

Sprinkler Design Data

Project Name: CAPE FEAR MOB - SHELL	System: Wet
Project Street Address: 225 BRIGHTWATER DRIVE	Work Area Sq. Ft.: ± 65,986
Suite: N/A	Floor#: N/A
Designed By: Associated Fire Protection	Phone: (919) 553-4021
Occupancy: SHELL	Hazard: LIGHT
	Ceiling Height: Varies
	Total Bldg. Hgt.: 29'-4"

Design Summary

Design Method	System #1
1	Calculated
Design Area #	1
Location	3RD FLOOR
Type of System	Wet
Hazard Class	LIGHT HAZARD
Criteria From	NFPA 13 2013 ED
Design Area	1,512 Sq. Ft.
Sprinkler Spacing	225 Sq. Ft. Max.
Density	10
K-factor	5.6
Hose Allowance	100 GPM
# Design Sprinklers	12
Special Application Spk	N/A
Requirement @ BOR	
G.P.M. Req'd	284.02
P.S.I. Req'd	87.65
Requirement @ TEST	
GPM Required	384.02
PSI Required	104.62
Safety factor @ Test	26.92
Dry Sys. Volume (gal)	N/A

WATER SUPPLY INFORMATION

Tested by	AFP	Date/Time	9.06.23 @ 9:20AM	Pressure Hydrant	N/A
Hydrant Elevation	±172'-0"	Flow Hydrant # 1	N/A	Flow Hydrant #2	N/A
Static (PSI)	133	Residual (PSI)	105	Flow (gpm)	1,894

Copy of Water Test Data Included with Calculation

NOTES:

GENERAL NOTES
 THE FIRE PROTECTION SYSTEM SHALL COMPLY WITH NFPA 13 2013 EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES. FINAL INSPECTION AND APPROVAL OF THE FIRE PROTECTION SYSTEM SHALL BE BY THE LOCAL FIRE DEPARTMENT, AND ARCHITECT/ENGINEER.

PIPE ROUTING SHOWN INDICATES OUR INTENT DESIGN AND LAYOUT. FINAL ROUTING AND ELEVATIONS SHALL BE BASED ON A FIELD SURVEY TO BE CONDUCTED AND COORDINATED WITH ALL TRADES.

FIRESTOP ALL PENETRATIONS OF SMOKE/FIRE WALLS, CEILING, FLOORS, ROOFS, ETC. USING UL LISTED FIRESTOP SEALANT.

PROVIDE ACCESS PANELS TO ALL VALVES ABOVE NON-ACCESSIBLE CEILING AND CHASES.

A CABINET WITH STOCK OF EXTRA SPRINKLERS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13.

METHODS OF HANGING PIPES, HEADERS, AND BRANCHES SHALL BE IN ACCORDANCE WITH NFPA 13. NO OTHER PIPING AND/OR DEVICES ARE TO BE ATTACHED TO THE SPRINKLER PIPE HANGER SYSTEM. THIS CONTRACT DOES NOT INCLUDE ANY MATERIAL OR DEVICE TO IMPROVE THE STRUCTURAL STRENGTH OF THE BUILDING TO ENABLE IT TO CARRY THE LOAD OF THE FIRE PROTECTION SYSTEM.

ALL VALVES FOR FIRE SERVICE SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES, INC.

ALL POWER WIRING SHALL BE ACCOMPLISHED BY THE FIRE ALARMELECTRICAL CONTRACTOR. ALL CONTROL AND INTERLOCK WIRING SHALL BE ACCOMPLISHED UNDER THE ELECTRICAL SECTION OF THE SPECIFICATIONS IN ACCORDANCE WITH THE REQUIREMENTS IN THE ELECTRICAL DIVISION. COORDINATE ALL ELECTRICAL ITEMS WITH THE ELECTRICAL CONTRACTOR AND INSURE PROPER COORDINATION.

A HYDRAULIC DATA PLATE SHALL BE PLACED ON THE SYSTEM RISER STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SYSTEM.

ALL PORTIONS OF THE BUILDING WHERE WET SYSTEM PIPING IS ROUTED SHALL BE MAINTAINED TO A MINIMUM OF 40 DEG. FAHRENHEIT. THIS TEMPERATURE SHALL BE MAINTAINED BY THE OWNER AT ALL TIMES.

ALL SPRINKLER HEADS MOUNTED IN THE CEILING SHALL BE A MINIMUM OF 4" AWAY FROM WALLS, CEILING HEIGHT CHANGES, OR ANY OTHER VERTICAL INTERSECTING SURFACE.

PROVIDE SPRINKLERS ABOVE AND BELOW ANY EXPOSED DUCTWORK 48" OR WIDER.

PIPE MATERIALS
 ALL PIPE TO BE BLACK STEEL WITH BLACK CAST IRON FITTINGS WITH JOINTS AS PER NFPA
 ALL PIPING SHALL AS PER THE FOLLOWING SIZES:
 MAIN PIPING = SCH 40
 RISER PIPING = SCH 10
 LINE PIPING 1" and larger = SCH 10
 1" RETURN BEND PIPING = SCH 40

HANGERS
 PIPE HANGERS SHALL BE INSTALLED AS REQUIRED BY NFPA FOR SUPPORTING SPRINKLER PIPING.
 NO OTHER PIPING AND/OR DEVICES ARE TO BE ATTACHED TO THE SPRINKLER PIPE HANGER SYSTEM.
 THIS CONTRACT DOES NOT INCLUDE ANY MATERIAL OR DEVICE TO IMPROVE THE STRUCTURAL STRENGTH OF THE BUILDING TO ENABLE IT TO CARRY THE LOAD OF THE FIRE PROTECTION SYSTEM.

STEEL PIPE SIZE
 MAX. DIST BETWEEN HANGERS: 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3" 3 1/2" 4" 5" 6" 8"

THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT BE GREATER THAN 36" FOR 1", 48" FOR 1 1/4", AND 60" FOR PIPE GREATER THAN 1 1/2".

THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOR TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 12'



REVISIONS

No.	Date-Description
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SYSTEM SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
☐	FIRE DEPARTMENT CONNECTION
○	HYDRAULIC REFERENCE POINT
—	CENTERLINE OF PIPE ABOVE FINISH FLOOR
—	CENTERLINE OF PIPE BELOW TOP OF STEEL

SYMBOL	S.I.N.#	SIZE	STYLE	MAKE	FINISH	MODEL	MIN. SPACING	MAX. SPACING	TEMP.	K-FACTOR	TOTAL	SPRINKLER SYMBOL DESCRIPTION	
												MIN. SPACING	MAX. SPACING
○	V2708	1/2"	ISORCP	Victaulic	CHROME	Pendent	6'-0"	15'-0"	155 F	5.6	11	11	
○	V2704	1/2"	ISQRU	Victaulic	BRASS	Upright	6'-0"	15'-0"	155 F	5.6	480	480	
○	V8006	1/2"	ISQRCP	Victaulic	WHITE	Concealed	6'-0"	15'-0"	155 F	5.6	7	7	
○	V2710	1/2"	ISSRHS	Victaulic	BRASS	Shelwall	6'-0"	15'-0"	200 F	5.6	2	2	
TOTAL SPRINKLERS SHOWN IN THIS AREA												0	
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT												520	

Seal:

