

# **SUPERJOIST & SUPERMAXXJOIST**



## **Installation Instructions** Standard Joists, SuperJoist, & SuperMAXX Joists

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Super Stud  
Building Products'  
Joist systems provide  
excellent strength  
and stability for roof  
and floor framing.

With multiple options  
for finishes and fire  
rated assemblies,  
Super Stud Joists  
are simple to install  
and finish.



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## Installation Instructions:

Standard Joists, SuperJoist, and SuperMAXX Joists Super Stud Joist systems provide excellent strength and stability for roof and floor framing. With multiple options for finishes and fire rated assemblies, Super Stud Joists are simple to install and finish.

**Before starting, make sure that work area is safe and free from debris or dangerous conditions.**

Also, ensure that existing structure is adequate and appropriate for the fastening method used and design loads.

### Tools:

- Required: 0 to 2500 revolutions per minute (RPM) variable speed reversible screw gun
- Helpful: locking C-clamps, bar clamps, tape measure, square, level

### Fasteners:

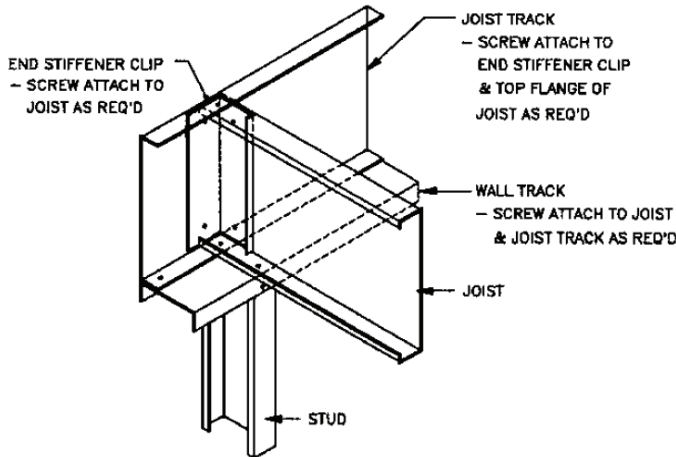
- Minimum #10 framing screws with driller points. For most framing, hex washer head (HWH) is preferred by installers. For screws that will be installed in the top flanges of joists under floor sheathing or decking, use a low-profile head (such as pan-head or

modified truss head) screw. All screw fasteners shall comply with ASTM C1513.

- Low-velocity pins, for attachment to structural steel or concrete. Coordinate with pin manufacturer to ensure proper style and embedment required for imposed loads.
- Welding may be used for certain attachments. Field welding is NOT recommended for framing materials less than 43 mil thickness. Field welding to structural steel is not recommended for thicknesses less than 68 mil, and lap-joints are preferred to t-joints for welding to prevent melt through. All welds must be touched up with zincrich
- paint or cold galvanizing compound that complies with ASTM A780.

### Accessories:

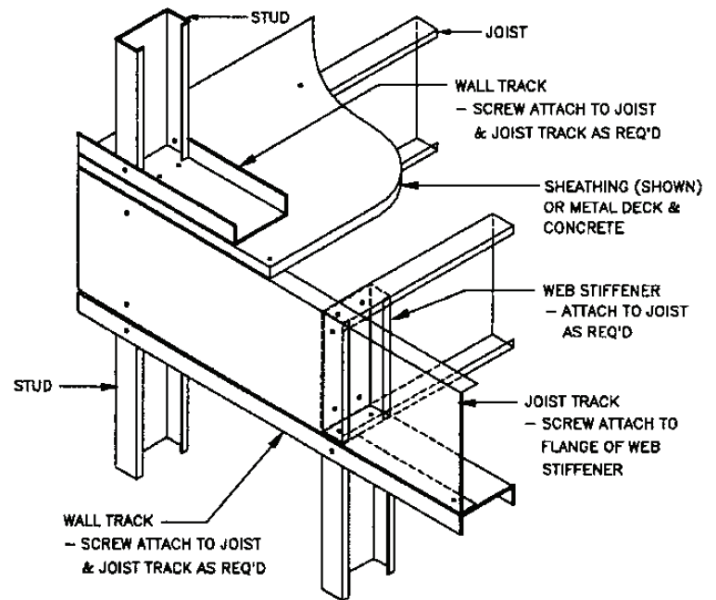
- Joist Blocking is used to both prevent rotation and lateral movement of joists, and to help maintain proper joist spacing. Super Stud provides joist blocking specifically tailored to each joist flange size and spacing
- When ordering Super Stud Joist Blocking, make sure and specify all the following: 1) Joist depth, 2) joist spacing, and 3) joist flange width.



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#### WITH END STIFFENER CLIP

NOTE: ALIGN JOIST & STUD AS SHOWN. WHERE OFFSET IS ANTICIPATED, JOIST TRACK, SIZED AS REQUIRED, MAY BE USED TO TRANSFER JOIST REACTION



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#### WITH WEB STIFFENER

## Support Bearing Conditions

There are four primary support bearing conditions for CFS joist systems: direct bearing, pocket bearing in masonry walls, joist hangers, and ledger framing. The joist layout and orientation is the same for all four, but certain detailing at the supports is slightly different for each.

### 1. Joist Direct Bearing.

In this configuration, the joists sit directly on top of the wall, beam, header, or other support structure. The bearing length is the width of the wall or beam or header. The end of the system is typically capped with an end track, and web stiffeners are installed either inside or outside the joist web.

Follow these steps for joist installation on direct bearing:

- a. Make sure bearing surface is clean, level, and free of defects or imperfections that could affect proper connection or bearing.
- b. Layout joist locations and mark on bearing surface.
  - i. If bearing on a steel stud wall, joists must align with support studs below, unless a load distribution member (LDM) has been designed. See North American Standard for Cold-Formed Steel Structural Framing (AIS S240) section B 1.2.3 for alignment framing requirements. Figure B1.2.3-1 (below) details the alignment requirements based on joist and stud orientation and web stiffener placement.

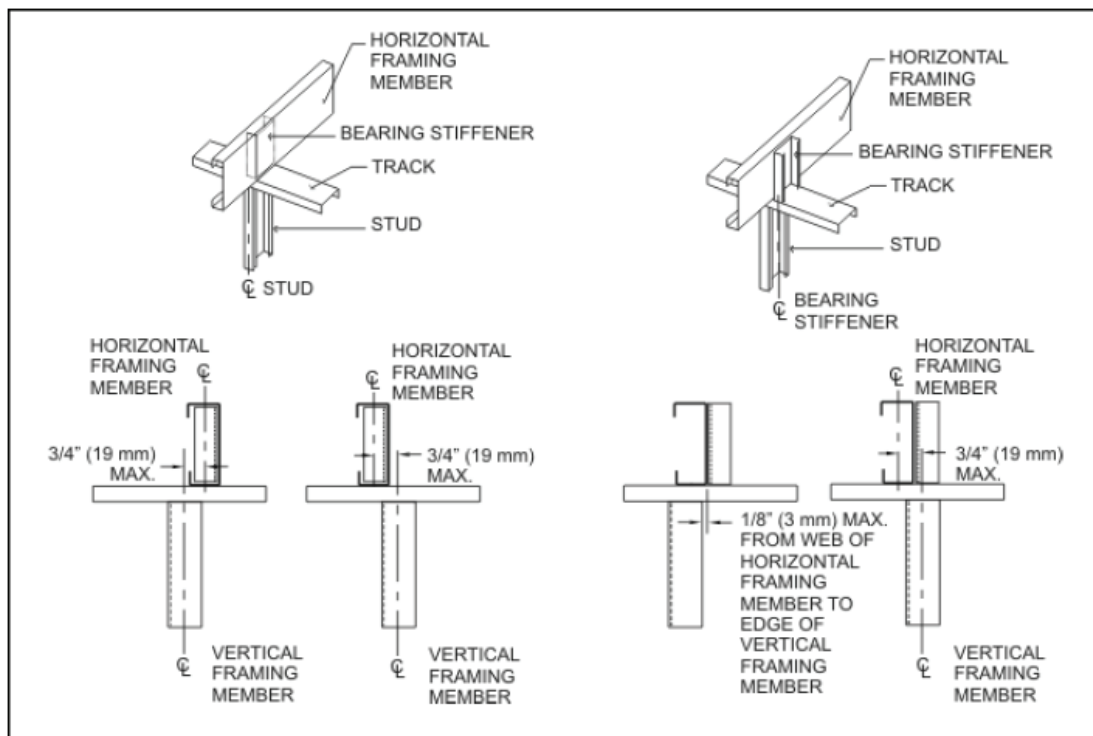


Figure B1.2.3-1 In-Line Framing

- ii. If bearing on a wood stud wall, ensure double top plate is capable of distributing load to adjacent studs, and ensure steel framing is isolated from pressure treated lumber to prevent corrosion.
- c. Check for level between adjacent bearing surfaces. Shims or grout may be required for unlevel concrete or other out-of-level bearing surfaces. Steel plates may be used as shims as long as they are securely anchored in place.
- d. Install anchor bolts or clips if required for uplift or lateral anchorage.
- e. Install end track (also called rim track). This may have the bottom leg shot or screwed directly to the surface below.
- f. Install joists with webs vertically oriented within the end track.
- g. Screw the top flange of the end track to the top flange of each joist. The bottom flange does not need to be connected to the joist if web stiffeners or clip angles are used to connect the web of the joist to the web of the track. Install web stiffeners or end clip angles in accordance with details and load transfer requirements.

- h. Once first joist is in place, check for plumb and level.
- i. Install subsequent joists, checking frequently for proper spacing and bearing
- j. See “SuperJoist Blocking Installation Instructions” for blocking options and details. Blocking may be used to help maintain joist spacing and vertical alignment.

## 2. Pocket Bearing in Concrete.

In this configuration, gaps or “pockets” are left in block walls. These pockets are deep enough to provide adequate bearing for the joists, and infill with grout or other Portland cement based filler can provide additional support and web stiffening.

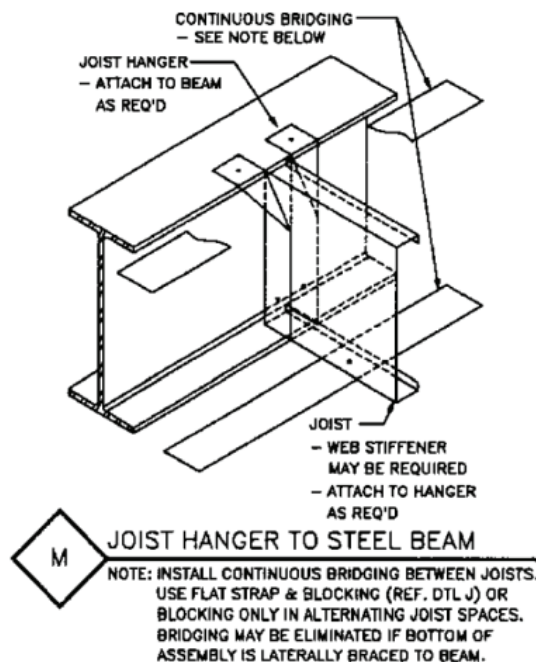
Note that some designs may call for web stiffeners to be installed before the joists are inserted in the pockets or grouted. Either the grout or some other bracing must provide both lateral and twisting restraint of the ends of the joists before they are fully loaded. Temporary bracing, blocking, or sheathing designed specifically for this purpose may be used to brace the ends of the joist before grout is installed.

