For more information, view our website on Open Joist at
http://www.openjoist.com

Open Joist™
Floor Trusses

FIELD INSTALLATION GUIDE

Read carefully before installing Open Joist

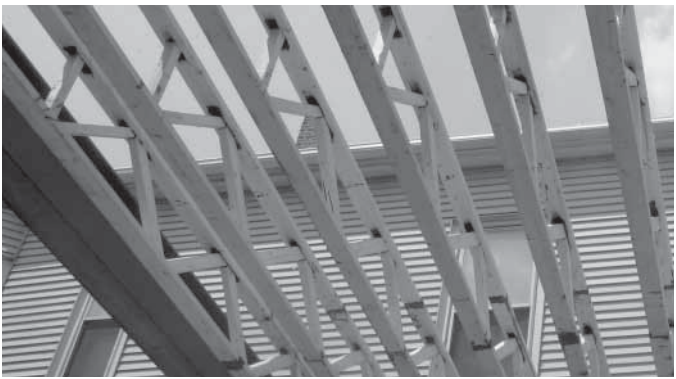
This guide is a supplement to an engineered Floor Framing Plan created for a specific job. Details included in the Floor Framing Plan take precedence over any other general Open Joist framing details contained in this guide.

IMPORTANT:

Deviation from the engineered Floor Framing Plan supplied for a specific job will result in material shortages, job delays and possible unsafe installations! Do not deviate from the plan without contacting your Open Joist representative.

This guide is also available in Spanish.
Esta guía también esta disponible en Español.

CONTENTS



HANDLING, STORAGE AND SAFETY

Handle Open Joist trusses upright and by the bottom chord. Handle trusses carefully to avoid damaging them.

Store trusses out of mud and water.

Open Joist floor trusses stored outdoors should be covered for protection from weather.

In the interest of safety, bundles of Open Joist should remain banded until ready for use. Care should be exercised when cutting bands on bundles.

Avoid excessive flat-wise bending of Open Joist trusses. Only use Open Joist floor trusses for their intended purposes. Do not use trusses for ramps, ladders, etc.

Open Joist trusses are designed for floor framing and may only be used for roof framing if the roof pitch is 1/2 on 12 or less and trusses have been adequately sized.

Distribute piles of building materials (gypsum board, plywood, concrete blocks, etc.) in small bundles and over bearing supports. Do not overload Open Joist members. Do not stack materials on trusses that have not been properly supported, braced or sheathed to provide lateral support.

Do not walk on floor trusses that have not been properly supported and braced.

For any questions about the correct use of Open Joist floor trusses, call Open Joist Technical Services at 800-584-5191.

TEMPORARY BRACING

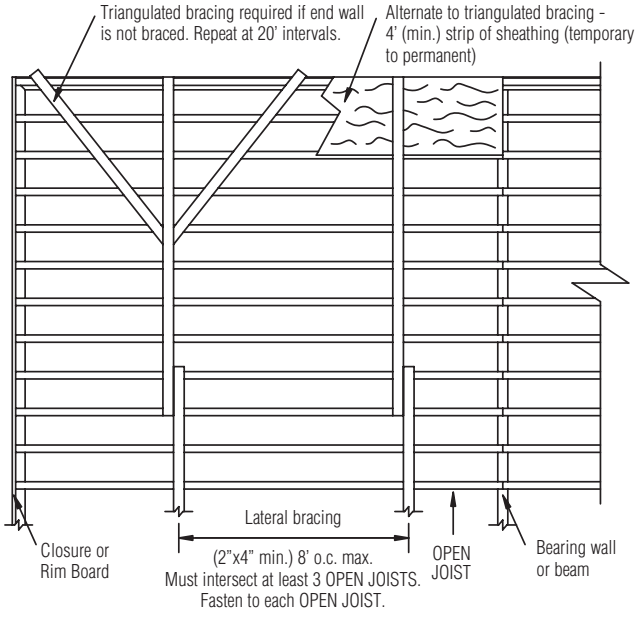
No one should be allowed on the Open Joist floor system until all hangers, blocking, rim board and temporary bracing are completely installed.

Open Joist trusses must be held straight and plumb at their design-specified spacing while all blocking, rim board and bracing are installed.

Temporary bracing is required at all supports and at the interval shown on the drawing until permanent bracing elements and/or sheathing are installed.

Cantilevered trusses require lateral bracing at ends.

Installation of permanent "strongback" bridging for the purposes of load sharing and vibration dampening is recommended. See Framing Details #5 and #5A. Permanent bracing to transmit lateral forces or to provide stability in some applications may be required and should be specified by the building designer.

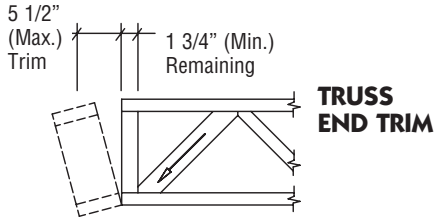


Open Joist STANDARD TRUSS CONFIGURATIONS

Joist Depth	Joist Length	Chord Size & Grade
9-1/4"	3' thru 16'	3 x 2 - #2
9-1/4"	17' thru 20'	4 x 2 - MSR 2100
11-7/8"	3' thru 17'	3 x 2 - #2
11-7/8"	18' thru 19'	4 x 2 - #2
11-7/8"	20' thru 23'	4 x 2 - MSR 2100
14"	3' thru 18'	3 x 2 - #2
14"	19' thru 21'	4 x 2 - #2
14"	22' thru 25'	4 x 2 - MSR 2100
16"	3' thru 17'	3 x 2 - #2
16"	18' thru 22'	4 x 2 - #2
16"	23' thru 26'	4 x 2 - MSR 2100
16"	27' thru 30'	4 x 2 - MSR 2400

TRIMMING AND ALTERING

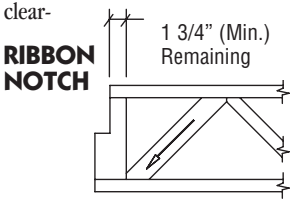
Open Joist floor trusses are manufactured in one-foot incremental lengths and may be trimmed by a maximum of 11 inches for precision fitting.

