



RESIDENTIAL DECKS 3-SEASON PORCHES

Information Sheet

BUILDING AND INSPECTION

- | | |
|--------------------------|---|
| Building Permits | Building permits are required for all decks and porches. |
| Setbacks | Check with the Building or Planning department. |
| Permit Fees | Based on construction cost, materials and labor. |
| Plan Requirements | Two (2) copies of the plans and one (1) copy of the site survey. (You may draw these yourself) Show all dimensions, specify types and sizes of materials - provide as much construction detail as you can. |
| Frost Footings | Frost footings are required for any deck or porch that is attached to a dwelling or garage that has frost footings. All porch footings must be 24" in diameter/square at the base of the footing. All footings must be 42" in depth - minimum. |
| Guardrails | All decks that are 30" or more above grade must be protected by a guardrail. Such rails shall be 36" minimum in height. Open guardrails and stair railings shall have intermediate rails or an ornamental pattern such that a 4" diameter sphere cannot pass through. |
| Overhang | Joists should not overhang beams by more than 2 feet, nor should beams overhang posts by more than 1 foot unless a special design is approved. |
| Live Load | All decks shall be designed to support a live load of 40 pounds per square foot. |
| Flashing | All connections between the deck/porch and dwelling shall be weatherproof. Any cuts in exterior finish shall be flashed and caulked. |
| Joist Hangers | Header Joist more than 6 feet long and tail joists over 12 feet long shall be supported by approved framing anchors as joist hangers. |

Wood Required

All exposed wood used in the construction of decks/porches is required to be of approved wood of natural resistance to decay (redwood, cedar, etc.) or approved treated wood. This includes posts, beams, joists and decking.

Stairs

Minimum width is 36". Maximum rise is $7\frac{3}{4}$ " Minimum tread run is 10". Largest tread run or riser height shall not exceed the smallest by more than $\frac{3}{8}$ ". A continuous graspable handrail is required, top to bottom of each stair having 4 or more risers. Handrails shall not be higher than 38" or lower than 34".

Design Note

Some deck designs may not be appropriate should the placement of a screen porch or 3-season porch on the deck platform be a future consideration.

Ten Most Common Reasons Deck Inspections Fail:

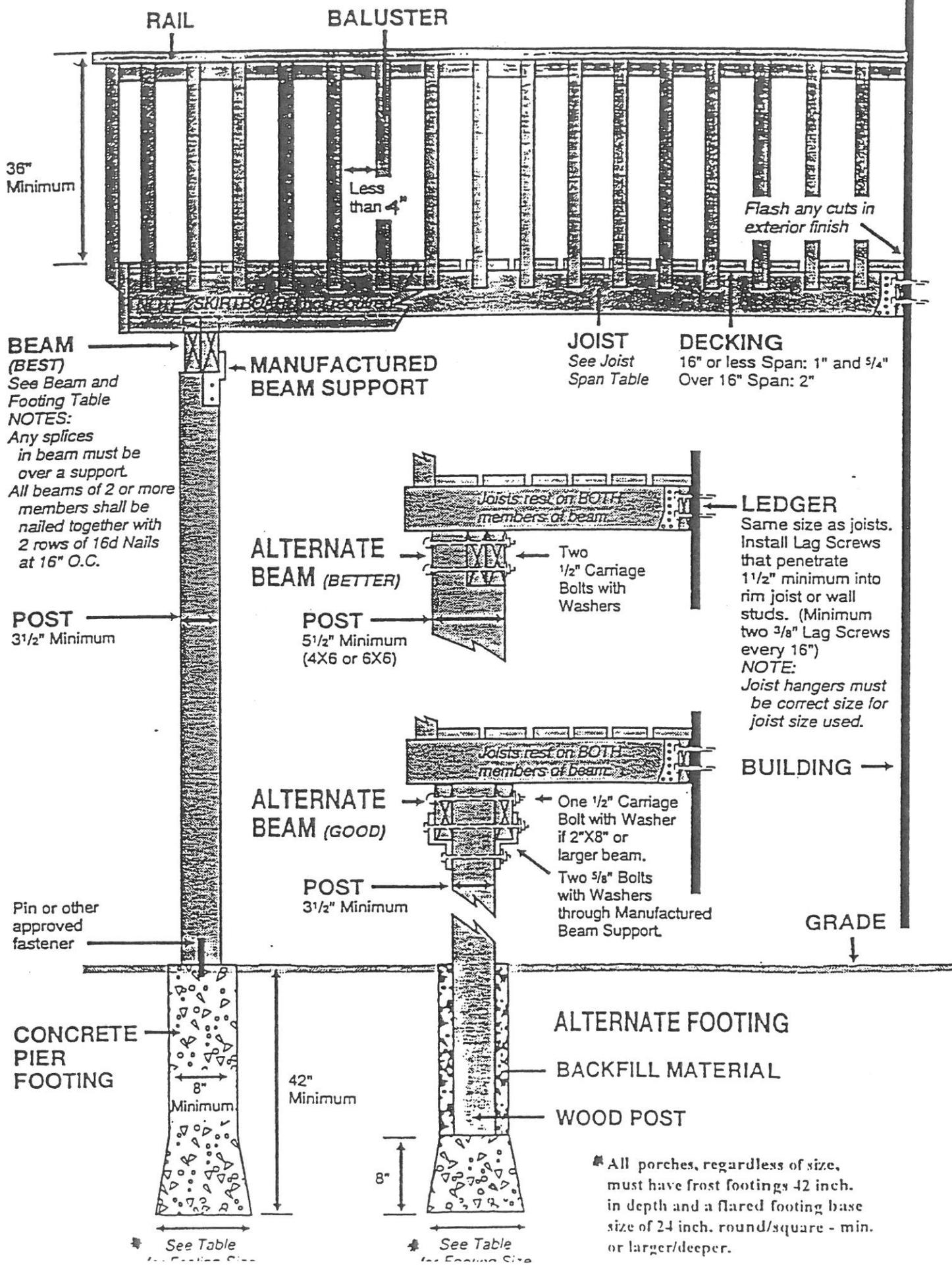
1. **FOOTINGS NOT PROPERLY SIZED OR FULL OF WATER**
The Building Inspector will size your footings during the plan review and mark sizes in red next to the appropriate footing on the plan. This is the minimum diameter the footings shall be at the base of the footings. The depth will always be 42" minimum. Also, if there is water in the holes, your footings will fail the inspection.
2. **PLANS NOT ON JOB**
The Building Inspector needs to have a copy of the approved plan at the site. That plan has the appropriate footing sizes as well as other needed corrections on it, and we cannot do an inspection without that plan being on the site at the time of the inspection.
3. **DID NOT CALL FOR A FRAMING INSPECTION**
If the deck being built is less than 48" from the ground, a framing inspection is required before any decking is nailed to enable the joists, joist hangers and beams to be seen.
4. **JOIST HANGERS NOT NAILED PROPERLY**
A joist hanger is an engineered piece of construction hardware. The hangers are designed with a certain amount of holes which all have to be nailed with the proper size joist hanger nails.
5. **SPLICES IN BEAMS NOT OVER POSTS**
If the beam on the deck is too long to have one continuous piece of lumber, splices in that beam shall occur over the top of a post.
6. **BOLT REQUIRED AT POST BEAM CONNECTIONS**
2 x 10 or larger beams require three 1/2 inch diameter bolts. 2 x 8 or smaller beams require 1/2 inch diameter bolts.
7. **LAG BOLTS IN LEDGER 16" ON CENTER**
The ledger that is attached to the house, regardless of the size of the deck requires two (2) lag bolts that are 4 1/2 inches minimum in length, and 3/8 inch minimum in diameter, spaced at 16 inches on center minimum.
8. **POSTS DO NOT LINE UP ON TOP OF FOOTINGS**
Posts should line up on top of the poured concrete footing with no portion of the post overhanging.

9. **RISERS AND TREADS NOT LEGAL ON STAIRS**

Risers are measured from top of tread to top of tread or ground level to top of tread in the case of the bottom step. All risers shall be equal, and the maximum height a riser can be is ~~7 3/4~~ The minimum height is 4". Treads are measured from nose of tread to nose of the next tread. They must also be equal and a minimum dimension of 10. Bottom and top risers and treads are no exception, they must all be equal.

10. **HANDRAILS NOT LEGAL**

Every stairway over 30" in height requires guardrails on both sides with a minimum height of 34". Every stairway with four or more risers requires an approved handrail on one side 34-38 inches in height from nosing of tread up to top of rail. The handrail shall be continuous the full length of the stairs, and ends shall terminate into a newel post or be returned back into newel posts.



