RESOLUTION NO. 97-99

RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA AUTHORIZING THE COUNTY ADMINISTRATOR TO ENTER INTO AN INTERLOCAL AGREEMENT WITH THE CITY OF ST. AUGUSTINE BEACH FOR LANDSCAPE MAINTENANCE ALONG A1A SOUTH

WHEREAS, the County has passed Resolution No. 97-90 to accept landscape maintenance responsibilities, to be performed under a maintenance agreement with the State of Florida, Department of Transportation, for a portion of State Road A1A South, from Owens Avenue (Mile Post 9.782) to Sandpiper Boulevard(Mile Post 10.910), a distance of 1.128 miles; and

WHEREAS, the City of St. Augustine Beach has passed Resolution 95-03 to accept landscape maintenance responsibilities, to be performed under a maintenance agreement with the Florida Department of Transportation for a portion of State Road A1A South, from Sandpiper Boulevard (mile Post 10.910) to Pope Road(milepost (13.668), a distance of 2.758 miles; and

WHEREAS, in proportion to the County, the City will be maintaining the larger of the two landscaped areas under contract with the Florida Department of Transportation; and

WHEREAS, it is in the best interest of both agencies to have landscaping and routine right of way maintenance activities performed by the same entity;

NOW THEREFORE BE IT RESOLVED By the Board of County Commissioners of St. Johns County, Florida that the County Administrator is authorized to execute the agreement in substantially the form attached.

PASSED AND ADOPTED THIS 8 **day of** July **, 1997.**

BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA

By: _____
Chairman

ATTEST: CHERYL STRICKLAND, CLERK

BY: _____
Deputy Clerk

K:\SHARED\GREG\MOWING\RESOLUTI.WPD

INTERLOCAL AGREEMENT

THIS AGREEMENT made and entered into this _____ day of _____, A.D., 1997, by and between the CITY OF ST. AUGUSTINE BEACH, a municipal corporation, organized under the laws of Florida, hereinafter called the "City," and ST. JOHNS COUNTY, a political subdivision of the State of Florida, hereinafter called the "County."

WHEREAS, the Florida Department of Transportation, through the public hearing process, has agreed to install landscaping along SR-A1A South, from Owens Avenue (Mile Post 9.782), north to Pope Road, (Mile Post 13.668), a total distance of 3.886 miles; and

WHEREAS, the Florida Department of Transportation does not perform landscape maintenance within the State Road right- of- way; and

WHEREAS, the County has passed Resolution No. 97-90 to accept landscape maintenance responsibilities, to be performed under a maintenance agreement with the State of Florida, Department of Transportation, for a portion of State Road A1A South, from Owens Avenue (Mile Post 9.782) to Sandpiper Boulevard (Mile Post 10.910), a distance of 1.128 miles; and

WHEREAS, the City has passed Resolution No. 95-03 to accept landscape maintenance responsibilities, to be performed under a maintenance agreement with the Florida Department of Transportation for a portion of State Road A1A South, from Sandpiper Boulevard (Mile Post 10.910) to Pope Road (Mile Post: 13.668), a distance of 2.758 miles; and

WHEREAS, in proportion to the County, the City will be maintaining the larger of the two landscaped areas under contract with the Florida Department of Transportation; and

WHEREAS, it is in the best interest of both parties to have landscaping and routine right of way maintenance activities performed by the same entity;

NOW, THEREFORE, and in consideration of the above, and based on the covenants contained herein, it is agreed by and between the parties as follows:

1. The City will perform routine landscape maintenance along that portion of A1A South from Owens Avenue (Mile Post 9.782) to Sandpiper Boulevard (Mile Post 10.910), a distance of 1.128 miles.

2 The City will perform routine landscape maintenance in accordance with the standards attached hereto and incorporated herein by reference as Exhibit "A."

3. The terms of this Agreement will commence on the date a written notice to proceed is issued to the City by the County Engineer and will continue for a period of (1) year. It is mutually agreed between both parties that, at the end of the initial one year period, this Agreement may be renewed for (2) two additional (1) one year terms. The County will give notice in writing of its intentions to renew this Agreement at least (60) days prior to the termination date of this Agreement. The City within (30) thirty days after receipt of said written notice by the County, will give written notice rejecting or consenting to said renewal. Without mutual assent, this agreement will automatically terminate at the end of the initial contract term of (1) one year.

This Agreement may be terminated by either party after (30) days written notice for failure of the other party to adhere to any requirement of this Agreement.

3. The County agrees to pay the City quarterly, (each three month period following a Notice to Proceed from the County Engineer), a lump sum payment of $2000.00 per quarter for a total sum of $ 8000.00 per year.

.4. To extent permitted by Florida law, the City covenants and agrees that it will indemnify and hold harmless the County and all of the County's officers, agents and employees, from any claim, loss, damage, cost or charge of expense arising out of any act, action, neglect or omission by the City during the performance of this agreement, whether direct or indirect, and whether to any person or property to which the County or said parties may be subject, except that neither the City nor any of its officers, agents, or employees will be liable under his article for damages arising out of injury or damages to persons or property directly caused or resulting from the sole negligence of the County or any of its officers, agents or employees.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hand and seals this day and year below written.

ATTEST:

_____
City Clerk

(SEAL)

CITY OF ST. AUGUSTINE BEACH

By: _____
Mayor-Commissioner

Date: _____

ATTEST:

_____

Clerk to the Board of County
Commissioners of St. Johns County, Florida

(SEAL)

BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA

By: _____
Chairman

Date: _____

Exhibit "A"

Interlocal Agreement

Landscape Maintenance

Standards

FLORIDA DEPARTMENT OF TRANSPORTATION
MAINTENANCE RATING PROGRAM STANDARDS

VEGETATION AND AESTHETICS

THE FOLLOWING CHARACTERISTICS MEET THE DESIRED MAINTENANCE CONDITIONS WHEN:

ROADSIDE MOWING

Not more than 2% of vegetation exceeds (varies) meter (inches) high. This excludes bahia seed stalks and decorative flowers allowed to remain for aesthetics. The area shall be evaluated in accordance with the mowing guide as a minimum.

RURAL LIMITED ACCESS	-	610 mm (24 in)
RURAL ARTERIAL	-	457 mm (18 in)
URBAN LIMITED ACCESS	-	457 mm (18 in)
URBAN ARTERIAL	-	305 mm (12 in)

SLOPE MOWING

Not more than 2% of vegetation exceeds 610 mm (24 in) high. This excludes bahia seed stalks and decorative flowers allowed to remain for aesthetics. The area shall be evaluated in accordance with the mowing guide as a minimum.

LANDSCAPING

Vegetation is maintained in a healthy, attractive condition.

TREE TRIMMING

There is no encroachment of trees, tree limbs or vegetation in or over travelway or clear zone, lower than 4.4 m (14-1/2 ft) or lower than 3.0 m (10 ft) over sidewalks.

CURB/SIDEWALK/ EDGE

There is no encroachment of grass and debris of more than 152 mm (6 in) onto the curb or sidewalk for more than 3.0 m (10 ft) continuous feet or no deviation of soil of more than 102 mm (4 in) above or 51 mm (2 in) below the top of curb or sidewalk for more than 3.0 m (10 ft) continuous feet.

LITTER REMOVAL

The volume of litter does not exceed 0.17 m^3 (6 cu ft) per 0.4 ha (1 acre) including all roadway pavement.

TURF CONDITION

Turf in the mowing area is 75% free of undesired vegetation.

VEGETATION AND AESTHETICS

ROADSIDE MOWING

Not more than 2% of vegetation exceeds (varies) meters (inches) high. This excludes allowable seed stalks and decorative flowers allowed to remain for aesthetics. The area shall be maintained in accordance with the mowing guide.

RURAL LIMITED ACCESS	-	610 mm (24 in)
RURAL ARTERIAL	-	457 mm (18 in)
URBAN LIMITED ACCESS	-	457 mm (18 in)
URBAN ARTERIAL	-	305 mm (12 in)

ROADSIDE MOWING - This characteristic is the control of planted or natural grasses and vegetation for protection of soil shoulders and slopes, safety and aesthetics purposes. Only the T-1 mowing area, as shown in the FDOT Guide to Roadside Mowing, should be evaluated. Areas mowed shall not be evaluated for minimum mowing height. Measurements with a rule or stick marked at the appropriate heights should be made throughout the sample. If more than 2% of vegetation, EXCLUDING allowable (or similar) seed stalks and decorative flowers which have been allowed to remain for aesthetics, exceeds the appropriate measurement as listed in the standard, then this characteristic does not meet the desired maintenance condition.

SLOPE MOWING

Not more than 2% of vegetation exceeds 610 mm (24 in)high. This excludes allowable seed stalks and decorative flowers allowed to remain for aesthetics. The area shall be maintained in accordance with the mowing guide.

SLOPE MOWING - This characteristic is the control of planted or natural grasses and vegetation for protection of soil slopes, safety and aesthetic purposes. Only evaluate the slope mowing areas as shown in the FDOT Guide to Roadside Mowing. Areas mowed shall not be evaluated for minimum mowing height. Measurements should be made throughout the sample. If more than 2% of vegetation, EXCLUDING allowable (or similar) seed stalks and decorative plantings allowed to remain for aesthetics, exceeds 610 mm (24 in), then this characteristic does not meet the desired maintenance condition.

LANDSCAPING Vegetation is maintained in a healthy, attractive condition.

LANDSCAPING - Landscaping is defined as those areas that have been changed by the placing of ornamental bushes, shrubs, flowers or plants that require maintenance such as weeding, mulching, trimming, pruning, replacing, fertilizing, insect spraying or edging. The presence of mulch materials (pine straw, wood chips) and evidence of pruning or trimming are indicators that a landscape area is probably being maintained. Plantings that are not pruned and that appear unhealthy or unattractive due to apparent lack of maintenance cause this characteristic not to meet the desired maintenance condition. Only those areas listed in the RCI as landscaping will be evaluated.

Landscaping on private property that extends into or over the travelway, shoulder or sidewalk is to be rated as tree trimming. The above photo meets desired maintenance conditions.

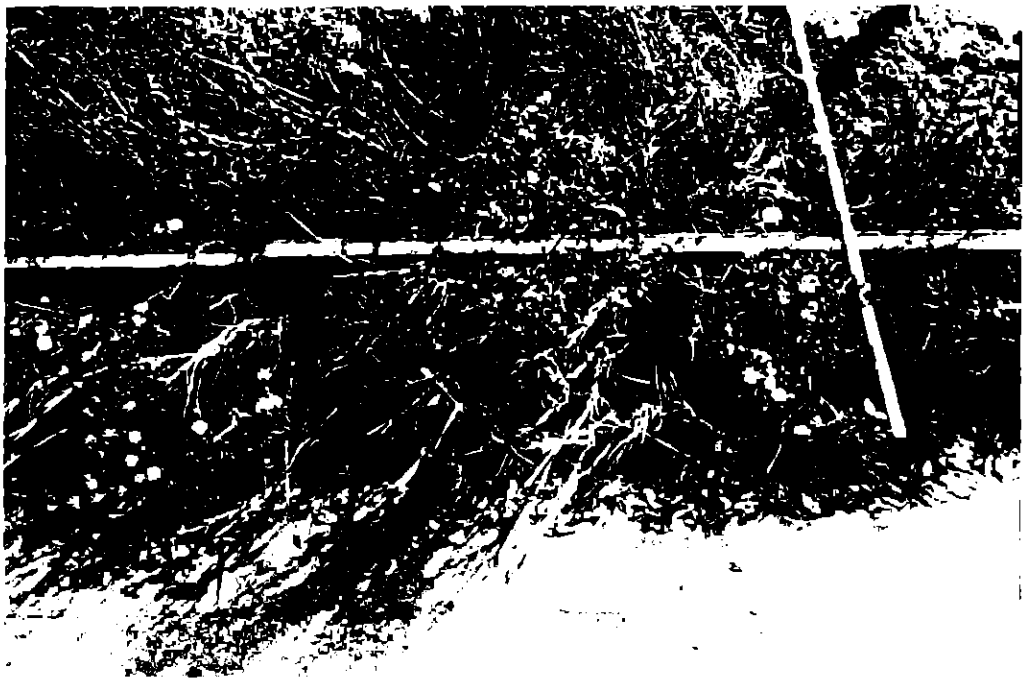
TREE TRIMMING There is no encroachment of trees, tree limbs or vegetation in or over travelway or clear zone, lower than 4.4 m (14 1/2 ft) or lower than 3.0 m (10 ft) over sidewalks.

TREE TRIMMING - This characteristic is the encroachment control of trees, tree limbs or brush into or over travelway, shoulder, clear zone and sidewalk. The FDOT Roadway and Traffic Design Standards (Index 700) is used to define the minimum horizontal limits of clear zone area (CZ) for limited access facilities and the Plans Preparation Manual, Voloume I (see Appendix IV) is used to define the minimum horizontal limits of clear zone area (CZ) for arterial roadways. Also, if encroachment is lower than 4.4 m (14 1/2 ft) over travelway or Clear Zone or lower than 3.0 m (10 ft) over a sidewalk, then this characteristic does not the desired maintenance condition. If there is dead or dying vegetation next to or over a travelway or Clear Zone that could fall or otherwise present a hazard to pedestrian or vehicular traffic, then this characteristic does not meet the desired maintenance condition. Only trees or limbs within Department right of way should be evaluated.

The survey point above does not meet desired maintenance conditions for tree trimming.

(RIGHT)
No encroachment lower than (3.0 m) 10 ft. over sidewalks

(BELOW)
No encroachment of grass and/or debris of more than (152.0 mm) 6" onto the curb or sidewalk for more than a continuous 10 ft.



CURB/SIDEWALK EDGE	There is no encroachment of grass and debris for more than 152 mm (6 in) onto the curb or sidewalk for more than a continuous 3.0 m (10 ft) or no deviation of soil of more than 102 mm (4 in) above or 51 mm (2 in) below the top of curb or sidewalk for more than a continuous 3.0 m (10 ft).

