



Sec. 58-527. - Specifications.

(a) *Compliance.* All sidewalks or their repair shall comply with the specifications of this section.

(b) *Generally.*

- (1) *Dimensions.* All sidewalks shall be constructed of concrete or other materials approved by the township board and shall be a minimum of five feet in width unless it is along a designated road or is on a bike path shown in the township master plan. Unless otherwise approved by the Board of Trustees, a sidewalk that is along a designated road shall be a minimum of seven feet in width. Unless otherwise approved by the board of trustees, a sidewalk that is on the bike path shall be a minimum of ten feet in width. However, the building department is authorized to permit variations of the sidewalk dimensions if the township engineer certifies a different width is consistent with the alignment of sidewalks in the area. The building department shall notify the township board of administrative variances that are granted for more than ten feet in sidewalk length. The sidewalk shall be minimum four inches in thickness, except any portion of a sidewalk traversing a driveway or driveway approach shall be not less than six inches in thickness.
- (2) *Concrete.* The sidewalk shall be constructed having a minimum compressive strength of 3,500 pounds per square inch and containing a minimum of 517 pounds of air entraining cement per cubic yard of concrete. Fine aggregate in the concrete shall consist of state department of transportation 2NS sand. Coarse aggregate in the concrete shall be state department of transportation 6A, 6AA, or 17A. Concrete shall have a maximum slump of four inches when tested with a standard 12-inch cone and air content of 6 ½ percent plus or minus 1 ½ percent.
- (3) *Embossed concrete and brick pavers.* If, after reviewing the plan for a sidewalk, the building and planning departments determines it meets appropriate standards, the building and planning departments may, at their discretion, grant administrative approvals to sidewalks constructed of embossed concrete, brick pavers or similar materials.
- (4) *Bike paths.* Bike paths will be constructed with asphalt or other materials approved by the township engineer. However, parties on a bike path route shall only pay the cost of a seven-foot concrete sidewalk. Similarly, those on a bike path route that would have a five-foot sidewalk requirement have the option of paying the cost of the five-foot sidewalk as opposed to the asphalt bike paths that would be required by this section and not the cost of the asphalt bike path, should it be higher than the cost of the concrete sidewalk. The amount shall be determined by resolution of the township board based on an established lineal foot cost. The funds shall be paid to the township treasurer for application to the township bike path. Asphalt pavement materials and installation methods shall be approved by the township engineer.
- (5) *River, drain and ditch crossings.* All public sidewalks crossing a river, drain or ditch shall be accomplished with either a culvert, culvert extension or a bridge and shall be approved by the township engineer. Drainage culverts shall match the existing culvert size or shall be according to the size specified by the governing public agency. Bridges shall comply with the current applicable AASHTO Guidelines except as modified with the following:
 - a. All bridges shall be supported on foundations designed to carry the bridge loads taking into account the existing soil and site.
 - b. All approach ramps and structures shall meet barrier free design requirements.
 - c. Bridges shall be constructed of concrete or steel and designed to be substantially maintenance free. Wooden and other alternative material structures are not allowed unless specifically approved by the board of trustees.
 - d. Engineering. Structural design of the bridge and foundations shall be performed under the supervision of a professional engineer registered in the State of Michigan with signed and sealed shop drawings and calculations submitted for approval prior to fabrication and construction. Bridge designs shall be in accordance with the appropriate and current AASHTO standard.
 - e. Loading criteria. Bridges shall be structurally designed to accommodate a light duty vehicle (AASHTO H-5 loading), plus the dead load from a 5-inch thick concrete deck, plus the dead load from the structure, plus a 30 psf uniform wind load.
 - f. Bridge geometry. The clear inside width between the top chords or handrails shall be minimum 8 feet - 6 inches. The top chords or handrails shall be a minimum height of 42 inches above the top of concrete slab. The bridge shall be designed to maintain an appropriate positive camber for all dead and live load conditions.
 - g. Railings. Vertical safety rails shall be placed on the inside of the truss or handrail with a maximum clear opening of less than 4 inches, resulting in a non-climbable condition. The safety rails shall extend to a minimum height of 42 inches above the finished concrete deck. A 1 ¼" nominal diameter galvanized rail shall be placed 34 inches above top of concrete deck.
 - h. Structural steel. The bridge structure shall be fabricated from high strength to low alloy, atmospheric corrosion resistant ASTM A847 cold formed welded square, rectangular tubing and other structural steel (Fy = 50,000 psi). The minimum corrosion index for atmospheric corrosion resistant steel shall be 5.8, in accordance with ASTM G101.
 - i. Performance guarantee. After plans have been approved by the township engineer, the person constructing the culvert, culvert extension or bridge shall enter into an agreement with the township guaranteeing the installation of the improvements.
 1. Agreement. Such agreement shall remain in effect for a period of two years after completion of the installation, guaranteeing that the installation conforms to all standards of this article and ensuring that the job is completed in a good workmanlike

manner and that the site of the work is left in as good as a condition as before the job was begun, and agreeing to save the township harmless from all damages during the course of construction of the improvements.

2. Security bond. The agreement is to be secured by a satisfactory maintenance and guarantee bond or cash deposit.

(c) *Base and fill.*

- (1) There shall be a minimum four-inch Michigan Department of Transportation (MDOT) Class II sand fully compacted base under all sidewalks. A four-inch aggregate base (stone) is required where the sidewalk grade exceeds a three percent slope or when required by the township building department or Township engineer. Aggregate base materials shall meet the requirements of MDOT series 21AA. All bike paths shall have a minimum six-inch aggregate base.
- (2) All fill material required below the base material shall consist of sand or MDOT class II granular materials. All fill and base material shall be thoroughly compacted to 95 percent of maximum density as determined by the modified proctor test.

