

The following details provide several common joint configurations utilizing the Timberlinx connectors. These details are intended to provide some possible uses to meet your specific requirements. It is important to study all of these details, as some components of each may be combined into the Ultimate connection for your specific use.

The capacity of each joint configuration can vary depending on joint configuration, load durations, and material types. Some guidance as to what to look out for is provided for the standard connections. Consult with your design professional in regards to your specific application.

Detail #	Description
TX1	Beam to Post
	<p>The standard timberlinx connection where two members are directly connected.</p> <p>Joint Capacity</p> <p>Tension – Allowable capacity of Timberlinx Connector  Compression – Allowable bearing capacity of the post side-grain  Shear – Allowable dowel bearing capacity of Timberlinx tube</p>
TX2	Stub Tenoned Beam to Post
	<p>Similar to the standard connection, but with the inclusion of a stub tenon to increase the shear capacity of the joint and provide some rotational restraint of the beam member.</p> <p>Joint Capacity</p> <p>Tension – Allowable capacity of Timberlinx Connector  Compression – Allowable bearing capacity of the post side-grain  Shear – Minimum of:  Allowable bearing capacity of stub tenon side-grain  Allowable horizontal shear capacity of notched beam</p>

### TX3 Fully Housed Beam to Post

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Similar to the standard and stub tenoned connection, but with the beam fully housed. This increases the joint shear capacity by increasing the bearing areas and eliminated a notched beam in shear. The fabrication of a fully housed beam is also simplified compared to that of a stub tenoned one.

#### Joint Capacity

Tension – Allowable capacity of Timberlinx Connector

Compression – Allowable bearing capacity of the post side-grain

Shear – Minimum of:

Allowable bearing capacity of beam side-grain

Allowable horizontal shear capacity of unnotched beam

### TX4 Beam to Post w/ Threaded Rod

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A threaded rod can be used in conjunction with a half Timberlinx connector. Use of this joint can reduce tension perpendicular to the grain, which is especially useful near post ends. It can also increase the allowable tension capacity and stiffness of the Timberlinx by eliminating the pin bearing on side-grain.

#### Joint Capacity

Tension – Minimum of:

Allowable capacity of Timberlinx Connector

Allowable bearing capacity of washer

Compression – Allowable bearing capacity of the post side-grain

Shear – Minimum of:

Allowable bearing capacity of beam side-grain

Allowable dowel bearing capacity of tube

### TX5 Beam to Post w/ Threaded Rod Version 2

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While a normal A475 can be set deeper to get additional end distance, use of a an A675 allows you to get a full 7 diameters of edge distance and have the tube cross through the shear plane between the connected members. This provides an increase in the shear strength over just the 7/8" diameter threaded rod.

#### TX6 Post / Plate Lap

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Rather than using a time consuming scarf joint, a pair of Timberlinx can be used to connect a plate over a post. A Timberlinx provides a positive tension in the top plate to resist any drag forces caused by lateral loading. A Timberlinx also provides a very positive high capacity uplift connection of the plate to the post.

#### TX7 Post / Plate Lap at Corner

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Timberlinx can be used to connect plates at corners over posts as well, which can greatly reduce joinery congestion compared the traditional mortise and tenon equivalents.

#### TX8 Knee Brace to Post

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A Timberlinx installed from a post to knee brace (or other sloped member) provides a positive connection, and, higher capacity results than a standard mortise and tenon joint in tension, allowing the knee brace to be more efficient in carrying both tension in compression, especially when coupled with a housed or stub-tenon connection. Inserting the Timberlinx square to the faces allows for use of the drilling jig without making any adjustments.

When calculating Joint Capacity, make sure axial forces in the knee brace are converted to resultant shear and tension/compression forces in the Timberlinx.

#### TX9 Collar Tie to Rafter

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Similar in function to the knee brace to post connection, this utilizes the Timberlinx tube oriented with the axial forces of the connected member. This effectively eliminates the shear component of the resultant forces, making for a much stiffer and possibly stronger connection. The capacity of the Timberlinx when loaded neither parallel to grain nor perpendicular to the grain (Such as in the rafter) can be conservatively assumed to be the perpendicular to grain capacity. A more exact approach can be determined using the Hankinson Formula.

#### TX10      Tension Rod to Connector

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By using a threaded rod to connect two half Timberlinx, the possibilities of joint configuration are nearly endless. By adjusting the length of the threaded rod, custom length Timberlinx can be developed, from just a few inches to many feet (such as a tension rod in a truss). The use of a threaded rod also allows for more leeway in connection members that are not quite true, as the Timberlinx pins do not need to be exactly parallel or perpendicular.

#### TX11      Post to Concrete Slab

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The day of imbedded knife plates and unsightly bolt-on hold-downs are over. A half Timberlinx in conjunction with your choice of concrete anchor can result in a concealed connector that has superior uplift results. Add a shear plate to the bottom of the post, and, you can't go wrong.

#### TX12      Rafter to Plate

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Rather than use disagreeable looking metal hurricane straps and other formed steel brackets to provide uplift and shear resistance, a concealed Timberlinx can be used. The Timberlinx can come with the pin holes at right angles to each other, allowing for easy drilling and installation. The capacity of these right-angle pinned Timberlinx is the same as the parallel pinned versions.

#### TX13      Rafters Through Ridge

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A set of rafters through a ridge can be securely installed with a longer Timberlinx. Increasing the shear capacity of the rafter to ridge beam can be accomplished by using a 4" diameter split ring.

#### TX14      Truss Heel Joint

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A heel joint of a truss is always a crucial connection. Traditional heel joints are extremely strong, but require clamping action to ensure the joint stays tight. A Timberlinx is a prime candidate for this, as it provides a higher clamping force with the removal of a minimal amount of material at this critical joint.

#### TX15      King Post w/ Interrupted Collar Tie

A common sight is a king post interrupting a heavily loaded collar tie of a truss. Rather than use side plates or long hidden splines, a Timberlinx can be used to bridge this connection. This results in an extremely stiff joint as the tension load is bypassed through the kingpost.

#### TX16      Two-Way Connection

A pair of timbers connecting into a post is a common connection in the timber world. So much so, Timberlinx has several sizes of Timberlinx available to take common post sizes into account.

#### TX17      Four-Way Connection

Traditional four way connections in a timber structures result in a greatly reduced cross section. Not only do the timbers need housed, but the splines and tenons further reduce the post. Using a pair of Timberlinx easily replaces the use of high and low splines. The result is a stronger, more concealed joint that installed in a much shorter time.

#### TX18      Pin Location Detail

Note that the center of the Timberlinx pin is not in the center of the pin hole drilled into the timber. The hole drilled into the timber is larger to allow for easy assembly of the joint and to make room for the patented expansion characteristics of the pin.

# TIMBERLINX STANDARD DETAILS

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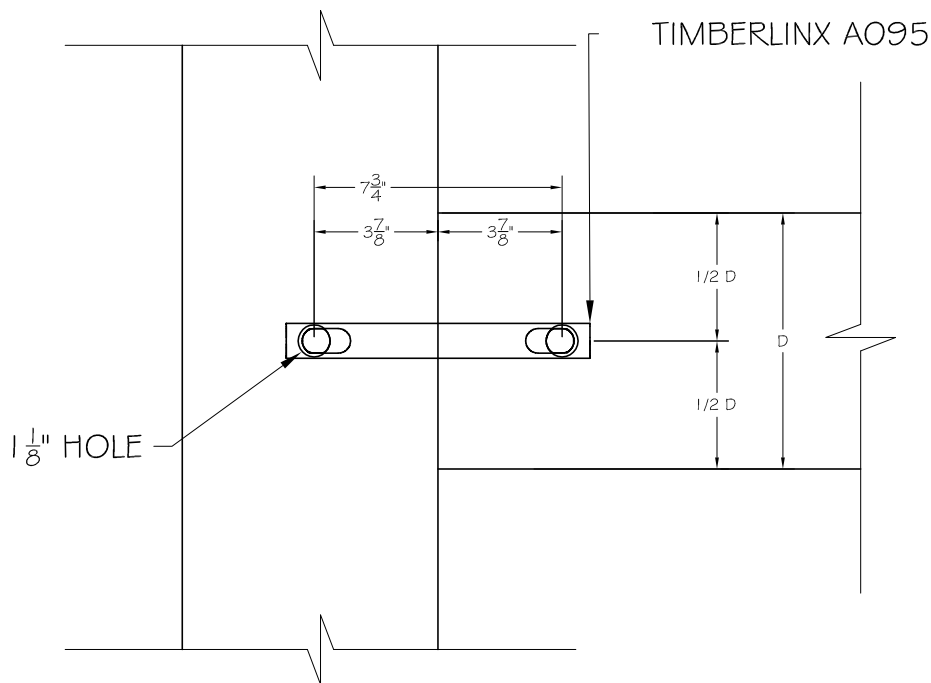
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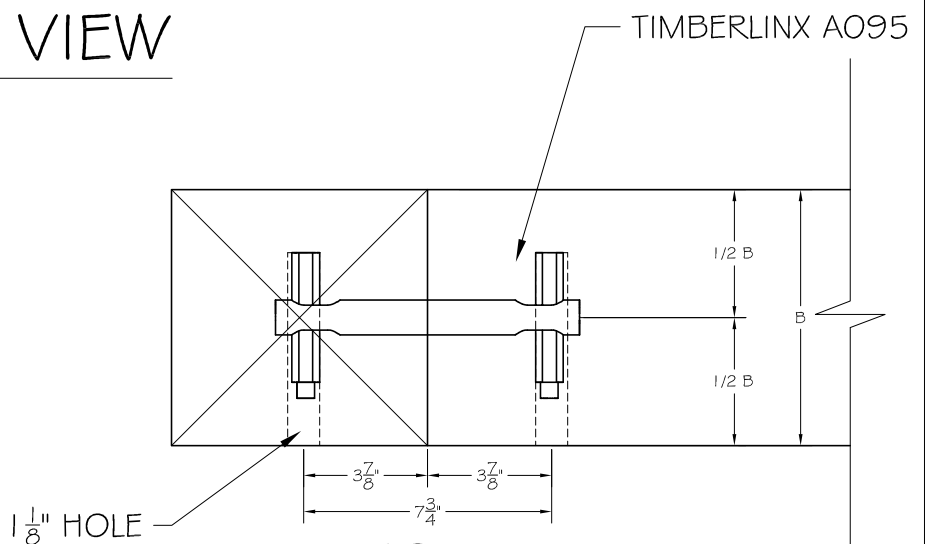
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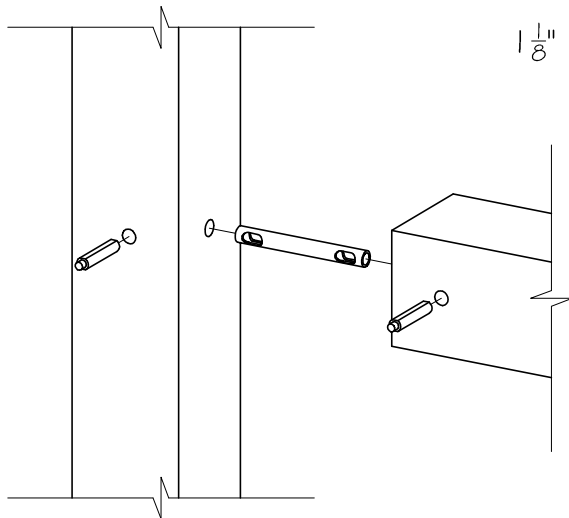
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SIDE VIEW



