

STANDARDS AND SPECIFICATIONS
FOR
SUBDIVISION STREETS
AND OTHER
DEVELOPMENT PROJECTS
WITH PUBLIC AND PRIVATE ROADS

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THE PLAT ACT

All plats intended to be recorded with the Register of Deeds must be in conformity with the “Subdivision Control Act” - Act 288, Public Acts of 1967, as amended.

Section 183 of the Subdivision Control Act reads as follows, in part:

“The County Road Commission may require the following as a condition of approval of final plat for all highway, streets and alleys in its jurisdiction or to come under its jurisdiction and also for all private roads in unincorporated areas:

- (a) Conformance to the general plan, width and location requirements that the Board may have adopted and published.
- (b) Adequate provision for traffic safety in laying out drives which enter county roads and streets, as provided in the Board’s current published construction standards.
- (c) Proper drainage, grading and construction of approved materials of a thickness and width provided in its current published construction standards.
- (d) Submission of complete plans for grading, drainage and construction, to be prepared and sealed by an engineer registered in the state.
- (e) Installation of bridges, culverts and drainage structures where it deems necessary.
- (f) Completion of all required improvements relative to streets, alleys and roads, or a deposit by the developer with the Board in the form of cash, a certified check or irrevocable bank letter of credit, whichever the developer selects, in an amount sufficient (as determined by the Engineer) to insure completion within the time specified.”

DEFINITIONS

A.A.S.H.T.O.	American Association of State Highway and Transportation Officials.
A.D.A.	The Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, and their implementing regulations, guidelines and standards.
APPLICANT	<p>A Person who applies for a permit to construct, install, operate, maintain or remove a facility or utility, or to perform any other activity, other than ordinary public travel, within the Right-of-Way of a county road; for a permit to use the Right-of-Way of a county road for purposes other than ordinary public travel; for a permit to cut down, remove, trim or tunnel under, a tree in the Right-of-Way or which would impact the Right-of-Way; or for a permit to temporarily close a county road or a part thereof. Applicant includes without limitation, a</p> <p>Property Owner, or a Property Owner's authorized legal agent who applies for a permit to connect a "driveway" to a county road pursuant to Act 200 of 1969, as amended (MCL 247.321 et seq.); or an authorized government official applying for a permit to temporarily close a county road for a parade, celebration, festival or similar activity pursuant to the same Act 200.</p>
APPROVED PLANS	Plans and drawings submitted by the Applicant and approved by the Board as part of permit approval. Approved plans include notes and comments made by the Board. Approved plans do not include contracts, proposals and other documents, unless specifically noted in the permit or approved by the Board.
BOARD	The Board of County Road Commissioners of the County of Kalkaska, State of Michigan.
COUNTY	The County of Kalkaska.
COMMERCIAL DRIVEWAY	A driveway serving a commercial establishment, industry, governmental or educational institution, hospital, church, apartment building, mobile home park, and not included in the definitions of Residential Driveway or Utility Driveway.
DEVELOPER	The owner or owners representative of the lands to be developed.
DEVELOPMENT	A land development project that may be completed under any part of the Land Division Act, Act 288, PA 1967, the Condominium Act, Act 59, PA 1978, any promulgated administrative rules, municipal

ordinance, or any other applicable County, State, or Federal law, and the Board's adopted policies.

ENGINEER	A Professional Engineer, licensed in the State of Michigan and appointed by the Board to act on their behalf in carrying out the provisions of the Plat Act, Land Division Act, Act 288, PA 1967, the Condominium Act, Act 59, PA 1978, any promulgated administrative rules, municipal ordinance, or any other applicable County, State, or Federal law, and the Board's adopted policies.
M.D.O.T.	Michigan Department of Transportation.
M.M.U.T.C.D.	The current edition of the Michigan Manual of Uniform Traffic Control Devices.
PRIVATE ROAD	A road which is not under the jurisdiction of a public body and provides access to two or more businesses, homes, or lots.
RESIDENTIAL DRIVEWAY	Driveway(s) serving one single family dwelling.
RIGHT-OF-WAY	The land over which the County of Kalkaska has highway jurisdiction and which is subject to use for highway purposes.
TRAFFIC CONTROL PLAN	A plan identifying all required traffic control devices, including, but not limited to signs, barriers, barricades, plastic drums, traffic signals and pavement marking, in accordance with current Michigan Manual of Uniform Traffic Control Devices.

These published minimum requirements and specifications are subject to change without notice by the Board. The Board reserves the right to require construction to higher standards where warranted by special conditions.

I. PRELIMINARY REQUIREMENTS

- A. **PRELIMINARY PLANS** In order that preliminary plans may be prepared in conformity with the general highway and street plans of the Board, the subdivider shall have prepared a preliminary plan of the area which is to be developed. The plan shall be prepared under the direction of a Licensed Land Surveyor or Registered Professional Engineer and shall be drawn on a topographic map to a convenient scale not smaller than one inch equals one hundred feet.

The preliminary plan shall give the name of the proposed development and the location with reference to the section and township in which the parcel is situated. The plan shall show the proposed, public and private, street and alley layout, lot, unit parent and development parcels dimensions (dimensions to the nearest foot are adequate on the preliminary plan), and governing factors such as adjoining subdivisions, proposed, feasible, or possible future developments, bodies of water, highway, railroads, parks, cemeteries, natural water courses, sewers, or any other feature which might affect the layout of the plan.

Three copies of the preliminary plan prepared as noted above shall be submitted (along with a Traffic Study, when required) to the Board, together with a letter requesting preliminary approval. The Board shall approve or reject in writing the preliminary plan within thirty days. One copy will be returned to the Developer, or their agent, with annotations of any required amendment or revisions from the Board.

- B. **DRAINAGE PLAN** A drainage plan, as it affects the roadways, shall be submitted indicating the manner in which stormwater drainage is to be collected and or disposed. To accomplish this will usually require making use of existing ditches, natural water courses, or constructing tributaries thereto. An easement of twenty feet or more in width shall be provided when the drain crosses private property within the development or adjacent to it.

The drainage plan may be superimposed on the preliminary plan or it may be submitted as a supplement to the preliminary plan. The drainage plan shall be drawn on a topographic map unless an exception is approved by the Board due to natural features.

- C. **RIGHT-OF-WAY WIDTH** The following minimum widths of right-of-way will be required for all roads, streets and alleys:

Alleys	33 feet
Residential or Local Access Routes	66 feet
Industrial or Commercial	66 feet
County Primary Roads (numbered roads)	100 feet

Greater right-of-way width may be required by the Board when considered necessary.

Right-of-way widths shall be increased by an additional 20 feet unless utilities are located in separate easements located outside the road right-of-way.

Section line and quarter line roads shall be centered on said lines unless an exception is approved by the Board. Half width dedications of roads, streets or alleys will be acceptable only when the boundary of the proposed plat coincides with the boundary of a recorded plat on which a half road, street, or alley has been previously dedicated, or along an existing county road or street.

- D. STREET LAYOUT The street layout shall conform to the general pattern established by adjacent roads and streets. All existing public roads and streets that terminate at the boundaries of a proposed development project must be connected with the street system of the proposed development project. Suitable access from isolated developments to existing public streets or roads must be provided by easement or dedication. Driveway access from lots to Primary Roads will not be permitted except in special cases where adverse topography or other special conditions exist. Access limitations shall be included within a Development's Covenants, Restrictions, Condominium Master Deed or By-laws.

