

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

Permit No. 01524 Issued 4-4-88
date

Job Location 1121 Willard St.
address

Lot 13 Highland 2nd add.
sub-div or legal discript

Issued By Eldon Huber
building official

Owner Michael Worchuck
name tel.

Address 1121 Willard

Agent Self
builder-eng.-etc. tel.

Address _____

Description of Use Residence

Residential 1
no. dwelling units

Commercial _____ Industrial _____

New _____ Add'n. X Alter _____ Remodel _____

Mixed Occupancy _____

Change of Occupancy _____

Estimated Cost \$ 970.00

FEES	BASE	PLUS	TOTAL
<input checked="" type="checkbox"/> BUILDING	9.00	9.00	18.00
<input type="checkbox"/> ELECTRICAL			
<input type="checkbox"/> PLUMBING			
<input type="checkbox"/> MECHANICAL			
<input type="checkbox"/> DEMOLITION			
<input type="checkbox"/> ZONING			
<input type="checkbox"/> SIGN			
WATER TAP			
SEWER TAP			
TEMP. ELECT.			
ADDITIONAL PLAN REVIEW	Struct. _____ hrs	Elect. _____ hrs	
TOTAL FEES.....			\$18.00
LESS MIN. FEES PAID _____			
			<small>date</small>
BALANCE DUE.....			

ZONING INFORMATION

district	lot dimensions	area	front yd	side yds	rear yd
A					
max hgt	no pkg spaces	no ldg spaces	max cover	petition or appeal req'd	date appr

WORK INFORMATION:

Size: Length 20 Width 12 Stories 1 Ground Floor Area 240

Height 30" Max. Building Volume (for demo. permit) _____ cu. ft.

Electrical: N.A.
brief description

Plumbing: N.A.
brief description

Mechanical: N.A.
brief description

Sign: N.A. Dimensions _____ Sign Area _____
type

Additional Information: Wood deck.

PAID
MAR 30 1988

Date 3-30-88 Applicant Signature Michael J. Worchuck
owner-agent CITY OF NAPOLEON

PERMIT

CITY OF NAPOLEON - BUILDING DEPARTMENT

01524 255 West Riverview Avenue, Napoleon, Ohio 43545 - 419-592-4010

Permit No. Issued 3-30-88
date
 Job Location 1121 WILLARD ST
address
 Lot 13 HIGHLAND 2ND ADD
sub-div or legal discript
 Issued By ET
building official
 Owner RICHARD WORCOCIL
name tel.
 Address 1121 WILLARD
 Agent SELF
builder-eng.-etc. tel.
 Address _____
 Description of Use RESIDENCE
 Residential 1
no. dwelling units
 Commercial _____ Industrial _____
 New _____ Add'n. X Alter _____ Remodel _____
 Mixed Occupancy _____
 Change of Occupancy _____
 Estimated Cost \$ 970.⁰⁰

FEE	BASE	PLUS	TOTAL
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PLUMBING			
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 Additional Information: WOOD DECK

PAID
 MAR 30 1988

Date _____ Applicant Signature _____
owner-agent

CITY OF NAPOLEON

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 1121 Willard St. Cost of project # 485.00

Owner's Name Michael Worchuck Address 1121 Willard St.

Contractor myself Telephone No. 592-1236

Address 1121 Willard St.

Lot Information: (Not required for siding job)

Lot No. 13 Subdivision Highland 2nd Addition

Zoning District A Lot Size 55 ft. X 30.5 ft. Area 217.75 sq. ft.

Setbacks: Front _____ Right Side _____ Left Side _____ Rear _____

Work Information:

Residential Commercial _____ Industrial _____

New Construction Addition _____ Remodel _____

Accessory Building _____ Siding _____

Brief Description of Work: ----- Adding a deck to back of house
12' x 20'

Size: Length _____ Width _____ No. of Stories 2

Area: 1st Floor _____ sq. ft. Basement _____ sq. ft.

