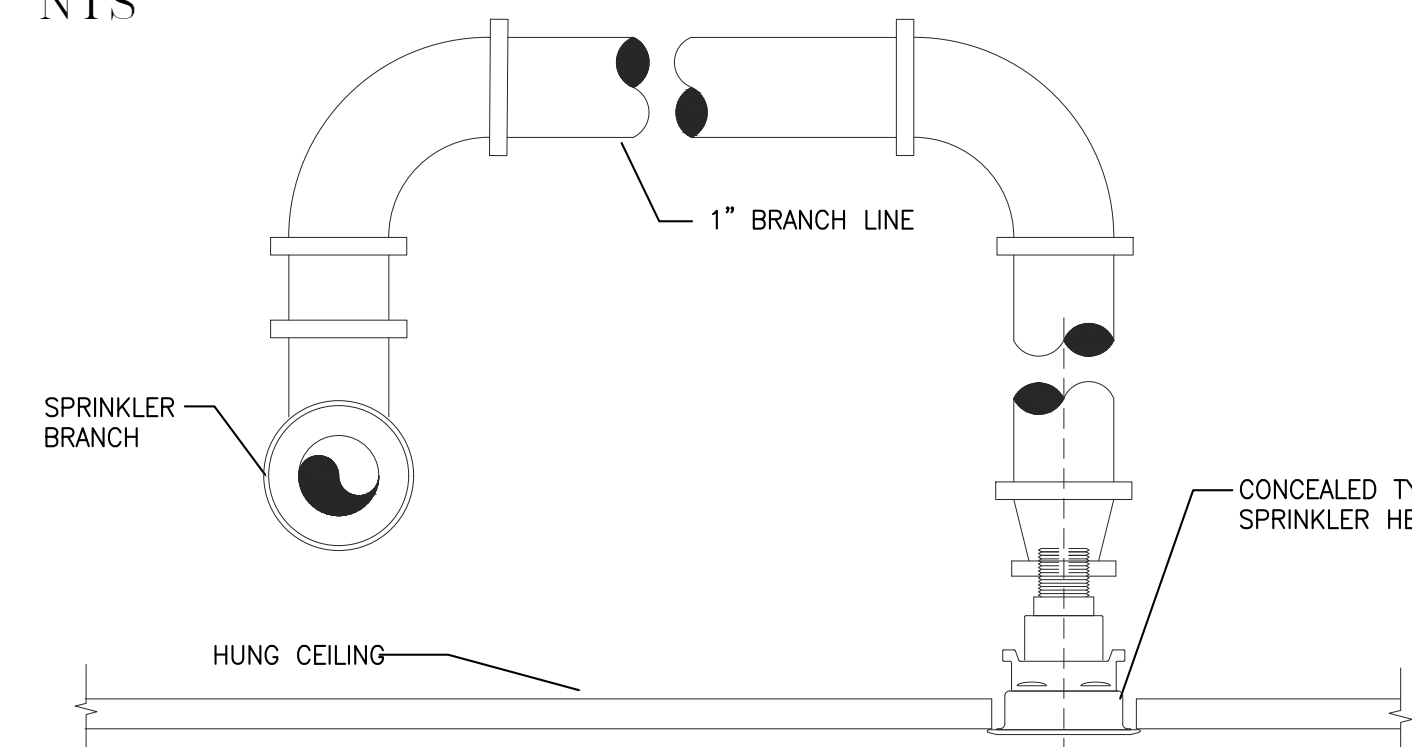


NOTES:
1. CLEVIS HANGERS REQUIRED ON PIPING LARGER THAN 1"
2. GENERAL PURPOSE HANGERS MAY BE USED ON 1" SPRINKLER PIPING ONLY.

