

HILLSDALE COUNTY ROAD COMMISSION

PROCEDURES AND STANDARDS FOR DEVELOPING PUBLIC ROADS

Revised by the Board of County Road Commissioners on

November 23, 2005

William L. Watkins, Chairman
Robert R. Godfrey, Vice-Chairman
C. George Gier, Member
Stanley L. Clingerman, Engineer-Manager

The Hillsdale County Road Commission hereby adopts these procedures and minimum standards for the development of public roads and streets that are intended to become part of the county road system under the jurisdiction of the Hillsdale County Road Commission in compliance with the Plat Act of 1929, as amended, and the Subdivision Control Act of 1967, as amended. These procedures and standards are to be followed in all land development cases including plats, site condominiums, land divisions or other road developments or improvements.

Section 1. ORDER OF PROCEDURE

The following steps shall be followed by the road commission in considering the development of all public roads and streets.

- A. Approval of a preliminary plat or preliminary plan.
- B. Approval of a road and drainage plan.
- C. Inspection of road and drainage construction in progress.
- D. Final inspection of completed construction.
- E. Approval of final plat when required.
- F. Acceptance of completed roads into the County Road System.

Section 2. PRELIMINARY PLAT OR PLAN

- A. The proprietor shall submit to the County Highway Engineer three copies of the preliminary plat or plan, drawn to a scale selected from a range of 1" = 50' to 1" = 100' on 18" x 24" sheets, prepared, sealed and signed by a Registered Professional Engineer or Registered Land Surveyor. The preliminary plat or plan layout must, at minimum, plainly show all of the following:
 - Show dimensions and bearings of the entire parcel proposed for development. Show all lots and easements (if any).
 - Indicate the location of the development with reference to the township and section in which the parcel is situated.
 - The layout shall be superimposed on a topographic map with not more than two foot contour intervals, using USGS elevation datum, with arrows indicating direction of overland drainage flow.
 - Show locations and names of proposed roads together with all existing and proposed road right of way widths within and adjacent to the development.

- Show rivers, wetlands, natural water courses, existing county or private drains, sewers and cross culverts.
- B. The proprietor's engineer or surveyor shall stake out the proposed centerline of all roadways at a spacing of no less than 200 feet, so that the County Highway Engineer can review the proposed locations of all roadways at the site.

Section 3. STREET AND ROAD DESIGN

- A. After approval of the preliminary plat, the proprietor shall submit to the County Highway Engineer, three (3) copies of the road and drainage plan covering all the roads within the development prepared, sealed and signed by a registered professional engineer. The road and drainage plan shall be drawn on 24" x 36" sheets to scale not smaller than 1" = 50' horizontal, 1" = 5' vertical. The plans must plainly show all the following information:
- Plan view of each road showing the centerline, stations, edge of pavement and curbline, if appropriate. Road centerline profile or top-of-curb profile shall be shown directly below the plan view.
 - Typical cross-section of the road(s) to be constructed.
 - Location and invert elevations of existing and proposed culverts, storm sewers and drainage structures.
 - All natural drainage features, including streams and wetlands.
 - Vertical and horizontal curves with all curve data including percent of grade.
 - Types and locations of vegetation to be removed within the road right of way.
 - Soil boring logs at 500 to 800 feet intervals to determine the subgrade condition at a minimum of 5.0 feet below the proposed road.
- B. The design of these roads and streets shall be governed by the requirements in the current issue of "A Policy on Geometric Design of Highways and Streets" as published by the American Association of State Highway Officials, using a minimum design speed of 40 MPH except as noted herein.
- C. The number of outlets to existing public highways and the approximate distance between them are subject to control by the Hillsdale County Road Commission. The recommended minimum number of outlets to existing public highways is two (2) in any single development. The maximum spacing for outlets in large developments is one-half (½) mile. Outlets will not be allowed access to existing public roads at unsafe locations without proper arrangements satisfactory to the Hillsdale County Road Commission to eliminate the potential dangerous situation at that location by regrading or relocating the existing public road.

- D. Conditions requiring special consideration in the proposed development shall be discussed on an individual basis and may dictate additional provisions or requirements.
- E. No construction shall be started until the road and drainage plan has been approved by the County Highway Engineer.

