



**DEPARTMENT OF
TRANSPORTATION**

**PROCEDURES AND GUIDELINES
FOR DEVELOPING PUBLIC
ROADS IN JACKSON COUNTY**

**JACKSON COUNTY DEPARTMENT
OF TRANSPORTATION**

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SECTION I – INTRODUCTION

This manual presents detailed procedures for the preparation, review, and approval of plans for public roads, subdivision plats, and site condominiums in Jackson County. In addition, it presents the minimum standards and specification details for the planning and construction of new public roads. The manual is intended to provide guidelines for design engineers who prepare the plans, staff of the Department of Transportation who review the plans, Township officials, other governmental agencies, and members of the Jackson County Board of Commissioners who approve the plans and accept new roads into the County Road System.

The scope of this manual applies only to those lands located outside the corporate limits of any city or village in the County of Jackson and to lands within incorporated areas when such lands are subject to public highways under the jurisdiction of the Jackson County Department of Transportation of the County of Jackson, State of Michigan.

The contents of this publication do not supersede any part of Act 288, Public Acts of 1967, as amended, or any part of Act 59, Public Acts of 1978, as amended, and they are intended for use only as an instrument to expedite the processing of proposed plats, condominiums, and road developments in Jackson County.

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SECTION II – ORDER OF PROCEDURE

The following steps, which will be explained in detail in subsequent sections, will be followed by the Department of Transportation in considering all plats, condominiums, and other road developments or improvements:

- Approval of a Preliminary Plat or Preliminary Plan.
- Approval of Road and Drainage Plans.
- Inspection of road and drainage construction in progress.
- Final inspection of completed construction.
- Approval of Final Plat or proposed roadways when required.
- Acceptance of completed roads into the County Road System by recordation.
- See flow chart for order of procedure in section VII, #'s 1 and 2.

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SECTION III – DEFINITIONS

AASHTO Guidelines

The highway design standards published by the American Association of State Highway and Transportation Officials in its current editions of “A Policy on Geometric Design of Highways and Roads” and “Roadside Design Guide”.

Agreement

The document entitled “Agreement to Construct Road Improvements”, signed by the proprietor and the Department of Transportation, indicating construction and financial obligations of the proprietor, and the intention of the Department of Transportation to accept the new roads as public roads.

ASTM

American Society of Testing and Materials

Board of Commissioners

The Board of Commissioners of the County of Jackson, State of Michigan.

Clear Vision Area

Land acquired or used by the Department of Transportation for the purpose of maintaining unobstructed vision.

Collector Road

A road that is designed for higher-speed and higher-volume traffic, while providing connections between local roads and arterial roads. Direct access to subdivided lots should be discouraged.

Condominium Act

Act 59 of the Michigan Public Acts of 1978 and all amendments thereto.

County Highway Engineer

The County Highway Engineer of the Department of Transportation or any of his or her associates assigned to act for the Engineer in carrying out the duties entailed by this manual.

Engineer

The licensed professional engineer or engineers employed by the proprietor of a plat or other development to prepare plans, supervise inspection, including all applicable material testing and certify construction of the roads in the development.

Governing Body

The elected or appointed board of a township in which a plat, site condominium, or other proposed road development is located.

Inspection

The close observation and examination of the various construction operations and products as a means of determining the acceptability of completed roads.

Laboratory

Any material testing laboratory which is approved by the County Highway Engineer.

Land Division Act (Plat Act)

Act 288 of the Michigan Public Acts of 1967 and all amendments thereto.

Local Road

A road that provides direct access to immediately adjacent properties.

MDOT

The Michigan Department of Transportation.

MDOT Standards

The current Standard Specifications for Construction and Standard Plans as issued by the Michigan Department of Transportation. English units will be used.

Proprietor

Owner or developer of land upon which a plat, condominium, or other development is planned.

Sight Distance

The clear length of roadway required so that a specified object is visible to the driver.

Surveyor

The licensed professional surveyor employed by the proprietor to prepare preliminary plans and final plans of the roads in the development area.

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SECTION IV – PROCEDURES AND GENERAL REQUIREMENTS

The following procedures and requirements apply to subdivisions, site condominiums, and other road construction improvements adjacent to new land developments. For all developments the Department of Transportation will require submission of both a Preliminary Plan and a Road and Drainage Plan for approval. In the case of a proposed platted subdivision, the Preliminary Plan will also be referred to as the Preliminary Plat.

A. Initial Review of Preliminary Plan or Plat

Prior to initial review of a Preliminary Plan or Plat of a subdivision or condominium by the Department of Transportation, it is anticipated that the Preliminary Plan will have received tentative approval by the governing body of the township or its designated township planning commission.

B. Review and Approval of the Preliminary Plan or Plat

Two (2) copies of the Preliminary Plan layout drawn to scale not smaller than 1" to 100' by a licensed land surveyor or licensed professional engineer and a letter of transmittal requesting that the preliminary plat be reviewed shall be submitted to the Department of Transportation for consideration. All plans should be drawn on 24" x 36" sheets.

The Department of Transportation, within 30 days of receipt of the preliminary plan, shall either approve it and note its approval on the copy to be returned to the proprietor or reject it. If rejected, the reasons for rejection and requirements for approval shall be given to the proprietor in writing.

At various stages of these procedures, the Department of Transportation will require a 30-day review period for plans or other items submitted, and for formal action by the Board. All items required to support a developer's request must be submitted with preliminary plans.

The Preliminary Plan Layout should show plainly all the following and meet the requirements listed.

1. Show locations and extent of property. This shall include a vicinity sketch with scale not smaller than 1" = 1,000', showing the development in relation to the County Road System. Approximate dimensions are sufficient.
2. Show dimensions and bearings of the entire parcel and that portion of layout for which approval is requested.
 - a. On preliminary plats, the part to be platted at a given time shall be clearly outlined and the original master preliminary plan re-submitted each time an additional portion is platted.
 - b. Each time a preliminary plan is re-submitted, a letter must accompany it stating the reason for the re-submission. Plan revisions shall be noted and dated on the drawings.

- c. Show locations of the plat or parcel with reference to the part of section and township in which the parcel is situated, and dimension all section and quarter lines and corners adjacent to and within the parcel.
3. Each original preliminary plan layout shall be superimposed on a topographic map showing:
 - a. Existing two-foot (2') contour intervals.
 - b. Proposed contours in areas of changes in natural drainage courses.
4. Show locations and names of proposed roads. The existing road name shall be used for any proposed road that is in direct line with an existing road, or is an extension of an existing road.

Road names will not be adopted that may be confused with a similarly named road, highway or street within Jackson County.

5. The road layout of the proposed development shall conform to the following:
 - a. The primary road layout shall connect to existing outlots in adjacent developments, and shall provide outlots or other provisions for future connections to adjacent land that is presently undeveloped.
 - b. The layout of roads in the proposed plan shall provide at least two points of access to an existing public road and shall provide a continuous circuit for travel. An exception will be considered when, in the opinion of the Board, the lands to be subdivided are limited in area or are subject to a natural barrier.

In order to satisfy this requirement in early phases of a multi-phase development, the Department of Transportation will consider approval of temporary connecting roads that meet all standards. Easements and completion guarantees are required for such roads. The title sheet shall plainly indicate that this is a multi-phase development and the phase being considered.

- c. Where a proposed road provides access to an existing public road at one end only, its layout may be acceptable provided that a circular cul-de-sac of 75 feet minimum right-of-way radius (commercial & industrial), or 70 feet (residential) is provided at the end of the road so as to permit turning in a continuous circuit. Pavement radius must meet the requirements of the Jackson County Department of Transportation. The Board may approve some other means of continuous circuit if presented in detail with sufficient documented justification.
 - d. Roads terminating in cul-de-sacs must be no more than 2,500 feet in length. The minimum length of a cul-de-sac road shall be 300 feet for the rural cross-section and 300 feet for the urban cross-section. Lengths are measured from centerline of through road to center of cul-de-sac.

- e. In any event, the Board of Commissioners reserves the right to deny any cul-de-sac that they deem inappropriate or unjustified.
6. Show plainly all governing conditions adjacent to the development such as:
 - a. Adjoining subdivisions and adjoining roads.
 - b. State trunkline highways, which shall be identified by name and route number. Proposed work within a state right-of-way shall be noted as such.
 - c. Rivers, natural or artificial watercourses, wetlands, existing county or private drains, sewers, and crossroad culverts on existing roads.
 - d. Railroads.
 - e. Cemeteries and parks.
 - f. Easements for public access for construction and maintenance of drains, public utilities, etc., and their dimensions, in, over, and across private property within the development, must be shown.
 - g. All existing or proposed lot lines showing the lot numbers, boundary dimensions, and land area. Lot sizes must comply with the Plat Act or as required by the governing body.
 - h. Building set back lines on each lot, as required by the governing body.
 - i. Proposed locations of survey monumentation on road rights-of-way and centerlines as required by Department of Transportation procedures.
 7. Show all existing and proposed road right-of-way widths within and adjacent to the development. Proposed widths shall comply with the requirements of established Department of Transportation standards.
 8. Show sight distances in both directions at all proposed intersections with existing county roads, at all interior intersections, and at all known driveways. The Developers' engineer should assure the developer that each lot has adequate driveway sight distance.
 9. Jackson County Department of Transportation sight distances are as follows:

| <u>Sight Distance Required in Feet</u> | | |
|---|---------------------------|--------------------------|
| <u>Speed Limit in MPH</u> | <u>2 Lane Road</u> | <u>Multi-Lane</u> |
| 25 | 260 | 280 |
| 30 | 310 | 340 |
| 35 | 360 | 400 |
| 40 | 410 | 450 |
| 45 | 460 | 510 |
| 50 | 510 | 560 |
| 55 | 560 | 620 |

10. Show the typical road cross-section and any cross sections, which vary from the typical and their locations of the roads to be constructed.
11. Indicate with arrows or other symbols the proposed course of surface water drainage within the subdivision to a natural drainage trace, stream, or public storm sewer.
12. One-way roads are prohibited without prior approval of the Board of Commissioners.
13. Private roads are prohibited in all developments in which any of the roads are dedicated to the public. All proposed extensions of public roads, or connections interior to a development, must also be public roads.
14. Where required to provide future connections to possible adjacent development outlots shall be provided and shall be designated "future road." An outlot must be at least sixty-six (66) feet wide. A right-of-way easement for such outlot for road purposes must be executed and filed with the Board at the time of plat approval or upon submittal of road and drainage plans. At the time of Road and Drainage Plan approval, the Department of Transportation may specify requirements for future improvements on outlots. However, the Department of Transportation will not accept a road on an outlot until the connecting road is completed.
15. Show all phase boundaries indicating the proposed order of construction. Phase lines must be located such that each successive phase will satisfy Department of Transportation requirements.
16. Show the name of the proprietor and the name and seal of the engineer or surveyor, with mailing addresses and telephone numbers of each.
17. Show the names of any adjacent subdivisions, platted lands, or known preliminary plats or condominiums, and give reference to roads terminating at the proposed development's boundary.
18. If the Road and Drainage Plan is not submitted to the Board within two years from the date of approval of the Preliminary Plan, then the preliminary approval will become null and void.
19. The developer must present written confirmation from the township of either tentative approval of a preliminary plat or preliminary approval of a tentative site plan.
20. Show locations of proposed temporary turnaround areas at phase boundaries. Turnarounds may be on either side of a boundary. At a property line, no turnaround will be allowed on adjacent property unless the adjacent owner provides a permanent rectangular easement, and the surface is paved.

21. No driveway in a new development will be allowed directly onto an existing County road, and no single-family driveway will be allowed onto a proposed collector road. Further, no driveway may be located closer than 50 feet from the right-of-way line of an intersecting road.

C. Road and Drainage Plan

1. General

After approval of the Preliminary Plan, two (2) copies of the Road and Drainage Plans covering all the roads within the development must be prepared, sealed and signed by a licensed professional engineer and submitted to the County Highway Engineer.

The Department of Transportation, within 30 days of receipt of the Road and Drainage Plans, shall approve it and note its approval on the copy to be returned to the proprietor's engineer, or reject it. If rejected, the reasons for rejection shall be given to the proprietor's engineer in writing. Revised plans will be approved when they show compliance with all requirements.

In order to assure that a Road and Drainage Plan will be considered at the scheduled meeting of the Department of Transportation within the 30-day period, all required fees, proposed easements and required documents must be submitted.

The Road and Drainage Plans shall consist of plan view and profile drawings and typical cross-sections, which shall comply with the current specifications required by the Board.

No construction of roads or drains shall be started until the Road and Drainage Plan has been approved.

All roads shall be provided with facilities for adequate storm drainage.

When sidewalks and/or curb and gutter are to be provided in the subdivision or condominium, they must be shown in detail in the Road and Drainage Plan. Inasmuch as sidewalks in front of property are under local jurisdiction, the proprietor should adhere to the requirements established by the local authorities. The depth of walk shall not be less than 4 inches (6 inches across driveways) and sidewalk grades shall be shown on plans where sidewalks are to be constructed. Materials and construction methods shall meet the requirements of the current MDOT Standard Specifications for Construction.

The Road and Drainage Plan shall be drawn on 24" x 36" sheets to scale not smaller than 1" = 50' horizontal and 1" = 5' vertical.

Drainage plans shall be shown for existing adjacent county roads and constructed to the standards required by the County Highway Engineer.

Approval by the Drain Commissioner must be completed prior to approval of the Road and Drainage Plan.

If no construction is started within two years from the date of approval of the Road and Drainage Plan, then this approval will become null and void.

All elevations shall coincide with datum determined by the U.S.G.S.

A permanent benchmark, in conformance to standards adopted by shown on the plans. All phases of a development shall include at least one (1) benchmark, and all developments larger than 20 acres shall include at least two (2) benchmarks.

2. **Road Plan Requirements**

The plans must show plainly all the following information:

- a. Plan view of each road showing the centerline, stations, edge of pavement and curb line if applicable. Centerline profile and top-of-curb profile shall be shown directly below the plan view.
- b. Typical cross-section of the road to be constructed.
- c. Locations of existing and proposed culverts, storm sewers, catch basins, manholes, and utilities.
- d. Locations of existing and proposed traffic-control and road name signs.
- e. Locations of existing and proposed utility and streetlight poles.
- f. Intersection details shall include all elevations for both the proposed roadway tie-in and the existing county road and any other required intersections, radii, acceleration and deceleration lanes, sight distance, curb tapers, and any other details requested by the County Highway Engineer.
- g. Location of all proposed sidewalks and bicycle paths, and any proposed curb drops to accommodate handicap accessible ramps as required by the Americans with Disabilities Act.
- h. All pertinent survey information (benchmarks, curve data, section corners, witnesses, etc.).
- i. Location of survey monumentation on road rights-of-way and/or centerlines.
- j. All existing features within the road right-of-way such as trees, brush, driveways, mailboxes, signs, poles, and hydrants. Trees of 8" diameter or more shall be identified by diameter and type.
- k. All proposed driveway culverts, including sizes and lengths, shall be identified by lot.
- l. All other proposed features in or near the right-of-way such as structures, landscaping, entrance signs, cluster mailboxes, etc.
- m. Types and locations of vegetation to be removed within the road right-of-way.

- n. Locations of all utilities, with typical legend as follows:

| | |
|-----------------------|-----------------------|
| S = proposed sanitary | s = existing sanitary |
| R = proposed storm | r = existing storm |
| W = proposed water | w = existing water |
| G = proposed gas | g = existing gas |

 Locations shall include all road crossings and service stubs to the right-of-way line.
- o. Phase boundary lines, and locations of temporary turnarounds or other temporary roads, with notations as to aggregate or paved surface, as prescribed by the Department of Transportation.
- p. Locations of temporary grading easements or tree removal permit requirements on neighboring property.
- q. Soil boring logs at sufficient intervals to determine the subgrade condition.
- r. Notations indicating no new trees, rocks, landscaping, berms, headwalls, private signs, sprinklers or private utilities to be allowed in the right-of-way.
- s. Notation indicating all mailboxes must conform to the standards of the Jackson County Department of Transportation.
- t. Location of existing and proposed driveways, when known. All driveways shall conform to established Department of Transportation guidelines.
- u. Notation indicating that if excessive use of the newly built road is anticipated to be by heavy trucks during home construction, an alternate construction access drive and road shall be required
- v. Notation indicating that no evergreen trees, rocks or landscaping exceeding 36 inches in height is allowed inside island of cul-de-sac. Deciduous trees will be allowed. The island of the cul-de-sac is maintained by others.
- w. Notation indicating no home-building construction traffic on new roads until both bituminous base and leveling course, if applicable, are placed.

3. **Drainage Plan Requirements**

a. Curb Design

The plans must show plainly all the following information:

- 1) The location, size, and invert elevations of all underground structures used for road drainage.
 - a) Show location and type of inlets and cleanout points for underground drainage systems, including sumps in all catch basins.
 - b) Show standard detail for all catch basins, inlets, manholes, etc.

- c) Show schedule of structure types, diameters, casting types, rim and invert elevations and sump notation where applicable.
 - 2) Profile of existing centerline.
 - 3) Profile of top-of-curb with corresponding profile of right-of-way line.
 - 4) Percent of grade and vertical curve data.
 - 5) Profile of centerline, ditch and proposed ditch of county road(s) adjacent to subdivision with proper outlet thereof.
 - 6) Show curb and centerline elevations a minimum of every 50 feet. Closer spacing may be needed at intersections.
 - 7) Show locations and profile of all drains outside of the roadway area that are going to be utilized for roadside drainage.
 - 8) Legend of profile lines shall be shown on each road according to illustrations.
 - 9) Notations shall be included to require continuous underdrain beneath all curbs if required.
- b. Open Ditch Design

The plans must show plainly all the following information:

- 1) The location, size, and depth of all underground structures used for road drainage.
 - a) Clearly show sizes, lengths, classes or gauges, and locations of all known and/or proposed driveway culverts.
 - b) Clearly show sizes, lengths, classes or gauges, and locations of all crossroad culverts.
- 2) Each profile must be shown separately for the following:
 - a) Existing and proposed centerline.
 - b) Right ditch and right-of-way.
 - c) Left ditch and right-of-way.
 - d) Centerline, ditch, and proposed ditch of county road(s) adjacent to proposed subdivision with proper outlet thereto.
- 3) Percent of grade of proposed centerline and independent ditches.
- 4) Show the numerical elevations of the existing and proposed centerline at each station (100 ft.)

- 5) Legend shall be shown on every sheet according to the illustration.
- 6) Vertical curve information.
- 7) Plans and details of the proposed Soil Erosion and Sedimentation Control measures, both temporary (during construction) and permanent.
- 8) Invert elevations of crossroad culverts shall be indicated to accommodate a minimum of one foot of cover from the top of the culvert pipe at the shoulder point of the roadway.
- 9) Front slope and back slope information.
- 10) All drainage easements, including those in areas where the drainage outlet is not within control of a public agency.

D. Locations of Underground Utilities

Storm sewers shall be located in the road right-of-way if possible. No storm-sewer or sanitary sewer manholes or water manholes & valves may be located under the pavement surface. When necessary, storm sewers may be located in a public easement adjacent to the right-of-way, as approved by the County Highway Engineer.

All other utilities may be located in either the road right-of-way or an adjacent private easement for public utilities. Such easements should be established in a manner that does not take precedence over road easements. No utility manholes may be located in the pavement surface, unless essential to reasonable design.

Parallel or crossing utility alignments in the right-of-way shall provide physical separations of at least 18 inches. All underground utilities shall be buried with at least 30 inches of cover, including those in ditch areas.

Utility alignments shall conform to the following standards unless otherwise approved by the County Highway Engineer:

1. Storm Sewers

Storm sewers shall be located and aligned such as to best conform to the layout of existing facilities. In roads where no pattern has been established, storm sewers shall be located as follows:

East Side of Road – Directly under or immediately behind curb.

North Side of Road - Directly under or immediately behind curb

If a storm sewer is proposed outside the right-of-way, a drainage easement must be provided.

2. **Sanitary Sewers**

Sanitary sewers shall be located and aligned such as to best conform to the layout of existing facilities. In roads where no pattern has been established, sanitary sewers shall be located as follows:

West Side of Road – Between pavement and property line or in easement outside right of way.

South Side of Road – Between pavement and property line or in easement outside right of way.

3. **Water Mains**

East Side of Road – Between storm sewer and property line, or in easement outside of right-of-way.

North Side of Road – Between storm sewer and property line, or in easement outside of right-of-way.

4. **Others**

Underground electric, telephone, television, gas or other lines shall be located in an easement outside the right-of-way if possible, or within the right-of-way as approved by the County Highway Engineer. A utility easement of sufficient width outside the right of way to accommodate all utilities shall be provided.

E. Right-of-Way Requirements

1. The right-of-way required for proposed public roads shall be granted by dedication of the land in a subdivision plat, or by a warranty deed granted by the landowner to the Department of Transportation for a site condominium or for any other public road.
2. The right-of-way required along existing public roads shall be granted to the Department of Transportation by the landowner in accordance with current procedure. Such easements shall be submitted prior to approval of the Road and Drainage Plan.
3. All road construction shall be centered on the road right-of-way.
4. All roads shall have a minimum right-of-way width of 66 feet, unless additional right-of-way is required for proper drainage, sight distance or construction.
5. All commercial and industrial roads shall have a minimum right-of -way of 86'.
6. All dead-end roads shall be provided with a circular turn-around (cul-de-sac) with a minimum right-of-way radius of 70 feet for local and residential roads and 75 feet for commercial and industrial roads.
7. At intersections with rural cross-sections, the corners of the right-of-way line shall have radii of at least 15 feet.

