SECTION VII

GRADING AND LANDSCAPING

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A. GENERAL

All vegetation removal, excavation, or grading work within the public right-of-way or other public places shall require a permit and be regulated in accordance with this Standard and applicable Village codes and ordinances. Vegetation removal or grading work on other lands shall comply with this Standard and applicable Village codes and ordinances.

B. ADDITIONAL RESOURCES

To protect existing utilities all underground work shall be performed in accordance with the Illinois Underground Utility Facilities Damage Prevention Act and JULIE Excavator Handbook.

Chapter 25 of the Municipal Code - Tree Protection and Preservation, Vegetation

Chapter 6 of the Municipal Code – Article XI, Site Grading, Drainage and Soil Erosion/Sedimentation Control

C. PROPERTY PROTECTION

Trees, shrubbery, irrigation and sprinkler systems, fences, poles and all other property and surface structures shall be protected during construction operations. All fences, poles or other man-made surface improvements which are moved or disturbed shall be restored to their original condition after construction is completed. Any trees, shrubbery or other vegetation, which are approved for removal shall be removed completely, including stumps and roots. Responsibility for any damage or claims for damage caused by construction operations to shrubbery or other landscape improvements, which were not authorized for removal or trimming, shall be assumed by the developer.

Restoration of Existing Improvement Surfaces
The developer shall restore all pavements, sidewalks, driveways, curbs, gutters, trees, shrubbery, lawns, fences, poles, public utilities, and other property and surface structures removed or disturbed during or as a result of construction operations to a condition which is equal in appearance and quality to that which existed before the work began. The surface of all improvements shall be constructed of the same material and match in appearance the surface of the improvements which were removed.

Cultivated Lawns
When cultivated lawns are damaged as the result of construction activities the disturbed areas shall be restored by furnishing and placing topsoil and sod with a guarantee period.

D. SOIL EROSION AND SEDIMENT CONTROL

Final Engineering Plans, specifications, and the Engineer Estimate of Probable Cost shall include soil erosion and sediment control measures during the construction stage and until permanent stabilization is established. Measures may include storm water runoff diversions, inlet filter baskets, barrier fence, sediment basins, ditch checks, seeding and mulch, and watering to control dust. The Practice Standards of the Illinois Urban Manual shall be followed.

Soil erosion and sediment control plans shall be approved by the Village Engineer and installed by the developer prior to earth disturbing activities commencing on the site. Following installation, the developer shall provide a minimum 48 hours' notice for inspection to the Village Engineer to verify and approve the measures installed.

The subject property is considered stabilized with 75% established turf growth, or the installation of sod. This use of sediment/erosion control as a temporary stabilization measure will only by accepted during seasons where grass growth/sod installation cannot occur; this will apply only to the following

months; November–April. No exceptions will be made. Sediment control measures are required to remain in place until 90 percent of the disturbed area is permanently stabilized with turf. Sodding must be sufficiently "knit" with the soil to prevent removal by hand or flotation.

E. TREE AND VEGETATION PROTECTION

Protection of Existing Trees and Shrubs

1. Code Compliance

   The developer shall comply with the requirements of Chapter 25 of the Municipal Code in connection with all work in the vicinity of, or affecting, existing trees and shrubs in any way, whether such trees and shrubs are located on or off the site being developed.

2. Village Review

   The developer's proposed methodology for protecting existing trees shall be reviewed by the Village Forester and work shall only be in accordance with an approved tree construction activity plan. If, in the opinion of the Village Forester, the developer has not taken the necessary precautions to preserve the tree asset, the Village may issue a stop order on all site development work in progress.

3. Tree Plan Approval

   The criteria for approving a tree plan shall include all applicable requirements of Village codes and ordinances, as well as the following:

   a. General design.

   b. Planting specifications.

   c. General environmental considerations.

   d. Preservation in a natural state of forested land.

   e. Extent of existing tree coverage.

   f. Techniques for the preservation and protection of existing trees during construction.

F. GRADING

1. Permits Required

   No entity shall alter, cause or permit the alteration of any existing land grade, contour or drainage pattern in any manner, whether or not pursuant to building, grading or other permits, without first complying with all applicable regulatory requirements and the provisions of these Standards and obtaining a grade alteration permit or approval. Copies of permits from regulatory agencies shall be provided to Village Engineer.

2. Lot Grading

   With the exception of water features, ponds, and detention facilities, grading of parking lots and rear, front, or side yards within the Village shall be performed to prevent minor ponding of water exceeding 12 inches in the event of complete failure of the storm sewer system.

