

PROCEDURES AND REGULATIONS FOR DEVELOPING PUBLIC ROADS



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Introduction

This document contains detailed procedures and regulations for the preparation, review, approval, and denial of plans for public roads within land development to be constructed within Livingston County. The publication is intended to assist design engineers who prepare the plans, Road Commission staff who review the plans, Township officials, and members of the Board of County Road Commissioners (Board) who approve the plans and ultimately accept new roads into the Livingston County Road system. The Livingston County Road Commission (LCRC) will only approve, for acceptance, those proposed public roads which are included in proposed Platted subdivisions. Site Condominium and land division projects such as lot splits shall be developed using private roads.

This document, adopted by resolution #XXXXXX by the Board of County Road Commissioners at its meeting held on June 27, 2024 supersedes the previous Livingston County Road Commission publication, *Specifications for Plat Development*, dated May 24, 1991.

The content of this document does not supersede any part of MCL 560.101 (Public Act 288 of 1967) as amended, commonly known as the Land Division Act, and is intended for use only as an instrument to assist in the review of proposed public road developments to be constructed within Livingston County.

If any part of these rules and regulations shall be found by a court of competent jurisdiction to be invalid, void or illegal, no such finding shall in any way affect, impair or invalidate any other provision contained in these rules and regulations, and such other provisions shall remain in full force and effect. To this end, these rules and regulations are declared severable.

In the event that the standards contained herein change between the approval date of the Preliminary Plat and submission of Road and Drainage Plans for a particular development or phase of a development, the standards in effect when the Road and Drainage Plans are submitted shall be followed.

Section 1 – General Provisions

1.1 Order of submittal

The following steps, which will be explained in detail in subsequent sections, will be administered by the LCRC when considering a Platted subdivision. As previously stated, land division and Site Condominium projects must be developed using private roads.

LCRC may require up to a 30-day review period for plans and supporting information for the following submittals. All items required to support the request for Board approval must be submitted at least 14 days in advance of a scheduled Board meeting to assure the request can be adequately considered before the meeting.

A. Preliminary Plat Submittal

1. A letter of transmittal introducing the proposed development and requesting the review of the Preliminary Plat for conformance with the public road standards contained herein.
2. Preliminary Plat
3. Traffic Impact Study (If applicable, refer to LCRC's Procedures and Regulations for Permitted Activities.)
4. Initial Stormwater Management System Concept Approval from the Livingston County Drain Commissioner (LCDC)

B. Preliminary Plat Board Approval

C. Road and Drainage Plan Submittal

1. Cost estimate using Michigan Department of Transportation (MDOT) standard pay items
2. Road and Drainage Plans
3. Right-of-way Conveyance/Easement documentation
4. Title Commitment and other pertinent documentation
5. Certificate of Insurance
6. Proof of Preliminary approval from the LCDC

D. Road and Drainage Plan Board Approval

E. Pre-Construction Meeting and Permit Issuance

F. Construction

G. Final Board Approval

H. Board Acceptance of Roadways

1.2 Standards, Guidelines & Specifications for Design and Construction

- A. The non-exhaustive list of engineering authorities in this section will provide guidance to Professional Engineers, Developers, and LCRC staff in the design of the proposed public roads. These authorities do not supersede the need for sound engineering judgment in conformity with accepted engineering principles.
- B. LCRC hereby adopts by reference and incorporates in these Procedure and Regulations as if fully stated herein the most current editions of the following publications:
 - The American Association of State Highway and Transportation Officials (AASHTO): A policy on Geometric Design of Highways and Streets
 - AASHTO: Roadside Design Guide
 - AASHTO: A Guide for Planning, Design, and Operation of Pedestrian Facilities
 - AASHTO: A Guide for the Development of Bicycle Facilities
 - Americans with Disabilities Act (ADA) Standards for Accessible Design
 - Institute of Transportation Engineers (ITE): Traffic Calming, Parking, and Trip Generation
 - LCDC Standards
 - MDOT: Standard Plans & Special Details
 - MDOT: Standard Specifications for Construction
 - Michigan Manual on Uniform Traffic Control Devices (MMUTCD)

Section 2 – Submittal Requirements

2.1 General

- A. The contents of this publication shall not supersede any portion of the Subdivision Control Act of 1967 (P.A. 288). If any part of these procedures or requirements are found to be invalid, each invalidity shall not affect the remaining portion of the procedures or requirements which can be given effect without the invalid portion, and to this end the procedures or requirements are declared to be severable.
- B. Any street or roadway that is going to be dedicated to the use of the public and accepted into the Livingston County Road System shall conform to the Board's current Procedures and Regulations for Developing Public Roads.
- C. As set forth in MCL 560.113 and MCL 560.183, the Developer must submit a Preliminary Plat which meets the requirements of this document and all applicable supporting documents.
- D. If either a Preliminary Plat or the Road and Drainage Plan, as approved by the Board, are later revised due to requirements of other regulatory agencies, or the Developer otherwise makes revisions, all revisions shall be incorporated into the respective document(s) and re-submitted for approval or denial by the Board. The Developer is further reminded that under certain conditions, the Michigan Department of Transportation, the Michigan Department of Natural Resources, the Michigan Department of Environment, Great Lakes, and Energy, the Livingston County Drain Commissioner, and the Livingston County Health Department for example may also be required to review and approve Preliminary Plat and the Road and Drainage Plan.

- E. The Board reserves the right to add, delete, or modify any existing requirements contained herein to maintain the proposed streets in a manner reasonably safe and convenient for public travel.
- F. When a proposed lot is bordered by an interior subdivision street and an existing county road, access will only be allowed from the interior street.
- G. The Board reserves the right to deny a plan that is not in the best interest of the motoring public.

2.2 Preliminary Plat Requirements

2.2.1 General Requirements for Preliminary Plats

- A. An electronic PDF of the Preliminary Plat, drawn to a scale no smaller than 1 inch = 100 feet, prepared by the Design Engineer or Professional Surveyor, shall be submitted to the LCRC for review.
- B. The plan shall be signed and sealed by a Professional Engineer or Surveyor licensed in the State of Michigan.
- C. The plans shall be dated with the month/day/year on the original submission, and subsequently include all revision dates.
- D. The Preliminary Plat shall note the location of the proposed development with references to the part of the section and township in which the parcel is situated and shall dimension all section and quarter lines and corners adjacent to and within the parcel.
- E. The submittal shall include a location map showing the proposed development in relation to the Livingston County Road system.
- F. The Board will not accept the dedication of any alley.
- G. All roads within the development must be proposed as public.
- H. The LCRC may require the completion of a Traffic Impact Study (TIS) in accordance with the specifications contained in the LCRC's *Procedures and Regulations for Permitted Activities*.
- I. If a developer proposes to develop the Plat in phases, the Preliminary Plat submittal shall include the proposed general layout for the entire parcel. Phase boundary lines shall be designated to ensure a continuous route of travel for LCRC maintenance vehicles. Phase boundaries will enable each phase to qualify for road acceptance independently.
- J. Within 30 days of receipt of the Preliminary Plat, LCRC shall either reject the proposed plan for noncompliance or recommend it for Board approval. If rejected, the reasons for rejection and requirements for approval shall be provided to the developer or design engineer in writing.
- K. Preliminary Plat approval shall be void after 2 years from the date of approval unless otherwise extended by the Board.

- L. Approval by the Board does not alleviate the Developer from meeting standards and obtaining approvals and permits required by other agencies.

2.2.2 Layout Requirements

- A. At a minimum, a Preliminary Plat shall consist of a title sheet, existing conditions sheet, proposed grading and utility plan, and proposed site plan.
- B. The Preliminary Plat shall show locations and names of proposed roads together with arrows indicating the direction of surface water drainage within the subdivision to an established drainage course or drain. It is desirable to show proposed storm sewers, culverts, detention/retention basins, and other proposed drainage features. A drainage district shall be established in accordance with current LCDC rules and regulations prior to acceptance of the roads into the county road system.
- C. The Preliminary Plat shall identify the name of the development, the name of the Developer, and the Design Engineer and Professional Surveyor, with mailing addresses, email addresses, and telephone numbers for each on the cover sheet. Cover sheets shall also provide a site map, legal description of the parcel(s), tax ID number(s), sheet index, and the date of the plans submitted, including all revisions.
- D. Easements for public access for construction and maintenance of drains, public utilities, clear vision, etc., and their dimensions, in, over, and across private property within the development shall be shown on the Plan.
- E. The Preliminary Plat shall plainly show all governing conditions such as:
 - 1. Adjoining subdivisions with lot lines and lot numbers and easement for public access to drains, public utilities, adjoining roads, and outlots where applicable. Include existing and proposed zoning for the subject parcels along with descriptions of what type of development can be built within the given type of zoning.
 - 2. Names, address, and parcel identification numbers of all adjacent lands.
 - 3. State highways, identified by name and route number. Proposed work within a state right-of-way shall be noted as such.
 - 4. All existing conditions in and around the property being developed shall be labeled on the existing conditions sheet. Examples of these items are railroads, cemeteries, parks, wetlands, natural water courses, easements, utilities (buried and overhead), county and private drains, rivers including the 100-year flood plain contour, sewers, and culverts. Where a road is proposed over or under an existing utility easement, the Developer must provide written correspondence from the easement owner authorizing the construction of the road and its facilities within the easement.
 - 5. All other existing topographic features whose location or existence might influence the layout of the Plat, including existing and proposed private roads, and driveways within 500 feet of the proposed subdivision's boundaries.

- F. Direct access from individual lots or units within a development to existing public roads is prohibited for reasons of access management and public safety. All lots within the proposed development shall front on an internal road system. The LCRC may require existing, adjacent driveways to be relocated to intersect the proposed road of the development.
- G. The use of “eyebrows” or “elbows” or other irregularities in the proposed roadway used to create road frontage for additional lots will not be allowed.
- H. The Preliminary Plat shall show typical cross sections of roads to be constructed. The typical cross section shall comply with all requirements contained herein, including without limitation right-of-way width, pavement width, pavement materials and pavement thicknesses. All roads shall be provided with facilities for adequate surface drainage.
- I. The open ditch cross section will only be allowed in developments where the minimum parcel frontage is 300 feet.
- J. The minimum centerline radius for horizontal curves shall be 300 feet.
- K. The Preliminary Plat shall provide stationing for all roads. Stationing shall not duplicate itself for the same road and shall be stationed from west to east and south to north.
- L. The Preliminary Plat shall provide horizontal alignment data for all proposed roads.
- M. The Preliminary Plat shall show sight distances, in both directions, at all proposed intersections with existing County roads. Plan and profile sheets of the existing county road centerline may be required by the LCRC. Sight distance for all proposed driveways and road approaches must comply with the requirements of established LCRC standards. All easements required for driveway sight distance must be shown.
- N. The developer shall provide a right-turn lane and taper and/or left turn lane if the LCRC or a TIS determines that such lanes are required.
- O. The location of soil borings taken on the site of the proposed development shall be shown on the plan along with a log describing the soil conditions and water table found at each location. Borings shall be of a frequency to classify the entire site.

2.2.3 Right of Way (ROW) Requirements

- A. Developments with proposed public roads shall have access to an existing public road.
- B. All roads located along section and quarter section lines shall be centered on said lines. Exceptions to this requirement will require approval by the Board.
- C. The proposed road ROW shall be described as parallel to the proposed road centerline. The proposed ROW shall be a minimum of 66 feet wide on interior residential roadways, 80 feet wide on all industrial / commercial interior roadways and 100 feet wide on boulevard roads. Cul-de-sacs shall have a minimum ROW radius of 75 feet.

- D. The road layout shall connect to existing ROW in adjacent developments and shall provide future ROW for connections to adjacent land that is presently undeveloped. Future ROW widths shall be no less than 66-feet and shall be shown and labeled as “Right-of-Way for Future Road Extension.”
- E. All existing and proposed road ROW widths within and adjacent to the development shall be shown on the plan.
- F. Half-width road ROW shall be dedicated to the LCRC when the boundary of the proposed development coincides with the boundary of a recorded Plat on which a half width road right-of-way has previously been dedicated.
- G. There shall be a private easement for public utilities 12 feet wide located outside and parallel to the right-of-way.
- H. The ROW width required in this section shall be considered minimum and shall generally govern. However, if the LCRC determines that additional ROW is required due to special circumstances that include, but are not limited to, a clear vision area, area for future intersection expansion, or in accordance with the Livingston County segment of the Inter-County Highway Plan and Right-of-Way Requirements for Southeastern Michigan, such requirement will be noted on the review.

2.2.4 Road Naming Requirements

- A. The Preliminary Plat shall show the locations and names of proposed roads on the site plan.
- B. The existing road name shall be used for any proposed road that is in a direct line with an existing county road or is an extension of an existing road.
- C. The developer may choose names for all other roads in the development, subject to the approval of the LCRC. The proposed road names shall comply with the current Livingston County Addressing Policy published by the Livingston County Geographic Imaging System (GIS) department.
- D. A road name which is a duplicate or may be confused with a similarly named road within the county will not be approved.
- E. Public road names shall be limited to thirteen (13) characters, including spaces and an abbreviated suffix. Suffixes shall be in accordance with the current Livingston County Addressing Policy published by the Livingston County Geographic Imaging System (GIS) department.

2.2.5 Intersection Requirements

- A. The minimum separation between interior intersections shall be 250 feet, regardless of whether they are on the same or opposite side of the road.
- B. The maximum distance between intersections (block length) shall be 1300 feet within the development, regardless of whether they are on the same or opposite side of the road.

