

Lowe's Deck Design

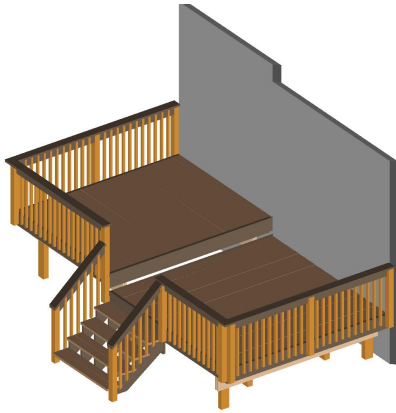
## **VP\_deck1**

Print this document and take it to the Doors and Windows desk or Commercial Sales desk at your local Lowe's store.

One of our associates will help you find the materials you need.

Your Deck Design's Project ID is:  
447351915

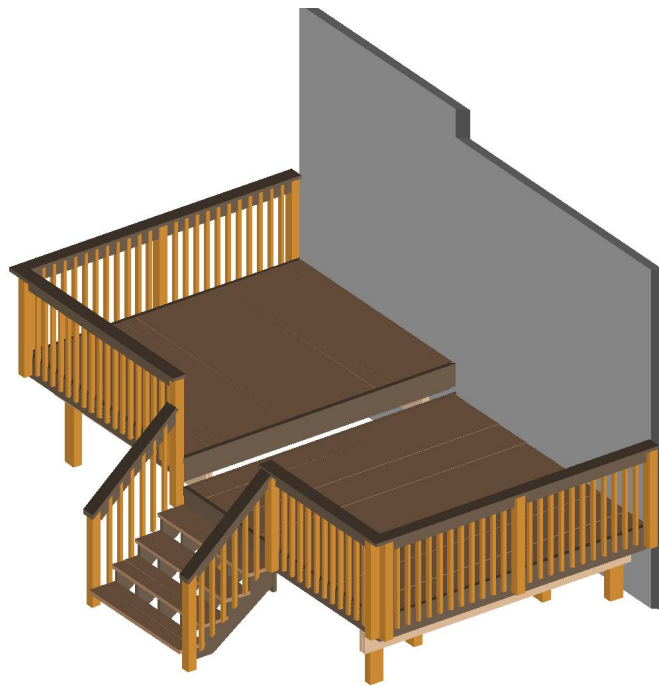
**Deck layout diagram**



Top view without planks

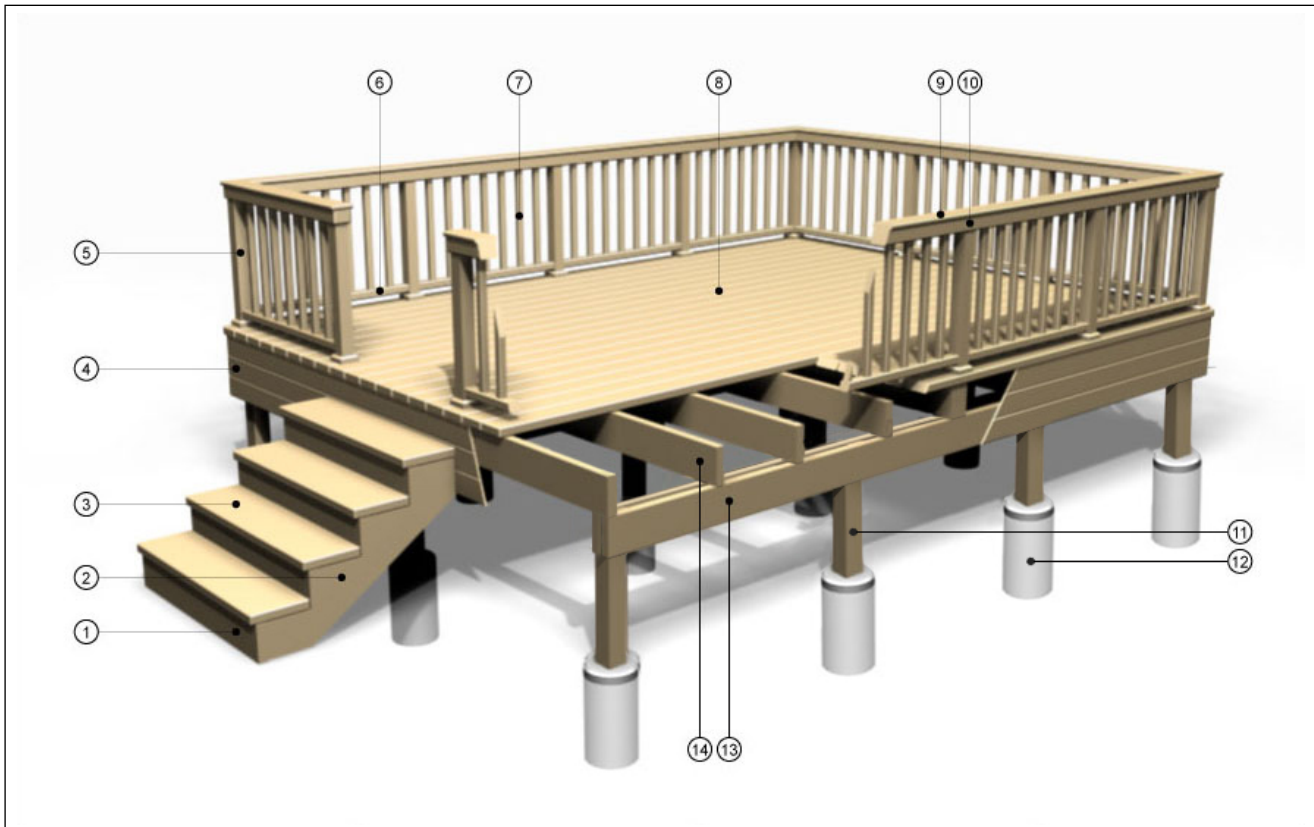


Bottom view with planks



Top view with planks

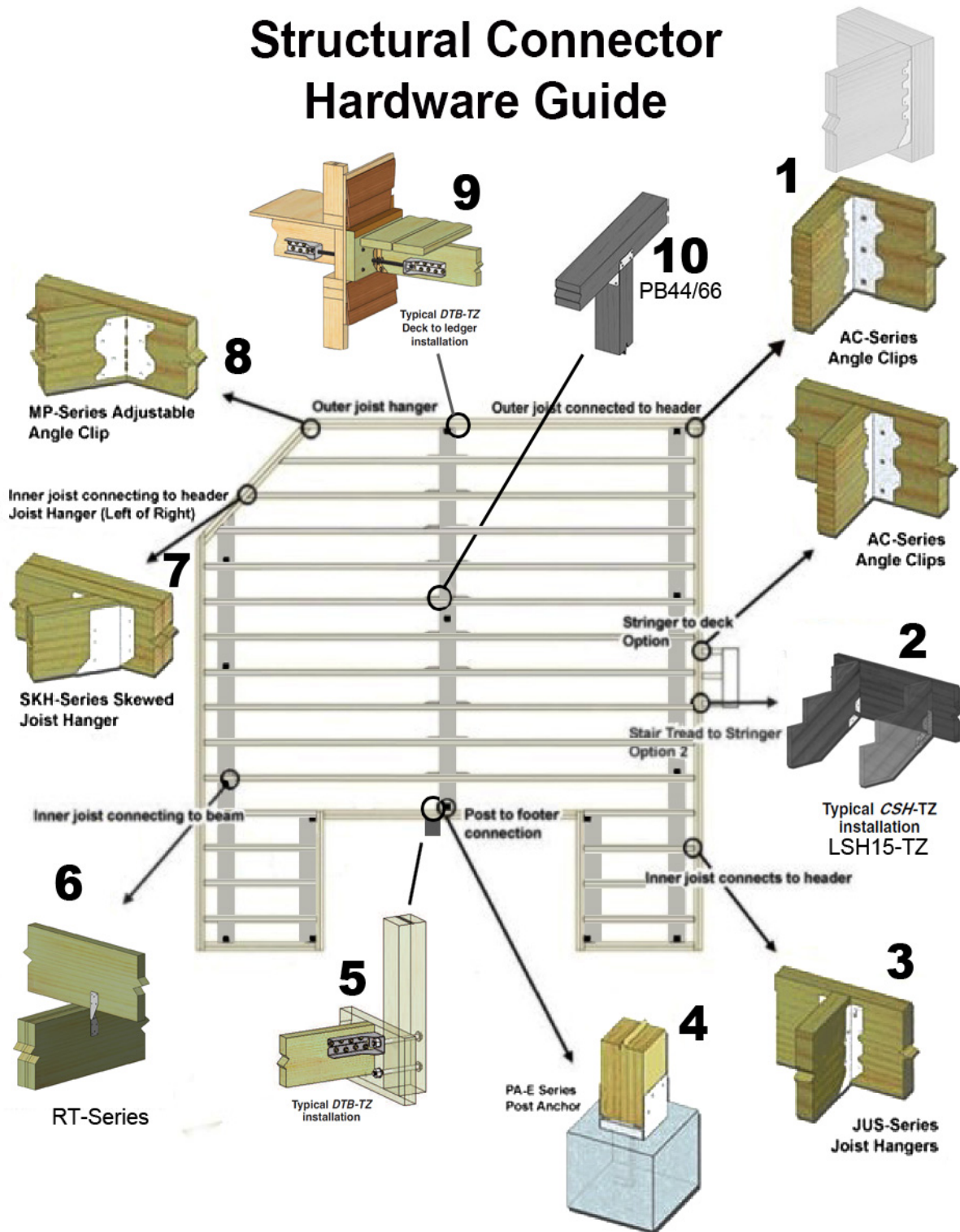
### Deck Part Identification



1. Riser	6. Bottom Rail	11. Post	<b>Major Deck Components</b>  NOTE: Not to scale ©2016 DIY Technologies
2. Stringer	7. Baluster	12. Post Footer	
3. Tread	8. Decking	13. Beam	
4. Fascia	9. Rail Cap	14. Joist	
5. Rail Post	10. Top Rail		

- Baluster**            The vertical pieces of a railing spaced at regular intervals between posts.
- Beam**                A horizontal framing piece, which rests on posts and supports joists.
- Decking**            The boards used to make the walking surface of the deck.
- Joist**                 A horizontal frame piece that supports the decking and spreads the weight over the beams.
- Ledger**             A horizontal strip that connects the deck to the house.
- Post Footer**        Concrete filled hole that the post is attached to.
