

Highway Mowing Guidelines



Nebraska Department Of Roads

Highway Mowing Guidelines

Section I General Instructions

1. Slope Mowing

Rural Areas - Slopes 3:1 and steeper shall not be mowed and shall be identified with a marker, or a slope indicator shall be attached to each tractor that is used for mowing.

Urban Areas - Some 3:1 and steeper slopes will be mowed. Use the equipment specifically designed for the operation.

2. Mowing Height

Rotary mowers shall be set no closer than five (5) inches to the ground. The cutting height shall be frequently checked by the supervisor.

3. First Mowing - (*by Memorial Day*)

Interstate and Expressways

Median - Minimum width is 5 feet - if wildflowers are in the median - maximum width is 8 feet. Without flowers - maximum width is 15 feet.

The Outside - Minimum width is 5 feet - if wild flowers are in the first 15 feet then the maximum width is also 8 feet. Without wildflowers - maximum width is 15 feet.

Other Highways

Surfaced Shoulders - Minimum width is 5 feet - maximum width is 15 feet.

Turf Shoulders - Minimum and maximum width is 15 feet (*except where 15 feet would be a hazard to the operator or to the public.*)

4. Second Mowing

The second mowing will be directed at correcting sight distance problems wherever they occur. The mowers may be roaded between sites. Sight distance may have to be corrected more than once - minimum mowing width is 5 feet - maximum mowing width is 15 feet unless sight distance dictates more.

5. Final Mowing - (*after Labor Day*)

As needed for snow control and to finish the total mowing of the right-of-way in areas that are scheduled for a total mow-out this year. Mowing to control volunteer brush is not advised. Use chemicals to do this.

6. Median Mowing

Rural - After the Memorial Day trim - one final full mowing after Labor Day and two trim mowings in between the Memorial Day trim and the Labor Day full mowing. Let the wildflowers go to seed before full width mowing.

7. Community Entrances

Mow these entrances as often as necessary to maintain them in an attractive manner.

8. Private Mowing

Private mowing of the right-of-way is not authorized.

Exceptions: Rural residences
Rural businesses
(They may mow within reason, but no hay harvesting.)

Section II

Specific Instructions

1. Urban Policy

- A. **All Urban Areas - *keep it neat*** - This means mowed and the trash picked up. Consider contract mowing and more than one group to pick up the trash.
- B. **Omaha Areas**
 - 1. **I-80 Platte River to Harrison Street** - Rural - Mow the interiors of Highways 31, 370, 50 and the Harrison Street Interchange.
 - 2. **I-80 - Harrison Street to Missouri River** - Mow as necessary to keep neat. Mow the interiors of the interchanges. Mow one strip next to the fence when possible.
 - 3. **I-680** - Mow one strip next to the fence when possible. Mow the Center Street, Pacific Street, Dodge Street, Maple Street, Fort Street, Irvington Interchange, 72nd Street, Highway 75, and Mormon Bridge Interchanges. Mow as necessary for good sight distance.
 - 4. **I-480 and North Expressway** - Mow as necessary to maintain in a neat and attractive manner.
 - 5. **Kennedy Expressway** - (I-80-to Railroad Avenue) - same as I-480 and North Expressway.
 - 6. **Kennedy Expressway** - Railroad Avenue to Terminus - mow the interior of the interchanges. *Exception:* At Highway 370 Interchange, do not mow wetlands area. Mow one strip next to the fence where houses are present.

2. Rural Interstate and Expressways

- A. **Major Rural Interchanges** that serve as city entrances may be mowed on a continuous basis.
- B. **Other Rural Interchanges** - Maintain the 5-foot to 15-foot mowing width along the interior of the interchange. These interchanges may be mowed in the fall to emphasize the trees and shrubs and to help protect them from fire. Remember to leave strips of unmowed grass for snow control.
- C. **Mainline - Interstate and Expressway**
 - 1. First mowing - 5-foot minimum to 15-foot maximum.
 - 2. Final mowing - as necessary for snow control
 - 3. Total mow-out - one side only. See mowing frequency map. Not before July 15.
- D. **Medians - Interstate and Expressways**
 - 1. First mowing - 5-foot minimum to 15-foot maximum.
 - 2. If there are flowers in the median, keep the mowing at the 5-foot to 8-foot width until the blooming has stopped.
 - 3. Final mowing - total mow-out except for medians wider than 58 feet which may be left alone except for the 15-foot mowing.

E. Rural Primary and Secondary Roadside Areas

1. Slopes that are 3:1 or steeper shall not be mowed. These slopes shall be identified with a hazard marker or a slope indicator on the tractor.
2. The minimum mowing height is five (5) inches. Where mowing is required, maintain the height of the vegetation between 5 inches and 12 inches. Mow approximately 3 feet beyond the guardrail.
3. Check for sight distance on a frequent basis.

F. Shoulder Mowing Widths

1. **Surfaced Shoulder** - The minimum width is 5 feet. The maximum width is 15 feet.
2. **Turf Shoulder** - The minimum and the maximum width is 15 feet (*except where 15 feet would be a hazard to the operator or to the public*).
3. **Flowers** - If the 15-foot width is going to mow flowers, reduce the width to 5 feet or 8 feet until the flowers have stopped blooming.
4. Mowing may be required beyond 15 feet for sight distance at farmsteads, intersections, and rural businesses. When doing this extra mowing, use smooth sweeping curves to blend in with the topography and the other mowing.

3. Sandhills Region Mowing

- A **Mowing Operations** - The soil and vegetation characteristics of the Nebraska Sandhills Region differs significantly from other areas of Nebraska whose soils contain a higher level of organic matter.

Because of this difference, shoulder mowing in the Sandhill regions shall be given special consideration. Height of vegetation shall be maintained at a minimum of 5 inches. This height can be obtained with one mowing, on or around July 1st of each year. One additional mowing may be needed in some locations for snowdrift control, this would best be started after October 1st.

Mowing widths on the highway shoulder areas will be limited to a minimum distance of 5 feet and a maximum distance of 15 feet beyond the edge of roadway surfacing on the first mowing. Care should be taken to prevent unnecessary disturbance of the fragile soil and grasses. It shall be at the discretion of the supervisor as to what mowing equipment will be utilized. (15-foot batwing or sickle bar).

- B. **Total Mow-out** - not required - optional, but the frequency would be on a five-year basis.
- C. **Waterways** - All waterways are to be kept clear and major waterways can be mowed if necessary.
- D. **Snow Control Mowing** - The final mowing may extend beyond the 15-foot zone for snow control in those areas that need the extra mowing.
- E. **Establishment period mowing** - not required.

