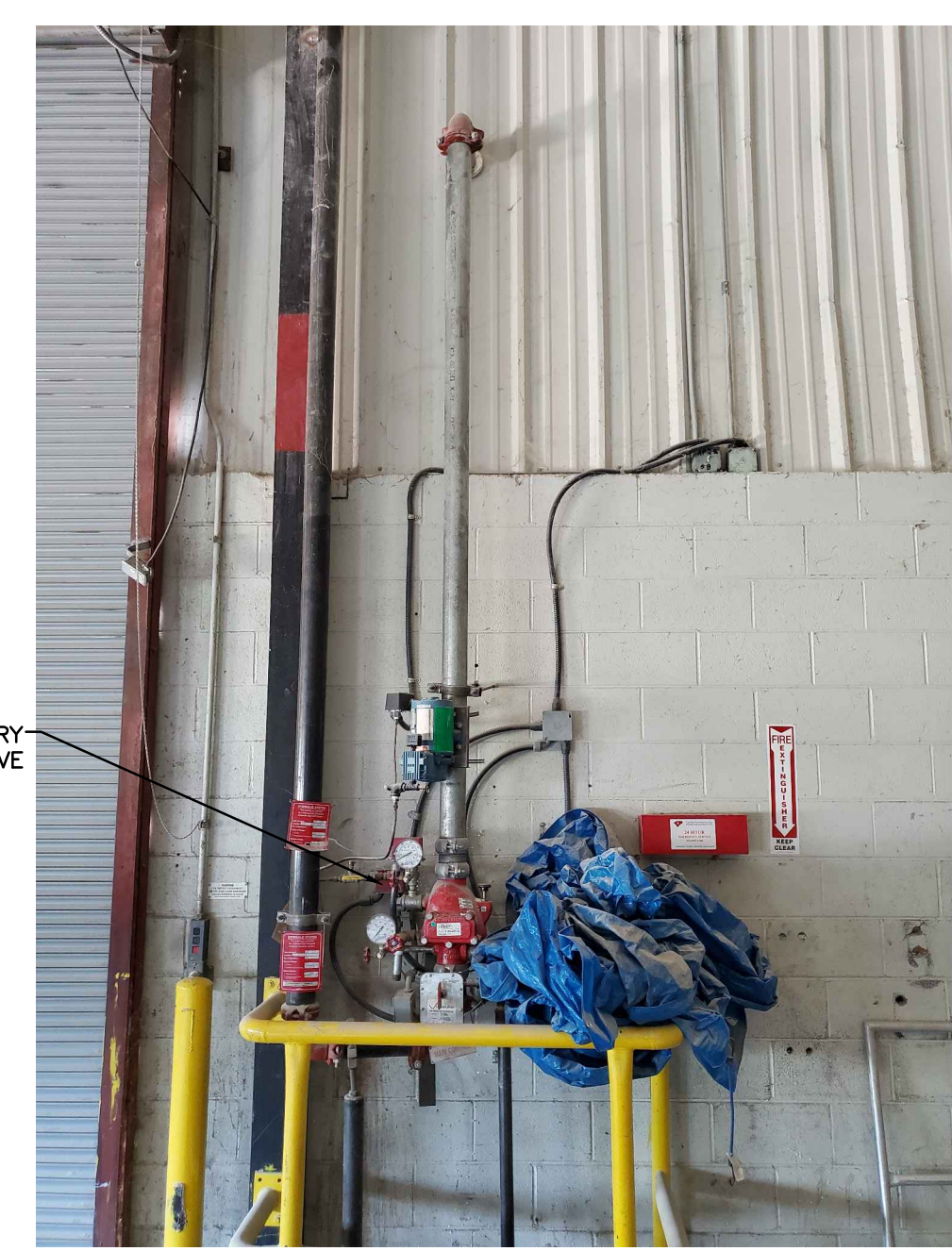


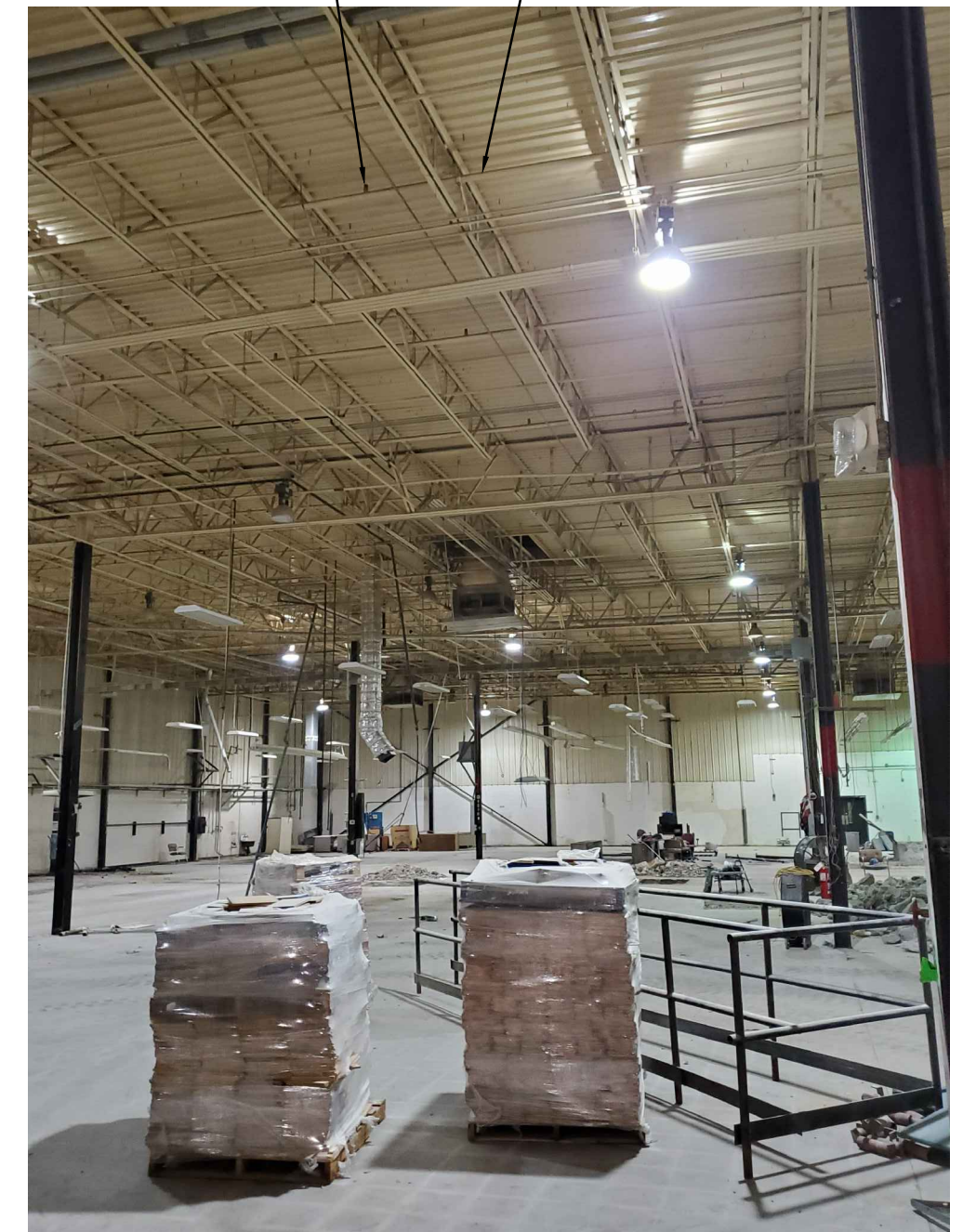
EXISTING WET RISER DETAILS



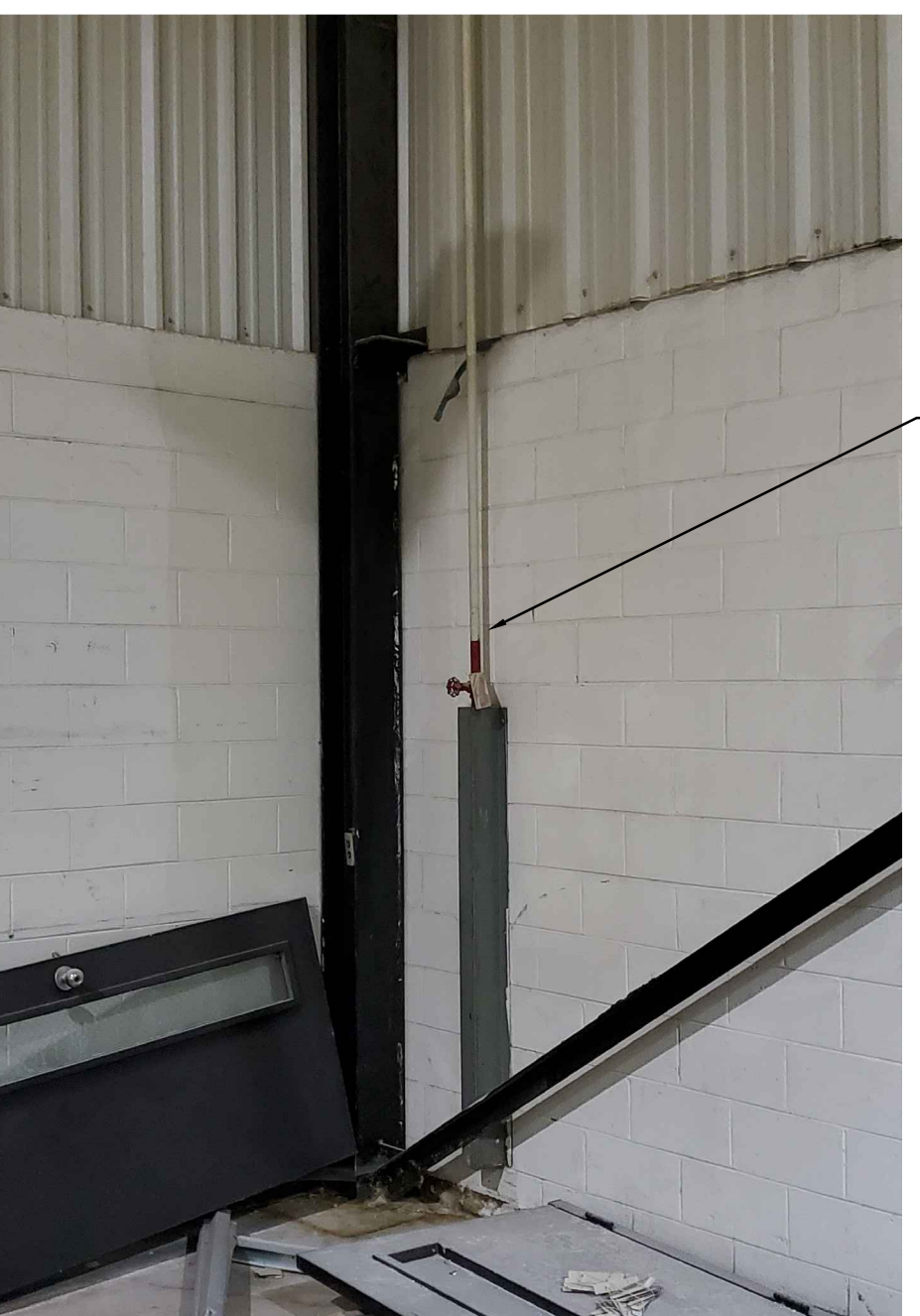
EXISTING DRY RISER DETAILS



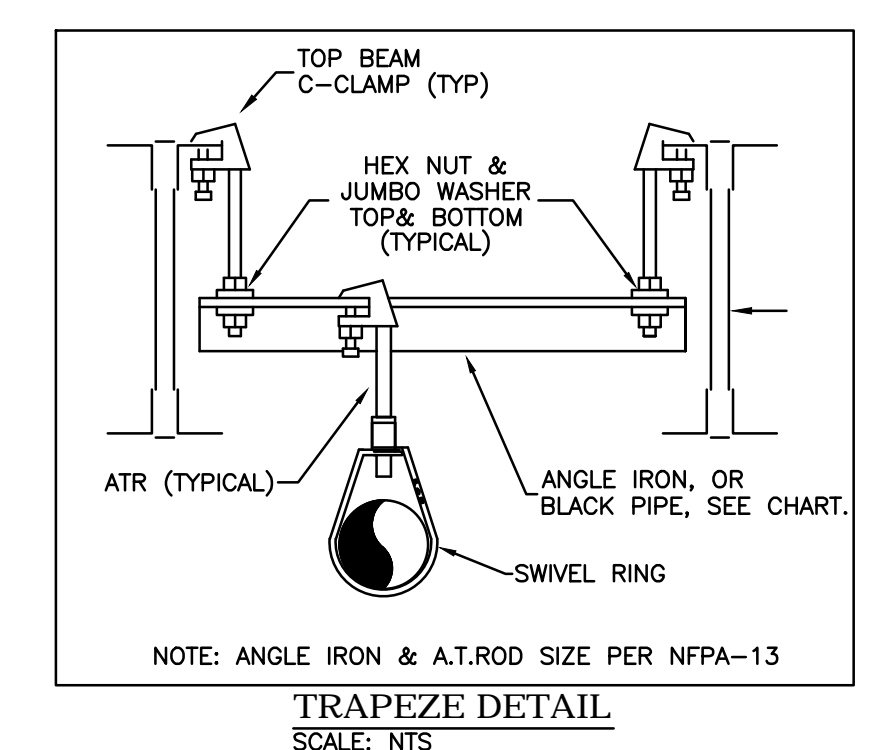
EXISTING REMOTE FDC & BACKFLOW



EXISTING SHELL BUILDING

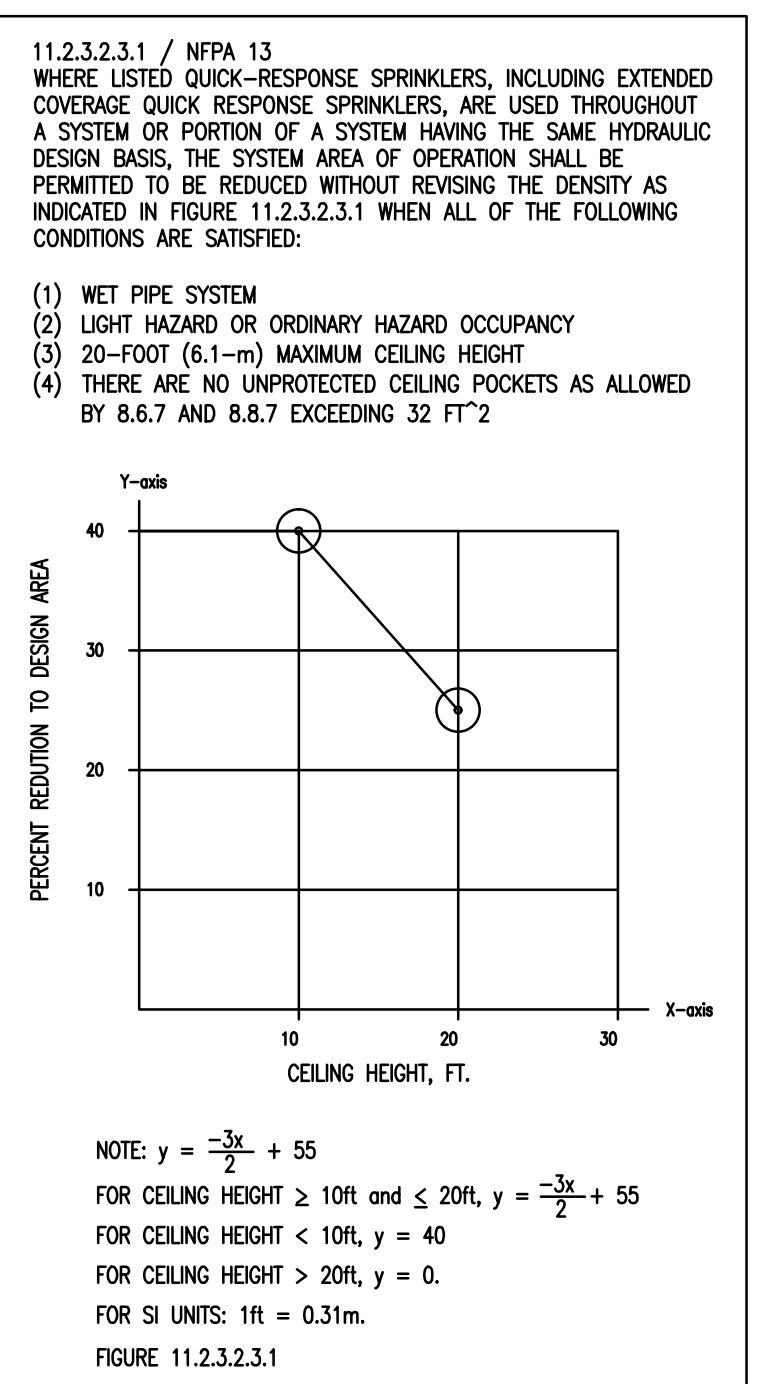


EXISTING ITC & DRAIN

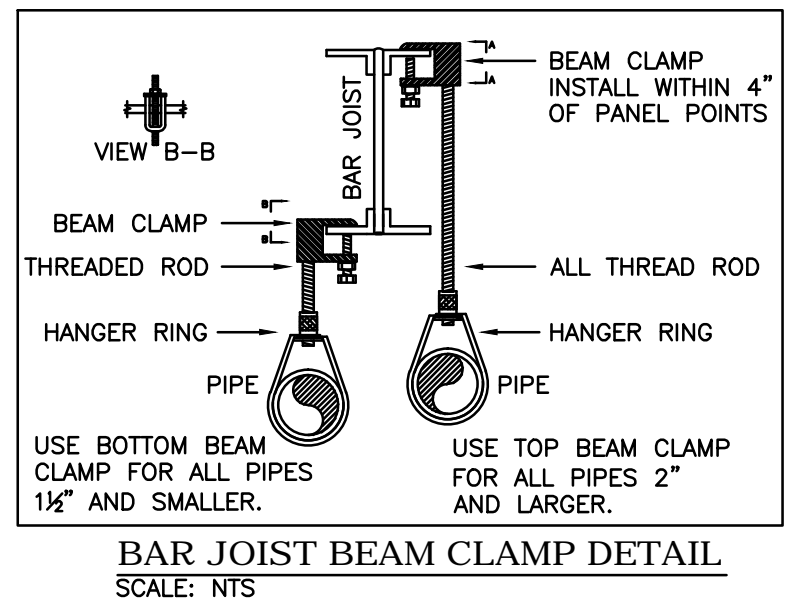


TRAPEZE INSTALLATION REQUIREMENTS

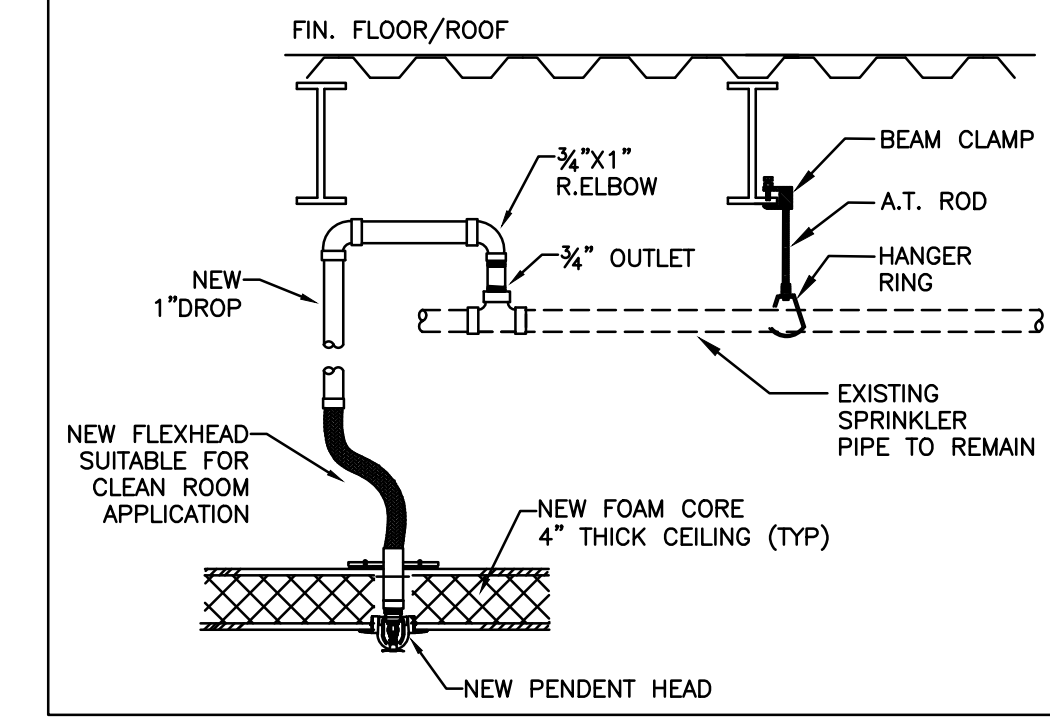
SPAN OF TRAPEZE (Schedule 10 OR 40)	NOMINAL PIPE SIZE SUPPORTED							
	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
1 FT. 6 IN.	1"	1"	1"	1"	1"	1-1/4"	1-1/4"	1-1/2"
2 FT. 0 IN.	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"
2 FT. 6 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"
3 FT. 0 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"
4 FT. 0 IN.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"
4 FT. 6 IN.	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"
6 FT. 0 IN.	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"
7 FT. 0 IN.	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3-1/2"
8 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3-1/2"
9 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	4"
10 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	4"