8. The right-of-way on all curves of curvilinear roads shall be at least the same width as the right-of-way on the tangents. Where curves limit sight distance, the right-of-way may need to be expanded to encompass the sight lines.
9. These requirements are only intended to represent the minimum widths established by the Jackson County Department of Transportation. Townships may have their own requirements.
10. The Board, when considered necessary, may require greater widths of right-of-way.
11. When a by-pass lane is required at the entrance to the proposed development, the developer will be responsible for obtaining the right-of-way easement for the by-pass lane when existing right-of-way is not available.
12. When a temporary grading easement or tree removal permit is required for work on neighboring private property, the developer will be responsible for obtaining such easement or permit, and providing a copy to the Department of Transportation.
13. A boulevard section will be permitted at the main entrance to a development, and shall provide a minimum 100-foot right-of-way width for both the urban cross-section and the rural cross-section. A boulevard median shall not exceed 300 feet in length nor shall it be less than 100 feet in length. Sufficient taper of the right-of-way width, in accordance with design speed, must be provided adjacent to a boulevard section. The minimum cross section is shown in the illustrations.

In cases where permission for maintenance is granted, a maintenance agreement must be provided, assuring long-term maintenance of landscaping or other items in a boulevard by neighboring residents.

No subdivision identification signs, private utilities, flag poles, rocks/stones/boulders or trees and plantings growing to a height exceeding 3 feet will be allowed in a boulevard median or in any other area of the public right-of-way.

14. Survey monumentation of the right-of-way of all roads shall be required at all intersections and all points of curvature
15. Any additional deeds or easements required to properly construct the improvements must be identified and submitted to the Department of Transportation for review prior to approval of the Road and Drainage Plan. Such easements may include outlot easements, grading easements, permanent drainage easements, clear vision easements, permanent easements to construct by-pass lanes, and any other type required by the County Highway Engineer. The developer will record these documents upon acceptance of roads and return them to the Department of Transportation.

F. Public Safety and Convenience

1. All roads shall be designed to serve the convenience and safety of the traveling public. Design layout, names and/or any features relative to public safety and convenience shall be subject to review by the County Highway Engineer.

2. The developer will be responsible for all costs deemed necessary by the County Highway Engineer to provide for public safety and convenience along the proposed roads within the development boundaries. These costs may include the erection of Department of Transportation-approved road-name signs, stop signs, other traffic control signs (regulatory, warning, and informational), signals or pavement markings required for public safety and convenience.
3. The developer will be responsible for submission of a traffic control plan for the construction period, as required by the County Highway Engineer. The developer will be required to provide all traffic control devices called for on the approved detour plan and/or traffic-control plan.

G. Financial Requirements and Responsibilities

1. Application and Preliminary Review Fee

An application fee for preliminary review shall be submitted to the Department of Transportation with the Preliminary Plan. This fee is to cover the costs of processing the application for board approval and the preliminary review of the plans by staff. The Department of Transportation shall set the amount of the application fee periodically, and it shall be non-refundable. An additional fee may be required each time a Preliminary Plan is re-submitted with substantial revisions or amended phase boundaries, or after being formally rejected by the Board.

2. Cost Estimate

The proprietor's engineer shall submit an estimate for all construction costs within the road right of way at the time of final submittal of the Road and Drainage Plan.

3. Inspection and Administration Fee

An inspection and administration fee in an amount consistent with current policy shall be paid to the Department of Transportation upon submission of the Road and Drainage Plan. This fee will be a separate account to cover the cost of administration, inspections and all other expenses incurred by the Department of Transportation in relation to the development. The fee schedule for determining the amount of this fee shall be set periodically by the Department of Transportation based on a specified fixed amount, a percentage of estimated cost, or other reasonable criteria. The developer, prior to road acceptance, must pay any deficit in the fee account.

4. Signs

The proprietor shall pay for the furnishing and erection of the all temporary and permanent road name and traffic control signs, signals, or pavement markings by the Department of Transportation. The County Highway Engineer will determine the cost for all signs. The cash or certified check shall be submitted with the Road and Drainage Plan, or final plat if applicable.

For improvement projects on existing county roads, the contractor shall provide the required traffic control including all permanent signs, signals, or pavement markings as part of the approved construction plan.

If a letter of credit expires, the developer must immediately renew the letter of credit for the required time period.

5. Performance Guarantee

The Performance Guarantee shall be submitted by the proprietor as a contingency to guarantee satisfactory performance of the completed construction work for a period of two (2) years. The amount of the guarantee shall be 10% of actual road construction cost. The proprietor shall guarantee the following actions if required by the Department of Transportation:

- a. Reconstruct any damaged road improvement.
- b. Correct unforeseen deficiencies after construction is completed.
- c. Re-establish any grass or sodding in road right-of-way that has failed or has been destroyed.

For subdivisions, condominiums and other new roads the Performance Guarantee shall be deposited at the time of acceptance of roads into the County Road System. For improvements on existing roads the Performance Guarantee shall be deposited at the time of approval of the completed construction.

The Performance Guarantee may be deposited by cash, certified check or irrevocable bank letter of credit. Letters of credit submitted prior to acceptance of roads must be renewed for the full two-year period, starting at the time of acceptance.

The Performance Guarantee will be held by the Department of Transportation for a period of two (2) years after final completion and acceptance of the roads for maintenance. Two months prior to the end of the two (2) year period, the proprietor shall notify the Department of Transportation and a field inspection will be made for recommendation to the Board for release of the guarantee.

6. Insurance

The proprietor shall submit proof of insurance that provides coverage for all injuries and damages to property resulting from the construction. The minimum public liability coverage shall be \$500,000 for injury to one person. The minimum property damage coverage shall be \$100,000 and excess coverage insurance of \$1,000,000 (umbrella). The insurance form shall identify the Jackson County Department of Transportation as an additional insured party.

7. General

Approval of any phase of construction by the Department of Transportation does not guarantee acceptance of the roads for maintenance by the Board of Commissioners or relieve the proprietor of responsibilities or liabilities incurred by the development

of the road, subdivision, or condominium.

H. Construction of Roads

1. The traditional order of building roads shall be followed in order to avoid any possible disagreements between the proprietor and the Department of Transportation.
2. Approval of the Road and Drainage Plan does not relieve the developer from compliance with the Department of Transportation permit requirements and all other state, county or local permits. Permits must be obtained from the Department of Transportation by the developer for construction within the right-of-way of existing county roads, haul routes and driveway installation.
3. The proprietor's engineer shall be responsible to the Department of Transportation for continued liaison with the construction contractors, and shall be available on a regular basis for consultation with Department of Transportation staff.
4. The proprietor's engineer shall conduct a pre-construction meeting to clarify all standards, procedures and working relationships among contractors, engineers and inspectors.
5. The proprietor's engineer shall coordinate utility installation and relocations such that completed road and drainage improvements are not damaged.
6. Inspection by the Jackson County Department of Transportation shall not relieve the proprietor's engineer of any of his or her obligations but will verify the proper construction of the roads in their various stages of construction by means of spot inspections during the course of construction. The following inspection notifications to the Department of Transportation are required with a minimum 24-hour advance notice.
 - a. Finished subgrade surface.
 - b. Underground drainage and all utility installation.
 - c. Completed subbase.
 - d. Completed base course.
 - e. Concrete placement.
 - f. Bituminous placement.
7. The proprietor's engineer shall set and check grade and alignment, conduct tests, provide inspectors' daily reports and furnish test slips to the County Highway Engineer of materials incorporated in the road and drain construction, and supervise the inspection of all construction in the right-of-way and drainage easements.
8. The proprietor's engineer shall provide a certificate of satisfactory construction following each stage of construction. (A permit-to-place may be required prior to each succeeding stage of construction.)

9. Any proposed changes in the approved road construction plans or specifications must be submitted in writing by the proprietor's engineer, and written approval by the County Highway Engineer must be obtained before construction proceeds on the revised plan. This includes any bituminous paving after November 15 and prior to May 5.
10. The roads and drainage systems shall be maintained by the proprietor in a safe, smooth and clean condition throughout the construction period.
11. The Jackson County Department of Transportation will perform periodic site inspection and may perform independent material density tests during construction.

I. Department of Transportation Approval of Final Plat

Following approval of the Road and Drainage Plan for a subdivision, 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 two prints of the final plat. The Department of Transportation will require at least a 15-day period for review of the plat prior to approval. All financial requirements must be fulfilled at the time that the final plat is submitted.

A new plat will not be approved by the Department of Transportation until such time that the Drain Commission has approved of the on-site and off-site drainage systems and has proper easements recorded in its name and/or has approved the plat in accordance with Section 192 of the Plat Act as amended.

J. As-Built Drawings

Prior to acceptance of the roads by the Department of Transportation for maintenance, the proprietor's engineer shall sign and submit a complete set of prints of "as-built drawings", including all driveways and all changes made in the Road and Drainage Plan during the construction phase. The as-built drawings will be maintained in the permanent Department of Transportation files.

K. Acceptance of Roads

1. The proprietor's engineer shall certify that they have personally directed the observation and inspection of all construction, that all drainage facilities and roads have been built in accordance with the approved plans and specifications, and that all survey monuments are properly installed and recorded where applicable. In addition, test reports shall be submitted to verify the adequacy of materials and installation, in accordance with the MDOT Materials Sampling Guide and MDOT Standard Specifications.
2. If any stage of construction has not been approved by the Department of Transportation prior to work on the next stage, then acceptance of the roads may be denied. If the Department of Transportation determines it is in the best interest of the public, a delayed acceptance period may be imposed.

3. After the completed construction of all proposed roads and any other related facilities, the Department of Transportation will conduct a final inspection. This inspection will be made to assure the Department of Transportation that all visible construction has been completed satisfactorily, including clean up. The final inspection must take place between the dates of April 15 and November 15.
4. All driveways and driveway culverts installed prior to acceptance of the roads for maintenance shall be installed in accordance with Department of Transportation standards. The proprietor's engineer shall certify all such driveway construction and compliance with sight distance requirements. The developer will be responsible for repair or replacement of improperly installed driveways, including involvement of homeowners when appropriate.
5. If a temporary turnaround in any phase of development is required to provide access for Department of Transportation maintenance, such turnaround must be completed and the Department of Transportation furnished with all required easements prior to acceptance of roads.
6. If any mailboxes have been placed in the right-of-way prior to acceptance, the developer will be responsible to assure their compliance with standards.
7. If any landscaping items other than conventional grading and seeding have been placed in the right-of-way prior to acceptance, the developer will be responsible to assure their compliance with standards.
8. When all items of these procedures have been completed, the Board will formally consider acceptance of the roads into the County Road System. The Department of Transportation will notify the proprietor upon the acceptance of roads. At that time, the Completion Guarantee and all unexpended fund balances will be processed for release, with the exception of the Performance Guarantee, which will be re-affirmed by the Board for a two-year period.
9. Acceptance of the roads in any approved phase of a development will involve all of the roads in that phase; in no case will any of the roads be excluded.

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SECTION V - ROAD DESIGN AND CONSTRUCTION STANDARDS

A. Typical Road Cross-Section

The minimum requirements for roadbed widths and pavement structures are shown in the chart of typical cross-sections. The chart is divided into sections according to functional class (urban/rural and residential/industrial). Illustrations are also provided for typical urban and rural sections.

1. Bituminous Pavement Sections

a. Residential Roads

1) Urban Cross Section

- 66' R.O.W. minimum
- Curb and gutter – 32'; back to back, MDOT Type F4 or D2 (modified)
- Underground storm drainage
- Subbase – 6" compacted MDOT Class II Granular, width 35'
- Aggregate Base – 6", compacted MDOT 22A, width 34'
- Bituminous Base – 3" MDOT Bituminous Mixture 13A, (PG58-28), width 28'
- Bituminous Surface – 1½" MDOT Bituminous Mixture Type 13A, (PG58-28), width 28'

2) Rural Cross Section

- 66' R.O.W. minimum
- Ditch drainage; ditch bottom to ditch bottom width 40'
- Subgrade Surface – width 36'
- Subbase – 6" compacted MDOT Class II Granular, width 34'
- Aggregate Base – 6" compacted MDOT 22A, width 31'
- Bituminous Base – 3" MDOT Bituminous Mixture 13A, (PG58-28), width 22'
- Bituminous Surface – 1½" MDOT Bituminous Mixture 13A, (PG58-28), width 22'
- Shoulders – 4 1/2" compacted MDOT 23A, width 3'

b. Commercial and Industrial Roads

1) Urban Cross Section

- 86' R.O.W. minimum
- Curb and gutter – 40' back to back, type MDOT F4
- Underground storm drainage
- Subbase – 10" compacted MDOT Class II Granular, width 43'
- Aggregate Base – 6" compacted MDOT 21AA, width 42'

- Bituminous Base – 3” MDOT Bituminous Mixture 13A, (PG64-22), width 36’
- Bituminous Leveling – 1½” MDOT Bituminous Mixture 13A, (PG64-22), width 36’
- Bituminous Surface – 1½” MDOT Bituminous Mixture 13A, (PG64-22), width 36’

2) Rural Cross Section

- 86’ R.O.W. minimum
- Ditch drainage
- Subgrade Surface – width 48’
- Subbase – 10” compacted MDOT Class II Granular, width 42’
- Aggregate Base – 6” compacted MDOT 21AA, width 39’
- Bituminous Base – 3” MDOT Bituminous Mixture 13A, (PG64-22), width 28’
- Bituminous Leveling – 1½” MDOT Bituminous Mixture 13A (PG64-22), width 28’
- Bituminous Surface – 1½” MDOT Bituminous Mixture 13A, (PG64-22), width 28’; Paved shoulders are included
- Shoulders – 6” compacted MDOT 23A, width 4’.

2. Crown and Shoulder Slope

The crown on all pavement surfaces shall be 2% unless otherwise specified. The side slope of all shoulders shall be 4% or ½” per foot, unless otherwise specified.

3. Ditch and Road-Side Slopes

Front slopes and back slopes of ditches shall be 1:3 or flatter. Slopes behind curbs shall be 1:3 or flatter, except that the area immediately behind a curb shall be virtually flat for at least 3 feet in width.

No berms will be allowed in the right-of-way.

TYPICAL CROSS SECTIONS

| FUNCTIONAL CLASS | ROADBED | | | PAVEMENT STRUCTURE | | |
|---------------------------------|----------|----------|------|--------------------|----------------|---------|
| | PAVEMENT | SHOULDER | CURB | PAVEMENT | AGGREGATE BASE | SUBBASE |
| LOCAL AND RESIDENTIAL URBAN | 28' | NA | Y | 4 1/2" | 6" | 6" |
| LOCAL AND RESIDENTIAL RURAL | 22' | 3' | NA | 4 1/2" | 6" | 6" |
| COMMERCIAL AND INDUSTRIAL URBAN | 36' | NA | Y | 6" | 6" | 10" |
| COMMERCIAL AND INDUSTRIAL RURAL | 28' | 4' | NA | 6" | 6" | 10" |

NOTES:

1. Underdrains shall be provided for twenty (20) feet on either side of all drainage structures contained by curb & gutter.
2. Sand Subbase shall be MDOT Class II, compacted to 95% of maximum unit weight
3. Aggregate Base placed under bituminous surface shall be MDOT 22A, 21A, or 21AA compacted to 98% maximum unit weight.
4. Concrete Curb shall be MDOT Standard Detail F4 or D2 (modified) in state right-of-way.
5. Bituminous Base shall be MDOT 13A (local & residential) or MDOT 13A (commercial & industrial).
6. Bituminous surface courses shall be applied in two equal lifts as follows:
 - Leveling Course –MDOT 13A
 - Wearing Course – MDOT 13A Asphalt Binder shall be PG58-28 (residential) and PG 64-22 (industrial).
7. All bituminous paving courses shall be compacted to 97% maximum unit weight.
8. Bond coats shall be SS – 1h or equivalent.

B. Horizontal Alignment of Roads

1. The centerline of construction shall coincide with the centerline of the right-of-way. Any changes from this standard must be approved by the County Highway Engineer.
2. All curvilinear roads shall have horizontal curves of not less than a 230-foot centerline radius.
3. The radius of corners at local and residential intersections with rural cross-sections shall be at least 35 feet to the edge of pavement. The radius of corners at intersections with urban cross-sections shall be at least 30 feet to the back of curb.
4. Alignments shall be designed to avoid obstructions of driver's view as required to assure sufficient stopping sight distance.
5. The minimum length of driveway and intersection sight distance within a subdivision or condominium shall be consistent with current Department of Transportation sight distance policy. Required sight lines must be located within the road right-of-way of new roads. On existing roads, a clear vision easement may be allowed if approved by the County Highway Engineer.
6. The intersecting angle of proposed centerlines of roads shall be 90 degrees, unless the County Highway Engineer approves a variance. In no case shall a variance be more than a 10-degree difference from the basic 90-degree requirement.
7. The horizontal alignment of road intersections shall include at least a 100-foot long tangent in all directions. An exception will be allowed for a T-intersection on the outside of a curve, provided that adequate sight distance is assured.
8. Intersections within a subdivision shall be spaced at least 150 feet apart from centerline to centerline. When possible, approaches of side roads from opposite sides of a through road should be in direct alignment.
9. Cul-de-sac roads shall terminate in circular pavement areas that are a minimum 50-foot radius, as shown in the illustrations. If an island is provided, it shall be curbed and have a diameter no greater than 46 feet back to back.
10. Boulevard sections at the entryway shall be 10 feet minimum in width. The boulevard median shall not exceed 300 feet in length nor shall it be less than 20 feet in length. In no case shall the boulevard extend beyond the right of way. Sufficient taper of the roadway width must be provided adjacent to the interior end of a boulevard, according to MDOT requirements. The minimum cross-section is shown in the illustrations. Sections VII, #19 & #20.
11. A clear zone shall be incorporated in the design of all roads with ditch drainage, according to AASHTO guidelines. On curbed roads and cul-de-sacs, the horizontal clear zone distance shall be at least 5 feet behind curb and a vertical clear vision zone must be assured between heights 3 to 8 feet above pavement level, except that trunks of deciduous trees will be allowed in the clear vision zone. No evergreen trees or rocks/stones/boulders are allowed in islands or other clear vision zone area.

C. Roadway Grades and Vertical Curves

1. The minimum grade on any urban road shall be 0.50% and 0.70% on any rural road.
2. The maximum grade on any road shall be 6.0%.
3. The grade of any stop-controlled road shall match the cross-slope of the edge of the through road, i.e. the 2% crown in most cases.
4. A vertical curve shall be required when the algebraic difference in road grade is 2% or more. Vertical curves shall be designed according to AASHTO guidelines, except that the minimum length of curve shall be 100 feet.
5. Surface grades shall not exceed 3% within an intersection nor for a distance of 100 feet from the intersection of the centerlines.

D. Intersections with Existing County Roads

1. The minimum intersection sight distance for a vehicle entering an existing county road shall be consistent with the posted speed of the existing county road, and AASHTO guidelines. If there is no posted speed, the design speed shall be 55 mph or 25 mph in residential areas. Advisory speed panels are not considered for use as the design speed.
2. All approaches from subdivision or condominium roads to existing county roads shall include auxiliary lanes on the existing county road. At a minimum, the auxiliary lanes shall include a 50-foot entrance taper, a 10-foot full-width tangent section, and a 50-foot acceleration taper. Requirements for the lengths of the auxiliary lanes will be based on MDOT Standards, dependent on current speed limit. Longer auxiliary lanes may be required, based on analysis of projected through traffic and turning traffic volume on the county roads.
3. A by-pass lane on the opposite side of an existing county road from the subdivision or condominium entrance may be required as part of the development for a proposed subdivision. Determination as to whether a bypass lane is warranted will be based on AASHTO guidelines, according to through traffic and turning traffic volume. Dimensions of by-pass lanes will be based on MDOT Standards.
4. All existing obstacles shall be removed from the clear zone in the right-of-way of the adjoining county road or roads, according to AASHTO guidelines. Such obstacles may include but not limited to trees, boulders, poles, signs or mailboxes. No such obstacles should be included within five feet of the barrier curb in any area adjacent to an existing county road. Mailboxes shall be installed according to current Department of Transportation standards.

E. Clearing and Grubbing

Clearing and grubbing shall be performed in accordance with MDOT Standards. All trees, stumps and brush within the right-of-way shall be removed. A request for an exception must be submitted in writing to the County Highway Engineer.

F. Utility Installations

As a minimum, all utility installations shall be performed in accordance with MDOT Standards and Department of Transportation requirements. Township standards may apply when they are more stringent than MDOT Standards.

All utility locations shall be established in accordance with Department of Transportation standards. All underground utilities including lot services to all proposed lots on both sides of the road shall be installed prior to the subbase and base construction. All underground utilities shall be stubbed to the right-of-way line or beyond.

G. Excavation and Backfill

All excavations within the influence area of the pavement shall be backfilled with suitable granular material. All backfill material and construction shall meet the current MDOT requirements. Test reports will be required to verify the in-place density and material gradation. Township standards may apply when they are more stringent than MDOT Standards.

H. Finished Subgrade Surface

The finished subgrade surface shall be free of all topsoil, stones, stumps, organic matter, muck, peat, and frost heave material and shall be prepared in accordance with the current MDOT Standard Specifications. The in-place density shall be verified by test reports or proof rolling.

I. Underdrains

Underdrains where required shall be in accordance with MDOT Standard Specifications.

J. Subbase

Subbase materials and construction shall conform to the current MDOT Standard Specifications for Class II granular material. Test reports will be required to verify the in-place density and material gradation.

K. Aggregate Base Courses

1. **Materials**

Aggregate base course materials shall be in accordance with the current MDOT Standard Specifications.

- a. Compacted 22A, 21A, or 21AA dense-graded aggregate shall be placed, as specified in this manual. The compacted depth of any layer shall be neither more than 6 inches nor less than 3 inches. Each course shall be thoroughly compacted. Test reports will be required to verify in-place density.
- b. For MDOT-certified aggregate stock, the proprietor's engineer shall verify compliance with the specifications by performing gradation analysis.
- c. The use of slag material will not be permitted.
- d. The use of any other type of base construction is not permitted.

2. **Equipment and Construction**

Base material shall not be placed until the subbase has been approved by the County Highway Engineer. All current MDOT requirements shall be adhered to when placing the aggregate base course.

