

**GENERAL CONDITIONS**

- I. SCOPE
  - A. The landscape contractor shall provide all materials, labor and equipment to complete all landscape work as shown on the plans, plant list and specifications.
  - B. Total number of plants shall be as drawn on the landscape plan. If this total differs from the plant key, the landscape contractor is to notify the landscape architect before the bid date.
- II. STANDARDS
  - A. All plant material will conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen (A.A.N.) conform in general to representative species.
  - B. The plant material must be selected from nurseries that have been inspected by state or federal agencies. Any certificates required must be provided to owner or representative upon delivery of materials.
- III. SUBSTITUTIONS
  - A. If a plant is found not to be suitable or available, the contractor is to notify the landscape architect before bidding.
  - B. The owner or landscape architect is then required to select a reasonable alternate or to inform all landscape contractors of the availability of the original plant.
  - C. If a substitute is selected, it must be of the same size, value and quality as the original plant.
  - D. Substitutions to be made with written approval of MANOPCC.
- IV. UTILITIES
  - A. The landscape contractor shall notify utility companies prior to construction and call "Miss Utility" at 1(800)257-7777, to locate main utility lines.
  - B. If there is a conflict with the utilities and the planting, the landscape contractor shall notify the landscape architect or owner immediately. Any cost of relocating caused by the contractors' failure to notify shall be borne by the contractor.
- V. DRAINAGE
  - A. Plants shall not be planted in situations that show obvious poor drainage. Such situations shall be brought to the attention of the landscape architect or owner, and if they deem necessary, the plants shall be relocated or the contract shall be adjusted to allow for drainage correction at a negotiated cost.
- VI. WORKMANSHIP
  - A. During planting, all areas shall be kept clean and neat, and all reasonable precautions shall be taken to avoid damage to existing plants, turf and structures.
  - B. Upon completion, all debris and waste material resulting from planting operations shall be removed from the project and the area cleaned up.
  - C. Any damaged areas shall be restored to their original condition at the cost of the contractor.

**I. PLANT MATERIAL**

- I. STANDARDS
  - A. Bare root
    - 1. Bare rooted shrubs shall be dug with adequate fibrous roots.
    - 2. Roots shall be protected during handling and transit and planted to guard against drying out and damage. If not planted soon after arrival, material must be heeled in and maintained.
  - B. Balled and Burlapped (B&B)
    - 1. Balled and Burlapped plants shall be dug with firm natural balls of earth.
    - 2. Ball sizes shall be in accordance with A.A.N. specifications.
  - C. Container grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold soil in container together.
  - D. All plant material shall be nursery grown unless otherwise specified. Pruning shall be done before planting or during the planting operation.
  - E. All plant material to be transported in covered container. Locally available material may be covered with a burlap or similar cover to keep from drying out, provided the transporting vehicle maintains a maximum of 35 mph.
  - F. Anti-desiccants shall be applied on all materials dug while in foliage.
  - G. Container stock may replace B&B as long as all other criteria are met.
  - H. Same plant material for location near each other shall be similar in appearance. Hedge material will be similar enough in size and shape, etc. to create a uniform hedge.