TOP VIEW



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BEAM TO POST

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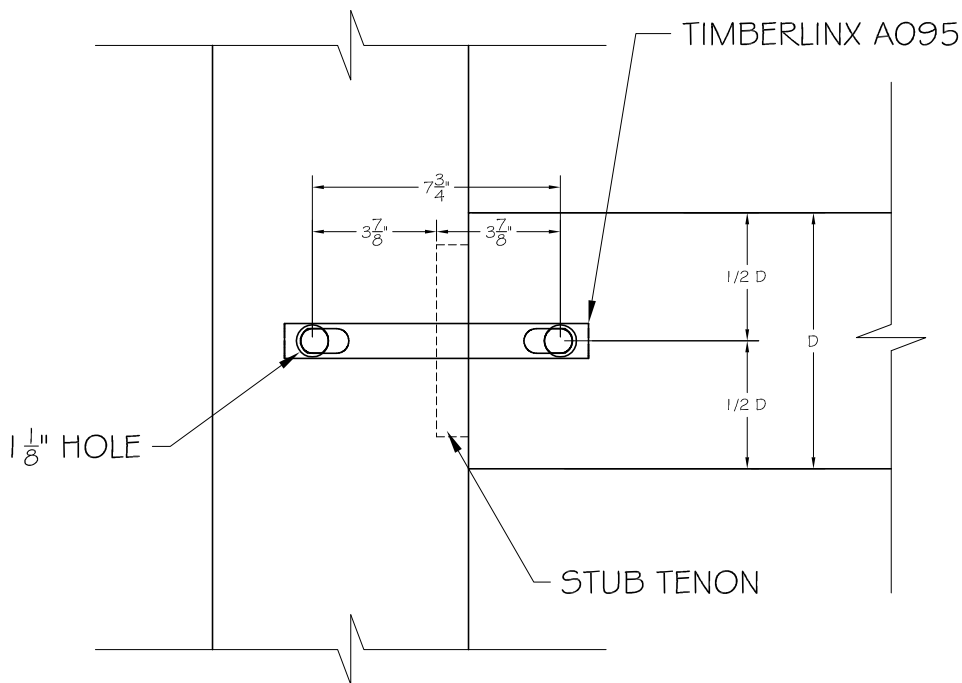
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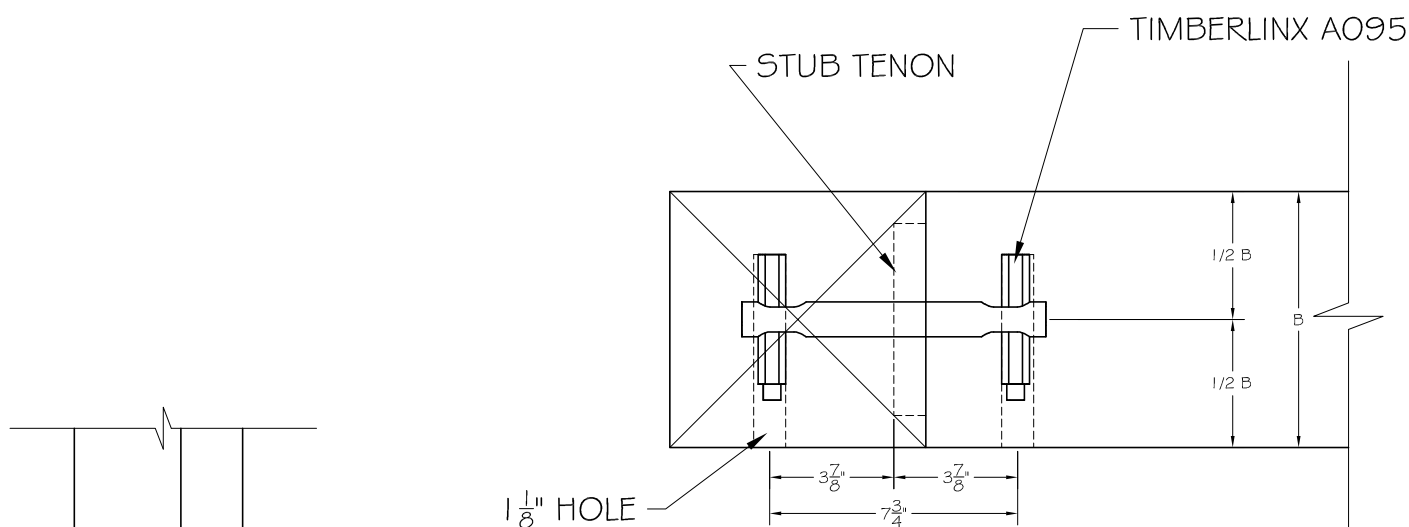
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TX 1



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STUB TENONED BEAM TO POST

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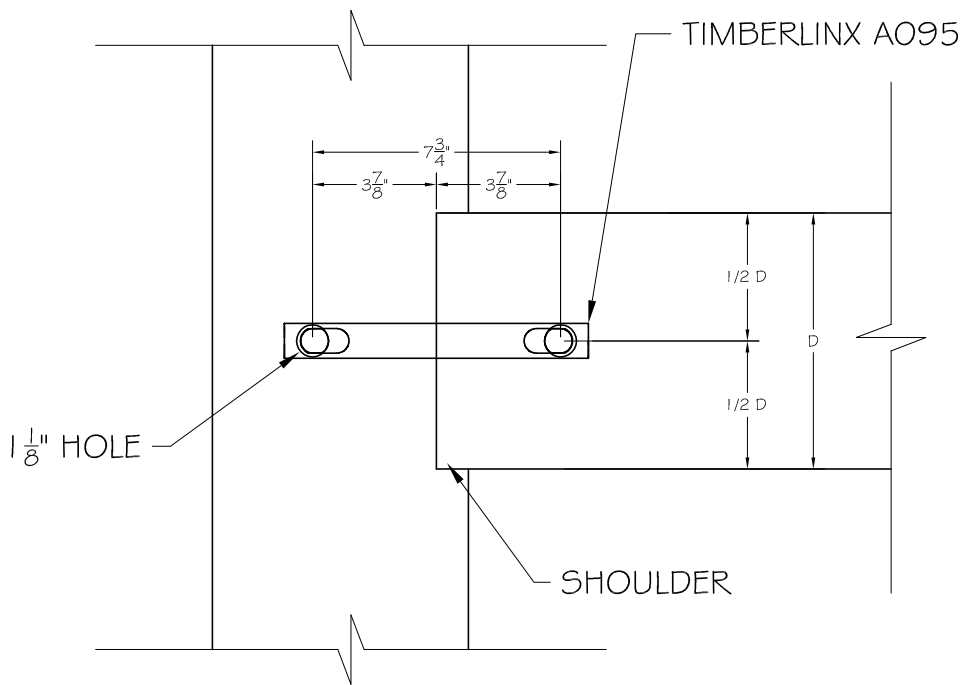
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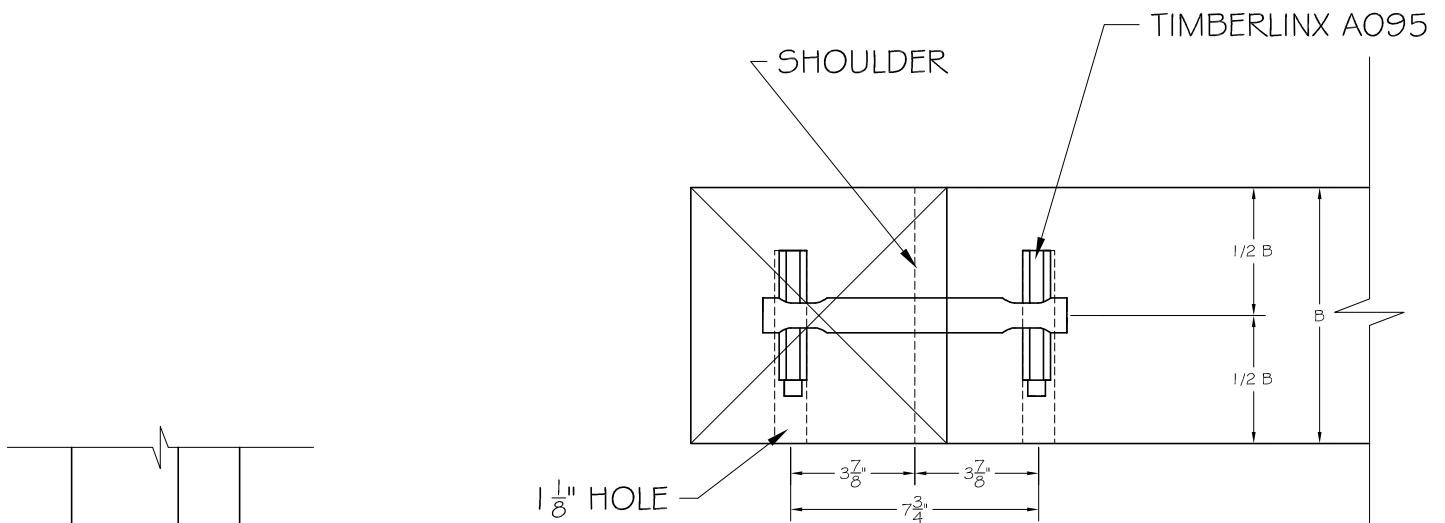
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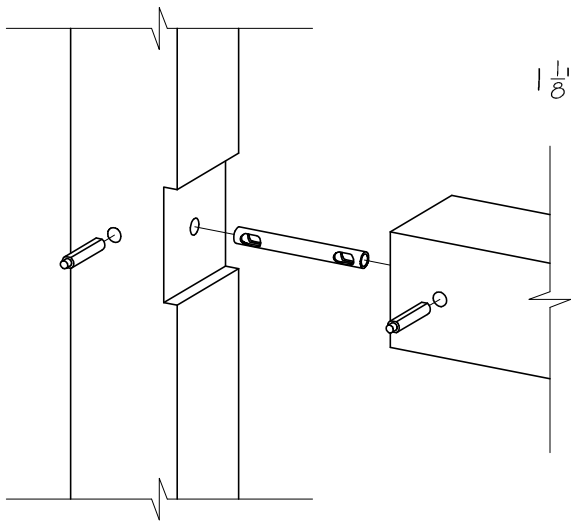




