

**MICHIGAN DESIGN MANUAL  
ROAD DESIGN**

**CHAPTER 5**

**INDEX**

**RIGHT OF WAY (R.O.W.)**

**5.01 REFERENCES**

**5.02 GLOSSARY OF TERMS**

**5.03 GENERAL**

5.03.01 Right of Way Parcel Overlay (ROWPO)

**5.04 R.O.W. WIDTHS**

**5.05 URBAN R.O.W.**

5.05.01 Urban Expressways

5.05.02 Constructing Sidewalks

**5.06 LIMITED ACCESS R.O.W. AT RAMP INTERSECTIONS**

**5.07 TURNBACK PROJECTS**

**5.08 TYPES OF R.O.W. EASEMENTS OR CONVEYANCE FOR DRAINAGE**

5.08.01 Special Ditches

5.08.02 County Drains

5.08.03 Drainage Structures

5.08.04 Retention Basins

**5.09 DRIVEWAYS**

**5.10 R.O.W. AT RAILROAD CROSSINGS**

**5.11 CONSENT(S)**

**5.12 POTENTIALLY CONTAMINATED SITES**

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### CHAPTER 5 RIGHT OF WAY INDEX (continued)

#### 5.13 TEMPORARY FENCE

#### 5.14 PRESERVING R.O.W. LOCATION

5.14.01 Government Corners

5.14.02 Alignment Monuments

5.14.03 R.O.W. Monuments

#### 5.15 REST AREAS AND WEIGH STATIONS

#### 5.16 RIGHT OF WAY (R.O.W.) PLAN SUBMITTAL

5.16.01 Environmental Clearance

5.16.02 Public Hearing Certification

5.16.03 Transmittal of Plans and Material

5.16.04 R.O.W. Forms

#### 5.17 BASE PLANS (PRELIMINARY R.O.W. PLANS)

#### 5.18 REQUIREMENTS FOR BASE PLANS (PRELIMINARY R.O.W. PLANS)

#### 5.19 PRELIMINARY PLANS (FINAL R.O.W.)

#### 5.20 REQUIREMENTS FOR PRELIMINARY PLANS (FINAL R.O.W.)

#### 5.21 R.O.W. REVISIONS

#### 5.22 MINOR CONSTRUCTION CHANGES FORM

5.22.01 Showing MDOT Remainder on Plans

5.22.02 Site Clearance

#### 5.23 R.O.W. SUMMARY

#### 5.24 R.O.W. SKETCHES

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## CHAPTER 5

### RIGHT OF WAY

**5.01** (revised 6-28-2021)

#### REFERENCES

Deleted

**5.02** (revised 8-23-2021)

#### GLOSSARY OF TERMS

**Abandonment** - Legally, cessation of use of R.O.W. or activity thereon with no intention to reclaim or use again. Sometimes erroneously called "vacation". Divisional usage: relinquishment of control to a subordinate governmental unit, e.g., county.

**Acquisition or Taking** - The process of obtaining R.O.W.

**Appraisal** - A professional estimate or opinion of value.

**Award** - The determination rendered by a judge, jury, or commission upon a controversy submitted to them, such as value of real property or damage thereto.

**Clear Vision Corner** - A corner of an at grade intersection from which all obstructions have been removed and on which no construction or growth is allowed that will interfere with a line of sight established according to principles of safety. Generally, requires property beyond the normal R.O.W., triangular in shape with the longer leg along the major highway. Clear vision corner R.O.W. is generally limited access.

**5.02 (continued)**

**Condemnation** - The process by which property is acquired for transportation and public purposes through legal proceedings under power of eminent domain.

**Condemnation Trial** - A step in the condemnation procedure, conducted by a judge in a court of law, in which MDOT is represented by the Attorney General, where the amount of just compensation to be paid to a property owner is determined.

**Consent(s)** - The right to enter upon a specific area of land for a temporary time frame for a specific purpose. The Consent will expire at the completion of the project or upon a specified date. Consents may be granted for the following purposes:

- Grading
- Grading Drive
- Closing Drive
- Relocating Drive
- Constructing Sidewalk
- Temporary Drives

If the Consent is to construct a temporary drive, the temporary drive is to be removed before the end of construction and the underlying lands returned as nearly as possible to their former condition.

**Control of Access** - The condition where the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is fully or partially controlled by public authority.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.02 (continued)

#### GLOSSARY OF TERMS

**Deed** - A duly attested written instrument, conveying real property or an interest therein.

**Deed, Quitclaim** - A deed conveying, without warranty, any title, interest, or claim that the grantor may have in the estate conveyed.

**Deed, Warranty** - A deed containing covenants by the grantor, for himself/herself and his/her heirs, to the grantee and his/her heirs, to warrant and defend the title and possession of the estate conveyed.

**Drainage Easement** - An easement for directing the flow of water and to allow construction and maintenance of sewers, ditches, and such.

**Easement** - An interest or right held by one person in land owned by another person whereby the first person is accorded partial use of such land for a specific purpose. An easement restricts but does not abridge the rights of the fee owner to the use and enjoyment of the easement holder's rights.

**Eminent Domain** - The power to take private property for public use. Eminent domain gives the government the right to take possession of private property in the manner directed by the Constitution and the laws whenever the public interest requires it.

**Encroachment** - Any structure illegally erected within or overhanging the R.O.W. and attached to the land, such as a fence, building, or gasoline pump. Has been expanded to include occupation of the R.O.W., e.g., parking vehicles offered for sale.

### 5.02 (continued)

**Fair Market Value (Eminent Domain Definition)** - Market value as defined in Standard Jury Instruction 90.06 considers the following:

1. The highest price estimated in terms of money that the property will bring if exposed for sale in the open market with a reasonable time allowed to find a purchaser buying with knowledge of all of the uses and purposes to which it is adapted and for which it is capable of being used
2. The amount which the property would bring if it were offered for sale by one who desired, but was not obliged, to sell, and was bought by one who was willing, but not obliged, to buy
3. What the property would bring in the hands of a prudent seller, at liberty to fix the time and conditions of sale
4. What the property would sell for on negotiations resulting in sale between an owner willing, but not obliged, to sell and a willing buyer not obliged to buy (e)what the property would be reasonably worth on the market for a cash price, allowing a reasonable time within which to effect a sale.

**Fee Simple, also Fee and Fee Simple Absolute** - Full, complete ownership of land. It is free from liens, judgments, easements, and in fact, all encumbrances.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.02 (continued)

#### GLOSSARY OF TERMS

**Government Corner** - Also called a Public Land Survey System (PLSS) corner, means the corners established in the original government survey of the state. The original surveys in Michigan first established the Township boundaries. Then, in an orderly sequence, subdivided the townships into sections NOMINALLY one mile square. The PLSS corners marking the four corners of a section are more specifically termed Section Corners. The sections are nominally divided into four parts by Quarter Corners approximately half way between the section corners. Nearly all land in Michigan, including state highways, is described by reference from one or more government corners. There are generally four section corners (Northeast, Southeast, Southwest and Northwest) for each section, one defining each corner of this section. Often a section corner is a common point for one to three other sections. Section lines are the lines from section corner to quarter corner around the outside of each section. There are often "Double" corners along township lines. Preservation of the monuments marking the location of PLSS corners is required by Michigan Act 74, P.A. 1970, as amended. Michigan Act 345 of 1990 is an act to re-monument all the corners of the state over a 20 year period.

**Highest and Best Use** - The most profitable use, reasonable, but not speculative or conjectural to which property may be put in the future.

### 5.02 (continued)

**Just Compensation** - A full and fair equivalent for the loss sustained by the owner as a result of taking or damaging of private property for transportation purposes.

**Legal Description** - A description of real property by government survey, metes and bounds, or lot numbers of a recorded plat including a description of any portion thereof subject to an easement of reservation, if any.

**Market Value** - The highest price for which property can be sold in the open market by a willing seller to a willing purchaser, neither acting under compulsion and both exercising reasonable judgement.

**Necessity Hearing** - A step in the condemnation procedure, conducted by a judge in a court of law, in which MDOT is represented by the Attorney General, wherein the desirability of the project and the need for the particular parcel is determined.

**Negotiation** - The process by which property is sought to be acquired for transportation purposes through discussion, conference, and final agreement upon the terms of a voluntary transfer of such property.

**Partial Taking** - Acquisition of a portion of a parcel of property.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.02 (continued)

#### GLOSSARY OF TERMS

##### Plats

**Subdivision** - An official map showing the division of a tract or area into lots for use or occupancy. Plat development is regulated under Act 288, P.A. 1968 and local ordinance. Plats are recorded in the office of the Register of Deeds in the counties and filed with the Subdivision Control Unit of the Department of Commerce. Most plats identify and dedicate R.O.W. within and bordering the subdivision. Subdivisions are identified with a unique title or name and the name of the owner or developer.

**Assessor's Plats and/or Supervisor's Plats** are established for the convenience of a local authority for tax or assessment purposes. The assessing officer will certify that the local governmental authority has acquired title to the highways, streets, alleys, and public places shown on said assessor's plat by reason of purchase, dedication, condemnation, or adverse possession for public use; and if there are any to which the local governmental authority has not acquired title for public use, the extent of their use shall be plainly stated. (The language of the statute pertains to the use of roads, streets, etc., to which title has not been acquired and not to the character and the rights of lot owners or others or the ownership of the land itself. In other words, such plats cannot dedicate R.O.W. for public use; they can only certify R.O.W. as it actually is or the use to which it is being put.)

### 5.02 (continued)

**Possession and Use Agreement (P&U)** - A form used when negotiations cannot be completed by the Real Estate Acquisition Agent and the owner has no objection to the State's taking possession of the land and commencing construction prior to determination of just compensation.

**Private Claim** - A parcel of land which was in private ownership at the time United States sovereignty was established. Private claims are numbered and almost always abut navigable waters. These claims were surveyed prior the General Land Office survey in Michigan is not a part of the rectangular Public Land Survey System.

**Property Controlling Corner** - A public land survey corner or any property corner which does not lie on a property line of the property in question, but which controls the location of one or more property corners of the property in question.

**Property Corner** - A geographic point on the surface of the earth, which is on, is a part of, and controls a property line.

**Remainder** - Real property that is located outside of the approved R.O.W. but been reviewed and approved for disposal.

**Right of Entry** - The lawful right to enter upon a parcel of land, which is in the process of being acquired, for the purpose of beginning the construction, or processes related to construction (drilling, testing, etc.) of a public project.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.02 (continued)

#### GLOSSARY OF TERMS

**Right of Way - (R.O.W.)** - The entire area reserved for the construction, operation, and maintenance of the roadway and the improvement of the roadside such as landscaping, sidewalks, pathways or transit stops. R.O.W will either be free access or limited access. Limited access R.O.W. is when the inherent right of access to a public highway by the abutting owner or occupant is acquired along with the title to the R.O.W.

