

TITLE: 13

CHAPTER 2: Landscaping

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13-2-1: Purpose

This Landscaping Code is adopted for the following purposes:

- A. Promote and maintain the high quality visual appearance and environmental benefits throughout the year through landscaping and preservation of native vegetation.
- B. Encourage and promote the implementation of best management practices to minimize erosion and stormwater runoff in a manner which provides functionality and visual appeal.
- C. Enhance the visual and environmental character of the Village's built environment through the utilization of conscientious landscape design.

13-2-2: General Requirements

- A. Installation: Installation methods of landscape plantings shall conform to the specifications of the approved landscape plan and industry standard installation practices appropriate for each type of planting.
- B. Maintenance: To ensure the health and vitality of landscape plantings, maintenance of insect and disease control, mulching, pruning, fertilization, weed control, and watering consistent with good forestry practices shall be performed, as needed, by the property owner.
- C. Inspections: Landscape plantings required by this Chapter will be inspected periodically by the Village to ensure compliance. For any plantings which require replacement, the property owner shall be notified of the requirement for replacement to be completed within sixty (60) days from receipt of notice or during the next available planting season, as determined by the Village. If the property owner fails to replace required plantings within the established time frame, a fine shall be rendered in accordance with the [Comprehensive Fine Schedule, Chapter 17, of Title 1 of this Code](#).

13-2-3: Replacement

- A. Region Wide Infestation: Landscape planting replacements due to region wide infestation or disease shall be replaced with an appropriate species in recognition of shape, form, and seasonal interest of the infested or diseased planting to which it's replacing, subject to the requirements of [Chapter 1 of this Title](#).
- B. Non-Single-Family Residential Property: Replacement of existing landscape plantings for all non-single-family residentially zoned lots shall be subject to the following:
1. Landscape Replacement Plan: Prior to the removal of any existing landscape plantings, authorization from the Village must be obtained, which shall be subject to the requirements of [Chapter 1 of this Title](#). A Landscape Replacement Plan shall be submitted identifying the following:
 - a. Location, species, existing condition, and size for each planting to be removed.
 - b. Location, species, quantity, and size for each replacement planting to be installed.
 2. Replacement Criteria: Landscaping replacements shall be subject to the following:
 - a. Replacement plantings shall be not less than the size specified on the approved landscape plan. If no approved landscape plan is available, single stem trees shall be not less than 2.5" DBH, clump and evergreen varieties shall be not less than 8 feet in height.
 - b. Evergreen trees shall be replaced with evergreen trees and deciduous trees shall be replaced with deciduous trees.
 - c. The replacement plan may be implemented over a period of time not to exceed three (3) years.
 - d. Any tree identified on an approved landscaping plan which existed on the property prior to development and has been preserved, as determined by the Village, may be removed to observe good forestry practices subject to Section 13-1-3(D) and 13-1-3(K) of this Title, except any tree which is dead or irreversibly declining due to natural circumstances does not require replacement.
 - e. If the plantings to be removed are considered to be a hazard to life and/or property, the specific plantings shall be flagged and verbal authorization by the Village Arborist for removal may be granted, which shall be conditioned upon the submittal of a Tree Removal Permit, if applicable, and Landscape Replacement Plan identified in 13-2-3(B)(1) submitted within thirty (30) days of the authorization for removal.

13-2-4: Landscape Screening

The intent of landscaping as screening is to provide a visual barrier to certain elements of a site which may be considered unattractive or monotonous including the following:

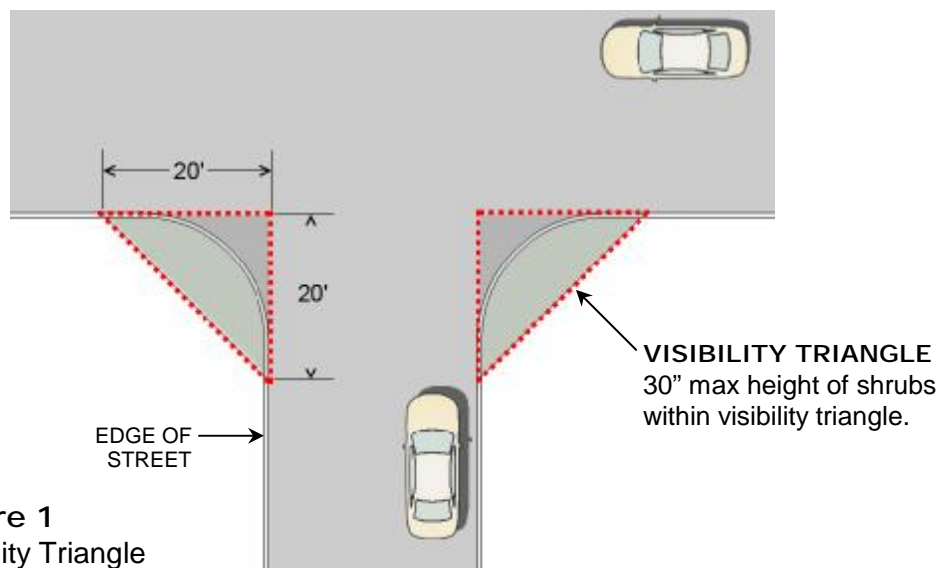
- A. Building Walls: Plantings of deciduous and evergreen species shall be planted to interrupt the view of large expanses of building walls which do not contain a primary architectural

element. A natural planting arrangement should be used whenever possible.

B. Ground-Mounted Equipment: Screening of ground-mounted equipment and utilities shall be screened in accordance with [Section 6-15-3\(B\) of Title 6 of this Code](#).

C. Parking Lots:

1. Landscaping installed within the visibility triangle (see Figure 1) shall maintain proper sight lines and not obstruct light fixtures. Shrubs shall not exceed a maximum mature height of thirty inches (30") above existing grade.



2. Accommodations shall be made for the storage of snow from all parking and loading facilities. Snow storage within landscaped areas should be avoided to prevent damage to plant material.
3. Hardy, salt tolerant plantings within parking lot facilities and parking lot islands should be used, see [Salt Tolerant Landscape Plants in Appendix 1](#).
4. Residential Zoning Districts: Parking lots containing more than three (3) parking spaces shall be screened for each side visible from the public way by densely planted shrubs or small trees not less than four (4) feet in height covering at least (75%) of the linear length of the lot. Plantings shall incorporate diverse mixture of plant types, including evergreen species. No plantings shall be permitted at any street intersection which obstructs the visibility triangle.
5. Non-Residential Zoning Districts:
 - a. A minimum of 50% of linear length of parking facilities visible from the public way shall be screened by a diversity of shrubs and trees as follows:

Type	Min. Number of Species	Size at Planting
Shrubs	1 deciduous + 1 evergreen	3 ft. in height
Trees	2	2.5" DBH

- b. A minimum eight (8) foot landscape planting area shall be required between all building façades and any parking area or circulation drive (See Figure 2), which shall include a mixture of trees, shrubs and grasses (native and non-native) at a minimum of three (3) species. The screening requirement identified in 13-2-4(A) above shall be applied towards the minimum planting species requirement.

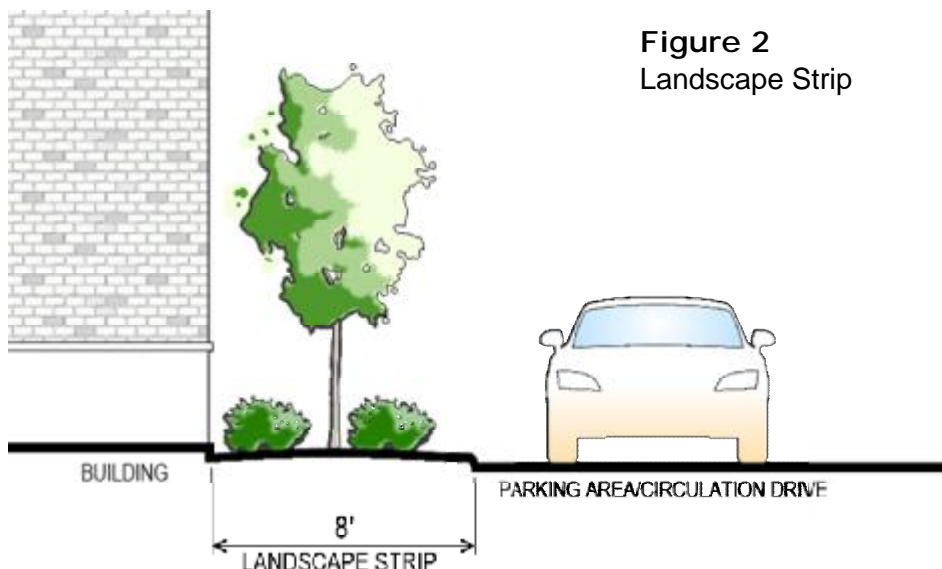


Figure 2
Landscape Strip

6. Parking Lot Islands (all Districts):

- a. A minimum of one (1) deciduous shade tree at two and a half (2.5) inch DBH shall be planted in every parking lot island. This requirement shall not apply if bio-retention areas are used in parking lot islands for the implementation of stormwater best management practice (BMP) techniques, which shall require native and non-native species suitable for use in bio-retention areas.
- b. Under story shrubs, perennials, and other plant materials, including native species, shall be planted to supplement the tree plantings.

D. Non-Residential Fencing: Fences taller than four (4) feet in height shall be screened with landscaping plant material to reduce the visual appearance from the public way with densely planted shrubs or small trees not less than four (4) feet in height and shall incorporate diverse mixture of plant types, including evergreen species..

13-2-5: Single-Family Residential Requirements

A. Required Landscaping: Single-family residential lots constructed after the adoption of this Title shall include the following plantings prior to the issuance of a Certificate of Occupancy.