The layout of roads and streets in a proposed development shall provide a continuous circuit for travel. Every effort shall be made to eliminate cul-de-sacs from the street layout. In special cases where the lands to be developed are limited in area or are encumbered by natural barriers, the Board may approve a dedication which provides access to another road or street at one end only if a cul-de-sac of ninety foot minimum radius with sixty-six foot road or street right-of-way or one hundred foot minimum radius with eighty-six foot road or street right-of-way is provided at the terminus of the street to permit turning in a continuous circuit. Refer to Figure 2, sketch of typical cul-de-sac. The minimum length of any street ending in a cul-de-sac shall be 650 feet, measured from the centerline of the intersecting street to the center of the cul-de-sac. No more than five driveways will be permitted to enter the cul-de-sac beyond the point of curvature at the beginning of the cul-de-sac. All mailboxes for lots around the cul-de-sac shall be located at the beginning of the cul-de-sac, and these mailbox limitations shall be included in the Development's Covenants, Restrictions, Condominium Master Deed or By-laws.

When the proposed development abuts land that can be developed in the future, road extensions designated for "Future Road Purposes" shall be provided to the boundary line of the areas with future development potential. Before approval of the final development, easements describing the proposed outlots must be provided in favor of the Board. Upon recordation of the Development, warranty deeds conveying title to the Board must be provided by the Developer. Construction of the future roads to standards in Figure 1 will be required, however placement of gravel and hot mix asphalt pavement will be the responsibility of the future developer of the adjacent lands.

- E. STREET NAMES Road and street dedications shown on development plans shall be designated by name. Roads and streets which are extensions of, or are in line with existing roads and streets, must be named to agree with those presently in existence. Other streets may be given names as the Developer may choose, subject to final approval of the Board.
- F. SIGNS The Board will furnish and erect street name signs and traffic control signs for public and private roads at the expense of the Developer. Street name signs will be placed at all intersections within the development and entrances onto main roadways. The design of the signs shall be similar to road name signs currently being purchased for use on

existing county roads. Traffic control signs shall be placed in accordance to the Michigan Manual of Uniform Traffic Control Devices.

Signs marked "Private Road" shall be erected and maintained by the Developer at the entrance to all private roads and streets in the development.

- G. CONDOMINIUM DEVELOPMENTS All sections of the "DESIGN AND CONSTRUCTION STANDARD SPECIFICATIONS" shall apply to the development of roads and streets within condominium projects established in accordance with Act 59, P.A. 1978, as amended. For the purpose of this section, the terms "development" and "subdivision" shall mean the same as "condominium project".

If the roads and/or streets within the condominium project are to be a part of the county road system, prior to acceptance by the Board, the developer shall convey the road right-of-way, by warranty deed or dedication agreement, to the Board of County Road Commissioners of Kalkaska County.

The Master Deed of the condominium development shall contain the following language: "Upon approval by an affirmative vote of not less than fifty-one (51%) percent of all Co-Owners, the Association shall be vested with the power and authority to sign petitions requesting establishment of a special assessment district pursuant to provisions of applicable Michigan statutes for improvement of roads within or adjacent to the condominium premises, and to consider and otherwise act on all assessment issues on behalf of the association and all co-owners.

In the event that a special assessment road improvement project is established pursuant to applicable Michigan law, the collective cost assessable to the Condominium Premises as a whole shall be borne equally by all Co-Owners.

All road improvement special assessments levied by any public taxing authority shall be assessed in accordance with Section 131 of 1978 P.A. 59, as amended (MCLA 559.231).

At some time subsequent to the recordation of the Master Deed, it may become necessary to improve some or all of the roads within or adjacent to the Condominium Premises. Those improvements may be financed, in whole or in part, by the creation of a special assessment district or districts which may include the condominium development. The acceptance of a conveyance or the execution of a land contract by any owner or purchaser of a Condominium unit shall constitute the agreement by such owner or purchaser, his/her heirs, executors, administrators, or assigns, that the Association shall be vested with full power and authority to obligate all Co-Owners to participate in the special assessment district, sign petitions requesting said special assessment, and consider and otherwise act on all assessment issues on behalf of the Association and all co-owners; provided, that prior to signature by the Association on a petition for improvement of such public roads, the desirability of said improvements shall be approved by an affirmative vote of not less than fifty-one (51%) percent of Co-Owners. No consent of mortgagee shall be required for approval of said public road improvement".

The Developer shall furnish to the Board of County Road Commissioners a letter of understanding from the appropriate township Board of Trustees that said township is aware of the proposed development, agrees with the concept of said development and the service of that development by county roads, and is willing to administer in the future, requests for special assessment districts for road improvements within, adjacent to, or serving said development.

If the roads and/or streets within the condominium project are not to be a part of the county road system, but intersects with, or connects to, an existing public road or street, a permit, including applicable fees, is required to be obtained from the Kankaska County Road Commission.

II. REQUIRED IMPROVEMENTS AND SPECIFICATIONS

The owner of the developed lands, or his agent, shall be required to grade, drain and surface the streets (Public and Private) and alleys shown in the development in accordance with the current standards and specifications of the Board of County Road Commissioners.

- A. **PLAN AND PROFILE** Plan and profile drawings shall be prepared by the Developer's Registered Professional Engineer in detail complete enough to be used as construction plans. The drawings shall show the proposed gradients of all roads and streets and the location of drainage facilities and structures as well as other pertinent information.

Three copies of the plan and profile drawings, signed and sealed, shall be forwarded to the Engineer for approval. More detailed construction plans may be required by the Engineer. One copy will be returned to the Developer's engineer with approval or necessary revisions marked thereon. Approval must be obtained before construction begins.

Permissible percents of grades on any subdivision road shall be within the following ranges:

Maximum.....	8%
Cul-de-sac Maximum.....	1%

On intersecting streets, an elevation higher than four feet above the intersected road shoulder will not be allowed within 200 feet of the intersected road shoulder. A minimum of fifty feet of flat gradient (maximum 0.5% sloped away from the through road or street having the traffic right-of-way) measured from the shoulder line, shall be provided at the approach of a controlled right-of-way road or street to a main road or street. No intersections will be allowed on grades steeper than six percent.

Vertical curves shall be used at all changes in grade. Sight distance, horizontal and vertical alignment shall be based on the following minimum design speeds:

Residential, Commercial, Industrial	30 MPH
All Other Routes	55 MPH

Sight distance and alignment will be approved by the Engineer and shall be in accordance with current A.A.S.H.T.O. Standards for Geometric Design. A design speed of 25 MPH may be approved in special cases on dead end roads. Horizontal curve radii, vertical curve lengths and percent of grade shall be all shown on the plan and profile drawings.

It is desirable that all intersecting roads and streets meet at right angles but in no case shall the intersection angle be less than 70 degrees. Sight distance at intersections shall be approved by the Engineer. Intersections on opposite sides of an intersected road shall either be located opposite each other or be a minimum of 300 feet apart, centerline to centerline. Intersections on the same side of an intersected road shall be located a minimum of 360 feet apart, centerline to centerline. School bus loading/unloading areas shall be provided in conjunction with intersection construction if the determination of need is

made between the board and the jurisdictional school district (Figure 3). Turning radii shall be provided at all intersections with a minimum radius of 30 feet at the lot lines.