- C. The streets used for access to the interior of the development from an existing public road shall not be less than 660 feet apart.
- D. If the streets used for access to the interior of the development from an existing public road are located directly opposite an existing approach, the exiting left turn lane from each approach shall be aligned. The geometry of the existing and proposed approaches shall be the same (i.e., if an approach has a boulevard island, the opposite approach shall also have a boulevard island).
- E. Intersection legs shall meet at 90-degree angles and have a minimum straightaway length of 65 feet as measured from the centerline of the intersected roads.

2.2.6 Cul-de-sac and Boulevard Requirements

- A. Stub roads shall have paved cul-de-sacs at their terminus to facilitate plowing and routine maintenance of the road system. Cul-de-sacs shall be located within dedicated road right-of-way. Proposed developments adjacent to existing developments with road stubs shall connect to all road stubs at their boundaries. A temporary cul-de-sac is required at all future connection road stubs.
- B. The use of hammer head or T turnarounds are prohibited.
- C. Cul-de-sac roads shall be designed in accordance with the specifications contained herein. A cul-de-sac road shall not be more than 750 feet nor be less than 300 feet in length as measured along the road centerline from the point of intersection with the intersecting road to the center point of the circular turnaround.
- D. Cul-de-sacs located in the interior of a subdivision shall not have more than 4 parcels fronting on the right-of-way for the cul-de-sac.
- E. Cul-de-sacs abutting the subdivision limits shall not have more than 2 lots fronting the cul-de-sac and shall be located to have a chord along the property line equal in length to the ROW required for the subdivision.
- F. When a public road is extended beyond the cul-de-sac, the cul-de-sac shall be removed and replaced with a through road.
- G. If a temporary cul-de-sac is required on adjacent property, the Developer shall obtain an executed and recordable easement from the property owner prior to approval of the Road and Drainage Plans.
- H. Driveways shall not be permitted off a boulevard road section.
- I. A center island or center boulevard shall have edge drain with a positive drainage outlet.

- J. An agreement for the maintenance of a center island or a center boulevard is required. This agreement shall hold harmless the LCRC and be made between the Developer and the local agency. A copy of the executed agreement shall be submitted with the road and drainage plans. The LCRC shall not be responsible for maintenance of the center island or center boulevard, nor for damage to landscaping and other surface treatments for any reason, including maintenance and snow removal operation of the roadway.

2.2.7 Sidewalks and Non-motorized Path Requirements

- A. Sidewalk and non-motorized paths are allowed along roads of new developments. The location of the back of sidewalk or path should be 1-foot inside the ROW.
- B. Sidewalks and non-motorized paths should not be placed along temporary turnarounds.
- C. Sidewalk and non-motorized paths shall comply with the LCRC's *Procedures and Regulations for Permitted Activities*.

2.3 Road and Drainage Plan Requirements

2.3.1 General Requirements for Road and Drainage Plans

- A. After approval of the Preliminary Plat, an electronic PDF file of the Road and Drainage plans shall be submitted. The plans shall be prepared, signed, and sealed by a Professional Engineer licensed in the State of Michigan.
- B. Within 30 days after the date of receipt of the Road and Drainage plans, LCRC staff shall either reject the plans for noncompliance or recommend it for Board approval. If staff rejects the plans, review comments will be provided to the Developer and/or the Developer's Engineer.
- C. A drainage district shall be established in accordance with current LCDC rules and regulations.
- D. To assure the Road and Drainage plan will be considered at a scheduled Board meeting, all documents must be submitted at least 10 days prior to the meeting.
- E. Approval of the Road and Drainage plan by the LCRC does not guarantee acceptance of the roads into the public road system or relieve the Developer of any responsibilities or liabilities incurred in the development of the road or subdivision.
- F. The Board approval of the Road and Drainage plan shall become void after 2 years from the date of Board approval if no road construction has been started unless the date is otherwise extended by the Board.
- G. The developer will need to submit a traffic control plan for the existing and proposed road network during the construction period, if requested by the LCRC. The Developer or the Developer's contractor will be required to provide and maintain all traffic control devices as shown on the approved traffic control plan.

- H. All work within the existing LCRC ROW shall require permits in accordance with the LCRC's *Procedures and Regulations for Permitted Activities*.
- I. Any driveway accessing a proposed public road shall be required to obtain a driveway permit from the LCRC.
- J. The construction of any portion of a subdivision shall not begin until the construction plans have been approved by the LCRC, a pre-construction meeting has been completed and permits have been obtained from the LCRC to work within existing LCRC right-of-way.

2.3.2 Benchmarks and Monument Requirements

- A. A permanent benchmark shall be placed near the entrance to the proposed development and may be required at each additional phase as determined by the LCRC. The permanent benchmark will be established on United States Geological Survey (USGS, NAVD88) datum.
- B. The benchmark shall be placed flush with the ground, in a location that is readily accessible and within the ROW.
- C. The permanent benchmark shall be installed after construction is complete and shall be shown on the as-built plans.
- D. If the proposed development encompasses an original Government Survey Corner, the corner shall be preserved.
- E. All ROWs shall be monumented in accordance with the Land Division Act prior to acceptance of the roadways.
- F. At street intersections, the intersecting lot lines shall be filleted with a radius of twenty feet and monumented accordingly.

2.3.3 Soil Borings and Pavement Design

- A. A detailed soils investigation shall be conducted and submitted to the LCRC to determine the suitability of proposed roadbed material. The soils investigation report shall be signed and sealed by a Professional Engineer. Soil boring locations shall be shown on the Preliminary and Road and Drainage Plans. All borings must occur within the influence of the proposed road. Soil boring logs shall be provided within the plan set and shall include geotechnical information including the date the boring was taken, who performed the boring, the elevation of the water table (or "dry"), soil classifications using the Unified Soil Classification System or the AASHTO System, and subgrade modulus or California Bearing Ratio.
- B. A pavement design shall be submitted for review. The pavement design and pavement cross sections shall be based on the soil borings provided on the plans. The LCRC reserves the right to require a pavement design based on a professional geotechnical review.

2.3.4 Drainage Requirements

- A. Except for facilities located within the proposed road ROW, the drainage system shall be made a part of the county drain system through proper legal procedures of the Livingston County Drain Commissioner. After construction, said system shall meet all requirements regarding ROW, easements, and use of land, prior to acceptance into the County Road System.
- B. All roadways shall be provided with facilities for adequate drainage. The Board strongly recommends the use of underground drainage facilities whenever possible and reserves the right to require the use of underground drainage systems or, parts of systems, within any proposed subdivision.
- C. The storm water drainage system shall meet the current requirements of the LCDC. The LCRC reserves the right to require written approval from the LCDC prior to the acceptance of the Construction Plans.

2.3.5 Cost Estimate

The design engineer shall submit a detailed estimate of roadway and drainage costs, based on current market prices at the time of final submittal of the Road and Drainage plan. This estimate shall be prepared using standard pay items as set forth in the current MDOT Standard Specifications for Construction. This estimate shall be used to determine the amounts of the administrative and sign fees.

2.3.6 Right-of-Way Dedication

- A. For Platted developments, all right-of-way and easements shall be submitted and approved by the Board at the time of final Plat approval. For other forms of development, right-of-way shall be conveyed by a perimeter description to the LCRC at the time of acceptance of the roads as public. Conveyance shall be via warranty deeds and/or easements, with all necessary attachments. If an easement not described on the final Plat is required for development, all easements with applicable attachments shall be conveyed to the LCRC in a format that is recordable at the Livingston County Register of Deeds Office and which meets the drafting requirements of Act 132, P.A. of 1970, prior to acceptance of the roads as public. All documents shall be signed and sealed by a Professional Surveyor.
- B. A centerline description of the ROW must be submitted and approved at the time of acceptance of the roads as public.
- C. The Board may request that additional ROW be conveyed to the LCRC in accordance with the Livingston County Segment of the Inter-County Highway Plan and Right-of-Way requirements for Southeastern Michigan.
- D. All proposed public roads shall have a minimum ROW of 66 feet for residential roadways and 80 feet for corporate parks, office developments, or industrial parks. ROW shall be of sufficient width to allow proper drainage, installation of sidewalks and non-motorized paths, and installation of public sanitary and water systems.

- E. The minimum widths of ROW may be increased by the Board when considered necessary due to existing conditions or future adjacent developments including, but not limited to, commercial areas, multi-lane roadways, divided roadways, non-motorized facilities, utilities, cut or fill sections of roadway, grading, drainage, clear vision, or for other reasons of health, welfare, and safety.
- F. The ROW on all curvilinear roads shall be the same width as the right-of-way on the tangent portions. Where curves limit sight distance, the right-of-way may need to be expanded to encompass the sight lines or clear vision easements may need to be recorded to encompass the sight lines.
- G. All road construction should be centered within the road right-of-way. Section line and quarter section line roads should be centered on the respective lines.
- H. When a grading permit, tree removal agreement or tree trimming agreement is required for work on neighboring private property, the Developer shall be responsible for obtaining the appropriate approvals and providing copies to the LCRC prior to Road and Drainage Plan acceptance.

2.3.7 Insurance Requirements

The developer, prior to performing any work within any existing or proposed county road right-of-way and continuing through completion of the project, shall furnish to the LCRC, and maintain, proof of liability insurance pursuant to current policy established by the Board. An example of the required insurance certificate and specific requirements can be found in the Appendix.

2.3.8 Sign Fee

The developer shall pay for the fabrication and installation of permanent traffic control devices by the LCRC pursuant to the acceptance of the Constructions Plans. This fee shall be submitted by the Developer prior to acceptance of the roads. The fee amount will be determined by the LCRC and is non-refundable.

2.3.9 Administrative Fee

The developer shall pay the Livingston County Road Commission an amount equal to three percent of the approved estimated construction costs to defray the Road Commission's expenses of administration for the subdivision. While there will be inspections made by this department, the developer or his engineer shall be responsible for inspection and testing in accordance with these procedures. Inspections made by this department shall be for the benefit of the Board and will not be used for quality control. Administrative fees shall be paid by certified check.

2.3.10 Financial Requirements

If construction is not completed at the time the Final Plat is submitted for approval, one of the following types of surety must be satisfied before the Final Plat can be approved by the Board.

- A. Cash Deposit - Using a certified check on an open and solvent bank made payable to the Livingston County Road Commission.
- B. Escrow Agreement or Letter of Credit - An escrow agreement approved in form and content by the General Counsel of the Livingston County Road Commission issued for a duration of not less than two years.

Approval of any single phase of construction does not guarantee acceptance of the roads, or approval of the Final Plat by the Board. Further, it will not relieve the developer of responsibilities or liabilities incurred by the development of the project. If the developer is granted Final Plat approval by the Board prior to construction, the developer shall maintain all roads in the Plat until the construction of said roads has been approved by the LCRC staff and accepted by the Board. Maintenance of the roads shall include but not be limited to snow, ice, soil erosion and sedimentation control. The developer shall indemnify and hold the Livingston County Road Commission harmless from any claims which may be made against the Road Commission for damages arising from the use of roads which have not been accepted into the County Road System. During this period the developer shall maintain liability insurance in which the Livingston County Road Commission is named as an additional insured, and in an amount established by the Road Commission, which will insure the Livingston County Road Commission against claims made because of the use of the road(s) prior to final acceptance.

2.3.11 Final Plat

Following acceptance of the Road and Drainage Plans, the Developer may submit the final Plat for approval and signing by the Board. In addition to the original mylar copy, the Developer shall submit an electronic PDF of the final Plat. The LCRC will require at least a 30-day period for review of the Plat prior to approval.

2.3.12 Waivers and Variances

- A. Waivers or variances from LCRC Procedures and Regulations may be allowed by the Board only in cases involving practical difficulties or unnecessary hardship.
- B. Waivers or variances from Road Commission procedures and regulations may be requested in writing by the Developer of a proposed public road development. Written requests for waivers or variances shall include sufficient technical details to support the following affirmative findings:
 - 1. That the alleged hardship or difficulties, or both, are exceptional or peculiar to a given site.
 - 2. That the Board's failure to grant the waiver or variance will result in substantially more than inconvenience or inability to attain a higher financial return, or both.

3. That allowing the variance will result in substantial justice being done, considering the public benefits and the individual hardships that will be suffered by a failure of the Board to grant the waiver or variance.
 4. That the conditions and circumstances, which are the basis of the waiver or variance request, shall not be self-imposed.
- C. Requests for waivers or variances shall be submitted for review by LCRC staff prior to consideration of the Preliminary Plat by the Board. Requests received after Board approval of a Preliminary Plat may require reconsideration of approved plans by the Board.

Section 3 – Road and Drainage Plan Design Standards

3.1 Plan Preparation

3.1.1 General Requirements for Preliminary Plans

- A. Road design shall conform to current AASHTO guidelines, applicable MDOT design methodology, and LCRC requirements described herein.
- B. Road and Drainage Plans shall contain all information necessary for constructing the project.
- C. The plans shall be submitted electronically.
- D. English units of measure shall be used exclusively.
- E. The design speed on all interior subdivision roads shall be 30 MPH. The Board reserves the right to require a greater design speed in the interest of safety.

3.1.2 Plan Sheet Requirements

- A. At a minimum, the Road and Drainage Plans shall include the following plan sheets and related information:
 1. Title sheet containing the following information:
 - a. Name of proposed development
 - b. Index of sheets
 - c. Location sketch of the proposed development within Livingston County
 - d. Name of the Developer's Engineer and company name, address, phone number and email address
 - e. Seal and signature of the Professional Engineer licensed in the State of Michigan
 2. Topographic and Boundary Survey Sheet signed by licensed Professional Surveyor
 3. Approved Preliminary Plat by the LCRC, if applicable.
 4. Overall Layout Plan with the proposed road center line alignments tied to 2 section corners with bearings and distances.