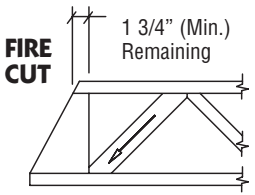


A maximum trim of 5-1/2" may be made on each end of an Open Joist truss, leaving a minimum of 1-3/4" of the solid end block remaining. Do not leave less than 1-3/4" of remaining end block.

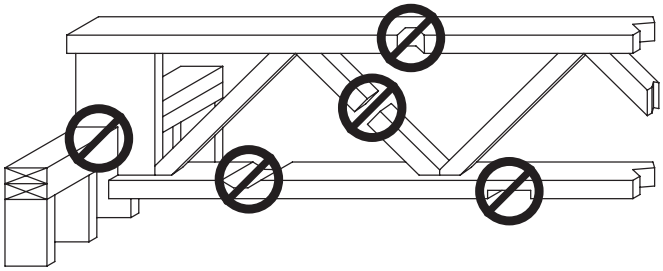
When trimming an Open Joist truss, it is not necessary to trim both ends of the truss unless the total amount to be trimmed off is greater than 5-1/2". In cases where it is necessary to trim both ends of the truss, it is not necessary to trim both ends equally.

Special end trims are possible with Open Joist. A ribbon notch may be cut into the end block as long as a minimum of 1-3/4" of the end block remains at its narrowest point. Following the same requirements, angled "bevel cuts" or "fire cuts" may be made on the ends of Open Joist trusses for pocket installation or rafter clearance.





Only the end blocks of Open Joist trusses may be cut according to the guidelines stated. Top and bottom truss chords and truss webs may not be cut, drilled or notched. Altering these elements will alter the trusses' structural integrity and may result in dangerous conditions. Cutting, drilling or notching chords and webs (other than normal end block trims as previously stated) without prior approval from Open Joist Engineering will result in the assumption of liability for floor system defects and responsibility for repair of such defects by the mechanic who performs unauthorized cutting or altering. Care should be taken during truss layout to allow for adequate mechanical clearances so that there will be no need to cut or notch trusses. Mechanicals subcontractors should be made aware of these cautions. If trusses have been cut, altered or installed incorrectly, contact Open Joist Engineering immediately at 800-584-5191.



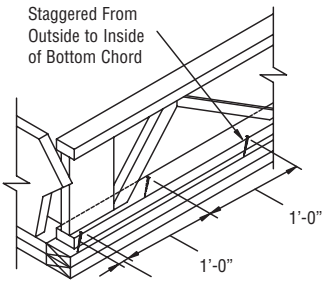
THESE CONDITIONS ARE NOT PERMITTED

DETAIL NO. 18

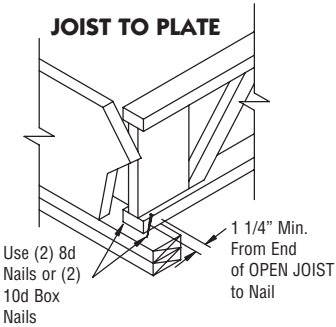
NAILING AND BEARING

Typical Nailing Conditions

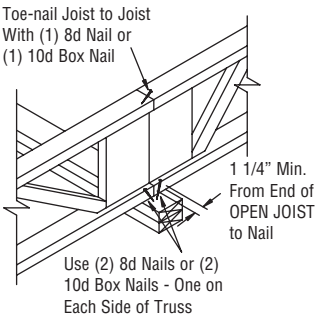
JOIST TO PLATE



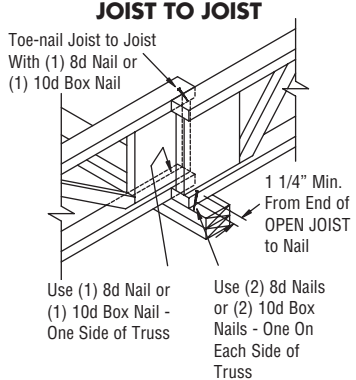
JOIST TO PLATE

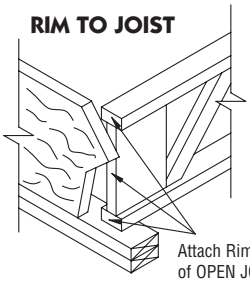


JOIST TO JOIST

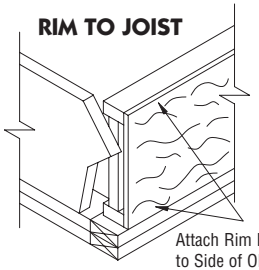


JOIST TO JOIST





Attach Rim Board to End of OPEN JOIST With (1) 8d Nail at Each Flange and (1) 8d Nail Centered at End Block



Attach Rim Board to Side of OPEN JOIST With 8d Nails at 4" o.c. Into Top and Bottom Chords

Nailing Notes

Caution: When fastening Open Joist trusses, care should be taken to avoid splitting wooden truss members.

Hangers: Follow hanger manufacturers' nailing instructions when installing Open Joist trusses with hangers.

Gussets: Open Joist engineered drawings will specify nailing schedules for attachment of gussets to trusses for cantilever and point load situations.

