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## Deck Plan Requirements

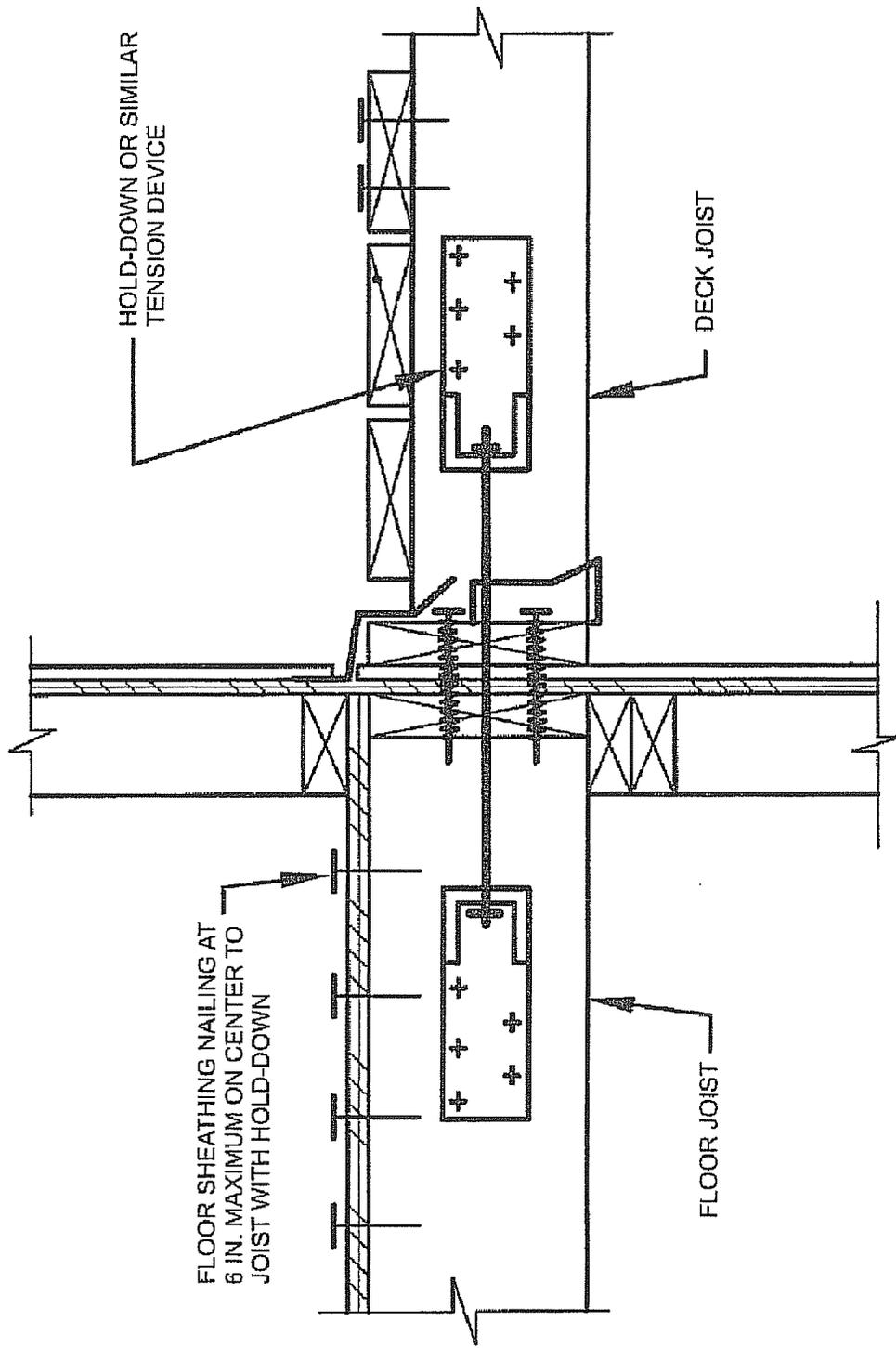
These guidelines and cross section are designed to assist you with your deck plans. Please include as much information as possible to speed up the plan review & building permit process.