 Andrew King, NICET Level III #152401

PROJECT:
 CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

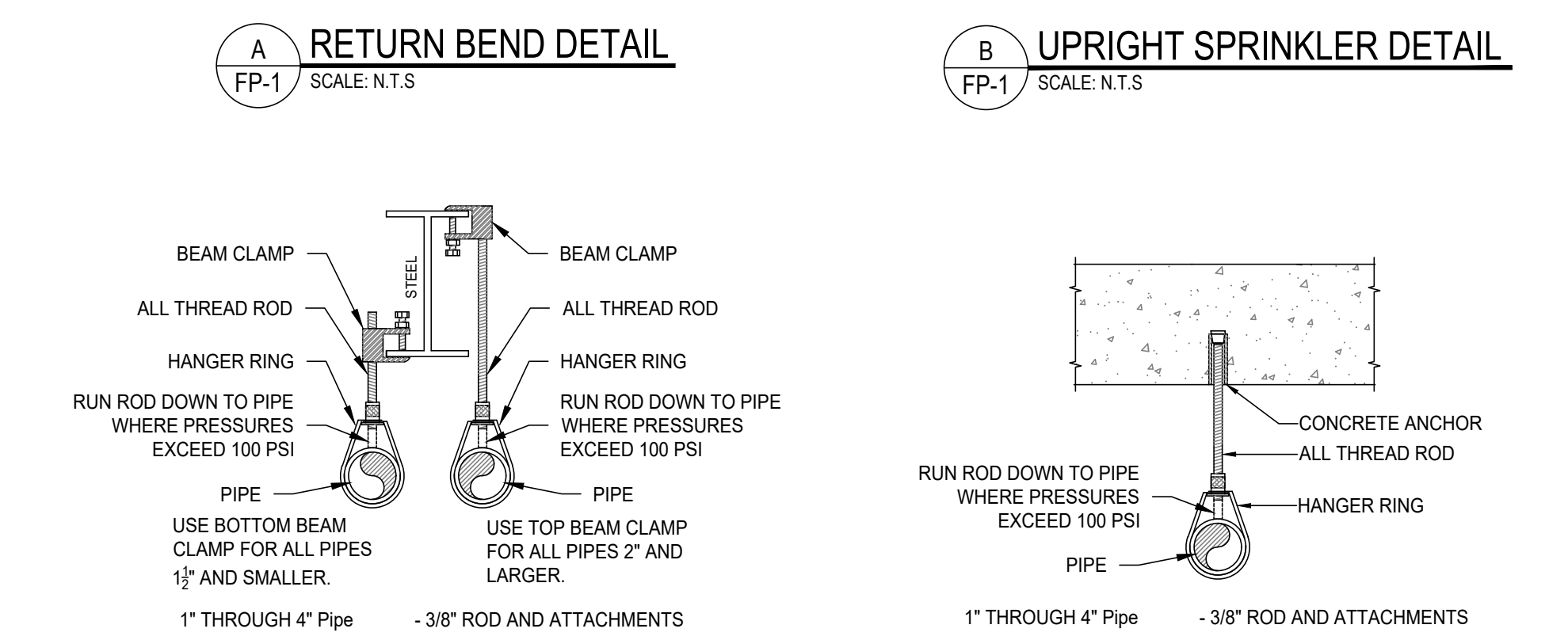
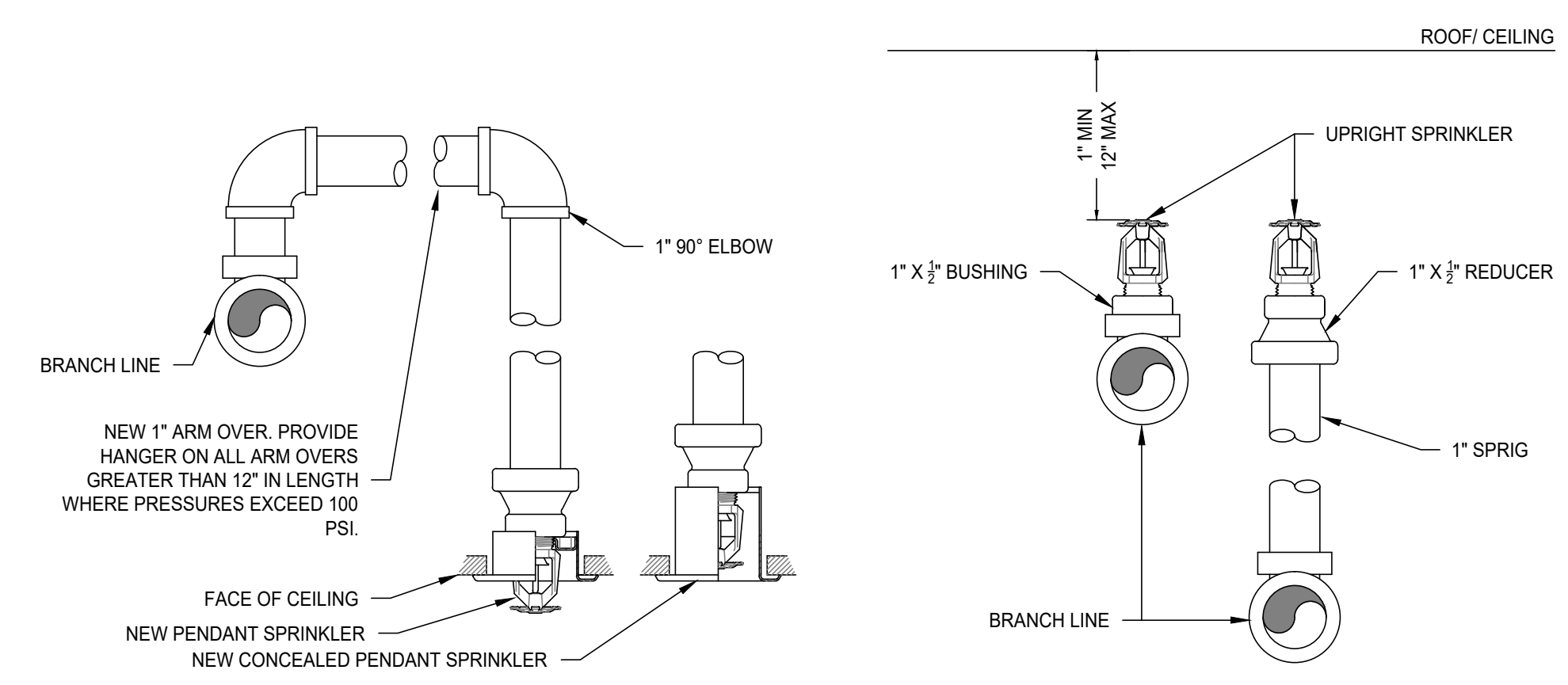
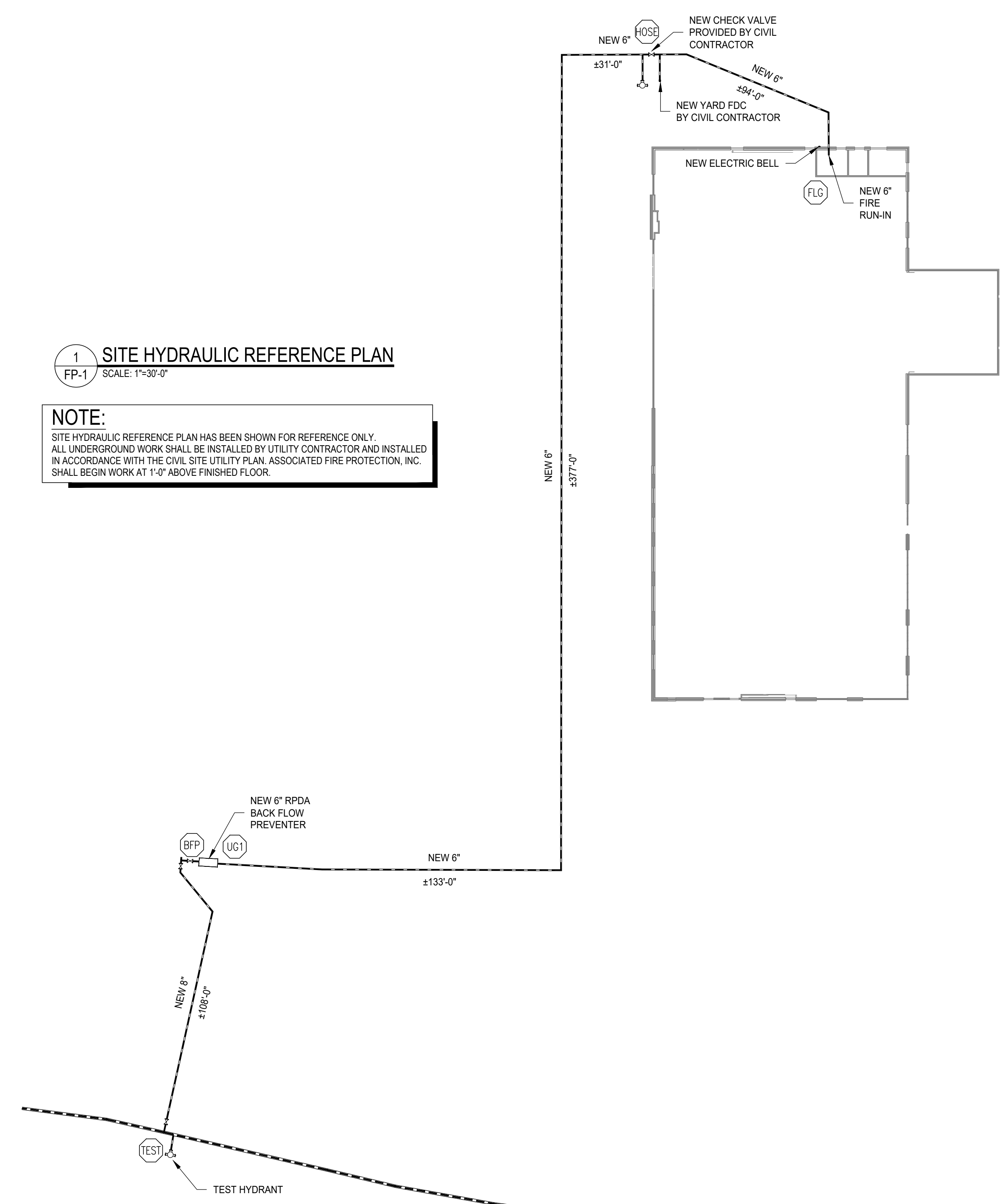
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Date: 10.19.23
 Scale: As Noted
 Job No.: EDW-1551
 Drawn By: WLH
 Sheet Name: NOTES AND DETAILS
 Sheet No.: FP-1