- a. Make sure pockets are free from mortar droppings or other material that would impede installation of joists. Pockets must be wide enough to ensure proper joist spacing, and deep enough to provide enough bearing to prevent web crippling.
- b. Coordinate sequencing with general contractor: in some cases the walls will be fully constructed before joists are installed; in others, joists are placed before additional masonry is installed above. Formwork or other framing may be required before grouting around joists.
- c. Check with plans to see if joist ends must be “fire cut” at an angle. This is not that common for cold-formed steel (CFS) floor framing, but is very common for wood floors and may be required by code in some jurisdictions. Note that all Super Stud joist products come standard with square end cuts; angled cuts are not available from the factory.
- d. Check pockets for level; shim as required.
- e. Install first joist in pocket. If wall is fully built, and joist is spanning between two block or concrete walls, pocket may need to be deep enough to extend joist beyond bearing so joist can fit into pocket in opposite wall.
- f. Once first joist is in place, check for plumb and level.
- g. Install subsequent joists, checking frequently for proper spacing and bearing
- h. See “Super Joist Blocking Installation Instructions” for blocking options and details. Blocking may be used to help maintain joist spacing and vertical alignment.

## 3. Joist Hangers.

In this configuration, joist hangers are either face-mounted to a vertical flat surface, or (more commonly) tabs from the hangers are attached to the top of a beam, wall, or header. Super Stud provides two types of top-mount joist hangers: bridle-style top mount hangers, or S-HJCT joist hanger kits from Simpson Strong-tie. See specific installation instructions from Simpson when using S-HJCT. The instructions below apply to Super Stud top-mount hangers. Additional installation instructions for using these bridle-style hangers for headers or double joists are available at [www.buysuperstud.com](http://www.buysuperstud.com).

- a. Make sure bearing surface for top-tabs of joist hangers are level and square. Shims may be used below tabs of hangers, but care must be taken to ensure hangers are properly secured against lateral and vertical loading. Shims must be properly secured and cannot merely be “friction fit” below hangers.
- b. Top tabs of hangers must be secured to top of bearing surface.
  - i. For attachment to structural steel, top tabs may be welded directly.
  - ii. Power actuated fasteners (PAFs) may be used to attach the top tabs to structural steel. Pins typically will not have enough edge distance to be used in concrete: a face mounted support may be better if concrete is the support option, or a hanger with longer tabs may need to be used. Pins to structural steel must be specifically approved and designed for that purpose, and must have full embedment in structural steel. A step-shank pin, such as the Hilti X-U 15, works best for ensuring full penetration.



- c. Once joist hangers are in place, install joists in the hangers.
  - i. Joist bearing for hangers is only 2 inches, so web stiffeners may be required. Stiffeners must fit inside the joists: see installation instructions for Super Stud web stiffeners at [www.buysuperstud.com](http://www.buysuperstud.com). Typically, web stiffeners are attached to the web of joists with 2 screws top, 2 screws bottom, and vertical screw spacing of no more than 6 inches.
  - ii. Joist must be physically attached to joist hanger. This may be to either the vertical portion of the hanger at the joist web, or to the bottom seat of the joist hanger through the flange. This may be a screw connection or a welded connection.
- d. Solid wood or steel blocking may or may not be required behind the end of the joist: verify with architectural details. There is no requirement by Super Stud for this blocking.
- e. Some architectural or structural details show the end of each joist capped with track, and this track segment is attached to the other side of the joist hanger with at least one screw. If this detail is used, the track length should be at least equal to the joist depth. This track segment must also be attached to both flanges of the joist, with at least one screw at each end of each track segment. This track segment may or may not obviate the need for web stiffeners: but web crippling must still be checked based on 2" bearing.
- f. Once first joist is in place, check for plumb and level.
- g. Install subsequent joists, checking frequently for proper spacing and bearing
- h. See "SuperJoist Blocking Installation Instructions" for blocking options and details. Blocking may be used to help maintain joist spacing and vertical alignment.

#### 4. Ledger Framing

In this configuration, rim tracks are attached directly to the face of the support wall or structure. This connection must be capable of carrying all joist end reactions through fastener shear, and may also be loaded in pullout if floor diaphragm continuity is not maintained. Structural details should show the size and number of fasteners for ledger support.

- a. Mark location of ledger on face of wall or support beam, noting that top of joists will be slightly below top of ledger track.
- b. Mount ledger track directly to support wall using screws, pins, welds, bolts, or other appropriate fasteners. These connections must be capable of carrying the full joist end reaction loads.
- c. Mark joist locations within ledger track. Note that some ledger tracks may have tabs or dimples or other built-in marking for joist locations: verify this with project-specific details.
- d. Install joists with webs oriented vertically in rim track.
- e. With ledger framing, clip angles, tabs, or web stiffeners are REQUIRED for end support to the web of the ledger track: the bottom leg of the track cannot be relied upon to carry the joist end reaction unless specifically designed to do so.
- f. With the end clips or web stiffeners in place, attachment of the joist flanges to the ledger track flanges is optional but recommended if they are accessible.

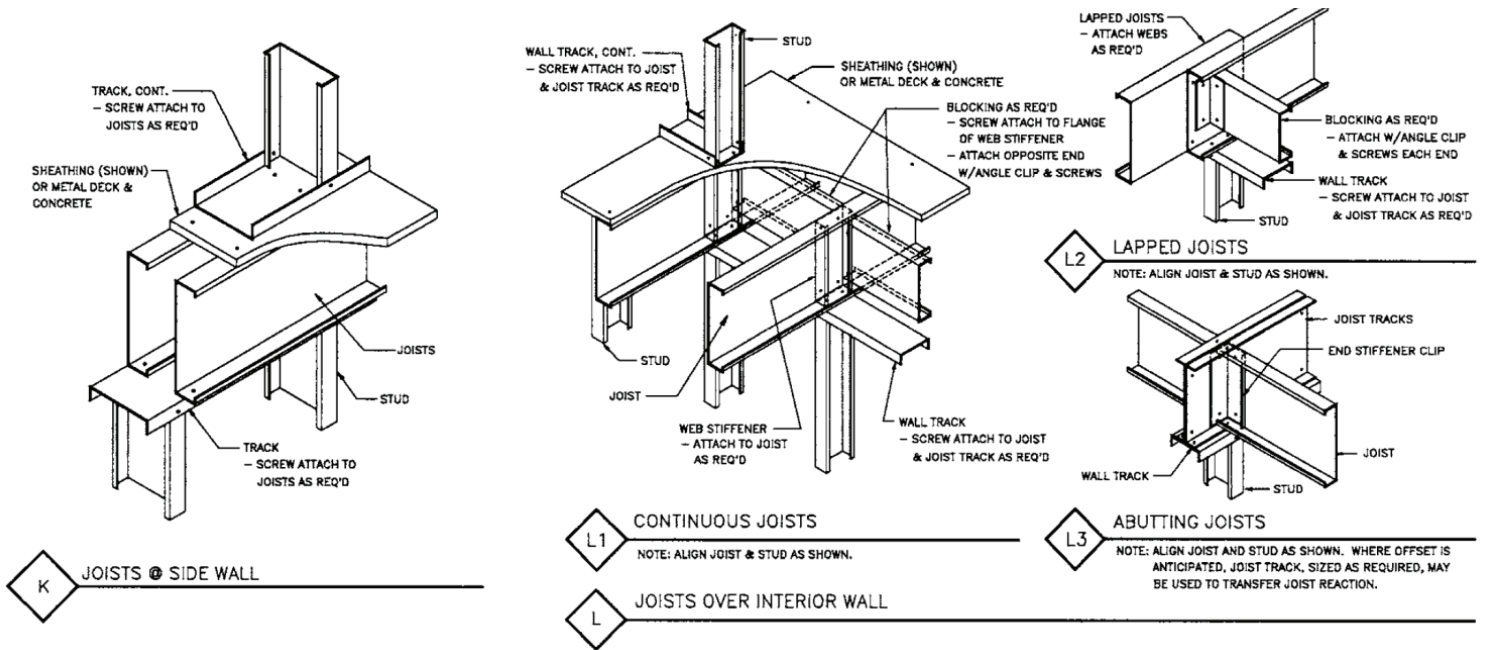


- g. Once first joist is in place, check for plumb and level.
- h. Install subsequent joists, checking frequently for proper spacing and bearing
- i. See "SuperJoist Blocking Installation Instructions" for blocking options and details. Blocking may be used to help maintain joist spacing and vertical alignment.

**Unless noted otherwise, blocking spacing should be no more than 8' apart along the length of the joists.**

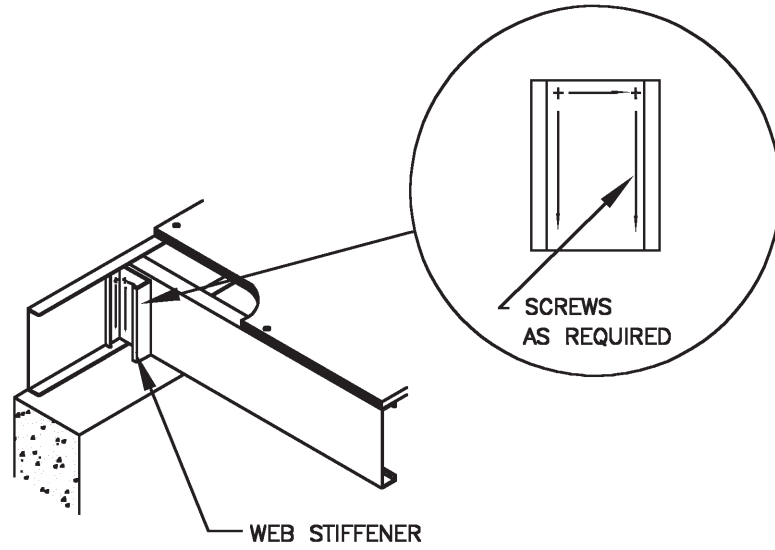
## Interior supports

Where joists extend over the top of interior supports, a row of blocking is required at the support wall or beam location if shear is being transferred from the structure above. The shear flow must be coordinated through the blocking and strapping. Web stiffeners are likely required at interior supports: and are most easily installed on the back side of the joists as shown below.

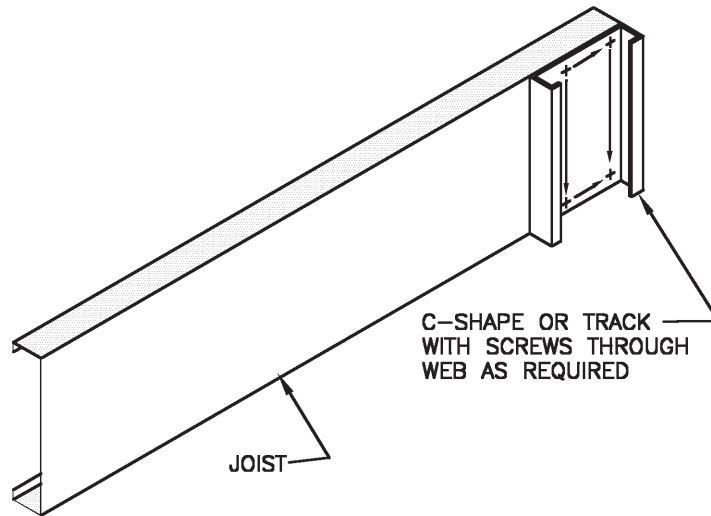


Details on the following pages are from the **Steel Framing Alliance Low Rise Residential Details** book. These details are also appropriate for light-framed commercial construction.