- Post**                 A vertical framing piece, used to support a beam or joist.
- Riser**                A board attached to the vertical cut surface of a stair stringer.
- Stringer**            The diagonal board used to support treads and risers on a stairway.
- Tread**                The horizontal surface of a stair.
- Bottom Rail**        The lower horizontal piece that connects rail posts and supports balusters.
- Top Rail**            The upper horizontal piece that connects rail posts and supports balusters.
- Rail Cap**            The top horizontal trim on railing.
- Rail Post**            The vertical post connected to the deck framing that supports the railing.

# Structural Connector Hardware Guide



## INSTALLATION CHECKLIST

### General legal requirements

Check title restrictions and easements, building codes and zoning by-laws to make sure your deck design complies.

Obtain any required permits or zoning variances.

Check with local utility companies to make sure deck footings and construction will not disturb or obstruct access to piping or wiring.

### Deck function

While planning your deck, determine how it will be used.

### Your climate

While planning your deck, consider local weather.

Take advantage of good views.

### Install ledger

Install ledger to anchor deck to house.

Ledger placement determines the deck floor level, normally 2-4" below floor line.

If unsure about attaching a ledger board, consult a professional.

Use batterboards and mason's string to mark off deck area and locate footing.

### Square with string

Attach string to ledger and/or batterboards.

Batterboards go just outside perimeter corners of the deck.

Use the 3-4-5 method to get a 90 degree angle in one corner.

### Footing requirements

Footing/posthole depth and location is dictated by local codes and by-laws.

## INSTALLATION CHECKLIST

### Attach beams to posts

Determine the desired deck floor height on the posts.

Determine height for securing the top of the beam to the post.

### Attach joists

Joists are attached to ledger board with joist hangers or by toenailing. See local building codes for required installation.

Determine where blocking will go and snap a chalk line, but make sure to stagger pieces for ease of nailing.

### Lay decking

Attach boards "bark side up" to minimize cupping and warping.

The deck boards can be trimmed after they are installed.

### Railings

Railings must be firmly attached to the framing members of the deck.

Check local codes and by-laws for requirements on railings.

### Stairs

Check local codes and by-law requirements on stairs.

Measure the rise and run of the stairs.