5. Overall Utility Plan
 6. Stormwater Management Plan
 7. Grading and Soil Erosion and Sedimentation Control Plan
 8. Municipal Utility Plan/Profile Sheet
 9. Road and Drainage Plan/Profile Sheet
 10. Intersection and Cul-de-Sac Detail Plan
 11. Typical Cross Section and Miscellaneous Detail Plan
 12. Landscape Plan
 13. Construction Traffic Control Plan
 14. Permanent Traffic Control Plan
 15. Standard Plans, Special Details and Notes Sheet
- B. All road and drainage construction shall be illustrated using plan/profile drawings.
- C. Plan/profile sheets should be drawn to a scale no less than 1 inch to 50 feet horizontal and 1 inch to 5 feet vertical.
- D. Plan/profile sheets shall show the location, size, material type and elevation of all existing and proposed drainage systems and underground utilities within existing and proposed road ROW.
- E. Plan view of each road shall show the centerline, stations, curve data, edge of pavement, back of curb, sidewalk, sidewalk ramps, and sidewalk landings.
- F. The profile of each proposed road shall be shown directly below the plan view and shall contain the following:
1. Profile of existing centerline.
 2. Proposed centerline.
 3. Percent of grade and vertical curve data.
 4. Existing and proposed grades at the ROW.
 5. Left and right proposed top of curb or ditch elevation.
 6. Centerline and any proposed/existing ditch of existing county road(s) adjacent to the proposed development with proper outlet thereto.
 7. Numerical elevations of the existing ground and proposed roads at each half station (50 feet).
- G. Plan/profile sheets shall show sizes, gauge, length, material, end treatments, and locations of all crossroad culverts.
- H. Plan/profile sheets shall show location, size, and cover type of proposed catch basins, inlets, and cleanout points for underground drainage systems.
- I. Plan/profile sheets shall show plan and profile of all proposed drainage system elements outside of the road ROW that are to be connected to existing or proposed road drainage facilities.

3.2 Vertical Alignment

- A. The centerline grade of a curb and gutter road shall not be greater than 6 percent or less than 0.5 percent.
- B. The centerline grade in an open ditch cross section shall not be less than 1 percent or more than 5 percent where ditch grades are centerline dependent.
- C. All intersections shall meet at right angles and shall be designed such that the first 65 feet in any direction shall be straight line sections.
- D. A vertical curve shall be required when the algebraic difference in road grade is greater than or equal to 1.0.
- E. Vertical curves shall have a minimum length of 100 feet and be designed with K values that meet or exceed the minimums listed in the Table below.
- F. Stopping sight distance is the principal controlling factor for the design of both crest and sag vertical curves. Stopping sight distance shall meet or exceed the stopping sight distance values illustrated in Table 1 below. Stopping sight distance shall be measured from a height of 3.5 feet above the proposed grade sighting an object with a height of 2 feet above the proposed grade.

TABLE 1 – Stopping Sight Distance

Design Speed (MPH)	Stopping Sight Distance (Feet)	Design K Value for Crest Vertical Curves	Design K Value for Sag Vertical Curves
30	200	19	37
35	250	29	49
40	305	44	64
45	360	61	79
50	425	84	96
55	495	114	115

3.3 Horizontal Alignment

- A. The centerline of construction shall coincide with the centerline of the right-of-way. Section line and quarter section line roads shall be centered on the respective survey lines.
- B. The minimum centerline radius for horizontal curves shall be 300 feet and all horizontal curves shall be designed so that the sight distance lines are contained within the road ROW. A horizontal curve table shall be provided on the sheet where the point of intersection appears, specifying point of curvature, point of tangency, point of intersection, external angle, degree of curve, tangent length, chord length, and length of the curve.
- C. Back-to-back reverse curves for reasons other than topographic limitations should be avoided. However, if they are to be used, the curves shall have the same radius and length of curve.

3.4 Road Cross Section

- A. Typical cross sections for Residential and Corporate Park/Industrial Park/Commercial roads are provided in the Appendix.
- B. All proposed concrete curb and gutter shall be a standard MDOT concrete curb and gutter, as approved by the LCRC.
- C. All proposed road approaches at existing curb and gutter public roads shall utilize MDOT concrete curb and gutter through the internal spring point.
- D. Non-standard pavement section designs may be considered provided their structural strengths are equivalent or greater than those contained in the Appendix. The Design Engineer may submit a pavement design for LCRC consideration using the AASHTO Pavement Design methodology.
- E. The transverse slope (crown) on all pavements shall be 2%. The cross slope of all shoulders shall be 4%.
- F. Roadside slopes shall be 1V:4H or flatter. Slopes behind curbs shall be 4% (½ inch per foot) through cut and fill sections from the back of curb to the hinge point. The hinge point shall be located five feet from the back of curb. Slopes from the hinge point to existing ground shall be 1V:4H or flatter.
- G. Berms will not be allowed in the ROW.
- H. Designs that necessitate guardrail installation are discouraged. Any design that utilizes guardrail will require a written justification. Further, a full design meeting current MDOT standards will be required.

3.5 Intersections

- A. All intersecting roads shall meet at right angles.
- B. The minimum separation between interior intersections shall be 250 feet, measured from the centerline to the centerline. This will hold true regardless of their orientation to one another.
- C. The maximum distance between intersections (block length) shall be 1,300 feet within the development.
- D. All dead-end roads shall terminate with a paved circular cul-de-sac. See the Appendix for cul-de-sac details.
- E. The intersection radii shall be 35 feet to the edge of pavement for an open ditch section and to the back of curb in a curb and gutter section.
- F. Each approach at an intersection shall provide a minimum 65 foot tangent along the centerline, measured from the center of the intersection.
- G. Boulevards for an entrance may only be permitted where a 'T' intersection is created, and where development directly across from the proposed entrance is unlikely or where an existing approach on the opposite side of the road has a boulevard approach. Where boulevards are permissible, they shall be curbed. Breaks between boulevards are not permissible. Lot access within the boulevard section is prohibited.
- H. Proposed roads intersecting with existing roads shall be designed and constructed in accordance with the current LCRC's *Procedures and Regulations for Permitted Activities*.

3.6 Sight Distance

Both stopping sight distance and intersection sight distance must be evaluated for all road design. In general, the Design Engineer can use graphical methods to check sight distance on horizontal curves and at intersections. Both the horizontal and vertical alignments must be considered when designing for sight distance. Required intersection sight distance values are listed in the LCRC's *Procedures and Regulations for Permitted Activities*. Required stopping sight distances are listed in Table 1 in Section 3.2.

3.7 Turning Lanes, Passing Lane, Intersection, and Cul-de-Sac Requirements

The Road and Drainage plans shall include details in accordance with the LCRC's *Procedures and Regulations for Permitted Activities* for construction of all turning lanes, passing lanes, intersections and cul-de-sacs.

3.8 Guard Rails

The Road and Drainage plans shall include details in accordance with the LCRC's *Procedures and Regulations for Permitted Activities* for construction of all required guard rails.

3.9 Drainage

3.9.1 General

- A. The stormwater management system shall be designed in accordance with the current LCDC Standards and constructed in accordance with the current MDOT Standard Specifications for Construction.
- B. In accordance with the Michigan Drain Code of 1956, as revised, MCL 280.1 et seq., the drainage of a proposed development shall be public and contained within an existing or newly established drainage district per LCDC Standards.
- C. The stormwater design shall be included in the plan set. At minimum, the plans shall include a drainage area sketch, all calculations, required basin volume and provided basin volume, percent of sewer grades, sizes, length, depths, elevations, inverts, station and offset, material types of pipes and proposed drainage structures and any other drainage related information.
- D. The Design Engineer shall provide an acceptable system of drainage to enable property owners to drain sump pump outlets, roof drains, and similar private drainage features. Connection of these private drainage features to LCRC right of way is prohibited.

3.9.2 Storm Sewer Drainage Structures

- A. Proposed drainage structures and covers installed within the road ROW shall conform to current MDOT Standard Plans and Special Details.
- B. Spacing of structures shall conform to the following:
 - 1. Catch basins and culverts shall be placed so that all intersections and low points are properly drained. Additional or intermediate catch basins, inlets, or culverts may be required to facilitate proper drainage patterns.
 - 2. Catch basins and culverts should be designed so that they align with side lot lines and avoid conflict with proposed driveway opening locations.
 - 3. Drainage structures shall be located at all changes in sewer alignment, size, or grade.
 - 4. Drainage structure spacing and inlet capacity shall conform to current LCDC and MDOT specifications and shall prevent standing water on the road.
- C. Construction of storm sewer facilities within the county road ROW shall conform to MDOT specifications.
- D. All storm sewer installation shall be inspected and certified by the Design Engineer and shall be true to line and grade, and properly bedded and backfilled.
- E. Standard 4-foot diameter catch basins in accordance with MDOT specifications shall be located so as not to exceed a maximum of 350 feet of surface drainage and located, where possible, on lot lines to avoid interference with driveways.

- F. Catch basin separation shall not be longer than 200 feet for road grades that exceed 4 percent.
- G. Standard MDOT 4-foot diameter catch basins with 2-foot sumps shall be constructed.

3.9.3 Ditch and Culvert Requirements

- A. The high-water elevation in all roadside ditches shall be at least 1 foot below the shoulder point (freeboard) and the maximum allowable water depth shall not exceed 2 feet.
- B. The maximum allowable storm water runoff conveyed overland in drainage ditches shall not be more than 6 acres. Where the tributary area is greater than 6 acres, underground storm sewer and curb and gutter will be required.
- C. Ditches shall be designed and constructed on each side of the roadway in cut and fill sections. Ditches shall be a minimum of 2 feet in depth below the shoulder point, and deeper where necessary to place the minimum cover over culverts or to provide independent ditches with adequate flow characteristics.
- D. All ditches shall have an established growth of vegetation provided by topsoiling, seeding, and mulching in accordance with MDOT specifications. The minimum roadside ditch grade shall be 1 percent. Ditch grades with slopes in excess of 3 percent shall be stabilized with applicable turf reinforcement mats.
- E. Ditches shall be stabilized with vegetation and free of rills and sediment prior to acceptance by the Board.
- F. Discharge of storm water to the existing road ROW shall not represent an increase in the rate or volume of runoff.

3.9.4 Underdrain Requirements

Continuous subgrade underdrains shall be provided on all roads. Subgrade underdrains shall be at least 6 inches in diameter and conform to the current MDOT Standard Plan. Positive outlets for underdrains, such as catch basins, shall be spaced no more than 300 feet apart. The developer shall provide video of underdrain post construction.

3.9.5 National Pollutant Discharge Elimination System (NPDES)

The LCRC is required to fulfill its responsibilities under the National Pollutant Discharge Elimination System (NPDES) for Municipal Separated Storm Sewer Systems (MS4). To facilitate meeting these requirements, the following items are required prior to the acceptance of the roads into the county road system:

- A. An electronic PDF of the as-built plans. The plans must clearly identify the location of all stormwater storage facilities, including detention/retention ponds and the location of the detention pond discharge point. The plans shall also identify the location of any innovative stormwater management techniques, such as retention/detention ponds, bioretention trenches, infiltration fields, rain gardens, and porous pavements.

- B. A table, in electronic format, which includes the identification, state plane coordinates, and the public road right-of-way name, detention pond discharge points, and any other discharge points to open or enclosed drains.

3.10 Soil Erosion and Sedimentation Control (SESC)

- A. Soil erosion and sedimentation controls shall be designed in accordance with current MDOT Standard Plans, Special Details, and Standard Specifications for Construction to minimize erosion and to prevent sedimentation from adversely affecting water resources and adjacent properties.
- B. The SESC plan, as required by the local enforcing agency, shall be included in the road and drainage plan set and should include the following minimum requirements per Michigan Department of Environment, Great Lakes, and Energy (EGLE) Rule 1703:
 - 1. Map with scale of 1" = 200' or less, or indication of exact distances between noted features on the site plan
 - 2. Legal description of property (town, range, section, quarter section)
 - 3. Proximity of any proposed earth change to lakes and/or streams
 - 4. Slope description or contour intervals
 - 5. Soils survey or written description of the soil types of the proposed exposed land area
 - 6. Description and location of the physical limits of each proposed earth change
 - 7. Description and location of all existing and proposed on-site drainage and dewatering facilities
 - 8. Timing and sequence of each proposed earth change
 - 9. Location and description for installing and removing all temporary SESC measures
 - 10. Description and location of all proposed permanent SESC measures
 - 11. Maintenance program for all permanent SESC measures and designation of person responsible for maintenance

3.11 Utilities

- A. All utilities shall be constructed in accordance with the LCRC's *Procedures and Regulations for Permitted Activities*.
- B. All franchise utilities shall be located within an easement adjacent to the ROW.
- C. All lot or house services shall be extended to the ROW line prior to placement of the subgrade.
- D. All public underground utilities shall be installed after the rough grading has been completed so that proper cover over the utilities can be determined and verified.

3.12 Traffic Control Requirements

- A. Work zone traffic control plans shall be developed and included in the road and drainage plans.
- B. The traffic control plan shall be consistent with the current edition of the MMUTCD.

- C. The traffic control devices shall be installed prior to the beginning of any construction and shall be maintained and remain in place until all work associated with the proposed development has been completed.
- D. The LCRC may require revisions to the traffic control and/or additional traffic control devices during construction.

3.13 Sidewalks

- A. Sidewalks shall conform to applicable MDOT standard plans and specifications and shall adhere to all ADA requirements.
- B. Multi-use pathways may require special considerations such as additional ROW or a separate easement beyond the road ROW, depending on the required road cross section and other factors.

