

**TECHNICAL SPECIFICATIONS: SEEDING AND SOODING**

- SCOPE OF WORK:** The work includes finished grading, furnishing fertilizer, seed and/or sod as stipulated in the project specifications and performance of all operations in connection with seeding and sodding in strict accordance with the applicable drawings and subject to the terms and conditions of the Contract.
- MATERIALS**
  - Turf for all seeding and sodding operations** will be supplied by the Owner.
  - Commercial Fertilizer and Delivery:** Fertilizer shall be delivered to the site in unopened, original containers, each bearing name and address of the manufacturer, name brand or trademark, and manufacturer's guaranteed analysis. The fertilizer shall contain a minimum basic percentage by weight of the following:
 

Nitrogen	24%
Phosphorus	24%
Potash	24%

 Fertilizer Strength - The fertilizer shall be a complete fertilizer containing a minimum basic percentage by weight of the following:
 

Nitrogen	24%
Phosphorus	24%
Potash	24%

 Prior to Seeding and/or Sodding 6-24-24  
 Nitrogen.....24%  
 Phosphorus.....24%  
 Potash.....24%  
 or as approved by the Landscape Architect
  - Grass Seed** shall be redried seed of the most recent seed crop available. All seed shall meet requirements established by the state and federal seed and weed control laws.
  - Mixing of Seed:** The seed shall be mixed thoroughly in accordance with the following:
 

Quantity	Purity	Germination
Kentucky Bluegrass.....	95%	90%
Fine Leafed Perennial Ryegrass.....	25%	85%
Red Fescue.....	10%	85%

 or as approved by the Landscape Architect
  - Match** shall consist of clean straw free from noxious weed seed and other elements harmful to lawns, or any of the commercially used materials available. Where specified on the plans, hydro-mulch shall consist of wood cellulose fiber and shall contain no growth or germination inhibiting factors and shall be dyed green to facilitate metering. The fiber shall have the additional characteristic of dispersing rapidly in water to form a homogeneous slurry and remain in such state while silted in a hydraulic mulching unit.
  - Broadcast Seed** shall comply with state and federal laws with respect to inspection for plant diseases and insect infestation. It shall be fresh cut, live, nursery grown sod, not less than one and one-half (1 1/2) inches thick having well-developed roots. The turf shall be a Kentucky Bluegrass mixture and shall contain no bait or grass grass nor any other noxious weed growth. It shall be firm, tough texture having a compact growth of grass. The sod sections shall be standard in size (6 inches wide x 3 feet in length) and each section shall be strong enough to support its own weight. Sod cut for more than 60 hours shall not be used without the approval of the Landscape Architect.
- SITE PREPARATION**
  - Rough Grading:** All rough grading will be completed by the Owner. This will include the rough grading of each room (if applicable) and the grading and filling of other areas. Owner will also spread black top.
  - Finish Grading:** The Contractor shall complete all finish grading operations. In all areas, surfaces shall have a smooth, continuous grade and shall be left in an even and properly compacted condition which, insofar as practicable, will not provide dips and pockets where water may stand. All areas shall be finish graded as needed to correct surface irregularities produced by preceding operations or by any other cause. A finish grade and earth mounds shall be approved by the Landscape Architect or his authorized representative before any planting, seeding or sodding takes place.
  - Filling:** Areas to be seeded and sodded shall be thoroughly prepared to the required depth of approximately three inches (3") by dishing, harrowing or other approved means. Limited areas as shown on the drawings which are too small to make these operations practicable shall receive special specification prior to final filling. Filling shall conform to the condition of the soil is suitable for the specified type of seeding and/or sodding.
  - Clean-Up:** After completion of filling operations, the surface shall be cleared of all stones, stumps and other objects larger than one inch (1") in diameter or gravel and roots, brush, wire, grade stakes and other objects that may be a hindrance to planting, installation, and maintenance operations. Adjacent paved areas shall be kept clean and soil or other dirt that may be brought upon the surface shall be removed promptly.
  - Seeding and Sodding:** Fertilizer shall be distributed uniformly over all areas indicated to be seeded or sodded at the manufacturer's recommended rate and shall be incorporated into the soil to the depth of at least two inches (2") by dishing, harrowing or other acceptable methods.
- SEEDING (Applies to all areas specified for sod on the Contract drawings)**