Single-family residential lots constructed prior to the adoption of this Title including structural additions and tear-downs shall be exempt from this requirement:

Yard	Minimum Number of Trees*	Size at Planting
Front & Corner Side	2	2.5" DBH deciduous tree or 8' tall evergreen tree
Side	1	2.5" DBH deciduous tree or 8' tall evergreen tree
Rear	2	2.5" DBH deciduous tree + 8' tall evergreen tree

* Unless the location, size, and vegetation coverage is deemed by the Village to achieve the above requirements, vegetation located within dedicated Conservancy Easements/Areas shall not be used to achieve compliance with the above requirements.

B. Permit: A Village permit must be obtained prior to the start of any landscape improvements which involve excavation, trenching, or placement of additional soil and/or hardscape materials within the rooting zone of trees, or which affect drainage patterns on the premises or adjacent properties.

C. Single-Family Residential Subdivisions

1. Tree Inventory Survey: All trees measuring six (6) inch DBH or greater existing on a property prior to construction shall be identified. The Tree Inventory Survey shall include the following information:
 - a. Existing property line boundaries of each parcel to be included in the subdivision and the boundary lines of the proposed subdivision.
 - b. All trees measuring six (6) inch DBH or greater to be removed shall be identified with an "X" or similar notation.
 - c. Tree inventory data chart containing the inventory/identification number of each existing tree measuring six (6) inch DBH or greater, common and scientific name, DBH (in inches), condition, and save/removal status of each inventoried tree.
 - d. Proposed subdivision improvements, including but not limited to, roadways, walks, building footprints, parking facilities, and driveways shall be illustrated.
 - e. Location of all proposed utility lines.
2. Landscape Plan: A landscape plan for the subdivision improvements must be submitted which contains the following information:
 - a. Parkway Trees: One (1) two and a half inch (2 ½") deciduous shade tree or ornamental tree must be planted for every 40 lineal feet of the street. Trees shall provide a minimum of twenty-five (25) feet separation. All remaining open areas of the right-of-way shall be seeded or sodded in accordance with the [Village of Lincolnshire Open Space Landscaping Standards, pursuant to Section 7-5-7 of](#)

[Title 7 of this Code \(Appendix 3\).](#)

- b. Ground-Mounted Equipment Screening: All ground-mounted mechanical equipment shall be screened in accordance with [Section 6-15-3\(B\) of Title 6 of this Code](#).
 - c. Stormwater Facilities Landscaping: Landscaping for stormwater facilities, if required, shall be provided in accordance with Section 13-2-8 herein.
 - d. Cul-de-Sac Landscaping: Planting of trees and shrubs are permissible in cul-de-sacs, provided traffic sight lines are not obstructed. Prior to installation, a landscape plan shall be submitted and approved by the Department of Public Works and include identification and quantity of plant material, the location of the curb or edge of pavement, and any easements within the cul-de-sac.
 - e. Location of all proposed utility facilities.
3. To ensure compliance with this Section, the Landscape Improvement Deposit in accordance with [Section 7-1-6 of this Code](#) shall be held for maintaining the landscape improvements for a period of three (3) years after acceptance. At the conclusion of the three (3) year maintenance period, any items not conducted in accordance with this Section, the Village shall draw from the Deposit to employ the services of a qualified consultant to ensure compliance, and for the time and labor required to achieve compliance.

13-2-6: All Other Property Requirements:

For all property other than single-family residential, the following shall apply:

- A. Plant Material and Density: Each landscape plan shall include a mixture of evergreen and deciduous trees, shrubs (native and non-native), grasses, and perennials plantings at a minimum of two to three (2-3) species each. The proper selection and placement of plant material is important for function as well as aesthetics, including variation in plant species and size.
 1. Spacing of tree species shall not exceed fourteen (14) feet on center (O.C.).
 2. Shrubs with a mature height less than three (3) feet shall be planted four (4) feet O.C. Shrubs with a mature height greater than three (3) feet shall be planted six (6) feet O.C.
 3. All planting areas are to be mulched with organic hardwood mulch or equivalent. Colored mulches and stone shall not be permitted.
 4. Areas which abut a public right-of-way must be sodded or established as native prairie areas, exclusive of parking lots, building pads, water features, or landscape beds.
 5. The minimum number of trees per acre of remaining green space (parcel of land excluding parking lots, building pads, water features and other hard surfaces) shall be planted in accordance with the following table. The distribution of tree species may be altered to achieve the desired landscaping effect based on site conditions and surrounding land uses, provided that the total number of trees shall not be reduced.

Type	Size (at planting)	Trees/Acre
Deciduous Shade Trees	2 ½" – 4" (DBH)	6
	4 ½" + (DBH)	6
Ornamental Trees	6' - 8' (height)	4
	8 ½' + (height)	4
Evergreen Trees	8' (height)	5
	10' + (height)	5

6. All landscape plantings installed within any easement(s) shall be the responsibility of the property owner to maintain and replace any plantings damaged or destroyed as a result of activity associated with such easement(s).

B. Landscape Plan Requirements:

1. Tree Inventory Survey: All trees measuring six (6) inch DBH or greater existing on a property prior to construction shall be identified. The Tree Inventory Survey shall include the following information:
 - a. Existing property line boundaries of each parcel to be included in the subdivision and the boundary lines of the proposed subdivision.
 - b. All trees measuring six (6) inch DBH or greater to be removed shall be identified with an "X" or similar notation.
 - c. Tree inventory data chart containing the inventory/identification number of each existing tree measuring six (6) inch DBH or greater, common and scientific name, DBH (in inches), condition, and save/removal status of each inventoried tree.
 - d. Proposed site improvements, including but not limited to, roadways, walks, building footprints, parking facilities, and driveways shall be illustrated.
 - e. Location of all proposed utility lines.
2. Landscape plans must be prepared and sealed by a licensed landscape architect in the State of Illinois. This requirement may be waived upon the demonstration the designer/landscaper has expertise equaling that of a licensed professional.
3. A site data chart must be included on every Landscape Plan submitted and shall contain the following information:
 - a. Total area (square feet) of entire site.
 - b. Total area (square feet) of impervious surfaces by category (drives, walks, buildings, water features) for the overall site.
 - c. Total area (square feet) of open (pervious) space for the overall site.

- d. A landscape planting chart containing the following information:
- i. Common and Scientific name of each plant material.
 - ii. Size of each plant material at time of planting.
 - iii. Quantity of each plant material.
 - iv. Period of flowering for all applicable annuals, perennials and ornamental trees.
4. An installation specification detail illustrating the method(s) for installation for woody plants, herbaceous plants, and seeding shall be included.
5. Stormwater Facilities Landscaping: Landscaping for stormwater detention facilities, if required, shall be provided in accordance with Section 13-2-6(A) herein.
- C. Transitional Yards: Where a side and/or rear yard abuts any residential zoning district, excluding the R5 District, transitional yard landscaping or fence screening a minimum of seventy-five percent (75%) opacity shall be provided along such transitional yards.

13-2-7: Public Right-of-Ways Requirements

Landscape material planted in the right-of-way dedicated to the Village of Lincolnshire shall conform to the following standards:

- A. Shrubs must provide a maximum mature height of thirty inches (30") above existing grade.
- B. Trees must provide a minimum mature height of twenty feet (20') and located so that any branches over the street are a minimum fourteen feet (14') above the ground. Tree species used must be taken from the following list:

Scientific Name	Common Name
Acer Nigrum	Black maple
Acer rubrum	Red maple (non freemanii species)
Acer saccharum	Sugar maple
Acer triflorum	Three-flowered maple
Carpinus caroliniana	American hornbeam, Ironwood, Musclewood
Carya cordiformis	Bitternut hickory
Carya ovata	Shagbark hickory
Celtis occidentalis	Hackberry
Cladrastis lutea	Yellowwood
Corylus colurna	Turkish filbert
Ginkgo biloba	Ginkgo (male only)
Gleditsia triacanthos var. Inermis	Thornless honeylocust
Gymnocladus dioecus	Kentucky coffeetree
Liquidambar styraciflua	Sweetgum
Liriodendron tulipifera	Tulip tree
Nyssa sylvatica	Black tupelo
Ostrya virginiana	American Hophornbeam
Platanus x acerifolia	London planetree
Platanus occidentalis	Sycamore
Quercus alba	White oak

Quercus imbricaria	Shingle oak
Quercus macrocarpa	Bur oak
Quercus robur	English oak
Quercus rubra	Red oak
Tilia Americana	Linden
Tilia cordata	Littleleaf linden

- C. No tree shall be planted under or within ten lateral feet (10') of any overhead utility line at their mature size. Trees and shrubs planted over or within five lateral feet (5') of any underground water, sewer, or main transmission utility line should be avoided (see Figure 3). Prior to installation, a landscape plan shall be submitted and approved by the Department of Public Works, which shall include identification of the location and quantity of plant material and the location of all underground utilities.