36" Minimum

Less than 4"

Flash any cuts in exterior finish

NOTE: SKIRTBOARDING REQUIRED

BEAM (BEST)
See Beam and Footing Table
NOTES:
Any splices in beam must be over a support.
All beams of 2 or more members shall be nailed together with 2 rows of 16d Nails at 16" O.C.

MANUFACTURED BEAM SUPPORT

JOIST
See Joist Span Table

DECKING
16" or less Span: 1" and 5/4"
Over 16" Span: 2"

POST
3 1/2" Minimum

ALTERNATE BEAM (BETTER)

POST
5 1/2" Minimum (4X6 or 6X6)

Joists rest on BOTH members of beam

Two 1/2" Carriage Bolts with Washers

LEDGER
Same size as joists. Install Lag Screws that penetrate 1 1/2" minimum into rim joist or wall studs. (Minimum two 3/8" Lag Screws every 16")
NOTE: Joist hangers must be correct size for joist size used.

ALTERNATE BEAM (GOOD)

POST
3 1/2" Minimum

Joists rest on BOTH members of beam

One 1/2" Carriage Bolt with Washer if 2"X8" or larger beam.
Two 5/8" Bolts with Washers through Manufactured Beam Support

BUILDING

GRADE

Pin or other approved fastener

CONCRETE PIER FOOTING

8" Minimum

42" Minimum

ALTERNATE FOOTING

BACKFILL MATERIAL

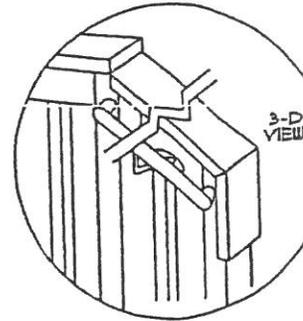
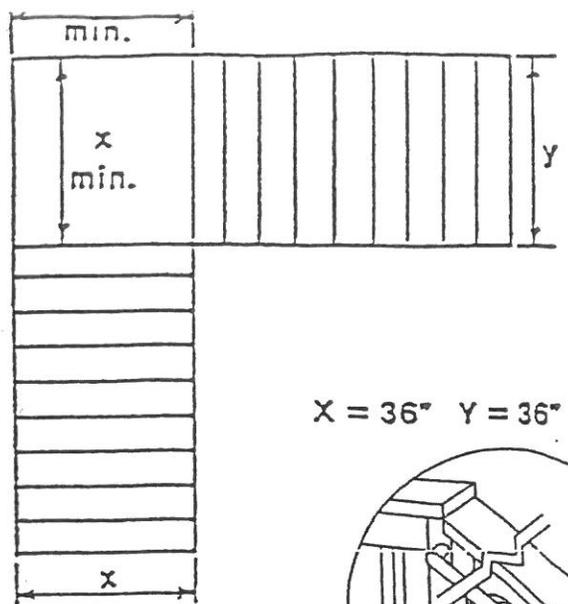
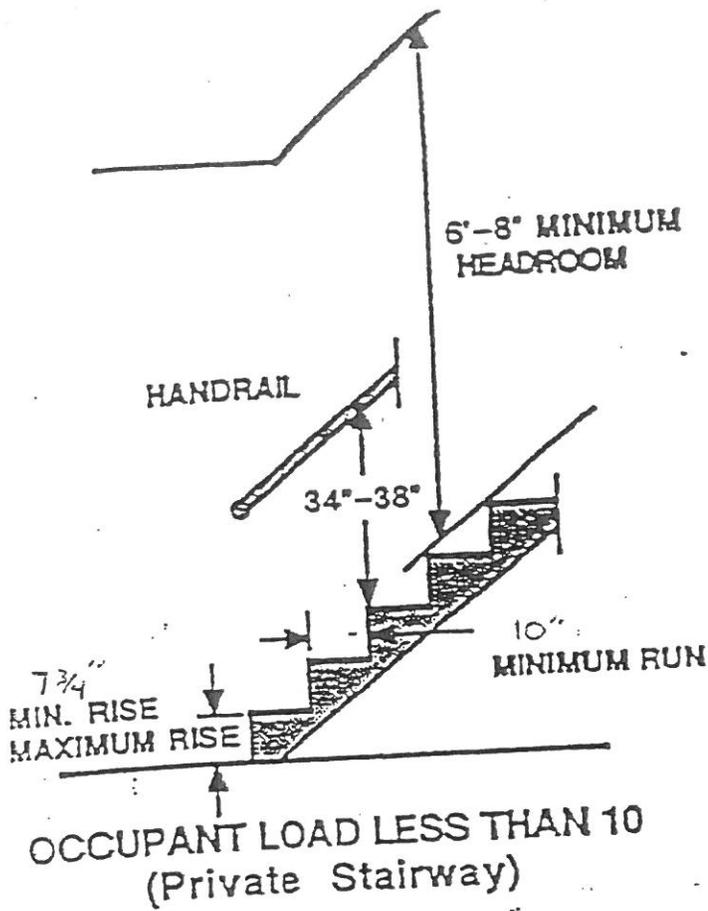
WOOD POST