65% Topsoil (Black topsoil furnished by the Owner)	
30% Peat (Minimum of 80% finely shredded organic peat moss)	
5% Manure (Well-rotted unchopped horse or cow manure, free from chemicals and not more than 60% moisture by weight)	
- Time Limits:** The season for seeding shall be in lawn areas shall be from April 1 to June 1 and from August 15 to October 1 or at such other times as are approved by the Landscape Architect. All sowing of seed shall be completed after trees and shrubs have been planted.
- Seeding:** No seeds shall be sown during high winds. Seed shall be applied at the rate of 5 pounds per 1,000 sq. ft. or 200 pounds per acre by mechanical means. Half the seed shall be sown with the sower moving in one direction and the remainder shall be sown with the sower moving at right angles to the first sowing. The seeded area shall be lightly raked being careful not to rake seed from one area to another, thus, causing an uneven seeding. The seed shall be covered to a depth from 1/8 inch to 3/8 inch. Seeding shall be done by individuals experienced in the type of work. In the event that seeding equipment does not compact, a separate rolling will be required.
- Mulching:** Mulching shall be performed immediately after seeding operations and shall consist of a hand or machine application of mulch uniformly to a depth of 2" loose measurement.
 

Nitrogen	4%
Phosphorus	20%

 Where specified, hydro-mulch shall be applied uniformly with a hydrocorder at the rates of:
 

Surfaces sloping < 4:1	35 lbs. per 1,000 sq. ft. or 500 lbs. per acre
Surfaces sloping > 4:1	45 lbs. per 1,000 sq. ft. or 2,000 lbs. per acre
- Required Maintenance:** Maintenance shall begin immediately after each seeding operation is complete and shall continue for 90 days through the period from April 1 to November 15. Maintenance activities that are incomplete on November 15 shall be completed beginning May 1 of the following year. Maintain seeded areas by watering, reseeding, leveling and repair of all erosion and settlement where required to establish a uniform turf. Watering of seeded areas shall be as required to grow healthy turf. The Contractor shall be responsible for maintaining all seeded areas until final acceptance by the Landscape Architect.
- Acceptance of Seeded Areas:** When the grass has all been cut a minimum of three times and a uniform distribution of grass plants is established without evidence of excessive weed or crab grass infestation, the acceptance of seeded areas will be determined by the inspecting Landscape Architect.
  - In an infestation of weeds or crabgrass develops prior to acceptance of the lawn, the Contractor shall treat the infestation by hand weeding or chemical control. The chemical control shall be furnished and installed by the Contractor as recommended by the manufacturer. At least two weeks shall elapse after chemical control is applied before a repeat of inspection for acceptance is made to the Landscape Architect.
  - Areas having bare spots larger than one (1) square foot will not be accepted. In this situation, the bare spots must be reseeded in accordance with the seeding specifications, when less than fifty percent (50%) of the area contains bare spots, the entire area shall be completely reseeded also in accordance with the seeding specifications.

- Labels:** The surface on which the sod is laid shall be dug at the Contractor's expense to allow for positive drainage. During periods of high temperature, the sod shall be lightly moistened immediately prior to laying the sod.
 

The sod shall be handled and laid by hand. The first row shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered (i.e. running bonds) to promote more uniform growth and strength. Care should be exercised to insure that the soil is not stretched or overlaid and that all joints are bedded tightly in order to prevent voids which could cause air drying of the roots and weed growth. On sloping areas where erosion may be a problem (3% or greater), sod shall be laid parallel to the contours of the slope with staggered lateral joints and secured by wooden pegs at a minimum of four (4) stakes per sloping area should be laid at the toe of the slope.