***Decks must include the following: All fasteners & hardware in contact with treated lumber must be hot-dipped galvanized, stainless steel or ACQ approved fasteners. All flashing used at ledger board/house connection must be corrosion resistant metal or approved non-metallic material. Post-to-beam attachment must be as shown in Fig. 8 or 10. Ledger board lag & thru-bolts must be staggered as shown in Fig. 19. Lateral load supports as shown in Fig. 502.2.2.3 must be used in not less than 2 locations per deck.***

Deck plans & attached cross section must include the following items:

1. Top, front & side views of deck showing length & width.
2. Size, thickness & depth below grade of concrete footers.  
(Minimum 36" deep to bottom, 6" thick)
3. Size, type & spacing of support posts.
4. Size, type & span of carrier beams.
5. Size, type, span & on center spacing of floor joists.
6. Type & thickness of decking material.
7. Show location of flashing, hangers, thru bolts, etc.
8. Show stairway details. (Stair rise & tread depth)
9. Show height of handrail, guardrail & baluster spacing.

Attached deck cross section is to help show most information but cannot be accepted as your only plan. If you intend to put a roof over your deck include that information as well. If you are unsure of a code requirement please ask.



1/4 mm.

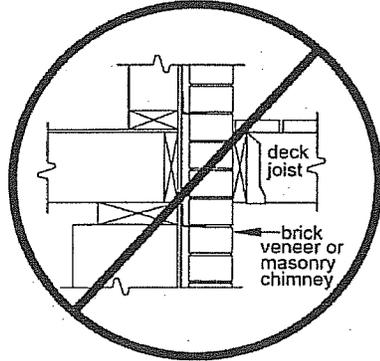
FIGURE 502.2.2.3  
DECK ATTACHMENT FOR LATERAL LOADS

**PROHIBITED LEDGER ATTACHMENTS**

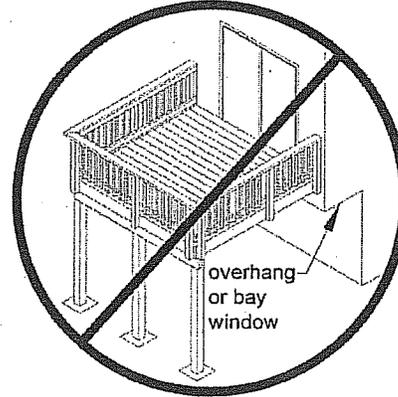
Attachments to exterior veneers (brick, masonry, stone) and to cantilevered floor overhangs or bay windows are prohibited (see Figures 17 and 18). In such cases the

deck shall be free-standing (see FREE-STANDING DECKS).

**Figure 17: No Attachment to or Through Exterior Veneers (Brick, Masonry, Stone)**



**Figure 18: No Attachment to House Overhang**

**LEDGER BOARD FASTENERS****Deck ledger connection to band joist or rim board.**

The connection between a deck ledger and a 2-inch nominal lumber band joist (1-1/2" actual) or EWP rim board bearing on a sill plate or wall plate shall be

constructed with 1/2" lag screws or bolts with washers per Table 5 and Figure 19 (see MINIMUM REQUIREMENTS). Only those fasteners noted below are permitted. LEAD ANCHORS ARE PROHIBITED.