**Right of Way (R.O.W.) Marker** - A signpost of wood, concrete, or metal construction which served as an indicator of the approximate location of R.O.W. along public ways. The signpost was painted or otherwise labeled with "R/W". The signpost extended well above the surface of the ground in order to be readily visible to the public and the abutting landowners. R.O.W. markers were used to mark section line intersections, changes in R.O.W. widths, the beginning and ending of curved R.O.W. lines, and other locations that would benefit landowners and the public. R.O.W. markers were not usually set along limited access roadways. R.O.W. markers and fencing were not placed by professional surveyors and were not intended to define the limits of roadway R.O.W.

**Right of Way (R.O.W.) Monument** - A R.O.W. monument is placed by a professional surveyor to identify a corner or a point-on-line of right-of-way. R.O.W. monuments are set flush with the ground surface or slightly below to increase their stability and survivability. Monuments are stamped with a monument number and the license number of the professional surveyor responsible for setting the monument. R.O.W. monuments are set in locations where fee title has been acquired and are intended to define the boundaries of such lands.

### 5.02 (continued)

**Riparian Rights** - The property and other rights of an owner of waterfront property in the bed, banks and water of a lake or stream. Riparian rights cannot be severed from the upland parcel to which they accrue.

**Roadside Control** - The public regulation of the roadside to improve highway safety, expedite the free flow of traffic, safeguard present and future highway investment, conserve abutting property values, or to preserve the attractiveness of the landscape.

**Roadway** - The part of the R.O.W. required for construction, limited by the outside edges of slopes and including ditches, channels and all structures pertaining to the work. In short, the area between slope stake lines.

**Scenic Easement** - An easement for conservation and development of roadside views and natural features.

**Setback Lines** - A line established by zoning ordinance, deed restriction or custom regulating the distance from the R.O.W. line of a street or highway to the point where improvements may be constructed.

**Sight Line Easement** - An easement for maintaining or improving the sight distance.

**Slope Stake Line** - The limits of the designed roadway cross section where the finished side slope of an excavation or embankment meets the surface of the existing ground. It is detailed on the plans as a dashed line and marked in the field by marked stakes (slope stakes).

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.02 (continued)

#### GLOSSARY OF TERMS

**Statutory Right of Way (R.O.W.)** - The R.O.W. of roads established by "use", where no other R.O.W. was established by dedication or purchase. This R.O.W. is defined by statutes and generally accepted to be 66', 33' either side of the centerline of the traveled way, or where the road is along section or quarter section lines, the R.O.W. is measured 33' either side of those lines.

**Step-1 Authority** - Authority from the FHWA to secure title information.

**Step-2 Authority** - Authority from the FHWA to proceed with appraisals, negotiations, and actual acquisition.

**Stipulated Settlement** - An agreement in an active court case under court jurisdiction which settles an issue or the entire case between contending parties without a judge's or jury's decision. It further must be approved by the court and made a matter of record.

**Title** - The evidence of a person's right to the property or the right itself.

### 5.02 (continued)

**Title Commitment** - A document issued to a prospective land purchaser by a title insurance company by which the company agrees to issue a title insurance policy on that parcel of land. The commitment contains the recorded legal description of the land, the name and address of the present owner, the title search findings, such as, chain of title information, title encumbrances, liens, easements, tax payment information, and the terms and conditions by which the insurance company is willing to guarantee title.

**Title Search** - An investigation of public records and documents to ascertain the history and present status of title to property, including ownership, liens, charges, encumbrances, and other interests.

**Uneconomic Remainder** - A remnant piece of property having little or no use. In the case of a partial acquisition requiring removal of all or most of the improvements (either residential or commercial), the remaining property (remainder) may be declared as uneconomic at the owner's request.



# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

**5.03** (revised 9-28-2020)

### GENERAL

Right of Way studies of a preliminary nature are nearly always made before the final survey is started. R.O.W. is decidedly a prominent part of a set of plans and should be carefully reviewed for the entire project before preliminary plans are started. Acquisition of R.O.W. is often difficult, expensive, and time consuming, and it is the responsibility of the Design Engineer to expedite all plan work pertaining to R.O.W. matters.

**5.03.01** (revised 9-28-2020)

#### Right of Way Parcel Overlay (ROWPO)

The purpose of ROWPO is to furnish the Region Real Estate staff with plans that have the requirements outlined in sufficient detail so that proper descriptions can be prepared and the land acquired for construction purposes. The information on the plans is used in preparing various conveyance instruments such as deeds, easements, consents, etc., and in legally describing and locating the various parcels of land referred to in these instruments. The R.O.W. information provided in the plans are used by real estate staff to prepare appraisal/valuation reports, acquire property, and for record purposes.

**5.04** (revised 8-23-2021)

### R.O.W. WIDTHS

The proposed R.O.W. width should be sufficient to accommodate the planned project. Federal regulations specify "The State shall acquire rights-of-way of such nature and extent as are adequate for the construction, operation, and maintenance of a project." AASHTO guidelines specify that "right-of-way widths should not be less than that required for all elements of the highway cross section and appropriate border areas."

Anticipated traffic volume, stage construction, real estate values, winter snow removal and storage difficulties, flat or rolling country, etc., should be considered in the selection of R.O.W. widths. It is essential that the R.O.W. width selected will meet all the requirements of ultimate construction as determined by careful highway planning. As a rule, proposed R.O.W. or a Consent are based on slope stake lines. A general rule of thumb is to provide 7' to 10' from the slope stake line to the proposed R.O.W. or Consent limits, although proposed R.O.W. should not be jogged too often to follow the slope stake line. Some engineering judgement is required.

The methods of acquisition are not explained in detail, however, it is the intent that R.O.W. be available for the maintenance of the total width including such drainage as may be necessary.

It is desirable, whenever local conditions will permit, to call for a uniform width of R.O.W. through a specific property, rather than to break it into a series of varying widths. Logical breaks or points of change are at fence lines or property lines that intersect the project. In the majority of cases, the property owner will prefer this method of R.O.W. acquisition. If the road can be built on less than the standard width, in order to avoid costly building relocation, the R.O.W. is frequently "jogged". However, care should be exercised in this practice because many times when the R.O.W. is jogged to miss the buildings they still suffer substantial damage, thus the jogging may not be justified.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

**5.05** (revised 8-23-2021)

### URBAN R.O.W.

Where all or portions of a project are located in urban areas, R.O.W. may be limited to the width determined by municipal planning or to existing R.O.W. Portions within urban boundaries that have never been developed should be set up the same as for rural projects. Occasionally, because of the increased width of the proposed surface, additional R.O.W. is needed. In this case the new width is determined by MDOT, and the designer should become familiar with whatever agreements or decisions are made.

**5.05.01** (revised 9-28-2020)

#### Urban Expressways

R.O.W is of primary importance in urban expressway design. Modern expressways are designed to provide roadways of sufficient width to carry large volumes of traffic frequently including frontage roads and access ramps, requiring R.O.W. widths of 300' to 400'. Obviously, a strip of land of this width cutting across a city is very costly and disruptive, and the work involved in securing the necessary properties requires a lot of time. Construction that is slowed by R.O.W. acquisition may further be delayed by the moving and razing of many buildings. Base Plans (Preliminary R.O.W.), although not exact and thus subject to revision, should be placed on file in the city's offices and used as a criterion for the issuing of building permits in areas where construction is planned in the near future.

**5.05.02** (revised 8-23-2021)

### Constructing Sidewalks

Whenever feasible, new or reconstructed sidewalk should be placed 1 foot minimum inside the existing or proposed R.O.W. line (as determined by a Professional Surveyor). When the proposed sidewalk grading limits extend outside the R.O.W., a Consent (Form [0640C](#)) is requested. The Consent obtains permission from the adjacent property owner to temporarily utilize their property to construct new and/or to replace existing sidewalks within the existing or proposed R.O.W. See application #3 on the following page for proposed sidewalk remaining outside the R.O.W. Show slope stake lines to determine the impact to the property.

The Real Estate Services Section of the Development Services Division or Region Real Estate will determine just compensation for the Consent which is offered to the property owner. Consent is noted at each applicable location as:

Consent

Listed below are several applications for use of the Consent and options in the event of failure to obtain Consent or fee/easement. Gapping out sidewalk construction in areas with Consent or fee/easement conflicts is not an acceptable option. Sidewalk accessibility must be provided for persons with disabilities according to the Americans with Disability Act (ADA) of 1990. When constructing sidewalk, MDOT is responsible for meeting ADA accessibility requirements for the public sidewalk. The area outside these limits may require restoration of existing private connection to the sidewalk. Regardless of whether the Consent is granted, accessibility impact should be discussed with the property owner during negotiations.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.05.02 (continued)

#### Constructing Sidewalks

If ROW is not in the scope of the road/bridge project, then it would not be required for the project solely for ADA compliance and a Consent will be needed to transition to the existing sidewalk. If the scope of the road/bridge project does include ROW and/or there is planned accessible path where constructing sidewalks are within the scope (more than just ramps), then ROW would need to be purchased for the sidewalk ramp transitions, including condemnation, if necessary.

See [Section 6.08.06](#) for information on accessibility requirements for private connections to sidewalks.

1. **Existing sidewalk extends to the face of buildings** - In the downtown business districts, many businesses are on the R.O.W. line or just beyond the R.O.W. line. If the existing sidewalk is being reconstructed to the face of a building, obtain the Consent. No fee/easement would be required if the pedestrian travel zone of the sidewalk is within the existing R.O.W. The Consent requested would include construction of the sidewalk frontage zone located outside the existing R.O.W. to add aesthetic value to the business property. If the Consent is not granted, MDOT may elect to delete the parcel and construct the sidewalk to the R.O.W. line leaving the remaining portion of old sidewalk to the face of the building with consideration for accessibility as previously stated.

### 5.05.02 (continued)

2. **Existing sidewalk to be replaced in existing R.O.W., but grading is needed outside existing R.O.W.**- Many communities have the existing sidewalks constructed one foot inside the R.O.W. line. If the proposed sidewalk requires a slope stake line outside the existing R.O.W., obtain the Consent. This Consent allows for reconstructing the sidewalk within the existing R.O.W. and placing fill material and/or excavating the back slope on the private property to construct the sidewalk to the proper line and grade. If the Consent is refused during negotiations, MDOT may elect to delete the parcel and build retaining walls with possible fencing or guardrail to keep the sidewalk and associated grading within the R.O.W. with consideration for accessibility as previously stated. If construction of the sidewalk cannot be accommodated within the existing R.O.W. or by Consent, MDOT may be required to condemn for either the Consent or a fee/easement in order to construct the new sidewalk.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.05.02 (continued)

#### Constructing Sidewalks

- 3. Sidewalk Partially Outside R.O.W. -** When a slope stake line falls within any portion of an existing sidewalk that is either outside or partially outside the R.O.W., obtain a Consent. The Consent allows for reconstructing a new sidewalk within the existing R.O.W. and removing that portion of existing sidewalk outside the existing R.O.W.