CURB/SIDEWALK EDGING - Curb and sidewalk edging, including median curb and is performed for safety and aesthetic reasons. Edging control may be accomplished by mechanical control (cutting or trimming by machine) or by chemical control. Dead or dying vegetation at a curb or sidewalk edge is an indication that a chemical control program is the method being used. In this case, an evaluation must be made to determine if the soil remaining, after the vegetation is gone, will still cause an encroachment. Encroachment of grass and debris on sidewalks could cause a hazard. If there is encroachment of more than 152 mm (6 in) onto the sidewalk or curb for more than a continuous 3.0 m (10 ft), then this characteristic does not meet the desired maintenance condition. A utility strip is generally considered to be that unpaved area between the back of a curb and a sidewalk. If the utility strip or curb and gutter median soil has a deviation of more than 102 mm (4 in) above or 51 mm (2 in) below the top of curb or sidewalk for more than a continuous 3.0 m (10 ft), then this characteristic does not meet the desired maintenance condition. Only evaluate the first 0.6 m (2 ft) behind all curbs.

LITTER REMOVAL The volume of litter does not exceed 0.17 m^3 (6 cu ft) per 4ha (1 acre) including all roadway pavement.

LITTER REMOVAL - Removal of litter from roadway and roadside areas is performed for aesthetic and safety reasons. It is desired to present a pleasing appearance to the motoring and pedestrian traffic, but is more important to provide safety. Litter on roadsides during mowing operations presents an increased possibility of hazard to the motorist, pedestrian and mower operator. The areas to be evaluated will normally be the mowing limits and all paved areas. An exception will be that portion of the right-of-way that is continually under water. This characteristic does not meet the desired maintenance condition if more than 0.17 m^3 (6 cu ft) of litter per 0.4 ha (1 acre) is present in the sample or if ANY litter exists that creates a hazard to motorist or pedestrian traffic. The presence of one large item (truck tire, large box) that does not create a hazard to motorist or pedestrian traffic, in an area free of other litter meets desired maintenance conditions.

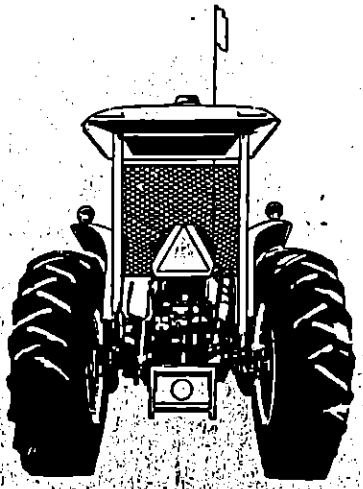
A large box or tire may meet maintenance conditions if there is no hazard created to motorist or pedestrian traffic. The above photo does not meet desired maintenance conditions.

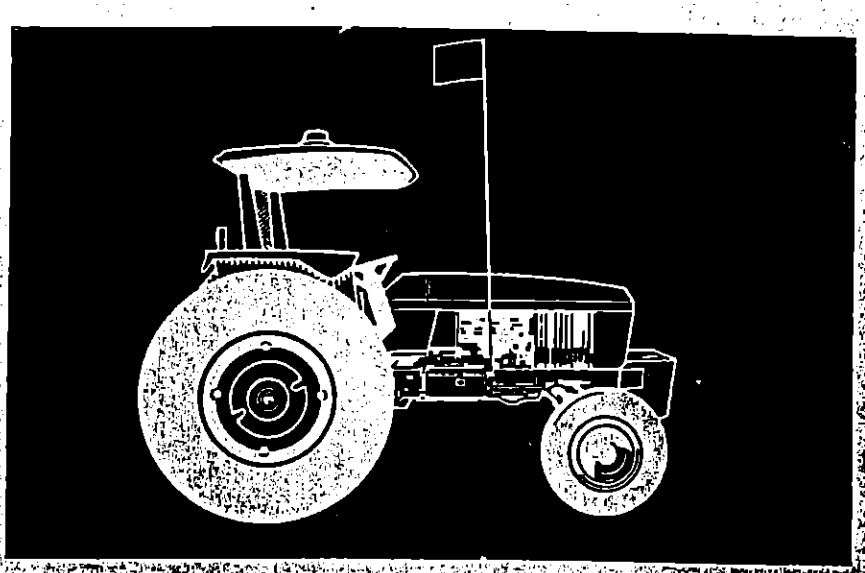
ROADWAY SWEEPING Material accumulation is not greater than 19 mm (3/4 in) deep for more than a continuous 0.3 m (1 ft) in the travelled way or shall not exceed 57 mm (2-1/4 in) in depth for more than a continuous 0.3 m (1 ft) in any gutter.

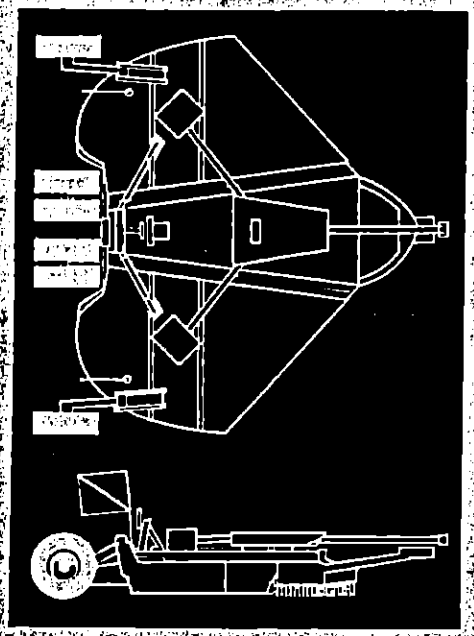
ROADWAY SWEEPING Material accumulation is not greater than 19 mm (3/4 in) deep for more than 0.3 m (1 continuous ft) in the travel way or shall not exceed 57 mm (2-1/4 in) in depth for more than 1 continuous foot in any gutter.

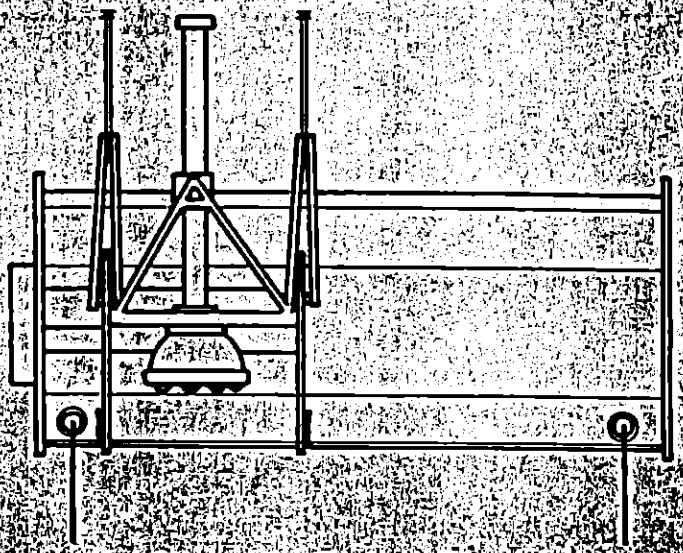
ROADWAY SWEEPING - This characteristic applies ONLY to: Urban Limited Access Roadways, paved shoulders on Urban Limited Access Roadways, most curb and gutter, shoulder gutter, any barrier wall gutter and all intersections of State Roads. This characteristic meets the desired maintenance condition if undesirable material accumulation is no greater than 19 mm (3/4 in) deep for more than 0.3 m (1 ft) continuous foot in the travelway or no more than 57 mm (2-1/4 in) deep for more than 0.3 m (1 ft) continuous foot in the gutter of curb and gutter, shoulder gutter, barrier wall gutter or Urban Limited Access paved shoulders. Do not rate curb inlet throats for sweeping.

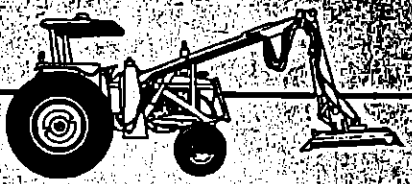
The debris is more than 2 1/4" in depth and is continuous for more than 1' and therefore does not meet desired maintenance conditions











A GUIDE TO

ROADSIDE MOWING

FLORIDA DEPARTMENT OF TRANSPORTATION
Bureau of Maintenance

A GUIDE TO ROADSIDE MOWING

State of Florida
Department of Transportation
Tallahassee, Florida
Affirmative Action/Equal Opportunity Employer

April 1990

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INTRODUCTION

This Guide to Roadside Mowing has been prepared to assist in establishing uniformity of mowing operations throughout the State of Florida and to provide for safe, effective and efficient use of personnel and equipment.

While this guide does not cover all conditions, it does offer operational directions for many situations that commonly occur in the field. Use of the procedures described in this guide in the planning and conducting of mowing operations will help ensure attractive, well-maintained roadsides on Florida's highway system.

The information presented in this guide is divided into three sections:

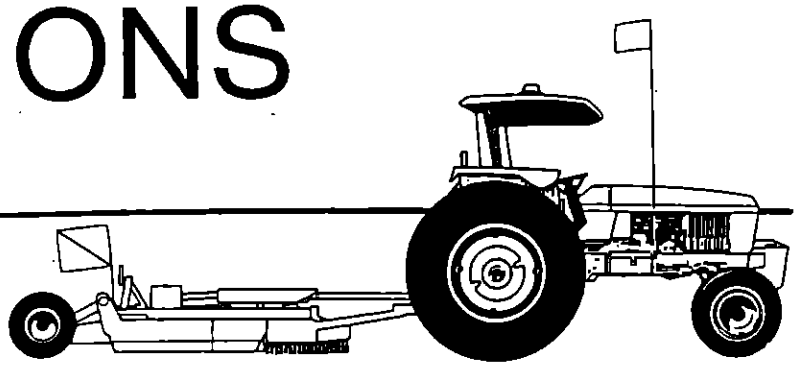
1. **Mowing Operations**, which covers the mowing areas and procedures for various field conditions;

2. **Operator Safety**, which presents guidelines for the safe and effective operation of mowing equipment;

3. **Equipment Maintenance**, which provides checklists for ensuring that DOT equipment receives the necessary care.

Appropriate maintenance performance standards for mowing and procedures for reporting productivity can be found in the Maintenance Management System Manual. Conversion charts for use in determining production rates are included in the appendix of this guide.

SECTION 1
MOWING OPERATIONS



LEGEND TO FIGURES 1-12

R/W: Right-of-way line

PL: Property line

℄ Center line of roadway

T-1: T-1 maintenance, mowed as scheduled

T-2: T-2 maintenance, normally not mowed

TYPES OF MAINTENANCE

T-1: Roadside areas to be mowed as scheduled.

1. Shoulders, front slopes, ditch bottoms, and back slopes, if applicable (Figure 1).

2. Areas adjoining residential and commercial property (arterial roads only).

3. Intersections and hazardous locations.

4. Urbanized areas, not from city limit to city limit but those areas adjacent to property having a high density population and heavy commercial or residential development.

5. All median areas less than 70 feet wide should be mowed entirely. Where the width of the median is 70 feet or greater, mow a minimum of 30 feet to a maximum of 35 feet from the median edge of the roadway.

T-2: Roadside areas normally not mowed.

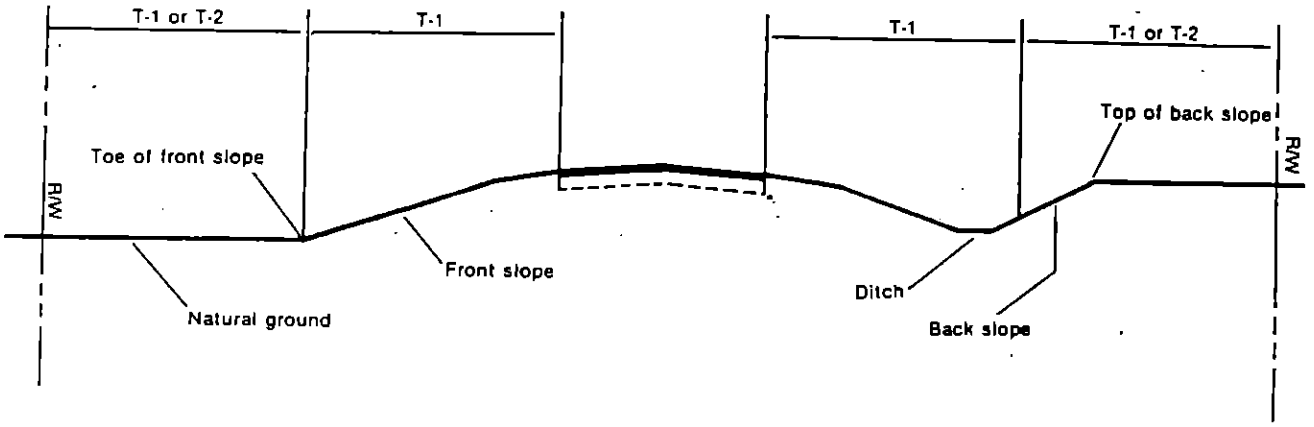
1. Areas adjoining agricultural and undeveloped roadside properties.

2. Wet weather swamps and ponds.

3. Locations where adjoining property is undisturbed natural terrain.

4. Strips of medians in excess of 70 feet.

FIGURE 1
ROADSIDE MOWING:
TYPICAL SECTION



MOWING PROCEDURES

TYPE T-1 ROADSIDE MAINTENANCE

T-1 maintenance involves the use of roadside mowing to control the growth of the planted and/or natural grasses, weeds, and other vegetation for safety reasons, as well as for scenic enhancement.

URBAN-AREA MOWING LIMITS (ARTERIAL ROADS ONLY)

Urban mowing areas are those areas adjacent to property having a high-density population and heavy commercial or industrial development.

Urban-area mowing limits are not just from city limit to city limit but, those areas adjacent to property having a high density population and heavy commercial or residential development (FIGURE 2).

At some locations, it may be feasible to reduce these limits because of unique field conditions, such as areas of functional or natural landscaping.

Rural-Area Mowing Limits

Rural mowing areas are those areas adjacent to locations having low-density population and light commercial or industrial development.

1. Roadside: the area between the edge of the pavement and the right of way line.

   a. Normal roadside mowing limits are confined to within 5 feet beyond the top of the ditch back slope if the height of the ditch back slope is less than 5 feet (Figure 3, view a).

   b. Where the ditch back slope is 5 feet or greater in height, the mowing limit is a maximum of 5 feet up the face of the ditch back slope from the bottom of the ditch (Figure 3, view b).

   c. In normal fill sections not requiring slope mowing (slopes flatter than 3:1), the mowing limit is a maximum of 5 feet beyond the toe of the fill slope (Figure 3, view c).