4. Establishment Period Mowing for Areas Except Sandhills

The establishment period for the roadside seeding will normally be a two-year period during which fence-to-fence mowing will be done as often as is necessary to control weeds.

Maintain the vegetation stubble at a 5- to 6-inch level. Do not let the weeds get over the 12-inch maximum height before mowing.

The establishment period mowing is critical to the early development of the grass and flowers. The seeding of our roadside is not cheap, but being cheap with the mowing can turn out to be very expensive if we would have to reseed an area!

5. Spraying for Noxious Weeds

The spraying of our rights-of-way is for noxious weeds only. The spraying is limited to spot spraying only. Fence-to-fence spraying is not to be done except in an extremely infested condition, and then only with permission.

The Noxious Weeds at the time of this writing are:

Musk Thistle	• Bindweed
Canada Thistle	• Tall Thistle
Plumeless Thistle	• Woolly Leaf Bursage
Spotted Knapweed	• Flodman Thistle
Difuse Knapweed	• Bull Thistle
Leafy Spurge	• <i>Noxious in some counties</i>
Salt Cedar	
Purple Loosestrife	

We are under contract with many counties and individuals for weed control work. The maintenance superintendent shall inform the sprayers about our spot spraying policy and remind them to keep the superintendent informed as to their spraying intentions.

Hundreds of dollars worth of goodwill and wildflowers can be destroyed by not sticking to the spot spraying policy.

6. Turf Management

To properly manage the grass stands along the highways, the vegetation will have to be removed by haying or mowing with a rotary mower. These haying or mowing operations will be done on a periodic basis as shown on the mowing frequency map.

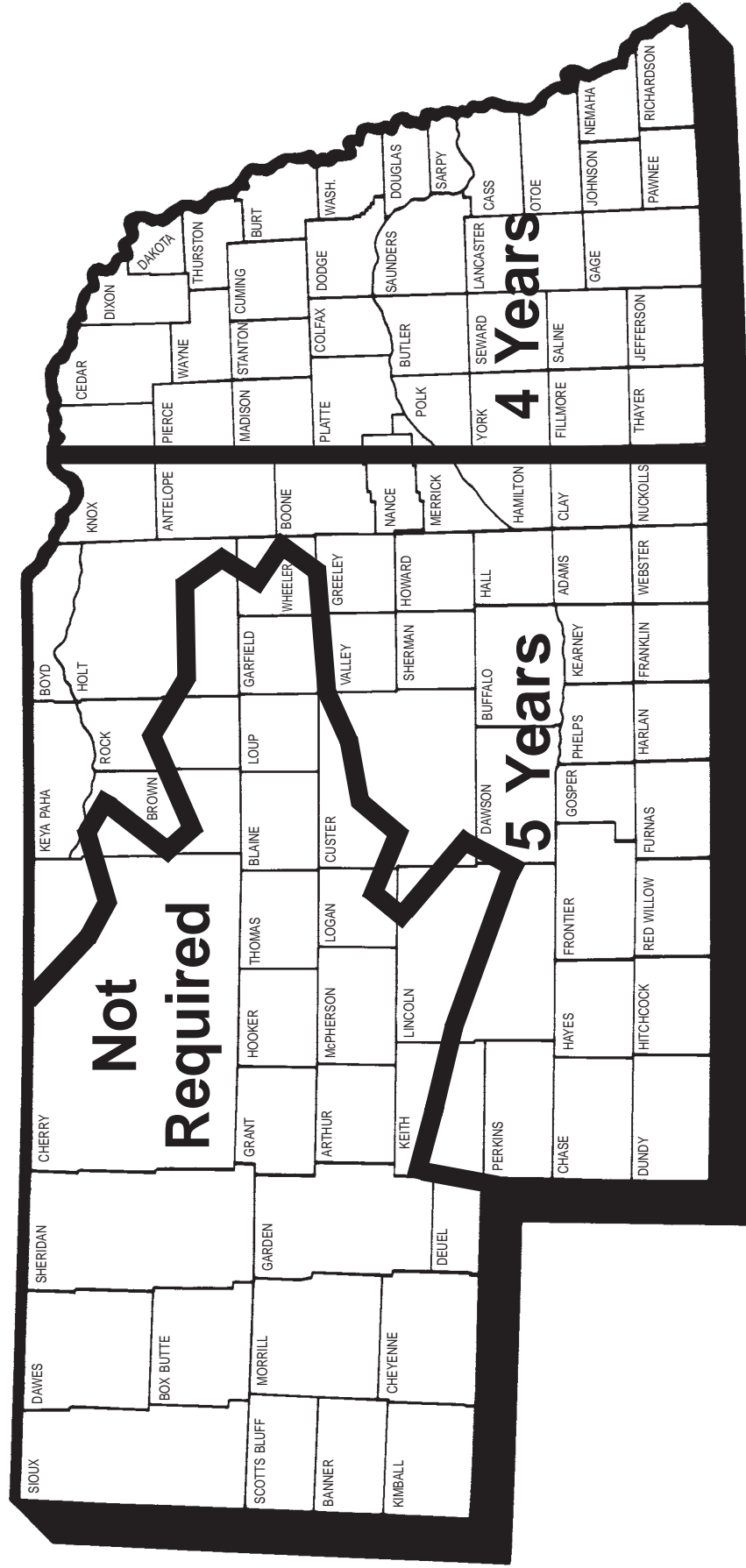
The mowing and haying shall be planned so that at least 1/4 or 1/5 of the total mileage is done each year. The vegetation shall not be removed from an entire district in any one year. The mow-out is limited to one side of the road in any given year. The mowing frequency map is your guide.

The haying operations shall not begin until July 15th. Mowing-out operations shall not begin until July 15.

All haying operations shall have the prior approval of the Maintenance Office before proceeding.

When the complete right-of-way is mowed, use extra caution behind the clear zone to save the volunteer trees and shrubs. These volunteer trees and shrubs that are left after mowing must not be a future hazard to our operations or to the public. Trees to avoid leaving are elm and black locust. Cottonwoods that are within 70 feet of the highway must be removed too. Cedars may be left, but they should be thinned to 40 - 50 feet apart. Selective thinning should be used for all the volunteer trees and shrubs left after mowing. The Roadside Development Unit is available for advice for selective thinning.