1 SITE HYDRAULIC REFERENCE PLAN
 FP-1 SCALE: 1"=30'-0"

NOTE:
 SITE HYDRAULIC REFERENCE PLAN HAS BEEN SHOWN FOR REFERENCE ONLY. ALL UNDERGROUND WORK SHALL BE INSTALLED BY UTILITY CONTRACTOR AND INSTALLED IN ACCORDANCE WITH THE CIVIL SITE UTILITY PLAN. ASSOCIATED FIRE PROTECTION, INC. SHALL BEGIN WORK AT 1'-0" ABOVE FINISHED FLOOR.



PRODUCT LEGEND

- INLET NIPPLE (1" MPT)
- NUT
- ISOLATION RING
- COLLAR (WELDED FITTING)
- AH-1 STAINLESS STEEL FLEXIBLE BRAIDED HOSE (1" NOMINAL DIAMETER) (LENGTHS AVAILABLE 31', 36', 48', 60', & 72')
- COLLAR (WELDED FITTING)
- NUT
- REDUCING OUTLET (AVAILABLE 1/2" OR 3/4" FMP)
- CENTER BRACKET ASSEMBLY
- SQUARE BAR (AVAILABLE IN 24" AND 48" LENGTHS)
- END BRACKET ASSEMBLY
- WING NUT OR SHEET METAL SCREW
- 1" OUTLET (SEE VICTAULIC SUBMITTAL NUMBER 10 95)

VICFLEX AH1 BRAIDED HOSE FRICTION LOSS DATA

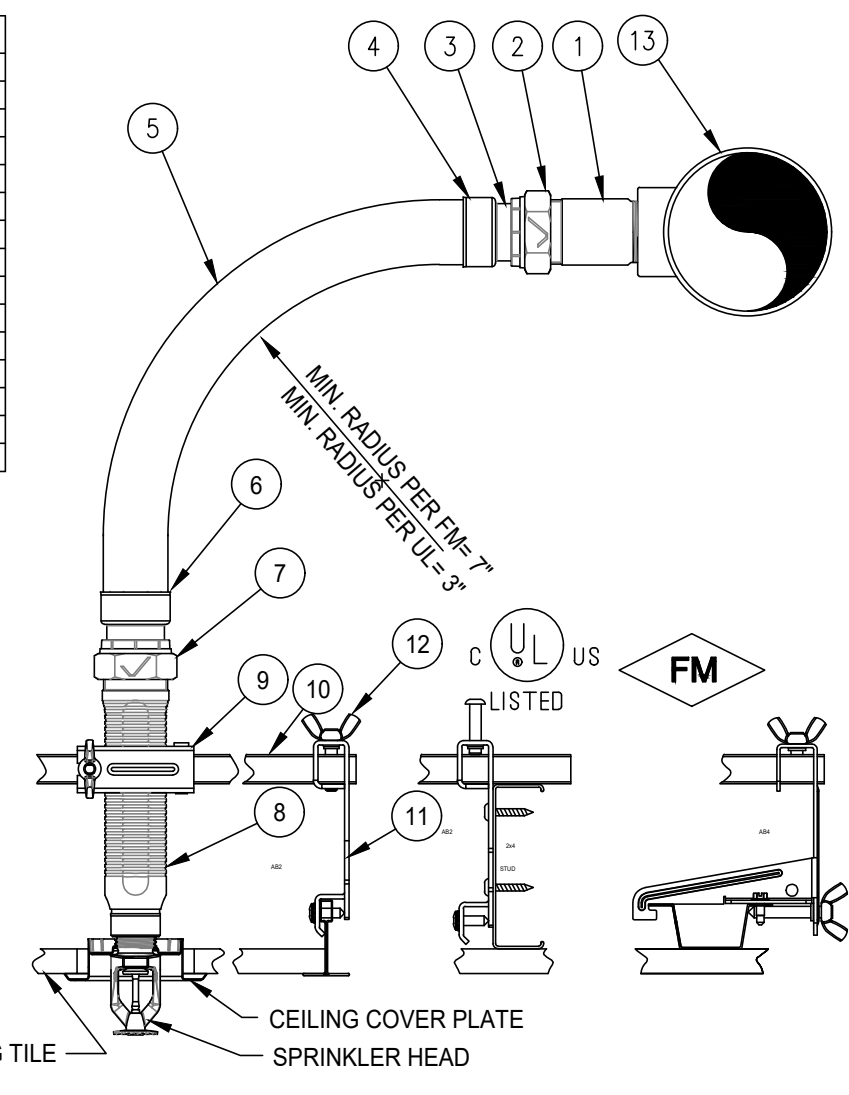
LENGTH	OUTLET CONNECTIONS	MAX # BENDS (UL)	EQUIV. LENGTH OF 1" SCHED 40 PIPE, FT (UL)
20'	1	3	25
25'	1	3	31
30'	1	3	37
35'	1	3	43
40'	1	3	49
45'	1	3	55
50'	1	3	61
55'	1	3	67
60'	1	3	73
65'	1	3	79
70'	1	3	85
75'	1	3	91
80'	1	3	97