2. Median: the area between roadways on divided highways.

   a. All medians less than 70 feet wide should be mowed entirely (Figure 4).

b. To permit the regeneration of natural growth and encourage flowering plants in medians 70 feet wide or wider, the mowing area is a minimum of 30 feet to a maximum of 35 feet from the median edge of the roadway. The native growth or grass allowed to remain must be a minimum of 10 feet wide unless otherwise approved by the District Maintenance Engineer (Figure 6).

3. **Steep slopes:** Slopes having a grade greater than 3:1. Specialized equipment must be used for mowing these slopes. This slope mowing should be performed periodically in conjunction with scheduled mowing operations.

   a. When the distance from the pavement edge to the right of way line is less than 70 feet or the right of way adjoins residential or commercial property, mow the entire right of way (Figure 5, view a).

   b. When the distance from the roadway edge to the right of way line is 70 feet or greater, or where the right of way adjoins agricultural or undeveloped property, mow a minimum of 5 feet to a maximum of 10 feet beyond the shoulder point or guiderail (Figure 5, view b).

4. Special areas: locations that require special attention due to safety considerations, adjacent property use, unique highway conditions, or vegetation type.

   a. **Highway signs.** When roadside conditions provide insufficient visibility of highway signs, an approach cut must be made to provide a minimum 1/4-mile sight distance. The approach cut should be to a point at least 5 feet beyond the outer edge of the sign panel. The transition back to the normal mowing limits should be a 45-degree angle (Figure 7).

      NOTE: Do not cut to provide sight distance for outdoor advertising or other privately erected signs.

   b. **Hazardous locations.** For safety reasons, normal mowing limits may need to be extended to provide additional visibility at potentially hazardous locations, such as intersections of state, county or city roads; driveways or other entranceways; the inside of horizontal curves; and railroad crossings (Figure 8).

c. **Clear zones.** In certain locations, the normal roadside mowing limits are extended to create unobstructed clear zones. These areas provide vehicles leaving the roadway with an extra margin of safety.

d. **Developed property** (Arterial Roads ONLY). Mow to the right of way line in front of developed residential and commercial property. Transition cuts from the normal mowing limits to the right of way line should be made at 30- to 45-degree angles (Figure 9).

e. **Grade separations and interchange infields.**

(1) Where a ramp pavement edge is less than 70 feet from the thru lane or an adjacent ramp, mow the entire area (Figures 10, view a, and 11).

(2) Where a ramp pavement edge is 70 feet or more from the thru lane or an adjacent ramp, mow a minimum of 5 to a maximum of 10 feet beyond the shoulder point or guiderail (Figures 10, view b, and 11).

(3) Normal roadside mowing limits should be maintained between ramps of equal elevation (Figures 10, view a, and 11).

f. **Roadside accent.** Contour mowing is performed in certain locations to enhance the appearance of the roadside by blending the maintained roadside with the attending native growth or land use. This blending is accomplished through variable mowing widths connected by sweeping curves. The mowing widths are governed by the terrain and adjacent land use and should accentuate the natural appearance of the roadside (Figure 12).

g. **Flowering plants.** Desirable flowering plants should not be mowed, treated with herbicides, or otherwise disturbed during their growing, blooming, and seed-ripening seasons. Periodic mowing may be required at other times to promote or assure regeneration of the flowers. Transitions from routinely mowed areas to adjacent flower sites should be made in a smooth manner to create a pleasing effect (Figures 2 and 12).

T-1 Maintenance Tips

The list below provides general guidelines that should be followed when roadside mowing is performed.

1. The established mowing height is 6 inches for all rural mowing areas. A higher standard of maintenance may be required for rest area facilities, office complexes, and sites within urban limits. At these locations, no more than one-third of the blade height of the desired grass (excluding seed heads) should be removed during a mowing cycle. This will result in a healthier turf better able to compete with undesired vegetation.

2. Do not scalp or mow excessively close to the ground line. Mowing too close to the ground increases soil temperature, contributes to erosion, lowers plant tolerance to cold and drought, results in the thinning of the turf and increases undesirable vegetation.

3. Mow only when necessary. Consider seasons, locations and turf conditions when scheduling mowing operations. Mowing should not be performed during periods of drought or growth stress.

4. Mow or disc a strip 5 to 10 feet in width to permit inspection and repair of the fence line on rural limited-access facilities. This is to be performed annually at the discretion of the Maintenance Engineer (Figure 5b).

5. Make smooth, free-flowing transitions when changing cutting width.

6. To avoid damage to the mowing equipment, do not mow unnecessarily close to roadside obstacles, such as signs, delineator posts, fences and guiderails.

7. Never mow beyond the Department right of way line. Under normal conditions, mowing beyond the right of way line is a violation of state law.

8. Never mow over debris that would damage the equipment or that might be picked up and thrown out by the mower. Stop and remove objects, such as old tires, limbs and other debris, from the mowing area.

9. Park equipment on the right of way as far from the roadway as feasible, in an area least susceptible to fire and vandalism.

TYPE T-2 ROADSIDE MAINTENANCE

Except under unique field conditions, T-2 maintenance areas are normally not mowed. This encourages the regeneration of natural growth and allows the areas outside the established mowing limits to return to their native state.

Encouraging natural growth or the planting of native trees, shrubs, and ground cover appropriate to the local environment is desirable. Such growth reduces the area the Department must maintain through mowing and thus the overall cost for maintenance operations. In addition, regenerated areas improve the appearance of Florida's roadways and serve as valuable habitats for native wildlife.

Wildflower sites may be established and maintained within existing mowing limits if their locations are compatible with routine maintenance operations. Sites may occasionally be located outside the normal mowing limits, including areas of natural regeneration. Locations selected for wildflower sites should be highly visible from the roadway and relatively free from competitive or noxious plants.

FIGURE 2
MOWING PLAN
(ARTERIAL ROADS ONLY)

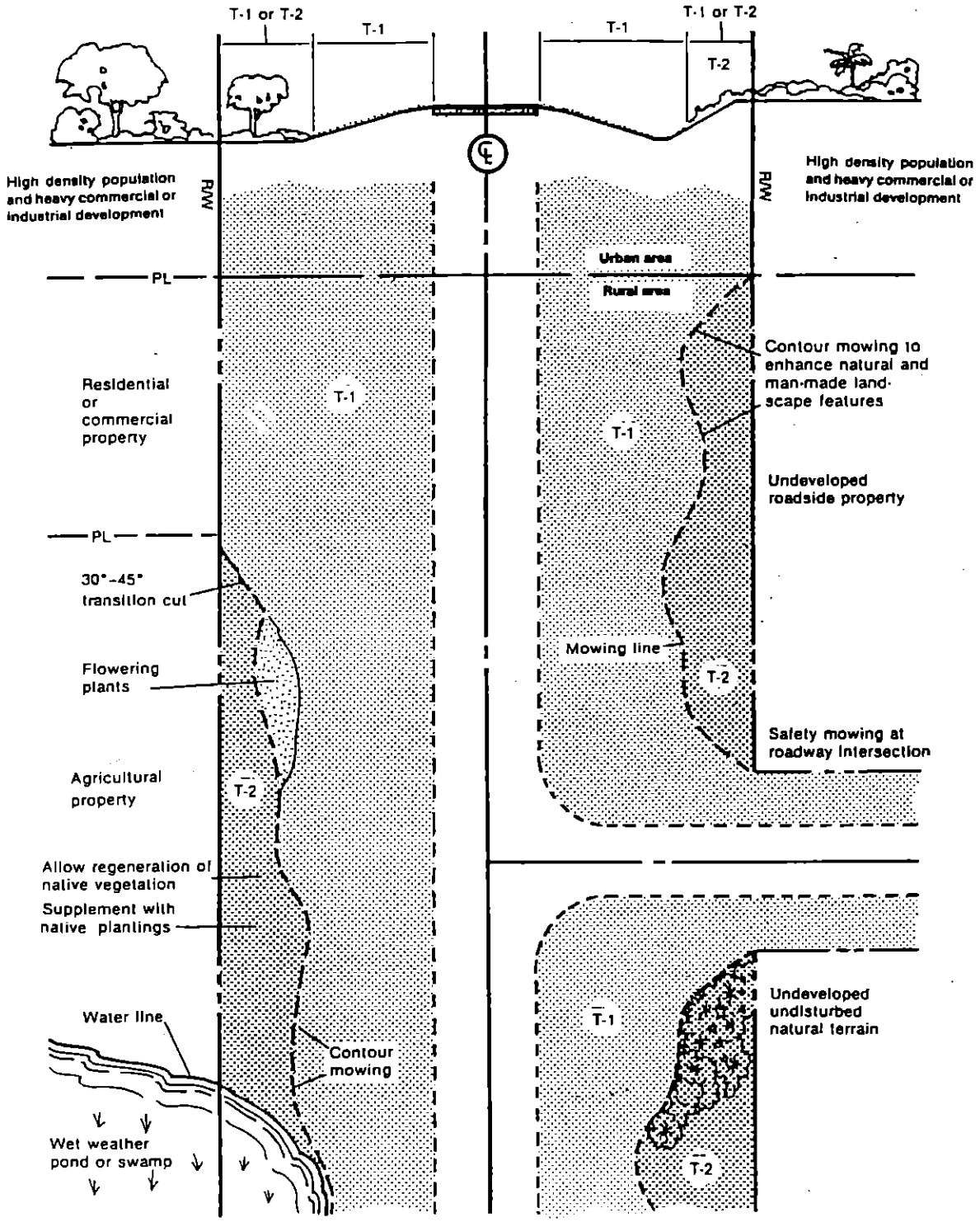


FIGURE 3
NORMAL ROADSIDE MOWING LIMITS:
RURAL AND LIMITED ACCESS

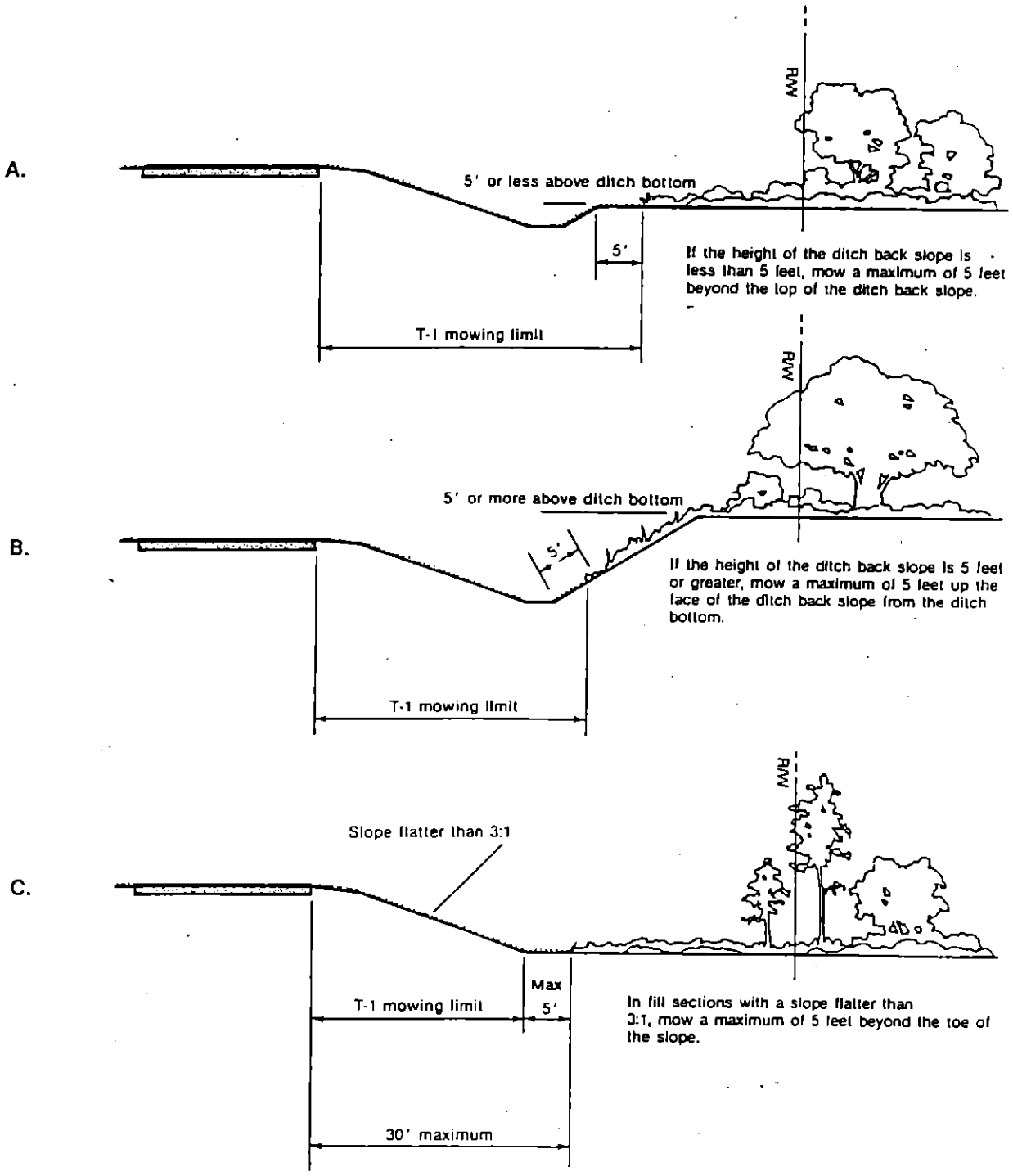


FIGURE 4
MEDIAN MOWING LIMITS:
RURAL ARTERIAL AND ALL LIMITED ACCESS
(OVERHEAD VIEW)