(d) *Joints.*

- (1) *Contraction.* Contraction joints shall be placed every five feet for a five foot sidewalk, and every seven feet for a seven-foot sidewalk.
- (2) *Expansion.* Expansion joints shall be placed at least every 50 feet and between the sidewalk and all crossing driveways and at all places where the sidewalk abuts a curb. Such expansion joints shall consist of one-half-inch-thick premolded bituminous material and shall extend the full width and depth of that portion of the sidewalk where it is placed.

(e) *Surface preparation.*

(1) *Finishing.*

- a. *Concrete.* All concrete shall be finished with a wood float and broomed to make a nonskid surface. A maximum cross slope of 1:48 shall be provided to facilitate drainage.
- b. *Joints and edges.* All joints and edges shall be edged with a suitable edger trowel.

- (2) *Concrete protection.* Concrete shall be placed and protected from rain and cold temperatures pursuant to MDOT standard specifications for construction. All concrete shall be covered and kept dampened for at least 72 hours after pouring or applying white curing compound, meeting MDOT specifications in the manner prescribed for such product application.

(f) *Alignment.* All sidewalks shall conform to the following alignment requirements:

- (1) *Within normal right-of-way.* Sidewalks constructed within the street right-of-way shall be located in a manner such that the edge of the sidewalk parallel to and furthest from the roadway shall be one foot from the right-of-way line or at any other location as approved by the township planning department or township engineer and as permitted by the county road commission or MDOT.
- (2) *Within easement or other right-of-way.* No sidewalk shall be constructed within any portion of a street right-of-way which is 50 feet or less in width which does not have street pavement curbs, and in such event the construction of any sidewalk shall be within an easement or other right-of-way not less than one foot wider than the required width of the sidewalk and located adjacent to the street right-of-way. Where the right-of-way width varies along a roadway, a sidewalk may be required to be placed within an easement to provide compatible alignment with other existing and future sidewalks along the same roadway.
- (3) *Private roads.* Sidewalk alignment on private roads shall be determined by the township engineer.
- (4) *Compatible with prior construction.* In any such case where sidewalks have been constructed prior to April 26, 1989, any additional sidewalk to be constructed may be in alignment with the existing sidewalk to the roadway of the nearest intersection street, provided such alignment is approved by the township engineer.
- (5) *Determination of location.* It is the duty of the contractor or other person installing such sidewalk to accurately survey or otherwise determine the location of the right-of-way line prior to installing such sidewalk. Satisfactory evidence of such right-of-way location shall be provided upon request.

(g) *Grades.* All sidewalks shall conform to the following grade requirements:

(1) *Maximum right-of-way of 60 feet.* For a 60-foot maximum right-of-way:

- a. *Roads with curbs.* Where the adjacent road has a curb, the sidewalk shall be constructed to a grade established at a slope three-eighths inch per foot above the curb as measured from the curb to the nearest edge of the sidewalk to the curb.
- b. *Roads without curbs.* When the road does not have a curb, the sidewalk shall be constructed in a manner such that the edge of the sidewalk furthest from the roadbed shall be established at an elevation midway between the elevation of the centerline of the street and the elevation of the adjoining houses subject to a minimum elevation of six inches below the outside grade of adjacent houses and not more than an elevation of nine inches above the centerline of the street, or as approved by the township engineer and/or building director.

- (2) *Right-of-way greater than 60 feet.* For a right-of-way greater than 60 feet, the sidewalk grade shall be in accordance with a construction plan approved by the township or as established by the township building department and/or the engineer. The grades shall generally be consistent with the provisions set forth in subsection (g)(1) of this section and may be altered to accommodate the existing conditions. Alterations to these conditions will require the approval of the township building department or engineer and the applicable governmental agency.

- (3) *Private roads.* The grades of sidewalks along private roads shall be determined by the township engineer.

- (h) *Corner lots and lots on major roads.*
- (1) *Generally.* Sidewalks shall be constructed on the front and side of corner lots and at the rear or other portion of any such lot abutting a public right-of-way. In those subdivisions that do not require sidewalks, only the property on a major road will require a sidewalk.
 - (2) *Continued to roadway.* Any sidewalk located upon or adjacent to any corner lot shall be continued in the same direction without interruption to the edge of the roadway adjoining the corner lot and shall be handicap accessible unless otherwise approved by the township building official.
 - (3) *Culvert pipe or head wall installation.* In addition to the other specifications set forth in this section, the contractor or other person constructing the sidewalk shall install any necessary length of culvert pipe or head wall in accordance with specifications provided by the township engineer, MDOT, county public works office, or county road commission, as their interest may exist in the road ditch to enable the sidewalk to be constructed to the edge of the roadway.
- (i) *Safety during construction.* The permit holder shall provide suitable safety barriers and other protective measures during the construction and curing of sidewalks.
- (j) *Safety after construction.* The permit holder shall provide approved durable safety barriers and other protective measures along the edge and at the ends of raised sidewalks where determined necessary by the building department.
- (k) *Sidewalk ramps and detectable warnings.* At all pedestrian street intersection crossings, median and refuge islands, and pedestrian rail line crossings, sidewalk ramps shall be used to meet the existing street grade. If existing curb is in place, the curb shall be removed and the sidewalk ramped to meet the pavement. All sidewalk ramps shall conform to the latest MDOT sidewalk ramp and detectable warning detail and the latest American's with Disabilities Act (ADA) standards and requirements.

(Ord. No. 220, § 5-10.05, 8-5-1998; Ord. No. 242, 5-6-2003; Ord. No. 265, § 1, 4-16-2013)