### Multi-level decks

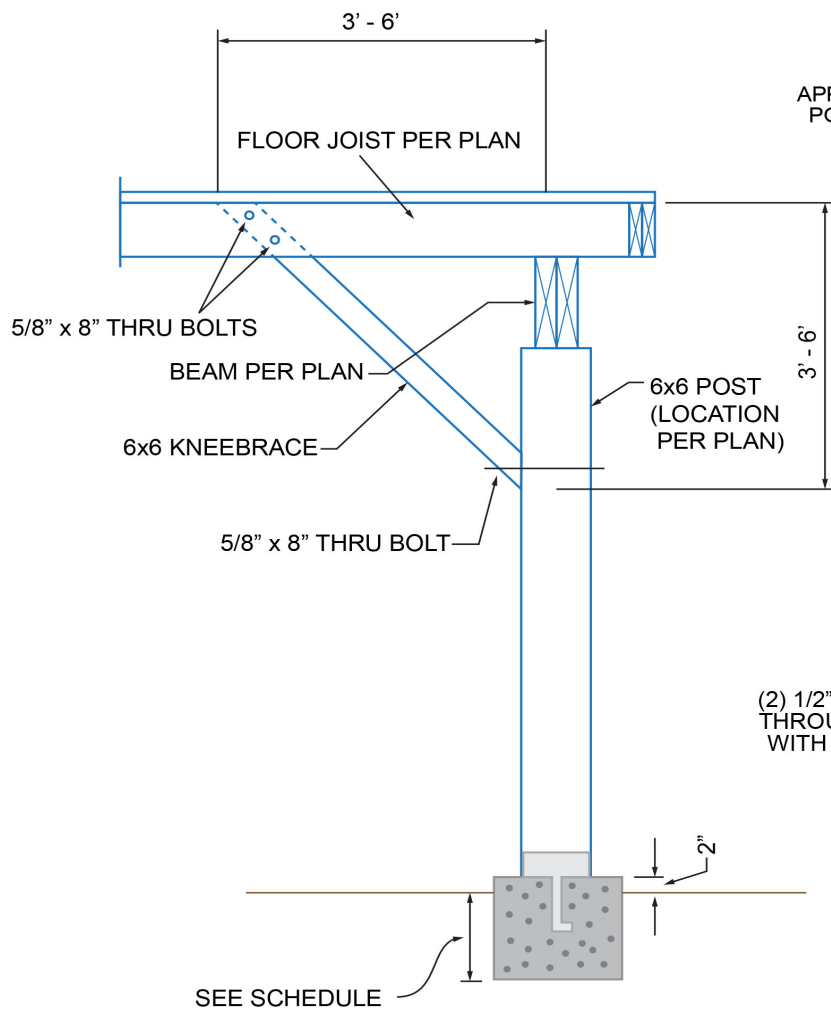
When planning a multi-level deck, for aesthetics make one deck larger than the other.

**INSTALLATION CHECKLIST**

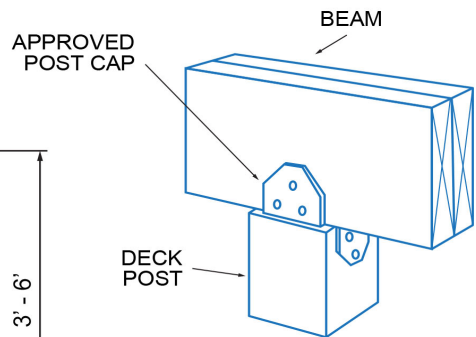
**Post bracing**

Brace posts as dictated by local codes and by-laws.

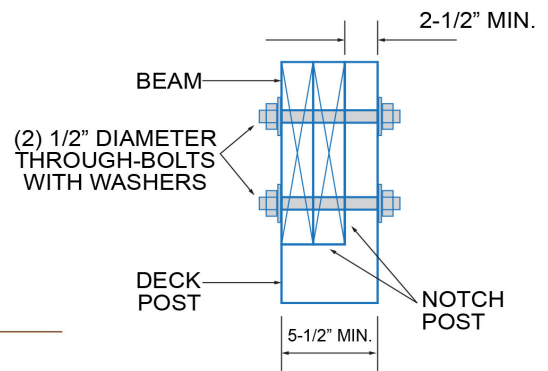
**BRACE AT JOIST**



**POST CAP**



**NOTCHED POST**



**8'-0" MAX. GRADE TO TOP OF DECKING**  
NOT FOR CONSTRUCTION TO BE ENGINEERED TO LOCAL CODES

NOT TO SCALE

## Tools Required & Tips for Success

### Tools Required:

Carpenter's level	Hearing protection	Ruler
Carpenter's square	Hammer	Safety glasses
Chalk line	Hand saw	Screwdrivers
Chisel	Hoe and hose (to mix concrete)	Shims or spacers
Circular saw	Ladder	Shovel
Claw hammer	Line	Socket wrench
Combination square	Mallet	Stakes or batter boards
Crescent wrench	Nail set	String
Drills and bits	Pencils	Tamper
Dust mask	Pick	Tape measure
Extension cord	Plumb bob	Transit
Framing square	Post hole digger	Tool belt
Gloves	Rafter square	Two foot level