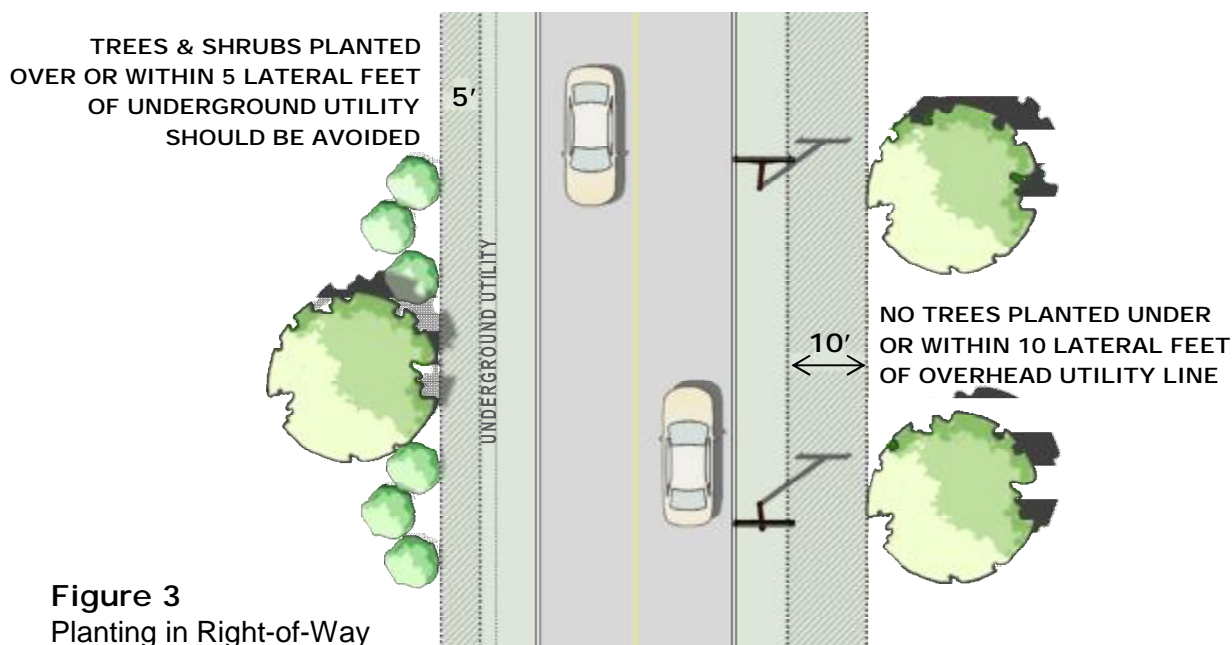


Figure 3
Planting in Right-of-Way

- D. At time of planting, all trees and shrubs shall be located a minimum of five feet (5') from the back of curb or edge of pavement to the center line of the tree/shrub.
- E. Planting of trees and shrubs are permissible in cul-de-sacs, provided traffic sight lines are not obstructed. Prior to installation, a landscape plan shall be submitted and approved by the Department of Public Works and include identification and quantity of plant material, the location of the curb or edge of pavement, easements, and utilities within the cul-de-sac.
- F. The maintenance of the trees, shrubs, and lawn planted in the right-of-way contiguous with the adjacent property is the responsibility of the property owner.
- G. To ensure compliance with this Section, the Landscape Improvement Deposit in accordance with [Section 7-1-6 of this Code](#) shall be held for maintaining the landscape improvements for a period of three (3) years after acceptance. At the conclusion of the three (3) year maintenance period, any items not conducted in accordance with this Section, the Village shall draw from the Deposit to employ the services of a qualified consultant to ensure

compliance, and for the time and labor required to achieve compliance.

13-2-8: Landscape Requirements for Stormwater Facilities

The purpose of this section is to ensure stormwater facilities within the Village are designed, constructed, and maintained in a manner which provides the highest level functionality as well as visual appeal. Any development which requires stormwater facilities, as determined by the Lake County Stormwater Management Commission (SMC), shall be subject to the following requirements:

A. General Requirements:

1. **Shape:** Stormwater facilities shall be designed to reflect a non-uniform, organic shape.
2. **Shoreline Slopes:** The shoreline banks of stormwater facilities shall be no steeper than 5:1 (from approximately 1 foot above to 1 foot below normal waterline) to prevent erosion and facilitate native plant establishment. Basins and other natural drainage facilities shall be required to have native dry-mesic and wet-mesic plants planted along the entire expanse of a detention pond's side slope.
3. **Safety Shelf:** For wet-bottom detention basins, a flat (or significantly flat) safety shelf must be constructed approximately eighteen (18) inches below normal water level, around the full perimeter of the basin. The safety shelf shall be a minimum of five (5) feet in width, and shall be planted with native emergent plant plugs.
4. **Bank Erosion Protection:** The shoreline of stormwater facilities shall be protected from erosion through establishment of deep-rooted, prairie and wetland perennial plants native to the Great Lakes region. Native prairie and wetland plants shall cover the complete shorelines, extending around the full perimeter of the stormwater facility. The native plant slope for basins shall have a minimum width from waterline of fifteen (15) feet.
5. **Seed Mixes and Planting Lists:** The landscape plan shall identify each species proposed, which shall consist entirely of native plants for all seed mixes and plant plugs to be used. Separate seed mixes shall be provided for planting on the upper (dry-mesic) and lower (wet-mesic) portions of the shoreline slope. The plant plug list shall be divided into three categories: dry-mesic, wet-mesic, and emergent plants. Each category shall contain a minimum of ten (10) species of native plants suited to the given environment.
6. **Guarantees:** All seeded and planted areas shall be guaranteed through the Maintenance Period and all performance criteria have been satisfied.

B. Plan Requirements:

1. **Installation Plan:** The installation plan shall provide detailed information regarding the specific locations and timing of native landscaping installation.
 - a. **Installation:** The installation of all native prairie and wetland plants shall be performed by a qualified natural environmental professional consultant. A site plan shall illustrate the following elements of the native landscaping installation:

- i. Specific planting zones.
 - ii. Plant and seed lists for each planting zone including quantities, seeding rates per species, and spacing of plants.
 - iii. Location and specification of erosion control measures.
 - b. Site Access: Access to the site for installation of native plantings shall be identified on the Plan, which shall include necessary access for installation equipment. Additional or alternate access areas not identified must be approved by the Village prior to the start of installation.
 - c. Installation Schedule: The schedule shall outline the proposed start and ending for site access preparation, planting area preparation and stabilization, and planting and seeding for each planting zone. Installation shall occur in the first available growing season after the grading of the pond is substantially completed and the pond is operational. Installation shall take place between May 1 and June 15 or after October 1 until the ground is frozen. Seeding shall not be performed from June 16 through September 30, unless authorized by the Village.
 - d. Erosion Control: Clean, seed-free hay or threshed straw of wheat, oats or barley shall be used for slopes less than 6:1. Straw mat or other appropriate erosion control blanket shall be used on all areas seeded or plugged for slopes steeper than 6:1. Synthetic net blankets shall not be used. The mat shall be affixed to the ground surface by mechanical crimping or other method approved by the Village.
 - e. Establishment: The installation plan shall provide specific information regarding activities to be performed to ensure establishment of the native prairie and wetland plants, including but not limited to, cover crops/erosion blankets, watering schedule, herbicide schedule, controlled burn/mowing frequency, and seed/plant depredation (wildlife grazing) control.
 - f. Criteria for Successful Installation and Establishment: Prior to the Village's acceptance of any stormwater detention facility, a status report shall be prepared by a qualified natural environment professional demonstrating the criteria for establishment of native plant landscaping conforms with requirements of this Section 13-2-8 herein.
 - g. Installation Conditions: All grades, soils, and water levels shall be examined and observed conditions shall comply with the specifications of the Installation Plan prior to the start of any work. If unsatisfactory conditions exist, the Village shall be notified and a written report of corrective action of unsatisfactory conditions shall be submitted to the Village. Work shall not proceed until authorization is provided by the Village.
2. Maintenance and Monitoring Plan: A Maintenance and Monitoring Plan shall be prepared by a qualified natural environment professional to provide the timing and/or frequency of all activities necessary to maintain native plant landscapes. Elements of the Maintenance and Monitoring Plan include but not limited to, controlled burn/mowing, spot herbicide applications/invasive species control, and monthly monitoring reports during the growing season.
 - a. Responsibility: The maintenance and monitoring of native plant landscapes shall

be the sole responsibility of the property owner, its successors and assigns.

- b. Monitoring Period: Vegetation monitoring shall be conducted monthly during the first three (3) growing periods for the months of April, May, June, July, August, September, October and November using the meander search method.
- c. Status Report: Monitoring Status Reports shall be submitted within two (2) weeks following the monthly monitoring session for each month of the Monitoring Period. The Status Reports shall include the following:
 - i. Percent of vegetation cover throughout the site.
 - ii. Inventory and estimated percent cover of the predominant species present.
 - iii. Inventory and estimated percent cover of the non-native invasive species present.
 - iv. Detailed description(s) of work undertaken during the previous month and recommended management measures for subsequent months.
 - v. Any other site conditions observed, including but not limited to, drainage problems, erosion, wildlife damage, extreme water level fluctuations, damage to the site by equipment, etc. and any remediation required.

C. Native Plant Specifications

1. Native Plants:

- a. Plants, freshly dug tubers and plants shall be provided. Materials which have been in cold storage shall not be used.
- b. All live herbaceous plants shall be potted, two year old nursery grown stock.
- c. All preparations shall be made for the planting of tubers prior to their arrival. Tubers shall be planted immediately once received. If planting is delayed more than four (4) hours after delivery, plants shall be set in shade, protected from weather and mechanical damage, and kept moist.
- d. Container grown stock shall not be removed from containers until time of planting.
- e. Plants shall be free from insects and diseases and must show appearance of normal health and vigor.
- f. Plants species shall be certified to be true to their name and originate within a 150-mile radius of the project location, with species and subspecies native to Lake County, Illinois.
- g. All plant material and collected stock shall comply with State and Federal laws for inspection of plant diseases and insect infestations.
- h. Plants shall be packed to ensure adequate protection against damage while in

transit, including being protected with wet material to ensure plants are delivered, stored, and planted in a moist and cool condition.

- i. Planting should not be conducted when conditions are not appropriate.
- j. All emergent herbaceous perennial plants, tubers, bulbs and dormant rootstock shall be installed at a water depth of 0" to 6".
- k. Plants shall be planted to adequate depth to prevent against desiccation.
- l. Plants shall be planted at a minimum density of 3,000 plants per acre. Unless an alternative Installation Plan is submitted and approved by the Village, plants shall be planted in pods or groupings to provide sections of color.
- m. All plants shall be protected from geese and other predators on all sides by 24" high fencing with nylon lines crosshatched across the top of the planting zones. Said fencing shall be maintained at all times and removal may be permitted at least one full growing season after installation.
- n. In areas where herbicide has been applied at least 14 days prior to planting, no planting shall occur. All herbicides shall be applied by a licensed operator under the direction of a licensed applicator.
- o. Any plant or seed species substitutions must be approved the by the Village prior to their planting.