Mowing Frequency Map



Section III

Mowing Safety

1. Marking Obstructions on the Right-of-Way

- A. Marker posts are to be placed to identify and locate all culvert pipe, concrete box culverts, headwalls, flared end sections, splash basins, flumes, drop inlets, or other objects difficult to see from the seat of a mower.
- B. All marker posts shall be 6½ foot lightweight steel posts with a 3-button delineator at the top.
- C. Marker posts which have been damaged shall be straightened, plumbed or replaced as a matter of course.

2. Cutting and Clearing of Vegetation on the Right-of-Way

A. Mowing with tractors

- 1. There are numerous hazards to which the mower operator is subjected. These include: washouts, ruts, culverts, markers, mowing on steep slopes, flying debris, passing motor vehicles, excessive operating speeds and others.
- 2. For the protection of employees, the supervisor shall inspect and patrol the area to be mowed for physical hazards. The supervisor shall also make sure that all personnel are fully clothed and are wearing bright orange or yellow-green clothing such as vests, shirts, jackets, coveralls and caps. Eye protection may also be required.
- 3. For the added protection of employees, slopes that are 3:1 or steeper, or abnormal terrain where conditions are adverse, shall not be mowed. Sickle bar mowers shall be used with the sickle bar pointed toward the upside of the slope. The operator shall wear a safety seat belt when tractors are equipped with a Roll-Over Protection Structure (ROPS).
- 4. Mowing side by side, or in close tandem shall be avoided. Stay far enough from each other to avoid any flying objects such as stones or other foreign materials. Stay in your seat until the power take-off has been disengaged and the mower has come to a complete stop.
- 5. Never attempt to unclog or adjust a running machine even at idle speed. In raising a cutter bar, keep hands and fingers away from guards. Fingers can be severed by a falling knife even if the PTO is disengaged. Spare sickle bar blades shall be stored in such a manner that if the front of the tractor strikes an object, the spare blades cannot move into the operator's area.
- 6. Mow with flow of traffic except in special circumstances or where permission is granted by your supervisor.

B. Mowing with Small Hand Rotaries

1. Small rotary hand mowers are to be used in improving landscaped areas and in other areas that require mowing, but are inaccessible to tractor units. Traffic circles, intersection lawn areas, and steep slopes are such areas. Other locations to be mowed in this way include areas around culvert inlets and outlets, bridge ends, and immediate areas near highway signs, guardrails or posts, and traffic control devices.
2. There are precautions to be exercised when operating small rotary hand mowers. These precautions include clearing the area of debris before mowing, staying off wet slopes and locating of large rocks or similar objects to be avoided when mowing.
3. Other safety measures to be followed are those of disconnecting the ignition wire when cleaning or replacing blades, shutting off the engine when the mower is unattended or when refueling, and keeping fingers and feet away from rotary blades. Safety-toed shoes shall be worn when operating small hand rotaries. All shields and guards shall be in place when equipment is running.

C. Flying Debris

Flying debris is a constant hazard when using rotary mowers. Flying debris is caused by poorly spaced or missing chain debris guards and by mowers that are set too low. Mowers should be shut off when crossing driveways and county road intersections .

Heated or welded mower blades may become brittle or break and, therefore, shall not be used.

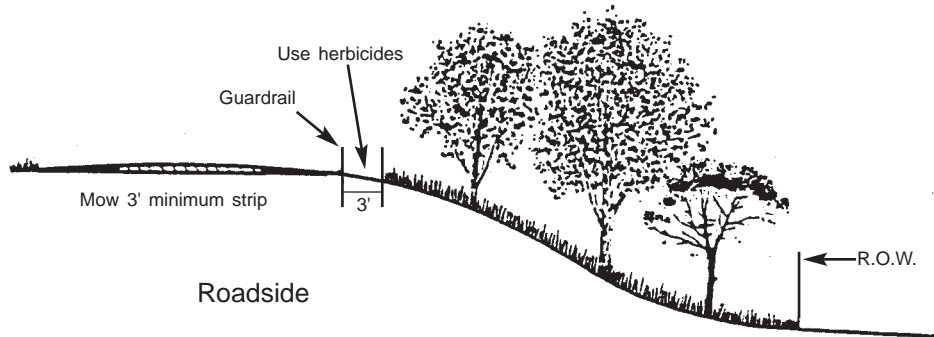
For the protection of the traveling public, several factors should be considered. Mower operators should try to eliminate flying debris. This can be accomplished by directing the possible flying objects toward the ditch and backslope, rather than towards the roadway.

D. Rules for Tractor-Mowers

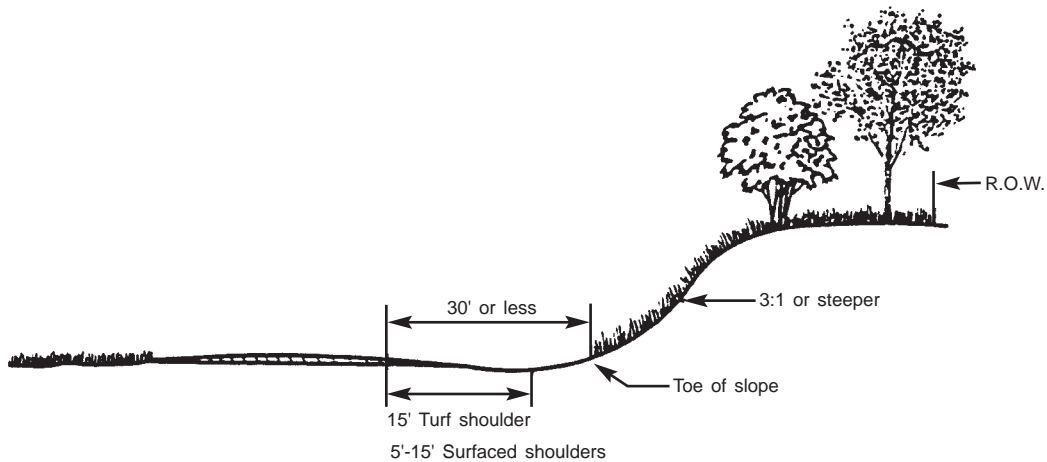
1. All motor vehicle laws will be observed.
2. All highway mowers shall be identified with the slow moving vehicle warning emblem and flags.
3. Only cross the road with the tractor and mower at locations where there is adequate sight distance.
4. All mowers shall be disengaged when moving onto the road.