If a proposed new or reconstructed continuous sidewalk is to remain partially outside the R.O.W., MDOT shall determine ownership prior to proceeding. If the property is within the municipality owned R.O.W., MDOT should obtain permission via Consent from the municipality. The Consent should be included in the R.O.W. Certification. If the property is not owned by the municipality, MDOT should acquire permanent fee/easement R.O.W. for the sidewalk remaining outside the existing R.O.W. Although MDOT is not responsible for the future maintenance or repair of the sidewalk, the fee/easement acquisition ensures the preservation of a sidewalk width compliant with ADA requirements. If MDOT is not able to acquire permanent fee/easement R.O.W., a Consent can be acquired.

For tying in short intermittent alterations to existing sidewalk outside the R.O.W. see #5.

If the fee/easement or Consent is refused by the property owner, MDOT may elect to delete the parcel, remove and replace that portion of the sidewalk within the R.O.W. and build retaining walls with possible fencing or guardrail to keep the sidewalk and associated grading within the R.O.W. As previously stated, accessibility impacts should be addressed during negotiations with the property owner.

### 5.05.02 (continued)

If construction of the sidewalk cannot be accommodated within the existing R.O.W., MDOT may be required to condemn for either the Consent or fee/easement in order to construct the new sidewalk.

- 4. Constructing Sidewalk Outside Existing R.O.W. -** When sidewalk is constructed or reconstructed outside the existing R.O.W. MDOT shall determine ownership prior to proceeding. If the property is within the municipality owned R.O.W., MDOT should obtain permission either via Permit or Consent from the municipality. The Consent should be included in the R.O.W. Certification. If the property is not owned by the municipality, MDOT should acquire permanent fee/easement R.O.W. to construct the sidewalk outside the existing R.O.W. If MDOT is not able to acquire permanent fee/easement R.O.W., a Consent can be acquired. Failure to obtain the permanent R.O.W. or a Consent during negotiations may require MDOT to condemn for permanent R.O.W. to replace the sidewalk. Whenever feasible, sidewalk should be constructed or reconstructed one foot minimum inside the existing/proposed R.O.W. (as determined by a Professional Surveyor).

See [Section 6.08.01](#) for the MDOT's position on sidewalk liability and maintenance agreements.

When the adjacent property is subject to Section 4(f) of the U. S. Department of Transportation Act of 1966, permanent easement or fee R.O.W. is usually not feasible. Consent should be pursued under these conditions.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.05.02 (continued)

#### Constructing Sidewalks

- 5. Tying to Existing Sidewalk** – When intermittent sidewalk construction such as sidewalk ramp upgrading or driveway construction is not done in conjunction with construction or reconstruction of the continuous sidewalk, the instrument used to access private property will depend on the proposed placement of the altered section of sidewalk. Consent can be used to tie in to existing sidewalk outside the right of way if the sidewalk is not realigned or widened outside the right of way. In other words, there is no further increase to existing encroachment. If the sidewalk alignment or width is altered causing further encroachment outside the right of way, a permanent easement is required.

The Project Manager should seek local government support for the project, utilizing Context Sensitive Design concepts. Local agencies can provide valuable assistance by holding public meetings to seek input from the community, of which, impacted property owners are primary stakeholders. This "input" process may help alleviate many disagreements and allow all stakeholders to reach consensus prior to any acquisition. If local officials are very supportive of the project, many times they talk directly with the affected owners to secure agreement for a certain design of the sidewalks. It is required that MDOT obtain an agreement for the local agency's acceptance of responsibility for maintenance of the sidewalk.

### 5.05.02 (continued)

Any property needed outside the existing R.O.W. should be acquired by MDOT for timely acquisition of the R.O.W. needs. If the property owner fails to sign a Consent the plans should be revised according to the different scenarios above or Region Real Estate and Real Estate Services Section initiates the condemnation process prior to letting the plans.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 5.06

#### LIMITED ACCESS R.O.W. AT RAMP INTERSECTIONS

In order to control access in the interchange area along crossroads adjacent to and within the influence of ramp intersections, limited access R.O.W. should be extended along the crossroad. See [Section 5.24](#), [Figures 5.24.01 and 5.24.02](#).

5.07 (revised 8-23-2021)

#### TURNBACK PROJECTS

Generally, MDOT will not acquire additional R.O.W. on turnback projects. If additional R.O.W. is required, it must be obtained by the local agency. See [Section 12.03.05](#) for additional information on R.O.W. on turnback projects.

5.08 (revised 9-28-2020)

#### TYPES OF R.O.W. EASEMENTS OR CONVEYANCE FOR DRAINAGE

1. R.O.W. will be required when an outlet ditch is to be constructed in a location where there was no previous ditch.
2. Existing ditches flowing across the R.O.W. that will require cleaning and deepening will require consent from the affected property owner(s) to clean the outlet ditch.

### 5.08.01

#### Special Ditch

Any additional R.O.W. required for intercepting ditches through tillable areas or for swamp ditches, where permanent control is needed for clean-out or other maintenance, should be shown as proposed permanent R.O.W. See [Section 5.24](#), [Figures 5.24.04, 5.24.05, and 5.24.06](#).

5.08.02 (revised 1-29-2018)

#### County Drains

See the [Road Sample Plans](#) for proper labeling. See [Section 5.24](#), [Figure 5.24.06](#).

5.08.03

#### Drainage Structures

Wherever catch basins, sewers, drainage tile, cobble gutters, riprap, etc., are extended or placed beyond the proposed R.O.W. limits, they should be noted like this:

R.O.W. to Construct and Maintain  
Drainage Structure

5.08.04 (revised 2-14-2002)

#### Retention/Detention Basins

R.O.W. for detention basins should be acquired in fee so that it can be fenced. See [Sections 7.06.10 and 5.24](#), [Figure 5.24.06](#). R.O.W. for detention basins should be noted as:

Prop. R.O.W. for  
Retention Basin

or

Prop. R.O.W. for  
Detention Basin

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.09 (revised 8-23-2021)

#### DRIVEWAYS

MDOT may need to close or relocate a drive. If the drive cannot be closed or relocated within the existing Right-of-Way, MDOT must obtain a Consent from the property owner and follow the normal acquisition process. The plans should reflect one of the following:

- Consent to Close Drive
- Consent to Grade Drive
- Consent to Relocate Drive

If the drive can be closed or relocated within the existing Right-of-Way, MDOT does not need to obtain a Consent from the property owner. The plans should reflect one of the following:

- Close Drive
- Grade Drive
- Relocate Drive

Do not use:

Permit to Construct "Hot Mix Asphalt." (or "Conc.") Drive

Permit to "Widen" Drive

If a driveway or driveway approach is to be combined which requires work outside the Right-of-Way, a Consent must be obtained from each affected property owner. A Consent is not needed if the work can be completed within the existing Right-of-Way. **See Section 5.24, Figures 5.24.04 and 5.24.06.**

### 5.09 (continued)

It is important to show the limits of the driveway work by outlining the proposed driveway, **not** using dimensions. Slope stake lines, driveway profiles and/or grade information (Example: 2% for 15' then 7% to existing) is also useful to Real Estate personnel when contacting the property owner. When changes occur to a driveway outside MDOT R.O.W., after Preliminary Plans (Final R.O.W.) are submitted, a R.O.W. revision must be submitted to the Region Real Estate Agent and the Region Real Estate Technician. See [Section 5.21](#).

## MICHIGAN DESIGN MANUAL ROAD DESIGN

**5.10** (revised 1-29-2018)

### R.O.W. AT RAILROAD CROSSINGS

When determining the clear vision R.O.W. requirements of an at-grade trunkline crossing with a railroad, a plan sheet of the area in question should be submitted by the Design Engineer to the Railroad Coordination Unit – Office of Rail. This should be done as early as possible, so that the needed R.O.W. may be shown on the Preliminary Plans (Final R.O.W.). **See Section 5.24, Figure 5.24.03.**

**5.11** (revised 8-23-2021)

### CONSENT(S)

In cases where minor grading extends a short distance beyond the existing R.O.W., a Consent may be required. When it is anticipated that more than 500 cyd of earth excavation is to be removed from a Consent area, the R.O.W. plans should show the location and estimated quantities. Drainage structures, culverts, and ditches should not be placed within areas with a Consent but require permanent (fee/easement) R.O.W. Consents shall be dimensioned from the proposed or existing R.O.W. lines. **See Section 5.24, Figure 5.24.04.**

When the adjacent property is subject to Section 4(f) of the U. S. Department of Transportation Act of 1966, permanent easement, or fee R.O.W. is usually not feasible. A Consent ([Form 0640C](#)) should be pursued under these conditions.

**5.12**

### POTENTIALLY CONTAMINATED SITES

The identification of potentially contaminated sites is important on all projects, whether proposed R.O.W. is required or the project will be built within existing R.O.W. The Design Engineer should refer to the procedure outlined in [Chapter 14](#).

**5.13**

### TEMPORARY FENCE

It may be necessary to provide temporary fencing in stock grazing land where extra R.O.W. for grading and disposal of muck is required. A miscellaneous quantity of woven wire fence (for temporary fencing) should be shown on the note sheet.

**5.14** (revised 1-29-2018)

### PRESERVING R.O.W. LOCATION

Knowledge of the physical location of the R.O.W. is important to the Department when future improvements or expansions are planned. It is immediately important to owners of remainder properties abutting our fee ownership. Unless monuments are placed to mark the alignment on which the R.O.W. was purchased, confusion may result over the location of the R.O.W. In urban trunklines and rural expressway projects, where use of alignment monuments by surveyors would be so dangerous as to be impractical, the R.O.W. lines are monumented. In both cases, state law requires that all Government Corners used in the design survey or affected by construction activities be preserved and a record filed with the Register of Deeds.



# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 5.14.01 (revised 1-29-2018)

#### Government Corners

A description, witnesses and alignment ties to Government Corners are contained in the survey notes. The Design Survey Section or Region Surveyors must be consulted when questions arise. All Government Corners and property control corners that fall within the construction area must be identified on the plans and marked "PRESERVE". If MDOT professional staff are not available, the contractor will be required to retain a Michigan licensed professional surveyor to accomplish this work as described in the current Specification.

Activities under this section must conform to the requirements of the Land Corner Recordation Act, Act 74, P.A. 1970, as amended. This act requires that corners of the Public Land Survey System be monumented in place or by reference monument, and that if any such monument be located in a hard surfaced roadway, it shall be placed in a monument box.

