



## City of Chaska Residential Screen or 3-Season Porch Building & Zoning Requirements

(**Note:** The existing access from the house to the 3-season porch must remain in place. The size of a 3-season porch may require structural panels to be built in the corners of the porch thereby making the available window area smaller. Discuss proposed plan with the Building Inspection department.)

### **Required information to be submitted for a porch permit:**

1. The completed building permit application, include all required information in the number spaces, signed and dated.
2. Two copies of a site plan, drawn to scale indicating the location and area of proposed porch on the house and setbacks from property lines. See example. Check if there is a Certificate of Survey for the property on file at City Hall.
3. Two copies of porch plans drawn to ¼ inch scale with the following information:
  - a. Floor plan:
    - Proposed porch size
    - Location on the house
    - Size, spacing and type of lumber of floor joist and beams
    - Size of decking or sub-flooring and type of material
    - Size, type of lumber, location and spacing of posts
    - Location, diameter and depth of footings
  - b. Cross-section of either a side view or a rear view indicating the following:
    - Size and depth of footings
    - Size of posts
    - Header size supporting floor joists
    - Floor joist size and spacing
    - Flooring material
    - Guard height (if required)
    - Ceiling height
    - Type of screen or windows and door
    - Insulation type and R-value (if applicable)
    - Type(s) of sheathing and siding material
    - Pitch of roof
    - Roof covering
  - c. Elevations plan: (This can be eliminated if information is on the floor plan.)
    - Height of porch from established grade
    - Guard height, type of rail and spacing (if required)
    - Window & door location, header sizes
    - Stairs (location, size and stringer spacing)

**Required Inspections:**

1. **Footing:** after the holes have been dug, but before concrete is poured.
2. **Electrical:** Rough-in by State electrical inspector. Call Brian Luce between 7:00 AM and 8:30 AM, Monday thru Friday at 952-233-8988.
3. **Mechanical & Framing** inspection can be scheduled at the same time and shall take place *after* the rough electrical has been approved. Schedule a fireplace rough-in inspection at this time also, if applicable. Provide truss specification documents at time of inspection, if applicable.
4. **Insulation:** If applicable
5. **Final:** Schedule a final inspection when interior/exterior finishes, guards, stairs, landing(s), finished grade and the final electrical inspection have been completed.

**General notes:**

1. Call Gopher State One Call at least two full working days (48 hours) prior to digging, at 651-454-0002, (800-252-1166) or [www.gopherstateonecall.org](http://www.gopherstateonecall.org) to have utilities located.
2. Electrical permits need to be obtained from the State of Minnesota at [www.electricity.state.mn.us](http://www.electricity.state.mn.us) or call 651-297-4198.
3. The approved plan, survey and inspection card shall be made available at *every inspection* and kept on the job site until final inspection has been completed.

**To schedule an inspection, call 952-448-9200, 7:30 AM to 4:30 PM Monday thru Friday and ask for Building Inspections. Please try to give 24-hour notice.**

