

# CITY OF BRISTOL

## DECK CONSTRUCTION GUIDE

ACCORDING TO THE 2012 IRC WITH THE 2016 CT AMMENDMENTS

To construct an attached deck in to a **residential** home in the City of Bristol, you must provide the following:

- 1) Filled out permit application providing the location, applicant's name, address, contact phone number(s) and any applicable license numbers.
- 2) Deck construction plans (see below).
- 3) Location of deck on property in relation to home/building.
- 4) If applicable-wetlands approval and/or zoning variance.

### CODE SPECIFICATIONS

#### **Stairs:**

◆ **Stair Riser Height – 8-1/4” maximum.**

The minimum riser height shall be 4 inches. The greatest riser height within any flight of stairs shall not exceed the smallest by more than **3/8”**.

◆ **Stair Tread Depth – 9” minimum.**

The greatest tread depth within any flight of stairs shall not exceed the smallest by more than **3/8”**.

◆ **Stair Landing** – There shall be a floor landing a minimum of 3 feet in the direction of travel and 3 feet in width, or a width equal to the width of any adjacent stair, which ever is greater.

◆ **Stairway Width** – Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height.

#### **GUARD RAILS:**

◆ **Decks located** more than 30 inches above the ground shall have guards not less than 36 inches in height. The open sides of **STAIRS** with a total rise of more than 30 inches above the (floor or) grade shall have guards not less than 34 inches in height measured vertically from the nosing of the treads. **“Guards” and “Handrails” are not the same element of the deck** (see “handrails”).

◆ **Guard rail baluster spaces** – The maximum space between balusters must not allow the passage of a 4” sphere or more in diameter. The use of #2 pressure treated wood will allow for substantial shrinkage, increasing the space between the balusters. Use a 3 1/2” space when laying out baluster location to compensate for shrinkage.

◆ **Opening Exceptions** – 1) The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such size that a sphere 6 inches cannot pass through. 2) Openings for required guards on the sides of stair threads shall not allow a sphere 4 3/8 inches to pass through.

## HANDRAILS:

- ◆ **Handrails are required-** Handrails shall be provided on at least one side of each continuous run of treads or flight with **four or more** risers.
- ◆ **Handrail Height** – Handrail height shall be not less than 34 inches and not more than 38 inches measured vertically from the nosing of the tread.
- ◆ **Handrail Grip Size** – Circular handrails can be 1 ¼”-2” in diameter, non-circular cannot exceed 2 ¼ “in cross section width-see attached diagram.
- ◆ **Continuity** – Handrails for stairways shall be **continuous** for the full length of each flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends **shall be returned** to a wall or shall terminate in newel posts or safety terminations. Handrails adjacent to a wall shall have a space not less than 1 ½ inches between the wall and the handrail.

## DECK CONSTRUCTION:

- ◆ Decks must be designed to resist a 40 pound per square foot loads.
- ◆ All wood used for exterior decks must be decay resistant-either pressure treated or naturally resistant. All wood in contact with the ground must be rated for ground contact.
- ◆ All exterior deck fasteners used for pressure treated wood shall be stainless steel, silicon bronze, copper, G185 galvanized steel or shall be hot dipped galvanized. The exception is for one-half-inch diameter or greater steel bolts in normally dry locations.
- ◆ The frost line in Connecticut is 42” below the top of grade. The bottom of all pier support foundations must be at that level.
- ◆ Piers shall be a minimum of 2,500 PSI concrete.
- ◆ Galvanized concrete anchors and post base connectors shall be required at each support pier and installed per the manufacturer’s instructions.
- ◆ Galvanized joist hangers and structural member connectors must be attached with the manufacturer’s specified fasteners (nails). Sheet rock or decking screws, untreated nails or any other deviation from the required fasteners will not be allowed.