Strongback Bracing: When fastening 2X bracing perpendicular to and through OPEN JOIST trusses, use the following attachments. When fastening to a vertical web or block, use (2) 3" nails fastened to the vertical member only. When fastening to a diagonal web, use (1) 3" nail into the web and (1) 3" nail into the bottom truss chord (see details 5 and 5A). Strongback bracing should be nailed in place before decking/sheathing is installed.

Decking/Sheathing: Follow APA recommendations for fastening sheathing to the top chord of Open Joist floor trusses and rim members.

Screws: Wood screws of sufficient strength may be substituted for nails when fastening Open Joist floor trusses.

Adhesives: Engineered drawings will specify adhesive requirements where needed for attachment of gussets, etc. Using adhesives in addition to fasteners when installing decking/sheathing will improve floor system performance.

Bearing Requirements

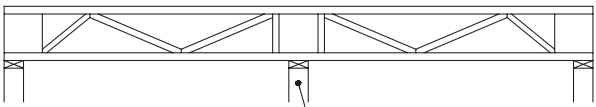
Bearing is any part of a structure (wall, column, pier, etc.) that supports vertical loads and is itself supported by a footing (a concrete pad under a foundation wall or a thickened concrete slab that carries loads down to "undisturbed earth"). Walls, etc. that are not supported by footings are not considered bearing.

Unless indicated otherwise by Open Joist Engineering, minimum bearing length of 1-1/2" is required to support each end of an Open Joist floor truss (see Framing Details 3, 3A and 3B).

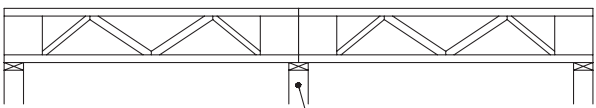
Open Joist is a bottom-chord-bearing product that must be supported by the truss' bottom chord. To achieve the same framing results as "top-chord-bearing" or "mid-chord-bearing" trusses, hangers and/or blocking should be used.

Open Joist is a simple-span product that must be butted or overlapped at any intermediate bearing such as a beam or wall. Open Joist is not designed for multiple-span applications.

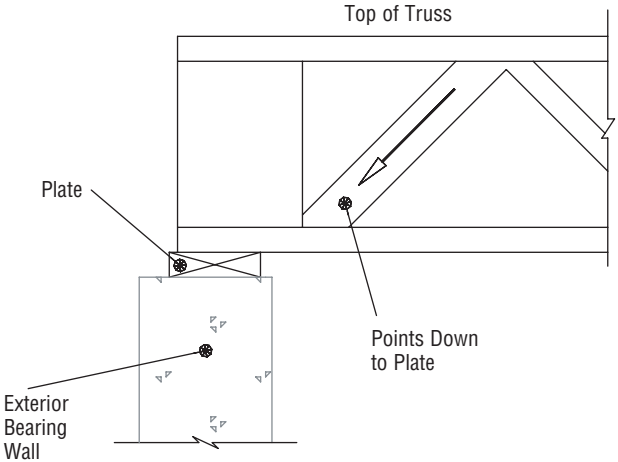
INCORRECT INSTALLATION
(Single Joist)



CORRECT INSTALLATION
(2 Joists Butted or Overlapped)



Each Open Joist floor truss is marked to indicate the top and bottom of the truss. Trusses should be installed in the proper orientation as indicated by these markings. To ensure correct installation, make sure the end diagonal web of the truss is pointing downward toward the sill plate.

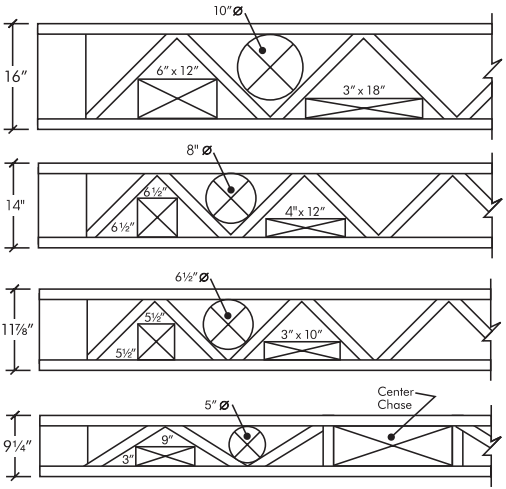


MECHANICAL SYSTEMS INSTALLATION

Plumbing, electrical and HVAC systems can be installed around and through the open web area of Open Joist floor trusses as long as the truss chords and webs are not cut, notched or altered.

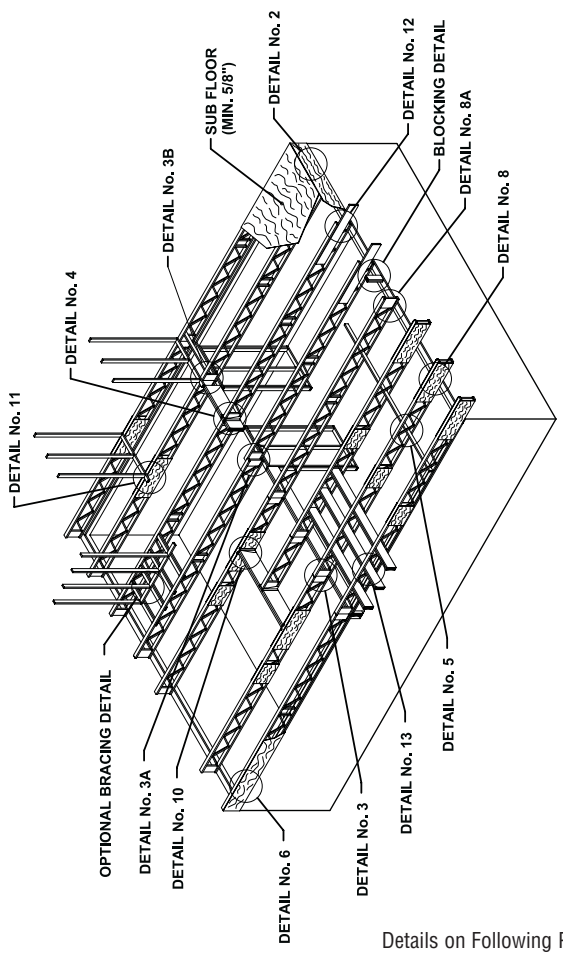
Cutting or notching chords and webs (other than normal end block trims) without prior approval from Open Joist Engineering will result in the assumption of liability for floor system defects and responsibility for the repair of such defects by the mechanic who performs the unauthorized cutting or altering. Care should be taken during truss layout to allow for adequate mechanical clearances so there will be no need to cut or notch trusses. Mechanicals sub-contractors should be made aware of these cautions.