2. Seed Mixtures:

- a. All seed shall have the proper stratification and/or scarification to break seed dormancy other than for fall planting.
- b. Prior to planting, all legumes shall be inoculated with the proper rhizobia at the appropriate time.
- c. All seed shall be packed and covered in a manner to ensure adequate protection against damage and maintain dormancy while in transit, storage or during planting operations.
- d. All seed shall be certified to be true to their name and originate within a 150 mile radius of the project location.
- e. All seed grass species shall be supplied as pure live seed.
- f. All seeded areas shall be protected from geese and other predators on all sides by 24" high fencing with nylon lines crosshatched across the top of the planting zones. Said fencing shall be maintained at all times and removal may be permitted at least one full growing season after installation.
- g. Seeding in zones where water levels exist shall not occur. All seeded areas shall be protected from water by erosion control mulch or straw mat.

- h. Any seed species substitutions must be approved the by the Village prior to their planting.
- i. The use and species of a cover crop must be approved by the Village prior to their planting, and shall not be annual rye.

D. Installation: Installation of native plantings shall be subject to the following specifications:

1. Qualifications: A qualified superintendent capable of reading and understanding approved plans and specifications, and a thorough knowledge of installation, maintenance practices and management needs shall be on-site during installation.
2. Site Preparation: Prior to installation, the planting area shall include preparing and amending existing soils; furnishing, transporting and installing all seeds plant and other materials; and protecting said materials as required for the repair and restoration of the site.
3. Soil Preparation:
 - a. Top soil shall be fertile, friable, loam surface soil without admixture of subsoil and free of stones, stumps, roots, trash, debris and other materials which might inhibit successful plant growth. Soil aggregates shall not exceed one (1) inch maximum diameter.
 - b. Subsoil should not have a compaction greater than 350 pounds per square inch based on soil penetrometer measurements.
 - c. The pH range shall be 6.5 to 8.4. Topsoil not within this pH range shall be amended through the addition of pH adjusters.
 - d. Organic content shall not be less than 3% and no greater than 10% determined by loss through ignition.
 - e. Soil nutrient content shall be as follows, as determined by appropriate laboratory analysis:

Phosphorus	Min. 75 lb./Ac
Potassium	Min. 300lb./Ac
Calcium	Min. 1,500 ppm
Magnesium	Min. 100 ppm
Cation Exchange Capacity	Min. 20 mea/100g
Soluble Salt	Max. 1,000 ppm

- f. Gradation shall meet the following specification:

Sieve Designation	Percent Passing
1" screen	100
1/4" screen	97 - 100
No. 10 U.S.S.	95 - 100
No. 140 U.S.S.	60 - 90
No. 270 U.S.S.	25 - 50

Clay content determined by Bouyoucous Hydrometer Test shall range between 5% and 20%. Percentages shall be based on dry weight of the sample.

- g. Topsoil shall be uniformly distributed to provide a minimum 8 inch depth after compaction and finishing grade. Top soil shall be spread cultivated, lightly compacted to prevent future settlement, dragged, and graded to finished grade.

4. Equipment:

- a. Equipment shall be suited for the installation of native plants and seeds. Equipment causing damage to soils or site (example: rutting, compaction, or prepared soils) shall not be used. Equipment shall be calibrated and adjusted to sow seeds at the proper seeding rate and operated in a manner to ensure complete coverage of the entire native zones.
- b. Seeding equipment shall be designed to accommodate a wide variety of seed types, sizes and shapes.
- c. If a rangeland type grass drill or no-till planter is used, rolling of the seed bed shall not be permitted.

E. Maintenance: The maintenance period shall begin immediately following planting and continue annually, subject to the following criteria:

- 1. All planted and seeded areas shall be maintained by prescribed burning (if permitted), high mow management, replanting or reseeding, and invasive control management as necessary to establish vegetation free of bare or eroded areas and areas that are infested with invasive plants.
 - a. In the first two (2) growing seasons, the planted area shall be mowed every four to six (4 – 6) weeks throughout the growing season to a height not less than eight (8) inches. Mowing is to be conducted frequently enough to cut weeds before they form seed heads. If seed heads form on weeds they shall be removed from the site.
 - b. Prescribed burning shall also be conducted at the conclusion of the third growing season. All licenses and permits required to conduct prescribed burning from state and local authorities shall be completed before initiating any burning. Prescribed burns shall continue annually.
- 2. Dead or declining plant material shall be reseeded and replaced as necessary to meet the performance standard in the year the damage is observed. All replacement plants must be of the same size as the plants thriving in the planted area.
- 3. Plant replacements shall be completed according to the installation instructions.
- 4. Native plant landscape areas shall be managed for invasive plant species as outlined on the [Invasive Plant Management Schedule \(Appendix 2\)](#).
- 5. When the Monitoring Status Report findings indicate performance of the native plant

landscape has fallen below the criteria for establishment of native plant landscapes of this Section, remedial action to restore and replace dead or declining plant material shall occur. Native plant landscapes requiring remedial action shall be considered non-compliant with this Section until necessary corrective actions are completed.

F. Performance Standards

1. At the end of the first growing season, seeded and planted areas shall meet or exceed 75% plant cover, seedlings of six planted grass/sedge species found and seedlings of six planted forb species found within any given one meter transect . No invasive species shall be present.
2. At the end of the second growing season, seeded and planted areas shall meet or exceed 80% plant cover, 5% cover by planted native grass/sedge species, 15% cover by planted forb species, and 20% of planted species found within any given one meter transect.

Sites less than two acres where planting or restoration has taken place, no invasive species shall be present.

Sites greater than two acres where planting or restoration work has taken place, invasive species shall comprise no more than 10% of the plant cover.

3. At the end of the third growing season, seeded and planted areas shall meet or exceed 95% plant cover, 20% cover by planted native grass/sedge species, 40% cover by planted forb species, and 60% of planted species found within any given one meter transect.

Sites less than two acres where planting or restoration has taken place, no invasive species shall be present.

Sites greater than two acres where planting or restoration work has taken place, invasive species shall comprise no more than 5% of the plant cover.

4. At the conclusion of the three year maintenance period, if the planted areas do not meet the performance specification, the Village shall draw on the letter of credit to achieve the performance specifications.

G. Enforcement

1. In the event the property owner, its successors or assigns, do not perform the necessary actions to restore a non-compliant native plant landscape within two (2) weeks of identification of the non-conformity, provided environmental conditions permit immediate action, a fine in accordance with the [Comprehensive Fine Schedule set forth in Chapter 17 of Title 1 of this Code](#) shall be assessed. In addition the native plant landscape will be restored to a state of compliance and/or a status assessment will be conducted by a Village consultant at the expense of the responsible party.
2. To ensure compliance with this Section, the Landscape Improvement Deposit in accordance with [Section 7-1-6 of this Code](#) shall be held for maintaining the landscape improvements for a period of three (3) years after acceptance. At the conclusion of the

three (3) year maintenance period, any items not conducted in accordance with this Section, the Village shall draw from the Deposit to employ the services of a qualified consultant to ensure compliance, and for the time and labor required to achieve compliance.

13-2-9: Penalties

Any person found guilty of violating any provision of this Chapter shall be assessed at a cost as prescribed in the [Comprehensive Fine Schedule set forth in Chapter 17 of Title 1 of this Code](#). Where a continued violation persists, after notification by the Village, the fine shall be assessed weekly until the violation is corrected. (Ord. No. 03-1840-17, eff. 4/14/03)

13-2-10: APPENDICES

[Appendix 1: Salt Tolerant Landscape Plants](#)

[Appendix 2: Invasive Plant Management Schedule](#)

[Appendix 3: Open Space Landscaping Standards](#)

Appendix 1: Salt Tolerant Landscape Plants*

T = Plants with highest degree of salt tolerance. Use in most exposed areas.

M = Plant with moderate degree of salt tolerance. Use in low salt areas.

