

UNION COUNTY ENGINEER DIVISION OF BUILDING REGULATIONS

Residential Deck and Covered Porch Requirements 2019 Residential Code of Ohio

Application Procedures

- *A nonrefundable application fee of \$30.00 is due at the time of application.
- *A nonrefundable \$45.00 plan review fee is due at the time of application.
 - Due at time of submittal: \$75.75
- Building permit fees are to be paid at the time the permit is issued.
 - \$92.00 building permit fee.
 - \$57.50 electrical fee (if applicable)
 - All fees (plan review and permit fees) will be assessed a 1% fee collected on behalf of the Ohio Board of Building Standards.
- Permit is issued after plans are reviewed, approved and fees are paid.
- A separate deck permit is not required when the deck is constructed as part of a new home. The deck will be included in the permit for structure as long as it is shown on the approved plans and associated fees are paid.
- Submit a zoning permit from your township (required in most townships)
- Health department site plan approval, for properties with well and septic systems.
- Submit two site plans showing the house and deck location. If applicable show location of well and septic system.
- Submit two building plans of deck to be built.
 - Plans are to include deck layout, post location, concrete footing size and post to beam connection details.
 - *Also, to include the location of GFCI electrical outlet installed within the perimeter of any balcony, deck or porch as required by the 2017 National Electric Code.*

Inspection Procedures

- Call for post hole inspection after all holes have been dug and before any concrete has been placed, holes must be clear of any debris.
- Call for frame inspection if the bottom of the deck joists are less 36" above grade. If the joists are over 36" above grade the frame inspection can be done with the final inspection.
- Call for a final inspection when the deck is complete, all handrails/guardrails and steps/stair have been installed.
- If you call for your framing and final inspect together, please remember to schedule both inspections.

