

41-10 LANDSCAPING AND EROSION CONTROL

41-10.01 Landscape Plantings General Information

Highway landscape plantings are the living component of the highway design and, through the use of native and non-native materials, provide the means to fully integrate the highway with the surrounding environment. Landscape plantings will serve as functional elements (e.g., erosion control, screening, sound abatement, snow control) in the highway environment.

41-10.01(a) Plant Selection

The plants selected generally should be characteristic, native, or indigenous to the specific locality. Consider the following guidelines:

1. Native Plants. Native plants are effective in perpetuating a self-sustaining roadside landscape. They are adapted to regional environmental conditions and can survive extreme temperatures, wind, and rainfall without additional irrigation or fertilizer.
2. Non-Native Plants. Non-native plants may be selected to achieve special effects (e.g., color, texture, growth habit) for emphasis. For example, non-native plants could be used in urban areas to accentuate an artificial manmade environment. Another example would be to use non-native material to screen the unsightly view of a junkyard.
3. Plant Maintenance. Maintenance is a major consideration in landscape plant selection. Strive to choose those plants that require a minimum of maintenance.

41-10.01(b) Prohibited Plants

The following plants are banned from use on highway projects in Illinois:

1. Ash Tree (*Fraxinus spp.*). Due to federal Emerald Ash Borer quarantine established by the United States Department of Agriculture, highway plans should not include any species of ash tree (*Fraxinus spp.*).

41-10.01(c) Hardiness

Select plants for a particular section of roadway based on their climatic and soil requirements. In Illinois, climatic conditions and soil types are favorable to both southern and northern plant groups. Conduct a study of soils, climate, and existing plant growth in the area when planning each planting project. Plant hardiness zones will be as stated in the *IDOT Standard Specifications*. Use the USDA Plant Hardiness Zone Map, latest edition, when selecting plant material for any project.

41-10.01(d) Size

The size at which a plant matures will determine the number of plants that will be required in a group planting. Consider the following guidelines:

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1. Younger Plants. Younger plants generally establish themselves faster than older plants. As a general practice, specify the smallest size of plants that is consistent with the requirements of the environment.
2. "Balled and Burlapped" Planting. Specify all deciduous trees larger than 1.5 in (40 mm) in diameter or 5 ft (1.5 m) in height as "balled and burlapped" at the time of planting. Also, specify this method of planting for plants that, according to good horticultural practice, require a ball of earth. It is acceptable to specify container-grown material in lieu of "balled or burlapped" plants as an alternative. The relationship of the plant size to the soil ball size or the container size will be as stated in the *IDOT Standard Specifications*.
3. Perennial Plants. Perennial plants can be planted as bulbs, tubers, or container plants. Bulbs and tubers should be of a size large enough to produce a healthy plant and to flower the first year. Container plants should be well rooted in the container. A quart sized container is usually the smallest size that should be planted on highway projects.
4. Prairie Forbs and Grasses. Prairie forbs and prairie grasses can be planted as root plugs or as seed. The minimum size plug should be 1.25 in (30 mm) in diameter by 4.25 in (110 mm) deep.

41-10.01(e) Considerations for Plantings

Consider the following:

1. Fertilizing and Mulching. For survivability and lack of future maintenance, give consideration to fertilizing and mulching all plantings.
2. Roadside Safety. Do not locate woody plants with diameters at maturity greater than 4 in (100 mm) in the clear zone, as defined for new construction. These plants should not be planted on the front slope or in ditches even if outside the clear zone.
3. Existing Soil. Where practical, use the existing soil in the planting operation. In cases where highway construction has made the condition of the existing soil unsuitable, consider the use of soil amendments or new topsoil. When soil conditions require topsoil placement to ensure adequate growth, specify 8 in (200 mm) where extensive plantings of woody or perennial plants are proposed.
4. Impacts of Salt. Due to the adverse effect of salt upon plants, give special consideration to the type and location of plants and their proximity to the roadway in those areas of the State where there is extensive snow and ice control.
5. Agricultural Areas. Do not plant large trees or evergreens on the right-of-way where there is adjacent agricultural land use due to their shading characteristics and their impact on farm machinery mobility.
6. Signage. Do not place plants in a location that will block the view of legally placed advertising signs.

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7. Screening. Landscape plantings are used to screen adjacent properties that have undesirable land usage; to reduce highway noise, dust, etc., reaching adjacent properties; and/or to screen the highway from a residential area or park.
8. Sight Distance. When planting in urban areas, consider potential sight distance problems and the problems of obstructing traffic signals, signs, lighting, etc.
9. Snow Drifting. Do not plant dense continuous hedges within 40 ft (12 m) of the edge of pavement where they may cause snow to drift onto the pavement.

41-10.02 Classification

Consider the following groups for planting:

1. Shade Trees. A single-stem, high-headed, deciduous plant that generally grows to a height in excess of 30 ft (9 m).
2. Intermediate Trees. Generally, a multi-stem, deciduous, low, round-headed plant that matures at 30 ft (9 m) or less in height.
3. Shrubs. Low-growing multiple stemmed plants that are either deciduous or evergreen.
4. Evergreen Trees. Tall-growing evergreen plants.
5. Ground Cover and Vines. A colony forming plant less than 1.5 ft (0.5 m) high that has the ability to spread and root itself.
6. Seedlings. Small shade trees, intermediate trees, shrubs, and evergreens that are usually less than 2 years old.