### Tips for success:

1. When cutting or drilling wood, always wear eye protection to prevent injury from flying wood particles
2. When cutting lumber, a fabric breathing mask will help to avoid ingestion of the dust. Wear gloves as the surface is rough and can cause splinters.
3. For outdoor projects, nails and other hardware should be hot-dipped zinc-coated or equally well-protected material to keep them from rusting.
4. To help prevent splitting, drill pilot holes in each piece of lumber before nailing or screwing.
5. Make sure to treat your deck to prolong its lifespan.
6. Before you apply a finish on your deck, test for moisture by sprinkling the surface of a small area of the deck with water. If the droplets bead up, the wood is still wet. Wood that is dry enough for treatment will quickly soak up the water.
7. Deck finishes come in both water and oil based. While oil-based finishes penetrate deeper into the wood, water-based products are easier to clean up and are more forgiving in damp conditions.
8. When applying finish or cleaner to your deck, protect surrounding vegetation by wetting with a hose and covering with plastic.
9. Invest in a pair of kneepads if you are doing floor jobs or working on a deck.
10. Dispose of scraps in the regular trash or take to a landfill - never burn.



**Below are the Specifications And Materials  
that you have selected for your deck.**

<b>Overview</b>	Number of Levels: 2	Footer Depth: 24"
	Total Square Feet: 180	Live Load: 65 Dead Load: 10

<b>Component</b>	<b>Size</b>	<b>Wood Type</b>
Joists	2x10	Top Choice Treated
Beams	2x10	Top Choice Treated
Posts	4X6	Top Choice Treated
Decking	2x6	Pressure Treated
Railing		Pressure Treated
Lattice		

FooterDepth	24"	Live Load	65 psf
		Dead Load	10 psf

### Material List

#### Lumber Materials

Item Number	Quantity	Description	Usage
468942	8	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 10-in; Actual: 1.5-in x 9.25-in x 8-ft)	Beam
468935	2	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 10-ft)	Railing Section
468936	2	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 12-ft)	Railing Section
468950	1	Severe Weather Pressure Treated Pine Lumber (Common: 4-in x 4-in x 6-ft; Actual: 3.5-in x 3.5-in x 6-ft)	Railing Post
639134	6	Severe Weather Pressure Treated Pine Lumber (Common: 4-in x 4-in x 8-ft; Actual: 3.5-in x 3.5-in x 8-ft)	Railing Post
468966	43	Top Choice #1 Pressure Treated Lumber (Common: 2 x 2 x 8; Actual: 1.5-in x 1.5-in x 96-in)	Baluster
468934	1	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 8-ft)	Railing Section
468936	1	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 12-ft)	Railing Section
468943	27	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 10-in; Actual: 1.5-in x 9.25-in x 10-ft)	Cladding
468934	21	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 8-ft)	Decking
468955	4	Severe Weather Pressure Treated Pine Lumber (Common: 4-in x 6-in x 8-ft; Actual: 3.5-in x 5.5-in x 8-ft)	Post
488908	5	Top Choice 4-Step Pressure Treated Pine Deck Stair Stringer	Pre Cut Stringer
468937	3	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 16-ft)	Railing Section
468935	1	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 10-ft)	Railing Section
468937	1	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 16-ft)	Railing Section
468935	21	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 6-in; Actual: 1.5-in x 5.5-in x 10-ft)	Decking
468944	2	Top Choice Pressure Treated Pine Lumber (Common: 2-in x 10-in; Actual: 1.5-in x 9.25-in x 12-ft)	Beam

#### Other Materials

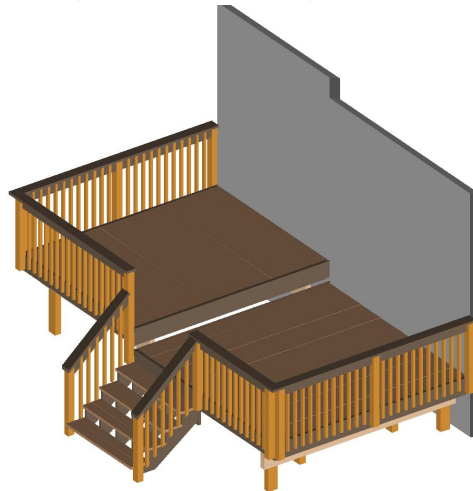
Item Number	Quantity	Description	Usage
116209	24	USP 2-in x 10-12-in Triple Zinc Slant Nail Joist Hanger	Joist Framing
184955	2	USP 1 lb 9-Gauge 1-1/2-in Galvanized Smooth Joist Hanger	Joist Framing
69139	3	Grip-Rite 1 lb 9-Gauge 3-in Hot-Dipped Galvanized Smooth Nails	Joist Framing
37164	8	USP1-5/16-in x 2-3/8-in x 6-15/16-in Triple Zinc Angle Clip	Joist Framing
21993	42	USP 1-1/2-in x 6-1/2-in Triple Zinc Rafter Tie	Joist Framing
68408	3	USP 1 lb 11-Gauge 1-1/2-in Hot-Dipped Galvanized Smooth Joist Hanger Nails	Joist Framing
10385	29	QUIKRETE 80 lbs Setting Post Concrete Mix	Footing to Post
10150	6	QUIKRETE 12-in Concrete Forming Tube	Footing to Post
193212	12	The Hillman Group 1/2-in x 10-in HDG Anchor Bolt	Footing to Post
37161	24	USP 4-in x 6-in Steel G185 Post Cap	Post to Beam