2nd Floor _____ sq. ft. Accessory Bldg. _____ sq. ft.

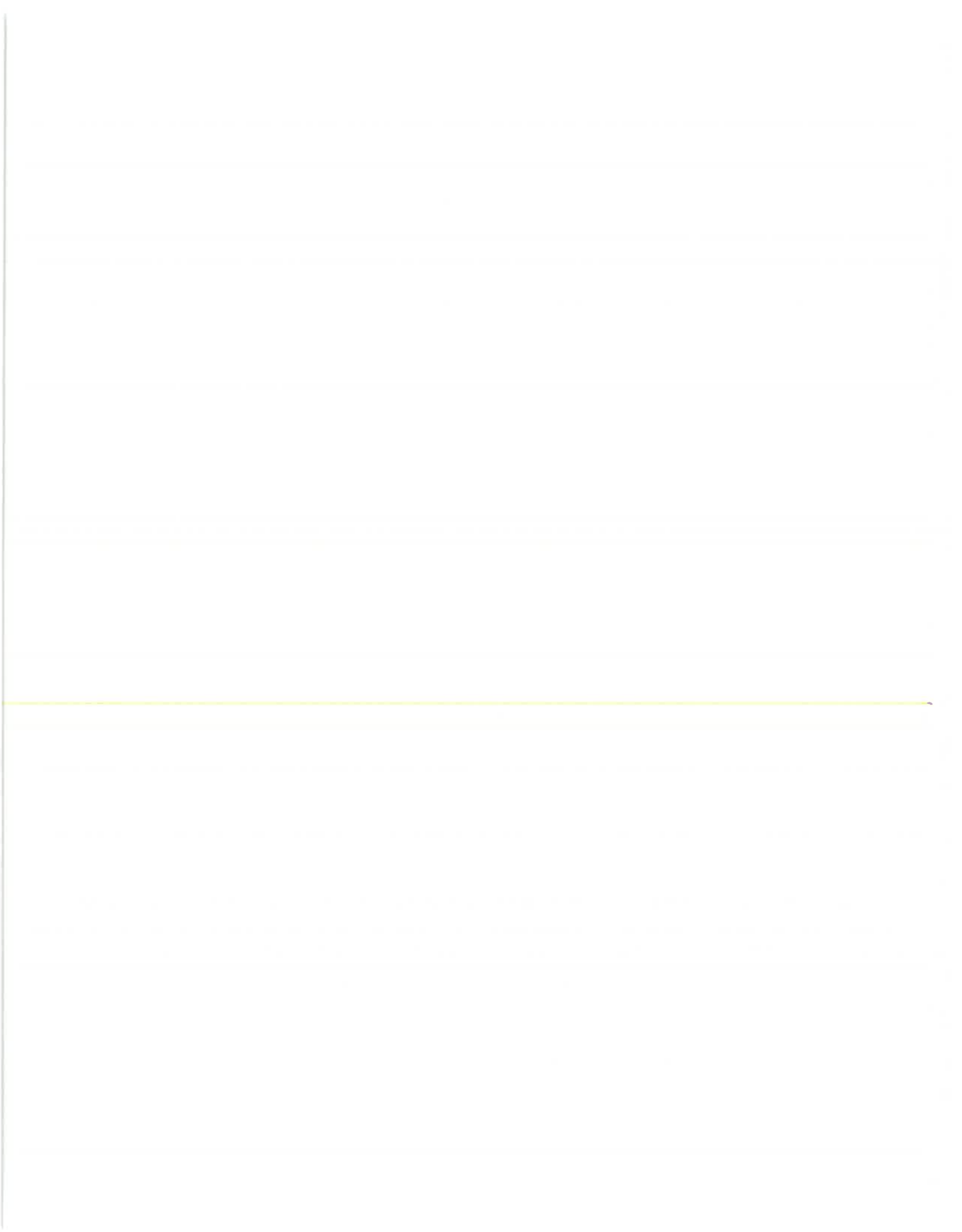
