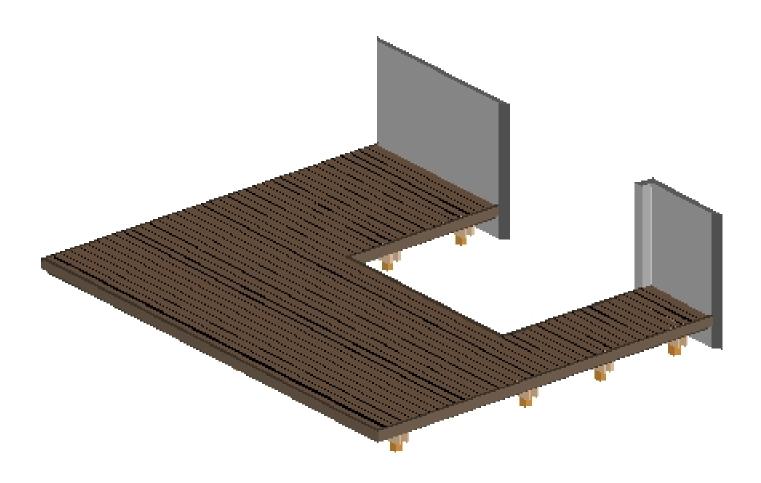
# Design and Plan Your Deck





Lowes Deck Design For

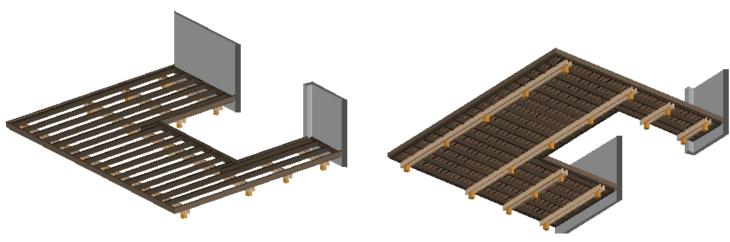
# **Keith**

Print this document and take it to your local Lowe's.

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

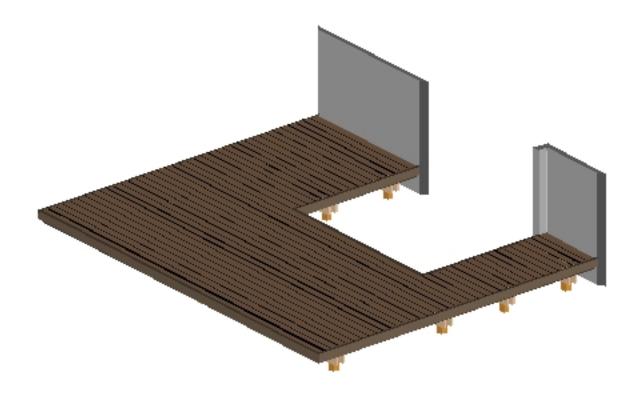


# **Deck layout diagram**



Top view without planks

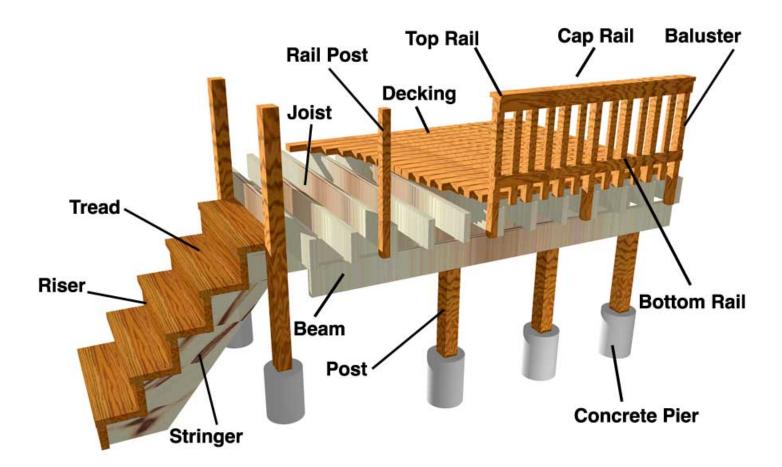
Bottom view with planks



Top view with planks



#### **Deck Part Identification**



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.

