## PERMIT

INSPECTION RECORD

# CITY OF NAPOLEON - BUILDING DEPARTMENT 255 West Riverview Avenue, Napoleon, Ohio 43545 - 419-592-4010

Permit No	01524Issue	ed 4-4-88 date		FE	ES		PLUS	TOTAL
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# INSPECTION RECORD

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PLUMBING	Building Sewer			Water Piping			Condensate Lines			Water Heater	111	
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	Refrigerant Piping			Refrigerant Piping			Chimney(s)			Grease Exhaust System		
CAL				Duct Furnace(s)			Fire Dampers			Air Cond. Unit(s)	7 - 0	
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_	Conduits & or Cable			Conduits/ Cable			□ Range □ Dryer			Temp Service Temp Lighting		Г
AL	Grounding & or Bonding			Rough Wiring			☐ Generator(s) ☐ Motors			Fixtures Lampholders		
TRIC	Floor Ducts Raceways			Service Panel Switchboard			□ Water Htr □ Welder			Signs		
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	Temporary Power Pole			Subpanels			□ Duct Htr(s) □ Furnace(s)			FINAL APPROVAL		
	Location, Set- backs, Esmt(s)			Exterior Wall Construction			Roof Covering Roof Drainage			Smoke Detector		
	Excavation						Exterior Lath			Demolition (sewer cap)		
	Footings & Reinforcing						☐ Interior Lath ☐ Wallboard					
BUILDING	Floor Slab			Interior Wall Construction			Fire Wall(s)			Building or Structure		
BUIL	Foundation Walls	-		Columns & Supports			Fireplace Chimney			· ·		
_	Sub-soil Drain			Crawl Space  □ Vent □ Access			Attic □ Vent □ Access					
	Piles			Floor System(s)						FINAL APPROVAL BLDG. DEPT.	1/19	5
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### PERMIT

CITY OF NAPOLEON - BUILDING DEPARTMENT 015 24 255 West Riverview Avenue, Napoleon, Ohio 43545 - 419-592-4010 Permit No. FEES PLUS BASE BUILDING Job Location. **ELECTRICAL PLUMBING** building official WORCHUCIL Owner A ICHARC **MECHANICAL** Address //21 W/CCARO **DEMOLITION** builder-eng.-etc. ZONING Address. Description of Use RESIDENCE SIGN WATER TAP Residential\_ **SEWER TAP** no. dwelling units Commercial\_ Industrial. TEMP. ELECT. \_Remodel\_ **ADDITIONAL** Struct. \_\_\_\_\_ hrs PLAN Mixed Occupancy. REVIEW Elect. Change of Occupancy TOTAL FEES..... Estimated Cost \$ LESS MIN. FEES PAID\_ BALANCE DUE..... **ZONING INFORMATION** district lot dimensions area front yd side yds max hgt no pkg spaces no idg spaces max cover petition or appeal reg'd WORK INFORMATION: Size: Length 26 \_Width\_// Ground Floor Area 2 40 Height To Man Building Volume (for demo. permit) Electrical: NA brief description Plumbing: XA brief description Mechanical: brief description Dimensions Sign Area Additional Information: Date\_ Applicant Signature owner-agent