Section 4. RIGHT-OF-WAY

- A. The right of way required for proposed public roads shall be granted by dedication of the land in a subdivision plat, or by a warranty deed granted by the landowner to the road commission for a site condominium, land division or for any other public road.
- B. All roads and streets shall have a minimum right-of-way width of 66'. A minimum of 50' from the centerline is required dedicated to the use of public on all existing public roads. Additional right-of-way may be required for unusual situations which may arise or for subdivisions being developed along the existing primary roads. Exception: A private road or street serving five (5) lots or less with no possibility for future extension may be 50' wide.
- C. Alleys, if used, shall have a minimum right-of-way width of 33' and shall be dedicated to the use of the lot owners only. Alleys are defined as right-of-way which provides secondary access to a lot or parcel of land.
- D. Easements serving as drives may not be used.

Section 5. ALIGNMENT

- A. Horizontal and vertical alignment of all through-type roads and streets shall conform to the appropriate section of the reference in Section 3, above, using a 40 MPH design speed. A 30 MPH design speed may be used for all non-through roads and streets less than 800' in length. Vertical grades shall not exceed 6% maximum.
- B. The desired design angle at intersections is 90 degrees. Variances of greater than 10 degrees will not be allowed. Radius of corners at intersections shall be at least 35 feet to edge of pavement. Sight distance at intersections shall be in accordance with HCRC's driveway standards.
- C. At the end of non-through streets and roads or a highway with a single entrance, a cul-de-sac or turn-around shall be constructed with a minimum right-of-way radius of 60'. The surfaced area of such cul-de-sac shall have a minimum 40' radius. Roads terminating in cul-de-sacs shall be no more than 2,640 feet in length.

- D. Roads less than 300' in length shall be dedicated to the use of the lot owners only (private road).
- E. When the extension or continuation of a plat is anticipated in the near future, a cul-de-sac constructed outside of the plat boundaries on a temporary easement for highway purposes may be accepted in lieu of including a cul-de-sac in the plat itself.
- F. All road construction shall be centered on the road right of way.

Section 6. DRAINAGE AND RESTORATION

- A. The plans must clearly show the type of road side drainage, either open ditch or concrete curbs with storm sewer. Show all underground structures used for road drainage with location, size and invert elevation. Show profile and grade of ditchlines or storm sewers. Show any drainage easements required. Open ditches shall be a minimum of 2 feet deep. The front slopes and back slopes of ditches shall be 4:1 or flatter, except the area immediately behind the curb shall be relatively flat for at least 3 feet in width.
- B. All drainage structures shall be approved by the Hillsdale County Road Commission with respect to size, gauge and/or design strength, type of material, location of installation, etc. prior to being incorporated into the project.
- C. Drainage structures shall be determined by an accurate study of the drainage areas involved. Study shall be made by a registered engineer experienced in such design. All cross culverts shall be a minimum of 18" diameter, 16 gauge galvanized corrugated steel pipe with steel end sections. All driveway culverts shall be a minimum of 12" diameter, 16 gauge galvanized steel corrugated steel pipe without concrete headwalls or concrete end sections. Drive culverts shall be a minimum of twenty-four (24) feet in length.
- D. All disturbed areas in the highway right-of-way shall be topsoiled, fertilized, seeded, and mulched. The topsoil thickness shall be a minimum of 3 inches. The required seed mixture shall be selected from MDOT's general roadside seed mix table for the appropriate soil type at the approximate rate of 220# per acre. Fertilizer shall be applied at the approximate rate of 228# of nutrient per acre. Special provisions such as temporary erosion control, straw mulch blanket and/or riprap may be required at the direction of the County Highway Engineer for areas carrying a large volume of water. An erosion control plan shall be submitted that meets all MDEQ requirements.
- E. If the success of the seeding is in doubt, the Hillsdale County Road Commission may require a deposit as a guarantee until the following season.

Section 7. STRUCTURAL REQUIREMENTS

A. Structural requirements of roads and streets shall conform to the typical cross sections attached hereto and made a part of these requirements. All roadways shall be constructed in accordance with the current MDOT Standard Specifications for Construction and as specified herein:

B. Subgrade

- The roadway location shall be selected so that unstable soils are avoided. The County Highway Engineer shall be consulted to determine the feasibility of the removal of such unstable soils, choice of alternate routes, etc.
- No brush, stumps or other debris shall be placed under the roadway.
- Twelve-inch layer method is to be used in placing and compacting embankment except where a paved surface is planned during the same construction season at which time the controlled density method shall be used. In either case, each layer shall be compacted to not less than 95% of the maximum unit weight.
- The width of the grade shall be uniform over all drainage structures. Fills or structures over 10' high shall be graded 4' wider than the normal cross section, and guard posts or guard rail provided if directed by the County Highway Engineer.
- The back slopes shall be graded as flat as possible extending beyond the right-of-way line if practical to present a pleasing appearance and to reduce the drifting of snow and erosion of slope.
- Proprietor shall obtain approval of the completed subgrade from Hillsdale County Road Commission prior to placing aggregate subbase.

