

**MICHIGAN DESIGN MANUAL  
ROAD DESIGN**

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## CHAPTER 13

### MISCELLANEOUS PAY ITEMS

**13.01** (revised 12-22-2011)

#### REFERENCES

- A. ***Guide to Management of Roadside Trees in Michigan***, MDOT
- B. ***MDOT Soil Erosion and Sedimentation Control Manual***, Construction Field Services Division
- C. ***Roadside Design Guide***, Current Edition
- D. Standard Plan R-96-Series, "Soil Erosion & Sedimentation Control Measures"
- E. Standard Plan R-115-Series, "Removal Details for Site Clearance Areas"
- F. ***Standard Specifications for Construction***, Current Edition

#### 13.02

#### CLEARING

**13.02.01** (revised 7-10-2006)

##### General

All wooded and brushy areas, individual trees, and rows of trees within the construction limits should be set up for clearing or removing trees. The ***Standard Specifications for Construction*** state that the clearing limits shall extend 10 feet outside the slope stake line or to the right-of-way line, whichever is less. For design purposes, it has been determined that clearing should be figured to 5' outside the slope-stake line. Contact the Roadside Development Unit for limits of clearing in parks, rest areas, and other environmentally sensitive areas.

**13.02.01 (continued)**

The pay item "Clearing" is measured by the acre. Clearing measured by the station should be avoided because of possible confusion over what vegetation needs to be removed. It is intended that clearing measured by the station will only be used for long narrow strips of brush, such as along fence rows or in other similar conditions. See [Section 13.02.07](#), Clearing For Fence. When the designer determines that clearing measured by the station is desirable a special provision is required.

**13.02.02** (revised 12-22-2011)

#### Clearing in Water Storage and Wetland Mitigation Areas

Generally, vegetation in storm water storage areas should be removed if the area will have standing water from a few days to possibly a month. This needs to be done since the trees, if left in place, may die as a result of being in standing water. Consult the Region/TSC Resource Specialist to determine if any vegetation should remain in place.

Clearing for wetland mitigation areas should be discussed with the Design Division Environmental Specialist and with the Region/TSC Resource Specialist. The clearing limits can then be determined.

**13.02.03**

#### Clearing for Vision on Horizontal Curves

The quantity for clearing in clear vision areas should be shown separately and the limits indicated on the plans as "Clearing for Clear Vision." The quantity for clearing in clear vision areas may be included in the clearing quantity or considered included in other pay items. Horizontal sight distance should be examined throughout the project, including horizontal curves, intersections, and clear vision corners.

See [Section 3.03.01D](#) for sight distance considerations.

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**13.02.04** (revised 12-22-2011)

### Clearing – Disposition of Timber

The ***Standard Specifications for Construction*** provide various methods of disposing of merchantable timber depending on ownership and type of right-of-way. These are summarized below:

#### A. Land Owned by the USDA Forest Service or MDNR

Merchantable timber is the property of the USDA Forest Service or MDNR and shall be cut and disposed of as agreed to by the Department and the USDA Forest Service or MDNR.

#### B. Private Land

1. ***Right-of-Way Easements*** - Merchantable timber shall be cut and piled outside the right-of-way for the abutting property owner. The Contractor shall provide the Engineer with the property owner's written direction for the disposal of the marketable timber. If the owner does not want the marketable timber, it will become property of the Contractor and shall be salvaged and made available to wood-using industries or individuals.
2. ***Right-of-Way Purchased in Fee Simple*** - Merchantable timber shall become the property of the contractor and be made available to wood using industries or individuals.

**13.02.05** (revised 2-27-2012)

### Clearing – Showing of Plans

In preparing plans with the pay item "Clearing," designers are to be governed by the following instructions:

1. Plans that call for Clearing in land owned by the USDA Forest Service or MDNR should show USDA Forest Service or MDNR ownership.
2. Clearing quantities should be broken down in area for land owned by the USDA Forest Service, MDNR, or private ownership. This breakdown is for the information of the bidder only. There will be only one bid item for Clearing, which will include the total area shown in the plans.
3. The Department attempts to buy all right-of-way that is to be used for highway purposes in fee simple (except for land owned by the USDA Forest Service or MDNR). However, there may be cases, such as widening jobs on existing right-of-way, where easements have been obtained. In such cases, the bidder should know the areas where the easement specification for Clearing applies. Any question relative to whether the right-of-way is easement or fee simple may be referred to the Technical Unit of the Development Services Division.
4. When surveys provide classification on tree and brush information (see following table), this information should be shown on the plans. This information helps the contractor determine the clearing bid price.