<b>Other Materials</b>			
<b>Item Number</b>	<b>Quantity</b>	<b>Description</b>	<b>Usage</b>
67377	26	The Hillman Group 1/2-in- 13 x 8-in Hot-Dipped Galvanized Standard (SAE) Hex Bolt	Railing Post
58128	7	The Hillman Group 4-Count 1/2-in x 1-in Zinc Plated Standard (SAE) Flat Washer	Railing Post
67342	26	The Hillman Group 2-Count 1/2-in-13 Zinc Plated Standard (SAE) Hex Nuts	Railing Post
9457	4	1 lbs #8 x 3-in Countersinking-Head Galvanized Deck Screws	Deck Planking
69262	1	Grip-Rite 5 lb 9-Gauge 3-in Hot-Dipped Galvanized Smooth Nails	Joist Framing
222710	1	QUIKRETE 50 lbs Concrete Mix	Footing to Post
29926	5	USP 1-3/4-in x 5-1/16-in Triple Zinc Slope/Skew Hanger	CladRimOrStair
41762	1	Project Pak 25-Count 1/2-in x 1-in Galvanized/Un-Coated Standard (SAE) Flat Washer	Railing Post
9470	1	5 lbs #8 x 3-in Countersinking-Head Galvanized Deck Screws	Deck Planking

### Your Custom Deck Estimate

Estimated materials cost with your custom selections:

**\$1,676 - \$1,762**



### Your Custom Selections

**Decking Type:** Pressure Treated

**Decking Size:** 2x6

**Decking Color:** Pressure Treated

**Railing Material:** Pressure Treated

**Railing Style:** Standard Railing without Bottom Rail

**Railing Color:** Pressure Treated

**Joist Spacing:** 16"

**Joist Wood Type:** Top Choice Treated

**Joist Size:** 2x10

**Beam Size:** 2x10

**Post Wood Type:** Top Choice Treated

**Post Size:** 4X6

A detailed materials list, which includes the item numbers of products to purchase, can be found on page 10.

**Estimated materials cost with basic selections: \$1,821 - \$1,914**

**Decking Type:** Pressure Treated

**Decking Size:** 5/4x6

**Railing Material:** Pressure Treated

**Railing Style:** Pre-Assembled Railing

**Joist Spacing:** 16"

**Joist Wood Type:** Top Choice Treated

**Joist Size:** 2x8

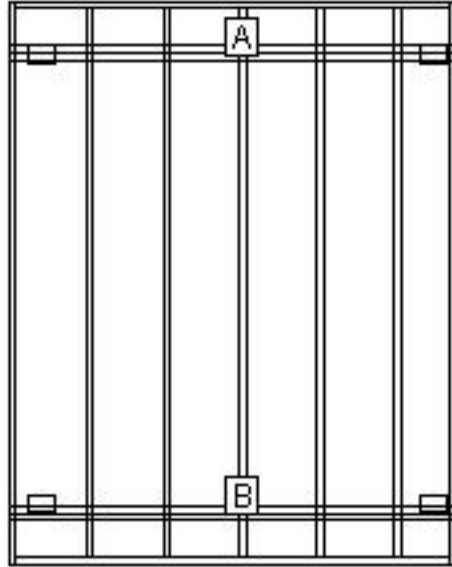
**Beam Size:** 2x8

**Post Wood Type:** Top Choice Treated

**Post Size:** 4x4

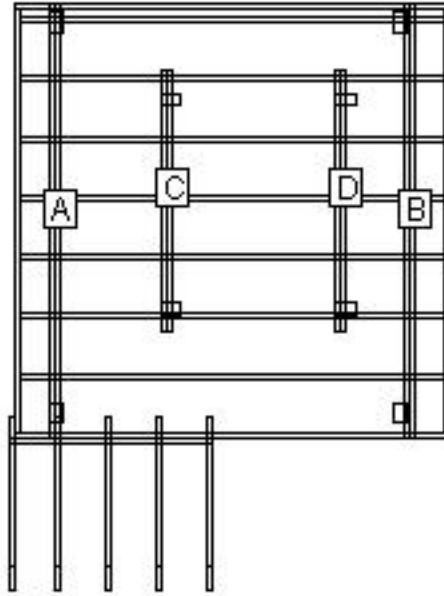
**Note: Estimates are based on representative costs of materials in your geographic area. Actual, current material costs and availability may vary by location, and are routinely subject to change. Contact your local Lowe's store for product availability, pricing, and other assistance.**