- B. CLEARING AND GRUBBING All trees, stumps, brush and roots thereof shall be entirely removed from within the grading limits of all streets and alleys in the proposed development and shall be properly disposed of. No debris shall be placed or stored within the road right-of-way.
- C. GRADING AND DRAINAGE A roadway shall be constructed on the center of the street right-of-way conforming to requirements shown on the Board's Standard Plans for Subdivision Road Grading and described herein.

Roadbeds shall have the following minimum widths between shoulder lines as detailed in Figure 1.

Residential & Local Access	32 feet
Commercial	32 feet
Industrial	34 feet
County Primary Roads (numbered roads).....	36 feet

Concrete curb and gutter may be approved by the Board.

Plans and specifications must be approved by the Engineer prior to the start of construction.

Minimum distance from face of curb to face of curb is 25 feet.

Integral hot mix asphalt raised edge (see Figure 4) may be approved by the Board for use in areas subject to severe erosion, possibly eliminating the need for roadside ditches. Minimum width between beginnings of raised edges shall be the same as shown for the minimum distance between shoulder lines as shown on Figure 1.

Where the development is located adjacent to an improved county road, the Developer may be required to meet the Board's current construction standards for such adjacent roads. The work within the road right-of-way will normally include such items as intersection widening, deepening and/or relocating existing ditches, and developing an approved grading cross-section along the limits of the development.

The presence of other than well drained granular materials in the subgrade soil shall require a full width 15 inch granular subbase or other special treatment approved by the Engineer.

All peat and muck shall be removed from beneath the roadbed in accordance with Michigan Department of Transportation Method A.

The level of the finished subgrade shall be at least two and one-half feet above the high water table.

Drainage ditches shall be constructed on each side of the roadway in cut sections and in fill sections when required. Ditches shall be a minimum of two feet in depth and deeper where necessary to permit placing of future driveway culverts. Ditches of less than two feet may be approved by the engineer, if soil conditions & topography allow driveways without culverts.

Driveways located in major cut sections shall be graded during construction to an elevation at the right-of-way line which is not more than one and one-half feet above the elevation of the finished shoulder to facilitate placing of utilities.

Private alleys shall be graded to a minimum width of twenty feet with a minimum three inch crown to assure adequate drainage.

- D. DRAINAGE STRUCTURES AND EROSION CONTROL Drainage structures shall be installed as indicated on the Drainage Plan. Minimum diameter of culverts across roads shall be fifteen inches, unless otherwise specified. The bottom ends of culverts shall extend to the bottom of the slope. Either concrete culvert pipe, corrugated metal pipe or corrugated polyethylene pipe meeting Michigan Department of Transportation specifications of the required size and strength may be used. Standard flared end sections shall be used on all road cross-culverts. White painted or treated guard posts shall be placed beside the ends of cross culverts to mark their location.

Bridges shall be designed for HS-20 or more loading on all roads.

Culverts at driveway entrances may be necessary and shall be provided either by the Developer or lot owners. Minimum diameter of driveway culverts shall be fifteen inches. Driveway permits will be required after roads have been taken over by the Board. All driveway construction shall conform to current Road Commission standards.

Sodding, rip-rapping, sediments basins, topsoil, seeding, mulching or other methods of erosion control shall be used in accordance with the recommendations of the State of Michigan Soil Erosion and Sedimentation Control Officer and the Kalkaska County Drain Commissioner. Proposed material shall meet MDOT's current standards or shall be approved by the Engineer.

- E. SURFACING A minimum total depth of six inches of compacted dense graded 22-A aggregate, MDOT 2012 Standard Specifications for Construction, Section 3.02 shall be placed on Public and Private roads and streets. The prepared subgrade width, depth and compaction must be inspected and approved by the Engineer prior to the placement of aggregate base.

The aggregate base course shall be placed on the prepared subgrade for the entire width of the roadway in accordance with the Standard Plans for Subdivision Grading (Figure 1). Alleys shall have a minimum width between shoulders of twenty four feet and shall have a crown of three inches minimum. HMA width on alleys shall be eighteen feet. Gravel to be used on the project must be approved by the Engineer prior to placement.

HMA paving shall be done in accordance with Division 5 of MDOT 2012 Standard Specifications. HMA shall consist of (base course 165# / SYD LVSP) and (top course 165# / SYD LVSP) applied in two or more courses (Except private roads may be one course) shall be placed on all roads and streets at the following minimum rates.

Private Roads	220# / SYD
Residential, Local Access and Commercial.....	330# / SYD
Industrial, Collector and Arterial	330# / SYD or greater*

*Industrial, collector and arterial roads shall be designed and constructed in accordance with "Design Guidelines" – AASHTO Interim Structural Pavement Design Procedure Adopted for All Season County Roads.

For rates between 275# / SYD and 385# / SYD, the leveling course shall be placed at a rate of 165# /SYD with the remainder placed on the wearing course. For rates over 385# /SYD, the number of courses and the application rates shall be as directed by the Engineer.

Prepared gravel width, depth and compaction must be inspected and approved by the Engineer prior to the placement of HMA surface. Contractor shall give the Engineer 48 hours' notice when the HMA surface is to be placed. A MDOT certified inspector must be present to check width, yield and take HMA samples. It is the responsibility of the contractor to make specified yield and to place HMA that will pass quality specifications.

A time period of no more than one year shall elapse between the placement of any two courses of HMA pavement. A HMA bond coat applied at a rate of 0.05-0.15 gal/SYD between pavement courses will be required unless waived by the Engineer. All contractors who perform HMA paving on subdivision roads must be currently prequalified with MDOT for this item, and shall furnish a mix design for review prior to HMA paving operations.

The following minimum widths of bituminous pavement shall be placed:

Residential and Local Access	22 feet
Commercial	30 feet
Industrial	32 feet

On roads where grades are steeper than five percent, the minimum surface width shall be thirty feet.

Shoulders on residential streets or local access roads shall be stabilized with two and one half inches or more of good compacted topsoil over six inches of compacted gravel. Shoulders shall be sodded or seeded and mulched to insure an adequate covering of grass.

- F. DRIVEWAYS Residential driveway approaches within county road right of way shall slope down from the pavement edge at a rate of one-half inch to three-quarter inch per foot for a distance of eight feet or back to the ditch centerline, whichever is greater.

The side slopes of the driveway shall slope to the ditch bottom at a maximum 3 on 1 slope for residential areas where the speed limit is 25 mph. A maximum 4 on 1 slope will be allowed in other areas.

Typical residential driveways must be a minimum of twelve feet and a maximum of twenty four feet wide. The standard radius shall be fifteen feet to the road shoulder with ten foot tapers to the edge of pavement. The driveway, radius and taper must all be included within one property, and must not encroach across property lines without legally documented permission from the adjoining owner.

All driveways must intersect roads at right angles with a maximum variance of 20°.

Driveway approach, including the radius and taper may not infringe upon the road intersection radius.

The maximum slope for a driveway approach intersecting a county maintained road shall not exceed 10%.

All landscaping, sod, and vegetation placed at the edge of the road shoulder shall be kept lower than the shoulder elevation.

