

**DELTA TOWNSHIP CONCRETE SIDEWALK  
CONSTRUCTION STANDARDS**

**Original Adoption: November 1, 1993**

**Revision #1: December 18, 2006**

**Revision #2: July 17, 2017**

**Revision #3: March 16, 2020**

**1.01 GENERAL**

- A. All concrete sidewalks hereafter constructed, repaired or rebuilt in Delta Township shall be constructed, repaired or rebuilt in accordance with applicable MDOT Standard Plans and Specifications and the following specifications.
- B. A Delta Township Sidewalk Construction Permit is required prior to beginning construction, removal or repair of a sidewalk as required by Sec. 34-26 of the Delta Township Code of Ordinances, as amended. Permittee shall obtain a form inspection from Township staff prior to placing concrete sidewalks.
- C. The Contractor shall obtain any applicable permits from the Eaton County Road Commission and the Michigan Department of Transportation to work within the road right-of-way. A copy of said permit(s) shall be submitted by the Contractor to the Township Engineer.
- D. During construction, the Contractor shall provide traffic control on adjacent streets in compliance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), as amended.
  - 1. When construction occurs along county primary roads or MDOT routes or at the direction of the Township Engineer, the Contractor shall provide sidewalk closure and detour signage in accordance with the MMUTCD, Chapter 6D, Figure 6H-28 and Figure 6H-29, as applicable.
- E. For protection of underground utilities and in conformance with Public Act 53, the Contractor shall dial 1-800-482-7171 a minimum of three (3) full working days, excluding Saturdays, Sundays and holidays prior to beginning each excavation in areas where public utilities have not been previously located. All "Miss Dig" participating members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be part of the "Miss Dig" alert system.

**1.02 MATERIALS**

- A. All workmanship and materials used in sidewalks shall conform to the most recent Standard Specifications of the Michigan Department of Transportation, Section 803 Concrete Sidewalk, Sidewalk Ramps and Steps and the following sections, as amended.

Concrete, Grade P1	601
Cement	901
Coarse Aggregate	902
<i>Limestone aggregate required</i>	
Granular Material Class II	902
Concrete Admixtures	903
Concrete Curing Materials	903
<i>Calcium Chloride prohibited</i>	
Steel Reinforcement	905
Turf Establishment Materials	917

### **1.03 PREPARATION OF SUBGRADE**

- A. The subgrade shall be prepared by excavating or filling to the required elevation of the bottom of the concrete sidewalk. The subgrade shall be well drained and free of all sod and organic material.
- B. Any material found to be unsuitable by the Township Engineer, such as muck, peat, marl, soft clay and other such materials subject to frost heaving, differential frost action, or unable to provide adequate support for surface improvements, shall be excavated and removed from the job site. Any material so removed shall be replaced with MDOT Class II granular material.
- C. Where necessary for the construction of ramps, existing curb and gutter shall be saw cut and removed, for its full depth.
- D. Furnish, place and compact any additional embankment material required to establish the line and grade of the proposed sidewalk in accordance with MDOT Standard Specifications. All fills shall be thoroughly compacted to the required grade. The width of all cuts and fills shall be such that they conform to the final grading requirements as hereinafter stated.
- E. A minimum of four (4) inches of compacted MDOT Class II material shall be provided under the concrete sidewalk. A minimum of four (4) inches of compacted MDOT 21AA crushed stone or crushed concrete shall be provided under all ramps and in other areas where erosion of a sand base may occur, as determined by the Township Engineer.

### **1.04 LINES, GRADES, SLOPE, WIDTH, THICKNESS**

- A. At the time of site plan and plat reviews the Township Engineer, in cooperation with the Eaton County Road Commission and/or the Michigan Department of Transportation, shall approve all proposed lines and grades.
- B. The surface of all sidewalks and subgrade shall have a cross slope of at least one (1) percent (%) toward the curb line for drainage. The surface of all sidewalks shall have a cross slope of no greater than two (2) percent (%).
- C. The surface of all sidewalks and subgrade shall have a running slope less than five (5) percent (%) unless otherwise approved by the Township Engineer. Running slopes of eight (8) percent (%) may be used if level landings are provided at thirty (30) foot intervals or less.
- D. All new concrete sidewalks shall have a minimum width of five (5) feet.
- E. All concrete sidewalks, except at driveways, shall be at least four (4) inches thick. All driveway approaches shall be at least six (6) inches thick. All curb ramps shall be six (6) inches thick. The Township Engineer may mandate a concrete thickness in excess of six (6) inches when special conditions warrant such as truck entrances, access to solid waste units, etc.

### **1.05 VERTICAL ALIGNMENT**

- A. Sidewalks shall be aligned vertically to drain surface water off the sidewalk and avoid ponding on the surface of the sidewalk.
- B. In areas where vertical sidewalk alignment will create a sudden transition from the surface of the sidewalk to existing turf, integral lateral curbs up to twelve (12) inches in height shall be provided. Provide sloped transitions at each end of lateral curb at least five (5) feet in length.