As sodding is completed in any one section, the entire area shall be rolled by the Contractor to insure contact between the sod root system and the prepared subgrade. The Contractor shall water the sod immediately after installation to prevent excessive drying during the progress of the work.

Any disturbed joints or depressions caused by workmen or equipment shall be reworked to conform to the proper grade.
- Required Maintenance:** The Contractor shall be responsible for maintaining all sodded areas until such time as these areas are accepted by the Landscape Architect. This acceptance will be granted after the Contractor has established an acceptable standard of turf that has knit to the existing soil.
- Inspection and Acceptance of Sodded Areas:** When the sod has all been cut a minimum of three times and has knit to the soil without evidence of excessive weed or crab grass infestation, the acceptance of sodded areas will be determined by the Landscape Architect.
 

If an infestation of weeds or crab grass develops prior to acceptance of the lawn, the Contractor shall treat the infestation by hand weeding or chemical control. The chemical control shall be furnished and installed by the Contractor as recommended by the manufacturer. At least two weeks shall elapse after chemical control is applied before a repeat of inspection for acceptance is made to the Landscape Architect.

Areas which are dead or are in an unhealthy, unsightly or badly infested condition shall be unacceptable and shall be re-laid using the same type acceptable stand of grass.

In order to obtain final acceptance of sodded areas, the Contractor shall notify the Landscape Architect by telephone or letter that the work has been completed. The Landscape Architect will then conduct an inspection. His findings will be documented in a written field report which will be forwarded to both the Owner and Contractor. If the Landscape Architect approves the area inspected, the Contractor will then be eligible for final payment (ten percent withholding). If the Landscape Architect rejects the inspected area, the Contractor will be required to perform whatever work that is necessary to correct the deficiencies and receive the approval of the Landscape Architect before final payment will be authorized.

Upon acceptance by the Owner, the Owner shall assume maintenance of the lawn areas.

The Contractor shall not be held liable for damage incurred to the sodded areas caused by deicing compounds, toxic substances, fertilizers, pesticides and other materials not specified or not applied by him or under his supervision, nor those damages caused by vandalism or acts of God.
- SOD AND SEED GUARANTEE:** The Contractor shall guarantee all work covered by this specification to the extent that all sod shall be uniform in color, quality and coverage and shall be reasonably free of weeds, diseases or other visible imperfections.

- Base-Roof Plants:** Those plants marked BR (Base-Roof) shall be dug at the Contractor's expense to allow for positive drainage. During periods of high recovery of the plant. Roots shall be covered with a suitable packing material immediately after they are dug for protection until delivery and installation.
 

All base-root trees shall have a heavy fibrous root system characteristic of the species that has been developed by proper cultural treatment, transplanting and root pruning. The spread of the root system in final soil shall be equal to the trunk diameter at six inches.