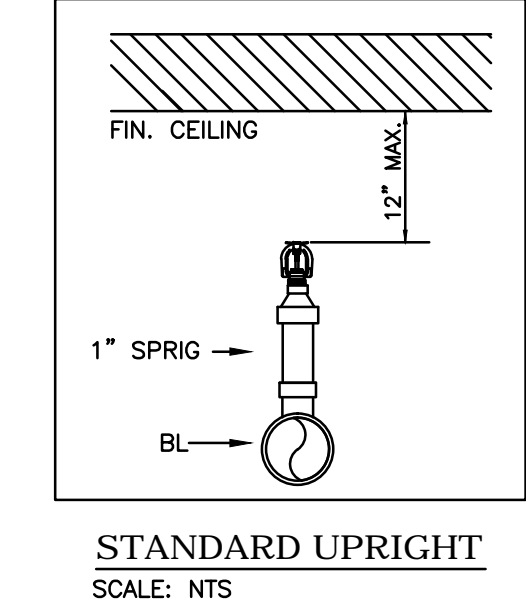
REVISED AREA REDUCTION CHART
NFPA-13



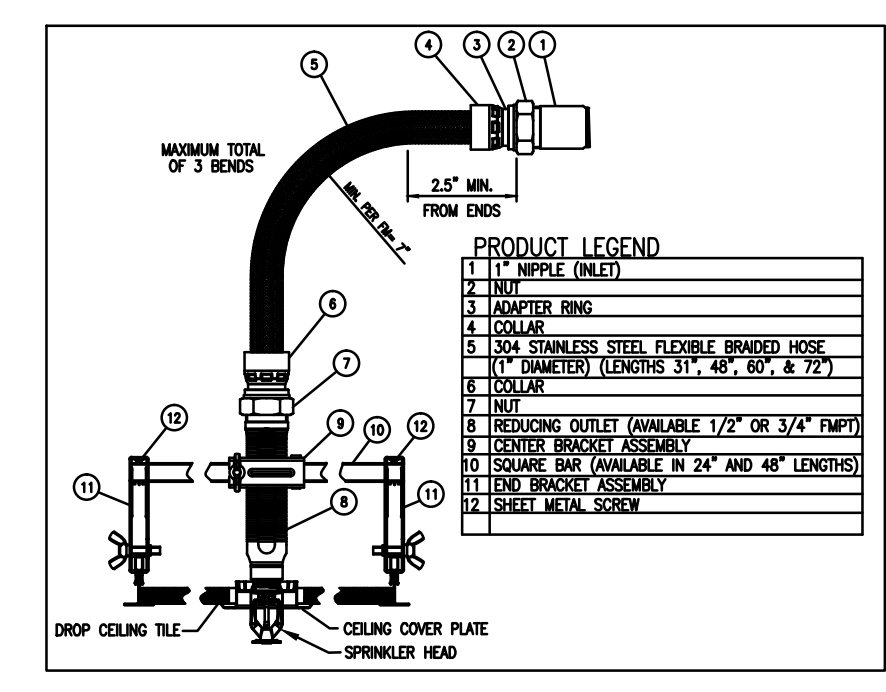
BAR JOIST BEAM CLAMP DETAIL
SCALE: NTS



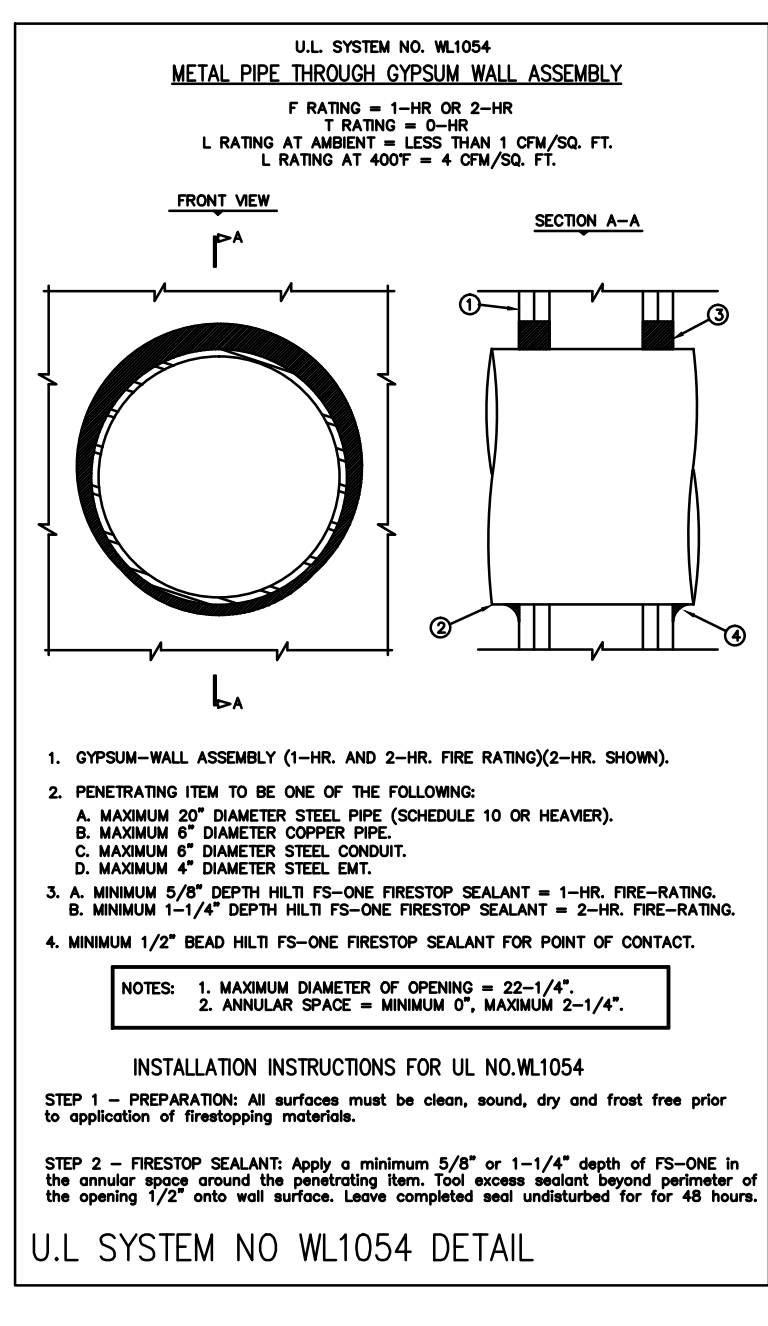
UPFIT PENDENT HEAD DETAIL (FOAM CORE CEILING AREAS)
SCALE: NTS



STANDARD UPRIGHT
SCALE: NTS



FLEXIBLE HOSE ASSEMBLY DETAIL (DROP CEILING AREAS)
SCALE: NTS



U.L. SYSTEM NO. WL1054 DETAIL

GENERAL NOTES

- SCOPE OF WORK - TO MODIFY THE EXISTING SPRINKLER SYSTEM TO ACCOMMODATE FOR THE NEW TENANT UP-FIT AS SHOWN IN THE DRAWING IN COMPLIANCE WITH LOCAL AUTHORITY, AND NFPA - 13.
- ALL UNDERGROUND PIPING, SYSTEM RISER, ZONE CONTROL, BACKFLOW, CONTROL VALVES, AND FLOW SWITCHES TO REMAIN UNDISTURBED.
- ALL PIPING 1" PIPE TO BE SCH40 BLACK STEEL WITH CAST IRON SCREWED FITTINGS.
- ALL PIPING 1 1/2" AND ABOVE TO BE SCH10 BLACK STEEL WITH GROOVED FITTINGS.
- ALL MAIN AND BRANCH LINE PIPES WILL REMAIN UNDISTURBED.
- ALL HANGER ASSEMBLIES SHALL UTILIZE UL/FM LISTED COMPONENTS AND COMPLY WITH NFPA-13
- EXISTING CONTROL VALVES SHALL BE ELECTRICALLY SUPERVISED. ALL ELECTRICAL CONNECTIONS TO BE MADE BY AN ELECTRICIAN.
- ALL INTERIOR PIPING SHALL BE HYDRAULICALLY TESTED AT 200 PSI FOR 2 HOURS.
- IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ADEQUATE HEAT TO PREVENT THE FIRE PROTECTION SYSTEM FROM FREEZING.
- CONTACT PERSON: DREW PATEL, PROJECT MANAGER, KRIGEN PHARMACEUTICALS TEL: 919-961-3751

SPRINKLER DESIGN DATA

Project Name:	KRIGEN PHARMACEUTICALS	System:	WET
Project Street Address:	800 EDWARDS BROTHERS DRIVE, LILLINGTON, NC 27546	Syn. Sq. Ft.:	33,000
Site:	N/A	Floor#:	1
Designed By:	REGIONAL FIRE SERVICES OF NC	Phone:	919-212-2722
Occupancy:	FACTORY, PACKAGING	Hazard:	ORDINARY, LIGHT
		Total Bldg. Hgt.:	27'-0"

DESIGN SUMMARY

Design Method	System #1		System #2		System #3	
	CALCS.	DENSITY/AREA	CALCS.	DENSITY/AREA	CALCS.	DENSITY/AREA
Design Area #	1		2		3	
Location	WATER GENERATION AREA 110		PASSAGE AREA 58		PACKAGING MATERIAL AREA 21	
Type of System	WET		WET		WET	
Hazard Class	ORD. GR-2		LIGHT		ORD. GR-1	
Criteria From	NFPA-13		NFPA-13		NFPA-13	
Design Area (sq.ft.)	1500		900		1500	
Sprinkler Spacing (sq.ft.)	256		256 MAX.		256	
Density	.2		.1		.15	
K-factor	11.2		11.2		11.2	
Hose Allowance	250		100		250	
# Design Sprinklers	10		11		10	
Special Application Spk.	N/A		N/A		N/A	
Requirement @ BOR						
G.P.M. Req'd	516.98		278.29		395.73	
P.S.I. Req'd	60.03		36.75		46.48	
Requirement @ TEST						
GPM Required	766.98		378.29		645.73	
PSI Required	66.43		41.99		52.21	
Safety factor @ Test	8.18		42.39		26.04	
Dry Sys. Vol. (gal)	N/A		N/A		N/A	