DECIDUOUS TREES

Scientific Name	Common Name	Zone	Aerial Salt Tolerance	Soil Salt Tolerance
<i>Acer campestre</i>	Hedge maple	5-8	M	
<i>Acer ginnala</i>	Amur maple	2-8	M	
<i>Acer nigrum</i>	Black maple	4-9	M	
<i>Acer pseudoplatanus</i>	Sycamore maple	5-7	T	
<i>Aesculus hippocastanum</i>	Horse-chestnut	4-7	T	Y
<i>Aesculus octandra</i>	Yellow buckeye	4-8	M	
<i>Amelanchier x grandiflora</i>	Apple serviceberry	4-9	T	
<i>Betula nigra</i>	River birch	3-7	M	
<i>Carya cordiformis</i>	Bitternut hickory	4-9	T	Y
<i>Carya ovata</i>	Shagbark hickory	4-8	T	
<i>Catalpa speciosa</i>	Northern catalpa	4-8	T	Y
<i>Celtis occidentalis</i>	Hackberry	2-9	M	Y
<i>Diospyros virginiana</i>	Persimmon	4-9	M	
<i>Ginkgo biloba</i>	Ginkgo	3-8	M	Y
<i>Gleditsia triacanthos</i>	Honey locust	3-9	T	Y
<i>Gymnocladus dioica</i>	Kentucky coffeetree	3-8	T	Y
<i>Juglans cinerea</i>	Butternut	3-7	T	
<i>Juglans nigra</i>	Black walnut	4-9	T	Y
<i>Koelreuteria paniculata</i>	Golden rain tree	5-8	M	
<i>Larix decidua</i>	European larch	2-6	T	
<i>Larix laricina</i>	American larch	2-5	T	
<i>Liquidambar styraciflua</i>	Sweet gum	5-9	T	Y
<i>Malus</i> (some cultivars) (x <i>zumi</i> 'Calocarpa', 'Adams', 'Donald Wyman', 'Prairifire')	Crabapple	5-7	M	
<i>Nyssa sylvatica</i>	Tupelo	4-9	M	Y
<i>Ostrya virginiana</i>	Ironwood	3-9	M	
<i>Platanus occidentalis</i>	Sycamore	4-9	M	Y
<i>Quercus alba</i>	White oak	3-9	T	
<i>Quercus bicolor</i> *	Swamp white oak	4-8	M	Y
<i>Quercus ellipsoidalis</i>	Northern pin oak	4-6	M	Y
<i>Quercus imbricaria</i>	Shingle oak	4-8	M	
<i>Quercus macrocarpa</i>	Bur oak	2-8	M	Y
<i>Quercus robur</i>	English oak	4-8	T	
<i>Sassafras albidum</i>	Sassafras	4-9	M	
<i>Syringa amurensis</i>	Japanese tree lilac	3-7	T	Y
<i>Syringa pekinensis</i>	Peking lilac	4-7	T	Y
<i>Taxodium distichum</i>	Bald-cypress	4-9	T	Y
<i>Ulmus</i> 'Regal'	Regal elm	4-6		Y

EVERGREEN TREES

Scientific Name	Common Name	Zone	Aerial Salt Tolerance	Soil Salt Tolerance
<i>Juniperus chinensis</i>	Chinese juniper	2-8	T	Y
<i>Juniperus horizontalis</i>	Creeping juniper	4-9	T	Y
<i>Juniperus virginiana</i>	Eastern red-cedar	3-9	T	
<i>Picea pungens</i>	Blue spruce	2-7	T	Y
<i>Pinus mugo</i>	Mugo pine	2-7	T	Y
<i>Thuja occidentalis</i>	Eastern arborvitae	2-8	M	Y

SHRUBS

Scientific Name	Common Name	Zone	Aerial Salt Tolerance	Soil Salt Tolerance
<i>Inus rugosa</i>	Speckled alder	3-6	M	
<i>Amelanchier canadensis</i>	Serviceberry	3-7	T	
<i>Amorpha fruticosa</i>	Indigo-bush	4-9	T	Y
<i>Aronia arbutifolia</i>	Red chokeberry	4-8	M	
<i>Aronia melanocarpa</i>	Black chokeberry	3-8	M	
<i>Buxus microphylla</i> var. <i>koreana</i>	Korean boxwood	4-9	M	
<i>Caragana arborescens</i>	Siberian pea-shrub	2-7	T	Y
<i>Caragana fruticosa</i>	Russian pea-shrub	2-6	T	
<i>Clethra alnifolia</i>	Summersweet clethra	3-8	T	
<i>Comptonia peregrina</i>	Sweet-fern	2-5	T	
<i>Cotoneaster</i> species	Cotoneaster	4-8	T	Y
<i>Forsythia</i> spp.	Forsythia	6-8	T	Y
<i>Hamamelis virginiana</i>	Witch-hazel	3-8	T	
<i>Hibiscus syriacus</i>	Rose-of-Sharon	5-8	M	
<i>Hippophae rhamnoides</i>	Sea-buckthorn	3-7	T	Y
<i>Hydrangea</i> spp.	Hydrangea	3-9	T	
<i>Hypericum</i> spp.	St. John's wort	3-8	T	
<i>Ilex verticillata</i>	Winterberry	3-9	M	
<i>Lespedeza bicolor</i>	Shrub bush-clover	4-8	T	
<i>Myrica pensylvanica</i>	Bayberry	3-6	M	Y
<i>Perovskia atriplicifolia</i>	Russian-sage	5-8	T	
<i>Philadelphus coronarius</i>	Mock-orange	5-8	M	
<i>Potentilla fruticosa</i>	Shrubby cinquefoil	2-7	T	
<i>Prunus x cistena</i>	Purpleleaf sand cherry	2-8	M	
<i>Pyracantha coccinea</i>	Firethorn	6-9	T	
<i>Rhodotypos scandens</i>	Black jetbead	4-8	T	
<i>Rhus aromatica</i>	Fragrant sumac	3-9	T	Y
<i>Rhus glabra</i>	Smooth sumac	3-9	T	Y
<i>Rhus typhina</i>	Staghorn sumac	4-8	T	Y
<i>Ribes alpinum</i>	Alpine currant	2-7	M	Y
<i>Robinia hispida</i>	Bristly locust	5-8	T	Y
<i>Rosa rugosa</i>	Rugosa rose	2-7	T	Y

<i>Sambucus canadensis</i>	Elderberry	3-9	T	
<i>Shepherdia canadensis</i>	Buffaloberry	2-6	M	
<i>Spiraea</i> spp. (most)	Spirea	3-8	T	
<i>Symphoricarpos albus</i>	Snowberry	3-7	T	
<i>Syringa meyeri</i> 'Palibin'	Palibin lilac	3-7	M	Y
<i>Syringa patula</i> 'Miss Kim'	Miss Kim lilac	3-7	T	Y
<i>Viburnum dentatum</i>	Arrowwood viburnum	5-9	M	
<i>Viburnum lentago</i>	Nannyberry	2-8	M	
<i>Viburnum prunifolium</i>	Blackhaw viburnum	3-9	M	Y
<i>Viburnum trilobum</i>	American cranberry-bush	2-7	M	

* Source: The Morton Arboretum, www.mortanarb.org

Appendix 2: Invasive Plant Management Schedule

Plant Name	Specific Management	Month(s)	Comments
Common and Glossy Buckthorn (<i>Rhamnus cathartica</i> and <i>fragula</i>)	Cut and immediately wick apply herbicide.	Jan, Feb, March, June, July, Aug, Sept, Oct, Nov, Dec	Foliar application of herbicide should not be considered unless the site is to be completely reseeded with the understanding that all plants will be killed.
Honeysuckle (<i>Lonicera tatarica</i> , <i>maackii</i> , <i>japonica</i>)	Cut and immediately wick apply herbicide.	Jan, Feb, March, June, July, Aug, Sept, Oct, Nov, Dec	Foliar application of herbicide should not be considered.
Multiflora Rose (<i>Rosa multiflora</i>)	Cut and immediately wick apply herbicide.	Jan, Feb, March, June, July, Aug, Sept, Oct, Nov, Dec	Foliar application of herbicide should not be considered.
Teasel (<i>Dipsacus sylvestris</i> , <i>laciniatus</i>)	Herbicide rosettes.	Mar, April, May, June, Nov	Biennial, important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads.
Teasel (<i>Dipsacus sylvestris</i> , <i>laciniatus</i>)	Cut seed heads, remove from site. Herbicide cut stock close to ground.	July, Aug, Sept	Biennial, important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads.
Reed Canary Grass (<i>Phalaris arundinacea</i>)	Herbicide stands of grass.	April, May, June	
Reed Canary Grass (<i>Phalaris arundinacea</i>)	Cut seed heads, remove from site. Herbicide cut stock close to ground.	July, Aug, Sept	Reed Canary Grass (<i>Phalaris arundinacea</i>)
Garlic Mustard (<i>Allaria petiolata</i>)	Herbicide rosettes.	March, April, Oct, Nov	Biennial, important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads.
Garlic Mustard (<i>Allaria petiolata</i>)	Hand pull plants. Remove from site.	May, June, July, Aug, Sept	Biennial, important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads.
Crown Vetch (<i>Coronilla varia</i>)	Cut and herbicide plant close to the ground. Remove cut plants from site.	April, May, June, July, Aug, Sept, Oct	
Bird'S Foot Trefoil (<i>Lotus corniculatus</i>)	Cut and herbicide plant close to the ground. Remove cut plants from the site.	April, May, June, July, Aug, Sept, Oct	

Canada and Bull Thistle (Cirsium arvense, vulgare)	Herbicide small plants or rosettes.	March, April, May, June, Oct, Nov	Bull thistle is a biennial. It is important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads. Canada thistle is a perennial. Remove all seed heads from the site.
Canada and Bull Thistle (Cirsium arvense, vulgare)	Cut seed heads and remove from site. Herbicide cut stalks close to the ground.	July, Aug, Sept, Oct	Bull thistle is a biennial. It is important to catch rosettes in first year. Care needs to be taken to remove all seed heads from site. Do not mow. Manually remove heads. Canada thistle is a perennial. Remove all seed heads from the site.
Purple Loosestrife (Lythrum salicaria)	Herbicide young plants.	May, June	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.
Purple Loosestrife (Lythrum salicaria)	Cut seed heads and remove from site. Herbicide cut stems close to the ground.	July, Aug, Sept, Oct	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.
Phragmites (Phragmites australis)	Herbicide young stands.	April, May, June, July	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.
Phragmites (Phragmites australis)	Cut seed heads and remove from site. Herbicide cut stems close to the ground.	June, July, Aug, Sept, Oct	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.
White and Yellow Sweet Clover (Melilotus alba and officinalis)	Cut and remove plant from site. Herbicide cut stems close to the ground.	May, June, July, Aug, Sept, Oct	
Willow (Salix)	Cut plant and herbicide cut stems close to the ground.	April, May, June, July, Aug, Sept, Oct	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.
Cattails (Typha)	Cut plant and herbicide cut stems close to the ground or water. Remove any seed heads from the site.	April, May, June, July, Aug, Sept, Oct	This plant grows in wet conditions. An aquatic herbicide must be used if it is in the water or close to the water.