8"

* All porches, regardless of size, must have frost footings 42 inch. in depth and a flared footing base size of 24 inch. round/square - min. or larger/deeper.

See Table for Footing Size

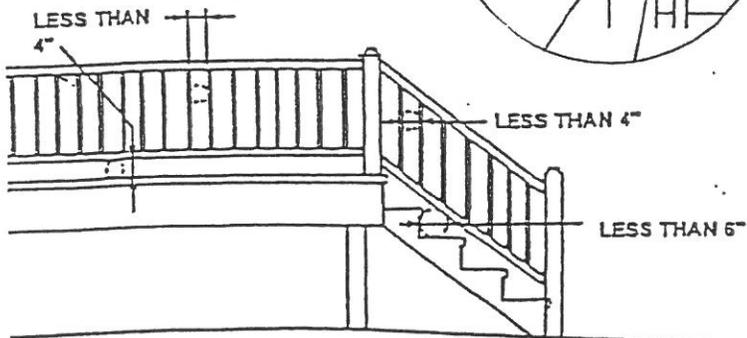
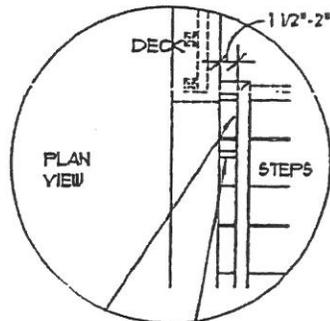
See Table for Footing Size



Stairways:

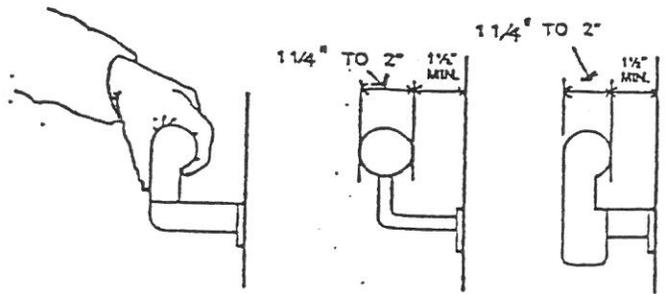
Stairs must be 36" minimum wide with a handrail on at least one side - continuous from top to bottom of stairs. All stairs must have a concrete landing at the bottom.

GUARDRAILS



guardrails shall have intermediate rails or an ornamental pattern such as a sphere 4 inches in diameter cannot pass through.
 EXCEPTION: The triangular openings formed by the riser, tread and baluster element of a guardrail at the open side of a stairway may be of such a size that a sphere 6 inches in diameter cannot pass through

STAIRWAYS



GRASPABLE HANDRAILS

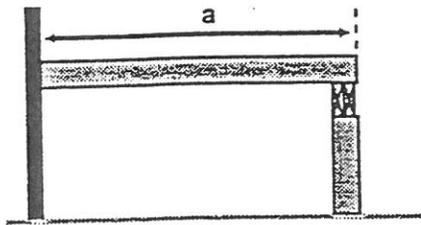
Joist Span

Based on No. 2 or better wood grades.
(Design Load = 40#LL + 10#DL, Deflection = L/360)

	Ponderosa Pine			Southern Pine			Western Cedar		
	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC
2x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
2x8	12-1	10-10	8-10	14-2	12-10	11-0	12-1	11-0	9-2
2x10	15-4	13-3	10-10	18-0	16-1	13-5	15-5	13-9	11-3
2x12	17-9	15-5	12-7	21-9	19-0	15-4	18-5	16-0	13-0

Sample Calculations for Using Joist Span, Beam Size and Footing Size Tables

CASE I SOLUTION:



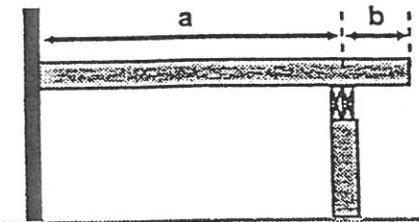
Refer to tables for joist, beam and footing size requirements.