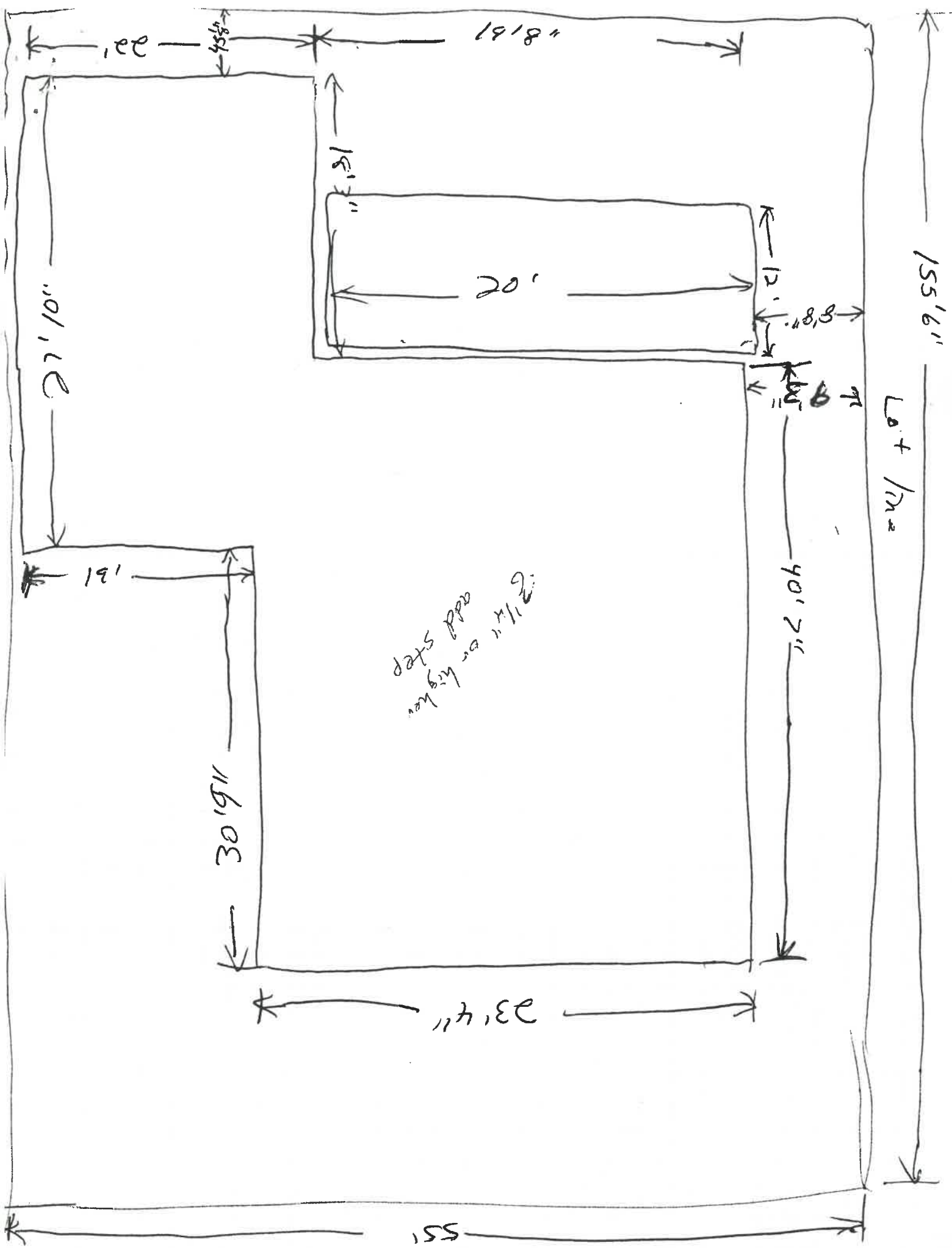
3rd Floor _____ sq. ft. Other _____ sq. ft.