C. Subbase

- The subbase shall be a uniform thickness of approved MDOT granular material class II. The required compacted-in-place subbase thickness ranges from six (6) inches on Hillsdale-Riddles-Fox-Boxer sandy loam type soils to nine (9) inches on Blount-Morley-Pewamo cohesive type soils to twelve (12) inches on Houghton-Gilford mucky loamy soils in accordance with the 1991 USDA general soils map and at the direction of the county engineer. Geotextile fabrics may be required under the subbase in certain poor soil conditions as directed by the County Highway Engineer. The determination of subbase thickness shall be made at the time of the submission of the road and drainage plans.

- For commercial all-season roads, the subbase thickness shall not be less than twelve (12) inches compacted-in-place.
- The subbase shall be constructed according to Section 301 of the MDOT Standard Specifications and compacted to not less than 95% of maximum unit weight. The completed subbase must be approved by Hillsdale County Road Commission prior to placing the aggregate base course.

D. Aggregate Base

- The aggregate base course shall be a uniform compacted-in-place thickness of not less than 6" of approved MDOT 22A aggregate. The finished aggregate base course shall be uniformly sprayed with mineral well brine at a rate of 3,000 gallons per mile for conditioning and dust control. Additional brine applications may be required.
- The aggregate base shall be constructed according to Section 302 of the MDOT Standard Specifications and compacted to not less than 98% of maximum unit weight. The completed aggregate base must be approved by the Hillsdale County Road Commission prior to placing the pavement.

E. Pavement & Shoulders

- The pavement shall be a 20' wide hot mix asphalt pavement applied at minimum rate of 380# per syd as follows. A leveling course of MDOT HMA 13A shall be applied at a minimum rate of 220# per syd. A top course of MDOT HMA 13A or 36A shall be applied at a minimum rate of 165# per syd. The asphalt cement shall have a performance PG 58-28 with a minimum 5.8% AC in both courses. All hot mix asphalt paving shall be performed according to Sections 501 thru 504 of the MDOT Standard Specifications.
- For commercial all-season roads, the pavement shall be a 24' wide hot mix asphalt pavement applied at a minimum rate of 550# per syd in 3 courses.
- Class II shoulders shall be placed using approved MDOT 23A aggregate a minimum of 3 ½" deep x 4' wide on each side of the pavement. The shoulders shall be constructed according to Section 307 of the MDOT Standard Specifications. The pavement shall have cured at least 2 weeks prior to placement of the shoulders.

Section 8. FINANCIAL REQUIREMENTS AND RESPONSIBILITIES

- A. An application fee for preliminary review shall be submitted to the road commission with the preliminary plat or plan. This fee is to cover the costs of processing the application for board approval and the preliminary review of the plans by staff. The amount of the application fee shall be set periodically by the road commission in its permit and fee inspection schedule, and it shall be non-refundable. An additional fee may be required each time a preliminary plan is re-submitted with substantial revisions or amended phase boundaries, or after being formally rejected by the board.
- B. The proprietor's engineer shall submit a detailed estimate of construction costs in typical MDOT format for the roadway and any required infrastructure improvements at the time of final submittal of the road and drainage plan.
- C. The proprietor will be billed on a monthly basis for all costs incurred by the road commission for periodic inspection of the road or street construction to determine compliance with these specifications.
- D. The proprietor of a proposed plat having roads dedicated to the use of the public shall reimburse the Hillsdale County Road Commission for the costs of furnishing and installing road name signs, traffic control signs, posts, and/or pavement markings. Determination of signing/markings required and installation shall be performed by the Hillsdale County Road Commission.
- E. On all private roads at their intersection with public roads a sign is required bearing the legend "Private Road - not maintained by county road commission". Installation and payment for such signs shall be per Section 8 D (above).
- F. If all the roadway construction is not completed before the proprietor wishes to submit the final plat for approval, a financial security shall be submitted by the proprietor via the posting of a certified check, cash or irrevocable bank letter of credit in the amount designated by the County Highway Engineer to guarantee construction of all roadways per these specifications.
- G. Proprietors of plats posting such security may have up to two (2) years to satisfactorily complete such construction of roads in the approved plats. The Hillsdale County Road Commission may, at its own discretion after that time, perform such remaining work as may be necessary to bring said roadway up to the minimum standards as described herein and use the security of the proprietor for such work.