White-Building Department "Yellow-Applicant" Pink-Electrical Inspector

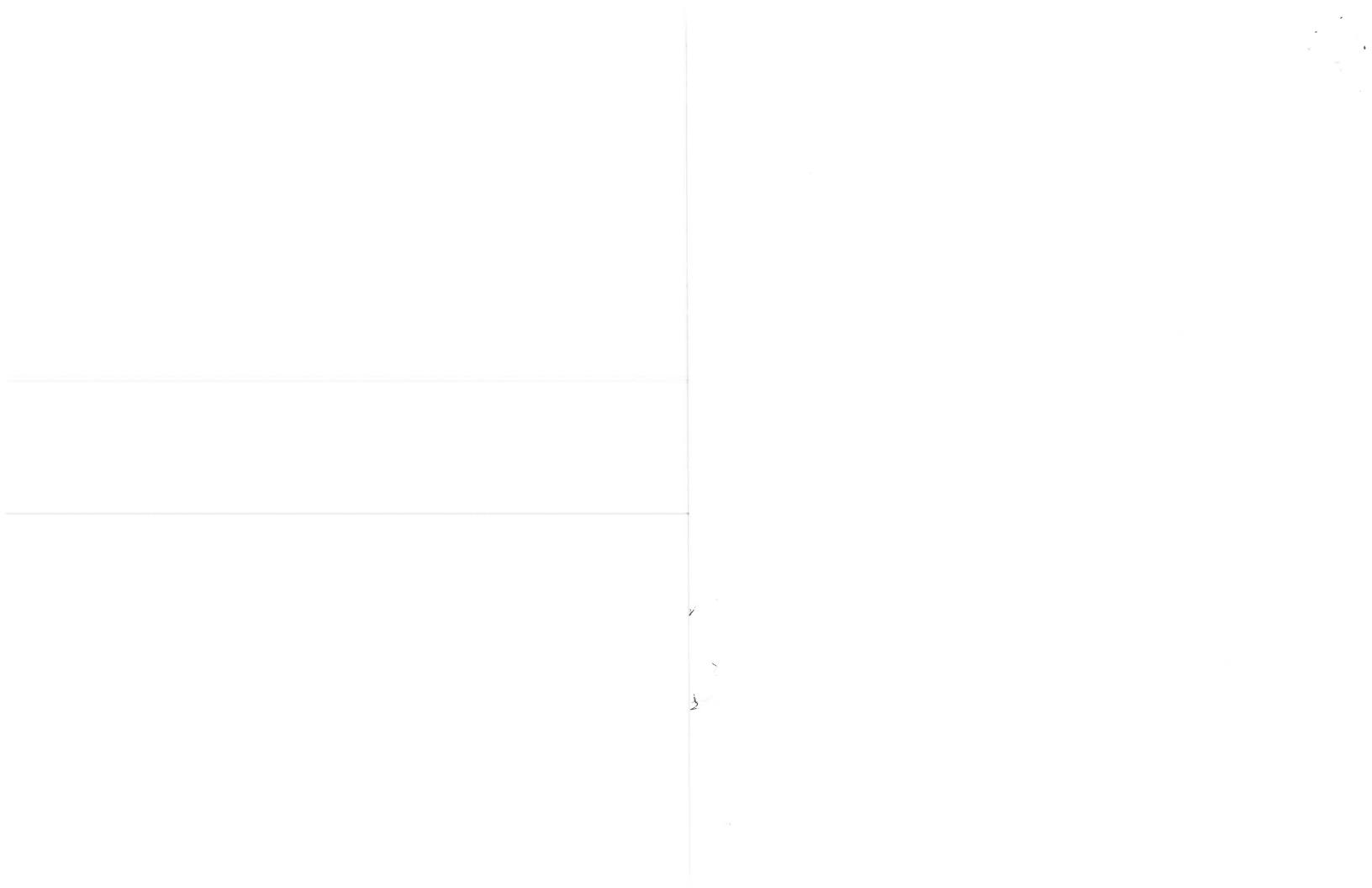
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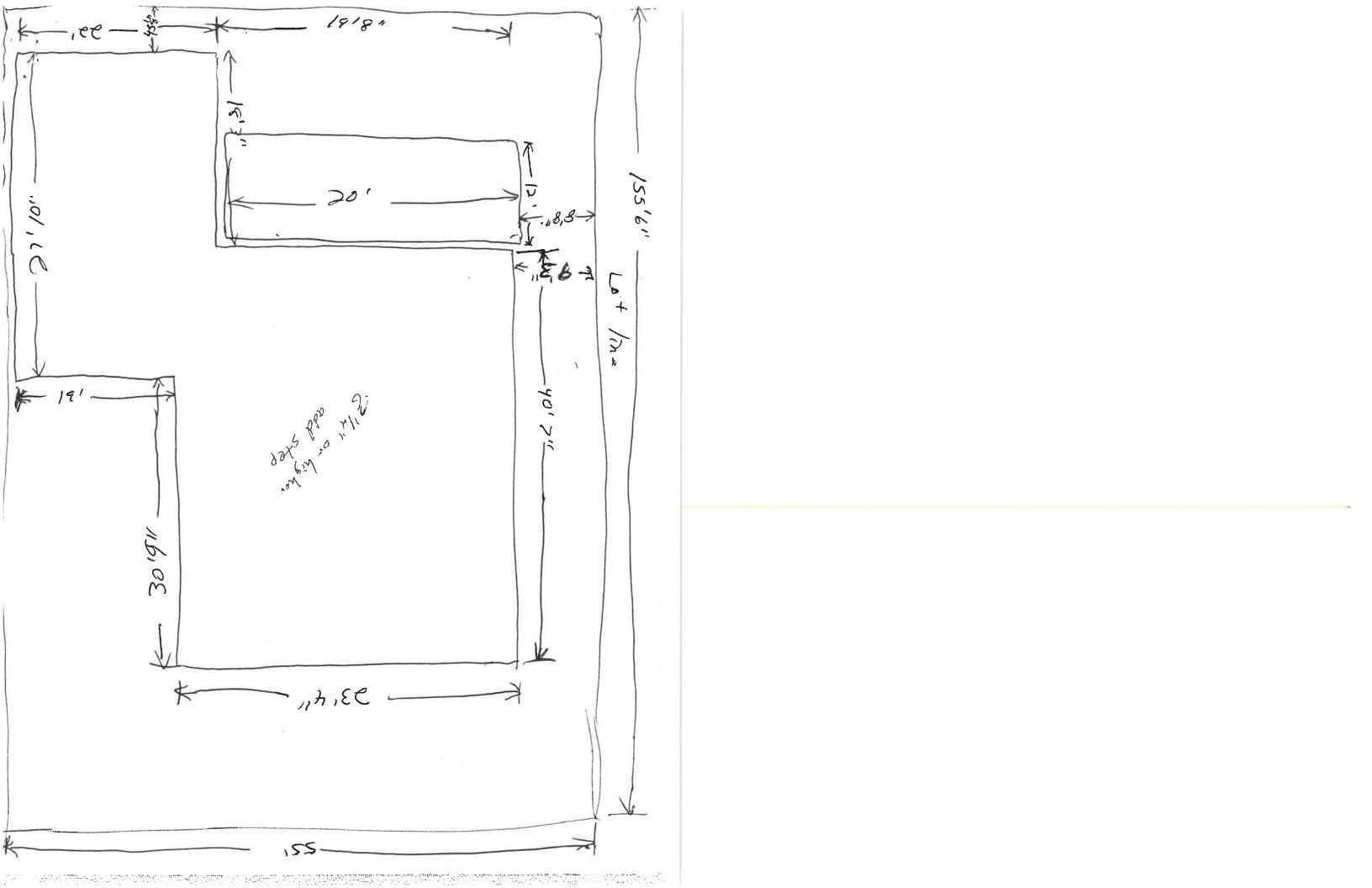
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# CITY OF NAPOLEON BUILDING INSPECTION DEPARTMENT APPLICATION FOR BUILDING PERMIT (Please print or type)