## Commonly Asked Code Questions Regarding Porch Construction

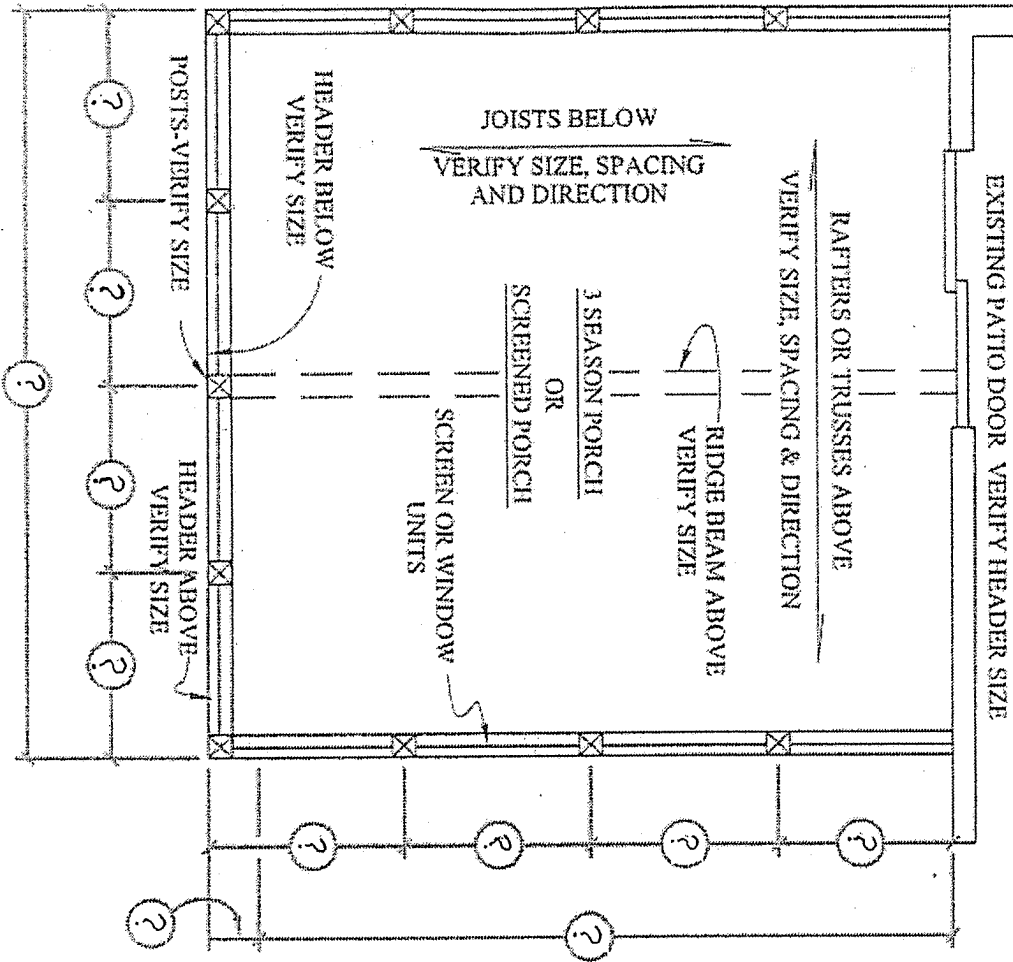
- **Frost footings:** Required for a deck attached to a structure that has frost footings. The minimum depth to the bottom of the footing is 42 inches. See handout to determine the diameter required to support the deck load. (Deck designs need to be capable of supporting 50 pounds per square foot. Any additional loads, i.e. covered porch, hot tub, etc. should be designed accordingly. Contact Building Inspections for assistance.)
- **Wood required:** All exposed wood is required to be of natural resistance to decay such as redwood, cedar or approved treated lumber. This includes posts, beams, joists, decking and railings on a screen porch.  
**Note:** Any composite or plastic decking and railing material must be approved prior to installation by Building Inspections because some of these products have not been tested and approved for deck use.
- **Fasteners:** Nails and screws must be corrosion resistant. Joists that frame into ledger boards or beams shall be supported by a joist hanger (or equal). Provide a mechanical connection between post to footing and post to beam. All nail holes in joist hangers and mechanical fasteners are to be filled. (No roofing nails or screws are allowed.)
- **Framing details:** Ledger board is required to be lag bolted to the structure with 2 ea. - 3/8" x 4" lags, 16" on center or 24" on center for floor trusses.  
**Note:** Ledger boards cannot be attached to house cantilevers unless specifically designed for the additional load. Contact Building Inspections.  
Floor joists and stair stringers spaced 24" or 19.2" on center require a minimum of 2" nominal decking, 16" on center may use 1" decking boards. Some composite decking products may require joist spacing to be 12" on center.
- **Splices** in multiple beam members must occur over support posts.
- **Flashing:** All connections between deck and the building shall be weatherproof. Corrosion resistant flashing over the deck ledger and under siding is required. Also seal bottom and sides of ledger.
- **Cantilevers (overhanging joists and beams)** are not allowed on porches unless "site specific" engineering is supplied to provide adequate bearing. (For specific information, contact a design professional or the Building Inspection Department.)
- **Insulation:** (For heated porches)
  1. Walls shall be insulated to a minimum of R-19
  2. Floors shall be insulated to a minimum of R-30
  3. Ceilings shall be insulated with a minimum of R-38
  4. An interior poly vapor barrier shall installed and sealed at all edges, seams and penetrations per Code.
  5. Enclosed attics and rafter spaces must be provided with ventilation equivalent to 1/300<sup>th</sup> of the attic area, 1/2 in soffit vents and 1/2 in roof vents.

- **Guards** are required on all decks and both sides of stairs over 30 inches above grade. A guard shall be 36 inches above the finished deck surface and 34 to 38 inches above the stair nosing. Open guards require intermediate rails or an ornamental pattern such that a 4-inch diameter ball will not pass through open space. **Note:** *screening alone is not an approved guard.*
- Exceptions:**
1. The triangle formed at the stair riser, tread and bottom element of the guardrail must be sized such that a 6-inch diameter ball will not pass through. See attached handout.
  2. The openings for required guards on sides of stairs shall allow a 4 3/8 inch ball to pass through. See attached handout.
- **Safety glazing** shall be provided in hazardous locations as required by the 2007 MN Residential Building Code.
  - **Handrails:** Stairways having 4 or more risers shall have at least one gripable handrail. The top shall be placed between 34 to 38 inches above the stair's nosing, starting even with the top tread nosing and bottom tread nosing. It shall be continuous with both ends returned back to a post or wall. (Use attached handout as a guide.)
  - **Stairs:** If a stairway is provided, the minimum *inside* width is 36 inches. Maximum rise is 7 3/4 inches; the minimum tread is 10 inches. A nosing of 3/4 inch to 1 1/4 inch is required. The largest tread width or riser height and nosing depth cannot exceed the smallest by more than 3/8<sup>th</sup> inch. A 4-inch diameter ball will not pass through the riser opening on stairs greater than 30 inches above grade. Stair stringers shall be attached to the deck in a positive and secure fashion. All landings and stairways shall be illuminated. (See attached handout)
  - **Landings** shall be provided at the top and bottom of the steps. They are to be level, 36 inches wide minimum (but not less than the width of the stairs), by 36 inches deep. If the porch is screen only, no landing at the top is required but in no case shall the door open over the stairs. The bottom landing does not have to be concrete, it may be grass. The rise from the landing to the first tread is the same as the other risers and shall not vary more than 3/8<sup>th</sup> inch.
  - **Ice and water barrier** is required on all pitched roofs except unheated detached garages. The barrier must consist of two layers of 15 pound asphalt felt solidly mopped together **or** a layer of self-adhering polymer modified bitumen sheet applied, according to manufacturers installation instructions, from the roof edge to a point 24 inches inside the exterior wall line. It is also required in all valleys under the valley lining.