41-10.03 Turf Grasses

Non-native grass, grains, legumes, and native grasses form the backbone of highway vegetation cover. The large number of species and varieties of vegetative cover may be used for many applications. Consider the following guidelines:

1. Temporary Erosion Control. Use temporary vegetative cover for temporary erosion control at locations where the duration of the turf cover is short term and is expected to prevent loss of soil.
2. Permanent Erosion Control. Permanent vegetative cover is used for permanent erosion control in most highway applications. To achieve a cost-effective permanent cover, select a type of turf grass appropriate to the landscape conditions and planned maintenance.

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3. Weed Control. Good turf establishment will minimize weed growth, thereby reducing pesticide requirements.
4. Groomed Appearance. Provide a vegetative cover that can be mowed into a park-like appearance. In urban settings, use a lawn-type mixture to blend in with the urban landscape.
5. Wildlife. Provide a vegetative cover that will enhance and encourage wildlife.
6. Sodding. Seed mixtures are most commonly used; however, some instances may call for the use of sodding to provide for the rapid establishment of turf.
7. Applications. The turf grasses specified in the *Standard Specifications* are used for specific applications as follows:
 - a. Lawn Mixtures. Lawn mixtures are used in urban settings to create a park-like appearance and require a relatively high degree of maintenance.
 - b. Salt Tolerant Mixtures. Salt tolerant mixtures are used along road segments where de-icing salts are heavily used.
 - c. Roadside Mixtures. Roadside mixtures are used in more rural settings where a tougher, lower maintenance turf is desired.
 - d. Slope Mixtures. Slope mixtures are used on slopes usually 1V:3H or greater.
 - e. Native Grass and Forb (Wildflower) Mixtures. Native grass and forb (wildflower) mixtures can be planted to create specific turf conditions; see Section 59-7.05 of the *BDE Manual*.
 - f. Conservation Mixtures. Conservation mixtures are used for wildlife nesting cover. These are usually planted at the request of resource agencies.
 - g. Temporary Erosion Control Mixtures. Temporary erosion control mixtures are seeded to prevent soil from being displaced on a construction project that will be exposing soil. The mixture is spread over all exposed earth to provide a quick cover of the turf that will interrupt the force of rain on the soil and prevent soil from moving. The temporary erosion seed mixture may need to be spread on construction sites numerous times during construction activities. The temporary erosion control mixture also can be combined with a permanent erosion control mixture to provide a nurse crop while the permanent seed is establishing.

41-10.03(a) Seeding

The seeding operation that is conducted in the field occurs in a series of steps. The most important aspects of seeding are seed mixture selection, site preparation, and placement of mulch. Select the class of seed mixtures that are appropriate to the specific roadside environment. Consider the following:

1. Class 1 (Lawn Mixture). Use Class 1 seeding in an urban setting.

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- a. Class 1A (Salt Tolerant Lawn Mixture). Use Class 1A seeding for:
 - urban projects not covered in Class 1B, and/or
 - all projects where the entire right-of-way is not torn up and Bluegrass is the primary existing cover.
- b. Class 1B (Low Maintenance Lawn Mixture). Use Class 1B in the southern half of the State for urban projects.
2. Class 2 (Roadside Mixture). Class 2 seeding is a hardy roadside turf and should be used where reduced mowing will occur. Use Class 2A seeding (Salt Tolerant Roadside Mixture) for:
 - all rural reconstruction projects where the entire right-of-way is to be seeded or any situation where grasses other than Bluegrass are the primary existing cover, and/or
 - areas adjacent to roads subject to salt spray and/or disposition.
3. Class 3 (Slope Mixture). Use Class 3 seeding in rural areas for slopes 1V:3H or steeper.
4. Class 4, 4A, 4B, 5, 5A, 5B (Native Grass and Forbs Mixture). See Section 59-7.05 of the *BDE Manual* for additional discussion.
5. Class 6 and 6A (Conservation Mixture). Class 6 seeding is used for wildlife cover in the east central part of Illinois. Class 6A seeding is a Class 6 which includes salt tolerant grass. Use caution when considering this class with other seeding classes.
6. Class 7 (Temporary Turf Cover). Class 7 seeding is used as a temporary cover for areas to be regraded more than a year from the time of seeding. Use Class 7 for winter shut down. Provide temporary mulch or erosion control blanket with Class 7 seeding.

Use the Temporary Erosion Control Seeding System weekly for shorter-term temporary cover.

