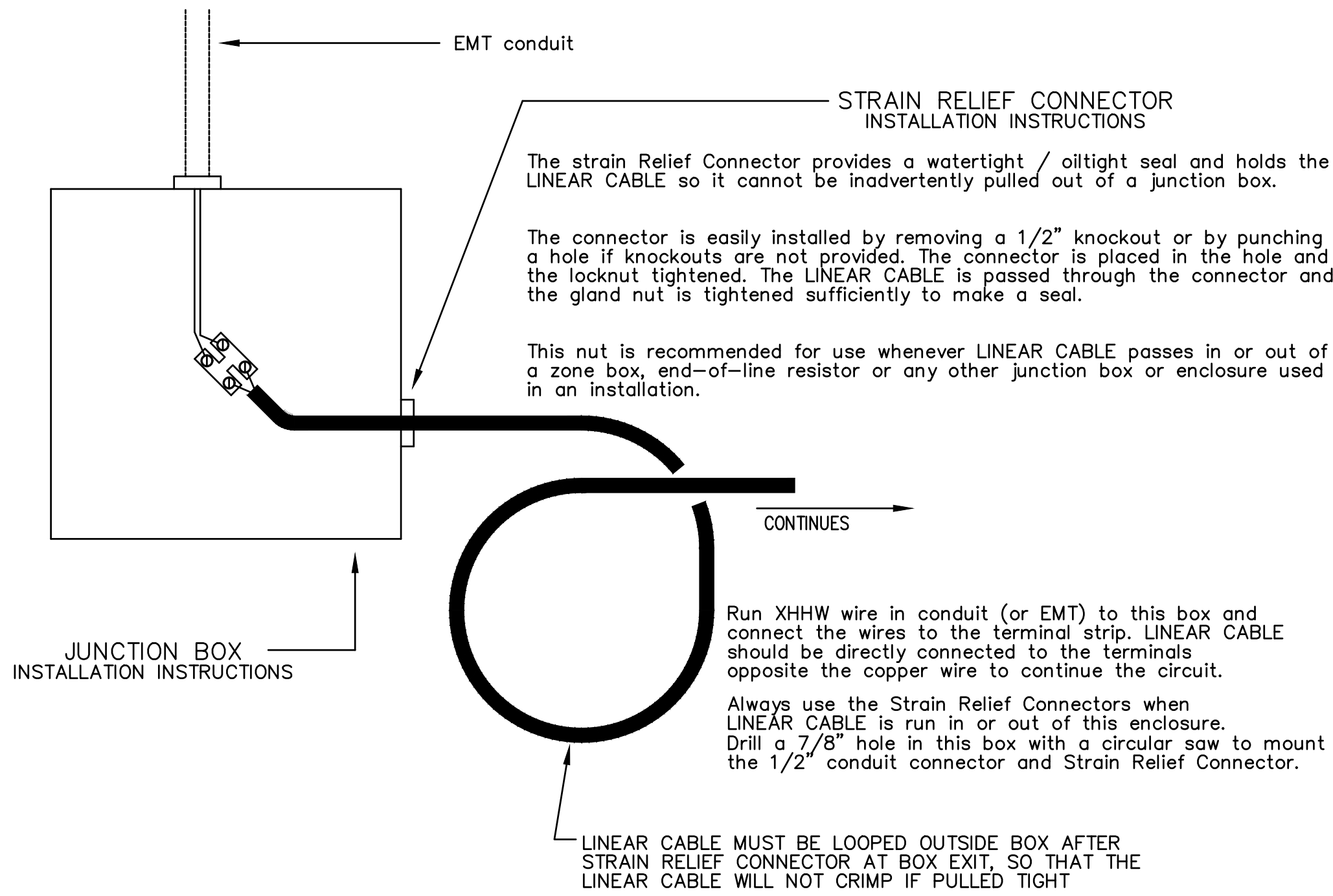


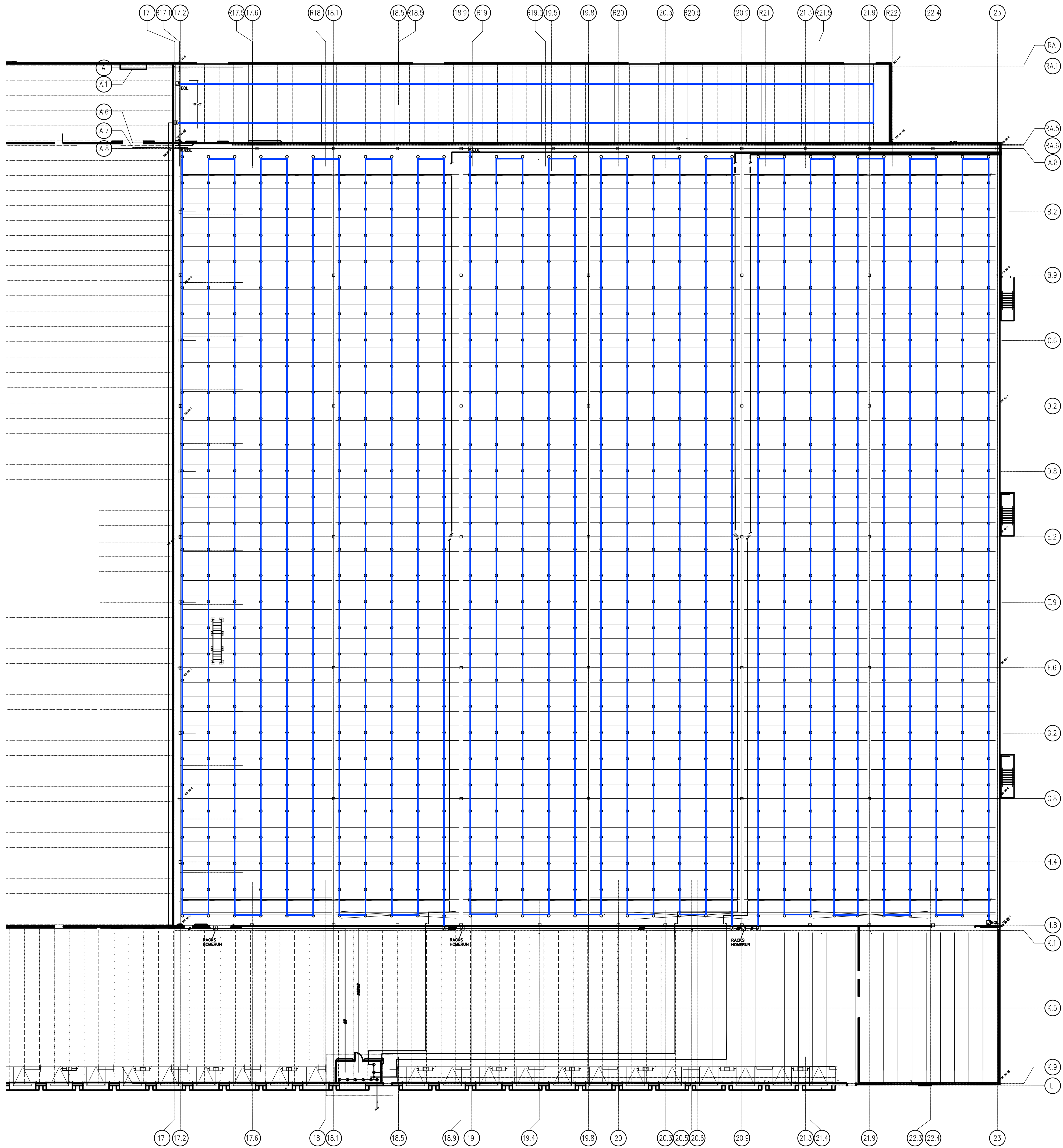
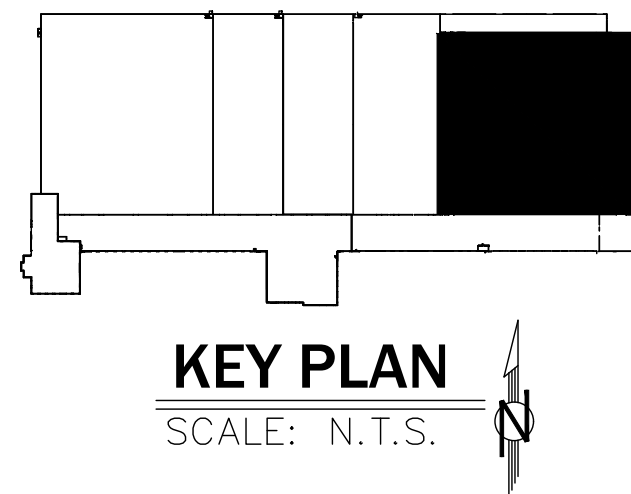
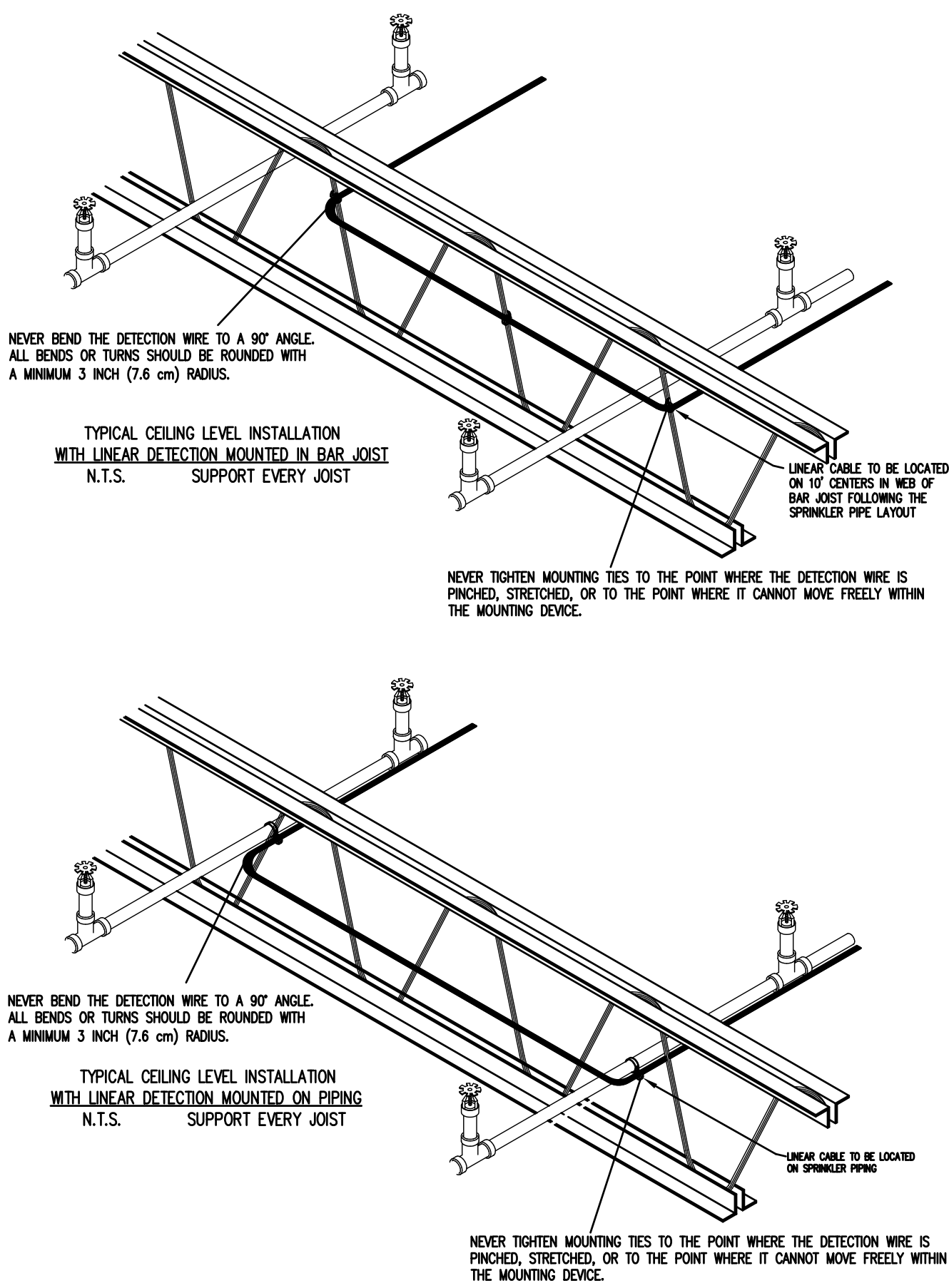


JUNCTION BOX INSTALLATION DETAIL
NO SCALE

NOTE:

1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

TEMPERATURE	SAG	WIRE MOUNT SPACING
20°	3/4"	3'-5'
0°	7/8"	3'-5'
-20°	1"	3'-5'
-40°	1-1/8"	3'-5'



OVERALL CEILING LINEAR DETECTION LAYOUT

SCALE: N.T.S.

GENERAL NOTES

1. LINEAR DETECTION SYSTEM IS NOT THE BUILDING FIRE ALARM SYSTEM.
2. FIRE ALARM PANEL BY OTHERS.
3. FIRE ALARM PULL STATION BY OTHERS.
4. FIRE ALARM VISUAL DEVICES BY OTHERS.
5. FIRE ALARM AUDIBLE DEVICES BY OTHERS.
6. ALL CONDUIT 1/2" MINIMUM.
7. ALL FLEXIBLE CONDUIT SHALL BE METAL CLAD TYPE.
8. ALL CONDUCTORS #14 AWG MINIMUM.
9. USE THHN WIRE IN AMBIENT TEMPERATURE AREAS.
10. USE XHHN WIRE IN FREEZER TEMPERATURE AREAS.
11. MAX #14 AWG THHN WIRE IN 1/2" CONDUIT PER NEC = 12 ACTUAL ON SITE = 10
12. MAX #14 AWG XHHN WIRE IN 1/2" CONDUIT PER NEC = 8 ACTUAL ON SITE = 2
13. LINEAR DETECTION CABLE TO BE INSTALLED AS A CLASS "B" CIRCUIT.
14. MAXIMUM LINEAR DETECTION CABLE PER ZONE = 10,000 FEET
15. APPROXIMATE DETECTION CABLE CEILING ZONE #2 = 3400 FEET
16. APPROXIMATE DETECTION CABLE CEILING ZONE #3 = 3400 FEET
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18. APPROXIMATE DETECTION CABLE RAIL DOCK ZONE #5 = 800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #6 = 5800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #7 = 5800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #8 = 7400 FEET
20. APPROXIMATE TOTAL DETECTION CABLE = 30,000 FEET

SCOPE OF WORK

1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8

SAFE
FIRE PROTECTION, INC.

SAFE Fire Protection, Inc.
8914 Brittany Way
Tampa, Florida 33619
813-664-8989
www.safefireprotection.net

FL CERT. OF COMP. 159562001/2009
CA LICENSE #93318

NICET
CERTIFIED
LEVEL IV
SPRINKLER
NICET # 9240

LINEAR HEAT DETECTION FOR PRE-ACTION SYSTEMS

US COLD STORAGE
211 NE McCLOSKEY AVENUE
LAKE CITY, FLORIDA 33055

OVERALL CEILING LAYOUT

NO.	DATE	DESCRIPTION
07		
06		
05		
04		
03		
02		
01		

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FIRE PROTECTION, INC.

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DATE: 05/05/2009

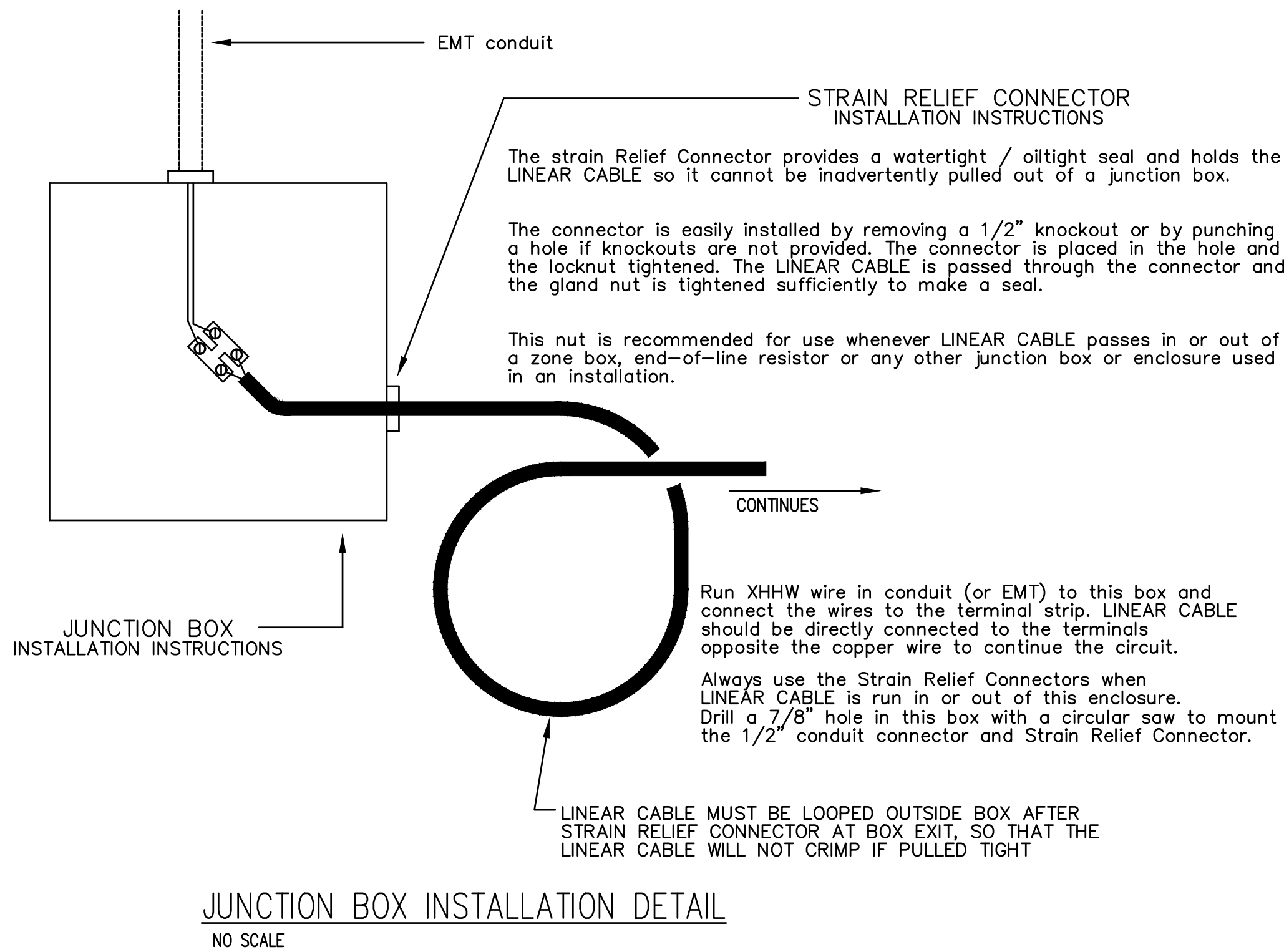
SCALE: AS NOTED

DRAWN BY: J. J. L.