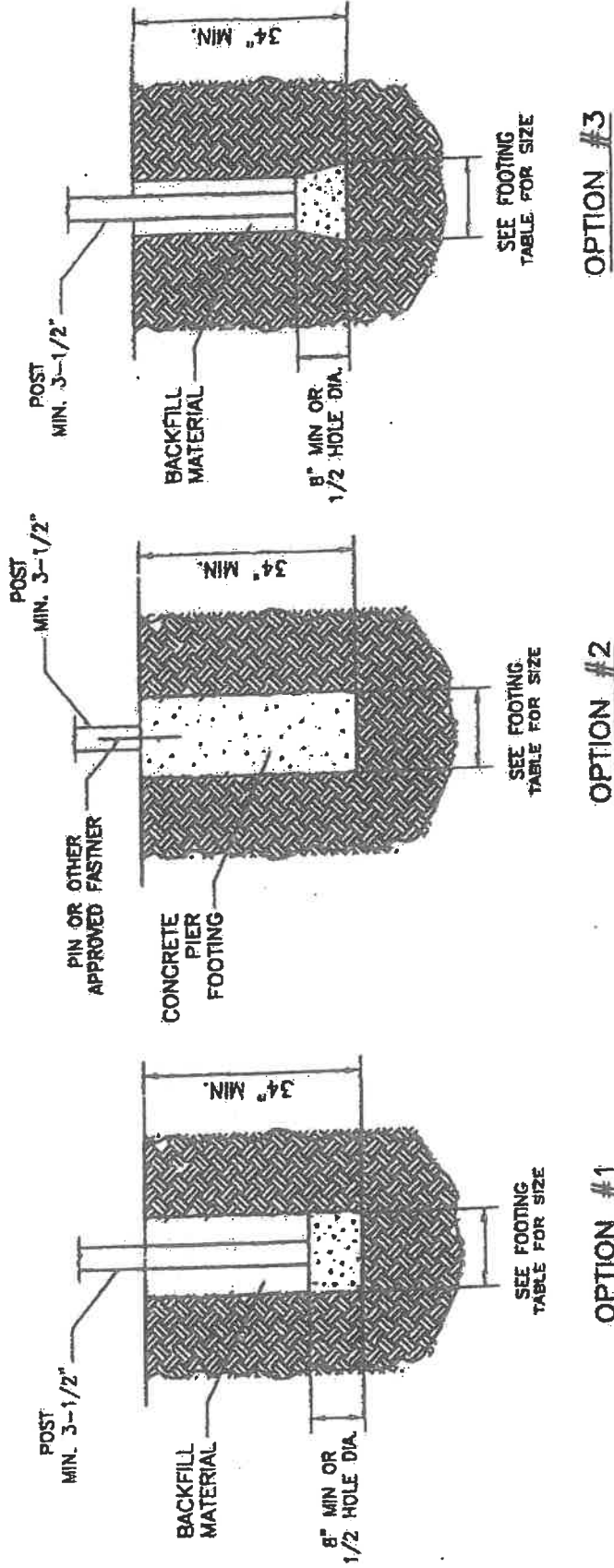
TO SCHEDULE AN INSPECTION

Call (937) 645-3019

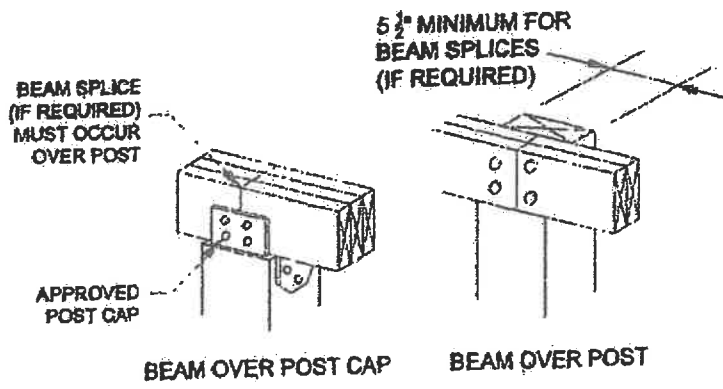
You must provide your building permit # and address to schedule an inspection.

Revised February 25, 2021

ACCEPTABLE FOOTING TYPES

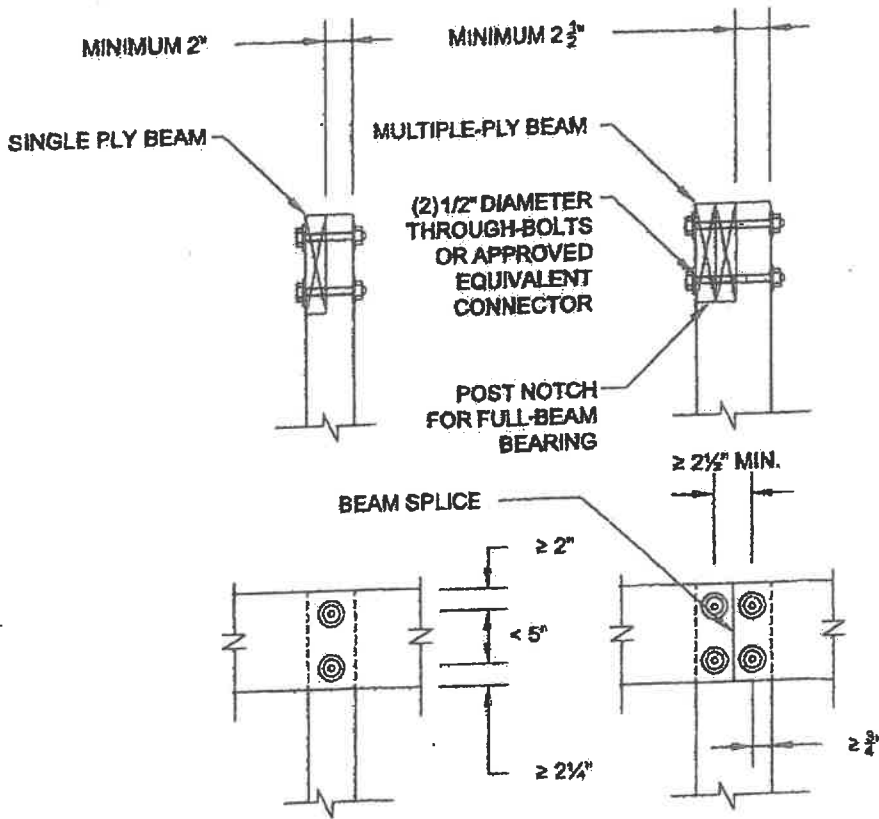


Note: R403.1.4 exception #2 states: Decks not supported by a dwelling need not be provided with footings that extend below the frost line: minimum post hole depth 12".