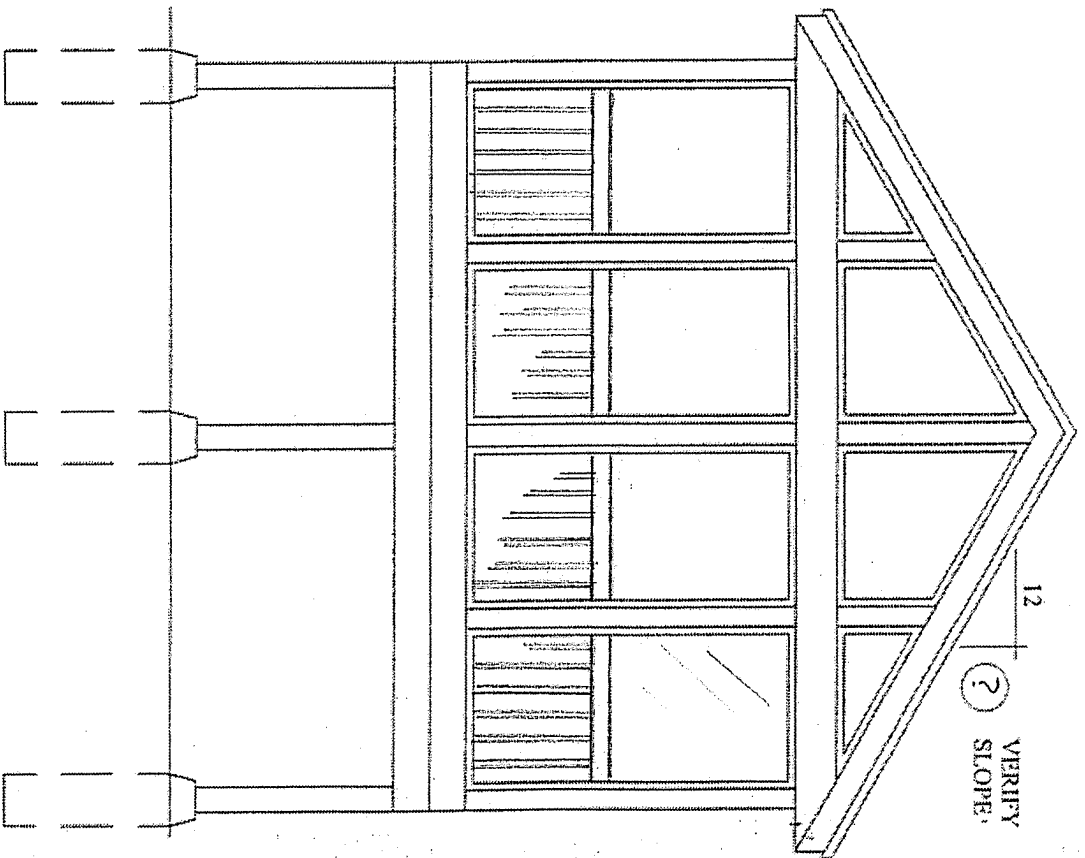
**Special design note:** Some existing deck designs may not be appropriate for the placement of a porch. Discuss with the Building Inspection Department about the design. Porch and deck setbacks are not the same.

**THIS INFORMATION IS A GUIDE TO THE MOST COMMON QUESTIONS. IT IS NOT INTENDED, NOR SHALL IT BE CONSIDERED, A COMPLETE SET OF REQUIREMENTS.**

# EXISTING HOUSE



FLOOR PLAN



FRONT ELEVATION

EXAMPLE ONLY

EXISTING HOUSE

SHINGLES - VERIFY  
MATERIAL & WEIGHT

JOIST HANGERS

DROPPED BRAM  
VERIFY SIZE

SIDE ELEVATION

DECKING OR SHEATHING  
VERIFY TYPE & SIZE

RAPTERS - VERIFY  
SIZE & SPACING

RIDGE BEAM  
VERIFY SIZE OR  
COLLAR TIES OR  
CHLING JOISTS - VERIFY  
SIZE AND SPACING

HEADER - VERIFY SIZE  
POSTS - VERIFY SIZE  
AND SPACING

WINDOW OR SCREEN UNITS  
RAILING OR LOW WALL  
(REQUIRED FOR SCREENS)

DECKING OR SHEATHING  
VERIFY SIZE AND TYPE

JOISTS - VERIFY SIZE,  
SPACING AND DIRECTION

RIM JOISTS - VERIFY SIZE  
APPROVED TREATED OR  
NATURALLY MOISTURE  
RESISTANT POSTS  
VERIFY SIZE

CONCRETE FOOTINGS  
VERIFY SIZE

GRADE

36" MIN.

CROSS SECTION

EXAMPLE ONLY

# STAIR HANDRAIL

HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF STAIRWAYS. HANDRAILS NOT REQUIRED ON STAIRWAYS HAVING LESS THAN FOUR RISERS

