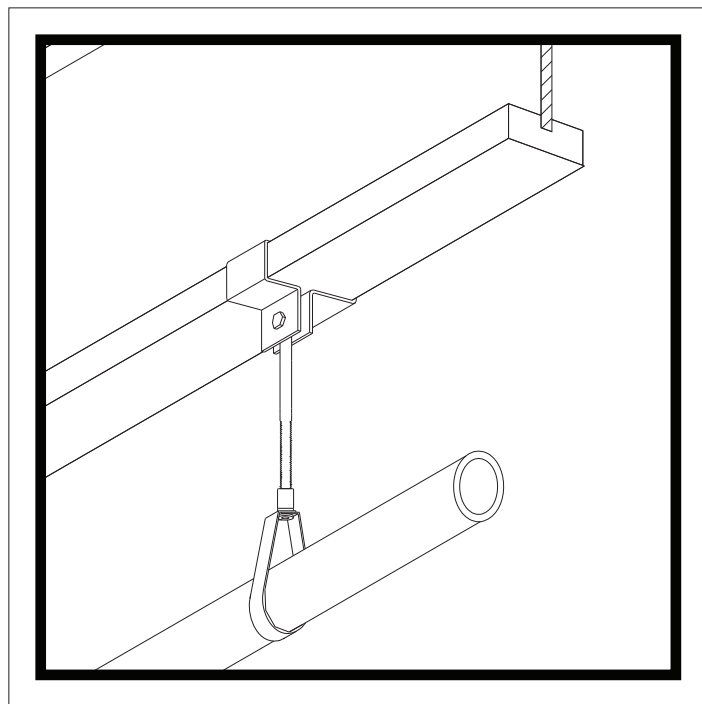


Sprinkler Pipe Installation Design Details

**A Supplement to APA Technical Note: Sprinkler Pipe Installation
for APA Performance Rated I-Joists, Form J745**

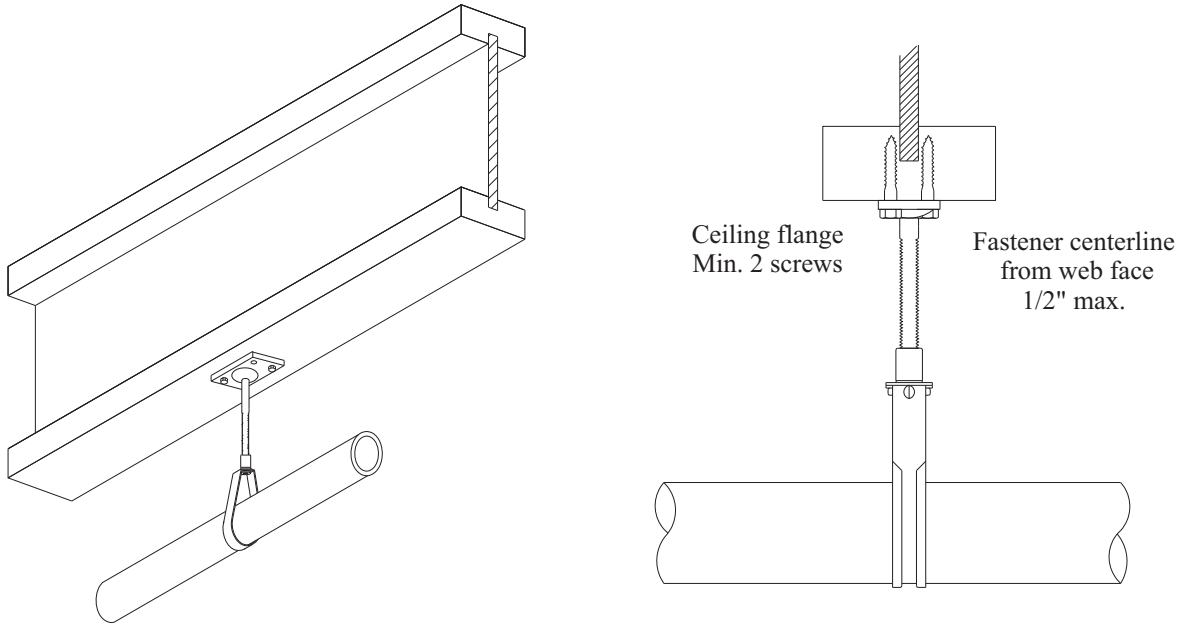


APA

**Details provided by Kraig Kirschner, Principle
Technical Committee Member National Fire Protection
Association (NFPA) 13, Standard for the Installation of
Sprinkler Systems; Hanging and Bracing**

**Note: When CPVC sprinkler systems are used, it is the
responsibility of the designer to ensure the pipe and
fittings are listed by a listing agency for I-joist systems in
accordance with NFPA 13.**