**Detail G9**  
**Web Stiffener Detail 1**

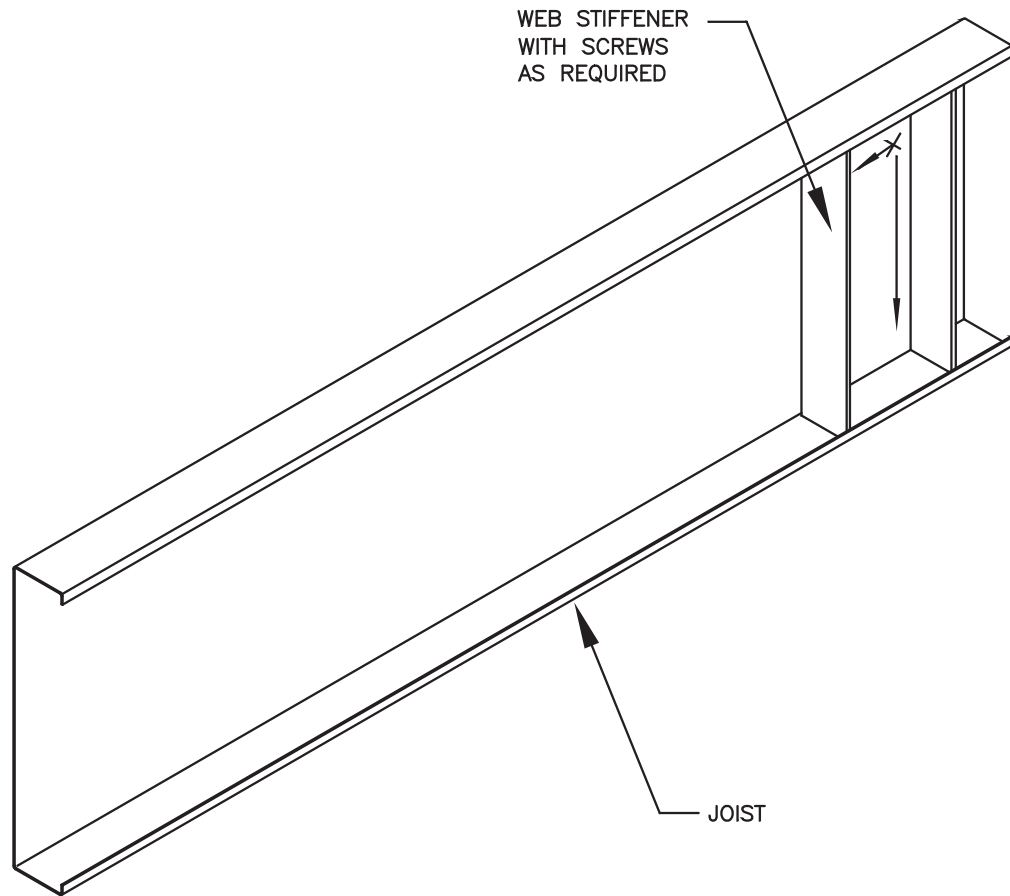


**Detail G10**  
**Web Stiffener Detail 2**

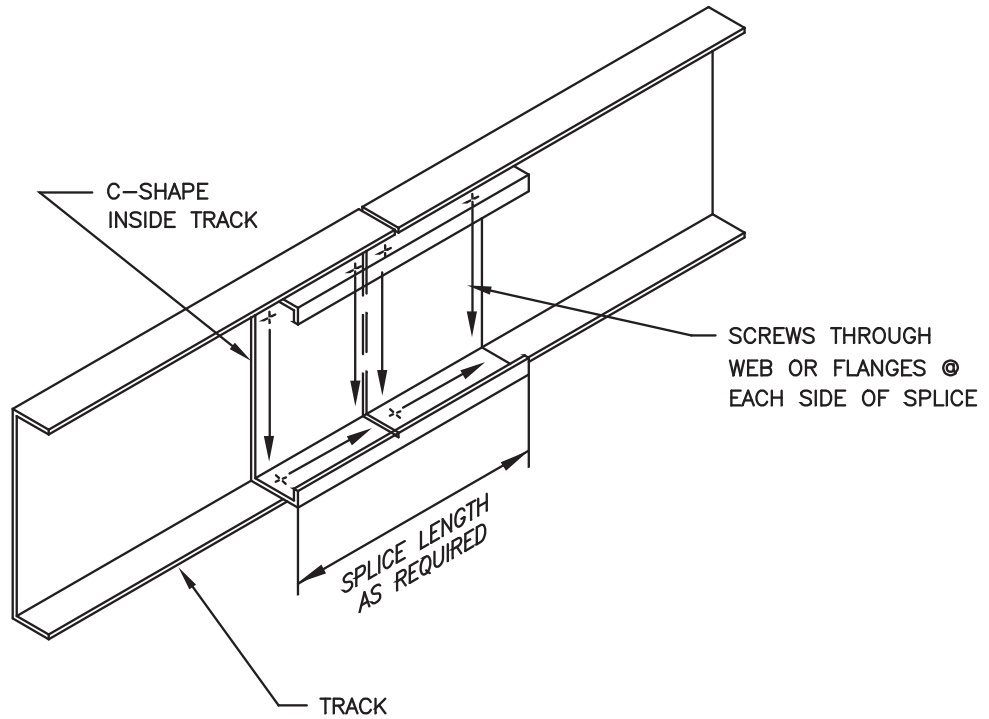




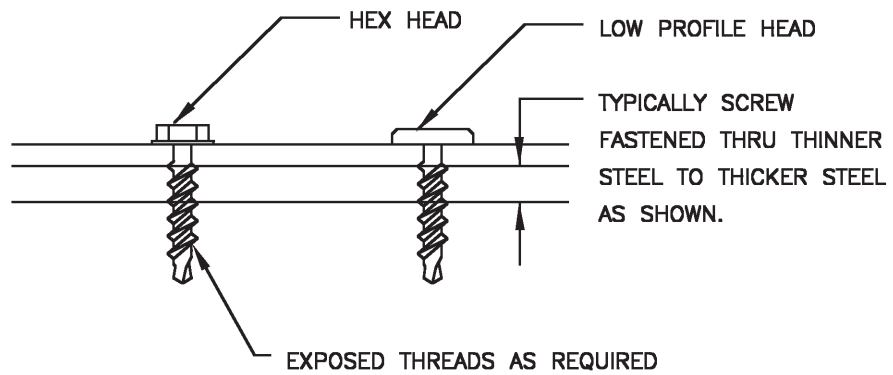
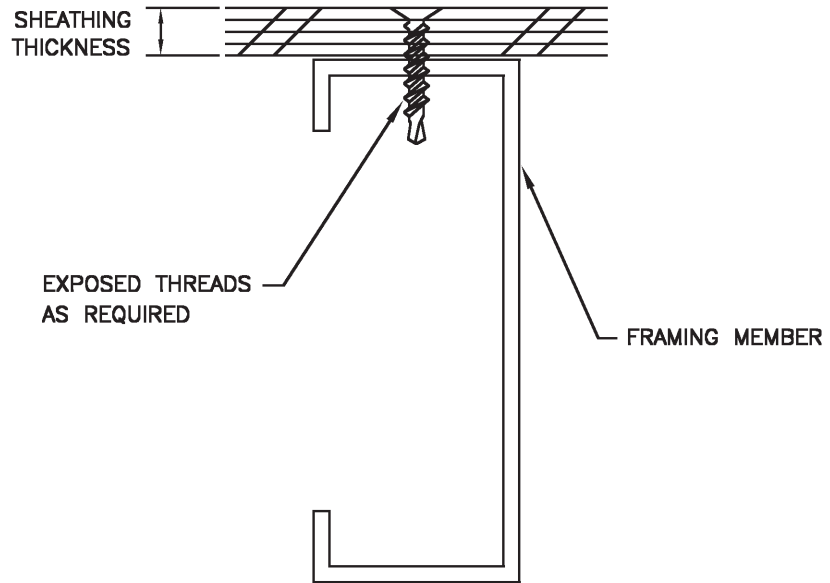
**Detail G11**  
**Web Stiffener Detail 3**



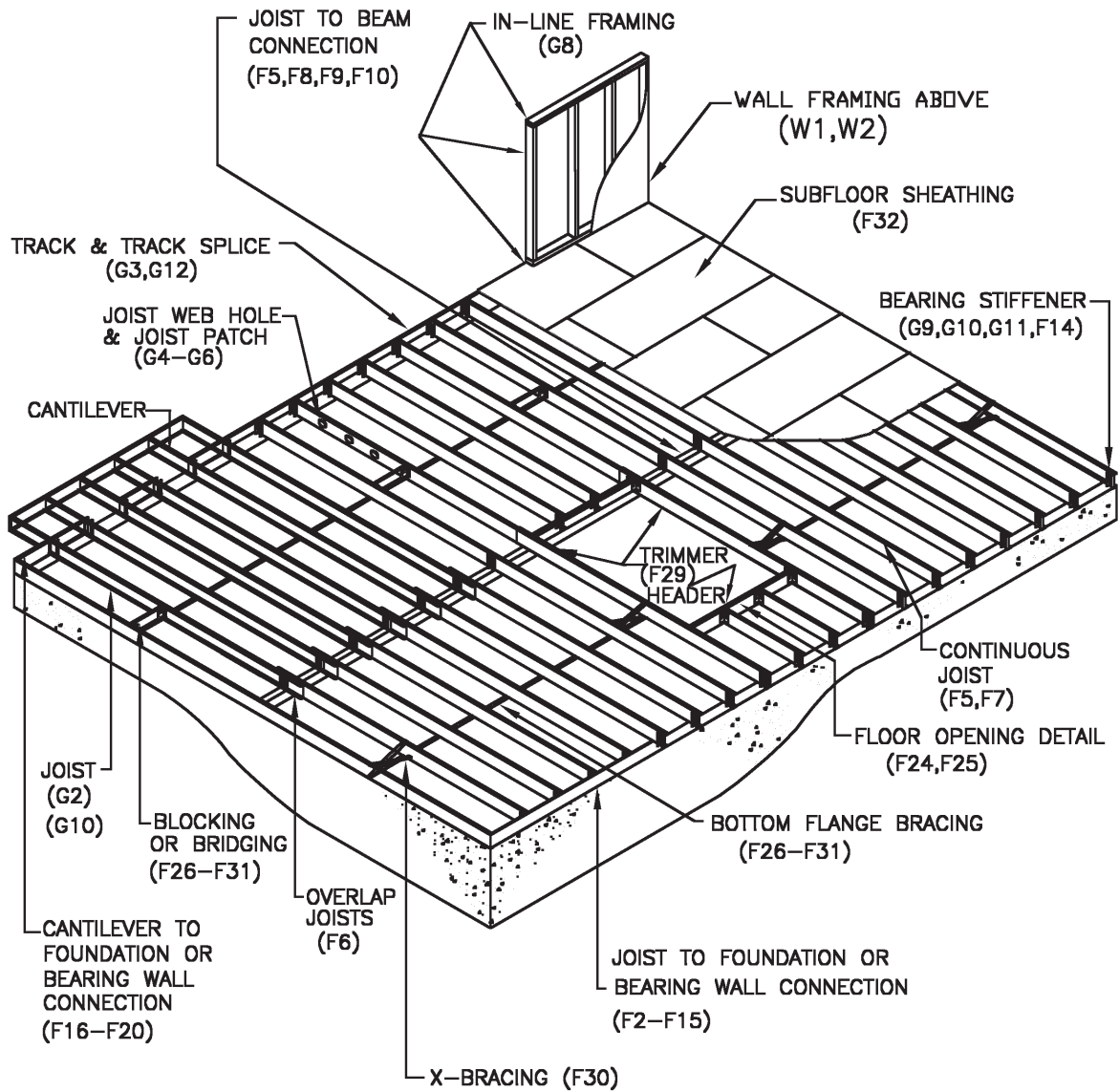
**Detail G12**  
**Track Splice Detail**