All base-root plants shall have been maintained in cold storage at the temperature of approximately 30 degrees prior to being delivered to the site.
- Balled and Buried Plants (designated "BB")** shall be dug with firm natural balls of earth of diameter indicated herebelow and of sufficient depth to enclose the roots and feeding root system necessary for full recovery of the plant. Plants having balls broken or cracked during delivery or at time of planting will cause the plant to be rejected by the Landscape Architect.
- Balls:** All balls shall be the top size, as specified in American Standard for Nursery Stock and shall be live, clean, free of rot, bruises or abrasions.
- Deliveries:** All specimens that are demanded by good trade practice to insure arrival of the plant material at the stated delivery point in good condition for successful growth and without injury of any nature shall be taken by the Contractor. Plants shall be covered properly to prevent drying, insect diseases or injury.
- Temporary Storage:** Insofar as it is practicable, plant material shall be planted on the day of delivery. In the event this is not possible, the Contractor shall protect the material stock from sun and drying winds at all times. All balled and burlapped plants shall be shaded from the sun, have their ball set on the ground and heeled in with sand, peat, soil or other moisture-retaining material and shall be kept moist. Plants should not remain unwatered for longer than three (3) days.
- Substitutions:** Substitutions may be permitted. Such substitution may be made only upon written authorization by the Landscape Architect.
- Selection:** All plants shall be obtained from reputable nurseries licensed by the State of Illinois and approved by the Landscape Architect. The Landscape Architect reserves the right to accompany the Contractor to the nurseries for the purpose of selection (buying) material.
- PLANTING:** Planting operations shall be conducted under favorable weather conditions during the season stated in the Contract.
- Excavation for Planting Area:** Before excavations are made, the surrounding turf (if existing) shall be covered in a manner that will satisfactorily protect lawn areas that are to be trucked or hauled over and upon which soil is to be temporarily stockpiled.
- Excavation for Planting:** Excavation for planting shall include the stripping and stockpiling where deemed necessary of all acceptable topsoil occurring within the areas to be excavated for trees, plants, pits and planting beds.
 

Colorer pits with vertical sides shall be excavated for all plants except those plants specifically designated on the plans to be planted in beds. In general, the diameter of pits for trees shall be at least two feet greater than the diameter of the ball or stems of roots. Diameter of pits for shrubs shall be at least one foot greater than the diameter of the ball or spread of roots.

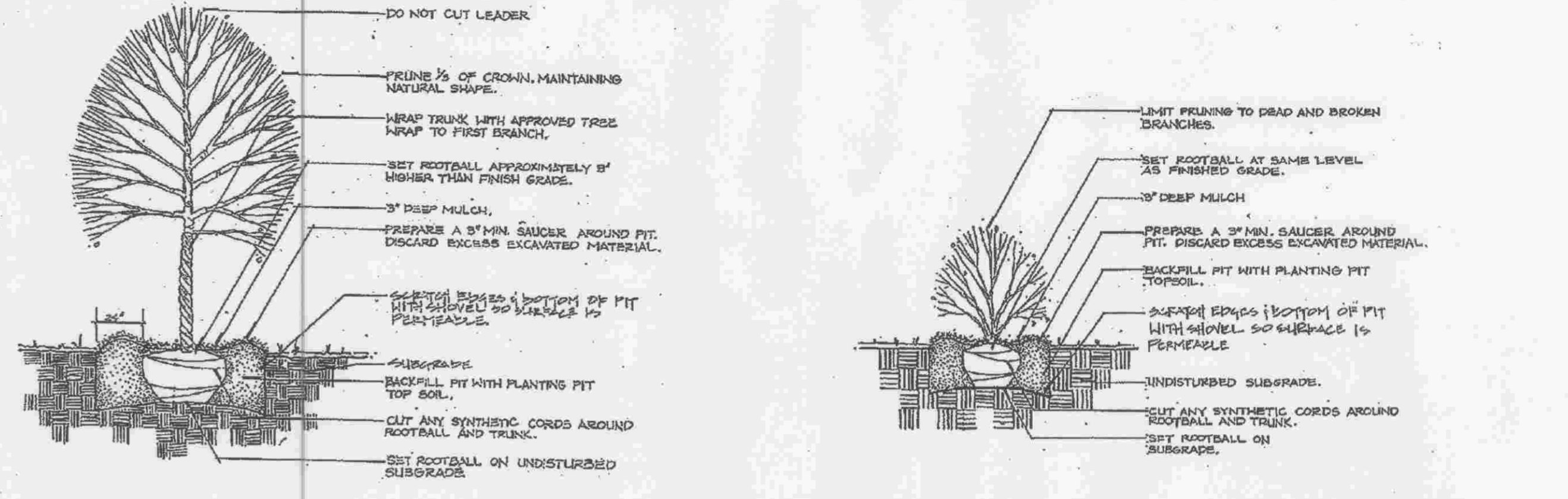
The depth of pits for trees shall be suitable to accommodate the ball or roots when the plant is set in place and to provide for a topsoil or prepared soil in bottom of the pit. The use of augers for plant pit excavation in wet clay soil conditions should be avoided.