For SI: 1 inch = 25.4 mm.

FIGURE 507.5.1(1)
DECK BEAM TO DECK POST



For SI: 1 inch = 25.4 mm.

FIGURE 507.5.1(2)
NOTCHED POST-TO-BEAM CONNECTION

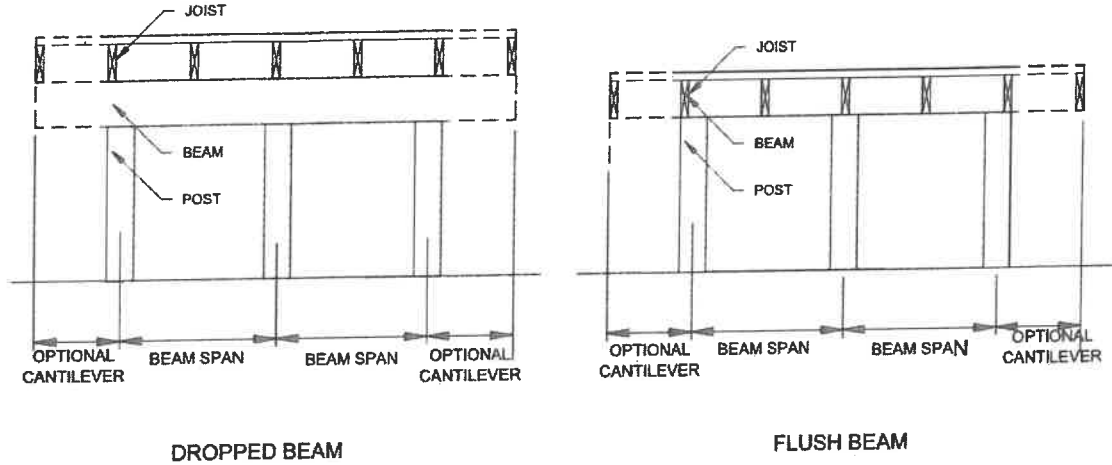


FIGURE 507.5
TYPICAL DECK JOIST SPANS

TABLE 507.5
DECK BEAM SPAN LENGTHS ^{a, b, g} (feet - inches)

SPECIES ^c	SIZE ^d	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	1-2x6	4-11	4-0	3-7	3-3	3-0	2-10	2-8
	1-2x8	5-11	5-1	4-7	4-2	2-10	3-7	3-5
	1-2x10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1-2x12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2-2x6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2-2x8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2-2x10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2-2x12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3-2x6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3-2x8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3-2x10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
3-2x12	15-3	13-3	11-10	10-9	10-0	9-4	8-10	
Douglas fir-larch ^e , hem-fir ^e , spruce-pine-fir ^e , redwood, western cedars, ponderosa pine ^f , red pine ^f	3x6 or 2-2x6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3x8 or 2-2x8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3x10 or 2-2x10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3x12 or 2-2x12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4x6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4x8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4x10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4x12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3-2x6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3-2x8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3-2x10	12-0	10-5	9-4	8-6	7-10	7-4	6-11
	3-2x12	13-11	12-1	10-9	9-10	9-1	8-6	8-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

- a. Ground snow load, live load = 40 psf, dead load = 10 psf, $L/\Delta = 360$ at main span, $L/\Delta = 180$ at cantilever with a 220-pound point load applied at the end.
- b. Beams supporting deck joists from one side only.
- c. No. 2 grade, wet service factor.
- d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.
- e. Includes incising factor.
- f. Northern species. Incising factor not included.
- g. Beam cantilevers are limited to the adjacent beam's span divided by 4.