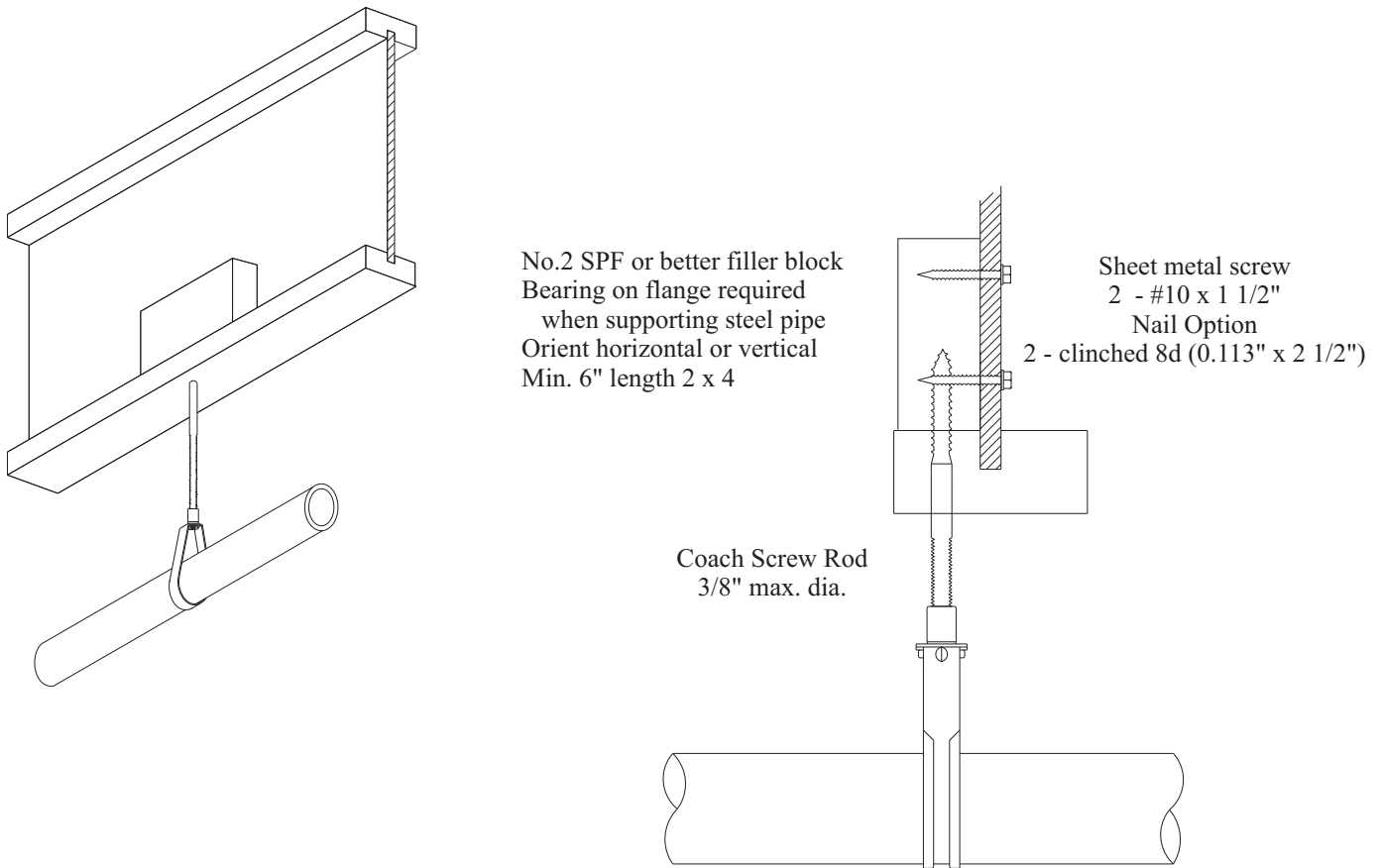
FIGURE 1
APA PERFORMANCE RATED I-JOIST
CEILING FLANGE HANGER



Install per NFPA 13 and manufacturer's instructions

Steel sprinkler system pipe
4" Max. dia. or 500# max. point load

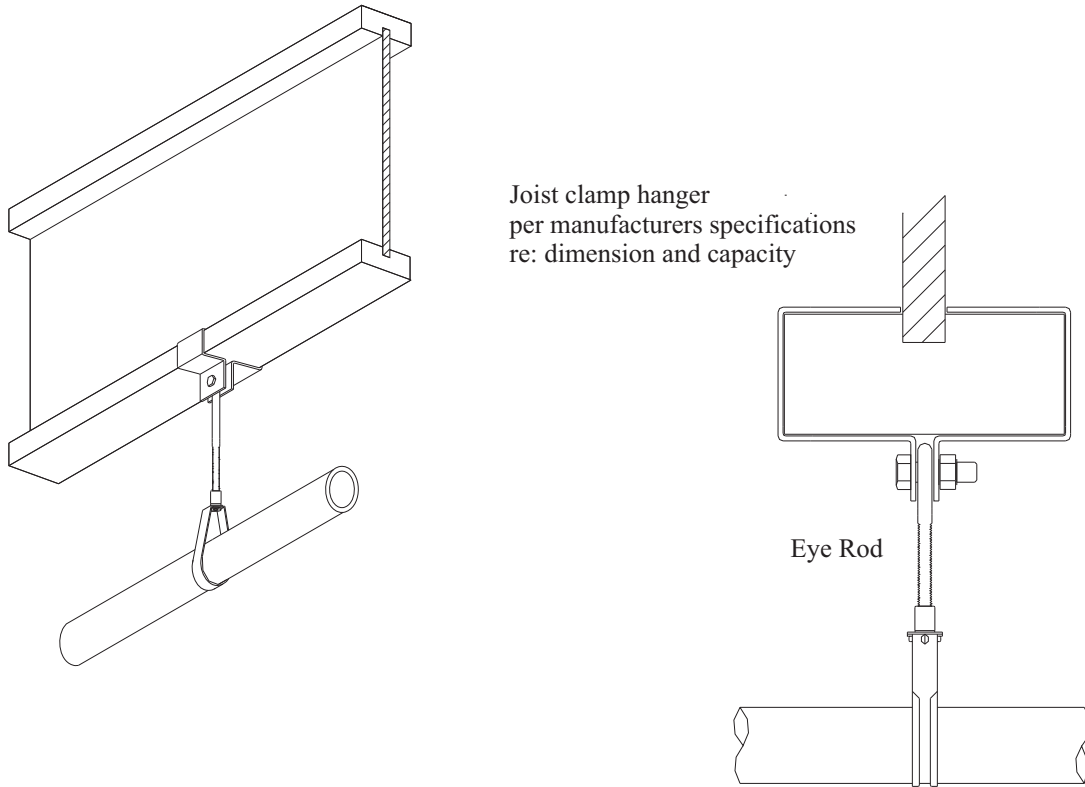
Figure 2
 APA PERFORMANCE RATED I-JOIST
 COACH SCREW HANGER



Install per NFPA 13

Steel sprinkler system pipe
 4" Max. dia. or 500# max. point load

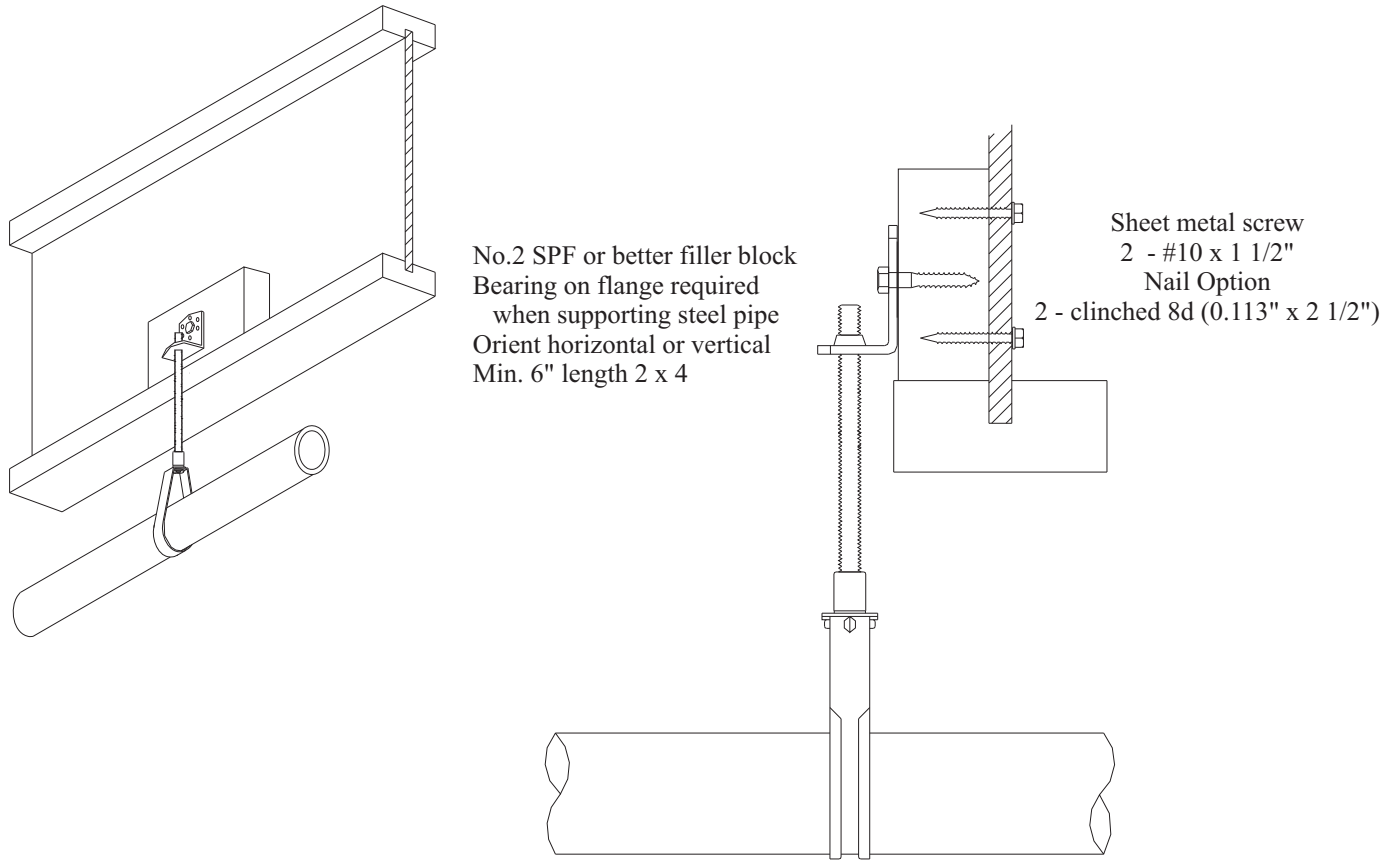
Figure 3
APA PERFORMANCE RATED I-Joist
JOIST CLAMP HANGER