For hedge plantings, a continuous trench instead of separate round pits may be utilized.

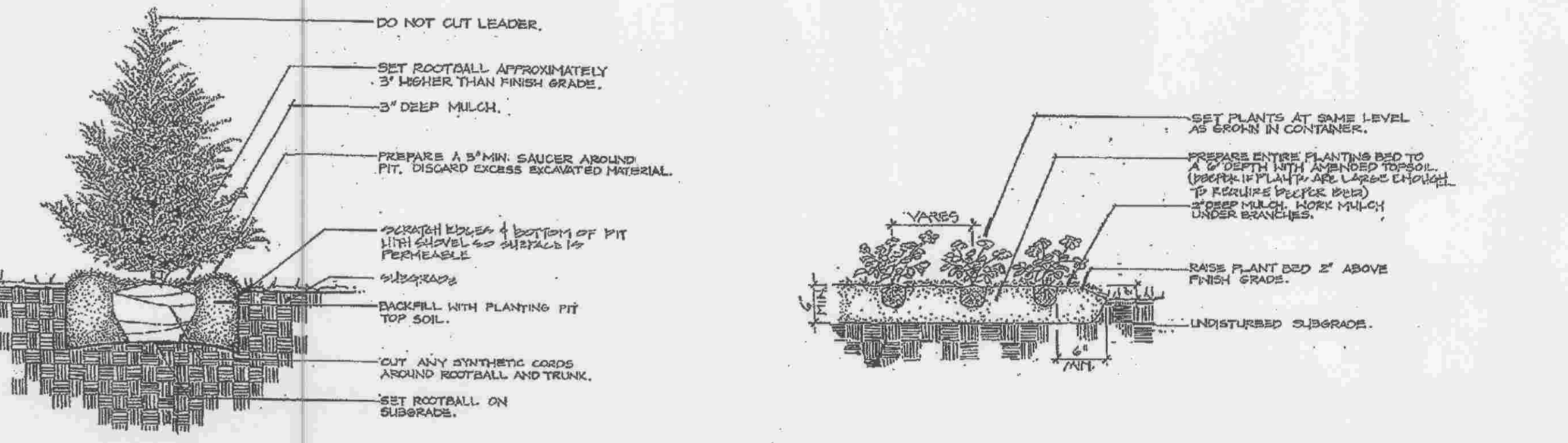
Where obstructions below or above ground are encountered, alternate locations may be selected as approved by the Landscape Architect. Where locations cannot be changed, removal of underground obstructions shall be the responsibility of the Contractor. All alternate locations shall be approved by the Landscape Architect.