PROJECT: US COLD PH 3

LD15735

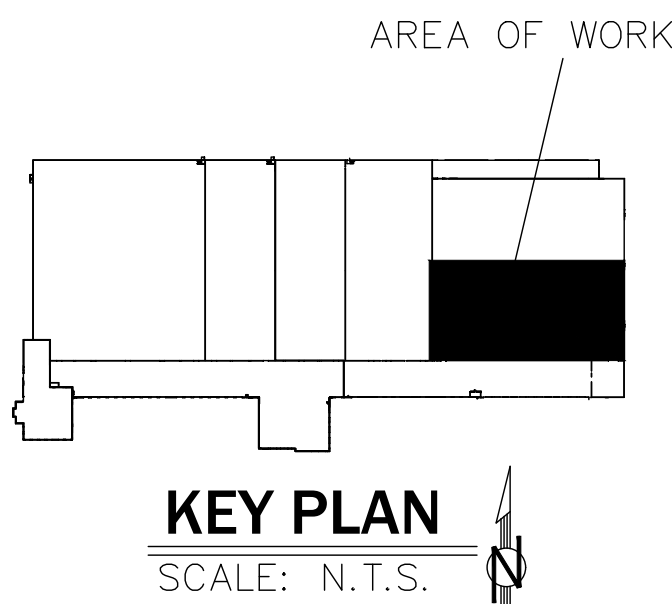
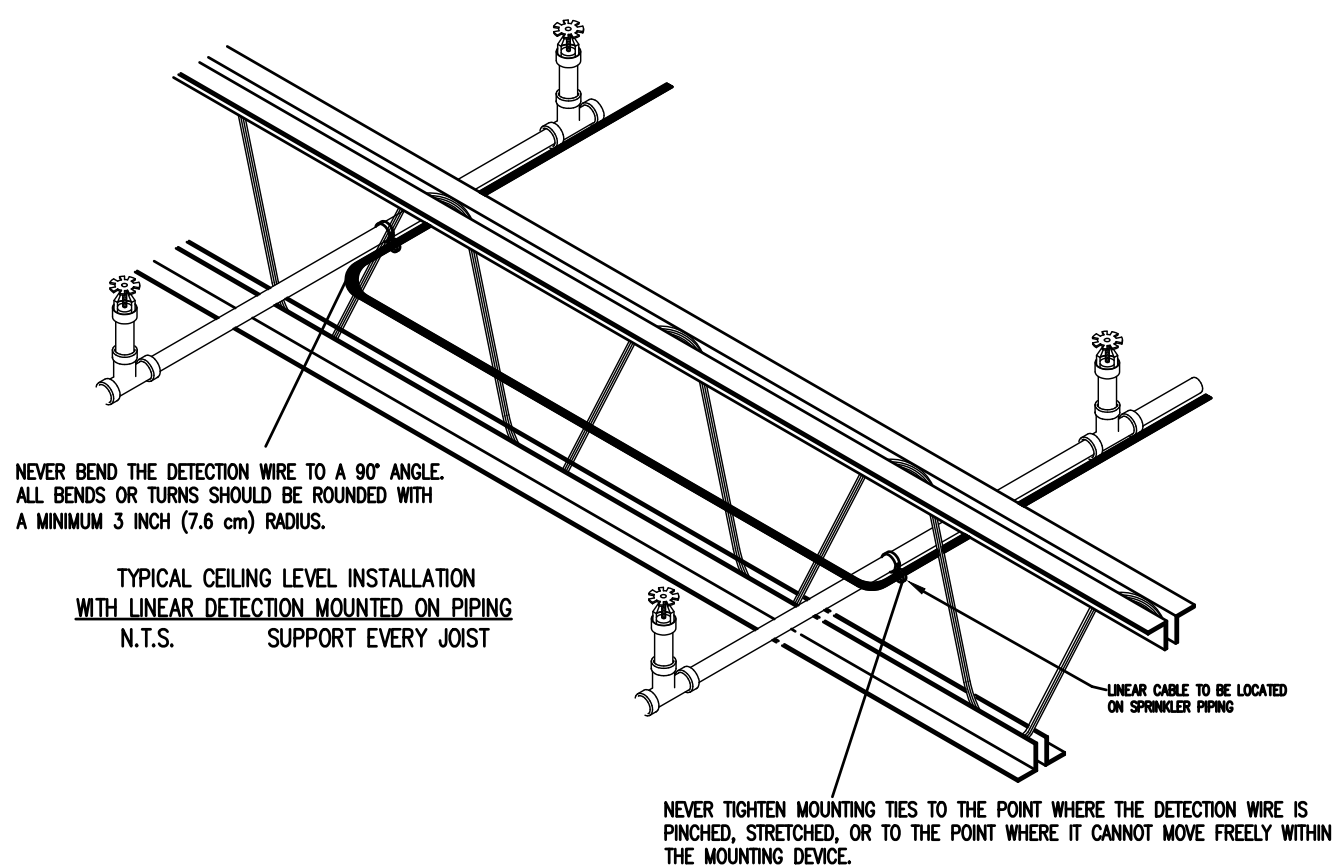
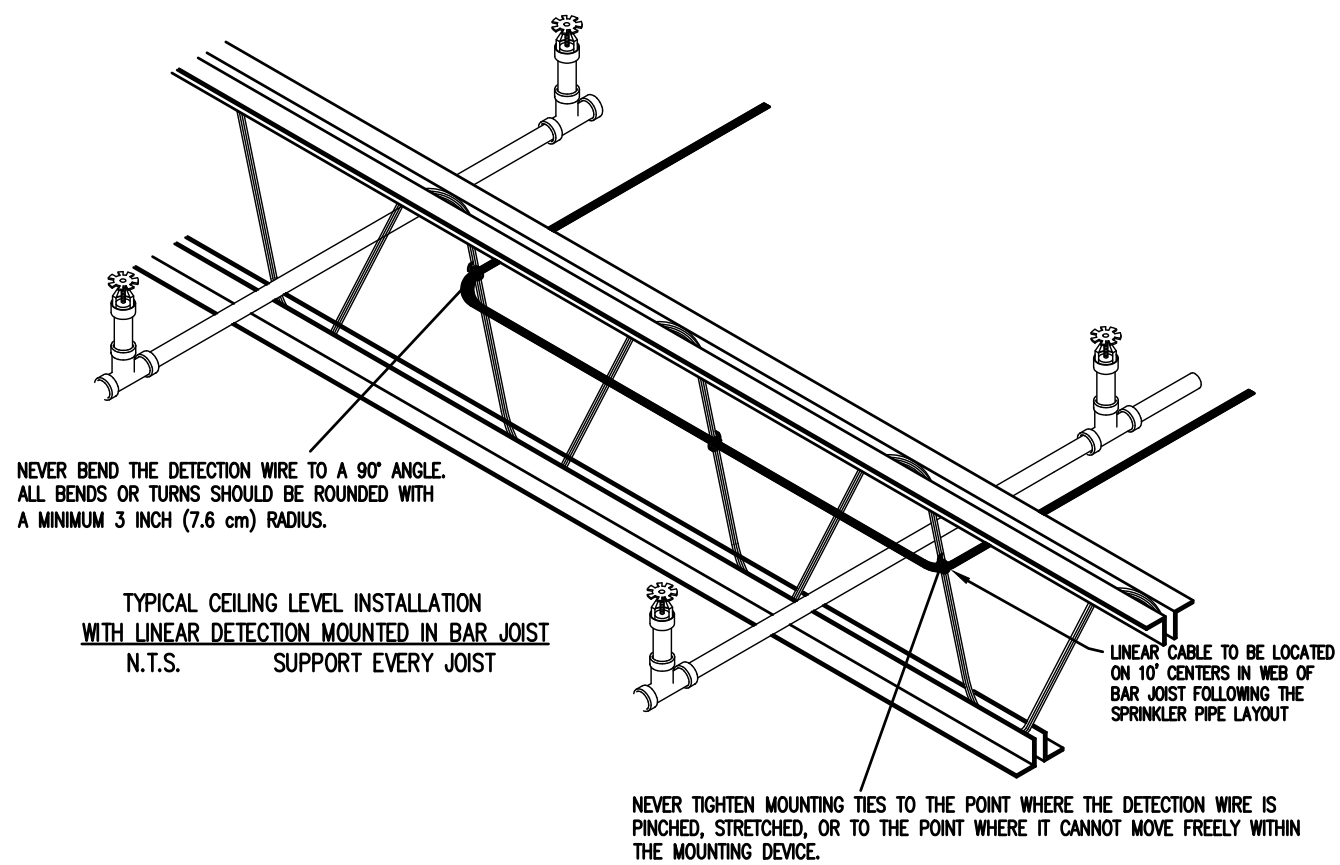
1 of 12



NOTE:

1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

TEMPERATURE	SAG	WIRE MOUNT SPACING
20°	3/4"	3'-5'
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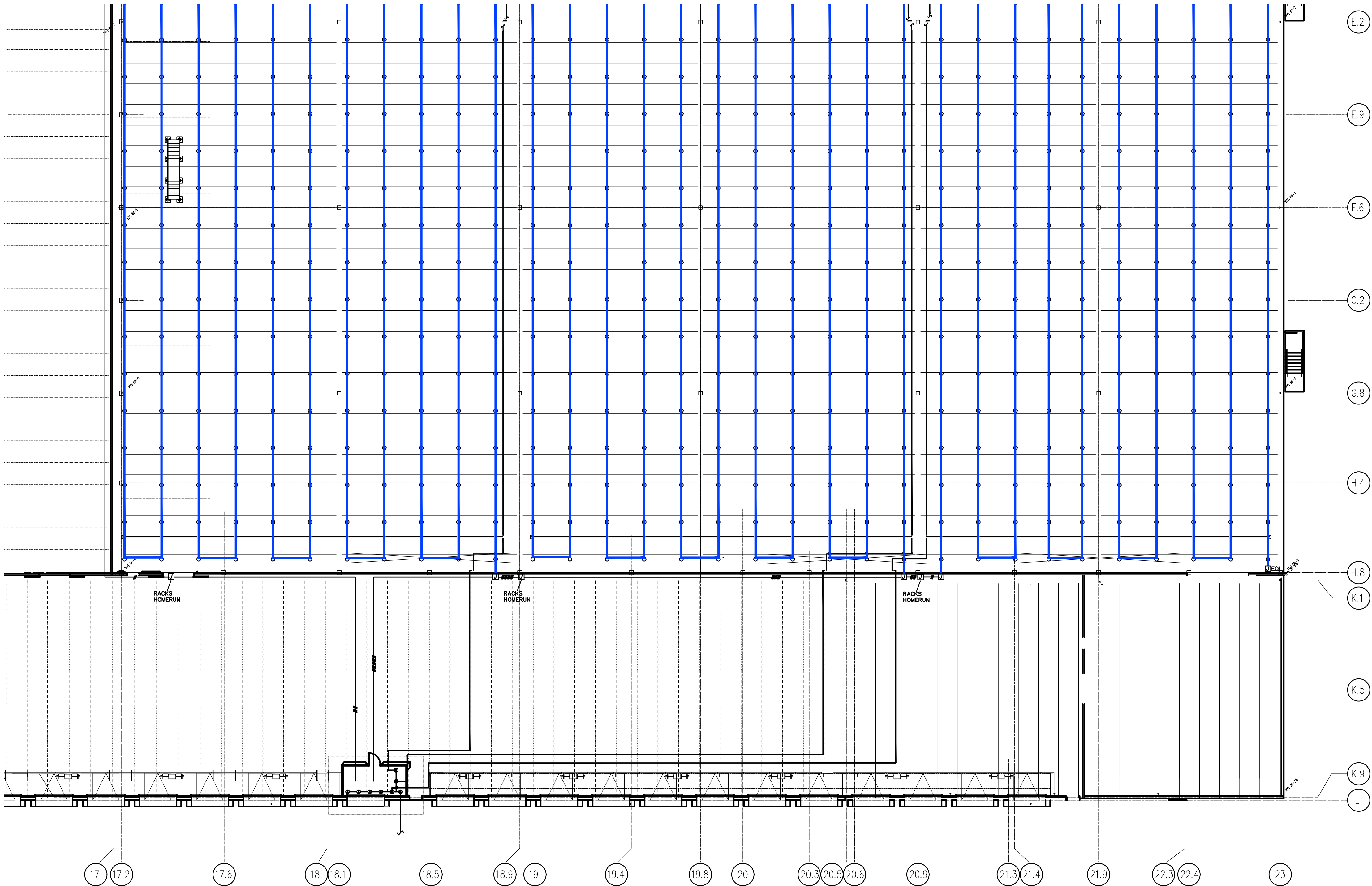


GENERAL NOTES

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SCOPE OF WORK

1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR



PARTIAL CEILING LINEAR DETECTION LAYOUT SYS #2, #3, & #4

SCALE: 1/16"=1'-0"

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	-----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



SAFE Fire Protection, Inc.

8914 Brittany Way
Tampa, Florida 33619
813-664-8989

www.safefireprotection.net
FL CERT. OF COMP. 15956200012009
CAL. LICENSE #93318

NIJET
CERTIFIED
LEVEL IV
SPEC. # 92240

LINEAR HEAT DETECTION FOR PRE-ACTION SYSTEMS

US COLD STORAGE
211 NE McCloskey Avenue
Lake City, Florida 33055

SOUTH - PARTIAL CEILING LAYOUT FOR SYSTEMS #2, #3, & #4



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US COLD PH 3

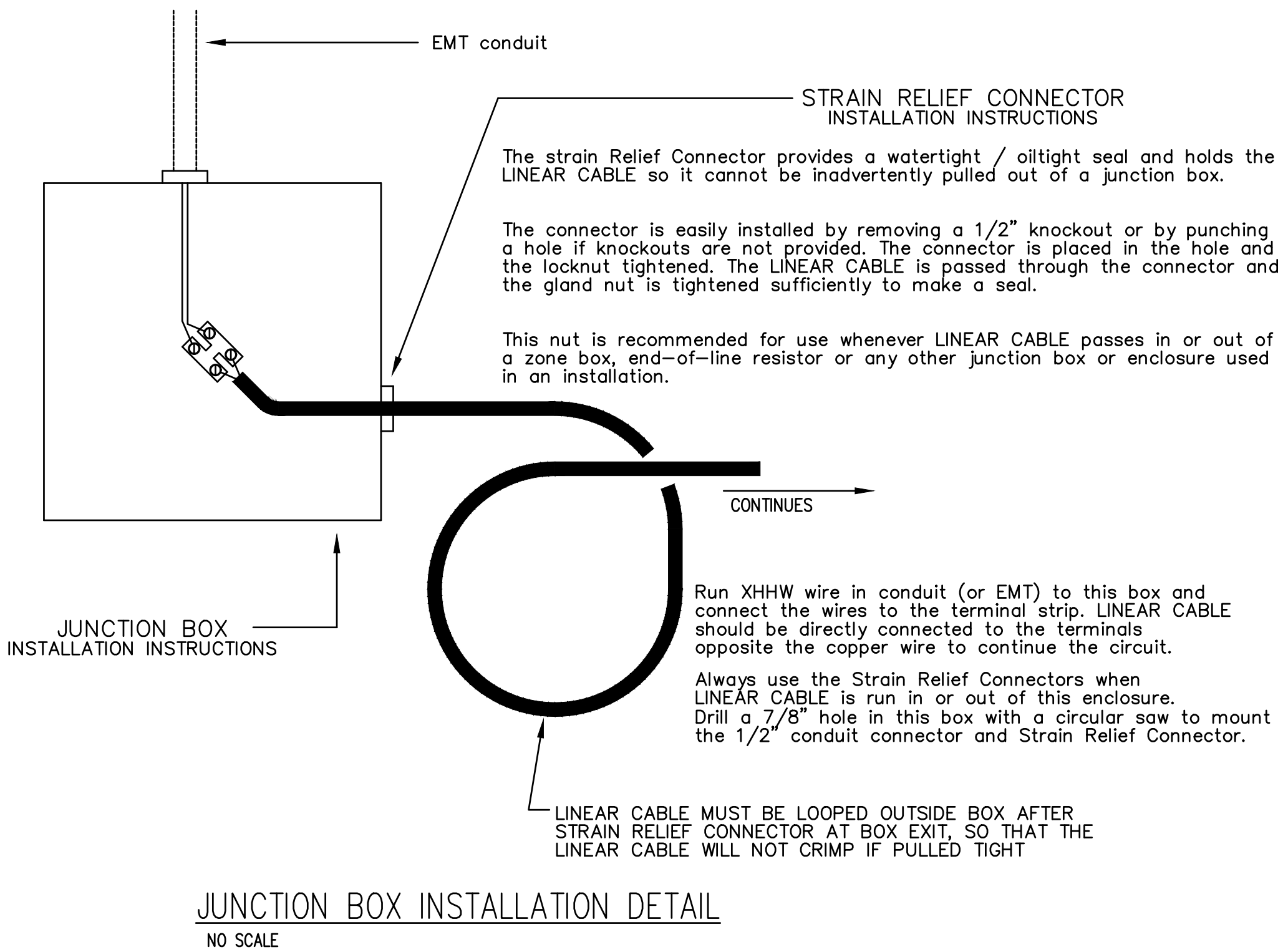
D.R.J.

LD15735

DATE

AS NOTED

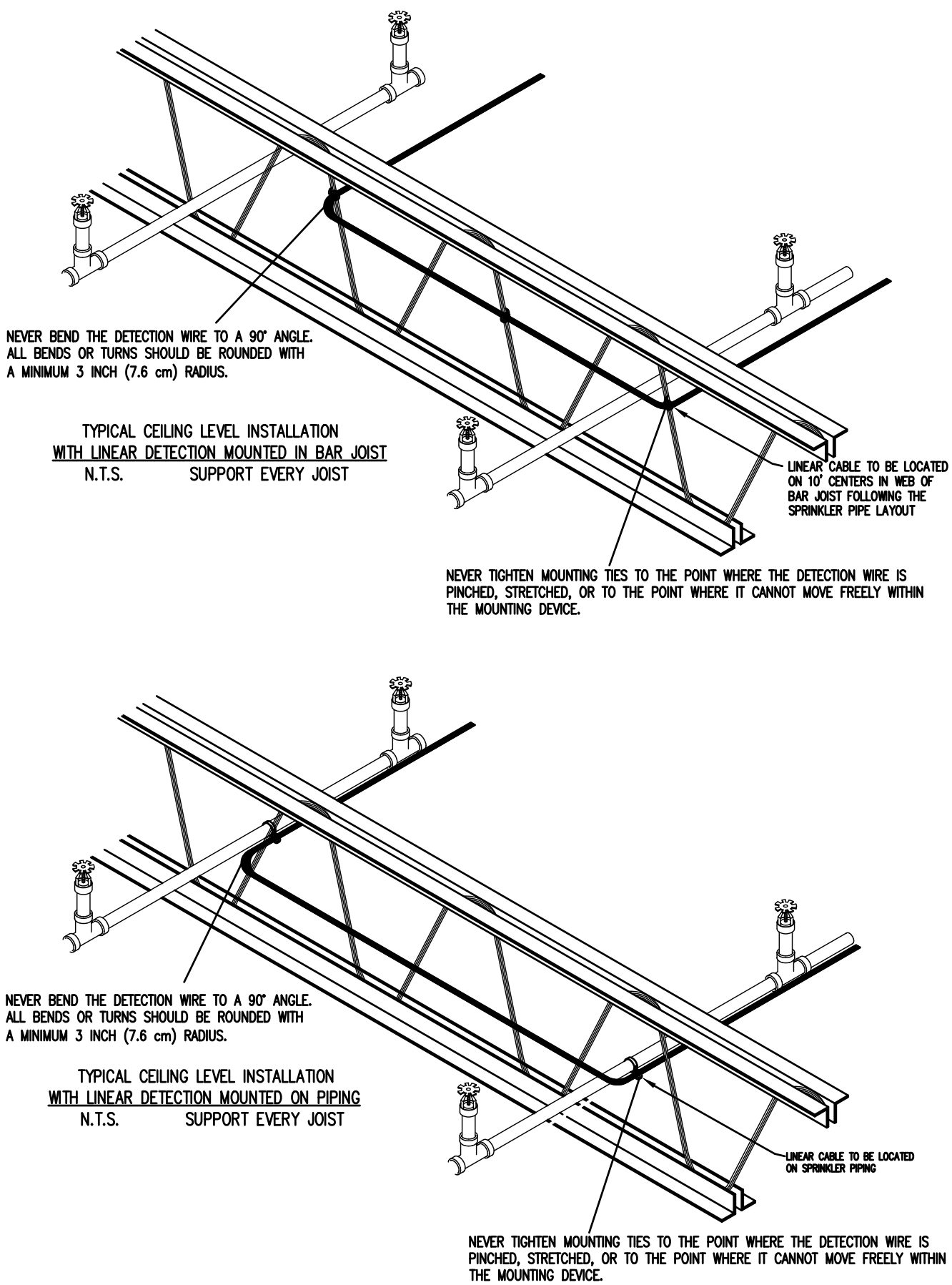
2 of 12



NOTE:

1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

TEMPERATURE	SAG	WIRE MOUNT SPACING
20°	3/4"	3'-5'
0°	7/8"	3'-5'
-20°	1"	3'-5'
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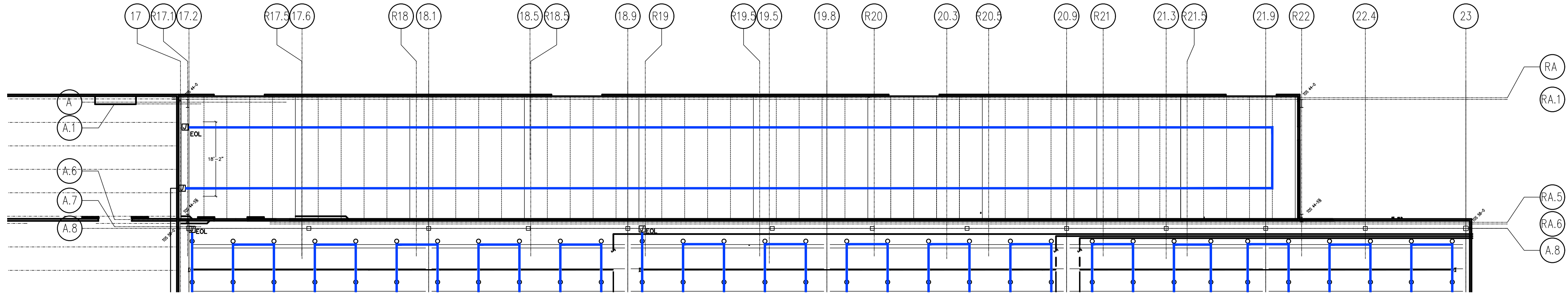


GENERAL NOTES

1. LINEAR DETECTION SYSTEM IS NOT THE BUILDING FIRE ALARM SYSTEM.
2. FIRE ALARM PANEL BY OTHERS.
3. FIRE ALARM PULL STATION BY OTHERS.
4. FIRE ALARM VISUAL DEVICES BY OTHERS.
5. FIRE ALARM AUDIBLE DEVICES BY OTHERS.
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19. APPROXIMATE DETECTION CABLE RACK ZONE #8 = 7400 FEET
20. APPROXIMATE TOTAL DETECTION CABLE = 30,000 FEET

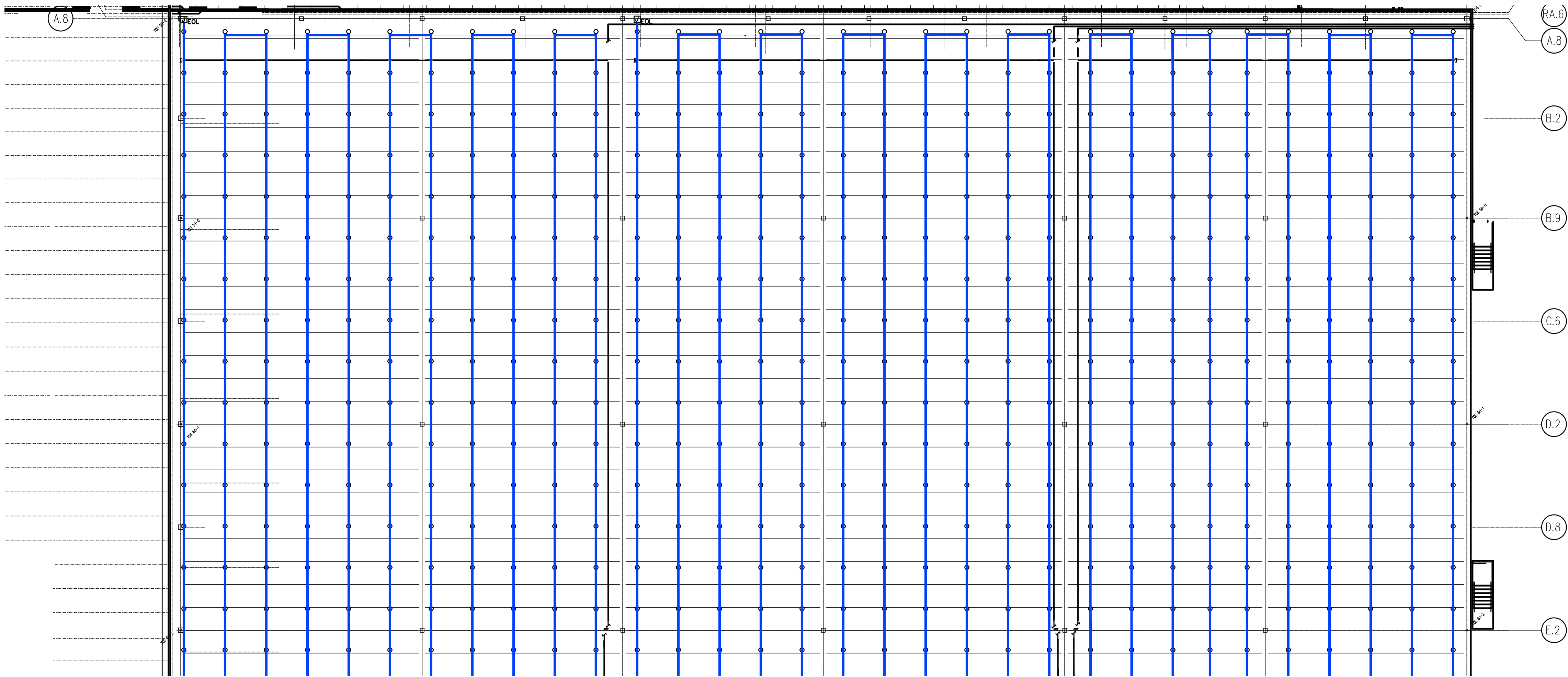
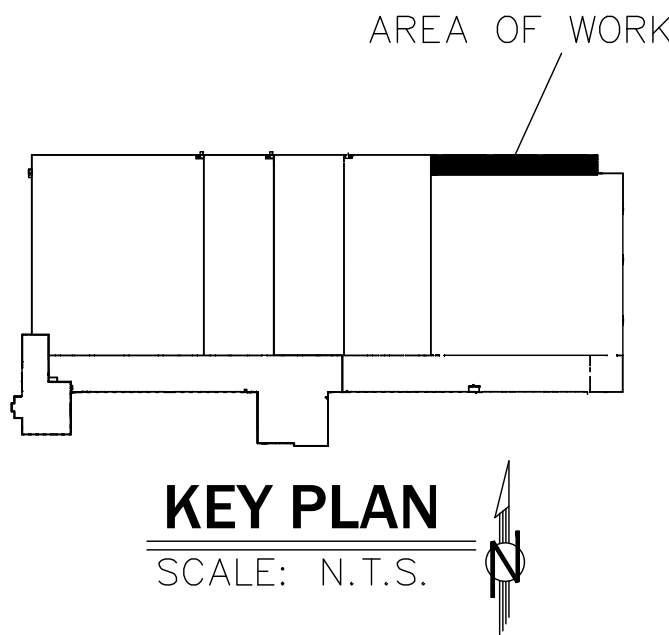
SCOPE OF WORK