3.14 Streetlights

- A. Streetlights placed within the ROW shall be owned and maintained by a public utility recognized by the LCRC in accordance with the LCRC's *Procedures and Regulations for Permitted Activities*.
- B. Streetlight supports are not permitted in locations that would obstruct sight distances.
- C. Target positions to traffic flow should be avoided if possible. The number of streetlight supports should be kept to a minimum.
- D. All streetlight supports shall be equipped with breakaway devices, typically classified as frangible bases, slip bases, or frangible couplings.

3.15 Landscaping

- A. Trees will not be allowed within the road ROW. Plantings within the ROW may be allowed if the mature height, when left unattended, does not exceed 18 inches pending approval from the LCRC.
- B. All proposed landscaping must be shown on a landscaping plan and be part of the road and drainage plan set.
- C. Landscaping berms will not be allowed within the road ROW.

3.16 Sign Plan

Plans shall illustrate all required signs and locations pursuant to the current MMUTCD and shall include a quantity table identifying the MMUTCD codes and sign dimensions.

3.17 Mailboxes

- A. Mailboxes shall not obstruct sight distance.
- B. Mailboxes shall be light steel, aluminum or plastic construction that meets US Postal Service requirements.
- C. Mailbox post shall not be set in concrete or filled with any material.
- D. Mailbox post is a single wood or metal post.
- E. Mailbox is adequately attached to the post to prevent separation if impacted by a motor vehicle.

3.18 Encroachments

Encroachments are strictly prohibited in the road ROW. Examples of encroachments include items such as plantings with a mature height greater than 18 inches, boulders, berms, headwalls, private signs, flagpoles, irrigation systems, sump pump and footing drains, fences, buildings, landscape lighting, or privately owned utilities.

3.19 Driveways

A driveway permit is required for all units, lots or parcels accessing a proposed or existing public road. Driveways shall be constructed in accordance with the LCRC's *Procedures and Regulations for Permitted Activities*.

Section 4 –Construction Requirements

4.1 General Requirements

- A. Public road improvements and proposed public roads shall be constructed in accordance with the Road and Drainage Plans, current MDOT Standard Specifications for Construction, Standard Plans, Special Details, and specification described herein.
- B. The Developer's Engineer shall be responsible to the LCRC for ongoing liaison with construction contractors and shall be available on a regular basis for consultation with the LCRC staff.
- C. The Developer's Engineer or Contractor shall coordinate utility installation and relocations so that completed road and drainage improvements are not damaged.
- D. The Developer's Engineer or Contractor shall be responsible for the maintenance of all roads and drainage systems through the construction period and prior to acceptance of the roads by the LCRC. The roadway surface shall be maintained in a safe and clean condition.

- E. Any field changes to the approved plans and specifications deemed necessary due to unforeseen circumstances encountered during construction shall be submitted by the Developer's Engineer to the LCRC for approval before the work begins. If work is performed without approval, the LCRC may require the work to be redone in accordance with LCRC standards. Costs associated with such work shall be the responsibility of the Developer. All field changes shall be noted on the As-built plans.

4.2 ROW Permit

- A. A permit application for any proposed work within existing county road ROW shall be submitted to the LCRC for approval and issuance of a permit to work within the county road ROW.
- B. No work will be allowed within the existing ROW until the Contractor of record has provided proof of insurance in accordance with the LCRC's insurance requirements and a permit has been issued.

4.3 Pre-Construction Meeting

- A. At least 2 weeks prior to any construction activity, and after approval of the Road and Drainage plans, the Developer shall schedule and hold a preconstruction meeting.
- B. The meeting shall be held between the Developer, the Developer's engineer and surveyor, the Contractor, the independent material sampling and testing agent, utility companies, and the LCRC staff.
- C. At the meeting, the Contractor shall submit a written progress schedule outlining the procedure of construction and submit a safety program.
- D. The meeting is intended to delineate the proposed construction, discuss testing requirements and progress inspections, identify haul routes, and define the sequence of construction and construction schedule.

4.4 Construction Staking

Construction staking, utility placement staking, and layout will be the responsibility of the Developer.

4.5 Construction Inspection

- A. The Developer shall retain an independent Construction Inspector for construction inspection and material testing. The Developer shall be responsible for any fees that occur from the construction inspection and testing.
- B. Periodic inspections will be conducted by the LCRC during construction. The Developer's Engineer is responsible for setting and checking grade and alignment, documenting all construction, and making all observations necessary during all phases of construction to verify the proper materials are used, and the work conforms to the approved plans and specifications.

- C. Periodic construction inspections by the LCRC do not alleviate the Developer, Developer's Engineer, or the Contractor of the responsibility for all stages of construction of the development.

4.6 Inspection and Testing

- A. Periodic Inspections may be performed by the LCRC prior to, during and after any road construction. The Developer shall allow the LCRC access onto the site as a condition of the construction plan approval.
- B. The Developer shall arrange for independent testing and inspection companies to perform daily inspections and materials sampling and testing per the MDOT Sampling Frequency Guidelines. All testing shall conform to MDOT Specifications, and all results shall be reported to the Construction Inspector and the LCRC. Copies of all independent testing results shall be forwarded to the LCRC as soon as they are available so that an evaluation can be made as to whether subsequent construction should continue or not. The independent testing agent shall inform the contractor when tests indicate that the required materials fail to meet specifications, or the required density is not achieved. Upon notice, the contractor shall alter its construction methods to meet or exceed the requirements contained herein.
- C. Inspection by the LCRC shall not relieve the Developer's Engineer of any of their 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. The Developer's Engineer shall inspect grades and alignment, verify all materials incorporated into road and utility construction, arrange and supervise independent materials testing services, evaluate the test results and inspect all roadway construction so that they can certify that the roadways are constructed per the approved plans and the specifications herein.

4.7 Soil Erosion and Sedimentation Control

A soil erosion and sedimentation control permit must be obtained from the LCDC. Soil erosion and sedimentation controls shall be installed and maintained in accordance with current LCDC Specifications.

4.8 Clearing and Grubbing

All trees, stumps, brush, and roots shall be entirely removed from within the grading limits of all proposed roads and shall be disposed of outside the right-of-way.

4.9 Storm Sewer and Culverts

Video inspections are required for all storm sewers located within the ROW. One copy of the video inspection and a written log of all damage and installation defects identified in the video shall be submitted to the LCRC prior to acceptance of the roads into the county system.

4.10 Subgrade

The finished subgrade shall be smooth and free of all topsoil, stones, stumps, organic material, muck, peat, and material prone to frost heave. The finished subgrade shall be prepared in accordance with the current MDOT specifications.

4.11 Subbase

Sand subbase shall consist of MDOT Class II granular material compacted to 95% of its maximum unit weight in accordance with the current MDOT specifications. An independent testing agent shall perform material and compaction testing and the results reported to the LCRC. All testing shall conform to MDOT specifications.

4.12 Aggregate Base

Aggregate base material shall be 21AA and conform to the current MDOT specifications and as illustrated on the approved plans. Aggregate base shall be compacted to 98% of its maximum unit weight in accordance with MDOT specifications. An independent testing agent shall perform material and compaction testing and the results reported to the LCRC. All testing shall conform to MDOT specifications.

4.13 Curb and Gutter

- A. Materials and methods for construction of concrete curb and gutter shall conform to the current MDOT specifications and shall include reinforcing bars.
- B. An independent testing agent shall perform material testing and the results reported to the LCRC. Verification of proper base installation and compaction, air tests, slump tests and strength tests of concrete shall conform to the MDOT sampling and testing guidelines.
- C. Expansion joint material shall be placed at all spring points, at 400-foot maximum intervals as measured along the back of curb and gutter, in adjacent contraction joints each side of a catch basin, and as further directed by the LCRC.
- D. Horizontal sawing of curb cuts on straight-back curbs is allowed provided the finished curb cut conforms to the geometric requirements of the current MDOT standard plan.

4.14 Hot Mix Asphalt Pavement

- A. Hot Mix Asphalt (HMA) production and placement shall conform to the current MDOT specifications and the approved road and drainage plans.
- B. Paving shall occur only between May 5 and November 15 of any year when it is above 32 degrees Fahrenheit, unless a written request is submitted and approved by the LCRC to pave before or after these dates.

- C. An independent testing agent shall perform material and compaction testing and the results reported to the LCRC. All testing shall conform to MDOT specifications.
- D. The independent material sampling and testing company shall conduct at least one extraction test per 1,000 tons of HMA per course and in any case not less than one test per day per course.
- E. Butt joints shall be provided at connections to existing paved roads.

4.15 Concrete Pavement

- A. Concrete pavements shall conform to the current MDOT specifications and the approved plans.
- B. It is the Developer's responsibility to ensure cold weather, hot weather, and rain protection measures are in place when necessary to protect the concrete from environmental damage during curing.
- C. The independent testing agent shall perform material and compaction testing and the results reported to the LCRC. All testing shall conform to MDOT specifications.
- D. Integral curb and gutter may be allowed if approved by the LCRC.

4.16 Turf Establishment

- A. All areas lacking acceptable vegetative growth within the ROW shall be top soiled, seeded, and mulched. The methods and time of seeding and mulching shall be in accordance with the current MDOT specifications.
- B. All disturbed areas within the ROW shall be covered with a minimum of 3 inches of topsoil.
- C. Vegetative cover shall be established on all ditches and drainage courses within the ROW before the roads are accepted into the county road system.
- D. Sod is required in all ditches with a slope greater than 4 percent.

4.17 Construction within the Existing Road ROW

Construction activities within an existing county road ROW requires a LCRC permit in accordance with the LCRC's *Procedures and Regulations for Permitted Activities*. Such work typically involves the construction of turn lanes, driveway approaches, shoulder additions, underground utilities, drainage facilities, and intersection construction. Typical details for road approaches can be found in the Appendix of the LCRC's *Procedures and Regulations for Permitted Activities*.

Section 5 –Acceptance of Roads

5.1 Final Inspection of Completed Construction

- A. Once proper progress inspections have been performed and a written request for final inspection is received, the LCRC will inspect the completed construction.
- B. If the final inspection reveals that the work is not completed to the satisfaction of the LCRC, the LCRC will provide a punch list of items to be corrected to the Developer and Developer’s Engineer for further action. The LCRC will conduct a re-inspection of the work after receipt of written notification that the deficiencies have been corrected.
- C. The final inspection must take place between April 15 and November 15.
- D. After completion of the final inspection by the LCRC, one paper copy and an electronic PDF of as-built plans shall be furnished showing all changes, additions, and deletions to the road and drainage plans.

5.2 Acceptance of Completed Roads

- A. Driveway permits will not be issued on proposed public roads within a proposed development or phase of development until all lifts of Hot Mix Asphalt have been placed. The LCRC will review the condition of the pavement and may require repairs to the road structure prior to final acceptance of the road(s).
- B. The LCRC will not accept the roads within the development until the homes on 75% of the lots have received their certificate of occupancy.
- C. A letter from the LCDC stating that the drainage system installed as part of the development has been approved and will be accepted as part of the County Drainage System must be submitted.
- D. After completion of all construction within the proposed ROW and before the acceptance of the roads, the Developer shall have the storm sewer system cleaned.
- E. If a temporary cul-de-sac is required in any phase of the development, the cul-de-sac must be completed prior to acceptance of the roads.
- F. Permanent benchmarks are required and must be in place before acceptance.
- G. If any mailboxes have been placed in the ROW, the Developer shall ensure their compliance with all applicable standards before acceptance of the roads.
- H. If any landscaping items other than conventional grading and seeding have been placed in the ROW, the Developer shall ensure their compliance with all applicable standards before acceptance of roads.

- I. The Developer or Developer's Engineer shall submit a letter stating their understanding of the ongoing responsibilities to meet soil erosion and sedimentation control requirements. This shall include all lots, impacted ROW, and storm sewer discharge areas within and abutting the development.
- J. Electronic copies of all signed IDR's, test reports, and certifications of materials shall be submitted to the LCRC.
- K. All requests for final approval and acceptance of roads must be accompanied by a written statement bearing the signature of a Professional Engineer licensed in the State of Michigan certifying that the construction of the development has been completed in accordance with the approved construction plans and specifications.
- L. After the LCRC has completed the final visual inspection and approved the construction, and all other required submittals are approved, the LCRC will recommend to the Board acceptance of the roads into the County Road system. Approval of any phase of construction does not guarantee acceptance by the Board of any other phase or relieve the Developer of responsibilities and liabilities inherent in developing a parcel of land.
- M. The LCRC shall install permanent traffic control devices after acceptance of the roads.

Section 6 –Converting Private Roads into Public Road

- A. The LCRC occasionally receives inquiries regarding turning private roads into public roads. Only Platted private roads will be considered for conversion to public roads. The LCRC shall receive a petition signed by all the property owners and those with real interest in the easement agreeing to convert the private road into a public road. The property owners will be required to follow the same procedures and regulations imposed upon developers when developing public roads.
- B. Property owners who request that their private roads become public will be required to retain a qualified Professional Engineer to prepare plans and drawings and will be required to hire their own contractor to perform work required to bring the condition of the road or roads to current LCRC standards.
- C. Property owners who request that their private roads become public will be required to amend the Plat.
- D. Property owners will also be required to provide the LCRC with a warranty deed and certificate of survey in order for the full road ROW to become public, in accordance with current LCRC procedures and regulations.
- E. The Board may reject any proposal if it determines that the private road(s) offers little public value, or that costs exceed the benefits of converting the road to public use.