THE TOP OF GUARDRAILS FOR STAIRWAYS ONLY, MAY HAVE A MINIMUM HEIGHT OF 34 INCHES

ENDS RETURNED OR TERMINATE IN A NEWELL POST OR SAFETY TERMINAL

CONTINUOUS FULL LENGTH OF STAIRS  
MEASURE TO TOP OF HANDRAIL

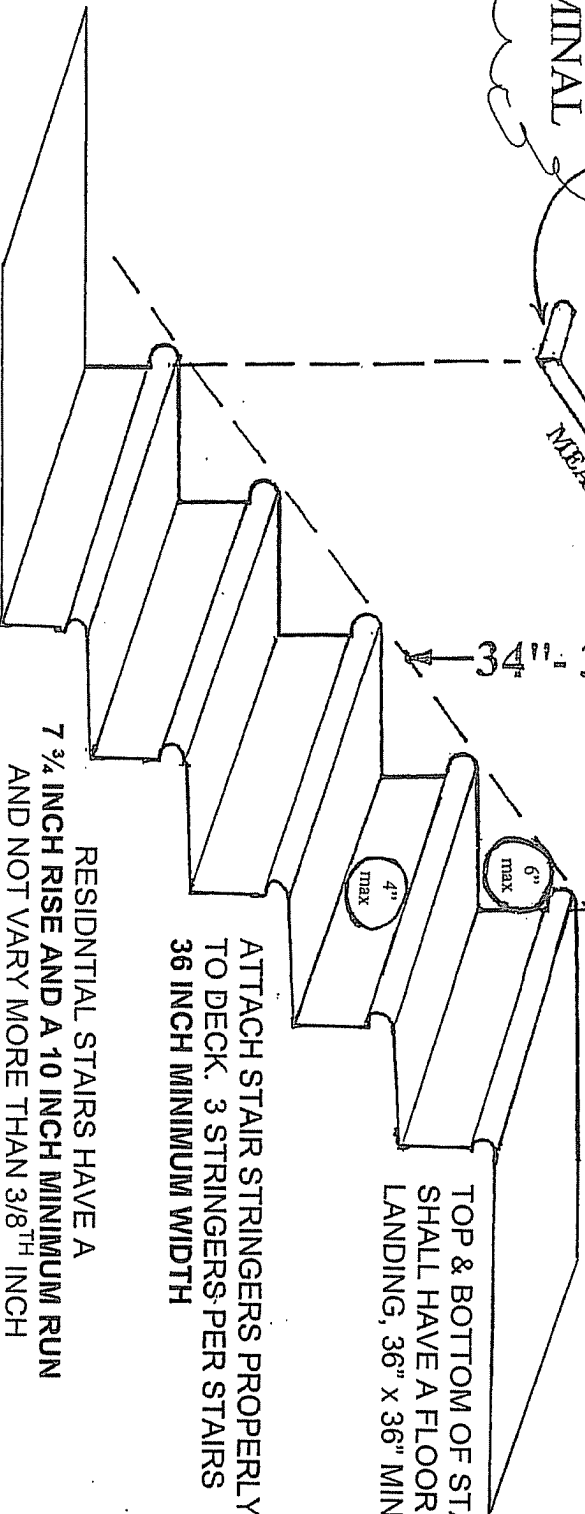
34" - 38"