1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR



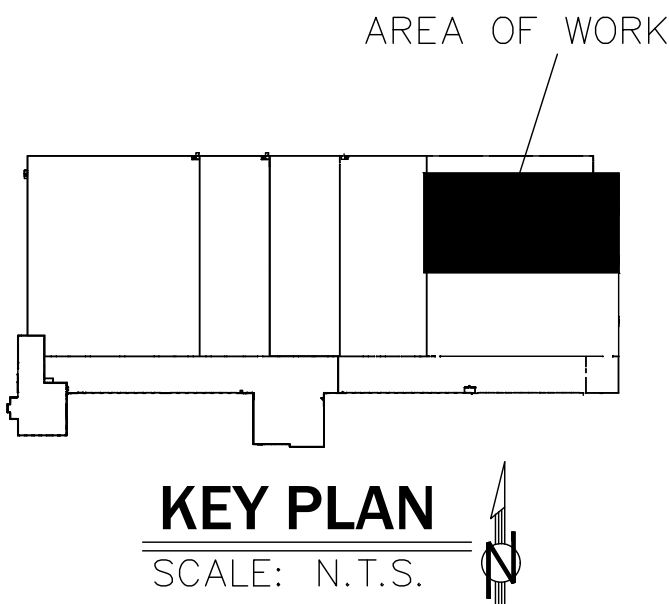
RAIL DOCK CEILING LINEAR DETECTION LAYOUT SYS #5

SCALE: 1/16"=1'-0"



PARTIAL CEILING LINEAR DETECTION LAYOUT SYS #2, #3, & #4

1/16"=1'-0"



ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	-----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



SAFE Fire Protection, Inc.
8914 Brittany Way
Tampa, Florida 33619
813-664-8989
www.safefireprotection.net
FL CERT. OF COMP. 15956200012009
SPEC. O. 15956200012009
CA. LICENSE #9240

DATE	DESCRIPTION
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DATE	DESCRIPTION
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LINEAR HEAT DETECTION FOR PRE-ACTION SYSTEMS
US COLD STORAGE
211 NE McCLOSKEY AVENUE
LAKE CITY, FLORIDA 33055

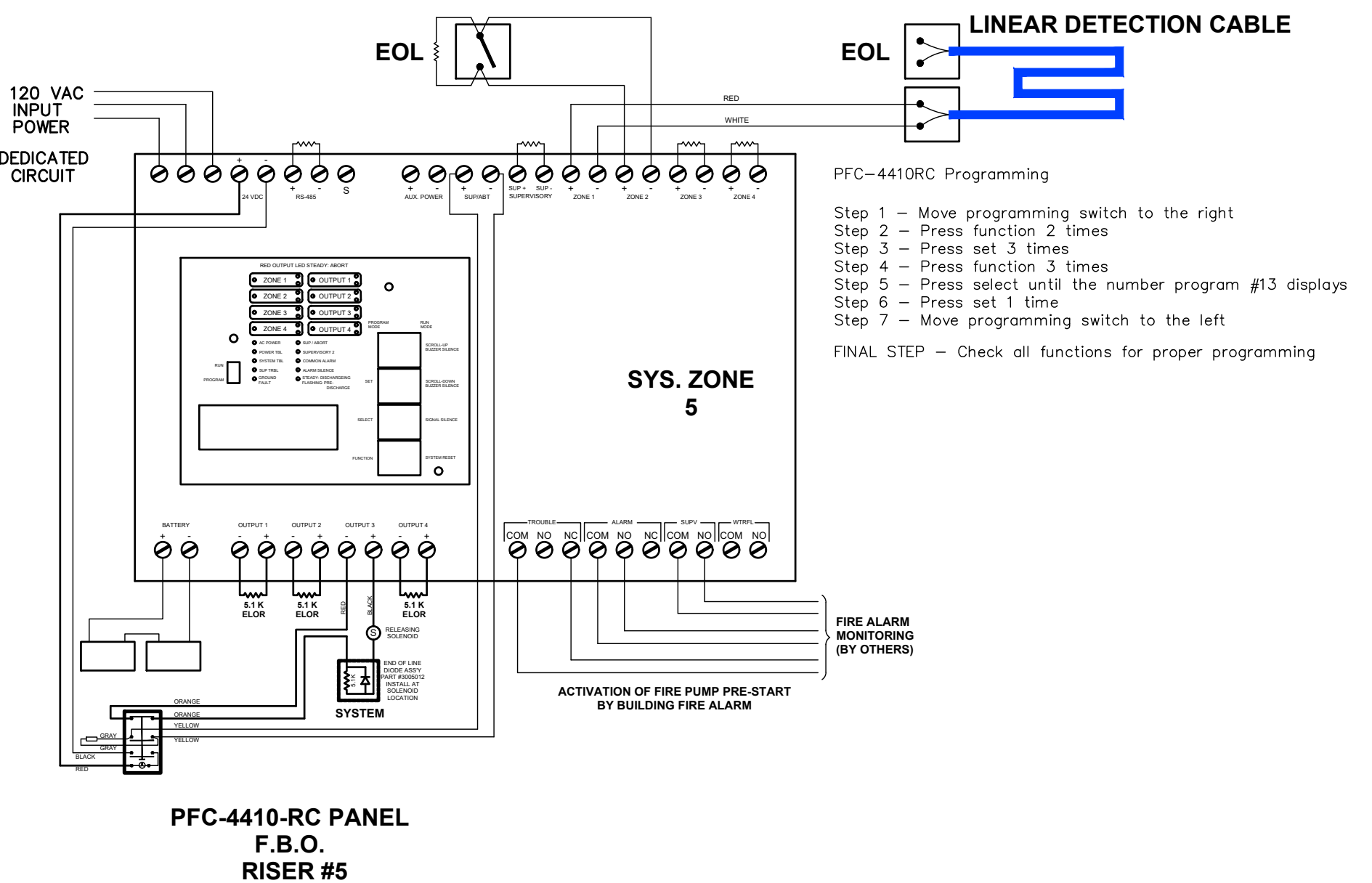
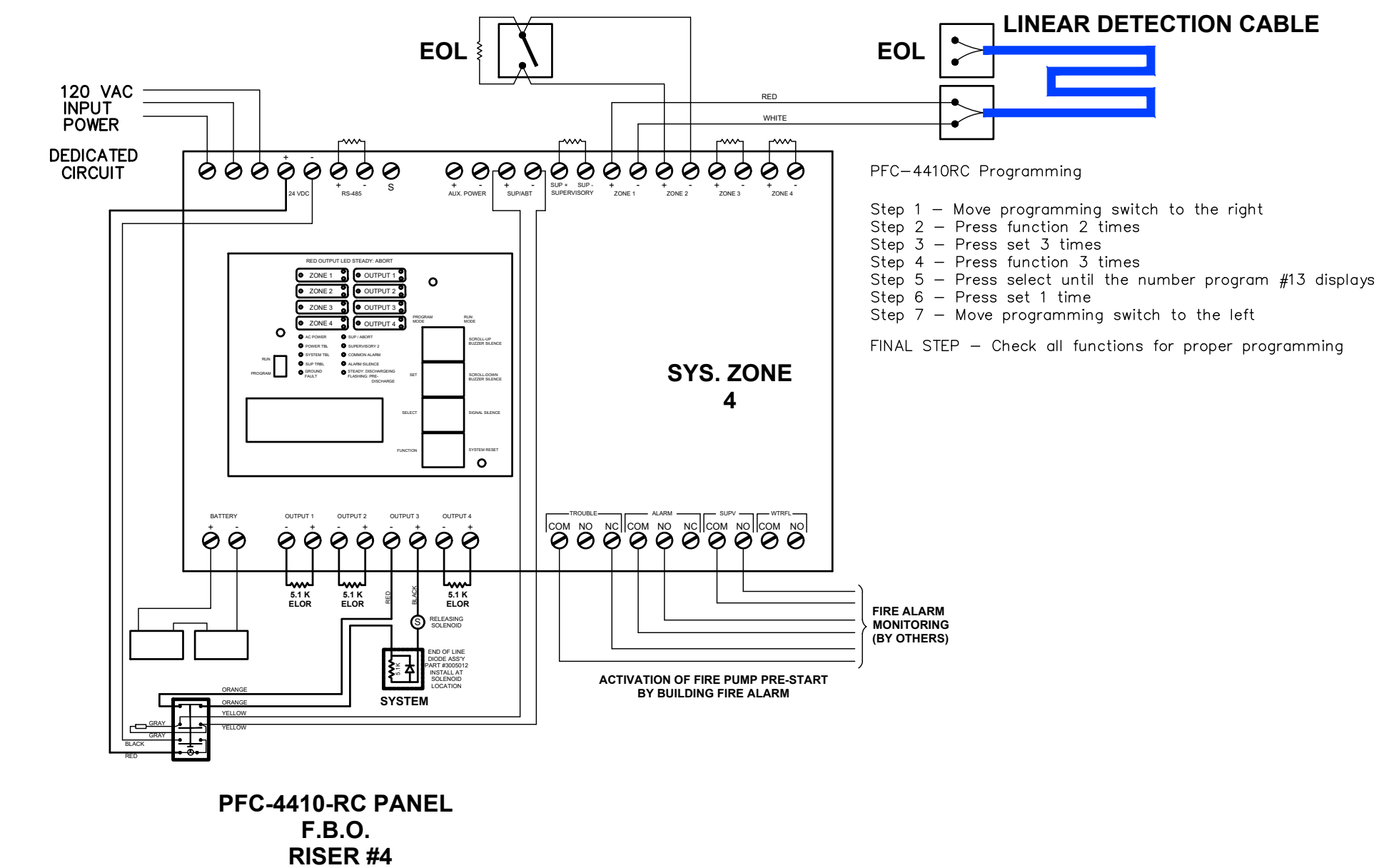
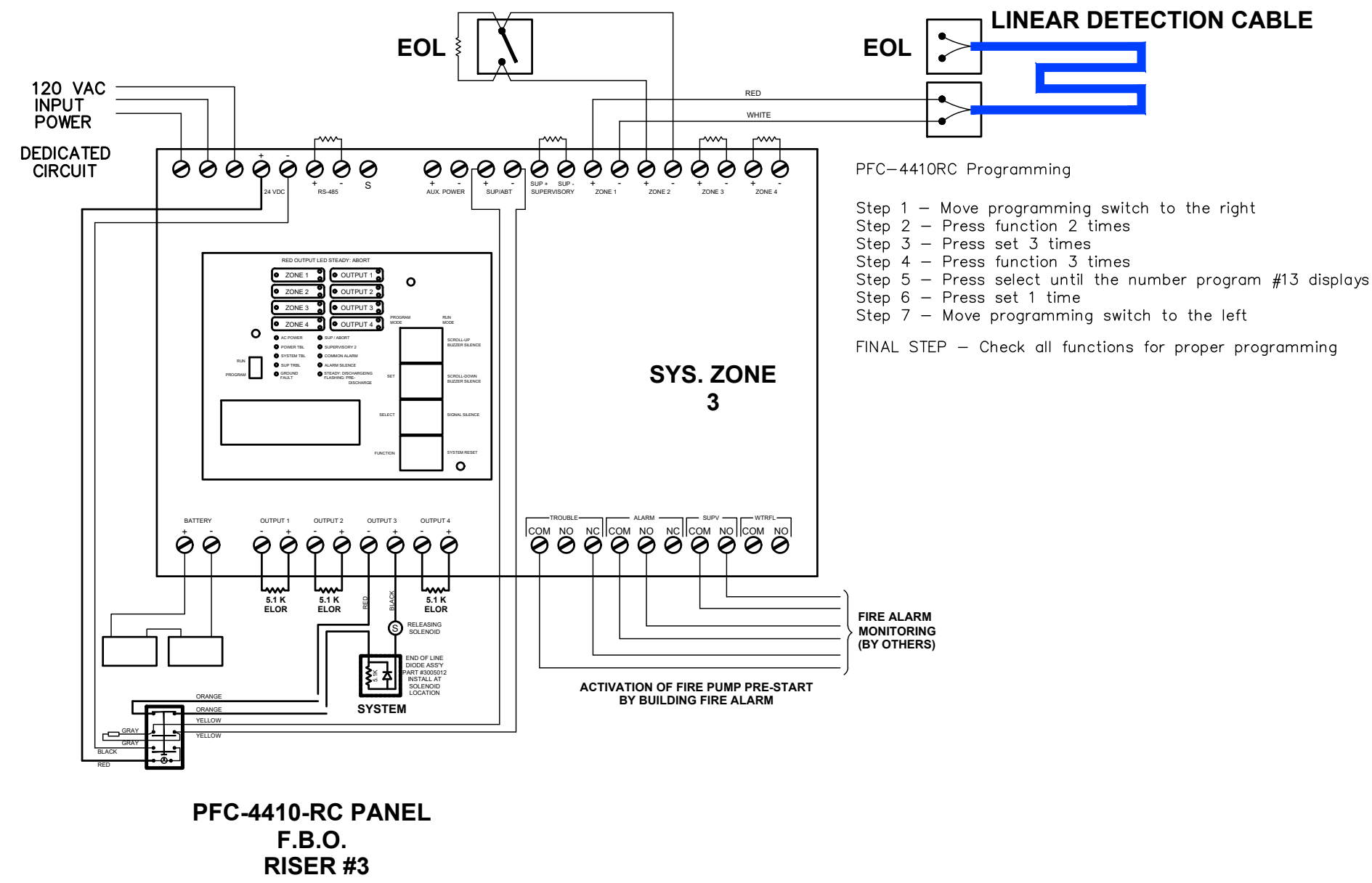
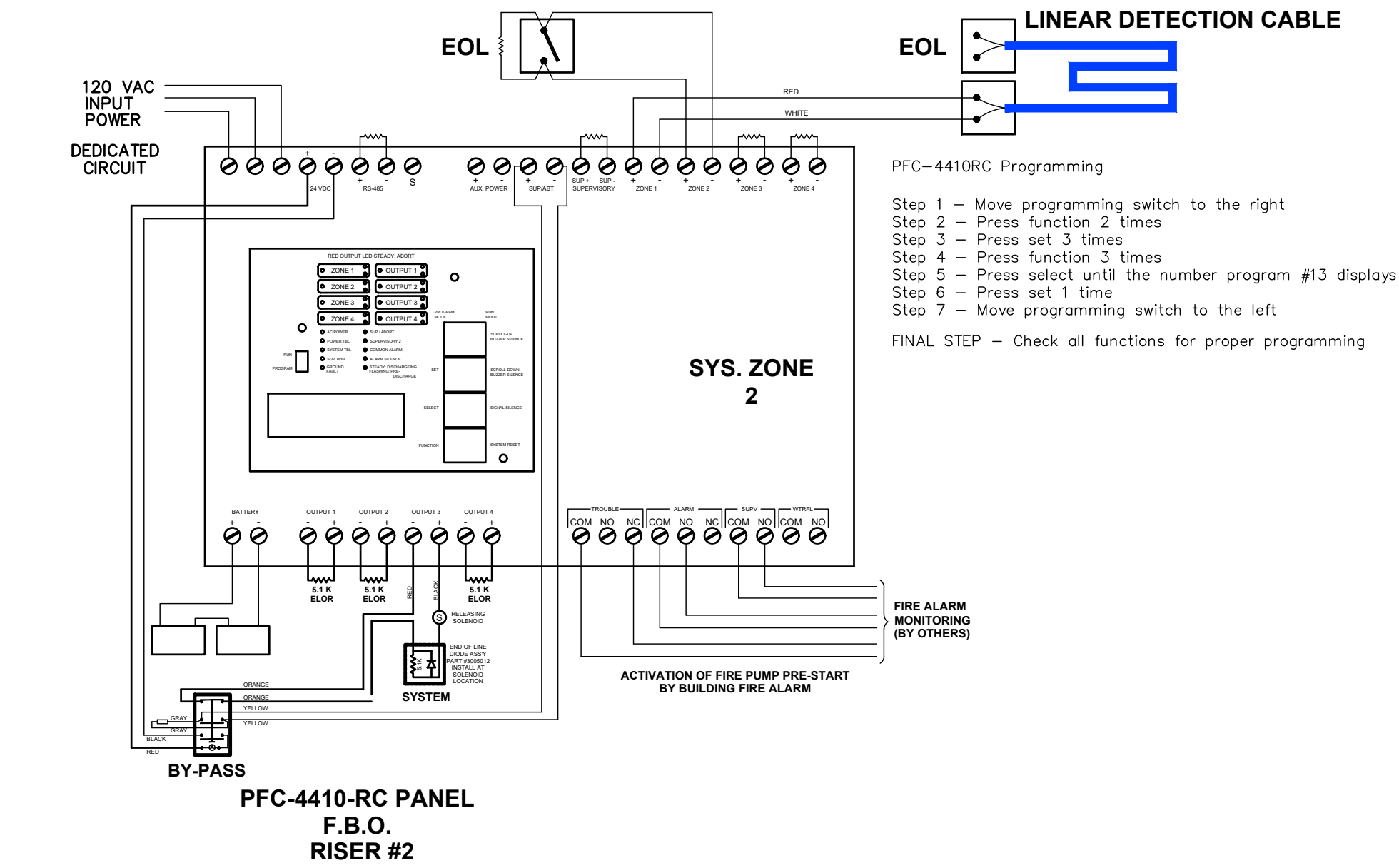
NORTH - PARTIAL CEILING LAYOUT FOR SYSTEMS #2, #3, & #4



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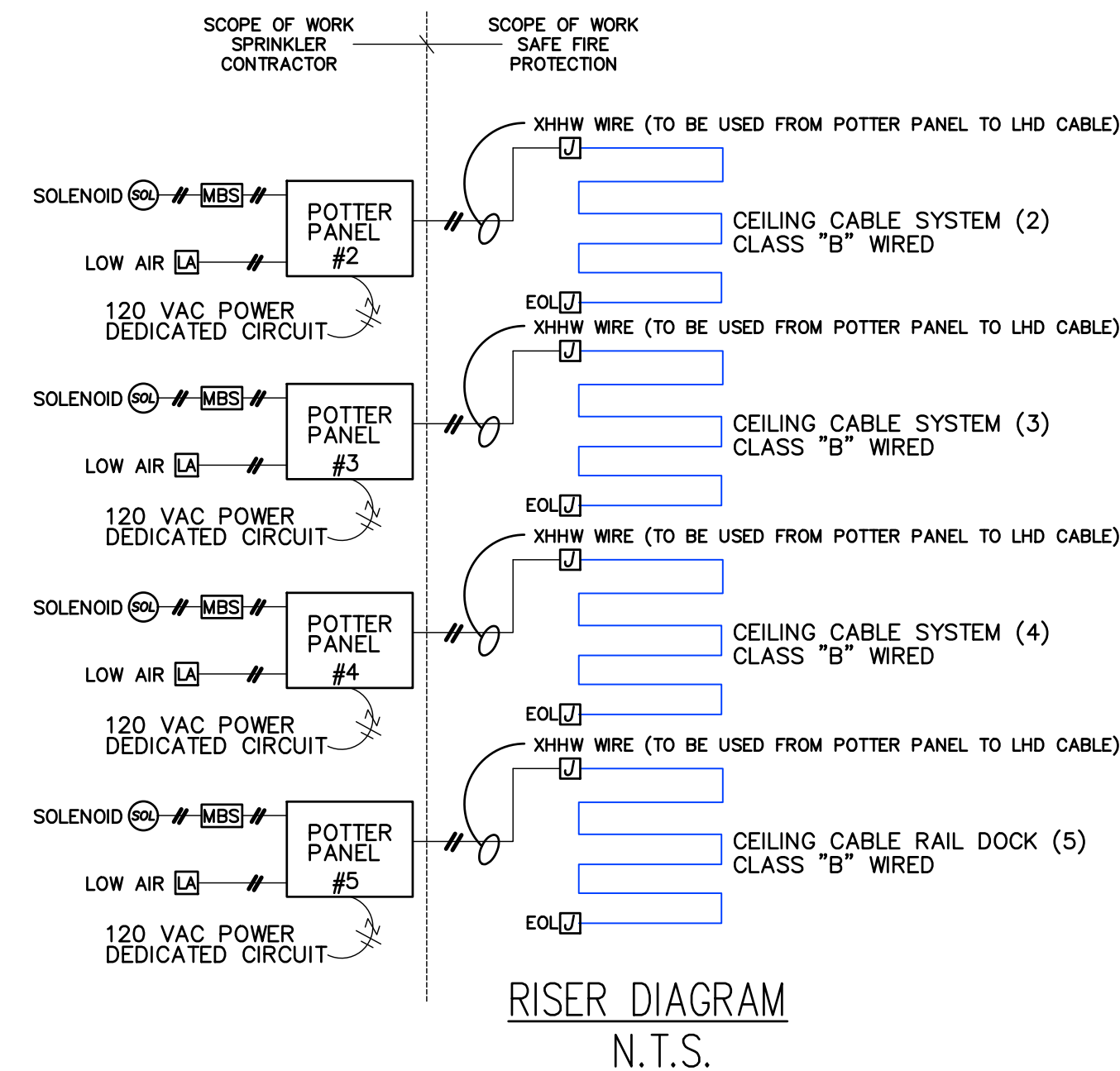
DATE	DESCRIPTION
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US COLD PH 3
D.R.J.
LD15735
DATE
AS NOTED
PAGE 3 of 12