WATER SUPPLY INFORMATION

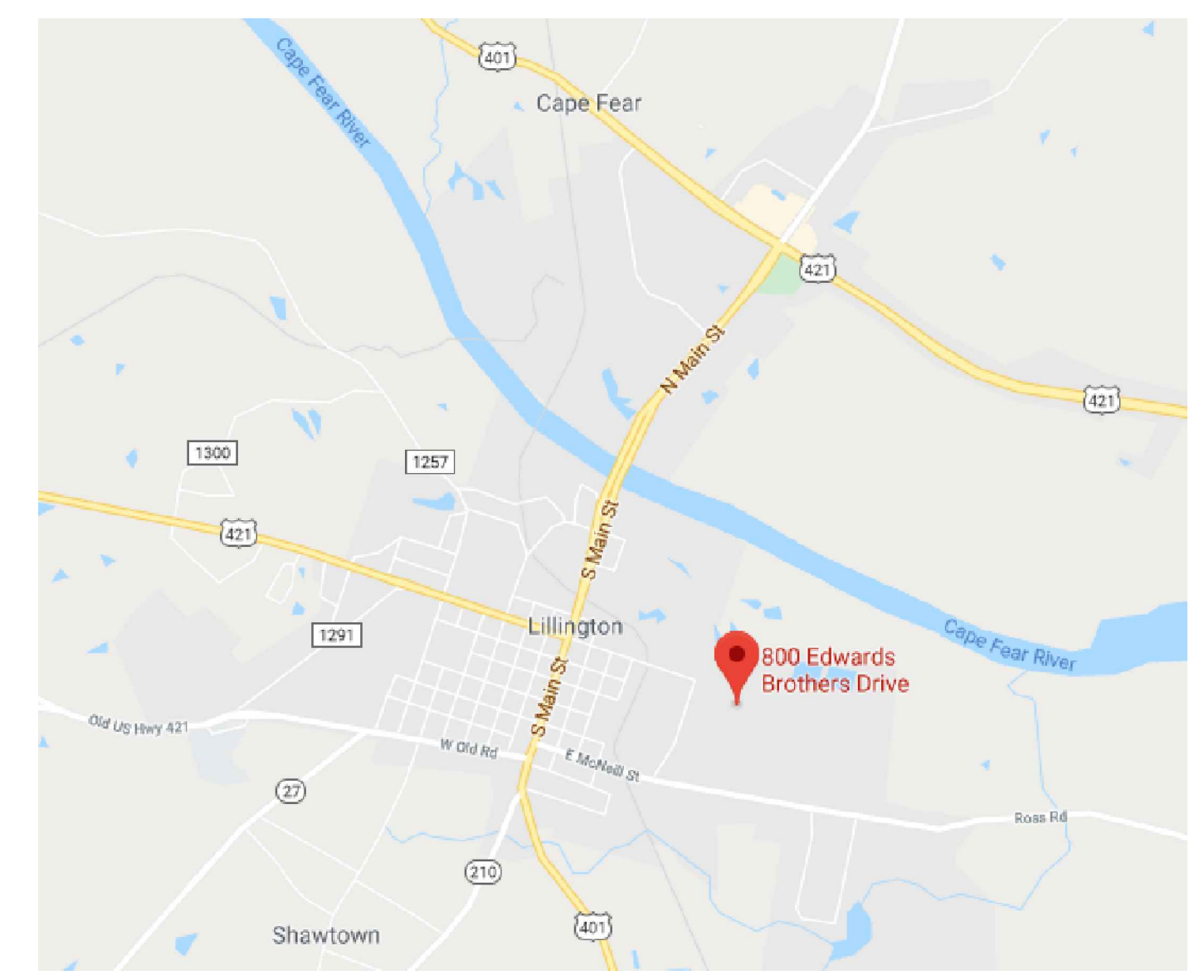
Tested by:	LILLINGTON FIRE DEPARTMENT	Date/Time:	9/10/2019	Pressure Hydrant:	-
Hydrant Elevation:	-	Flow Hydrant #1:	-	Flow Hydrant #2:	-
Static (PSI):	88	Residual (PSI):	58	Flow (gpm):	1186

Copy of Water Test Data Included with Calculation

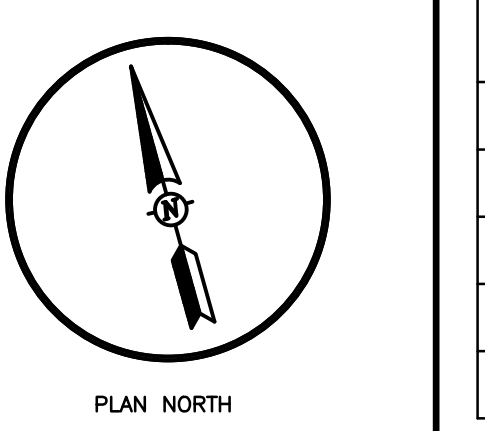
Fire Pump Data			
Rated G.P.M.	-	Rated Pressure	-
Rated Pressure	-	Horsepower	-
Churn Pressure	-	Style of pump	-
150% Flow (gpm)	-	150% Flow (gpm)	-

If Storage is Greater than 12 Feet Complete Commodity Storage Design Information

Commodity Description	??	Storage Height	??	Storage Type (Rock, Bin, Pile)	??	Clearance	??
Commodity Class	??	Open/Closed	??	Array	??	Wet/Dry	??
Stable/Unstable	??	Design	??	Minimum Design	??	Final Design	??



VICINITY MAP
N.T.S.



HANGER INSTALLATION REQUIREMENTS

NOMINAL PIPE SIZE	MAXIMUM DISTANCE BETWEEN HANGERS							
	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
SCH. 10 & 40 STEEL PIPE	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADABLE LIGHTWALL	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
CPCV	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A

APPLICABLE CODES

NCSBC 2018, NFPA 13-2013

TYPE OF OCCUPANCY: FACTORY, PACKAGING

CONSTRUCTION TYPE: II-B

FIRE PROTECTION: PER NFPA 13

PROJECT GSF: 30,000 S.F.

BUILDING GSF: 54,000 S.F.



Symbol	Description	Total This Uplift Area	Number of Sprinklers	Total This Building
(Symbol)	HYDRAULIC REFERENCE POINTS	106		
(Symbol)	ELEV. BELOW TOP OF STEEL	106	(1/2" K=5.6) Q.R. PENDENT, RECESSED ESCUT., CHROME, 155°, TYCO, TY3231	
(Symbol)	ELEV. ABOVE FINISHED FLOOR	161	(3/4" K=11.2) E.C.Q.R. PENDENT SEMI-REC. CHROME, 155°, TYCO, TY5237 (16'X16')	
(Symbol)	ELEV. OF TOP OF STEEL	63	(1/2" K=5.6) Q.R. STAINLESS STEEL PENDENT, VC-250 FINISH, REC. ESCUT., 155°, VICTALIC 92709	
(Symbol)	CEILING HEIGHT	18	(3/4" K=11.2) E.C.Q.R. UPRIGHT, BRASS, 155°, TYCO, TY1317 (16'X16')	
(Symbol)	DENOTES HANGER LOCATION			
(Symbol)	DENOTES BRANCH LINE RESTRAINT			
(Symbol)	RISE UP OR DOWN			
(Symbol)	NEW SPRINKLER PIPE			
(Symbol)	EXISTING SPRINKLER PIPE			

Drawing Title: SITE PLAN, DESIGN DATA, NOTES & FP DETAILS

Project No: 19043

Drawn By: A.Z.