## Helpful Web Sites

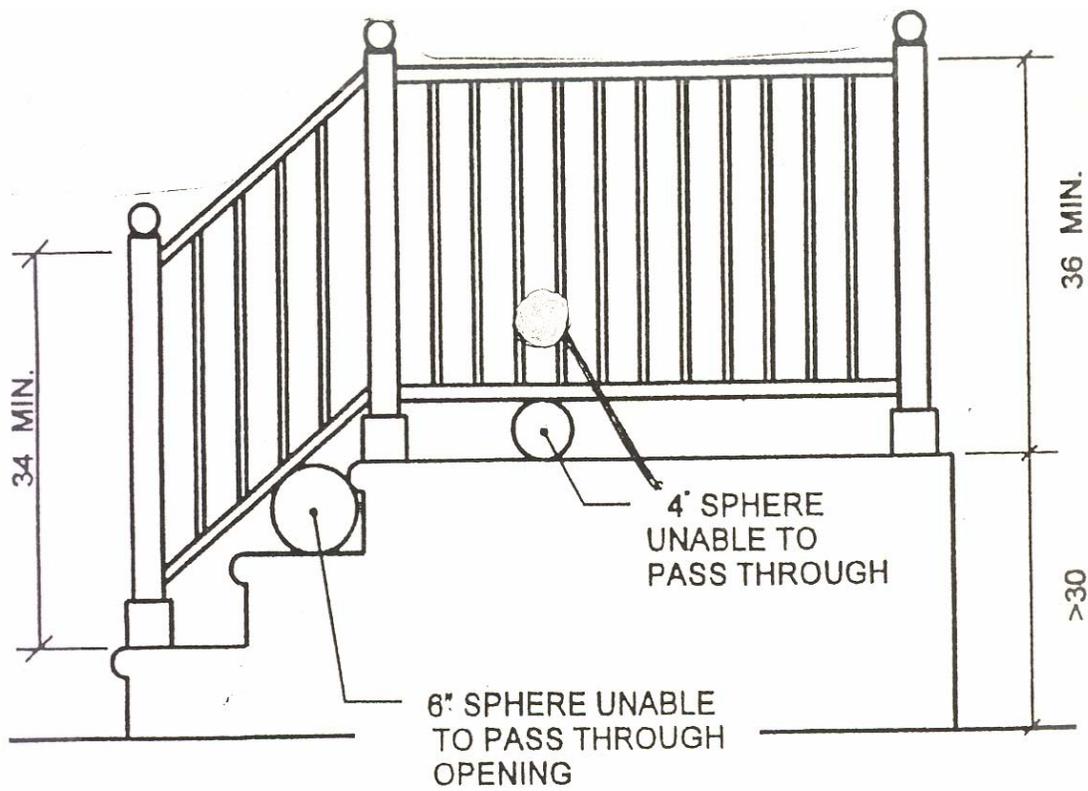
The following web sites maybe helpful when designing your deck bear in mind that the State of Connecticut has amendments to the building codes *not* used in these web sites which may affect the design.

[www.decks.com](http://www.decks.com)

[www.awc.org/publications/DCA/DCA6/DCA6-09.pdf](http://www.awc.org/publications/DCA/DCA6/DCA6-09.pdf)

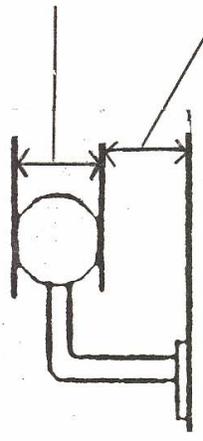
(Updated September 2017)