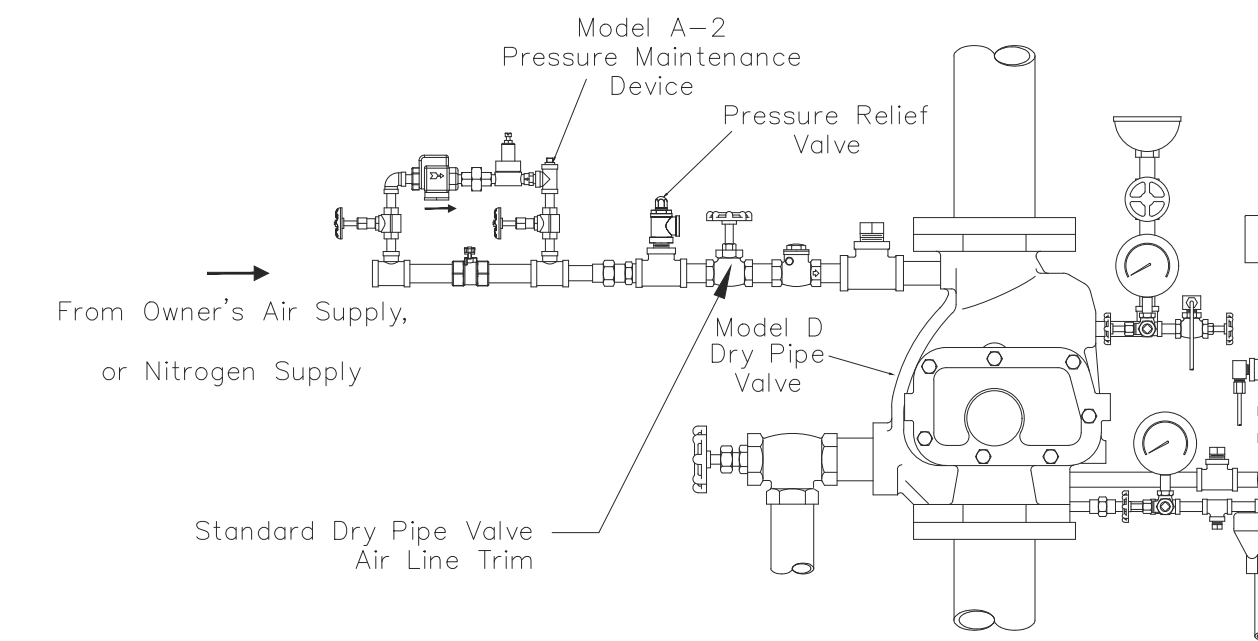
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FP-401 NTS
TYPICAL HANGER DETAIL



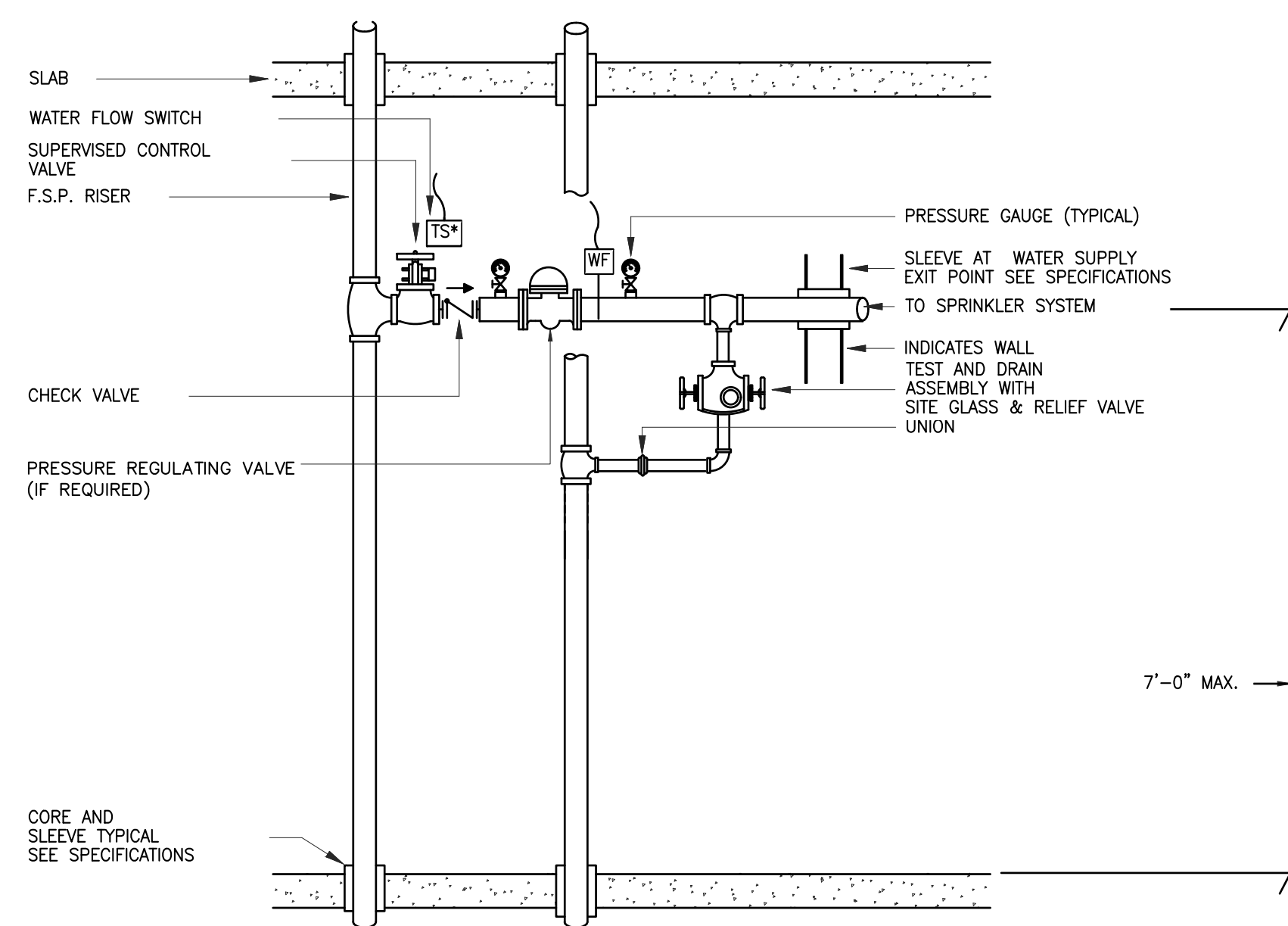
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FP-401 NTS
TYPICAL UPRIGHT SPRINKLER HEAD DETAIL