### 5.14.02 (revised 1-29-2018)

#### Alignment Monuments

On MDOT trunklines wherever their future use is deemed practicable, survey markers should be set at all points defining the road alignment. Alignment points include PC, PI, PT, etc. The Region Project Development Engineer should consult with the Region Surveyor to determine, during scoping, if the alignment on a project should be monumented. If the Region determines that the alignment be monumented, and has programmed sufficient funding to do so, the Design Unit adds the appropriate pay items to the plans and notes proposed locations to be monumented on the construction plans as follows:



Survey marks shall consist of rebar not less than  $\frac{5}{8}$ " in diameter and 18" in length. All alignment points in the road surface should be placed in a monument box. Since alignment is a component of our boundary, Act 299, P.A. 1980, as amended, requires that this work be performed by a Michigan licensed professional land surveyor. If MDOT professional staff are not available, the contractor will be required to retain a professional surveyor to monument alignment points.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 5.14.03 (revised 9-28-2020)

#### R.O.W. Monuments

In cases where setting monuments to preserve the alignment is not possible or practical, the actual limits of the R.O.W. should be established.

R.O.W. lines should be monumented:

at the intersection of all section lines and private claim lines (Along the Detroit and St. Clair rivers long narrow plats of land were established. These are known as French Claims and there are no section lines in this area);

at the intersection of all subdivision block lines;

at all changes in direction of the line;

at the P.C. and P.T. of curved sections of the line;

at intervals not greater than 2000'.

In determining the location of monuments placed at the 2000' spacing, the intersection of the R.O.W. with section subdivision lines or other property lines identified in the design survey should be used whenever possible.

When service roads are involved, monumentation will be along the outside R.O.W. of the service road. If the service road R.O.W. is not contiguous with the freeway R.O.W., both lines must be monumented.

The Design Unit notes proposed locations to be monumented on the construction plans as follows:

Place Monument with MDOT ROW cap stamped with the license number of the Professional Surveyor in charge -  
PRESERVE

### 5.14.03 (continued)

After the Design Unit has noted the locations of the monuments, it will send the digital data to the Survey Unit for review. The Survey Unit will mark any proposed changes and return the digital data to the Design Unit.

If additional R.O.W. is acquired, Region Real Estate or the Real Estate Services Section will notify the Survey Unit, who will determine when the placement of the R.O.W. monuments will be completed. Therefore, when R.O.W. monumenting is called for, the following note should be placed on the plans:

R.O.W. monuments and marker posts are not a part of this contract

The placement of R.O.W. monuments is boundary surveying and shall be performed by the Survey Unit or a consultant survey firm based on Act 299, P.A. 1980, as amended.

Monumenting of R.O.W. will apply on all projects requiring the acquisition of R.O.W.

When acquiring easement and fee R.O.W., MDOT must comply with Public Act 132 of 1970, as amended as part of the survey process. See the MDOT Wiki Page for additional information - [http://mdotwiki.state.mi.us/design/index.php/Chapter\\_4\\_-\\_Surveys\\_-\\_Types#4.6\\_Certified\\_Surveys\\_for\\_Real\\_Estate\\_Acquisition](http://mdotwiki.state.mi.us/design/index.php/Chapter_4_-_Surveys_-_Types#4.6_Certified_Surveys_for_Real_Estate_Acquisition)

### 5.15

#### REST AREAS AND WEIGH STATIONS

When a rest area or weigh station is recommended, R.O.W. requirements are to be shown on the plans and secured along with the road R.O.W.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.16 (revised 8-23-2021)

#### RIGHT OF WAY (R.O.W.) PLAN SUBMITTAL

R.O.W. requirements are submitted in two phases, preliminary and final. These phases have been incorporated into the Base Plan and the Plan Review milestone submittals. ProjectWise workflows have been created as noted in Chapter 1 - ProjectWise Pre-Bid Processes of the Design Submittal Requirements to provide further guidance.

Base Plans (Preliminary R.O.W. Plans) is for title search, project R.O.W. cost estimates assigning parcel numbers, preparation of the ownership sheet and creation of the Parcel.dgn file. The Parcel.dgn file is a reference file that is attached to the Alignment/ROW plan sheets prior to the Preliminary Plan submittal. The Parcel.dgn file contains the legal property lines of properties affected by proposed R.O.W. along with parcel numbers and other parcel report information. (See [http://mdotwiki.state.mi.us/design/index.php/Chapter\\_3\\_-\\_Standard\\_Naming\\_Conventions](http://mdotwiki.state.mi.us/design/index.php/Chapter_3_-_Standard_Naming_Conventions) for more detail) The Parcel.dgn file is created by the Region Surveyor, Region Real Estate Technician, or Consultant, if contracted to perform this work task.

After Preliminary Plans (Final R.O.W.) have been submitted as part of the Plan Review milestone, any changes required to the R.O.W. plans are submitted as a R.O.W. revision. This R.O.W. revisions represent a snapshot in time. Changes to the design that would impact a property owner and any proposed R.O.W. items should only be considered if time permits prior to letting. These changes should be discussed with the Region Real Estate Agent and Acquisition Agent to determine the impact of the Proposed Acquisition and minimize the potential for a delay due to changes in R.O.W.

The Designer prepares the plans by laying out the R.O.W. requirements of a highway. The plans used for R.O.W. purposes are drawn utilizing MDOT's current CADD format.

### 5.16 (continued)

At least one month prior to the submittal of Base Plans (Preliminary R.O.W.), the Project Manager or the Design Engineer should verify that a ROW phase is set up on the Phase Initiator (P.I.) system. The ROW phase does not need to be chargeable, but it must be on the P.I. system. If the ROW phase is not on P.I., the Project Manager or Design Engineer should submit a change request in JobNet. When the Base Plans (Preliminary R.O.W.) are submitted to the Region Real Estate Technician, the Project Manager will complete the process to obtain a chargeable ROW phase.

The design plans should be at a point where the final Slope Stake Lines and construction limits have been identified. Roughly 50% complete before Final R.O.W. is submitted. The project must have an Environmental Clearance (and Public Hearing Certification, if needed). The Project Manager has the responsibility for verifying that Environmental Clearance and Public Hearing Certification has been obtained

In the R.O.W. Overlay (ROWPO) Phase the Region Real Estate Technician, or consultant if contracted for this phase, adds the ownership sheet. Not required but if requested by the Region Real Estate Agent or Acquisition Agent, the Legal Property Lines, parcel number and other parcel report information can be attached to the Removal and Construction Plan Sheets by attaching the Parcel.dgn file as a reference file for making individual Property parcel sketches.

## **MICHIGAN DESIGN MANUAL ROAD DESIGN**

### **5.16.01** (revised 9-28-2020)

#### **Environmental Clearance**

All projects are required to be classified environmentally prior to MDOT making the Good Faith Offer to the property owner. If the project has not been cleared, the Environmental Section, Project Planning Division (PPD), Bureau of Transportation Planning, will need a set of plans for their review and subsequent classification of the project.

### **5.16.02** (revised 2-18-2010)

#### **Public Hearing Certification and Public Meetings**

Projects which require an Environmental Impact Statement (EIS) require a formal Public Hearing. For other projects that require the acquisition of several (approximately 25 or more) parcels of R.O.W. a public information meeting should be considered prior to the R.O.W. acquisition. The Public Involvement Unit, Statewide Transportation Planning, Bureau of Transportation Planning will schedule a Public Hearing if required and can assist in scheduling a public information meeting prior to the R.O.W. acquisition. Such a meeting is held in a location and at a time convenient to the individuals directly affected.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 5.16.03 (revised 9-28-2020)

#### Transmittal of Plans and Materials

Any transmission of plotted plans, section maps, and other material, as well as the Final R.O.W., are made through the Project Manager, who keeps the necessary records and distributes prints as required. Any revision of the R.O.W., must follow this same channel. The current method of transmittal is electronic via MDOT's project management system (ProjectWise). Transmittal includes the submission of CADD files and prints plotted in PDF format.

#### A. ProjectWise Procedure

Upon submittal of the various R.O.W. transmittals the project manager shall place the R.O.W. files into ProjectWise.

There are two parts to the ProjectWise transmittal. Submission of the CADD files and the submission of PDF files.

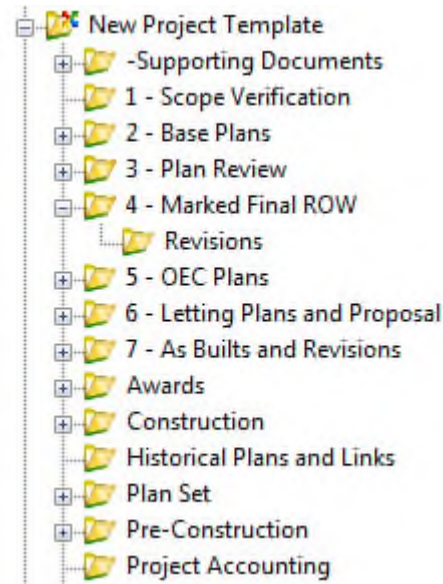
The PDF files are the documents of record and as such are located in locked folders.

The ProjectWise location of the CADD files will be provided by the designer as part of the CADD transmittal. This will include the location of the design base files and sheet files. See Standard\_Naming\_Conventions for information that is included in each file. The Region Real Estate Technician can utilize the sheet CADD files created by design as a template for developing R.O.W. exhibits. It is the designer's responsibility to notify Real Estate of any changes to the appropriate design base files that are included in the R.O.W. CADD transmittal.

A snap shot of CADD files used to create the Plan Review files will be submitted in the RID\_Preliminary folder as part of the RID Review process. The D-XXXXXX\_ROW\_20YY-MM-DD.dgn can not be modified without a subsequent submittal.

### 5.16.03 (continued)

#### B. ProjectWise Template



### 5.16.04 (revised 1-29-2018)

#### R.O.W. Forms

The form needed to submit R.O.W. plans is in PDF fillable format. The 0303 form should be used at each submittal. The 0303 form should be completed and signed by the Project Manager.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

**5.17** (revised 1-25-2021)

### **BASE PLANS (PRELIMINARY R.O.W.)**

The Base Plans (Preliminary R.O.W.) submittal should be submitted based upon the approved dates established by the Planisware network for the project. Project Managers must meet this date and are encouraged to submit the Preliminary R.O.W. earlier if possible.

The Project Manager will notify the appropriate review groups via ProjectWise email notification of the Base Plan Review meeting with ProjectWise links to the signed [0303](#) Design form and submitted Base Plans (Preliminary R.O.W. Plans). The review groups will review the Base Plans (Preliminary R.O.W. Plans) and all review comments are collected by the Project Manager. After the Base Plan Review meeting has occurred, any review comments that require changes to the Base Plans (Preliminary R.O.W. Plans) will be incorporated into the development of the Preliminary Plans (Final R.O.W. Plans). Any R.O.W. or Design revisions that occur after the Plan Review meeting and submission of the Preliminary (Final R.O.W. Plans) will be documented by using the [0303](#) Design Form and follow the Revision process.