Section 7 – Procedure for Paving or Modifying the Profile of an Existing Public Road

The following steps are offered as a guideline to interested parties who, on their own voluntary action, are interested in securing a permit from the Livingston County Road Commission (LCRC) to pave or alter an existing county road:

- A. Preliminary Plat Approval: Preliminary Plats shall be prepared by a licensed Professional Engineer with extensive experience in public road design. The Engineer shall be pre-approved by the LCRC. Sample plans will be provided to the Engineer by the LCRC, and any subsequent design shall conform to the sample plans. The applicant may also contract directly with the LCRC for road design. The plans shall include plan and profile views of the proposed project. The plans shall also include cross-sections, soil borings, pavement design, utility locations, curve data, road right-of-way, and all trees (including those to be removed) within the project limits. The LCRC staff will work with the applicant's Engineer to identify any revisions that are required for Preliminary Plat approval. If the LCRC is satisfied with the plans, Preliminary Plat approval will be granted.
- B. Estimate: The applicant's Engineer shall submit an estimate of costs, based on current market prices, to the LCRC for the proposed project. This estimate shall be prepared using standard pay items as set forth in the current MDOT Standard Specifications for Construction.
- C. Grade Inspection: The applicant's Engineer shall coordinate a meeting with the LCRC and utility companies where the plans are reviewed. A field meeting will then follow where plans can be further reviewed. Plans and estimates shall be revised as necessary, pursuant to these reviews.
- D. Consent of Adjacent Property Owners: The applicant or Engineer must secure grading easements for any grading that is proposed to extend outside of the public road right-of-way. Similarly, tree disposal agreements must be obtained from affected property owners for any trees that need to be removed as part of the project, whether the trees are in or out of the road right-of-way.
- E. Declaratory Action: An un-appealed judgment on a declaratory action filed in the Livingston County Circuit Court regarding the legality of a contract between the applicant and the LCRC must be obtained. The attorney for the LCRC will outline to the applicant's attorney the procedure for executing a consent judgment in circuit court.
- F. Plan Approval: Final plans must be approved by the LCRC and the Board of County Road Commissioners, at one of their regularly scheduled Board meetings. The applicant must inform the Board of the intended method of financial security at this time.
- G. Financial Security: A bank letter of credit or a cash escrow must be submitted to the LCRC in order to guarantee satisfactory completion of the work. This security must be filed at the time of issuance of any permit. This security may be eligible for partial release as satisfactory construction progress is made.
- H. Permit: Upon approval by the LCRC Board and receipt of financial security, the LCRC Engineering Department will issue a permit to the applicant for construction.

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Drainage Easement Form.....	8.16
Temporary Grading Easement Form.....	8.17
Clear Vision Easement Form	8.18
Sample Certificate of Insurance	8.19

Livingston County Road Commission Public Road Development Fee Schedule

Review Fees:

Applicants seeking to develop public roads will be required to pay preliminary application fee of \$100.00 upon submittal of the Preliminary Plan.

Upon submittal of the Road and Drainage plans, a review fee of \$300.00 is required.

Construction Inspection & Administrative Fee:

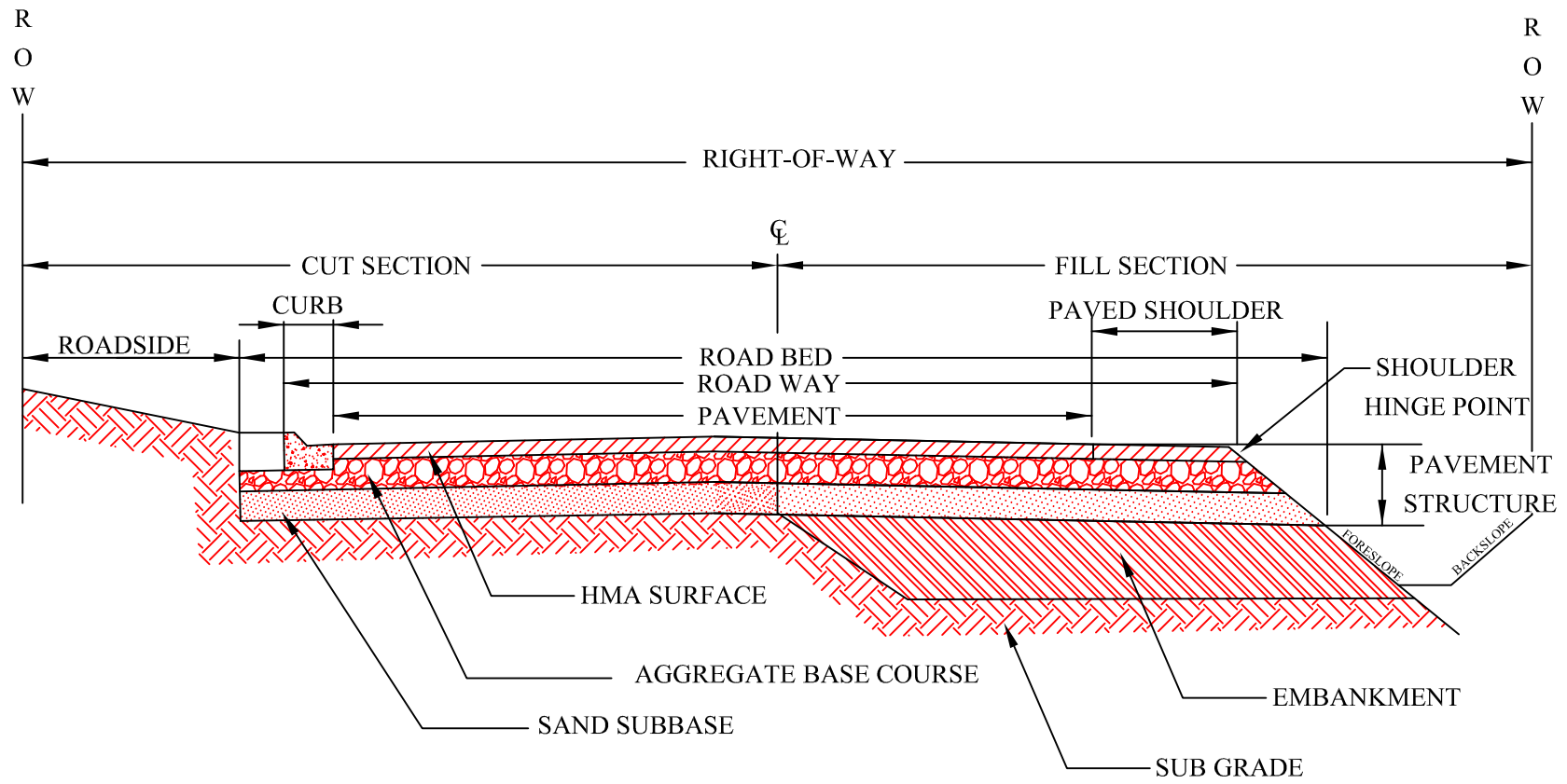
An inspection and administrative fee in the amount of 3% of the approved estimate of construction will be required prior to acceptance of the proposed roads by the Board of County Road Commissioners.

Sign Fee:

A sign fee based on costs determined by the Road Commission will be required prior to acceptance of the proposed roads by the Board of County Road Commissioners. This fee will cover the Road Commission costs for the fabrication and installation of any required permanent traffic control devices.

Storm Sewer Cleaning Fee:

A one-time storm sewer cleaning fee based on costs determined by the Road Commission will be required prior to acceptance of the proposed roads by the Board of County Road Commissioners. This fee will cover the Road Commission costs for cleaning the storm sewer system, located within the county road ROW once all of the lots/units have been built upon.



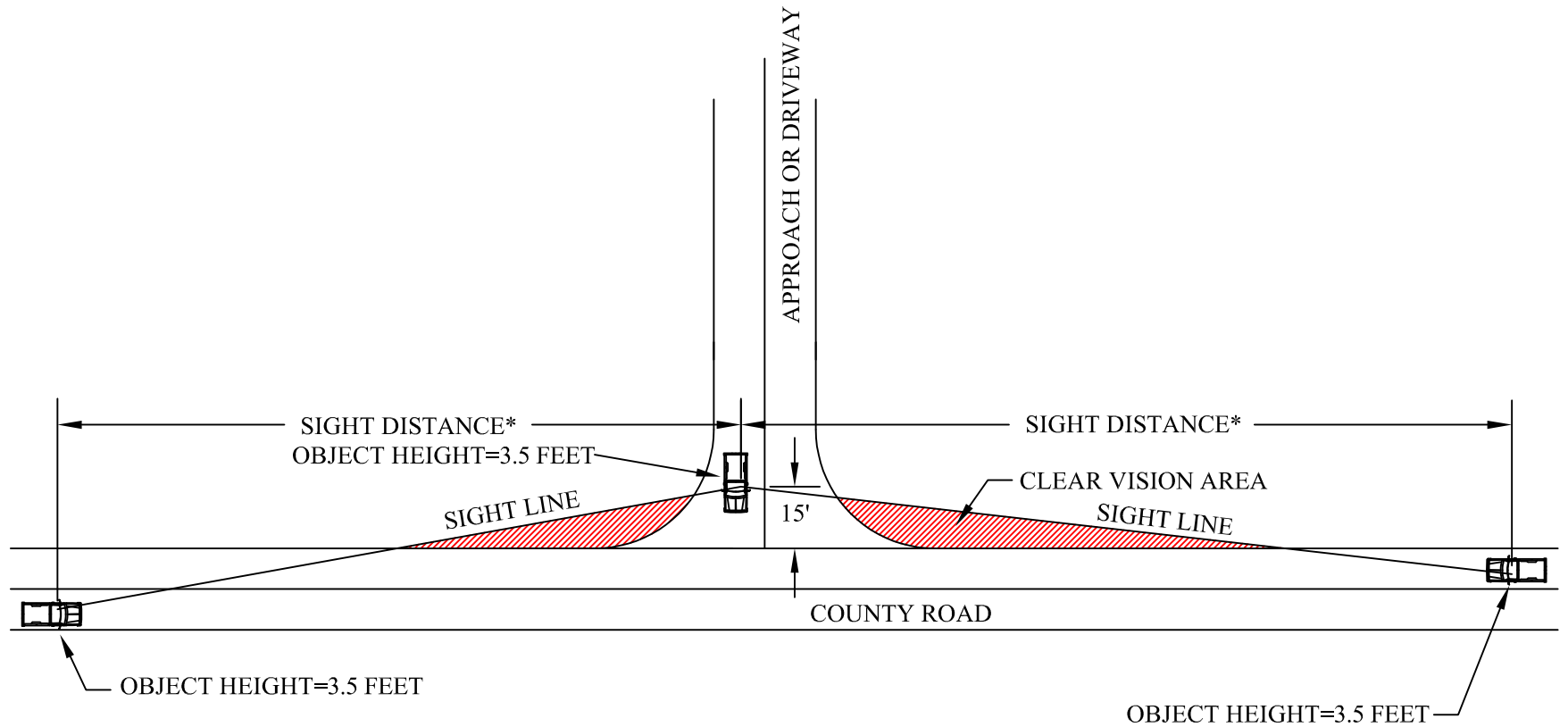
8.2

SCALE: N.T.S.

ROAD SECTION TERMINOLOGY



1/1/2024



*SIGHT DISTANCE IS BASED ON THE SPEED LIMIT. SEE SECTION 6.3.4 IN THE LCRC PROCEDURES AND REGULATIONS FOR DEVELOPING PUBLIC ROADS.

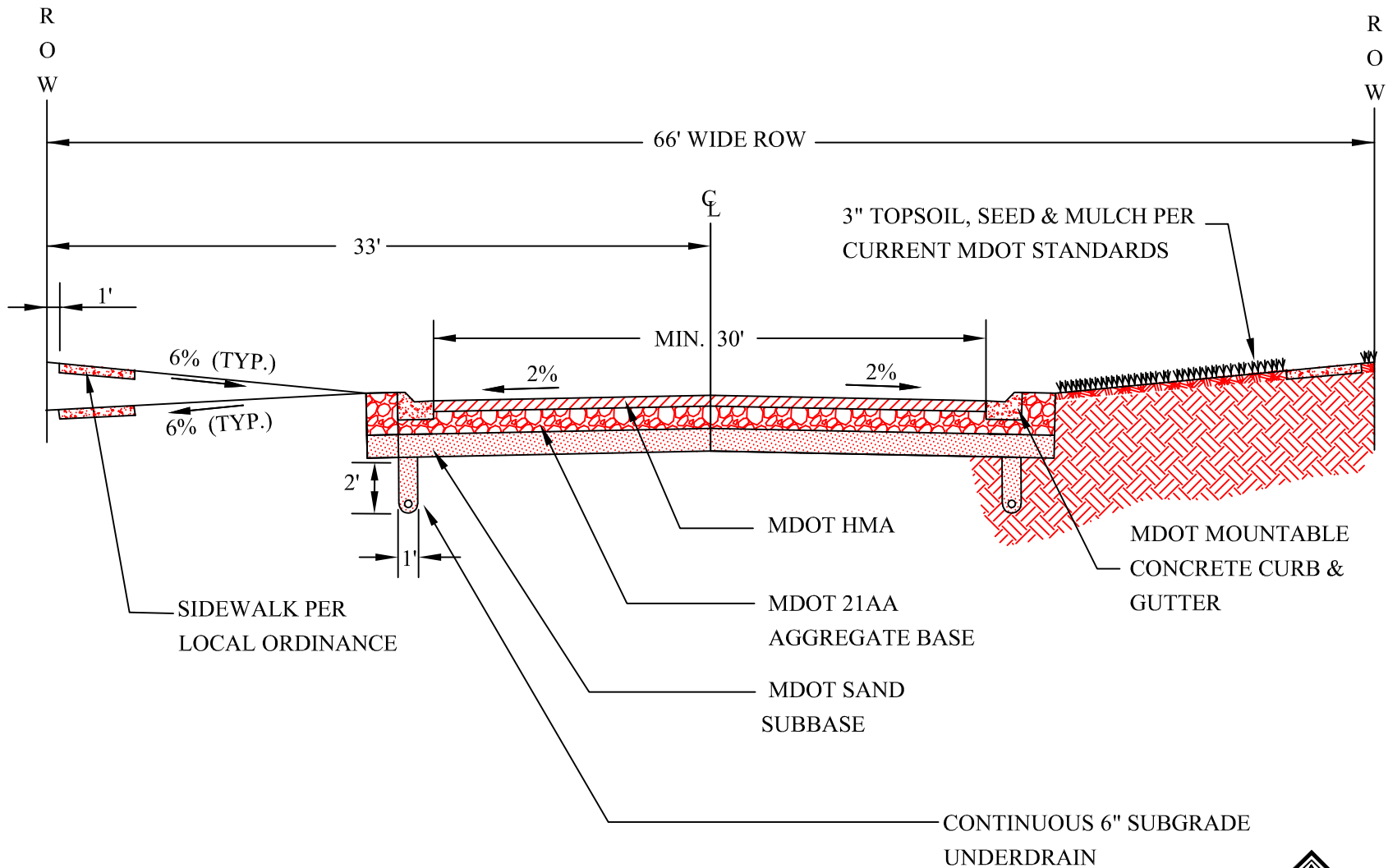
SIGHT DISTANCE REQUIREMENTS AT INTERSECTIONS AND DRIVEWAYS

SCALE: N.T.S.



