

CITY OF ROCHESTER HILLS
ENGINEERING DESIGN STANDARDS

CHAPTER 10

Non-Motorized Pedestrian Pathways

A. Plans and Specifications – Submittal Procedure

1. ~~Safety~~ Pathway Plans and Specifications must be submitted to and approved by the Department of Public Services prior to receiving approval for construction in accordance with ~~Section~~ **Chapter 1, General Agreements, and Submittals.**
2. If the ~~Safety~~ Pathway is proposed as part of a general development or site improvement, then the details of the pathway and its location can be incorporated into the overall site plan.
3. If the proposed ~~Safety~~ pathway is within the right-of-way of another agency or entity having jurisdiction over such right-of-way, then the applicant will be responsible for acquiring any necessary permits after first having the plans approved by the City, for permit processing.

B. Plans and Specifications – Design Criteria

1. Plans shall show the entire proposed pathway in plan view and shall be presented at a scale to clearly identify grades and spot elevations at twenty-five foot (25') intervals along the pathway.
2. ~~Safety~~ Pathways shall, in general, be located completely within the right-of-way, and be located one foot (1') from the edge of the City's Master Plan right-of-way. **Pathway easement shall be provided, where required, to provide a two-foot (2') access beyond proposed pathway.**
3. Pathways shall be **eight foot (8') feet wide, except through drives they shall be ten foot (10') wide.**
4. The distance from the edge of the pathway to the back of curb, or edge of road, shall clearly be called out on the plans. Pathways shall not be placed any closer than ten feet (10') unless otherwise approved by the City Engineer.
5. **In general,** longitudinal slopes of proposed paths shall not exceed eight percent (8%) ~~slope in general,~~ and shall follow the natural contour of the land. Transverse ~~cross~~ slopes shall ~~not exceed 2 percent.~~ **be a minimum of one percent (1%) and not exceed two percent (2%).**

~~Ramp at curb openings~~ **Pathway ramps** shall not exceed five percent (5%) longitudinal slope, with two percent (2%) transverse slope. **A minimum eight-foot (8') by five-foot (5') level landing area shall be constructed adjacent to the pathway ramp. The slope shall not exceed two percent (2%) in any direction within the level landing area.**

At street intersections, concrete pathway ramps shall be used to meet the existing street grade. If existing curb is involved, the curb shall be removed and the pathway ramped to meet the pavement. No curb cuts shall be used. All pathway ramps shall conform with the latest MDOT sidewalk ramp and detectable warning detail R28 series and the latest American with Disabilities Act (ADA) requirements.

6. Pathways shall freely drain and not pond water. Appropriate sized culverts shall be used where crossing streams or ditches. Calculations for sizing such culverts shall be submitted along with the plans for approval. **In general, pathways shall drain towards the roadway.**
7. Crossings of wetland areas or other special, natural features, as determined by the City, may require special structures such as wooden pedestrian bridges. Such designs will need to comply with City typical designs in regards to railings, construction and cross section. **The traveled width shall be a minimum of ten foot (10') wide, and designed to accommodate a four (4) ton vehicle loading.** The proposed structure will be reviewed by the City Engineer on a case-by-case basis.
8. Detailed construction drawings of such structures shall be submitted to the City Department of Public Services for review and approval prior to construction.
9. Existing **and proposed** land contours ~~at a minimum of 2-foot intervals~~ shall be clearly shown and labeled on the plans **at two-foot (2') intervals.**
10. ~~Proposed grades of the centerline and sides of the path shall be called out at 25-foot intervals. A profile of the pathway shall be shown on the plans, including centerline of path, road and right of way line.~~
11. ~~Where grading is required, proposed contours shall be clearly shown and labeled at 2-foot intervals.~~
10. Any other grades, slopes, or details, where requested by the City Engineer, shall be clearly shown on the plans.
11. All existing public utilities, structure rim elevations, power poles, drives, hydrants, guy wires, signs, etc., shall be clearly shown on the plans.