Additional Information: _____

APPLICATION FOR PERMIT SHALL BE ACCOMPANIED BY TWO COMPLETE SETS OF PLANS INCLUDING: ELEVATIONS, FLOOR PLANS, CROSS SECTIONS AND PLOT PLAN. IF ADDITION OR REMODELING, SHOW ALL EXISTING STRUCTURES AND THEIR SIZE AND LOCATION. ALL PLANS SHALL BE DRAWN TO SCALE.

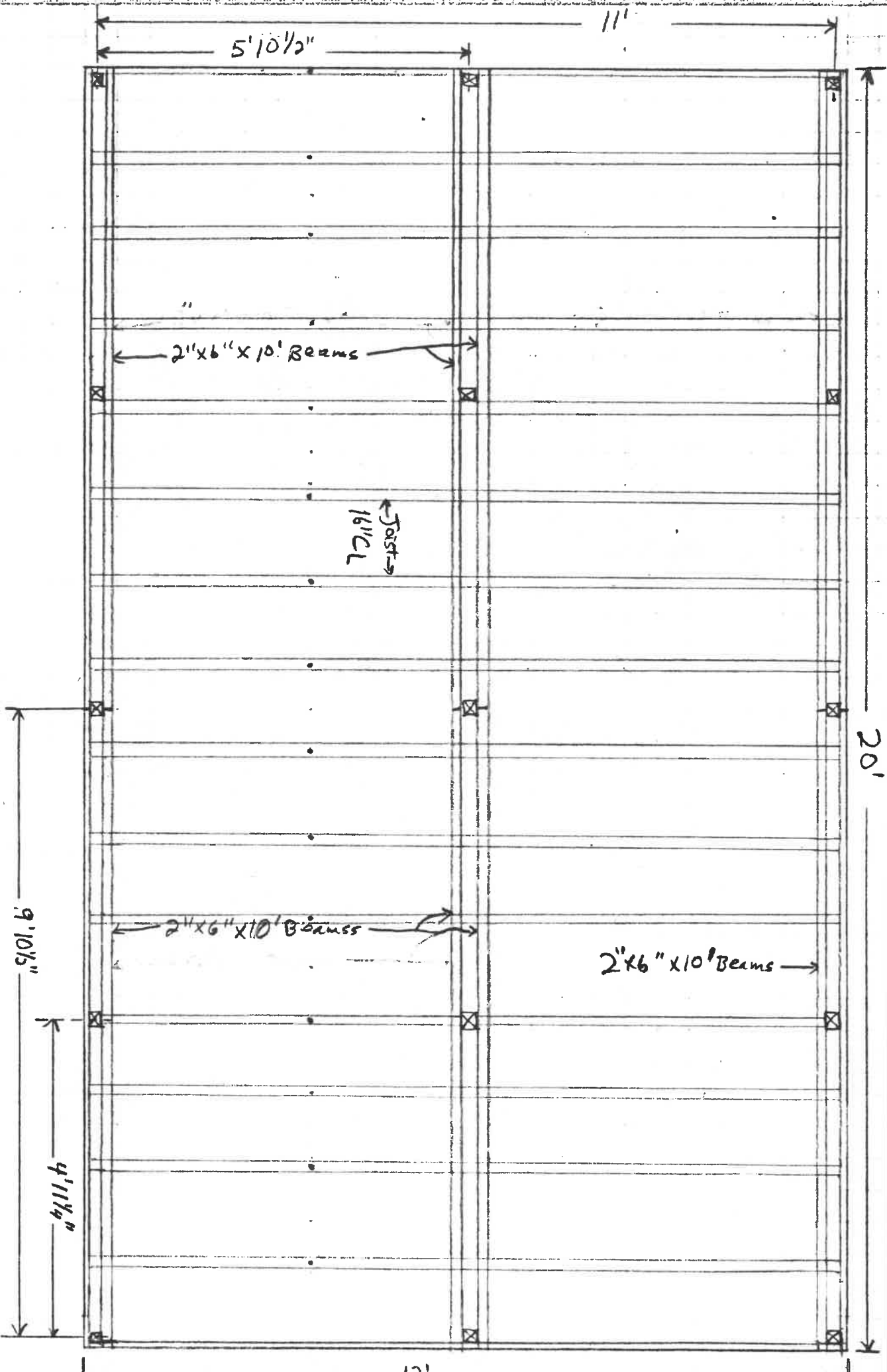
Date 3-30-88 Applicant's Signature Michael Worchuck