FLEXIBLE SPRINKLER CONNECTION

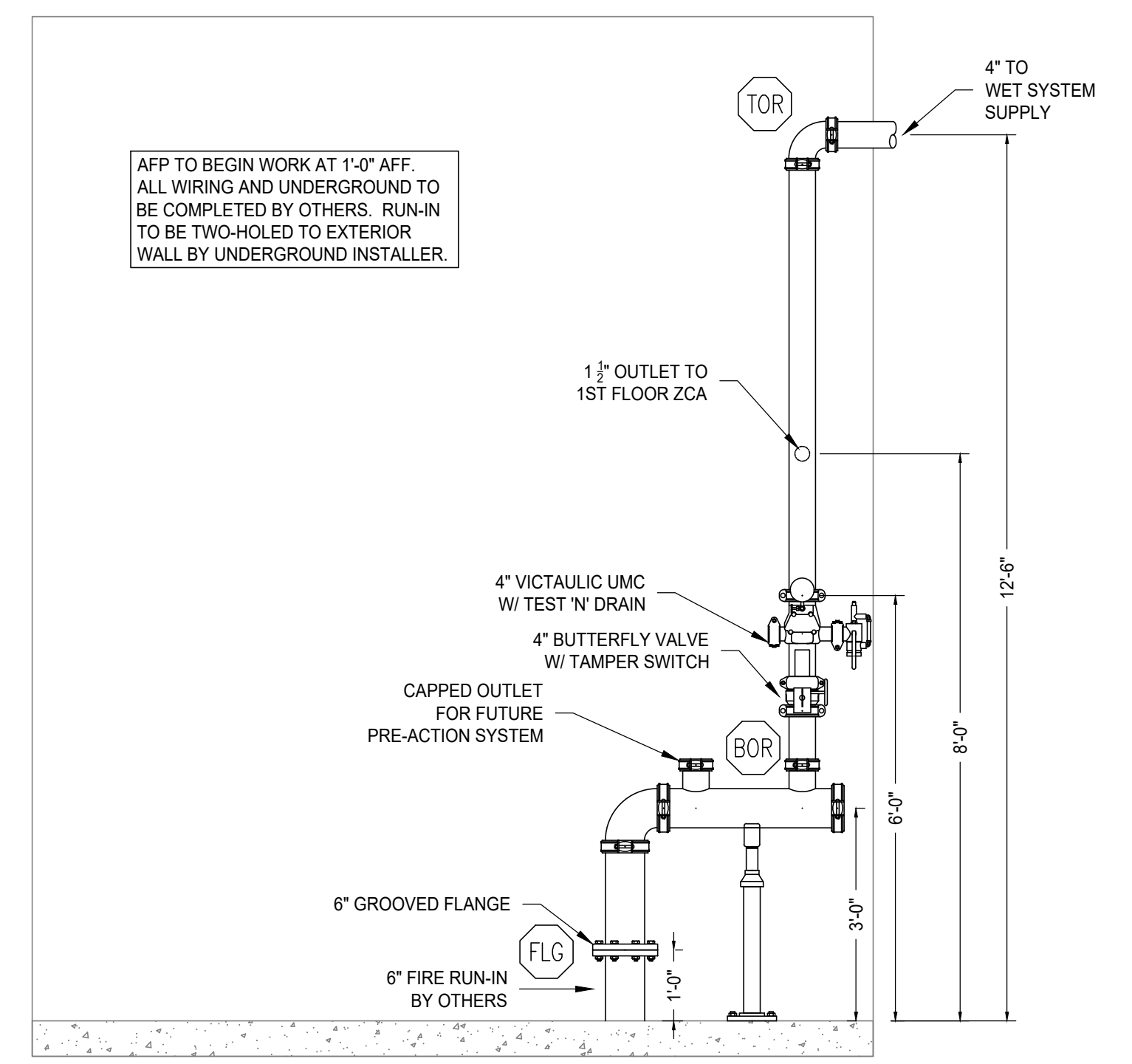
TOTAL EQUIVALENT LENGTH ALLOWED (PER HYD. CALC.) 85 FEET

SUMMARY OF ITEMS TO DETERMINE EQUIVALENT LENGTH OF 1" PIPE

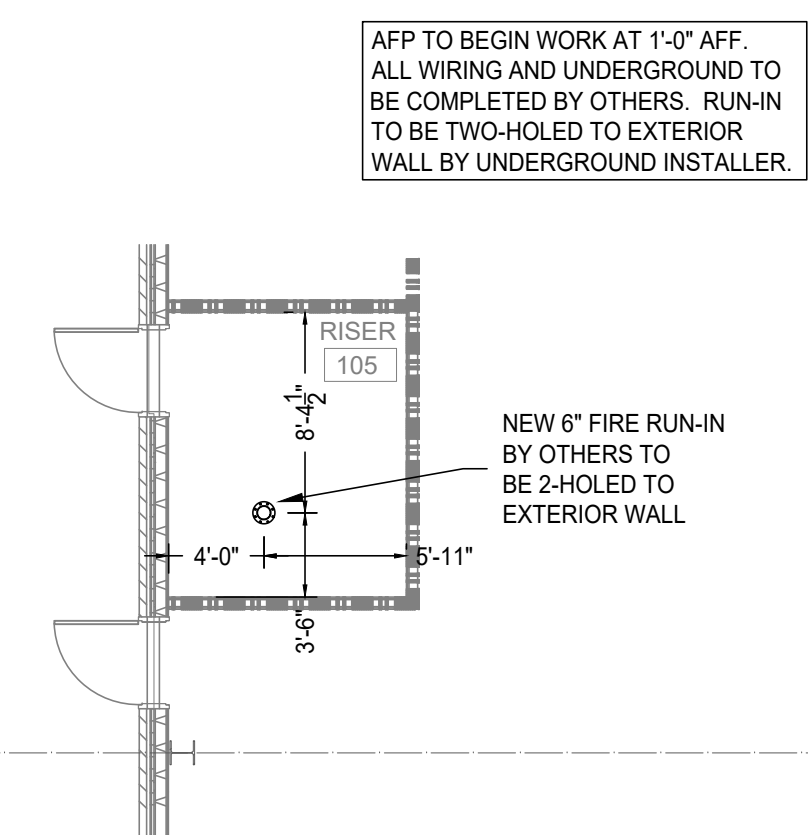
60" FLEXIBLE CONNECTION	72 FEET
STANDARD 1" 90 DEG. ELBOW	2 FEET
STANDARD 1" STRAIGHT TEE	5 FEET
4'-0" OF 1" SCH. 40 PIPE	4 FOOT



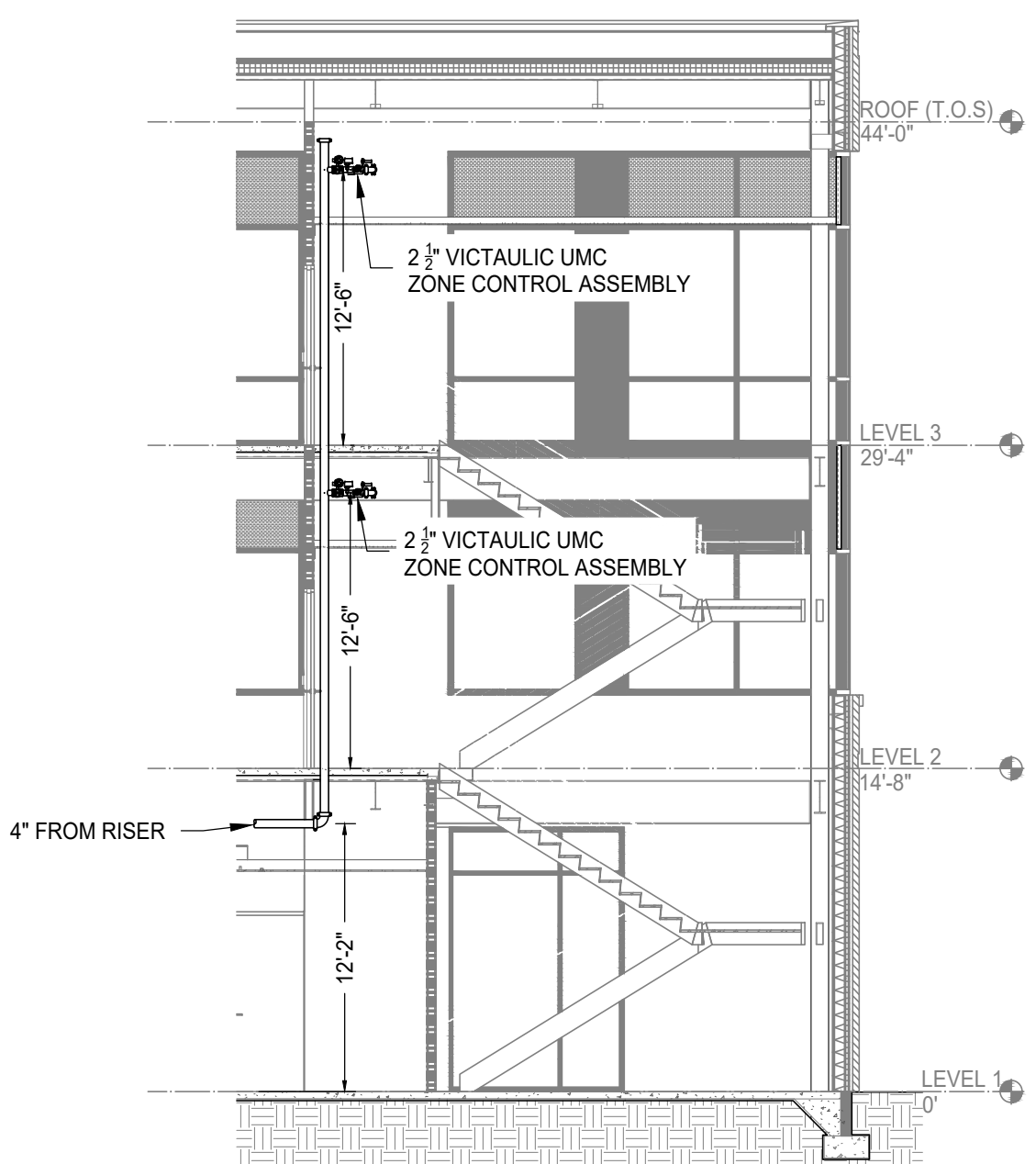
E VICFLEX AH1 FLEXIBLE SPRINKLER DROP DETAIL
 FP-1 SCALE: N.T.S.