Table 507.9.1.3(1)
DECK LEDGER CONNECTION TO BAND JOIST
 (Deck live load = 40 psf, deck dead load = 10 psf, snow load <40 psf)

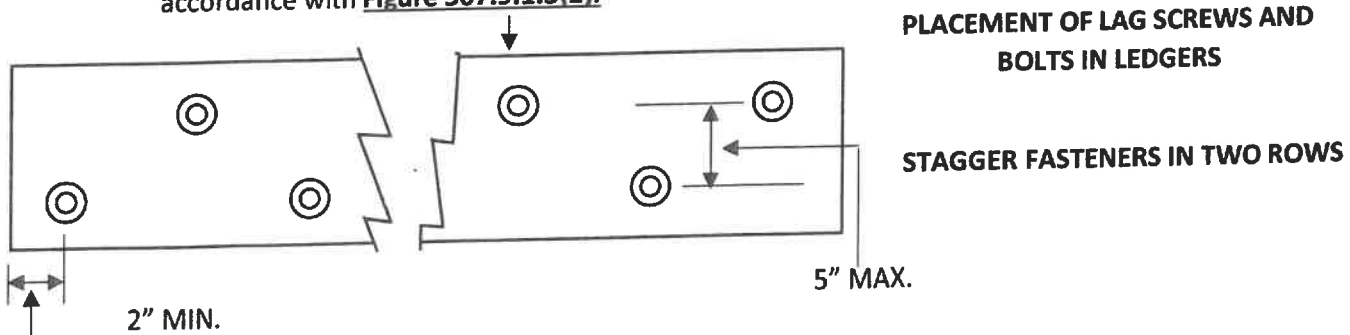
CONNECTION DETAILS	JOIST SPAN						
	6'- less	6'1" - 8'	8'1" - 10'	10'1" - 12'	12'1" - 14'	14'1" - 16'	16'1" - 18'
	ON - CENTER SPACING OF FASTENERS						
½" - inch diameter lag screw with ½" - inch maximum sheathing	30	23	18	15	13	11	10
½" - inch diameter bolt with ½" - inch maximum sheathing	36	36	34	29	24	21	19
½" - inch diameter bolt with 1" - inch maximum sheathing	36	36	29	24	21	18	16

1. Ledgers shall be flashed in accordance with Section 703.4 to prevent water from contacting the house band joist.
2. Snow load shall not be assumed to act concurrently with live load.
3. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
4. Sheathing shall be wood structural panel or solid sawn lumber.

TABLE 507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger	2" - inches	¾" - inch	2" - inches	1-5/8" - inches
Band Joist	¾" - inch	2" - inches	2" - inches	1-5/8" - inches

1. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with figure 507.9.1.3(1).
2. Maximum 5 inches.
3. For engineered rim joists, the manufacturers recommendations shall govern.
4. Minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with **Figure 507.9.1.3(1)**.



Joist Size

The span of a joist is measured from the centerline of bearing at one end of the joist to the centerline of bearing at the other end of the joist and does not include the length of the overhangs. Use the table below to determine the joist span based on lumber size and joist spacing. Joist may overhang a beam by L/4 provided the fully supported span is at least 6' long.