Install per NFPA 13 and manufacturer's instructions

Steel sprinkler system pipe
4" Max. dia. or 500# max. point load

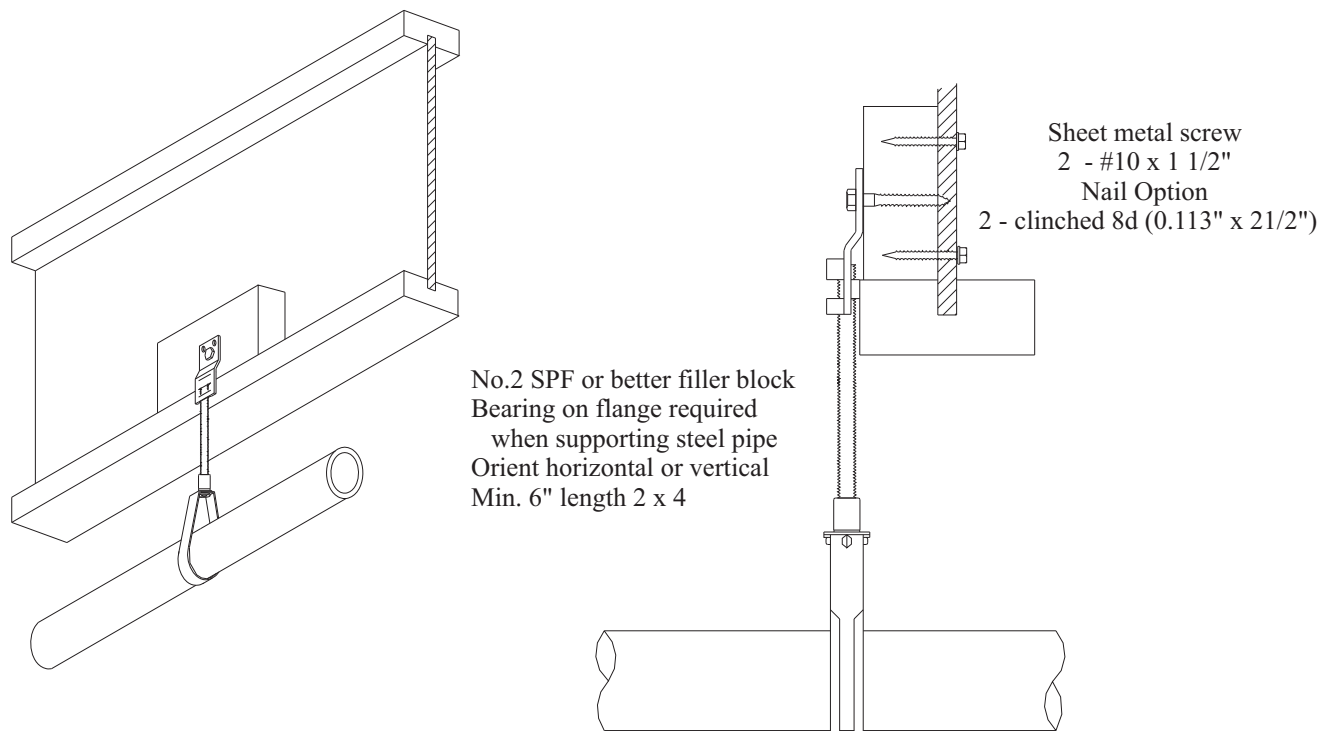
FIGURE 4
APA PERFORMANCE RATED I-JOIST
ANGLE BRACKET HANGER



Install per NFPA 13 and manufacturer's instructions

Steel sprinkler system pipe
4" Max. dia. or 500# max. point load

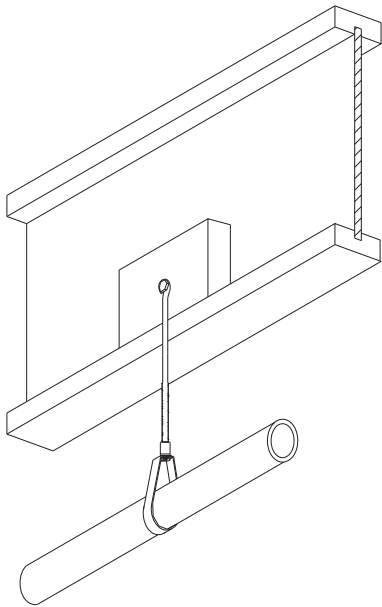
Figure 5
APA PERFORMANCE RATED I-JOIST
OFFSET EYE-SOCKET HANGER



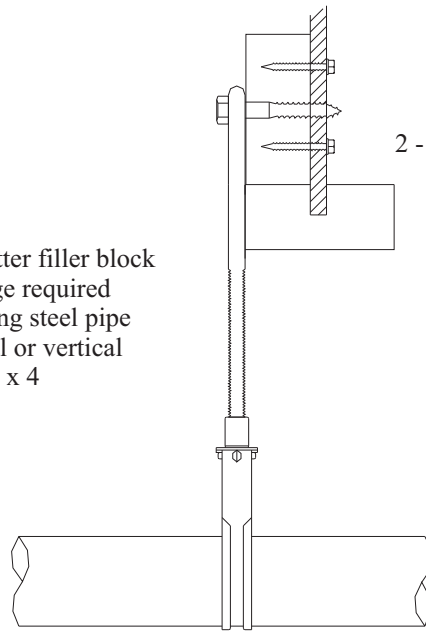
Install per NFPA 13 and manufacturer's instructions

Steel sprinkler system pipe
4" Max. dia. or 500# max. point load

FIGURE 6
APA PERFORMANCE RATED I-JOIST
EYE ROD HANGER



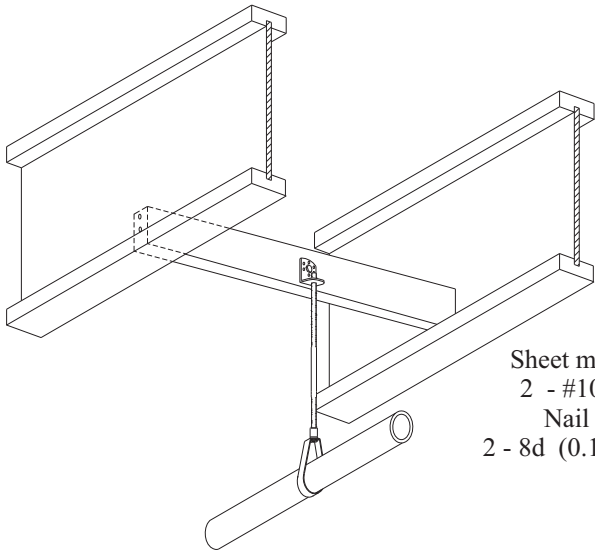
No. 2 SPF or better filler block
Bearing on flange required
when supporting steel pipe
Orient horizontal or vertical
Min. 6" length 2 x 4



Sheet metal screw
2 - #10 x 1 1/2"
Nail Option
2 - clinched 8d (0.113"x 2 1/2")

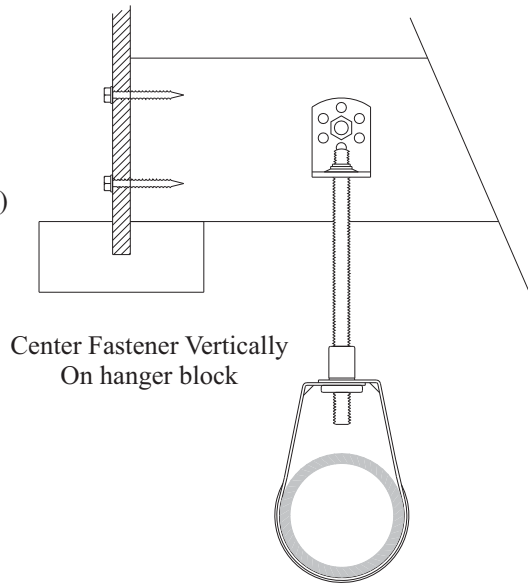
Install per NFPA 13
Steel sprinkler system pipe
4" Max. dia. or 500# max. point load