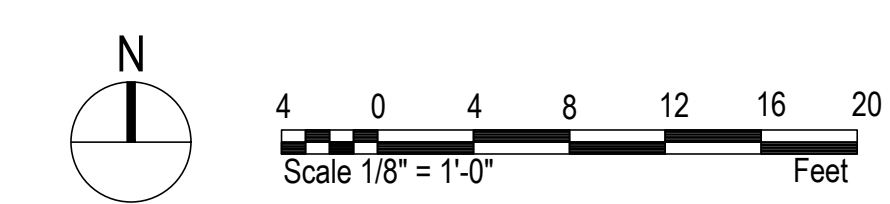
2 RISER DETAIL
 FP-1 SCALE: 1/2"=1'-0"



3 FIRE RUN-IN DETAIL
 FP-1 SCALE: 1/8"=1'-0"




4 STANDPIPE DETAIL
 FP-1 SCALE: 1/8"=1'-0"



REVISIONS	
No.	Date-Description
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
FD	FIRE DEPARTMENT CONNECTION
HP	HYDRAULIC REFERENCE POINT
7-7	CENTERLINE OF PIPE ABOVE FINISH FLOOR
7-7	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION		TOTAL	
SYMBOL	S.I.N.#	TEMP	K-FACTOR
○	V2708	155 F	5.6
○	V2704	155 F	5.6
○	V2706	155 F	5.6
○	V2710	200 F	5.6
TOTAL SPRINKLERS SHOWN IN THIS AREA		175	520
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT			

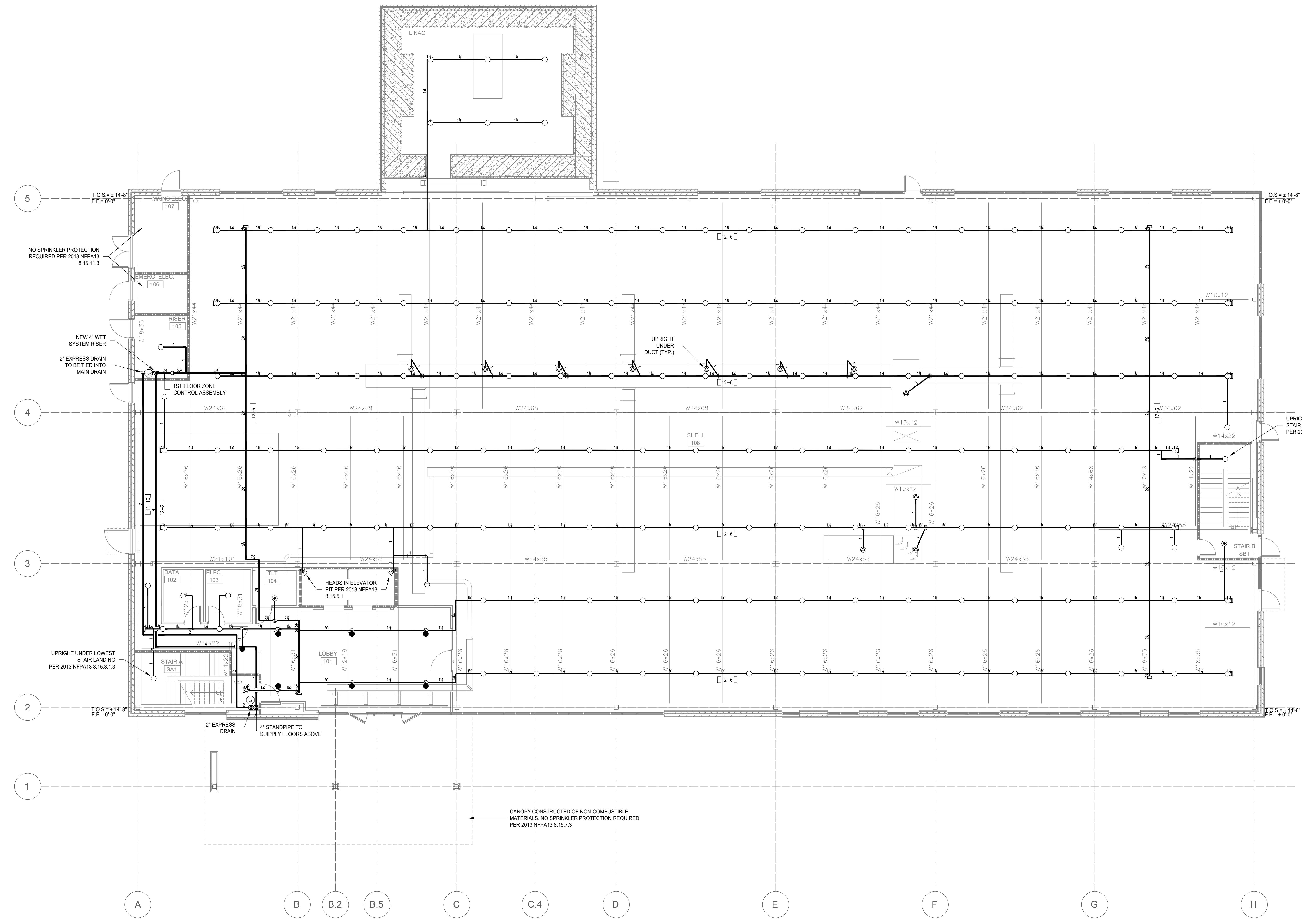
Seal:

 Andrew King, NICET Level III #152401

PROJECT:
CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

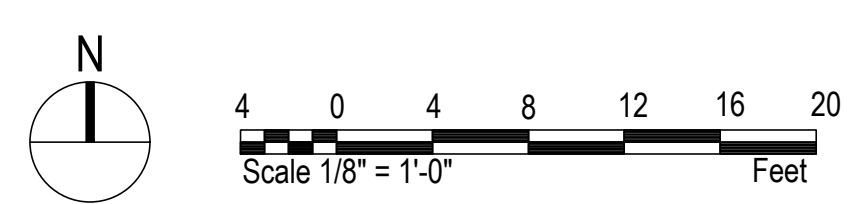
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Date: 10.19.23
 Scale: As Noted
 Job No.: EDW-1551
 Drawn By: WLH
 Sheet Name: **FIRST FLOOR PIPING PLAN**
 Sheet No.: **FP-2**




1 FIRST FLOOR PIPING PLAN
 FP-2 SCALE: 1/8"=1'-0"



REVISIONS	
No.	Date-Description
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
⊠	FIRE DEPARTMENT CONNECTION
⊞	HYDRAULIC REFERENCE POINT
⊟	CENTERLINE OF PIPE ABOVE FINISH FLOOR
⊠	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION		MIN. SPACING	MAX. SPACING	TEMP.	K-FACTOR	TOTAL					
SYMBOL	S.I.N.#	SIZE	STYLE	MAKE	FINISH	MODEL					
⊙	V2708	1/2"	ISSORCP	Victaulic	CHROME	Pendent	6"0"	15'0"	155 F	5.6	157
⊙	V2704	1/2"	ISSORCU	Victaulic	BRASS	Upright	6"0"	15'0"	155 F	5.6	0
⊙	V9006	1/2"	ISSORCP	Victaulic	WHITE	Concealed	6"0"	15'0"	155 F	5.6	0
⊙	V2710	1/2"	ISSORCS	Victaulic	BRASS	SideWall	6"0"	15'0"	200 F	5.6	0