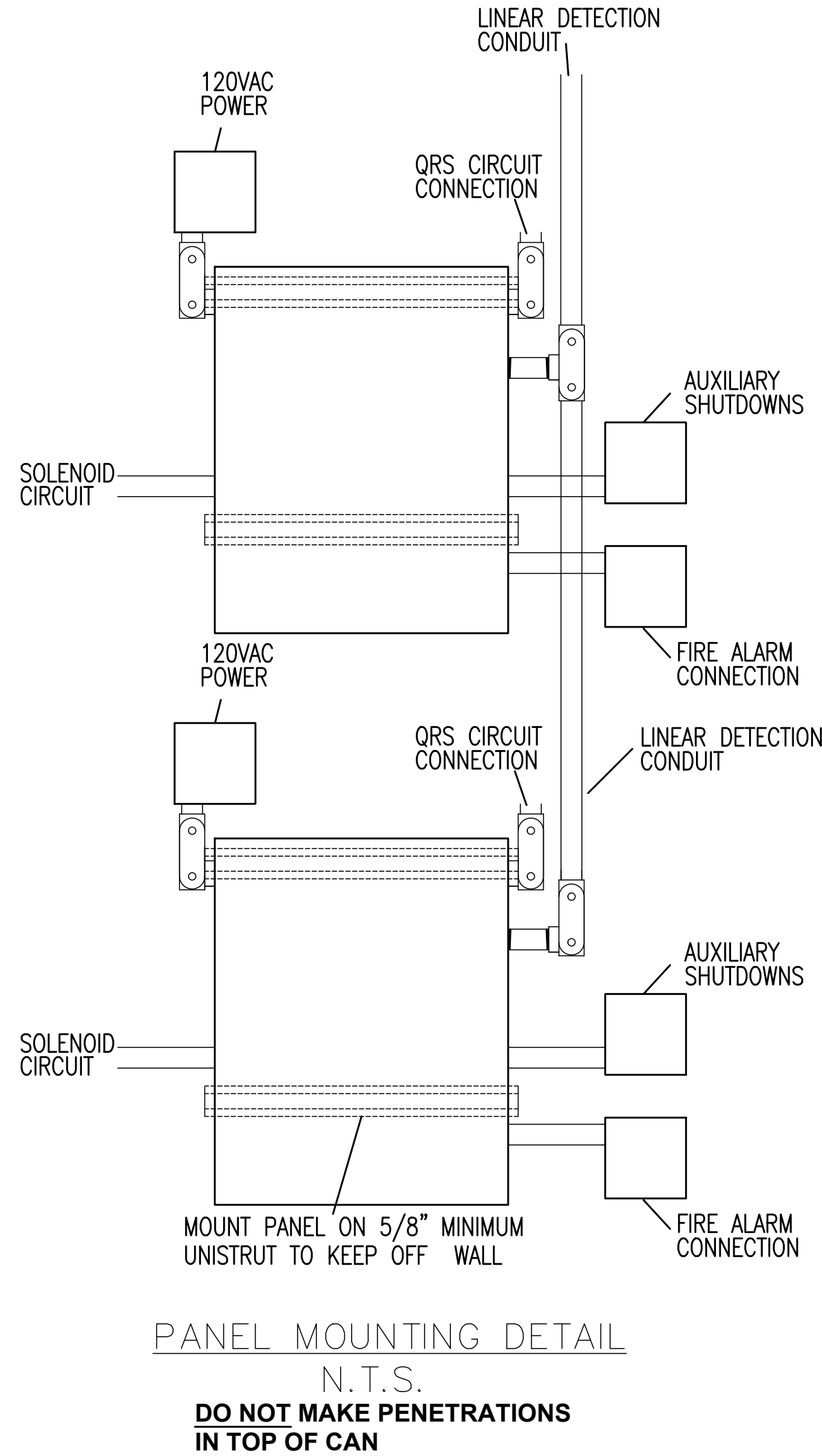
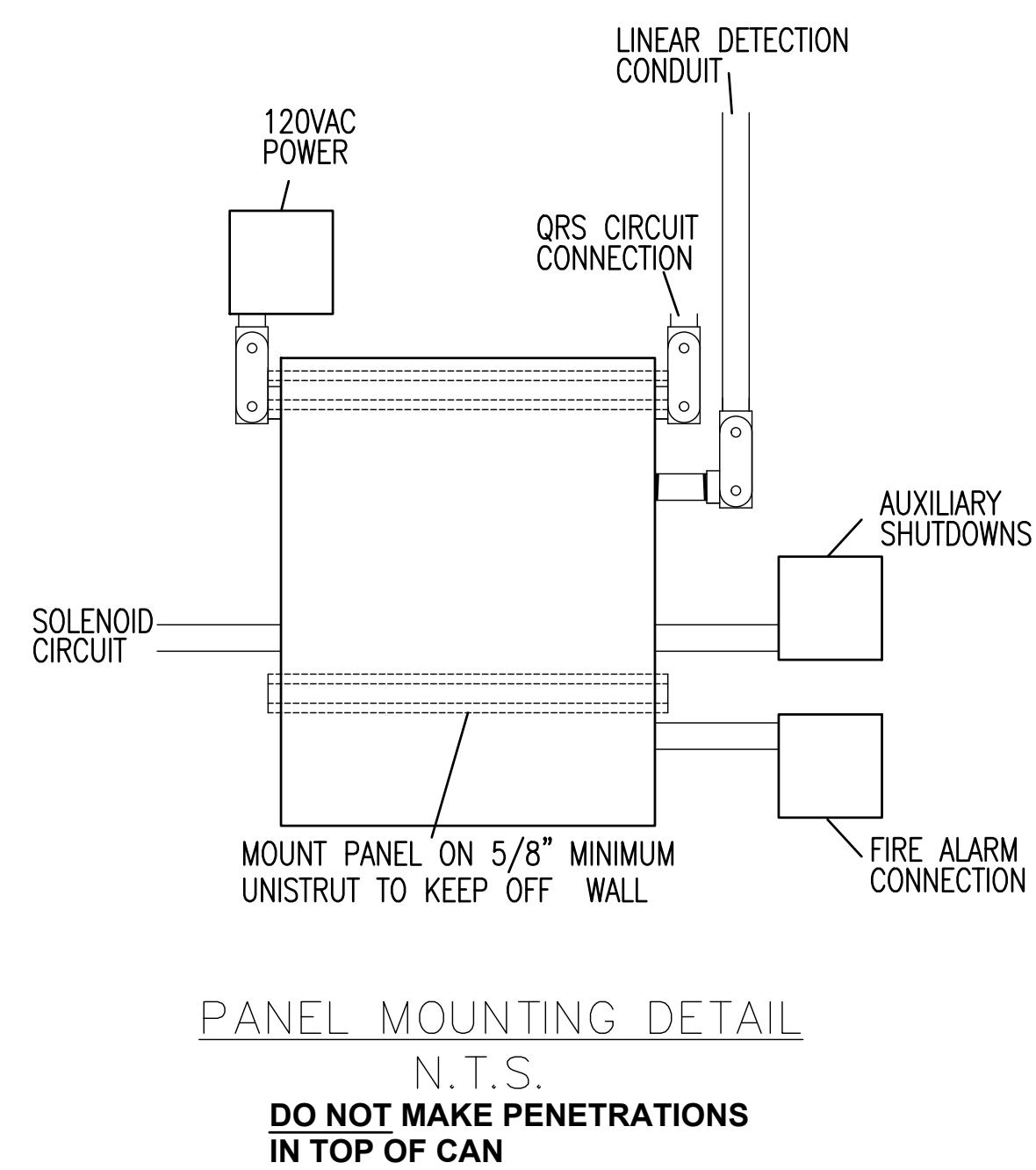
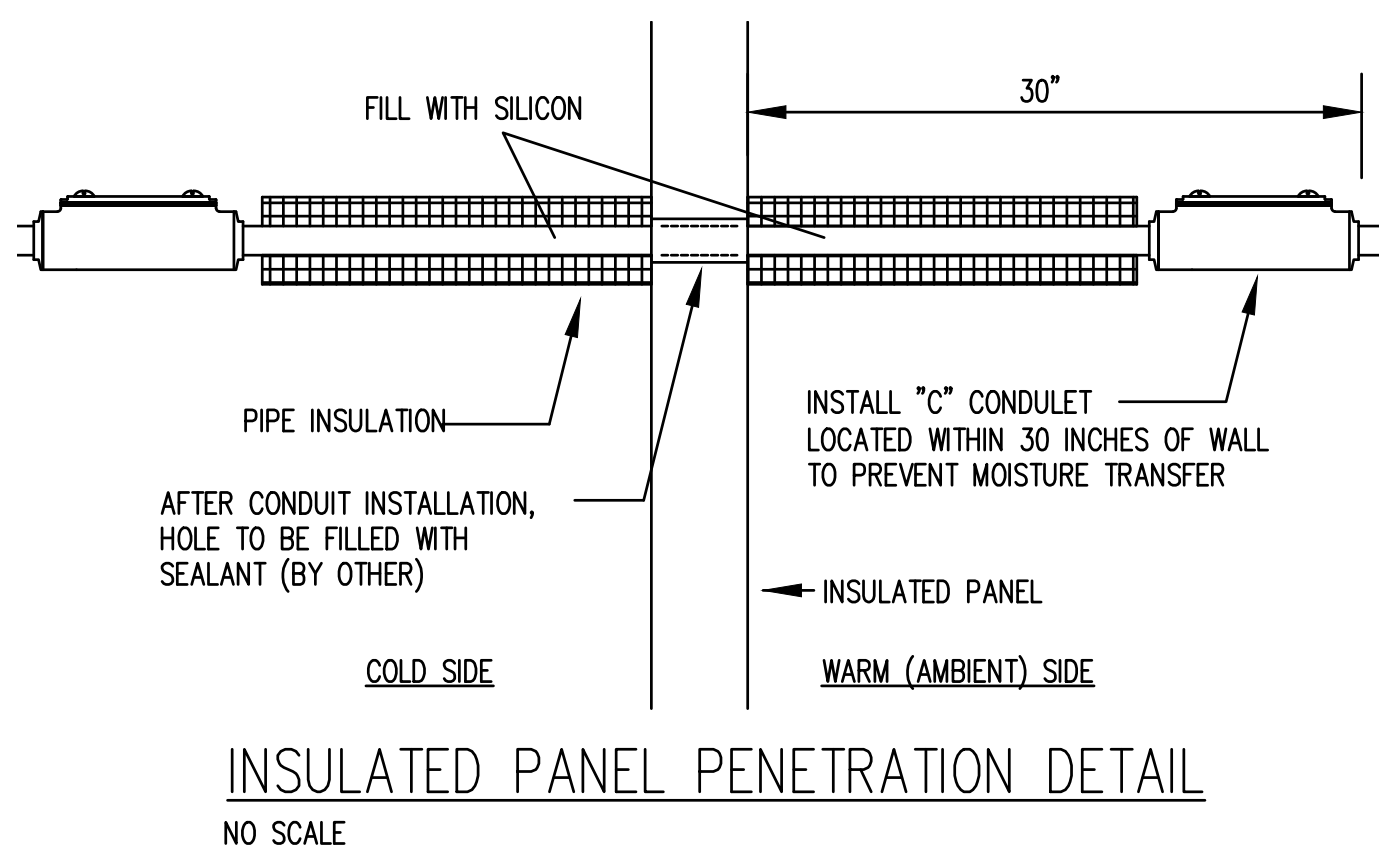
BATTERY CALCULATIONS

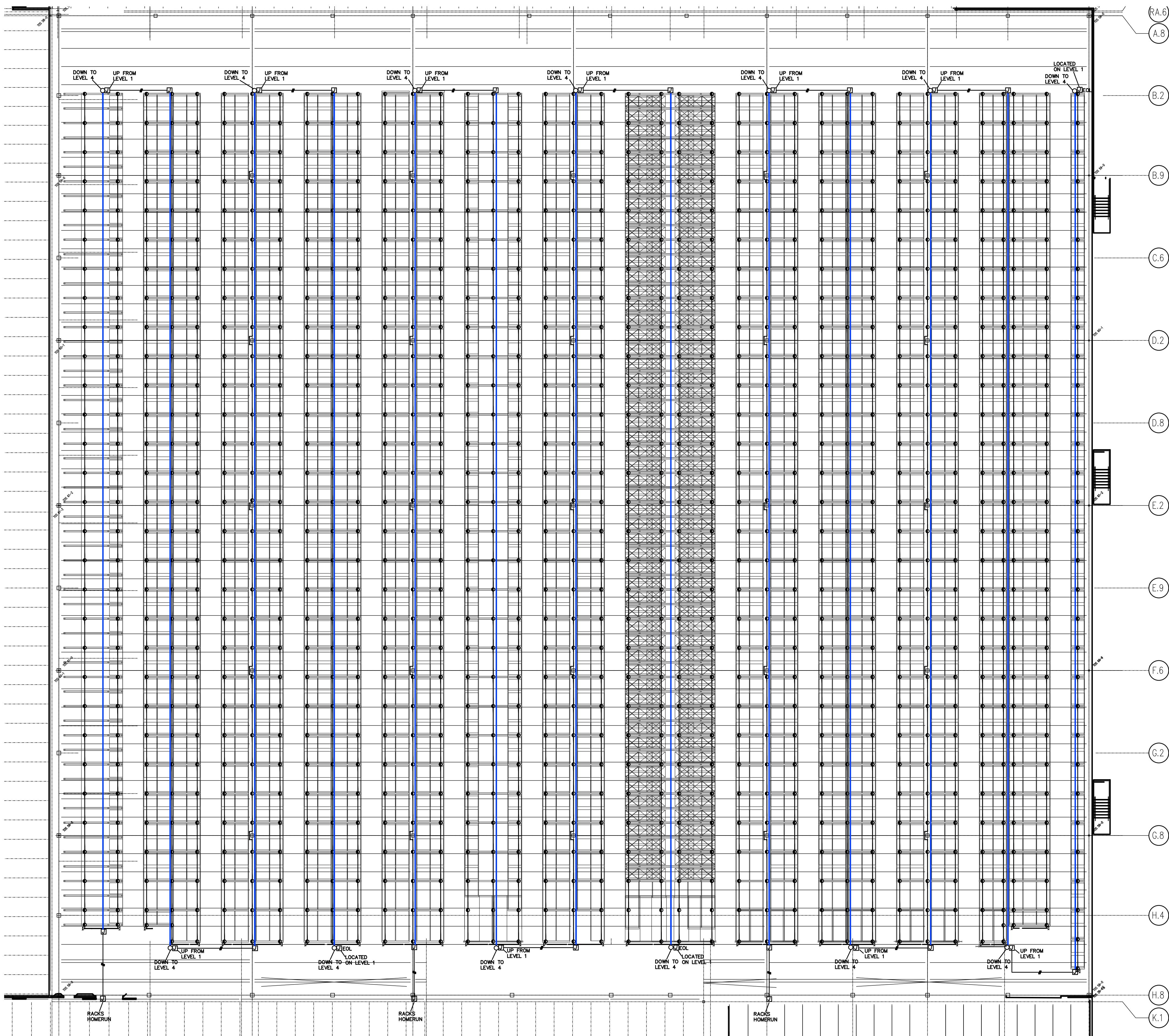
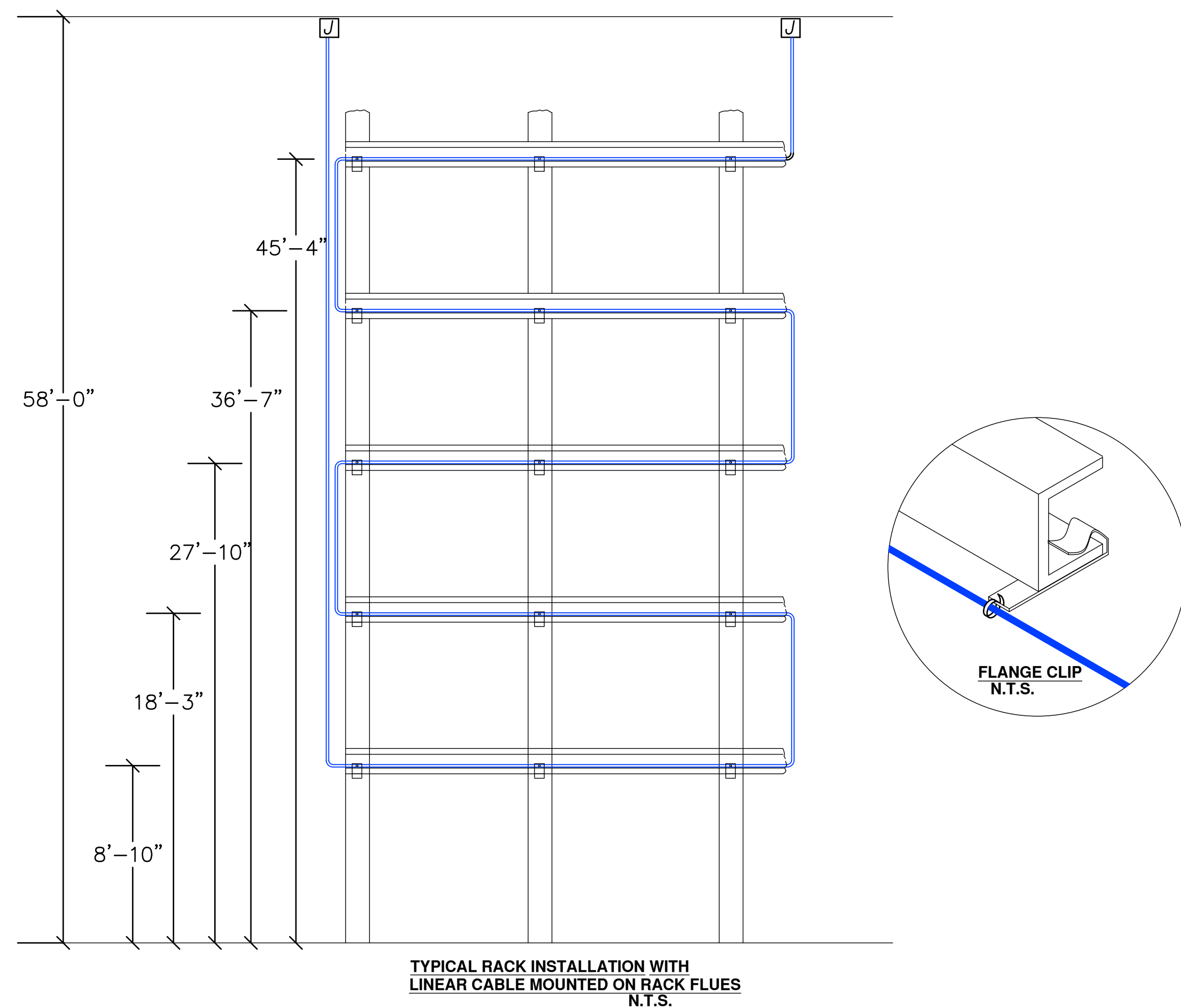
BATTERY CALCULATION				
Qty	Module / Device	Standby Amps	Total Standby	Total Alarm
1	Potter #410-RC	0.092	0.092	0.215
1	QRS Switch	0.040	0.040	0.080
FIELD DEVICES				
1	Sprinkler Solenoid	-	-	0.416
Total Amps			0.132	0.711
50	Standby Hours	11.880		
5	Min. of Alarm	0.035		
Minimum Amps Req'd		11.939		
Safety Factor		1.200		
Minimum Battery Required		14.327		



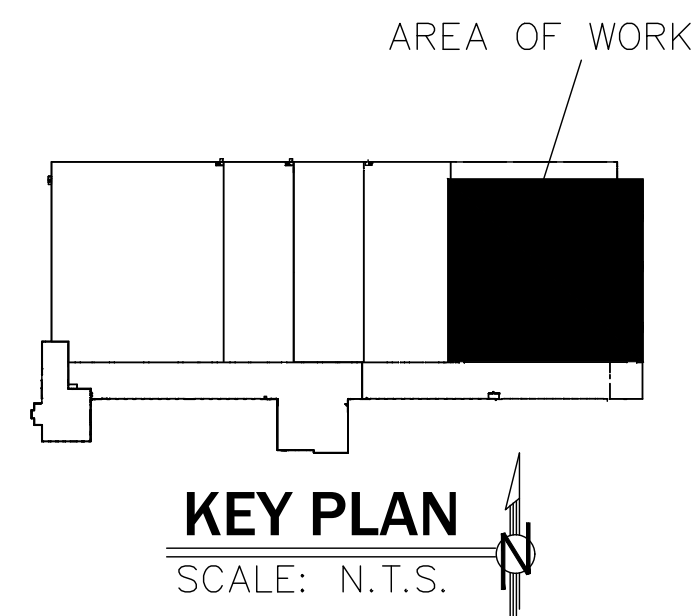
Sequence of events Matrix - Pre-Action Systems									
Outputs									
Event	A	B	C	D	E	F	G	H	I
1 Linear Heat Detection Cable	X			X			X	X	X
2 Low Air Pressure Supervisory Sw		X			X				
3 Pre-Action System loss of AC Power			X			X			
4 Pre-Action System low battery		X				X			
5 Pre-Action System Open Circuit			X			X			
6 Pre-Action System Short Circuit		X				X			
7 Pre-Action System Ground Fault		X				X			

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2	POTTER	RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3	LA	LOW AIR SWITCH	----	POTTER	OTHERS	8
4	J	JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6	MBS	MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8





SCALE: 1/16"=1'-0'