### **1.06 PLACEMENT**

- A. Sidewalks shall be placed a minimum of ten (10) feet back from the edge of the travel lane of the road and one (1) foot in from the street right-of-way line, except as otherwise approved by the Township Engineer.
- B. Maintain a minimum of two (2) feet clearance to obstructions along the route, unless otherwise approved by the Township Engineer.

### **1.07 RAMPS**

- A. Unless otherwise approved by the Township Engineer, sidewalk ramps shall be installed at all street

intersections and constructed in accordance with the most current version of plan R-28 entitled "Sidewalk Ramp and Detectable Warning Details" contained in the Michigan Department of Transportation Standard Plans, as amended.

- B. Truncated dome panels shall be asphalt coated, cast iron as manufactured by EJ, TufTile or approved equal.

#### **1.08 DRIVEWAY OPENINGS & APPROACHES**

- A. Sidewalks shall be installed across driveways in accordance with Michigan Department of Transportation Standard Plan R-29 entitled "Driveway Openings & Approaches and Concrete Sidewalk", as amended.

#### **1.09 FORMS**

- A. The forms shall be of such design of steel or wood as to insure the accurate maintenance of lines and grades and provide the minimum sidewalk thickness specified. Flexible strips may be used where necessary on curves. After forms are completely set in place, the Owner/Contractor shall contact the Township Engineering Department to schedule a form inspection before any concrete is poured.

#### **1.10 JOINTS**

- A. Expansion Joints
  1. Transverse expansion joints one-half (1/2) inch thick shall be placed at every fifty (50) linear feet of sidewalk and between the backs of curbs and sidewalks or driveway approaches.
  2. Place expansion joints at driveway openings per MDOT Standard Plan R-29, except place an additional expansion joint on the backside of sidewalk in locations where driveways are concrete behind the sidewalk, such that the portion of sidewalk crossing a concrete driveway is isolated by expansion joints on four (4) sides.
  3. Expansion joint material shall be closed-cell, polyethylene foam with removable strip for joint sealant application, and shall be placed at right angles to the centerline of the sidewalk and perpendicular to the surface. When removal strip is removed, the expansion joint material shall be recessed 1/2 inch below the surface of the concrete and material shall extend to the subgrade.
  4. Expansion joints shall be sealed with Sikaflex-1c SL or approved equal.
- B. Contraction Joints
  1. Unless otherwise approved by the Township Engineer, contraction joints shall be placed at intervals matching the width of the sidewalk. They may be formed by saw cutting or tooling after floating. Joints shall have a depth of not less than one-quarter (1/4) of the thickness of the sidewalk. They shall be straight, perpendicular, and at right angles to the centerline of the sidewalk.
- C. Special Joints
  1. When the sidewalk abuts buildings, utility structures or any other special structures, joint details shall be approved by the Township Engineer.

#### **1.11 PLACING AND FINISHING**

- A. The subgrade shall be thoroughly moistened and the concrete shall be deposited to the proper depth.
- B. The concrete shall be consolidated and struck off until all voids are eliminated and the surface has the required grade and cross section.
- C. The surface shall be floated and troweled just enough to produce a smooth dense surface, free from irregularities.
- D. Provide a medium-textured broom finish, perpendicular to the direction of traffic.
- E. All joints and edges shall be rounded to a radius of one-quarter (1/4) inch with an approved finishing tool.

**1.12 CURING AND PROTECTION**

- A. All concrete surfaces shall be treated as per the current Standard Specifications of the Michigan Department of Transportation, Section 602.03 and 903.
- B. Curing compound shall be white.
- C. The sidewalk shall be properly protected from the elements and travel for the first 72 hours, except that pedestrian traffic may be permitted after 48 hours.
- D. The contractor shall be responsible for the strength and quality of the concrete laid during cold weather and concrete damaged by freezing temperatures shall be removed and replaced at the contractor's expense.

**1.13 FINAL GRADING AND CLEANUP**

- A. After the concrete has set sufficiently, the forms shall be removed and the spaces shall be back filled.
- B. The areas disturbed by construction of the sidewalk shall be graded and leveled to drain and as required for turf restoration. These areas shall be left free of all rocks, concrete, roots or other debris.

**1.14 TURF RESTORATION**

- A. All turf areas disturbed during sidewalk construction shall be restored to existing or better condition after construction of the sidewalk.
- B. Restoration shall include placing four (4) inches (minimum) of topsoil, seed, fertilizer, mulch and mulch adhesive or mulch blanket.
  - 1. All materials used shall meet MDOT specifications.
- C. Topsoil shall be used to shape the finish grade from the edges of the sidewalk to the existing adjacent grade and all other disturbed areas.
  - 1. Topsoil must be weed and weed seed free and friable prior to placing seed. Remove any stones greater than 1/2 inch in diameter or other debris. Apply seed mixture and fertilizer to prepared soil surface. Incorporate seed into top 1/2 inch of topsoil.
- D. Seed, fertilizer and mulch shall be applied as required to establish growth and prevent soil erosion and control mud and dust. Areas that do not establish suitable growth, as determined by the Township Engineer, shall be corrected.