Detail #17 below shows typical through-web clearances for mechanicals. In addition, Open Joist floor trusses feature a rectangular chase opening (size varies by truss size) located at the center of the truss.



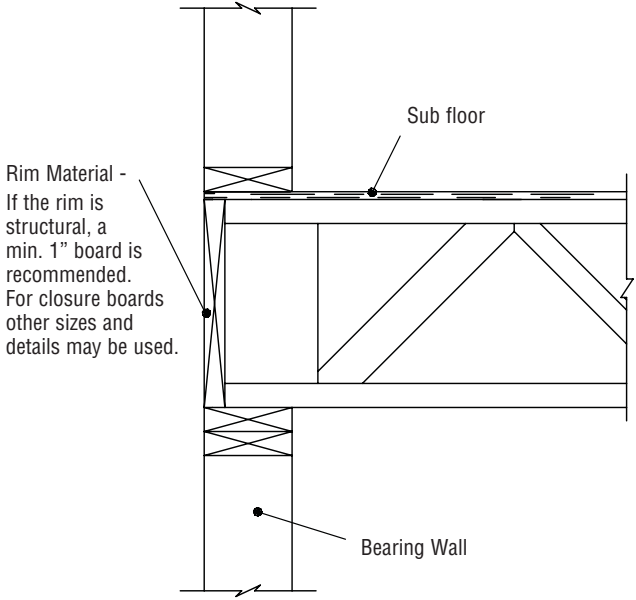
MECHANICAL SERVICE CLEARANCE
DETAIL NO. 17

FLOOR SYSTEM INSTALLATION DETAILS



Details on Following Pages.

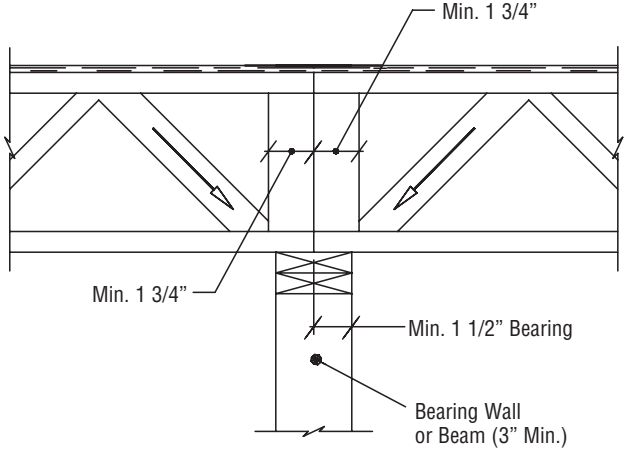
FLOOR SYSTEM DETAILS



- This detail is an illustration
- All material shall be sized per the project plans