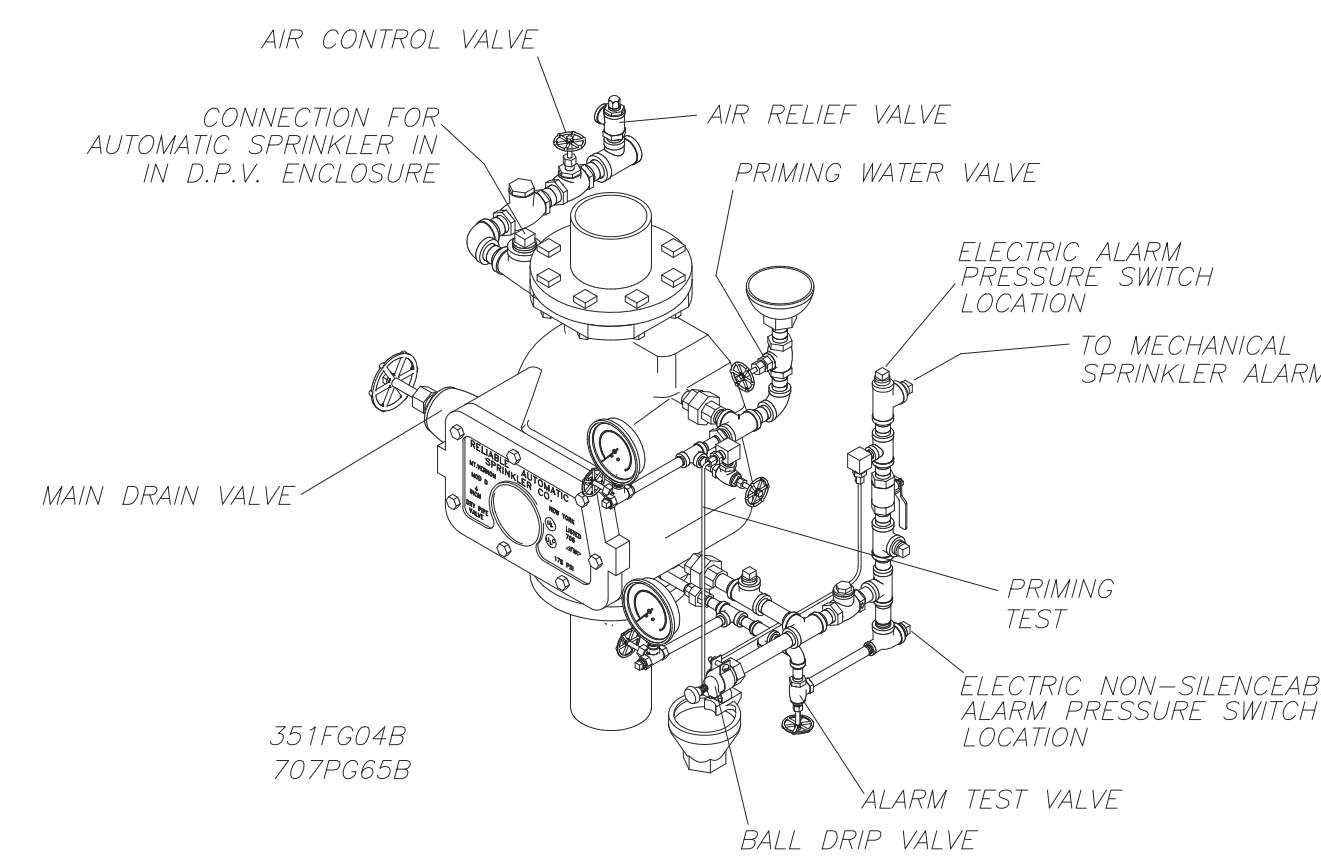
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FP-401 NTS
**TYPICAL CONCEALED PENDENT
SPRINKLER HEAD DETAIL**