GUARDRAILS REQUIRED ON BOTH SIDES OF STAIRWAYS OVER 30 INCHES ABOVE GRADE

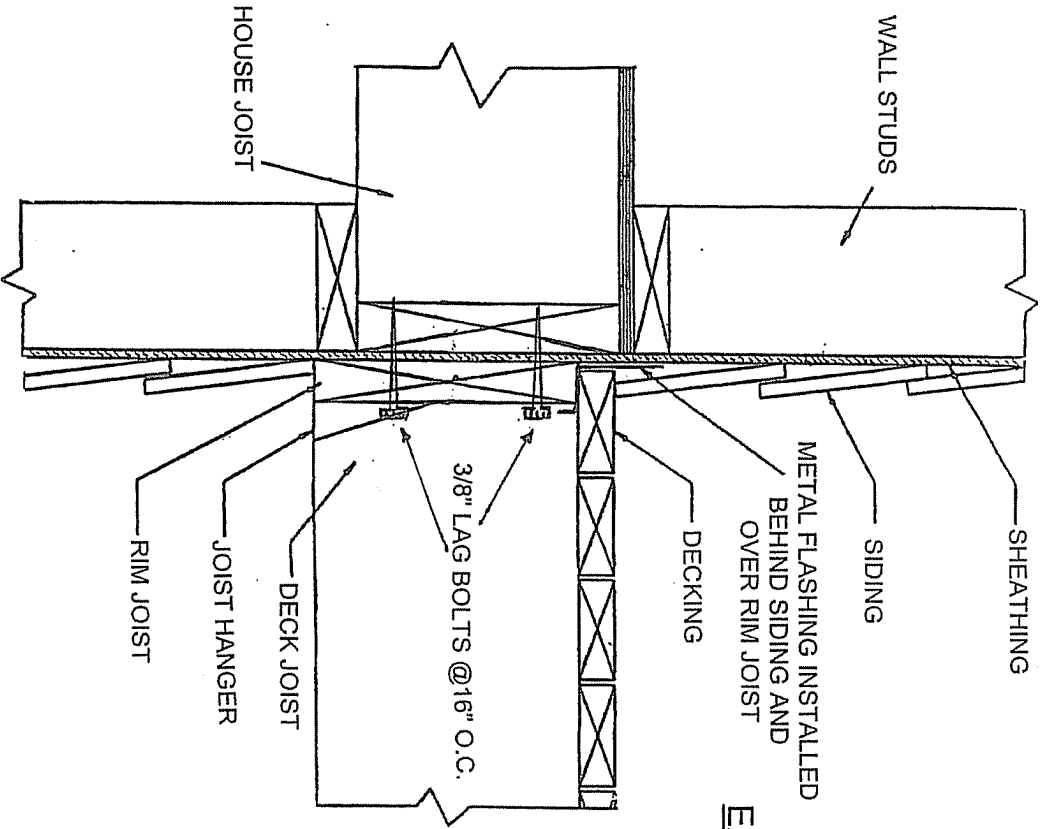
TOP & BOTTOM OF STAIRWAYS SHALL HAVE A FLOOR OR LANDING, 36" x 36" MINIMUM

ATTACH STAIR STRINGERS PROPERLY TO DECK. 3 STRINGERS PER STAIRS  
36 INCH MINIMUM WIDTH

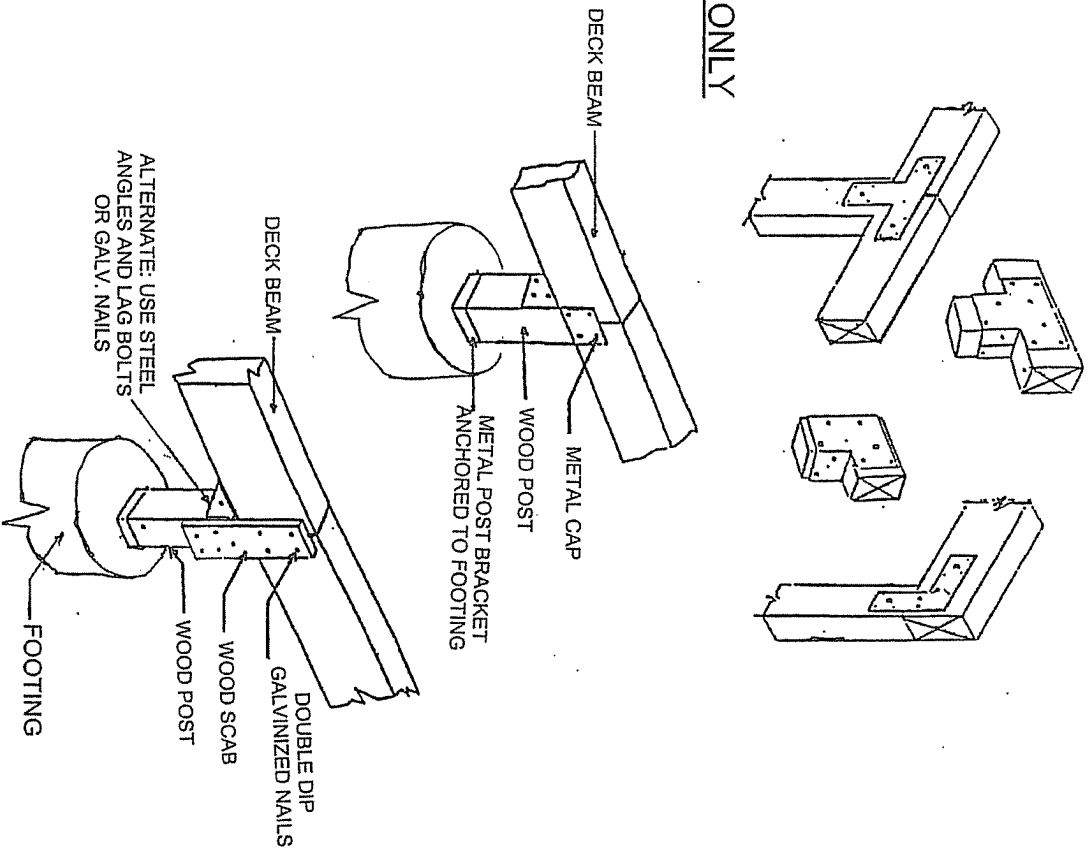
RESIDENTIAL STAIRS HAVE A 7 3/4 INCH RISE AND A 10 INCH MINIMUM RUN AND NOT VARY MORE THAN 3/8 TH INCH