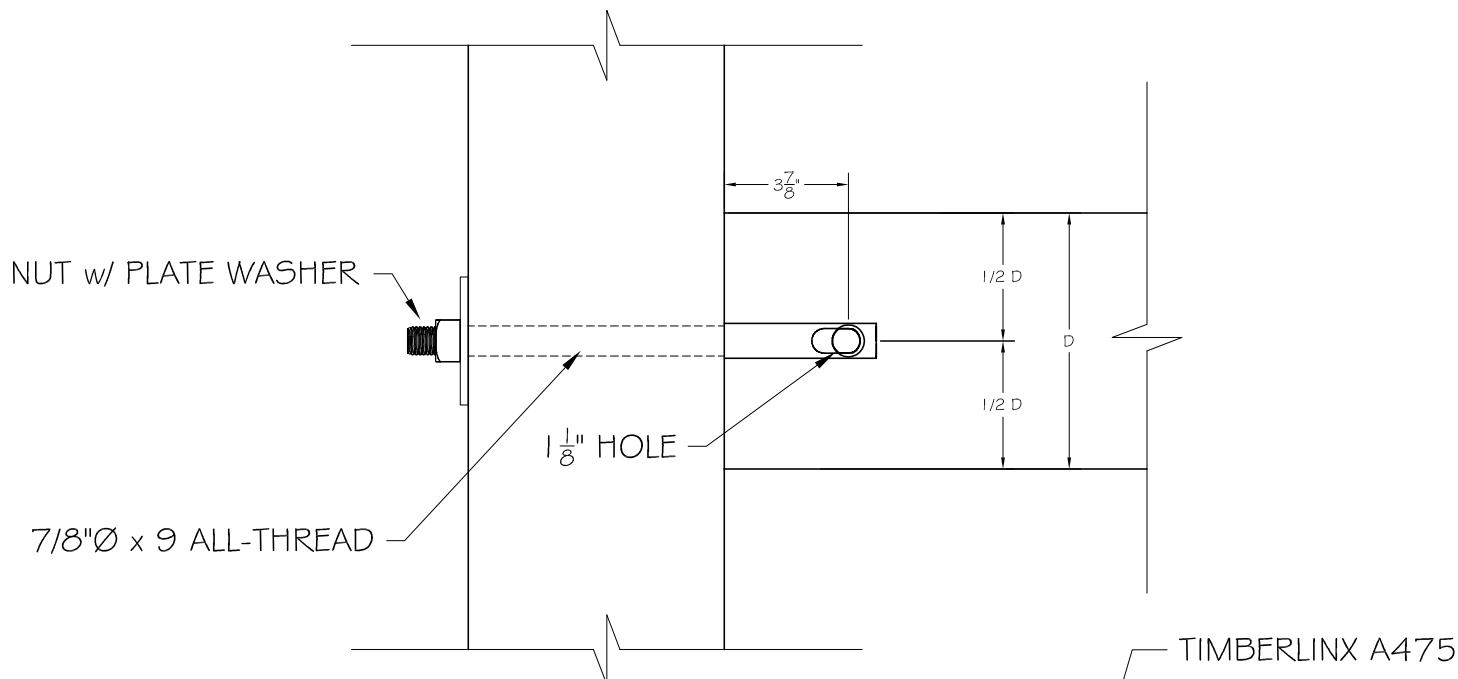
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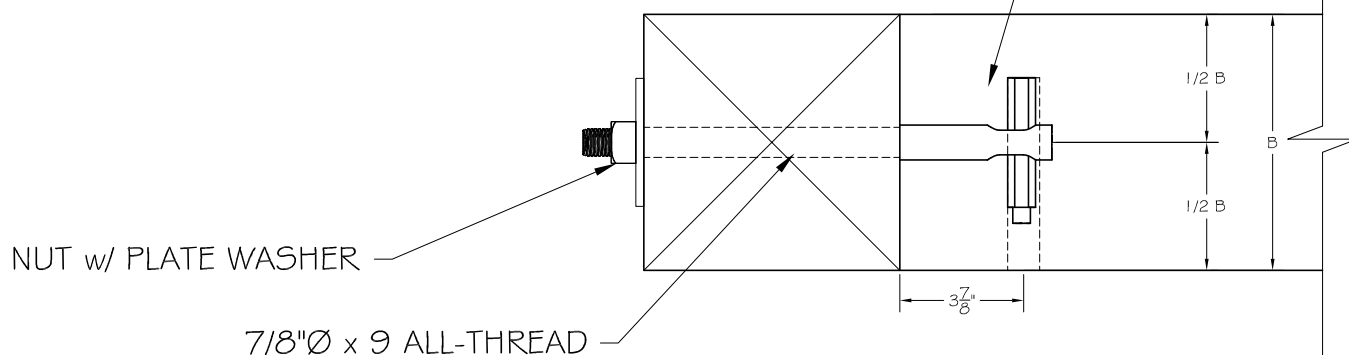
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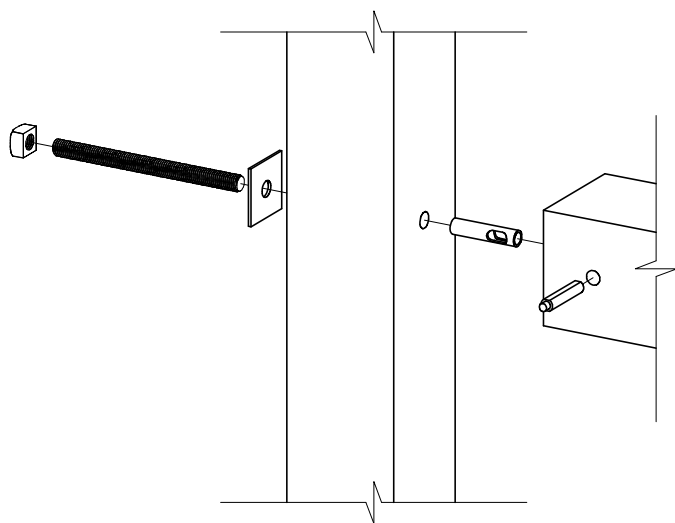
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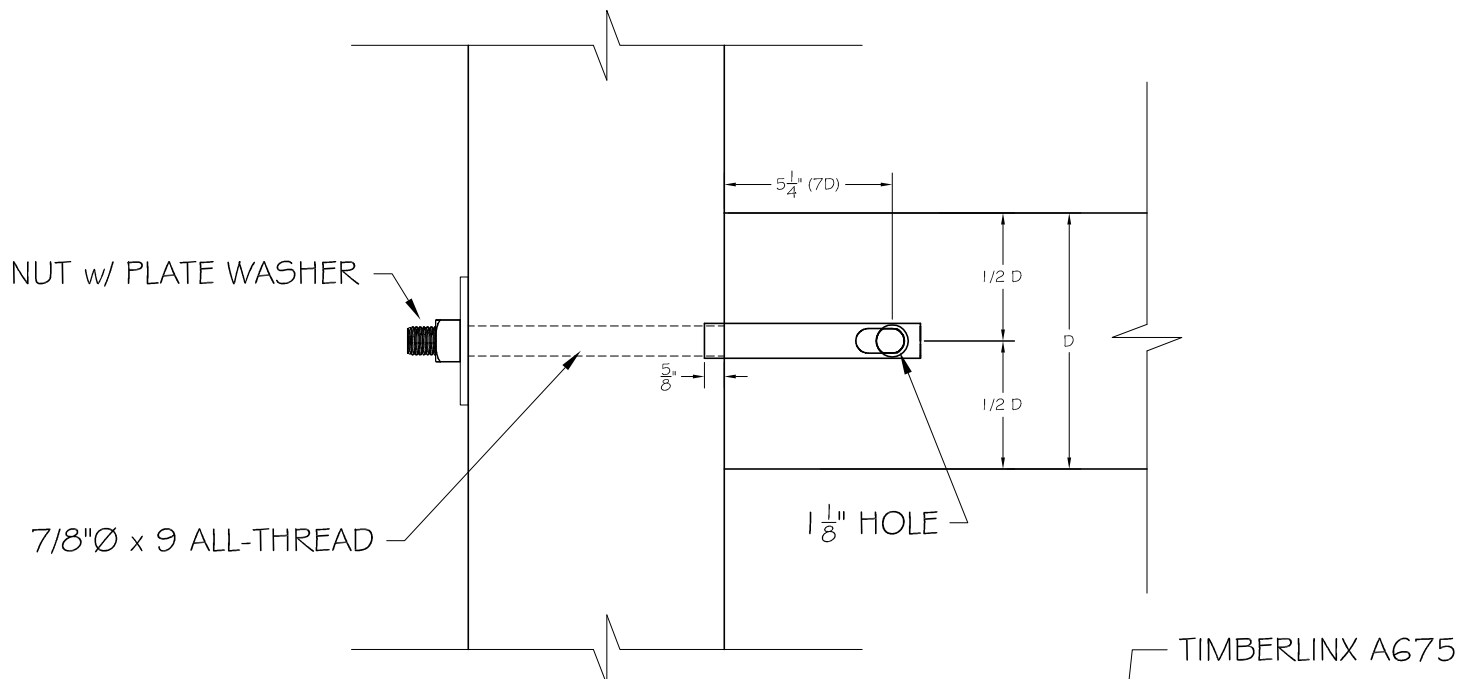
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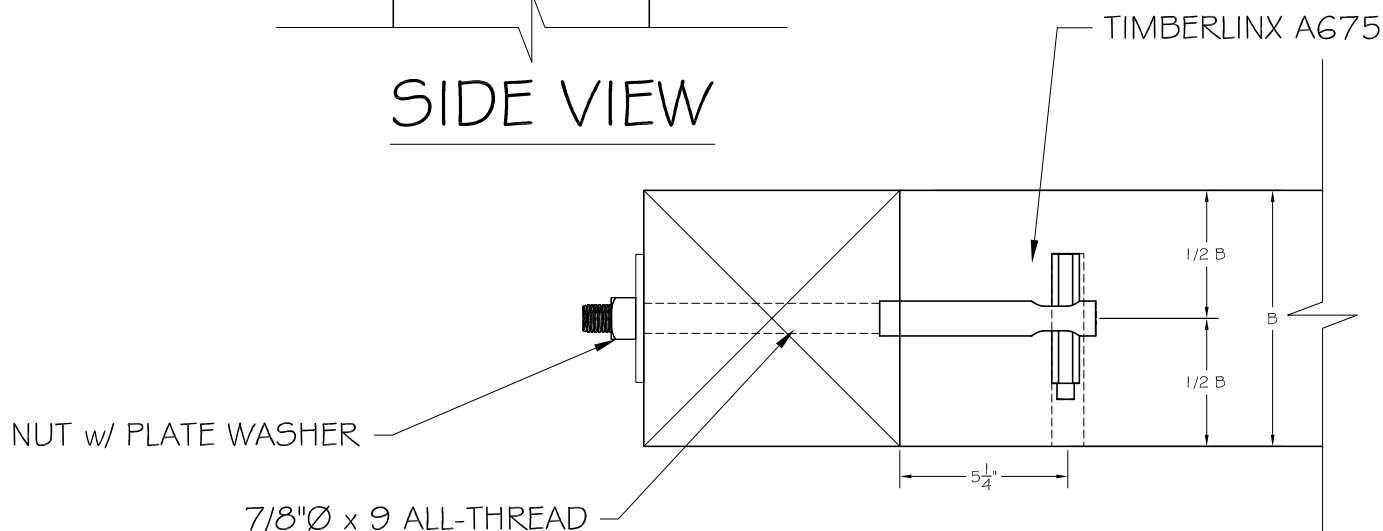
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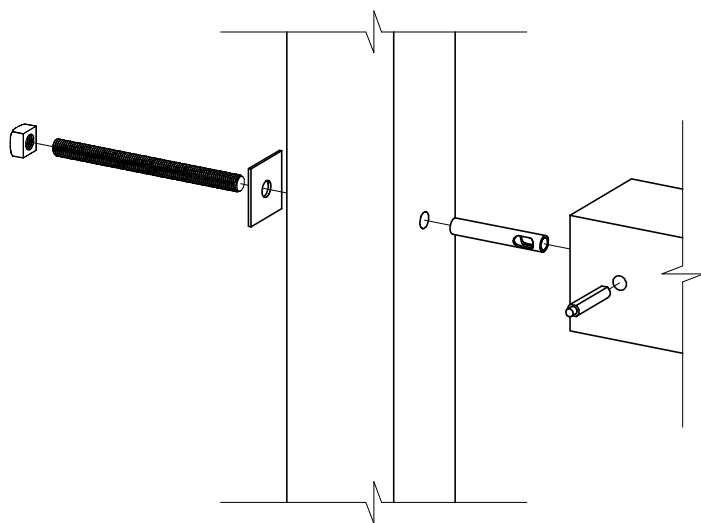
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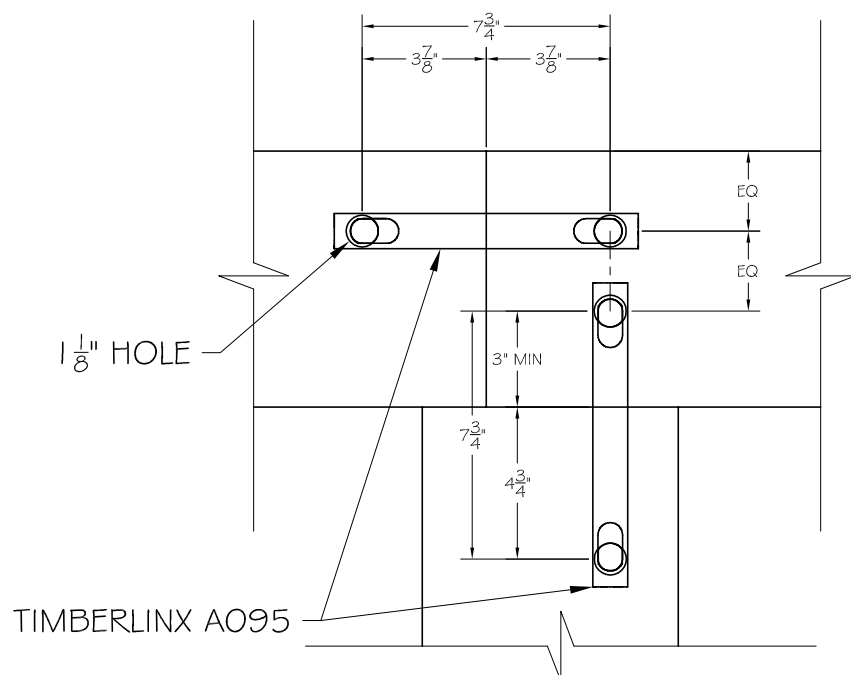
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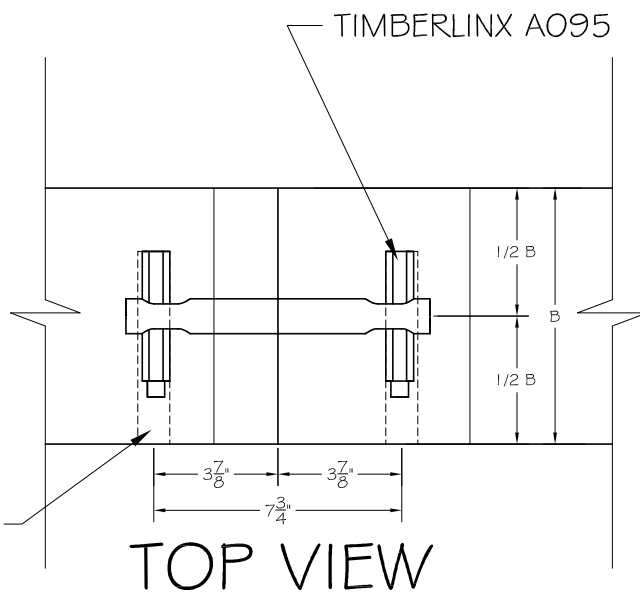
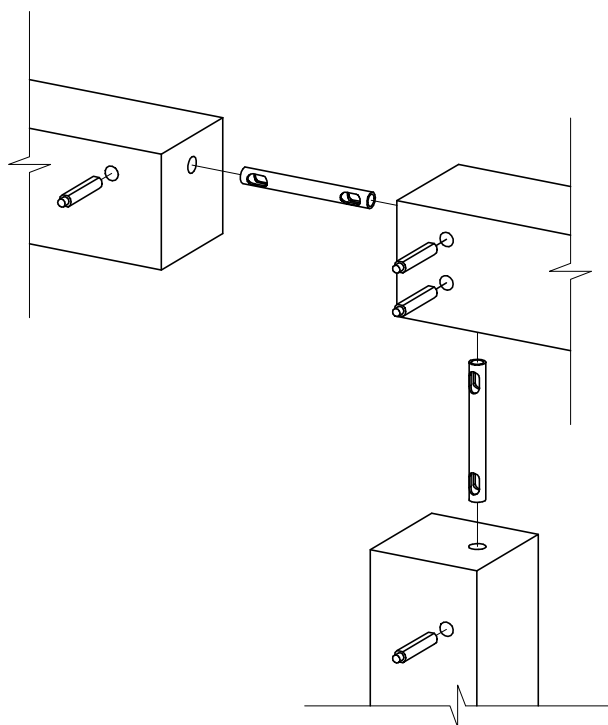
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POST / PLATE LAP