Mowing Details

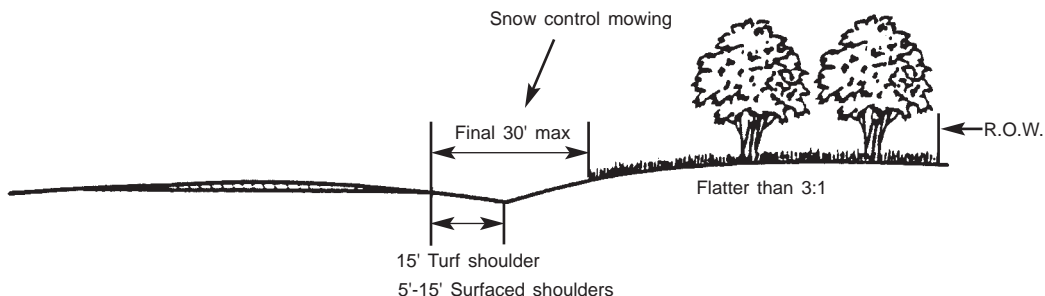
- A. Guardrail** - mow to a minimum of 3 feet beyond guardrail. Herbicides will reduce the need for hand trimming under the guardrail and surfacing under the guardrail will eliminate the chemicals. When the slope beyond the guardrail is less than 3:1, it will be mowed to 30 feet on the snow control mowing. If the entire right-of-way is to be mowed, this area will also be mowed.



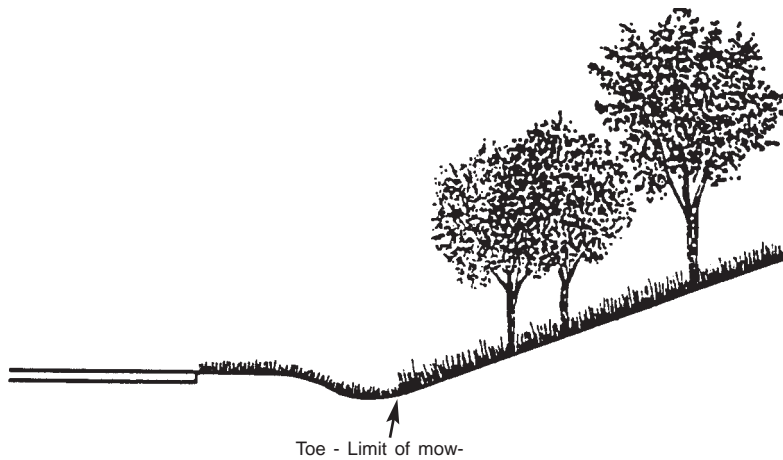
- B. Slopes that are 3:1, or steeper shall not be mowed.** On the final snow control mowing, the mowing section is to be extended as shown in this detail. Do not mow up the slope.



- C. Slopes that are flatter than 3:1, either cut or fill, shall be mowed as shown in this diagram, except when the entire right-of-way is mowed.**

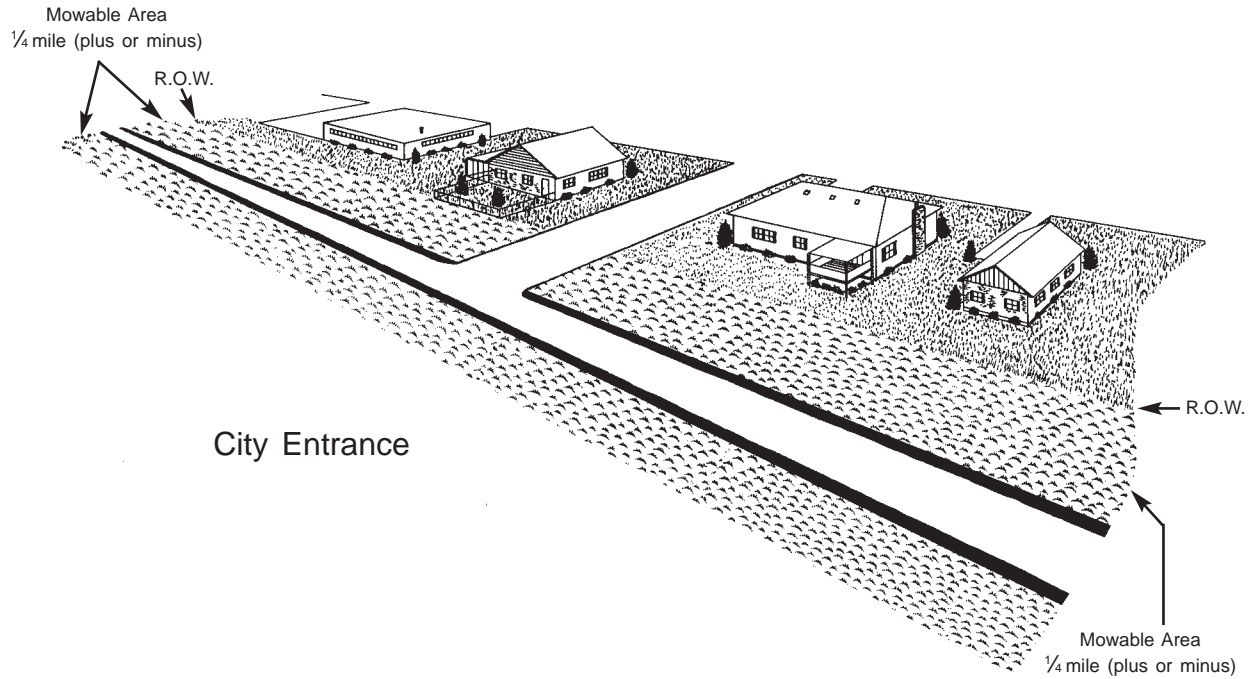


- D.** The toe of the slope is the limit of mowing, even if it falls inside the 15-foot or snow control limits.



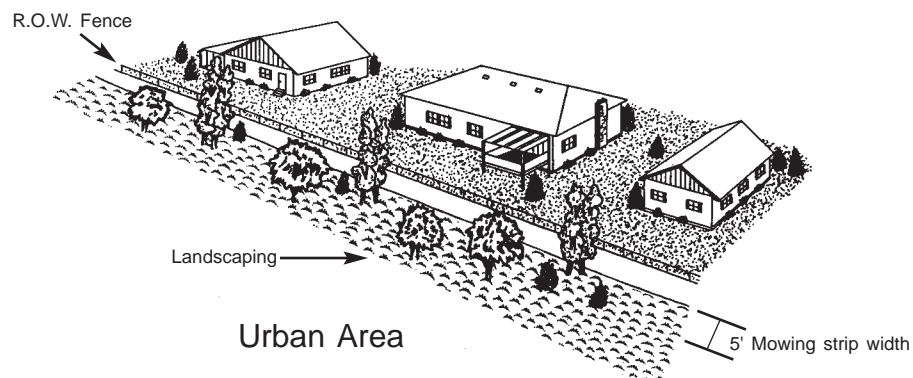
E. City Entrances

Mow the city entrances as required to maintain them in an attractive manner.