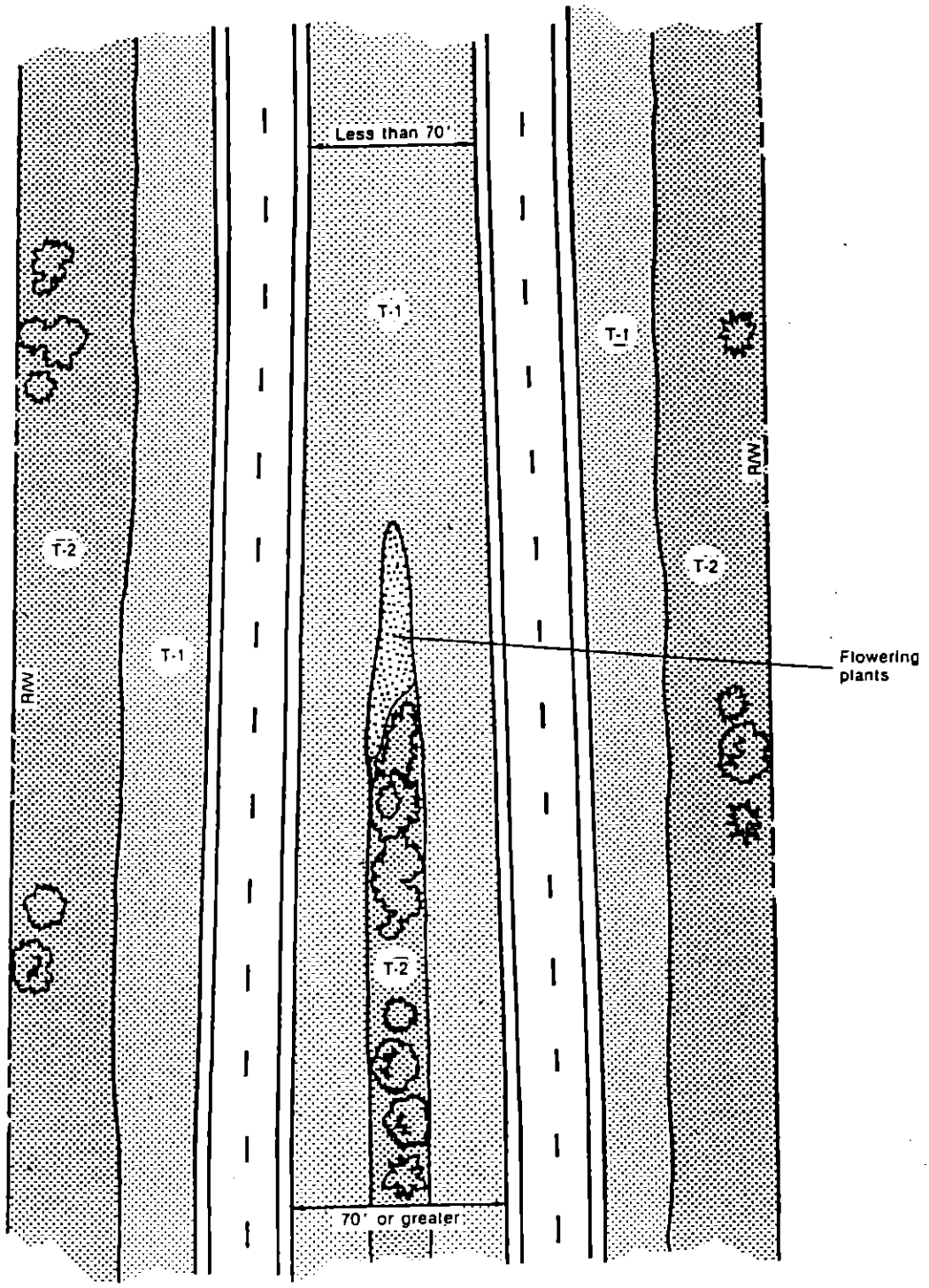
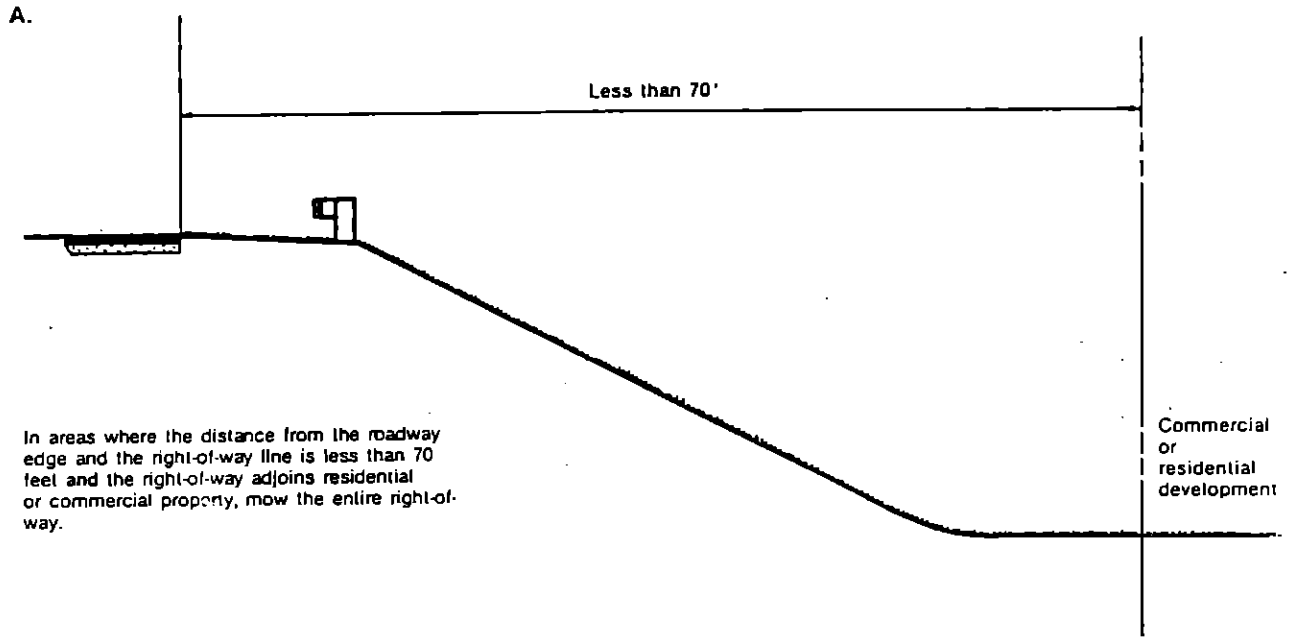


FIGURE 5
SLOPE MOWING LIMITS:
RURAL ARTERIAL AND ALL LIMITED ACCESS



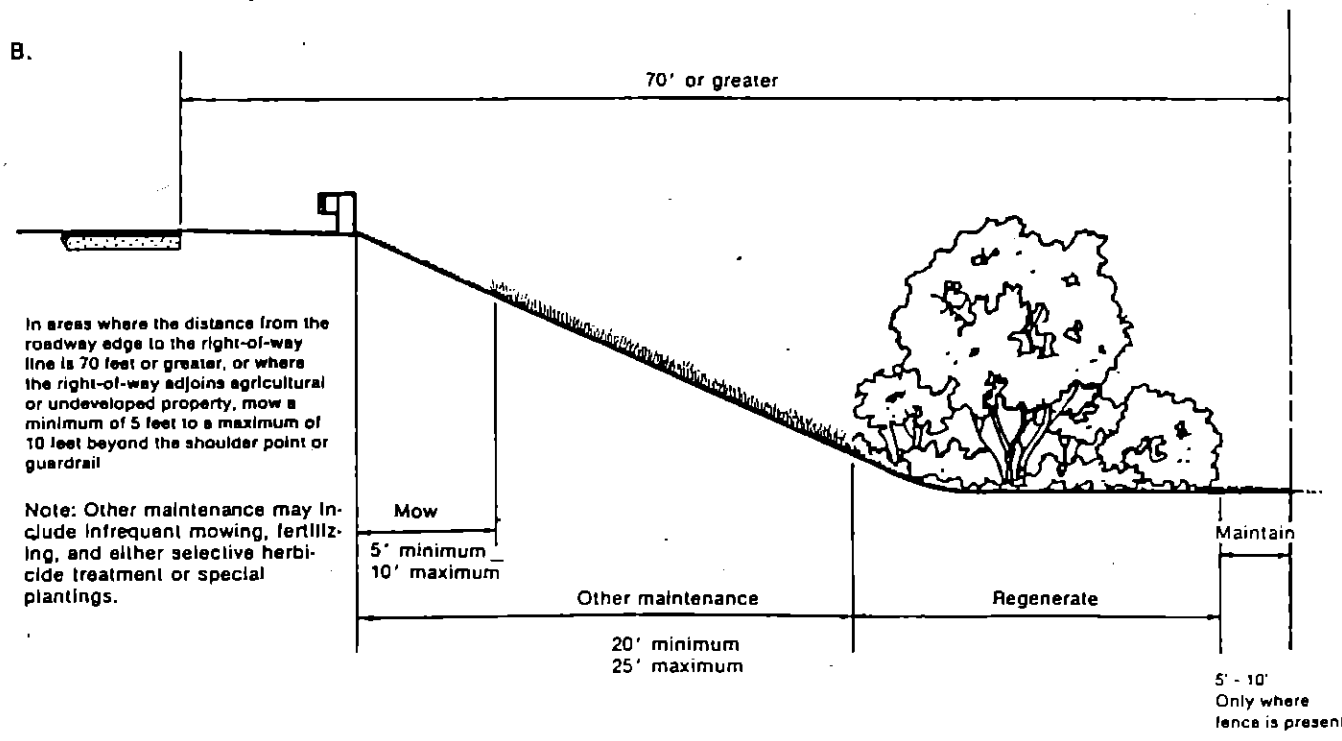
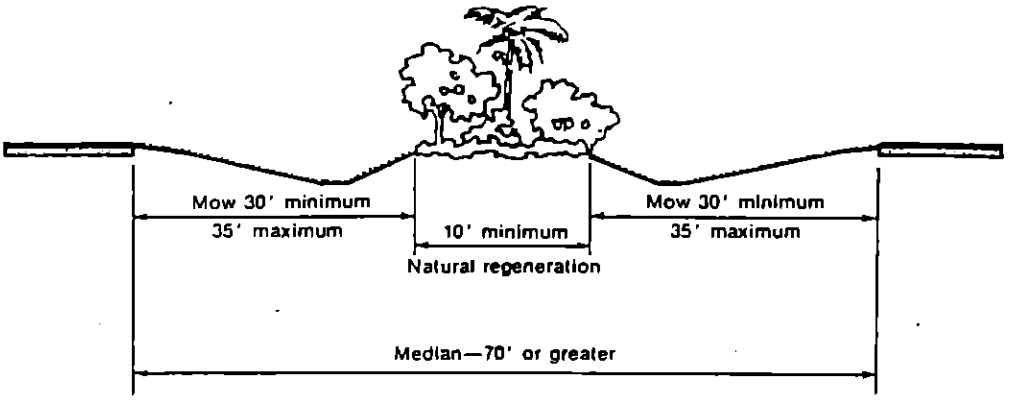


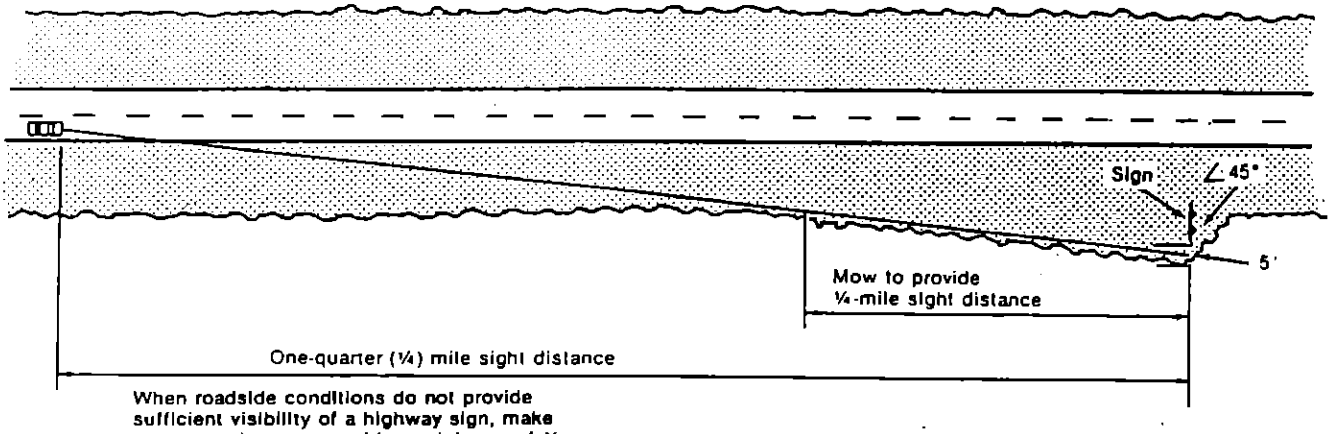
FIGURE 6
MEDIAN MOWING LIMITS:
RURAL ARTERIAL AND ALL LIMITED ACCESS
(CROSS-SECTIONAL VIEW)



Where the width of the median is 70 feet or greater, mow a minimum of 30 feet to a maximum of 35 feet from the median edge of the roadway. Remaining strips of native growth or grass must be at least 10 feet wide.

All median areas less than 70 feet wide should be entirely mowed.

FIGURE 7
HIGHWAY SIGN MOWING LIMITS



When roadside conditions do not provide sufficient visibility of a highway sign, make an approach cut to provide a minimum of ¼-mile sight distance. The approach cut should be to a point at least 5 feet from the outer edge of the sign panel. The transition back to the normal mowing limit should be at a 45-degree angle.

Do not cut to provide sight distance for outdoor advertising or other privately erected signs.