Concrete Pier A vertical piece of concrete, used as a footing to support a post.

Post A vertical framing piece, used to support a beam or a joist.

Riser The 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, perpendicular to the riser.

Bottom Rail The lower horizontal piece that connects rail posts

Top Rail The upper horizontal piece that connects rail posts

Cap Rail The top horizontal trim on railing.

Rail Post The vertical posts connected to the deck framing, to which railing is secured.

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### **Installation Checklist**

## **Building code and zoning requirements**

Check deed restrictions, building codes and/or zoning laws to make sure your deck complies. Check with local utility companies to make sure deck construction will not disturb 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.

#### Install posts

Footing/posthole depth is dictated by local codes.

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



#### Installation Checklist

#### Post bracing

Brace posts as dictated by local codes.

#### 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.

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 for local code restrictions on railings.

#### **Stairs**

Check local codes on stair restrictions.

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.



# **Tools Required & Tips for Success**

#### **Tools Required:**

Carpenter's level Hearing protection Ruler

Carpenter's squareHammerSafety glassesChalk lineHand sawScrewdriversChiselHoe 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.
- Before you apply a finish on your deck, test for moisture by sprinkling the surface of a small area of the deck
- 6. 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.

#### "How to Guide" Download Information

If you have not read our deck building article, read it at Lowes.com/YourDeck



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

Overview	Number of Levels: 1 Total Square Feet: 316	Footer Depth: 30" Live Load: 40 psf
		Dead Load: 10 psf

Component	Size	Wood Type
Joists	2 x 6	Top Choice Treated
Beams	2 x 6	Top Choice Treated
Posts	4 x 4	Top Choice Treated
Decking	5/4 x 6	Pressure Treated Standard Decking
Railing		None
Bench		None
Lattice		None

FooterDepth	30"	Live Load	40 psf
		Dead Load	10 psf



# **Item Numbers May Vary By Location**

Some Items May Not Be Available In All Locations

# **Material List**

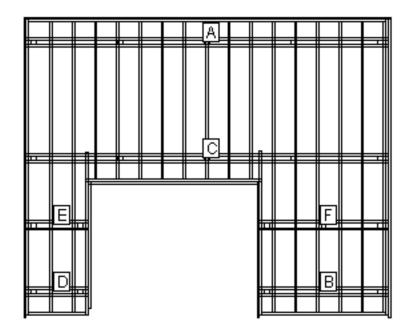
Lumber Materials					
Item Number	Quantity	Description	Usage		
6715	15	2X6X20 ACQ TREATED	Rim Joist		
30180	10	2X6X10 TOP CHOICE STRUCT HF ACQ	Rim Joist		
24272	8	2X6X12 TOP CHOICE STRUCT HF ACQ	Beam		
24661	6	2X6X8 TOP CHOICE STRUCT HF ACQ	Beam		
5663	1	5/4X6X12.40 STDPT DKG WTR REPE	Deck Planking		
86570	17	5/4X6X14 STD ACQ TREATED	Deck Planking		
5665	26	5/4/6X16.40 STDPT DKG WTR REPE	Deck Planking		
24665	2	2X6X16 TOP CHOICE STRUCT HF ACQ	Rim Joist		
121	4	4X4X6 #2 .40 ACQ TREATED	Post		

Other Materials					
Item Number	Quantity	Description	Usage		
108719	19	ABA44Z 4X4 POST BASE Z MAX COATED	Footing to Post		
103283	26	BASIC CONCRETE MIX 80LB	Footing to Post		
218509	19	1/2"X6" HDG ANCHOR BOLT AB126HDG	Footing to Post		
69262	1	NAIL COMMON GALV 5 LB 10 D	Footing to Post		
35586	152	1/2" FLAT WASHER 806409.5	Post to Beam		
67357	76	GALV CARRIAGE BOLT 1/2 X 8	Post to Beam		
67342	76	GALV 1/2 HEX NUT	Post to Beam		
21993	96	HURR ANCHOR, 6.5X1.5TZ DBL PLATE TIE	Joist Framing		
69138	20	NAIL COMMON GALV 1LB 8D	Joist Framing		
68408	3	JOIST HGR.NAIL 1 LB 1-1/2"NA111CD	Joist Framing		
115180	28	H2.5AZ REVERSIBLE HURR CLIP ZMAX	Joist Framing		
95991	32	LUS26Z ZMAX 2X6 JOIST HANGER	Joist Framing		
184956	1	10DX1 1/2" NAIL (5 LB.) MC	Joist Framing		
87727	8	L70Z 7" ANGLE ZMAX	Joist Framing		
27388	2	Olympic Maximum Waterproofing Clear Sealant	Deck Planking		