L. Bituminous Pavement

1. **Materials**

Bituminous paving materials shall be in accordance with the MDOT Standard Specifications.

2. **Equipment and Construction**

All current MDOT requirements shall be adhered to when placing bituminous pavement.

- a. The bituminous pavement shall be laid in two (2) or more courses to a total minimum compacted depth as designated. Test reports will be required to verify aggregate gradation, bituminous content and in-place density.
- b. All manhole covers and other utility castings within the paved area shall be adjusted to grade between the placement of the base course or leveling course and the surface course, per MDOT Standard Specifications. The adjacent pavement and/or curb and gutter shall be replaced to the original elevation, condition and kind of construction.

M. Sidewalks and Bicycle Paths

Sidewalks and bicycle paths, when called for on the plans, shall meet the MDOT Standard Specifications and Standard Plans as well as current Americans with Disabilities Act requirements. The depth of concrete sidewalks and bicycle paths shall not be less than 4 inches upon a sand cushion except at driveways where it shall be not less than 6 inches or as specified by the governing body. When bituminous material is used, the depth shall be not less than 3 inches, with 6 inches of aggregate base. Sidewalk and bicycle path grades shall be shown on the plans.

N. Curb and Gutter

The curb and gutter cross-section shall be as illustrated herein for MDOT F4 or D2 curb, or as per the current MDOT Standard Specifications and Standard Plans. Testing reports shall be required to verify the concrete mix and strength as stated in the concrete pavement section. Backfill behind the curb shall consist of suitable granular material.

O. Aggregate Shoulders

Aggregate shoulder materials and construction shall be in accordance with the current MDOT Standard Specifications for Class A Shoulders. All shoulders shall be constructed with a minimum slope of 4% (½" per ft.) away from the paved surface. Test reports will be required to verify the in-place density and material gradation.

P. Guardrail

Galvanized steel beam guardrail shall be placed at all locations where warranted according to AASHTO guidelines or specified by the Department of Transportation. Installation shall be in accordance with MDOT Standard Plans and Standard Specifications. In order to accommodate a guardrail, the subgrade width must be increased by at least 5 feet.

Q. Topsoil Surface, Seeding and Mulching

All topsoil, seed, fertilizer and mulch placement shall be in accordance with the current MDOT Standard Specifications and Standard Plans.

All disturbed areas shall be covered with three (3) inches of topsoil. The Department of Transportation will accept no road where erosion or sedimentation is evident. Also the seeding must be sufficiently established in and along the road right-of-way to assure that future erosion or sedimentation problems will be of no concern.

R. Non-Specified Materials and Construction

All items that are not specified within these Specifications, but that are essential to the proper construction of the roads in question, shall be of material and constructed in accordance with the current MDOT Standard Specifications and Standard Plans, and shall be submitted to the County Highway Engineer for approval.

S. Signs, Pavement Markings and Traffic Control

All signs, pavement markings and other traffic control devices shall be placed in accordance with approved plans, and shall conform to MDOT Standard Plans and Standard Specifications, and the Michigan Manual of Uniform Traffic Control Devices, and current Department of Transportation practices. The Department of Transportation must be notified and shall give approval of devices and locations prior to placement. High intensity reflectorized materials shall be used on all permanent signs (MDOT Type III A). Placement of signs, pavement markings and other traffic control devices shall not begin until all the construction work has been completed on the roadway and drainage system, unless

otherwise approved by the County Highway Engineer. All such signs, markings and devices, shall be completed prior to final inspection.

Upon acceptance of the new roads, the Department of Transportation will install the permanent road name signs and traffic control signs as soon as possible. If requested by the developer because of safety reasons, before acceptance of the roads, and if lots are occupied, the Department of Transportation will install road name signs and stop signs at the intersections. All costs will be the responsibility of the developer and if signs are damaged before acceptance, the developer must pay for replacement.

T. Mailboxes

Individual mailbox posts and mailboxes shall be installed per Department of Transportation guidelines.

Cluster mailboxes shall be placed beyond the clear zone per AASHTO guidelines. Pavement must be widened by at least eight feet and shoulder or curb must be provided at cluster mailbox locations. The length of the paved eight-foot section and approach and departure sections must be approved by the County Highway Engineer prior to construction.

U. Trees

No trees may be planted in the right-of-way without prior approval of the Jackson County Department of Transportation.

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SECTION VI - DRAINAGE DESIGN AND CONSTRUCTION STANDARDS

All roadway surfaces and other areas within the road right-of-way shall be designed, constructed and maintained such that surface water is free to drain to existing drainage courses. Leachate basins are not allowed under any circumstances. Discharged water flowing onto adjoining property should follow an established drainage course. The drainage flowing into County ditches in existing road right-of-way from adjoining property shall not be allowed to increase as a result of any new development.

A. Approval Authority

For all drainage improvements along new and existing roads, the plans shall meet current Department of Transportation standards.

For drainage improvements on county drains and drainage systems which will be dedicated to the Drain Commissioner, the proprietor will be required to obtain the Drain Commissioner's approval prior to the Road and Drainage Plan approval. For drainage improvements on watercourses under the jurisdiction of the Michigan Department of Environmental Quality (MDEQ) and for improvements impacting regulated wetlands, the proprietor will be required to obtain a MDEQ permit prior to the Road and Drainage Plan approval.

B. Drainage Easements

Drainage from the road right-of-way may be accommodated by drains located in an adjoining drainage easement. As deemed necessary by the Department of Transportation, all such drains carrying significant proportions of the run-off from the road right-of-way shall be enclosed drains with approved material, size and grade in accordance with the design standards of the Jackson County Drain Commission. All other appurtenances such as headwalls and manholes shall be in accordance with the current MDOT Standards.

C. Drainage Design

The storm drainage design shall be in accordance with the agency that has jurisdiction over the watercourse. In no case shall the design flow capacity be less than a 10-year, 24-hour storm event. Drainage design computations shall be in accordance with the Soil Conservation Service (SCS) TR-55 or TR20 Methods, or the Rational Method, and be submitted for all storm sewers, drainage ditches, retention/detention ponds, culverts and restricted discharges. Furthermore, computations shall encompass all drainage areas, and, include all rates of discharge, runoff coefficients and times of concentration for each inlet and outlet design point. When using SCS design methods, all design storm events shall be based on the SCS Type II rainfall distribution.

Roadside ditches and roadside drainage structures are intended to accommodate drainage from the roadway and should not be designed to the exclusive drainage system for the entire subdivision. Additional drainage systems may be required in unique drainage situations.

On all bridge installations and all culverts placed in a natural streambed, the proprietor shall provide a scour analysis in accordance with MDOT requirements.

D. **Storm Sewers**

The design of all storm sewers shall provide a flowing velocity of three (3) feet per second, minimum and ten (10) feet per second, maximum.

1. **General**

- a. Storm sewers and their appurtenances should be made a part of the County Drain System by proper legal procedures before final acceptance of the road in the plat by the Board.
- b. The design of all storm sewers shall be in accordance with the Jackson County Drain Commission's design standards.

2. **Materials**

All storm sewers and appurtenant structures shall be constructed of materials that meet the current MDOT Standard Specifications and Standard Plans.

3. **Equipment and Construction**

All current MDOT requirements shall be adhered to when placing storm sewers and appurtenant structures.

4. **Structures and Covers**

- a. All structure design shall be in accordance with current MDOT Standard Plans for Manholes, Catch Basins and Inlets. A structure schedule shall be provided on the plans showing each manhole, catch basin or end section by number that includes structure type, casting, inverts, rim elevation and depth.
- b. All structure covers shall be in accordance with MDOT Standard Plans. All catch basin or inlet covers shall be designed to accept the 10-year, 24-hour design storm event. A backwater condition should not occur during this storm event.
- c. All catch basins shall have sumps.
- d. Shop drawings shall be submitted to the proprietor's engineer for review for all storm sewers and appurtenances to be installed. Shop drawings will consist of letters of certification for the pipe and manufacturer's standard details or cut sheets for structures and appurtenances.

5. **Location of Structures**

- a. Catch basins, inlets and culverts shall be placed such that all low points are properly drained.
- b. Structures shall be placed in locations to prevent flow across a road intersection.

- c. Catch basins and inlets serving a continuous flow line shall be spaced no more than 350 feet apart.
- d. Manholes shall be located at all points of change in alignment, size, or grade and shall be spaced no more than 350 feet apart.
- e. Public utility lines (water main, storm sewer and sanitary sewer) should be located to minimize the length of line under the pavement surface.

6. Inspection

The proprietor's engineer shall inspect the construction to assure that the storm sewers are true to line and grade and properly bedded and backfilled. In addition, inspection of plastic pipe shall include 95% mandrel testing in accordance with MDOT standards. All storm sewers shall be flushed and all sumps cleaned prior to final inspection by the Jackson County Department of Transportation.

E. Roadside Ditches

- 1. The minimum grade of any ditch line shall be 0.70%. Ditch line grades from 0.70% to 4% shall require that the ditch bottoms and slopes be stabilized with established turf. Grades over 4% shall be stabilized permanently by means of riprap, erosion control blankets or enclosed with storm sewers. Seeding and mulching and/or matting shall be provided in accordance with current MDOT Standards.
- 2. Roadside ditches shall be free of sedimentation and erosion prior to acceptance of the roads by the Department of Transportation.
- 3. Ditches along existing county roads adjacent to the development shall be cleaned out to such a depth and to such an extent as to provide drainage. All brush, fences, obstructions, etc., shall be removed from the right-of-way. Trees shall be removed as directed by the Jackson County Department of Transportation.
- 4. When required by the County Highway Engineer, drainage in ditches along the existing county roads shall be replaced by underground drainage structures. The roadside drainage system is not intended to function as a storm water system.

F. Crossroad Culverts

1. Materials

- a. The minimum size for crossroad culverts shall be 15" diameter (for cleaning purposes), with equivalent-size end sections where applicable.
- b. Material shall be as specified by the current MDOT Standards and shall be designed to carry an H-20 live load.
- c. A minimum of 18" of cover is required.

2. **Construction**

- a. Installation and erosion treatment at the ends of culverts shall be in accordance with current MDOT Standards.
- b. All backfill shall be MDOT Class II material or other suitable material approved by the County Highway Engineer and compacted under the controlled density method in accordance with the current MDOT Standards. Backfill shall be placed and compacted with a mechanical compactor in layers not exceeding twelve (12) inches.
- c. All bedding and filling shall be in accordance with current MDOT Standards.

3. **Inspection**

The construction shall be inspected by the proprietor's engineer to assure that the culverts are true to line and grade and properly bedded and backfilled. In addition, inspection of plastic pipe shall include 95% mandrel testing in accordance with MDOT standards.

G. **Driveway Culverts**

1. **Materials**

- a. Material shall be corrugated metal pipe (CMP) only and shall be used in accordance with the current MDOT standards including a minimum cover as recommended by the manufacturer.
- b. The typical minimum pipe cover shall be twelve (12) inches.
- c. Driveway culverts shall be designed by the developers' engineer with a minimum diameter of 12 inches and a minimum length of 24 feet.

2. **Construction**

- a. Installation and erosion treatment at the ends of culverts shall be in accordance with current MDOT Standards including a minimum cover as recommended by the manufacturer.
- b. All bedding and filling shall be in accordance with current MDOT Standards.
- c. Headwalls are not allowed in the road right-of- way.

3. **Inspection**

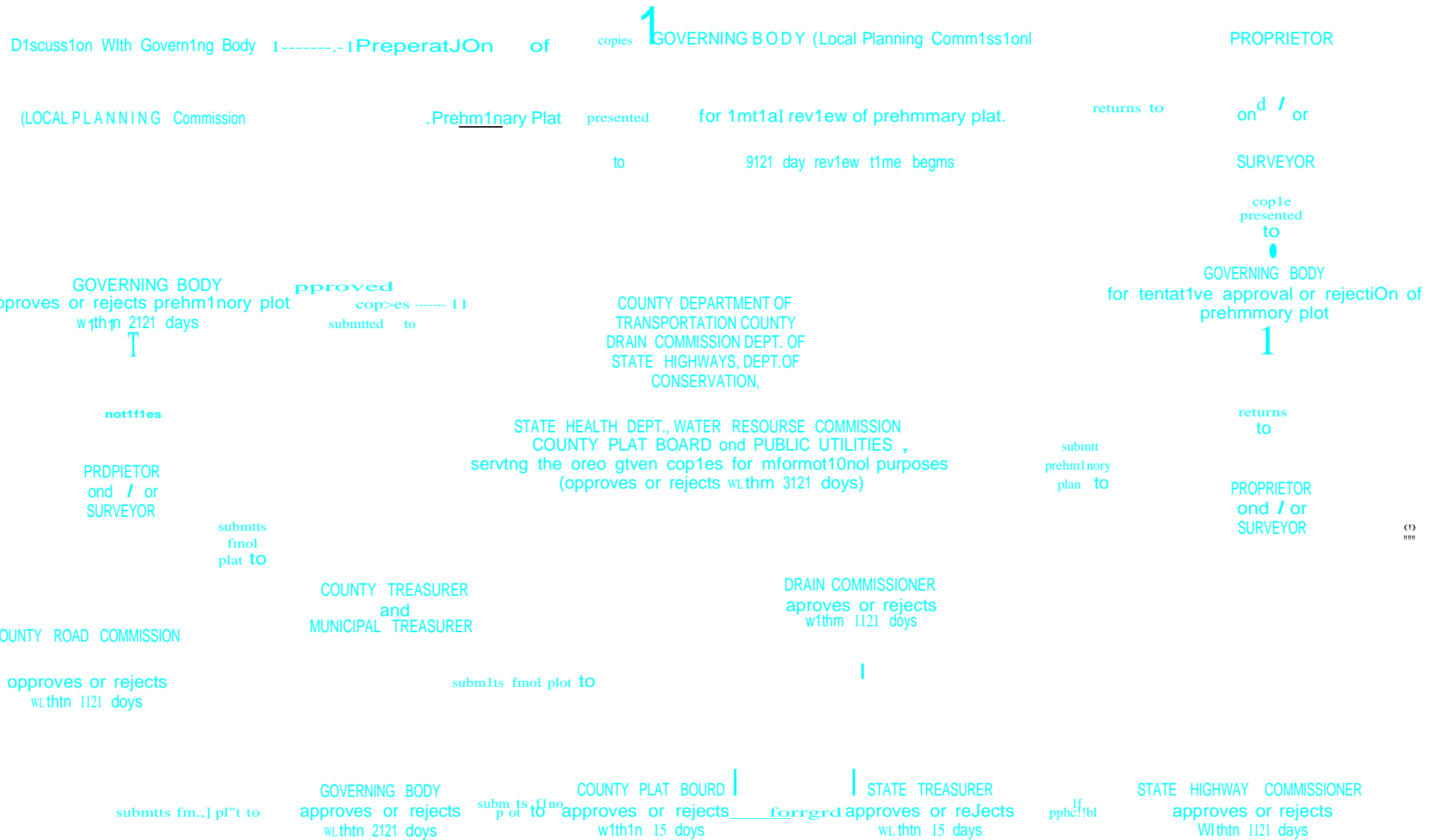
The proprietor's engineer to assure that the culverts are true to line and grade and properly bedded and backfilled shall inspect the construction.

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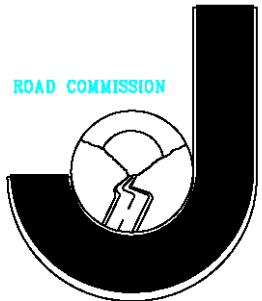
SECTION VII – ILLUSTRATIONS

1. Plat Review Procedure
2. Site Condominium Review Procedure
3. Typical Bituminous Cross-Section - Urban (Local & Residential)
4. Typical Cul-de-Sac with Island - Urban (Local & Residential)
5. Typical Entry onto Existing Paved Road - Urban (Local & Residential)
6. Typical Radii of Internal Streets - Urban (Local & Residential)
7. Typical Bituminous Cross-Section - Urban (Commercial & Industrial)
8. Typical Urban Cul-de-Sac with Island- Urban (Collector & Industrial)
9. Typical Entry onto Existing Paved Road- Urban (Commercial & Industrial)
10. Typical Radii of Internal Streets - Urban (Commercial & Industrial)
11. Typical Bituminous Cross-Section - Rural (Local & Residential)
12. Typical Cul-de-Sac with Island, Rural (Local & Residential)
13. Typical Entry onto Existing Paved Road – Rural (Local & Residential)
14. Typical Radii of Internal Streets- Rural (Local & Residential)
15. Typical Bituminous Cross-Section - Rural (Commercial & Industrial)
16. Typical Cul-de-Sac with Island – Rural (Collector & Industrial)
17. Typical Entry onto Existing Paved Road - Rural (Commercial & Industrial)
18. Typical Radii of Internal Streets – Rural (Commercial & Industrial)
19. Typical Bituminous Cross- Section Boulevard – Urban (Local and Residential)
20. Typical Bituminous Cross- Section Boulevard –Rural (Local and Residential)
21. Typical Curb & Gutter Cross-Section Details
22. Minimum Sight Distance Guidelines

PLAT REVIEW PROCEDURE JACKSON COUNTY, MICHIGAN



ROAD COMMISSION



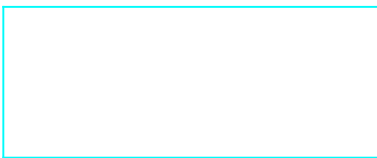
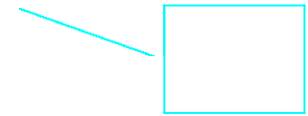
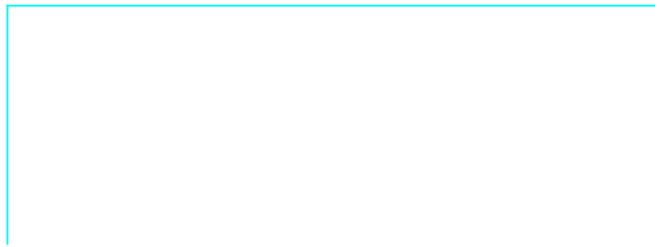
1. STATE TREASURER
2. COUNTY TREASURER distributes
3. MUNICIPALITY (GOVERNING BODY) certified for recording, who then
4. COUNTY ROAD COMM. plots certifies all plats
5. PROPRIETOR

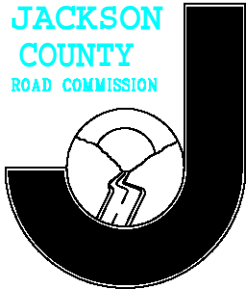
REGISTER OF DEEDS

sends to

returns to

sends to - STATE TREASURER approves or rejects within 15 days





SITE CONDOMINIUM REVIEW PROCEDURE

DEVELOPER SUBMITS AND
PAYS FOR PRELIMINARY

PLAN REVIEW FEE

JCDOT APPROVES PRELIMINARY SITE PLAN
TOWNSHIP, DRAIN COMMISSION, AND MDEQ
APPROVE PRELIMINARY SITE PLAN

| | |
|--------------------|-----------------------------|
| DEVELOPER PAYS FDA | DEVELOPER SUBMITS |
| 1. INSPECTION FEE | 1. BANK LETTER OF |
| 2. STREET NAME | CREDIT TO JCDOT |
| SIGNS AND TRAFFIC | FOR FULL COST OF |
| CONTROL SIGNS | CONSTRUCTION |
| | 2. COST ESTIMATE |
| | FOR ROAD WORK |
| | 3. APPROVAL LETTERS FROM |
| | TOWNSHIP, DRAIN COMMISSION, |
| | AND MICHIGAN DEPARTMENT |
| | OF ENVIRONMENTAL QUALITY |

JCDOT APPROVES ROAD & DRAINAGE PLANS

OBTAIN COMMERCIAL
DRIVEWAY PERMIT FROM
JCDOT

CONSTRUCTION COMPLETE EXCEPT
TDP COURSE OF ASPHALT

| | | |
|---|--|---|
| LETTER FROM DEVELOPER'S ENGINEER STATING ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH PLANS & SPECS | OBTAIN LETTER FROM DRAIN COMMISSIONER STATING DEVELOPMENT'S DRAINAGE IS PART OF COUNTY DRAIN SYSTEM | DEVELOPER SUBMITS TO JCDOT: 1. 'AS BUILT' PLANS 2. LETTER REQUESTING FINAL APPROVAL OF DEVELOPMENT 3. WARRANTY DEED FOR R.O.W. FOR REVIEW BY JCDOT 4. TESTING REPORTS AND CORRECTIONS FOR ROAD WORK 5. WATER AND SEWER TESTING REPORTS (PRESSURE & MANDRELL) |
|---|--|---|

