CITY OF DELANO
Department of Building Inspections
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RESIDENTIAL DECK REQUIREMENTS

*This handout is only a **GUIDE** and does not contain all of the requirements of the Minnesota State Building Code or City Ordinances.*

Building permits are required for any deck that is attached to a dwelling or is more than thirty (30) inches above grade, including freestanding decks.

REQUIRED INFORMATION WHEN APPLYING FOR A PERMIT:

1. CERTIFICATE OF SURVEY/SITE PLAN:
Drawn to scale, indicating lot dimensions, deck location and setbacks from property lines.

2. TWO (2) COPIES OF DECK PLAN, DRAWN TO SCALE:
PLAN REVIEW CROSS SECTION ELEVATIONS

* **Plans that are drawn on a computer must meet the minimum requirements of this handout.**
* Proposed deck size, location of stairs
* Size, type and spacing of floor joists
* Size & type of decking **(Plastic/Composite decking must be approved before installing)**
* Size, type, location and spacing of posts, beams and headers
* Height of structure from grade
* Joist, hangers, flashings and fasteners
* Diameter and depth of footings
* Guardrail height and spacing of intermediate rails
* If using a plan from a big box hardware store (Menards, Home Depot and Lowe's), compare information provided here in the handout to what they provide.

DECK BUILDING REQUIREMENTS

1. SETBACKS: Check with City Hall for setback requirements.

2. LIVE LOAD: All deck floor systems must be designed to support a live floor load of Forty (40) pounds psf, ten (10) pounds psf. dead load. (IRC Table R301.5)

3. FOOTINGS: Frost footings must extend to at least 42" below grade for any deck that is attached to a dwelling or a garage that has frost footings. The diameter of the footings should be at least 12", attached heated and non-heated (three-season or screen porches) additions will require larger footings. The future addition with a roof should be considered at the time of permit application. A positive mechanical connection between post and footings is required.

4. **WOOD REQUIRED:** All wood used in the construction of decks is required to be of approved naturally durable wood or treated wood. This includes posts, beams, joists, decking, guards and rails. All lumber shall bear the quality mark of an approved inspection agency. (MSBC 1300.0110 Subd. 13) Plastic/Composite deck materials must be **APPROVED** before installing; material must be installed and supports spaced O.C. or spans per ES report. Copy of report must be available for installer and inspector. A list of decking materials can be found at: www.10klakes.org and the ES reports can be found at: www.icc-es.org.

5. **FLASHING:** All connections between deck and dwelling must be flashed and weatherproof (IRC Sec. R703.4 Flashing)

6. **LEDGER BOARD:** Siding must be removed to allow this member to be properly fastened. 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. 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 inspections, decks shall be self-supporting. (IRC Sec.R507.8 & Sec.R507.9) Fasteners must be long enough to penetrate framing members. Decks shall not be supported by cantilevered floor framing without specific engineering.

7. **JOIST/BEAMS:** Joist spacing of 24 inches on center requires decking with a 2" nominal thickness, 5/4" decking material requires joist spacing no greater than 16 inches on center (decking installed perpendicular to the joists). Joists with cantilevers (see maximum joist span in handout), exceeding handout will require structural engineering. Beams that overhang posts by more than 12 inches from center of post (see handout). Beams that exceed the handout will require a structural engineering. Built-up beams (two or more members) are to be nailed together. A positive, mechanical connection between post and beam is required (see example in illustration). Beam splices must be over a post.

8. **JOIST HANGERS:** Joists framing into the side of a beam or ledger shall be supported by approved framing anchors such as joist hangers. (IRC Sec R502.6.2 Joist framing)

9. **FASTENERS:** Fasteners for pressured-preservative wood shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153. (IRC Sec 317.3.1 Fasteners for preservative-treated wood and Table 507.2.3.)

10. **GUARDS:** All open sides of decks, landings, balconies and porches which are more than 30" above grade or floor below, must be protected by a guard not less than 36" in height. Open sides of stairs with a total rise of more than 30" above the floor or grade below shall have guards not less than 34" in height measured vertically from the nosing of the treads. Required guards shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4" in diameter (4 3/8" for guards on open sides of stairways). The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway may be of such size that a sphere 6 inches in diameter cannot pass through. (IRC Sec R312.1.3 Opening limitations). **Post supporting the guardrailings either for the deck or stairs cannot be notched.**

11. **STAIRS:** Stairways shall not be less than 36 inches in width. The maximum riser height shall be 7 3/4" (3/8 inch maximum variation in riser heights) and the minimum tread depth shall be 10" (3/8 inch maximum variation in tread depths). Open risers are permitted, provided that the openings between treads does not permit the passage of a 4 inch diameter sphere. All stair stringers must be a minimum of 2 x 12. For minimum width stairs, a minimum of three stringers is required. If 5/4" decking material is used for treads, stringers shall be spaced a maximum of 16" O.C. (IRC Sec. R311.7.5.1 Risers and Sec.R311.7.5.2 Treads) (For plastic/composite material see the ICC ES report for the product.)

12. **HANDRAILS:** A handrail shall be provided on at least one side of all stairways having four (4) or more risers. Handrails shall be placed not less than 34" or more than 38" above the nosing of treads and be continuous the full length of the stairs. Handrails projecting from a wall or guardrail must have a space of not less than 1 ½" between the wall or guardrail and the handrail. The handgrip portion of handrails shall have a cross section of 1 ¼" minimum to 2" maximum in cross-sectional dimension and must have a smooth surface with no sharp corners. Handrail ends shall be returned or shall terminate in newel posts. (IRC Sec R311.7.8.4 Continuity)

REQUIRED INSPECTIONS:

1. **FOOTINGS:** After the holes are dug, but before concrete is poured.

2. **FINAL/FRAMING:** In most instances the framing can be inspected at the final inspection. If your deck is less than three feet above the ground, a separate framing inspection will be required before the decking is installed.

PLEASE NOTE:

If you plan to use plastic/composite materials to build your deck, you must provide an Evaluation Services Report and the manufacturer's installation instructions at the time of permit application (this report must remain on the job for all inspections). Each ES report is unique to the manufacturer and will include requirements for DECKING, STAIR TREADS or RAILING SYSTEMS. If they are not included in the report then it cannot be used for installation.