The Design Plan Submittal memorandum ([0303](#) Design Form) contains Design and Real Estate information. The 0303 contains the following information along with additional information:

- A. Control section and job number
- B. Location
- C. Environmental Classification (and date of determination), if available.
- D. Anticipated R.O.W. Certification date
- E. A general description of the R.O.W. needed to construct the project, i.e., proposed R.O.W. consists of limited access R.O.W. for relocated interchange ramp.

**5.18** (revised 1-29-2018)

### **REQUIREMENTS FOR BASE PLANS (PRELIMINARY R.O.W.)**

The Base Plans (Preliminary R.O.W.) should include the following:

1. See [Chapter 1](#) and the [Road Sample Plans](#) for guidance regarding plan sheet creation.
2. Design Plan Submittal Form [0303](#).
  - Distribute plans and memos as per the distribution list.
3. Consultants are also required to submit both the CADD and PDF files to the Project Manager through ProjectWise utilizing MDOT's standard system format.

The following items are not required but if available should be sent as part of the Base Plans (Preliminary R.O.W.) submittal:

Survey notes with property ties and government corners, vicinity map depicting the location of the various proposed R.O.W., and existing and proposed typical cross sections.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

**5.19** (revised 1-25-2021)

### PRELIMINARY PLANS (FINAL R.O.W.)

When the design plans are at a point where the final slope stake and construction limits have been identified (roughly 50% complete), Preliminary Plans (Final R.O.W.) should be submitted showing final R.O.W. requirements. On large projects it may be desirable to have an informal plan review with representatives from the Environmental Section, Real Estate Services Section, Region Real Estate Agent and the Design R.O.W. Engineer prior to the Plan Review meeting. This may help to avoid future R.O.W. revisions and ensure that Real Estate is receiving all of the information it needs. The R.O.W. necessary for the proposed project is outlined on Form [0303](#).

The Project Manager will notify the appropriate review groups via ProjectWise email notification of the Plan Review meeting with ProjectWise links to the signed Form [0303](#) and submitted Preliminary Plans (Final R.O.W.). The review groups will review the Preliminary Plans (Final R.O.W.) and all review comments are collected by the Project Manager. After the Plan Review meeting has occurred, any review comments that require changes to the Preliminary Plans (Final R.O.W.) will be incorporated into the development of the Final Plans (Plan Completion). Any R.O.W. or Design revision after the submittal of the Preliminary Plans (Final R.O.W.) will follow the process in [Section 5.21](#).

**5.20** (revised 1-29-2018)

### REQUIREMENTS FOR PRELIMINARY PLANS (FINAL R.O.W.)

In addition to the requirements for Base Plans (Preliminary R.O.W.), the following information is needed for Preliminary Plans (Final R.O.W.):

1. See [Chapter 1](#) and the [Road Sample Plans](#) for guidance regarding plan sheet creation.

R.O.W. revisions can be used to modify the Final R.O.W. submittal as requested by the Designer or Region Real Estate. Designers should make determining R.O.W. needs a priority in the Design Process.





## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 5.22 (revised 9-28-2020)

#### MINOR CONSTRUCTION CHANGES FORM

During the negotiations between the property owner and MDOT Real Estate, the property owner may request some construction change or note be made on the plans. For example, the property owner may want the driveway relocated 60 feet west of its existing location because of improvements planned for the property, or a property owner may request the timber from removed trees to be stockpiled for the property owner's use. The Real Estate Acquisition Agent will describe the change on Minor Construction Changes Form (form 728). Any requested change involving design issues are to be presented to the designers by the Region Real Estate Agent or Region Project Development Engineer for their approval or denial before the negotiation is complete. The designer is encouraged to work with the Region Real Estate Agent in reaching an agreement that satisfies the property owner while providing a safe and constructible road.

When the Design Unit receives signed, approved 728 forms, every effort should be made to place the information on the plans. This will aid the construction field office and the contractor. The cost for the change should be included in the estimate. The changes shown on Form 728 should not require the submittal of R.O.W. revision, because they should not change the limits of the proposed R.O.W.

### 5.22.01 (revised 9-28-2020)

#### Showing MDOT Remainder Property on Plans

Many times MDOT has remainder property in the project vicinity. Quite often this property could be used by the contractor for locating various batch plants, equipment and materials storage, or disposing of excess excavations. The designer should consult with the Real Estate Region Agent and Construction Field Services Division to determine if the remainder property locations should be shown on the plans. If it is determined that the project area contains remainder property that could be used by the contractor, the construction plans will require a special provision informing the contractor of any restrictions for the use of the property and/or items required for authorization of its use (by the Resident Engineer) and that a rental agreement between the contractor and MDOT (Real Estate Services Section – Property Management Unit) may be required.

### 5.22.02 (revised 9-28-2020)

#### Site Clearance

Occasionally Region Real Estate or the Real Estate Services Section will request the Design Division to include the removal or demolition of a building in the design plans. Real Estate will provide all the necessary information to be included in the proposal package, including the Building Removal Specifications (Form 665).

## **MICHIGAN DESIGN MANUAL ROAD DESIGN**

**5.23** (revised 9-28-2020)

### **R.O.W. SUMMARY**

The preceding commentary on the processing of R.O.W. should be considered as a general guideline only. Each project will have to be examined for special or unique features that might require further study. These should be discussed with the Design R.O.W. Engineer (liaison between Design and Region Real Estate or the Real Estate Services Section).

Preliminary reviews will help to reduce the number of R.O.W. revisions. Changes in R.O.W. design, after it has been submitted, must be held to a minimum. In some cases the R.O.W. may already have been acquired, as detailed on previously submitted plans. Changes usually dictate that additional time may be needed to clear R.O.W. and additional expenses charged to the project. To avoid interference or delay during construction, Region Real Estate or the Real Estate Services Section must be satisfied that all requirements are met. Revisions in R.O.W. can be avoided by making certain concessions in the form of ditch changes, steeper slopes, etc., to stay inside the R.O.W. as previously submitted. These practices should be encouraged insofar as they do not materially detract from the concepts of a good design and/or safety.

**5.24** (revised 9-22-2014)

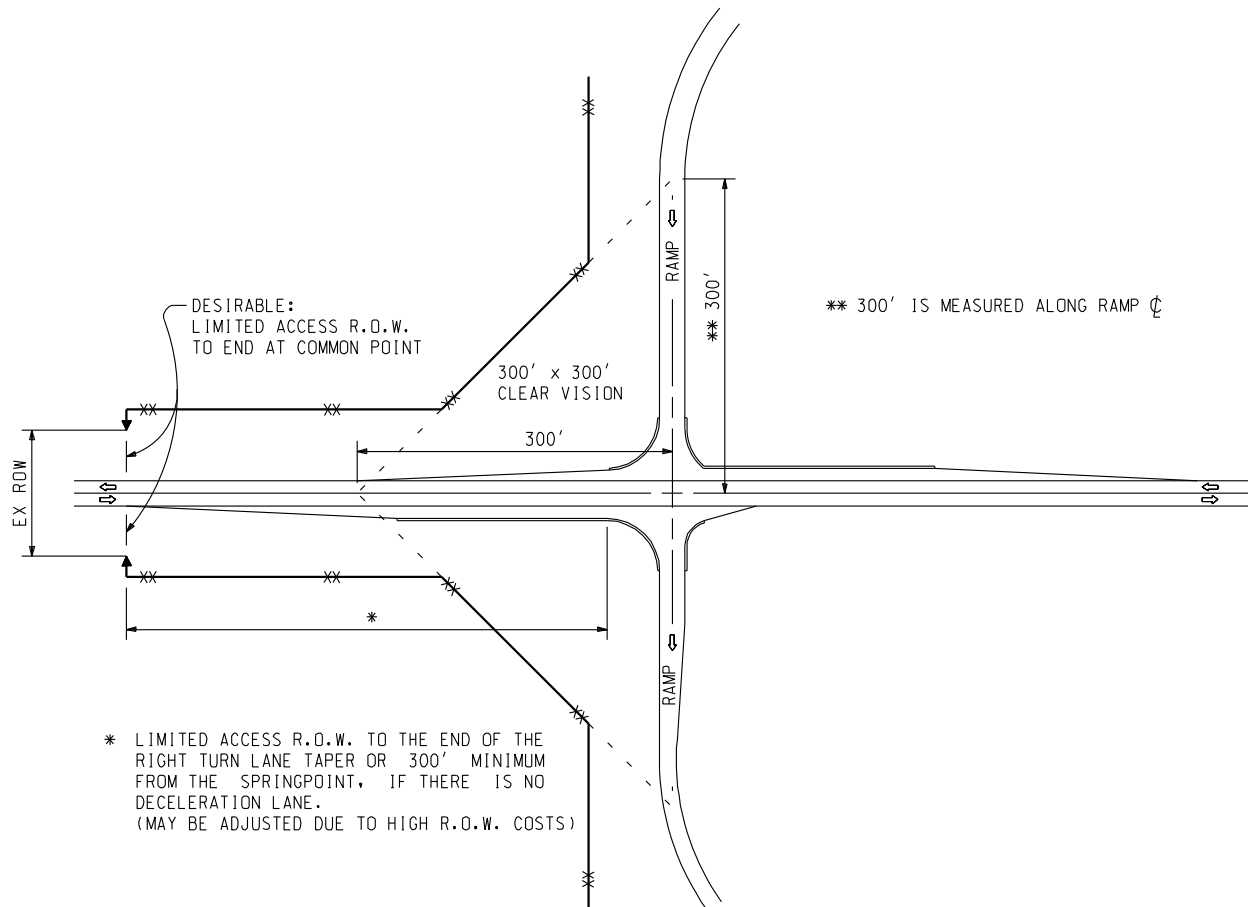
### **R.O.W. SKETCHES**

The R.O.W. sketches included in this section should be considered general guidelines for depicting certain situations only. The sketches are not intended to show complete R.O.W. dimensioning for every situation.

