

# **VILLAGE OF CARO**

## **ENGINEERING DESIGN STANDARDS**

APRIL 2004

**SECTION 9 – DRIVEWAYS & SIDEWALKS**  
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**A. Plans and Specifications - Submittal Procedure**

1. Plans and specifications shall be submitted as part of a site development package in accordance with “Section 1 - General Requirements & Submittals.”

**B. Plans and Specifications - Design Criteria for Driveways**

1. Residential – All residential driveways within the road right of way shall be concrete with a minimum thickness of six (6) inches. Residential driveways shall have a minimum width of ten (10) feet or match the existing drive. No residential driveway shall be wider than thirty (30) feet (measured at the edge of the street), unless approved in writing by the Village.
2. Commercial – All commercial driveways within the road right of way shall be concrete with a minimum thickness of eight (8) inches and reinforced with 6”x6”x#6 steel mesh. Commercial drives shall be of a width approved by the Village.
3. Industrial – Heavily traveled industrial drives shall be designed by a qualified Professional Engineer and approved by the Village. Industrial drive widths shall be approved by the Village.
4. Residential approaches shall have adequate flares to provide a safe turning radius. Minimum flaring shall be six (6) feet on the right side and four (4) feet on the left. Flaring length shall be a minimum of ten (10) feet. If a residential driveway is wider than twenty (20) feet, the flaring widths shall be adjusted to provide a maximum drive opening of thirty (30) feet.
5. Commercial and industrial approaches shall be MDOT Type “M” openings.
6. Driveways shall be sloped to direct drainage to the street.
7. For residential approaches constructed on an existing curbed street, the curb and gutter shall be entirely removed or cut horizontally when approved in advance by the Village. When an MDOT Type “M” approach is constructed on any existing curbed street, the curb and gutter must be entirely removed. The extent of the removal shall extend to the nearest joint past the spring line of the new curb.

**C. Plans and Specifications – Design Criteria for Sidewalks**

1. Sidewalks shall generally be located one (1) foot inside of the right of way line and parallel to such line and shall be required on both sides of a new street. For commercial site plans, continuous sidewalk shall be provided across the parcels frontage.
2. Sidewalks shall be five (5) feet wide with control joints one (1) inch deep at five (5) foot intervals.

3. Sidewalks shall generally conform to the grade of the existing topography. Sidewalk transverse slopes shall not exceed one-half (1/2) inch per foot. Transverse slopes less than one-quarter (1/4) inch per foot shall not be used unless longitudinal drainage is provided. Longitudinal grades shall not exceed one (1) inch per foot.
4. Sidewalks shall also meet latest ADA (Americans with Disabilities Act) requirements.
5. Sidewalks shall have smooth transitions and gentle curves. No sharp edges or abrupt changes in alignment are allowed. Sidewalks shall “jog” around natural features (i.e. trees, etc.)
6. Plans for sidewalks shall include existing contours at a minimum of two (2) foot intervals. Proposed grades along the centerline of the sidewalk shall be at fifty (50) foot intervals.
7. In general, sidewalks shall be at a higher elevation than the street and slope transversely toward the street at two percent (2%) minimum.
8. Where sidewalks meet driveways, they shall run continuously through the drives. The slope of the drives shall be designed to meet the sidewalk.
9. At street intersections, sidewalk ramps shall be used to meet the existing street grade. If existing curb is involved, the curb shall be removed and the sidewalk ramped to meet the pavement. No horizontal curb cuts shall be used unless approved in advance by the Village.
10. Integrated curb and sidewalk shall not be used, except for commercial site plans.
11. Sidewalks shall have the following thicknesses:

Thru commercial drives*	8” w/6” x 6” x #6 steel mesh
Thru residential drives*	6”
Sidewalk ramps	6”
All others	4”

\*Plus one (1) flag each side of driveway

D. Materials

1. Sidewalks and driveways shall be air-entrained concrete with a minimum compressive strength of 3500 psi. Sidewalk shall be treated with one (1) coat of a curing compound membrane.
2. Sidewalk and driveway base shall be four (4) inches of Class II Sand, compacted to ninety-five percent (95%) maximum density.
3. Shoulders shall be graded gently away from the sidewalk and be either seeded and mulched, or sod.