Concrete driveway approaches shall have a depth of six inches within the road right of way.

Asphalt driveway approaches placed within forty feet of an existing asphalt driveway approach, must have the shoulder area between the two approaches paved.

Additional details on commercial approaches see Figure 6.

- G. UTILITIES Utilities will be placed in the road right-of-way or within the outside ten feet of the right-of-way increased to provide for utility locations. Water mains and sanitary sewer manholes may be located a minimum of twenty-five feet from road centerline. Special conditions may be granted for sanitary sewer manholes at a minimum of eighteen feet from road centerline.

In existing county roads where utilities are located within the road right-of-way resulting in significant conflicts, the Road Commission staff may determine alternate locations.

- H. MAINTENANCE It shall be the Developer's responsibility to maintain all public roads and streets in good condition until they are taken over by the Board. Maintenance of eroded areas shall be the responsibility of the Developer until erosion and sedimentation are definitely controlled.

- I. INSPECTION Inspections of subdivision roads and street will be made by the Engineer as follows:

1. Prior to construction

2. After grading and trenching is complete but before aggregate and topsoil is placed.
3. After aggregate is final shaped and compacted and ready for HMA surfacing.
4. After construction is complete.

It shall be the Developer's responsibility to inform the Engineer when he is ready for the above inspections. The above inspections will be made at no cost to the Developer. A fee will be charged to cover the cost of each additional inspection due to sub-standard work.

It shall be the Developer's responsibility to provide engineering inspection during the construction.

There will be no inspection of construction work by the Engineer between December 1 and April 1 unless favorable weather conditions prevail.

J. CERTIFICATION Upon completion of construction, the Developer's Engineer shall certify that all work has been done in accordance with the approved plans and specifications. If requested, the Developer's Engineer shall provide to the Road Commission copies of inspection and testing reports to verify compliance to Road Commission Standards and Specifications. If field changes in the plans have been approved, as-built construction plans shall also be submitted to the Engineer.

K. TESTED MATERIAL All materials incorporated in the work shall meet the specifications called for or be approved by the Engineer. Test reports from a qualified laboratory or approved engineering firm shall be submitted to the Road Commission before they assume maintenance of the roads for the following materials:

Aggregate - Gradation test, width and depth checks on finished grade before paving and density tests (98%).

HMA Material - Approved density, mix design, extraction tests, and yield checks during paving.

III. FINAL PLANS

- A. CONSIDERATION BY BOARD In accordance with the provisions of Section 164 and 165 of the Subdivision Control Act, the Developer shall submit to the Board of County Road Commissioners all copies of the plans prepared in conformity with the requirements of the Act. Delivery of plans to the Board shall be made at least one week before their next regular meeting. The Board shall consider and either approve or reject the plat within fifteen days after it is received.

If the Board approves the plans, it shall have its certificate of approval transcribed thereon and shall return the approved plans to the Developer.

If the Board rejects the plans for any reason, it shall give written notice of such rejection and its reason to the Developer and shall send a copy of the letter to the clerk of the governing body.

- B. GUARANTEE OF IMPROVEMENTS If the Developer has not completed the grading, draining and surfacing of the roads, streets and alleys in a development prior to submitting it to the Board for final approval, he shall furnish a deposit. The deposit shall be in the amount required by the Road Commission in the form of cash, Irrevocable Bank Letter of Credit or Certified Check in the form acceptable to the Board in accordance with Section 183 of the Subdivision Control Act. The deposit shall guarantee the completion of all improvements within a period of 24 months from the date of final approval of the plans by the Board.
- C. PRIVATE ROADS If the development includes roads, streets or alleys which are private, the Developer shall submit a letter stating that he will inform purchasers of lots that the roads, streets or alleys are not required to be maintained by the Board, as outlined in Section 261 of the Subdivision Control Act.
- D. FEES In accordance with Section 248 of the Subdivision Control Act, the Board may adopt a schedule of fees to be charged to Developers seeking approval of land developments. After adoption, this schedule shall become a part of these Standards and Specifications.

GENERAL NOTES

Ditches shall be of sufficient depth, per Section II.C., to permit placing of driveway culverts. Where ditch grades exceed 5%, a six-foot wide minimum high velocity mulch blanket must be placed centered in ditch bottom and staked down in accordance with manufacturers specifications.

Earth grade to be trenched before gravel is placed.

Sodded one-on-two back slopes and one-on-two fill slopes with three foot widening on shoulders may be approved under special conditions.

Guardrail with three foot shoulder widening shall be placed on fills with less than one-on-four fill slopes which are six feet in height or greater. The construction of one-on-four or flatter slopes is preferred over the use of guardrail and is required where practical. All guardrail shall meet MDOT specifications.

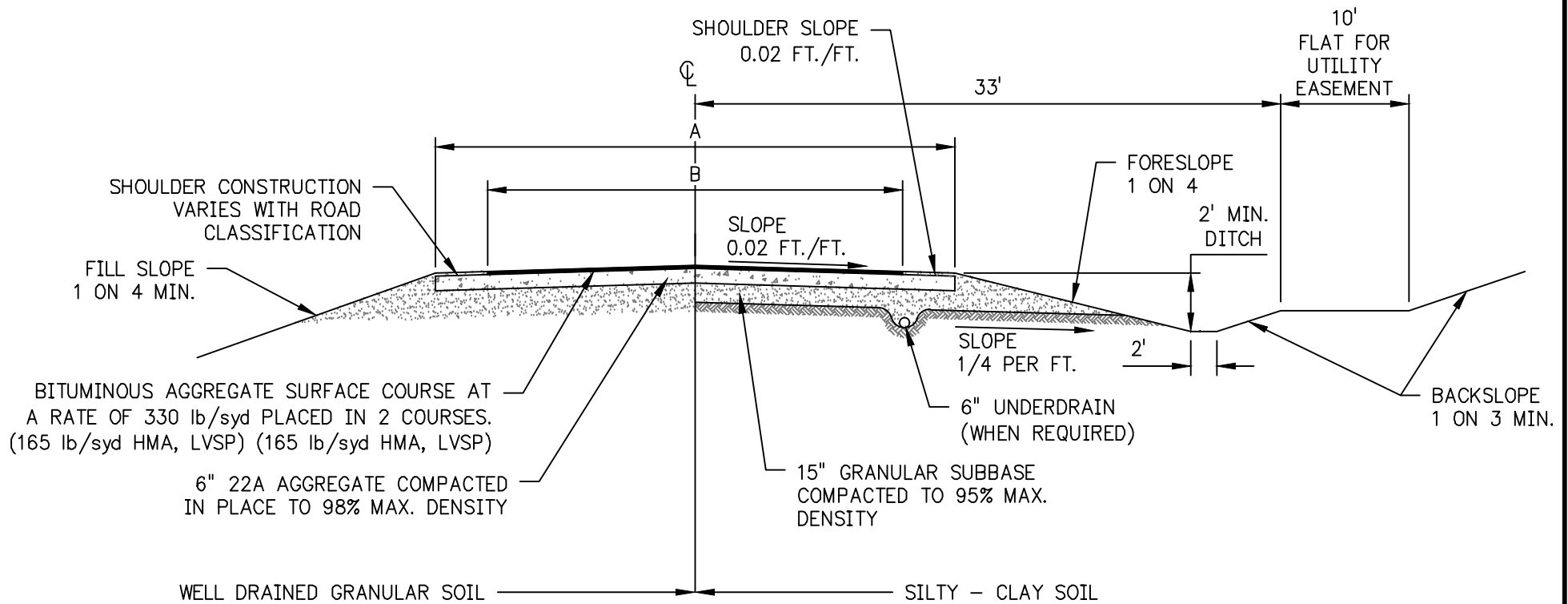
Exceptions to the "Typical Cross Section" for residential and Commercial Subdivisions can be found in Part II, Section C - Grading and Drainage and in Section E - Surfacing.