NOTE: All herbicides and their application must be specific to the type of plant controlled. Manufacturers' instructions must be carefully followed. With few exceptions spot or wick applications must be utilized to protect surrounding plants.

**Appendix 3:
Open Space Landscaping Standards**

VILLAGE OF LINCOLNSHIRE

OPEN SPACE LANDSCAPING STANDARDS

CONTENTS

- A. Seeding
- B. Mulch and Excelsior Blanket
- C. Sodding
- D. Planting
- E. Period of Establishment and Guarantee

A. SEEDING:

Description: This section describes the seed bed preparation and furnishing, transporting and placing the seed and other materials required in seeding operations.

CONSTRUCTION REQUIREMENTS:

Seed Bed Preparation: Seed bed preparation shall not be started until all stones, boulders, debris and similar material larger than 3 inches in diameter have been removed. The area to be seeded shall be worked to a minimum depth of 3 inches with a disk or other equipment approved by the Village Engineer, reducing all soil particles to a size not larger than 2 inches in the largest dimension. The prepared surface shall be relatively free from all weeds, clods, stones, roots, sticks, rivulets, gullies, crusting and caking. No seeds shall be sown until the seed bed has been approved by the Village Engineer.

Seed bed preparation will not be required for Erosion Control Seeding if the soil is in a loose and pliable condition. Light discing shall be done if the soil is hard or caked.

Seeding Methods: No seed shall be sown during high winds or when the ground is not in a proper condition for seeding, nor shall any seed be sown until the purity test has been completed for the seeds to be used, and shows that the seed meets the noxious weed seed requirements. The Village Engineer will examine and then approve any equipment to be used. Prior to starting work, seeders shall be calibrated and adjusted to sow seeds at the proper seeding rate. Equipment shall be operated in a manner to ensure complete coverage of the entire area to be seeded. The Village Engineer shall be notified 48 hours prior to beginning the seeding operations so that the Village Engineer may determine by trial runs that a calibration of the seeder will provide uniform distribution at the specified rate per acre. When seed or fertilizer is applied with a hydraulic seeder, the rate of application shall be not less than 1000 gallons of slurry per acre. This slurry shall contain the proper quantity of seed or fertilizer specified per acre. When using a hydraulic seeder, the fertilizer nutrients and seed shall be applied in two separate operations.

Within 12 hours, all seeded areas, including slopes 3 to 1 or flatter, shall be rolled at right angles to the run off with an approved type roller or cultipacker to compact the seed bed and place the seed in contact with the soil. Slopes steeper than 3 to 1 need not be rolled. Rolling will not be required in the following conditions:

On slopes steeper than 3 to 1.

When a mulch stabilizer is used to anchor the mulch.

When a hydraulic seeder is used to apply the seed.

When a rangeland type grass drill is used.

When the seeding equipment is equipped with a roller that achieves the desired compaction.

When Erosion Control Seeding is called for on the plans, a harrow, approved by the Village Engineer, maybe substituted for the roller.

The optimum depth for seeding shall be 1/4 inch.

All legumes (clover, vetch, birdsfoot trefoil, lespedeza and alfalfa) shall be inoculated with the proper bacteria in the amounts and manner recommended by the manufacturer of the inoculant before sowing or being mixed with other seeds for sowing. The inoculant shall be furnished by the Contractor and shall be approved by the Village Engineer. The seed shall be sown as soon as possible after inoculation and seed that has been standing more than 24 hours after inoculation shall be re-inoculated before sowing. If legumes are applied by hydro seeder, 3 times the normal amount of inoculant shall be used.

- a. Native Grass and Native Forb Seed Mixtures: Native Grass and Native Forb Seed Mixtures shall be done by hydraulic seeders or with a rangeland type grass drill meeting the approval of the Village Engineer.

If a hydraulic seeder is used, the water application rate shall be not less than 500 gallons per acre.

Seeding operations for new construction (bare earth) shall be May 15 to June 30 or October 15 to December 1. Seeding operations on existing turf shall be between October 15 and December 1. All areas of existing turf to be seeded except as listed below shall be mowed one or more times to a height of not more than three inches. The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. The cut material shall not be windrowed or left in a lumpy or bunched condition. Subsequent mowing may be required on certain areas in order to disperse the mowed material and allow penetration of the seed.

Debris encountered during the mowing and seeding operations which may hamper the operations shall be removed and disposed of. Damage to the turf, such as ruts or wheel tracks more than two inches in depth, shall be repaired to the satisfaction of the Village Engineer prior to the time of seeding.

- b. Erosion Control Mixture

This method shall be considered a temporary erosion control method and shall be used as a temporary cover when permanent seeding cannot be accomplished. All areas that are to be left bare for more than one month will be consider for Erosion Control Seeding. Any areas that cannot receive permanent seeding before winter shut down shall be seeded with Erosion Control Seeding.

Seeding Mixtures: The classes of seeding mixtures will be designated by the Village Engineer and will consist of one or more of the types listed in Table 1.

Table 1 - SEEDING MIXTURES

TYPE	SEEDS	LBS./ACRE
Park & Lawn Mixture	Ky Bluegrass	50
	Perennial Ryegrass	30
	Creeping Red Fescue	20
Salt Tolerant Lawn Mixture	Ky Bluegrass	30
	Perennial Ryegrass	10
	Dawsons Red Fescue	10
	Scaldis Hard Fescue	10
	Fults Salt Grass*	30
Roadside Mixture	Ky 31 or Alta Fescue	50
	Perennial Ryegrass	30
	Creeping Red Fescue	20
	Oats, Spring	48
Salt Tolerant Roadside Mixture	Ky 31 or Alta Fescue	30
	Perennial Ryegrass	10
	Dawsons Red Fescue	10
	Scaldis Hard Fescue	10
	Fults Salt Grass*	30
Slope Mixture	Ry 31 or Alta Fescue	40
	Perennial Ryegrass	20
	Alsike Clover**	5
	Birdsfoot Trefoil**	10
	Little Bluestem	5
	Side Oats Grama	10
Native Grass Mixture	Big Blue Stem	4
	Little Blue Stem	5
	Prairie Switchgrass	2
	Indian Grass	2
	Prairie Dropseed	1
	June Grass	1
	Side Oats Grama	5
	Perennial Ryegrass	20
	(delete when seeding over existing turf)	
Native Forb Mixture	Amorpha canescens -Lead Plarn (6)**	
	Asclepias tuberosa – Butterfly Milkweek (1)	
	Aster laevis – Smooth Aster (2)	
	Aster novae-angliae - New England Aster (2)	
	Ceanothus americanus - New Jersey Tea (3)	
	Coreopsis palmata - Prairie Coreopsis (6)	
	Dodecatheon Meadii - Shooting Star (4)	
	Echinacea pallida - Pale Purple Coneflower (8)	
	Eryngium yuccifolium - Rattlesnake Master (8)	
	Liatris asoera - Button Blazing Star (8)	
Liatris pycnostachya - Prairie Blazing Star (6)		
Monarda fistulosa - Prairie Bergamot (6)		

Parthenium integrifolium - Prairie Quinine (3)
 Petalostemum candidum - White Prairie Clover (1)**
 Petalostemum purpureum - Purple Prairie Clover (6)**
 Rudbeckia hirta - Black-eyed Susan (9)
 Ratbida pinnata - Yellow Coneflower (8)
 Silphium laciniatum - Compass Plant (1)
 Silphium terebinthinaceum – Prairie Dock (1)
 Solidago rigida - Rigid Goldenrod (6)
 Veromcastrum virginicum - Culvert's Root (5)

(The number in the () indicates the suggested percentage by weight of each item in the mixture. The total weight of the mixture shall be 2 lbs/acre. The mixture shall contain at least 1% and not more than 10% by weight of each variety listed.)

Variation in the Native Forb seed quantities or varieties will be allowed in the event of a crop failure or other unforeseen conditions. The contractor shall provide for the approval of the Village Engineer a written description of the changed Mixture, the reasons for the change, and the name of the seed supplier.

Conservation Mixture	Smooth Brome Grass	40
	Vernal Alfalfa**	15
	Oats. Spring	48
Detention Area Mixture	Buffalo Grass	100
Erosion Control Mixture	Perennial Ryegrass	50
	Oats, Spring	64

*Fults pucinnellia distans

**Legumes - inoculation required

Method of Measurement: The quantities and application rates of fertilizer nutrients and agricultural ground limestone are subject to adjustment and will be determined on the basis of the analysis of soil samples taken by the Developer.

Fertilizer will be measured by weight in pounds of actual nutrients. The following formula will be used to determine the pounds of fertilizer nutrients applied:

$$(\text{Total weight of mixed fertilizer in pounds}) \times (\text{Percentage of each nutrient in the fertilizer applied}) = \text{pounds of each fertilizer nutrient.}$$

B. MULCH AND EXCELSIOR BLANKET

Description: This section describes the furnishing, transporting and placing mulch or excelsior blanket.

Materials: Materials shall meet the following requirements:

Mulching Seeded or Planted Areas: Within 24 hours from the time seeding, or planting of

seedling trees, shrubs or vines has been performed, the seeded or planted area shall be given a covering of mulch by one of the following methods. On slopes steeper than 3:1 mulch shall be applied the same day as seeded or planted. Mulch shall be applied uniformly at the rate specified.

Method 1: This method shall consist of hand or machine application of straw mulch. The mulch shall be loose enough to permit air to circulate but compact enough to reduce erosion. If baled mulch material is used, care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.

Method 2: This method shall consist of applying a layer of asphalt-coated straw mulch on seeded areas or planted areas.

This mulch shall have a partial coating of Emulsified Asphalt.

The coated mulch shall be placed by equipment which will blow or eject, by means of a constant air stream, controlled quantities of the mulch and asphalt in a uniform pattern over the specified area. If the mulch is excessively cut or broken, the Contractor shall take measures to reduce the cutting or breakage to a limit approved by the Village Engineer.