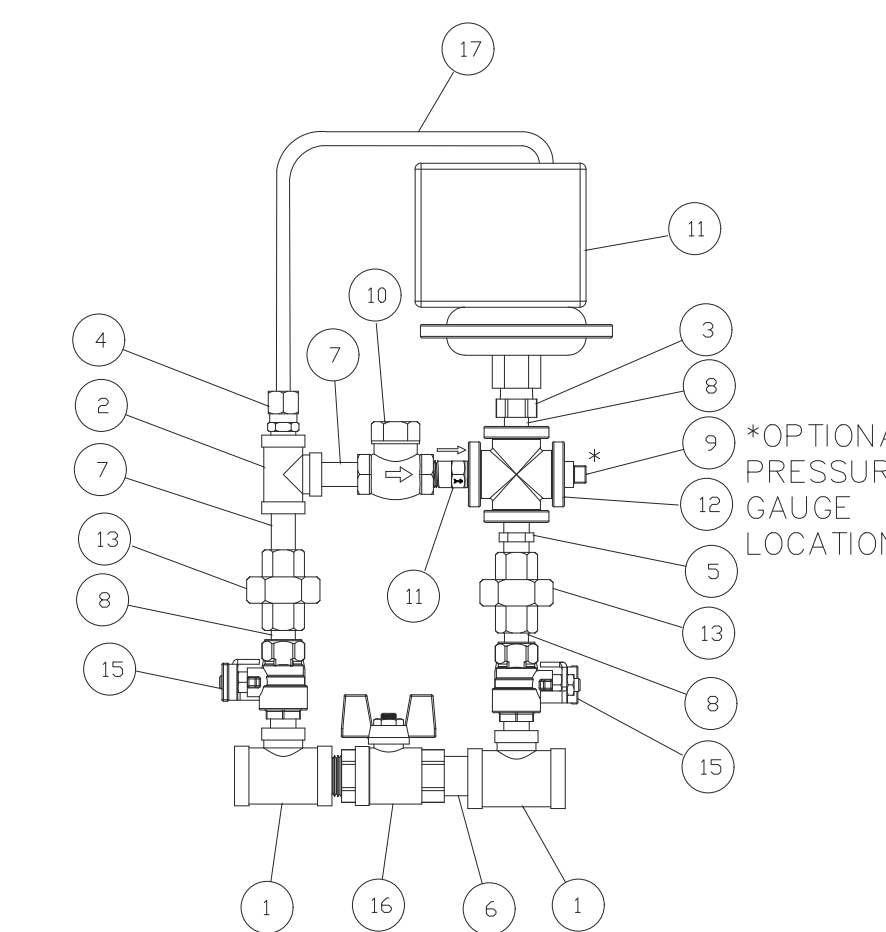
7
FP-401 NTS
**DRY VALVE AIR PRESSURE
MAINTENANCE DEVICE DETAIL**



3
FP-401 NTS
TYPICAL FLOOR CONTROL ASSEMBLY DETAIL



6
FP-401 NTS
DRY VALVE DETAIL RELIABLE 'MODEL D'



8
FP-401 NTS
**DRY VALVE AIR PRESSURE
MAINTENANCE DEVICE DETAIL**

ITEM NO.	PART NO.	DESCRIPTION	REMARKS	QTY.
17	98768000	COPPER TUBING, 1/4"		18'
16	9884011E	VALVE, BALL, 1/2" NPTF x 1/2" NPTM		1
15	98840237	VALVE, BALL, 1/4" NPTF x 1/4" NPTM		2
14	98840147	CHECK VALVE, 1/4" NPT, POPPET TYPE IN-LINE		1
13	98015201	UNION, 1/4", IRON, G.J., GALV.		2
12	98750004	PIPE CROSS, 1/4", GALV.		1
11	98728801	PRESSURE SWITCH		1
10	98727607	STRAINER, 1/4"		1
9	98614403	PLUG, IRON, SQ. HD., 1/4"		1
8	98543227	NIPPLE, STEEL, GALV., 1/4" X CLOSE		3
7	98543226	NIPPLE, STEEL, GALV., 1/4" X 1-1/2"		2
6	98543223	NIPPLE, STEEL, GALV., 1/2" X 1-1/2"		1
5	98523100	RESTRICTION DRIFICE		1
4	98085630	CONNECTOR, 1/4" TUBING x 1/4" NPT		1
3	98048034	BUSHING, REDUCER, 3/8" x 1/4", GALV.		1
2	96606608	TEE, GLVN, 1/4 x 1/4 x 1/4		1
1	96606607	TEE, GLVN, 1/2 x 1/2 x 1/4		2