Overland flow routes for storm water runoff shall be adequately identified, sized and located within public drainage and utility easements for the 24-hour, 100-year storm event.

Turf area grading shall be between 1.0 percent and 30 percent slope. Slopes over 20 percent shall be sodded and staked. Slopes over 30 percent with engineered stabilization measures may be approved by the Village Engineer at their discretion.

Residential driveway grades on all lots, as measured from the top of curb to the finished garage floor, shall be between 1.5 percent and 8 percent. Slopes between 8 percent and 10 percent may be approved by the Village Engineer at their discretion.

3. Drainage

All grading activity shall maintain positive and controlled drainage patterns that will not unreasonably block flow from nor divert flow to, adjoining property.

4. Lot Grading Certification

At the time of final occupancy, and after landscaping, the developer's licensed engineer shall furnish to the Village Engineer a 95 percent certification statement and as-built topographic plans. The statement shall indicate the finished lot grades around all structures conform to the approved grading plan and that each lot drains properly. The as-built topographic plans shall have the results of an elevation survey of the completed work demonstrating as-built grades adjacent to the approved proposed elevations.

G. STREAM PRESERVATION

1. Purpose and Need

The developer of a parcel adjacent or tributary to an existing drain, reach or tributary of a river or stream shall remove and dispose of obstructions, overgrown vegetation, trash, debris, construction materials, and shall improve the existing channel's ability to carry floodwater, and clean out blockages of a channel caused by overgrowth, debris, and sediment deposits.

2. Design Considerations

Bank stabilization activities required by the Village Engineer shall be undertaken by the developer to discourage illegal dumping, improve the aesthetic value, and reduce future maintenance costs. The developer shall permanently permit vehicular access for maintenance work through recorded easements.

3. Inspection and Maintenance

The Village Engineer and Director of Public Works shall jointly review improvements and routinely inspect the adjacent stream to reduce the possibility of storm water conveyance and nuisance problems.

H. INSPECTION REQUIRED BEFORE PLANTING

A 48-hour advance notification to the Department of Public Works is required prior to planting to allow sufficient time for inspection of any trees, shrubs or landscaping required by any applicable code, ordinance, agreement or approved plan.

I. TURF PLANTING

All pervious areas within dedicated public right-of-way shall be graded and seeded or sodded in accordance with the Illinois Department of Transportation Standard Specifications for Road and

Bridge Construction, latest edition. Restoration work shall be performed to the satisfaction of the Village Engineer.

1. Topsoil Placement

   Topsoil shall be furnished and placed to a depth of 6 inches. The work to be done includes preparing the subgrade, removal of surplus earth, filling all irregularities or depressions in the planting area due to settlement, weathering or other causes, furnishing, placing, raking, and rolling topsoil, and removal of debris. The topsoil furnished shall be pulverized and screened consisting of loose, friable, loamy, non-acid soil, rich in organic matter and free from clay and other objectionable matter.

   Before topsoil is placed, the subgrade shall be shaped, trimmed, and finished to accommodate the desired amount of topsoil to bring the area to the proper finished grade. The subgrade shall be tilled to a depth of 2 inches to provide a suitable bond with the topsoil. The topsoil shall be deposited and spread over the planting surface and firmed by rolling to leave a smooth surface.

2. Sodding

   Furnishing and placing sod shall include preparing the ground surface and furnishing, transporting, and placing the sod and other materials required in the sodding operation. Sod shall be a well-rooted mixture of Kentucky Bluegrass and conform to the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

   Sod which has been cut more than 36 hours prior to being placed shall not be used without the approval of the Village Engineer. All sod in stacks shall be kept moist and protected from exposure to the sun, wind, and from burning. Agricultural ground limestone and nutrients shall be included as required. Initial and additional waterings shall be performed in accordance with the Standard Specifications for Road and Bridge Construction. Supplemental watering may be required due to weather conditions.

   The guarantee period for sodding shall extend to April 15th of the year following installation. Any defective, dead or dying sod shall be removed and replaced within that period.

3. Seeding

   Seeding may be approved at the discretion of the Village Engineer. Developer shall furnish and spread an approved seed mixture and apply mulch via an approved method.

4. Growth Required

   An established growth of live turf at a height of not less than two inches shall be required prior to issuance of a final certificate of occupancy for buildings on the project site.