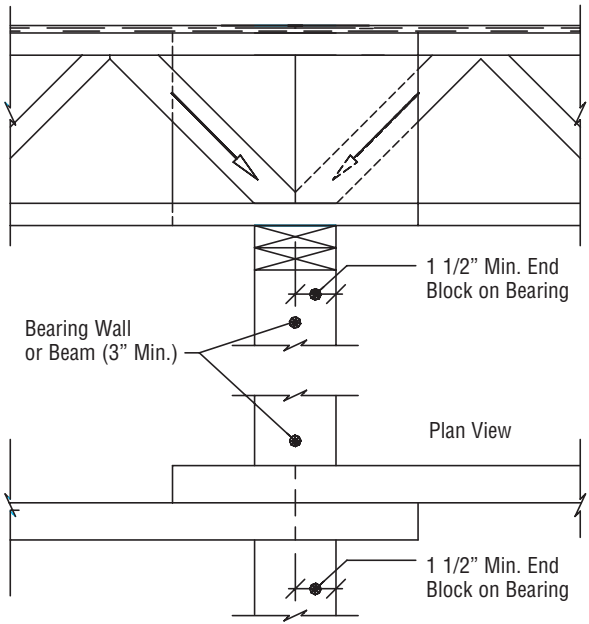
PERPENDICULAR JOIST ON END BEARING WALL

DETAIL NO. 2



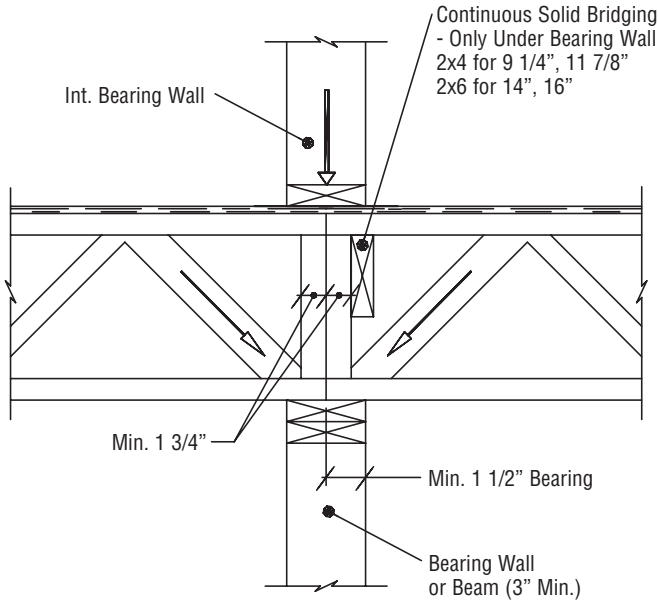
END-TO-END ON INTERIOR BEARING

DETAIL NO. 3



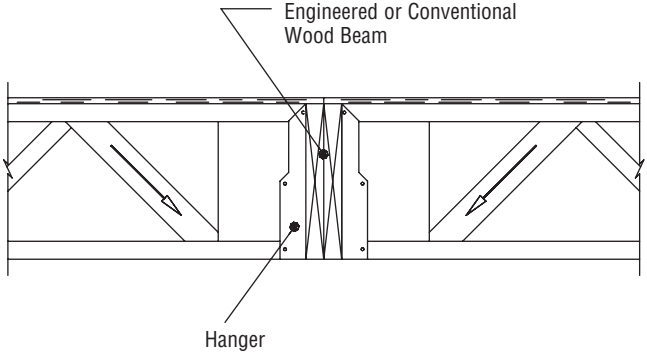
OVERLAPPING ON INTERIOR BEARING

DETAIL NO. 3A



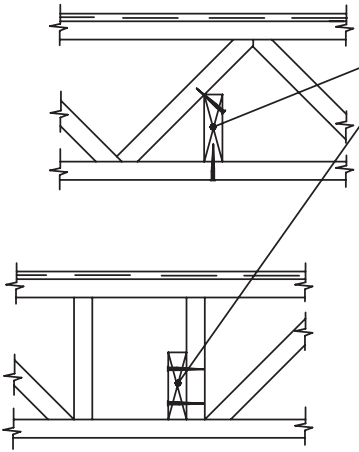
END-TO-END ON INTERIOR BEARING

DETAIL NO. 3B



JOIST TO WOOD BEAM WITH APPROPRIATE HANGER

DETAIL NO. 4



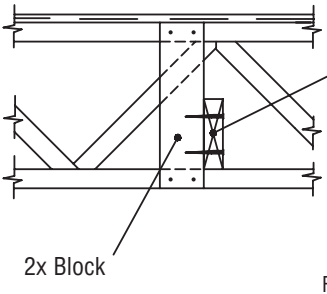
Continuous Strongback Bridging Recommended Every 7'-0" Nailed as Indicated With (2) 3" Nails.

Framer is Advised to Install and Nail All Strongbacks Before Installation of the Sub Floor.

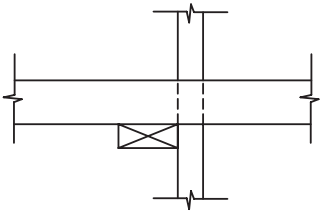
9 1/4" Joists - 2x4 Strongback
11 7/8" Joists - 2x4 Strongback
14" Joists - 2x6 Strongback
16" Joists - 2x6 Strongback

RECOMMENDED CONTINUOUS STRONGBACK BRIDGING

DETAIL NO. 5



Framer is Advised to Install and
Nail All Blocks and Strongbacks
Before Installation of the Sub Floor.

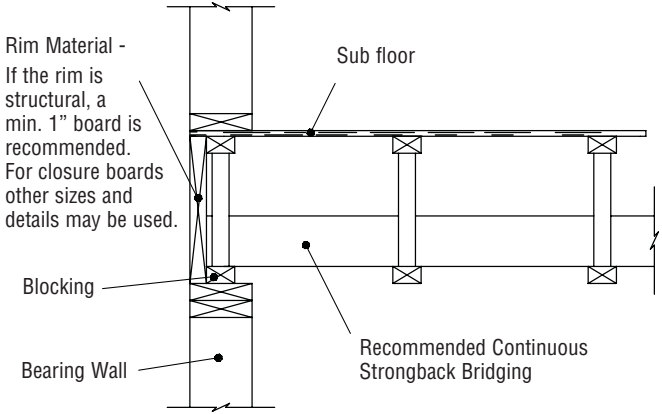


9 1/4" Joists - 2x4 Strongback
11 7/8" Joists - 2x4 Strongback
14" Joists - 2x6 Strongback
16" Joists - 2x6 Strongback

Plan View

RECOMMENDED CONTINUOUS STRONGBACK BRIDGING (ALTERNATE)

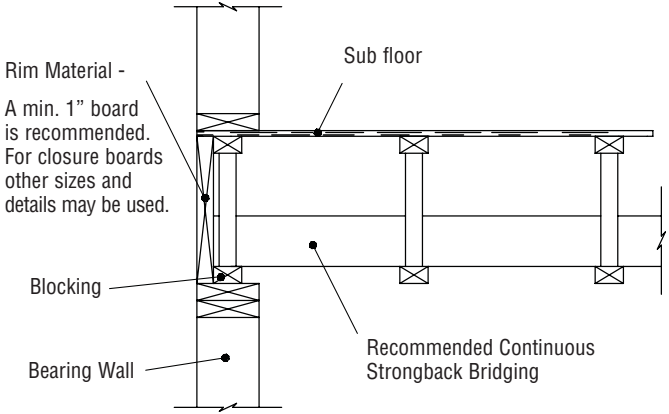
DETAIL NO. 5A



- This detail is an illustration
- All material shall be sized per the project plans