**Table 5. Fastener Spacing for a Southern Pine, Douglas Fir-Larch, or Hem-Fir Deck Ledger and a 2-inch Nominal Solid-Sawn Spruce-Pine-Fir<sup>7,9</sup> Band Joist or EWP Rim Board<sup>6</sup>**  
(Deck Live Load = 40 psf, Deck Dead Load = 10 psf)<sup>3,6</sup>

Joist Span	Rim Board or Band Joist	6'-0"	6'-1"	8'-1"	10'-1"	12'-1"	14'-1"	16'-1"
		and less	to 8'-0"	to 10'-0"	to 12'-0"	to 14'-0"	to 16'-0"	to 18'-0"
<b>Connection Details</b>		<b>On-Center Spacing of Fasteners<sup>4,5</sup></b>						
1/2" diameter lag screw with 15/32" maximum sheathing <sup>1</sup>	1" EWP <sup>6</sup>	24"	18"	14"	12"	10"	9"	8"
	1-1/8" EWP <sup>6</sup>	28"	21"	16"	14"	12"	10"	9"
	1-1/2" Lumber <sup>7,9</sup>	30"	23"	18"	15"	13"	11"	10"
1/2" diameter bolt with 15/32" maximum sheathing	1" EWP <sup>6</sup>	24"	18"	14"	12"	10"	9"	8"
	1-1/8" EWP <sup>6</sup>	28"	21"	16"	14"	12"	10"	9"
	1-1/2" Lumber <sup>7,9</sup>	36"	36"	34"	29"	24"	21"	19"
1/2" diameter bolt with 15/32" maximum sheathing and 1/2" stacked washers <sup>2,8</sup>	1" EWP <sup>6</sup>	24"	18"	14"	12"	10"	9"	8"
	1-1/8" EWP <sup>6</sup>	28"	21"	16"	14"	12"	10"	9"
	1-1/2" Lumber <sup>7,9</sup>	36"	36"	29"	24"	21"	18"	16"

<sup>1</sup> The tip of the lag screw shall fully extend beyond the inside face of the band joist.

<sup>2</sup> The maximum gap between the face of the ledger board and face of the wall sheathing shall be 1/2".

<sup>3</sup> Ledgers shall be flashed or caulked to prevent water from contacting the house band joist (see Figures 14, 15, and 16).

<sup>4</sup> Lag screws and bolts shall be staggered per Figure 19.

<sup>5</sup> Deck ledgers shall be minimum 2x8 pressure-preservative-treated No.2 grade lumber, or other approved materials as established by standard engineering practice.

<sup>6</sup> When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (minimum 1" thick wood structural panel band joist or structural composite lumber including laminated veneer lumber), the ledger attachment shall be designed in accordance with accepted engineering practice. Tabulated values based on 300 lbs and 350 lbs for 1" and 1-1/8" EWP rim board, respectively.

<sup>7</sup> A minimum 1"x9 1/2" Douglas fir-larch laminated veneer lumber rim board shall be permitted in lieu of the 2" nominal band joist.

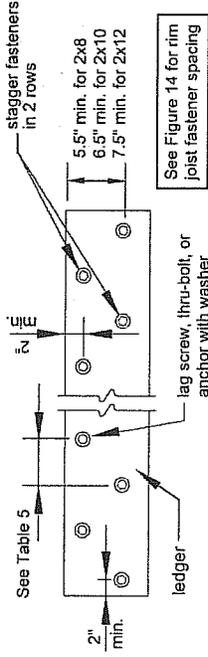
<sup>8</sup> Wood structural panel sheathing, gypsum board sheathing, or foam sheathing not exceeding one inch thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be one inch.

<sup>9</sup> Fastener spacing also applies to southern pine, Douglas fir-larch, and hem-fir band joists.

**Placement of lag screws or bolts in deck ledgers**  
 The lag screws or bolts shall be placed two inches from the bottom or top of the deck ledgers and between two and five inches from the ends. The lag screws or bolts

shall be staggered from the top to the bottom along the horizontal run of the deck ledger (see Figure 19). Proper installation of lag screws or bolts shall be verified by the building official.

**Figure 19: Ledger Board Fastener Spacing and Clearances**



**Thru-Bolts**

Thru-bolts shall have a diameter of 1/2". Pilot holes for thru-bolts shall be 7/32" to 9/16" in diameter. Thru-bolts require washers at the bolt head and nut.