FIGURE 7
APA PERFORMANCE RATED I-JOIST
LOAD CARRIED BY FLANGES



Sheet metal screw
2 - #10 x 1 1/2"
Nail Option
2 - 8d (0.113"x 2 1/2")

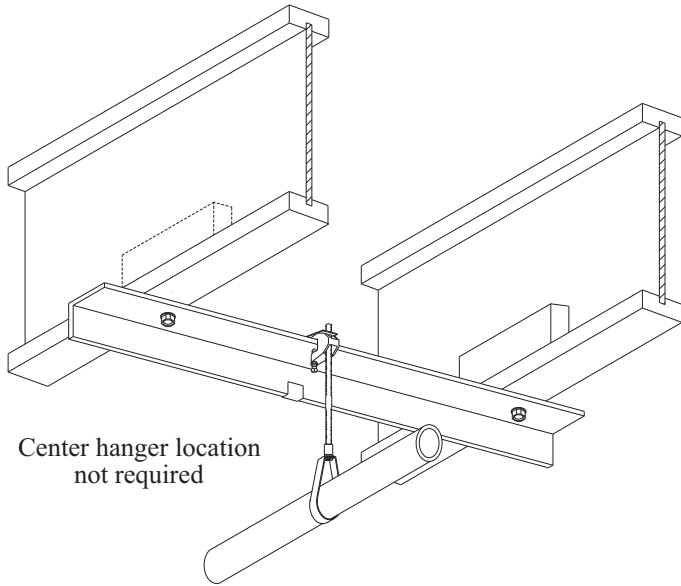
No. 2 SPF or better hanger block
Bearing on flange required when supporting steel pipe
Install - 48" max. length 2x4 for 3" max. dia. = 475# max. point load
Install - 48" max. length 2x6 for 5" max. dia. = 600# max. Point load



Install per NFPA 13 and manufacturer's instructions

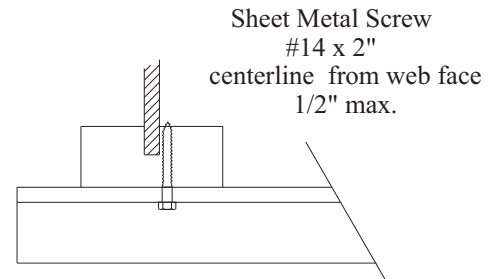
Steel sprinkler system pipe
see note above

FIGURE 8
APA PERFORMANCE RATED I-JOIST
NFPA 13 STEEL ANGLE TRAPEZE WITH HANGER



Center hanger location
not required

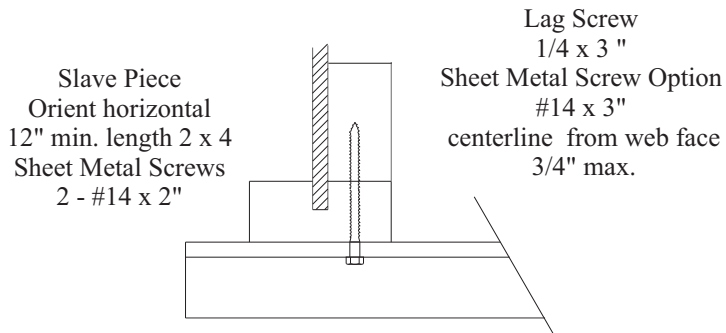
Install 48" max. length NFPA 13 trapeze angle iron