**TABLE 507.6
DECK JOIST SPANS FOR COMMON LUMBER SPECIES (ft. - in.)**

SPECIES ^a	SIZE	ALLOWABLE JOIST SPAN ^b			MAXIMUM CANTILEVER ^{c,1}		
		SPACING OF DECK JOISTS (Inches)			SPACING OF DECK JOISTS WITH CANTILEVERS ^c (Inches)		
		12	16	24	12	16	24
Southern pine	2 × 6	9-11	9-0	7-7	1-3	1-4	1-6
	2 × 8	13-1	11-10	9-8	2-1	2-3	2-5
	2 × 10	16-2	14-0	11-5	3-4	3-6	2-10
	2 × 12	18-0	16-6	13-6	4-6	4-2	3-4
Douglas fir-larch ^d , hem-fir ^d , spruce-pine-fir ^d ,	2 × 6	9-6	8-8	7-2	1-2	1-3	1-5
	2 × 8	12-6	11-1	9-1	1-11	2-1	2-3
	2 × 10	15-8	13-7	11-1	3-1	3-5	2-9
	2 × 12	18-0	15-9	12-10	4-6	3-11	3-3
Redwood, western cedars, ponderosa pine ^e , red pine ^e	2 × 6	8-10	8-0	7-0	1-0	1-1	1-2
	2 × 8	11-8	10-7	8-8	1-8	1-10	2-0
	2 × 10	14-11	13-0	10-7	2-8	2-10	2-8
	2 × 12	17-5	15-1	12-4	3-10	3-9	3-1

Approved naturally durable or pressure-preservative-treated wood shall be used for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances when those members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering that would prevent moisture or water accumulation on the surface or at joints between members.

Such members may include:

1. Horizontal members such as girders, joists and decking.
2. Vertical members such as posts, poles and columns.
3. Both horizontal and vertical members.

POST PIER DIAMETER SIZING TABLE

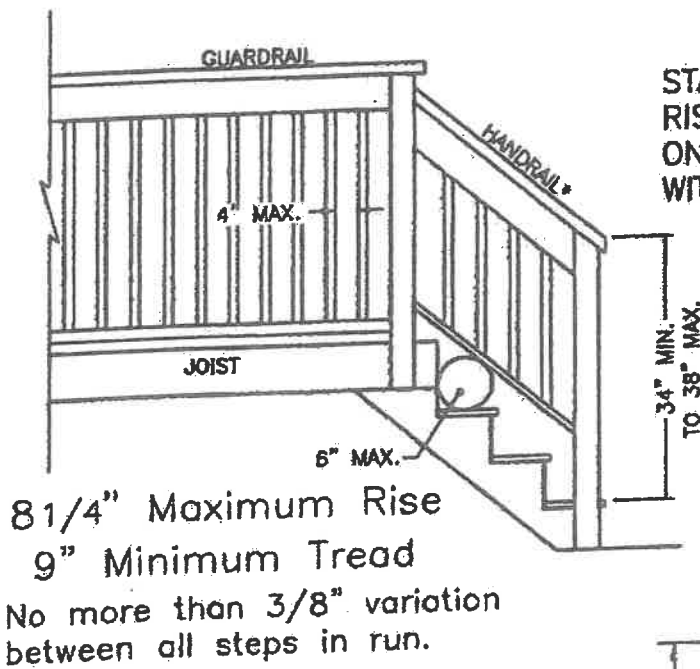
Post Pier Diameter (In Inches) Square Foot per Post

10 "	17 "
12 "	23.6 "
14 "	32.2 "
16 "	41.7 "
18 "	53 "
20 "	65.7 "
24 "	71 "

SUBMIT THIS SHEET WITH APPLICATION Residential Deck

GUARDRAIL/HANDRAIL/STAIRS DETAIL

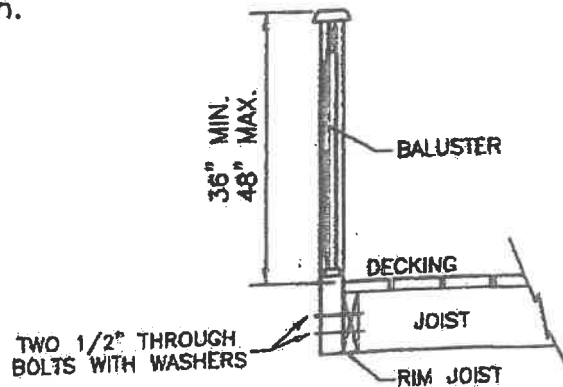
CIRCLE EACH DETAIL THAT APPLIES



STAIRS WITH 4 OR MORE
RISERS REQUIRE HANDRAIL
ON AT LEAST ONE SIDE,
WITH ADEQUATE GRASPABILITY.