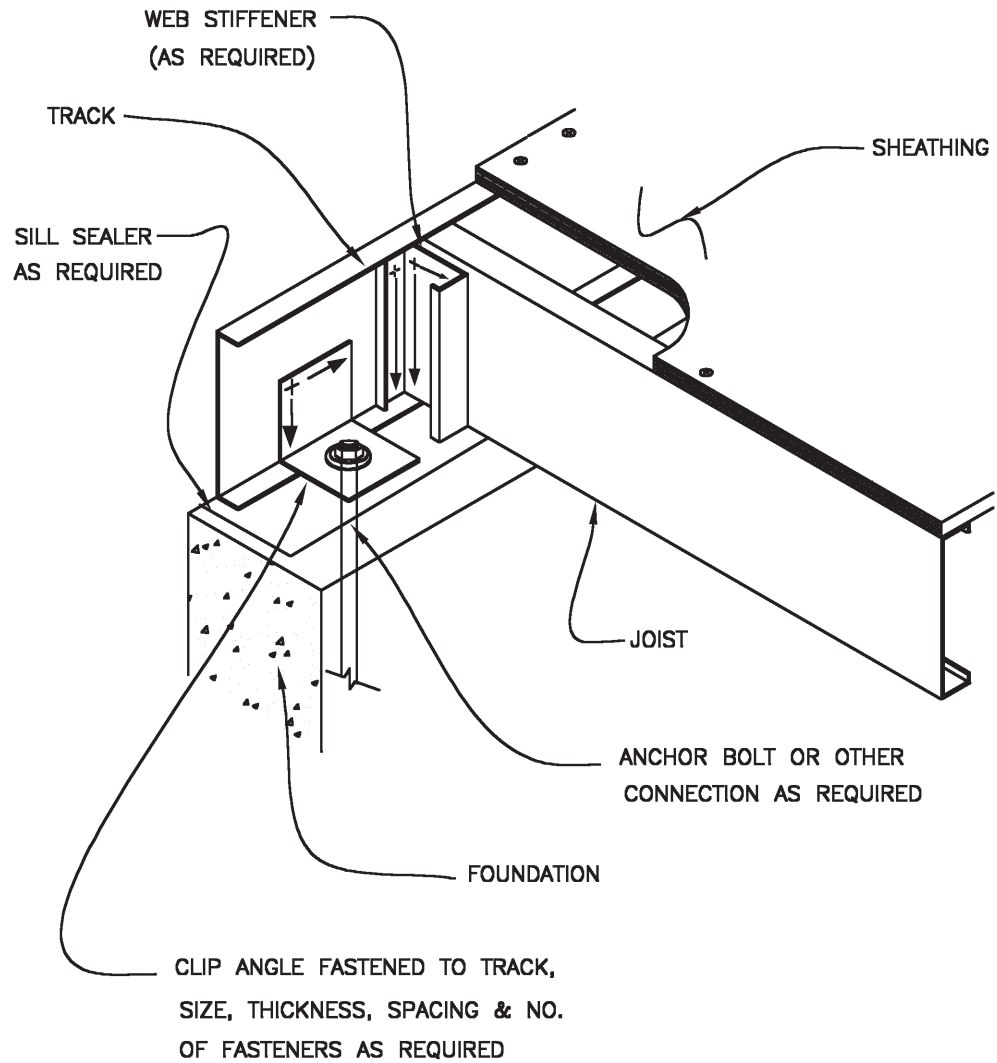
**Detail G13**  
**Screw Attachment Detail**



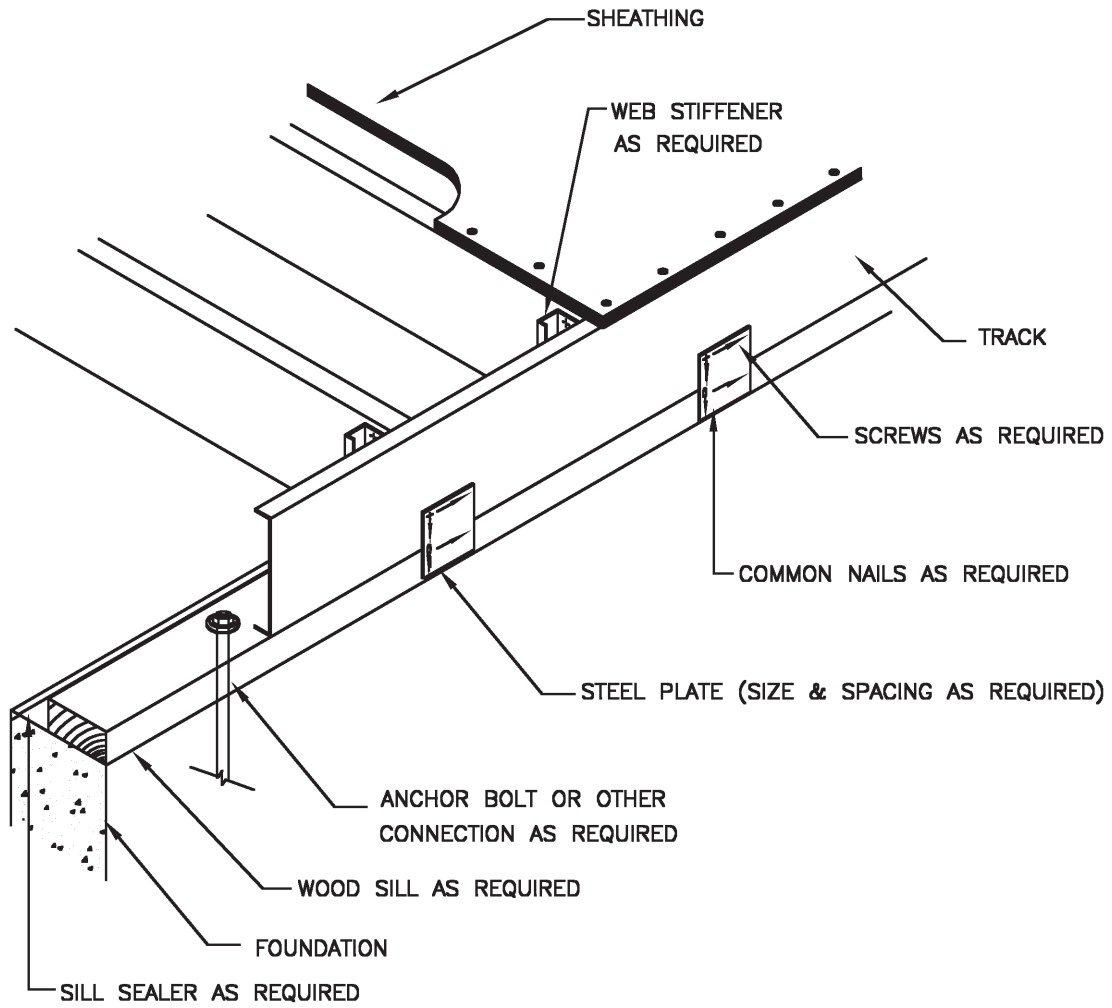
### Detail F1 Floor Framing



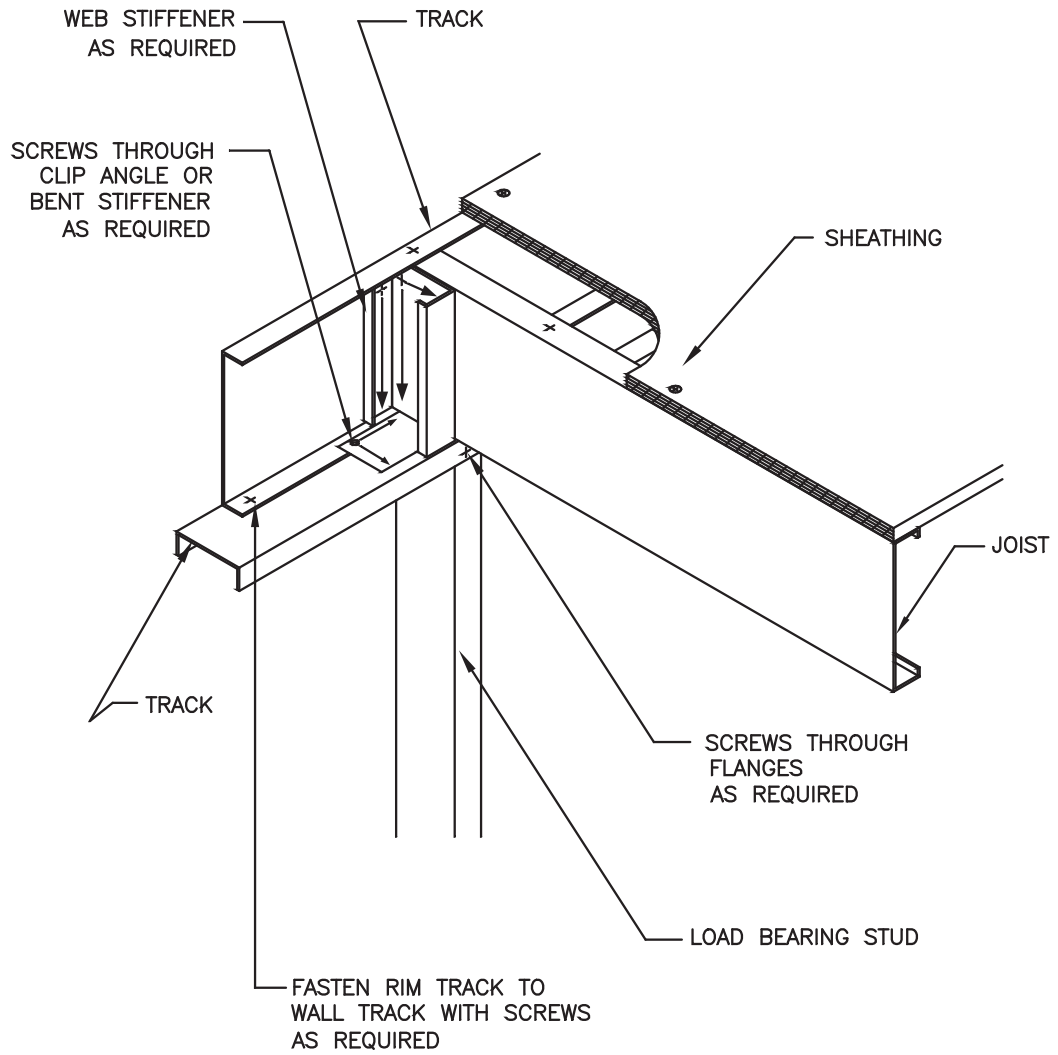
**Detail F2**  
**Floor to Foundation Connection**



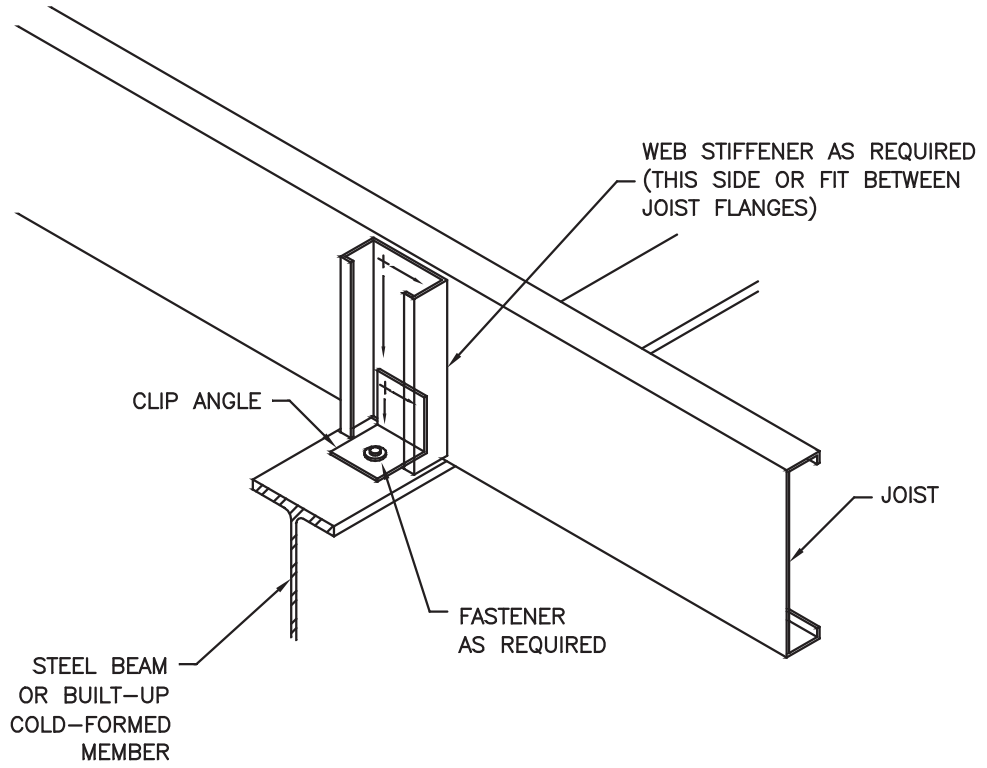
Detail F3  
Floor to Wood Sill Connection