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### 13.02.05 (continued)

#### Clearing – Showing on Plans

##### CLASSIFICATION OF TREES AND BRUSH

	CLEARING	AVERAGE SPACING OF TREES CENTER TO CENTER		
CLASSIFICATION	SIZE	LIGHT	MEDIUM	HEAVY
1ST CLASS	Diameter Greater Than 36"	15' Or More	10' to 15'	10' Or Less
2ND CLASS	Diameter Greater Than 18" to 36"	20' Or More	10' to 20'	10' Or Less
3RD CLASS	6" to 18" Diameter	10' Or More	3' to 10'	3' Or Less
4TH CLASS	Brush Less Than 6" In Diameter	One Half Covered	Two Thirds Covered	Completely Covered

### 13.02.06 (revised 4-20-2015)

#### Clearing - Recheck

When more than one year has elapsed between the time of The Plan Review and the advertising date of a project, it may be necessary to request a field recheck on the clearing limits and classification of the trees and brush.

### 13.02.07

#### Clearing for Fence

Clearing for Fence is the removal and disposal of trees, brush, stumps, and other vegetation located along a fence line. It also includes treating stumps and stubs within 1' of the fence line with a material to prevent the sprouting of new growth. Maximum width of the clearing zone is 8' within the right-of-way. Measurement for Clearing for Fence will be by station.

### 13.02.08 (revised 9-22-2025)

#### Clearing and Removing Trees on Freeway New Construction or Reconstruction Project Types

The following guidelines were developed for a 1991 resurfacing project on I-75 north of Grayling. These guidelines have the approval of FHWA and concerned Department scenic and environmental specialists.

The designer should develop a special provision based on the following guidelines, and input from the Region/TSC Resource Person, the Roadside Development Unit, and Traffic and Safety using the following criteria based on existing slopes:

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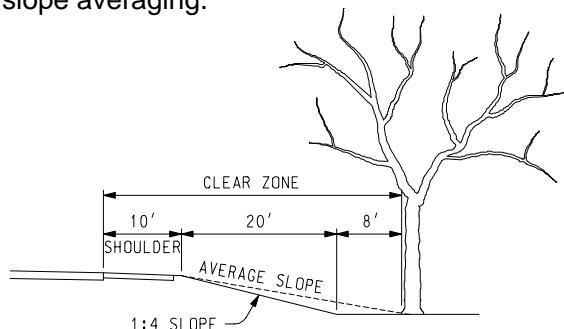
### 13.02.08 (continued)

#### Clearing and Removing Trees on Freeway New Construction or Reconstruction Project Types

Slopedine	From Pavement Edge Clear to ____ feet	
	Fill slope	Cut slope
1:3		25
1:4	40	26
1:5	38	30
1:6	33	30

These distances are within the range of acceptable clear zone distances given in Table 3.1 of the AASHTO *Roadside Design Guide*. Note that the above distances are on the mid to low side of the range of values from the table. Higher values should be considered on the outside of horizontal curves with a radius of 2900' or less or where there is a crash pattern.

Variable slopes should be averaged before applying the above guidelines. Slope averaging applies from the shoulder point out. For example: a 1:4 slope meeting a flat slope for some distance before meeting the tree line would be averaged to something flatter than a 1:4. The following sketch gives an example of slope averaging.



NOTE:  
SLOPE AVERAGING IS FROM THE SHOULDER POINT OUT.

EXAMPLE:  
20' AT 1:4 SLOPE = 5' DROP  
8' FLAT = 0' DROP  
AVERAGE SLOPE 28/5 = 5.6 SLOPE  
1:4 SLOPE REQUIRES 40' CLEAR ZONE  
1:5 SLOPE REQUIRES 38' CLEAR ZONE  
EXAMPLE HAS 38' CLEAR ZONE WITH 1:5.6 AVERAGE SLOPE  
THEREFORE THE TREES CAN BE LEFT

### 13.02.08 (continued)

Because of the sensitive nature of tree removal, both to the Department and to the public, good information is necessary before the design can be completed. The designer should obtain the following information:

1. Crash history covering at least a five-year period.
2. Accurate measurements from the edge of pavement to individual trees and tree lines.
3. An accurate slope survey indicating slopes and changes in slopes from the shoulder point to the trees. This information should be complete enough so that slopes can be averaged.
4. A list of environmental concerns from the Region/TSC Resources Specialist.

For additional background information the designer should refer to Chapter 3, Geometrics, Section 4 of the current edition of the AASHTO *Roadside Design Guide* dealing with "Trees", and MDOT's *"Guide to Management of Roadside Trees in Michigan"*.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 13.03

#### SELECTIVE THINNING

**13.03.01** (revised 11-28-2001)

##### General

Selective Thinning is the removing and disposing of dead, diseased, poorly formed or undesirable trees outside the area designated for clearing. This item also includes removal of undergrowth, stumps of uprooted trees, all debris and treating stumps and stubs with a growth preventive material where required.