Install per NFPA 13

CPVC sprinkler system pipe

2 1/2" Max. dia. = 290# max. Point load



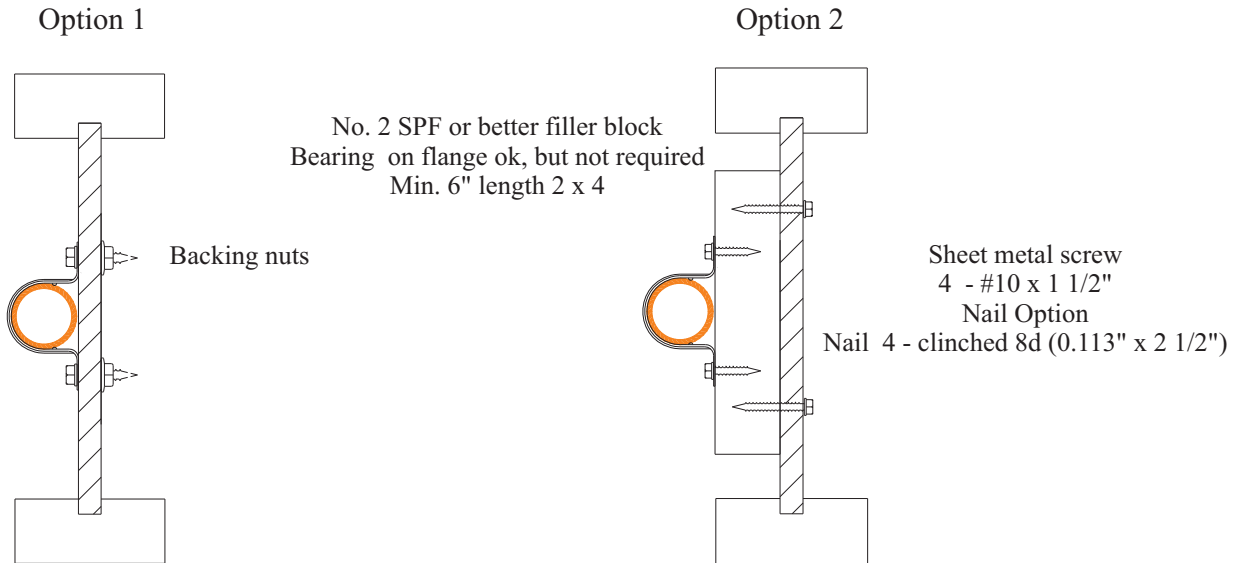
Install per NFPA 13

Steel sprinkler system pipe

4" Max. dia. = 500# max. point load

FIGURE 9

APA PERFORMANCE RATED I-JOIST
CPVC HANGER - SURFACE MOUNT

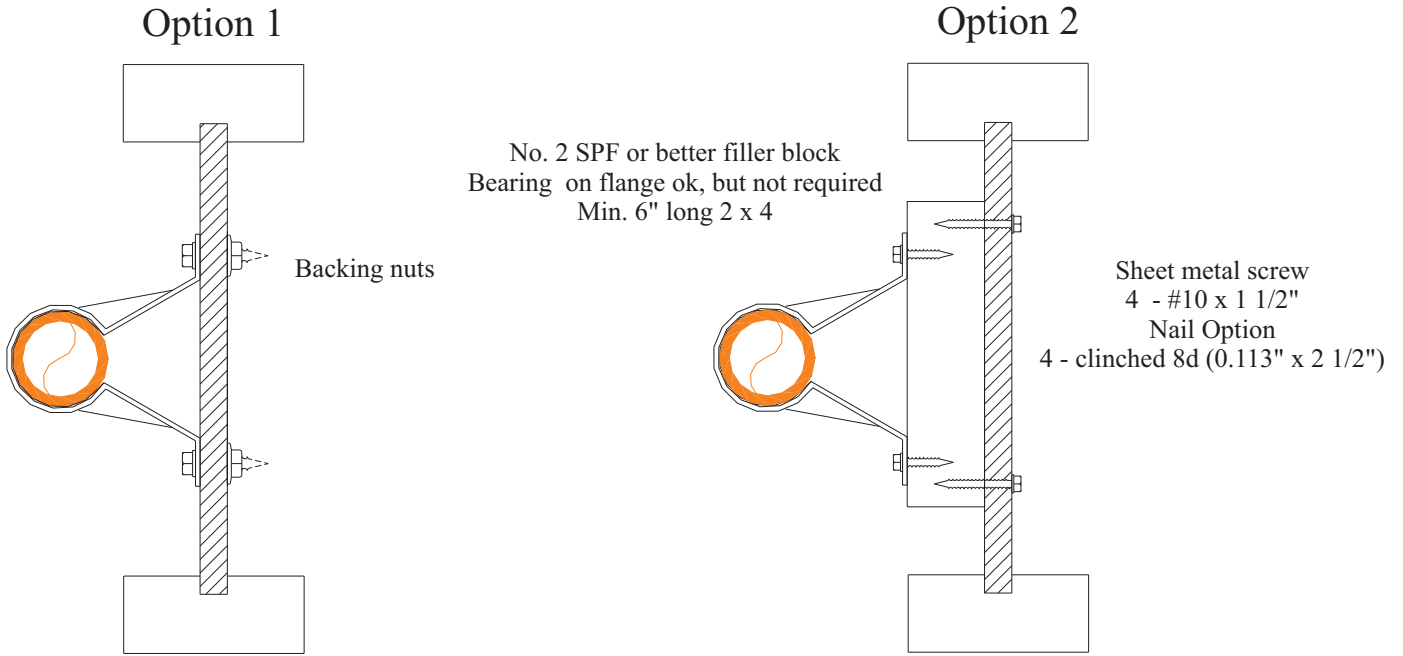


Install per NFPA 13 and manufacturer's instructions

CPVC sprinkler system pipe
3" Max. dia. or 310# max. point load

FIGURE 10

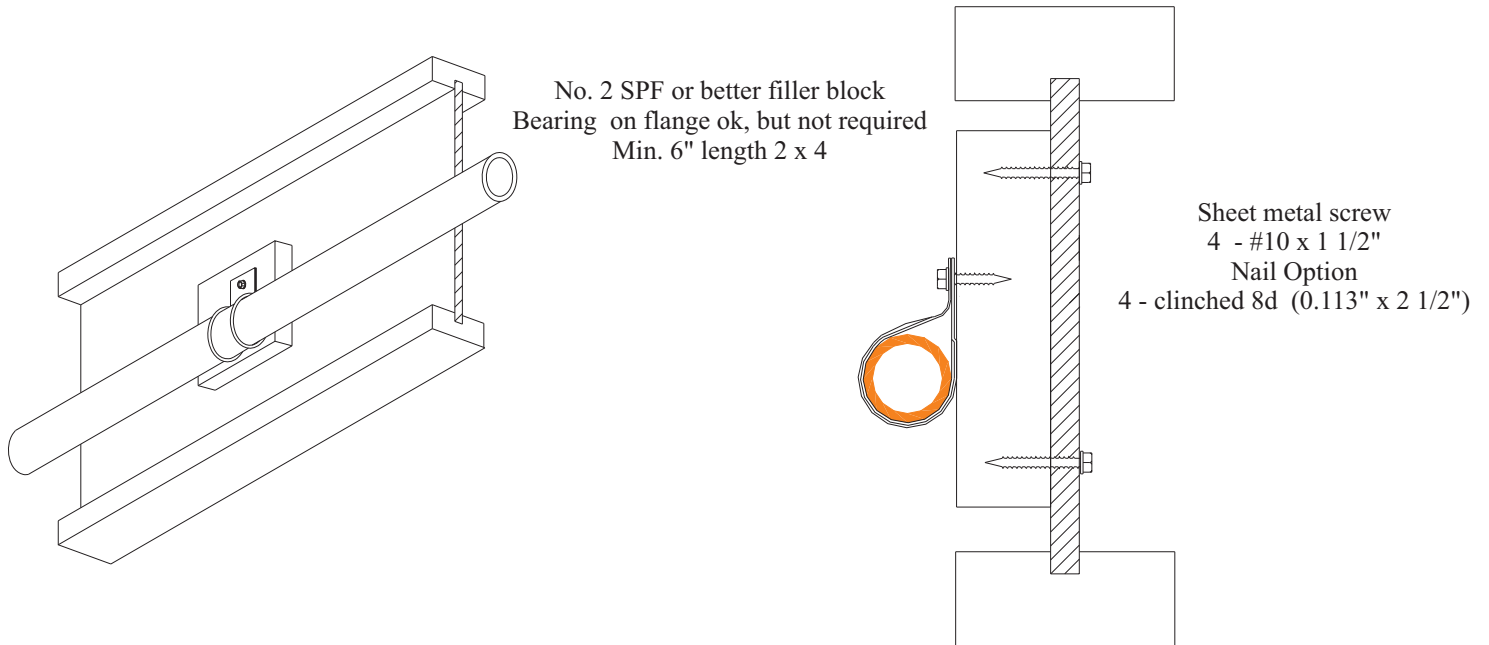
APA PERFORMANCE RATED I-JOIST
CPVC HANGER - OFFSET



Install per NFPA 13 and manufacturer's instructions

CPVC sprinkler system pipe
3" Max. dia. or 310# max. point load

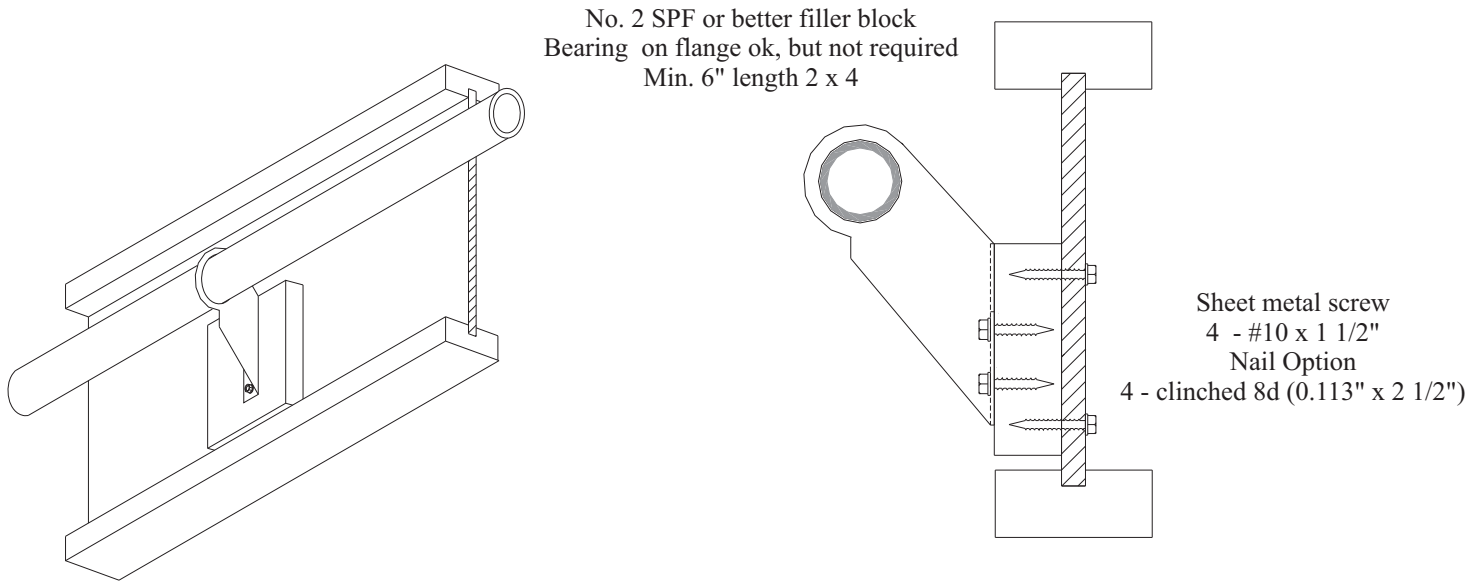
FIGURE 11
APA PERFORMANCE RATED I-JOIST
CPVC HANGER - SURFACE MOUNT



Install per NFPA 13 and manufacturer's instructions

CPVC sprinkler system pipe
3" Max. dia. or 310# max. point load

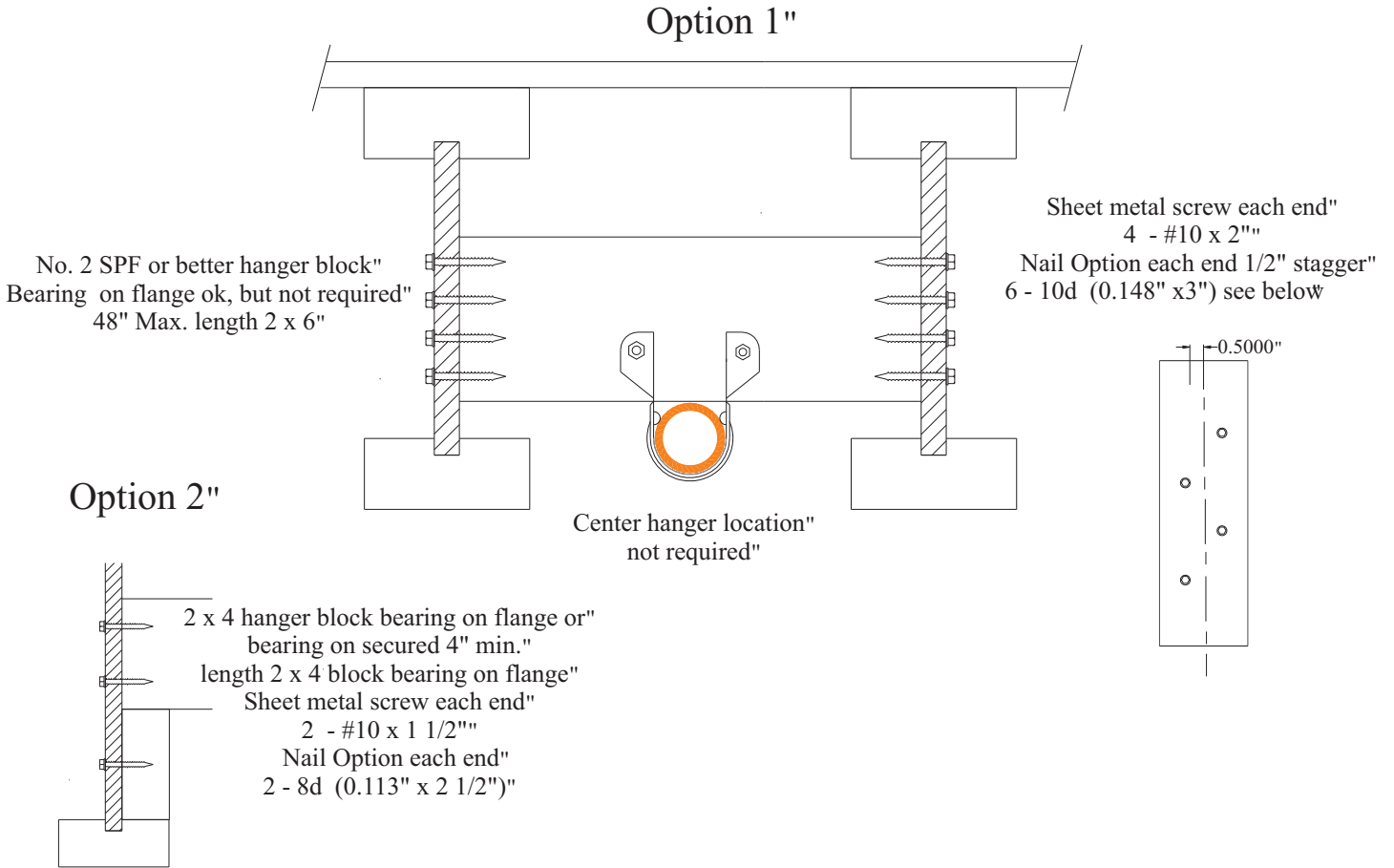