### Detail F4 Floor to Load Bearing Wall Connection

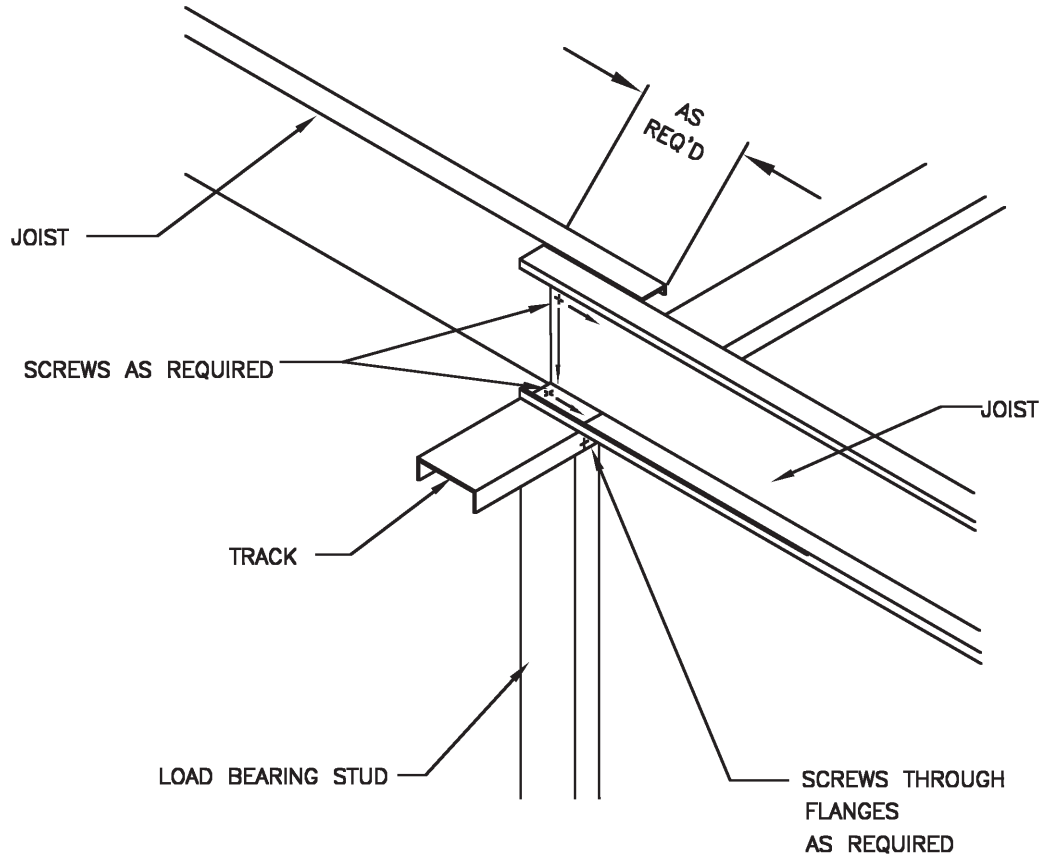


**Detail F5**  
**Floor Bearing on I-Beam Connection**

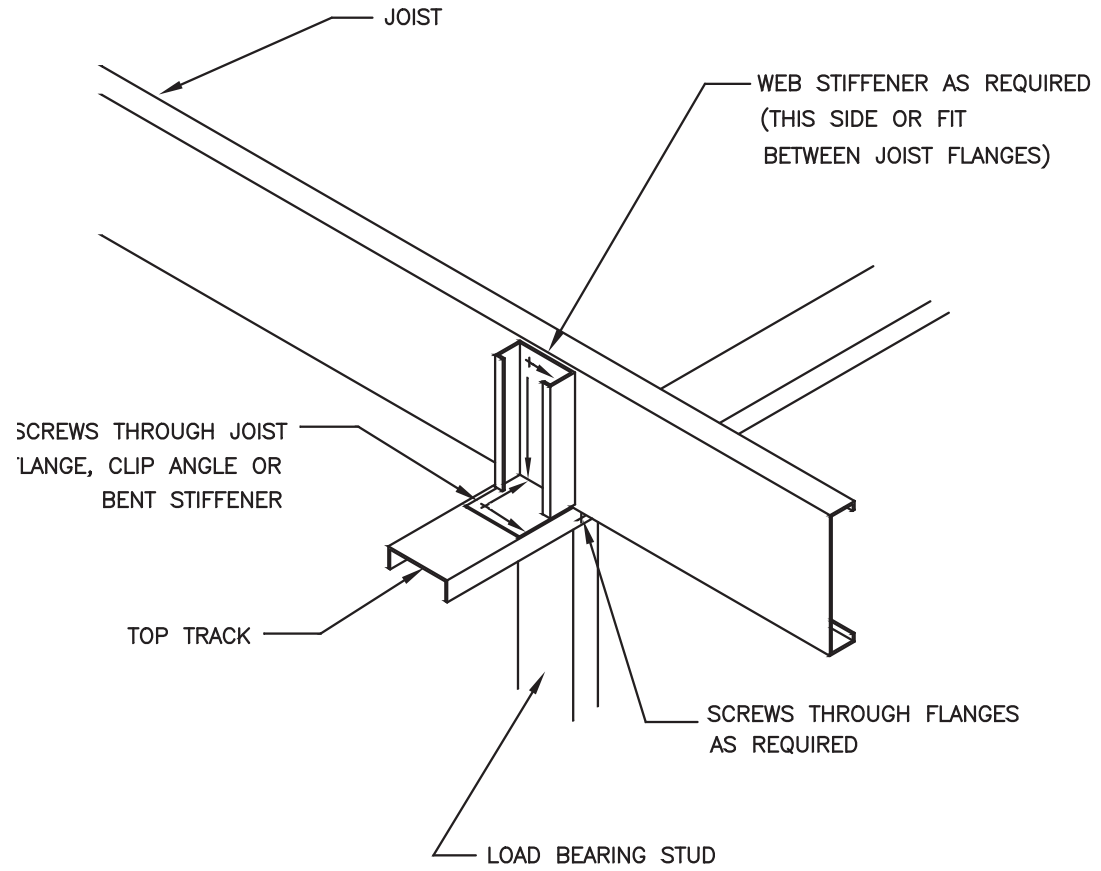




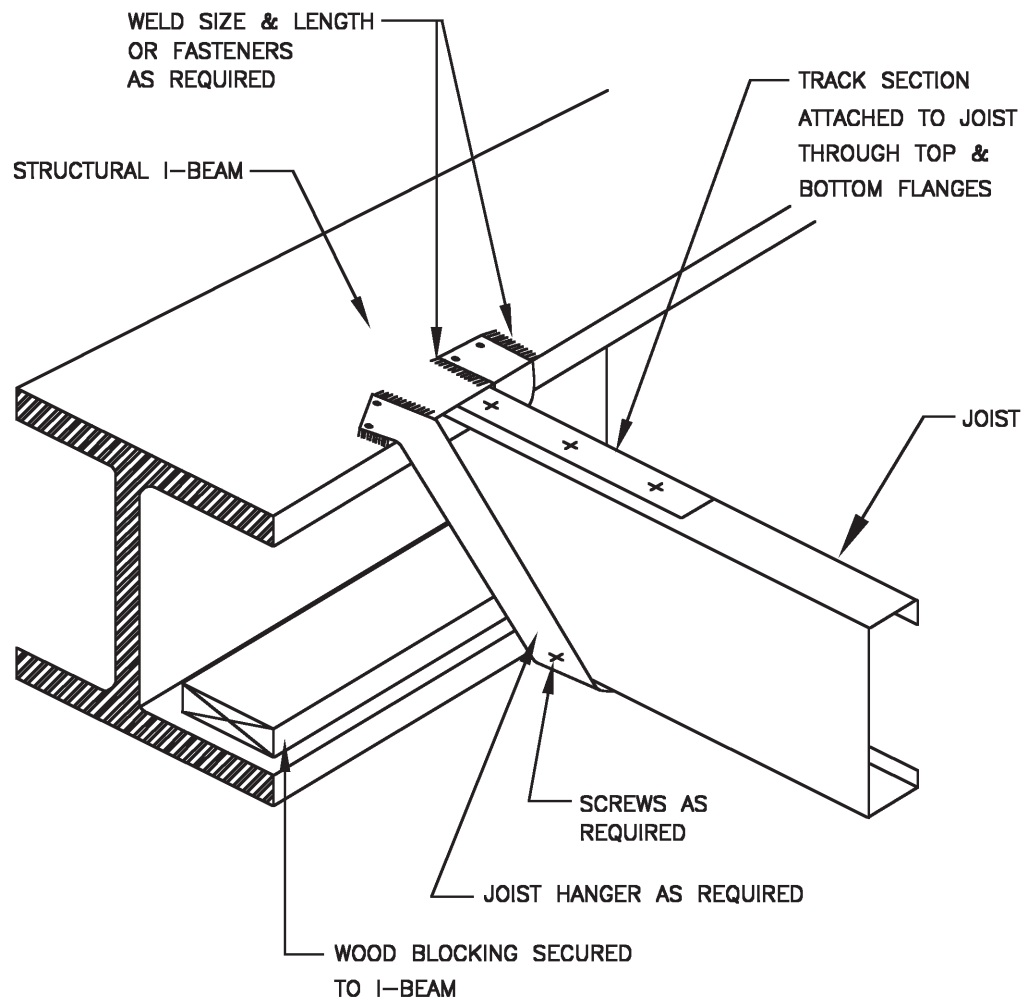
**Detail F6  
Lapped Joists**



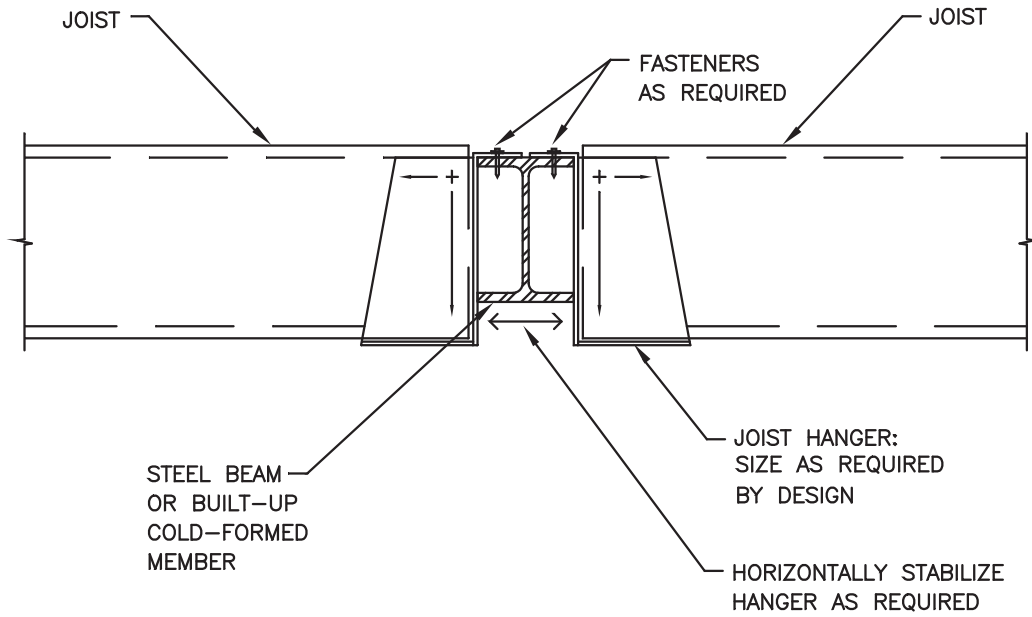
**Detail F7  
Continuous Joist**



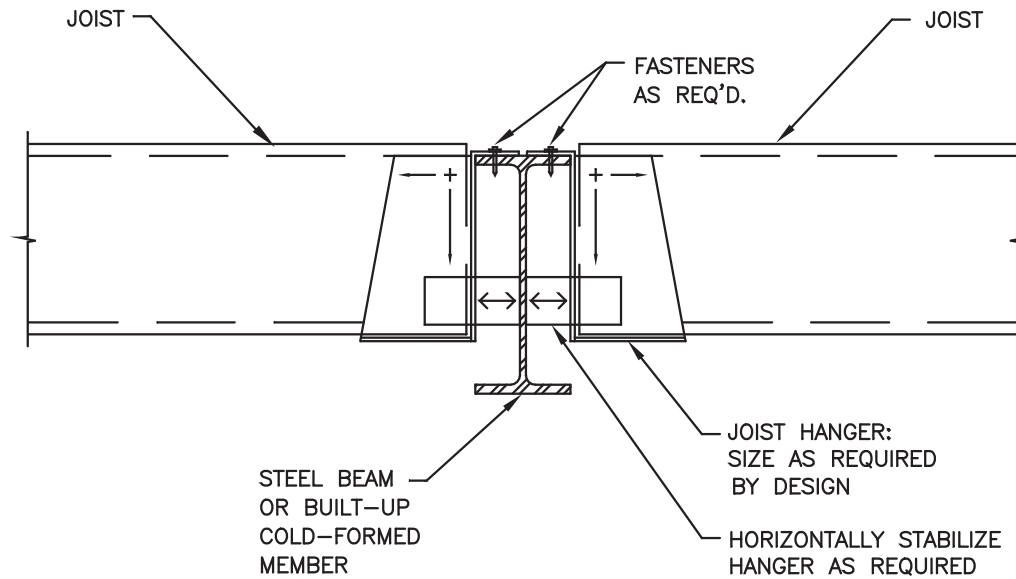