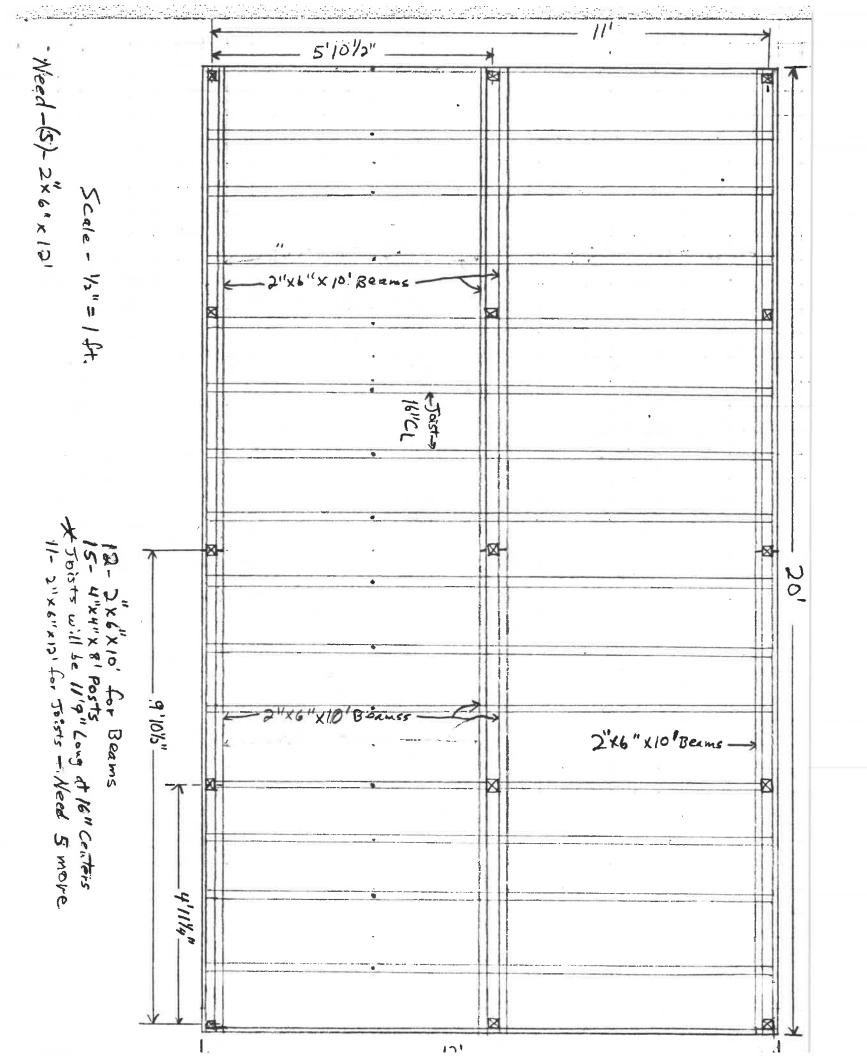
The undersigned hereby makes application for construction, installation, or alteration work as herein specified, agreeing to do all such work in strict accordance with the City of Napoleon's adopted Building Codes.