Minimum embedment length shall be per the manufacturer's recommendations. All anchors must have washers.

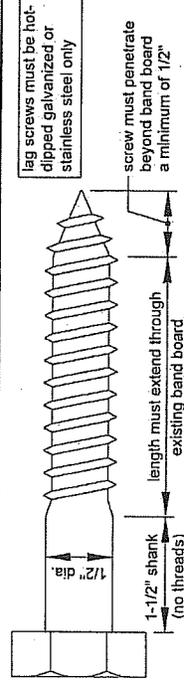
**Expansion and Adhesive Anchors**

Use approved expansion or adhesive anchors when attaching a ledger board to a concrete or solid masonry wall as shown in Figure 15 or a hollow masonry wall with a grouted cell as shown in Figure 16. Expansion and adhesive anchor bolts shall have a diameter of 1/2".

**Lag Screws**

Lag screws shall have a diameter of 1/2" (see MINIMUM REQUIREMENTS). Lag screws may be used only when the field conditions conform to those shown in Figure 14. See Figure 20 for lag screw length and shank requirements. All lag screws shall be installed with washers.

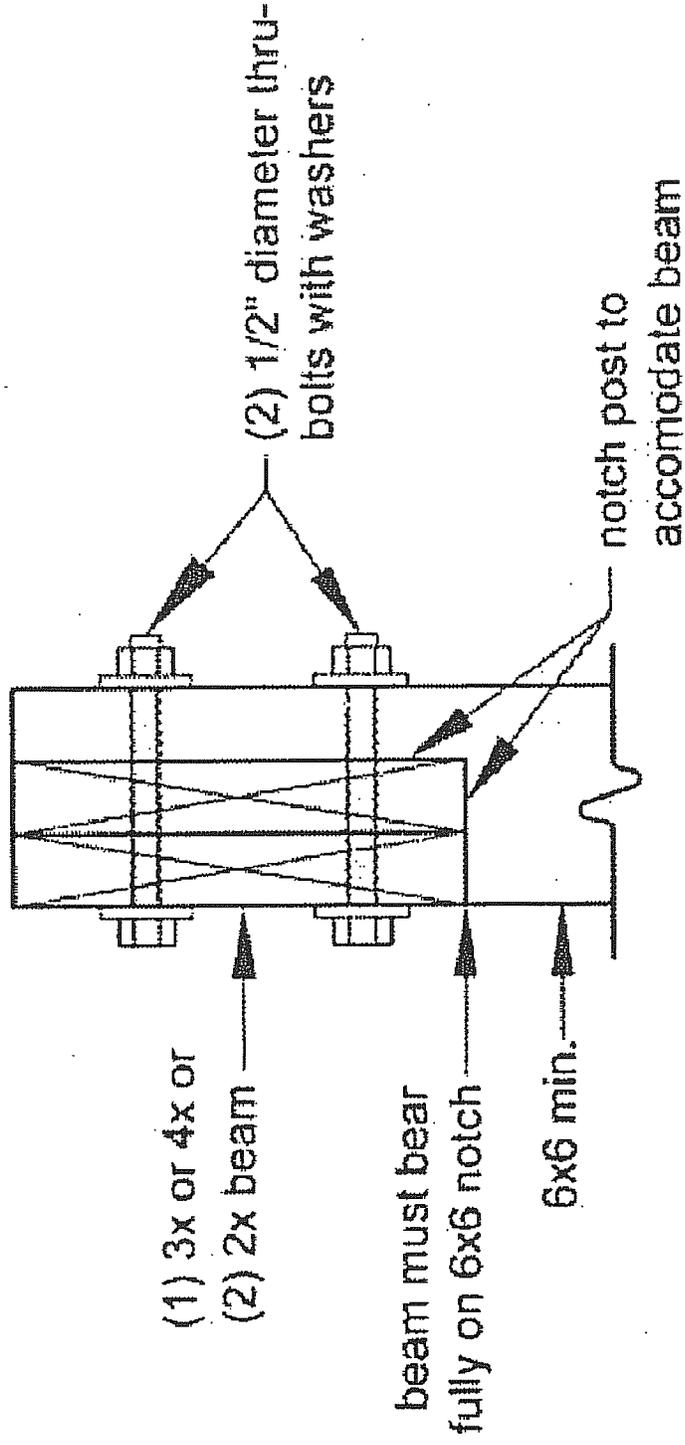
**Figure 20: Lag Screw Requirements**



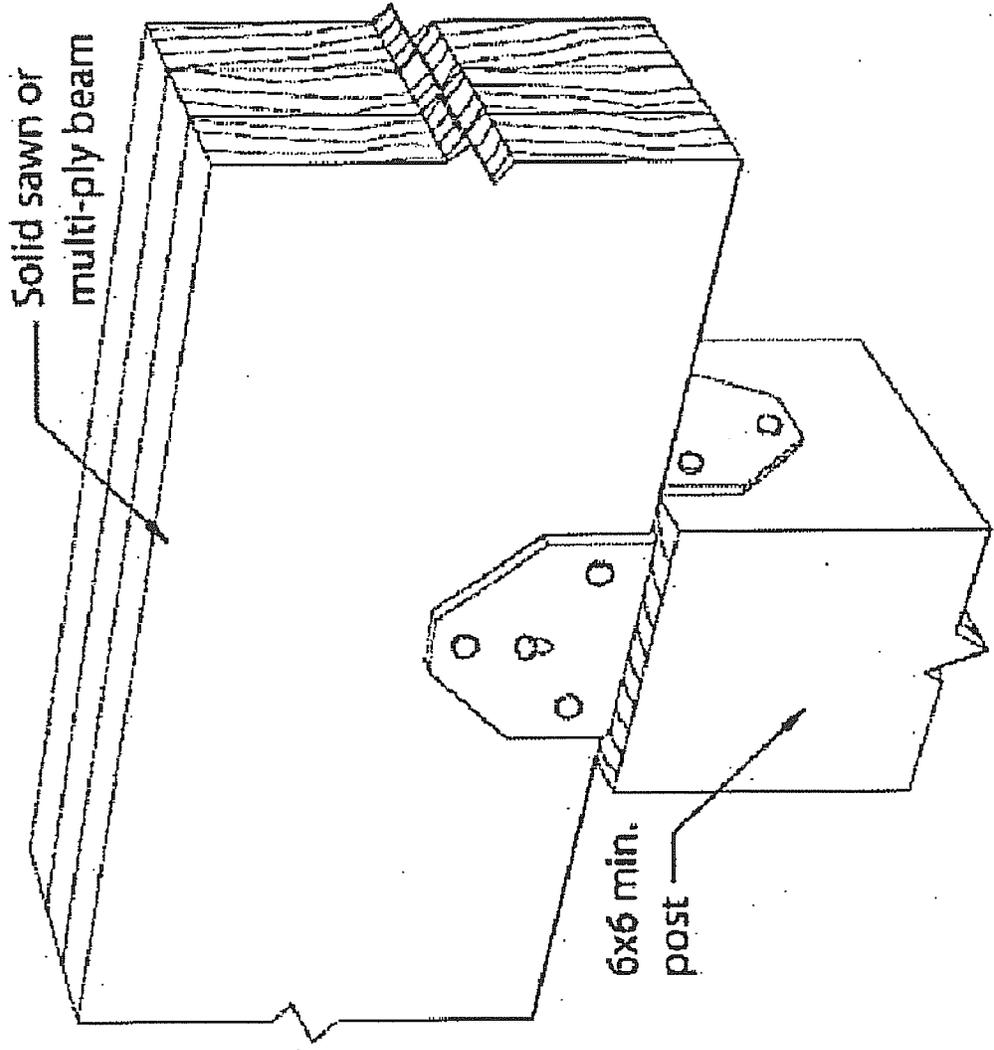
**Lag screw installation requirements:** Each lag screw shall have pilot holes drilled as follows: 1) Drill a 1/2" diameter hole in the ledger board, 2) Drill a 5/16" diameter hole into the band board of the existing house. **DO NOT DRILL A 1/2" DIAMETER HOLE INTO THE BAND BOARD.**