PRELIMINARY
INSPECTION OF
DEVELOPMENT
BY JCDOT

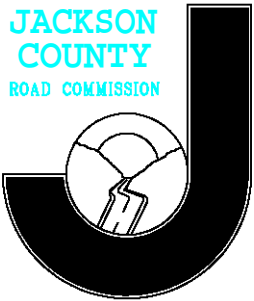
DEVELOPER BUILDS HOUSES

JCDOT INSPECTS ROAD

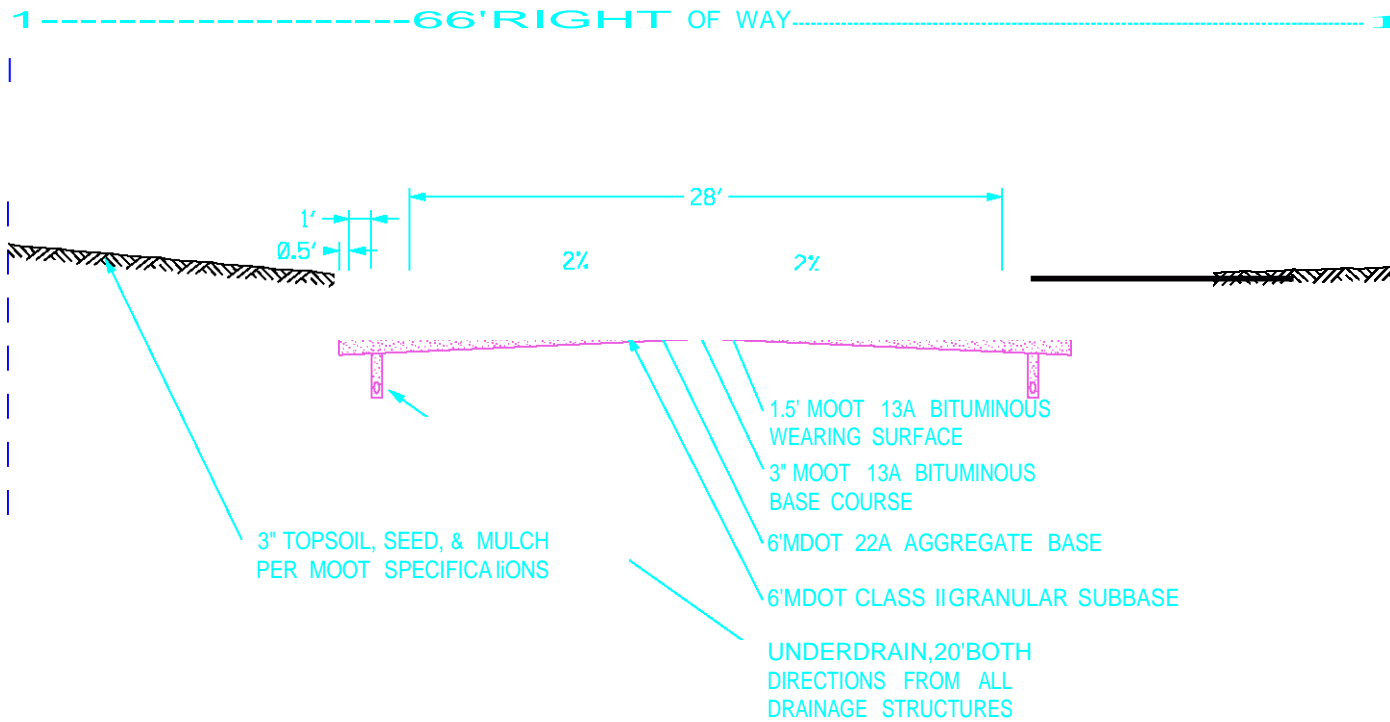
| | |
|--|---|
| DEVELOPER MAKES NECESSARY CORRECTIONS AND PAVES FINAL COURSE OF ASPHALT | BANK LETTER OF CREDIT REDUCED TO 75% OF FULL CONSTRUCTION COST |
|--|---|

DEVELOPER MAINTAINS ROAD
FOR 1 YEAR

| | | |
|---|--|---|
| ROADS IN SITE CONDOMINIUM ACCEPTED AS COUNTY ROADS | JCDOT PERFORMS FINAL INSPECTION BANK LETTER OF CREDIT RELEASED | RECORDED WARRANTY DEED FOR R.O.W. OF NEW ROADS AND ALONG EXISTING COUNTY ROADS SUBMITTED |
|---|--|---|



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TYPICAL BITUMINOUS CROSS SECTION
URBAN LOCAL AND RESIDENTIAL

TYPICAL CUL-DE-SAC WITH ISLAND
URBAN LOCAL AND RESIDENTIAL

23'R TO BACK OF CURB

70'R TO RIGHT OF WAY

52'R TO BACK OF

70'R TO RIGHT

02 MODIFIED OR
F4 CURB

F4 or 02 SPILLOUT
CURB

TO BACK OF CURB

RADIUS
POINT

↑ 28'
32'
66'-----1

1-4-----

----- 70' HALF WIDTH RIGHT OF WAY -----

23' TO BACK OF CURB

If J/, MAX.

----- 25' -----

1.5" MOOT WEARING 13A BITUMINOUS COURSE

3' TOPSOIL, SEED & MULCH PER MOOT SPECIFICATIONS

TOPSOIL, SEED & MULCH PER MOOT SPECIFICATIONS

MOOT F4 or 02 SPILLOUT CURB AND GUTTER

----- 33' -----

3' MOOT 13A BITUMINOUS BASE COURSE

6' MDOT 22A AGGREGATE BASE

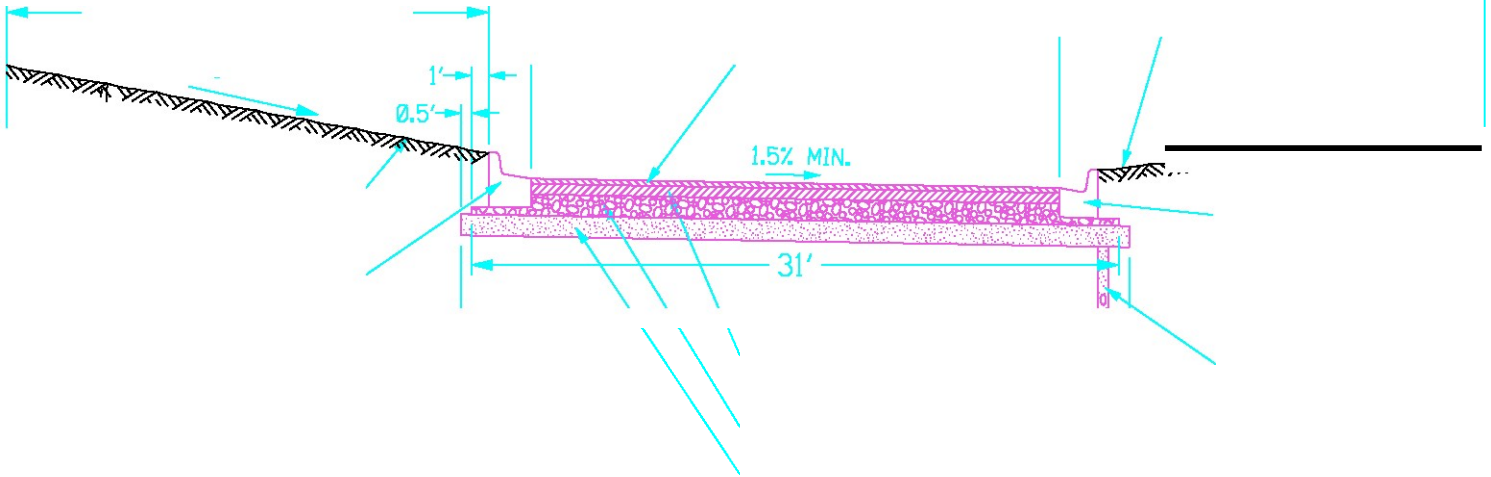
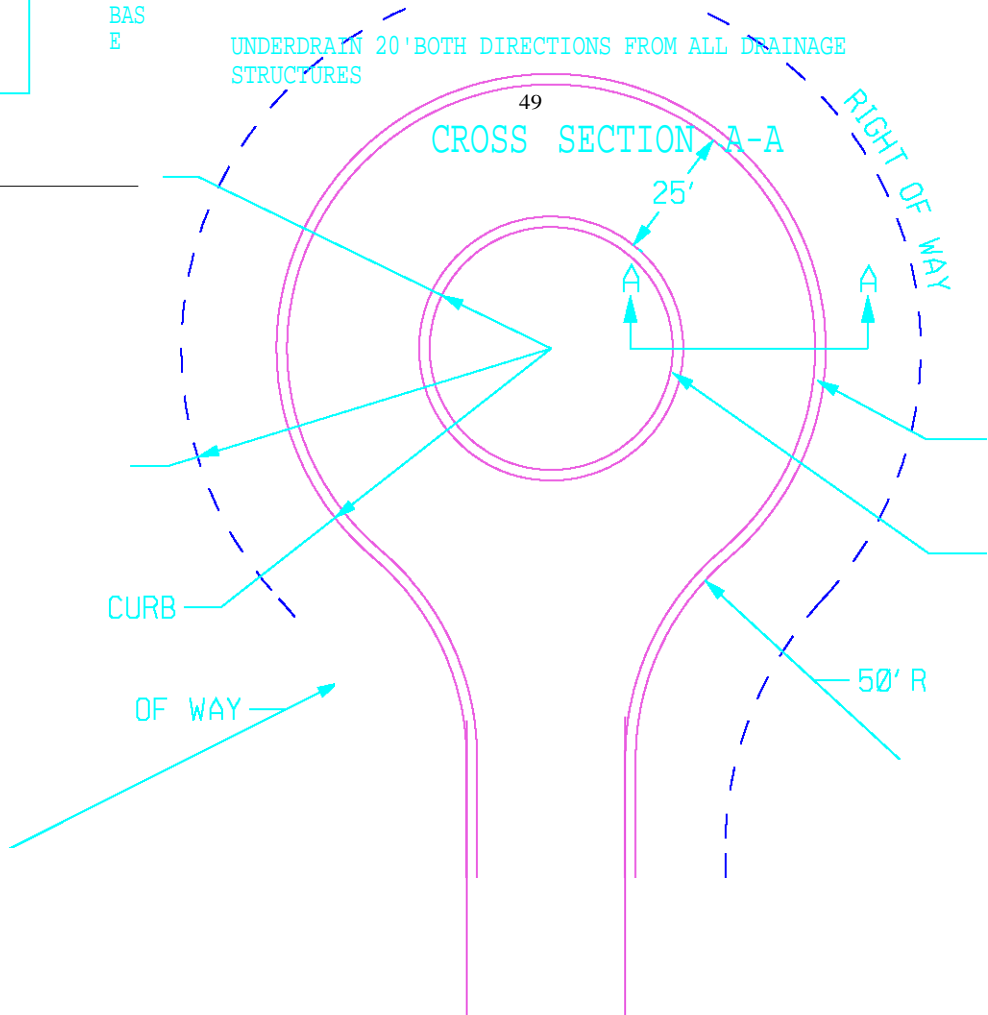
6
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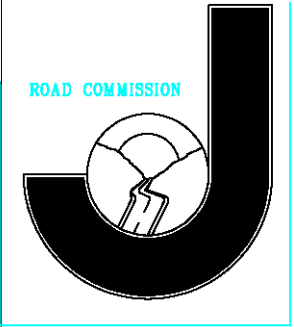
II
GRA
NUL
AR
SUB
BAS
E

MOOT F4
OR 02 MODIFIED CURB AND GUTTER

UNDERDRAIN 20' BOTH DIRECTIONS FROM ALL DRAINAGE
STRUCTURES

49
CROSS SECTION A-A

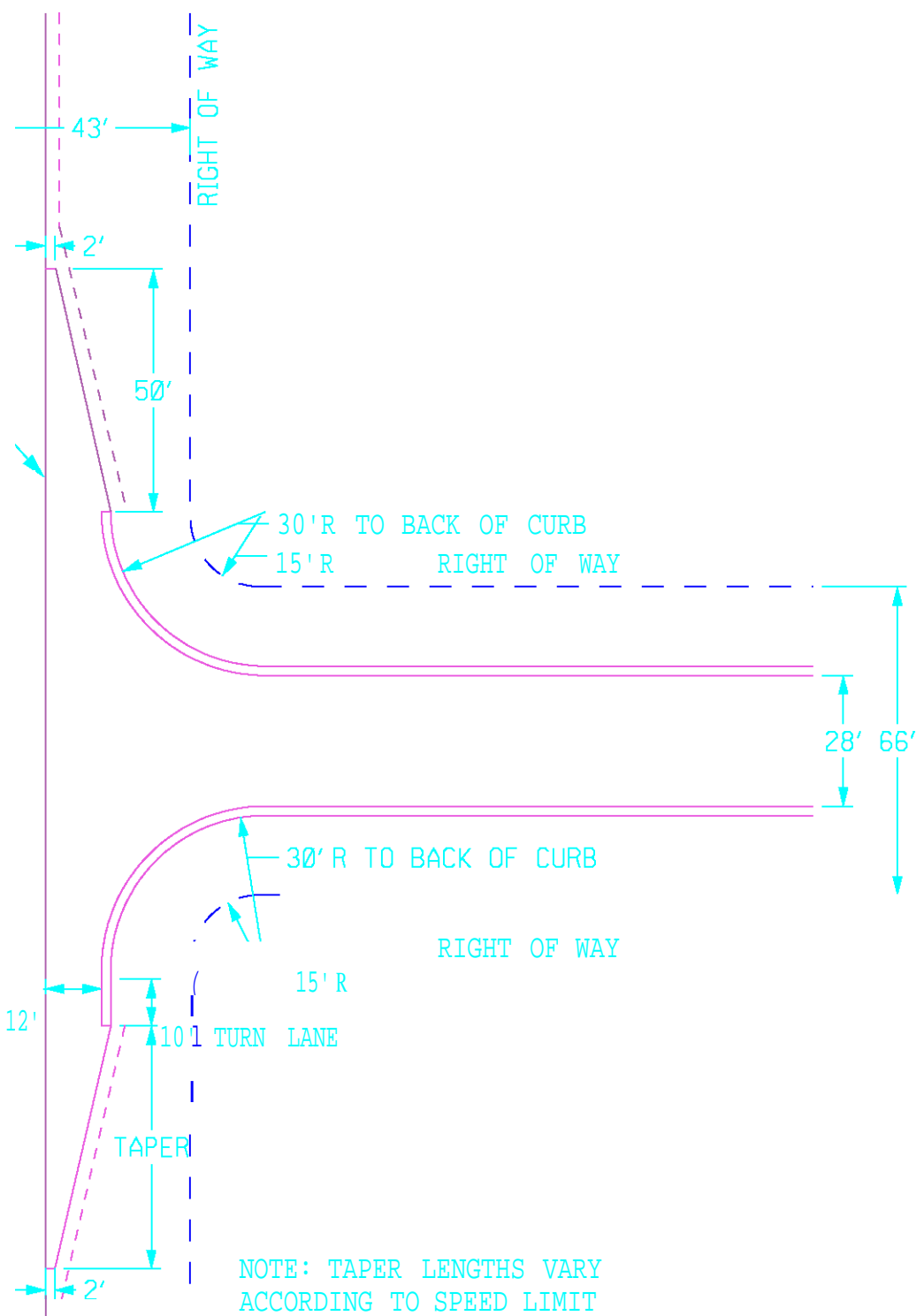




ROAD COMMISSION

EDGE OF PAVEMENT
(SAWCUT WHEN
REQUIRED)

CENTERLINE OF
EXISTING ROAD

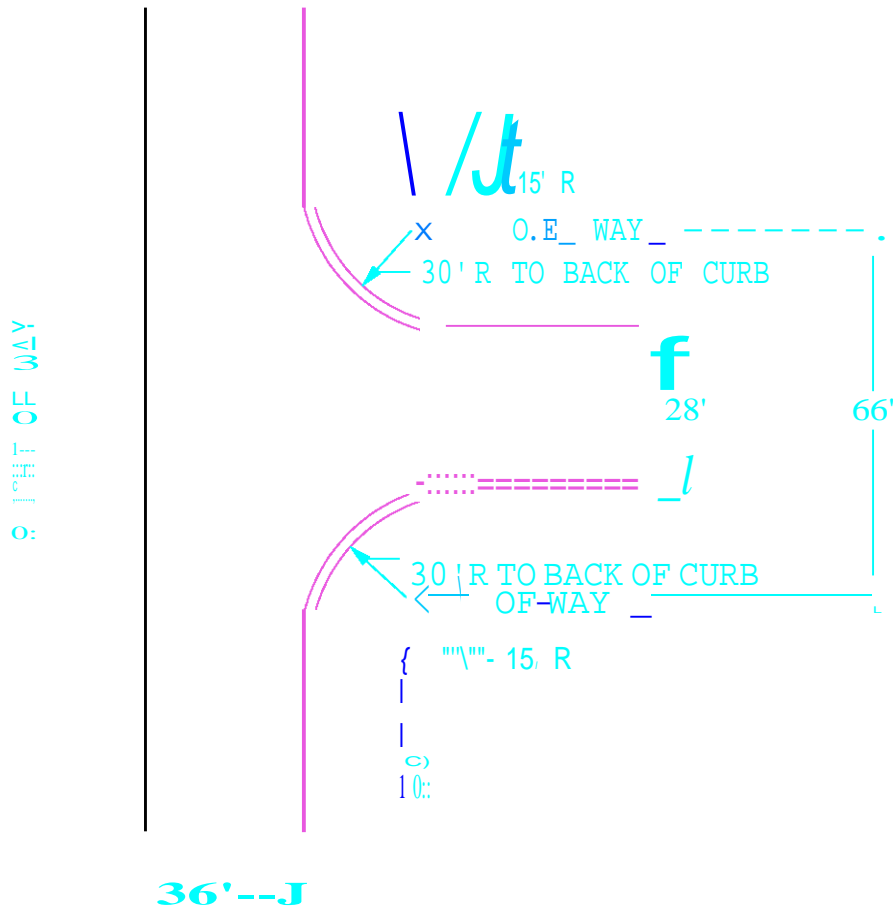
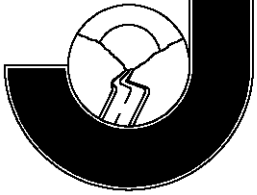


13:10:10

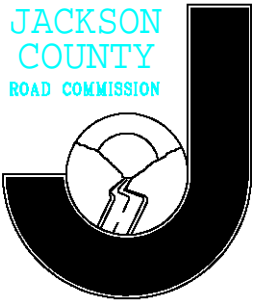
| SPEED LIMIT (MPH) | TAPER LENGTH (FT) |
|-------------------|-------------------|
| 30 OR LESS | 50 |
| 35 | 75 |
| 40 | 100 |
| 45 | 125 |
| 50 OR MORE | 150 |