J. NATIVE PLANTING

These standards detail the procedures required to successfully establish native plant communities. Upon successful establishment, native vegetation can provide water quality benefits by filtering sediments and pollutants from stormwater runoff. Additionally, the floral diversity created by these plantings will provide a valuable habitat for wildlife, as well as a unique and aesthetically pleasing landscape.

Native plants shall be selected based on the land use for which they are proposed. Plants mixes shall conform to the plant mixes identified in the Appendix.

- Emergent Mix shall be used in areas designed to have perennial standing water.

- Wet to Mesic Mix shall be used between the normal water level and high-water level associated with stormwater management facilities.
- Low Profile Prairie shall be used in all other areas.

1. Contractor Qualifications

   Contractors chosen for the establishment and enhancement of natural areas shall be experienced in the restoration, installation, and management of said areas. Qualified personnel shall be available, at all times, to identify non-native and native plants by genus and species. The goal of installing successful native plant communities is a long-term process. It is imperative that a qualified contractor perform the initial installation and maintenance.

2. Quality and Condition
   a. Native seed shall be obtained from sources east of the Mississippi River, within the same EPA Level III Ecoregion as the project site (Central Corn Belt Plains).
   b. Native seeds shall be blended by the vendor, and the mixture and ratio shall be guaranteed in writing to be as specified. The amount of seed indicated on the design specifications shall mean the total amount of pure live seed (PLS) per acre for all species listed. It is the sole responsibility of the contractor to provide approved seed that meets industry-standard PLS requirements.
   c. Contractor shall provide the Village Engineer with the name and location of the seed supplier, origin of the various kinds of plants, and a statement of the purity of the seed.
   d. Seed shall conform to applicable State and Federal regulations as in effect on the date of approval. Unless otherwise specified, seed shall not contain in excess of 1 percent weed seeds; 0 percent is desirable.
   e. All storage requirements, stratification, and scarification considerations shall be the sole responsibility of the contractor.
   f. Mycorrhizal inoculants shall be palletized and mixed at 1 lb. per acre with the fine seeds before installation. The inoculants shall contain a diverse mixture of Glomales fungal species (Glomus spp.) in palletized form.
   g. Under no circumstances shall Wheat (Triticum aestivum), Cereal Rye (Secale cereale), Perennial Rye (Lolium perenne), or Barley (Hordeum vulgare) be used as a temporary cover crop or otherwise be incorporated into the approved seed mix.

3. Handling
   a. The contractor shall be solely responsible for the proper handling and storage of the seed according to the best seed handling and storage practices, including fungicide treatments and stratification considerations.
   b. All native seeds shall be packed and covered in such a manner as to ensure adequate protection against damage and maintain dormancy while in transit, storage, or during planting operations.
   c. Seed shall be kept dry and unopened until needed for use. Seed shall not be stored or temporarily stored in locations or vehicles where the temperature will be in excess of 90 degrees F.

4. Site Preparation
   a. The contractor shall be responsible for performing all work necessary to achieve and maintain an acceptable seedbed prior to seeding. All areas shall be properly prepared before seeding begins. Underground utility location maps and plans should be reviewed prior to work.

Equipment having low unit pressure ground contact shall be utilized within the planting areas.

b. The seedbed shall be prepared by working the topsoil to a depth of 3 inches. Site preparation equipment shall be of a design that can be utilized efficiently by the contractor to meet the requirements for the work specified.
c. Prior to seeding, at least 6 inches of topsoil shall be present and free of all clods, stones, roots, sticks, rivulets, gullies, crusting, and cracking. The soil aggregate size will be no greater than 2 inches in the largest diameter.
d. If present, compacted soils shall be disked or raked prior to seeding. Remedial measures for the access area may include ripping from 12 to 18 inches of the soil horizon prior to disking. If compaction is not a concern, and the seedbed needs to be loosened prior to seeding to ensure good seed-soil contact, disking or raking shall be performed using appropriate equipment.
e. If needed, cultivation shall occur within 24 hours prior to seeding. Seeding should occur immediately after the last cultivation and preferably before rain.