FIGURE 8
SAFETY MOWING LIMITS

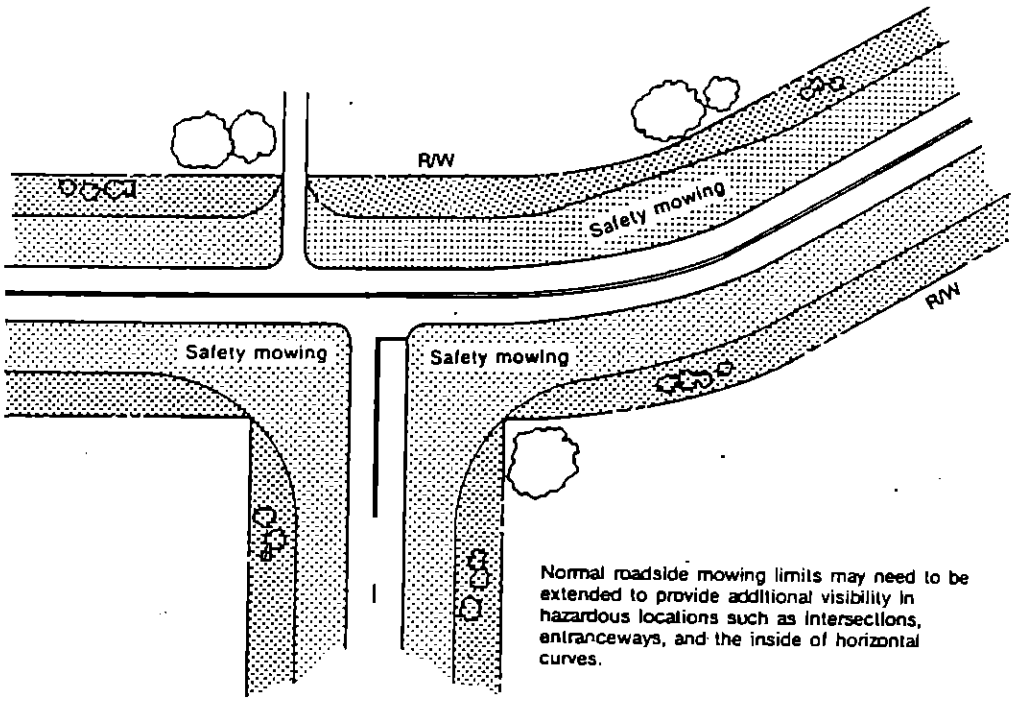


FIGURE 9
DEVELOPED PROPERTY MOWING LIMITS:
RURAL (ARTERIAL ROADS ONLY)

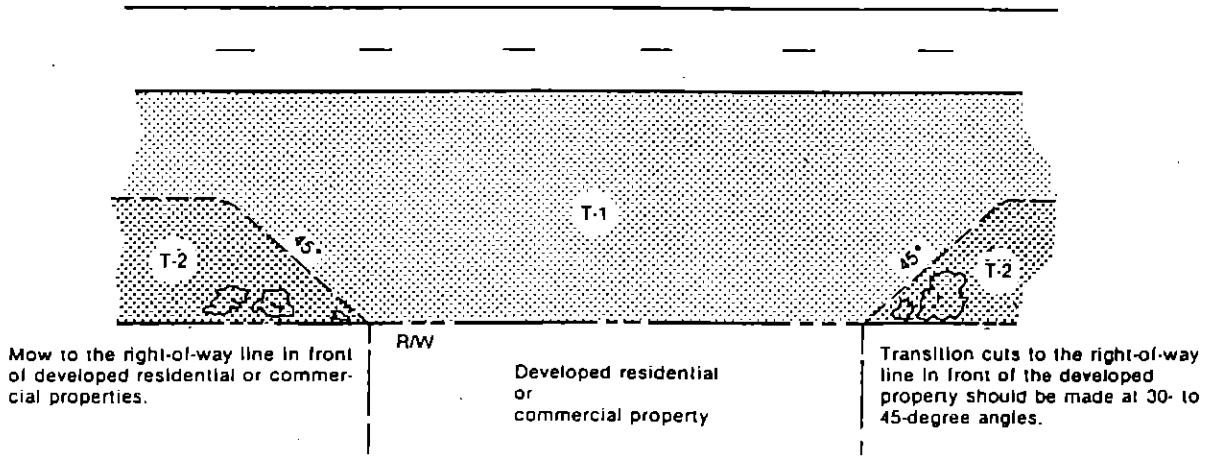
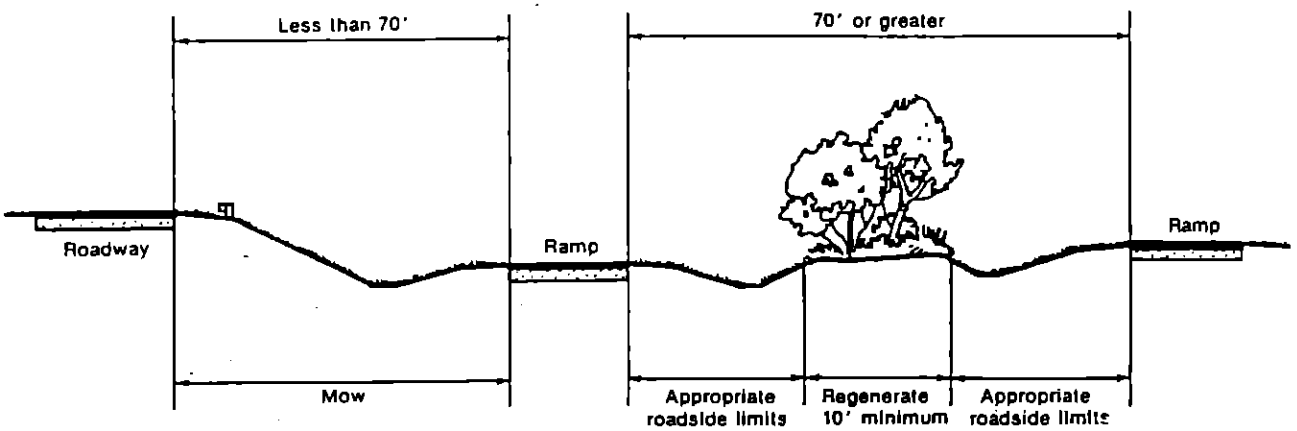


FIGURE 10
GRADE SEPARATIONS AND INTERCHANGE INFIELDS:
RURAL (CROSS-SECTIONAL VIEWS)

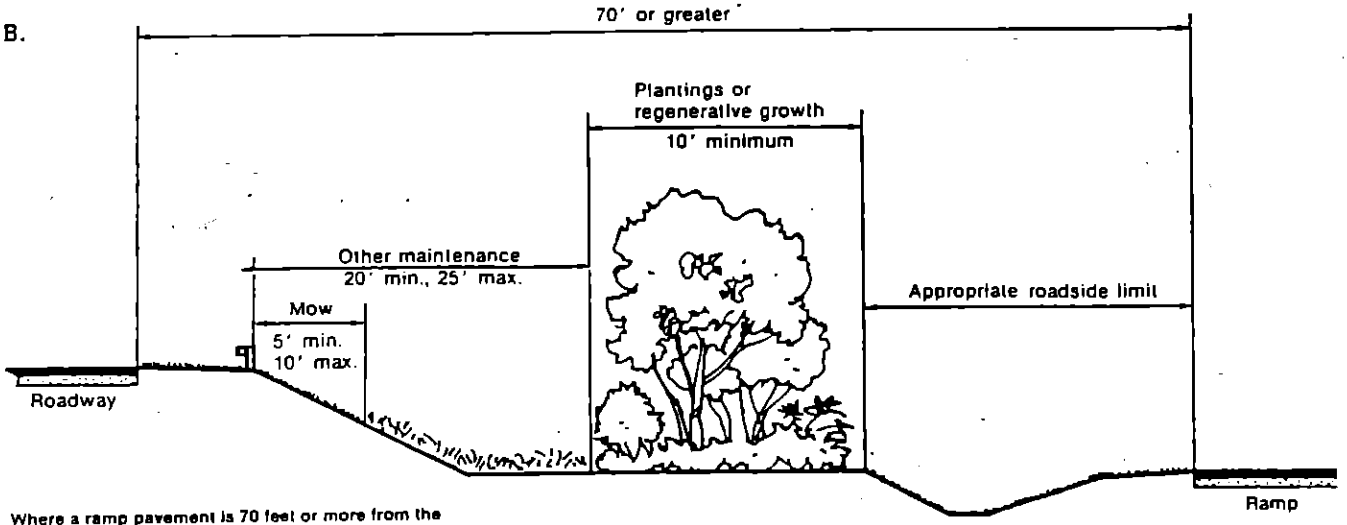
A.



Where a ramp pavement edge is less than 70 feet from the thru lane or an adjacent ramp, mow the entire area.

Normal roadside mowing limits should be maintained between ramps of equal elevation.

B.



Where a ramp pavement is 70 feet or more from the thru lane or an adjacent ramp, mow a minimum of 5 feet to a maximum of 10 feet beyond the shoulder point or guardrail.

Note: Other maintenance may include infrequent mowing, fertilizing, and either selective herbicide treatment or special plantings.

FIGURE 11
GRADE SEPARATIONS AND INTERCHANGE INFIELDS:
RURAL (OVERHEAD VIEW)

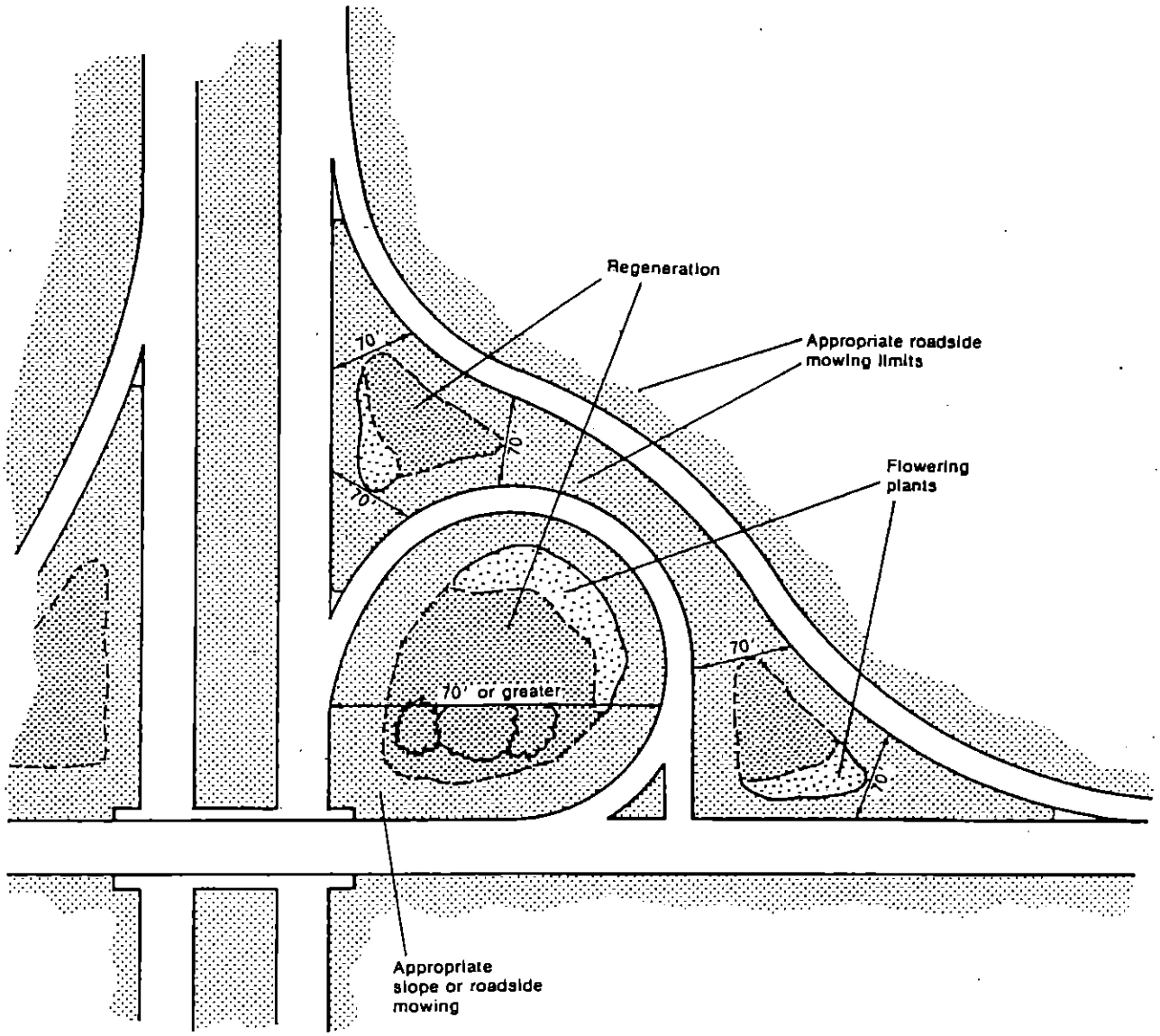
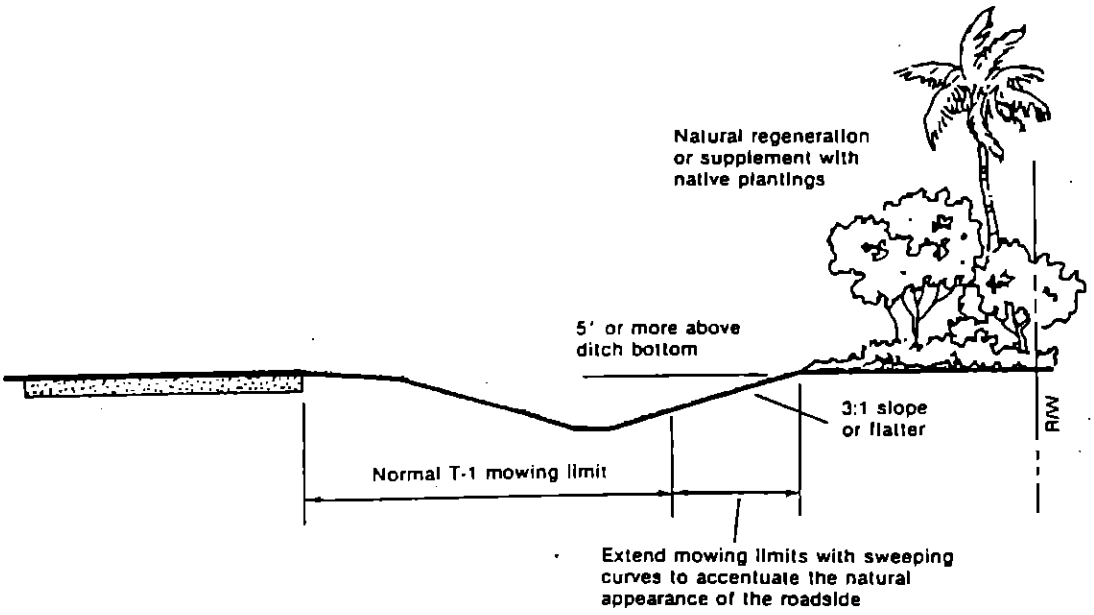
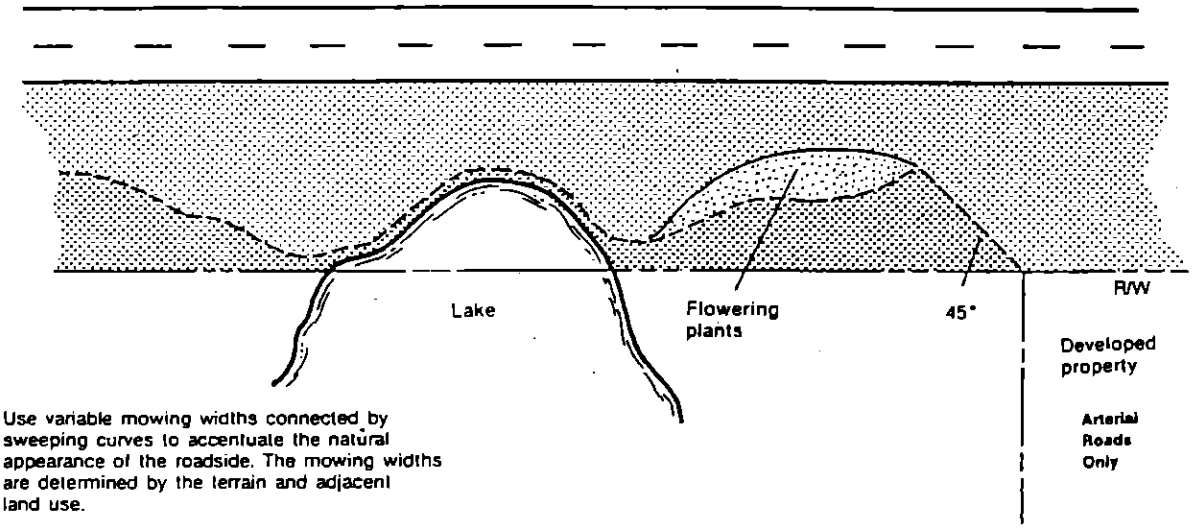