TYPICAL ENTRY ONTO EXISTING PAVED ROAD

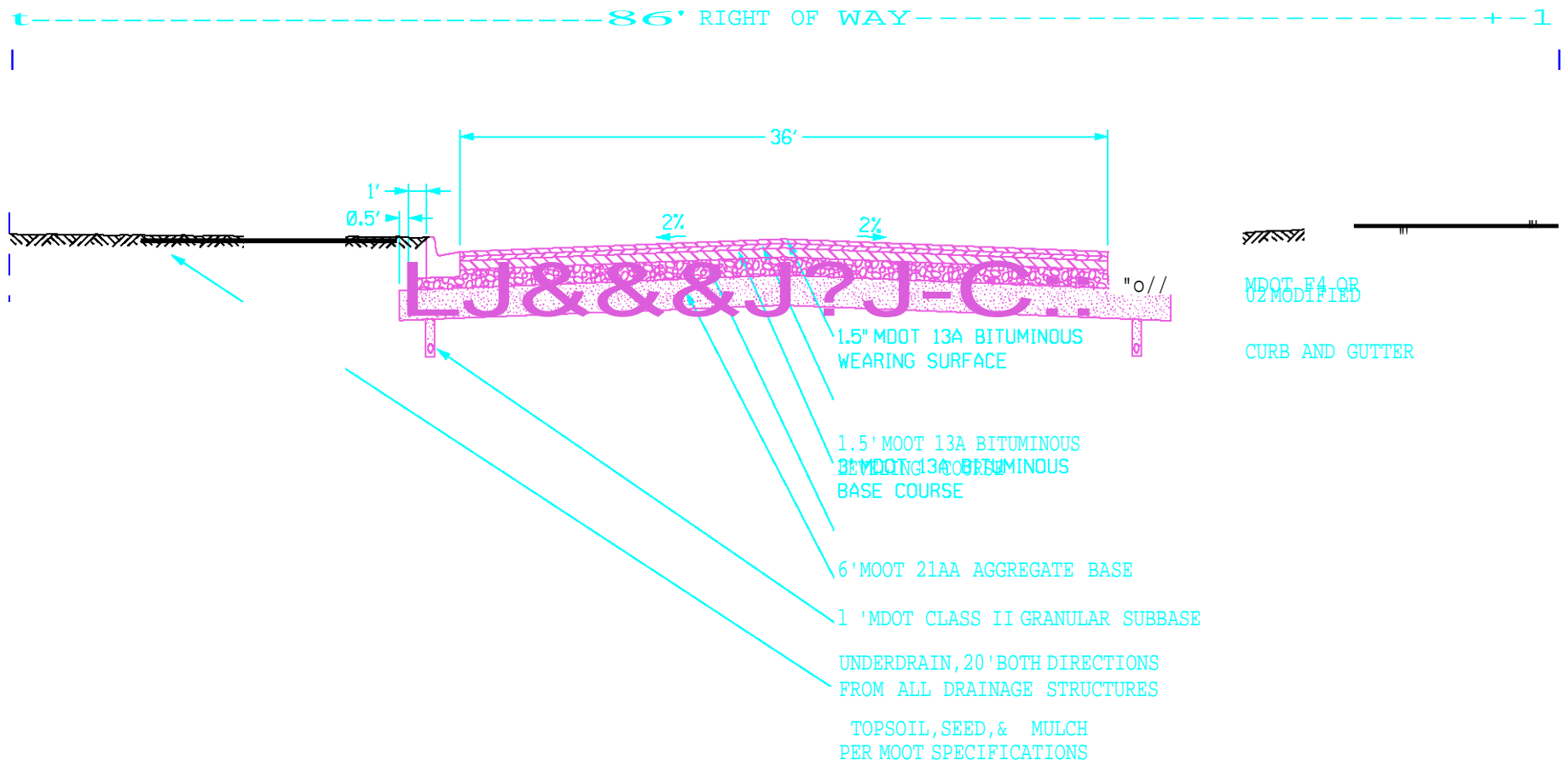
URBAN LOCAL⁵⁰ AND RESIDENTIAL



TYPICAL RADII OF INTERNAL URBAN STREETS LOCAL AND RESIDENTIAL

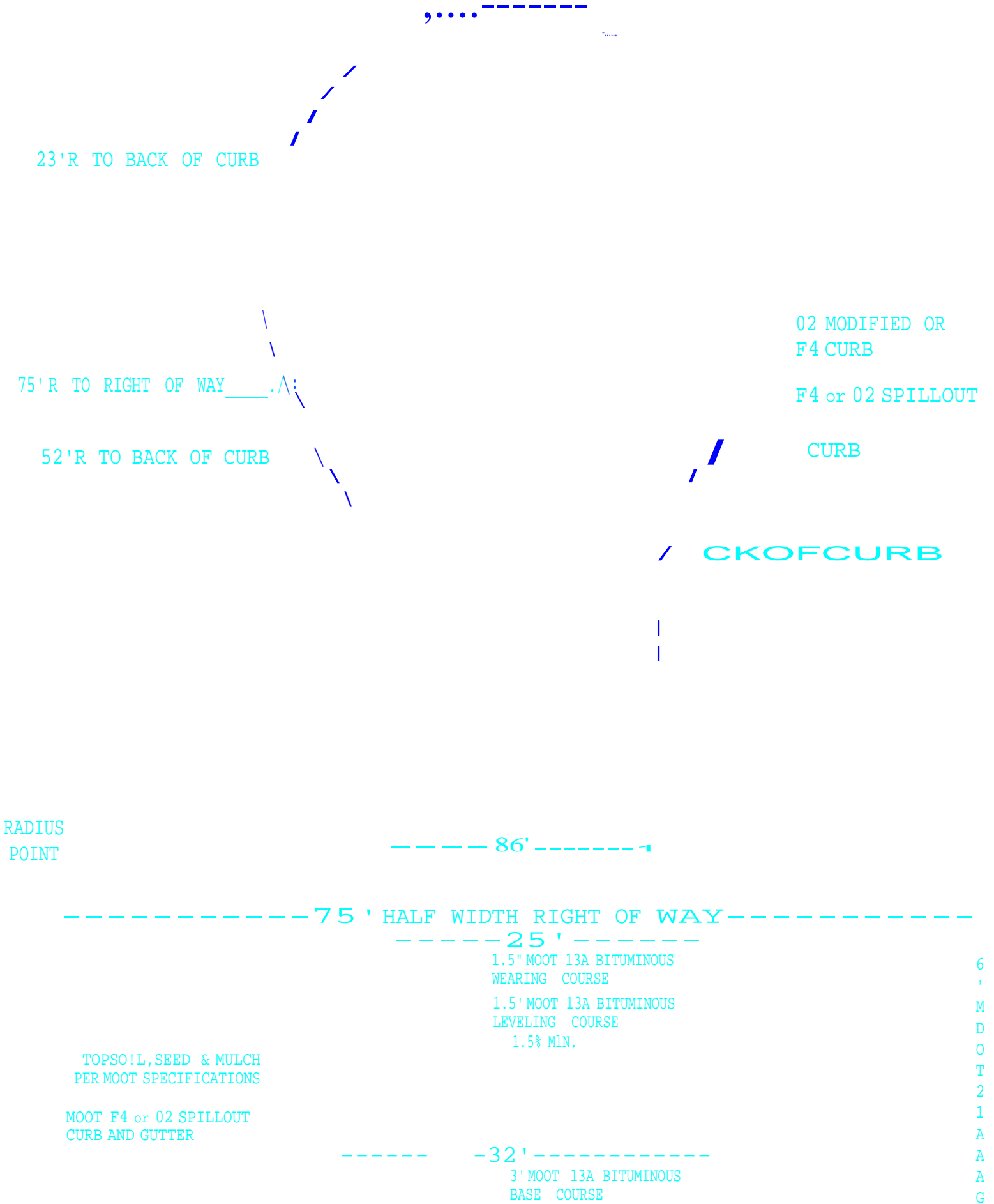


(1)



TYPICAL BITUMINOUS CROSS SECTION
 URBAN COMMERCIAL AND INDUSTRIAL

TYPICAL CUL-DE-SAC WITH ISLAND URBAN COMMERCIAL AND INDUSTRIAL



ROAD COMMISSION

GR
EG
AT
E
BA
SE

3' TOPSOIL, SEED & MULCH PER MOOT SPECIFICATIONS

MOOT F4
OR 02 MODIFIED CURB AND GUTTER

UNDERDRAIN 20' BOTH DIRECTIONS FROM ALL
DRAINAGE STRUCTURES

25'
10' MDOT CLASS II GRANULAR SUBBASE

53
CROSS SECTION A-A

RIGHT OF WAY

75' R TO RIGHT OF WAY

36'

40'

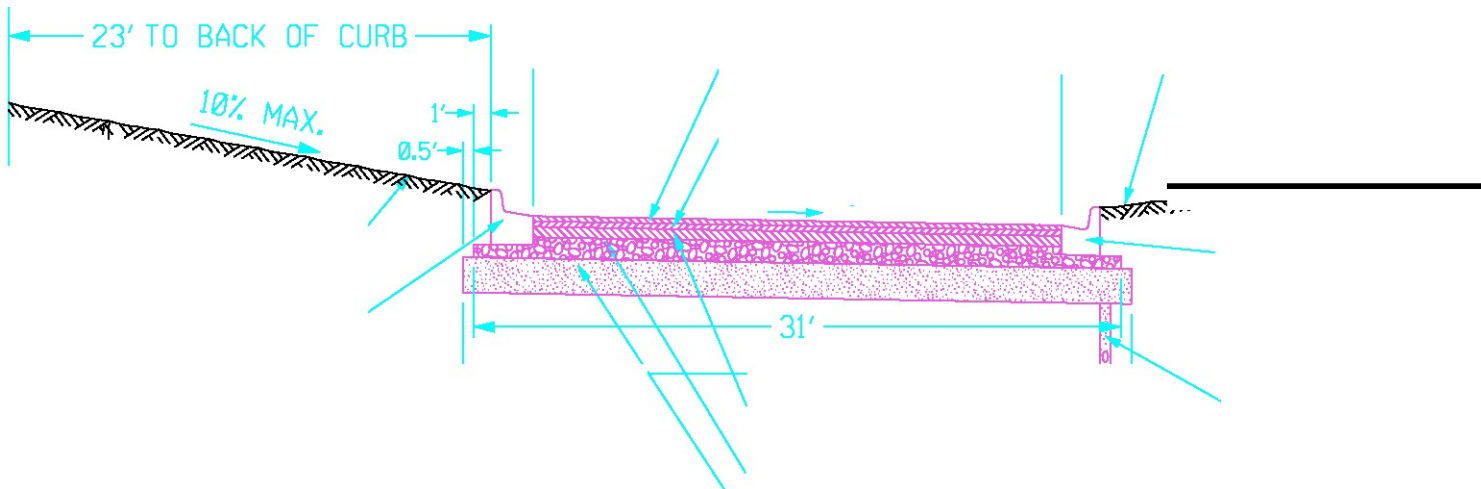
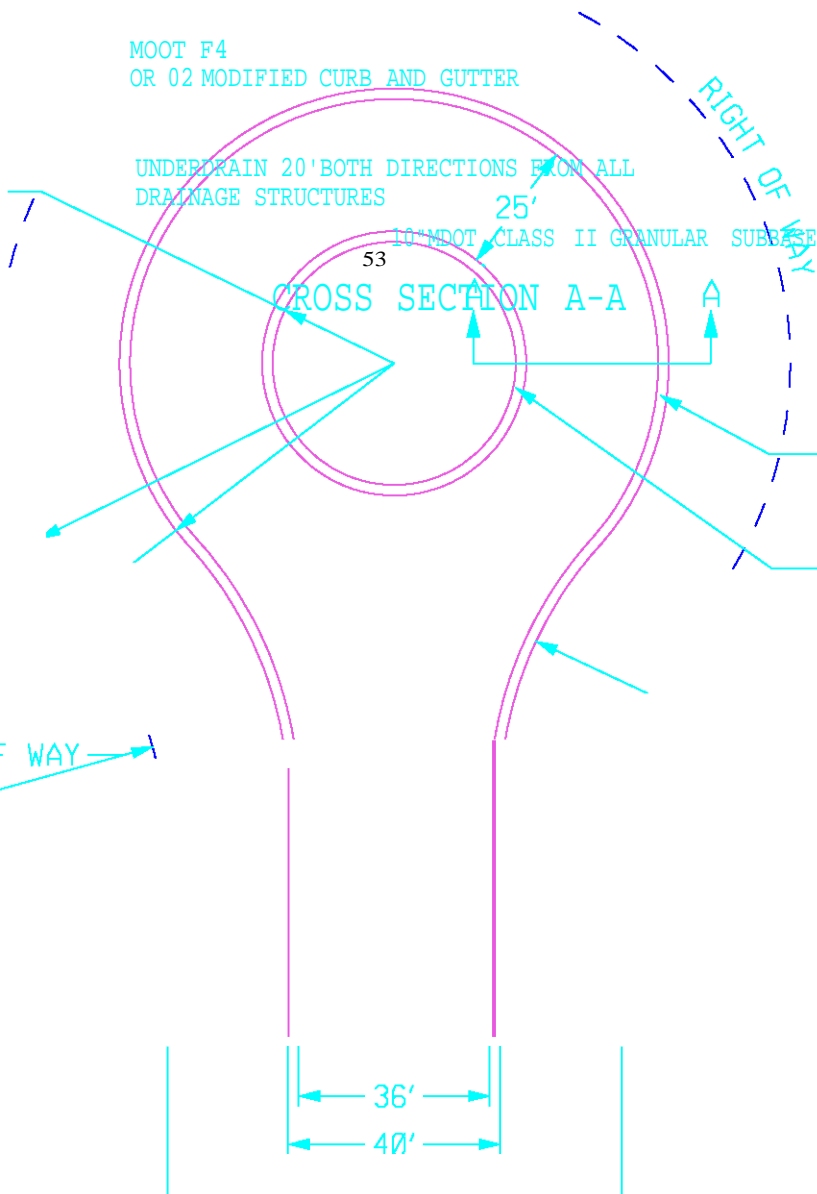
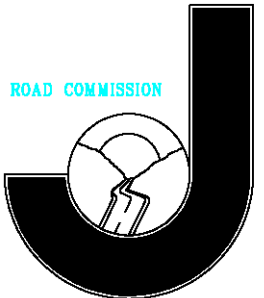
23' TO BACK OF CURB

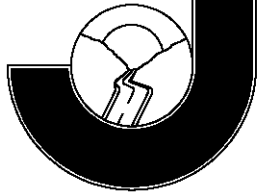
10% MAX.

1"

0.5'

31'

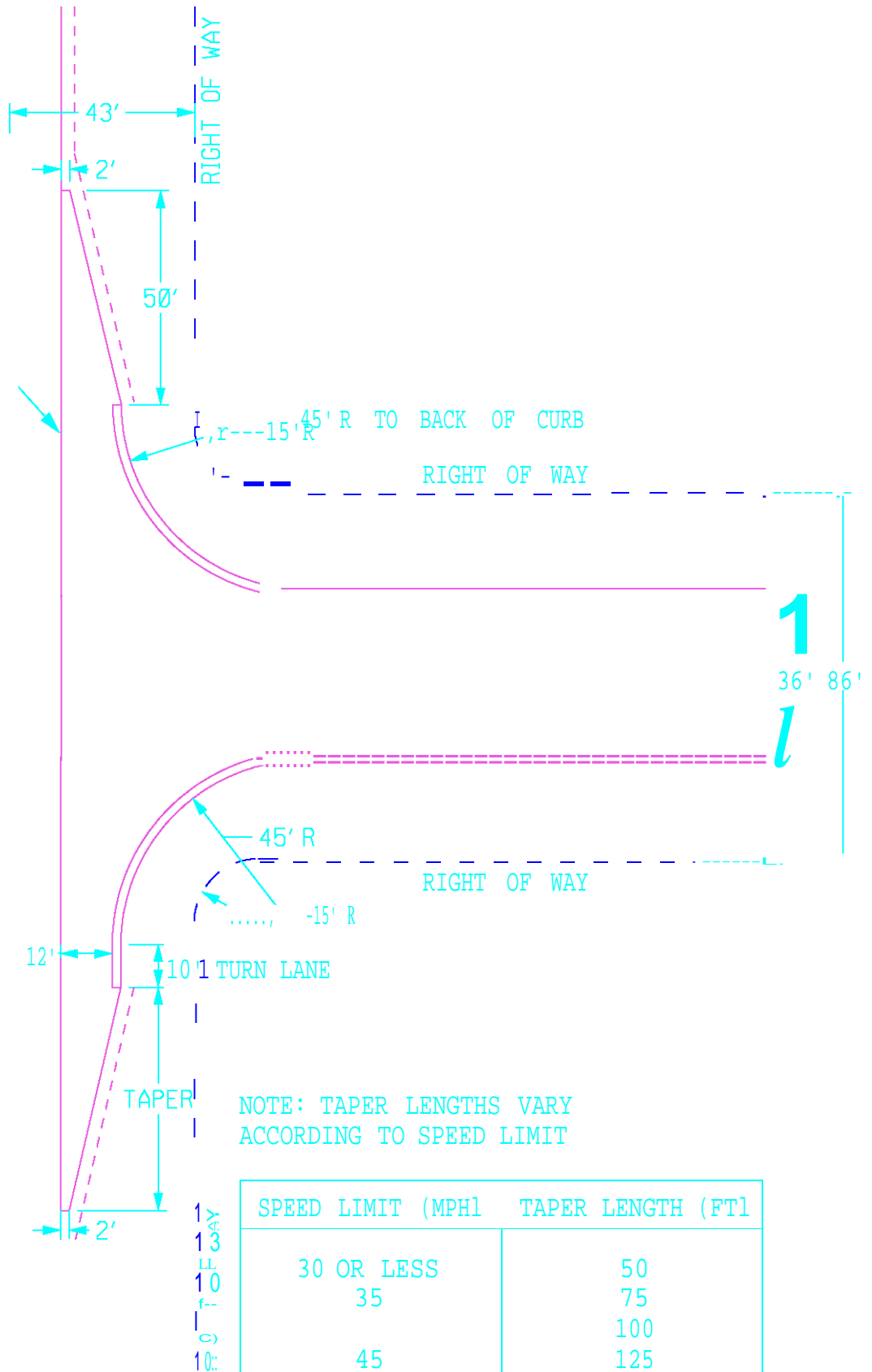




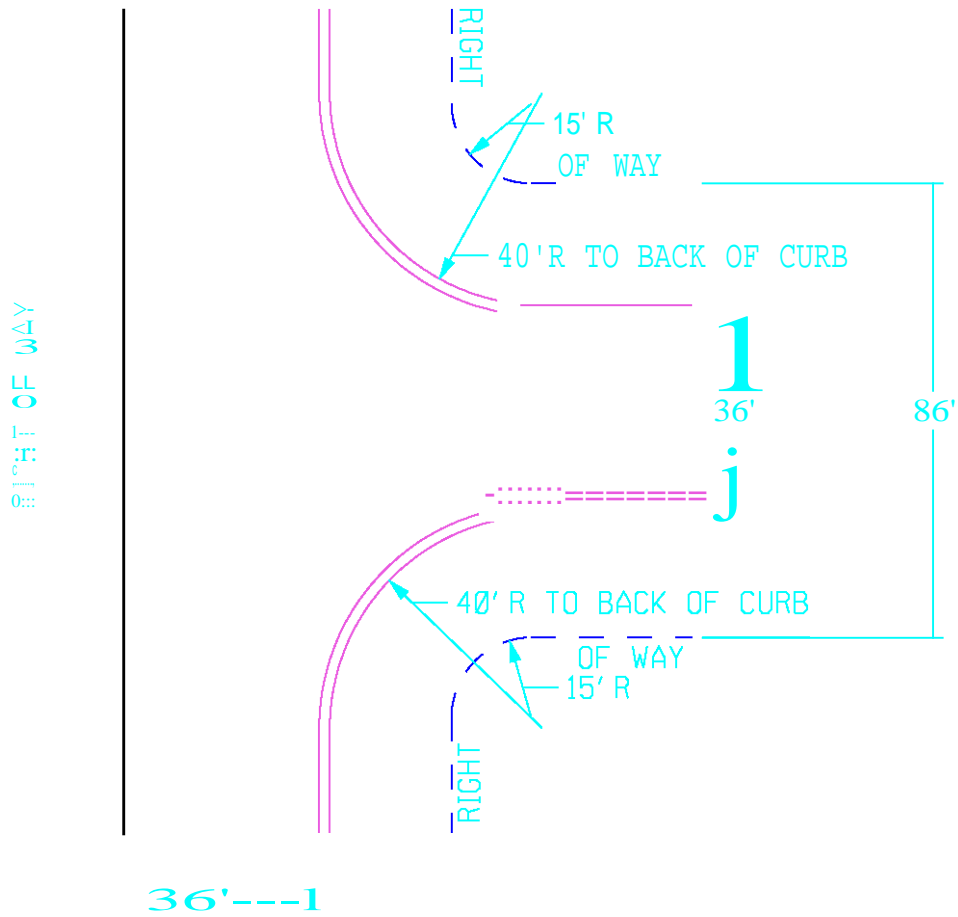
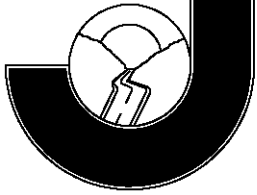
TYPICAL ENTRY ONTO EXISTING PAVED ROAD URBAN COMMERCIAL AND INDUSTRIAL

EDGE OF PAVEMENT
(SAWCUT WHEN
REQUIRED)

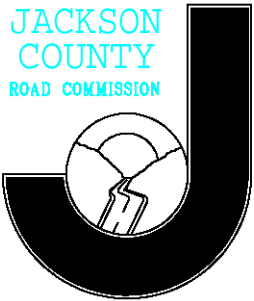
CENTERLINE OF
EXISTING ROAD



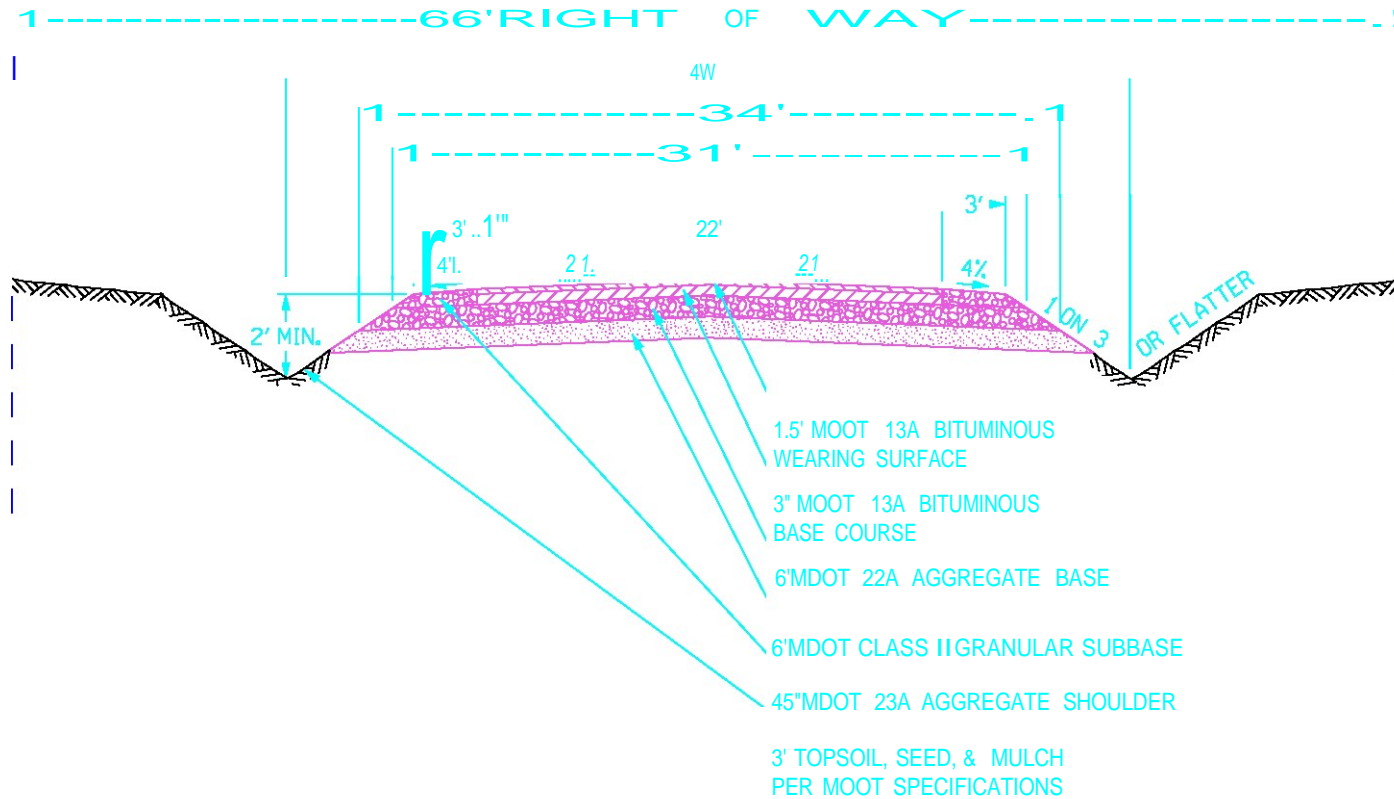
| SPEED LIMIT (MPH) | TAPER LENGTH (FT) |
|-------------------|-------------------|
| 30 OR LESS | 50 |
| 35 | 75 |
| 45 | 100 |
| 50 | 125 |
| 55 | 160 |
| | 200 |