The threaded portion of the lag screw shall be inserted into the pilot hole by turning. **DO NOT DRIVE LAG SCREWS WITH A HAMMER.** Use soap or a wood-compatible lubricant as required to facilitate tightening. Each lag screw shall be thoroughly tightened (snug but not over-tightened to avoid wood damage).

# Figure 8: Post-to-Beam Attachment Requirements



**Figure 10: Alternate Approved Post-to-Beam  
Post Cap Attachment**



# Deck Plan Submittal

Deck Size (overall dimensions) : \_\_\_\_\_ X \_\_\_\_\_

\* note: All Fasteners Must Be Exterior grade

**Railing :** \_\_\_\_\_  
 - req'd if floor is 30" or more off the ground  
 - constructed so no opening will allow a 4" sphere to pass through.

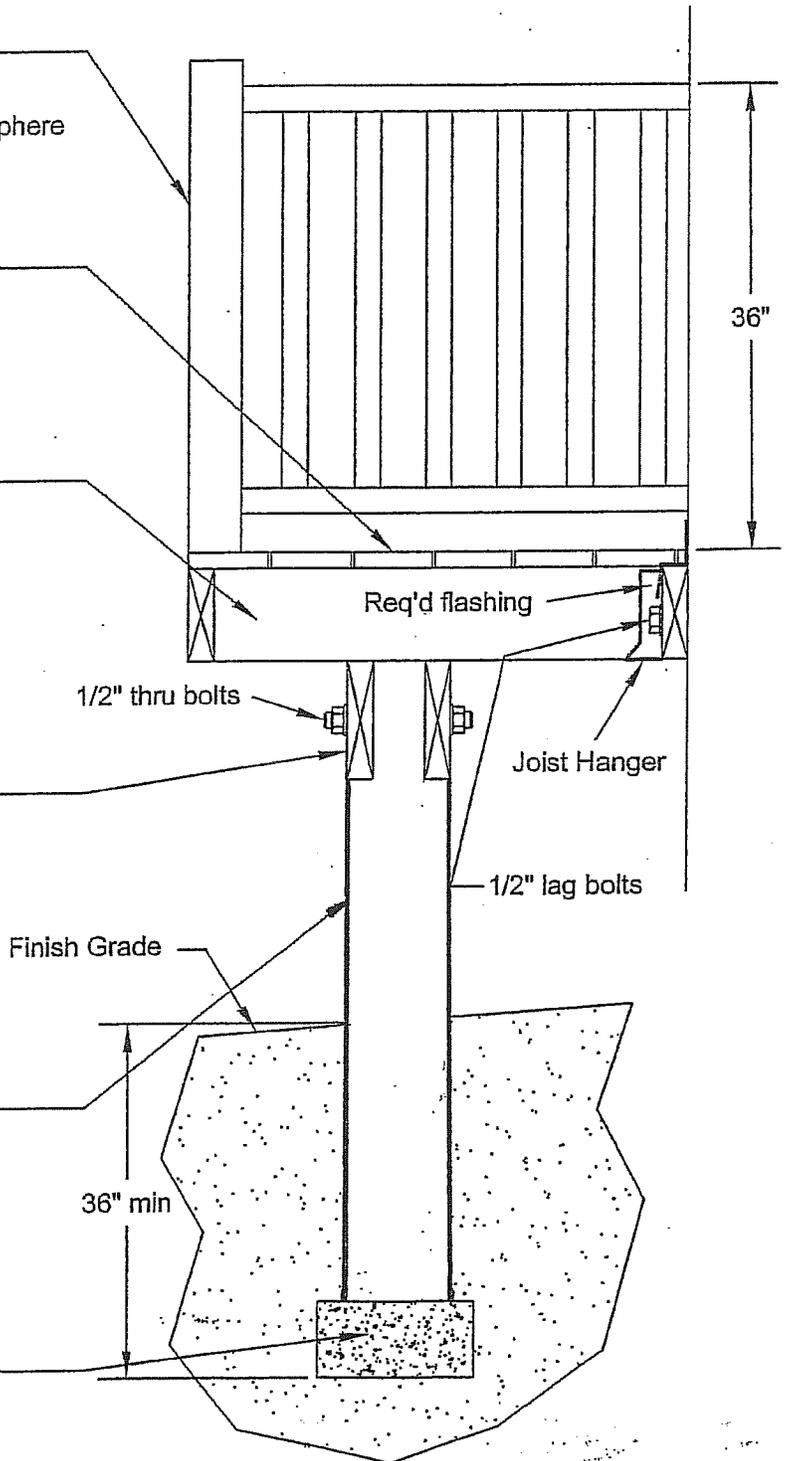
**Flooring :** \_\_\_\_\_  
 - Material: \_\_\_\_\_  
 - Size (nominal): \_\_\_\_\_ X \_\_\_\_\_