**Beam Layout Level 1**



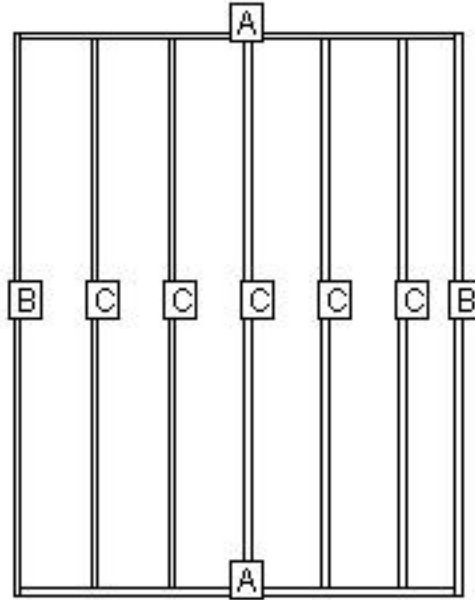
BEAM LABEL	BEAM LENGTH	POST COUNT	POST SPACING
A	7' 9"	2	6' 9 1/2"
B	7' 9"	2	6' 9 1/2"

**Beam Layout Level 2**



BEAM LABEL	BEAM LENGTH	POST COUNT	POST SPACING
A	9' 9"	2	8' 9 1/2"
B	9' 9"	2	8' 9 1/2"
C	5' 10"	2	4' 8 1/2"
D	5' 10"	2	4' 8 1/2"

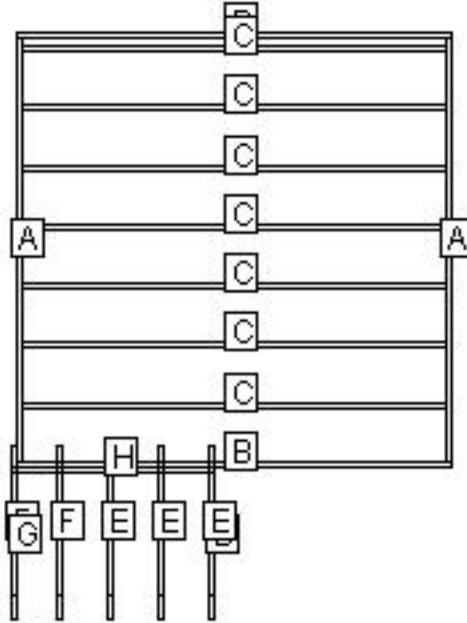
**Materials Cut List: Level 1**



LABEL	NAME	QTY	LENGTH	BEVELS	LABEL	NAME	QTY	LENGTH	BEVELS
A	Header	2	7' 6"	0, 0	C	Internal Joist	5	9' 6"	0, 0
B	Rim Joist	2	9' 9"	0, 0					

Cut Angles: L=Left, R=Right, F=Front, S=Side

**Materials Cut List: Level 2**

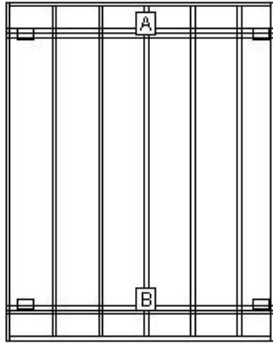


LABEL	NAME	QTY	LENGTH	BEVELS	LABEL	NAME	QTY	LENGTH	BEVELS
A	Header	2	9' 6"	0, 0	E	Pre Cut Stringer	3	4' 1 1/2"	0, 0
B	Rim Joist	2	9' 9"	0, 0	F	Pre Cut Stringer	2	4' 1 1/2"	0, 0
C	Internal Joist	7	9' 6"	0, 0	G	Cladding	1	4' 1 1/2"	0, 0
D	Cladding	1	4' 1 1/2"	0, 0	H	Stringer Support	1	4' 7"	0, 0

Cut Angles: L=Left, R=Right, F=Front, S=Side



**Analysis Page: Level 1**



**LOAD AND SUPPORT:**

Your deck will support a 102 PSF live load.  
Posts have 24" below ground support.