**Detail F8**  
**Floor to I-Beam Side Connection**



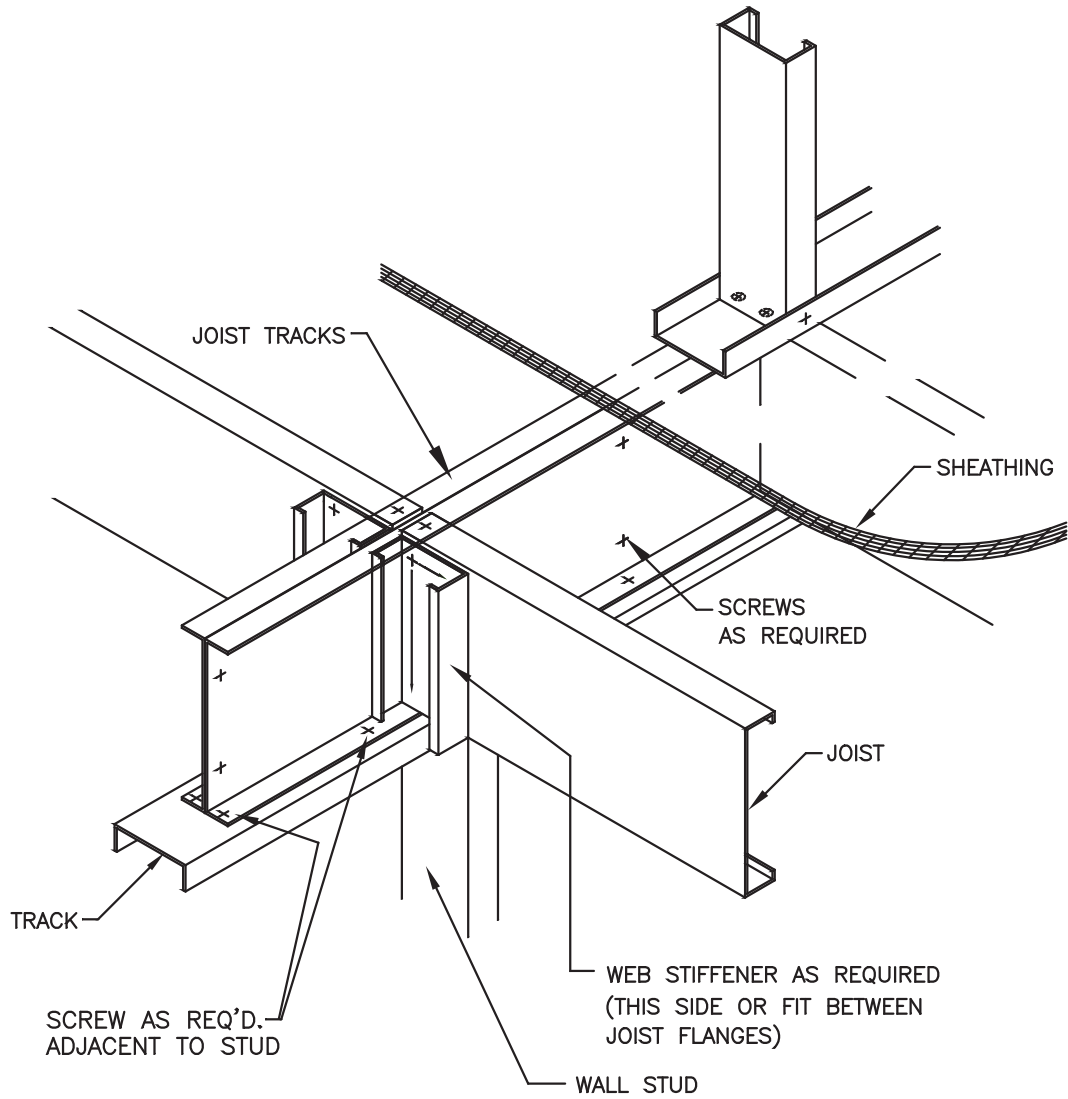
**Detail F9**  
**Joists Supported by Shallow I-Beam**



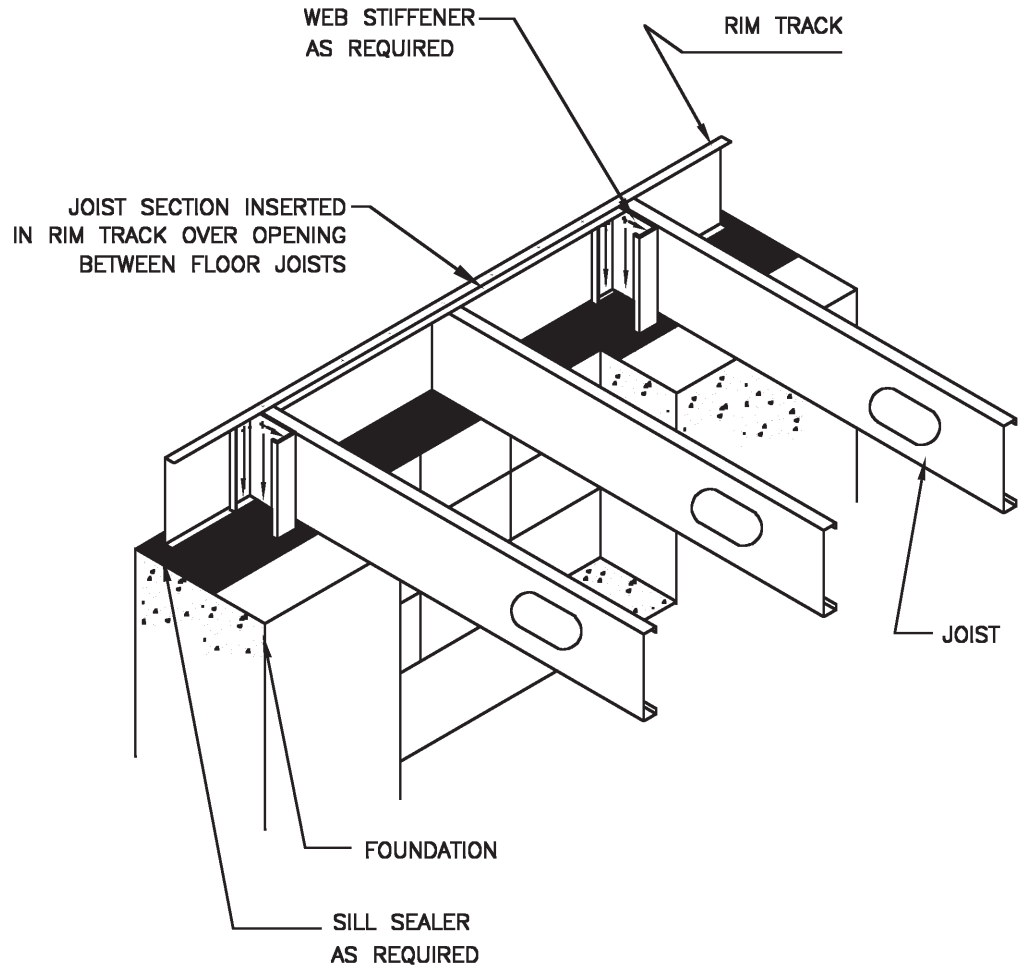
**Detail F10**  
**Joists Supported by Deep I-Beam**



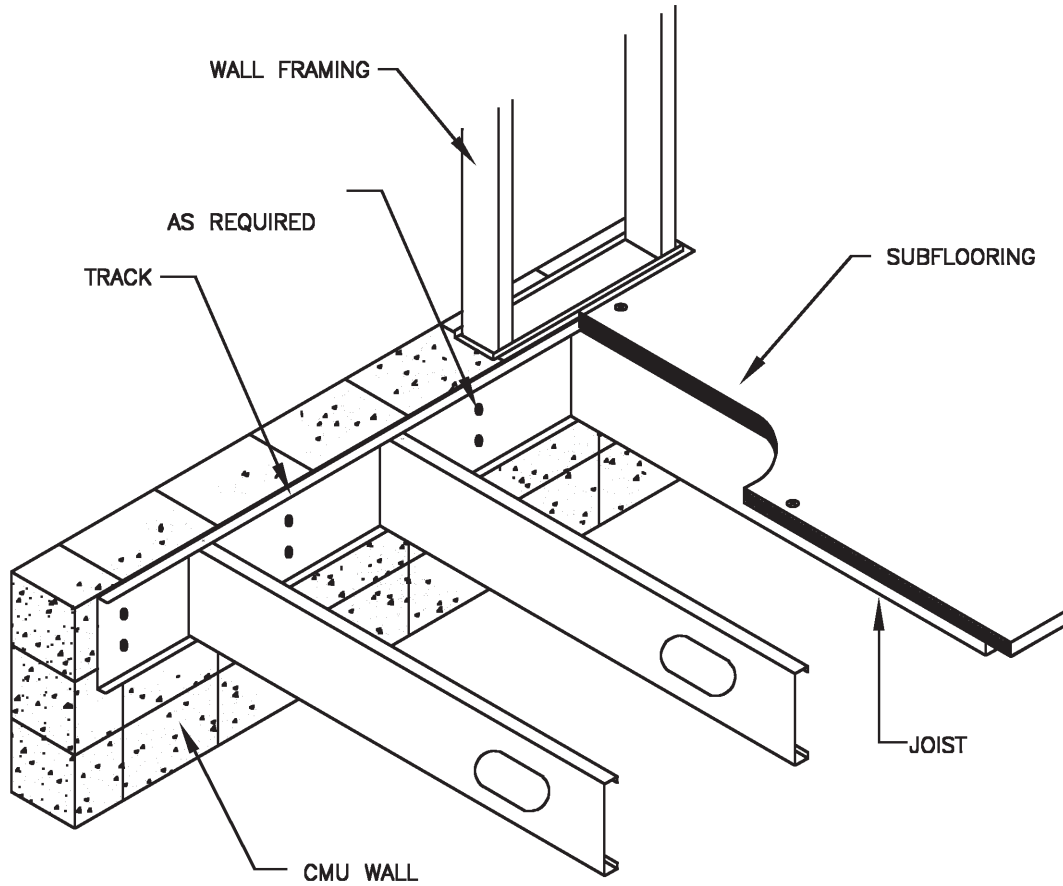
**Detail F11**  
**Floor Joists at Interior Bearing Wall**