Location of project	t 1/21 Willard ST	Cost of	project #485.00
Owner's Name Mic	hael Worchuck	Address_//	Willard St.
	nyself		
	21 willard St.		
	(Not required for s	iding job)	
Lot No. 13	Subdivision	Highland 2nd A.	delition
	A Lot Size <u>55</u>		
Setbacks: Front_	Right Side	Left Side	Rear
Work Information:		•	
Residential $\_$	Commerc	cial	Industrial
New Construction_	X Additio	on	Remodel
Accessory Building	J	Siding	nocific Tune)
	of Work:A	siding (S	specific Type)  back of house
12' x 20'			
/2' x 20' Size: Length	of Work:A  Widthsq. ft.	_ No. of Stories_	2
Size: LengthArea: lst Floor	Width	No. of Stories	sq. ft.
Size: Length	Width sq. ft.	No. of Stories  Basement  Accessory Bldg	sq. ft. sq. ft.
Size: Length	Width sq. ft sq. ft sq. ft sq. ft.	No. of Stories  Basement  Accessory Bldg	sq. ft. sq. ft.
Size: Length	Width sq. ft sq. ft sq. ft sq. ft.	No. of Stories  Basement  Accessory Bldg.  Other  MPANIED BY TWO CON CROSS SECTIONS AN STING STRUCTURES AT TO SCALE.	sq. ft. sq. ft. sq. ft. sq. ft. sq. ft. sq. ft.





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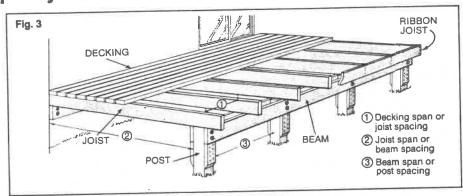
Let's say that your deck will extend eight feet from the house and be 14 feet long. If it is to be just above ground level, there's little need for a railing. However, higher decks call for a sturdy railing.