Example: $a = 12'$; Post Spacing = 8'

Use the **Joist Span** table to find the acceptable joist sizes for a 12' span, 2x8s at 12" O.C., 2x10s at 16" O.C. or 2x12s at 24" O.C.

Use the **Beam and Footing Sizes** table and find the 8' post spacing column. With a 12' deck span, the beam may be either two 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 12", 10" or 9" for the corner post and 17", 14" or 12" for all intermediate posts.

CASE II SOLUTION:



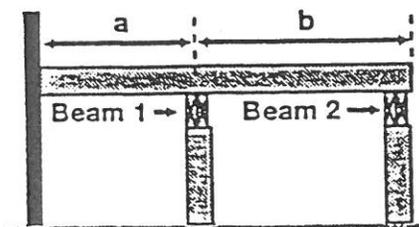
Use "a" to determine joist size and "a" + "b" to determine beam and footing sizes. The length of "b" is restricted by both the length of "a" and the size of the joists.

Example: $a = 8'$, $b = 2'$, Post Spacing = 10'

Refer to the **Joist Span** table. For an 8' joist span, either 2x8s at 24" O.C. or 2x6s at 16" O.C are acceptable.

For sizing the beam, use a joist length of 10' ($8' + 2'$) and a post spacing of 10'. The **Beam and Footing Sizes** table indicates that the beam may be either two 2x10s or two 2x12s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 13", 11" or 10" for the corner post and 18", 15" or 13" for all intermediate posts. Note that because of the 2' cantilever all footing sizes were increased by 1" as required by footnote 2 at the end of the table.

CASE III SOLUTION:



Use "a" or "b", whichever is greater, to determine joist size. Use "a" + "b" to determine the size of Beam 1 and the post footing size for the posts supporting Beam 1. Use joist length "b" to determine both the size of Beam 2 and the post footing size for the posts supporting Beam 2.

Example: $a = 6'$, $b = 7'$, Post Spacing = 9'

Joist size is determined by using the longest span joist (7'). The **Joist Span** table indicates that 2x6s at 24" O.C. would be adequate for this span.

For Beam 1 and footings, use a joist length of 13' ($6' + 7'$) and a post spacing of 9'. The **Beam and Footing Sizes** table indicates that the beam may be two 2x10s or two 2x12s, depending on the wood used. Depending on the type of soil, the footing diameters for Beam 1 posts shall be 13", 11" or 9" for the corner (outside) post and 19", 15" or 13" for all intermediate posts. For Beam 2 and footings use a joist length of 7' and post spacing of 9'. The beam may be two 2x8s or two 2x10s, depending on wood used. The footing diameters for Beam 2 shall be 10", 8" or 7" for the corner posts, and 14", 11" or 10" for all intermediate posts.

Beam and Footing Sizes

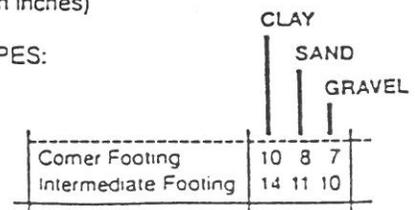
Based on No. 2 or better Ponderosa Pine and Southern Pine
Treated for weather and/or ground exposure)