# DECK RIM (AT HOUSE) DETAIL



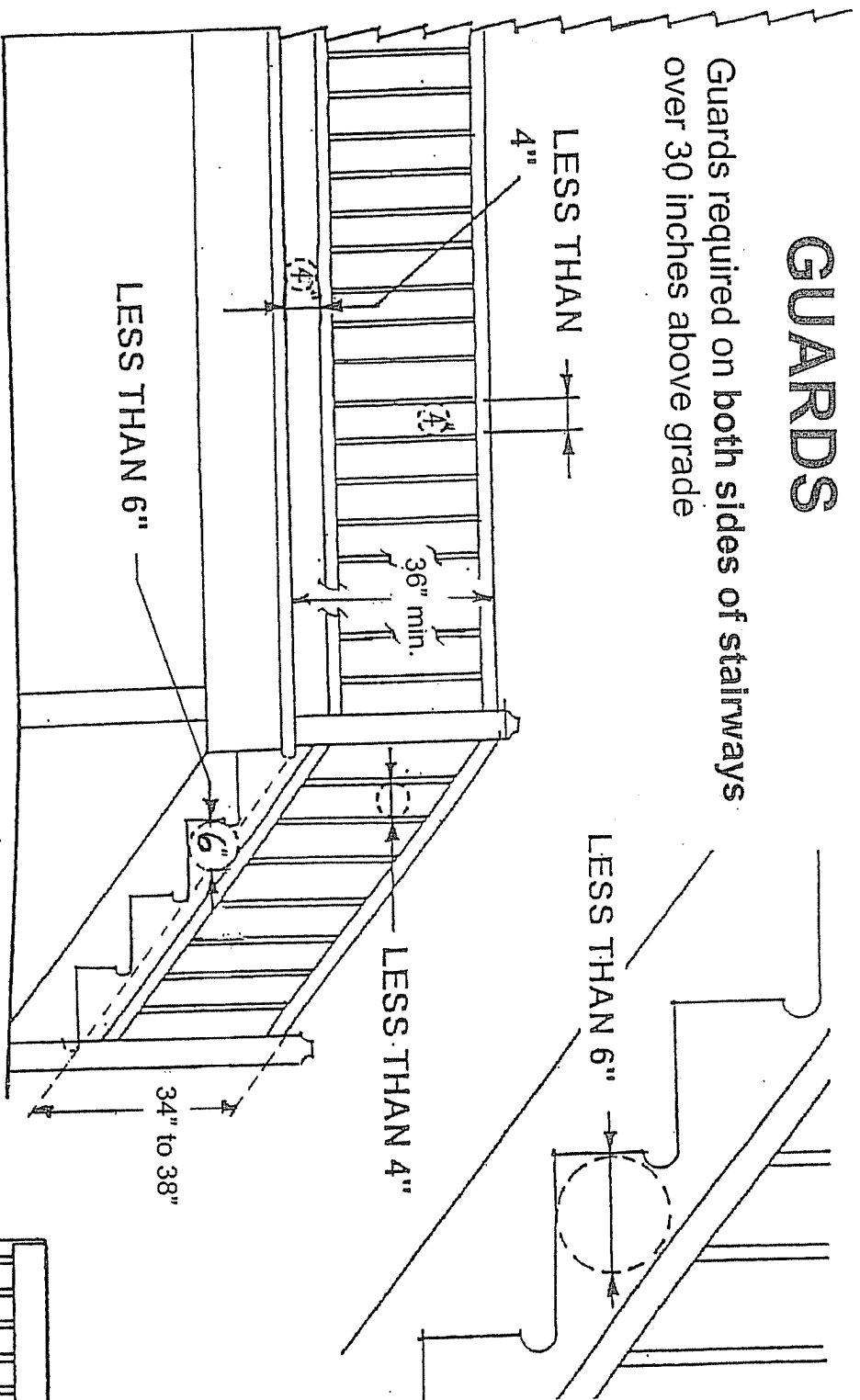
## EXAMPLE ONLY



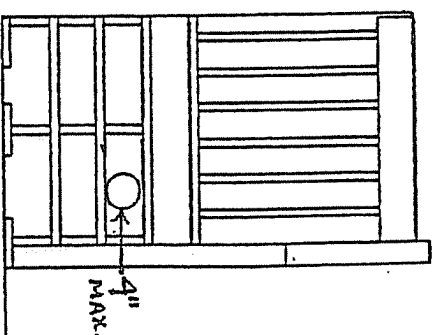
## POST TO BEAM CONNECTIONS

# GUARDS

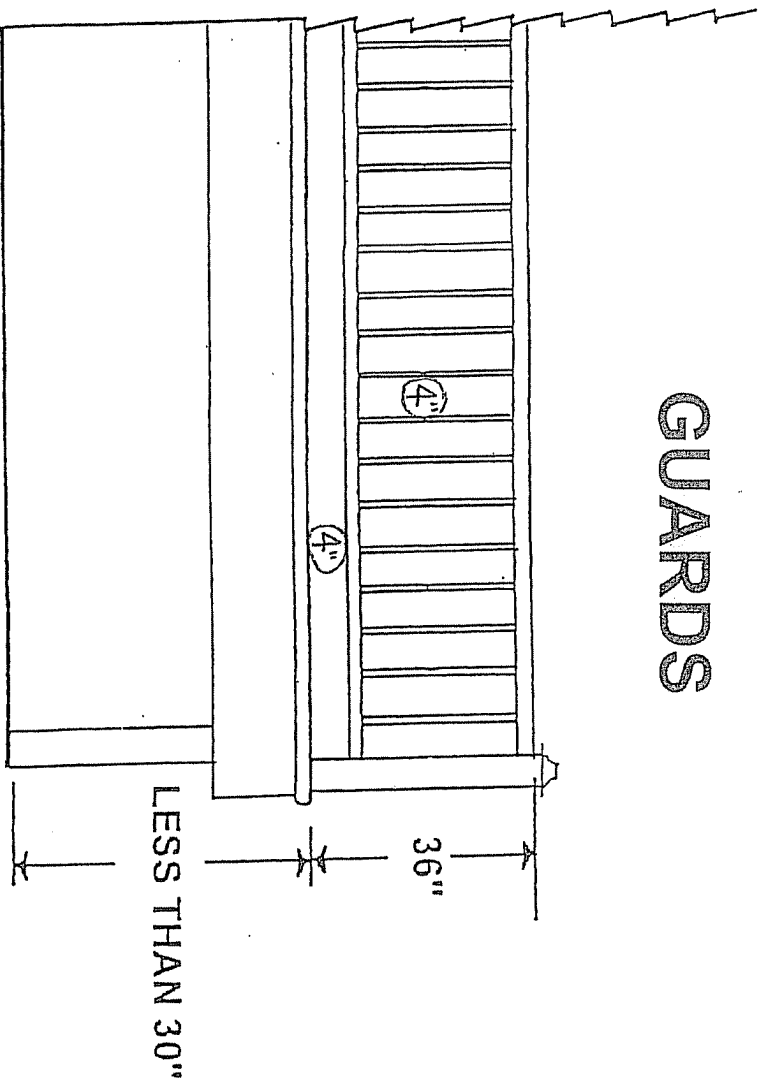
Guards required on both sides of stairways over 30 inches above grade



Openings in required guards and in stair risers, shall have intermediate rails or ornamental closures such that a 4 inch diameter sphere cannot pass through.  
**Exception:** The triangle openings formed by the riser, tread, and bottom rail of the guard at the open side of a stairway are permitted to be of a size such that a sphere 6 inches in diameter cannot pass through.