The Roadside Development Unit and the Region/TSC Resource Specialist should be consulted when setting up areas for selective thinning.

The ***Standard Specifications for Construction*** provide for two types of selective thinning.

**13.03.02** (revised 11-28-2001)

##### Selective Thinning – Type I

This is to be used in areas within the highway right-of-way where a stump not more than 6" above existing ground level may be left in place and treated the same day with a material to prevent new growth.

**13.03.03** (revised 11-28-2001)

##### Selective Thinning - Type II

This is to be used in rest area sites and in other areas where it is desirable to have the stump removed to 4" below the proposed ground level.

### 13.04

#### REMOVAL ITEM

**13.04.01** (revised 11-28-2001)

##### Removals

The extent of removals should be shown or noted on the plans using the conventional "legend sheet" symbols. Any information concerning removals, such as pavement thickness, types, and depth of structures, thickness of hot mix asphalt (HMA) surfacing, etc., should also be shown on the plans. Removal limits, if possible, should be made at existing construction joints of concrete items.

**13.04.02** (revised 11-1-2002)

##### Removing Trees and Stumps

The plans should indicate which trees and stumps will be removed within the right-of-way and outside of areas estimated for clearing. Removing trees and stumps less than 6" in diameter will be included in other contract pay items. All fruit trees within the right-of-way shall be removed.

##### A. Tree Removal for Completely New Construction for Rural Projects

1. Remove all trees within the established clear zone. See [Section 7.01.11](#)
2. Remove all trees less than 50' from the nearest edge of pavement on limited access highways.

##### B. Tree Removal for Other Roadways

Tree removal, especially in urban areas and along scenic highways, can be an extremely sensitive item. The designer should use the information available for guidance when setting up tree removal. This information is contained in [Section 3.09.03](#).

## MICHIGAN DESIGN MANUAL ROAD DESIGN

**13.04.03** (revised 4-20-2015)

### Removing Culverts and Sewers

#### A. Removing Pipe Culverts

The removal of driveway and crossroad culverts will be paid for separately when the old culvert is 12" or greater in diameter. Culverts less than 12" in diameter will not be paid for separately if any portion of the existing pipe is within the excavation limits of the new structure, culvert or sewer. The pay items "Culv, Rem, Less than 24 inch", "Culv, Rem, 24 inch to 48 inch", and "Culv, Rem, Over 48 inch" will include removing the pipe and any end section treatments.

If the grade of an existing roadway cross-section is changed sufficiently to cause the removal of a pipe culvert in normal grading operations, its removal will be classed as earth excavation and measured and paid for as such.

#### B. Removing Culverts Other Than Pipe

The pay item of "Culv, Other than Pipe, Rem" is for removal of Box and Slab Culverts. If the culvert is to be removed it will be paid for separately.

If the structure is to be extended or otherwise incorporated in the new work, only a part of the existing structure need be removed to provide a proper connection for the new work.

**13.04.03**

### C. Removing Culvert Ends

It is the intent of the *Standard Specifications for Construction* that the pay items "Culv, End, Rem, Less than 24 inch", "Culv, End, Rem, 24 inch to 48 inch", and "Culv, End, Rem, Over 48 inch" apply only to pipe culverts and should be used whenever an end section must be removed, to extend a culvert, or change the end section. Where box or slab culverts are concerned, the pay item of "Culv, Other than Pipe, Rem" shall apply. The appropriate Culv End Rem pay item is used when the entire culvert is to be removed or when just a portion is to be removed. A note describing what is covered will help the contractor to bid the item. The Culv End Rem pay item includes the removal of any end treatment regardless of size, including end sections, sloped end sections, and headwalls.

### D. Removing Sewers

The pay items "Sewer, Rem, Less than 24 inch", "Sewer, Rem, 24 inch to 48 inch", and "Sewer, Rem, Over 48 inch" are covered in the *Standard Specifications for Construction*. The provisions are very similar to the culvert removal items. The pay unit for the Sewer, Rem pay items is in "feet", however, instead of the "each" pay unit used for removing culverts.

### E. Salvaging Culvert End Sections

Culvert end sections to be salvaged and re-used shall be removed without damage and stored outside the construction limits. The designer should consider salvaging end sections if The Plan Review or other field inspections show ends to be in good condition, but need to be reset because of culvert extensions or other reasons.



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**13.04.04** (revised 12-22-2011)

### Removing Miscellaneous Structures & Materials

#### A. Pay Items

Pay items for removing miscellaneous structures include the following:

- Pavt, Rem
- Curb, Rem
- Gutter, Rem
- Curb and Gutter, Rem
- Sidewalk, Rem
- Basement Cleanout
- Track, Rem
- Utility Pole, Rem
- Structures, Rem
- Structures, Rem Portions
- Culv, Other than Pipe, Rem
- Masonry and Conc Structure, Rem
- Guardrail, Rem
- Fence, Rem
- Concrete Barrier, Rem
- Glare Screen, Rem

#### B. Removing Pavement

Removal of HMA pavements and concrete or masonry pavements is covered in the ***Standard Specifications for Construction***. The specifications for HMA pavements are somewhat confusing as they include both removing pavement and removing HMA surface items. The table in [Section 6.03.04B\(6\)](#) shows clearly the proper pay items for different situations.