FIGURE 12
APA PERFORMANCE RATED I-JOIST
CPVC HANGER - DOUBLE OFFSET



Install per NFPA 13 and manufacturer's instructions

CPVC sprinkler system pipe
3" Max. dia. or 310# max. point load

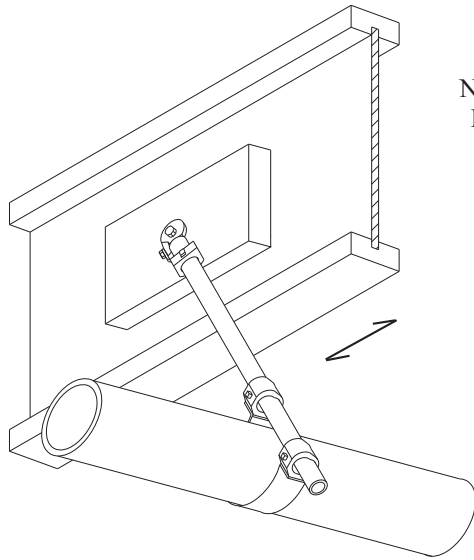
FIGURE 13"
APA PERFORMANCE RATED I-JOIST"
CPVC HANGER - FACE MOUNT"



Install per NFPA 13 and manufacturer's instructions

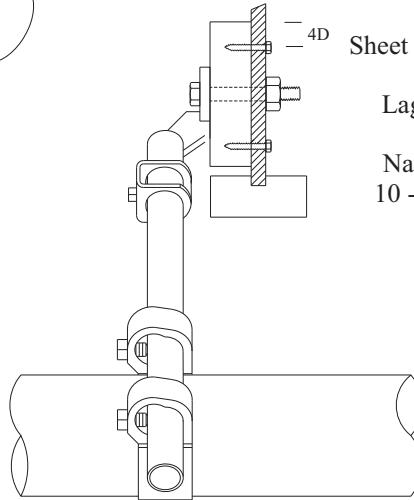
CPVC sprinkler system pipe"
 3" Max. dia." or 310# max. point load"

FIGURE 14 - Option 1
APA PERFORMANCE RATED I-JOIST
SWAY BRACE BLOCKING FOR SEISMIC LOADS
PARALLEL TO THE JOIST



No. 2 SPF or better filler and slave block
 Bearing on flange ok, but not required
 Install both sides
 Min. 12" long 2 x 6

Blocking on one side of web

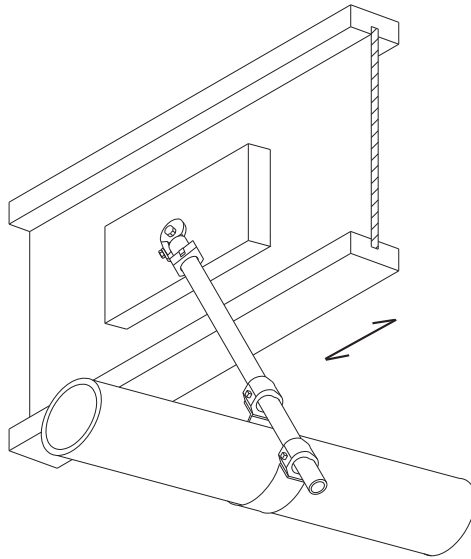


Sheet metal screw thru web into block
 8 - #10 x 1 1/2"
 Lag Option thru web into block
 8 - 1/4" x 1 1/2"
 Nail Option thru web into block
 10 - clinched 8d (0.113" x 2 1/2")