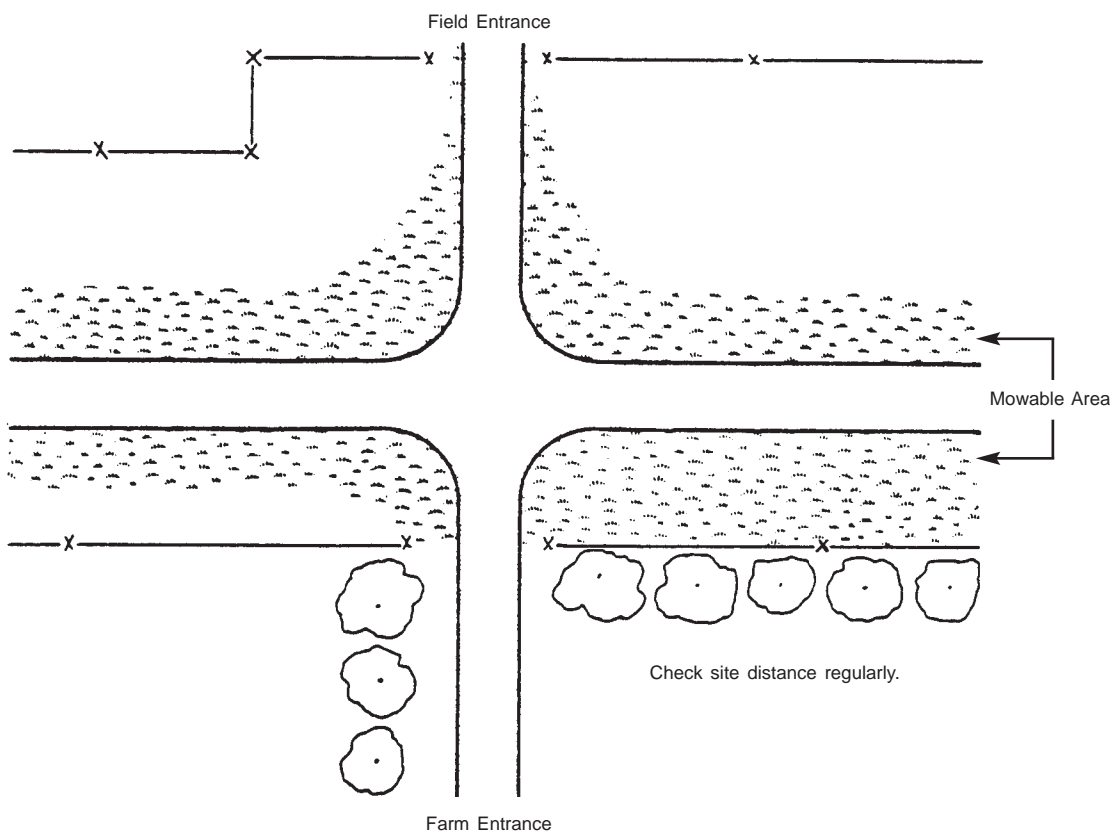


F. Urban Area Fence Lines

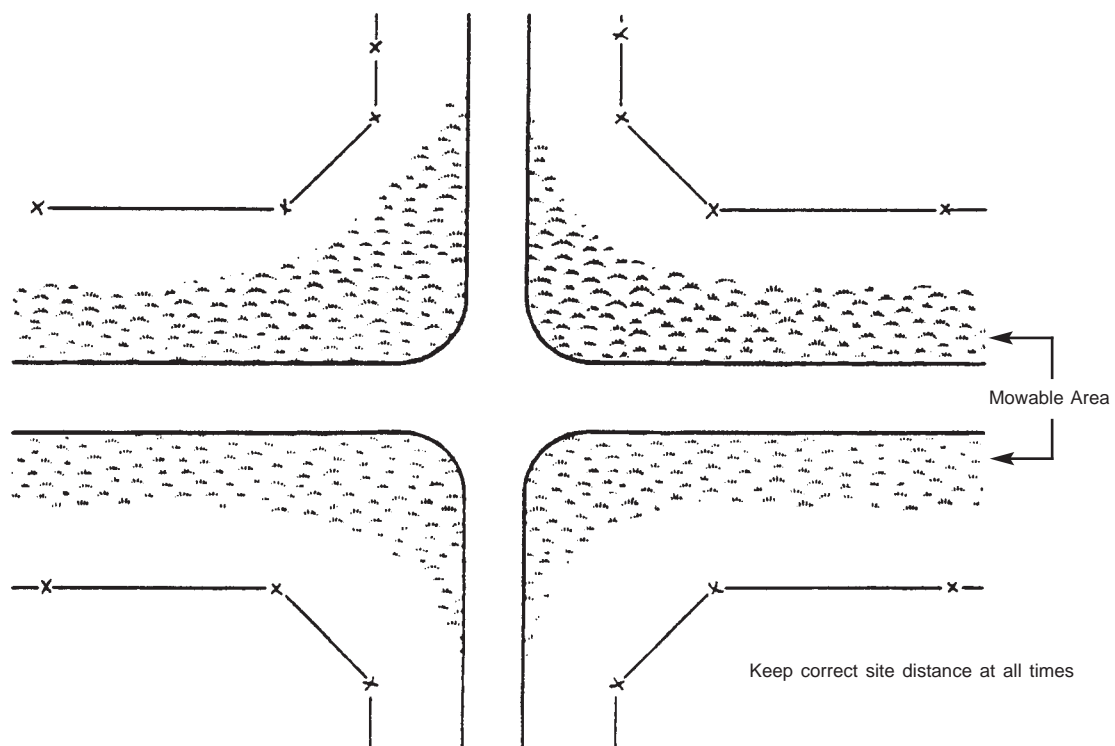
Mow a 5-foot width to the fence where landscape plantings and degree of slope permit.