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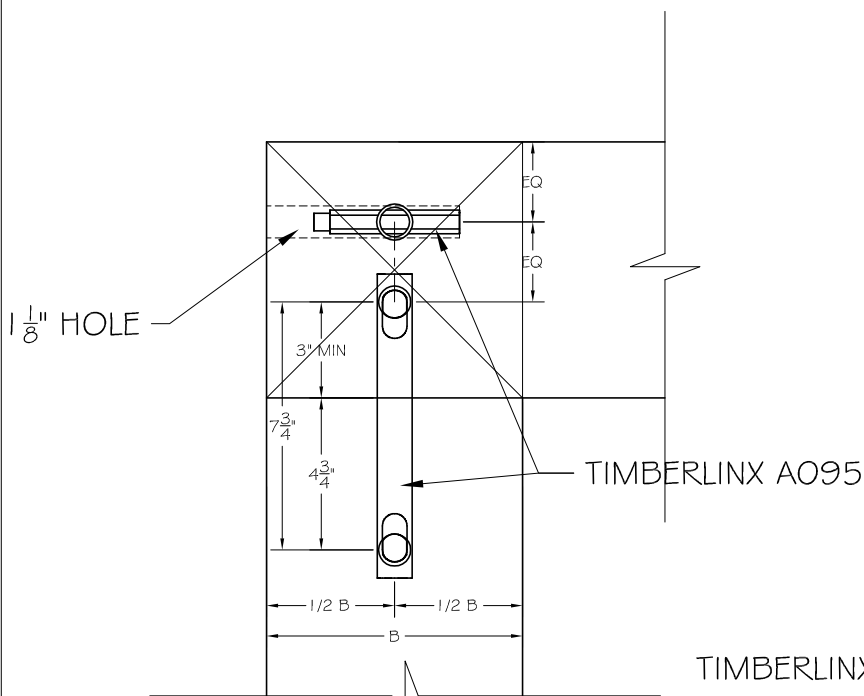
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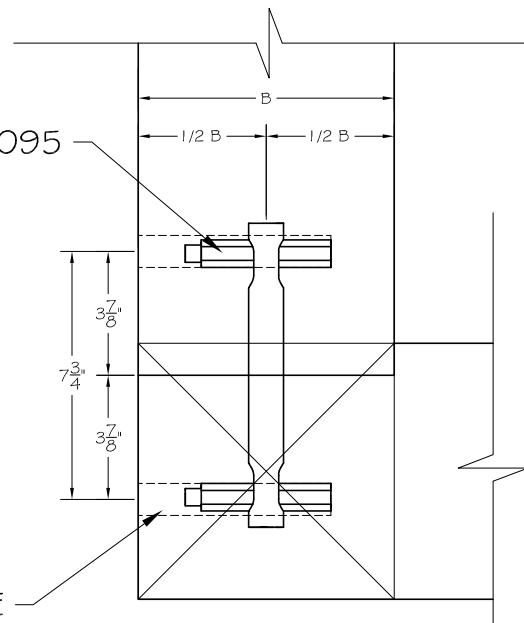
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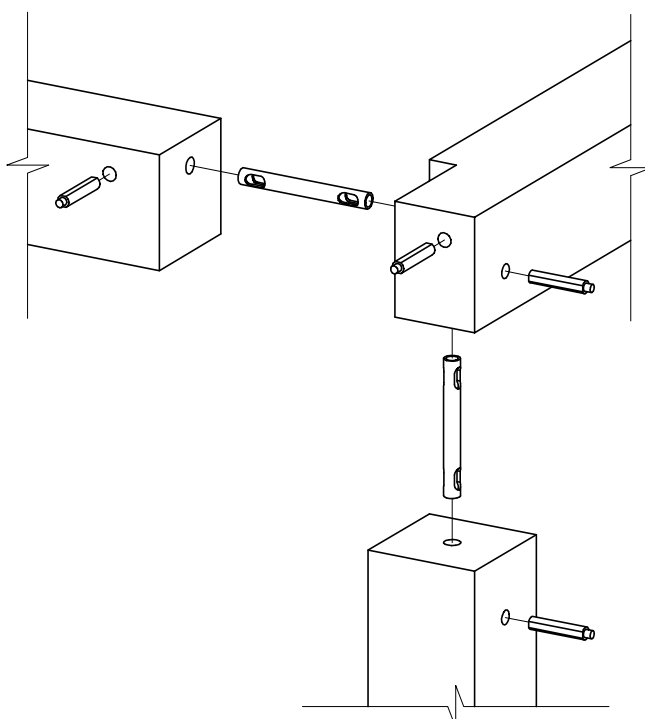


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POST / PLATE LAP AT CORNER

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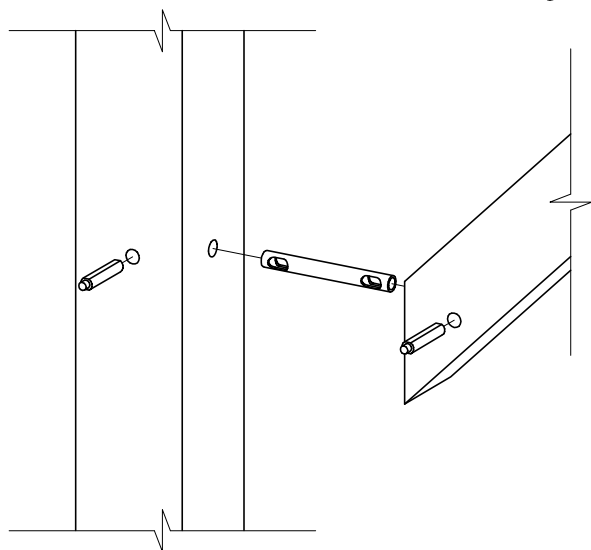
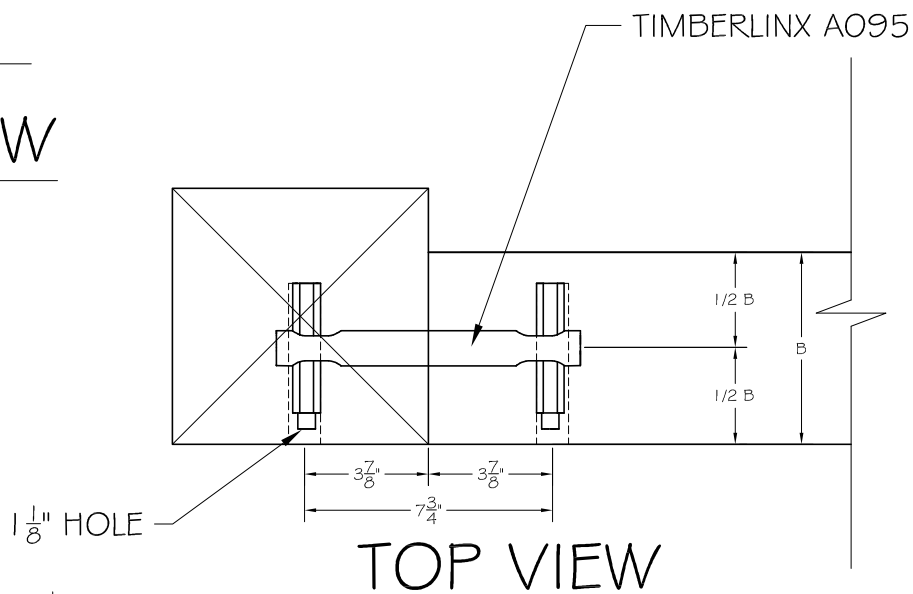
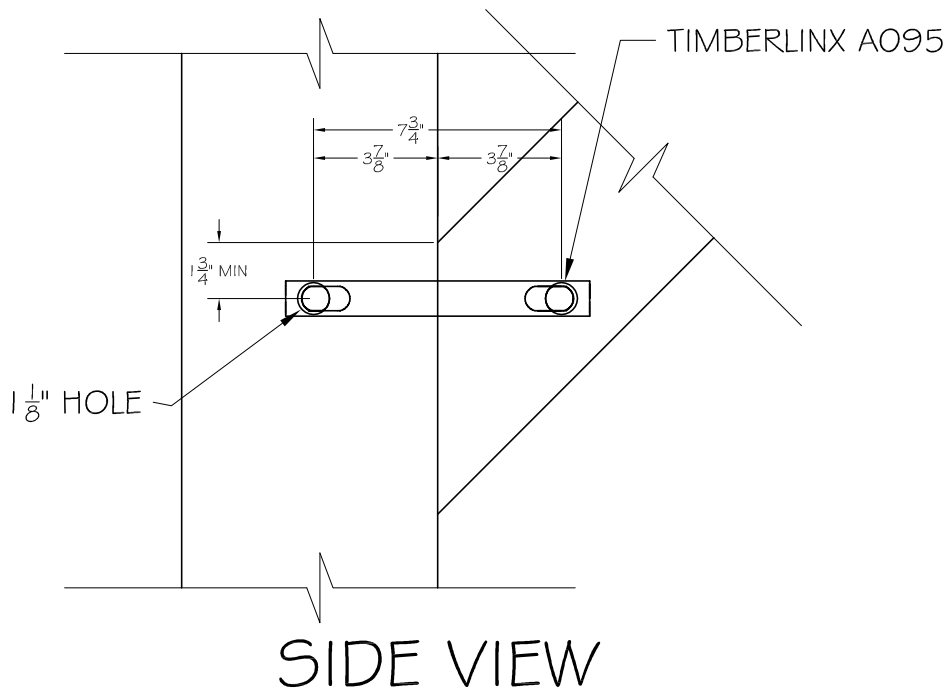
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KNEE BRACE TO POST