Table 2 shows the appropriate beam size. For example, the distance between the house and the beam is eight feet. A 4 x 8 beam allows a span of seven feet between posts, a convenient figure for a deck 14 feet long. A beam can be a single piece of the dimension specified, or built up from two small pieces either nailed together or placed a few inches apart on either side of a post. Note, however, that two 2 x 8's are not equivalent to a 4 x 8 in actual dimensions, as shown in Table 1.

To calculate the size post needed, multiply the beam spacing (eight feet) by the post spacing (seven feet). This gives you the load area-56 square feet. Table 3 shows that, for a load area less than 72 sq. ft. and a post height under 6 feet, a 4 x 4 post is adequate.

Decking in this example will be 2 x 6 boards, laid flat. Table 4 shows the safe spans for the decking.

Now refer to Table 5. As in our example, your joists must span the eight



feet between the house and the outer beam. That can be achieved with 2 x 8 joists spaced 24 inches apart.

If a railing is desired, refer to Table 6 to determine proper post sizes and spacing requirements.

# **Estimating**

After deciding the type, shape and size of deck you'll build, the next step is to estimate the materials you'll need. If you use a ready-made design, and the materials list is provided, this work is already done for you. But if you design your own deck, or use a variation from a

standard plan, you'll have to estimate material requirements. In estimating, it's better to overestimate since you can always use any excess material in other projects, such as benches or planter boxes.

First, draw a simple sketch of the deck-decking, rails, footings, posts and beams. Using the worksheet at the back of this manual, sketch the deck to scale. perhaps 1/4-inch per foot. To save money, stick to standard lumber sizes and lengths to the fullest extent possible. For example, deck boards are usually stocked  $2 \times 4$ ,  $2 \times 6$  or  $\frac{5}{4} \times 6$  inch and 8. 10, 12, 14 and 16 foot lengths. Allow a maximum of 1/4 inch spacing between boards.

Table 2-Minimum beam sizes (see Fig. 3)

Length	Spacing between posts (ft.)								
of Span (ft.)	4	5	. 6	7	8	9	10		
6	(2) 2 x 8s	(2) 2 x 8s	(2) 2 x 8s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 12s		
7	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s		
8	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 12s		
9	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 12s	*		
10					(3) 2 x 12s		*		
11		(2) 2 x 12s				*	*		
12		(3) 2 x 12s				*	*		

\*Beams larger than 2 x 12 recommended. Consult a designer for appropriate sizes.

Table 3-Minimum post sizes

Height	Load area (sq. ft.) = beam spacing x post spaci					
(ft.)	48	72	96	120	144	
Up to 6	4 x 4	4 x 4	6 x 6	6 x 6	6 x 6	
Up to 8	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	

Vertical loads figured as concentric along axis.

Table 4—Recommended spans for spaced deck boards

	S	pans ir	Inches	
	Laid	flat		Laid on edge
5/4 x 4	5/4 x 6	2 x 4	2 x 6	2 x 4
16	16/24**	16	16/24**	48

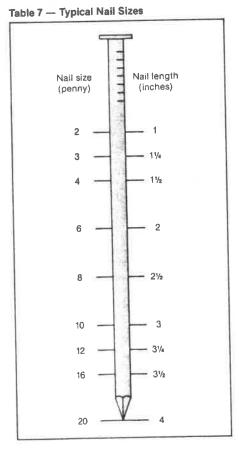
\*\*Although 24 inches is a safe span, undesirable deflection or springiness may occur.