PARALLEL JOIST ON END BEARING WALL

DETAIL NO. 6

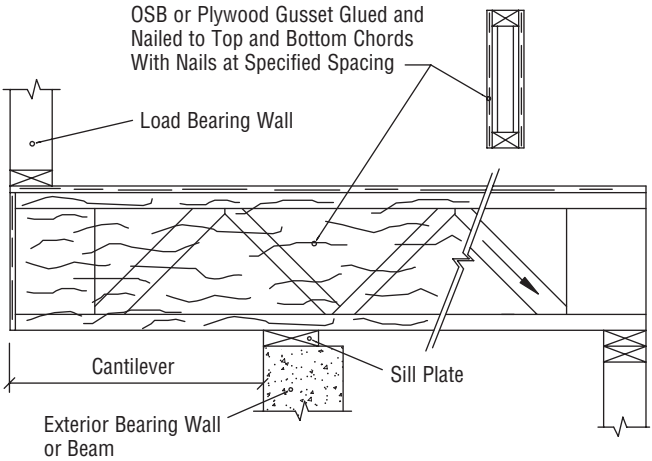


- This detail is an illustration
- All material shall be sized per the project plans

PARALLEL RIM ON END BEARING WALL

DETAIL NO. 6A

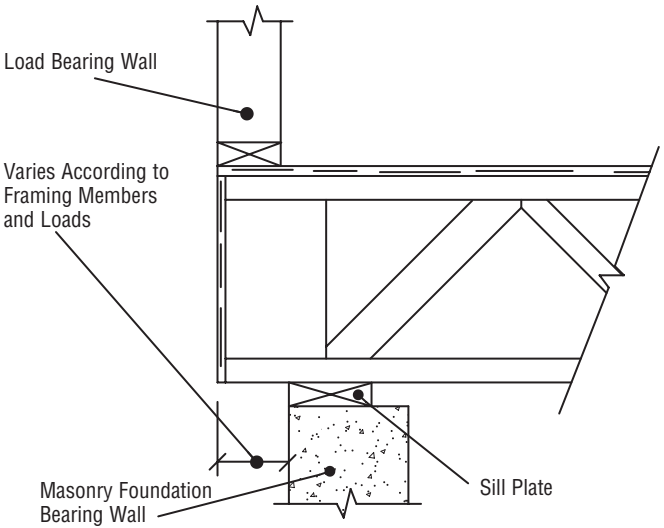
E*



E* Engineering required.
Engineered job drawings will specify gusset size and location and fastening.

CANTILEVERED SUPPORTING LOAD BEARING WALL
DETAIL NO. 8

E*

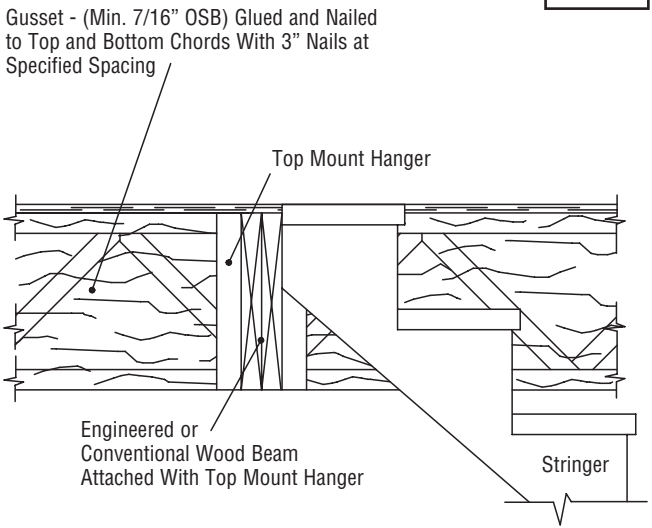


E* Engineering required.
Engineered job drawings will specify gusset size and location and fastening.

SHORT CANTILEVER WITHOUT REINFORCEMENT SUPPORTING LOAD BEARING WALL

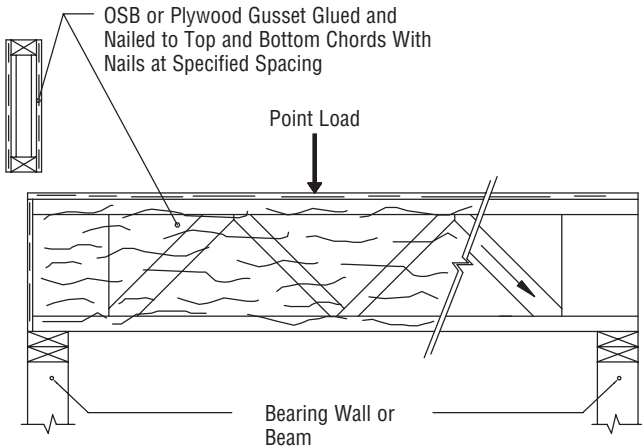
DETAIL NO. 8A

E*



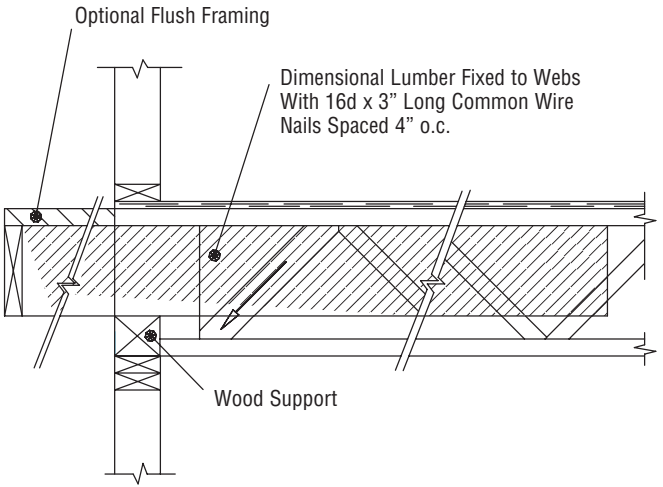
E* Engineering required.
Engineered job drawings will specify gusset size and location and fastening.