TYPICAL RADII OF INTERNAL STREETS URBAN COMMERCIAL AND INDUSTRIAL

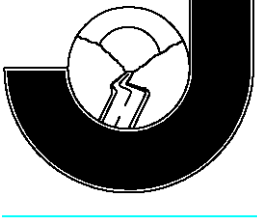


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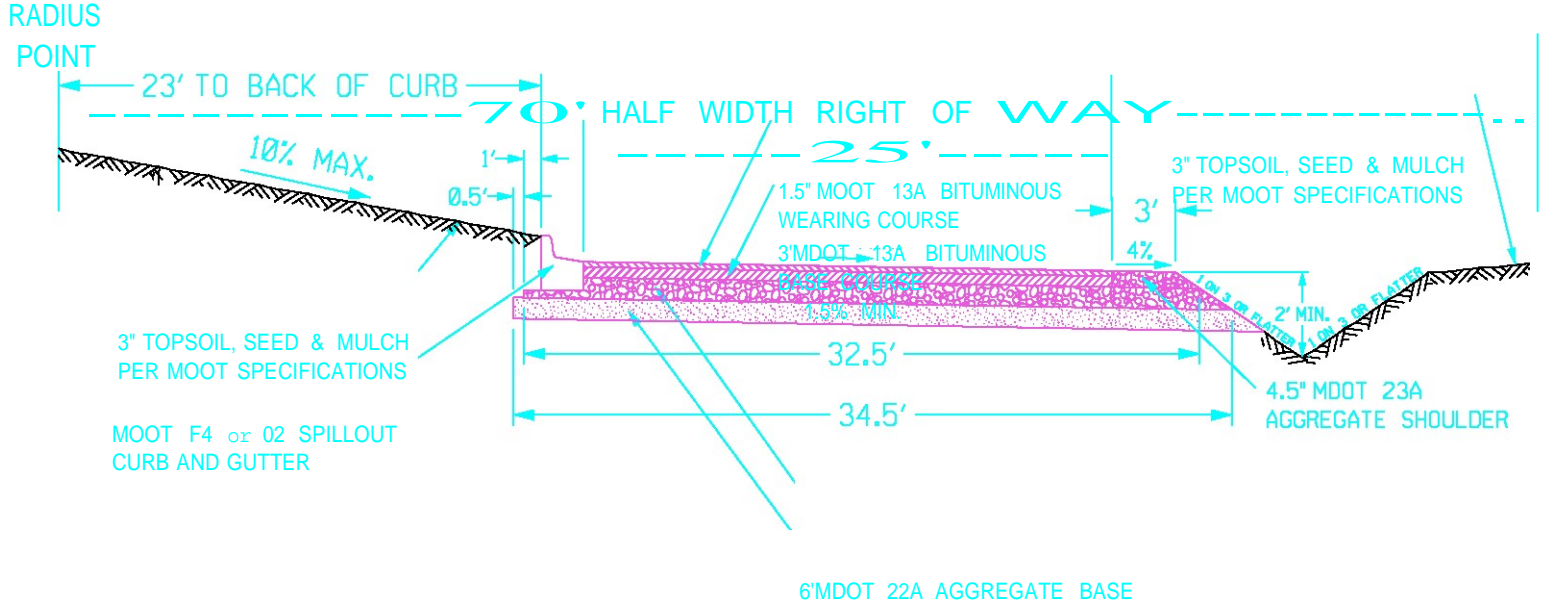
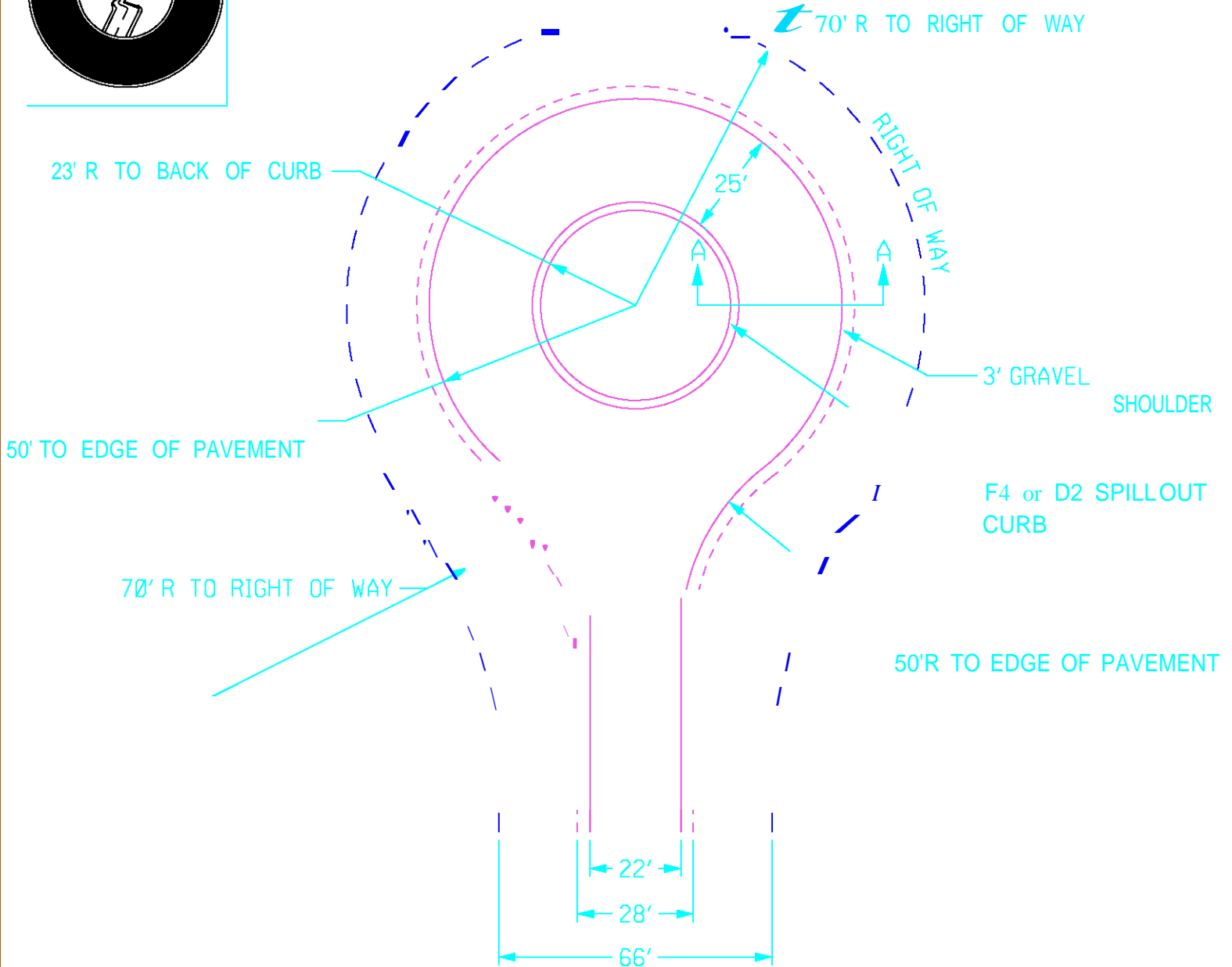


③
III

TYPICAL BITUMINOUS CROSS SECTION
RURAL LOCAL AND RESIDENTIAL

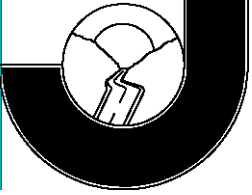


TYPICAL CUL-DE-SAC WITH ISLAND RURAL LOCAL AND RESIDENTIAL



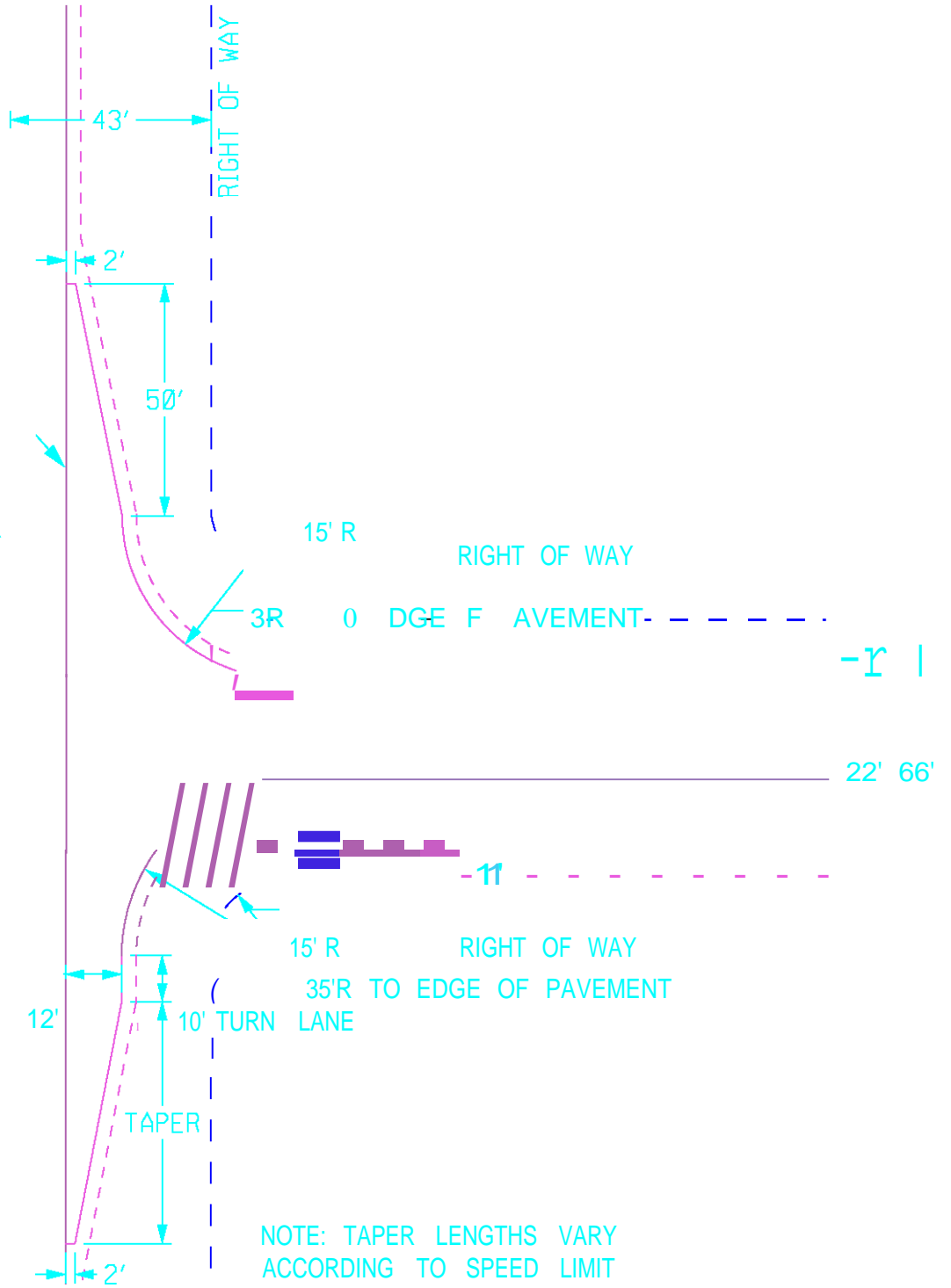
6"MDOT CLASS II GRANULAR SUBBASE

CROSS SECTION A-A



EDGE OF PAVEMENT
(SAWCUT WHEN
REQUIRED)

CENTERLINE OF
EXISTING ROAD

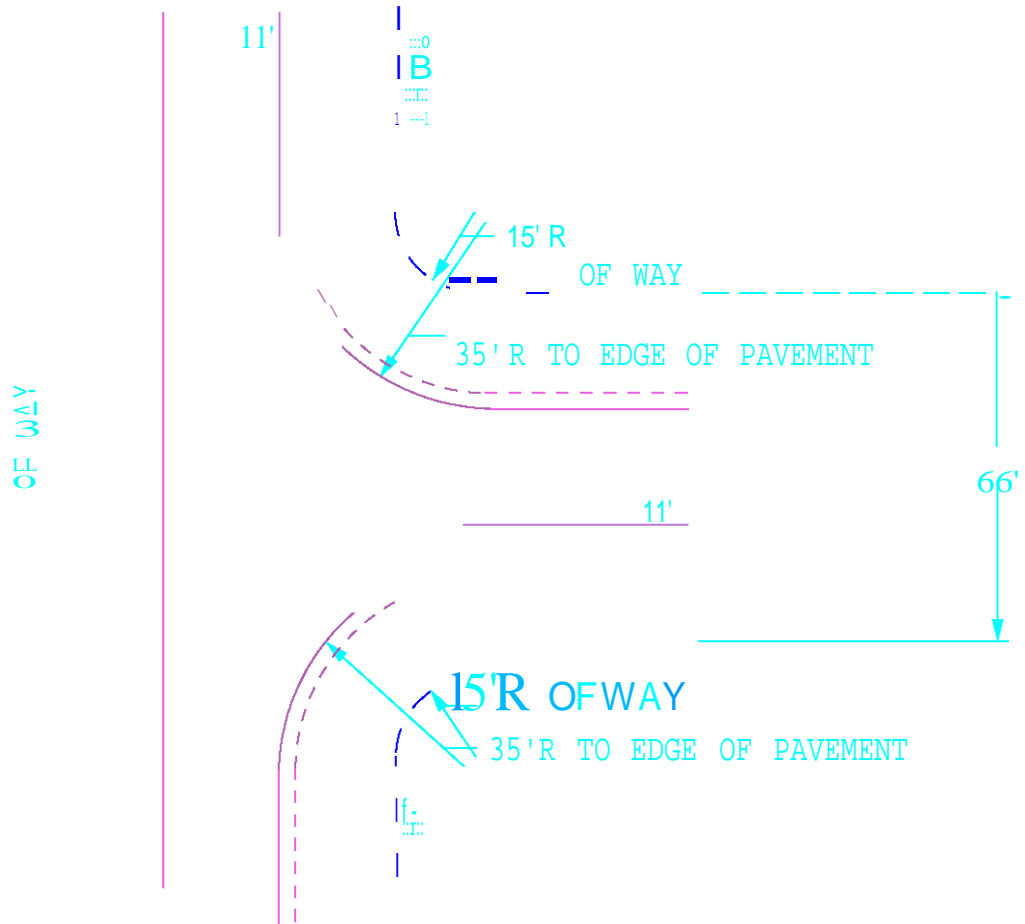


NOTE: TAPER LENGTHS VARY
ACCORDING TO SPEED LIMIT

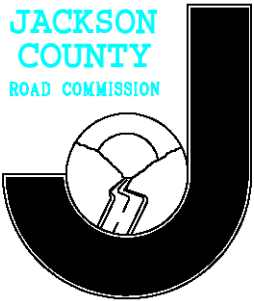
1
13
10

| SPEED LIMIT (MPH) | TAPER LENGTH (FT) |
|-------------------|-------------------|
| 30 OR LESS | 50 |
| 35 | 75 |
| 40 | 100 |
| 45 | 125 |
| 50 OR MORE | 150 |

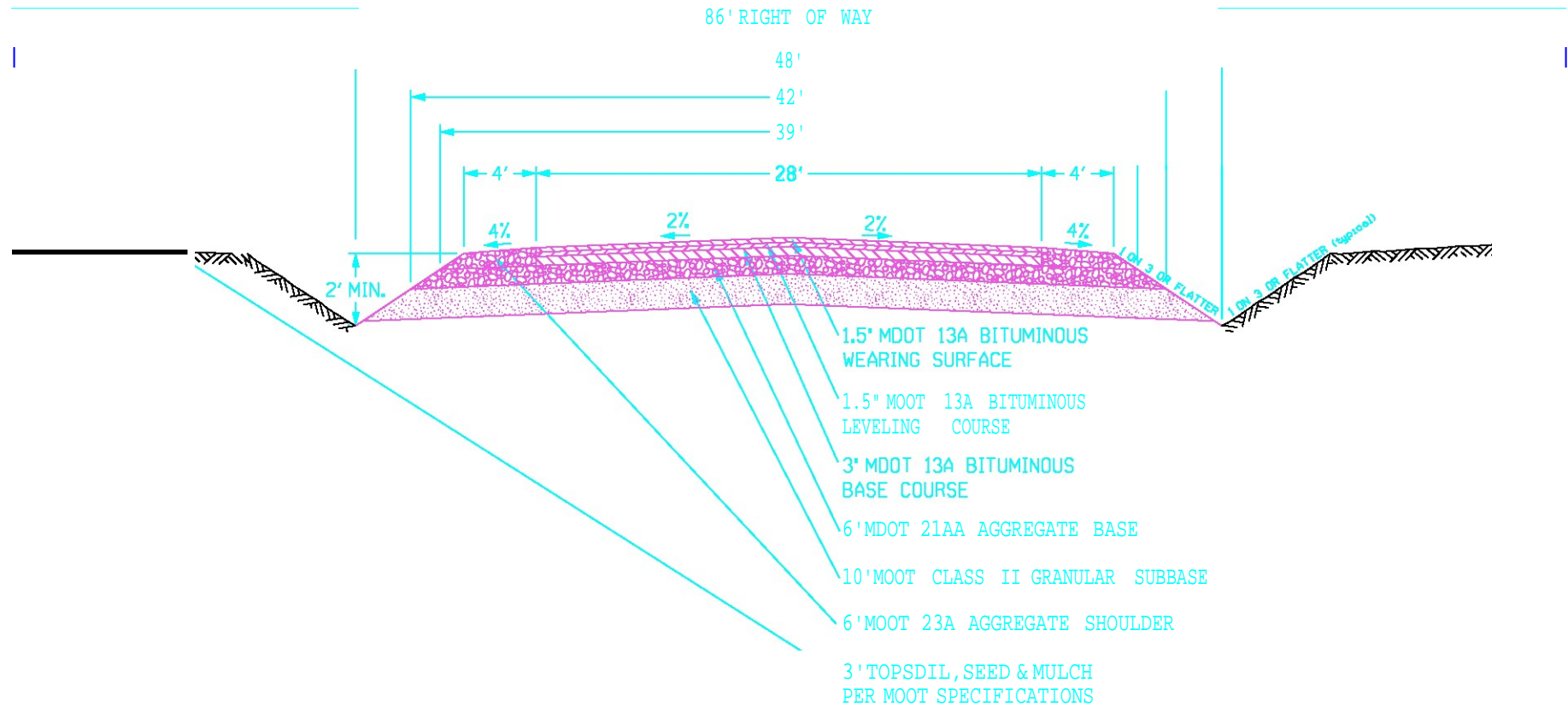
TYPICAL ENTRY ONTO EXISTING PAVED ROAD
RURAL LOCAL AND RESIDENTIAL



TYPICAL RADII OF INTERNAL STREETS
RURAL LOCAL AND RESIDENTIAL



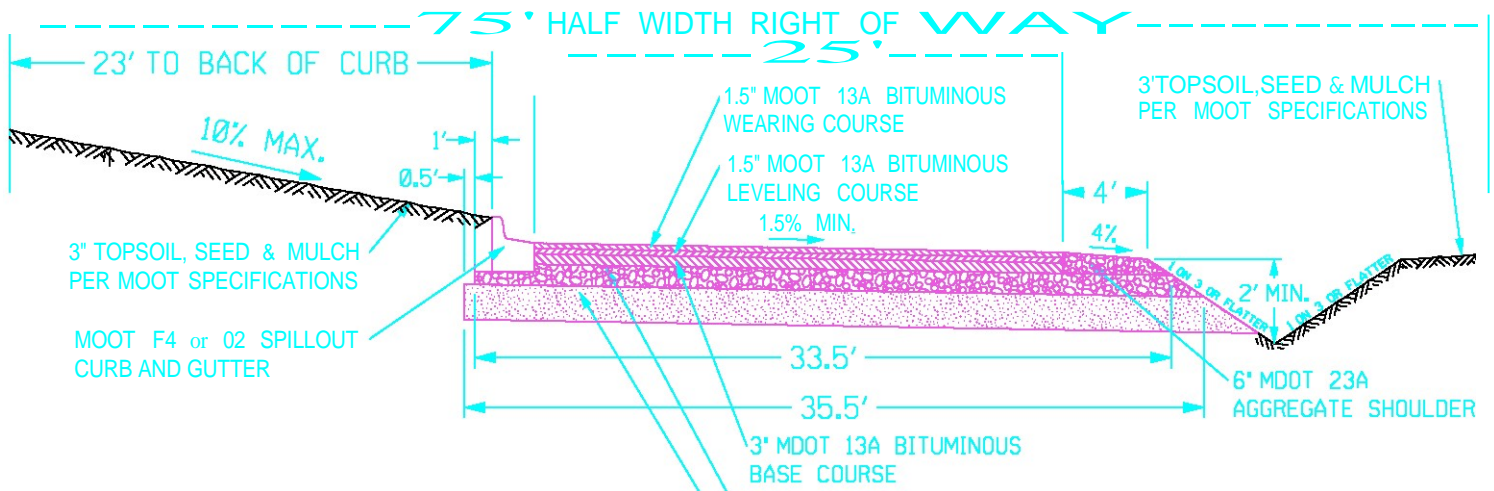
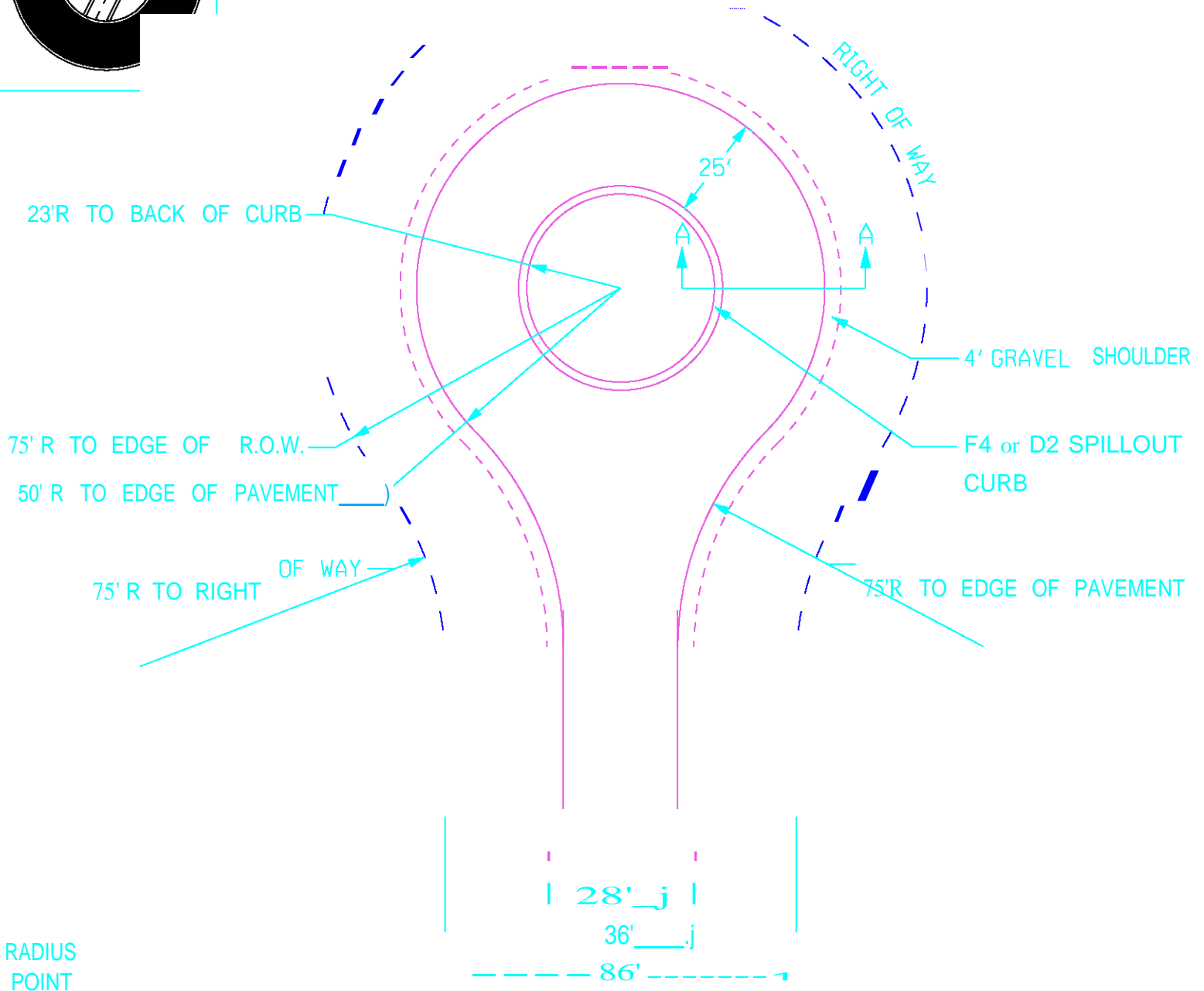
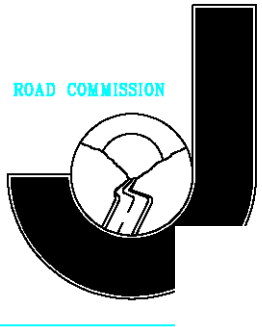
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TYPICAL BITUMINOUS CROSS SECTION
RURAL COMMERCIAL AND INDUSTRIAL