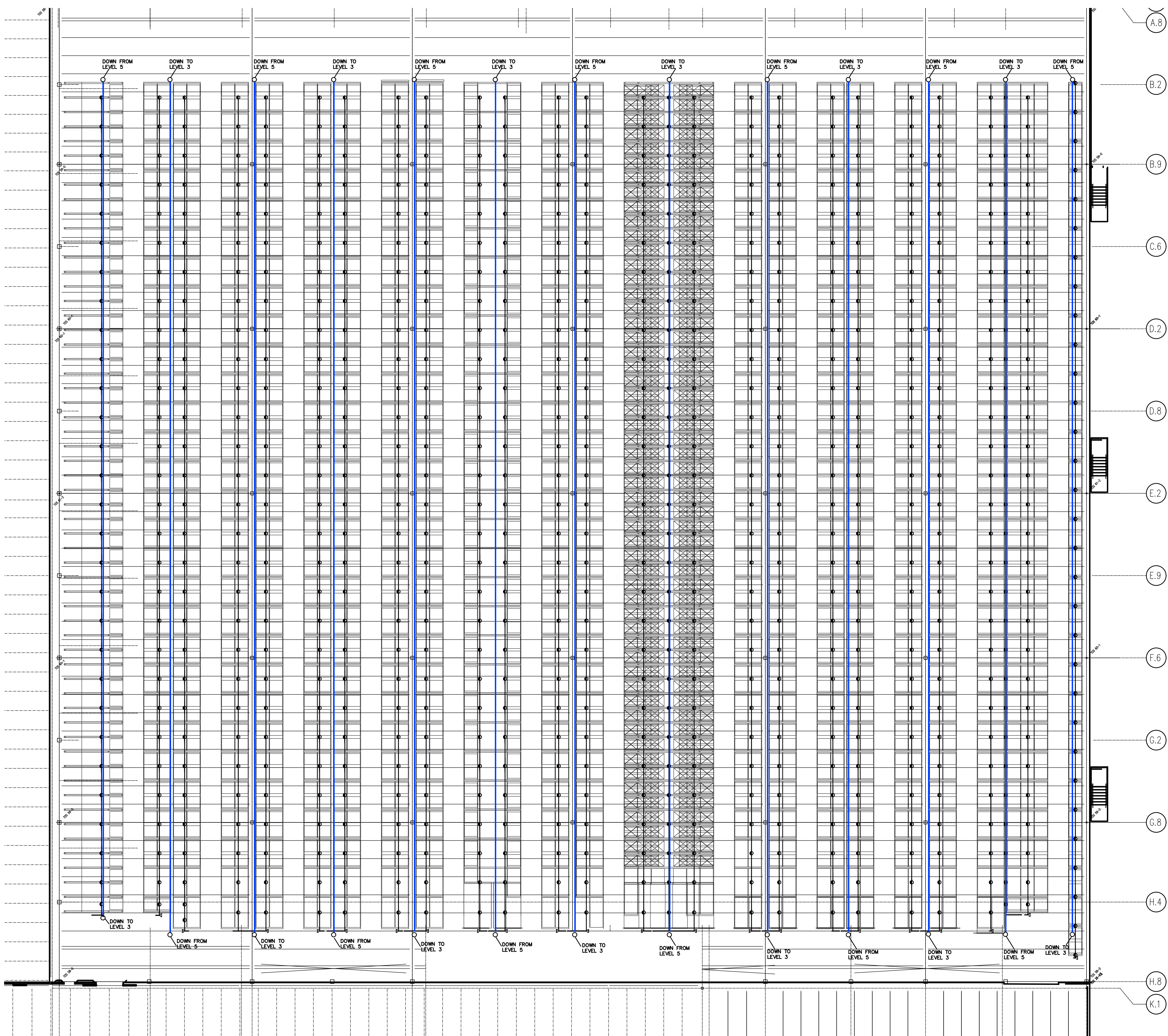
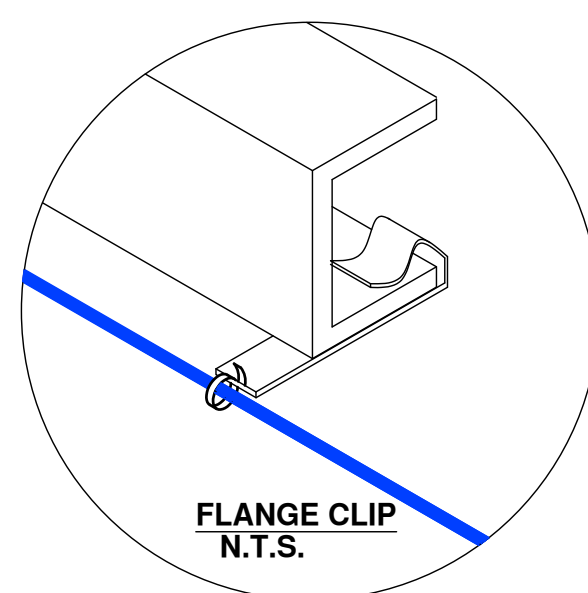
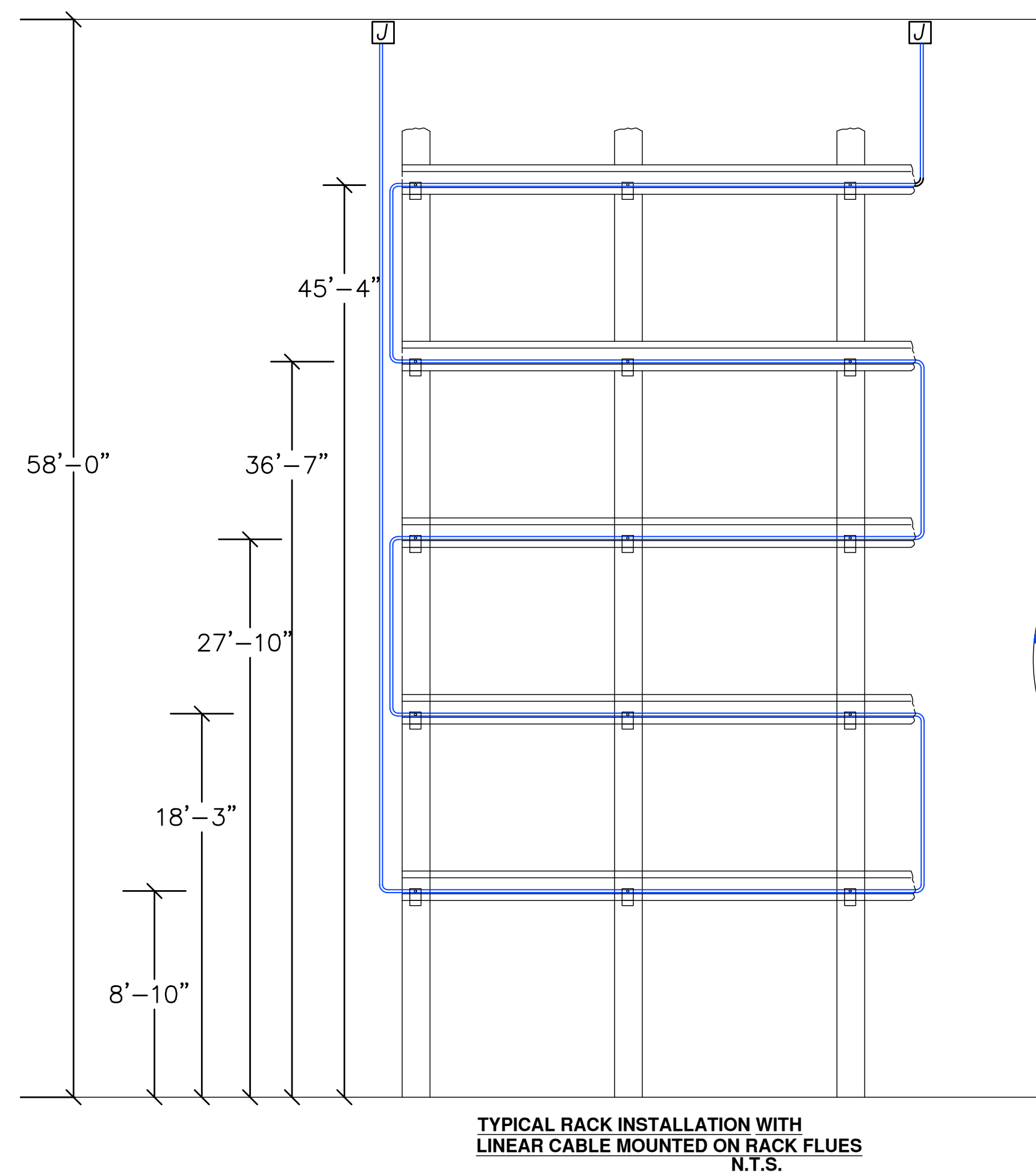
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TEMPERATURE	SAG	WIRE MOUNT SPACING
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-20°	1"	3'-5'
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1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RAVACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
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4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



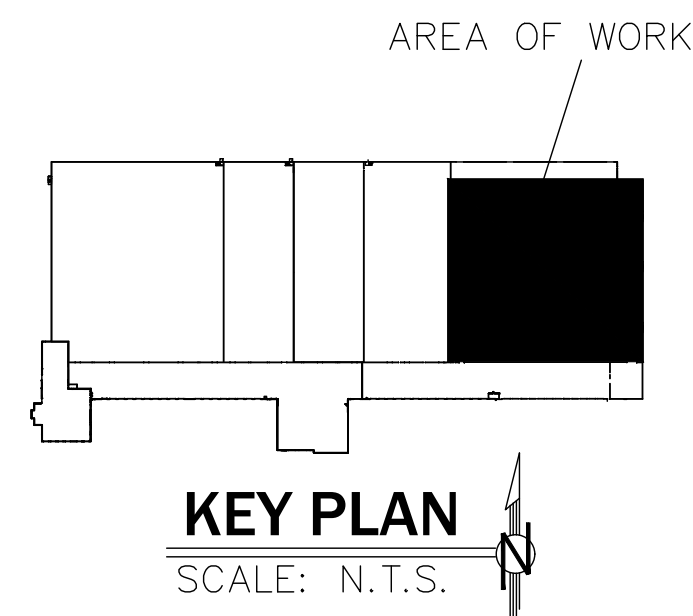
SCALE: 1/16"=1'-0"

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7. ALL FLEXIBLE CONDUIT SHALL BE METAL CLAD TYPE.
8. ALL CONDUCTORS #14 AWG MINIMUM.
9. USE THHN WIRE IN AMBIENT TEMPERATURE AREAS.
10. USE XHHN WIRE IN FREEZER TEMPERATURE AREAS.
11. MAX #14 AWG THHN WIRE IN 1/2" CONDUIT PER NEC = 12 ACTUAL ON
12. MAX #14 AWG XHHN WIRE IN 1/2" CONDUIT PER NEC = 8 ACTUAL ON
13. LINEAR DETECTION CABLE TO BE INSTALLED AS A CLASS "B" CIRCUIT.
14. MAXIMUM LINEAR DETECTION CABLE PER ZONE = 10,000 FEET
15. APPROXIMATE DETECTION CABLE CEILING ZONE #2 = 3400 FEET
16. APPROXIMATE DETECTION CABLE CEILING ZONE #3 = 3400 FEET
17. APPROXIMATE DETECTION CABLE CEILING ZONE #4 = 3400 FEET
18. APPROXIMATE DETECTION CABLE RAIL DOCK ZONE #5 = 800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #6 = 5800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #7 = 5800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #8 = 7400 FEET
20. APPROXIMATE TOTAL DETECTION CABLE = 30,000 FEET

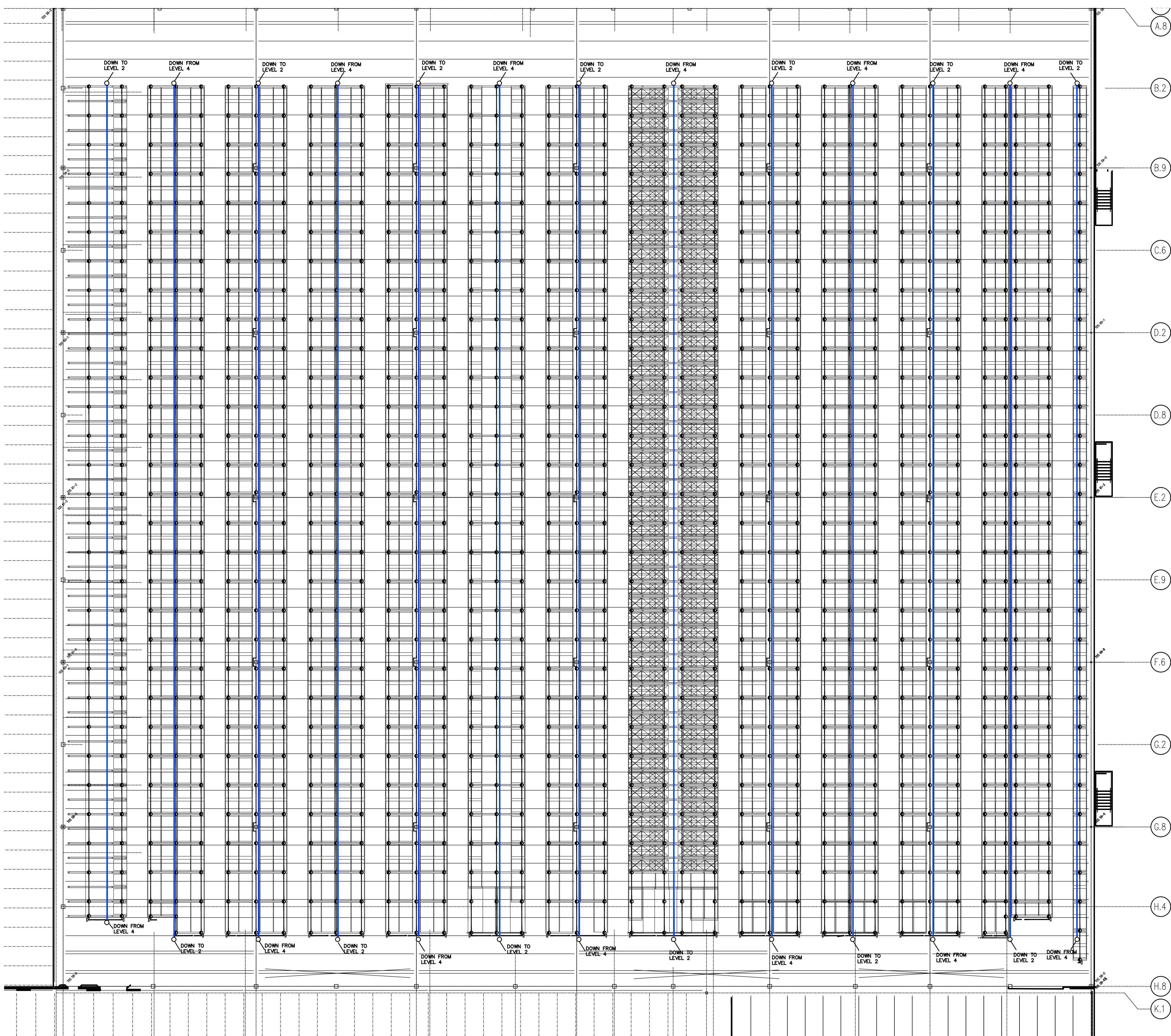
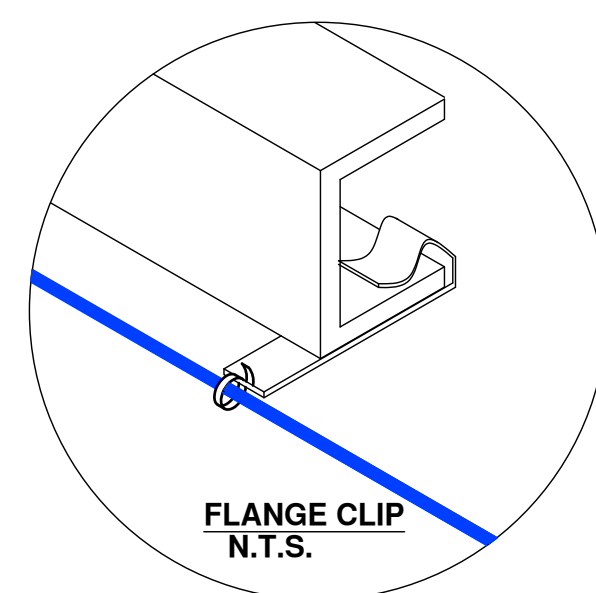
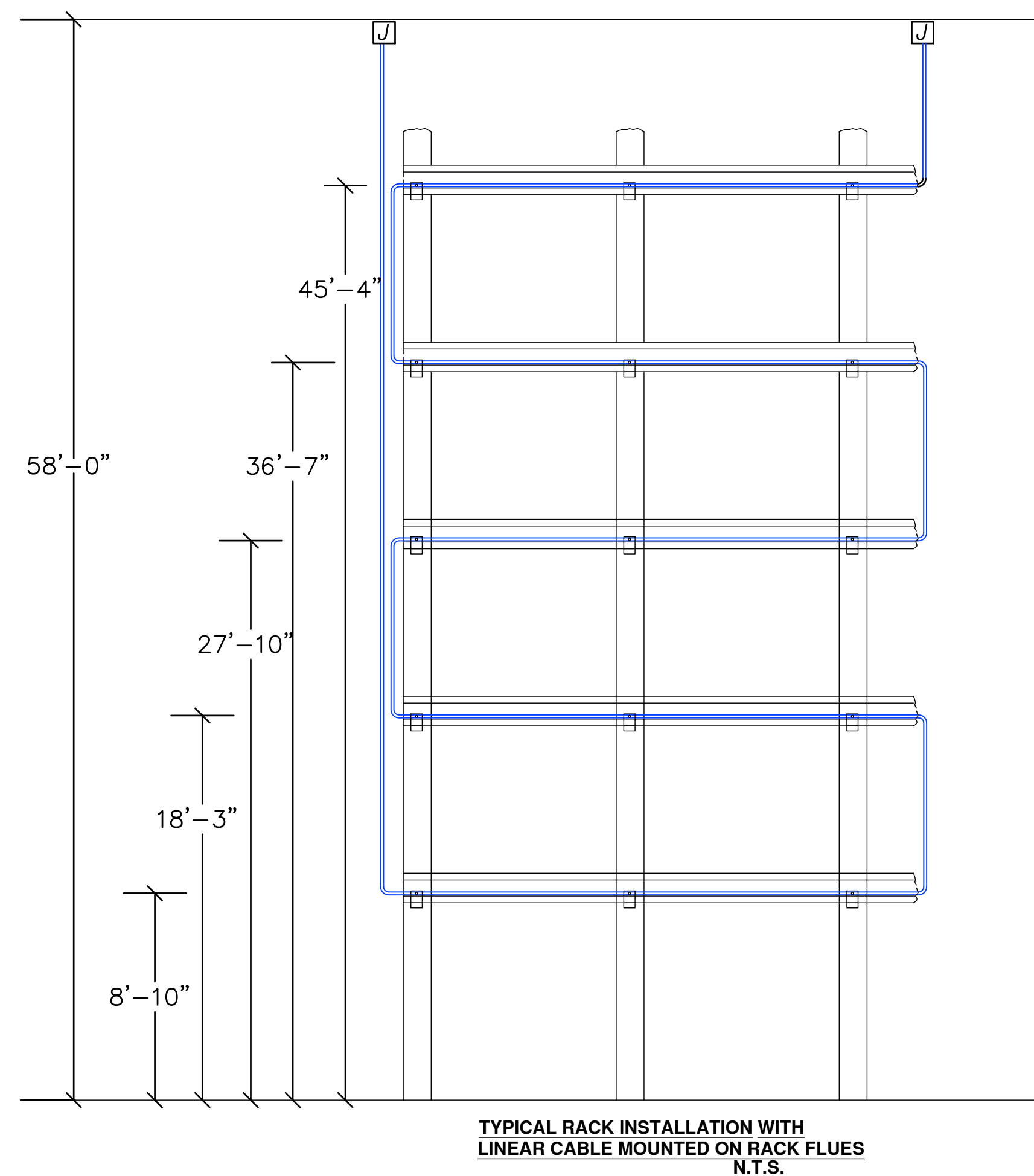
1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

TEMPERATURE	SAG	WIRE MOUNT SPACING
20°	3/4"	3'-5'
0°	7/8"	3'-5'
-20°	1"	3'-5'
-40°	1-1/8"	3'-5'

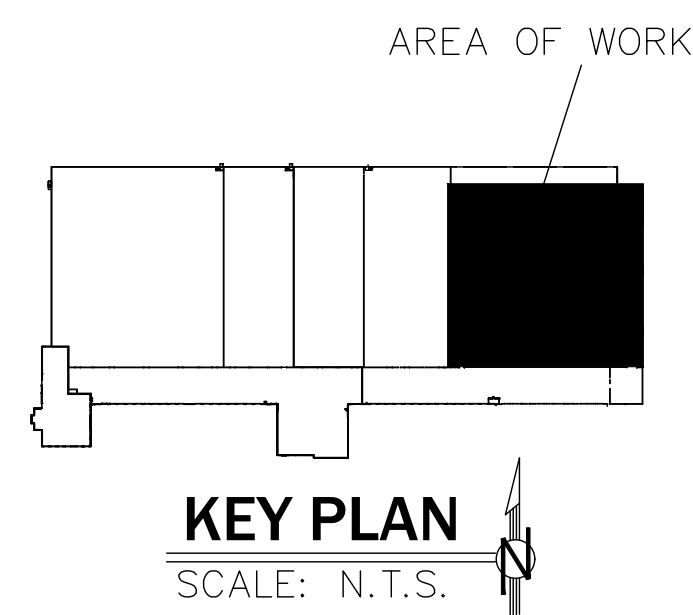
1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RAVED SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR



ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	-----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



SCALE: 1/16"=1'-0"