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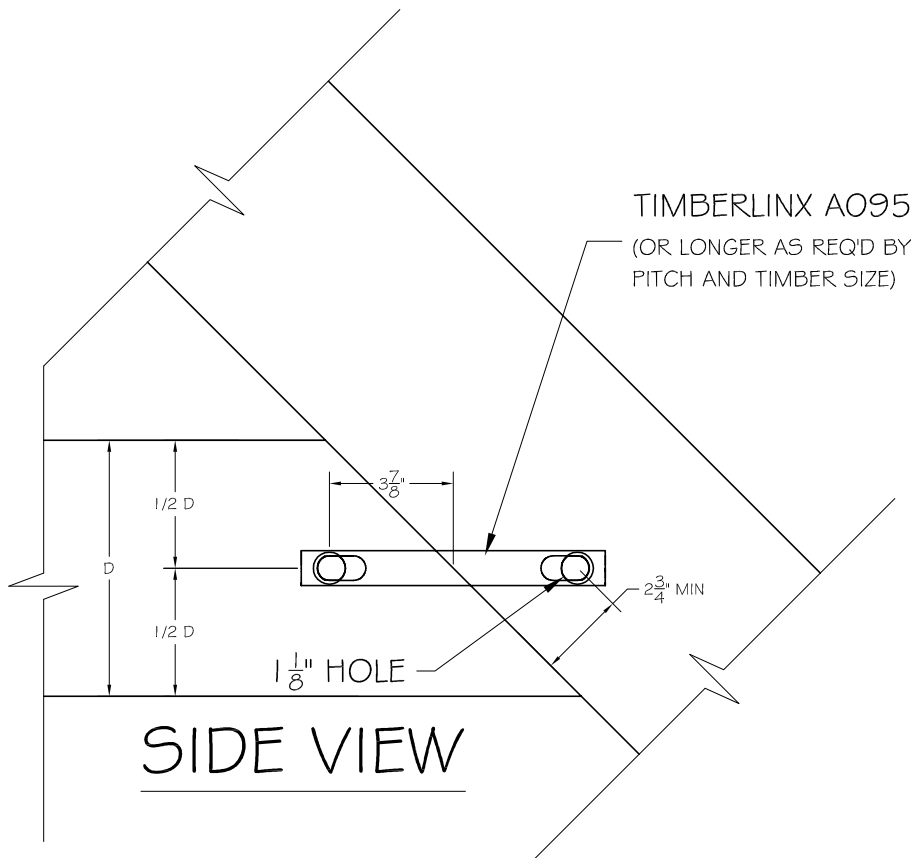
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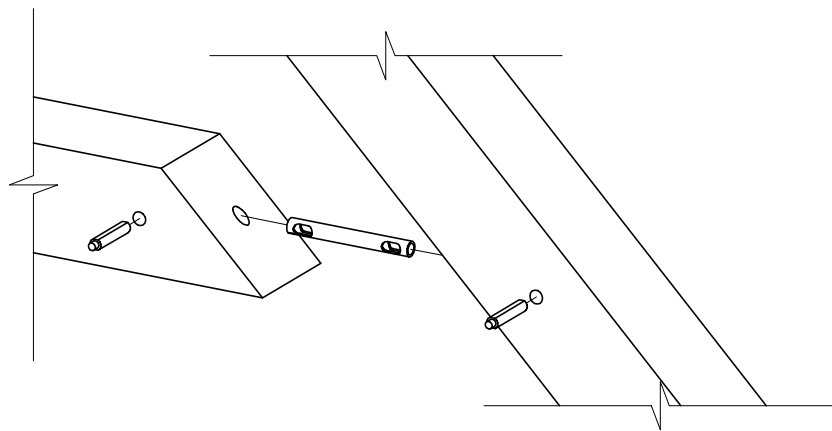
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COLLAR TIE TO RAFTER

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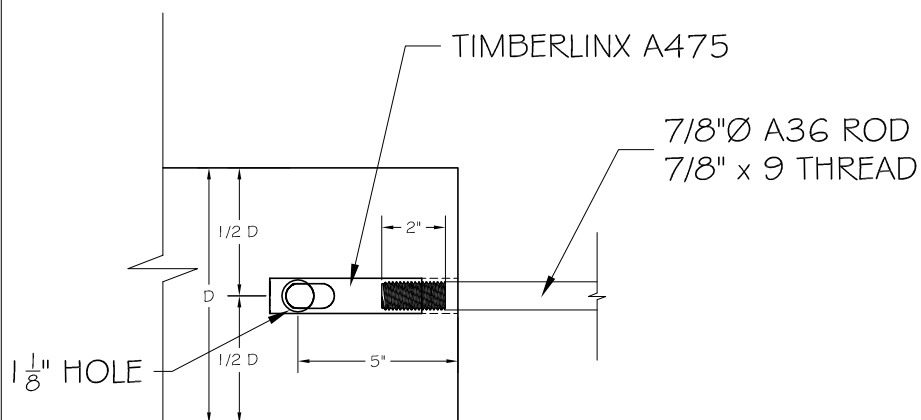
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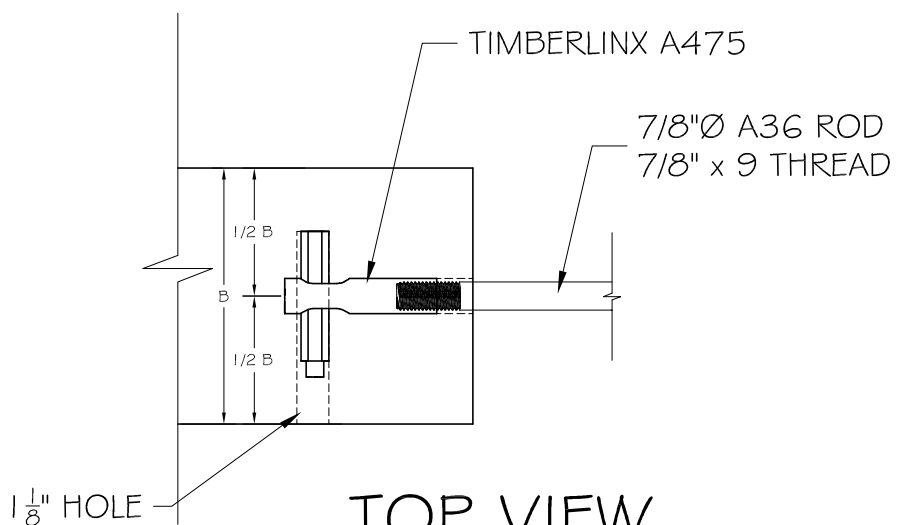
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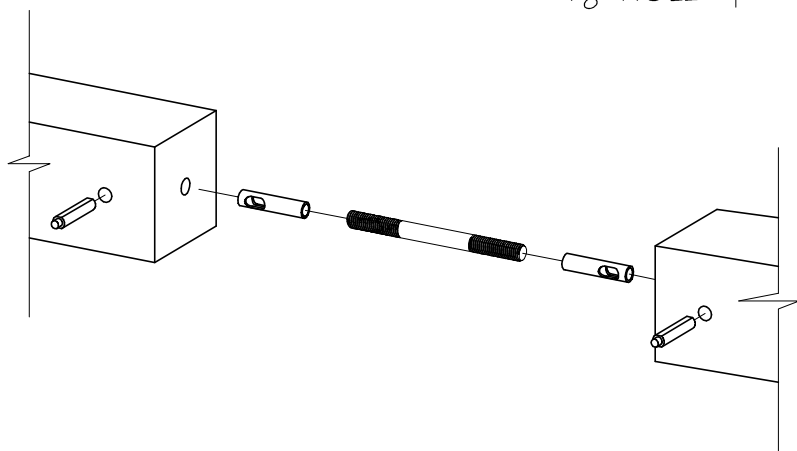
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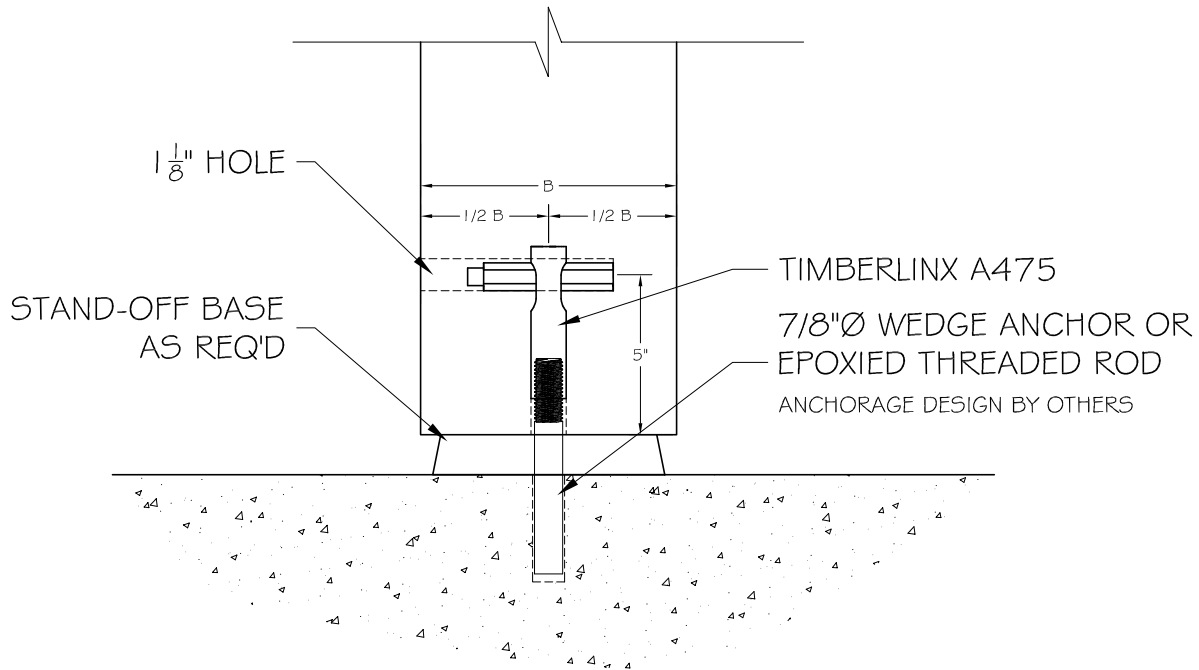


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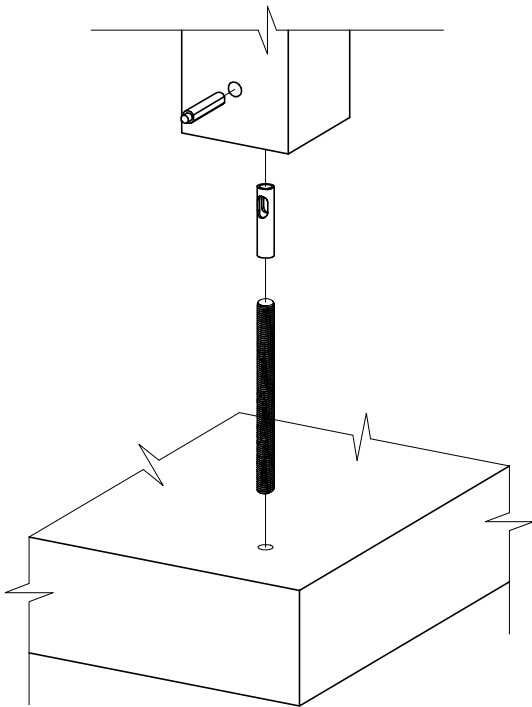