The asphalt shall be introduced into the air stream by means of a spray arranged in such a manner that it will partially coat the mulch with a spotty asphalt tack prior to the depositing of the mulch covering. The rate of application will be determined by the Village Engineer; however, the rate of application shall be not less than 75 gallons per ton of mulch.

Method 3: The straw shall be applied in accordance with all of the requirements of Method 1, except a mulch stabilizer shall be used to anchor mulch into the soil by means of dull blades or disks. These blades or disks shall be without camber, be approximately 20 inches in diameter.

The disks shall be notched and shall be spaced at approximately 3-inch intervals and shall be equipped with scrapers. The stabilizer shall weigh approximately 1000 pounds and shall have a working width not to exceed 72 inches and shall be equipped with a ballast compartment, so that when directed, weight can be increased.

Method 4: This method shall consist of a hand or machine application of an approved shredded tree bark mulch material. The processed bark mulch shall be uniformly applied over the seeded area at a rate determined by the Village Engineer. Care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.

Method 5: This method shall consist of machine application of straw mulch at the specified rate using an approved mulch blower followed immediately by an overspray application of hydraulic mulch. The hydraulic mulch shall be applied as a slurry of 750 pounds of mulch and 1000 gallons of water per acre by an approved hydraulic mulch applicator. The hydraulic mulch slurry shall be agitated a minimum of 5 minutes before application and shall be agitated during application.

Method 6: This method shall consist of machine application of straw mulch at the specified rate using an approved mulch blower with chemical mulch binder applied simultaneously with the hay or straw as in Mulch Method 2 or with chemical mulch binder applied as an overspray in accordance with Mulch Method 5. Chemical mulch binder shall be applied at the rate and manner recommended by the supplier and approved by the Village Engineer.

Method 7: This method shall consist of machine application of wood or paper fiber hydraulic mulch at the specified rate using an approved hydraulic seeder. The hydraulic mulch shall be applied as a slurry of 2000 pounds of mulch and not less than 2000 gallons of water per acre. The hydraulic mulch slurry shall be agitated a minimum of 5 minutes before application and shall be in continuous agitation during application. The seeding will not be applied concurrently with this operation.

Following the mulching operation, every precaution shall be taken to prohibit foot or vehicular traffic, or the movement of mulching has been displaced by any Contractor's equipment or personnel, the seeding or other work damaged as a result of that displacement shall immediately be replaced and the mulch covering replaced, at the Contractor's expense, in a manner satisfactory to the Village Engineer.

Excelsior Blanket: The excelsior blanket shall be placed within 24 hours after seeding operations have been completed on the areas specified by the Village Engineer. Prior to placing the mat, the areas to be covered shall be relatively free of all rocks or clods over 1 1/2 inches in diameter, and all sticks or other foreign material which will prevent the close contact of the blanket with the seed bed. If as a result of a rain, the prepared seed bed becomes crusted or eroded, or if eroded places, ruts or depressions exist for any reason, the Contractor will be required to rework the soil until it is smooth and to reseed such areas which are reworked. After the area has been properly shaped, fertilized and seeded, the blanket shall be laid out flat, evenly and smoothly, without stretching the material.

Jute or paper mat used as a ditch lining shall be applied with the lengths running parallel to the flow of water. When the blanket is unrolled, the netting shall be on top and the fibers in contact with the soil.

In ditches, the blankets shall be applied in the direction of the flow of the water and butted snugly against each other. Use 4 staples across at the start of each roll and continue to staple each side and the center on 4-foot intervals. Use a common row of staples on adjoining blankets.

On slopes, the blanket shall be applied either horizontally or vertically to the contour. Staple similar to ditch applications except the space interval shall be 6 feet.

C. SODDING

Description: This section shall describe the preparation of the ground surface and furnishing, transporting and placing sod and other materials required in the sodding operations.

Ground Preparation: Immediately prior, but not in excess of 24 hours before the sod is placed, the soil surface shall be worked until it is relatively free from debris, washes,

gullies, clods and stones, and is in a satisfactory condition. The surface shall be worked to a depth of not less than 3 inches with a disk, tiller or other equipment approved by the Village Engineer. Prepared surfaces that become crusted shall be reworked to an acceptable condition for sodding.

All soil surfaces shall be moist when the sod is placed. When directed by the Village Engineer, the Contractor shall be required to apply water to dry soil surfaces at a minimum rate of one gallon per square yard immediately prior to placing the sod.

When specified, agricultural ground limestone and fertilizer nutrients shall be applied at the designated rates over the areas to be sodded.

Sodding Time: Sod shall be placed when the ground is in a workable condition and temperatures are less than 90 degrees F. Sod shall not be placed when the sod or ground surface is frozen or during and extended drought.

Transportation: All sod shall be properly covered when transported to prevent it from drying out. Adequate shading and ventilation must be provided for the sod to prevent it from decomposing while it is transported.

Sod cut for more than 48 hours shall only be used with the approval of the Village Engineer. Any sod that has dried out, has heated to over 100 degrees F. or is frozen prior to placing will be rejected and shall be immediately removed from the job site by the Contractor.

Placing Sod: The sod shall be placed on the prepared surface with the edges in close contact and alternate courses staggered.

In ditches, the sod shall be placed with the longer dimension perpendicular to the flow of water in the ditch. On slopes, starting at the bottom of the slope, the sod shall be placed with the longer dimension parallel to the contours of the ground. The exposed edges of sod shall be buried flush with the adjacent soil.

On slopes where the sod may be displaced during sodding operations, the workmen shall work from ladders or treaded planks.

Staking Sod: The sod shall be staked on all slopes of 2:1 or steeper. Sod shall be staked with not less than 4 stakes per square yard with at least one stake for each piece of sod. Stakes shall be a minimum of 6" long. Stakes shall be installed so that they hold the sod firmly in place yet present no danger to pedestrians or mowing crews. The type of stake and the method of installation shall meet the approval of the Village Engineer.

Sod Watering: Within 6 hours after the sod has been placed. 5 gallons of water per square yard shall be applied. Thereafter, on days designated by the Village Engineer, additional water shall be applied at the rate of 3 gallons per square yard. The sod must be adequately watered during the period of establishment, defined as the period of time between sod placement and when the sod becomes knitted to the soil and growing in place.

The Contractor shall have on hand enough equipment to completely water all sodded areas in 2 days at watering rates specified during the period of establishment. The Village

Engineer will make periodic checks of the Contractor's equipment to determine its adequacy and operating condition.

All watering described herein shall be done with a spray application. An open end hose will not be acceptable. The method of watering shall meet the approval of the Village Engineer.

Supplemental Watering: During periods of intense heat or subnormal rainfall, supplemental watering may be required prior to acceptance of the work. Supplemental watering shall be performed when directed by the Village Engineer. Water shall be applied at the rate specified by the Village Engineer within 24 hours of notice. Supplemental watering may be performed during the period of establishment or any time prior to final acceptance of the project.

Disposal of Surplus Material: Surplus and waste materials resulting from sodding operations shall be disposed of by the Contractor, at his/her own expense.

D. PLANTING

Description: This work shall consist of digging and preparing plant holes, and of furnishing, transporting and planting trees, shrubs, vines, seedlings and other materials.

It shall also include all incidental operations such as mulching, bracing, wrapping, care of living plants and replacements of unsatisfactory plants.

Planting Time: Except for container grown items, plants must be dormant when delivered to the storage site or project.

Bare root plant material shall be planted only when the air temperatures exceed 35 degrees F. The Contractor shall begin this work not later than September 1, following the award date of the contract.

- a. Spring Planting: This work shall be performed from the time the soil can be worked until the plant, under field conditions, is not dormant except that:
 1. Evergreen planting shall end April 30.
 2. Seedlings shall be planted only during the spring planting season.
 3. The planting time may be extended for container grown plants if the Village Engineer determines that the weather conditions are favorable.
- b. Fall Planting: This work shall be performed from the time the plant becomes dormant until the ground cannot be satisfactorily worked except that evergreen planting shall be performed between August 15 and October 15.

Digging of Plants: Plants shall not be dug until the Contractor is ready to transport them from their original locations to the site of the work or approved storage. The maximum time lapse between digging and being properly loaded for delivery to the site of the work or being placed in approved storage, shall be 4 days for balled or burlapped plants and one day for bare root plants. They shall be dug with care, avoiding injury to

the plants or loss or damage of the roots, particular attention being given to fibrous roots. Immediately after digging, roots shall be protected against drying out and freezing. Bare root plants shall be dug only when air temperatures exceed 35 degrees F.

Transportation: During transportation, the Contractor shall exercise care to prevent injury and drying out of the plants. Upon arrival at the temporary storage location of the site of the work, plants will be inspected for proper shipping procedures. Should the roots be dried out, large branches be broken, balls of earth be broken or loosened, or areas of bark be torn, the Village Engineer may reject the injured tree. When a tree has been so rejected, the Contractor shall at once remove it from the area of the work and replace it.

Temporary Storage: No plant shall remain in temporary storage over the summer. Plants delivered to the project that are not to be planted immediately shall be protected in the following manner:

- a. Bare Root Plants: Plants may remain on the site of the work only 24 hours prior to being planted or placed in storage. During this 24 hour period, the Contractor shall continue to exercise care to prevent injury and drying out of the plants. The roots of plants to be placed in storage shall first be puddled in a paste solution of the prepared backfill used in planting and water. The plants shall then be protected and kept moist by "heeling-in" the roots or by placing the plant in a cool moist storage building. The "heeling-in" procedure shall require the plants to be separated and the roots heeled in a suitable moist soil. If plants are stored in a building, the roots shall be covered with a suitable moist mulch. Winter storage of bare rooted plants will be allowed only in temperature and humidity controlled buildings. The Village Engineer shall approve the storage methods. The duration of storage, the method of storage and the materials used for mulch and "heeling-in" shall meet with the approval of the Village Engineer.
- b. Balled and Burlapped Plants and Container Grown Plants: Plants may remain on the site of the work only 72 hours prior to being planted or placed in storage.