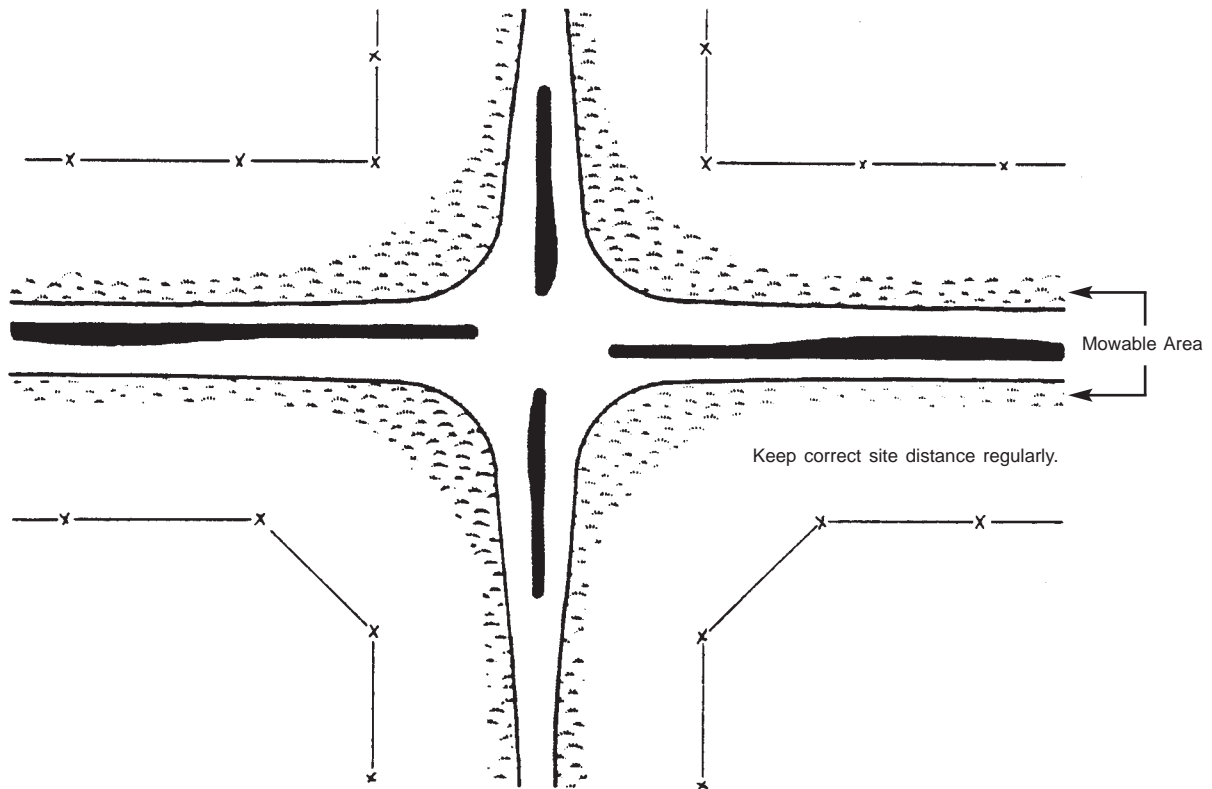
G. Farm Dwelling and Field Entrance Mowing