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POST TO CONCRETE SLAB

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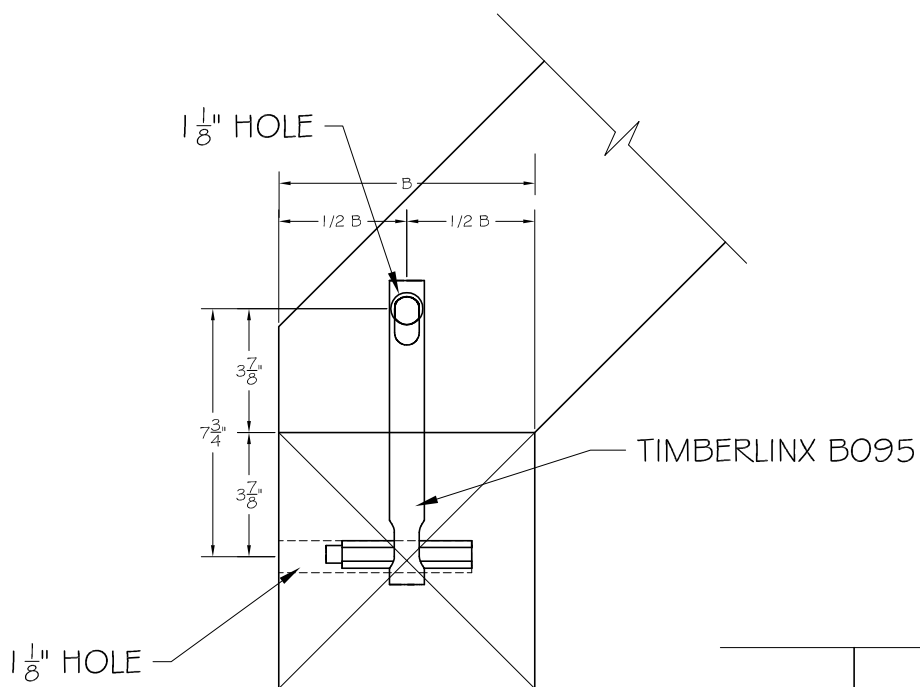
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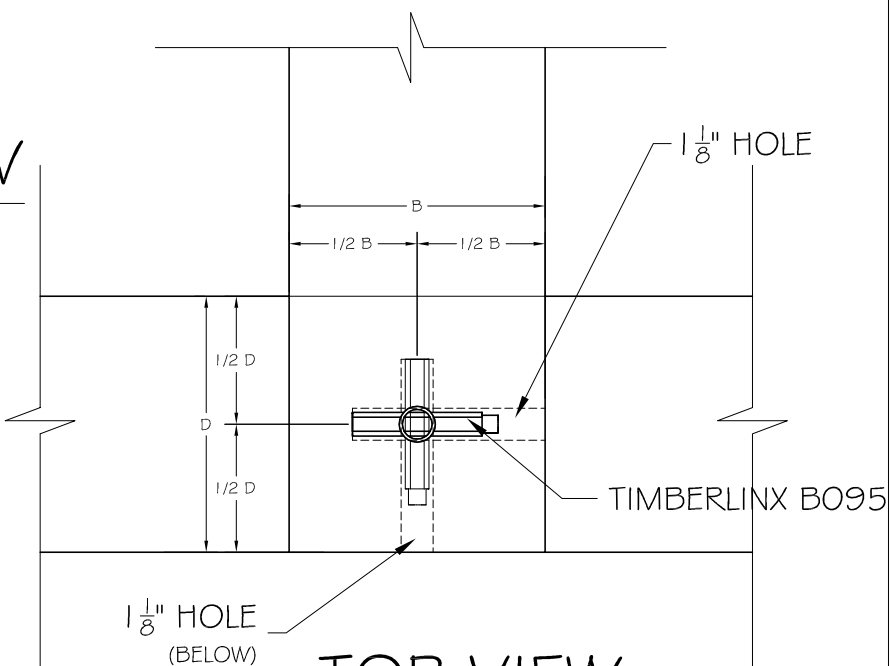
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Sheet Description:

RAFTER TO PLATE

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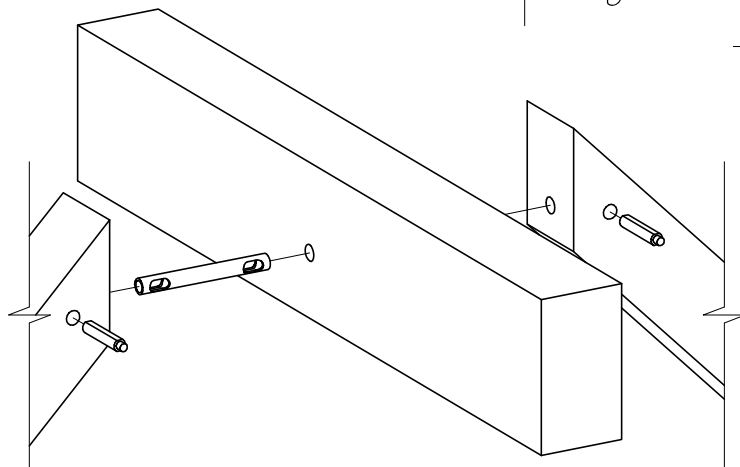
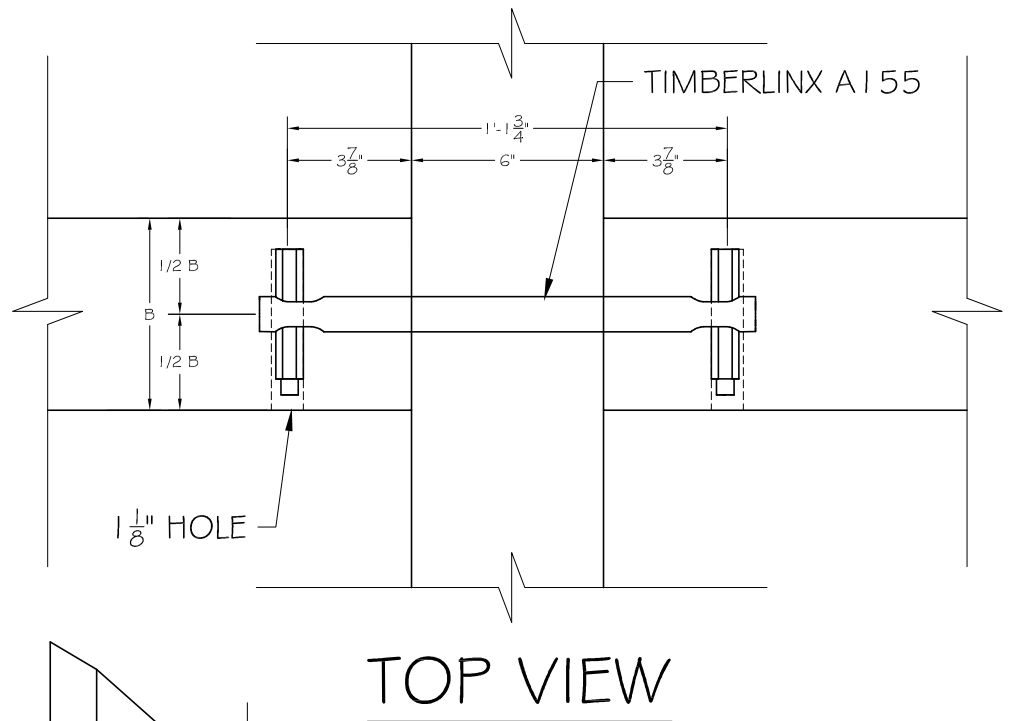
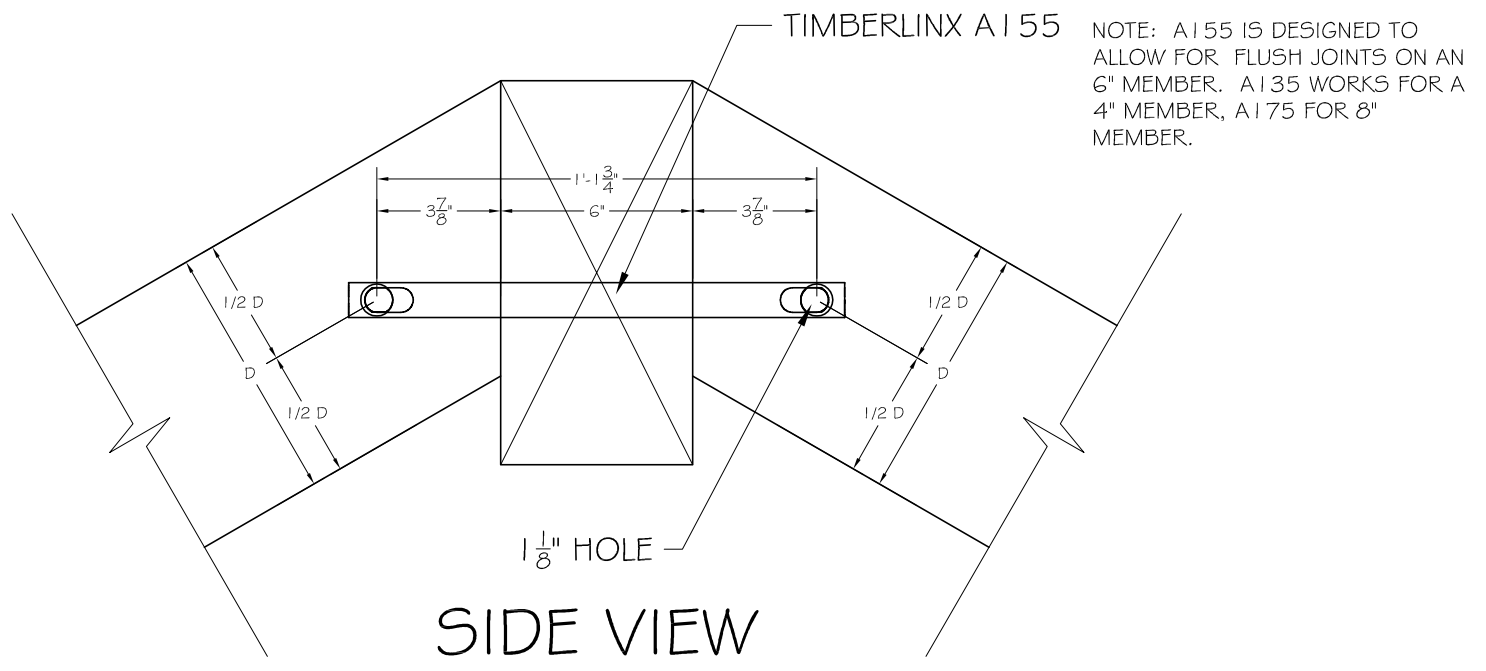
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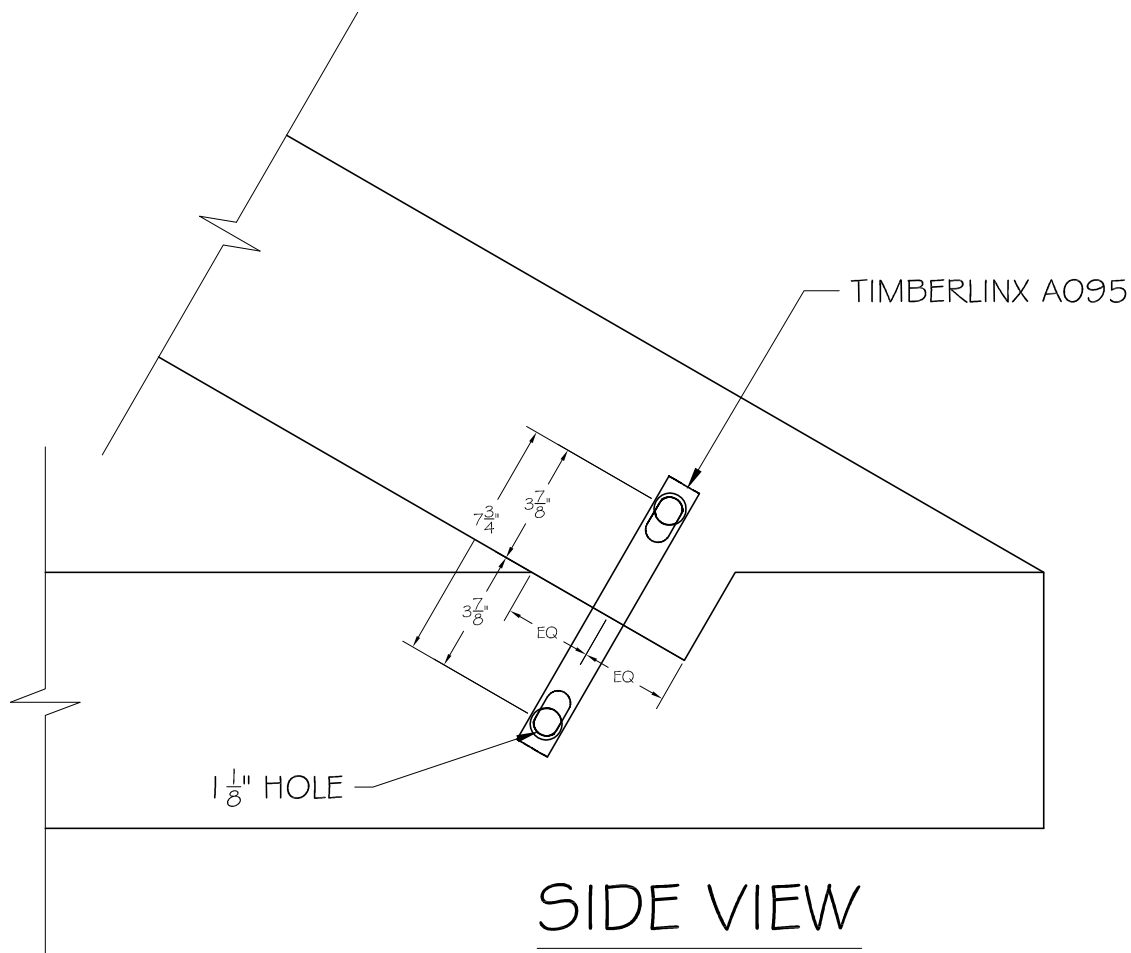
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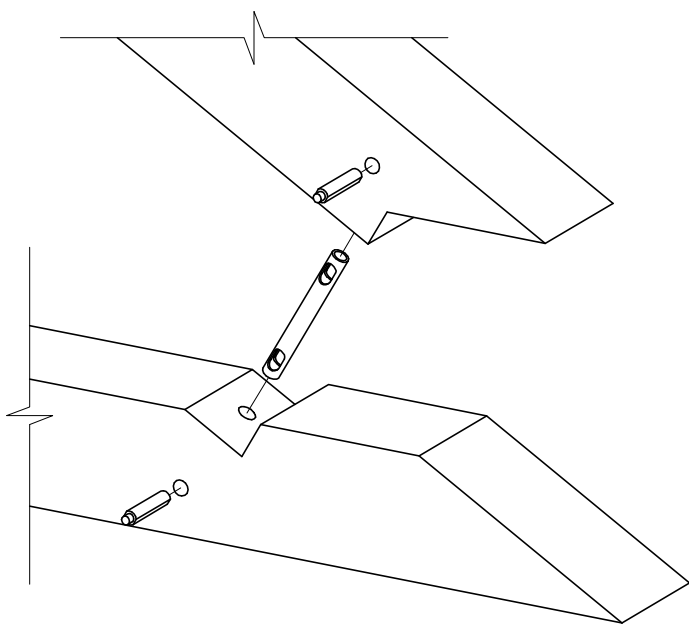
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TRUSS HEEL JOINT