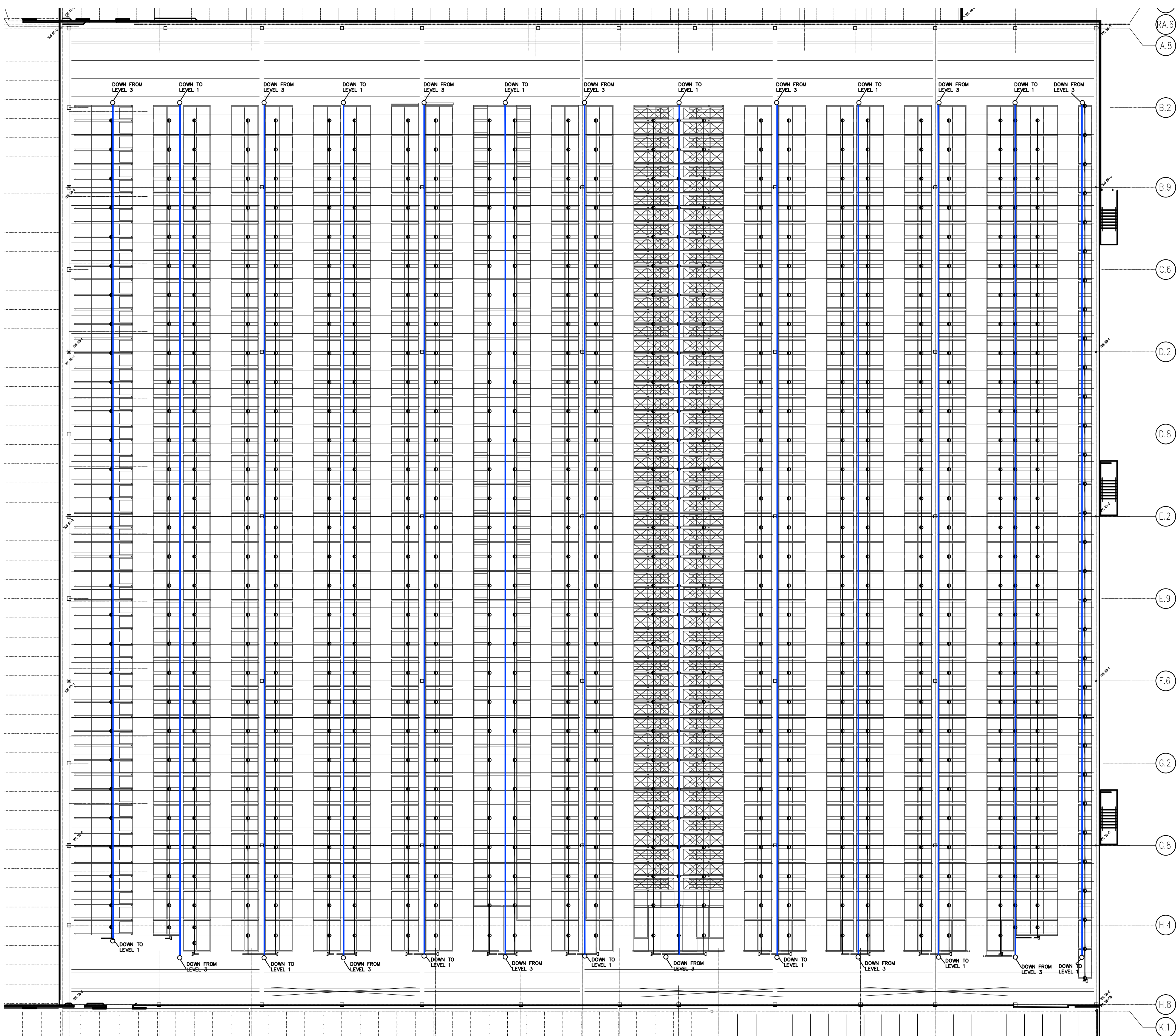
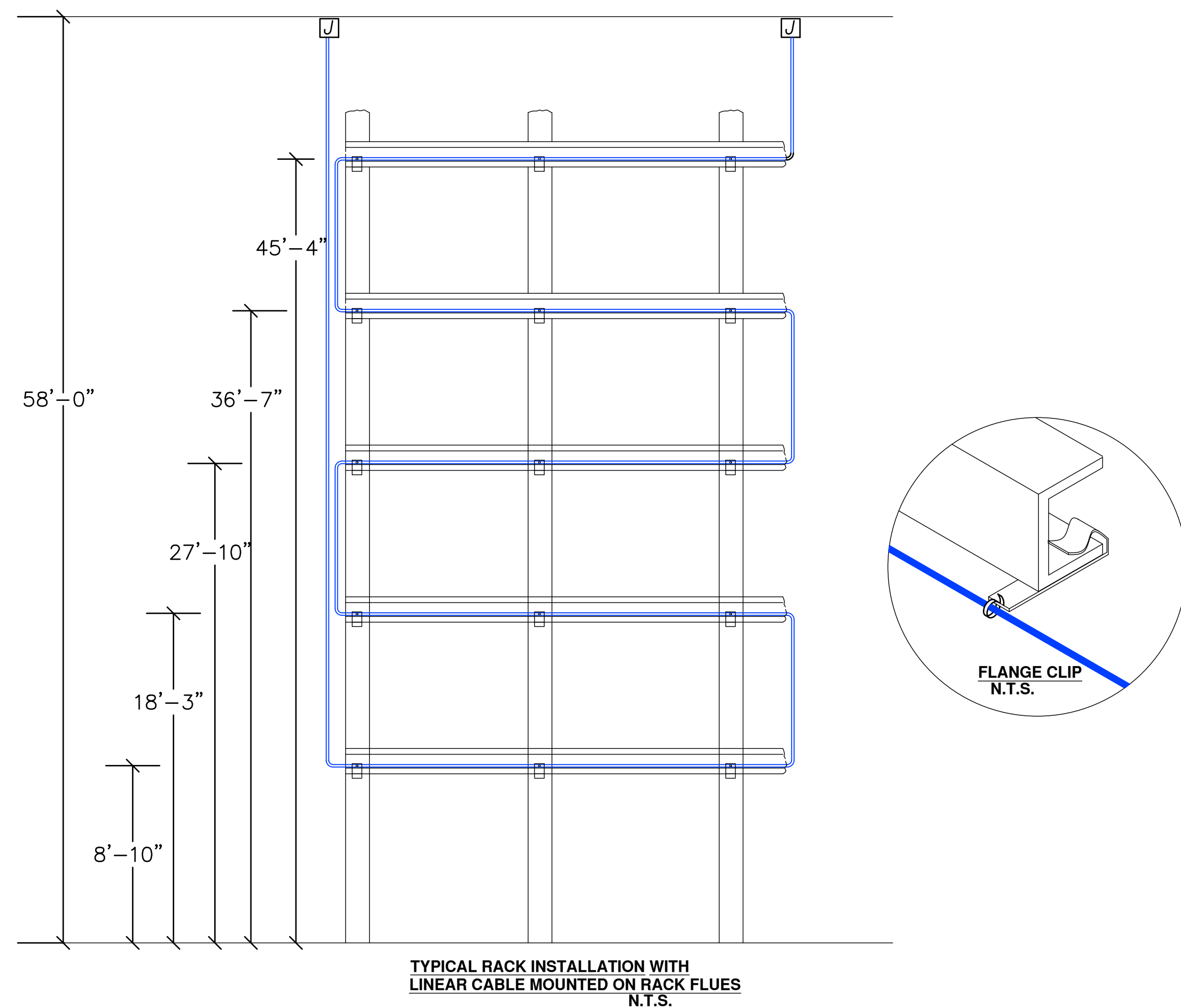
7. ALL FLEXIBLE CONDUIT SHALL BE METAL CLAD TYPE.
8. ALL CONDUCTORS #14 AWG MINIMUM.
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10. USE XHHN WIRE IN FREEZER TEMPERATURE AREAS.
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19. APPROXIMATE DETECTION CABLE RACK ZONE #7 = 5800 FEET
19. APPROXIMATE DETECTION CABLE RACK ZONE #8 = 7400 FEET
20. APPROXIMATE TOTAL DETECTION CABLE = 30,000 FEET

1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

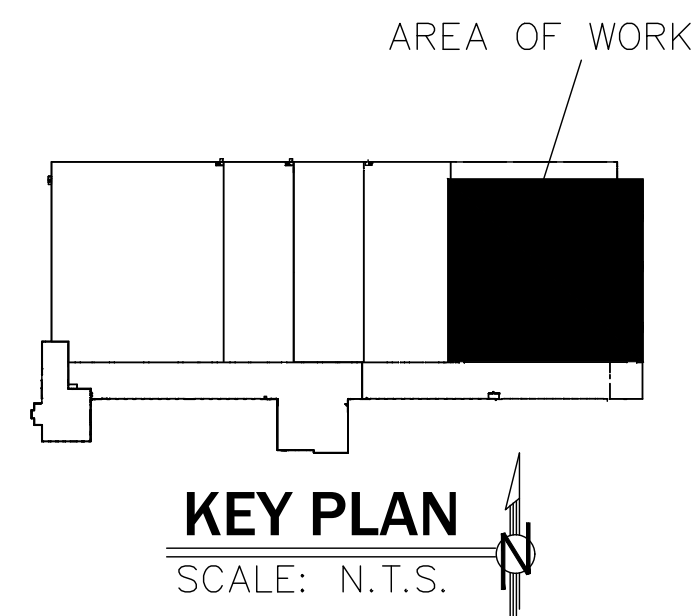
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-20°	1"	3'-5'
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1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	-----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



SCALE: 1/16"=1'-0"



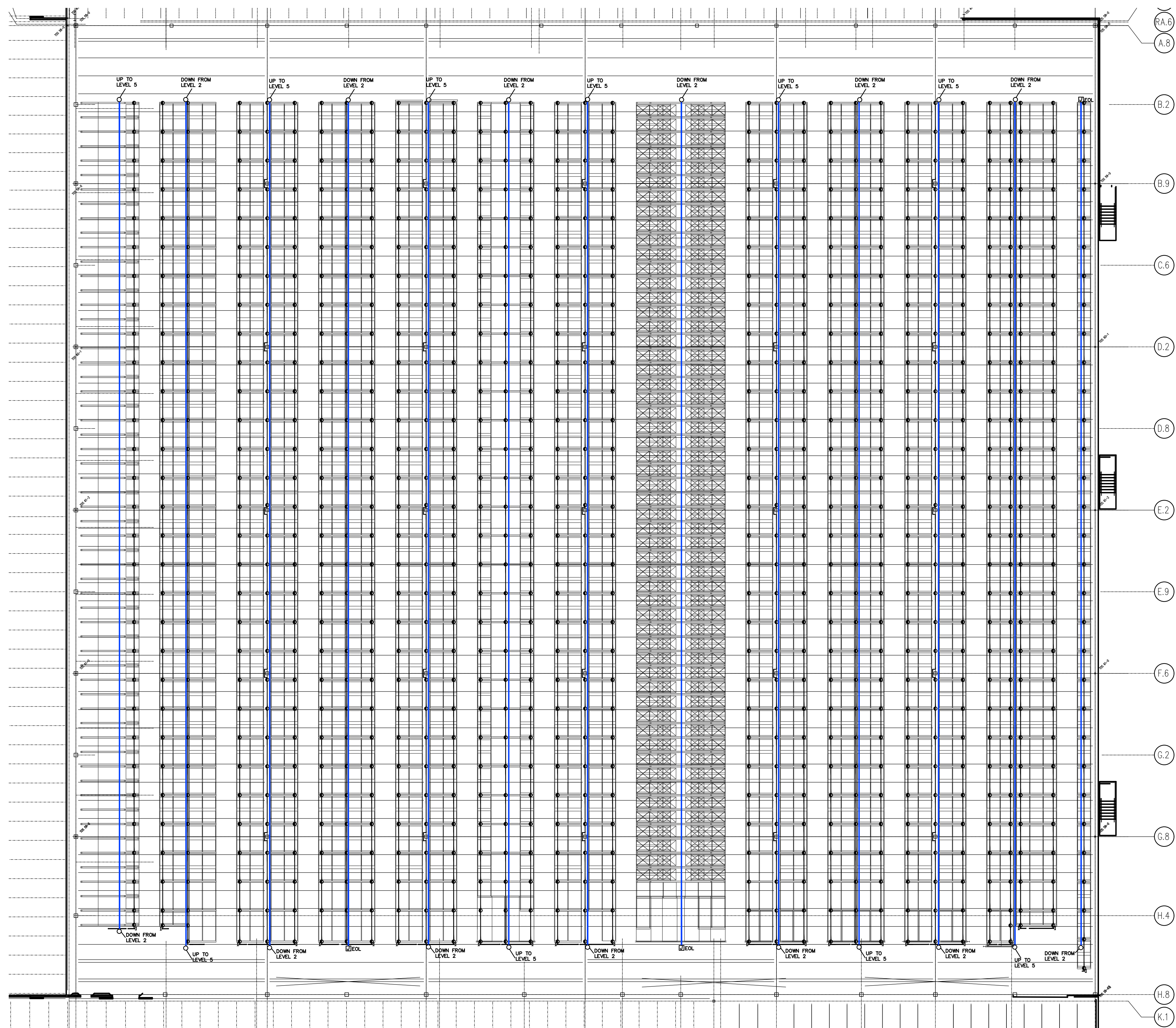
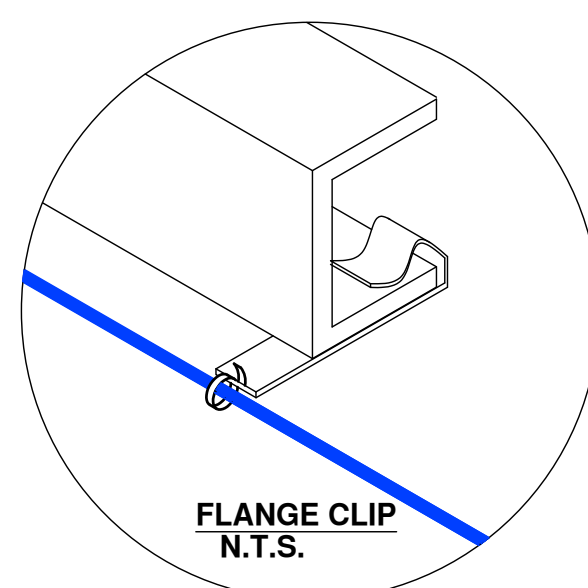
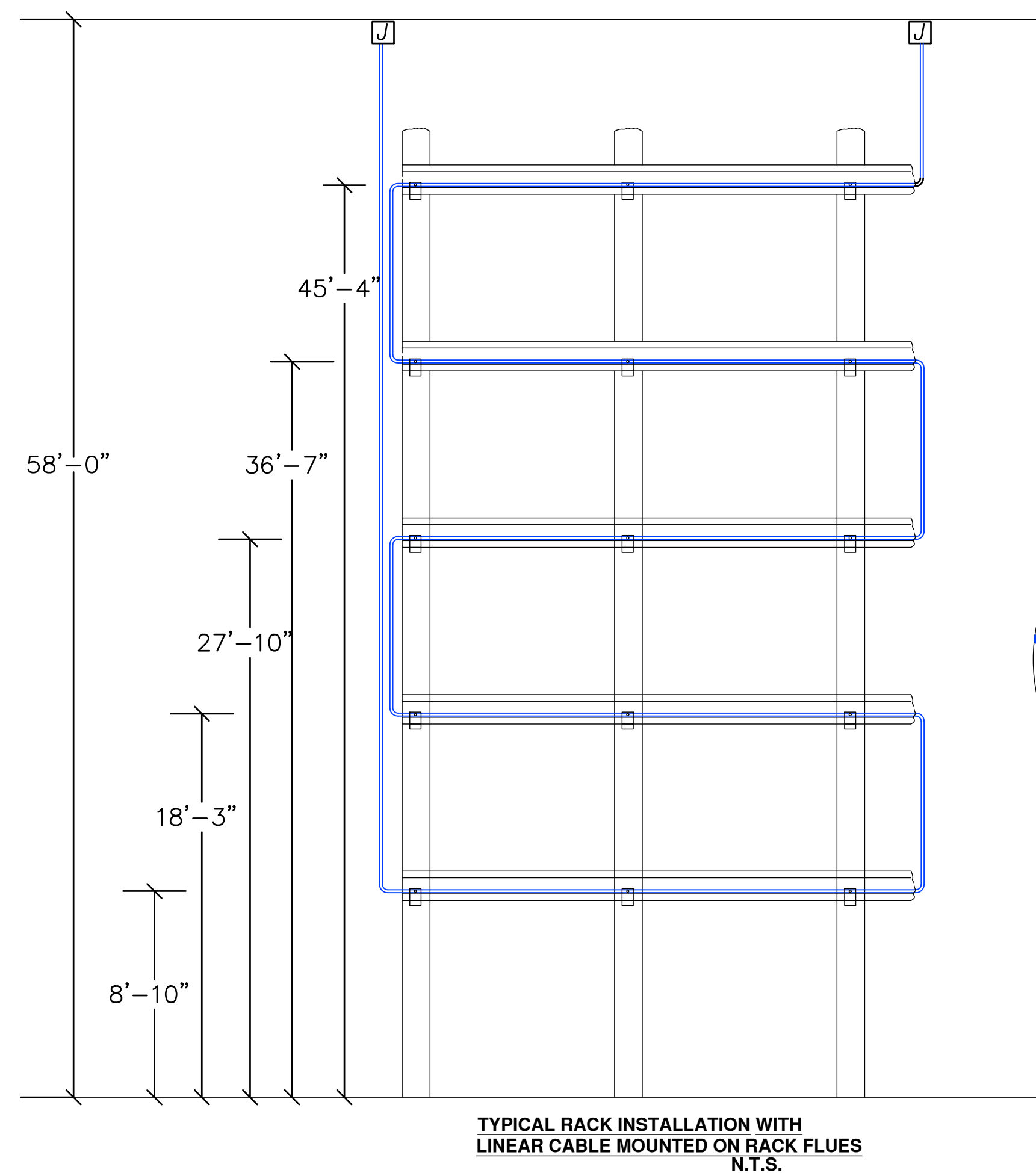
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19. APPROXIMATE DETECTION CABLE RACK ZONE #8 = 7400 FEET
20. APPROXIMATE TOTAL DETECTION CABLE = 30,000 FEET

1. SUPPORT THE DETECTION CABLE AT 3 TO 5 FOOT MINIMAL INTERVALS
2. ALLOW THE PROPER AMOUNT OF SAG WHEN INSTALLING THE DETECTION WIRE. REFER TO THE SAG CHART BELOW FOR DETAILED INFORMATION.

TEMPERATURE	SAG	WIRE MOUNT SPACING
20°	3/4"	3'-5'
0°	7/8"	3'-5'
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2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR



AREA OF WORK

KEY PLAN

SCALE: N.T.S.