Table 5-Maximum allowable spans

Joist size (inches)	Joist spacing (inches)		
	16	24	
2 x 6	9'-9"	7'-11"	
2 x 8	12'-10"	10'-6"	
2 x 10	16'-5"	13'-4"	

Table 6—Railings

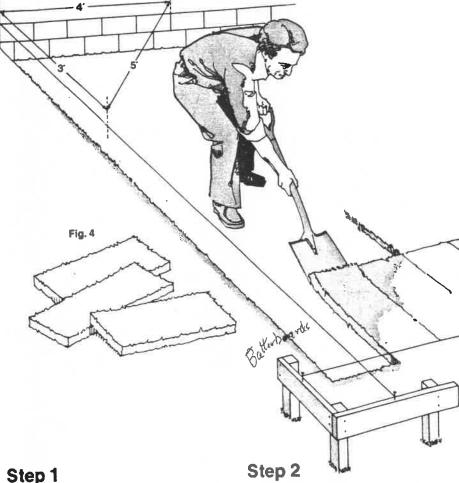
Distance between posts	Post size (inches)	Cap size (inches)
2' to 3'	2 x 4	2 x 4
3' to 4'	2 x 4, 4 x 4	2 x 4, 2 x 6
4' to 6'	2 x 6, 4 x 4	2 x 6



Construction



# Step-by-step Method of Deck Construction



Prepare the site. With a spade or sod cutter, remove sod to a depth of two or three inches. Uncover an area approximately two feet larger than the planned deck. It's unlikely that grass would be able to grow in the shadow of your deck, so you might as well transfer the sod to a bare spot in your yard where it would be useful. To prevent weeds and unwanted vegetation from growing up through the deck, spread a sheet of polyethylene film over the area, You'll have to slit this to embed posts in the ground. After the posts have been installed, cover the sheet with gravel,

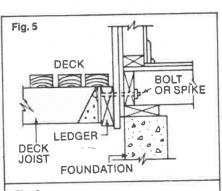
pebbles or bark chips.

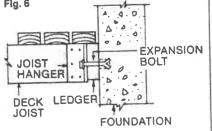
# Step 3

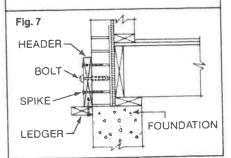
A ledger/header board is the next step if you are attaching your deck to an existing structure.

The placement of the ledger/header determines the level of the deck floor, so be sure it is positioned at the correct height and is horizontal.

When fastening ledger/header boards to wood, the ledger can be held securely with nails or lag screws. Predrill a pilot hole first before driving the lap siding; a strip of the siding can be inverted and used as a shim to hold the ledger/header perpendicular. Where aluminum or vinyl siding is in place, It is pest to carefully cut siding away from house so that ledger/header board can be secured directly to house. (see Figs. 5, 6 & 7 below).







Mark off the deck area using string and "batterboards" (Fig. 4) making sure that it is level and square. The string will help you visualize the size and appearance of the finished deck and will also serve as a guide for excavation and post placement.

### Squaring with string

- (1) Attach string to house and/or batterboards-make sure it's level.
- (2) Use felt tip marker to mark string 3' from corner in one direction and 4' from corner in other direction.
- (3) When the diagonal connecting these two points is 5', you have a right triangle and the angle at the corner will be 90°

Note: To obtain the 5' measurement, move string attached to batter board to the left or right until correct.

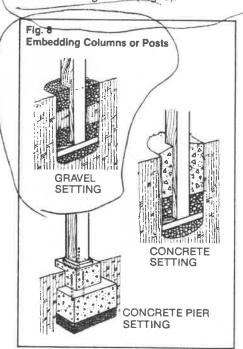
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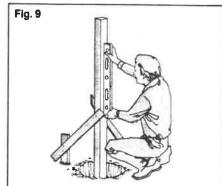


Step 4

Locate and dig holds for footings. In normal soil the holes should be a minimum of 24 inches deep, although the actual depth will depend on the height of the column and the depth of the frost line. Posts should go deeper than the frost line to avoid heaving during freeze and thaw cycles. Fill the bottom of the hole with 6 inches of gravel and place a Wolmanized wood footer plate (2" x 6" or 2" x 8" cut off) on top of gravel. Upright posts can then be positioned on this base (Fig. 8) Fill the post hole with alternating layers of 4 to 5 inches of gravel and earth. Tamp each layer until hole is filled and post is plumb and solid. If concrete collars are used, taper the tops downward and away from the post for drainage. Posts can also be set in concrete.