Any changes in specifications must have prior approval by the Road Commission.

Signs denoting the subdivision name will not be permitted within the road right-of-way.

Mailboxes are allowed in the road right-of-way as a public service. The face of the mailbox shall be placed a minimum of six feet off the edge of the blacktop or one foot behind the road shoulder, whichever is farthest from centerline. Single mailboxes should be installed on a four inch by four inch or four and one-half inches diameter wood post or steel post less than 3 lbs per foot. These supports shall be embedded no more than twenty four inches into the ground. Multiple mailbox installations should be placed on individual supports spaced at least three feet apart. Planks or structures for multiple installations are not allowed.

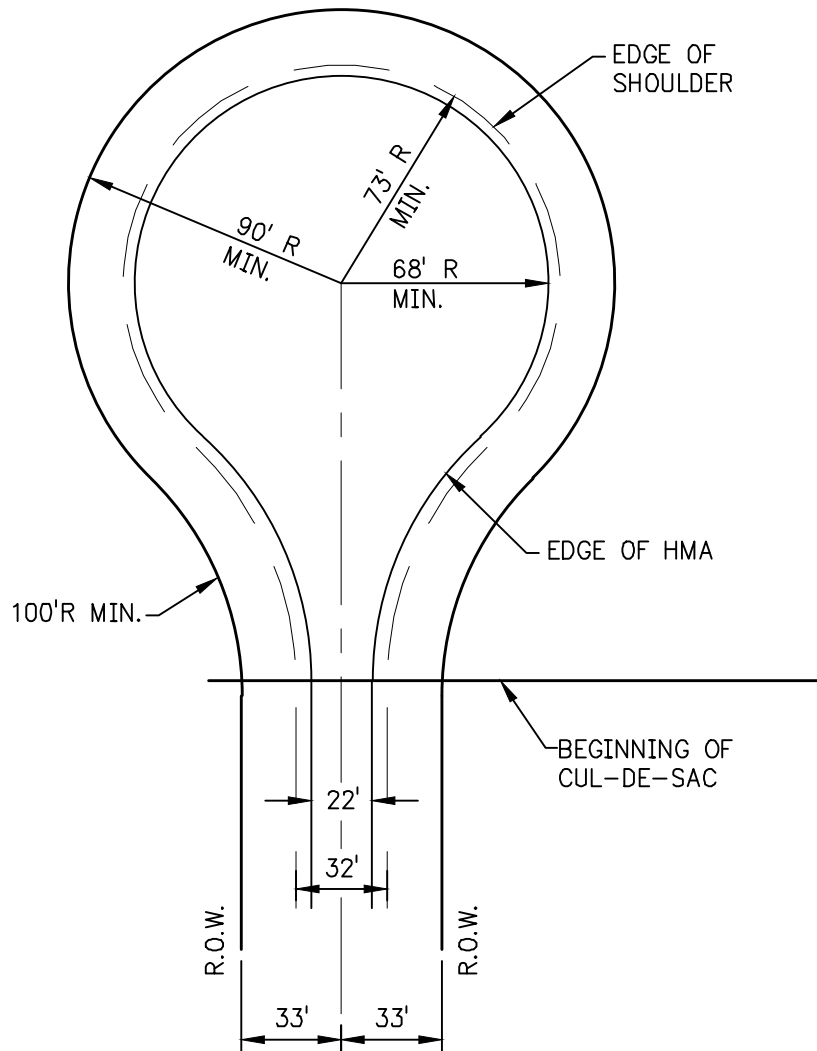
FIGURES



NOTE:
 IF FILL SLOPE IS DESIRED STEEPER THAN 1 ON 4, APPROVAL BY ROAD COMMISSION IS REQUIRED AND A FLAT UTILITY BENCH MUST BE CONSTRUCTED 33' TO 43' FROM CENTERLINE.

ROAD CLASSIFICATION	A	B	
		(1)	(2)
RESIDENTIAL AND LOCAL ACCESS	32'	22'	30'
COMMERCIAL	32'	30'	30'
INDUSTRIAL	34'	32'	32'
MINOR COLLECTOR	36'	*	*
MAJOR COLLECTOR	36'	*	*
MINOR ARTERIAL	36'	*	*