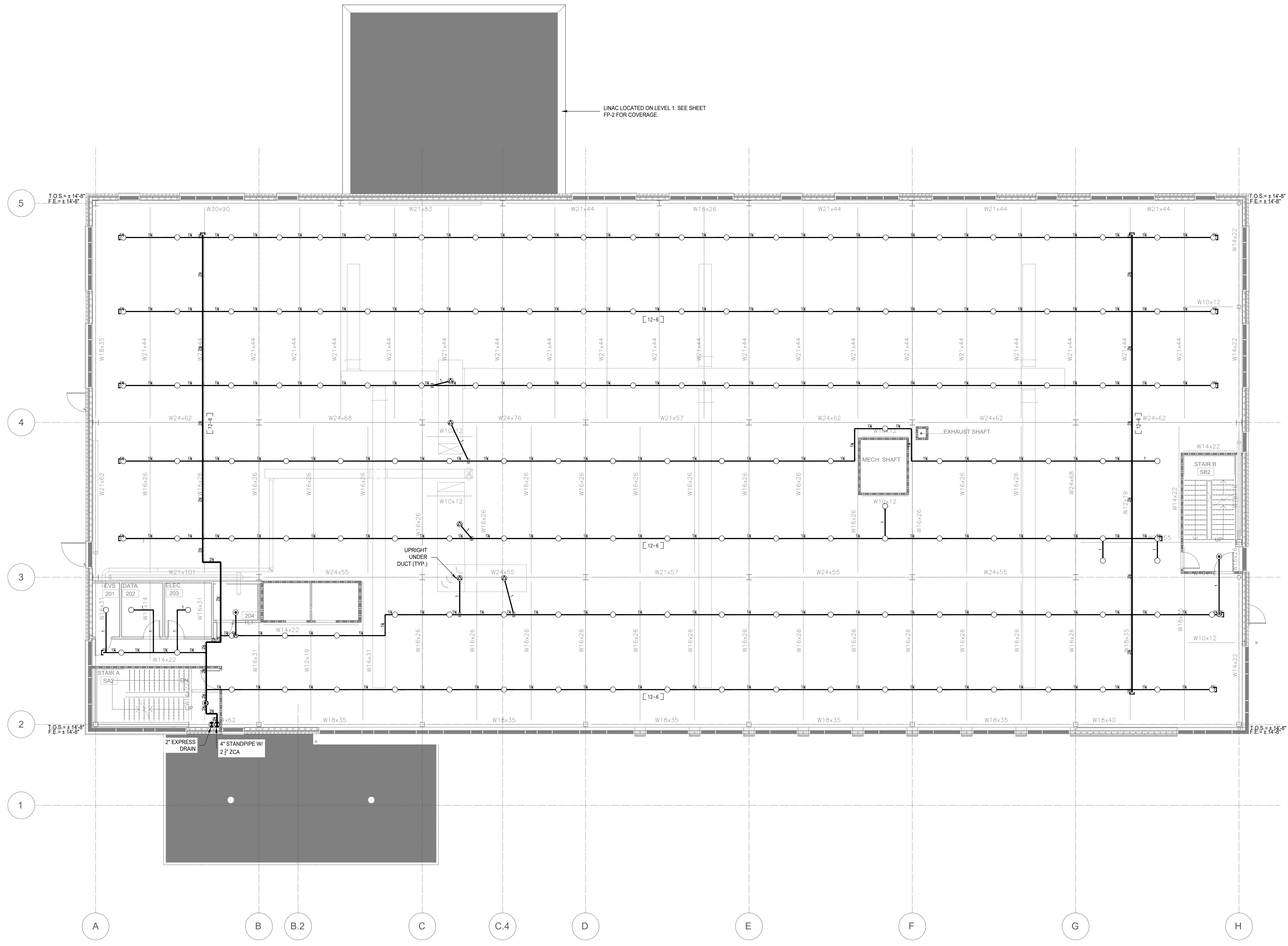
Seal:

 Andrew King, NICET Level III #152401

PROJECT:
CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

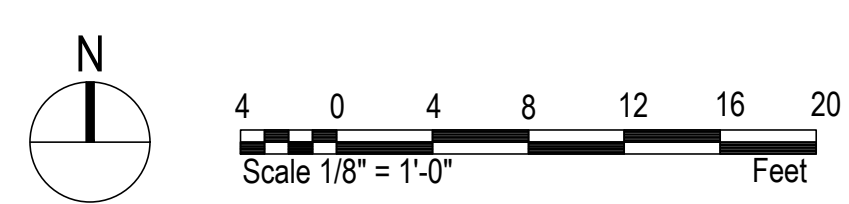
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Date:	10.19.23
Scale:	As Noted
Job No.:	EDW-1551
Drawn By:	WLH
Sheet Name:	SECOND FLOOR PIPING PLAN
Sheet No.:	FP-3



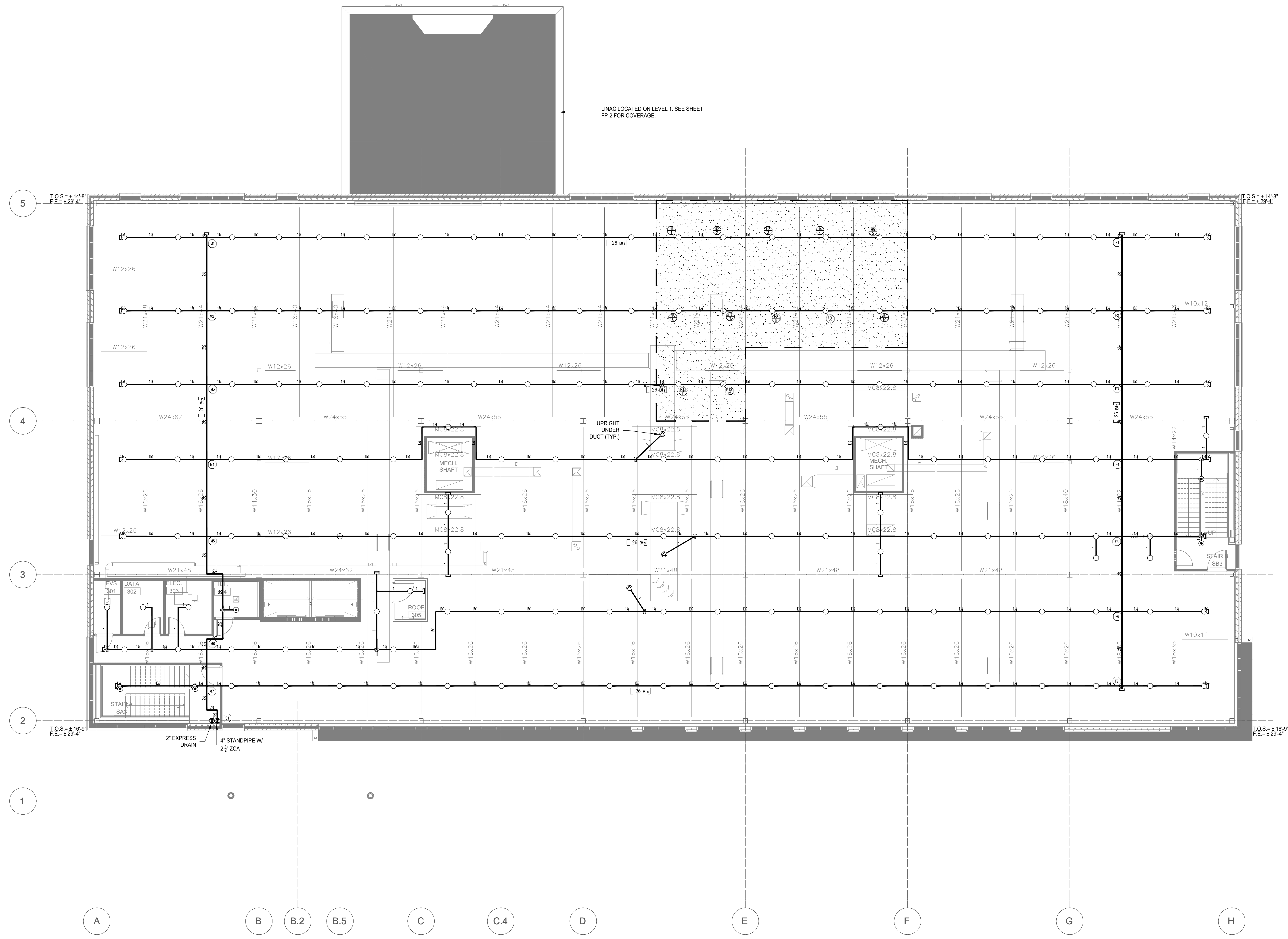
1 SECOND FLOOR PIPING PLAN
 FP-3 SCALE: 1/8"=1'-0"



REVISIONS	
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
(S)	FIRE DEPARTMENT CONNECTION
(H)	HYDRAULIC REFERENCE POINT
(-)	CENTERLINE OF PIPE ABOVE FINISH FLOOR
(-)	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION		TOTAL	
SYMBOL	S.I.N.#	TEMP	K-FACTOR
(S)	V2708	155 F	5.6
(S)	V2704	155 F	5.6
(S)	V9006	155 F	5.6
(S)	V2710	200 F	5.6
TOTAL SPRINKLERS SHOWN IN THIS AREA		105	520
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT			



1 THIRD FLOOR PIPING PLAN
 SCALE: 1/8"=1'-0"

Seal:

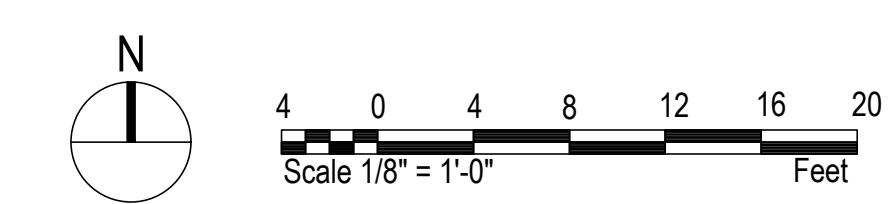
 Andrew King, NICET Level III #152401

PROJECT:
 CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

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Date:	10.19.23
Scale:	As Noted
Job No.:	EDW-1551
Drawn By:	WLH
Sheet Name:	THIRD FLOOR PIPING PLAN
Sheet No.:	FP-4