FIGURE 12
ROADSIDE ACCENT MOWING

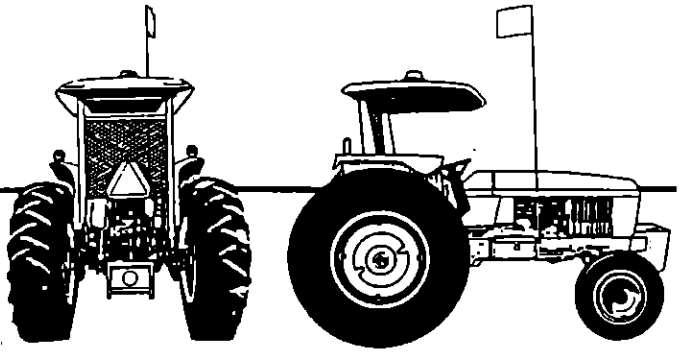




Use variable mowing widths connected by sweeping curves to accentuate the natural appearance of the roadside. The mowing widths are determined by the terrain and adjacent land use.

Do not mow desirable flowering plants during growing, blooming, and seed-ripening seasons. Transitions from routinely mowed areas to adjacent flower sites should be made in a smooth manner.

SECTION 2
OPERATOR SAFETY



This section of the Guide to Roadside Mowing provides basic procedures for the safe operation of mowing equipment. It also points out some of the hazardous situations that may be encountered on the job and suggests possible ways to deal with them.

The information provided is meant to **supplement** the specific information contained in manufacturers' operating manuals and the Department's Accident Prevention Procedures handbook. Additional precautions may also be necessary, depending on conditions at the work site or in the service area.

GENERAL SAFETY PROCEDURES

It is very important for the operator to be familiar with the mowing equipment before using it. Read the manufacturer's operating manual. Know the equipment's capabilities, its operating characteristics, and the purpose of all controls, gauges and dials.

A list of general safety procedures is provided below.

BEFORE MOWING OPERATIONS

1. Before using mowing equipment, make sure that it is in good operating order. Never operate equipment that is in less than safe condition.

2. Keep all protective and warning devices in place. All guards, shields, and safety equipment must be properly installed and in working order (Figures 14, 15, 16 and 17).

3. Before mowing begins, the crew leader should inspect the area to identify physical hazards. These may include washouts, ruts, culverts, markers and other obstructions.

4. Employees must be fully clothed and wearing the proper personal protective equipment which shall include a safety vest, hard hat and hearing protection. Respriators and gloves are optional equipment and will be required based on work conditions and/or supervisor recommendations.

DURING MOWING OPERATIONS

5. When operating equipment, always comply with the guidelines provided in the Department's Accident Prevention Procedures handbook.

6. Amber flashing lights, mounted on tractors and slope-mowing equipment, must be on and working properly during mowing operations (Figures 14 and 17).

7. Never allow riders on the tractor, on the drawbar, or on any towed equipment.

8. Operate equipment in the direction of the traffic flow when making the first cut. Any additional cuts may be made in either direction.

9. When it is necessary to pull mowing equipment onto the pavement, come to a complete stop and disengage the power takeoff, or PTO. Check traffic in all directions before attempting to cross any roadway.

10. Avoid travel during heavy traffic periods, and use proper hand signals. When on highways, tractor operators must abide by the accepted rules for automobile drivers.

11. Check the brakes for equal application when they are locked together for highway use.

12. Never operate equipment while taking medication that might impair reflexes or thinking ability. Equipment operators must remain alert at all times while mowing.

REMEMBER: GOOD SAFETY PRACTICES NOT ONLY PROTECT YOU, THEY ALSO PROTECT THE PEOPLE AROUND YOU!

ACCIDENT PROCEDURES

The supervisor must be notified immediately of any accident involving damage to equipment or private property, no matter how slight it may seem. Unless absolutely necessary, the equipment should not be moved until the supervisor has completed an investigation.

Any accident involving personal injury must also be reported immediately.

TRACTOR SAFETY

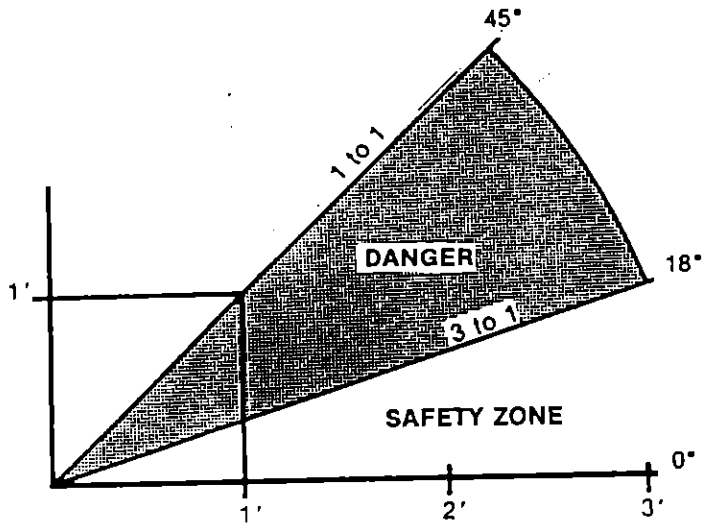
Misuse of the features that make the tractor a useful and versatile piece of equipment can result in serious accidents, producing injuries or death. Many such accidents can be prevented by following simple safety guidelines.

HOW TO AVOID OVERTURNING

A large percentage of tractor accidents are due to overturning. Many factors contribute to or cause overturning: lack of appropriate operator training, speed too high for the conditions, sharp turns, improper equipment hook-ups, and operator impairment.

Mowing on slopes presents one of the most dangerous situations in tractor-mowing operations because of the increased possibility of overturning the equipment (Figure 13). For this reason, slopes with a grade steeper than 3 to 1 must be mowed with specially designed slope-mowing equipment only. By mowing these areas with slope-mowing equipment, the operator will minimize the possibility of the slope eroding due to rutting or scarification of the turf.

FIGURE 13
SLOPE HAZARDS



To avoid the possibility of overturning, tractor operators should observe the following rules:

1. Make wide, gradual turns whenever possible. If it is necessary to turn sharply, do so slowly and carefully. Most tractors will overturn sideways if a sharp turn is made at excessive speed.

2. Slow down when operating on rough terrain or in areas where vision is limited.

3. Add front-end weights when operating on hilly terrain and proceed with caution. Use lower gears when going downhill.

4. Avoid running over washouts, deep ruts, holes, and other obstacles or debris that might bounce or tip the tractor.

Welds or alterations must never be made to the roll-over protection structure. Welds weaken the strength of the structure and could cause it to fail during an accident.

HOW TO AVOID BACKWARD TIP-OVER

Backward tip-over is another major hazard in tractor operation because power applied to the rear wheels tends to lift the front end of the tractor off the ground. This type of accident is most likely to occur when the operator is driving over soft ground, going up an incline, or trying to pull an improperly hitched load.

To avoid backward tip-over, follow the guidelines listed below:

1. When traveling over soft ground, the tractor's drive wheels may slip or become lodged, so that the tractor gets stuck. Do not gun the engine or place blocks in front of the rear wheels because this greatly increases the chance of tipping over backwards.

   When stuck, always try to back out. If backing out is not possible, get help to be pulled out.

2. Going up an incline, such as a slope or climbing out of a ditch, shifts the tractor's weight to the rear. If the clutch is engaged too quickly while power is applied, the tractor may tip over backwards.

   When climbing an incline, proceed cautiously and reduce speed when approaching the top. Add front-end weights to the tractor if necessary.

3. Pulling a load attached to the tractor's axle or to a drawbar that is raised too high can cause the tractor to tip over backwards.

   When pulling a load, hitch only to the drawbar. Keep the drawbar hitch set to the manufacturer's recommended height.

   Make sure that the hitch length is not too short. With the proper hitch length, the hitch lowers rapidly as the front wheels begin to rise. This action quickly reduces the force causing the backward tip-over.

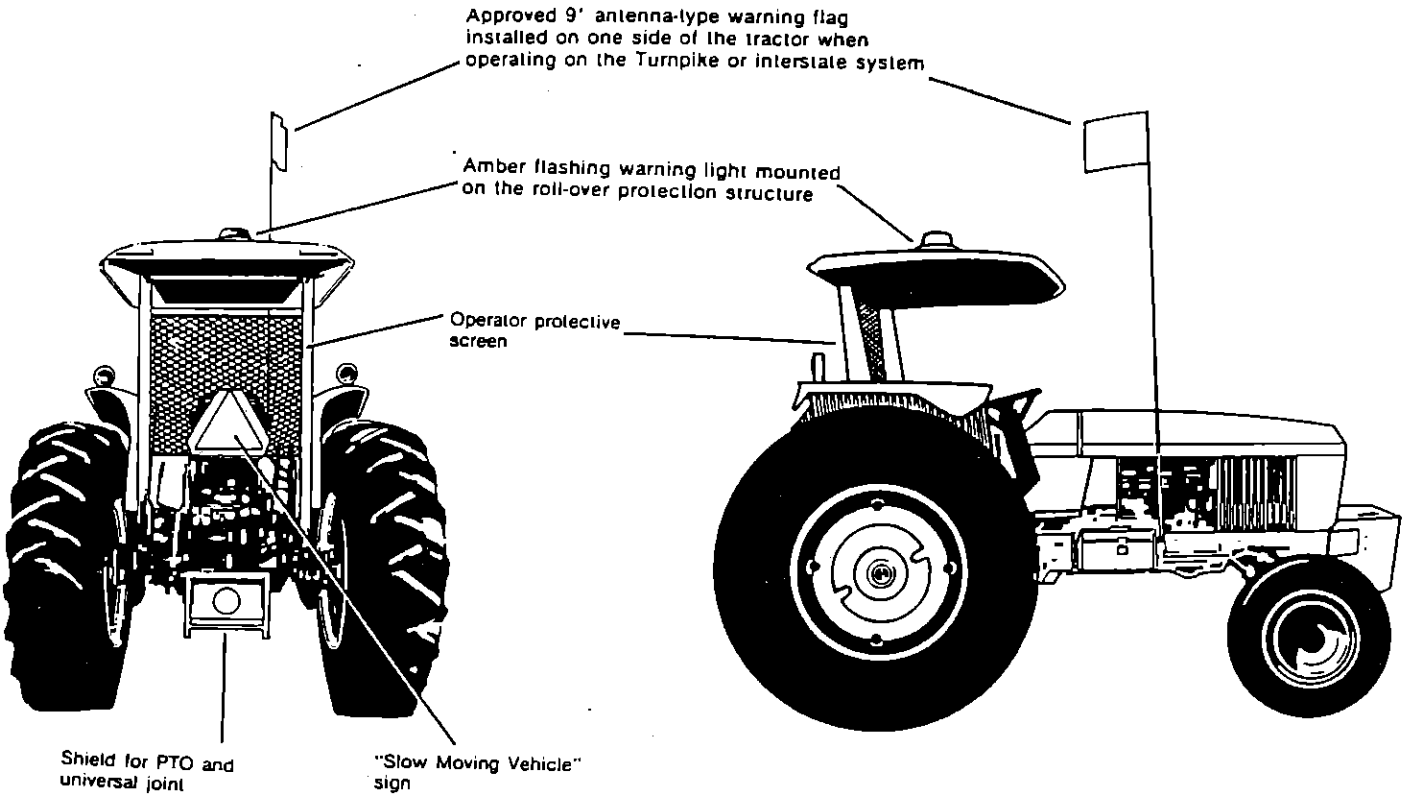
HOW TO SHUT DOWN THE EQUIPMENT

Always park the mowing equipment as far from the roadway as possible and in an area least susceptible to fire and vandalism. When possible, park the equipment on level ground. If it is necessary to park on a slope, position the equipment across the slope, set the parking brake, and lower the mower to the ground.

Correct shutdown of the equipment is important. Follow the general steps listed below and any specific procedures provided by the manufacturer's manual or departmental policy.

1. Place the controls in NEUTRAL.
2. Disengage the PTO clutch or transmission drive.
3. Set the parking brake.
4. Lower the mower to the ground.
5. Lower, latch and/or block wings (when applicable).
6. Idle the engine three to five minutes for gradual cooling.
7. Shut off the engine.
8. Wait for all movement to stop.
9. Move the hydraulic controls several times in all directions to eliminate any residual pressure.
10. Lock the ignition and remove the key.
11. Dismount carefully, using the handholds and step plates.

FIGURE 14
TRACTOR SAFETY DEVICES



MOWER SAFETY BY TYPE

ROTARY MOWERS

Flying debris is a constant hazard when rotary mowers are used. For this reason, they should be used only in rural or other unpopulated areas.