Scale: AS NOTED

Date: 10/29/2019

Job: KRIGEN PHARMACEUTICALS

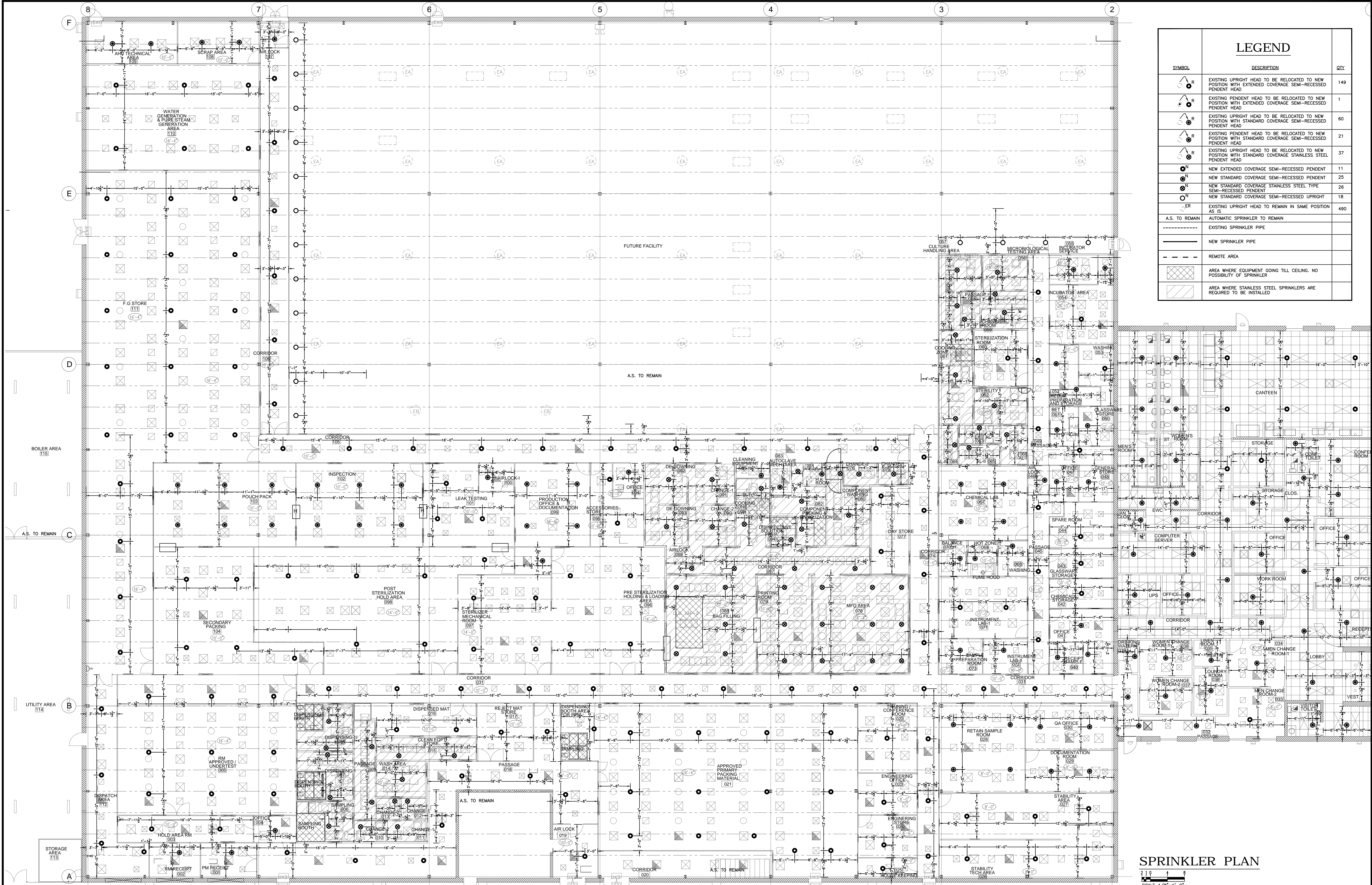
800 EDWARDS BROTHERS DRIVE

LILLINGTON, NC 27546

Owner: KRIGEN PHARMACEUTICALS

800 EDWARDS BROTHERS DRIVE

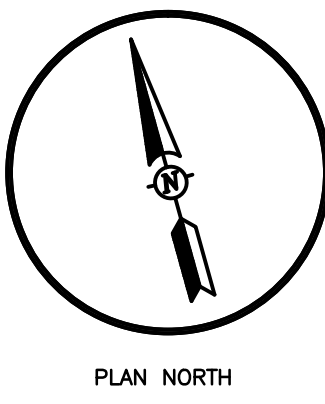
LILLINGTON, NC 27546



LEGEND		
SYMBOL	DESCRIPTION	QTY
	EXISTING UPRIGHT HEAD TO BE RELOCATED TO NEW POSITION WITH EXTENDED COVERAGE SEMI-RECESSED PENDENT HEAD	149
	EXISTING PENDENT HEAD TO BE RELOCATED TO NEW POSITION WITH EXTENDED COVERAGE SEMI-RECESSED PENDENT HEAD	1
	EXISTING UPRIGHT HEAD TO BE RELOCATED TO NEW POSITION WITH STANDARD COVERAGE SEMI-RECESSED PENDENT HEAD	60
	EXISTING PENDENT HEAD TO BE RELOCATED TO NEW POSITION WITH STANDARD COVERAGE SEMI-RECESSED PENDENT HEAD	21
	EXISTING UPRIGHT HEAD TO BE RELOCATED TO NEW POSITION WITH STANDARD COVERAGE STAINLESS STEEL TYPE SEMI-RECESSED PENDENT HEAD	37
	NEW EXTENDED COVERAGE SEMI-RECESSED PENDENT	11
	NEW STANDARD COVERAGE SEMI-RECESSED PENDENT	25
	NEW STANDARD COVERAGE STAINLESS STEEL TYPE SEMI-RECESSED PENDENT	26
	NEW STANDARD COVERAGE SEMI-RECESSED UPRIGHT	18
	EXISTING UPRIGHT HEAD TO REMAIN IN SAME POSITION AS IS	490
	AUTOMATIC SPRINKLER TO REMAIN	
	EXISTING SPRINKLER PIPE	
	NEW SPRINKLER PIPE	
	REMOTE AREA	
	AREA WHERE EQUIPMENT GOING TILL CEILING. NO POSSIBILITY OF SPRINKLER	
	AREA WHERE STAINLESS STEEL SPRINKLERS ARE REQUIRED TO BE INSTALLED	

SPRINKLER PLAN

SCALE 1/8"=1'-0"



HANGER INSTALLATION REQUIREMENTS									
MAXIMUM DISTANCE BETWEEN HANGERS									
NOMINAL PIPE SIZE	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"
SCH. 10 & 40 STEEL PIPE	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADABLE LIGHTWALL	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A
CVC	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A	N/A

APPLICABLE CODES	
NCSBC 2018, NFPA 13-2013	
TYPE OF OCCUPANCY	FACTORY, PACKAGING
CONSTRUCTION TYPE	II-B
FIRE PROTECTION	PER NFPA 13
PROJECT GSF	30,000 S.F.
BUILDING GSF	54,000 S.F.