STAIR HEADER
DETAIL NO. 10



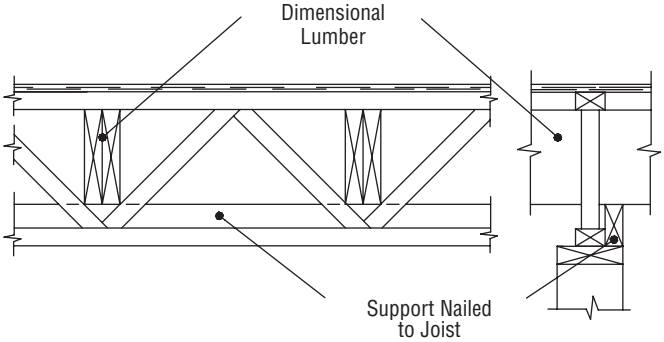
E* Engineering required.
Engineered job drawings will specify gusset size and location and fastening.

REINFORCEMENT FOR POINT LOAD
DETAIL NO. 11



NOTE: Cantilevered Dimensional Lumber must be engineered for load and deflection per applicable code.

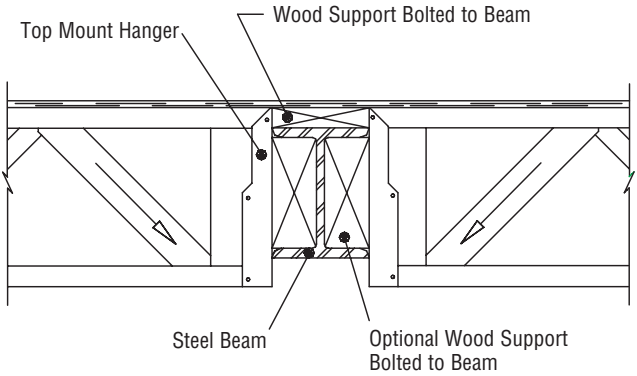
CANTILEVERED BALCONY OR PLATFORM
DETAIL NO. 12



NOTE: Cantilevered Dimensional Lumber must be engineered for load and deflection per applicable code.

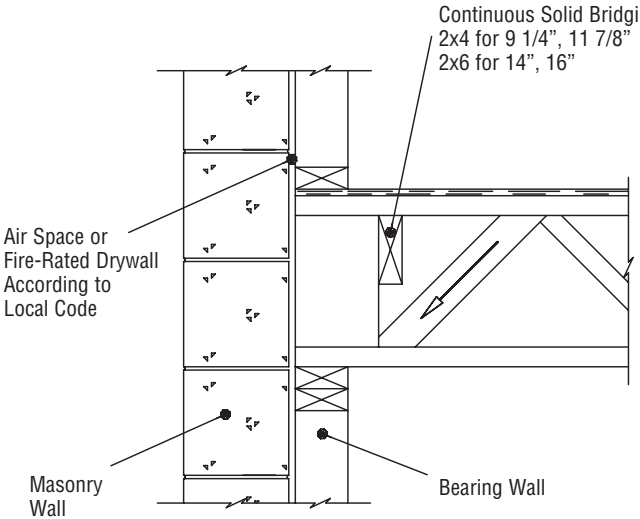
SOLID LUMBER CANTILEVER PERPENDICULAR TO Open Joist

DETAIL NO. 13



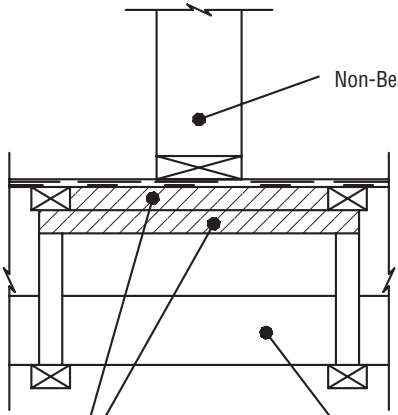
JOIST TO STEEL BEAM WITH APPROPRIATE HANGER