PERMIT NO. 01524
PERMIT FEE \$ 18.00



- Need (5) - 2" x 6" x 12'

Scale - 1/2" = 1 ft.



12 - 2" x 6" x 10' for Beams
15 - 4" x 4" x 8' Posts
* Joists will be 11' 9" Long @ 16" Centers
11 - 2" x 6" x 12' for Joists - Need 5 more

How to Get Started

Use these tables to help plan your deck

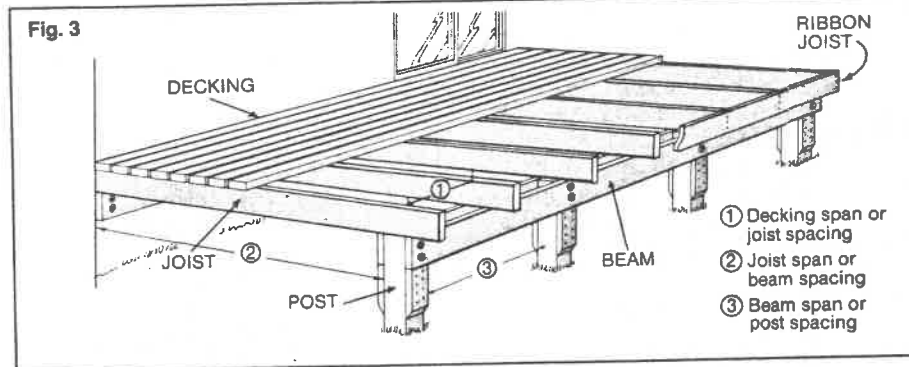
Let's say that your deck will extend eight feet from the house and be 14 feet long. If it is to be just above ground level, there's little need for a railing. However, higher decks call for a sturdy railing.

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 x 4, 2 x 6 or 1/4 x 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 of Span (ft.)	Spacing between posts (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	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	*	*
11	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	*	*	*
12	(2) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	*	*	*

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

Table 3—Minimum post sizes

Height (ft.)	Load area (sq. ft.) = beam spacing x post spacing				
	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. No lateral loads considered.