**Detail F12**  
**Joists Bearing on Foundation at Opening**

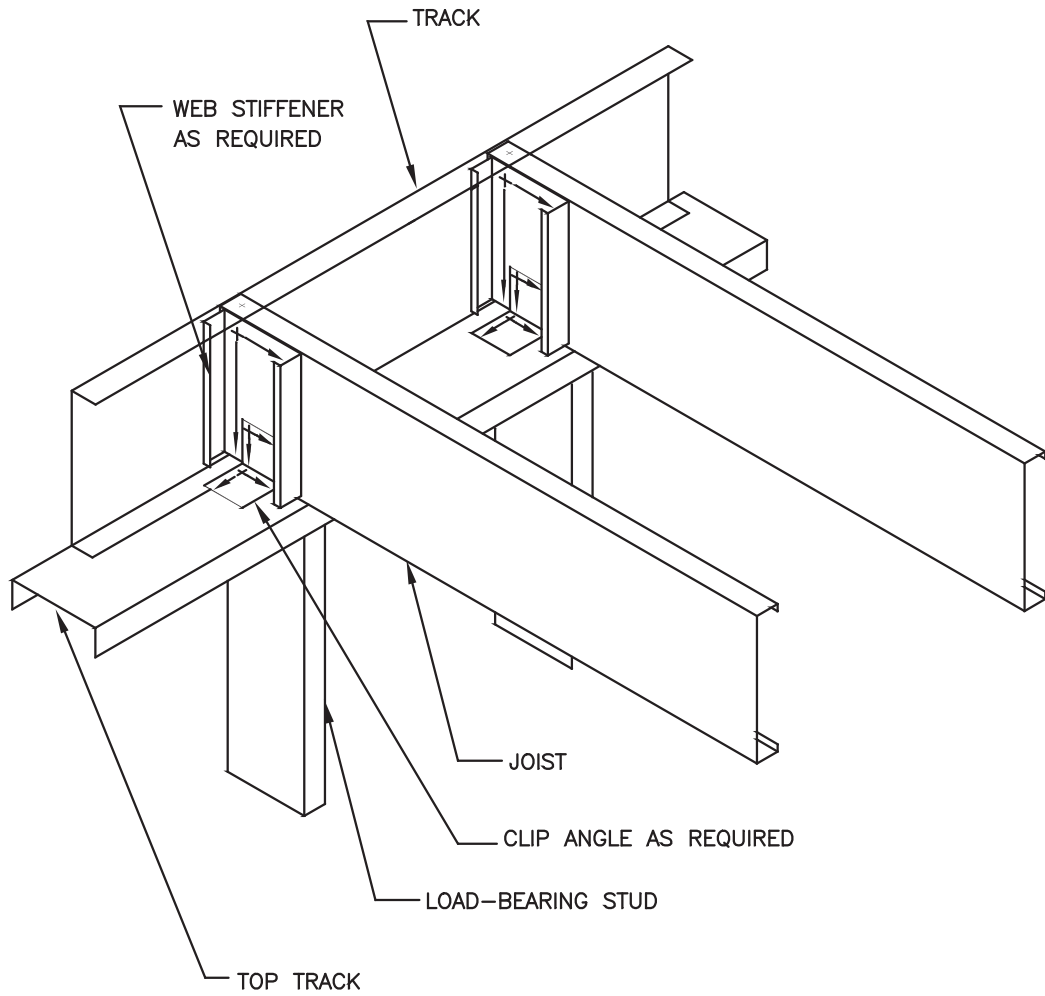


**Detail F13**  
**Floor to CMU Wall Side Connection**

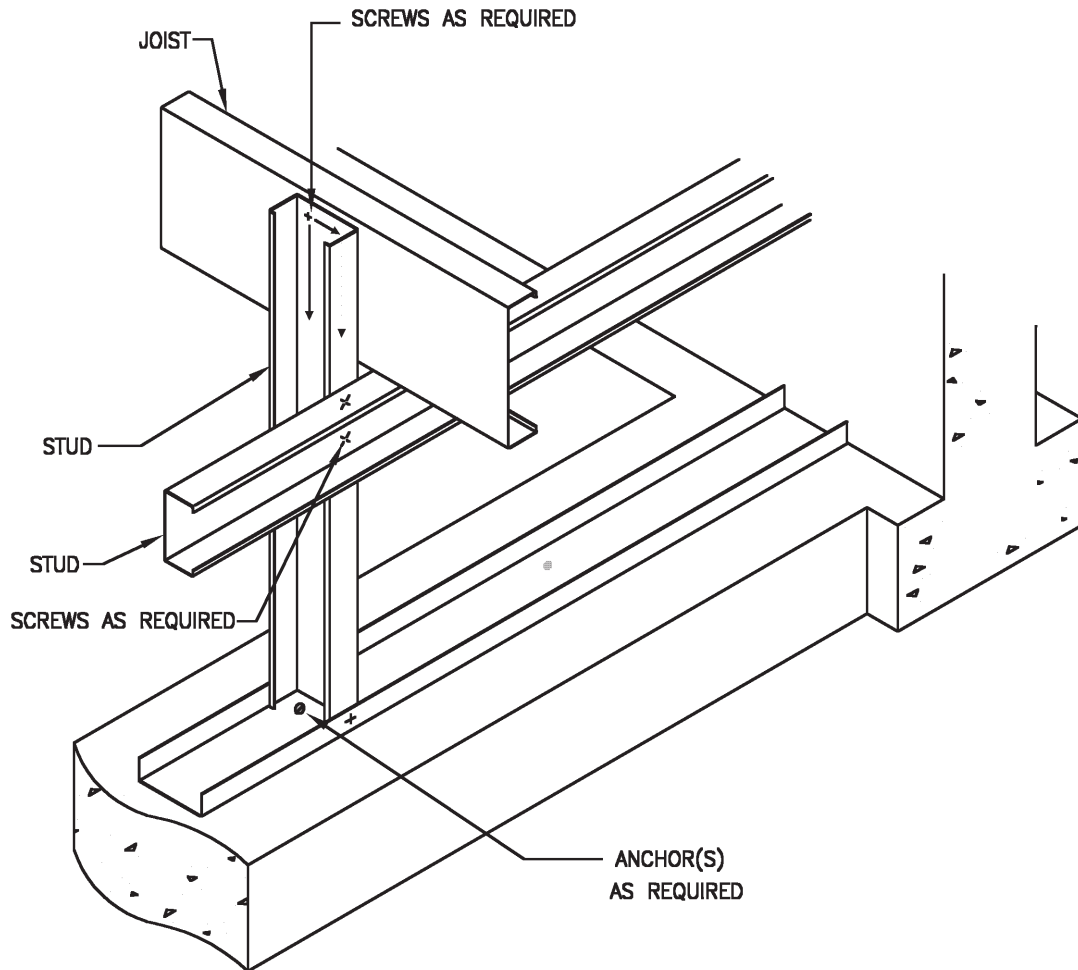




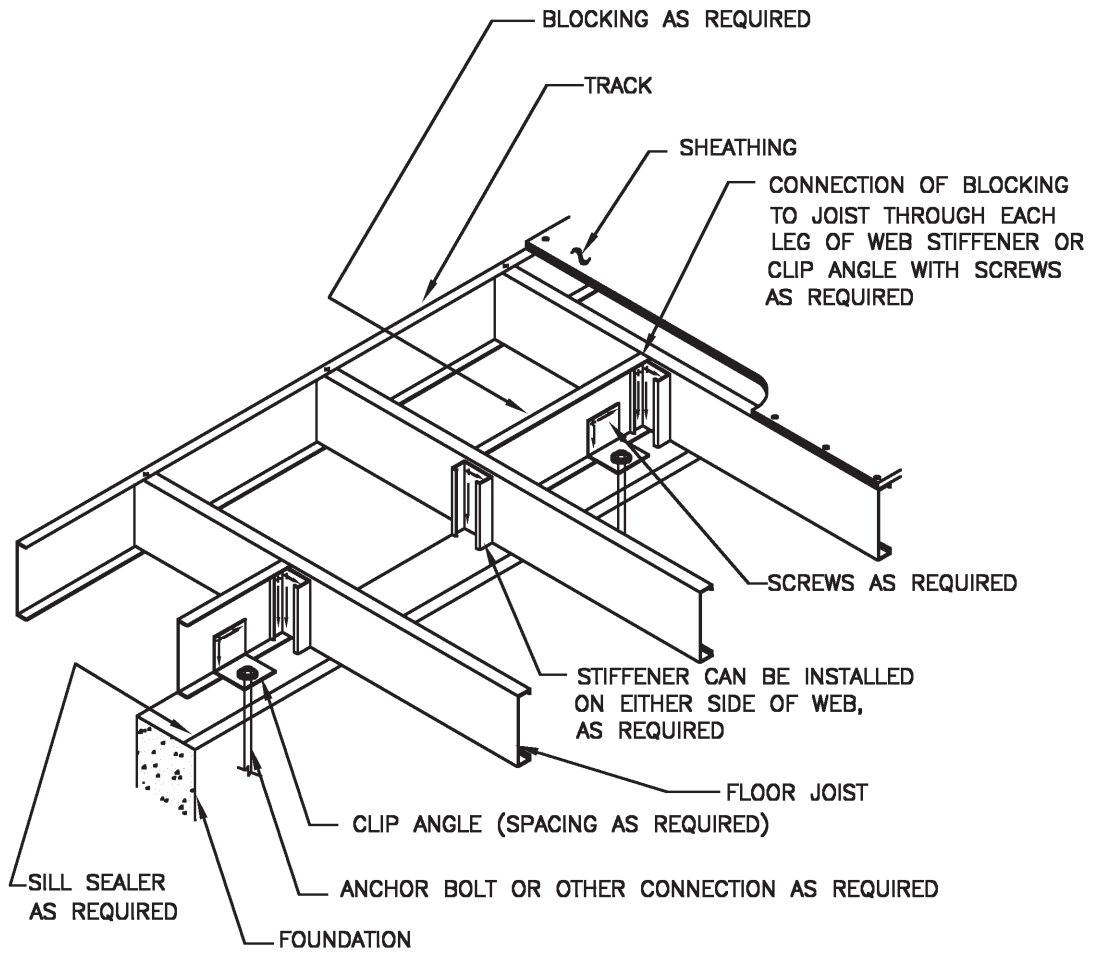
**Detail F14**  
**Web Stiffener at Load Bearing Wall**