1/1/2024

8.4

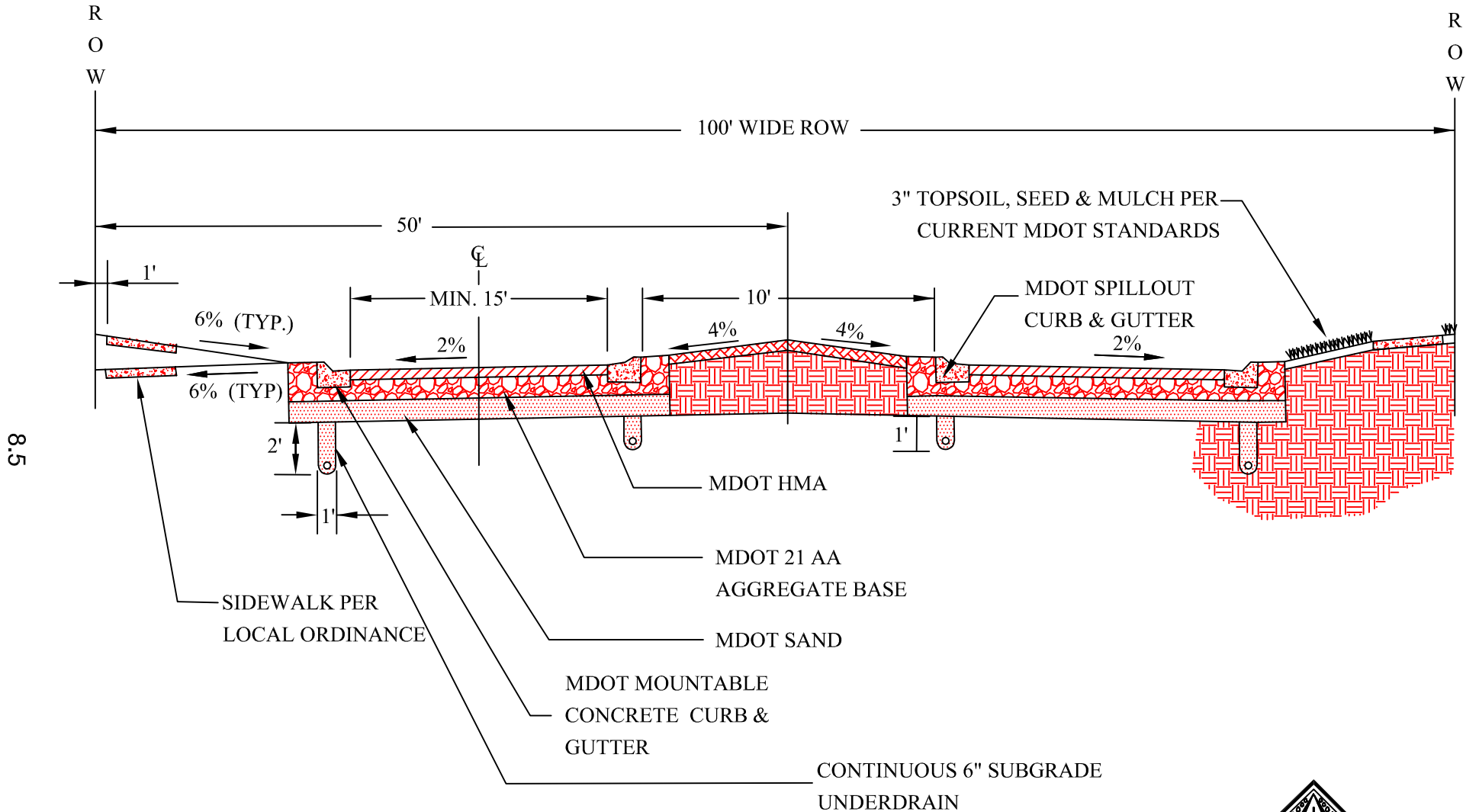


TYPICAL RESIDENTIAL CURB & GUTTER CROSS SECTION - 66' R.O.W.

SCALE: N.T.S.



1/1/2024

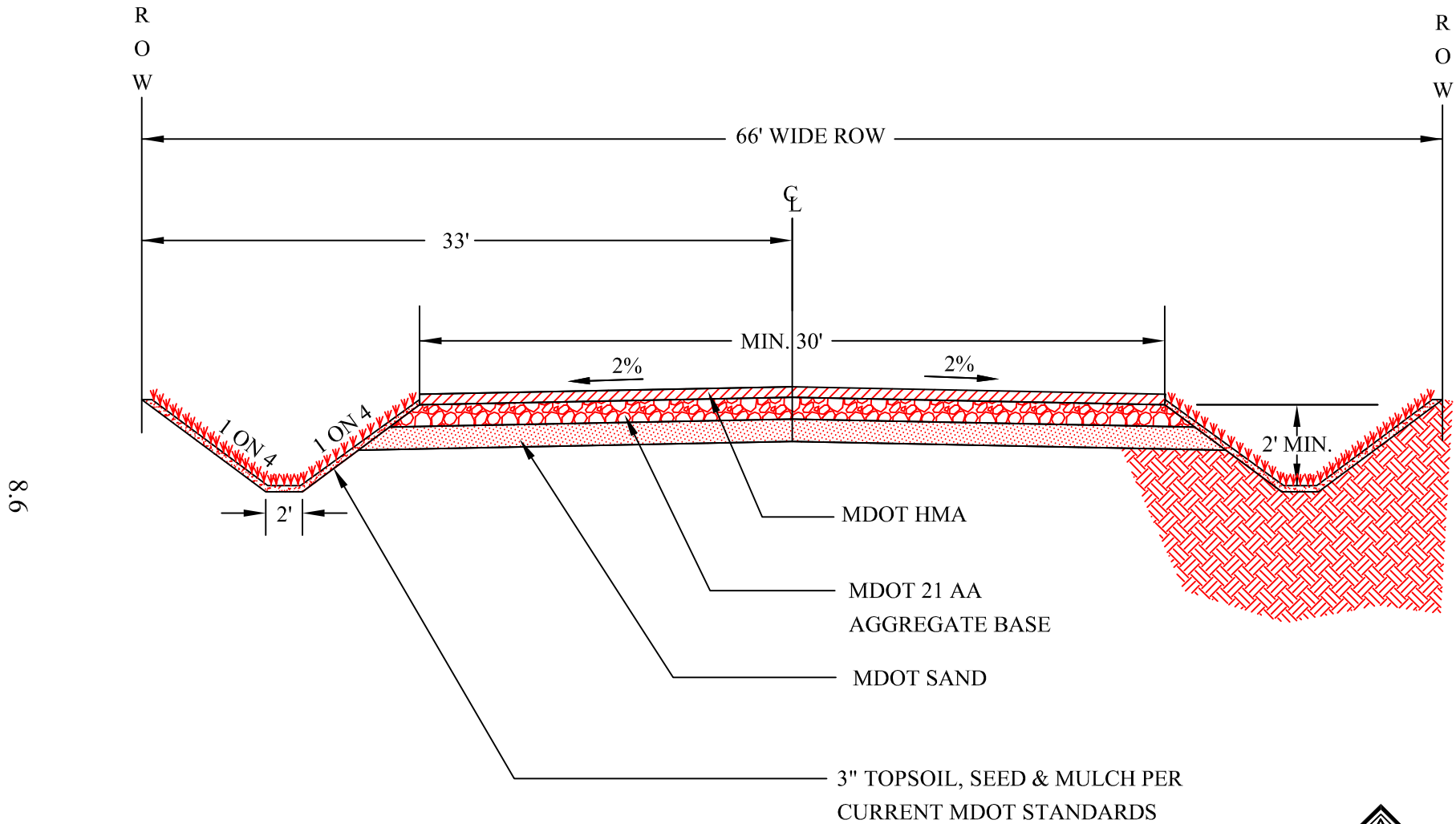


**TYPICAL RESIDENTIAL CURB & GUTTER
BOULEVARD ENTRANCE CROSS-SECTION
100' R.O.W.**

SCALE: N.T.S.



1/1/2024



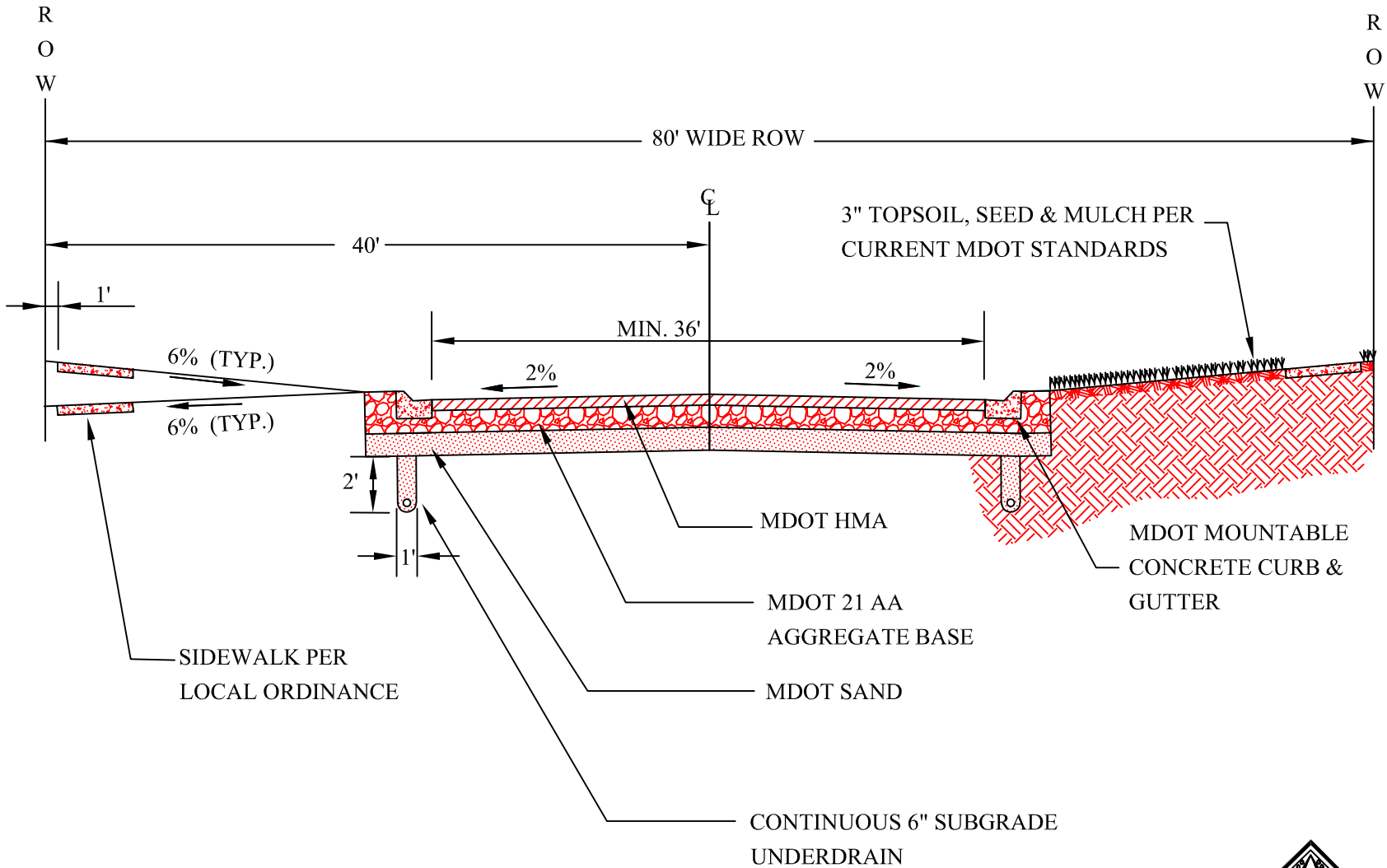
TYPICAL RESIDENTIAL OPEN DITCH CROSS SECTION - 66' R.O.W.

SCALE: N.T.S.



