



**TOWN OF BLUFFTON  
BUILDING PERMIT APPLICATION  
WIND ZONE DESIGN CERTIFICATE**

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**WIND ZONE DESIGN CERTIFICATE  
Due at Time of Building Permit Application**

Permit Number:

Contractor Name:

Owner Name:

Address:

Address:

Phone:

Phone:

Location of Work:

**Wind Zone Design Regulations and Certification**

**This form can only be used if you are constructing a residential addition, alteration or remodel less than 200 square feet.**

I understand the Town of Bluffton is in a 140mph 3 second gust wind zone. The 2015 International Residential Code allows several structural design options for 140mph wind requirements. The options provided are AF&PA Wood Frame Construction Manual (WFCM), ICC600, ASCE7, AISI S230 or IBC. I have chosen to use the WFCM method for 140mph wind design for my addition/alteration/remodel. If any design criteria is altered as provided by the WFCM, I will provide an Engineer Letter to the Town of Bluffton Building Safety Department for the change in design.

\_\_\_\_\_

**Print name**

\_\_\_\_\_

**Signature of Contractor/authorized agent**

\_\_\_\_\_

**Date**

**This design is for single story additions that are 200sqft or less. This design meets or exceeds the requirements of the 2015 IRC and the 2015 Wood Frame Construction Manual for 140MPH High Wind Design.**

### Concrete Footing / Slab Requirements

<u>Foundations</u>	<u>Size (in)</u>	<u>Rebar</u>
1. Perimeter footings requirements	12(W) X 20(D) Continuous	(2) #5 3" clearance to soil on all Sides
2. Interior footings	12(W) X 12(D) Continuous	(2) #5 3" clearance to plastic
3. Porch post footings	24 (Square) X 24 (D)	(2) #5 each way through post (*)

\* Posts to be supported by concrete Block a min of 4" off the bottom of the footing.  
\*Slab minimum thickness 3.5"

Vapor Barrier must be installed under all concrete under conditioned spaces. Barrier to be lapped a minimum of 12".

Welded Wire Mesh (WWM) or Fiber reinforcement is required for concrete slab reinforcement. WWM is required to be supported in the upper third of the slab.

### Wood Floor Systems

#### **Elevated floor or deck :**

1. Ledger attachment to existing structure: One ½"X5" lag or through bolt 24" on center (OC) alternating from top to bottom. Bolt cannot be closer than 2" from top or bottom and no closer than 5" apart. (see 2015 IRC Figure R507.2.1(2)). In addition, see figure 7 or 8 for lateral attachment.
2. Girder, joist or stringer attachment to post : Two ½" X5" lag or through bolt .

Full depth blocking or cross bracing required in the first two bays of the floor framing system.

Attach sheathing .

Joist support must be made with joist hangers. Ledger strips are not permitted without engineer approval.

All wood materials exposed to the elements or in contact with masonry must be treated material.

### Wall Section

Strapping to be completed per figure 4.

All metal materials exposed to the elements must be corrosion resistant.

All walls to be framed with 2X4 studs or better @ 16" OC.

Anchorage within 12" of plate ends and every 4" with 5/8" anchor embedded 7" into the concrete with 3"X3"X1/2" square washers. All corners to be framed with 3 studs with fastened together with 2- 16d nails spaced 10" OC. A hold down must be installed in each corner installed per the manufacturer (see figure 6).

All walls to be tied continuous to the foundation.

Wall sheathing: ½" structural panels installed with .113 nails 2 3/8" long or better. Spacing for fasteners to be 4" edge / 6" field. Blocking at sheathing seams to be 2X material or better. Sheeting must extend from the bottom of the bottom plate to the top of the top plate.

Windows, doors and wall coverings to be installed per the manufacturer.

Opening protection required. Discuss options with the inspector.