NICET#: 92734

3101-310 POPLARWOOD CT, RALEIGH, NC 27604
 TEL: 919.212.2722 FAX: 919.212.2720
www.regionalfirenc.info

Symbols		Number of Sprinklers	
Symbol	Description	Total This Uplift Area 348	Total This Building --
	HYDRAULIC REFERENCE POINTS		
	1 1/2" K=5.6 Q.R. PENDENT, RECESSED ESCUT., CHROME, 155, TYCO, TY3231	106	
	3/4" K=11.2 E.C.Q.R. PENDENT SEMI-REC. CHROME, 155, TYCO, TY5237 (16'X16)	161	
	1 1/2" K=5.6 Q.R. STAINLESS STEEL PENDENT, VC-250 FINISH, REC. ESCUT. 155, VICTALIC 92769	63	
	CEILING HEIGHT		
	DENOTES HANGER LOCATION		
	DENOTES BRANCH LINE RESTRAINT		
	RISE UP OR DOWN		
	NEW SPRINKLER PIPE	18	
	EXISTING SPRINKLER PIPE		

Drawing		Title	
Project No.	19043	Plot Date:	1/20/2020
Drawn by:	A.Z.	Revisions:	ARCHITECTURAL CHANGES 1/20/2020
Scale:	AS NOTED	Date:	10/29/2019