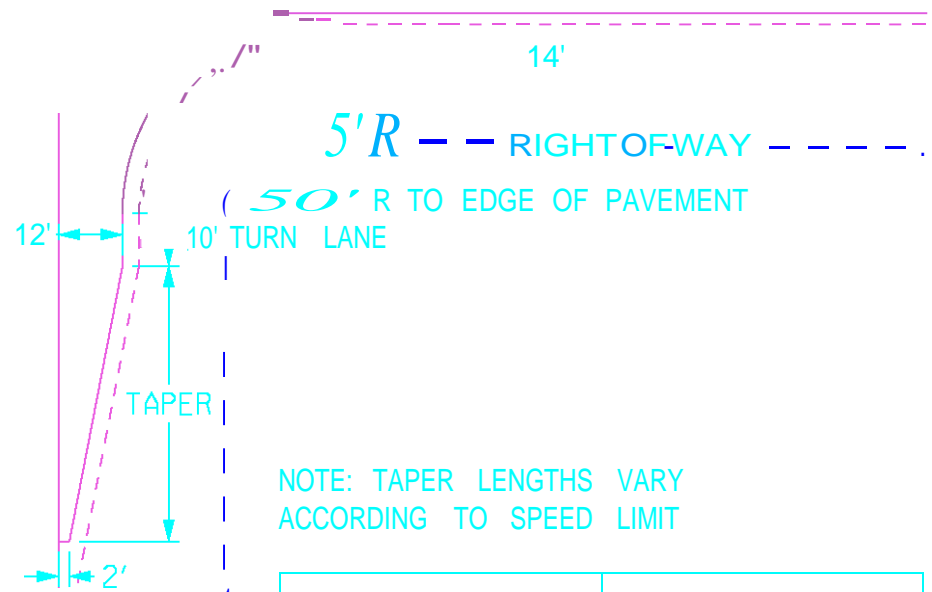
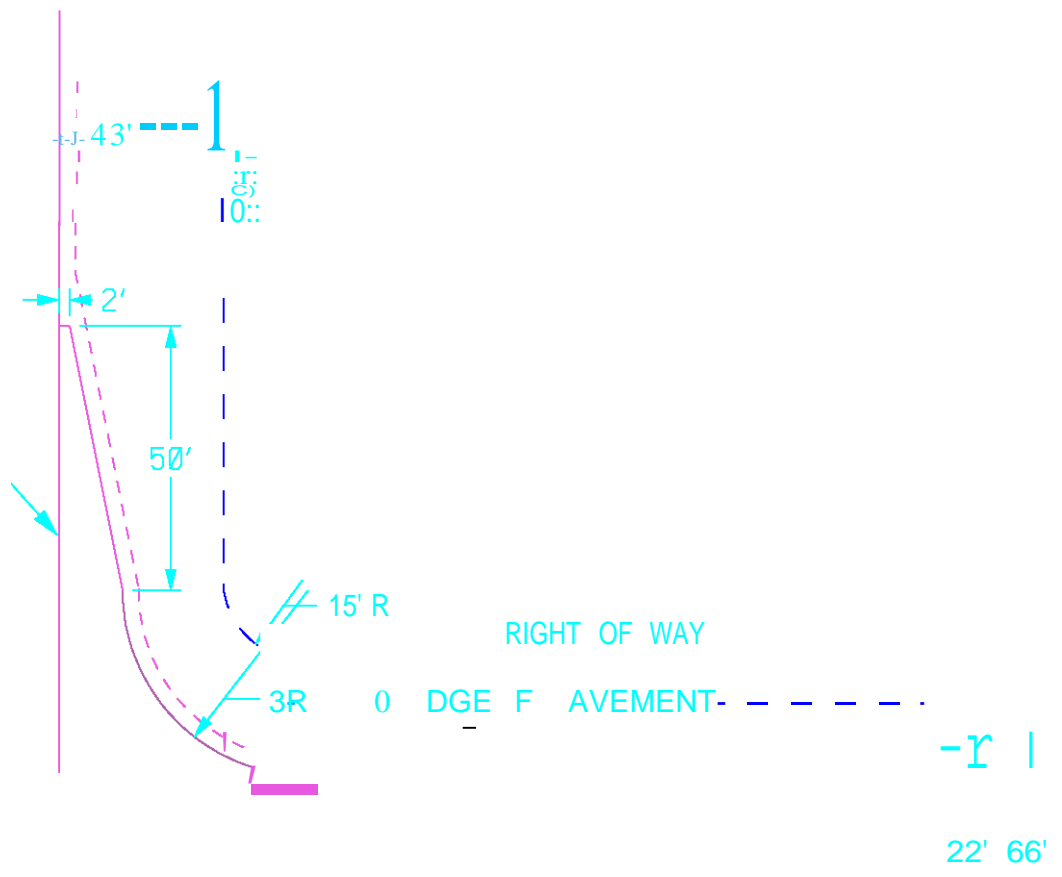
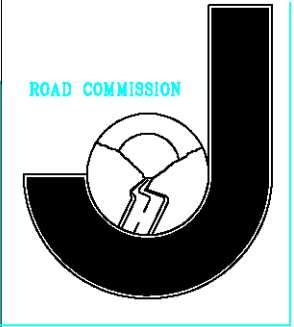
TYPICAL CUL-DE-SAC WITH ISLAND RURAL COMMERCIAL AND INDUSTRIAL



6"MDOT 21AA AGGREGATE BASE

1rZl" MOOT CLASS II GRANULAR SUBBASE

CROSS SECTION A-A

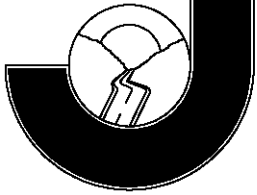


NOTE: TAPER LENGTHS VARY ACCORDING TO SPEED LIMIT

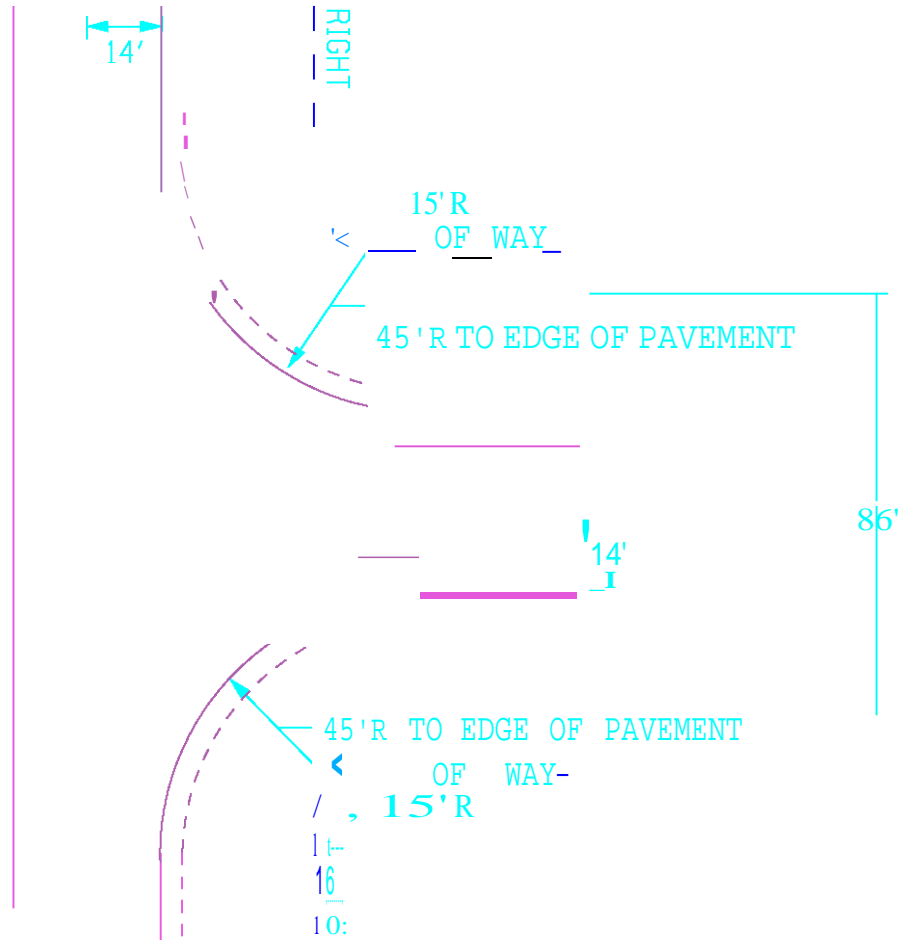
| SPEED LIMIT (MPH) | TAPER LENGTH (FT) |
|-------------------|-------------------|
| 30 OR LESS | 50 |
| 35 | 75 |
| 40 | 100 |
| 45 | 125 |
| 50 OR MORE | 150 |

TYPICAL ENTRY ONTO EXISTING PAVED ROAD

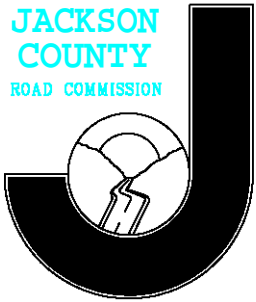
RURAL COMMERCIAL AND INDUSTRIAL



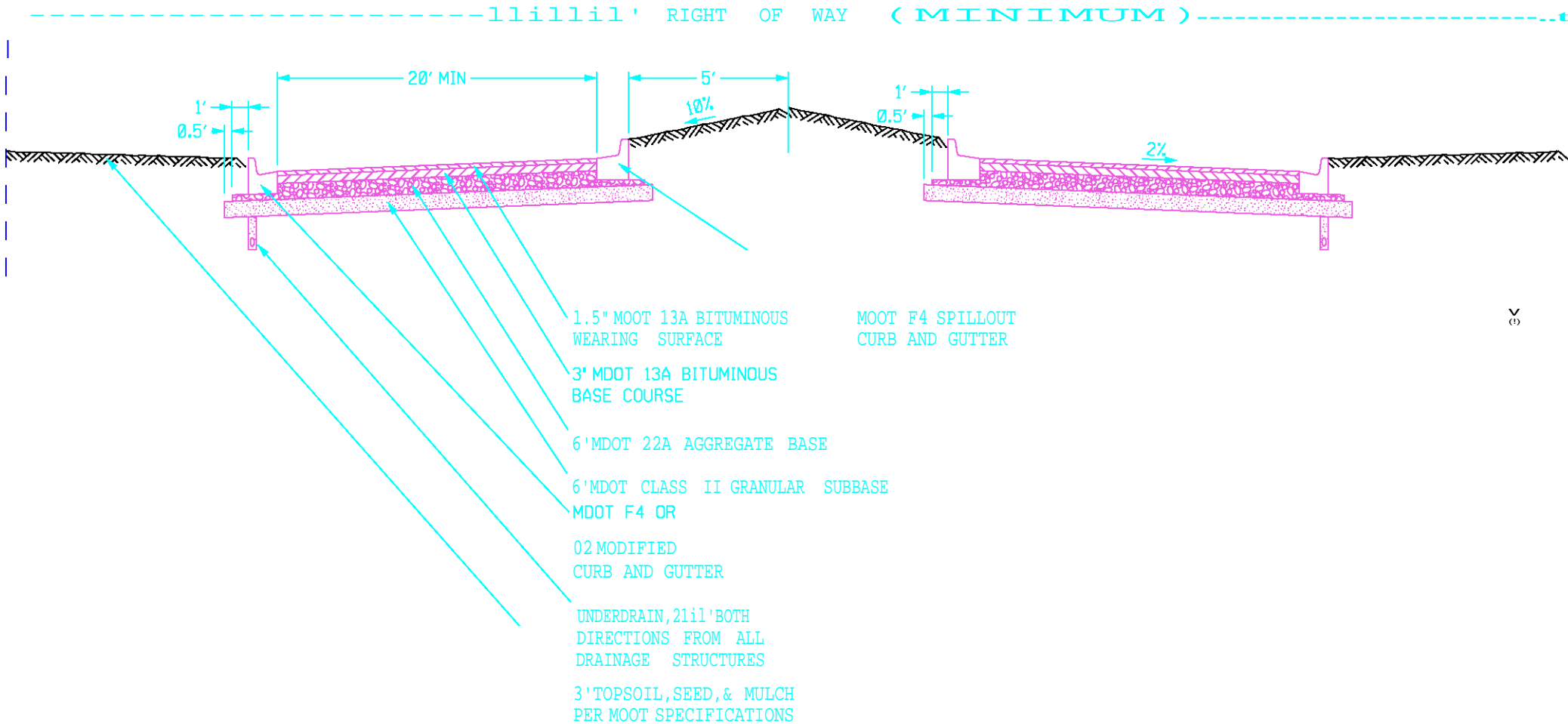
RIGHT OF WAY



TYPICAL RADII OF INTERNAL STREETS RURAL COMMERCIAL AND INDUSTRIAL

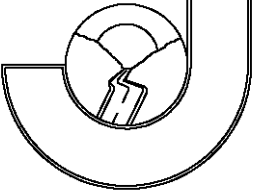


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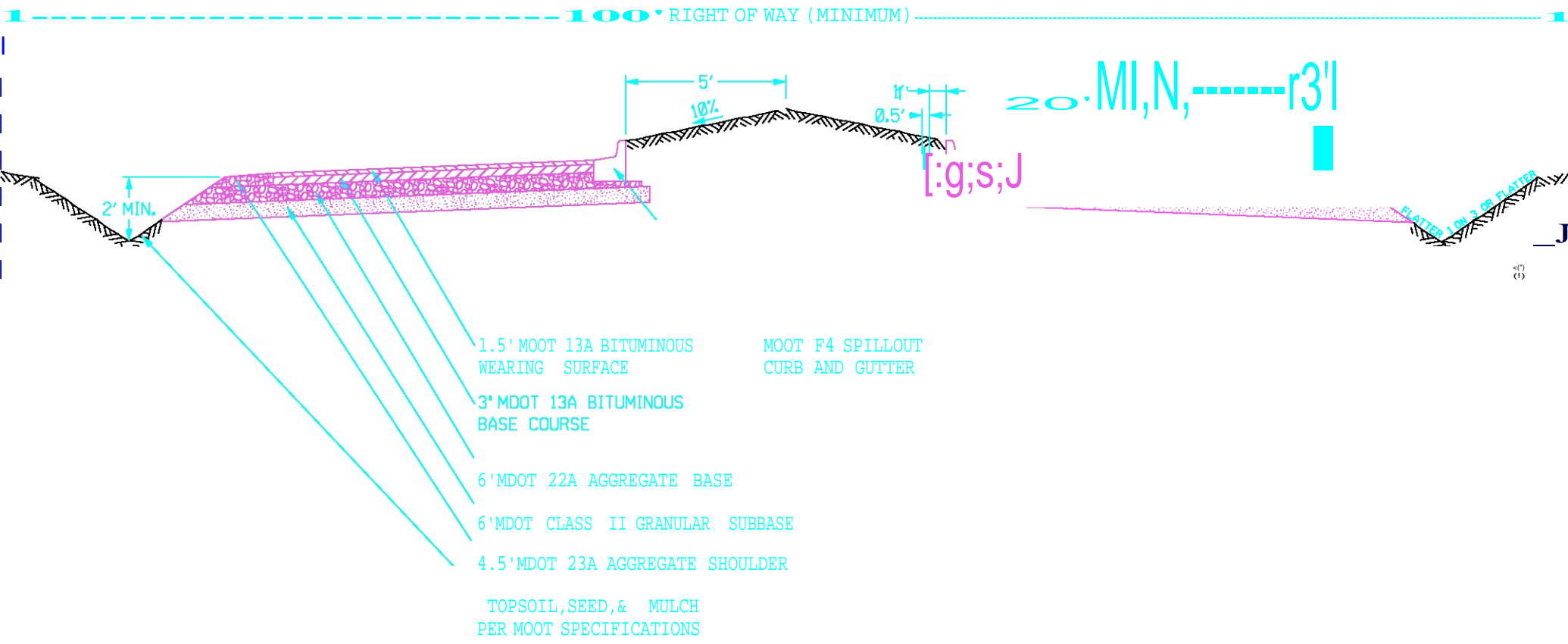


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e)

TYPICAL BITUMINOUS CROSS SECTION BOULEVARD
URBAN LOCAL AND RESIDENTIAL



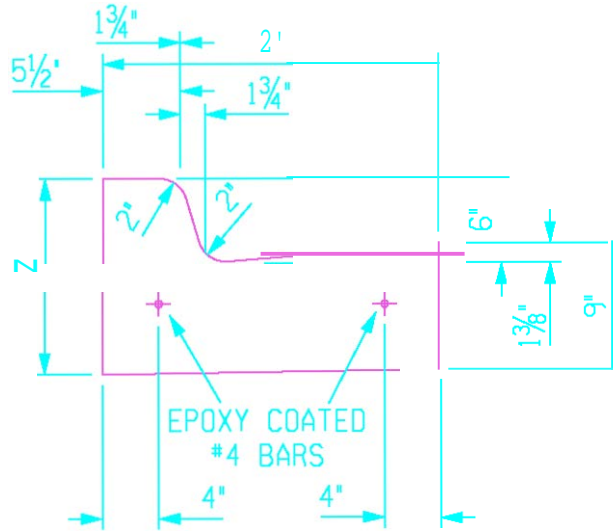
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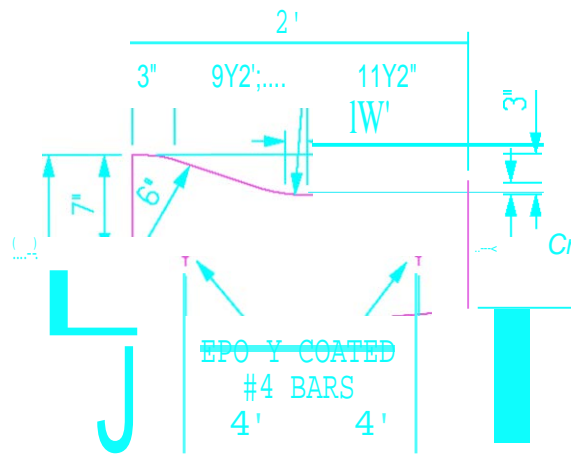
TYPICAL BITUMINOUS CROSS SECTION BOULEVARD
RURAL LOCAL AND RESIDENTIAL



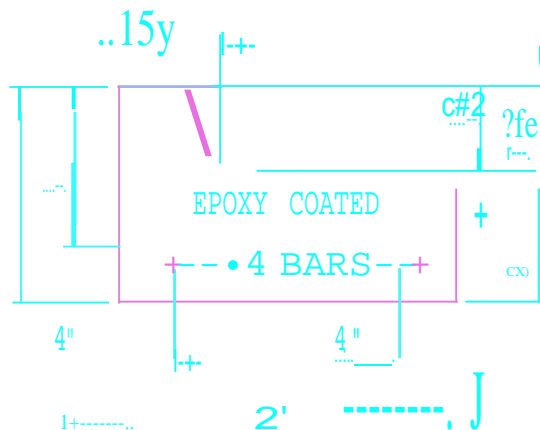
TYPICAL CURB AND GUTTER CROSS SECTIONS DETAILS