DETAIL NO. 15



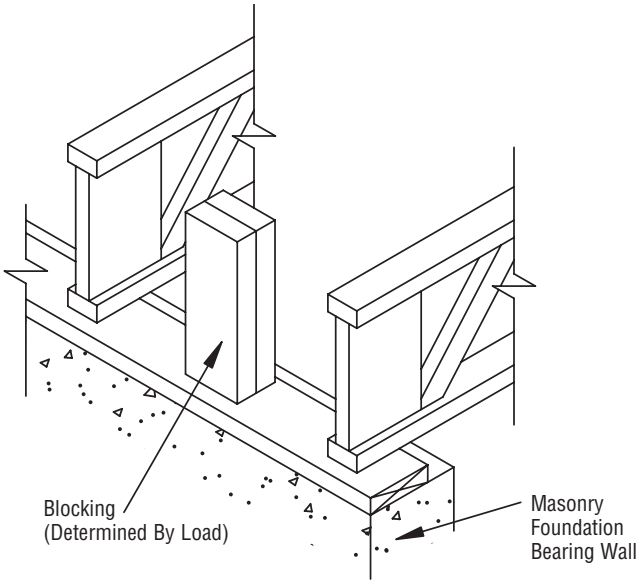
TYPICAL FIRE SEPARATION WALL

DETAIL NO. 16



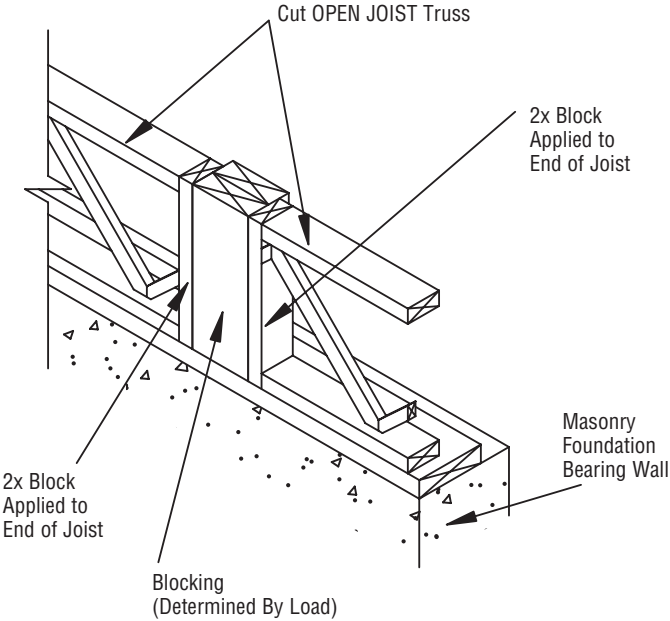
NON-BEARING WALL PARALLEL WITH JOISTS

OPTIONAL BRACING DETAIL



BLOCKING UNDER CONCENTRATED LOAD THAT FALLS BETWEEN JOISTS

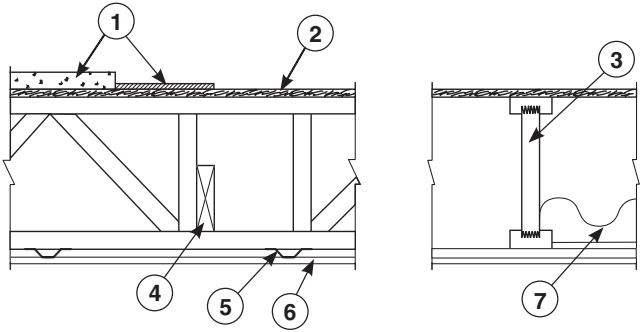
BLOCKING DETAIL



BLOCKING UNDER CONCENTRATED LOAD ON PARALLEL END WALL

BLOCKING DETAIL

ONE-HOUR FIRE ENDURANCE ASSEMBLY OJ/FCA 60/02



1. Topping: Optional. Can be lightweight or proprietary topping.
2. Sub-Flooring: Minimum 5/8" tongue-and-groove plywood or oriented strand-board (OSB).
3. Structural Members: Open Joist floor trusses from a minimum depth of 9-1/4" to a maximum depth of 16", installed up to 24" on center, maximum load design according to manufacturer L/480 load tables, with structural graded 3X2 or 4X2 chords per NLGA grading rules for Canadian Lumber or graded by an inspection bureau or agency approved by the United States Department of Commerce Board of Review of the American Lumber Standards Committee with chord sizes of 3X2 or 4X2. Structural members should bear the WHI certification mark.
4. Bridging: Continuous 2X4 lumber nailed to the bottom chord and the sides of the diagonals with 3" long nails.
5. Resilient Channel: (Optional – for acoustic performance only.) Rigid steel furring channels (inverted hat-type) spaced 16" on center and attached to the bottom chord by means of 2 Type W screws. Channels overlap on 10" at the end and are attached to each other by a 1-1/4" Type S screw.
6. Gypsum Board: 1 layer of 5/8" Type X. Long edges located between joists perpendicular to the resilient channels. Short edges are staggered by 4 feet. Sheets are fastened to the resilient channels by means of 1-1/2" Type S screws located 1-1/2" away from the edge and 3" from the long edges. Screws are spaced 6" on center. Joints are taped and finished with 2 layers of compound.
7. Insulation: Insulation material is optional for acoustic and/or thermal protection.

Results obtained from tests performed by Inchcape Testing Services NA Ltd-Warnock Hersey in accordance with ASTM E-119, CAN/ULC S-101 and UL-263.

CODE APPROVALS AND CERTIFICATION

Model Building Code Acceptance

Open Joist is accredited by International Code Council Evaluation Service Report Number ESR-1035 and is in compliance with the following codes: 2006 International Building Code (IBC), 2006 International Residential Code (IRC), BOCA National Building Code/1999 (BNBC), 1999 Standard Building Code (SBC), and the 1997 Uniform Building Code (UBC). Open Joist is accredited by the City of Los Angeles (RR#25376 and RR#25584), New York City (MEA#300-00-E), the city of Houston (#434B); and the state of Florida (FL#5828). Open Joist is certified by Canadian report #CCMC 12118R and is in compliance with Part 4 and Part 9 of the National Building Code of Canada 1995, the Ontario Building Code 1995; and CAN/CSA-086. 1-M94 standards for limit state design and controlled vibration standards. Code approval reports available at www.openjoist.com.

Universal Forest Products is a member of the Wood Truss Council of America.

Third Party Certification

Intertek Testing Services, which uses the Warnock Hersey certification mark for engineered wood products, is the independent evaluation/ testing agency for certification of Open Joist's manufacturing process.

NOTES

OPEN JOIST™

WHERE SPEED MEETS STRENGTH

Universal Forest Products

Open Joist

www.openjoist.com

The diagrams and instructions in this brochure are for illustration purposes only and are not meant to replace the work of a licensed professional. Any construction or use of the product must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in a written limited warranty supplied by Universal Forest Products ("Universal"), Universal does not provide any other warranty, either express or implied. Universal shall not be liable for any damages, including special, incidental or consequential damages which may result from the installation of this product. Installer and/or end user should not exceed load capacities. Universal makes no warranty as to design of wall and roof loads, and all loads should be verified by a licensed professional.

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