- H. A performance guarantee in the form of cash, certified check or irrevocable bank letter of credit shall be submitted by the proprietor at the time of the acceptance of the roads into the county road system as a guarantee of satisfactory performance of the completed construction work for a period of two years. The amount of the guarantee shall be 10% of the as-constructed cost referred to in Section 10C. The proprietor shall guarantee the following actions if requested by the road commission.
- Reconstruct any damaged or defective roadway improvement.
 - Correct unforeseen deficiencies after construction is completed.
 - Re-establish any grass or sodding in road right-of-way that has failed or has been destroyed.
 - The performance guarantee will be held by the road commission for a period of two years after final completion and acceptance of the roads for maintenance. Two months prior to the end of the two-year guarantee period, the proprietor shall notify the road commission. A field inspection will then be conducted by the County Highway Engineer, proprietor and the project engineer for the purpose of identifying deficiencies prior to the recommendation to the board for release of the guarantee.

Section 9. CONSTRUCTION

- A. All roadways shall be constructed in accordance with the current MDOT Standard Specifications for Construction and as required herein. The work is subject to the inspection of the Hillsdale County Road Commission at all times.
- B. The traditional order or sequence of building roads shall be followed.
- C. No construction shall occur when the ground is frozen or during frost laws. No asphalt pavement shall be placed between November 15 and April 30.
- D. Approval of the road and drainage plan does not relieve the developer from compliance with all other state, county or local permits. Permits must be obtained from the road commission by the developer for construction within the right-of-way of existing county roads.
- E. The proprietor's engineer shall be responsible to the road commission for continued liaison with the construction contractors, and shall be available on a regular basis for consultation with road commission staff.
- F. The proprietor's engineer shall conduct a pre-construction meeting to clarify all standards, procedures and working relationships among contractors, County Highway Engineer and road commission inspectors.

- G. The proprietor's engineer shall set and check grade and alignment, conduct tests and furnish test slips to the county engineer of materials incorporated in the road and drain construction, and supervise the inspection of all construction in the right-of-way and drainage easements.
- H. Inspection by the Hillsdale County Road Commission shall not relieve the proprietor's engineer of any of his or her obligations, but will verify the proper construction of the roads in their various stages of construction by means of spot inspections during the course of construction.
- I. Approval of any phase of construction by the road commission does not guarantee acceptance of the roads for maintenance by the Board of County Road Commissioners or relieve the proprietor of responsibilities or liabilities incurred by the development of the road, subdivision, or condominium.
- J. After the completed construction of all proposed roads and any other related facilities, the road commission will conduct a final inspection. This inspection will be made to assure the road commission that all visible construction has been completed satisfactorily, including clean up. The final inspection must take place between the dates of April 30 and November 15.

Section 10. FINAL PLAT

- A. Prior to the approval of a final plat, all requirements as stated herein must be met including either the physical construction of the roadways in the proposed plat or the posting of a financial security referred to in Section 8F.
- B. Prior to final approval of any plat, all outstanding bills to the road commission shall be paid, including fees for inspection, signs, pavement marking, etc.
- C. Prior to approval of the final plat, the proprietor's engineer shall furnish the "as-constructed" costs of the roadways in a similar format as the engineer's estimate, for GASB financial reporting requirements.
- D. The proprietor shall submit one mylar copy of the final plat for road commission approval. After the final plat is approved by all parties, the proprietor shall submit one mylar copy of the final plat with all signatures for our records. The proprietor shall submit one mylar copy of the road and drainage "as-constructed" plans for our records.
- E. The proprietor shall furnish the Hillsdale County Road Commission, at the time of final approval of such plat, a drawing of the roadways in said plat drawn by a Registered Professional Engineer or Registered Land Surveyor to the scale of 1" = 600' and showing such information as the lengths of public roads and the distance and bearings from a section corner or similar marker. The lengths of roadways shall be shown between intersection of the centerlines of the respective roadways. Said drawing shall be used for roadway certification.