ISSUE/REVISION	DATE
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1	80% DD SET 1/08/2021

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**SPRINKLER
DETAILS**

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FP-401

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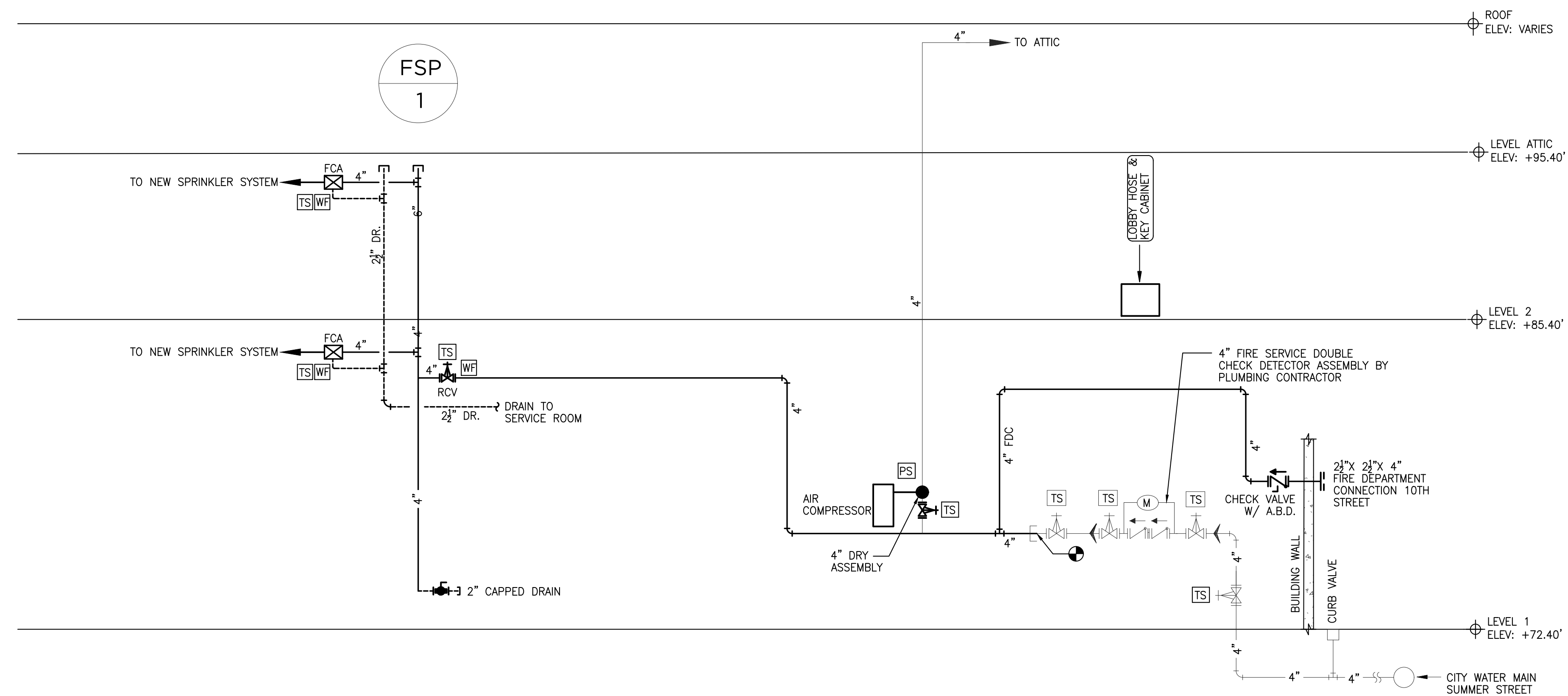
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1 AUTOMATIC FIRE SPRINKLER RISER DIAGRAM
FP-5.01 N.T.S.

2 100% PERMIT SET 2/02/2021

1 80% DD SET 1/08/2021

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