Excavated topsoil or rich top soil shall be stockpiled and used for backfilling of pits and all excavated material not needed for backfilling shall be disposed of by the Contractor outside the project property.
- Final Inspection:** After the pit has been dug to the proper size (Section 2), the soil at the bottom of the pit shall be loosened to a minimum depth of four (4) inches by tamping or by other methods. The pit shall then be backfilled with a six (6) inch layer of compacted, prepared soil. In wet conditions, substitute an equal depth of germicide washed sand for the compacted soil backfill. If the Contractor should encounter severe drainage problems or soil conditions which he feels could be detrimental to the growth and survival of the plant material, he should inform the Landscape Architect immediately by phone of the condition before proceeding with the work. The Landscape Architect will then confer with the Contractor so that a solution to the problem can be quickly agreed upon.
- Setting and Fertilizing Plants:** All plants shall be installed in accordance with the following:
  - Balled and Buried Plants:** "BB" plants being planted in pits or trenches shall be placed in the center of the pit or trench on the six inches of compacted, prepared soil. The soil shall be adjusted so that the top of the root ball bears the same relationship to final grade as it bore to previous finish grade in the nursery. All bare soil around the tree trunk shall be removed. All treated burlap or plastic wrap shall be rolled down all around the ball. If feasible, it shall be completely removed, along with any other nondecomposable materials. Untreated burlap need not be removed, but should be loosened around the tree trunk. Backfill the planting pits with prepared soil and fertilizer in 2" layers and tamp each layer to fill voids until the planting mixture is at final grade. The fertilizer (bonemeal or 6-24-24) should be incorporated in the backfill mixture at the rate recommended by the manufacturer.
  - Container Grown Plants:** Open and remove potted plants from containers. If the growing medium is composed of seventy-two percent (72%) or more of peat, perlite, sand, or like material other than sand, all visible roots away from the container medium so as to leave the roots partially exposed. Place plants in the plant pit or trench and carefully backfill with prepared soil and fertilizer among the exposed roots. Continue backfilling and tamping in six inch (6") layers until the planting mixture is at final grade.
  - Base-Roof Plants:** "BR" plants which have been potted in a mud or peat and watered in the center of the pit or trench. All broken or frayed roots shall be cut off. The roots shall be spread out on a natural position and moist prepared soil and fertilizer shall be carefully backfilled among the roots in six inch layers until the planting mixture is at final grade.
- Finalize Planting:** A shallow saucer shall be formed around each isolated plant pit with prepared soil to retain water. All plants shall be watered immediately after planting. In all cases, the required fertilizer shall be incorporated into the prepared soil mixture at rates specified by the manufacturer.
- Disposition of Planting Beds:** All areas specified for ground cover, nurseries or perennials, shall be covered with a two-inch (2") layer of mushroom manure. This shall be worked into the soil at a minimum depth of nine inches (9") by the use of a subsoiler or other mechanism which cultivates. After completion of this operation, the bed shall be mulched in its entirety with an additional three inch (3") layer of mushroom compost prior to the planting of plants.
- Wrapping:** Trees shall be wrapped immediately after planting. Wrap up from bottom to top for evergreen trees. Prior to wrapping, the trunks shall be inspected for injury to bark, improper pruning, and evidence of insect or disease infestation.
- Pruning:** Upon completion of the planting operations, all new trees and shrubs on the site shall have been pruned. Pruning shall be limited to the minimum necessary to remove dead or injured limbs and branches and to compensate for the loss of roots as a result of the transplanting operation. Pruning shall be done in such manner as not to change the habit or shape of the plants. All cuts shall be made flush, leaving no stubs. On all cuts over 2 1/2" diameter and branches and stems on the bark, the injured cambium shall be treated with fungicide and removed; wounds shall be smoothed and shaped so as not to retain water. Treating such areas with a tree paint is not recommended. Pruning shall be done only to remove dead or broken branches. In no case shall a leader be removed.
- Staking:** Securing trees via guy wires and stakes shall not be required unless, in the opinion of the Landscape Architect, conditions are such that certain individual plants require such situation which will be specified on landscape plan drawings. In such cases, the method of staking shall be as follows: stakes shall be of sound, durable, unfinished lumber composite of withstanding above and below ground conditions during the period of guarantee, at 2' or 4' and ranging from 24-30" long. A maximum of 12" of stake shall be exposed above grade level. Guy wires shall be No. 12 gauge galvanized steel wire and hose shall be new two-ply reinforced rubber hose not less than 1/2" inch inside diameter.