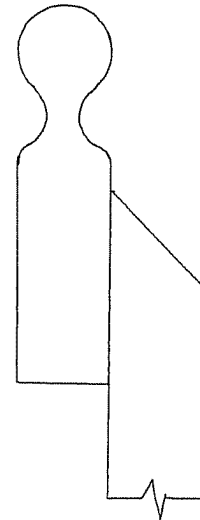
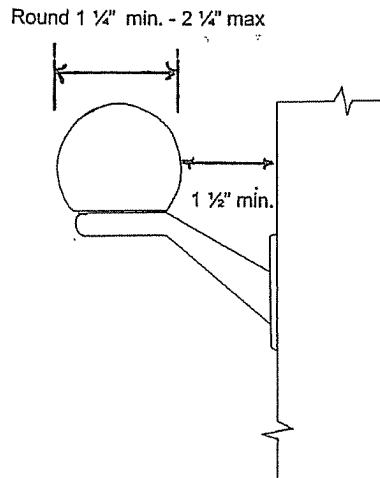
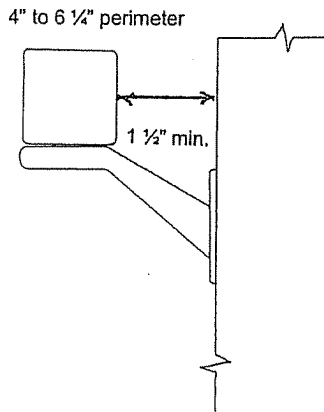
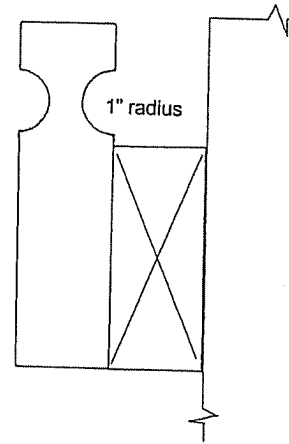
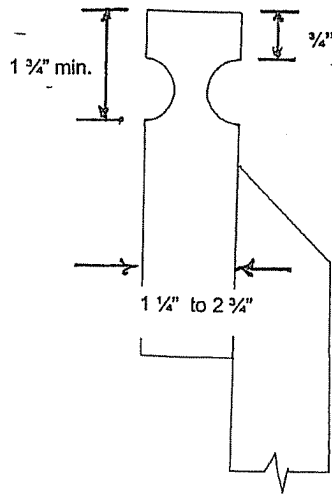
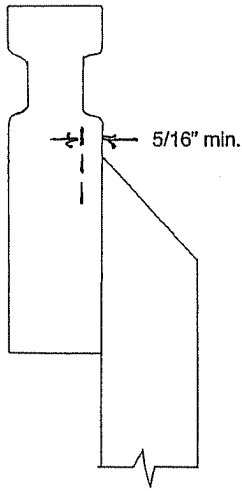


# GUARDS

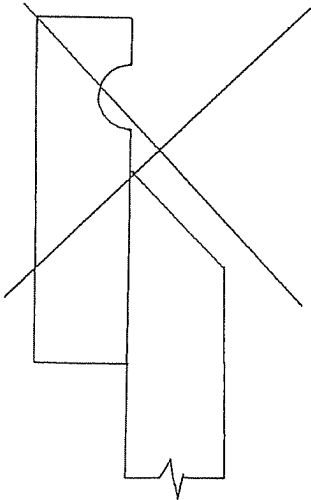


A 36 inch high guard is required for residential porches, balconies or raised floor (decks) surfaces that are located more than 30 inches above a floor or grade. Guards shall have intermediate rails or ornamental closures that do not allow the passage of a sphere 4 inch in diameter.

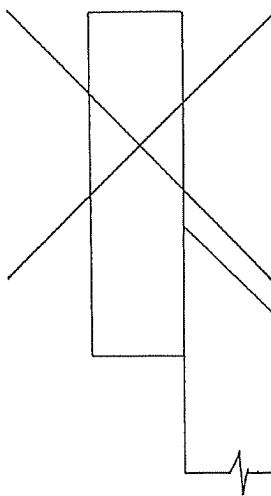
# Acceptable Gripable Handrail Design



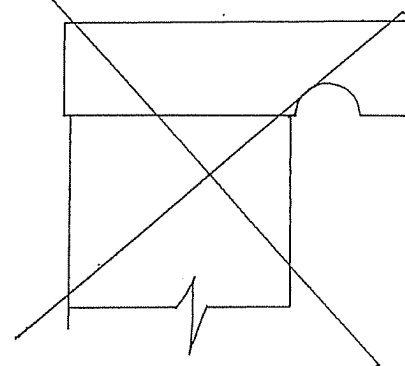
Not Acceptable



Not Acceptable



Not Acceptable



Example only

## Floor Joist spans, Beam and Footing size tables

**Maximum Joist Spans (Based on Treated # 2 or better wood grades)**

joist size	Spruce, Pine or Fir			joist size	Southern Pine			joist size	Western Cedar			joist size
	12" OC	16" OC	24" OC		12" OC	16" OC	24" OC		12" OC	16" OC	24" OC	
2 x 6	9'-2"	8'-4"	7'-0"	2 x 6	10'-9"	9'-9"	8'-6"	2 x 6	9'-2"	8'-4"	7'-3"	2 x 6
2 x 8	12'-1"	10'-10"	8'-10"	2 x 8	14'-2"	12'-10"	11'-0"	2 x 8	12'-1"	11'-0"	9'-2"	2 x 8
2 x 10	15'-4"	13'-3"	10'-10"	2 x 10	18'-0"	16'-1"	13'-5"	2 x 10	15'-5"	13'-9"	11'-3"	2 x 10
2 x 12	17'-9"	15'-5"	12'-7"	2 x 12	21'-9"	19'-0"	15'-4"	2 x 12	18'-5"	16'-0"	13'-0"	2 x 12

**Beam size Spruce, Pine or Fir (based on treated #2 or better wood grades)**

joist length	Post spacing											
	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
8'	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12
10'	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	
12'	2-2x6	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12		
14'	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12			
16'	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12			