Table 4—Recommended spans for spaced deck boards

Spans in 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 for deck joists

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

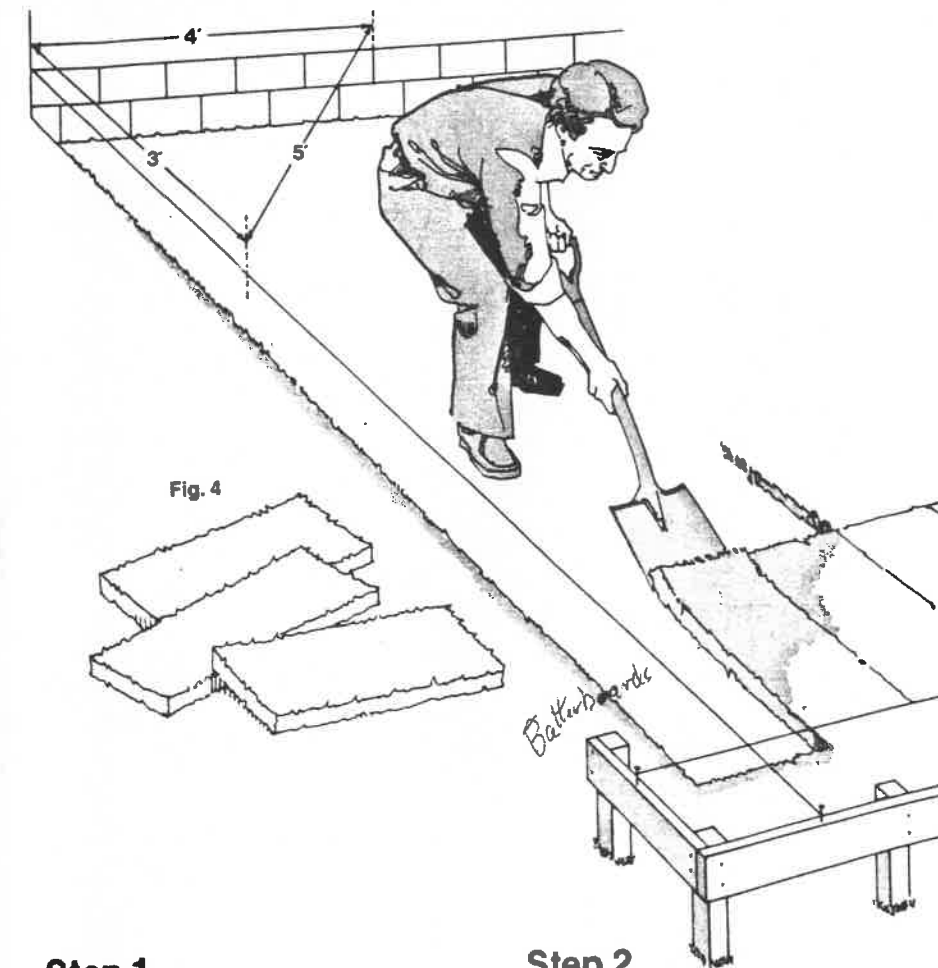
Side rails can be nominal 1" or 2" lumber of varying widths

Tables are based on lumber with 1200 psi bending stress rating and a live load of 40 psi.

Construction

Wolmanized
Pressure-Treated Lumber

Step-by-step Method of Deck Construction



Step 1

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

- Attach string to house and/or batterboards—make sure it's level.
- Use felt tip marker to mark string 3' from corner in one direction and 4' from corner in other direction.
- 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.

Step 2

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. Pre-drill a pilot hole first before driving the lag 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 best to carefully cut siding away from house so that ledger/header board can be secured directly to house. (see Figs. 5, 6 & 7 below).

Fig. 5

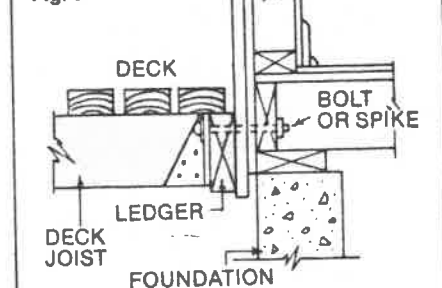


Fig. 6

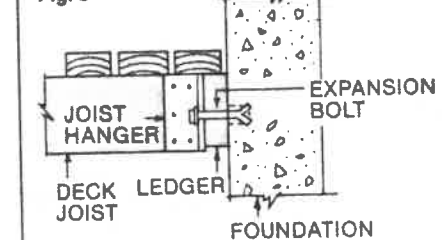
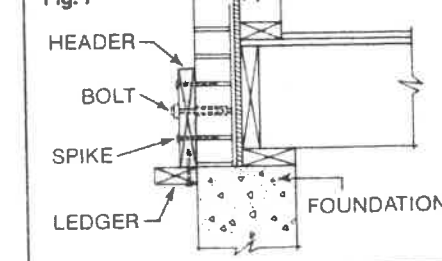


Fig. 7



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).