When operating rotary mowers, take the following precautions:

1. Replace missing chain debris guards. The danger from flying debris is greatly increased when chain debris guards are poorly spaced or missing. Do not operate the mower if the guards are missing (Figure 15).

2. Make sure that the mower height is set properly. The danger from flying debris is also increased when mowers are set too low.

3. Before starting a rotary mower, make sure that no one is on or near the equipment. Never operate the mower with bystanders in the work area.

4. Always disengage the PTO before crossing a roadway.

5. When parking the mower, always place it in its lowest position.

6. Before servicing the blades, make sure that the tractor is in neutral the PTO disengaged, the parking brake set, the mower secured, and the engine shut off.

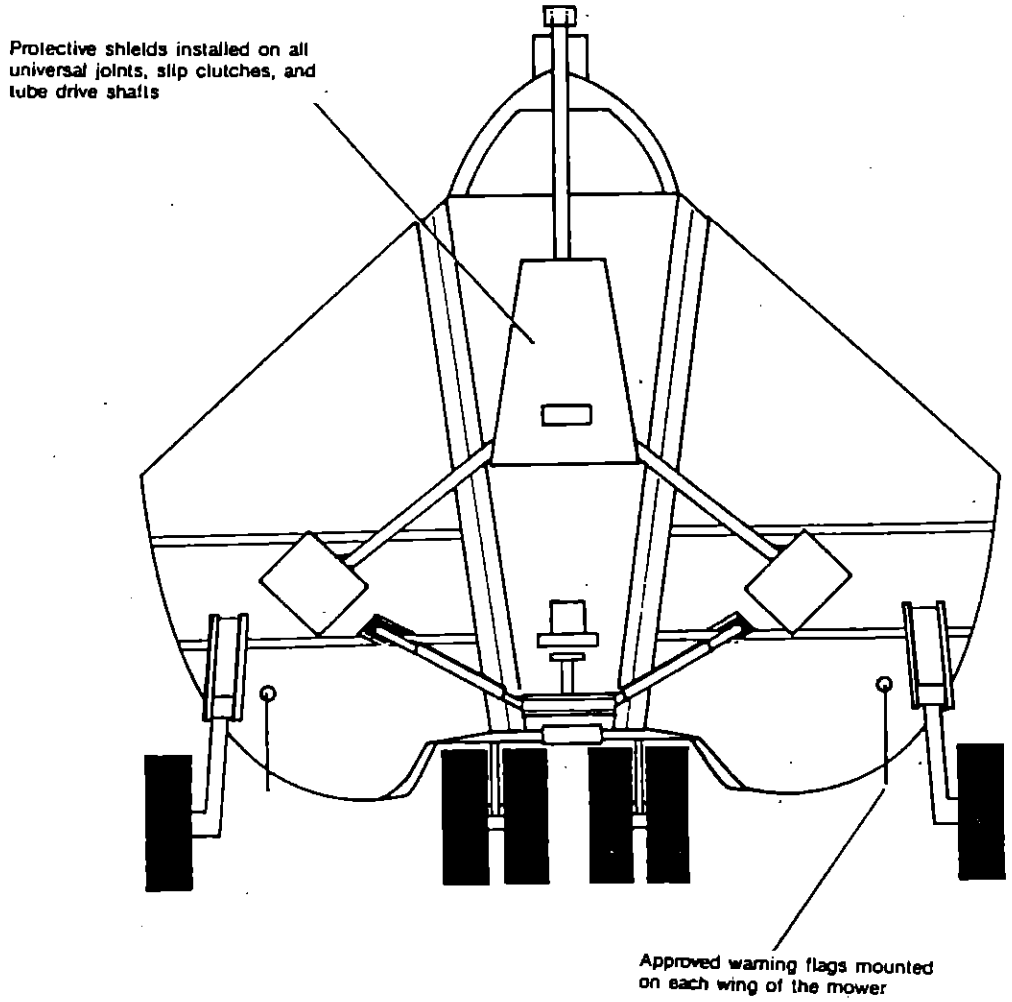
7. Because blades may be sharp or nicked or have metal burrs on the edges, always wear gloves when servicing them.

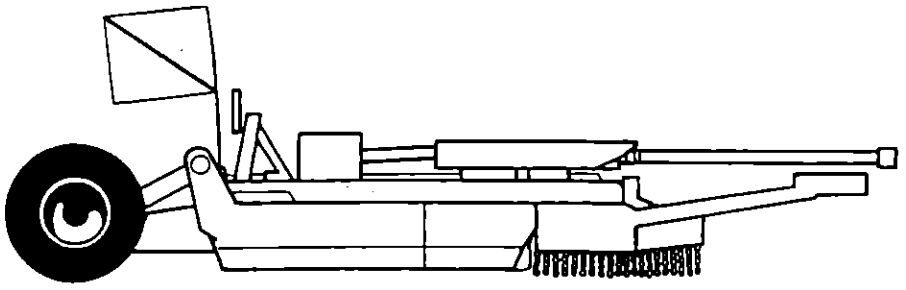
8. Examine the blades for cracks or failures before installing them.

9. After installation, double-check the blades to make sure that they are secure.

10. Replace all shaft, belt and pulley guards before operating a mower that has been serviced (Figure 15).

FIGURE 15
ROTARY MOWER SAFETY DEVICES





Rotary mowers must be shielded around their entire perimeter. Chain guards must be installed at the front and rear. Sides must be covered by floating or adjustable skids.

FLAIL MOWERS

Flying debris is not as great a hazard with flail mowers as it is with rotary mowers because flail mowers discharge the cuttings downwards. All precautions should be taken to avoid running over any objects that could cause debris to be thrown out by mower.

Safety procedures for flail mowers are generally the same as those for rotary mowers:

1. Check all shields and chain guards daily to make sure that they are in place before operating the equipment (Figure 16).

2. Make sure that there are no bystanders in the work area before starting the mower.

3. Disengage the PTO before crossing roadways.

4. Place the mower in its lowest position when parking it.

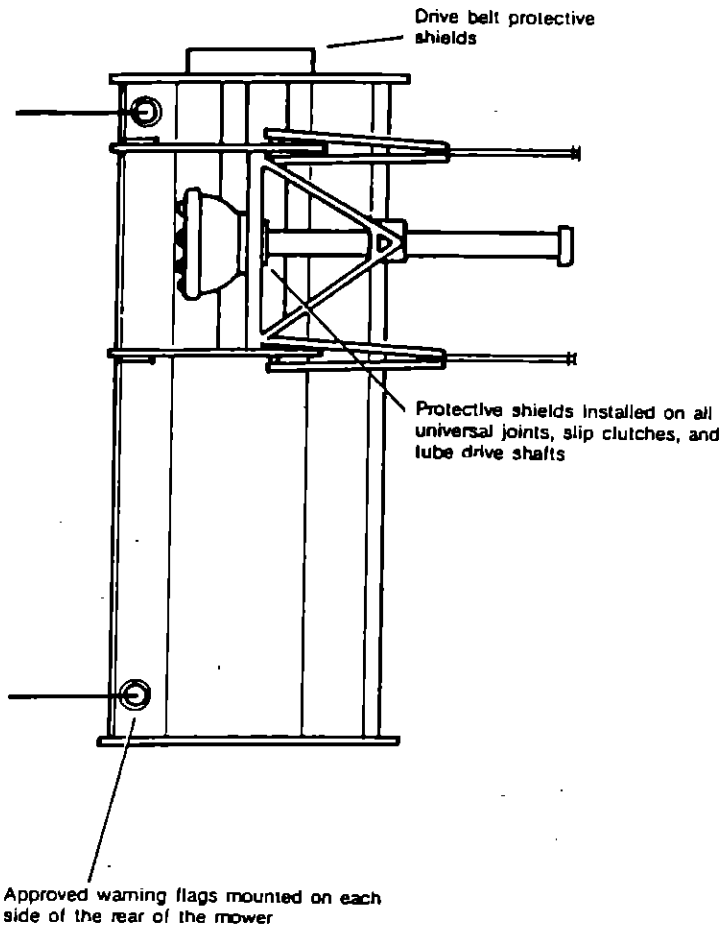
5. Before removing the mower blades for servicing, place the tractor in neutral, disengage the PTO, set the parking brake, secure the mower and shut off the engine.

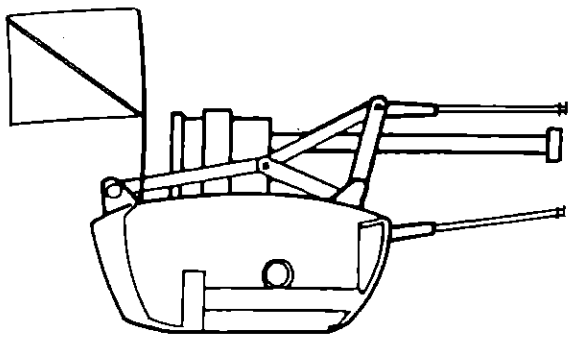
6. Examine the blades carefully for any defects before installing them.

7. After installation, double-check the blades to make sure that they are secure.

8. Replace all shaft, belt and pulley guards before operating any mower after it has been serviced (Figure 16).

FIGURE 16
FLAIL MOWER SAFETY DEVICES





SPECIALIZED ROTARY SLOPE MOWERS

Mowing on slopes presents one of the most dangerous situations in tractor-mowing operations because of the increased possibility of overturning the equipment. For this reason, slopes with a grade steeper than 3 to 1 must be mowed with specially designed slope-mowing equipment only. In addition, by mowing these areas with slope-mowing equipment, the operator will minimize the possibility of the slope eroding due to rutting or scarification of the turf.

Rotary slope mowers are used for a variety of purposes, such as hedging, trimming brush, and mowing slopes. The danger from flying debris is greater with slope mowers than with other rotary mowers because of the manner in which they are used.

Slope-mower operators must comply with the same safety rules as towed-mower operators:

1. Check all safety shields daily to ensure that they are in working condition. Replace missing chain debris guards (Figure 17).

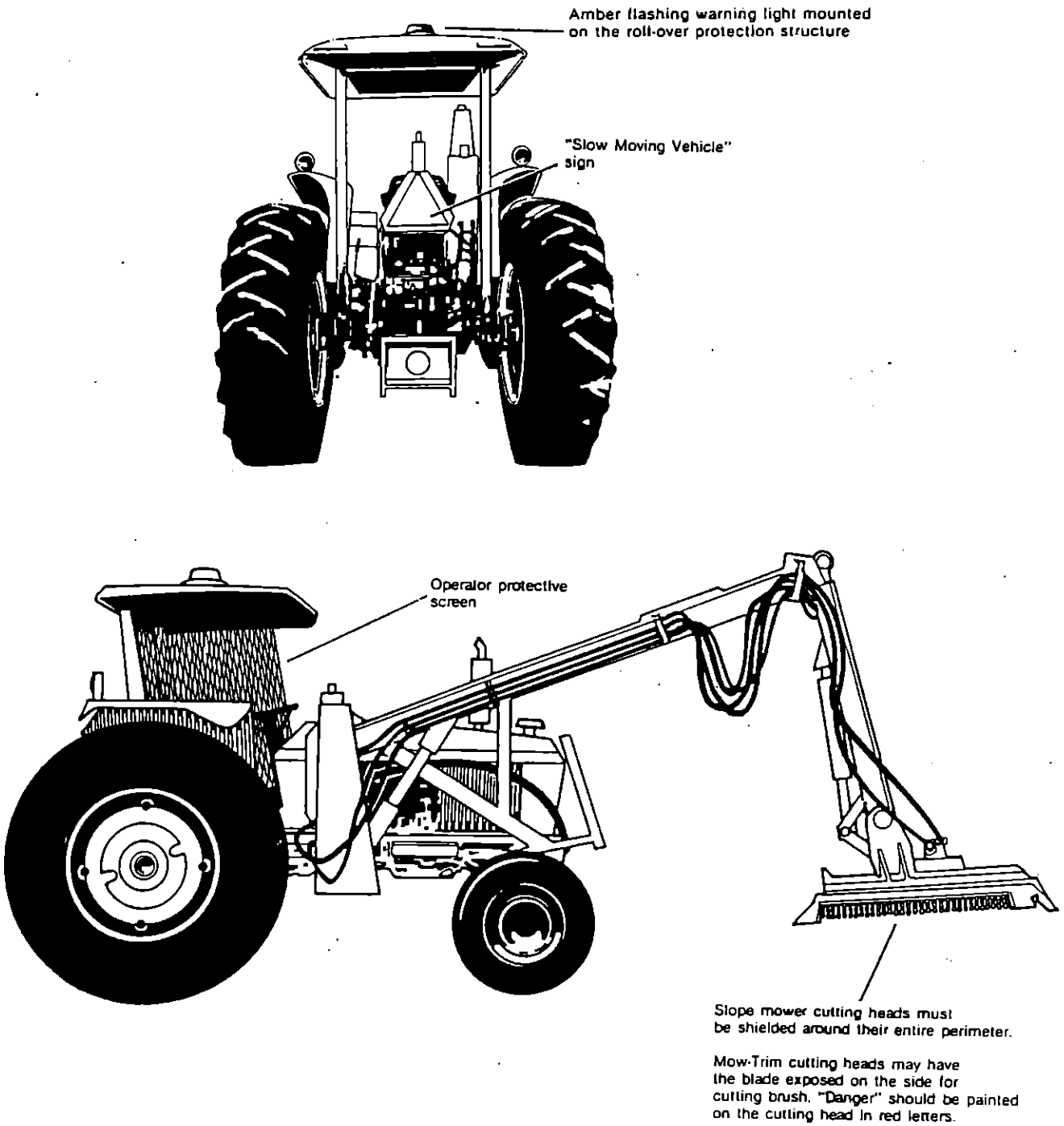
2. When using a boom-type mower, do not engage the blade prior to lifting the mowing head off the ground.

3. Make sure that other personnel are well clear of the mower before putting it into operation.

4. When parking the mower, always place it in its lowest position.

5. As with other mowing equipment, follow all safety procedures when servicing the mower blades.

FIGURE 17
SLOPE MOWER SAFETY DEVICES



SMALL MACHINE MOWERS

Small machine mowers are used in landscaped areas and in similar locations that require mowing, but that are inaccessible to conventional tractor units.

