

# City of Westland

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## RESIDENTIAL DECKS AND RAMPS

The undercarriage of residential decks must be comprised of treated lumber unless otherwise approved by the Building Official. The deck and railing may be constructed of treated lumber or a variety of materials approved for that use.

### STAIRS

Steps must be a minimum of 36" wide. Riser heights are 8 1/4" maximum and 4" minimum. Tread depths are 9" minimum with a 1" nosing if a solid riser is installed. There can be no more than a 3/8" variation in riser heights or tread depths in the total run of the stair.

### HANDRAILS

Stairs with four or more risers require a graspable handrail on at least one side. The handrail must be between 34" and 38" above the stair nosing. Handrails must be continuous for the full length of the stairs, 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 post or shall terminate in a newel post or safety terminal. Handrails adjacent to a wall shall have a space of not less than 1 1/2" between the wall and the handrail.

### GUARDRAILS

Decks or porches with a walking surface more than 30" above floor or grade must have a guardrail system extending not less than 36" above the deck surface on residential decks. Commercial and multifamily decks require a minimum 42" high guardrail. Guardrail systems must be able to withstand a 200 lb. thrust load in either direction. Openings in the guardrail system (and handrail supports), must have a maximum opening of less than 4 inches. The triangular openings formed by a riser, tread and bottom rail of the guard at the open side of a stairway are permitted to be such that a 6 inch sphere cannot pass through.

## **FOOTINGS**

Foundations must be a minimum of 8" piers or posts sunk 42" below grade when the deck is attached to the house. Unattached decks do not require footings.

## **UNDERCARRIAGE**

Beams and Joists must support a live load of 42 pounds per square foot. Joists must be attached by metal hangers at termination points without positive bearing.

## **DECKING**

Nominal 2 inch boards are required for joists spaced at a maximum of 24" on center. Nominal 5/4" boards may be attached to joists spaced at a maximum of 16" on center or less. Joist hangers must be used on all connections without positive bearing. Only double dipped galvanized nails, fasteners and hardware should be used unless otherwise approved by manufacturer.

Approved corrosion-resistant flashing is required at the intersection of exterior walls and decks. Flashing shall be inserted to the extent under the existing siding and over the ledger board to prevent water from collecting at this point. Flashing must be continuous.

## **ATTACHMENT TO HOUSE**

Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads as applicable with a minimum 1/2-inch diameter fastener. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting.

## **DRAWINGS REQUIRED FOR BUILDING PERMIT**

Site Plan – This should show the location of the deck on the lot and the distance from all property lines. (See example on page 6) Deck Plan – A plan drawn preferably at 1/4 scale (1/4" equals a foot). This plan should show all framing sizes and spacing, location and depth of footings and other structural supports. Include planters, seats, stairs, etc. Elevation – Include an elevation if the deck is 30 inches or more above finish grade.

## **INSPECTION REQUIREMENTS**

Footing/Post-holes – Before post are set. Framing – Before installing the decking (walking surface). Final – After completion of all work (including trade work). Note that any electrical work installed on decks must meet the current electrical code and will require proper permits and inspections.



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## **HANDICAP RAMPS RESIDENTIAL**

Aluminum handicap ramps may be installed without permits. These are considered Temporary in nature and are designed to meet the current codes. Any aluminum ramp found to be improperly installed will be required to have repairs made to meet safety standards.

All wood permanently installed ramps must meet the deck standard for construction as listed above with the following additional requirements.

A minimum of a 4' X 5' Flat surface at the door.

1. Change of direction requires a landing to allow for turning and a minimum of 5' X 5' flat surface.
2. ADA Standards Require a 1:12 ramp slope ratio which equals 4.8 degrees slope or one foot of wheelchair ramp for each inch of rise. If space does not permit no greater than a 1 : 8 Pitch may be acceptable with approval.
3. Ramps must end on a hard level surface or concrete or asphalt.
4. The ramp must have a clear area of 36" between required handrails.
5. Ramps and landing platforms higher than the 30" from ground must meet the Guard Rail requirements.
6. Ramps must be located wholly on the owner's property and shall not impede any Public walkway.
7. Handicap ramps may be built in the required front yard setback and not need additional approvals.