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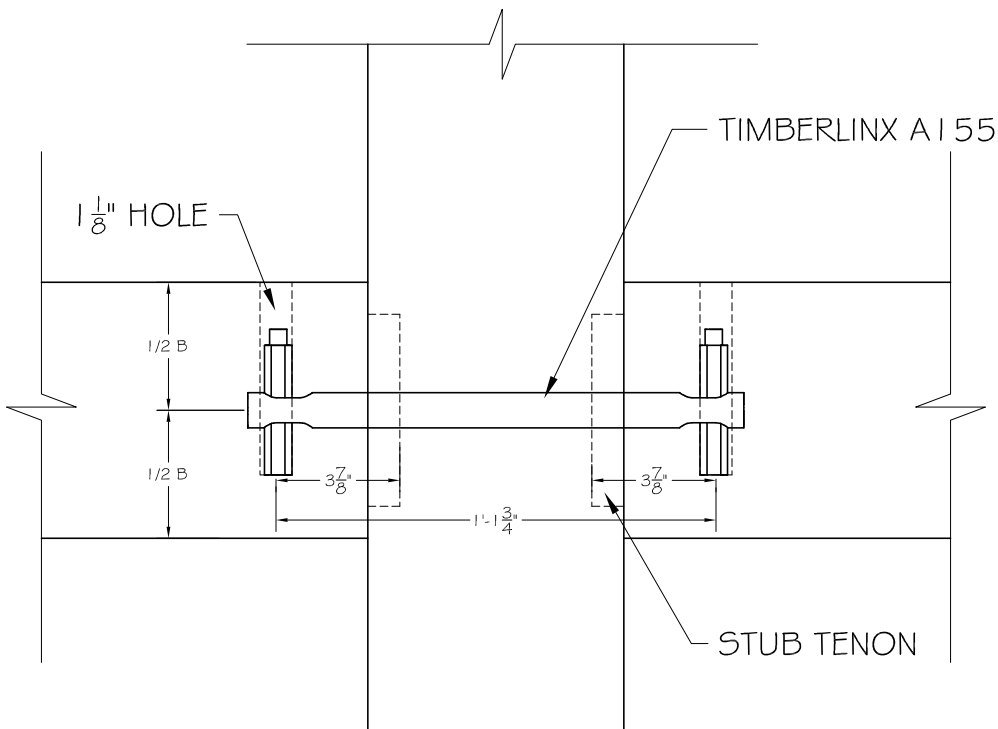
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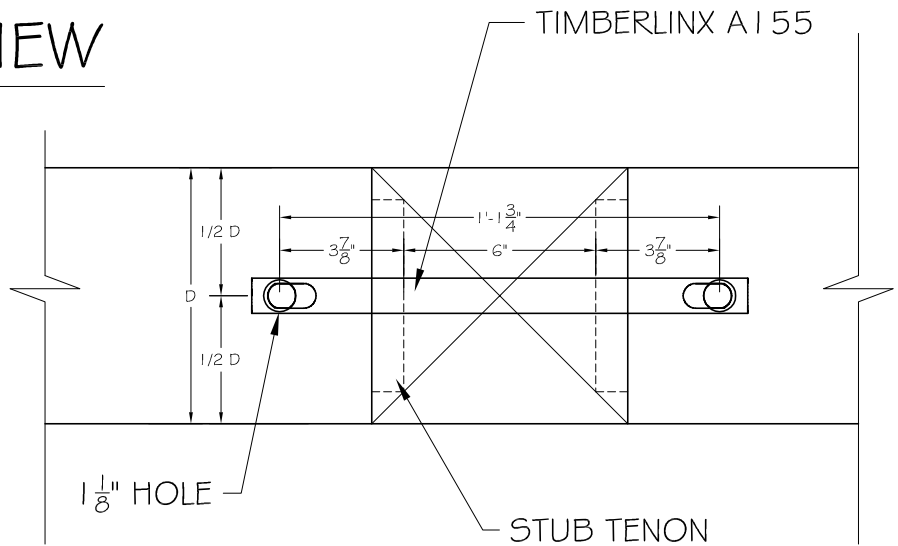
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TX14

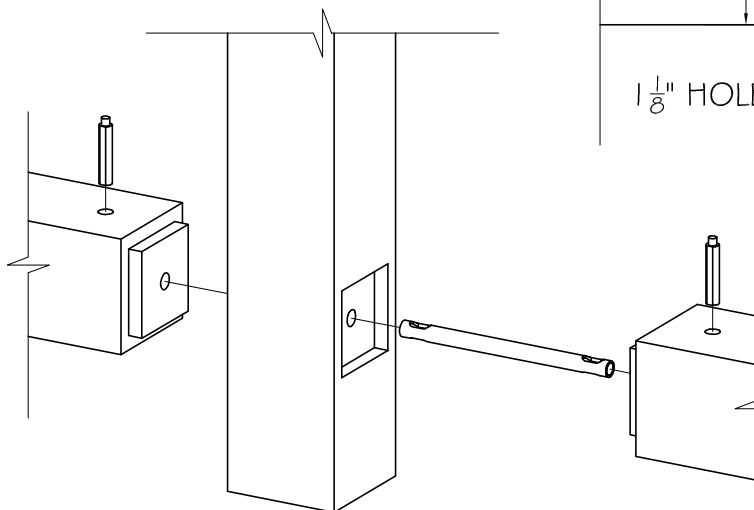
NOTE: A155 IS DESIGNED TO ALLOW FOR HOUSED JOINTS ON AN 8" POST. A135 WORKS FOR A 6" POST, A175 FOR 10" POST.



SIDE VIEW



TOP VIEW



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Sheet Description:

KING POST INTERRUPTED COLLAR TIE

Project Description:

STANDARD DETAILS

Scale:

1 1/2" = 1'-0"

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14 SEPT 07

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JFM

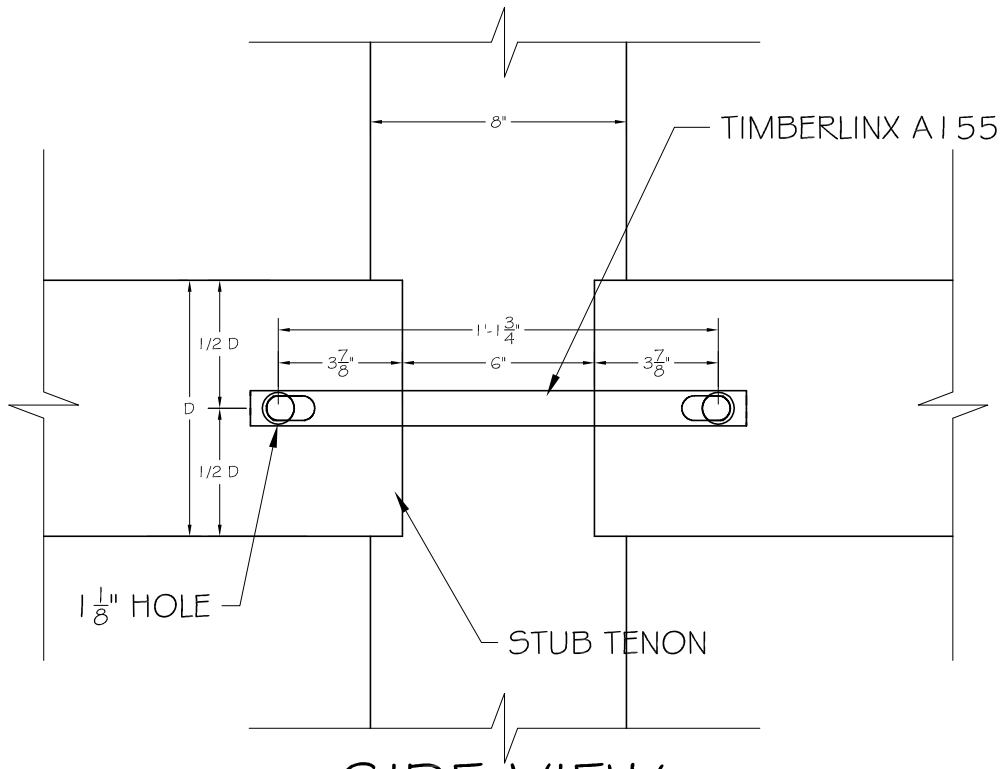
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NM/MP

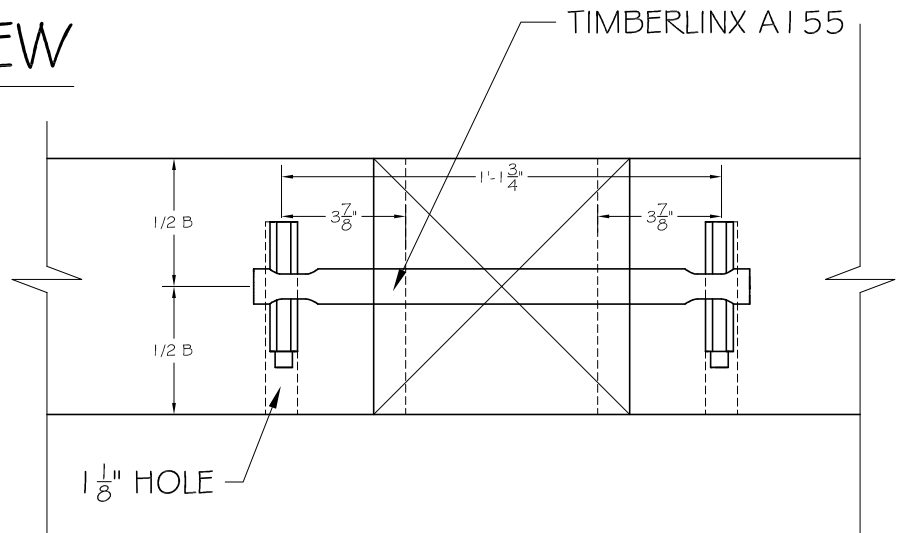
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TX15

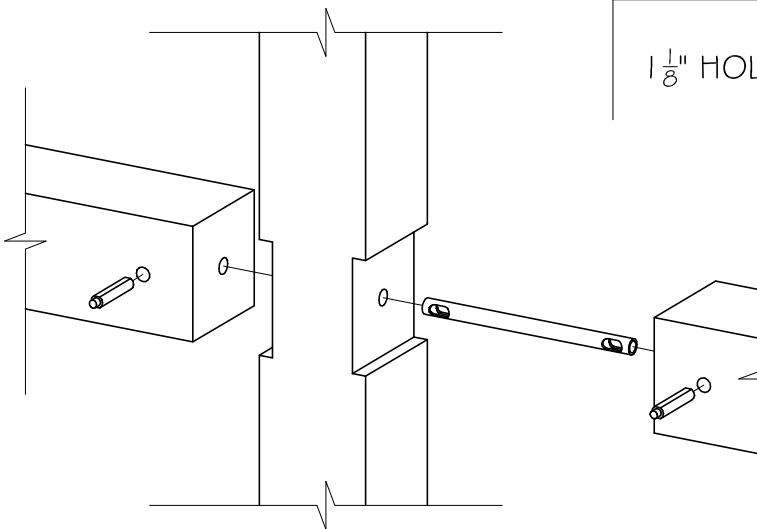
NOTE: A155 IS DESIGNED TO ALLOW FOR HOUSED JOINTS ON AN 8" POST. A135 WORKS FOR A 6" POST, A175 FOR 10" POST.