*SEE HANDRAIL DETAIL SHEET

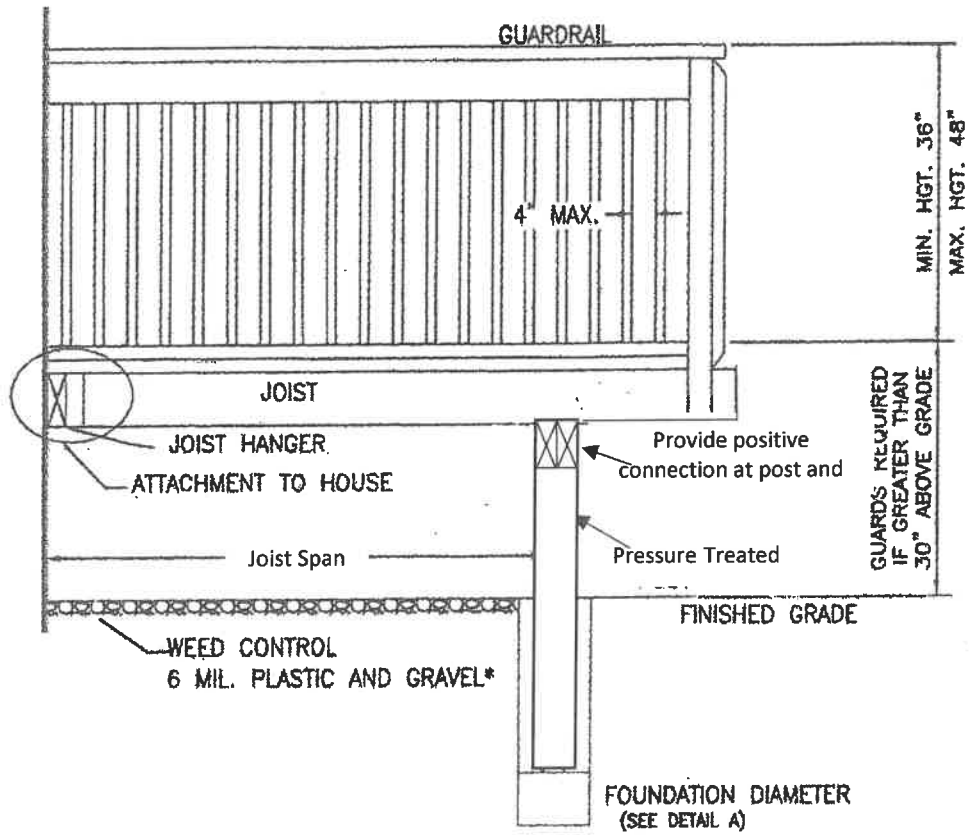
DETAIL E



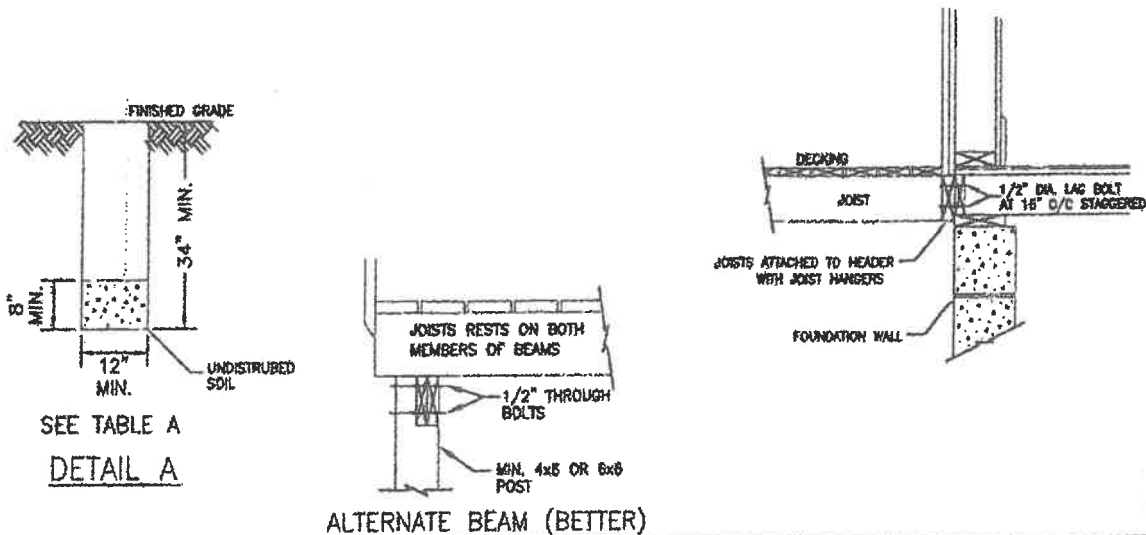
DETAIL D

SUBMIT THIS SHEET WITH APPLICATION

Residential Deck

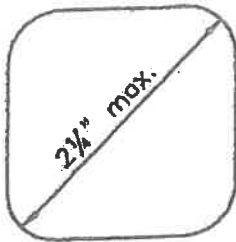


See next sheet for optional post beam connections

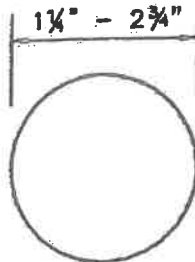


Residential Deck HANDRAIL DETAIL SHEET

OPTION 1



NONCIRCULAR
Perimeter: 4" - 6 1/4"

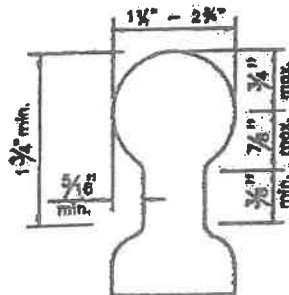


CIRCULAR
Perimeter: 4" - 6 1/4"

OPTION 2



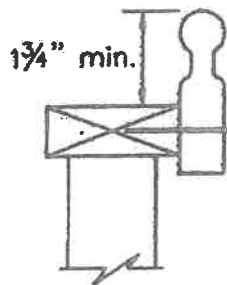
2x4 or 2x6 "grooved" for ease of gripping.



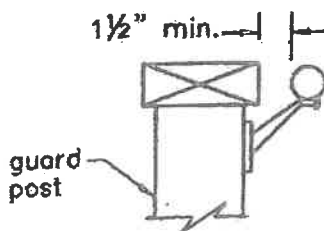
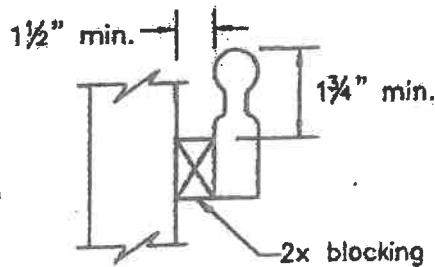
RECESSED
Perimeter: >6 1/4"

Note: Handrails shall run continuously from a point directly over the lowest riser to a point directly over the highest riser and shall return to the guard at each end. Handrails may be interrupted by a guard posts only at a turn in the stair. A 2x4 or 2x6 can only be used as a handrail if it is grooved to provide a graspable finger recess area.