C. Crossings

1. At all street intersections, pathways shall be ramped to meet the street at grade. Horizontal curb cuts shall not be allowed unless approved by the City Engineer. Curbs shall be cleanly sawcut, removed, and replaced with a dropped curb section to meet the existing grade, and comply with MDOT Ramp Detail ~~11-28G~~ **R-28 D Series.**
2. At all driveway crossings, **pathways** shall go through the drive. Existing drives shall be cleanly sawcut and the **pathway** shall continue through the drive uninterrupted. **In general,** the transverse slope of the **pathway** (~~crosswise, one side to the other~~) shall not exceed two percent (2%).
3. ~~Pathways shall conform to all Americans with Disabilities Act (ADA) requirements.~~

D. General:

1. All construction of pathways shall conform to the City of Rochester Hills' Construction Standards and approved details.
2. A three-foot (3') shoulder shall be graded to smoothly drain away from the pathway. Shoulders shall be seeded or sod.
3. A **Minimum ten-foot (10')** vertical clearance from the base of the pathway ~~shall be established by tree trimming, and relocating of obstructions (guy wires), if necessary to any object shall be maintained, unless otherwise approved by the City.~~
4. ~~A~~ **Minimum three-foot (3')** horizontal clearance from the edge of the pathway to any object shall be maintained, **unless otherwise approved by the City.**
5. The minimum distance from the edge of the pathway to the back of curb shall be ten-feet (10'), unless **otherwise** approved by the City.
6. Where the adjacent cross slope exceeds the acceptable ~~4:4 slope~~ **1:3 slope**, a safety fence or railing shall be constructed ~~to keep pedestrians from falling into the roadway, if~~ **when** required by the City Engineer. The fence or railing shall be designed and constructed as approved by the City Engineer.
7. **Alignment of pathway shall be designed to avoid existing and proposed utility structures being located in the pathway. If this cannot be avoided, the structures shall be located in the center of the pathway.**
8. Significant grade changes may require the use of retaining walls to construct the pathway. Keystone walls or equivalent (full block) may be used. Block color shall be as approved by the City. Timber retaining walls are not acceptable.
9. All rights-of-way areas shall be fully restored to original or better condition, and be properly graded after pathway construction.
10. All tree roots shall be cut and removed within the influence of the pathway ~~centerline~~.
11. During pathway construction, signs shall be placed in accordance with the latest edition of the Michigan Manual of Uniform Traffic Control Devices, providing notification that the pathway is closed. Pedestrians shall not be detoured into the roadway.

E. Materials and Forms:

1. ~~Safety~~ Pathways shall be four inches (4") thick, ~~bituminous hot mixed asphalt (HMA) comprised of two inches (2") of 1100 L below HMA 36A over two inches (2") of 1100 T HMA~~ **3C 13A**. Pathways shall consist of an additional two inches (2") of ~~1100 L HMA~~ **3C 13A** through existing and proposed drives ~~and pathway ramps abutting proposed commercial drives. Pathway ramps located at public and private streets, and signalized drives shall be constructed in concrete with ADA detectable warning plates. Concrete pathway ramps shall be six inches (6") thick, air-entrained concrete, at 3,500 psi compressive strength.~~

2. ~~Bedding~~ The aggregate base shall be four inches (4"), MDOT 21AA aggregate base coarse materials (crushed limestone or crushed concrete). Alternate recycled asphalt product (RAP) base course materials may be considered upon approval of the City Engineer. Alternate RAP materials must meet equivalent structural strength of 21AA aggregate (crushed limestone or concrete).crushed limestone., compacted to ~~95%~~ ninety-seven percent (97%) maximum density, placed on base treated with a soil sterilant. The base shall have all existing topsoil removed as well as be firm and compact. The base shall at a minimum be extended to one foot (1') wider than the proposed pathway on each side.
3. Pathways shall have smooth, curved transitions, minimum ninety-foot (90') centerline radius. No sharp angles or abrupt changes in direction are allowed.
4. The width of the pathway shall be constant and uniform throughout its entire length, including curves and transitions.
5. In general, pathways shall be placed to parallel the right-of-way line as much as possible. Curving the pathway to avoid ~~specimen~~ trees and landscaping is encouraged, but in general the pathway should follow a straight line if at all possible.
6. ADA detectable warning plates shall be color contrasted and consist of pre-formed materials, either steel or plastic/fiberglass. Pre-formed plastic detectable warning plates shall be red in color. Stamped concrete is not acceptable.