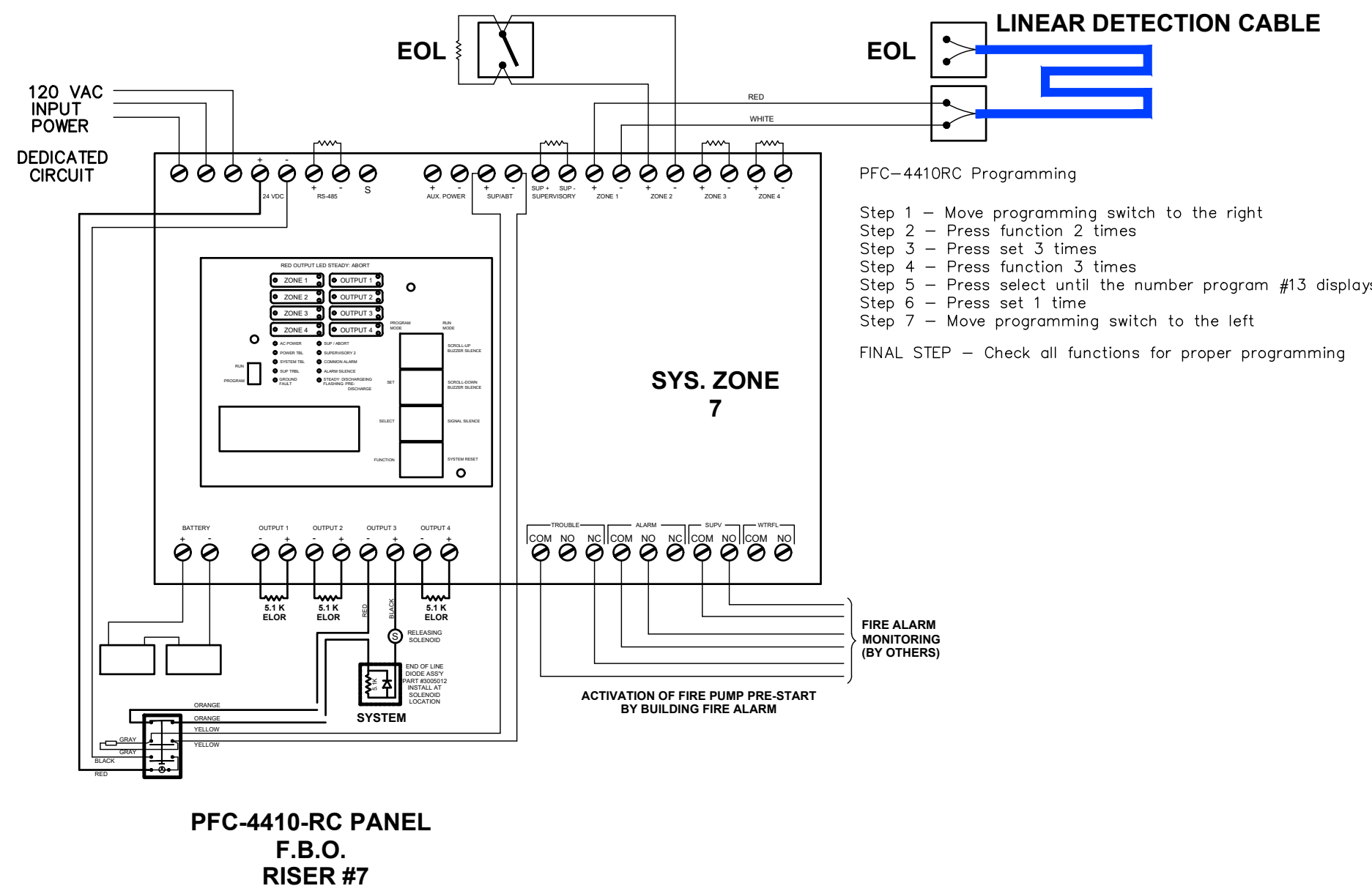
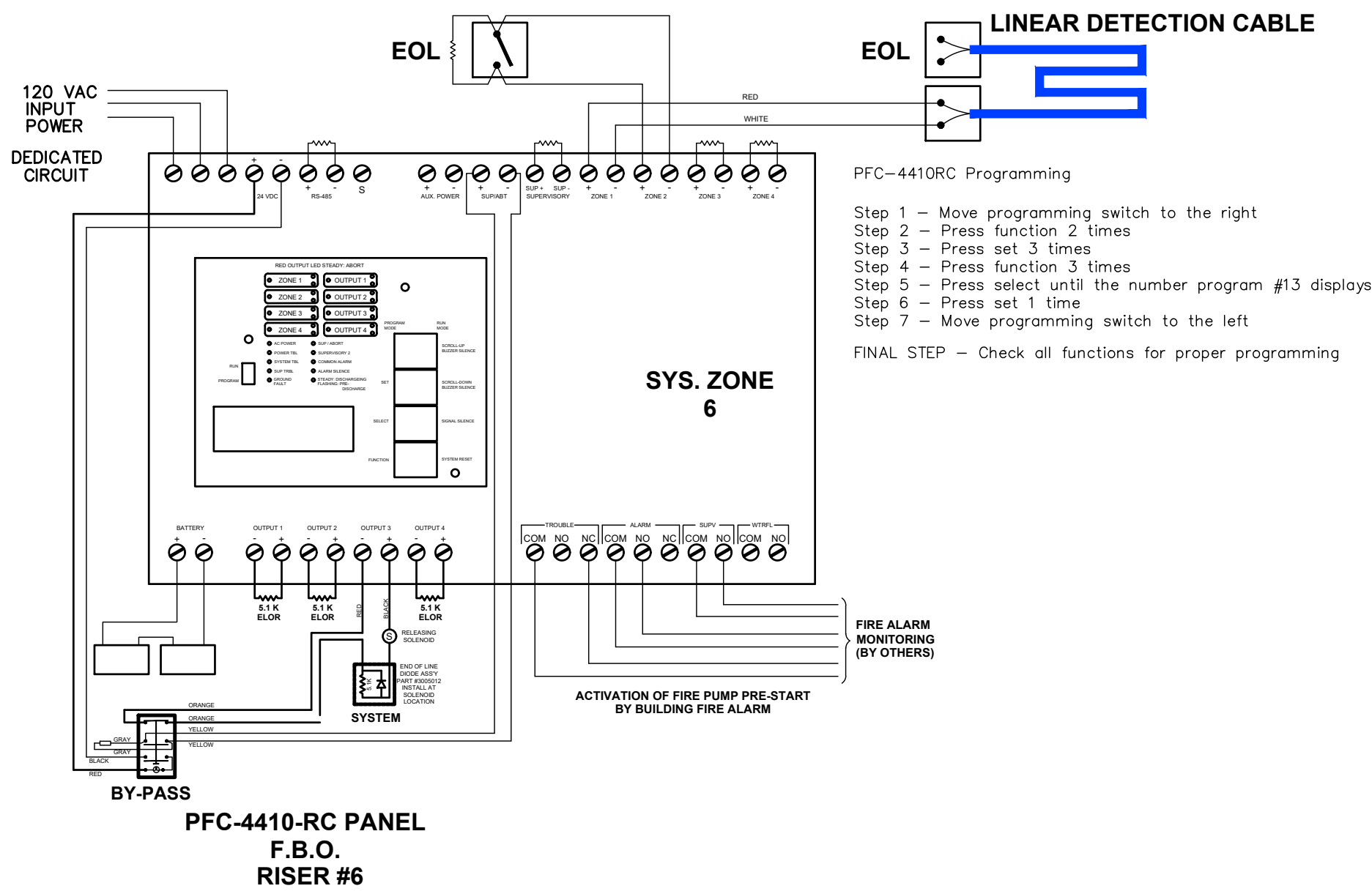
1. LINEAR DETECTION SYSTEM IS NOT THE BUILDING FIRE ALARM SYSTEM.
2. FIRE ALARM PANEL BY OTHERS.
3. FIRE ALARM PULL STATION BY OTHERS.
4. FIRE ALARM VISUAL DEVICES BY OTHERS.
5. FIRE ALARM AUDIBLE DEVICES BY OTHERS.
6. ALL CONDUIT 1/2" MINIMUM.
7. ALL FLEXIBLE CONDUIT SHALL BE METAL CLAD TYPE.
8. ALL CONDUCTORS #14 AWG MINIMUM.
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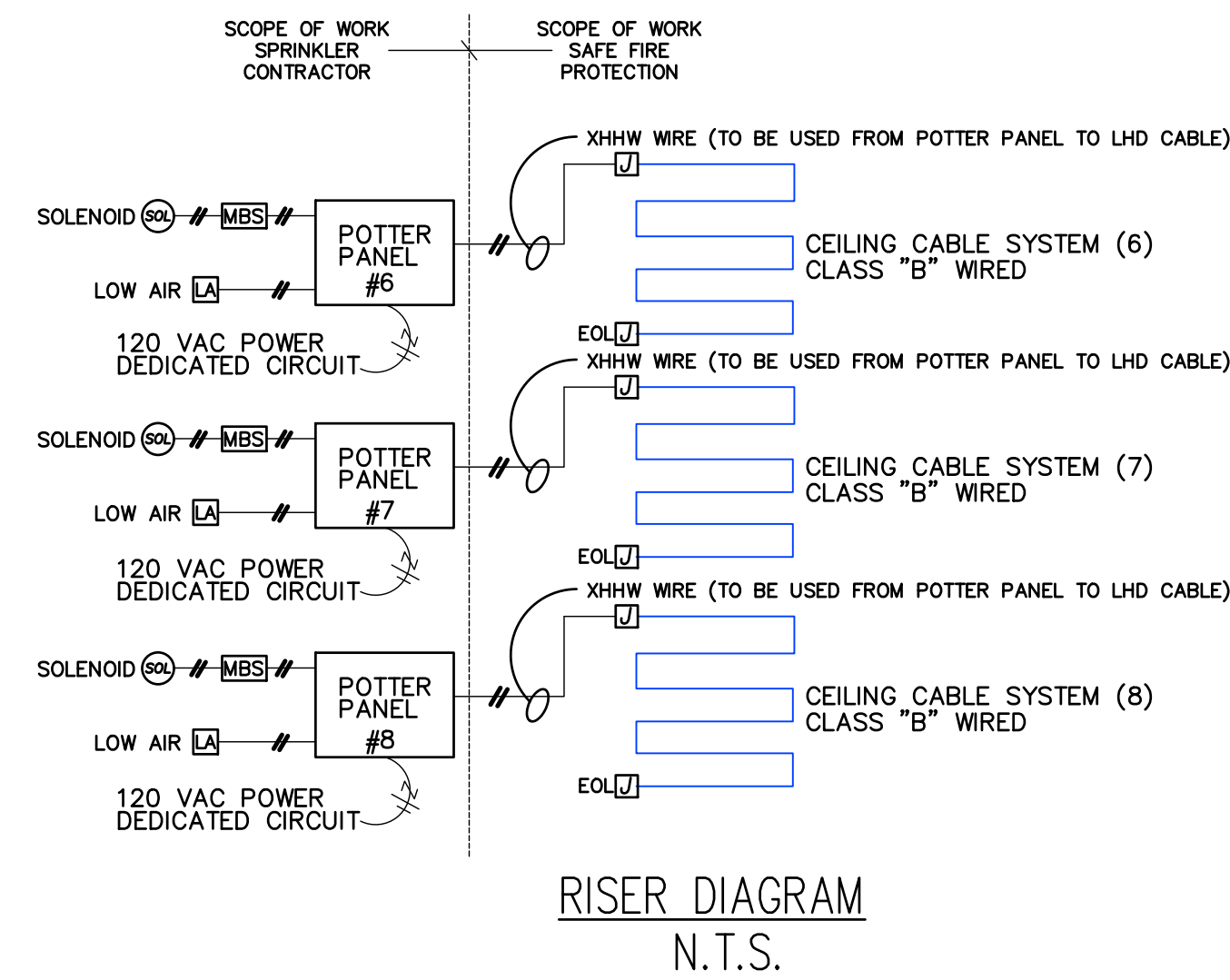
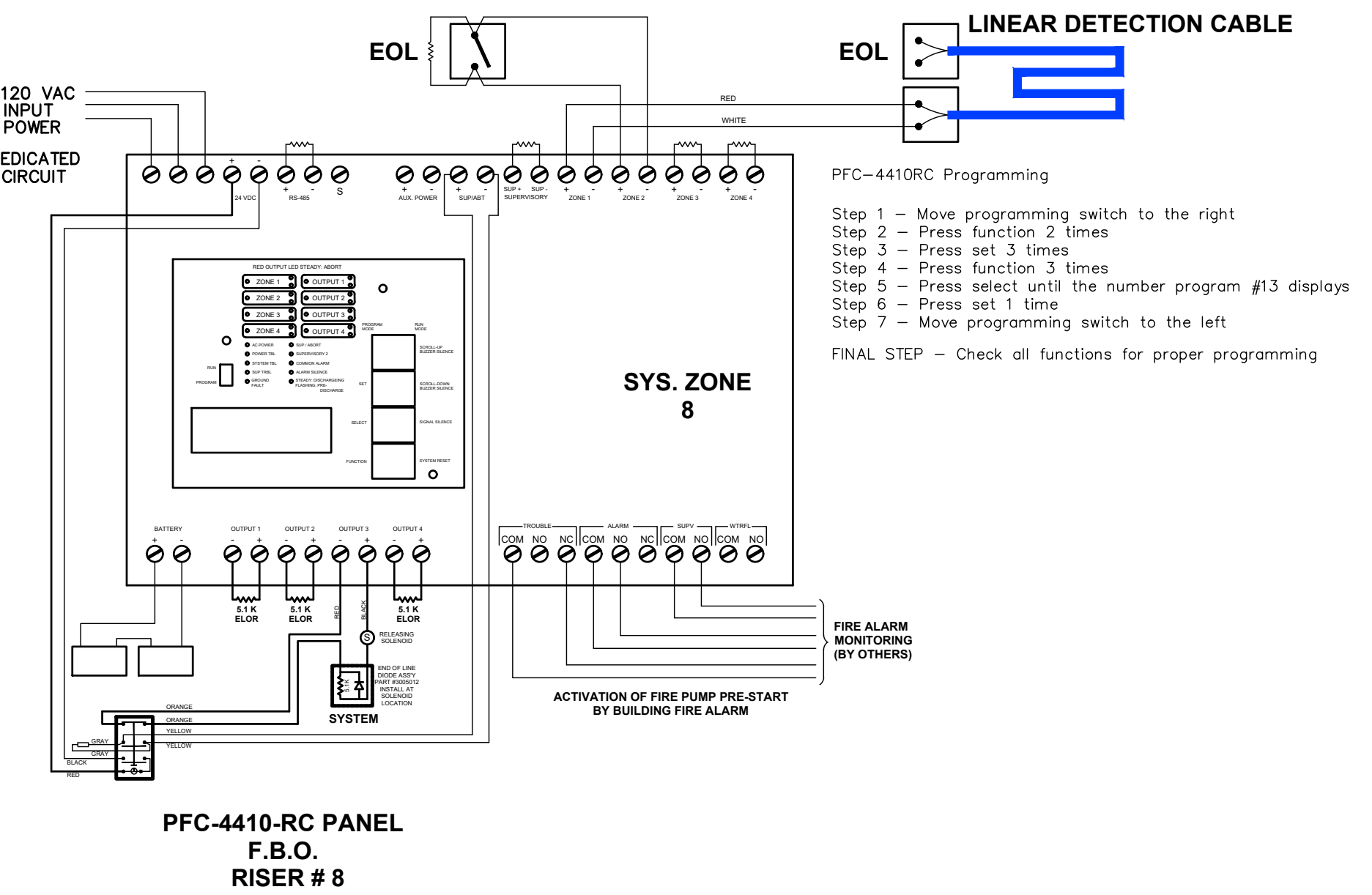
1. FURNISH & INSTALL LINEAR DETECTION CABLE AND PRE-ACTION RELEASING PANELS FOR THE CEILING, RAIL DOCK, AND IN-RACK SYSTEMS.
2. SPRINKLER SYSTEM, AND LOW AIR SWITCH, PROVIDED BY SPRINKLER CONTRACTOR
3. FINAL TEST OF LINEAR DETECTION CABLE WITH SPRINKLER CONTRACTOR

ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2		RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3		LOW AIR SWITCH	-----	POTTER	OTHERS	8
4		JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6		MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8

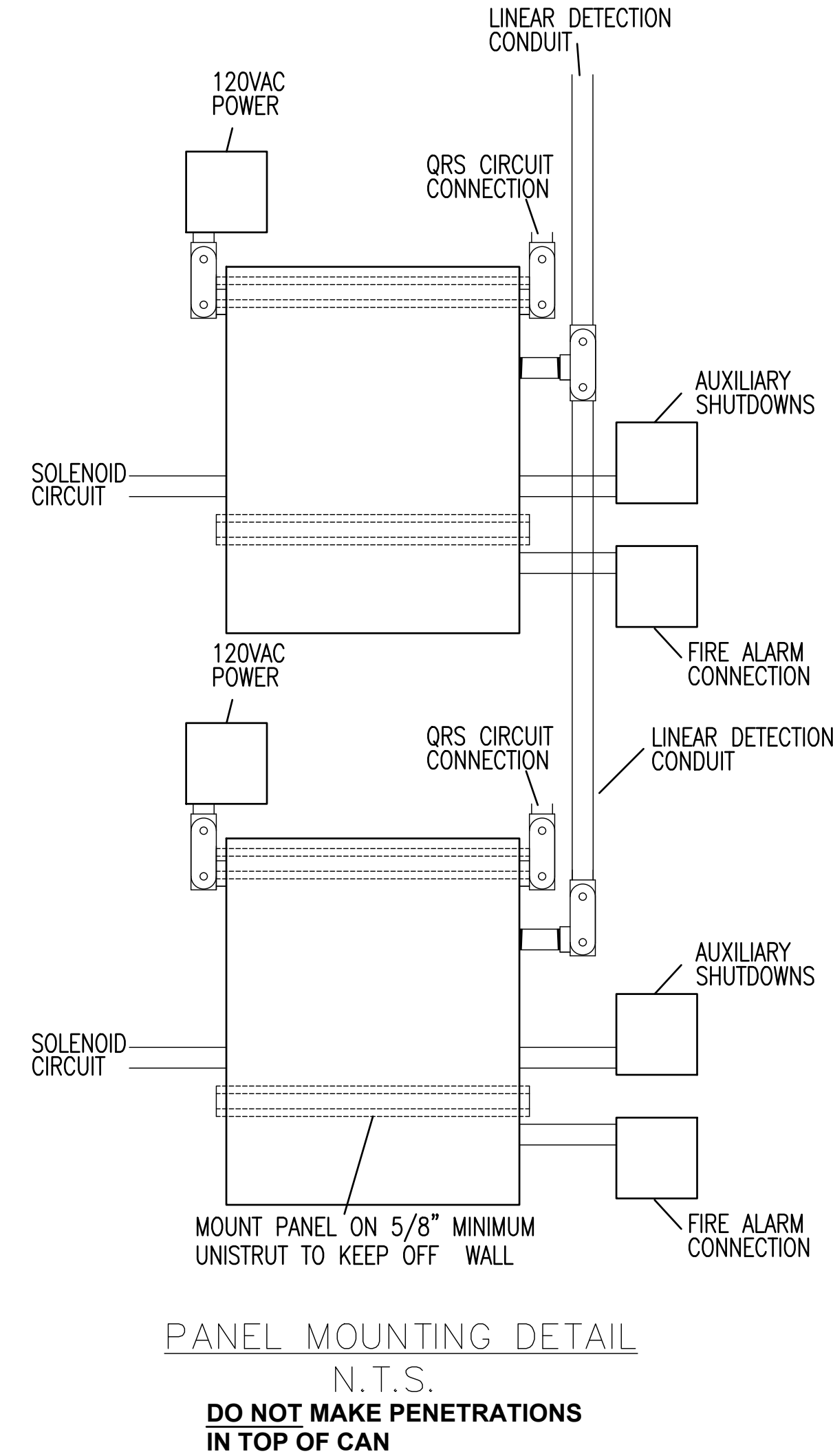
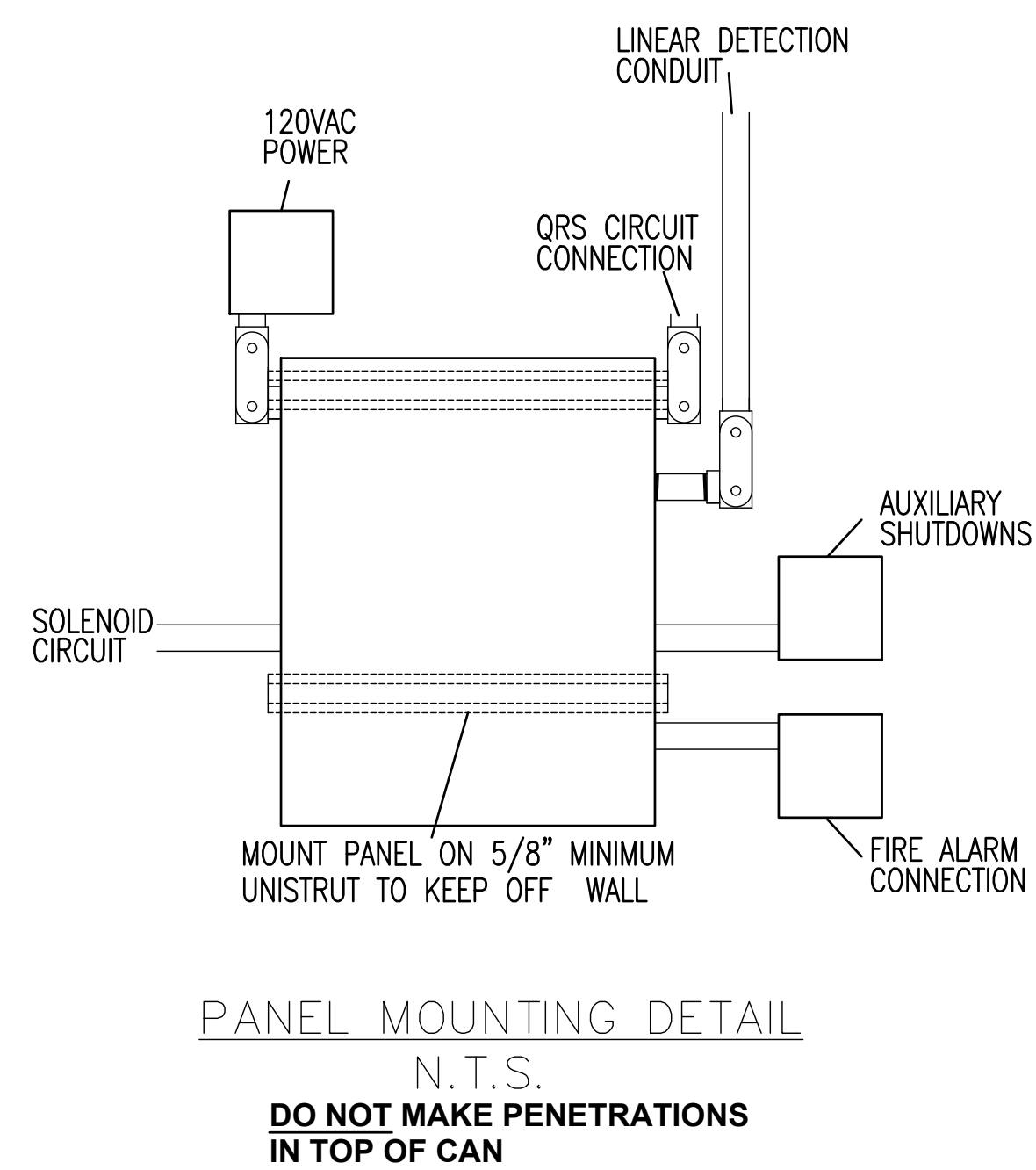
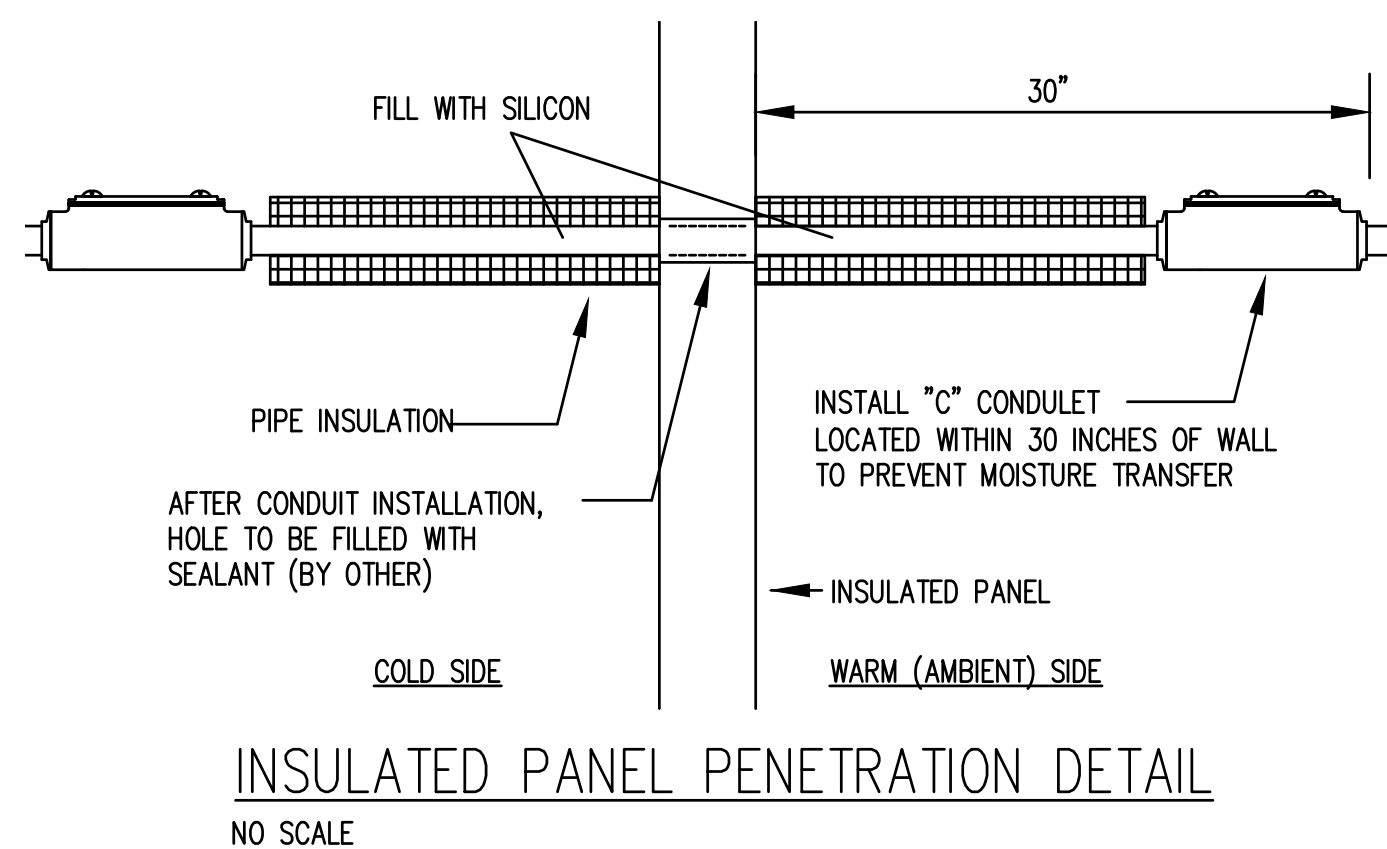


BATTERY CALCULATIONS

BATTERY CALCULATION				
Qty	Module / Device	Standby Amps	Total Standby	Alarm
1	Potter 4410-RC	0.092	0.092	0.2150
1	QRS Switch	0.040	0.040	0.0800
FIELD DEVICES				
1	Sprinkler Solenoid	-	-	0.416
Total Amps			0.132	0.711
90	Standby Hours	11.880		
5	Min. of Alarm	0.059		
Minimum Amps Required			11.939	
Safety Factor			1.200	
Minimum Battery Required			14.327	



Sequence of events Matrix - Pre-Action Systems									
Outputs									
Event	A	B	C	D	E	F	G	H	I
1 Linear Heat Detection Cable	X			X			X	X	
2 Low Air Pressure Supervisory Sw		X			X				X
3 Pre-Action System loss of AC Power			X			X			
4 Pre-Action System low battery		X			X				
5 Pre-Action System Open Circuit			X			X			
6 Pre-Action System Short Circuit		X			X				
7 Pre-Action System Ground Fault		X			X				



ITEM	SYM	DESCRIPTION	MODEL	MANUFACTURER	PROVIDED BY	QUANTITY
1		SAFECABLE LINEAR HEAT DETECTION CABLE	TC155	SAFE	SAFE	30,000
2	POTTER	RELEASE CONTROL PANEL	4410-RC	POTTER	SAFE	8
3	LA	LOW AIR SWITCH	----	POTTER	OTHERS	8
4	J	JUNCTION BOX	TC1000	SAFE	SAFE	X
5	NO SYM	STRAIN RELIEF CONNECTOR	TC100	SAFE	SAFE	X
6	MBS	MAINTENANCE BY-PASS SWITCH	RCDS-1	POTTER	SAFE	8



PFC-4410RC
RELEASING CONTROL PANEL



Dimensions: 18 3/4" x 14 1/2" x 4 1/4"
UL and ULC Listed, FM Approved, NYMEA Accepted, and CSFM Approved

General Description

The Potter Model PFC-4410RC is a flexible multi-hazard releasing control panel that is well suited for a number of applications. The PFC-4410RC is listed for use with pre-action and deluge sprinkler suppression systems and agent based fire suppression systems. The panel utilizes a microprocessor-based system that has 19 Standard Programs, which covers a majority of installations. The simple to follow Menu Structure programs the entire system in a matter of minutes. In addition to the Standard Programs, the panel allows custom programming to accommodate any installation.