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



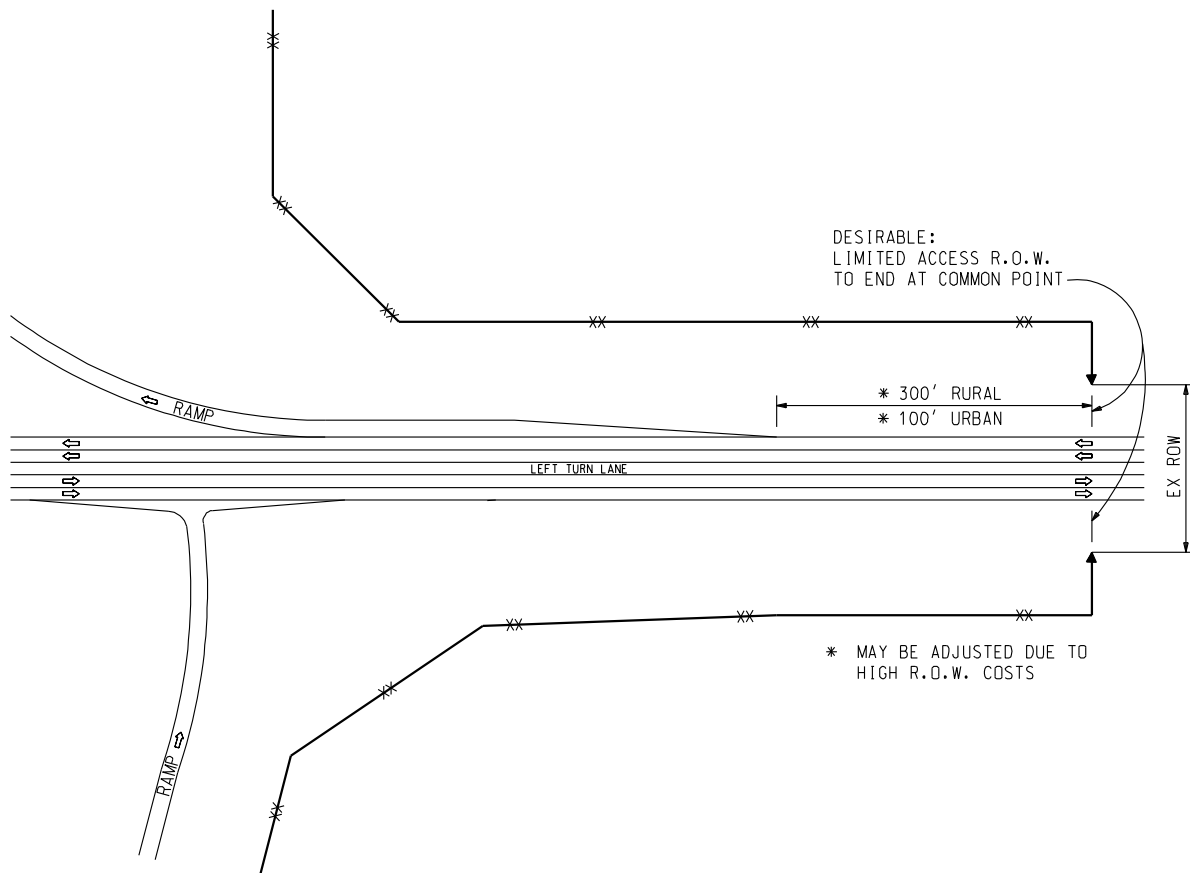
GUIDE FOR THE PURCHASE OF  
LIMITED ACCESS R.O.W. AT RAMP TERMINAL (RURAL)

Figure 5.24.01

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



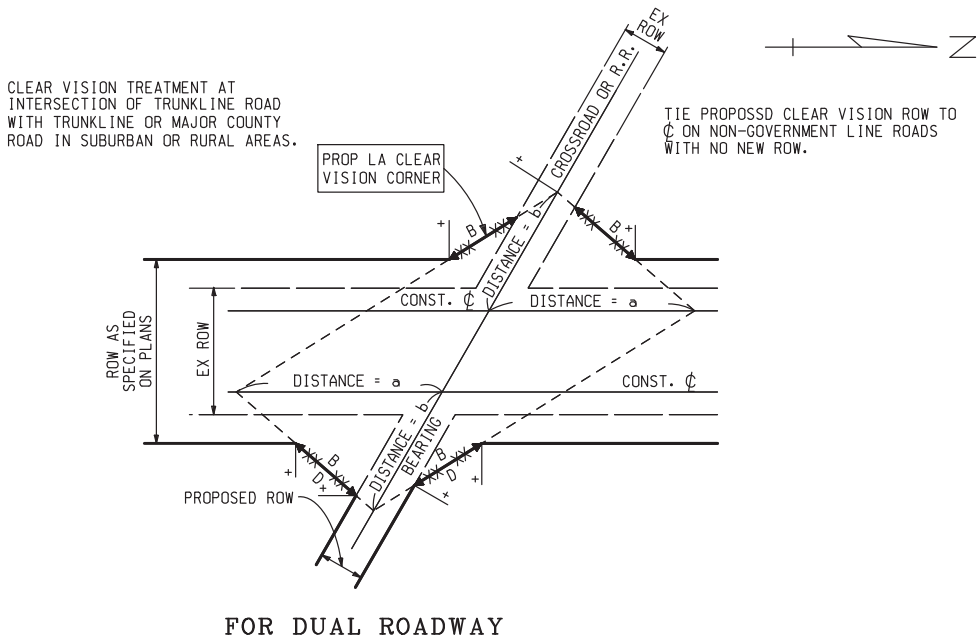
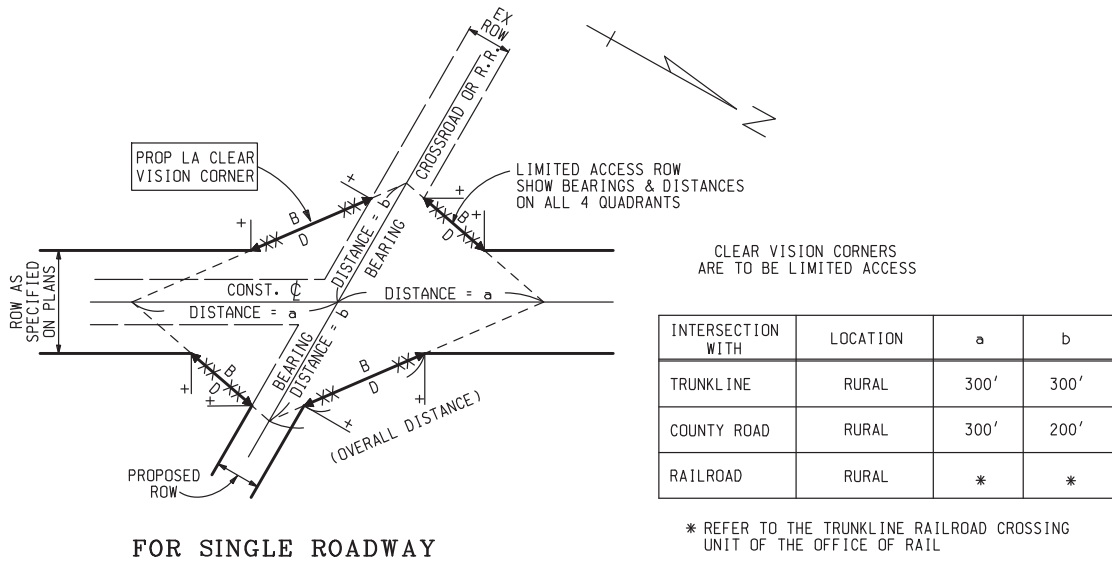
GUIDE FOR THE PURCHASE OF  
LIMITED ACCESS R.O.W. AT RAMP TERMINAL