		Post Spacing										
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
	Corner Footing	6 5 4	7 6 5	7 6 5	8 7 6	9 7 6	9 7 6	10 8 7	10 8 7	10 9 7	11 9 8	11 9 8
	Intermediate Footing	9 8 7	10 8 7	10 9 7	11 9 8	12 10 9	13 10 9	14 11 10	14 12 10	15 12 10	15 13 11	16 13 11
7'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10
	Corner Footing	7 5 5	7 6 5	8 7 6	9 7 6	9 8 7	10 8 7	10 8 7	11 9 8	11 9 8	12 10 9	12 10 9
	Intermediate Footing	9 8 7	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	15 13 11	16 13 11	17 14 12	17 14 12
8'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12
	Corner Footing	7 6 5	8 6 6	9 7 6	9 8 7	10 8 7	10 8 7	11 9 8	11 9 8	12 10 9	13 10 9	13 11 9
	Intermediate Footing	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	16 13 11	16 13 12	17 14 12	18 15 13	18 15 13
9'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12
	Corner Footing	7 6 5	8 7 6	9 7 6	10 8 7	10 9 7	11 9 8	12 10 8	12 10 9	13 10 9	13 11 9	14 11 10
	Intermediate Footing	10 9 7	12 10 8	13 10 9	14 11 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 15 13	20 16 14
10'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x10
	Ponderosa Pine Beam	1-2x6	1-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng 8m
	Corner Footing	8 6 6	9 7 6	10 8 7	10 8 7	11 9 8	12 10 8	12 10 9	13 11 9	14 11 10	14 12 10	15 12 10
	Intermediate Footing	11 9 8	12 10 9	14 11 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15
11'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng 8m
	Corner Footing	8 7 6	9 7 6	10 8 7	11 9 8	12 9 8	12 10 9	13 11 9	14 11 10	14 12 10	15 12 10	15 13 11
	Intermediate Footing	12 9 8	13 11 9	14 12 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15
12'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng 8m	Eng 8m
	Corner Footing	9 7 6	10 8 7	10 9 7	11 9 8	12 10 9	13 10 9	14 11 10	14 12 10	15 12 10	15 13 11	16 13 11
	Intermediate Footing	12 10 9	14 11 10	15 12 10	16 13 11	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15	22 18 15	23 18 16
13'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	Eng 8m	Eng 8m
	Corner Footing	9 7 6	10 8 7	11 9 8	12 10 8	13 10 9	13 11 9	14 12 10	15 12 10	15 13 11	16 13 11	17 14 12
	Intermediate Footing	13 10 9	14 12 10	15 13 11	17 14 12	18 15 13	19 15 13	20 16 14	21 17 15	22 18 15	23 19 16	24 19 17
14'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng 8m	Eng 8m	Eng 8m
	Corner Footing	9 8 7	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	15 13 11	16 13 11	17 14 12	17 14 12
	Intermediate Footing	13 11 9	15 12 10	16 13 11	17 14 12	18 15 13	20 16 14	21 17 15	22 18 15	23 18 16	24 19 17	24 20 17
15'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng 8m
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng 8m	Eng 8m	Eng 8m
	Corner Footing	10 8 7	11 9 8	12 10 8	13 10 9	14 11 10	14 12 10	15 12 11	16 13 11	17 14 12	17 14 12	18 15 13
	Intermediate Footing	14 11 10	15 12 11	17 14 12	18 15 13	19 16 14	20 17 14	21 17 15	22 18 16	23 19 17	24 20 17	25 21 18
16'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng 8m
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng 8m	Eng 8m	Eng 8m
	Corner Footing	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	16 13 11	16 13 12	17 14 12	18 15 13	18 15 13
	Intermediate Footing	14 11 10	16 13 11	17 14 12	18 15 13	20 16 14	21 17 15	22 18 16	23 19 16	24 20 17	25 21 18	26 21 18

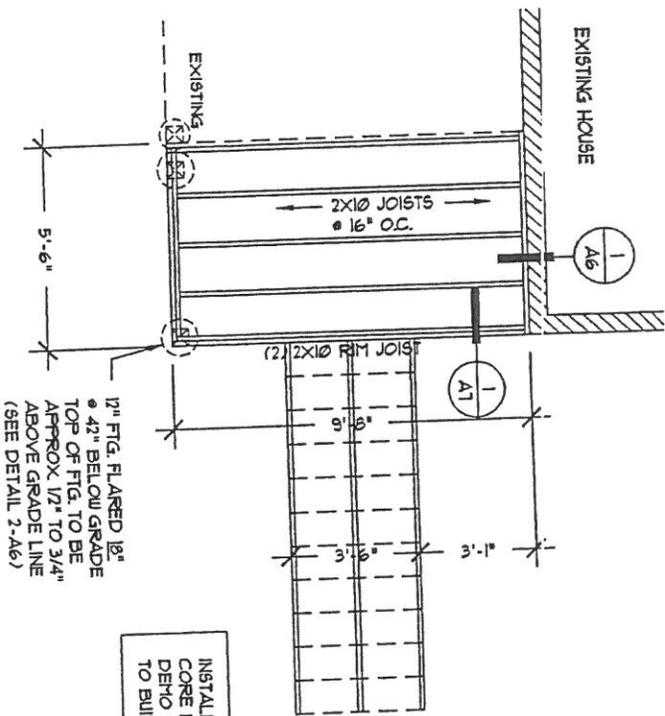
Notes:

- Joist length is total length of joist, including any cantilevers.
- When joist extends (cantilevers) beyond support beam by 18" or more, add 1" to footing dimensions shown.
- Requirements for future 3-season porches or screen porches:
 - Increase corner footing size shown by 90%.
 - Increase center footing size shown by 55%.
 - Locate all footings at extremities of deck (no cantilevers).
 - Beam sizes indicated need not be altered.

- All footing sizes above are base diameters (in inches) and are listed for THREE SOIL TYPES:

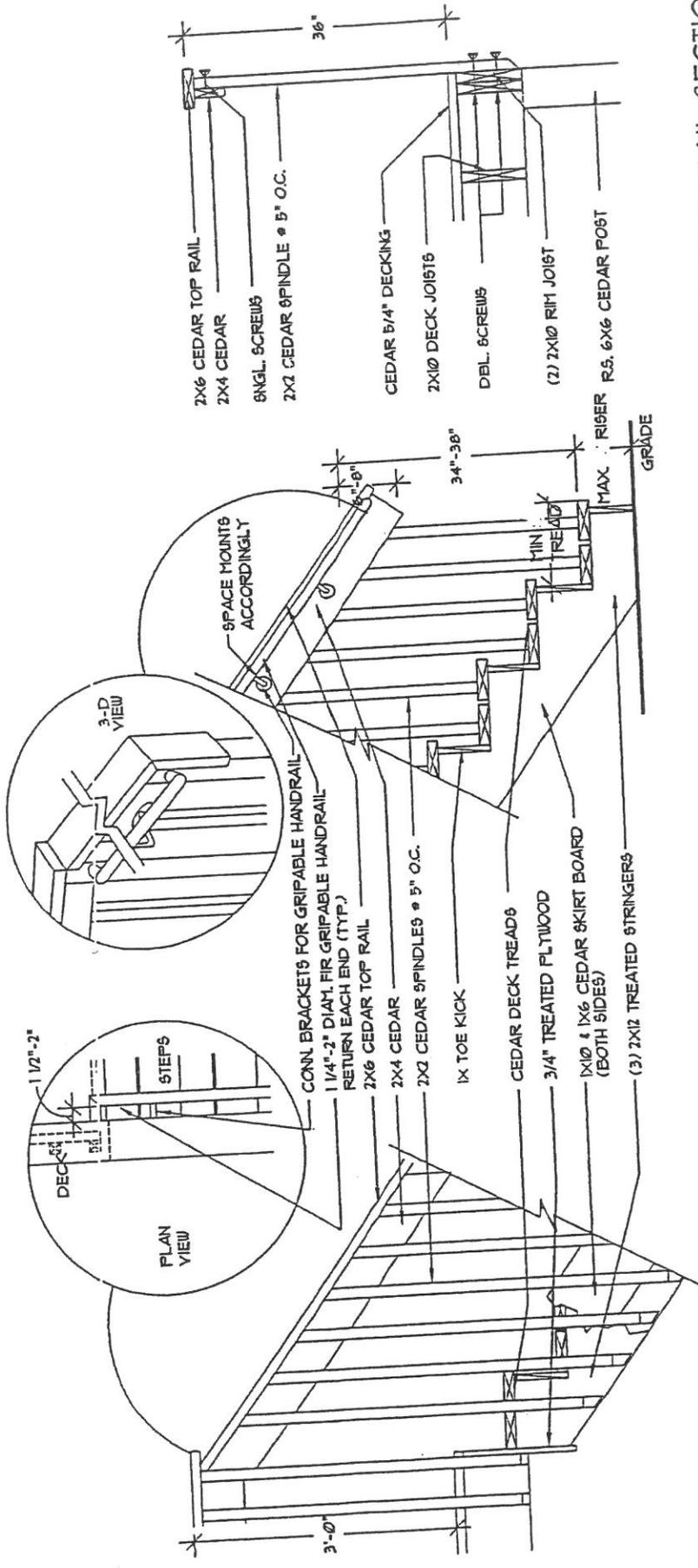


CONSTRUCTION NOTES:
 1) SEE DETAIL ON SHEETS SPECIFIED



FRAMING PLAN
 SCALE : 1/4" = 1'-0"