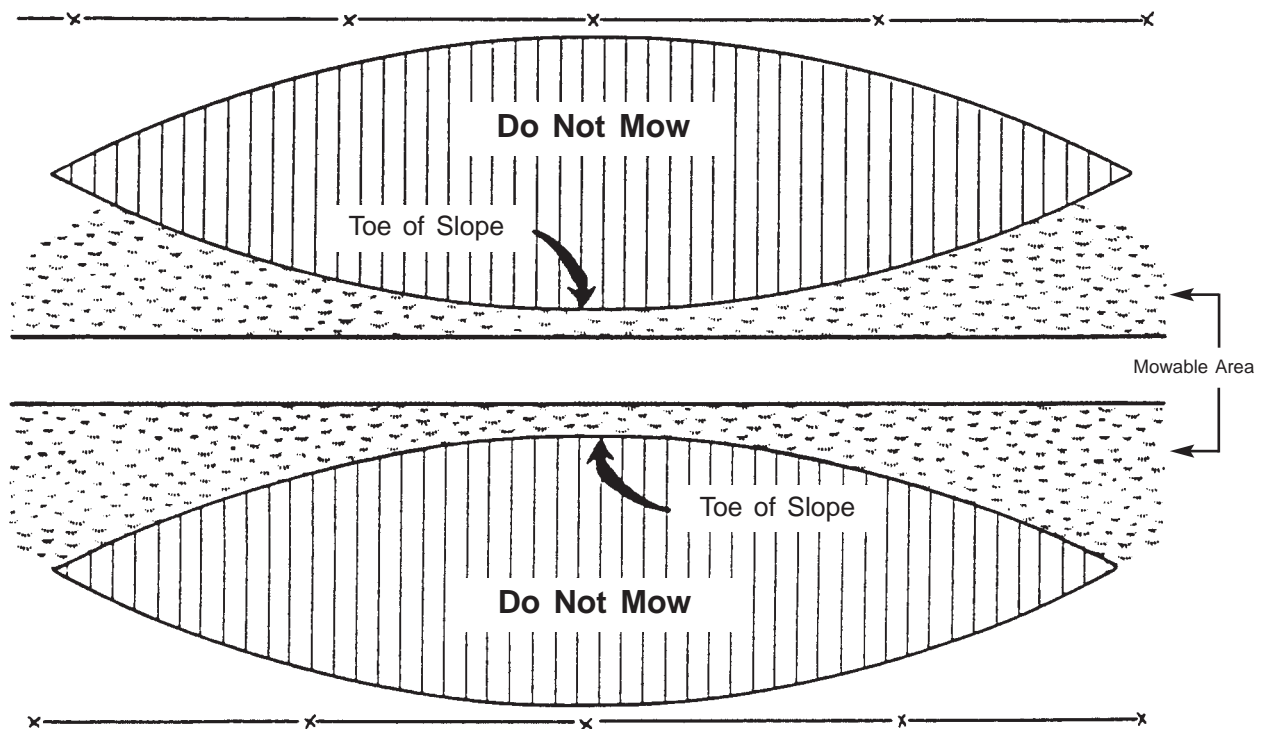
H. County Road Intersection Mowing



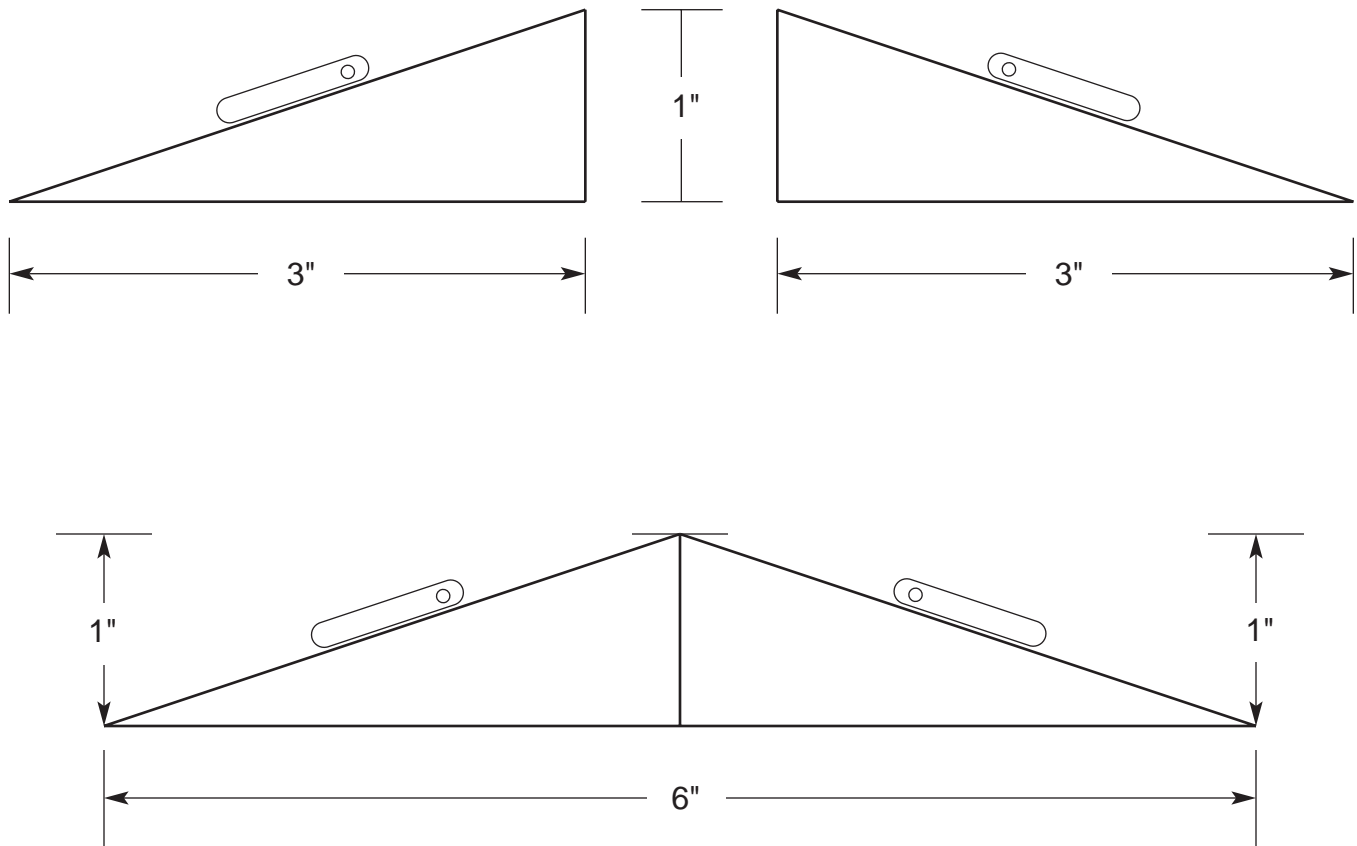
I. Highway Intersection Mowing



J. Slopes 3:1 and Steeper



Placing Levels on Mower Tractors



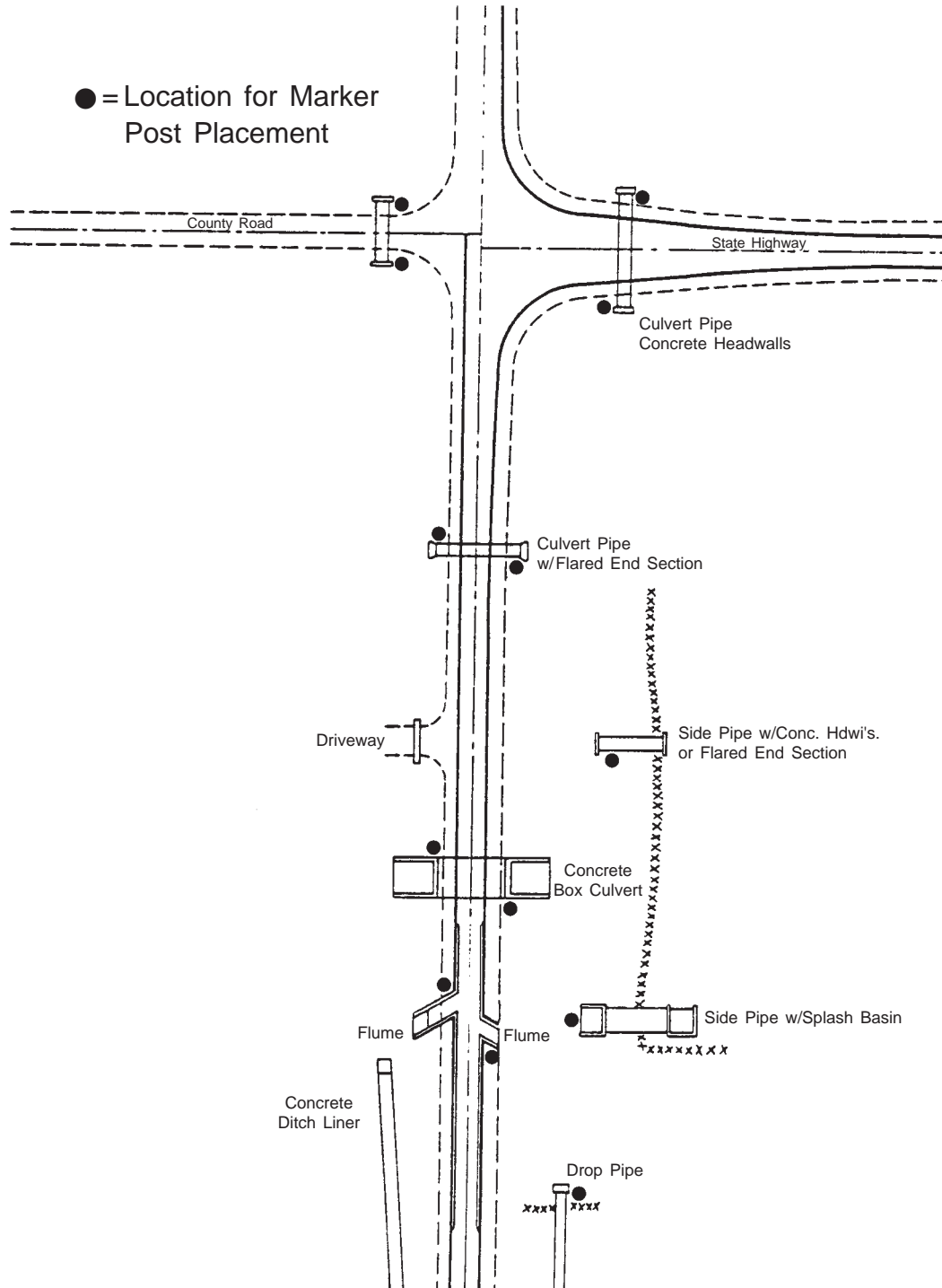
These sketches show the method to place levels on the mower tractors to indicate to the operator when they are on a 3:1 slope.