Install per NFPA 13 and manufacturer's instructions

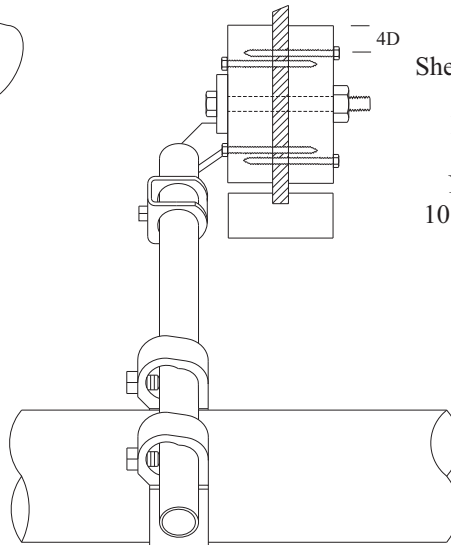
Max. horizontal load = 650#
 includes a 1.33 duration of load adjustment

FIGURE 14 - Option 2
 APA PERFORMANCE RATED I-JOIST
 SWAY BRACE BLOCKING FOR SEISMIC LOADS
 PARALLEL TO THE JOIST



No. 2 SPF or better filler and slave block
 Bearing on flange ok, but not required
 Install both sides
 Min. 12" long 2 x 6

Blocking on both sides of web

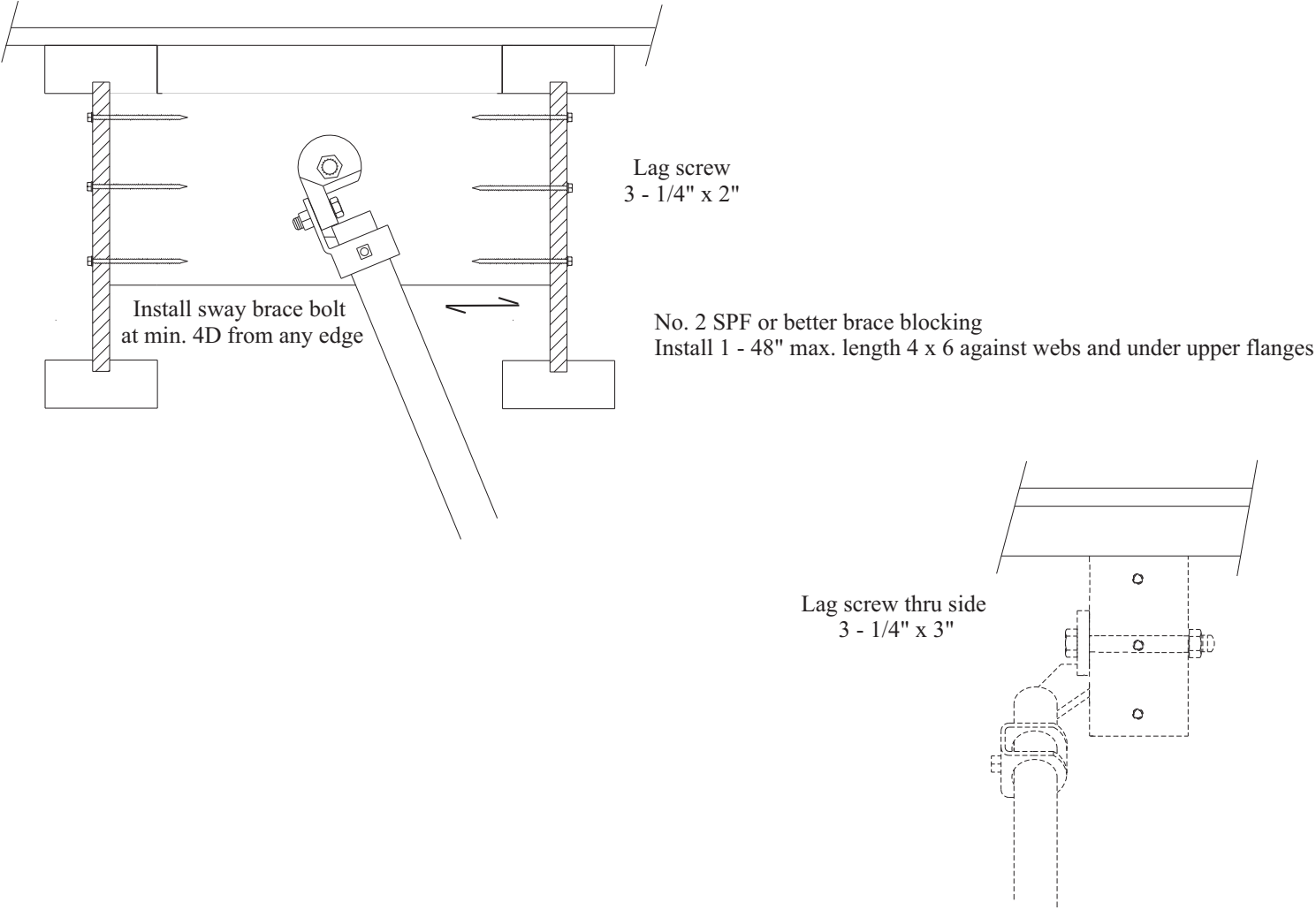


Sheet metal screw each side
 8 - #14 x 3"
 Lag Option each side
 8 - 1/4" x 3"
 Nail Option each side
 10 - 12d (0.128" x 3 1/4")

Install per NFPA 13 and manufacturer's instructions

Max. horizontal load = 1000#
 includes a 1.33 duration of load adjustment

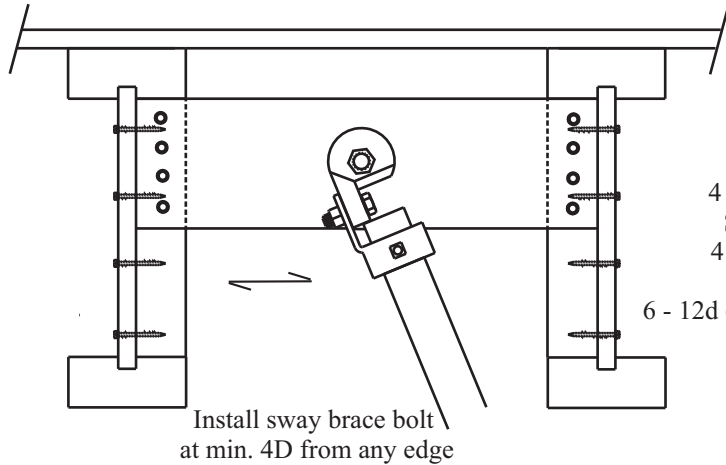
FIGURE 15
APA PERFORMANCE RATED I-JOIST
SWAY BRACE BLOCKING FOR SEISMIC LOADS
PERPENDICULAR TO THE JOIST



Install per NFPA 13 and manufacturer's instructions

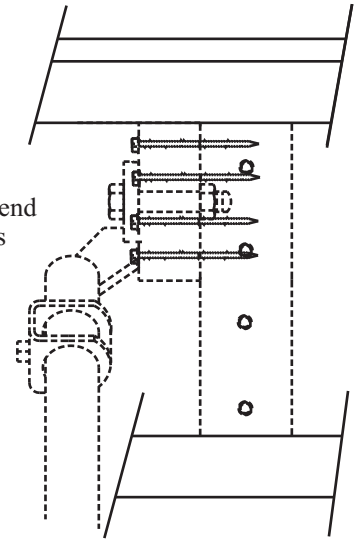
Max. horizontal load = 585#
 includes a 1.33 duration of load adjustment

FIGURE 16
 APA PERFORMANCE RATED I-JOIST
 SWAY BRACE BLOCKING FOR SEISMIC LOADS
 PERPENDICULAR TO THE JOIST



- Cross Member
 Lag Screws
 4 - 1/4" x 3" each end
 Sheet Metal Screw
 4 - #14 x 3" each end
 Nail Option
 6 - 12d (0.128" x 3 1/4") each end