1/1/2024

8.7

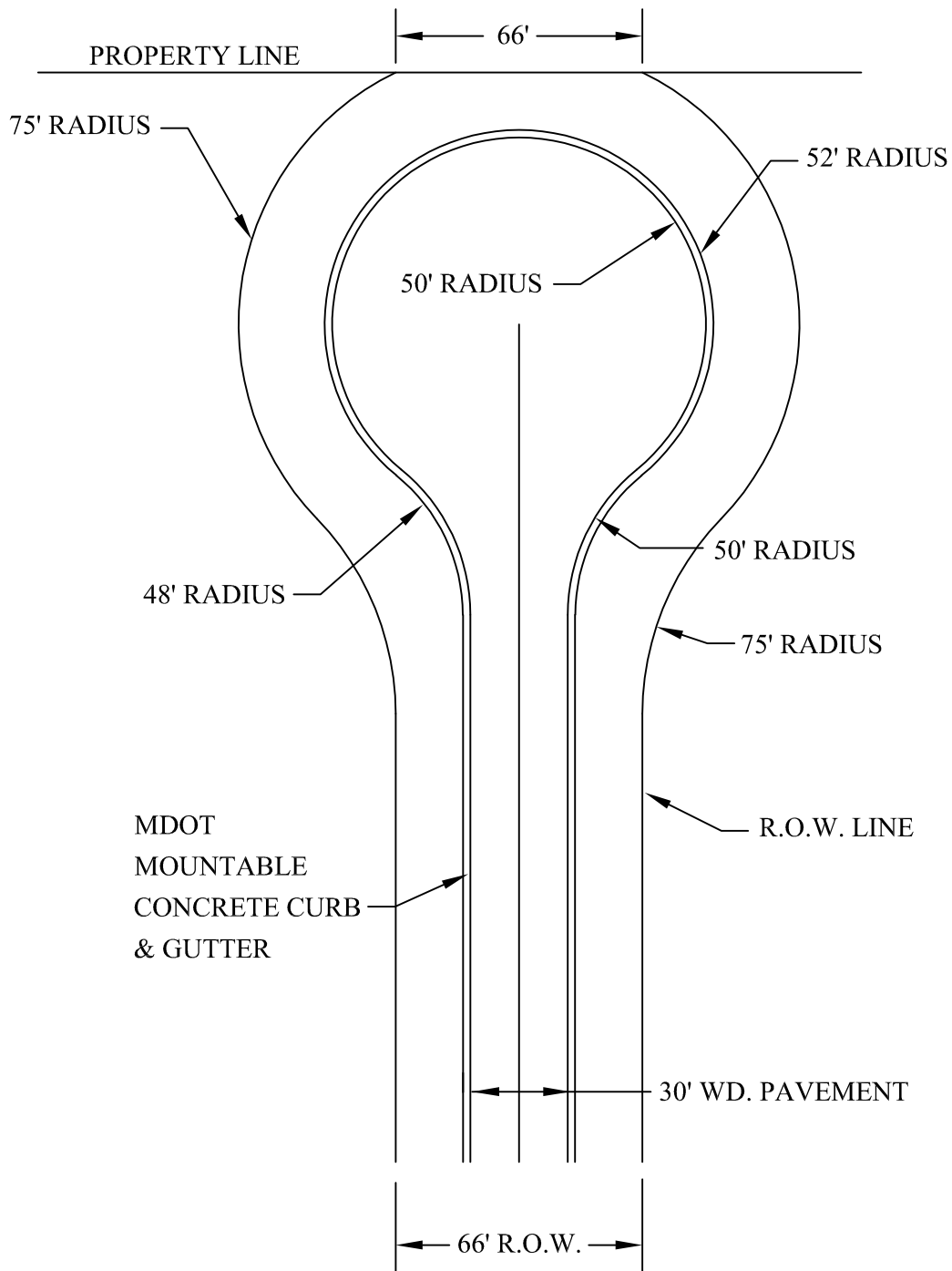


TYPICAL INDUSTRIAL/COMMERCIAL CURB & GUTTER CROSS SECTION - 80' R.O.W.

SCALE: N.T.S.



1/1/2024

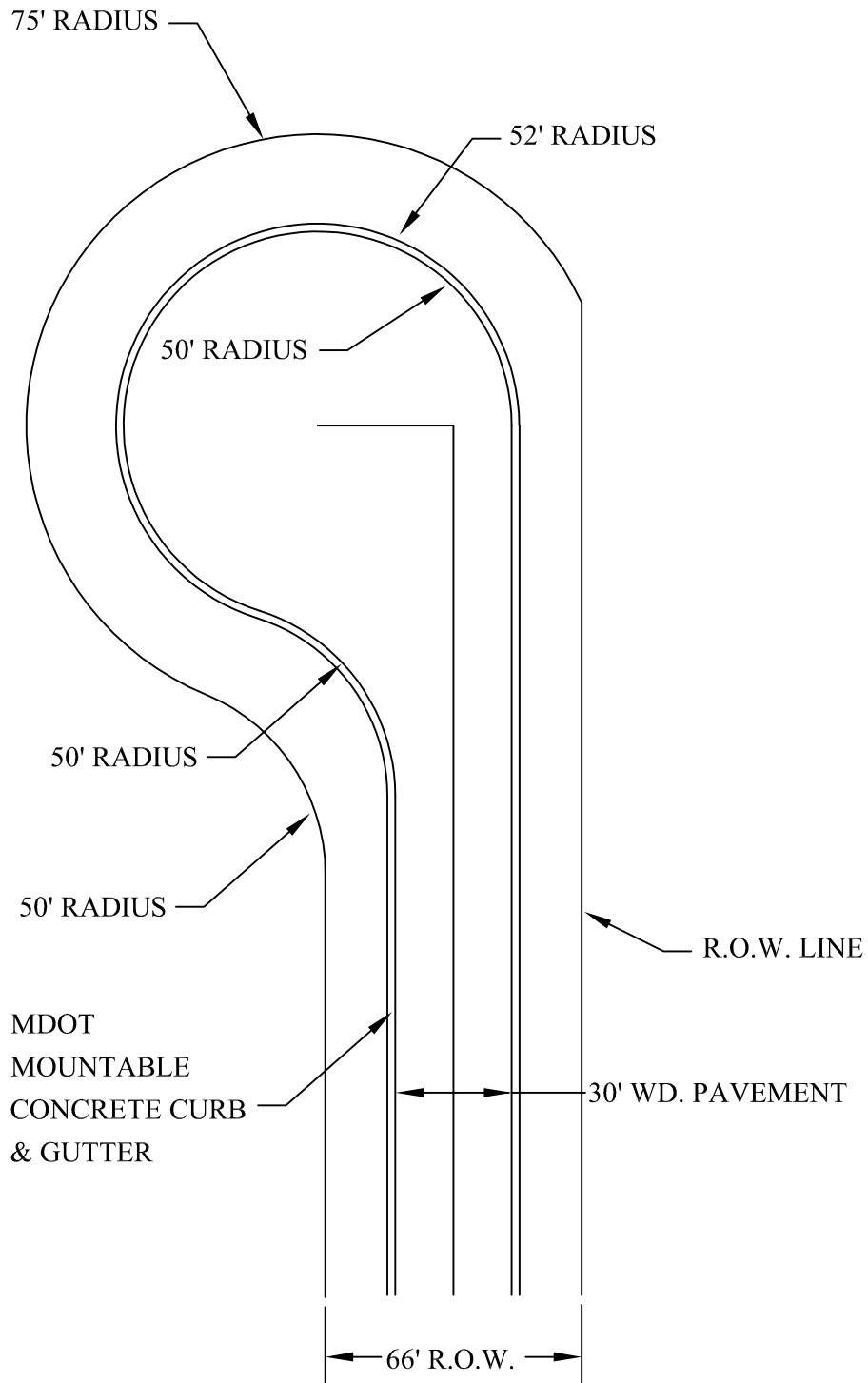


TYPICAL CUL-DE-SAC WITH CURB & GUTTER



SCALE: N.T.S.

1/1/2024



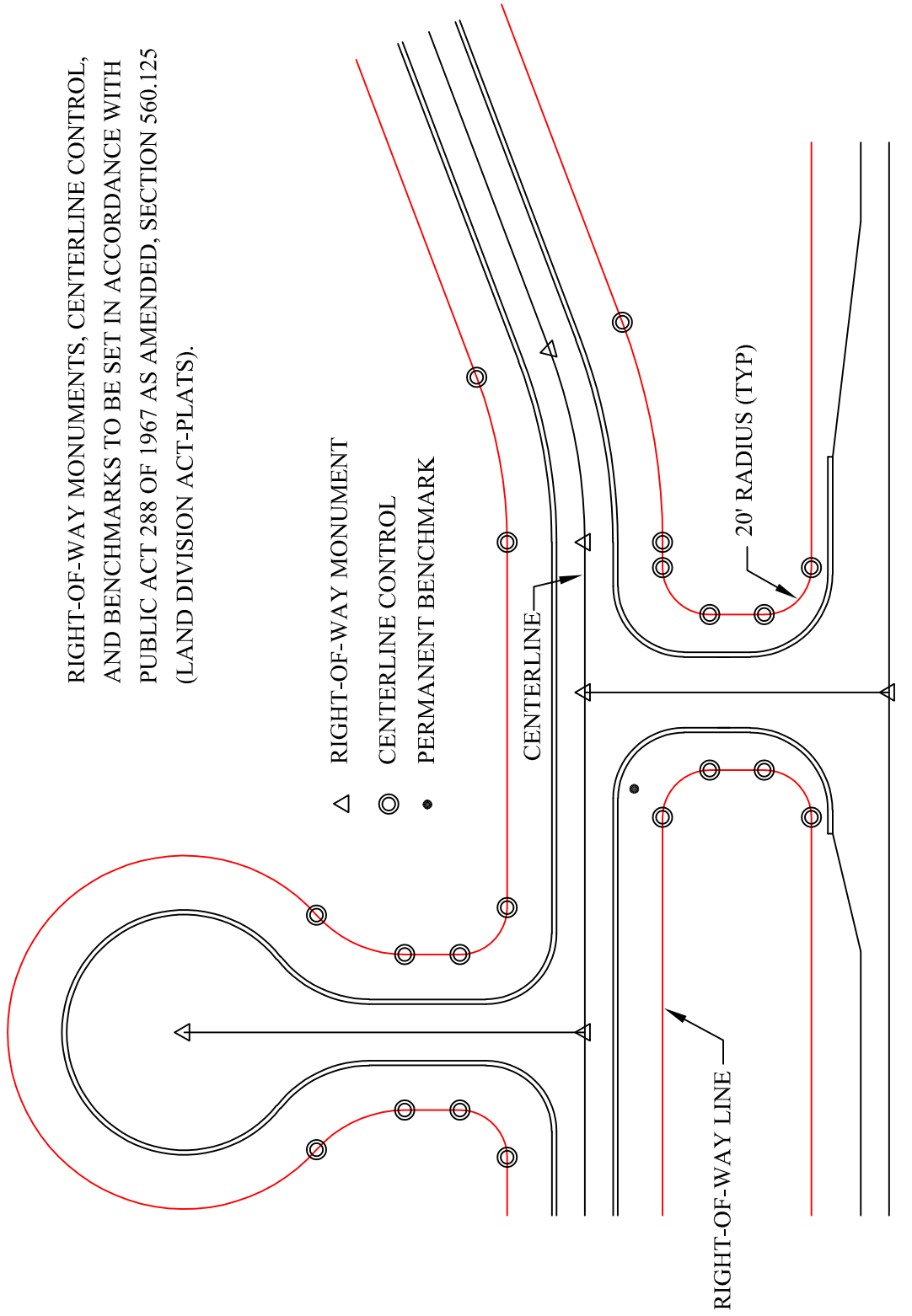
TYPICAL OFFSET CUL-DE-SAC



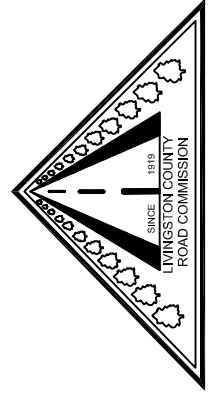
SCALE: N.T.S.