When operating small mowers, take the following precautions:

1. Inspect the mowing area to locate hazardous objects. Clear away any debris that may be thrown out by the mower.

2. Avoid mowing on wet slopes.

3. Always keep hands and feet away from rotating blades.

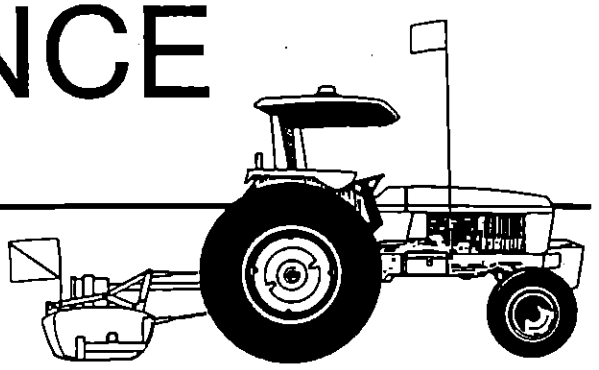
4. Shut off the engine before leaving the mower unattended and when refueling.

5. To avoid spills when refueling the mower, use only the proper refill devices. If a spill occurs, make sure that all spilled fuel has been cleaned up before restarting the engine.

6. Disconnect the ignition wires when servicing the mower or replacing the blades.

7. Make sure that all belt and pulley guards are in place before operating the mower after it has been serviced.

SECTION 3
EQUIPMENT MAINTENANCE



OPERATION AND MAINTENANCE OF MOWING EQUIPMENT

Always exercise care when operating or maintaining DOT tractors and other mowing equipment. Follow the instructions outlined in the manufacturer's manual and any specific DOT requirements for proper equipment operation and servicing.

For any questions related to equipment maintenance not covered by the available manuals, or for maintenance beyond the expected responsibility of the operator, refer to the shop supervisor.

In general, equipment life can be extended by using high-grade lubricants, changed at the correct intervals. Filters should also be inspected and changed frequently.

The following pages provide operator checklists for servicing equipment commonly used in mowing operations. Observing these guidelines can extend the life of the equipment and reduce overall maintenance costs.

MAINTENANCE CHECKLISTS

AUTOMOTIVE AND TRUCKING EQUIPMENT THROUGH ONE TON

Daily

1. Fuel, oil, and water (check fluid levels, leaks).
2. Tires (check condition).
3. Damage (check after an accident; check for missing components, rust).
4. Instruments and controls (check gauges, warning lights, knobs, wipers, washers, and switches).
5. Lights and horn (check operation, condition).
6. Steering (check for free play).
7. Brakes (check pedal free travel, stopping action).
8. Clutch (check pedal free travel).
9. Interior (check cleanliness).

Weekly

10. Tires (check air pressure, visual check).

11. Belts (check tension, condition).

12. Battery (check fluid level, corrosion).

13. Exterior of vehicle (wash/polish as required).

MOWING TRACTORS

Daily

1. Fuel, oil, water, and hydraulic fluids (check fluid levels, leaks).

2. Belts (check tension, condition).

3. Tires, wheels, and lugs (check condition, tightness).

4. Damage (check after accident, for missing components).

5. Hitch (check for bent or broken frame, arms; damaged hoses and lines).

6. All pivot points and pins (lubricate as necessary).

7. Instruments and controls (check gauges, knobs, levers, pedals and switches)

8. Lights and warning devices (check operation, condition).

9. Brakes (check pedal free travel, stopping action).

10. Clutch (check pedal free travel).

11. Steering (check for looseness).

Weekly

12. Tires (check air pressure).

13. Filters, sediment bowls (drain water, sediment)

14. Air cleaner (clean dirt and trash).

15. Battery (check fluid level, corrosion).

16. Cleanliness of equipment (wash or steam clean as required).

17. Lubrication (per lubrication chart).

MOWERS

Daily

1. Gear boxes (check oil level; clean vents and breathers).
2. Drive belts (check tension, condition).
3. Drive shafts, slip joints and U-joints (check condition).
4. Hydraulic cylinders (check leaks, ram condition, mounts, hoses, and lines).
5. Cutting edges (check condition of blades, bed knife, cutter blade knife, and flail knife).
6. Pulleys and idlers (check condition, mountings).
7. Slip clutches (check condition, operation).
8. Shielding (check condition, mounting).
9. Wings (check hinge condition).
10. Height crank (check condition, operation).
11. Wheels and tires (check condition, bearing adjustment).
12. Reels, rotors and cutter bars (check condition, operation).
13. All fittings, slip joints and hinges (lubricate).

TRAILERS

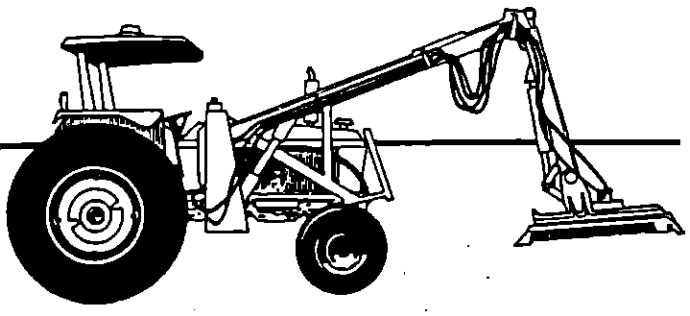
Daily

1. Landing gear (check pads or wheels, operation).
2. Lunette and hitches (check for cracks, loose mountings).
3. King pin (check for cracks in mounting).
4. Wheels, tires and lugs (check condition, tightness).
5. Lights and reflectors (check operation, condition).
6. Brakes (check stopping action; drain air tanks).

Weekly

7. Tires (check air pressure).

APPENDIX
CONVERSION CHARTS



MILES TO ACRES CONVERSION CHART

FOUR FEET WIDE														
MILES	.25	.50	1	2	3	4	5	6	7	8	9	10	11	12
ACRES	.12	.24	.48	.96	1.5	1.9	2.4	2.9	3.4	3.9	4.4	4.8	5.3	5.8
MILES	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ACRES	6.3	6.8	7.3	7.8	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.6	12.1	12.6
MILES	27	28	29	30	31	32	33	34	35	36	37	38	–	–
ACRES	13.1	13.6	14.1	14.5	15.0	15.5	16.0	16.5	17.0	17.5	17.9	18.4	–	–

SIX FEET WIDE														
MILES	.25	.50	1	2	3	4	5	6	7	8	9	10	11	12
ACRES	.18	.36	.72	1.5	2.2	2.9	3.0	4.4	5.1	5.8	6.5	7.3	8.0	8.7
MILES	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ACRES	9.5	10.2	10.9	11.6	12.4	13.1	13.8	14.5	15.3	16.0	16.7	17.5	18.2	18.9
MILES	27	28	29	30	31	32	33	34	35	36	37	38	–	–
ACRES	19.6	20.4	21.1	21.8	22.5	23.3	24.0	24.7	25.5	26.2	26.9	27.6	–	–

EIGHT FEET WIDE														
MILES	.25	.50	1	2	3	4	5	6	7	8	9	10	11	12
ACRES	.24	.48	.96	1.9	2.9	3.9	4.8	5.8	6.8	7.8	8.7	9.7	10.7	11.6
MILES	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ACRES	12.6	13.6	14.5	15.5	16.5	17.5	13.8	19.4	20.4	21.3	22.3	23.3	24.2	25.2
MILES	27	28	29	30	31	32	33	34	35	36	37	38	–	–
ACRES	26.2	27.2	28.1	29.1	30.1	31.0	32.0	33.0	34.0	34.9	35.9	36.8	–	–

TEN FEET WIDE														
MILES	.25	.50	1	2	3	4	5	6	7	8	9	10	11	12
ACRES	.30	.60	1.2	2.4	3.6	4.8	6.1	7.3	8.5	9.7	10.9	12.1	13.3	14.5
MILES	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ACRES	15.8	17.0	18.2	19.4	20.6	21.8	23.0	24.2	25.5	26.7	27.9	29.1	30.3	31.5
MILES	27	28	29	30	31	32	33	34	35	36	37	38	–	–
ACRES	32.7	33.9	35.2	36.4	37.6	38.8	40.0	41.2	42.4	43.6	44.8	46.11	–	–

TWELVE FEET WIDE														
MILES	.25	.50	1	2	3	4	5	6	7	8	9	10	11	12
ACRES	.36	.73	1.5	2.9	4.4	5.8	7.3	8.7	10.2	11.6	13.1	14.5	16.0	17.5
MILES	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ACRES	18.9	20.4	21.8	23.3	24.7	26.2	27.6	29.1	30.5	32.0	33.5	34.9	36.4	37.8
MILES	27	28	29	30	31	32	33	34	35	36	37	38	–	–
ACRES	39.3	40.7	42.2	43.6	45.1	46.5	48.0	49.5	50.9	52.4	53.8	55.3	–	–

SQUARE FEET TO ACRES CONVERSION CHART

SQ. FT.	50	100	200	300	400	500	1,000	2,000	3,000	4,000	5,000	6,000
ACRES	.001	.002	.005	.007	.009	.012	.023	.046	.069	.092	.115	.138
SQ. FT.	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	16,000	17,000	18,000
ACRES	.161	.184	.207	.230	.253	.276	.298	.321	.344	.387	.390	.413
SQ. FT.	19,000	20,000	21,000	22,000	23,000	24,000	25,000	26,000	27,000	28,000	29,000	30,000
ACRES	.436	.459	.482	.505	.528	.551	.574	.597	.620	.643	.666	.689
SQ. FT.	31,000	32,000	33,000	34,000	35,000	36,000	37,000	38,000	39,000	40,000	41,000	42,000
ACRES	.712	.735	.758	.781	.804	.826	.849	.872	.895	.918	.941	.964
SQ. FT.	43,000	44,000	45,000	46,000	47,000	48,000	49,000	50,000	51,000	52,000	53,000	54,000
ACRES	.987	1.01	1.03	1.06	1.08	1.10	1.12	1.15	1.17	1.19	1.22	1.24
SQ. FT.	55,000	56,000	57,000	58,000	59,000	60,000	61,000	62,000	63,000	64,000	65,000	66,000
ACRES	1.26	1.29	1.31	1.33	1.35	1.38	1.40	1.42	1.45	1.47	1.49	1.52
SQ. FT.	67,000	68,000	69,000	70,000	71,000	72,000	73,000	74,000	75,000	76,000	77,000	78,000
ACRES	1.54	1.56	1.58	1.61	1.63	1.65	1.68	1.70	1.72	1.74	1.77	1.79
SQ. FT.	79,000	80,000	81,000	82,000	83,000	84,000	85,000	86,000	87,000	88,000	89,000	90,000
ACRES	1.81	1.83	1.86	1.88	1.91	1.93	1.95	1.97	2.00	2.02	2.04	2.07
SQ. FT.	91,000	92,000	93,000	94,000	95,000	96,000	97,000	98,000	99,000	100,000	101,000	102,000
ACRES	2.09	2.11	2.14	2.16	2.18	2.20	2.23	2.25	2.27	2.30	2.32	2.34
SQ. FT.	103,000	104,000	105,000	106,000	107,000	108,000	109,000	110,000	111,000	112,000	113,000	114,000
ACRES	2.36	2.39	2.41	2.43	2.46	2.48	2.50	2.53	2.55	2.57	2.59	2.62
SQ. FT.	115,000	116,000	117,000	118,000	119,000	120,000	121,000	122,000	123,000	124,000	125,000	126,000
ACRES	2.64	2.66	2.69	2.71	2.73	2.75	2.78	2.80	2.82	2.85	2.87	2.89
SQ. FT.	127,000	128,000	129,000	130,000	131,000	132,000	133,000	134,000	135,000	136,000	137,000	138,000
ACRES	2.92	2.94	2.96	2.98	3.01	3.03	3.05	3.08	3.10	3.12	3.15	3.17
SQ. FT.	139,000	140,000	141,000	142,000	143,000	144,000	145,000	146,000	147,000	148,000	149,000	150,000
ACRES	3.19	3.21	3.24	3.26	3.28	3.31	3.33	3.35	3.37	3.40	3.42	3.44

LARGE MACHINE MOWING CONVERSION CHART

EIGHTY INCH CUT															
MILES	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	2	3	4	5	6
ACRES	.07	.14	.21	.27	.34	.41	.48	.55	.62	.69	1.4	2.1	2.7	3.4	4.1
MILES	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ACRES	4.8	5.5	6.2	6.9	7.6	8.2	8.9	9.6	10.3	11.0	11.7	12.4	13.1	13.7	14.4
MILES	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ACRES	15.1	15.8	16.5	17.2	17.9	18.6	19.2	19.9	20.6	21.3	22.0	22.7	23.4	24.1	24.7
MILES	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
ACRES	25.4	26.1	26.8	27.5	28.2	28.9	29.6	30.2	30.9	31.6	32.3	33.0	33.7	34.3	35.1
TEN FOOT CUT															
MILES	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	2	3	4	5	6
ACRES	.11	.22	.33	.44	.55	.65	.76	.87	.98	1.1	2.2	3.3	4.4	5.5	6.5
MILES	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ACRES	7.6	8.7	9.8	10.9	12.0	13.1	14.2	15.3	16.4	17.5	18.5	19.6	20.7	21.8	22.9
MILES	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ACRES	24.0	25.1	26.2	27.3	28.4	29.5	30.5	31.6	32.7	33.8	34.9	36.0	37.1	38.2	39.3
MILES	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
ACRES	40.4	41.5	42.5	43.6	44.7	45.8	46.9	48.0	49.1	50.2	51.3	52.4	53.5	54.5	55.6
FIFTEEN FOOT CUT															
MILES	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	2	3	4	5	6
ACRES	.16	.34	.51	.68	.85	1.0	1.2	1.4	1.5	1.7	3.4	5.1	6.8	8.5	10.2
MILES	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ACRES	11.9	13.6	15.3	17.0	18.7	20.4	22.1	23.8	25.5	27.2	28.8	30.5	32.2	33.9	35.6
MILES	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ACRES	37.3	39.0	40.7	42.4	44.1	45.8	47.5	49.2	50.9	52.6	54.3	56.0	57.7	59.4	61.1
MILES	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
ACRES	62.8	64.5	66.2	67.9	69.6	71.3	73.0	74.7	76.4	78.1	79.8	81.5	83.2	84.8	86.5