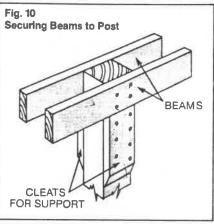
In setting the posts, make sure they are plumb and in alignment with one another. Use a carpenter's level to check for vertical alignment (Fig. 9).



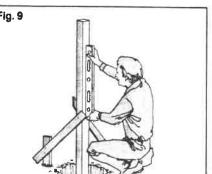


# Step 5

Secure beams to posts. Using a string and level, find the desired deck floor height on the posts. By subtracting the thickness of the deckboard and joist (use the actual dimension not the nominal one), you will have determined the correct height for securing the top of the beam to the post. Carefully mark all 4 sides of all posts. You may cut all posts except those serving as railing supports at this time. Fasten the beam to the post, keeping post and beam flush. (see Fig. 10).







# Step 6

Attach joists. Joists are attached to the house with joist hangers and/or supported by a ledger board. Joists are placed on 16" or 24" centers, and attached to the beams and ribbon joist. (see Fig. 11).

LEDGER

**HEADER** 

JOISTS

2 x 8 s

ON 16" OR 24"

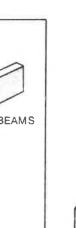
LEDGER

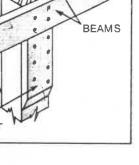
**HEADER** 

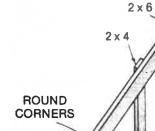
Fig. 11

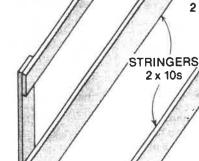
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TREAD





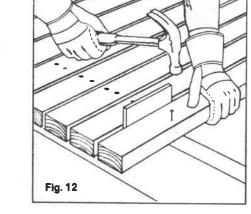




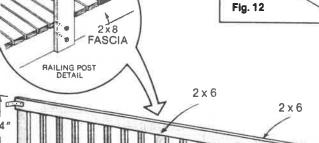
# Step 7

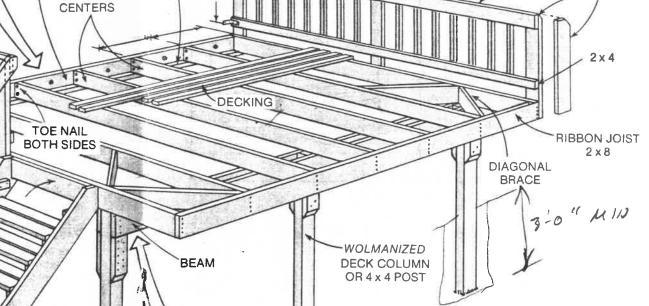
Install deck boards using hot-dipped zinc-coated 10 penny nails. You may wish to consider various nail heads and choose one with the appearance you like best.

Separate boards using a nail as a spacer or set boards 1/6" to 1/4" max., to allow for expansion and contraction. This can be quickly done using a nail or spacer (see Fig. 12) of the desired thickness.



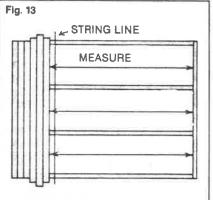
2 x 6s





2 x 10 **BEAMS** 

Your deck surface is an important part of your project, and the most visible. Make it simple with boards of equal width set on joists, or if you prefer, alternate planks of different widths. Make sure you measure as you go; and if you discover your spacing is off, adjust between the next 3 or 4 boards (see Fig. 13). When you get near the end, start adjusting your spacing to avoid a gap at the end of your deck. Fig. 13



If you install decking using straight planking, you can trim your deck after nailing to assure a straight line (see Fig. 14). Do not allow an overhang exceeding 11/2". For a more finished appearance, cut boards flush to the joist and add a fascia board.

If a board is slightly humped, install it with the bark side up when possible to minimize cupping. The weight of people and objects on the deck, and of the board itself, will tend to flatten it. A curved board can also be used; use a chisel to pry it to the desired position and nail securely.