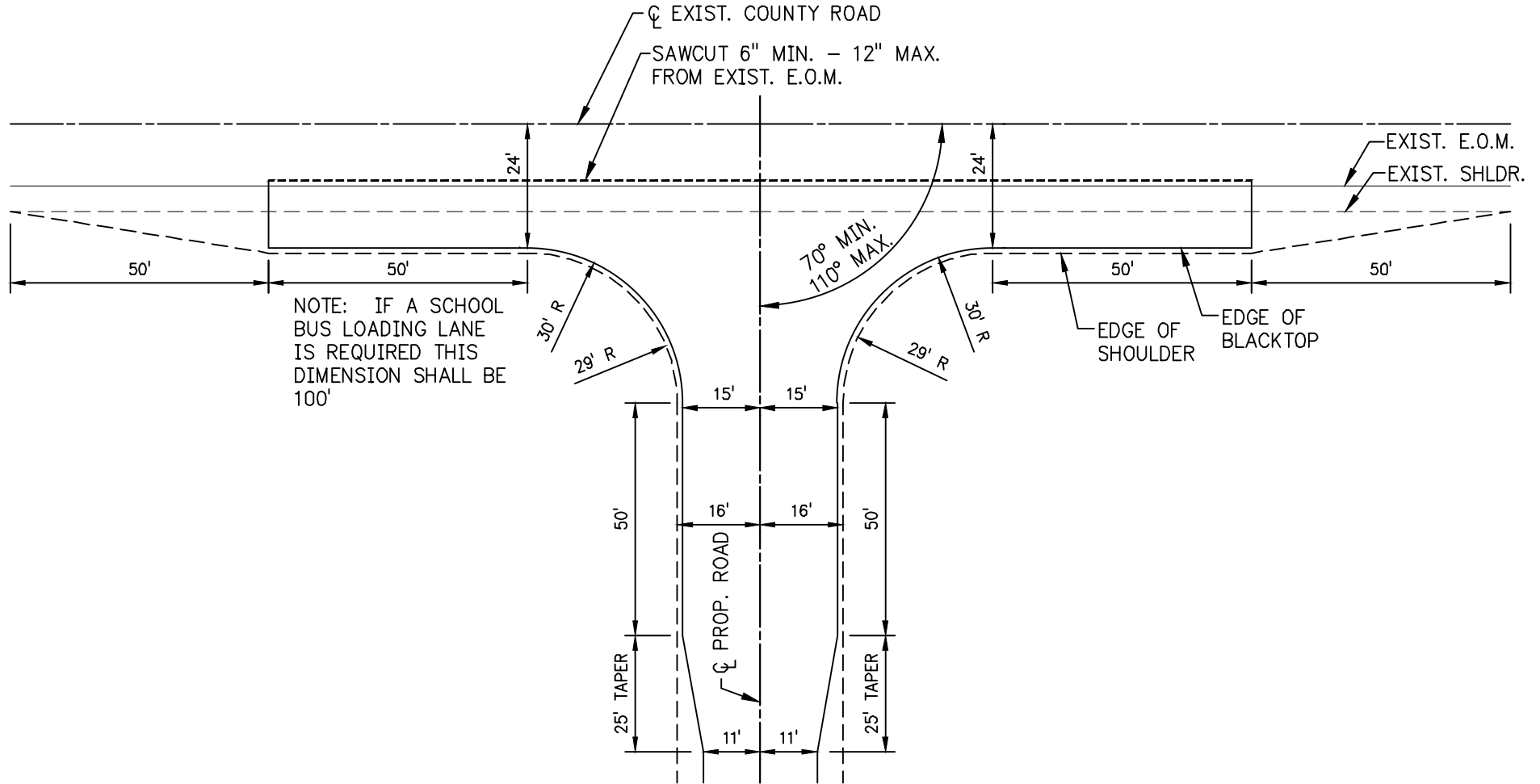
FIGURE NO. 1



NOTE:
 ALL DIMENSIONS TO R.O.W. SHALL BE
 INCREASED BY 10' FOR 86' R.O.W.