**Beam size Southern Pine (minimum beam size based on treated #2 or better wood grades)**

joist length	Post spacing											
	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10
8'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12
10'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x10
12'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x6	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x12
14'	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	3-2x12
16'	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	

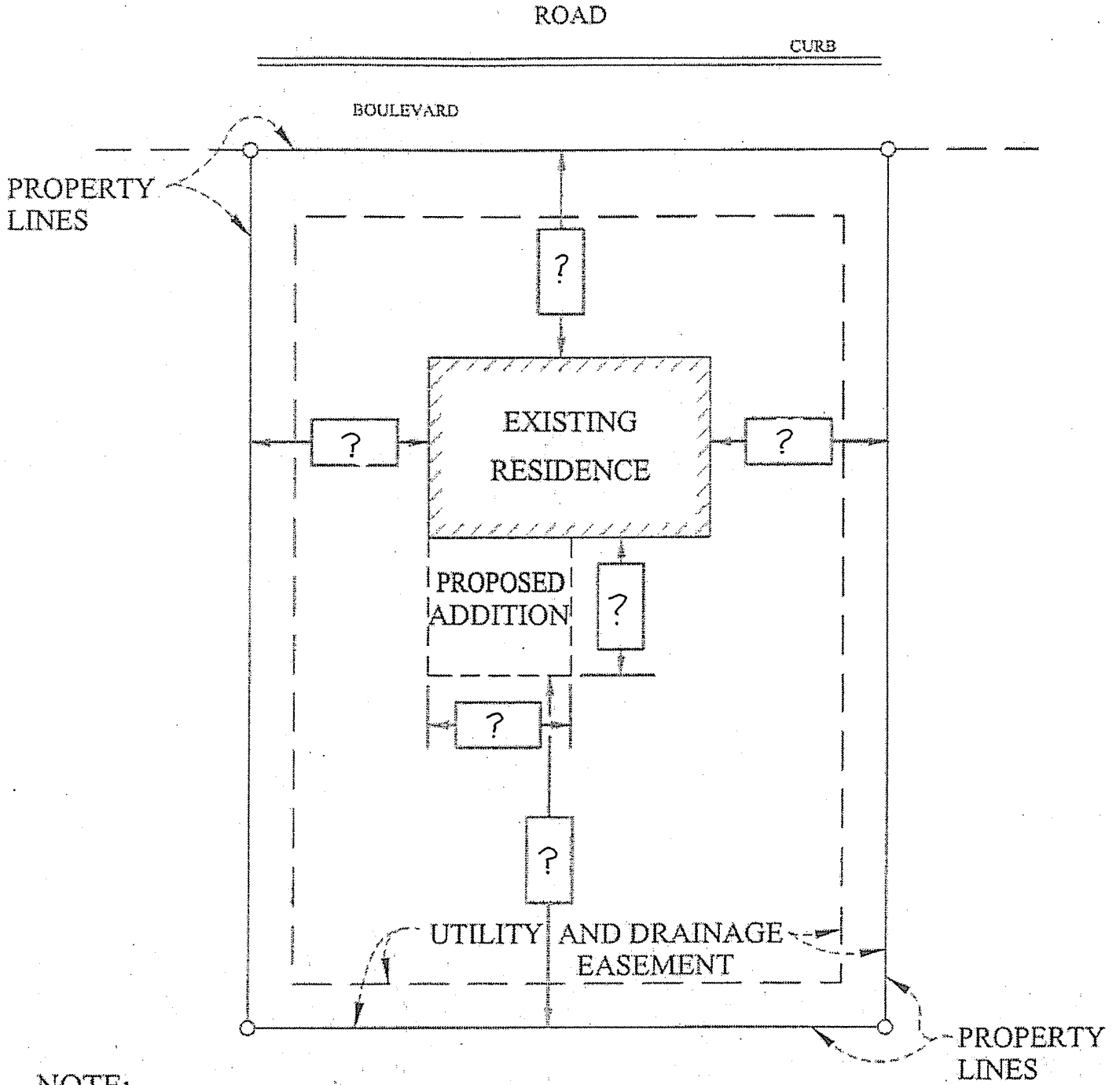
**Corner footings (minimum bottom diameter)**

joist length	Post spacing											
	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	8"	8"	8"	8"	8"	8"	8"	9"	9"	9"	10"	10"
8'	8"	8"	8"	8"	8"	9"	9"	10"	10"	11"	11"	12"
10'	8"	8"	8"	9"	9"	10"	11"	11"	12"	12"	13"	13"
12'	8"	8"	9"	9"	10"	11"	12"	12"	13"	13"	14"	14"
14'	8"	8"	9"	10"	11"	12"	12"	13"	14"	14"	15"	15"
16'	8"	9"	10"	11"	12"	12"	13"	14"	15"	15"	16"	16"

**Intermediate footings (minimum bottom diameter)**

joist length.	Post spacing											
	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	8"	8"	9"	9"	10"	11"	12"	12"	13"	13"	14"	14"
8'	8"	9"	10"	11"	12"	12"	13"	14"	15"	15"	16"	16"
10'	9"	10"	11"	12"	13"	14"	15"	15"	16"	17"	18"	18"
12'	9"	11"	12"	13"	14"	15"	16"	17"	18"	18"	19"	20"
14'	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	21"
16'	11"	12"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"

# EXAMPLE SURVEY



NOTE:

SHOW ANY ADDITIONAL STRUCTURES THAT EXIST ON THE PROPERTY (I.E. POOL, SHED, ETC.)