**13.04.05** (added 6-24-2024)

### Vertical Exploratory Investigation for Relocation

If the designer has reason to believe that proposed work may require relocation because of a conflict with existing features (abandoned facilities, foundations, etc.) during construction operations, the Special Provision for Vertical Exploratory Investigation for Relocation should be used.

Use of this special provision includes, but is not limited to, the following situations.

- Exposing culverts, sewers, etc.
- Exploratory situations (moving planned work and a utility conflict is uncertain)
- When existing survey information may be incomplete
- When drainage patterns may be unknown
- When SUE is unable to be performed because of existing traffic constraints
- Areas of congested utilities where identification of all probable conflicts could not be reasonably identified per our design process

The pay item will compensate the Contractor to locate and expose underground infrastructure and obstructions, such as culverts, sewers and utilities, as needed. The special provision is not to compensate the Contractor for the Contractor's responsibilities in subsection 107.12 of the Standard Specifications for Construction. The special provision and pay item are not to be used to expose existing marked utilities as that is a requirement in subsection 107.12.

## **MICHIGAN DESIGN MANUAL ROAD DESIGN**

### **13.05**

#### **OTHER COMMONLY USED MISCELLANEOUS ITEMS**

##### **13.05.01** (revised 4-20-2015)

###### **Obliterating Roadway**

Obliterating Roadway is completely eliminating old roads or temporary roads that are no longer needed. It shall apply only to those portions of the existing or temporary road outside the limits of the new roadway. The old road to be obliterated shall be graded to provide suitable drainage and produce an appearance of blending into the adjacent terrain. During The Plan Review, it should be discussed whether to bury the road surface or remove the road surface. When burying the road is not a viable option, the road surface should be set up for removal and paid for separately before obliteration begins. Ditches should be filled or graded to give a natural appearance. Old Structures should be broken down and buried or removed. The removal of large structures may be paid for separately. Obliterated areas shall be topsoiled, seeded, fertilized and mulched which will be measured and paid for separately. Obliteration may be accomplished by breaking the pavement surface to provide drainage and covering the roadway to a depth of at least 12 inches with suitable material.

##### **13.05.02**

###### **Project Cleanup**

"Project Cleanup" consists of cleaning up the project, including roadsides, prior to final acceptance. Project Cleanup provides for the removal of all debris, including old fences, fallen timber, logs and rubbish, within the right-of-way up to 50' beyond the grading limits. This work also includes the clean out of all culverts, sewers, and drainage structures that contain sediments from the contractors operations.

Project Cleanup should be included as a pay item on most projects.

##### **13.05.03** (revised 4-20-2015)

###### **Field Offices and Laboratories**

Field Offices and Laboratories are needed on some projects for making field tests and housing office activities. Usually, facilities are available to the Department and the Contractor is not required to furnish a separate field office. The designer should place a note on The Plan Review prints asking if a field office is required.

##### **13.05.04** (revised 8-19-2013)

###### **Transporting Salvaged MDOT Material**

Salvaged MDOT material, specifically signs and sign supports, are removed, transported and stockpiled during construction. The storage location for these items on all projects will be the MDOT Overhead Sign Shop in Lansing. Federal participation in the cost of this work is limited to a five mile haul distance. Therefore the pay item should always be considered 100% state funded. The designer should specify the storage location by note. See [Traffic Signing General Notes](#).

##### **13.05.05**

###### **Mobilization**

Mobilization is to reimburse the contractor for initial costs incurred prior to starting work on the project. This consists of preparatory work and operations for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of the contractor's offices, buildings, and other facilities necessary to undertake the work on the project. It also includes other work and operations that must be performed, or for expenses incurred, prior to beginning work on the various contract items on the project site. This item applies to all projects.

## **MICHIGAN DESIGN MANUAL ROAD DESIGN**

### **13.05.06**

#### **Escalator Clauses - Fuel, Asphalt, Cement, and Steel**

When Management determines material price inflation is a concern, it is sometimes desirable for the Department to let contracts with escalator clauses. These escalators allow for adjustments in prices of basic materials that may inflate during the life of the contract. This allows contractors to bid certain items to allow for inflation during the life of the contract.

When management determines that an escalator clause will be used, a special provision will be required setting forth the terms and methods of determining applicable price adjustments.

### **13.05.07**

Section deleted.