Figure 5.24.02

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



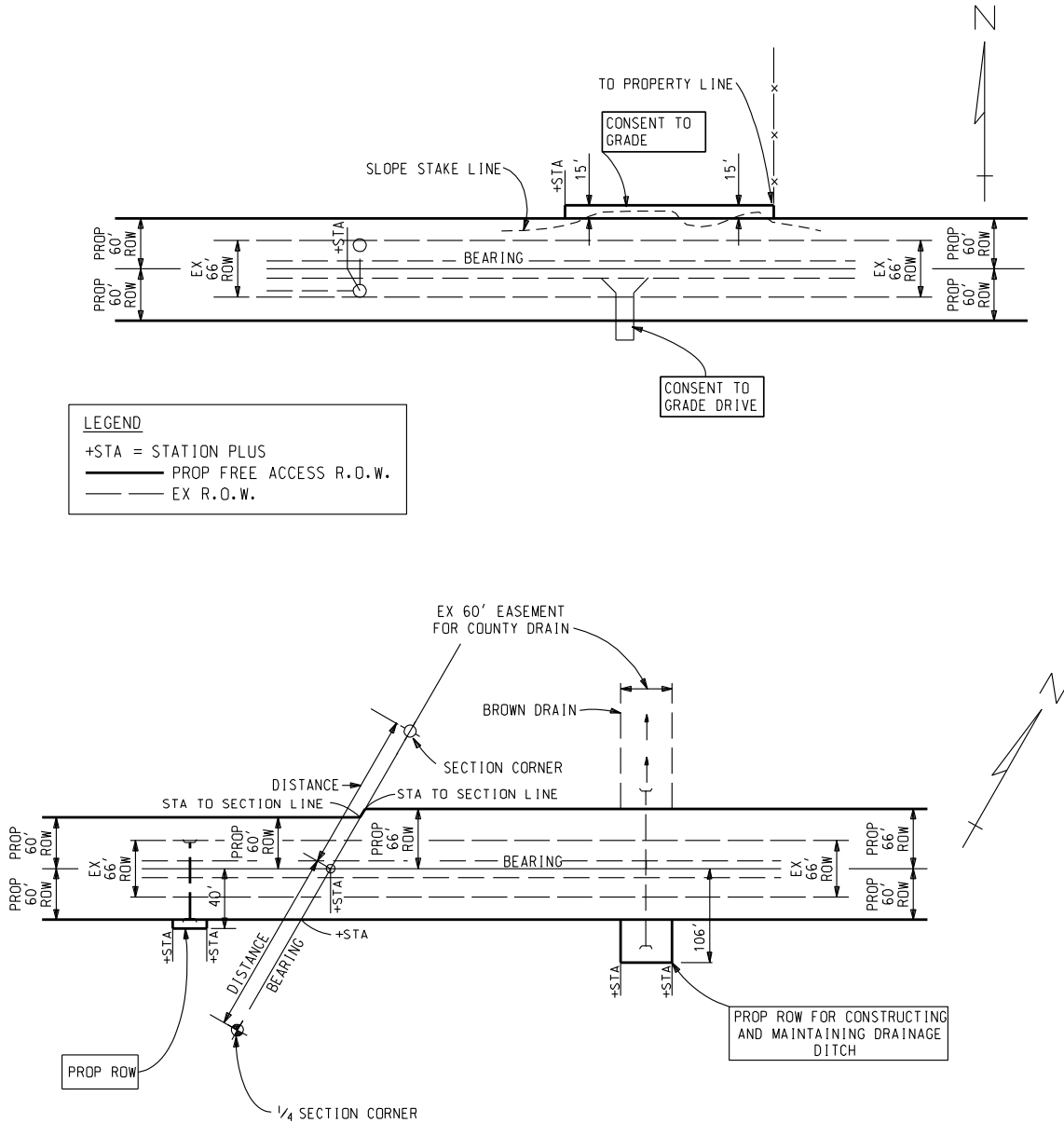
SKETCHES SHOWING DIMENSIONS FOR CLEAR VISION AREAS

Figure 5.24.03

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



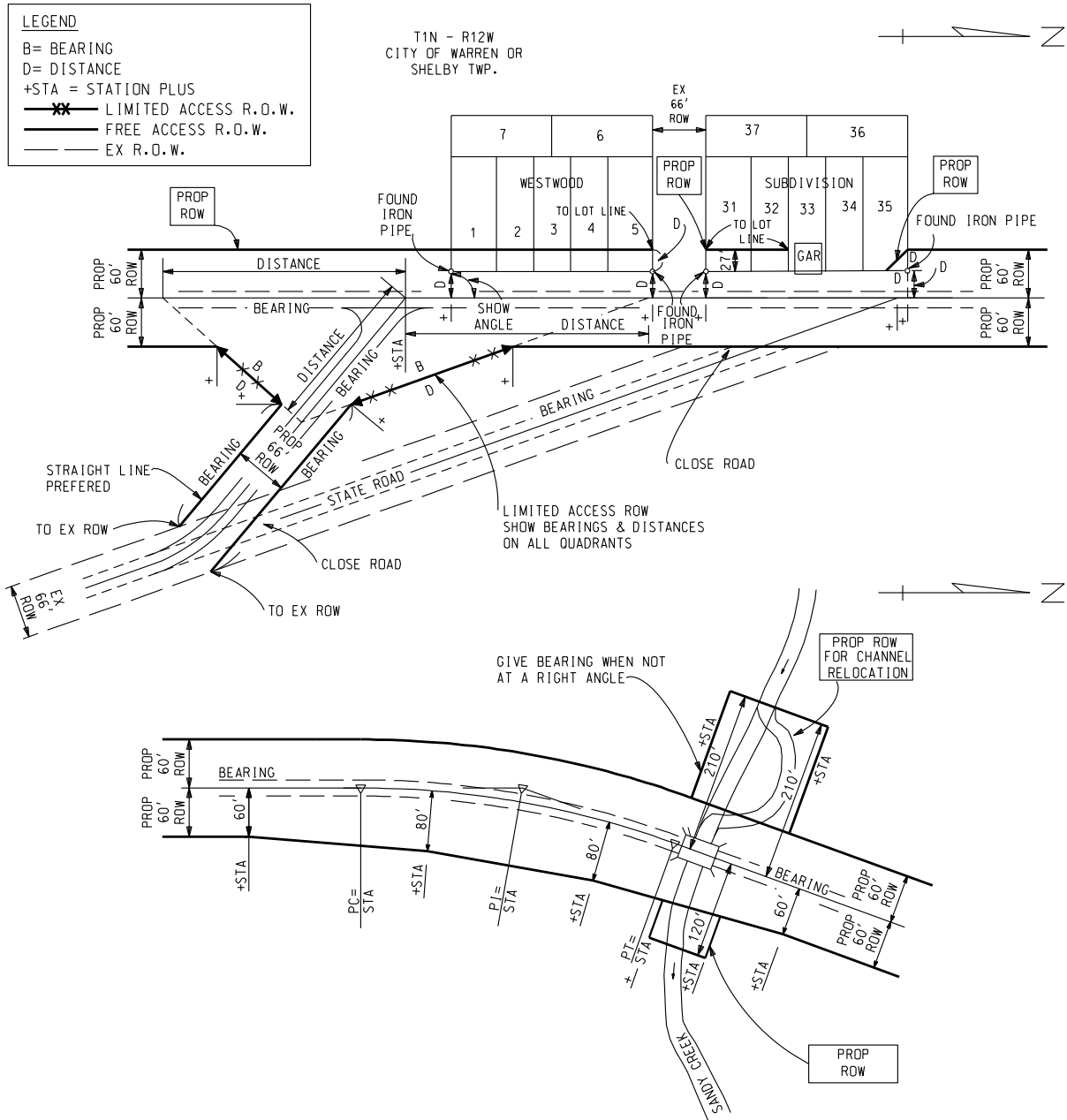
METHOD OF INDICATING  
EXISTING OR ACQUIRED AND PROPOSED RIGHT OF WAY ON PLANS

Figure 5.24.04

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



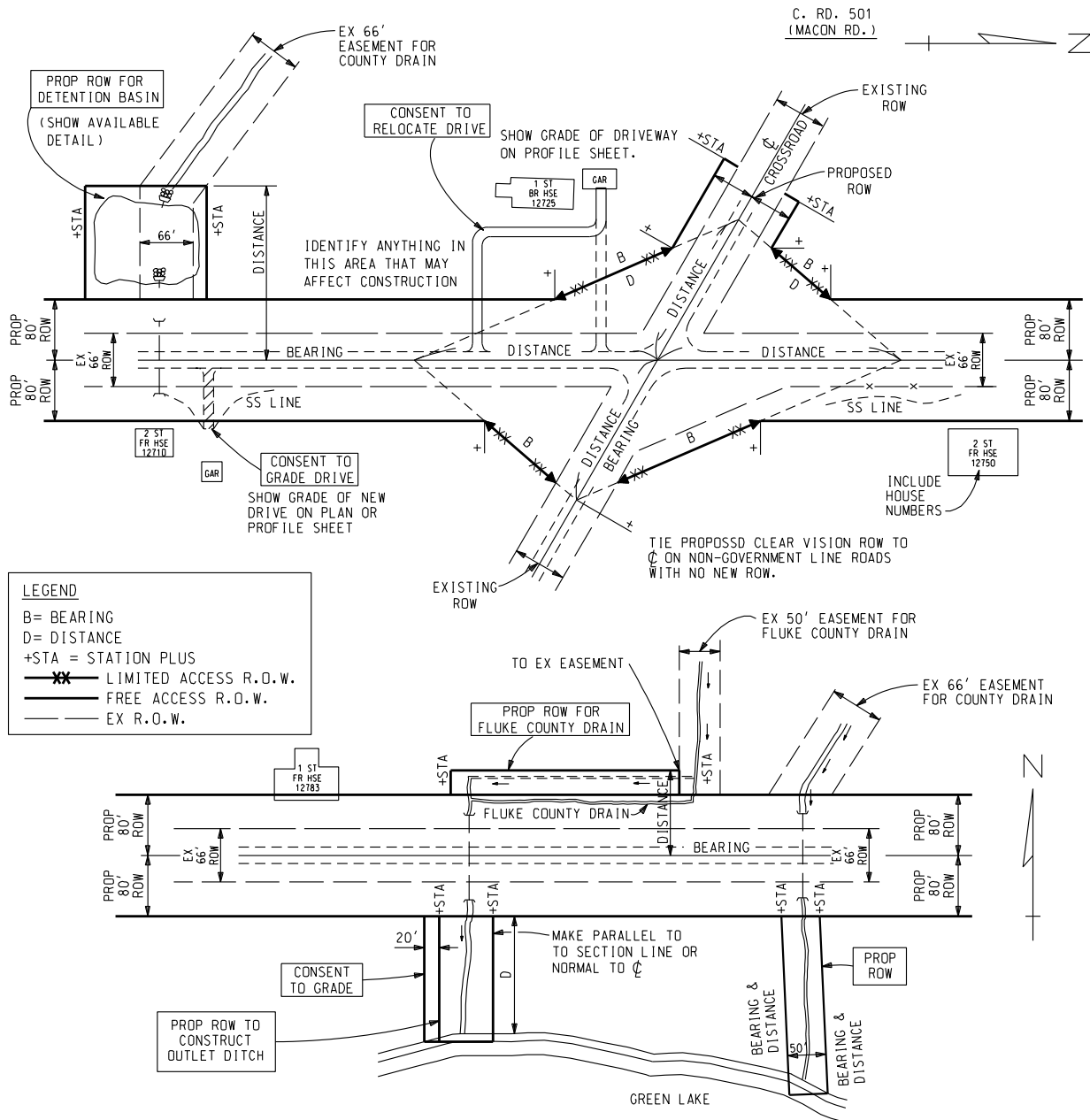
METHOD OF INDICATING  
EXISTING OR ACQUIRED AND PROPOSED RIGHT OF WAY ON PLANS

Figure 5.24.05

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



METHOD OF INDICATING  
EXISTING OR ACQUIRED AND PROPOSED RIGHT OF WAY ON PLANS

Figure 5.24.06

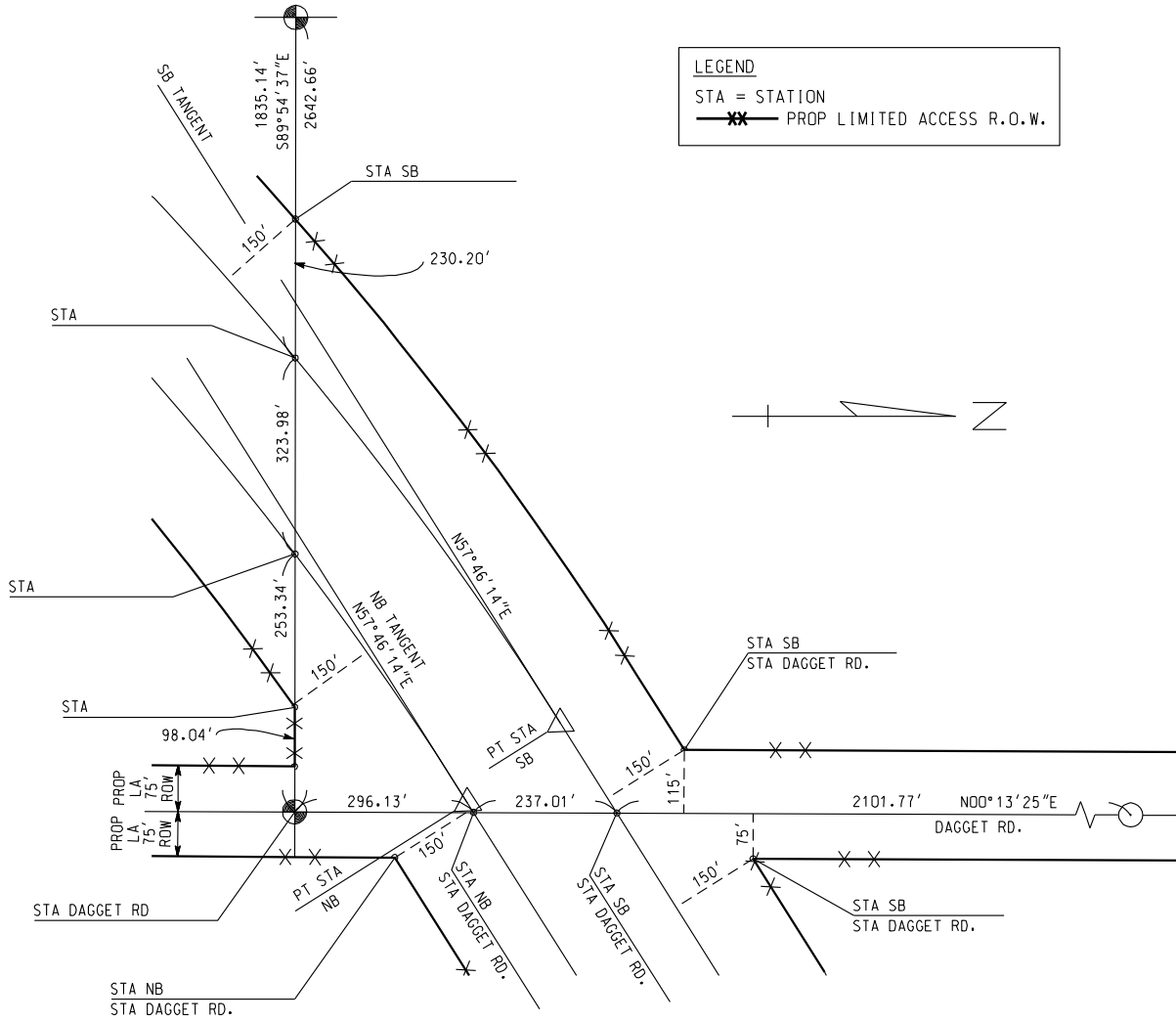




# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



**SAMPLE OF R.O.W. TIES**  
(NOT TO SCALE)

**Figure 5.24.08**

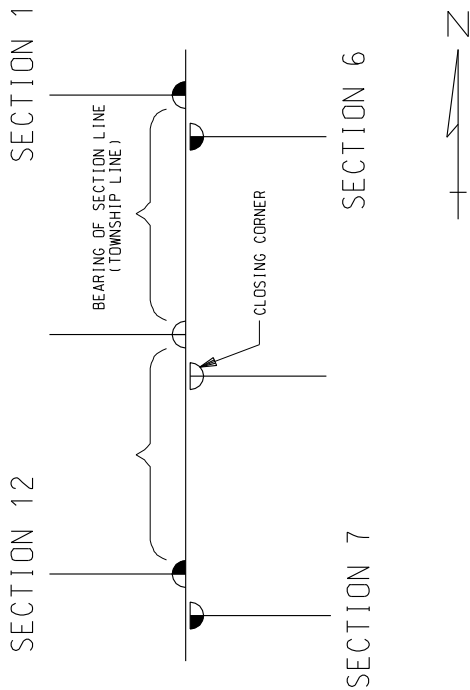
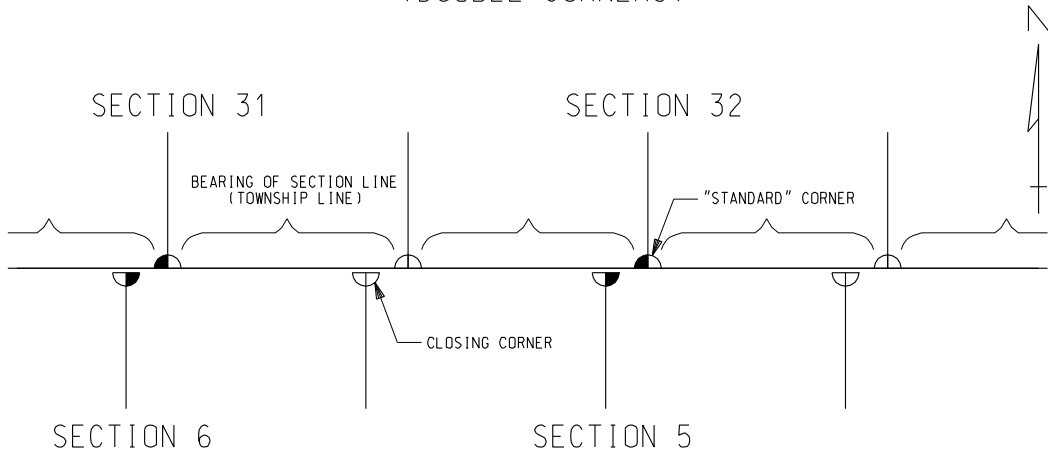