**GUARD DIAGRAM**



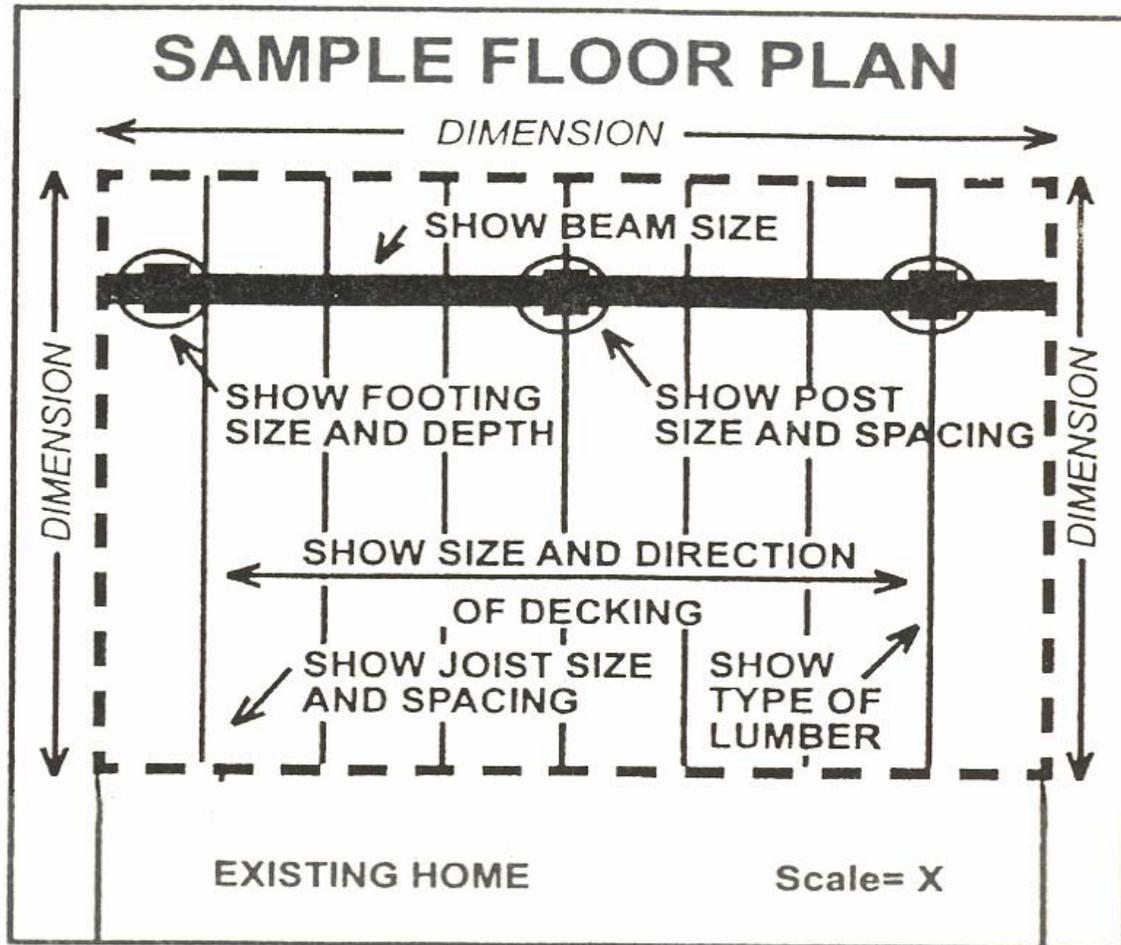
**HANRAIL DIAGRAM**

1 ¼" - 2" maximum      Minimum 1 ½" space



### FLOOR PLAN

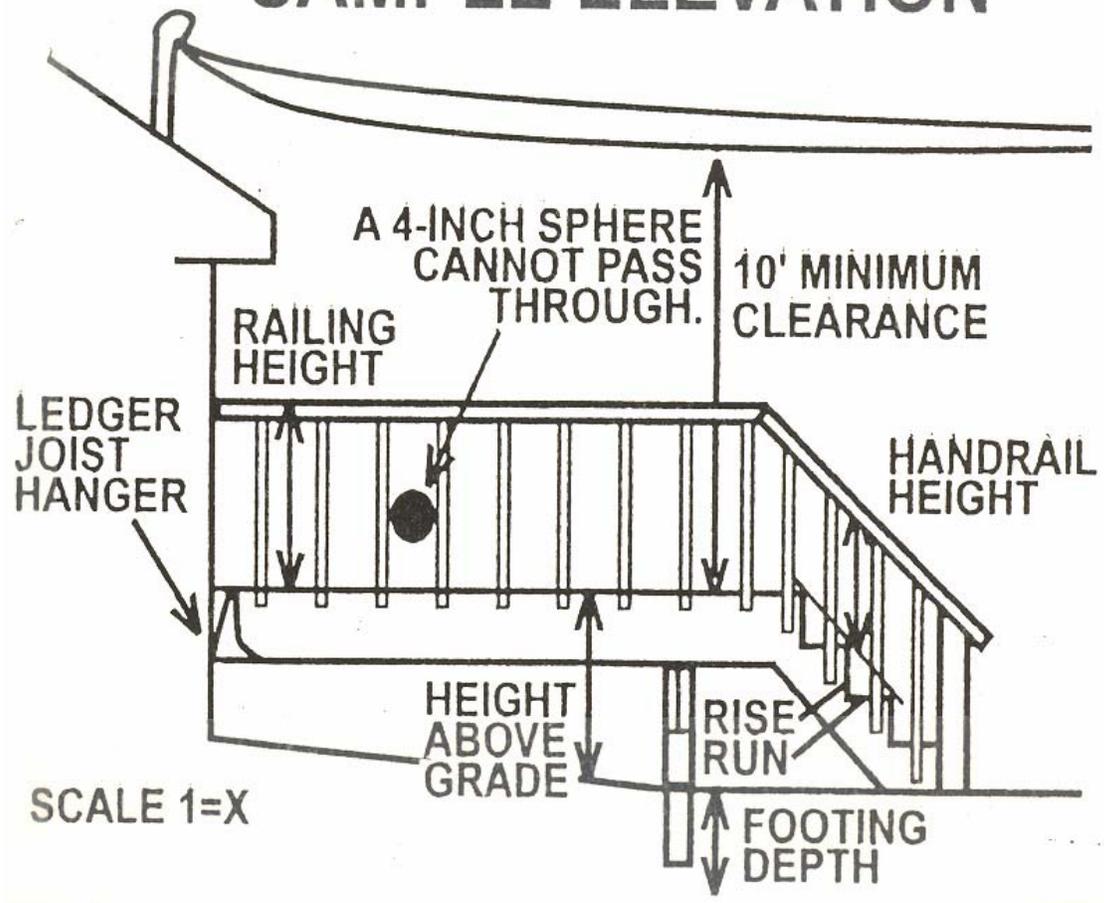
1. Proposed deck size.
2. Size and spacing of floor joists.
3. Size and type of decking material.
4. Size, type, location, and spacing of posts.
5. Size and type of beam