REVISIONS	
No.	Date-Description
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
FD	FIRE DEPARTMENT CONNECTION
H	HYDRAULIC REFERENCE POINT
7-7	CENTERLINE OF PIPE ABOVE FINISH FLOOR
7-7	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION		TOTAL	
SYMBOL	S.I.N.#	SIZE	TEMP
○	V2708	1/2"	155 F
○	V2704	1/2"	155 F
○	V2706	1/2"	155 F
○	V2710	1/2"	200 F
TOTAL SPRINKLERS SHOWN IN THIS AREA		175	520
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT			

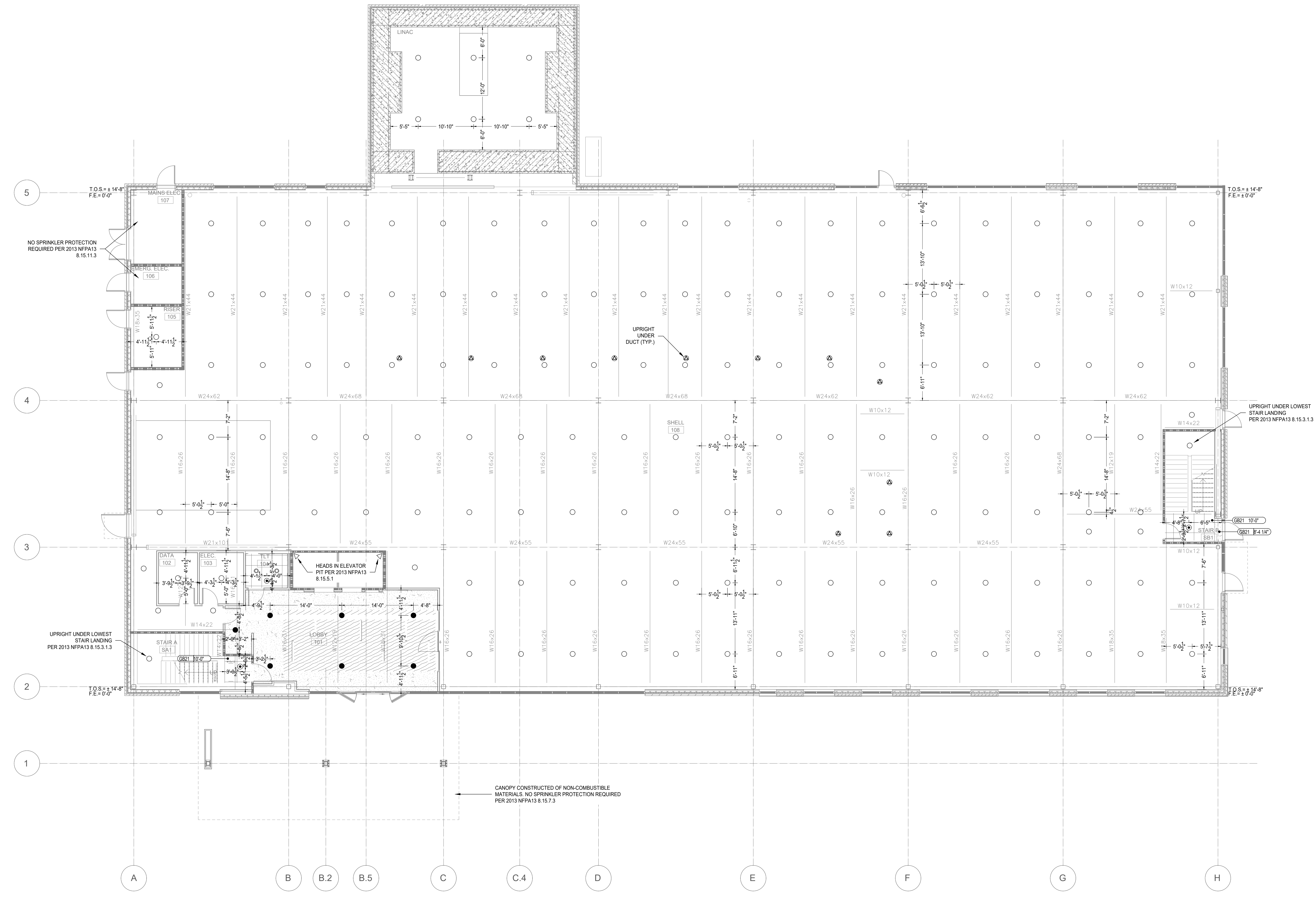
Seal:

 Andrew King, NICET Level III #152401

PROJECT:
 CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGSTON, NC

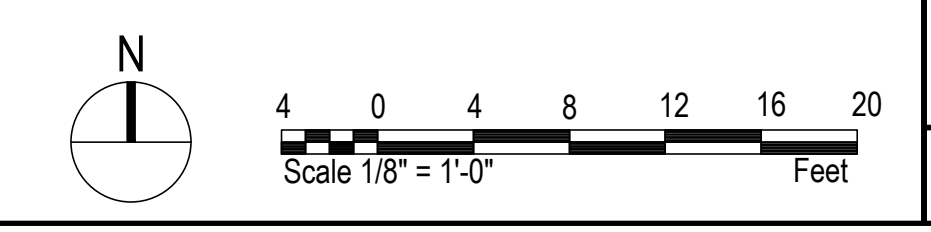
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Date: 10.19.23
Scale: As Noted
Job No.: EDW-1551
Drawn By: WLH
Sheet Name: FIRST FLOOR REFLECTED CEILING PLAN
Sheet No.: FP-5



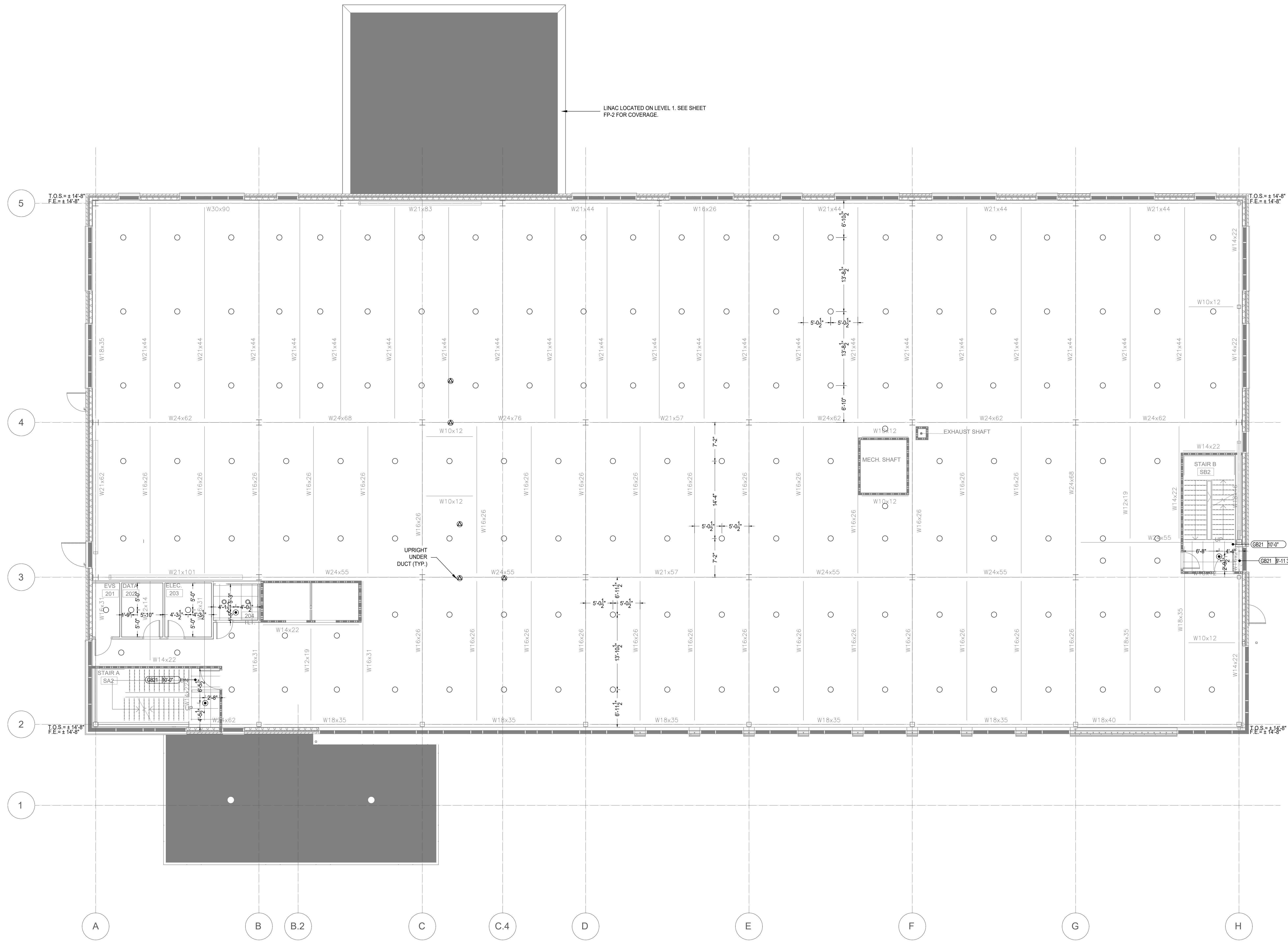
1 FIRST FLOOR REFLECTED CEILING PLAN
 FP-5 SCALE: 1/8"=1'-0"