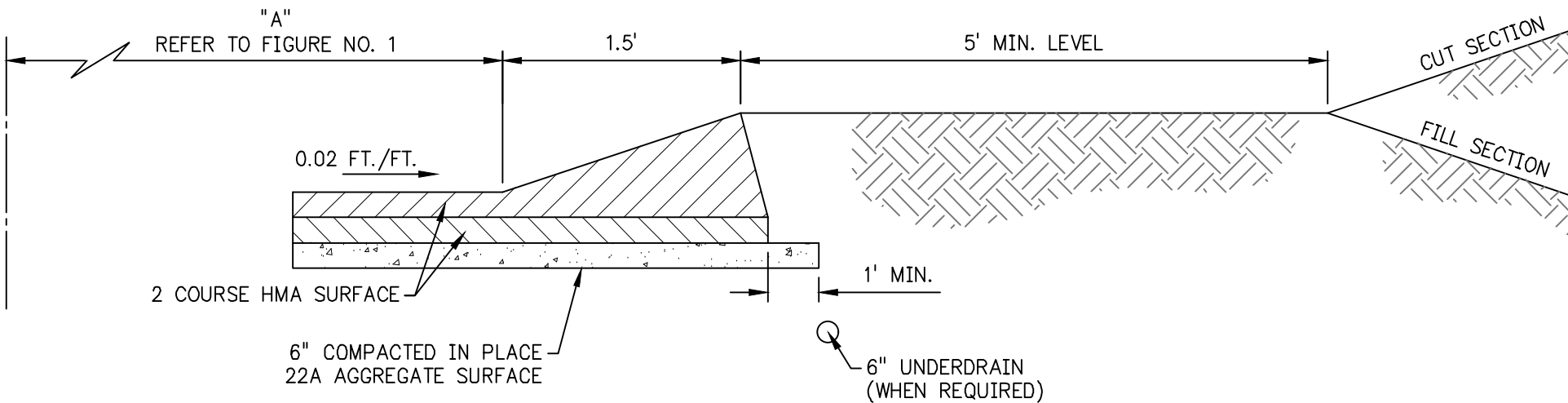
TYPICAL CUL-DE-SAC

NO SCALE



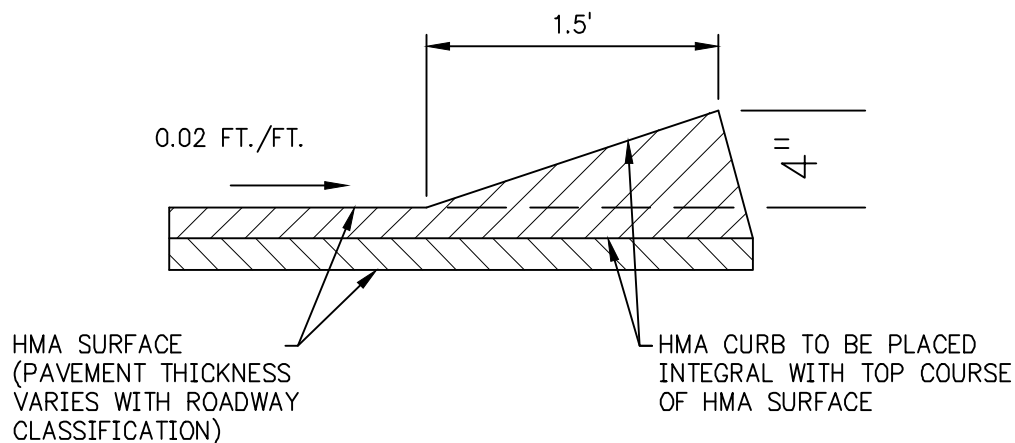
RESIDENTIAL AND LOCAL ACCESS TYPICAL INTERSECTION WITH EXISTING COUNTY ROAD

NO SCALE



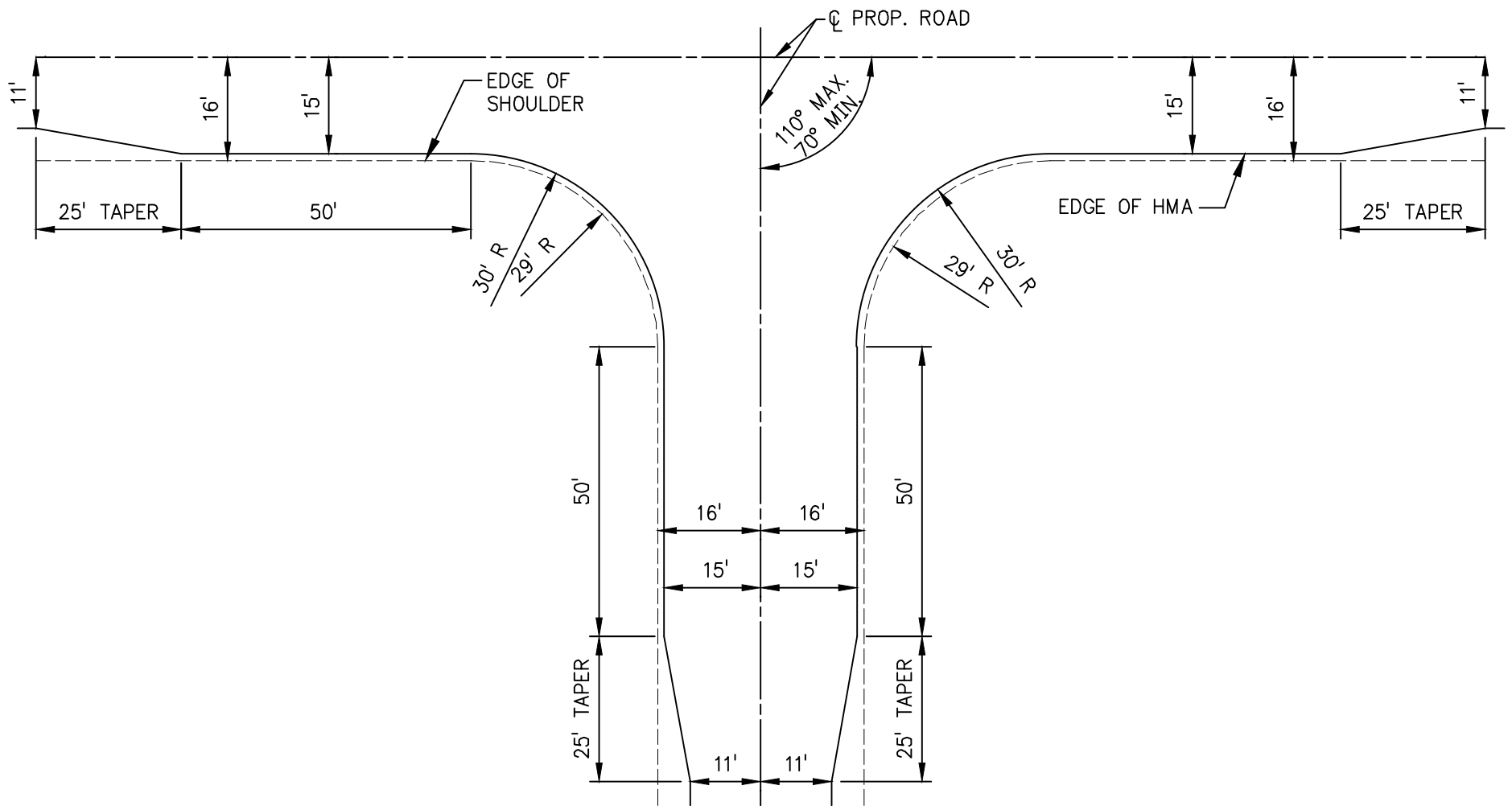
INTEGRAL BITUMINOUS RAISED EDGE PAVEMENT SECTION

NO SCALE



RAISED EDGE DETAIL

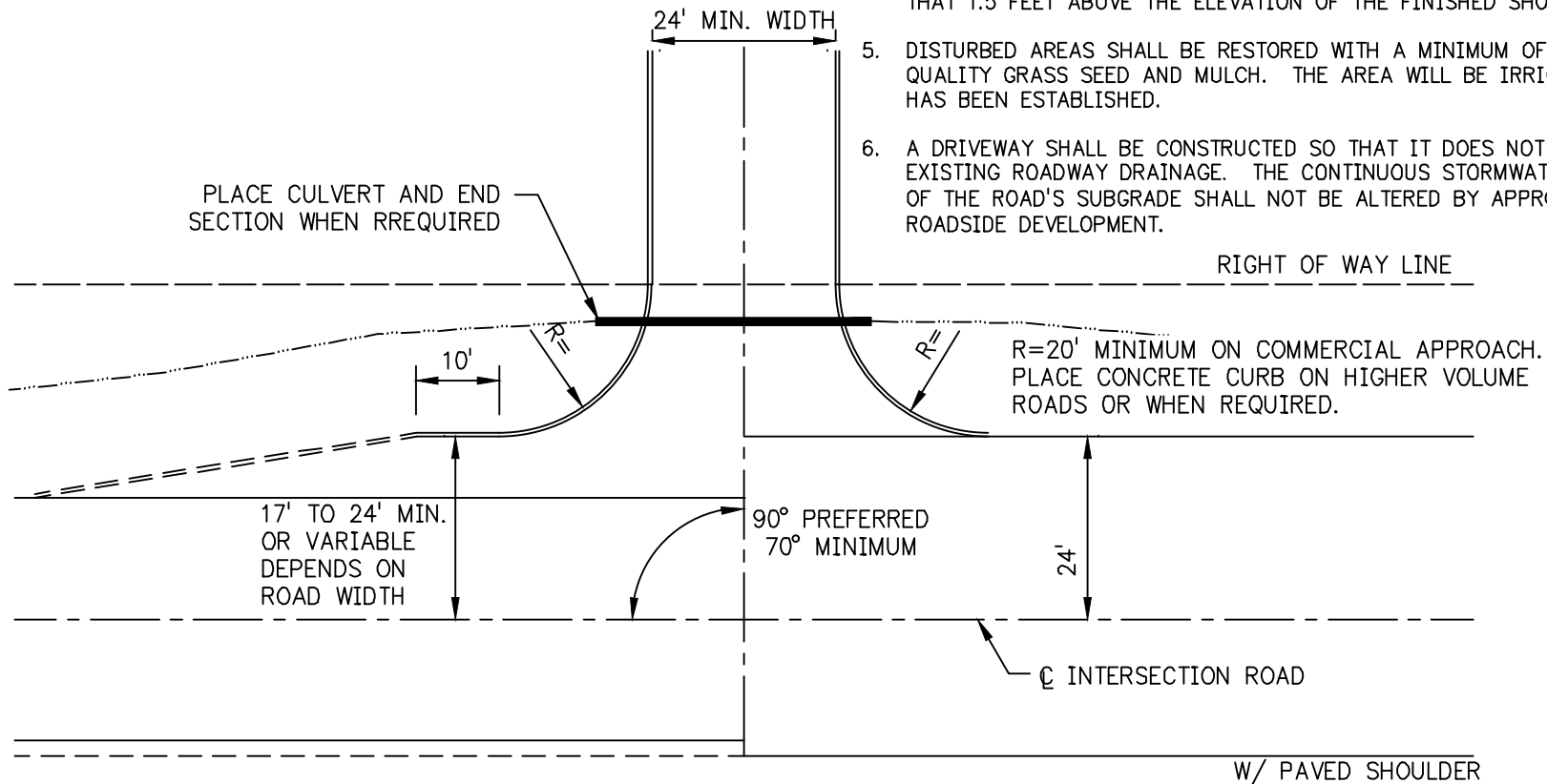
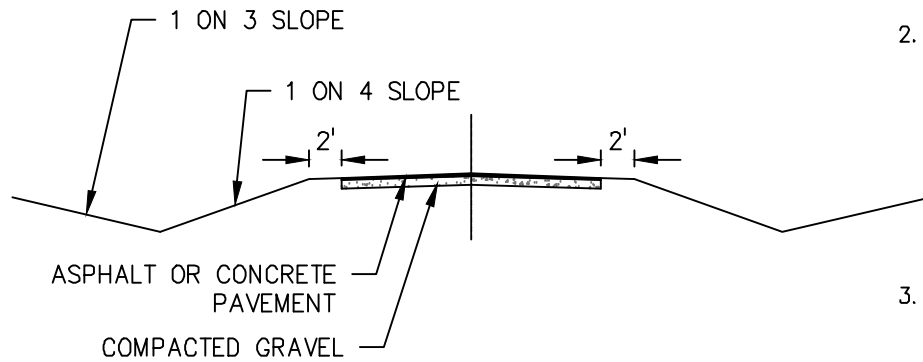
NO SCALE