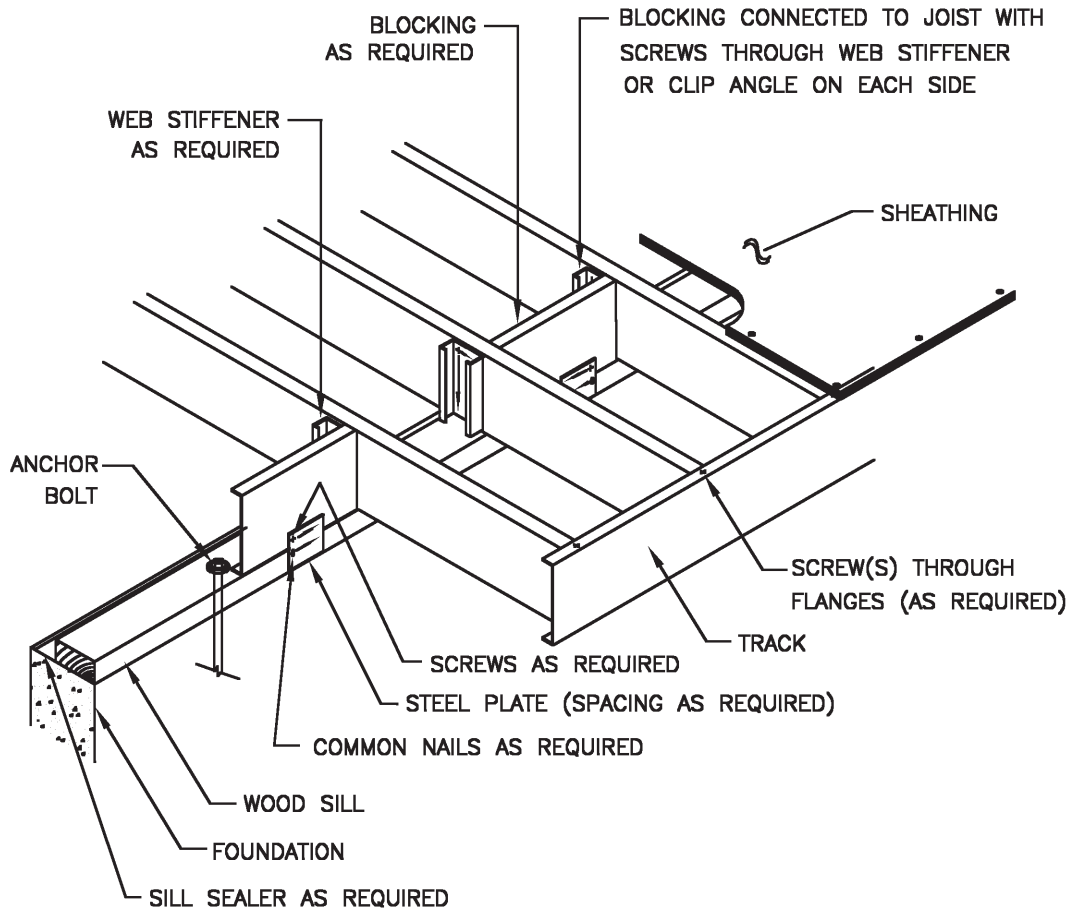
Detail F15  
Alternate Pony Wall Detail



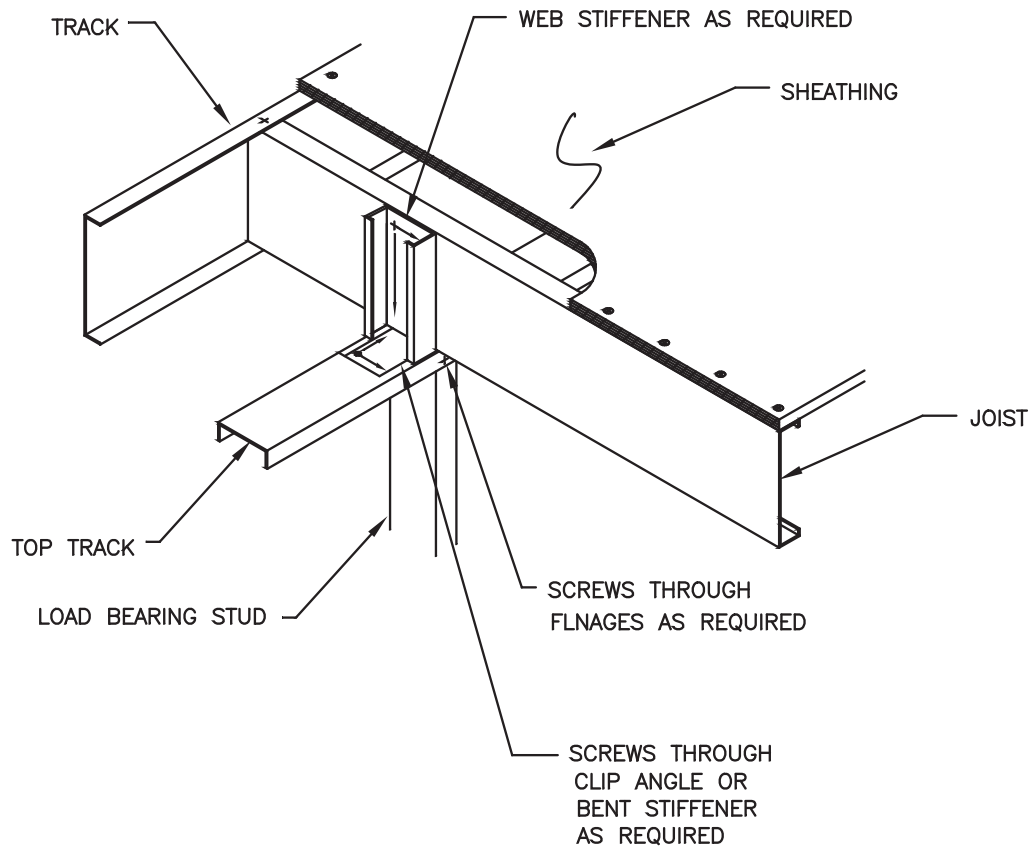
**Detail F16**  
**Cantilevered Joist to Foundation Connection**



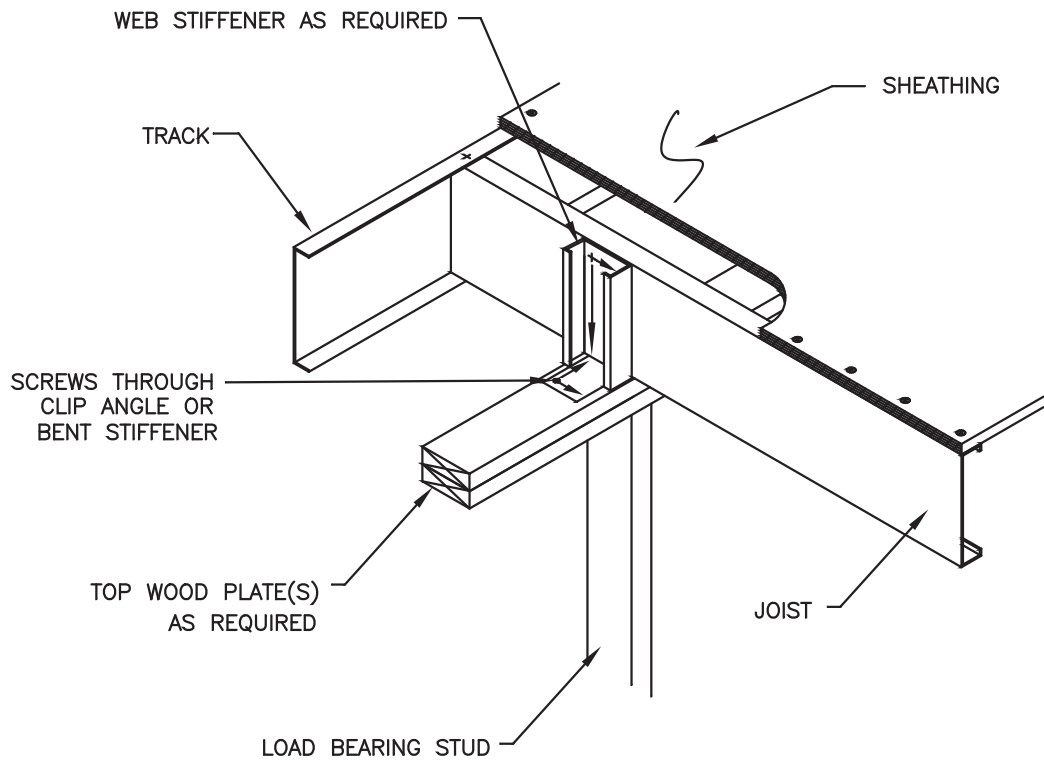
**Detail F17**  
**Cantilevered Joist to Wood Sill Connection**



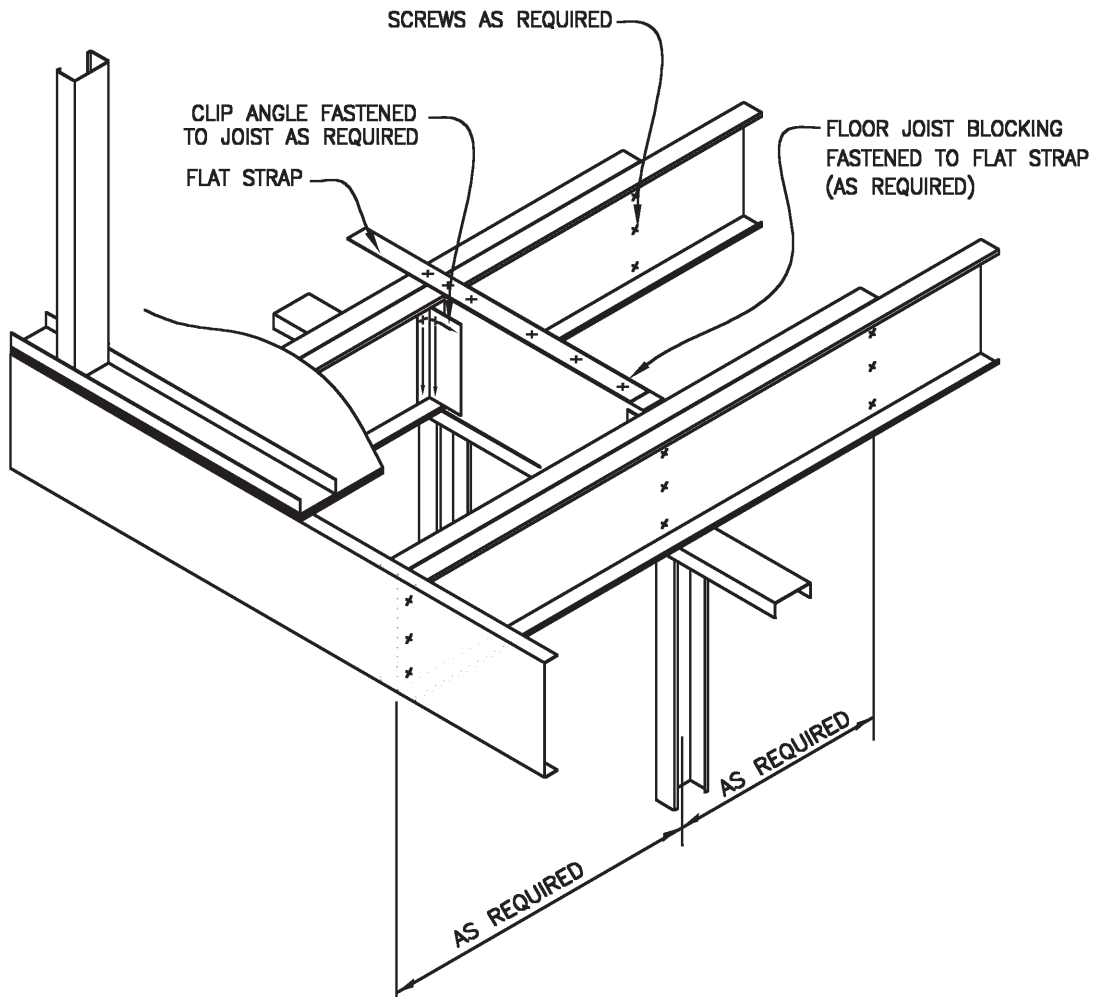
**Detail F18**  
**Cantilevered Joist to Bearing Wall Connection**



**Detail F19**  
**Cantilevered Joist to Wood Top Plate Connection**



**Detail F20**  
**Double Cantilevered Joists**





#### **PRODUCT INFORMATION**

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The products described within this document may not be available in all geographic markets. Consult your Super Stud Building Products' Sales Representative for more information.

#### **SAFETY NOTICE**

Always follow safety practices during handling and installation of all products. Take necessary precautions and always wear the appropriate personal protective equipment (PPE) as needed. Read all Safety Data Sheets or related literature on products before specification and installation.