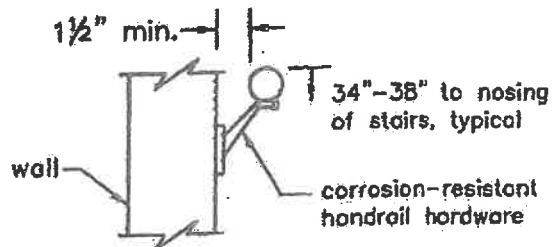
HANDRAIL GRASPABILITY TYPES/GEOMETRY



8d nails @
16" o.c.,
typical



MOUNTED TO GUARD

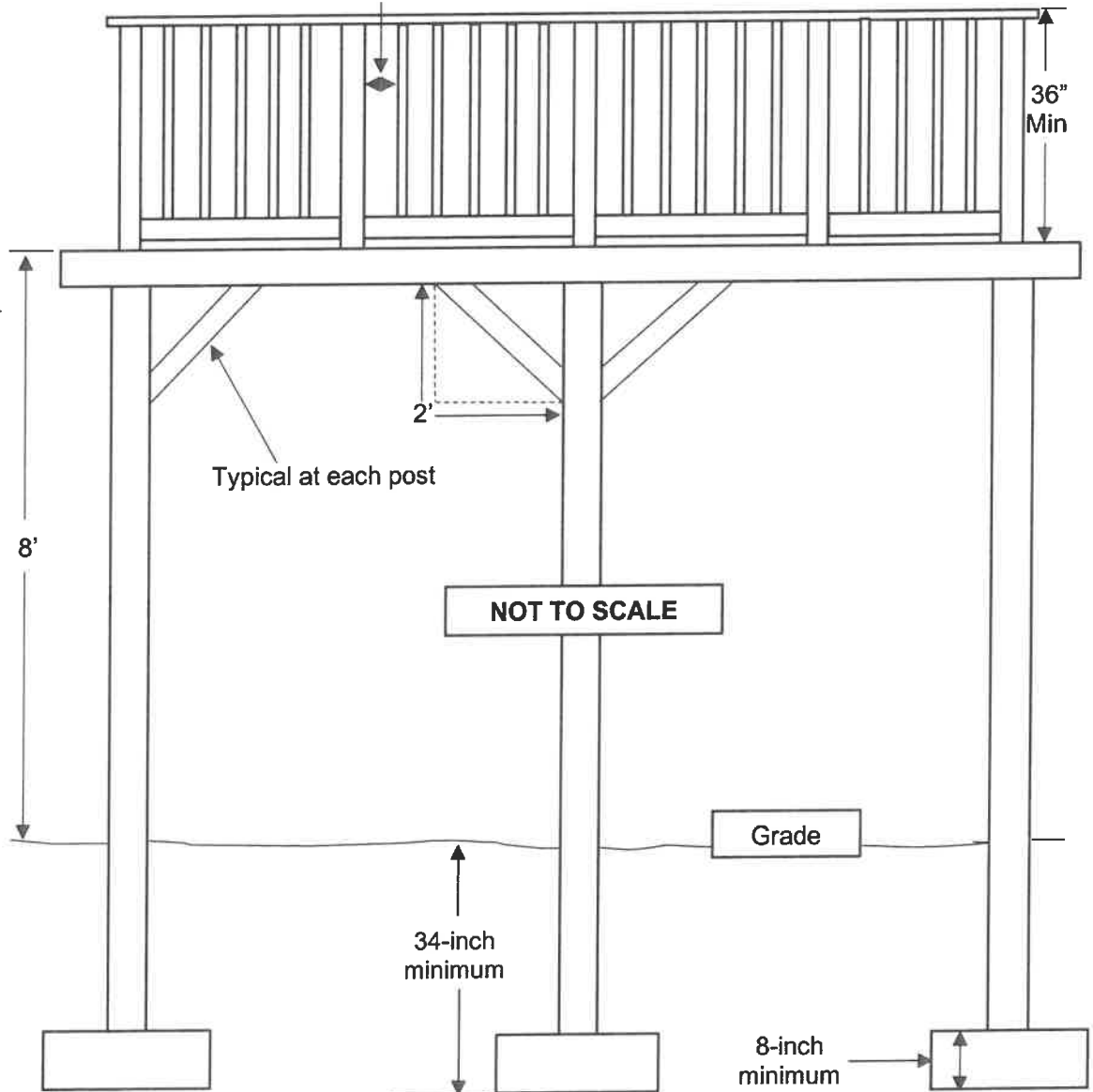


MOUNTED TO WALL

HANDRAIL REQUIREMENTS

DIAGONAL BRACING REQUIREMENTS

Openings shall not allow passage of a sphere 4-inches in diameter



**DECKS GREATER THAN 4 FEET ABOVE GRADE
SHALL BE PROVIDED WITH DIAGONAL BRACING**

Provide blocking when the floor joists do not align with the posts