TYPICAL INTERSECTION FOR INTERNAL RESIDENTIAL SUBDIVISION ROADS

NO SCALE

1. PLACE CULVERT AS CALLED OUT N ENGINEERED PLANS.
2. THE DRIVEWAY SURFACE SHALL BE EQUAL TO OR BETTER THAN THE FOLLOWING:
 - A.) A MINIMUM OF 330 LBS/SYD OF MDOT LVSP HMA PAVEMENT ON 8 INCHES OF MDOT 22A GRAVEL COMPACTED IN PLACE, OR CRUSHED STONE AND SUB-BASE THAT IS COMPATIBLE WITH THAT USED ON HIGHWAY.
 - B.) A MINIMUM OF 9 INCHES OF CONCRETE ON 4 INCHES OF COMPACTED GRAVEL OR CRUSHED STONE AND SUB-BASE COMPATIBLE WITH THAT USED ON THE HIGHWAY.
3. ALL WORK COMPLETED WITHIN THE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH CURRENTLY ADOPTED MICHIGAN DOT STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION.
4. SLOPE DRIVEWAY APPROACH AWAY FROM PAVEMENT EDGE AT 1/2 INCH PER FOOT FOR 12 FEET, OR A MINIMUM 4% GRADE. ALL DRIVEWAY GRADES SHALL HAVE A MAXIMUM SLOPE OF 9% OR LESS AND AN ELEVATION AT THE RIGHT-OF-WAY LINE THAT IS NOT MORE THAN 1.5 FEET ABOVE THE ELEVATION OF THE FINISHED SHOULDER.
5. DISTURBED AREAS SHALL BE RESTORED WITH A MINIMUM OF 3 INCHES OF TOPSOIL, QUALITY GRASS SEED AND MULCH. THE AREA WILL BE IRRIGATED UNTIL VEGETATION HAS BEEN ESTABLISHED.
6. A DRIVEWAY SHALL BE CONSTRUCTED SO THAT IT DOES NOT ADVERSELY AFFECT THE EXISTING ROADWAY DRAINAGE. THE CONTINUOUS STORMWATER DRAINAGE AND STABILITY OF THE ROAD'S SUBGRADE SHALL NOT BE ALTERED BY APPROACH CONSTRUCTION OF ROADSIDE DEVELOPMENT.



COMMERCIAL DRIVE APPROACH

NO SCALE

SAMPLE LETTERS

SAMPLE ENGINEER'S CERTIFICATE

Date: _____

Kalkaska County Road Commission
1049 Island Lake Rod
Kalkaska, MI 49646

RE: _____
(Development Name)

Section _____, T _____ N, R _____ W, _____ Township

I hereby certify that the construction of the roads in the above named Development is complete and that:

1. I have personally directed the supervision and inspection of the construction.
2. All improvements to date have been installed in accordance with the approved "Standards and Specifications for Subdivision Streets and other Development Projects with Public and Private Roads."
3. The construction materials meet the afore-mentioned specifications and that the reports of materials tests, where required, have been made and have been filed with the Kalkaska County Road Commission.
4. All the monuments, as shown on the plans, are in place and in good condition.

Developer's Engineer

Engineer's License Number

License Expiration Date

CONFLICT OF INTEREST CERTIFICATION
SAMPLE OF CERTIFICATION TO ACCOMPANY PRELIMINARY PLATS

Submit with preliminary plat names of all company and principal owners

Owners of the Development _____

Design Engineer _____

Construction Engineer _____

Construction Contractor _____

This certification can be changed in the future by filing an amended certification with the Kalkaska County Road Commission

The Kalkaska County Road Commission will require that independent, non-associated construction engineer and certification technicians be retained to provide certification of construction in the event of any of the following circumstances:

1. The Construction Engineer selected by the owners is an employee, associate or officer of the owner or a business organization of which the owner is an employee or member.
2. The Construction Engineer selected by the owners is an employee, associate or officer of the contractor or a business organization of which the contractor is an employee or member
3. or:
4. The Construction Engineer selected by the owners has any other apparent conflict of interest.

SAMPLE OF LETTER TO ACCOMPANY ALL DEVELOPMENTS WITH PRIVATE ROADS

Date: _____

Kalkaska County Road Commission
1049 Island Lake Road
Kalkaska, MI 49646

RE: _____
(Development Name)

Section _____, T _____ N, R _____ W, _____ Township

This will assure you that I will inform all purchases of lots in the Development named _____ that the roads in said Development are private roads and that they will not be accepted as county roads in the future until Kalkaska County Road Commission specifications and requirements for public roads are met.

I understand that the Road Commission will furnish and erect road name signs at my expense.

I will also erect a sign marked "Private Road" at all entrances to said Development.

Developer

SAMPLE OF LETTER TO ACCOMPANY DEPOSIT
TO GUARANTEE COMPLETION OF PRIVATE ROADS

Date: _____

Kalkaska County Road Commission
1049 Island Lake Road
Kalkaska, MI 49646

RE: _____
(Development Name)

Section _____, T _____ N, R _____ W, _____ Township

The enclosed _____ in the amount of \$ _____ is hereby submitted to guarantee the improvement of the roads in the Development named _____, in accordance with the Kalkaska County Road Commission Standards and Specifications.

Developer

SAMPLE OF LETTER TO ACCOMPANY DEPOSIT
TO GUARANTEE COMPLETION OF PUBLIC ROADS

Date: _____

Kalkaska County Road Commission
1049 Island Lake Road
Kalkaska, MI 49646

RE: _____
(Development Name)

Section _____, T _____ N, R _____ W, _____ Township

The enclosed _____ in the amount of \$ _____ is hereby submitted to guarantee the improvement of the roads in the Development named _____ in accordance with the Road Commission Standards and Specifications.

I understand that I will be responsible for the maintenance of the roads in said Plat until they have been approved and taken over by the Road Commission.

I also understand that the Road Commission will furnish and erect road name and traffic control signs at my expense.

Developer

SAMPLE OF IRREVOCABLE COMMERCIAL LETTER OF CREDIT

Date: _____

Kalkaska County Road Commission
1049 Island Lake Road
Kalkaska, MI 49646

We hereby open our Irrevocable Letter of Credit in your favor for the account of _____, _____, Michigan _____ for a sum not exceeding _____ dollars (\$_____).

We are advised that _____ is to install roads and drainage improvements in the Development named _____, Section _____, T _____ N, R _____ W, _____ Township in accordance with plans and specification approved by you.

In the event _____ shall fail to install roads and drainage improvements you may draw a draft at Sight on _____ Bank, _____, Michigan, for amounts not exceeding in aggregate the aforesaid sum of _____ dollars when accompanied by:

“Your signed statement certifying that _____ failed to install roads and drainage improvements.”

Upon receipt of your Resolution authorizing a release in the amount you will accept under this Credit, we shall issue our formal amendment reducing our liability to an amount equal to the original amount of this credit, less any amounts released by your Resolution and drawings hereunder.

All drafts drawn under this Credit must be marked “Drawn under Letter of Credit dated _____.” Any amendments to the terms of the Credit must be in writing over authorized signatures of this Bank.

This Credit is subject to the Uniform Customs and Practice for Documentary Credits (1983 Revision), International Chamber of Commerce, Publication 400.

We agree with you that all drafts drawn hereunder and in compliance with the terms of this Credit will be duly honored on delivery of your Statement as specified if presented at this office on or before _____.

Sincerely,