### ELEVATION PLAN

1. Height of structure from grade.
2. Size and depth of footings.
3. Guard height and spacing (if any).
4. Stairway rise/run and handrail height (if any).
5. Clearance of over-head wires (if applicable).
6. Ledger attachment details and flashing information.

# SAMPLE ELEVATION



## Southern Pine Span Tables

(The complete book of tables is available in PDF at [www.southernpine.com](http://www.southernpine.com))

Maximum spans given in feet and inches inside to inside of bearings

**TABLE 14 WET-SERVICE FLOOR JOISTS – 40 PSF LIVE LOAD, 10 PSF DEAD LOAD, 360 DEFLECTION**

DECKS; MOISTURE CONTENT EXCEEDS 19%

Size Inches	Spacing Inches on center	Grade									
		Visually Graded				Machine Stress Rated (MSR)			Machine Evaluated Lumber (MEL)		
		SS	No.1	No.2	No.3	240F-2.0E	2250F-1.9E	1950F-1.7E	M23	M14	M21
<b>2 x 6</b>	<b>12.0</b>	10-9	10-7	10-4	9-4	11-2	11-0	10-7	10-9	10-7	10-7
	<b>16.0</b>	9-9	9-7	9-5	8-1	10-2	10-0	9-7	9-9	9-7	9-7
	<b>19.2</b>	9-2	9-0	8-9	7-4	9-6	9-4	9-0	9-2	9-0	9-0
	<b>24.0</b>	8-7	8-5	7-10	6-7	8-10	8-8	8-5	8-7	8-5	8-5
<b>2 x 8</b>	<b>12.0</b>	14-2	13-11	13-8	11-11	14-8	14-5	13-11	14-2	13-11	13-11
	<b>16.0</b>	12-11	12-8	12-5	10-3	13-4	13-2	12-8	12-11	12-8	12-8
	<b>19.2</b>	12-2	11-11	11-4	9-5	12-7	12-4	11-11	12-2	11-11	11-11
	<b>24.0</b>	11-3	11-1	10-2	8-5	11-8	11-6	11-1	11-3	11-1	11-1
<b>2 x 10</b>	<b>12.0</b>	18-1	17-9	17-5	14-0	18-9	18-5	17-9	18-1	17-9	17-9
	<b>16.0</b>	16-5	16-2	15-10	12-2	17-0	16-9	16-2	16-5	16-2	16-2
	<b>19.2</b>	15-6	15-1	14-8	11-1	16-0	15-9	15-2	15-6	15-2	15-2
	<b>24.0</b>	14-4	13-6	13-1	9-11	14-11	14-8	14-1	14-4	14-1	14-1
<b>2 x 12</b>	<b>12.0</b>	22-0	21-7	21-2	16-8	22-10	22-5	21-7	22-0	21-7	21-7
	<b>16.0</b>	20-0	19-8	18-10	14-6	20-9	20-4	19-8	20-0	19-8	19-8
	<b>19.2</b>	18-10	17-11	17-2	13-2	19-6	19-2	18-6	18-10	18-6	18-6
	<b>24.0</b>	17-6	16-1	15-5	11-10	18-1	17-10	17-2	17-6	17-2	17-2

These spans are intended for use in enclosed structures or where the moisture content in use does not exceed 19 percent for an extended period of time unless the table is titled Wet-Service. Applied loads are given in psf (pounds per square foot). Deflection is limited to the span in inches divided by 360, 240, or 180 and is based on the load only. The load duration factor, C<sub>D</sub>, is 1.0 unless shown as 1.15 or 1.25. An asterisk (\*) indicates the listed span has been limited to 26'0" based on availability; check sources of supply for lumber longer than 20'. Highlighted sizes/grades are NOT commonly produced.

MAXIMUM SPANS: SOUTHERN PINE JOISTS & RAFTERS  
SOUTHERN PINE COUNCIL

2003  
Edition, **14**