Fig. 8
Embedding Columns or Posts

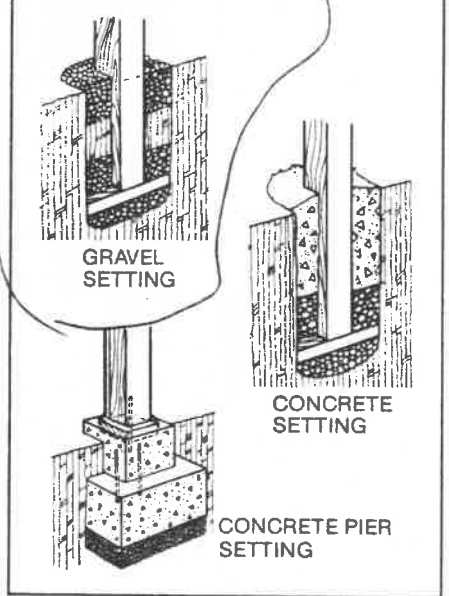
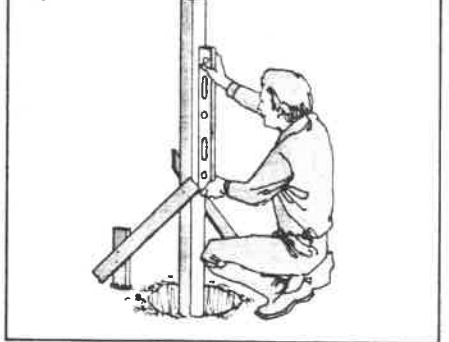


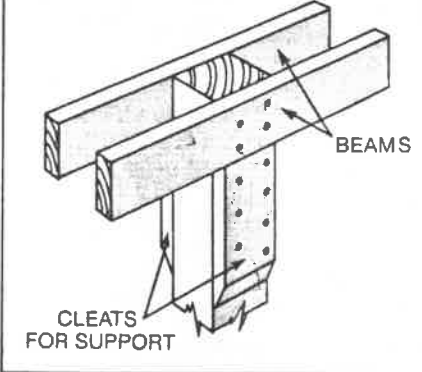
Fig. 9



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).

Fig. 10
Securing Beams to Post



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).