**Header Schedule**

Header Span	Header size	Jack/King	Uplift requirements
Up to 3'	2- 2X4	1J /2K	656
>3' - 4'	2- 2X6	1J/ 2K	874lbs
>4' - 5'	2- 2X8	2J/ 3K	1093lbs
>5' - 6'	3- 2X8	2J/ 3K	1312lbs
>6' - 7'	3- 2X12	2J/ 3K	1530lbs
>7' - 8'	8.25 LVL	3J/ 3K	1749lbs
>8' - 9'	9.625 LVL	3J/ 3K	1967lbs
>9' - 10'	11.0 LVL	3J / 4K	2186lbs
>10' - 11'	12.375 LVL	4J / 4K	2405lbs

Install hold downs each side of the openings over 3' to cover uplift

**Ceiling / Roof System**

Ceiling diaphragm to be installed per Figure 1 for design.

Outlookers max overhang is 24". Outlooks to be clipped for uplift. See Figure 3 for design.

Lookout blocks max overhang is 12". See Figure 3 for design.

The ridge board must be at least the depth of the rafter cut for full support.

The ridge straps or 2X4 Collar ties installed in the upper 1/3 of the rafter to be installed on every rafter.

Five 10d nails per collar tie or strap required in each rafter. (See Figure 5)

Engineered Roof systems to be installed per the manufacturer.

**Ceiling Joist Span**

Ceiling joist to be #2 SYP or better. This table is for No Attic Storage.

Ceiling Joist	2X4	2X6	2X8	2X10
16" OC	10.6'	16.9'	21.6'	25.6'
24" OC	9.3'	13.9'	17.6'	20.9'

**Rafter Span**

Rafters to be #2 SYP or better.

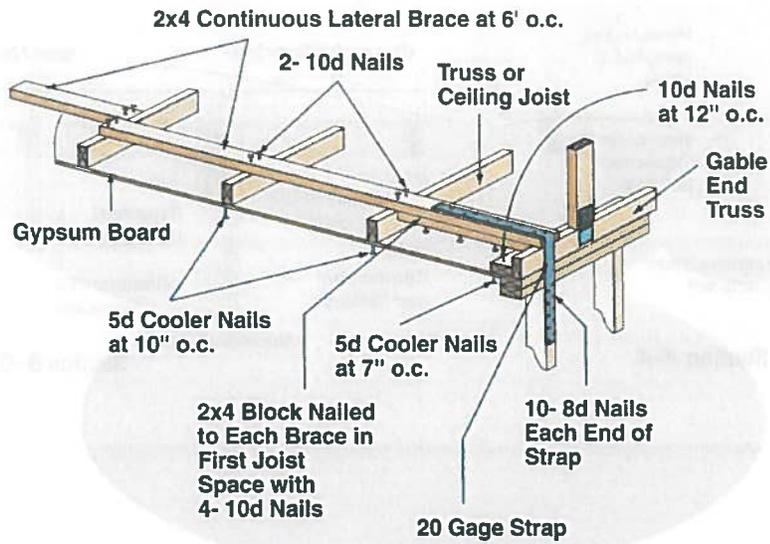
Rafter	2X6	2X8	2X10	2X12
16" OC	8,9'	11.3'	13,4'	15.6'
24" OC	7,26'	7.2'	10.9'	12.87'

All rafters to be clipped with 2 H2.5A or 1 H10A

Rafters installed with the ceiling attached must allow for required insulation R30 in the attic.

**Figure 1**

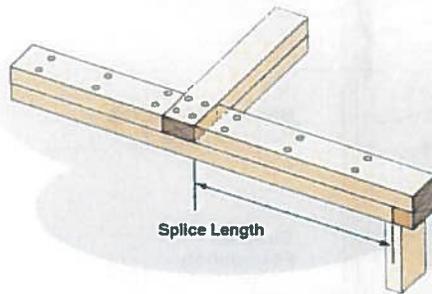
**Ceiling Diaphragm for Gable End Walls**