Balled and burlapped plants shall be kept moist and their solidity carefully preserved. To prevent drying out or freezing, they shall be stored either in a cool moist storage building or placed in a compact group with a suitable mulch material placed around and between the balls so they are completely covered.

Container grown plant material shall be kept moist by watering as directed by the Village Engineer. To prevent freezing, they shall be stored either in a cool moist storage building or placed in a compact group with a suitable mulch material placed around and between the balls so they are completely covered.

The duration of storage, method of storage and mulch material for balled and burlap material and container grown plant material shall meet the approval of the Village Engineer.

Layout of Planting: The area to be planted shall be finished to line and grade before planting operations are begun. The Contractor shall furnish all marking flags for locating plants and shall mark thereon the key number and size of plants. The Village Engineer will place the marking flags and outline each area for mass or solid planting.

Excavation of Plant Holes: The sides of all plant holes shall be vertical and the bottoms horizontal. On slopes, the depth of excavation will be measured at the center of the hole. Unless otherwise specified, the excess material excavated from the holes shall be spread in the immediate area as directed by the Village Engineer. The excavated material shall not be stockpiled on turf or in ditches. The sides of holes shall not be glazed or smooth.

- a. Excavation for Trees: Holes for trees shall be dug at the location indicated by the marking flags. The diameter of the hole shall be at least 24" wider than the diameter of the ball and the depth of the hole shall be 2" less than the depth of the ball.
- b. Excavation for Shrubs, Vines and Seedlings: Holes for shrubs, vines and seedlings shall be dug within the marked outline of the planting bed. The interval of planting will be designated on the plans. Spacing shall be measured from center to center and alternate rows shall be staggered.

Prior to digging shrub and vine holes, existing vegetation on the area shall be mowed or treated with a non-selective, post emergent non-residual herbicide approved by the Village Engineer. The area shall then be tilled to a minimum depth of 2 inches until free of debris, gullies, clods, weeds, stones and roots.

Holes for shrubs shall be dug to a minimum diameter of 18 inches greater than the diameter of the ball or container. Holes for vines shall be dug to a minimum diameter and depth of 8 inches.

Immediately prior to planting seedlings, the existing grass and weed growth within the planting area shall be cut to a maximum height of 2 inches. On slopes flatter than 3:1, the soil adjacent to the plant row parallel to the contour shall be prepared by cultivating or scalping to remove all grass and weed growth, in a continuous strip not less than 18 inches wide. The seedlings shall be planted in the center of this strip.

Holes for seedlings shall be made large enough to accommodate the root system with a spade, planting bar or an approved mechanical tree planting machine.

Individual holes for container grown plants shall be excavated to the same dimensions for comparable size balled and burlapped maternal.

Pruning: Pruning shall be done in such a manner as to preserve the natural growth habit or each plant. The method and location of pruning and the percentage of growth to be removed shall be the approval of the Village Engineer, all pruning shall be done with sharp tools in accordance with the best horticultural practices.

The ends of all broken and damaged roots of 1/4 inch or larger shall be pruned with a clean cut, removing only the injured portion. All broken branches, stubs and improper cuts of former pruning shall be removed.

- a. Deciduous Trees: Pruning shall consist of thinning the twigs or branches as dictated by the habit of growth of the various types of the trees to be pruned, and as directed by the Village Engineer. The leader and terminal buds shall not be cut unless directed by the Village Engineer.

- b. Deciduous Shrubs: In general, shrubs shall be cut back to 1/2 of their height.

Shrubs that are slow growing or do not sucker readily shall be pruned in the same manner as deciduous shade trees.

- c. Evergreens: Evergreens shall not be pruned except to remove broken branches.

Planting Procedures: The prepared backfill shall consist of a mixture of topsoil, peat moss and fertilizer. To each cubic yard of topsoil, add 3 cubic feet of loose peat moss, 3 pounds of phosphorus nutrients and 1 pound of potassium nutrients. The method of mixing the components of the prepared backfill shall meet the approval of the Village Engineer. The compressed ratio of the baled peat moss will determine the number of loose cubic feet contained therein. Topsoil shall be stockpiled at locations approved by the Village Engineer.

At the end of the establishment period, nitrogen nutrients shall be uniformly applied to the surface of all backfilled areas where trees, shrubs and vines were planted at the rate of 6 pounds of nutrients per 1000 square feet on inorganic mulch, and 10 pounds of nutrients per 1000 square feet on organic mulch.

The prepared backfill soil shall, at the time of planting, be in a loose, friable condition. At no time shall the prepared backfill or other topsoil used on the job be stockpiled on turf or in ditches.

All plants shall be placed in a plumb position and set 2 inches higher than the depth they grew in the nursery. Prepared backfill shall be placed around the root system. Tamping or watering shall accompany the backfilling operation to eliminate air pockets.

Thorough watering of trees, shrubs and vines, with a method approved by the Village Engineer, shall follow the backfilling operation. This watering shall completely saturate the backfill and be performed during the same day of planting. After the ground settles, as a result of the watering, additional backfill shall be placed to match the level of the finished grade. Approved watering equipment shall be at the site of the work and in operational condition prior to starting the planting operation.

- a. Balled and Burlapped Plants: After the plant is placed in the hole, all cords and burlap shall be cur away from the trunk.
- b. Container Grown Plants: Prior to placing the plant in the hole, the container shall be removed with care so as not to disturb the ball of soil that contains the root system. During the planting operation, care shall be taken not to destroy the solidity of the ball of soil. Pots of material that will decompose in one growing season need not be removed.
- c. Bare Root Plants: The roots shall be carefully spread in a natural position and prepared backfill shall be worked in around the roots so each root is individually packed to eliminate air pockets. The plant shall be gently raised and lowered to assure contact of the roots with the soil.

- d. Seedling Plants: When seedlings are removed from storage for planting, they shall be transported to the planting site in containers of water and the roots shall be continuously immersed until planted. The roots shall be placed in the center of the hole and prepared backfill shall be compacted around the roots to eliminate air pockets. The prepared backfill shall be saturated with water after the plant is placed. Any unplanted seedlings left at the end of each day shall be removed from the water, the roots wrapped in moist materials and the seedlings placed in storage.

Mulch Cover: A mulch cover shall be provided for all plants except seedlings. A 4-inch deep circular water saucer of soil shall be constructed around single plants and shall be filled with mulch material to a depth of not less than three inches (3"). When the plant is in a bed in which spacing is less than 6 feet on centers, the entire bed shall be mulched to a depth of not less than three inches (3") and with a mulch material. The mulch shall extend 3 feet beyond the peripheral plants of the bed.

Wrapping: Within 7 days after planting, all shade trees of 2 1/2 inches diameter or larger shall be wrapped from the ground to the lowest major branch. Unless otherwise specified, a double layer of commercial screen wire mesh shall be wrapped around the trunk of the tree. The screen wire shall be secured to itself with staples or single wire strand tied to the mesh.

E. PERIOD OF ESTABLISHMENT AND GUARANTEE

Final inspection of all work will be made during the month of September each year. To be acceptable, the plant must be in a live healthy condition, representative of its species, and shall have been growing in place for not less than one year prior to inspection. No portion of this work will be inspected until all items of work are completed.

Plants that do not meet the requirements for acceptance shall be replaced by the Contractor at his/her own expense following the date of inspection and prior to November 15 or in the case of items specified for spring planting only, prior to the following May 15, at which time another final inspection will be made for replacements only. Should replacements include both spring and fall items, the Contractor may elect to plant all replacements in the spring, prior to May 15.

The Contractor shall remove immediately from the site of the work any dead plant material. During spring or fall planting, the Contractor will not be permitted to terminate the operation until all plant material is in a live, healthy condition. All plant material which dies within 15 days after being planted shall be replaced at the time and shall be considered as part of the original planting and be subject to the requirement of the period of establishment.

Plant Care: During the period of establishment, the Contractor shall properly care for all plants doing such weeding, watering, adjusting of braces, repair of water saucers or other work which is necessary to maintain the health and satisfactory appearance of the plantings. All requirements for proper care during the period of establishment shall be considered as incidental to the cost of the contract and shall be performed within 5 days following notification by the Village Engineer.

- a. During the period of establishment, additional watering shall be performed at least once within every 30 days during the months of May through December.

The schedule for watering within the 30 day increment will be determined by the Village Engineer. Should excessive moisture conditions prevail, the Village Engineer may delete any of all of the additional watering cycles or any part of said cycles.

The water shall be applied to individual plants in such a manner that the plant hole will be saturated without allowing the water to overflow beyond the earthen saucer. Watering of plants in beds shall be applied in such a manner that all plant holes are uniformly saturated without allowing the water to flow beyond the periphery of the bed. The plants to be watered and the method of application shall be approved by the Village Engineer. The Contractor shall not be relieved in any way from the responsibility for unsatisfactory plants due to the amount of supplemental watering.

- b. During the period of establishment, weeds and grass growth shall be removed from within the earthen saucer of individual trees and from the area within the periphery of the mulched plant beds. This weeding shall be performed at least twice during the months of May through September. The weeding schedule will be determined by the Village Engineer.

The weeding may be performed in any manner approved by the Village Engineer provided the weed and grass growth, including their roots and stems, are removed from the area specified therein. Mulch disturbed by the weeding operation shall be replaced to its original condition. All debris that results from this operation must be removed from the right of way at the end of each day.

The plants weeded will be determined by the Village Engineer. The Contractor shall not be relieved in any way from the responsibility for unsatisfactory plants due to the extent of weeding.