CURB AND GUTTER, CONC,
DET F4



CURB AND GUTTER, CONC,
DET D2, MODIFIED



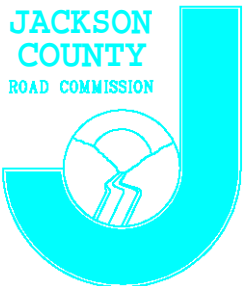
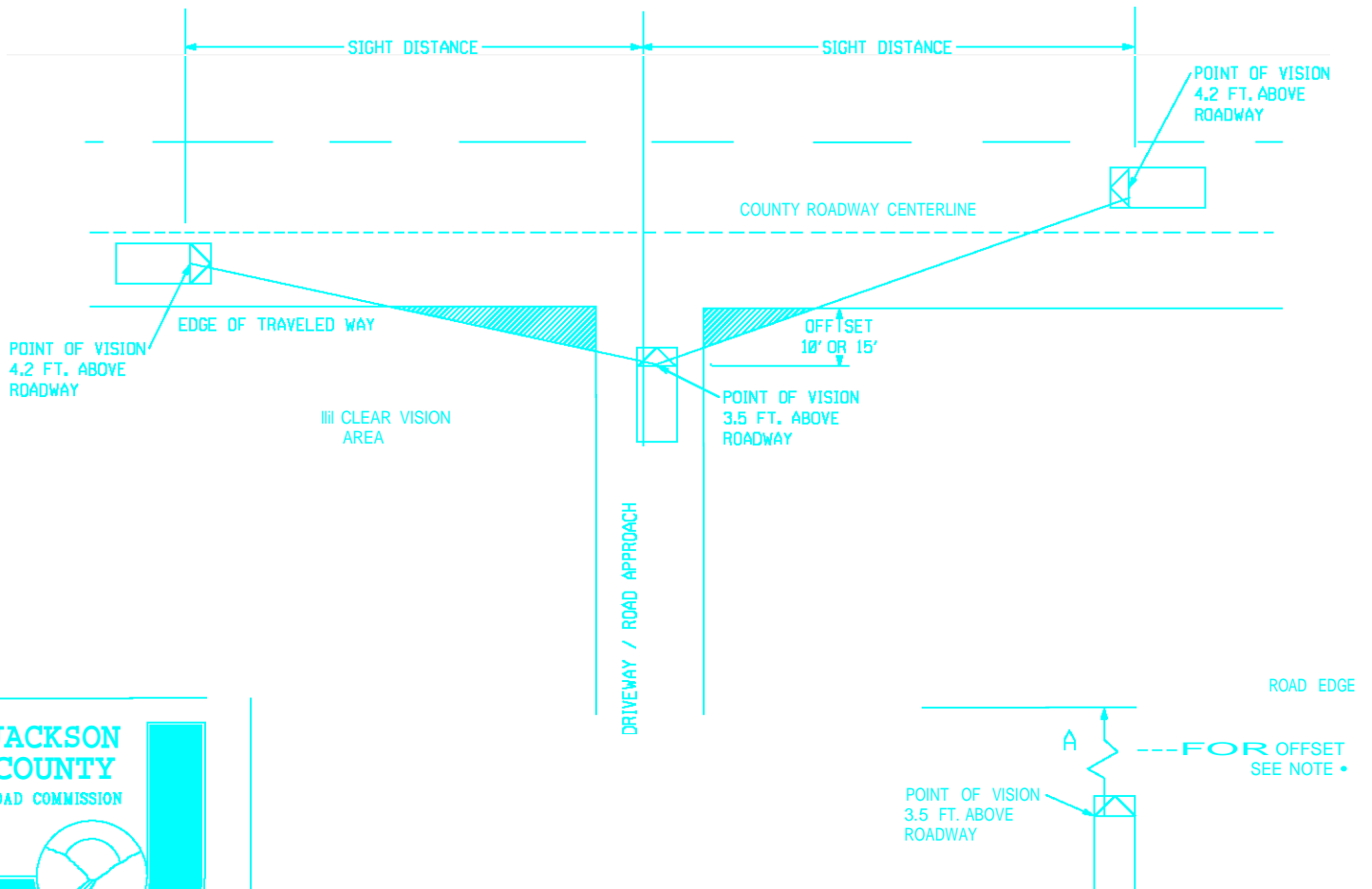
CURB AND GUTTER, CONC,
DET F4, SPILLOUT
TO BE USED IN CUL-DE-SAC ISLANDS
AND BOUL VARD ISLANDS

JACKSON COUNTY DEPARTMENT OF TRANSPORTATION

MINIMUM SIGHT DISTANCE GUIDELINES FOR DRIVEWAYS OR ROADWAY APPROACHES ONTO A COUNTY ROAD

Sight distances for residential driveways shall be measured at an offset of 10 feet from the traveled edge of the roadway. For commercial driveways and public or private road approaches, sight distances shall be measured at an offset of 15 feet from the traveled edge of the roadway.

| SPEED LIMIT (M.P.H.) | MINIMUM SIGHT DISTANCE (FEET) | |
|----------------------|-------------------------------|------------|
| | TWO LANE | MULTI-LANE |
| 25 | 260 | 280 |
| 30 | 310 | 340 |
| 35 | 360 | 400 |
| 40 | 415 | 450 |
| 45 | 465 | 510 |
| 50 | 515 | 560 |
| 55 | 575 | 620 |



- A = 10' FOR RESIDENTIAL DRIVE APPROACHES
- A = 15' FOR COMMERCIAL DRIVES AND PRIVATE

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SECTION VIII – APPENDIX

| | |
|---|----|
| Application for Road Approval | 70 |
| Engineer’s Certificate | 71 |
| Permit to Place | 72 |
| Application and Permit | 73 |
| Sample Format for Letter of Credit | 75 |
| Checklist for Accepting Private Roads into Public Road System | 76 |
| Preliminary Site Plan/Preliminary Plat Review Checklist | 77 |

**JACKSON COUNTY DEPARTMENT OF
TRANSPORTATION**

APPLICATION FOR ROAD APPROVAL

DEVELOPMENT NAME: _____

TYPE OF DEVELOPMENT: _____

LOCATION: SECTION _____ OF _____ TOWNSHIP
CROSSROAD: _____

DEVELOPER/PROPRIETOR:
Name: _____

ENGINEER/SURVEYOR:
Name: _____

Phone Number: _____

Phone Number: _____

PRELIMINARY PLAN REVIEW: (30 days from receipt, approve or reject)

Received Preliminary Plan on _____ and
Plan Review Fee on _____
Rejected on _____
Revisions received on _____
Approved Preliminary Plan on _____

ROAD & DRAINAGE PLAN REVIEW: (30 days from receipt, approve or reject)

Received on _____
Rejected on _____
Revisions received on _____
Engineers Estimate \$ _____
Inspection Fee Required \$ _____,
Received on _____
Number of Signs _____, Payment Required \$ _____,
Received payment on _____
Approved Road & Drainage Plans on _____

FINAL PLAT/PLAN REVIEW: (15 days from receipt, approve or reject)

Received Final Plat on _____
Completion Guarantee Required \$ _____, Received on
Type of Completion Guarantee Received _____
Approved Final Plat on _____

ACCEPTANCE OF ROAD FOR MAINTENANCE:

Final Inspection Date _____
Final Acceptance Date _____
Completion Guarantee Returned \$ _____ on
Performance Guarantee Required \$ _____, Received on
Final Inspection on _____

ENGINEER'S CERTIFICATE

Name of Development: _____

Township of: _____ Section: _____

Date: _____

Jackson County, Michigan

I hereby certify that the construction of _____ is complete and that:

- (1) I have personally directed the inspection of the construction;
- (2) All improvements to date have been installed in accordance with the approved construction plans and Jackson County Department of Transportation road and drainage standard specifications;
- (3) The construction materials meet the aforementioned specifications and the reports of materials and density testing have been filed with the Jackson County Department of Transportation;
- (4) All the monuments are shown on the plat or road plan are in place and in good condition.

Signed: _____
Licensed Professional Engineer

Seal

PERMIT TO PLACE

JACKSON COUNTY DEPARTMENT OF TRANSPORTATION

DISTRIBUTION: Original - JCDOT File; Copy - Contractor

| JOB IDENTIFICATION | JOB NO. | DATE |
|--------------------|---------|------|
| | | |

TO: (CONTRACTOR)

I have inspected the above project and find it to be constructed in reasonably close conformity with plans and specifications.

The contractor assumes full responsibility for detail dimensions and elevations measured from lines, grades, and elevations established by the engineer. Subject to the above responsibility, permission is given to place.

D SAND SUBBASE on the above project from:

D AGGREGATE BASE COURSE on the above project from:

D CONCRETE CURB & GUTTER on the above project from:

D BITUMINOUS PAVEMENT on the above project from:

D AGGREGATE SHOULDERS on the above project from:

D SEED & MULCH on the above project from:

D OTHER (SPECIFY) on the above project from:

COMMENTS:

SIGNATURE

TITLE

DATE

**JACKSON COUNTY DEPARTMENT OF TRANSPORTATION
APPLICATION AND PERMIT**

COMMERCIAL
PERMIT NUMBER

to construct, operate, maintain
use and/or remove within a county
road right- of- way

ISSUANCE DATE

JACKSON COUNTY DEPARTMENT OF TRANSPORTATION OF **JACKSON** COUNTY, MICHIGAN

ADDRESS: **2400 N. ELM ROAD, JACKSON, MIICHIGAN 49201.**

PHONE: **(517) 788-4230** FAX: **(517) 788-4237**

If applicant hires a contractor to perform the work, BOTH must complete this form and BOTH assume responsibility for the provisions of this Application and Permit.

| | | | |
|-------------------------------|------------|--------------------------------|------------|
| APPLICANT | | CONTRACTOR | |
| NAME _____ | | NAME _____ | |
| MAILING ADDRESS _____ | | MAILING ADDRESS _____ | |
| TELEPHONE _____ | | TELEPHONE _____ | |
| APPLICANT'S SIGNATURE | | CONTRACTOR'S SIGNATURE | |
| TITLE _____ | DATE _____ | TITLE _____ | DATE _____ |
| FINANCIAL REQUIREMENTS | | ATTACHMENTS REQUIRED | |
| PERMIT FEE | \$ _____ | PLANS & SPECS. | _____ |
| BOND | \$ _____ | BOND | _____ |
| TO BE BILLED | \$ _____ | PROOF OF CONTRACTORS INSURANCE | _____ |
| RECEIPT NO. FEE | \$ _____ | W/JCDOT ADDITIONAL INSURED | _____ |
| RECEIPT NO. - BOND | \$ _____ | YES _____ NO _____ | |
| DATED _____ | | P.I. \$ _____ P.D. \$ _____ | |

APPLICATION

Applicant and/or Contractor request a Permit for the purpose indicated in the attached plans and specifications at the following location:

COUNTY **JACKSON** TOWNSHIP _____ SECTION _____
 NAME OF ROAD _____ BETWEEN _____ AND _____
 FOR A PERIOD BEGINNING _____ AND ENDING _____
 AND AGREES TO THE TERMS OF THE PERMIT. (BRIEF DESCRIPTION OF WORK)

PERMIT

A PERMIT IS GRANTED IN ACCORDANCE WITH THE FOREGOING APPLICATION FOR THE PERIOD STATED ABOVE, SUBJECT TO THE FOLLOWING TERMS AGREED TO BY THE PERMIT HOLDER. WHEN APPLICANT HIRES A CONTRACTOR THE "PERMIT HOLDER IS THE APPLICANT AND THE CONTRACTOR.

RECOMMENDED FOR ISSUANCE

| | |
|---|--|
| _____ INVESTIGATOR _____ TITLE _____ DATE | JACKSON COUNTY DEPARTMENT OF TRANSPORTATION JACKSON COUNTY, MICHIGAN BY _____ BY _____ BY _____ |
|---|--|

1. **Specifications.** All work performed under this permit must be done in accordance with the plans, specifications, maps and statements filed with JCDOT and must comply with JCDOTs' current requirements and specifications on file at its offices and MDOT specifications.
2. **Fees and Costs.** Permit Holder shall be responsible for all fees incurred by JCDOT in connection with this permit and shall deposit estimated fees and costs as determined by JCDOT, at the time the permit is issued.
3. **Bond.** Permit Holder shall provide a cash deposit, letter of credit in a form and amount acceptable to the Commission at the time permit is issued.
4. **Insurance.** Permit Holder shall furnish proof of liability and property damage insurance in the amount stated on this permit naming JCDOT as an insured. Such insurance shall cover a period not less than the term of this permit and shall provide that it cannot be cancelled without ten (10) days advance written notice by certified mail with return receipt required to JCDOT.
5. **Indemnification.** Permit Holder shall hold harmless and indemnify and keep indemnified JCDOT, its Officers and employees from all claims, suits and judgements to which JCDOT, its officers, or employees may be subject and for all costs and actual attorney fees which may be incurred on account of injury to persons or damage to property, including property of JCDOT, whether due to the negligence of the Permit Holder or the joint negligence of the Permit Holder and JCDOT, arising out of the work under this permit, or in connection with work not authorized by this permit, or resulting from failure to comply with the terms of this permit, or arising out of the continued existence of the work product which is the subject of this permit.
6. **Miss Dig.** The Permit Holder must comply with the requirements of Act 53 of Public Acts of 1974, as amended. CALL MISS DIG AT (800) 482-7171 AT LEAST THREE (3) WORKING DAYS, BUT NOT MORE THAN TWENTY ONE (21) CALENDAR DAYS, BEFORE YOU START WORK. Permit Holder assumes all responsibility for damage to or interruption of underground utilities.
7. **Notification of Start and Completion of Work.** Permit Holder must notify JCDOT at least 48 hours before starting work and must notify JCDOT when work is completed.
8. **Time Restrictions.** No Sunday work is allowed except in an emergency.
9. **Safety.** Permit Holder agrees to work under this permit in a safe manner and to keep the area affected by this permit in a safe condition until the work is completed. All work site conditions shall comply with Michigan Manual of Uniform Traffic Control Devices.
10. **Restoration and Repair of Road.** Permit Holder agrees to restore the road and right-of-way to a condition equal to or better than its condition before the work began; and to repair any damage to the road right-of-way which is the result of the facility whenever it occurs or appears.
11. **Limitation of Permit.** This permit does not relieve Permit Holder from meeting other applicable laws and regulations of other agencies. Permit Holder is responsible for obtaining additional permits or releases which may be required in connection with this work from other governmental agencies, public utilities, corporations and individual, including property owners. Permission may be required from the adjoining property owners.
12. **Revocation of Permit.** The permit may be suspended or revoked at will, and the Permit Holder shall surrender this permit and alter, relocate or remove its facilities at its expense at the request of JCDOT.
13. **Violation of Permit.** This permit shall become immediately null and void if Permit Holder violates the terms of this permit and JCDOT may require immediate removal of Permit Holder's facilities, or JCDOT may remove them without notice at Permit Holder's expense.
14. **Assignability.** This permit may not be assigned without the prior approval of JCDOT. If approval is granted, the assignor shall remain liable and the assignee shall be bound by all the terms of this permit.
15. This permit is subject to supplemental specifications on file with the Department of Transportation and Act 200 of Public Acts of 1969.

SAMPLE FORMAT FOR LETTER OF CREDIT

Name & Address of
Lending Institution

Today's Date

To: Jackson County Department of Transportation
2400 N. Elm Road
Jackson, MI 49201

Dear Jackson County Department of Transportation:

RE: Irrevocable Letter of Credit No. _____ for _____
in _____ Township.

We hereby establish our Irrevocable Letter of Credit No. _____ and hereby authorize the Jackson County Department of Transportation to draw on us at sight for the account of _____ up to a total of \$_____.

Funds are available hereunder in an amount not exceeding the aggregate sum of \$_____ for the completion and construction of _____ and all necessary repairs within the road right-of-way at the expiration date of said Letter of Credit.

All drafts must be marked "Drawn under Letter of Credit of _____, No. _____, Dated _____."

We hereby agree with the drawers, endorsers, and bona fide holders that all drafts drawn under and in compliance with the terms of this Letter of Credit will be duly honored on due presentation to the drawees on or before _____. This original Letter of Credit must be presented to us upon drawing hereunder.

Signature of Authorized Personnel: _____

Title: _____

CHECKLIST FOR ACCEPTING PRIVATE ROADS INTO PUBLIC ROAD SYSTEM

The following items must be submitted to the Jackson County Department of Transportation for review and approval prior to acceptance of **paved** private roads into the public road system.

1. Review fee per the most recent JCDOT Permit Fee Schedule (currently \$200.00 + \$10.00 per lot).
2. Road sign fees, if applicable, per the most recent JCDOT Permit Fee Schedule.
3. Warranty Deed that describes the right-of-way where the road is located. If additional right-of-way was needed along the connecting county road, that should be included in the Warranty Deed as well.
4. Bank letter of credit or certified check in the amount of 10% of actual construction within the right-of-way or \$10,000.00, whichever is greater, to guarantee satisfactory performance of the specified improvements for a period of two (2) years following acceptance.
5. Inspectors Daily Reports (IDR's) from the engineering firm responsible for the project during construction.
6. Material Testing Reports from the responsible engineering firm or a third party firm. These reports shall include sieve analysis of sand and aggregate and density of same, bituminous extractions and densities for each lift; slump and air-entrainment tests for concrete and subsequent 7 and 28-day cylinder breaks. Pavement cores will be taken along the road to verify depths of each pavement layer.
7. One set of as-built drawings.

The Jackson County Department of Transportation will prepare a punch list indicating all deficiencies to the road including the right-of-way that must be corrected. This report will be sent to the current property owner. Upon submission of these appropriate documents, the Engineering Department will refer the project to the Jackson County Board of Commissioners for approval at a regularly scheduled board meeting.

**JACKSON COUNTY
DEPARTMENT OF TRANSPORTATION**

**PRELIMINARY SITE PLAN/
PRELIMINARY PLAT
REVIEW CHECKLIST**

| | | | |
|--|-----------------|-----------------|-------------------|
| PROJECT NAME: | | | |
| PROJECT LOCATION: | | | |
| DATE RECEIVED: | | | |
| | | | |
| | | NOT | NOT |
| DESCRIPTION | PROVIDED | PROVIDED | APPLICABLE |
| PLAN REVIEW FEE | | | |
| TWO (2) COPIES OF PRELIMINARY PLAN. IF RESUBMITTAL, NEED LETTER OF REASON | | | |
| WRITTEN CONFIRMATION FROM TOWNSHIP PROPRIETOR, DESIGN ENGINEER, AND LAND SURVEYOR NAMES, ADDRESSES AND TELEPHONE NUMBERS | | | |
| PROFESSIONAL ENGINEER OR LAND SURVEYOR SEAL AND SIGNATURE | | | |
| TOWN, RANGE, SECTION NUMBER & TOWNSHIP ON COVER SHEET | | | |
| DATE (INCLUDING REVISIONS) | | | |
| SCALE NOT SMALLER THAN 1" = 100' | | | |
| NORTH ARROW | | | |
| VICINITY MAP NOT SMALLER THAN 1" = 1000' | | | |
| LEGEND-EXISTING & PROPOSED | | | |
| ADJOINING SUBDIVISIONS | | | |
| PROPOSED ROAD LAYOUT WITH HORIZONTAL GEOMETRICS | | | |
| NAMES OF PROPOSED ROADS | | | |
| ROAD NAMES ACCEPTABLE TO JCDOT | | | |
| CONNECTIONS TO EXISTING OUTLOTS IN ADJACEMENT DEVELOPMENTS | | | |
| PROPOSED OUTLOTS SHOWN AS "FUTURE ROADS" | | | |
| TWO POINTS OF ACCESS | | | |
| STATE TRUNKLINES, IDENTIFIED BY NAME AND ROUTE NUMBER | | | |

**PRELIMINARY SITE PLAN/
PRELIMINARY PLAT
REVIEW CHECKLIST**

| | | NOT | NOT |
|---|----------|----------|------------|
| | PROVIDED | PROVIDED | APPLICABLE |
| DESCRIPTION | | | |
| NOTE REGARDING PROPOSED WORK WITHIN STATE RIGHT- OF-WAY | | | |
| PROPOSED LOCATION OF SURVEY | | | |
| EXISTING & PROPOSED UTILITIES | | | |
| MONUMENTATION ON ROAD RIGHT-OF-WAY AND CENTERLINES | | | |
| EXISTING AND PROPOSED ROAD RIGHT-OF-WAY AND WIDTHS | | | |
| INTERSECTION SIGHT DISTANCE | | | |
| PROPOSED TYPICAL ROAD CROSS SECTION | | | |
| PHASE BOUNDRIES | | | |
| RAILROADS | | | |
| CEMETERIES | | | |
| PARKS | | | |
| BENCHMARKS | | | |
| PROPOSED OR EXISTING DRIVEWAYS NO CLOSER THAN 50' FROM RIGHT-OF-WAY OF INTERSECTING ROAD | | | |
| PROPOSED TEMPORARY TURNAROUNDS | | | |
| TOPOGRAPHIC MAP WITH EXISTING CONTOURS AT A MAXIMUM INTERVAL OF TWO (2) FEET | | | |
| RIVERS, NATURAL RIVER COURSES, EXISTING COUNTY DRAIN, SEWERS AND CROSSROAD CULVERTS ON EXISTING ROADS | | | |
| LOCATIONS OF ALL EASEMENTS, INCLUDING FRANCHISE UTILITY EASEMENT | | | |
| PROPOSED AND EXISTING LOT LINES WITH LOT NUMBERS, BOUNDARY DIMENSIONS AND LAND AREA | | | |
| BUILDING SET BACK LINES ON EACH LOT | | | |
| ARROWS OR OTHER SYMBOLS INDICATING PROPOSED COURSE OF WATER DRAINAGE | | | |
| LOCATIONS OF EXISTING AND PROPOSED WETLANDS | | | |
| TOPOGRAPHY ON THE SITE AND BEYOND FOR 100 FEET IN ALL DIRECTIONS | | | |
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