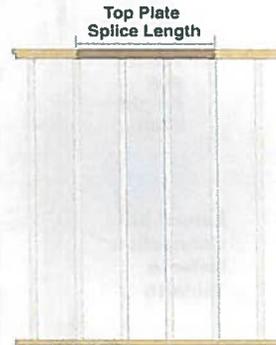
**Figure 2**

**Drag Strut Attachment Requirements**

*Figure 12. Top Plate Intersection Detail*



*Figure 13. Top Plate Splice Length*

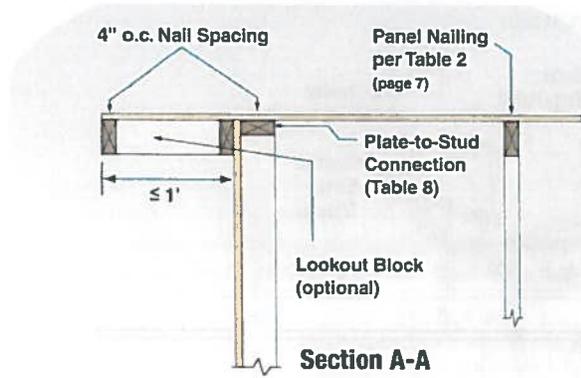


**Table 6. Top Plate Splices in Exterior Walls**

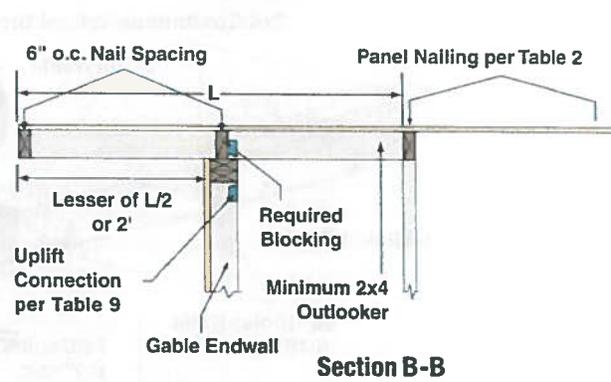
Splice Length (ft.)	Building Dimension of Wall Containing Top Plate Splice (ft.)											
	12	16	20	24	28	32	36	40	50	60	70	80
	Number of 16d Common Nails per Each Side of Splice											
2	5	6	8	NP								
4	5	6	8	10	11	13	14	16	NP	NP	NP	NP
6	5	6	8	10	11	13	14	16	20	24	NP	NP
8	5	6	8	10	11	13	14	16	20	24	28	32