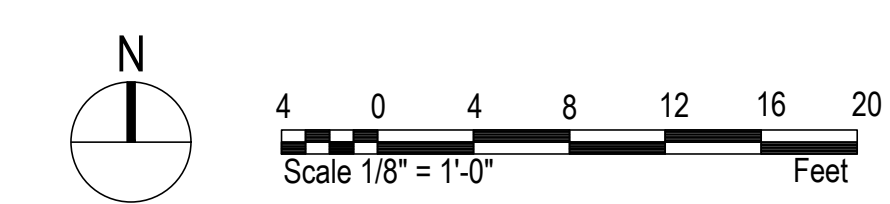
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
⊠	FIRE DEPARTMENT CONNECTION
⊞	HYDRAULIC REFERENCE POINT
⊞	CENTERLINE OF PIPE ABOVE FINISH FLOOR
⊞	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION										
SYMBOL	S.I.N.#	SIZE	STYLE	MAKE	FINISH	MODEL	MIN. SPACING	MAX. TEMP.	K-FACTOR	TOTAL
○	V2706	1/2"	ISSORCP	Victaulic	CHROME	Pendent	6'-0"	155 F	5.6	3
○	V2704	1/2"	ISSORCP	Victaulic	BRASS	Upright	6'-0"	155 F	5.6	157
○	V9006	1/2"	ISSORCP	Victaulic	WHITE	Concealed	6'-0"	155 F	5.6	0
○	V2710	1/2"	ISSORCP	Victaulic	BRASS	Stairwall	6'-0"	200 F	5.6	0
TOTAL SPRINKLERS SHOWN IN THIS AREA										160
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT										500



1 SECOND FLOOR REFLECTED CEILING PLAN
 FP-6 SCALE: 1/8"=1'-0"



Seal:

 Andrew King, NICET Level III #152401

PROJECT:
 CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

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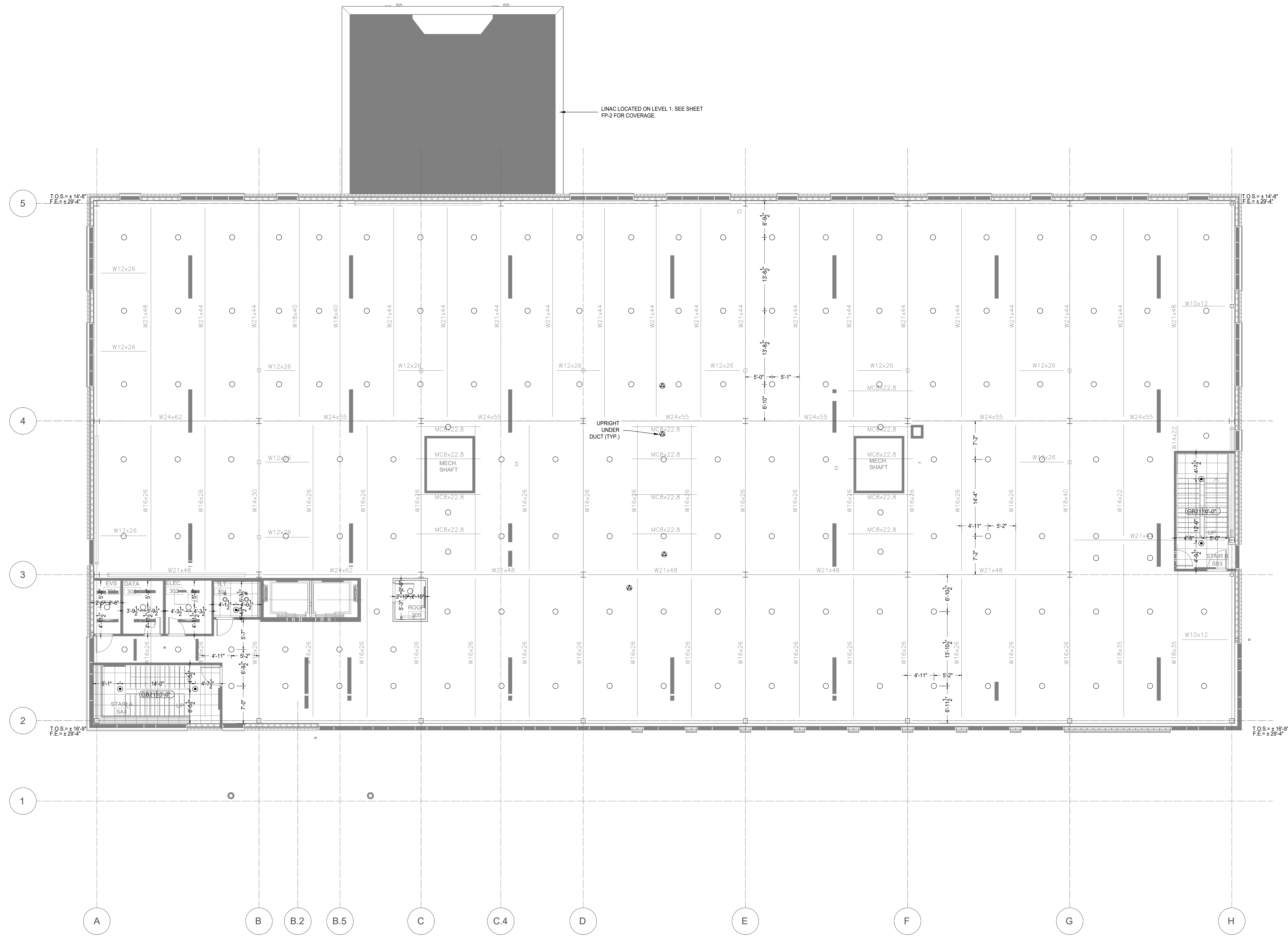
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Date:	10.19.23
Scale:	As Noted
Job No.:	EDW-1551
Drawn By:	WLH
Sheet Name:	SECOND FLOOR REFLECTED CEILING PLAN
Sheet No.:	FP-6

REVISIONS	
No.	Date-Description
1	
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SYSTEM SYMBOL DESCRIPTION	
SYMBOL	DESCRIPTION
⊠	FIRE DEPARTMENT CONNECTION
(H)	HYDRAULIC REFERENCE POINT
[7-7]	CENTERLINE OF PIPE ABOVE FINISH FLOOR
[? m]	CENTERLINE OF PIPE BELOW TOP OF STEEL

SPRINKLER SYMBOL DESCRIPTION		TOTAL	
SYMBOL	S.I.N.#	SIZE	TEMP
○	V2708	1/2"	155 F
○	V2704	1/2"	155 F
○	V2710	1/2"	200 F
TOTAL SPRINKLERS SHOWN IN THIS AREA		105	520
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT		105	520



1 THIRD FLOOR REFLECTED CEILING PLAN
 SCALE: 1/8"=1'-0"

Seal:

 Andrew King, NICET Level III #152401

PROJECT:
 CAPE FEAR MOB - SHELL
 215 BRIGHTWATER DRIVE
 LILLINGTON, NC

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Scale:	As Noted
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Drawn By:	WLH
Sheet Name:	THIRD FLOOR REFLECTED CEILING PLAN
Sheet No.:	FP-7