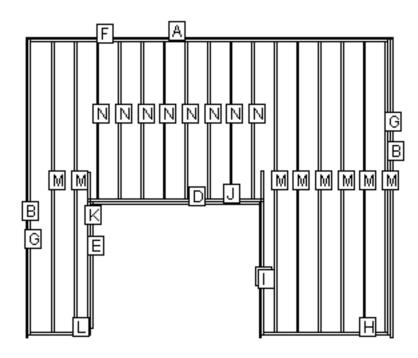
# **Beam Layout Level 1**



BEAM LENGTH	POST COUNT	POST SPACING
21' 9"	5	5' 2 1/2"
7' 9"	2	6' 9 1/2"
21' 9"	5	5' 2 1/2"
3' 9"	2	2' 9 1/2"
3' 9"	2	2' 9 1/2"
7' 9"	3	3' 4 3/4"
	21' 9" 7' 9" 21' 9" 3' 9" 3' 9"	21' 9"       5         7' 9"       2         21' 9"       5         3' 9"       2         3' 9"       2



**Materials Cut List: Level 1** 



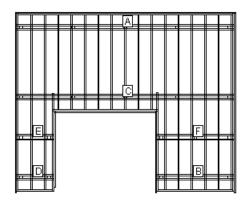
LABEL	NAME	QTY	LENGTH	<b>BEVELS</b>	LABEL	NAME	QTY	LENGTH	<b>BEVELS</b>
Α	Fascia	1	22'	F45 S45	Н	Header	1	7' 6"	
В	Fascia	2	18'	F45 S45	I	Outer Joist	1	9' 9 3/4"	
С	Fascia	1	8' 1 1/2"	F45 S45	J	Header	1	10' 6"	
D	Fascia	1	10' 3"	F45 S45	K	Outer Joist	1	9' 8 3/4"	
E	Fascia	1	7' 7 1/2"	F45 S45	L	Header	1	3' 6"	
F	Header	1	21' 6"		M	Joist	8	17' 6"	
G	Outer Joist	2	17' 9"		N	Joist	8	9' 6"	

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

# **Design and Plan Your Deck**



Permit Page: Level 1



# **LOAD AND SUPPORT:**

Your deck will support a 40 PSF live load. Posts have 30" below ground support.

# **DECK AND POST HEIGHT:**

You selected a height of 18" from the top of the decking to the ground level. The top of the deck support posts will therefore be 11.25" above ground level.

# Joists:

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

Stress Analysis: Level 1

Component	PSF	
Joist Deflection	172	
Joist Bending	56	
Joist Shear	81	
Joist Compression	196	
Beam Deflection	50	
Beam Bending	50	
Beam Shear	56	
Bolt Shear	168	
Post Stability	262	

# Design and Plan Your Deck



**Warning:** This may not be a final design plan. Variations in building codes, specific architectural considerations, or site conditions may require changes to this design. You are responsible for the final structural, code verification, 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 is a supplier of material only. Lowe's does not engage in the practice of engineering, architecture, or general contracting. 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. 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 vary throughout the country, it is imperative that you check with your local municipality for compliance with local building codes. The following building practice assumptions have been made in providing the materials for your project:

Footer Depth: 30

Footer Type: Post On Concrete

Joist Cantilever: 12 inches

Joist Spacing: 16" center to center

Spacing Between Deck Planking:

Stair Stringers:

Deck Live Load:

Deck Dead Load:

Stairs Live Load:

Stairs Live Load:

40 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 - www.healthybuilding.net - www.ccasafetyinfo.com www.treatedwood.com - Call: (800)282-0600 or (800)356-AWPI