**Floor Joists:** \_\_\_\_\_  
 - Material: \_\_\_\_\_  
 - Size (nominal): \_\_\_\_\_ X \_\_\_\_\_  
 - Spacing Cen to Cen : \_\_\_\_\_  
 - Clear span distance: \_\_\_\_\_

**Carrier Beam :** \_\_\_\_\_  
 - Material: \_\_\_\_\_  
 - Size (nominal): \_\_\_\_\_ X \_\_\_\_\_  
 - Spacing Cen to Cen : \_\_\_\_\_  
 - Clear span distance: \_\_\_\_\_

**Support Post :** \_\_\_\_\_  
 - Material: \_\_\_\_\_  
 - Size (nominal): \_\_\_\_\_ X \_\_\_\_\_  
 - Post Length : \_\_\_\_\_

**Footer :** \_\_\_\_\_  
 - Depth (below grade) : \_\_\_\_\_  
 - Size : \_\_\_\_\_ X \_\_\_\_\_  
 - Thickness : \_\_\_\_\_ (6" min.)



# City of St. Marys Residential Building Permit Application

<b>Office Use Only:</b>	
Permit No: _____	
Permit Fee: _____	
Date Issued: _____	
Plan Review Date: _____ Approved: _____ Approved w/changes: _____	
Permit Paid Date: _____ Check No: _____ [ ] Cash Receipt No: _____	

Owner: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_

Owner Address: \_\_\_\_\_

Worksite Address: \_\_\_\_\_

Contractor: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_

Contractor Address: \_\_\_\_\_

## TYPE OF WORK

( ) New Home      ( ) Addition      ( ) Garage      ( ) Deck

( ) Alteration      ( ) Pool      ( ) Fence      ( ) Demolition

( ) Other Description of Work: \_\_\_\_\_

Utility Company Work Order # (when applicable): West Penn Power \_\_\_\_\_  
National Fuel \_\_\_\_\_

## NEW BUILDING CHARACTERISTICS

No. of Stories \_\_\_\_\_ Height of Structure \_\_\_\_\_ ft.

New Building Area All Floors \_\_\_\_\_ sq.ft.

Total Estimated Cost of Project: \$ \_\_\_\_\_

As the owner/owner's agent, I hereby certify that the proposed work will conform to the PA Uniform Construction Code and all applicable laws of this jurisdiction.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_