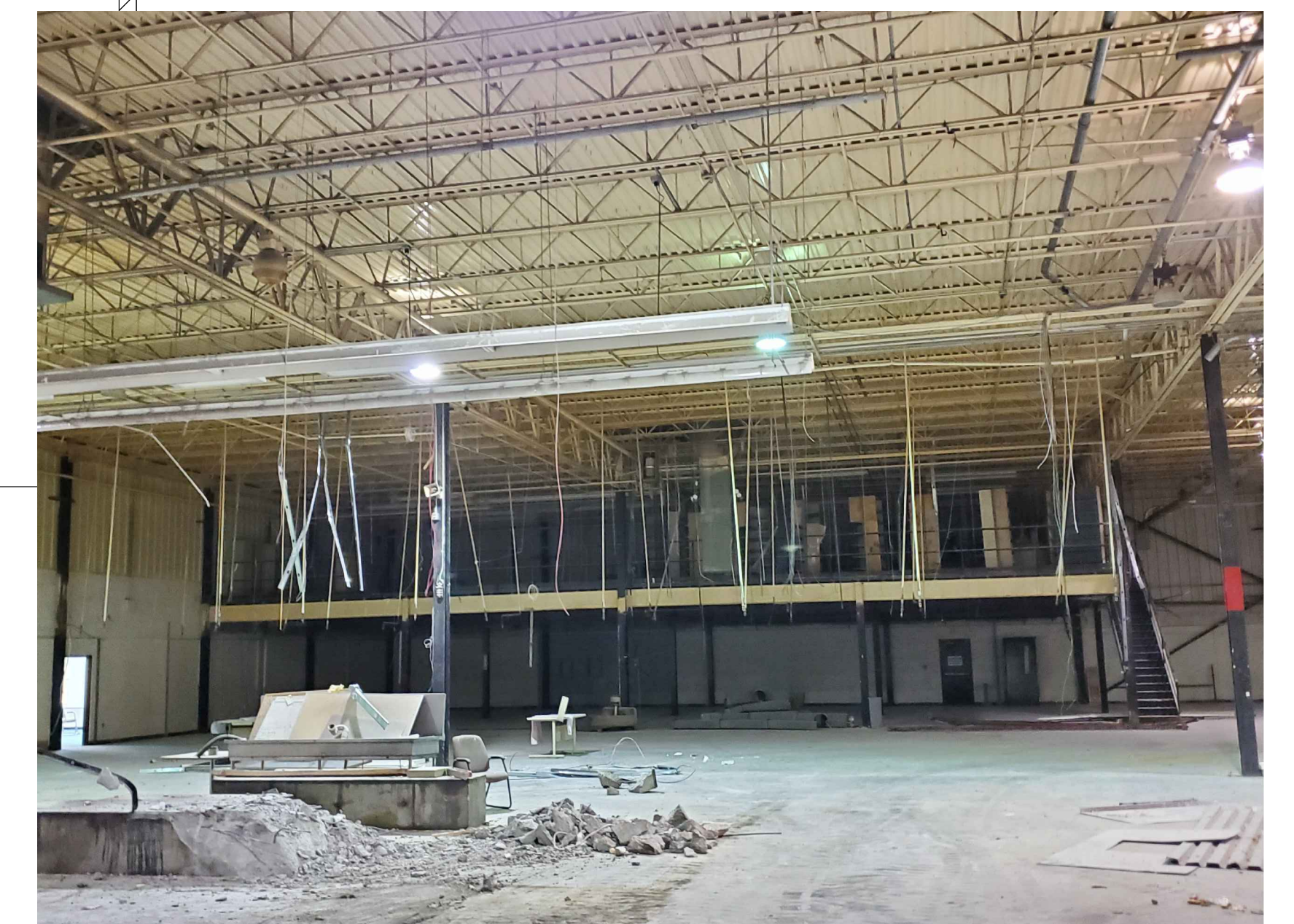
Job: KRIGEN PHARMACEUTICALS
 800 EDWARDS BROTHERS DRIVE
 LILLINGTON, NC 27546

Owner: KRIGEN PHARMACEUTICALS
 800 EDWARDS BROTHERS DRIVE
 LILLINGTON, NC 27546

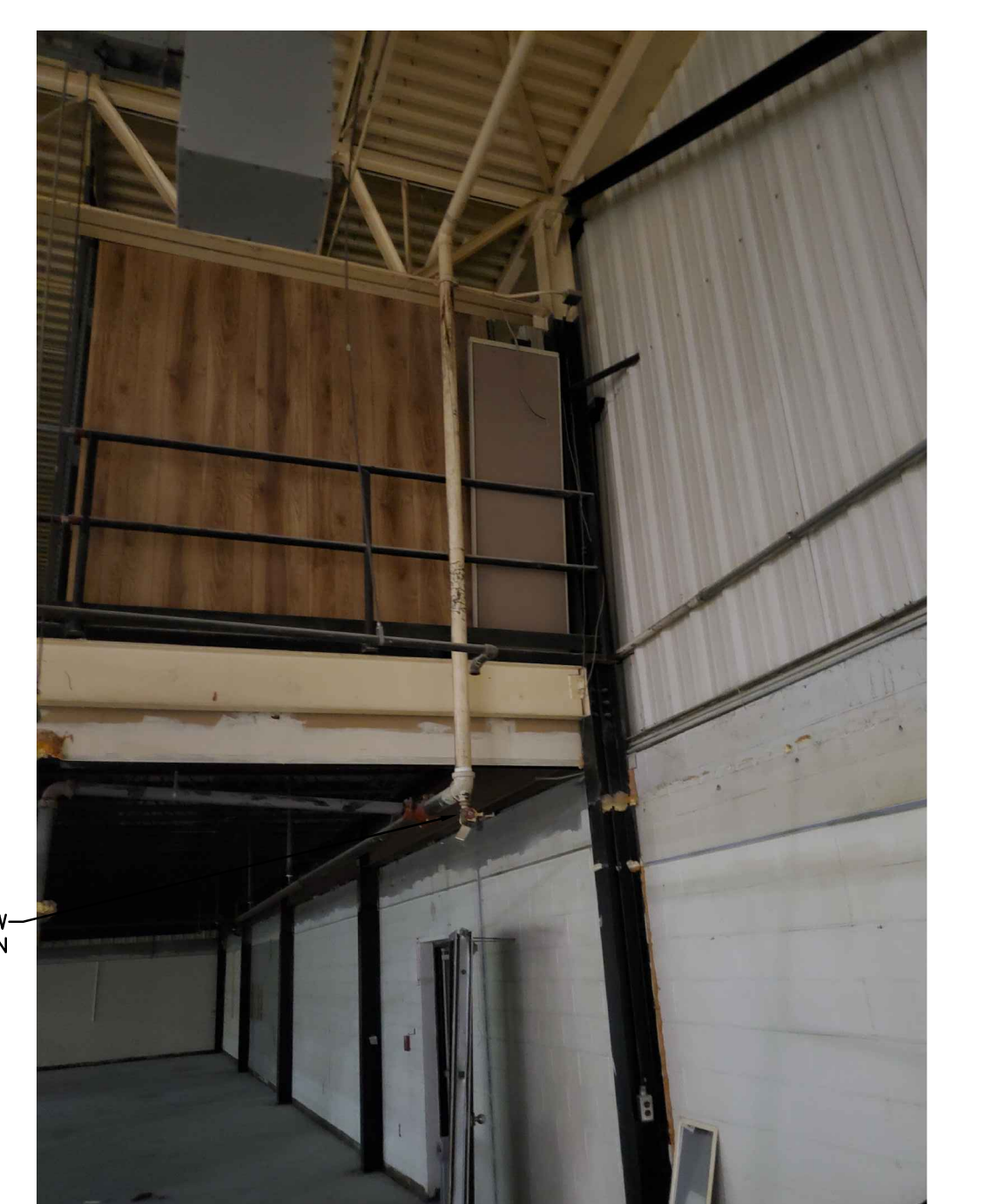
SHEET CP3 OF 4

LEGEND

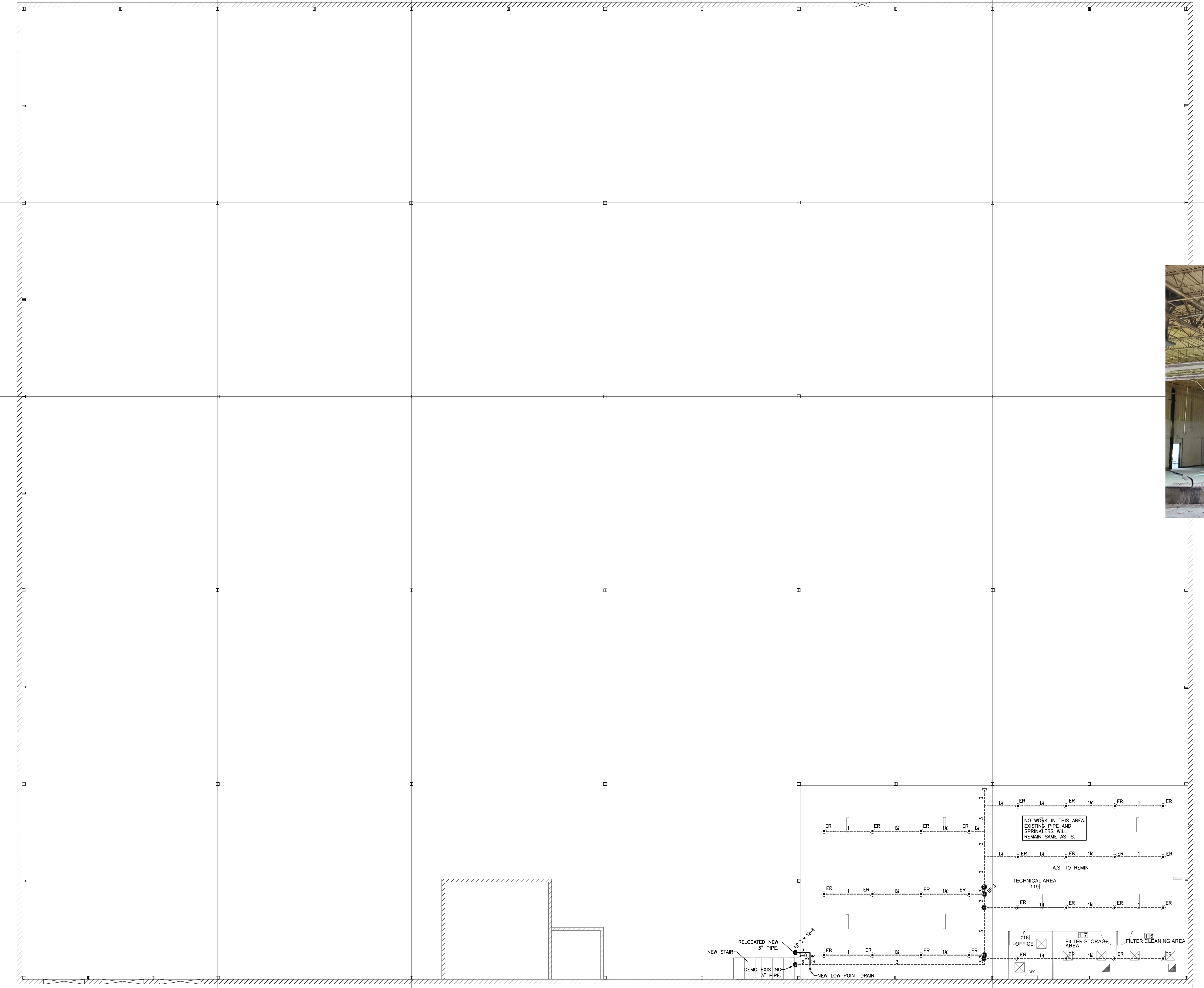
SYMBOL	DESCRIPTION	QTY
⊙	EXISTING PENDENT HEAD TO REMAIN IN SAME POSITION AS IS	28
—	A.S. TO REMAIN AUTOMATIC SPRINKLER TO REMAIN	
----	EXISTING SPRINKLER PIPE	
—	NEW SPRINKLER PIPE	



EXISTING MEZZANINE

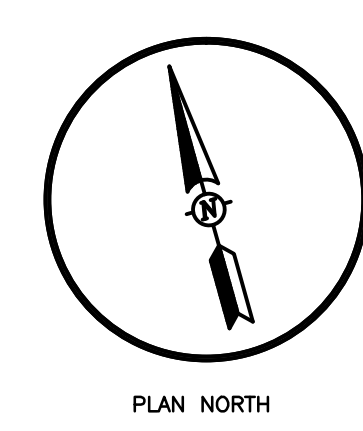


EXISTING MEZZANINE



PIPING PLAN - MEZZANINE UNDER

SCALE 1/8"=1'-0"



HANGER INSTALLATION REQUIREMENTS										
MAXIMUM DISTANCE BETWEEN HANGERS										
NOMINAL PIPE SIZE	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"	
SCH. 10 & 40 STEEL PIPE	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	
THREADABLE LIGHTWALL	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A	
CPVC	6-0	6-6	7-0	8-0	9-0	10-0	N/A	N/A	N/A	

APPLICABLE CODES
 NCSBC 2018, NFPA 13-2013
 TYPE OF OCCUPANCY: FACTORY, PACKAGING
 CONSTRUCTION TYPE: II-B
 FIRE PROTECTION: PER NFPA 13
 PROJECT GSF: 30,000 S.F.