1/1/2024

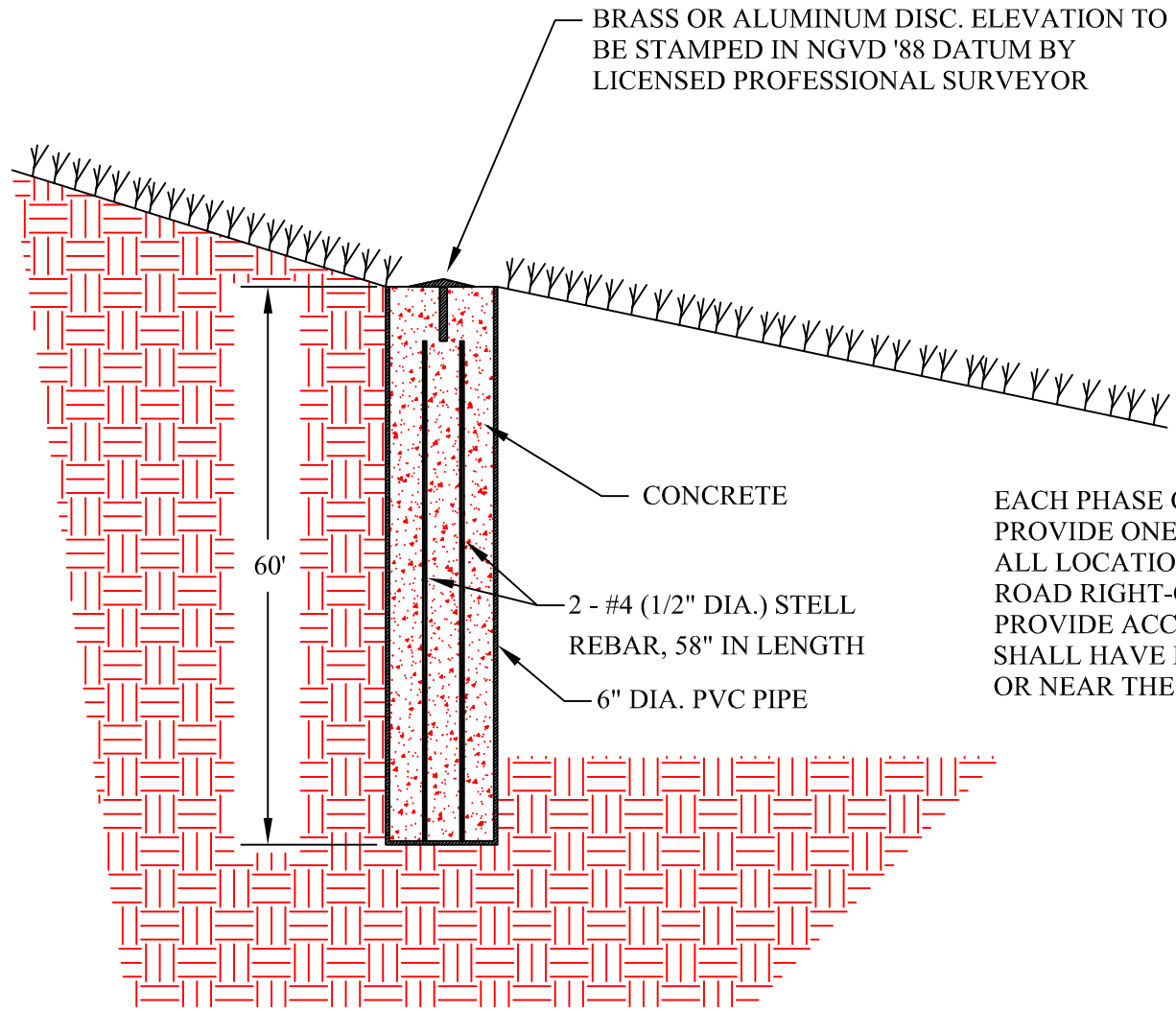
RIGHT-OF-WAY MONUMENTS, CENTERLINE CONTROL,
AND BENCHMARKS TO BE SET IN ACCORDANCE WITH
PUBLIC ACT 288 OF 1967 AS AMENDED, SECTION 560.125
(LAND DIVISION ACT-PLATS).



TYPICAL RIGHT-OF-WAY SURVEY MONUMENT CONTROL



8.11



EACH PHASE OF DEVELOPMENT SHALL PROVIDE ONE PERMANENT BENCHMARK. ALL LOCATIONS SHALL BE WITHIN THE ROAD RIGHT-OF-WAY. ALL PHASES WHICH PROVIDE ACCESS TO A PRIMARY ROAD SHALL HAVE BENCHMARKS LOCATED AT OR NEAR THE ENTRANCE.

TYPICAL SUBDIVISION BENCHMARK DETAIL

SCALE: N.T.S.



1/1/2024

PROPRIETOR'S ACCEPTANCE REPORT

SUBDIVISION NAME		PROPRIETOR
TOWNSHIP:	TYPE OF DEVELOPMENT	
LOCATION:		
CONTRACTOR:		
ENGINEER:		

DATE SUBGRADE COMPLETED:	DATE SUBGRADE ACCEPTED:
DATE DRAINAGE COMPLETED:	DATE DRAINAGE ACCEPTED:
DATE SUBBASE COMPLETED:	DATE SUBBASE ACCEPTED:
DATE AGGREGATE BASE COMPLETED:	DATE AGGREGATE BASE ACCEPTED:
DATE CURB AND GUTTER COMPLETED:	DATE CURB AND GUTTER ACCEPTED:
DATE PAVING COMPLETED:	DATE PAVING ACCEPTED:
DATE RESTORATION COMPLETED:	DATE RESTORATION ACCEPTED:

ACCEPTANCE RECOMMENDED BY:

This is to certify that construction work on the above captioned project substantially conforms to the plans and specifications as approved by the Board of County Road Commissioners of Livingston County Michigan.

PROPRIETOR'S ENGINEER

ENGINEER'S SEAL

FINANCIAL REQUIREMENTS

DEVELOPMENT NAME _____

PROPRIETOR _____ ENGINEER _____

TOWNSHIP _____ SECTION _____

ENGINEER'S ESTIMATED CONSTRUCTION COST	\$	_____
1) SIGN FEES	\$	_____
2) STORM SEWER CLEANING FEE	\$	_____
ADMINISTRATIVE FEE (5% cash deposit)	\$	_____
3) TOTAL CASH DEPOSIT	\$	_____

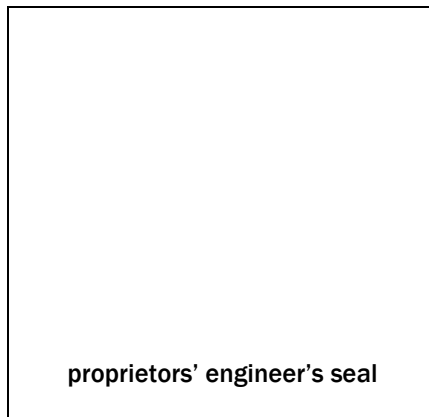
TYPE OF SURETY _____

ESTIMATE OF WORK COMPLETED TO DATE \$ _____

ESTIMATED PROJECT COMPLETION COSTS \$ _____

ENGINEER'S SIGNATURE _____

DATE _____



CHECKED BY (L.C.R.C.) _____

DATE _____

TREE REMOVAL AGREEMENT

I, (We,) _____, being the owner(s) of property located on _____, Section _____, in the Township of _____, Livingston County Michigan do hereby acknowledges the removal of certain trees and brush within the existing highway right of way along this same property required by improvements to _____.

Further, (I), we agree not to hold the aforementioned party liable for damaged shrubs, underground irrigation devices, ornamental lamps, etc., within the right of way while in the normal process of filling, leveling, grading or other work necessary to the removal and restoration operations.

During the course of work, it will be necessary to remove the following trees and bushes:

Station	Existing Feature	Proposed Feature

- As the property owner, I wish to have all trees removed for the construction of said road placed at a location of my choice immediately adjacent to but outside the construction area. I understand that I will receive the entire tree(s) minus the stump.
- As the property owner, I wish to have all trees and brush removed for the improvements of said road removed and disposed of in a manner deemed appropriate by the aforementioned party and at the expense of the aforementioned party.

The aforementioned party agrees to carry out its operations exercising reasonable care and judgment for the operation and affected area.

DATE: _____

 Witness

 Property Owner

 Witness

 Property Owner

**Livingston County Road Commission
HIGHWAY EASEMENT**

On this _____ day of _____, 20____, I/we, _____ a
_____, hereinafter referred to as the Grantor(s), to the Livingston County Road Commission,
3535 Grand Oaks Drive, Howell, Michigan, 48843, hereinafter referred to as the Grantee conveys as follows

Parcel ID No. _____

The consideration for this conveyance is less than Ten Dollars and 00/100 (\$10.00).

This easement is a permanent highway easement and shall be binding upon all heirs, successors and assigns and is dedicated to the Livingston County Road Commission for the use of the public.

Grantor(s) _____
Signature _____
Please Print Name _____

Grantor(s) _____
Signature _____
Please Print Name _____

Address: _____

City: _____

State, Zip: _____

Signed in the Presence of:

Signature _____
Please Print Name _____

Signature _____
Please Print Name _____

STATE OF MICHIGAN }
County of Livingston }

On this _____ day of _____, in the State of Michigan, County of Livingston before me, a notary public in
and for said _____
County, personally _____, whom have executed this
appeared _____ conveyance
as their free act and deed.

Notary Public
Livingston County, Michigan
My Commission
Expires: _____

Accepted on behalf of the
Board of Road Commissioners by:

Steven J. Wasyk-Managing Director
Livingston County Road Commission

Prepared By:
Name _____

When Recorded Return To:

Address _____

Livingston County Road Commission

Phone _____

3535 Grand Oaks Drive
Howell, Michigan 48843

**Livingston County Road Commission
DRAINAGE EASEMENT**

On this _____ day of _____, 20____, we, _____, husband and wife, hereinafter referred to as the Grantors, to the Livingston County Road Commission, 3535 Grand Oaks Drive, Howell, Michigan 48843, hereinafter referred to as the Grantee, conveys as follows: For and in consideration of prospective benefit to the public, Grantors do hereby release and convey to the BOARD OF COUNTY ROAD COMMISSIONERS OF LIVINGSTON COUNTY, a permanent drainage easement to be maintained by or under the supervision of the grantee, under and across the surface of land owned by the Grantors along a route as described in attached exhibit "A".

PARCEL ID NUMBER:

This easement is a permanent drainage easement for the conveyance of storm water runoff and shall be binding upon all heirs, successors and assigns and is dedicated to the Livingston County Road Commission.

Grantors: _____ <p style="text-align: center;">Signature</p> _____ <p style="text-align: center;">Please Print Name</p>	Grantors: _____ <p style="text-align: center;">Signature</p> _____ <p style="text-align: center;">Please Print Name</p>
Street: _____	_____
City: _____	_____
State, Zip: _____	_____

Signed in the Presence of:	
Signature: _____ <p style="text-align: center;">Signature</p> _____	Signature: _____ <p style="text-align: center;">Signature</p> _____
Please Print Name	Please Print Name

**STATE OF MICHIGAN
COUNTY OF LIVINGSTON**

On this _____ day of _____, 2005, in the State of Michigan, County of Livingston before me, a notary public in and for said County, personally appeared _____, whom have executed this conveyance as their free act and deed.

Notary Public
Livingston County, Michigan
My Commission Expires: _____

Accepted on behalf of the Board of Road Commissioners by: _____
Steven J. Wasyk – Managing Director
Livingston County Road Commission

Prepared by: _____ When Recorded Return To:
Livingston County Road Commission
3535 Grand Oaks Drive
Howell, Michigan 48843

**Livingston County Road Commission
TEMPORARY GRADING AGREEMENT**

I, (We,) _____, being the owner(s) of property located at _____ section _____, in the township of _____, Livingston County Michigan do hereby grant the (Developer's name Or Contractor's name) permission to excavate, grade, fill, and / or shape land outside the existing highway right of way and
In consideration of improvements to _____, Livingston County Road
Project number: _____ date: _____.

The permitted area of work shall be described as follows:

During the course of work, it will be necessary to remove the following trees and brush:

- As the property owner, I wish to have all trees removed for the construction of said road placed at a location of my choice immediately adjacent to but outside the construction area. I understand that I will receive the entire tree(s) minus the stump.
- As the property owner, I wish to have all trees and brush removed for improvements of said road removed and deposited in a manner deemed appropriate by the (developer or contractor) and at the expense of the (developer or contractor).

The (developer or contractor) agrees to carry out its operations exercising reasonable care and judgment for the operation and affected area.

Date: _____

Witness

Witness

Property Owner

Property Owner

**Livingston County Road Commission
CLEAR VISION EASEMENT**

The undersigned herewith grants and conveys to the Board of County Road Commissioners of the County of Livingston, whose address is 3535 Grand Oaks Drive, Howell, Michigan, 48843 a permanent clear vision easement for highway purposes over, under and upon a parcel of land situated in the Township of _____, Livingston County and State of Michigan as described in Exhibit "A" and is hereto attached.

TAX PARCEL ID NUMBER _____

IN WITNESS WHEREOF, we have set our hands and seals this _____ day of _____, _____.

Owner: _____
Street: _____
City: _____
State, Zip: _____

Witness:

Signature: _____
Name: _____

Signature: _____
Name: _____

**STATE OF MICHIGAN
COUNTY OF LIVINGSTON**

Subscribed and sworn to before a Notary Public this _____ day of _____, _____.

Notary Public

Livingston County, Michigan
My Commission Expires: _____

Accepted on behalf of the
Board of Road Commissioners by:

Steven J. Wasylk – Managing Director
Livingston County Road Commission

Prepared by:

When Recorded Return To:
Livingston County Road Commission
3535 Grand Oaks Drive
Howell, Michigan 48843



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	NAIC #	
INSURED Sample Excavating 123 One Way Road No Where, Michigan 41234	INSURER:	
	INSURER:	
	INSURER:	
	INSURER:	
	INSURER:	

Sample

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
<input checked="" type="checkbox"/>	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	<input checked="" type="checkbox"/>	ABC123456	10/31/11	10/31/12	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
<input checked="" type="checkbox"/>	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		FG55555	10/31/11	10/31/12	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ 500,000 BODILY INJURY (Per accident) \$ 1,000,000 PROPERTY DAMAGE (Per accident) \$ 1,000,000 \$
<input type="checkbox"/>	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
<input type="checkbox"/>	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y/N <input type="checkbox"/> N/A	XYZ654321	10/31/11	10/31/12	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 100,000 E.L. DISEASE - EA EMPLOYEE \$ 100,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

Sample

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

The Board of Livingston County Road Commissioners, the Livingston County Road Commission, and their officers, agents and employees are listed as Additional Insured. **Please make sure this wording is added! If this wording is not on the certificate of insurance, or an endorsement is provided, we cannot issue a permit.**

CERTIFICATE HOLDER Livingston County Road Commission 3535 Grand Oaks Drive Howell, Michigan 48843	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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ACORD 25 (2010/05)

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