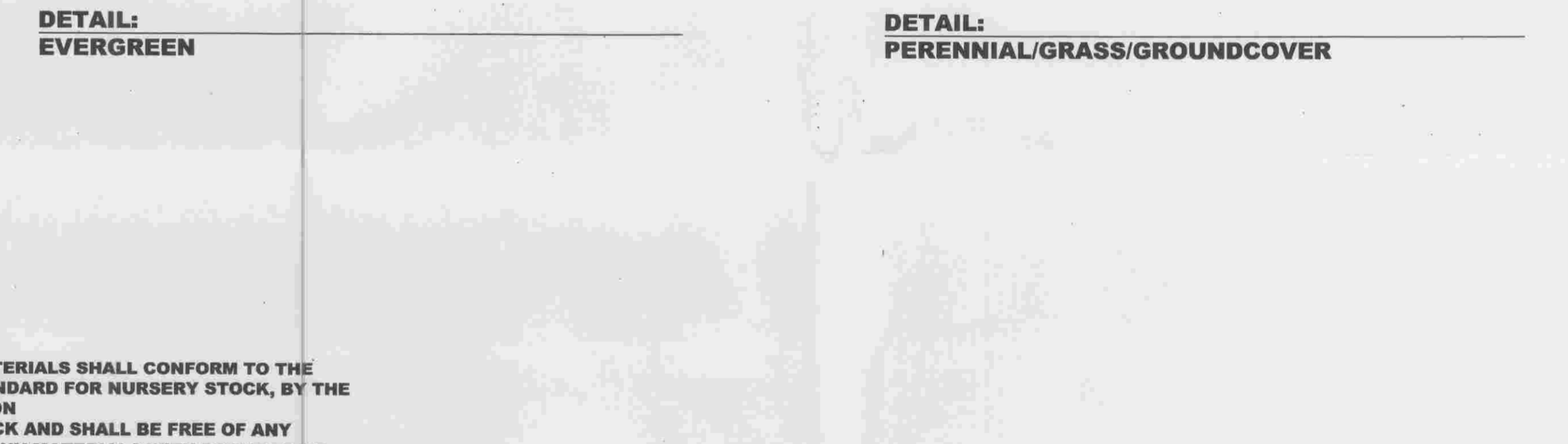
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- Locations without severely compacted sub-grades, no special plant pit preparation shall be required. Whereby severely compacted sub-grades exist, alternate drainage solutions shall be submitted to the Landscape Architect in accordance with Paragraph 3.4 of this section.**



**DETAIL: DECIDUOUS TREE**



**DETAIL: SHRUB**



**DETAIL: EVERGREEN**

- Replacements:** Plants which have died prior to the final inspection shall be replaced before final acceptance will be given. Plants which die or require replacement for other reasons during the one year (1 year) guarantee period shall be replaced as soon as possible during the acceptable planting seasons outlined in this specifications.
- Replacement of all plant material is not part of the Contract, but should be performed by the Owner or under a separate Maintenance Contract.** An application of an 15-5-5 commercial fertilizer should be applied to all plant materials in accordance with the manufacturer's specifications during the growing season immediately following that in which the plants were installed.

**DETAIL: PERENNIAL/GRASS/GROUND COVER**

**NOTE:**

- SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF ANSI Z60.1, AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION**
- ALL PLANT MATERIALS SHALL BE GROWN STOCK AND SHALL BE FREE OF ANY DEFORMITIES, DISEASES OR INSECT DAMAGE. ANY MATERIALS WITH DAMAGED OR BROOKED/DISFIGURED LEADERS, BARK ABRASION, SUNSCALD, INSECT DAMAGE, ETC. ARE NOT ACCEPTABLE AND WILL BE REJECTED.**
- ALL PLANT MATERIALS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. ANY MATERIALS INSTALLED WITHOUT APPROVAL MAY BE REJECTED.**
- TREES NOT EXHIBITING A CENTRAL (OR SINGLE) LEADER WILL BE REJECTED UNLESS CALLED OUT IN THE PLANT SCHEDULE AS MULTI-STEM.**
- PLANT QUANTITIES SHOWN IN THE PLANT SCHEDULE ARE FOR CONVENIENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIALS SHOWN ON THE PLAN AND SHOULD RELY ON THE PLANT SCHEDULE FOR DETERMINING QUANTITIES.**