## **INSPECTIONS REQUIRED**

1. Post hole
2. Attachment and Framing (before decking)
3. Final



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## DECK FORM - ADDRESS

HOUSE

ATTACHMENT FOR  
LANDINGS, STAIRS,  
ETC. R311.5.1

Decking  
Material:

A 4" sphere cannot  
pass through

WHEN  
ATTACHING  
BOND TO BOND,  
FOLLOW  
SECTION R507

DO NOT  
PENETRATE  
BRICK  
PROVIDE  
LATERAL  
BRACING

POST AT HOUSE MUST BE TO  
HOUSE FOOTING DEPTH

All Post Must Bear on  
Undisturbed Soil – Minimum 42"  
below Finish Grade

Footing: 42"

Less than 4"

Guardrail  
minimum 36"

BEAM SIZE: \_\_\_\_\_  
TOP BEARING

Joist Size: \_\_\_\_\_

Spacing: \_\_\_\_\_

Post to Post Span: \_\_\_\_\_

Post Size: \_\_\_\_\_

Grade

A 6" sphere cannot  
pass through

Rise: Max 8  $\frac{1}{4}$ "  
Run: 9" Min  
Nosing:  $\frac{3}{4}$ " – 1  $\frac{1}{4}$ "  
All risers will be equal  
Tread 10"  
No nose if tread = 11"

BLOCK & SCREW OR USE  
APPROVED BRACKETS ON  
RAIL POSTS

Guardrail minimum 34" off nosing

GRASPABLE

Less than 4"

Handrails: 34" – 38" measured  
vertically from the nosing of the  
treads. Shall be continuous the  
full length of the stairs, ends  
shall be returned. Circular  
cross section 1  $\frac{1}{4}$ " – 2"

Height Above  
Grade:

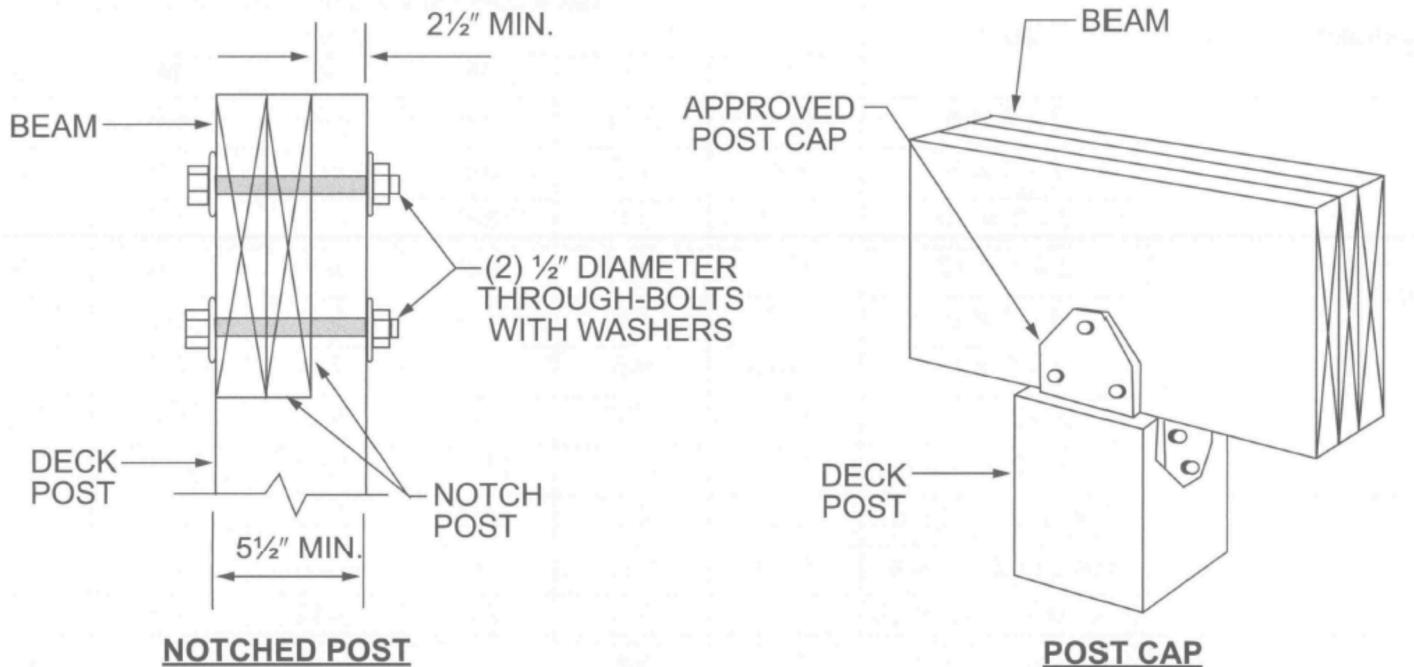
\*Please fill in all required information\*  
Revised: 7/19/22

Beam/Post Connection Method and Hardware to be Used:

**R507.7.1 Deck Post to Deck Beam**

Deck beams shall be attached to deck posts in accordance with Figure R507.7.1 or by other equivalent means capable to resist lateral displacement. Manufactured post-to-beam connectors shall be sized for the post and beam sizes. All bolts shall have washers under the head and nut.

**Exception:** Where deck beams bear directly on footings in accordance with Section R507.8.1.



For SI: 1 inch= 25.4 mm.

**FIGURE R507.7.1**  
**DECK BEAM TO DECK POST**

# Sample Plot Plan