**DECK AND POST HEIGHT:**

You selected a height of 48" from the top of the decking to the ground level. The top of the deck support posts will therefore be 36" above ground level.

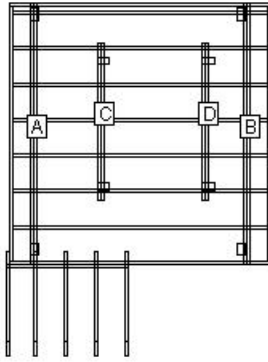
**Joists:**

Set joists on top of beams, 16"; center to center.

**Stress Analysis: Level 1**

Joist Deflection	578
Joist Bending	112
Joist Shear	167
Joist Compression	167
Beam Deflection	596
Beam Bending	128
Beam Shear	112
Post Stability	385

**Analysis Page: Level 2**



**LOAD AND SUPPORT:**

Your deck will support a 65 PSF live load.  
Posts have 24" below ground support.

**DECK AND POST HEIGHT:**

You selected a height of 36" from the top of the decking to the ground level. The top of the deck support posts will therefore be 24" above ground level.

**Joists:**

Set joists on top of beams, 16"; center to center.

**Stress Analysis: Level 2**

Joist Deflection	578
Joist Bending	112
Joist Shear	167
Joist Compression	167
Beam Deflection	212
Beam Bending	75
Beam Shear	81
Post Stability	306

**Warning:** You have prepared a preliminary design of a deck for residential purposes, including the preparation of a preliminary bill of materials and a preliminary materials pricing estimate. Materials pricing estimates do not include labor costs and are subject to change. This preliminary design is NOT intended for use as a final design and may not be sufficient for permit applications. Variations in building codes, specific architectural considerations, and/or site conditions may require changes to the preliminary design. You are responsible for the final structural, code compliance, material usage, and structural safety of this design. Be sure to check and verify the design with your architect, engineer and building inspector.

Lowe's does not assume any responsibility for design, engineering, or construction; for the use of installation of materials; or for compliance with any building code or standard of workmanship. You should consult with professionals (including an architect, engineer, licensed contractor, and/or building inspector or code official) concerning the suitability, safety, and legality of this preliminary design, rather than relying on this tool for those functions. Always refer to information on fastener packaging for use with pressure treated lumber.

**Preferences:** Certain assumptions have been made in order to provide an accurate material quote for your deck project. Because local codes and bylaw requirements may vary throughout the country (e.g., by municipality and state/province), it is imperative that you check with your architect, engineer, licensed contractor, and/or building inspector or code official for compliance with local requirements and building codes. The following building practice assumptions have been made in planning the materials for your project:

Footer Depth:	24"
Footer Type:	Post On Concrete
Joist Cantilever:	6 inches
Joist Spacing:	16" center to center
Spacing Between Deck Planking:	1/8"
Stair Stringers:	10 inches
Deck Live Load:	40 psf
Deck Dead Load:	10 psf
Stairs Live Load:	40 psf
Stairs Dead Load:	10 psf

Be sure to check and verify the design with your architect, engineer and building inspector.

**Note:** It is recommended that joist that meet on top of beams should be spliced with gussets. The gussets should be 2- by wood the same width at the joist and overlap by 6 inches on each side. These gussets should be held in place with 12 16d galvanized nails.

## Handling Precautions for Pressure-Treated Wood

**Disposal:** Dispose of treated wood by ordinary trash collection. Treated wood should not be burned in open fires, stoves, fireplaces, or residential bilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g construction sites) must be disposed of in accordance with state and Federal regulations, which may include burning only in commercial or industrial incinerators or boilers. Always refer to information on fastener packaging for use with pressure treated lumber.

**Operating Conditions:** Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing, sanding and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood. (Lowe's instore saws are equipped with a vacuum to minimize airborne sawdust).

**Protection:** When power-sawing and machining, wear goggles to protect eyes from flying particles.

**Clean Thoroughly:** Wear gloves when working with the wood. After working with the wood, and before eating, drinking, toileting, and use of tobacco products, wash exposed areas thoroughly.

**Wash Separately:** Because preservatives or sawdust may accumulate on clothes, they should be laundered before reuse. Wash work clothes separately from other household clothing.

**For Additional Information:** [www.epa.gov](http://www.epa.gov) - [www.healthybuilding.net](http://www.healthybuilding.net) - [www.ccasafetyinfo.com](http://www.ccasafetyinfo.com)  
[www.treatedwood.com](http://www.treatedwood.com) - Call: (800)282-0600 or (800)356-AWPI