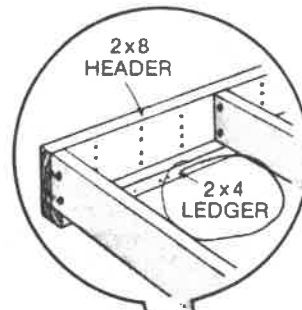
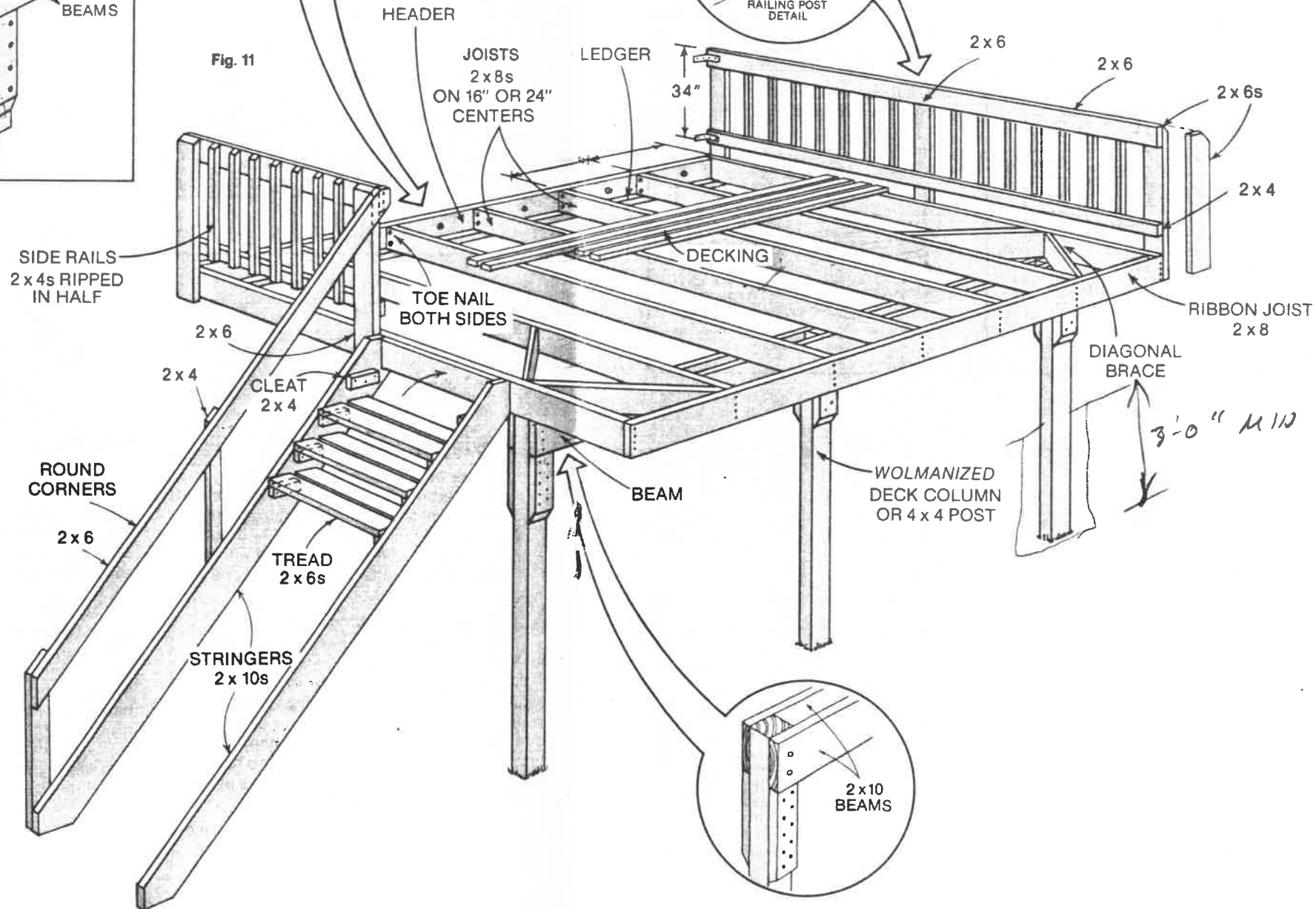


Fig. 11



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 1/8" 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.

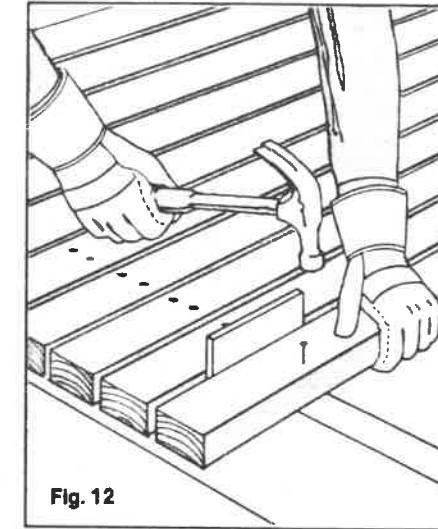
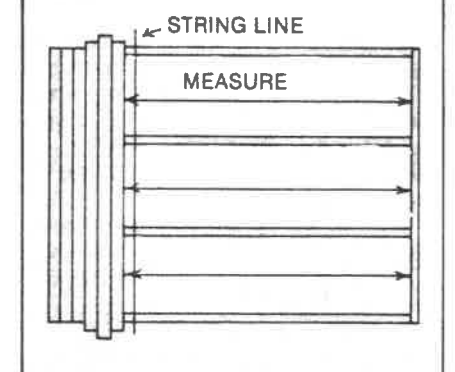


Fig. 13



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 1 1/2". 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.

Fig. 14