INSTALL NEW FOOTINGS - FIRST
 CORE DRILL ROUND - DON'T
 DEMO DECK UNTIL READY
 TO BUILD NEW ONE



- 2X6 CEDAR TOP RAIL
- 2X4 CEDAR
- ENGL. SCREWS
- 2X2 CEDAR SPINDLE @ 5" O.C.
- 36"
- CEDAR 5/4" DECKING
- 2X10 DECK JOISTS
- DBL. SCREWS
- (2) 2X10 RIM JOIST
- MAX. RISER R.S. 6X6 CEDAR POST
- GRADE

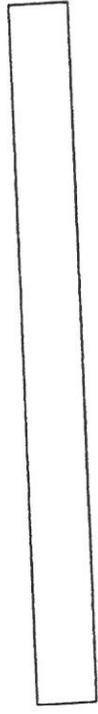
STANDARD RAIL SECTION
NOT TO SCALE

- 3-D VIEW
- SPACE MOUNTS ACCORDINGLY
- 34"-38"
- MIN. RISE
- MAX. RISER R.S. 6X6 CEDAR POST
- GRADE
- CONN. BRACKETS FOR GRIPABLE HANDRAIL
- 1 1/4"-2" DIA. FIR GRIPABLE HANDRAIL RETURN EACH END (TYP.)
- 2X6 CEDAR TOP RAIL
- 2X4 CEDAR
- 2X2 CEDAR SPINDLES @ 5" O.C.
- 1X TOE KICK
- CEDAR DECK TREADS
- 3/4" TREATED FLTWOOD
- 1X10 & 1X6 CEDAR SKIRT BOARD (BOTH SIDES)
- (3) 2X12 TREATED STRINGERS

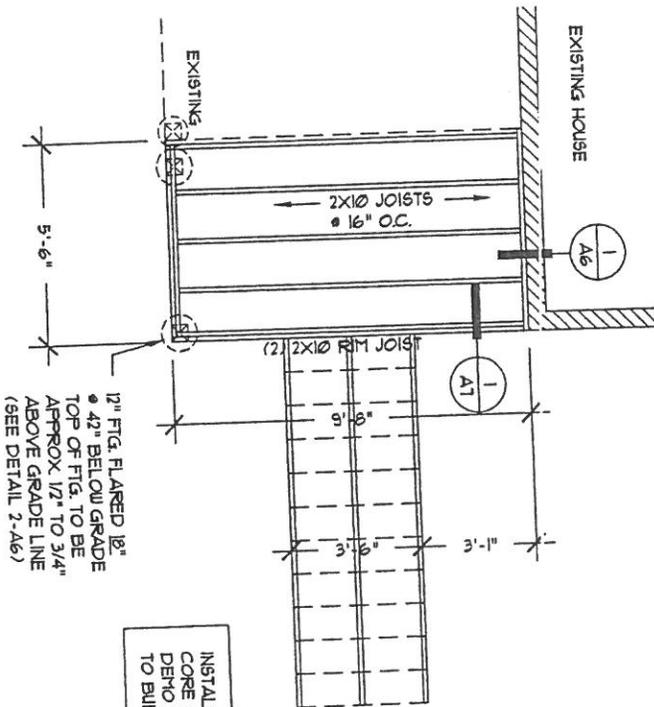
STANDARD STAIR RAIL @ BOTTOM
NOT TO SCALE

- 1 1/2"-2"
- DECK
- STEPS
- PLAN VIEW
- 3'-0"

STANDARD STAIR RAIL @ TOP
NOT TO SCALE



CONSTRUCTION NOTES:
 1) SEE DETAIL ON SHEETS SPECIFIED



FRAMING PLAN
 SCALE : 1/4" = 1'-0"

INSTALL NEW FOOTINGS - FIRST
 CORE DRILL ROUND - DON'T
 DEMO DECK UNTIL READY
 TO BUILD NEW ONE