 BUILDING GSF: 54,000 S.F.



NICET#: 92734

3101-310 POPLARWOOD CT, RALEIGH, NC 27604
 TEL: 919.212.2722 FAX: 919.212.2720
www.regionalfirenc.info

Symbol	Description	Total This Uplift Area	Number of Sprinklers	Total This Building
⊙	HYDRAULIC REFERENCE POINTS		348	
⊙	18 Btu ELEV. BELOW TOP OF STEEL	106	(1/2",K=5.6) Q.R. PENDENT, RECESSED ESCUT., CHROME, 155', TYCO, TY3231	
⊙	8-6 ELEV. ABOVE FINISHED FLOOR	161	(3/4",K=11.2) E.C.Q.R. PENDENT SEMI-REC. CHROME, 155', TYCO, TY5237(16'X16')	
⊙	105 20-0 CEILING HEIGHT	63	(1/2",K=5.6) Q.R. STAINLESS STEEL PENDENT, VC-250 FINISH, REC. ESCUT. 155', VICTAULIC 92709	
⊙	18 DENOTES HANGER LOCATION		(3/4",K=11.2) E.C.Q.R. UPRIGHT, BRASS, 155', TYCO, TY5137 (16'X16')	
—	RISE UP OR DOWN			
—	NEW SPRINKLER PIPE			
----	EXISTING SPRINKLER PIPE			

Drawing Title		Job:	
PIPING PLAN - MEZZANINE		KRIGEN PHARMACEUTICALS	
Project No. 19043	Plot Date: 1/20/2020	800 EDWARDS BROTHERS DRIVE	
Drawn By: A.Z.	Revisions: 1/20/2020	LILLINGTON, NC 27546	
Scale: AS NOTED	Architectural Changes	Owner:	
Date: 10/29/2019		KRIGEN PHARMACEUTICALS	
		800 EDWARDS BROTHERS DRIVE	
		LILLINGTON, NC 27546	