SIDE VIEW



TOP VIEW



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Sheet Description:

TWO WAY CONNECTION

Project Description:

STANDARD DETAILS

Scale:

1 1/2" = 1'-0"

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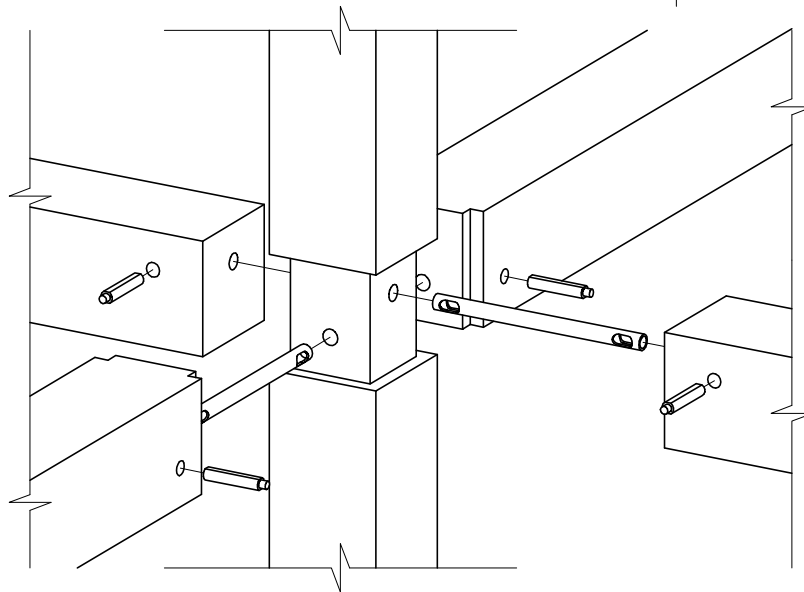
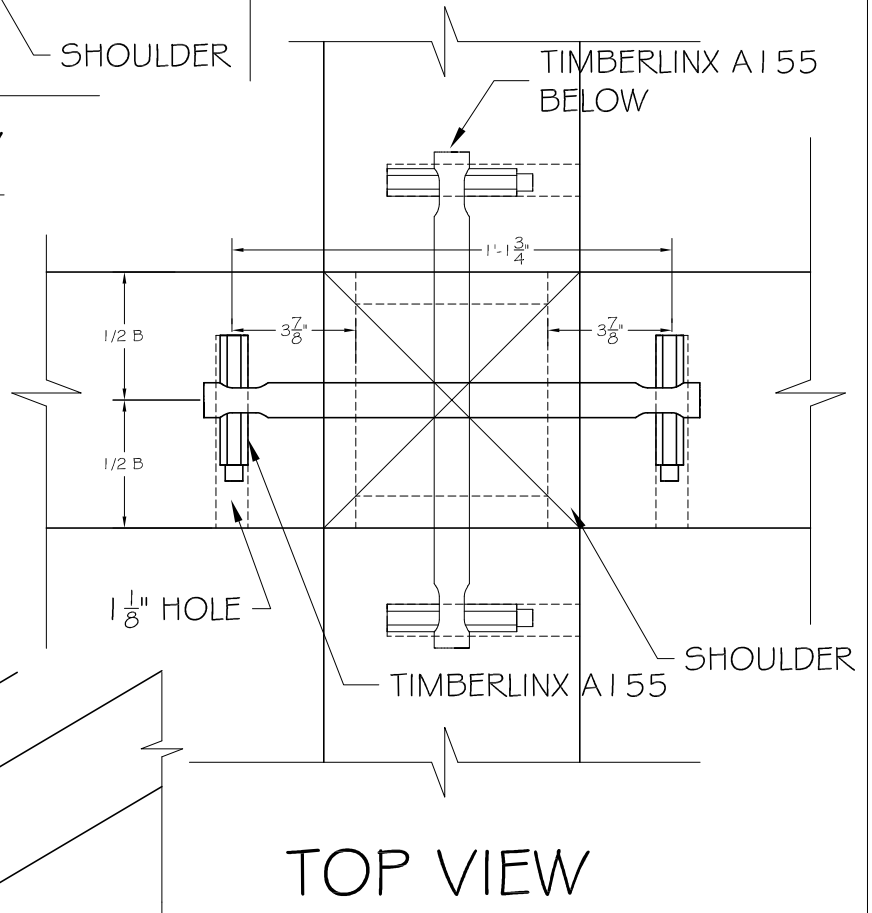
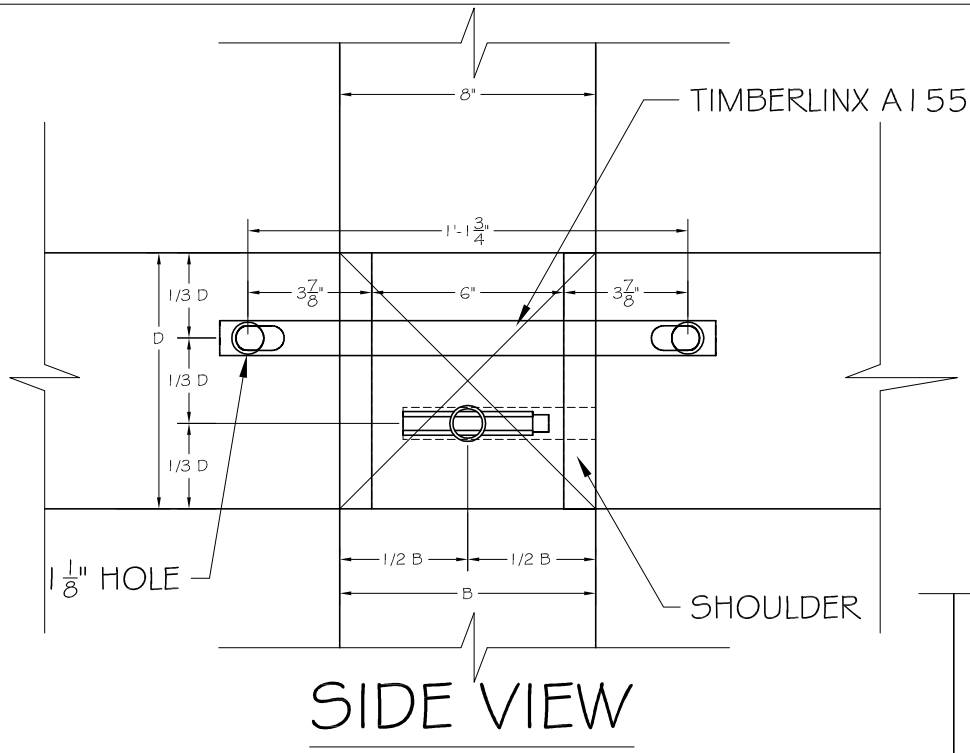
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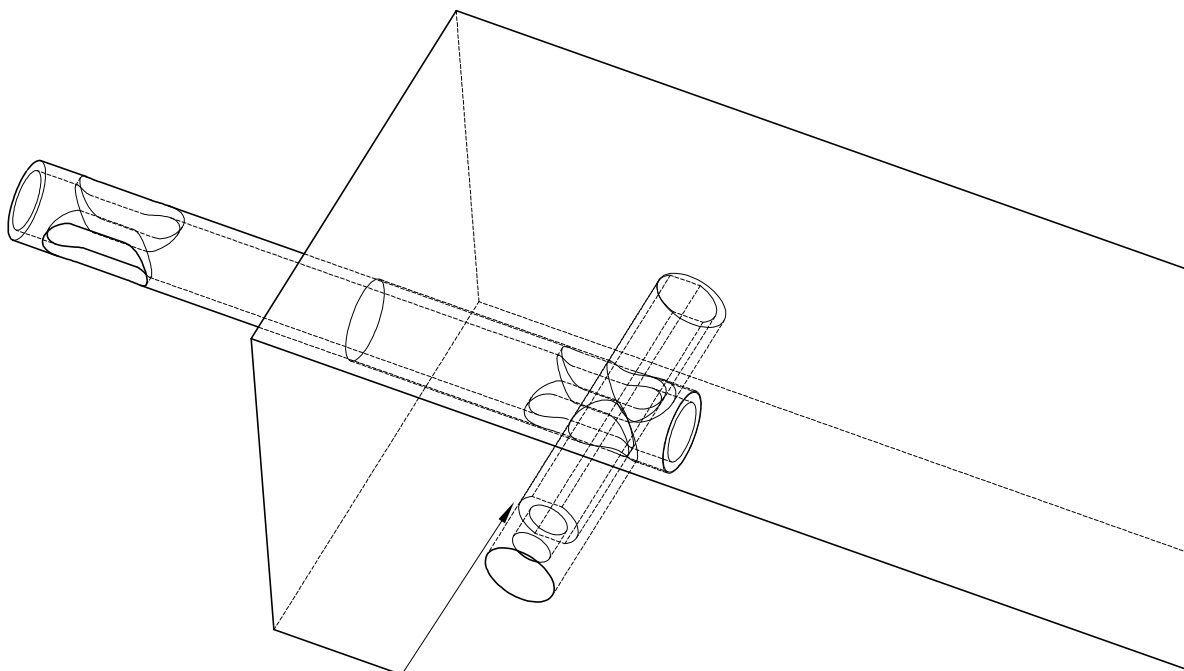
Sheet No.

TX16

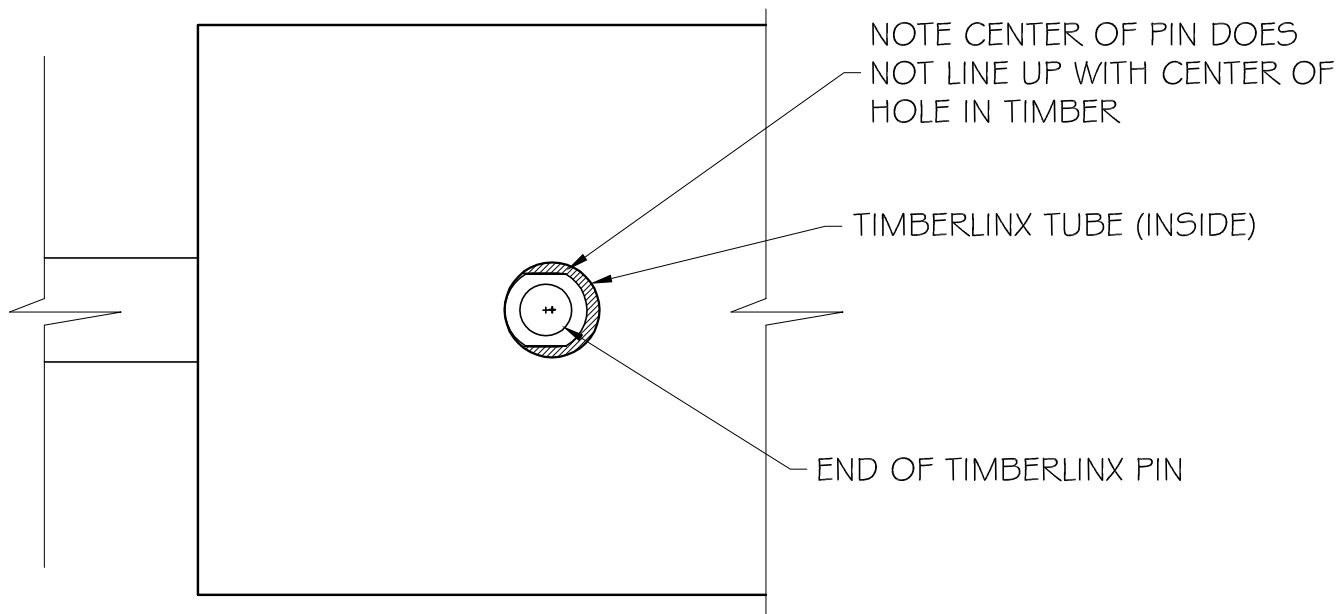
NOTE: A155 IS DESIGNED TO ALLOW FOR HOUSED JOINTS ON AN 8" POST. A135 WORKS FOR A 6" POST, A175 FOR 10" POST.



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Sheet Description:

PIN LOCATION DETAIL

Project Description:

STANDARD DETAILS

Scale:

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Sheet No.

TX18