Install sway brace bolt
 at min. 4D from any edge



- Web Blocking
 Lag Screws
 4 - 1/4" x 1 1/2" each end
 Sheet Metal Screws
 4 - #14 x 1 1/2"

No.2 SPF or better brace blocking
 Install 1 - full length vertical 2 x 4 flat on each web between top and bottom flanges
 Install 1 - 48" max. length horizontal 2 x 6 against webs and under upper flanges

Install per NFPA 13 and manufacturer's instructions

Max. horizontal load = 515#
 includes a 1.33 duration of load adjustment

FIGURE 17
APA PERFORMANCE RATED I-JOIST
SWAY BRACE BLOCKING FOR SEISMIC LOADS
PERPENDICULAR TO THE JOIST

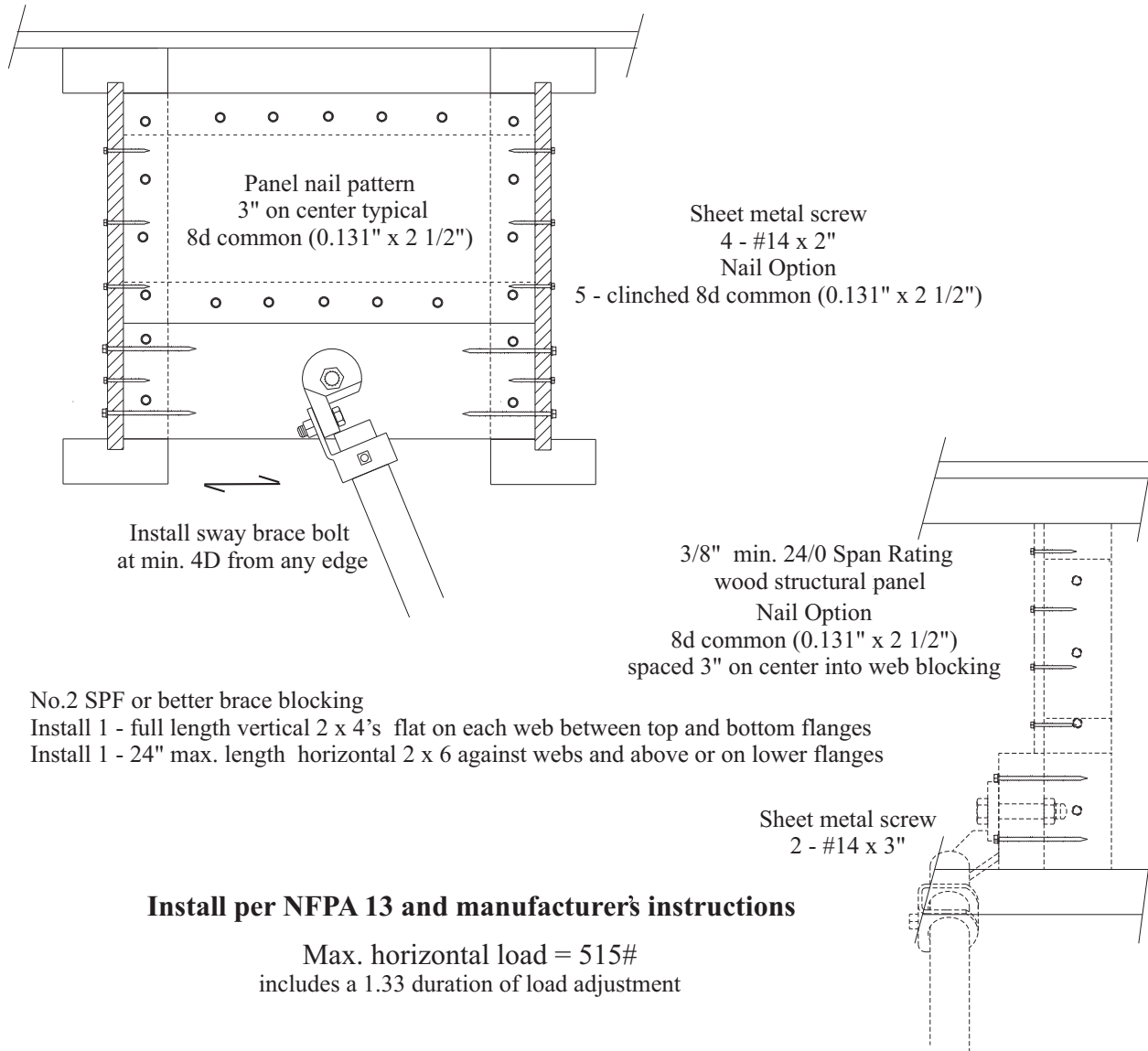
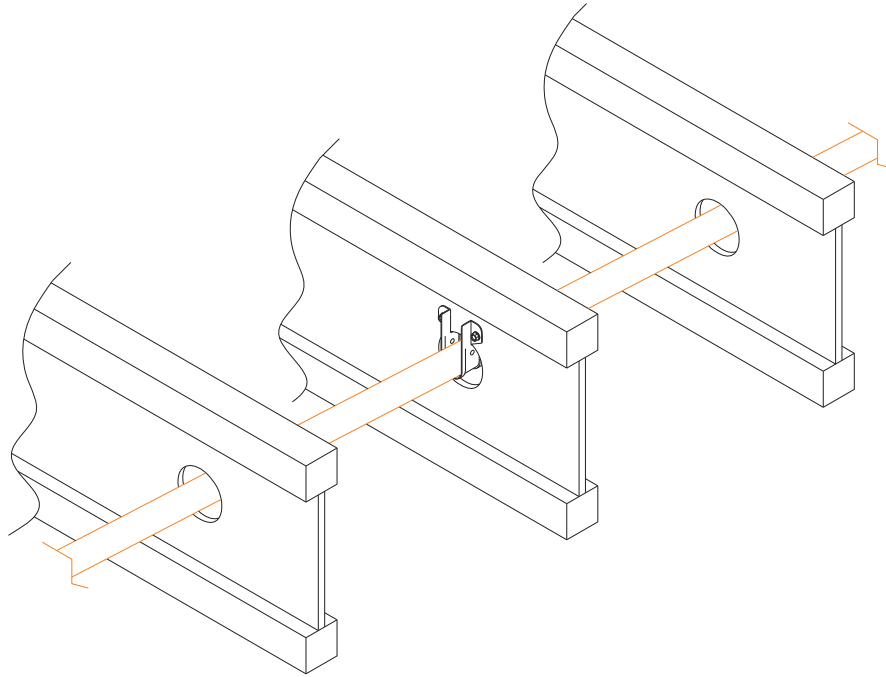


FIGURE 18
APA PERFORMANCE RATED I-JOIST
CPVC HANGER IN WEB BORE



Install per NFPA 13 and manufacturer's instructions

CPVC sprinkler system pipe
3" Max. dia. or 310# max. point load

Sprinkler Pipe Installation for APA Performance Rated I-Joists

We have field representatives in many major U.S. cities and in Canada who can help answer questions involving APA trademarked products. For additional assistance in specifying engineered wood products, contact us:

APA HEADQUARTERS

7011 So. 19th St. ■ Tacoma, Washington 98466 ■ (253) 565-6600 ■ Fax: (253) 565-7265

PRODUCT SUPPORT HELP DESK

(253) 620-7400 ■ E-mail Address: help@apawood.org

DISCLAIMER

The information contained herein is based on APA – The Engineered Wood Association’s continuing programs of laboratory testing, product research and comprehensive field experience. Neither APA, nor its members make any warranty, expressed or implied, or assume any legal liability or responsibility for the use, application of, and/or reference to opinions, findings, conclusions or recommendations included in this publication. Consult your local jurisdiction or design professional to assure compliance with code, construction and performance requirements. Because APA has no control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility for product performance or designs as actually constructed.

Form No. J745SUP/Issued June 2009



REPRESENTING THE ENGINEERED WOOD INDUSTRY