NP= Not Permitted

**Figure 3** Gable Overhang without structural Outlookers

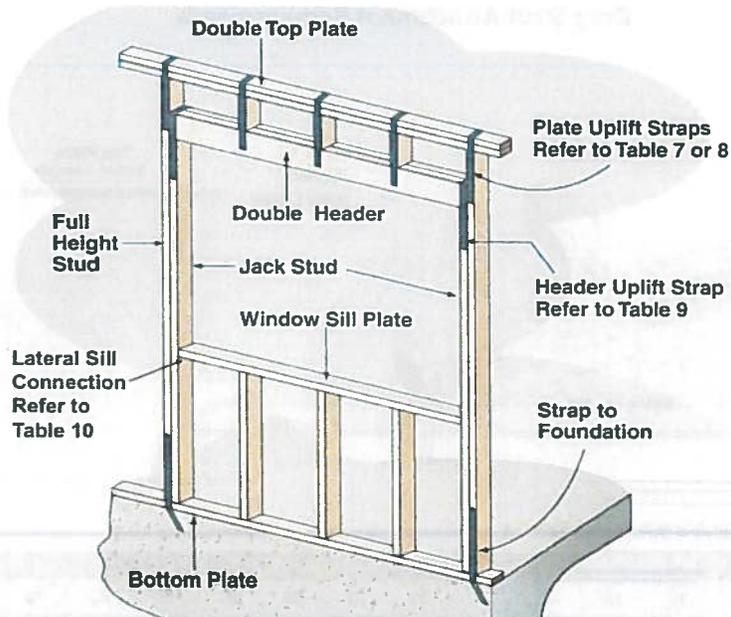


**Gable Overhang with Outlookers**



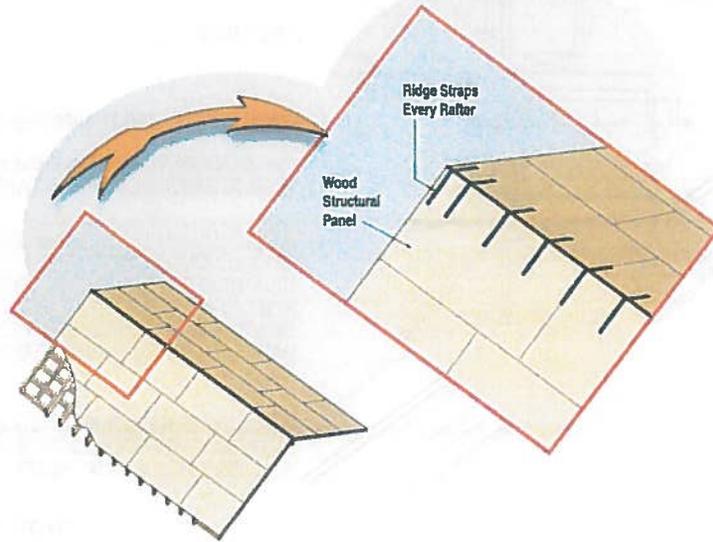
**Figure 4**

**Required Framing Around Exterior Openings**



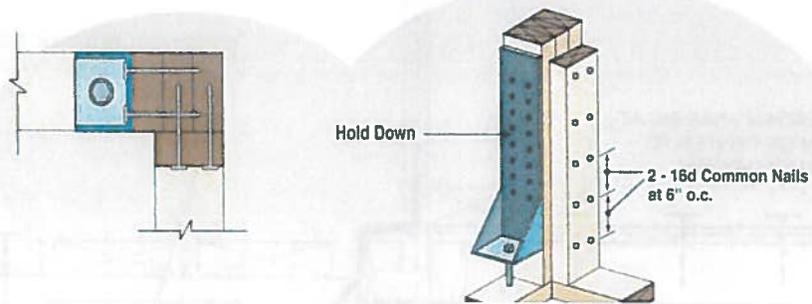
**Figure 5**

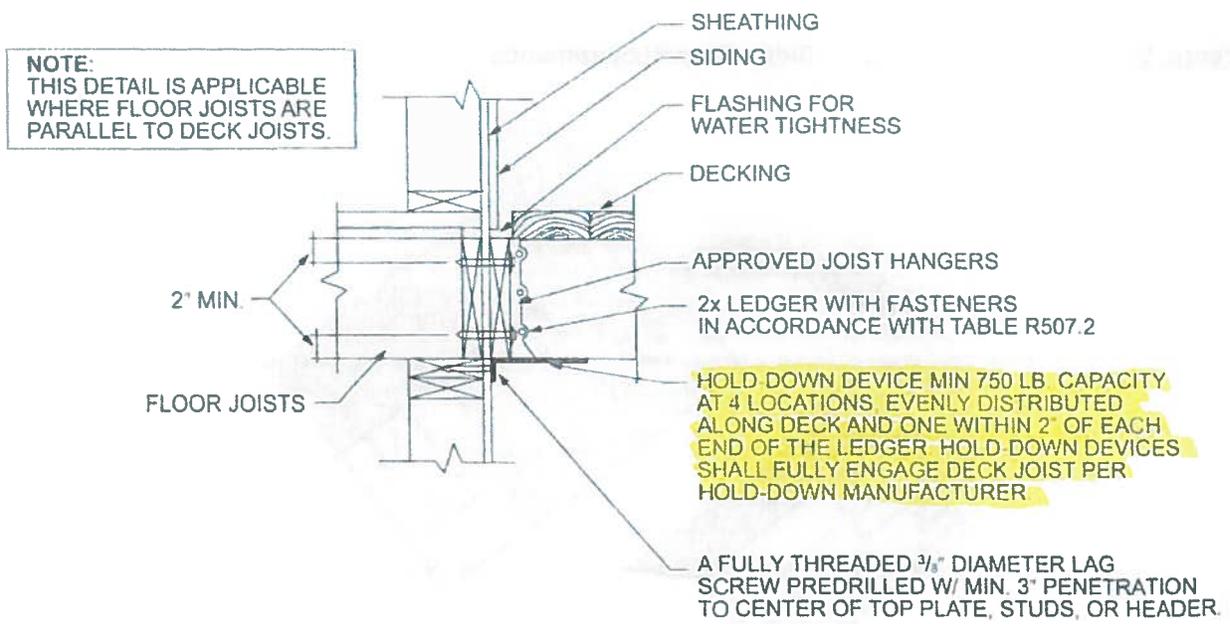
**Ridge Strap Requirements**



**Figure 6**

**Corner Hold Down Detail**





The DTT Deck Tension Ties meet this requirement as one Hold down option

Figure 7. Deck Attachment option 1 for lateral loads

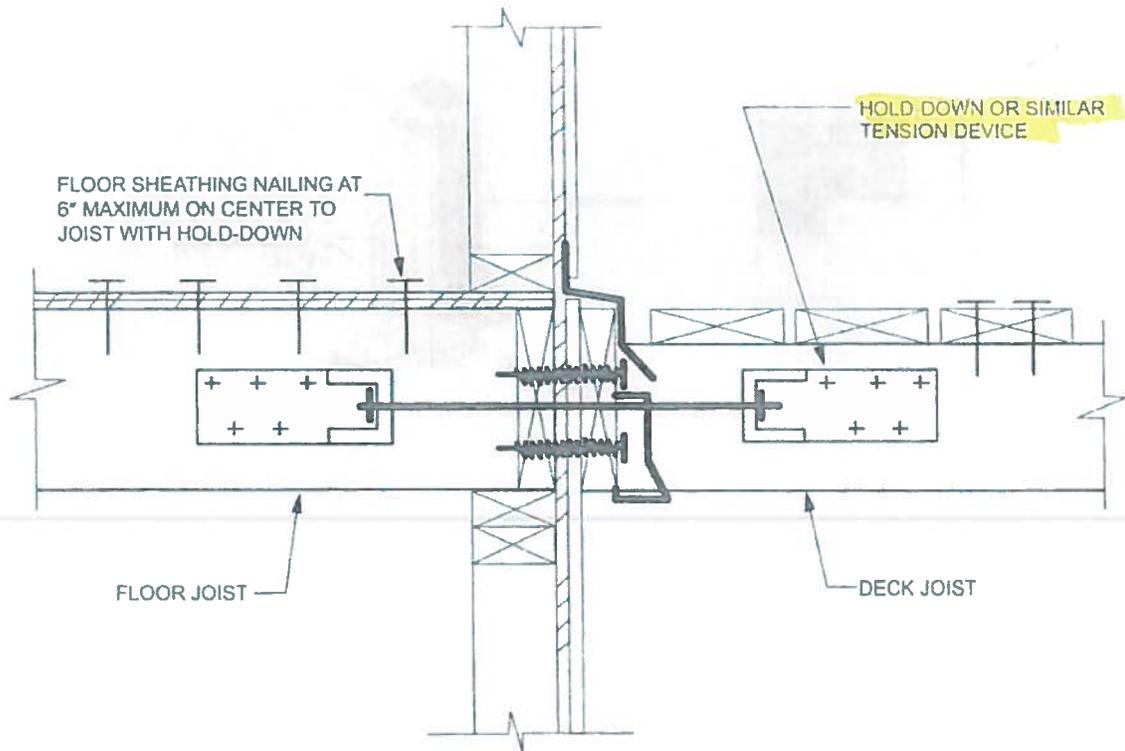


Figure 8. Deck Attachment option 2 for lateral loads



## DTT Deck Tension Tie



VIEW FULL GALLERY

### Deck Ties



This product's information may differ depending on the category of use. You are currently viewing details related to Deck Ties. You can also view product information related to the category: [SDS Screw Holdowns](#)

DTT tension ties are safe, cost-effective connectors designed to meet or exceed code requirements for deck construction. These versatile DTT connectors are also load-rated as a holdown for light-duty shearwalls and braced-wall panel applications.

For new construction or to make an existing current deck code-compliant, the DTT1Z can be used as a tension-tie to satisfy the 2015 IRC provision for a 750 lb. lateral load connection to the house at four locations per deck. This code detail permits the lateral connection from the deck joists to be made to top plates, studs or headers within the supporting structure, which eliminates the need to access to the floor joists inside the home. The DTT1Z is available in a kit (DTT1Z-KT) that includes (4) DTT1Z connectors, (4) Strong-Drive® SDWH Timber-Hex HDG screws and (26) SD #9 x 1 1/2" screws.