41-10.03(b) Sodding

Appropriate uses of sodding are as follows:

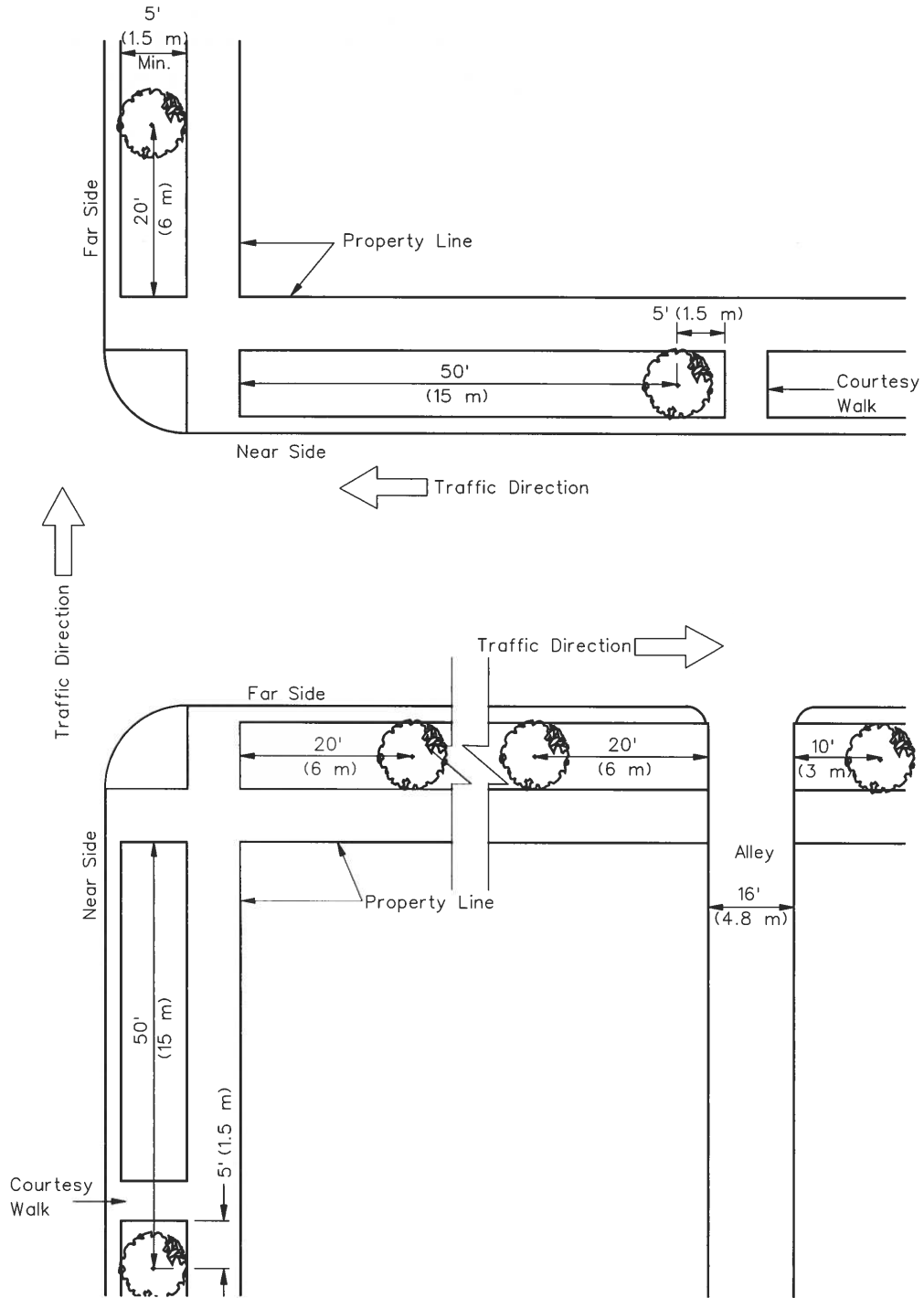
- urban areas with residential or commercial development (e.g., in front of homes, businesses, parks, adjacent to paved shoulders or edges of paved ditches);
- in front of maintained parks and cemeteries;
- erosion control in ditch bottoms and around culverts; and
- special areas (e.g., channelized medians, around inlets in grassed areas). Small areas which would normally be seeded should be sodded where a large majority of the remainder of the project (90% +/-) is to be sodded.

Specify salt tolerant sod in those areas where large quantities of deicing salt are used by maintenance forces (e.g., highly urbanized areas).

41-10.04 Planting in Urban Areas

Use the following criteria for planting in urban areas:

1. Minimum Distance from Intersections, Alleys, and Driveways. The following criteria relates to distances as measured from the property line and along the property lines:
 - a. Intersections. Do not locate trees within 50 ft (15 m) on the near side and 20 ft (6 m) on the far side of the intersection; see Figure 41-10A. Trees on medians should be located a minimum of 50 ft (15 m) from intersections.
 - b. Alleys. Do not locate trees within 20 ft (6 m) on the near side and 10 ft (3 m) on the far side.
 - c. Commercial Driveways. Do not locate trees within 20 ft (6 m) on the near side and 10 ft (3 m) on the far side.
 - d. Residential Driveways. Do not locate trees within 10 ft (3 m).



MINIMUM PLANTING DISTANCES FROM INTERSECTIONS

Figure 41-10A