Ordering Information

Model Number	Description	Stock Number
PFC-4410RC	4 Zone Releasing Control (White Cabinet)	3006144
PFC-4410RC	4 Zone Releasing Control (Red Cabinet)	3006142
PFC-TW	Bezel for Semi-Flush Mounting (White)	5090157
PFC-TR	Bezel for Semi-Flush Mounting (Red)	5090155
BT-40	Battery, 12V 4AH for 24 hour standby (2 Req'd)	5130092
BT-80	Battery, 12V 8AH for 60 hour standby (2 Req'd)	5130084
BT-120	Battery, 12V 12AH for 90 hour standby (2 Req'd)	5130090
BT-180	Battery, 12V, 18AH for 90 hour standby (2 Req'd)	5130086
CAZZ	2 Zone Class A Initiating Circuit Module	3006013
CAM	Class A Indicating Circuit Module	3005300
ARM-44	Relay Module for PFC-4410RC	3006221
ARM-2	Auxiliary Relay Module	3004725
RA-4410RC	Remote Annunciator	3006400
BB-RA-44R	Surface Mount Back Box for RA-4410RC (Red)	3006401

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MFG #5401259 - REV A
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PAGE 1 OF 2



PFC-4410RC
RELEASING CONTROL PANEL

Architects/Engineers Specifications

The control panel for the extinguishing agent releasing system shall be a microprocessor based control capable of protecting multiple hazards in one control panel. It shall be Underwriters Laboratories Inc. listed under Standard 864 Ninth Edition and Underwriters Laboratories of Canada for Local Control Units for Releasing Service. The control shall also be approved by Factory Mutual Research Corporation and be compliant with the requirements of NFPA-72

(Local: A, M, SS service types; DAC and NC signaling type) and NFPA12, NFPA12A, NFPA-13, NFPA-15, NFPA-16, NFPA-17, NFPA-17A, NFPA-750, and NFPA-2001.

The control shall be housed in an 18 gauge steel cabinet that has a hinged, removable door with a key lock. The finish shall be baked enamel and available in red or off-white with contrasting trim and logo. An optional matching bezel should be available for semi-flush mounting. The cabinet shall have adequate space to house 18 AH standby batteries capable of operating the system for at least 90 hours.

The control shall include a fully supervised integral power supply/battery charger capable of providing 200mA to the auxiliary power circuit. It shall also be capable of providing 2.5 Amps to all releasing and notification appliance circuits combined. All initiating, output and auxiliary power circuits shall be power limited.

The control shall have a 32 character (16 characters, 2 lines) backlit LCD display and a 34 LED supplemental display. All diagnostic and alarm event information shall be viewable in text form on this display. A field programmable custom banner message with the current date and time shall be displayed when no current alarm or diagnostic information exists.

All operational features of the control panel will be field programmable using menu driven selections on the alpha-numeric display and on board controls. No special programmer will be required and jumpers or switches to configure operational features shall not be permitted. Alarm and trouble indications shall resound when required.

The control panel shall be equipped with 19 programs built into the panel memory, 13 for water based extinguishing and 6 for agent extinguishing. In addition, the panel shall have the ability to add custom programs. All programming functions shall be password protected.

The control shall have four fully supervised Class B (Style B) initiating circuits capable of supporting the operation of 25 compatible 2-wire smoke detectors on each circuit.

The individual circuits shall be selectable through the programming sequence to operate in one of the following modes: Conventional,

Waterflow, Linear Heat Detection (up to 10,000 feet per zone), Manual Release, Low Air Alarm, Supervisory, Tamper, Low Air or High Air.

Optional Class A modules, CAZZ, may be added for Class A operation. The panel shall have a Low Air Zone that creates a supervisory condition and map to an output, UL and ULC Listed, FM Approved, NYMEA Accepted, CSFM Approved

The control shall have two fully supervised Class B (Style B) supervisory circuits. These circuits shall be selectable through the programming sequence to operate in one of the following modes: Supervisory, Tamper, Low Air or High Air.

The control shall have one fully supervised class B (style B) Abort circuit with 3 different operating modes, ULL, IRI, and NYC.

The control shall have four fully supervised Class B (Style Y) output circuits. These circuits shall be selectable through the programming sequence to operate as one of the following: Alarm Notification Appliance, Supervisory Notification Appliance, Trouble Notification Appliance or Releasing. The optional CAM module may be added to convert the outputs to Class A.

The panel shall have an RS-485 output and auxiliary power outputs for connection and supervision of up to 4 remote annunciators or an ARM-44 Relay Module and 3 annunciators.

The releasing circuits shall be supervised for short circuit conditions and shall be programmable for cross zoning operation when required. The discharge timer for these releasing circuits shall be programmable for times of 7, 8, 9, 10, 20 minutes or continuous. All initiating and output circuits shall be capable of being individually disabled or enabled. In addition, when in the agent extinguishing mode there shall be a pre-discharge timer adjustable from 0-60 seconds from an alarm zone or 0-30 seconds from a manual release zone.

The control shall have a test mode that will automatically disable all releasing circuits. The test mode shall operate in such a manner as to automatically reset the initiating circuit and indicating circuits after detecting each alarm condition initiated by the test. All testing shall be recorded in the 40 event history buffer. The test mode will automatically terminate after twenty minutes of inactivity.

The control shall have four integral relay contacts rated 3 Amps at 30 VDC for connection to external auxiliary equipment. One relay shall operate when an alarm condition occurs, another when a trouble signal occurs, the third when a supervisory condition occurs, and the fourth during a waterflow condition.

UL and ULC Listed, FM Approved, NYMEA Accepted, CSFM Approved.



RCDS SERIES
Releasing Circuit Disable Switch

Features

- Meets requirements of NFPA 72 and 2001
- Colored LEDs indicate system status
- Stainless steel plate mounts to single gang box
- RCDS-1: key removable in both positions
- RCDS-2001: key only removable in enabled position to comply with NFPA 2001
- Compatible with any 24VDC system



Description

The device consists of a stainless steel faceplate, green LED, amber LED, and a switch assembly. It is designed to mount on a standard single gang electrical enclosure.

Application

The RCDS-1 complies with the requirements of NFPA 72 (National Fire Alarm and Signaling Code):

The RCDS-2001 complies with the requirements of NFPA 2001 (Standard on Clean Agent Fire Extinguishing Systems):

- Specifying a physical switch to disconnect the release circuit in place of a software controlled disconnect
- Creating a supervisory condition on the associated release panel.

Technical Specifications

Dimensions	2 3/4" W x 4 1/2" H x 2" D (Approximate) Mounts on single gang or handy box
Contact Rating	1 AMP @ 40 VDC
Power Requirements	24 VDC, 10mA
Environmental Specifications	Indoor use only Temperature range -22°F to 140°F (-30°C to 60°C)

Potter Electric Signal Company, LLC • St. Louis, MO • Phone: 800-325-3936 • www.pottersignal.com

5401214 - REV F • 10/17

PAGE 1 OF 2

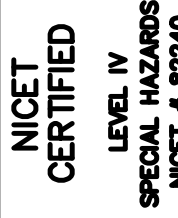


SAFE Fire Protection, Inc.

8914 Brittany Way
Tampa, Florida 33619
813-664-8989

www.safefireprotection.net

FL CERT. OF COMP. 10956200012009
CA LICENSE #9031B



LINEAR HEAT DETECTION FOR PRE-ACTION SYSTEMS

US COLD STORAGE
211 NE McCLOSKEY AVENUE
LAKE CITY, FLORIDA 33055

SUBMITTAL INFORMATION



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COPY: US COLD PH 3

Drawn by: D.R.J.

Check by: LD15735

Date: 11 of 12

Scale: AS NOTED

Drawn by: 11 of 12

SAFE LHD Cable

SafeCable LHD™ Linear Heat Detection Cable

• Addressable or Conventional
• Use with Any Listed Panel

Part Numbers: TC155 (TH68), TC172 (TH78)
TC190 (TH88), TC220 (TH105)
TC365 (TH185)

Cut Sheet



Features

- Up to 10,000 linear feet (3,048m) of SafeCable per zone
- Approved for up to 35' (10.7m) spacing
- .05 ohm/ft (.164 ohms/m) resistance for twisted pair wire, lower than any other type of linear heat detection wire
- Lower cost than other types of linear heat detection wire
- Compatible with ALL Fire Alarm Control / Releasing Panels
- Use with addressable modules
- Multiple alarm temperatures: 155°F (68°C), 172°F (78°C), 190°F (88°C), 220°F (105°C), 365°F (185°C)
- Distance locating available
- Can detect anywhere along the entire length of wire
- Multiple alarm temperatures can be mixed on the same zone
- Total zone length replacement unnecessary after alarm
- Longer standard spool lengths means less splicing
- Custom lengths available

Description

SafeCable digital linear heat detection (LHD) cable is a combination of advanced polymer and digital technologies that can detect heat anywhere along its entire length. SafeCable is also compatible with any listed addressable or conventional panel.

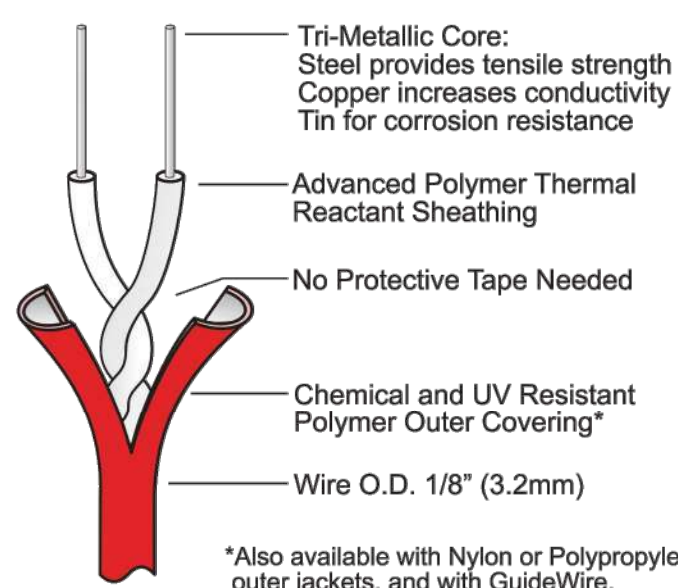
At the core of SafeCable is a twisted pair of extremely low resistance (.05 ohm/ft. [.164 ohms/m] of twisted cable) tri-metallic conductors, sheathed in new advanced thermal polymers. These polymers are chemically engineered to break down at specific fixed temperatures allowing the twisted conductors to make contact and initiate an alarm at the control panel without any calibration for changes in the ambient temperature. The distance locating option allows the control panel to identify and display the location, in feet or meters from the panel, where the heat source interacted with the detection cable.

The polymer used for the protective outer coating of SafeCable is chemically inert and UV protected. This allows for SafeCable to be used in an extremely wide variety of installations and hazards.

Applications

Use where other types of detection are not practical or where the location of an overheating condition must be known. SafeCable is ideal for aircraft hangars, switchgear, in-rack freezer and cooler storage, archive and warehouse storage, elevator shafts, cooling towers, conveyors, cable trays, cable spreading rooms, terminal rooms, in-cabinet, motors, pumps, generators, tunnels, bridges, parking decks and engine bays.

SafeCable Technology



*Also available with Nylon or Polypropylene outer jackets, and with GuideWire.



Maximum Listed Spacing

Temperature Rating	C-UL-US	FM
155°F (68°C)	35 ft. (10.7m)	30 ft. (9m)
172°F (78°C)	35 ft. (10.7m)	30 ft. (9m)
190°F (88°C)	35 ft. (10.7m)	30 ft. (9m)
220°F (104°C)	35 ft. (10.7m)	25 ft. (7.6m)
365°F (185°C)	35 ft. (10.7m)	25 ft. (7.6m)

Maximum Ambient Temperatures

Maximum Ambient Install Temperature	Alarm Temp.	Part Number
Up to 113°F (45°C)	155°F (68°C)	TC155
Up to 122°F (50°C)	172°F (78°C)	TC172
Up to 158°F (70°C)	190°F (88°C)	TC190
Up to 158°F (70°C)	220°F (104°C)	TC220
Up to 305°F (152°C)	365°F (185°C)	TC365

Specifications - SafeCable

Diameter:	1/8" (3.2mm)
Weight:	Nominal 15 lbs./1000 ft. (6.8kg/305m)
Bend Radius:	3" (76.2mm)
Max. Voltage Rating:	30 VAC, 42 VDC
Resistance:	.05 ohms/ft. (.164 ohms/m)
Temperature Ratings (°F):	155°, 172°, 190°, 220°, 365°
Temperature Ratings (°C):	68°, 78°, 88°, 105°, 185°
Sheathing Options:	PVC: Corrosive and UV resistant Nylon: Abrasion resistant Polypropylene: Chemical resistant
Optional Guidewire:	Minimal support - 15 ft (4.6m) intervals

Optional Distance Locating

The Distance Locating option available for SAFE Fire Detection's SafeCable system allows for identifying where the overheating condition occurred anywhere on the total length of cable in a particular zone. Unit displays the distance from the module to the overheating condition in both feet and meters.

The distance locating option may be used with any listed addressable or conventional system. Any listed 24VDC power source may be used to power the distance locating module.

For additional details, please refer to the SafeCable Distance Locating Module (APDL-21) cut sheet.



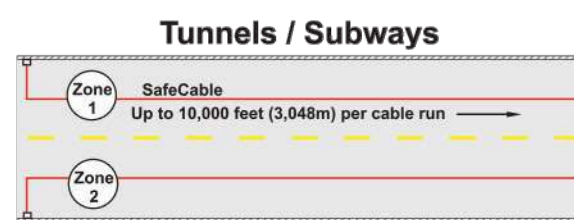
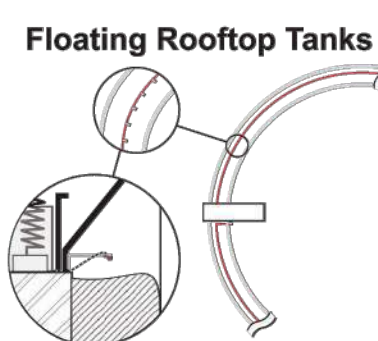
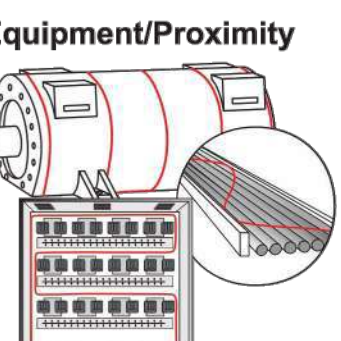
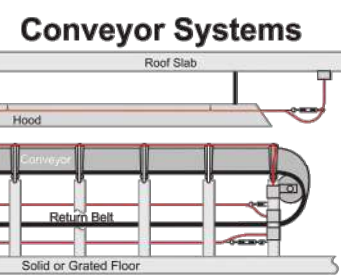
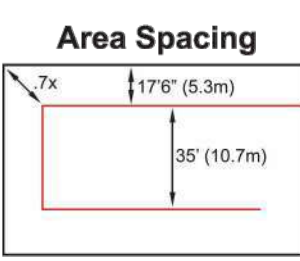
Note: Please refer to all federal, state and local codes, and manufacturer's recommendations prior to design or installation.



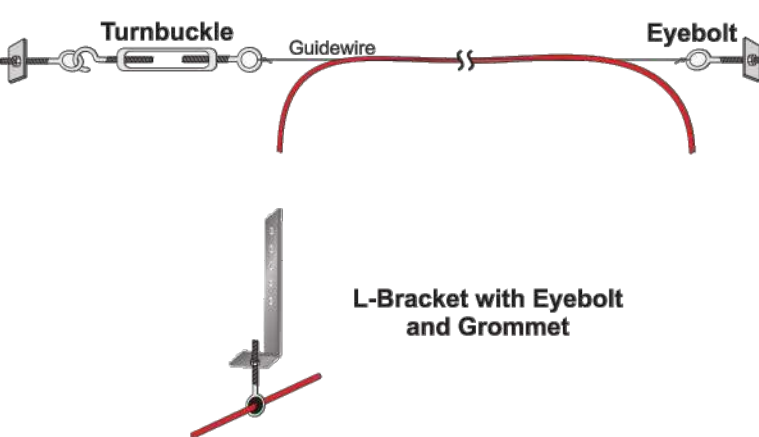
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Installation Examples

For more details, please refer to the SafeCable installation manual.



SafeCable with GuideWire for Extended Runs Using Minimal Support



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SAFE LHD Cable

Installation Accessories Fastening, Connecting, and Splicing

Cut Sheet

The following fastening, mounting, and splicing accessories have been approved for use with SafeCable Linear Heat Detection systems and are available through SAFE Fire Detection, Inc. The use of non-approved installation accessories may damage the detection wire, cause false alarms, and void the warranty.

Fastening Hardware

- Double Loop Cable Tie**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
File 3/4" x 2' (20m - 6m) sprinker pipe.
Part #: TC1027C - 1000/pack
Part #: TC1027M - 1,000/pack
- Double Loop Cable Tie**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
File 2/3" x 3/32" (6m - 8.3m) sprinker pipe.
Part #: TC1028M - 1,000/pack
- Large Single Loop Cable Tie**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
File 4" to 6" (10m - 15m) sprinker pipe.
Support SafeCable using Small Single Loop Cable Tie TC1010CM fastened to Large Single Loop Tie TC1029L.
Part #: TC1029L - 50/pack
- Small Single Loop Cable Tie**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
Use with Cable Tie Mount TC1017C or Large Single Loop Cable Tie TC1029L, not included.
Part #: TC1018C - 1000/pack
Part #: TC1018M - 1,000/pack
- Cable Tie Mount**
For environments between 0° to 180°F (-17.8° to 82°C).
Use with Small Single Loop Cable Tie TC1018CM and Cable Tie Mount Adhesive TC1019, not included.
Part #: TC1017C - 100/pack
- Cable Tie Mount Adhesive**
Use to secure Cable Tie Mount TC1017C to surface.
Part #: TC1019
- Cable Clip**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
3/16" (4.8mm) mounting hole. Use with Push Pin TC1034Q or appropriate screws, not included.
Part #: TC1019C - 1000/pack
Part #: TC1012M - 1,000/pack
- Cable Clip**
Zinc-plated steel cable clip, with 1/4" (6.4mm) mounting hole.
Use with Push Pin TC1034Q or appropriate screws, not included.
Part #: TC1013C - 100/pack
- Push Pin**
Black Nylon 6.6 rated from -40°F to 185°F (-40° to 85°C).
Secures cable clip TC1012CM or TC1013C to Beam Clamps, Cable Tray Mounting Clips, and L-brackets through 3/16" (4.8mm) mounting hole.
Part #: TC1034Q - 25/pack
- Beam Clamp, Spring Steel**
For material thickness up to 1/2" (12.7mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1014C - 100/pack
- Beam Clamp, Zinc Plated Steel**
For material thickness up to 7/8" (22.2mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1015C - 1,000/pack
- L-Bracket, Zinc Plated Steel**
For suspending detection cable on or around equipment.
Use with Nylon Cable Clip TC1012CM or Zinc Plated Cable Clip TC1013C, and secured with Push Pin TC1034Q, not included.
Part #: TC1016
- Cable Tray Mounting Clip, Zinc Plated Steel**
Cable Tray Mounting clip for material thickness from 1/16" to 1/4" (1.6 - 6.4mm).
Part #: TC1020C - 100/pack
- 1/16" (1.6mm) Cable Tray Mounting Clip**
For material thickness 1/16" to 5/32" (1.6 - 4mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1021C - 100/pack
- 5/32" (4mm) Cable Tray Mounting Clip**
For material thickness 5/32" to 1/4" (4 - 6.4mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1022C - 100/pack
- 1/8" (3.2mm) Universal Mounting Clip**
For material thickness 1/8" to 1/4" (3.2 - 6.4mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1023C - 100/pack
- 5/16" (7.9mm) Universal Mounting Clip**
For material thickness 5/16" to 1/2" (7.9 - 12.7mm).
Shown with Nylon Cable Clip TC1012CM and Push Pin TC1034Q, not included. May also be used with Cable Clip TC1013C.
Part #: TC1024C - 100/pack
- Cable Strain Relief Connector**
Required for all SafeCable penetrations through the wall of a JELR-Box or HDJELR-Box.
Part #: TC1100

Indoor Splicing

- Screw Terminal**
Two point screw terminal for all SafeCable splices and connections in JELR-Box and HDJELR-Boxes.
Part #: TC1005X - 100/pack
- Splicing Tape**
Use with Screw Terminal TC1005X for all indoor SafeCable splices when not using Junction Box.
Part #: TC1007 - White
Part #: TC1008 - Red
Part #: TC1009 - Blue
- Low Temperature Splicing Tape**
Black. Use with Screw Terminal TC1005X for all indoor splicing in low temperature applications when not using Junction Box.
Part #: TC1010
- Sealant Tape**
For indoor splices in addition to Splicing Tape for low temperature applications when not using Junction Box.
Part #: TC1006

Junction and ELR Boxes (Recommended for all Outdoor Splices)

For additional details, see the Standard and Heavy Duty Enclosure Cut Sheets. Requires Strain Relief Connector (Part #: TC1100) and Screw Terminal (Part #: TC1005X).

- JELR-Box - Standard**
NEMA 4X moisture proof Standard Junction/ELR box. Requires Screw Terminal TC1005X and Strain Relief Connector TC1100 for installation, not included.
Dim: 4" x 4" x 2" (102mm x 102mm x 51mm)
Part #: TC1009
- HDJELR-Box - Heavy Duty**
NEMA 4X moisture proof Heavy Duty Junction/ELR Box. Requires Screw Terminal TC1005X and Strain Relief Connector TC1100 for installation, not included.
Dim: 8" x 8" x 4" (162.6mm x 162.6mm x 102mm)
Part #: TC1002

Guidewire Installation Accessories

- Threaded Eyebolt**
For use in suspending SafeCable with or without Guidewire. Includes one nut, 1/4"-20 (6.4mm).
Part #: TC1030X - Zinc Plated, 100/pack
Part #: TC1030SS - Stainless Steel
- Locknut**
For securing Eyebolts TC1030X/SS if needed, 1/4" (6.4mm).
Part #: TC1031ZC - Zinc Plated, 100/pack
Part #: TC1031SSC - Stainless Steel, 100/pack
- Rubber Grommet**
Black Rubber Grommet used to insulate SafeCable from Eyebolt TC1030X/SS.
Part #: TC1032C - Zinc Plated - 100/pack
- Turnbuckle**
Used to tension and lighten Guidewire attached to SafeCable for long suspended lengths.
Part #: TC1033ZC - Zinc Plated
Part #: TC1033SS - Stainless Steel

To ensure a proper installation and years of continuous services, only SAFE Fire Detection, Inc. approved mounting and connection accessories must be used.



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SPEC. # 92300

LINEAR HEAT DETECTION FOR PRE-ACTION SYSTEMS

US COLD STORAGE
211 NE McCLOSKEY AVENUE
LAKE CITY, FLORIDA 33055



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DATE: US COLD PH 3

DESIGNED BY: D.R.J.

CHECKED BY: LD15735

DATE:

SCALE: AS NOTED

SHEET: 12 of 12