MICHIGAN DESIGN MANUAL  
ROAD DESIGN

5.24

R.O.W. SKETCHES

SPLIT SECTION CORNERS  
(DOUBLE CORNERS)



CLOSING CORNER MUST FALL ON SECTION LINE DEFINED FROM THE SOUTH CORNERS OF SECTION TO THE NORTH OR THE EAST CORNERS OF THE SECTION TO THE WEST.

A CLOSING CORNER NOT ACTUALLY LOCATED ON THE LINE THAT WAS CLOSED UPON WILL DETERMINE ONLY THE DIRECTION OF THE CLOSING LINE, BUT NOT ITS LEGAL TERMINUS; THE CORRECT POSITION IS AT THE TRUE POINT OF INTERSECTION OF THE TWO LINES. DESIGNERS SHOULD NOT COMPUTE THIS INTERSECTION POINT.

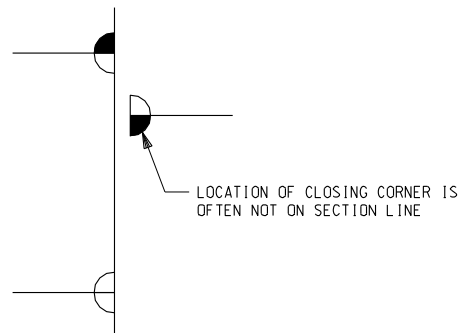
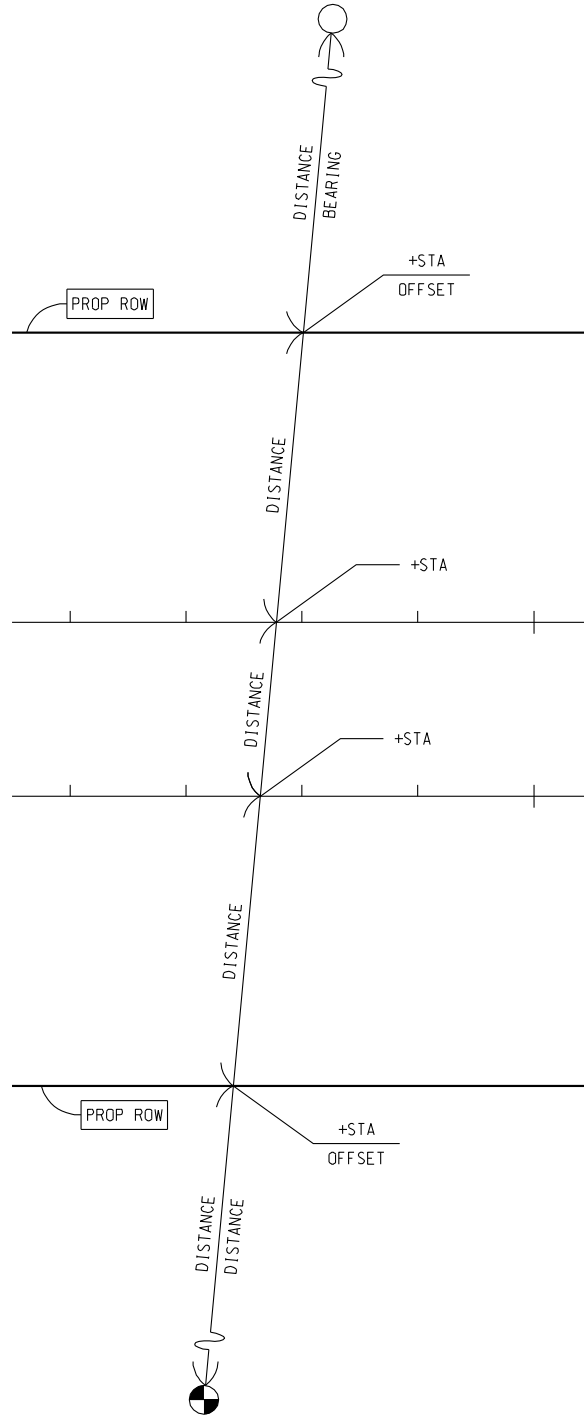


Figure 5.24.10

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



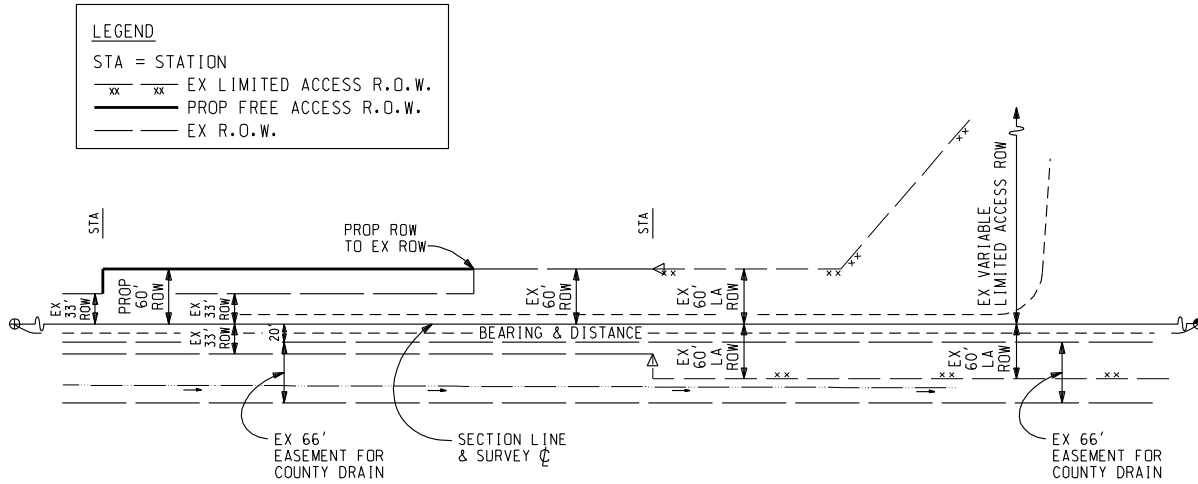
METHOD OF SHOWING TIES  
TO GOVERNMENT CORNERS

Figure 5.24.11

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 5.24

### R.O.W. SKETCHES



**METHOD OF INDICATING  
EXISTING OR ACQUIRED AND PROPOSED RIGHT OF WAY ON PLANS**

**Figure 5.24.12**