5. Seed Installation
   a. Seeding shall be performed using a Truax drill, Truax Trillion seeder, or comparable equipment designed specifically for installation of native seed. For areas where site conditions preclude the use of specialized equipment, seed may be installed through hand broadcasting and lightly raking in the seed. Hand broadcast seed shall be spread at twice the specified rate.
   b. Prior to starting work, all seeding equipment shall be calibrated and adjusted to sow seeds at the proper seeding rate. In general, the optimum seeding depth is 0.25 inch below the soil surface.
   c. Equipment shall be operated in a manner to ensure complete, uniform coverage of the entire area to be seeded and to avoid damage to existing woody plants.
   d. Seeding and soil firming shall not be done during periods of rain, severe drought, high winds, excessive moisture, frozen ground, or other conditions that preclude satisfactory results.
   e. To achieve best results, seed boxes should be kept more than one-quarter full at all times and ground speed should be no more than 2 to 3 mph.
   f. Seeding operations must occur when soil moisture is appropriate for seeding operation.
   g. Native plant seed shall not receive fertilizer
   h. Native plant seed shall not receive fertilizer.
   i. Wet seed that is moldy or otherwise damaged in transit or storage shall not be used.
   j. After seeding operation is completed, install erosion control blanket per manufacturer's specifications as necessary.

   Seasonal Considerations

   (1) November 1 through February 28: Seed must be protected from displacement due to water and wind erosion. Seeding on bare, graded surfaces must be protected with double netted erosion control blankets on slopes. Seed drilled into existing vegetation or on flat ground not subject to erosion may need only minimal erosion protection. Less cover crop will be observed during the following spring due to frost damage.

   (2) March 1 through June 29: Seeding during this period is appropriate but germination of a portion of the seed may not occur until the following season due to lack of cold

stratification to break seed dormancy. Cover crop generally germinates within 2-3 weeks of seeding operation.

(3) June 30 through September 15: Installation of native seed should be suspended unless irrigation can be provided, or unseasonably cool conditions persist. Annual forbs planted with the mix during this time period may germinate but not have sufficient time to flower before fall senescence.

(4) September 15 through October 31: Seeding on bare, graded surfaces must be protected with double netted erosion control blankets on slopes. Seed drilled into existing vegetation or on flat ground not subject to erosion may need only minimal erosion protection. Less cover crop will be observed during the following spring due to frost damage,

6. Plugging Implementation
   1. Plugs shall be installed in the spring or other date guaranteed by the contractor.
   2. Plugs shall be planted in a hole dug with a trowel, spade, planting bar, or suitable instrument such that the hole is of a minimum diameter and depth to accommodate the plug, with its roots, without damage.
   3. The soil excavated from the planting hole should be used to backfill around the plant and lightly packed to secure the roots in the soil.
   4. If planting is delayed more than six hours after delivery, store plugs in the shade, protect from the weather and mechanical damage, and keep them moist and cool. All plugs should be planted within 24 hours of delivery.
   5. Plugs shall be obtained from a reputable nursery or grown from seed. Plugs shall not be collected from wild populations of plants.
   6. Waterfowl exclusion shall be constructed around plug areas in a manner to protect new plantings from depredation. Fencing shall be constructed of 1 inch wire mesh or comparable material two feet in width. Posts shall be metal T-posts or 2”x 2” wood stakes. Posts shall be 4 to 6 feet in length dependent on soil structure within the emergent planting area. String shall be strung across the tops of the exclusion structures to prevent aerial entry by waterfowl.

7. Erosion Control Blanket

   All native planting areas shall be covered with erosion control blanket suitable for site conditions including slope and expected submergence. Erosion control blanket shall be installed within 24 hours after an area is seeded.

8. Signage

   "No Mowing and/or Dumping" or other signage should be installed along the perimeter of native planting areas or as indicated on the plan to define the boundary of the naturalized area.

9. Native Management Plan

   The developer shall be required to submit a management plan for native planting areas to guide establishment, monitoring, and maintenance of these areas. Additional information can be found within Appendix. At a minimum the management plans shall include the following:

   1. Identification of responsible parties for monitoring and maintenance activities both short term and long term
   2. Identification of funding sources and levels for monitoring and maintenance activities

3. Acceptance standards
4. Annual reporting requirements to the Village on progress of vegetation development relative to the acceptance standards.
5. Annual inspection and monitoring activities
6. Annual maintenance activities

K. GUARANTEES

Trees and plantings shall be guaranteed for a period of two years from the date of final approval or acceptance.

Sodding and turf shall be guaranteed through April 15th of the year following final approval or acceptance.

L. MAINTENANCE AND MANAGEMENT

Shrubbery or bushes existing in the dedicated right-of-way of any street shall not exceed 30 inches in height and shall not obstruct sight distances or otherwise be detrimental to public health, safety or welfare.