When the tractor leans to the right, the level on the left side will start to show level then you are approaching the 3:1 slope, time to get off the side hill.

Put the tractor on a level floor, find a place on the tractor's dash that is level, if the area is big enough use one board with two levels, but if there isn't enough room for the 6" board, cut it in half and place the 3" sections so they are visible to the operator when operating.

Typical Installation of Marker Posts

The following roadway indicates typical placement of marker posts. Care shall be exercised in marker post placement to avoid damage to culvert pipe headwalls, parapet walls, etc.



Memorandum of Understanding Between the Nebraska Game and Parks Commission and the Nebraska Department of Roads

This Memorandum of Understanding is made and entered into by and between the Nebraska Game and Parks Commission, hereinafter referred to as the Commission, and the Nebraska Department of Roads, hereinafter referred to as the Department. The purpose of this agreement shall be the establishment and administration of a program of cooperation in roadside management. Roadside habitat is vitally important to the wildlife species that use it. It is very important to pheasant and quail populations. Pheasant and quail provide the bulk of the upland game hunting in Nebraska and thereby make a substantial annual contribution to the state's economy.

Witnesseth:

Whereas, the Commission under authority of Section 81-805, R.R.S. Statutes of Nebraska, has among other things responsibility for management and enhancement of the wildlife resources of Nebraska, and;

Whereas, such enhancement and management are based on habitat development and improvement, and;

Whereas, as research has shown that 25 percent of the pheasants are hatched in roadsides, and;

Whereas, the right-of-ways along Nebraska's road systems managed by the Department of Roads are of significant importance as wildlife habitat, and;

Whereas, the Department has the responsibility for maintenance, human safety, and vegetation management on roads within its jurisdiction, and;

Whereas, vegetating the right-of-way with adaptive species of grasses and legumes is the most economical method of soil stabilization, reduction of routine maintenance, noxious weed control, enhancement of vehicle safety, and production of wildlife habitat, and;

Whereas, the Department and the Commission have cooperated in the past on developing seeding mixtures for the state and county roads and on a living snowfence program, and;

Whereas, the Department and the Commission are each desirous of performing their aforesaid responsibilities in an efficient and economical manner and in concert with each other;

Now, therefore, in consideration of the execution and adoption of this agreement by the parties hereto, each one agrees with the other as follows:

1. That roadside vegetation management is essential to maintain the vigor and quality of the plant community, and to meet necessary safety and drainage requirements along Nebraska highways, and that mowing or controlled burning are the preferred management options.
2. That total roadside mowing be done on a scheduled rotational basis and that no more than one-third of a district shall be mowed out in any one year. The term "total roadside mowing" is defined as mowing all areas within the right-of-way, including, but not limited to, the median and the road shoulder.
3. That the rotational total roadside mowing be done no more often than every four years east of Highway 14 and no more often than every five years west of Highway 14. The Panhandle and Sandhills regions are excluded from a total roadside mowing requirement.
4. That total roadside mowing be restricted to one side of the road in any given year.
5. That this does not restrict the Department from necessary management of roadside vegetation via shoulder, median, town and farmstead entrance, sight distance, and snow control mowing as may be required on either side of the road on an annual basis.

6. That total roadside mowing will be conducted only between the following dates:
 - A. Rotary mowing at a five-inch or greater height - July 15 to November 1.
 - B. Mowing by haying methods - July 15 to September 10.
7. That the entire roadside may be made available for haying when a drought emergency is declared by the Governor of Nebraska. The areas to be first offered for haying would be those areas that were scheduled for a total roadside mowing in that year. If the demand exceeds these offered areas, other areas may be made available. Haying dates may be extended past the September 10 cutoff date in a drought emergency.
8. That the establishment period for a new seeding is normally a two-year time period during which the seeded area is mowed at a five-inch cutting height as frequently as necessary to insure stand viability.
9. That the Commission will utilize its information and education capabilities to inform the public of the importance of roadsides to the soil, water, and wildlife resources of Nebraska. In addition, they will utilize the same capabilities to educate the public on the need to manage roadside vegetation through rotational mowing and to promote the cooperative programs between the agencies.
10. The Commission will assign a person to serve as a representative to the interagency Statewide Roadside Seeding Committee.
11. The Commission will work with and coordinate activities with the Department in areas where programs or responsibilities overlap, such as county roadside management programs.
12. It is mutually understood and agreed to, by and between said parties, that:
 - A. Nothing herein contained shall be construed as obligating the Department or Commission to expend in any one fiscal year any sum in excess of funds made available for such use.
 - B. This agreement shall be effective on the last date of execution as noted below.
 - C. This agreement shall remain in force until mutually modified or terminated.
 - D. This agreement is executed by the Commission and the Department after due consideration on the dates affixed beside their authorization and adoption thereof.

In witness thereof, the parties hereto have signed this Memorandum of Understanding this

17th day of July 1997.

This agreement is entered into in the spirit of cooperation for the conservation of the roadside habitat that is so vital to our wildlife resources.

State of Nebraska
Game and Parks Commission



Director

State of Nebraska
Department of Roads



Director-State Engineer