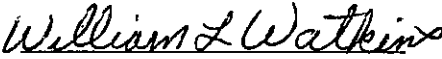
Section 11. ACCEPTANCE

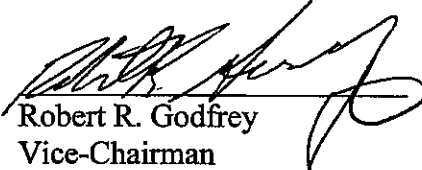
- A. Acceptance of any road or street into the county road system is a separate and distinct act from approval of a plat, site condominium or land division.
- B. When the Board of County Road Commissioners acts to accept a road or street into the county road system, the Board will do so by resolution which will be filed with the county clerk, township clerk, and recorded at the county register of deeds.
- C. Prior to the acceptance of any road into the Hillsdale County Road System, all road construction, traffic control signing and/or markings must be performed as set forth herein at no cost to the Hillsdale County Road Commission.
- D. The roads or streets must connect with other public highways in the county of Hillsdale.
- E. All roads and streets shall have a minimum 66' right of way width dedicated to the use of the public in plats or right-of-way deeded to the road commission for site condominiums.
- F. The subdivision, site condominium or land division must have at least 20% of its parcels developed with houses and buildings. The proprietor shall be responsible for all maintenance of the roadways in the interim period.
- G. Roadways that are dead-end and 500' or less in length may be refused acceptance into the county road system by the Board of County Road Commissioners.
- H. The Board of County Road Commissioners reserves the right to advise any developer upon receipt and review of a preliminary plat or plan that a proposed roadway will not be accepted into the county road system if said Board deems that the adoption of a proposed roadway is not in the best interest of the county road system.
- I. Roadways that were constructed prior to the acceptance of this policy may be refused acceptance into the county road system by the Board of County Road Commissioners.

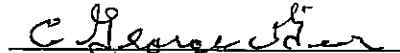
Section 12. ADOPTION

Said procedures and standards for developing public roads are hereby approved and revised by the Board of Hillsdale County Road Commissioners of the County of Hillsdale at their regular meeting on November 23, 2005, and ordered to take immediate effect. Plats which have received preliminary approval as of the effective date of these requirements have up to one (1) year from this date to obtain final approval of the plat in order to be exempt from these new requirements.

BOARD OF COUNTY ROAD COMMISSIONERS COUNTY OF HILLSDALE


William L. Watkins
Chairman

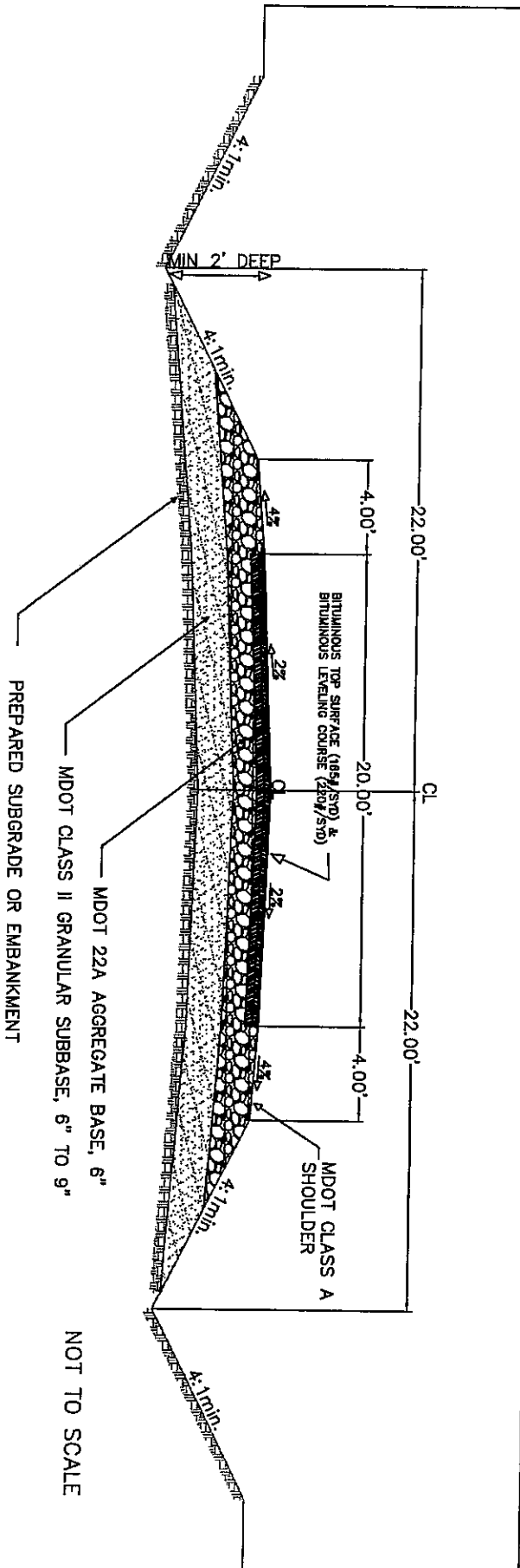

Robert R. Godfrey
Vice-Chairman


C. George Gier
Member

TYPICAL CROSS-SECTION

BITUMINOUS PAVEMENT WITH GRANULAR BASE

R.O.W.
66.00'



COMMERCIAL CROSS-SECTION

ALL-SEASON PAVEMENT WITH GRANULAR BASE