**II. MATERIALS**

- A. ANTI-TRANSPIRANTS
  - 1. Anti-transpirants shall be an emulsifiable concentrate used to retard excess water loss without harming normal transpiration.
- B. BACK FILL MIXTURES
  - 1. Back fill mixture shall be 1/3 existing soil mixed with 1/3 organic material (or peat) and 1/3 topsoil.
  - 2. If any other additives are found to be needed at the time of planting, it shall be added only with the approval of the landscape contractor, landscape architect and owner or owner's representative.
  - 3. Fertilizer is to be added depending on the size of the plant and the manufacturer's recommendation.
    - \* Trees - Use tree fertilizer as required by particular species
    - \* Shrubs - Use tree fertilizer as required by particular species
    - \* Ground Cover, Vines & Herbaceous Plants - Use tree fertilizer as required by species.
- C. TOPSOIL
  - 1. If used, top soil shall be sandy loam and uniform in color and composition.
  - 2. It shall be free of stones, roots, lumps, plants and other debris over 1 1/2".
  - 3. It shall not contain toxic substances harmful to plant growth.
  - 4. Top soil shall have a Ph range of 5.0 to 7.0 and the organic matter shall be a minimum content of 1.0%.
- D. ORGANIC MATTER
  - 1. Organic Matter used in back fill shall be peat or other material approved by the landscape architect or owner.
- E. PEAT MOSS
  - 1. Type I - sphagnum peat moss - is finely divided with a Ph of 4.0 to 5.0.
- F. LEAF MOLD
  - 1. This is a composted leaf material to be used with the approval of landscape architect.
- G. COMPOST
  - 1. To be organic matter composted and aged by accepted methods to be used only when specified or by approval of landscape architect.
- H. DOLOMITE LIME
  - 1. This is agricultural grade limestone containing total carbonates of 85% with a minimum of 30% magnesium carbonates.
- I. FERTILIZER
  - 1. Fertilizer shall be granular, packet or pellet with 35% to 85% of the total nitrogen in a slowly available form. To be applied by manufacturers methods.
  - 2. Fertilizer shall be a complete fertilizer with a minimum analysis as required by soil test and plant material.
- J. TRACE ELEMENTS
  - 1. These slow release materials containing zinc (Zn), molybdenum (Mo), iron (Fe), copper (Cu), boron (B), and magnesium (Mn). To be applied as per manufacturers directions as deemed necessary by soil test.

**III. BACKFILLING A TREE PIT**

- A. Cut rope or wire on ball of tree and pull burlap back to the edge of the root ball. Remove all plastic wraps and twine. Roll burlap 1/3 of the way down the root ball.
- B. Backfill tree pit with a soil mixture stated in the specifications.
- C. Mix soil amendments in the mixture either prior to filling pit or as pit is being filled.
- D. Make sure plants remain straight during backfilling procedure.
- E. Backfill sides of tree pit halfway with soil mixture and tamp as pit is being filled.
- F. Finish backfilling sides of tree pit and tamp firmly.
- G. NEVER COVER TOP OF TREE BALL WITH SOIL. Top of root ball should be 1/4 the root ball height above the tree pit.
- H. Form a 4" saucer above existing grade and around the outer rim of the tree pit.
- I. Mulch top of root ball and saucer within 48 hours to a minimum depth of 2" and not exceed 3".
- J. Water thoroughly the interior of the tree saucer until it is filled. EVEN IF IT IS RAINING. Provide enough water to ensure saturation of the root ball.
- K. Prune out any dead, conflicting or broken branches.
- L. In extremely hot weather, reduce foliage surface by pruning or stripping of foliage.
- M. Remove all tags, labels, strings, etc. from the tree.

**IV. TREES BRACED BY STAKING**

- A. Choose the correct size and number of stakes and size of hose and wire according to the Tree Support Detail and plant requirements. Staking shall be completed within 48 hours of planting the tree.
- B. Spacing stakes evenly and vertically on the outside of the tree ball drive firmly into the ground (stakes can be slightly angled away from the tree).
  - NOTE: Never drive a stake through the tree ball, as it will damage the tree's root system. Stakes to be 2/3 above ground, 1/3 below.
- C. Cut pieces of reinforced hose long enough to loop around the trunk of the tree.
- D. Place the hose around the trunk at the height required to provide optimum support. Then run the 12 gauge wire through the hose and pull both ends horizontally beyond the stake by 2".
- E. Cut the wire to sufficient length and then twist the wire at the rubber hose to keep it in place.
- F. Run both ends of wire together around the stake twice and then twist wire back onto itself to secure it. Cut off excess wire and stake.
- G. The above procedures are to follow for each stake.
- H. STAKES
  - 1. Stakes shall be 2"x2" hardwood, reasonably free of knots to be long enough for 1/3rd to be driven into the soil, and 2/3rds above the soil surface.
- I. WIRE
  - 1. Wire shall be 12 or 14 gauge galvanized steel or acceptable equal, depending on the size of the tree.
- J. CABLE
  - 1. Cable shall be 1/4" or 3/16" galvanized steel, depending on size of tree.
- K. CLAMPS
  - 1. Clamps shall be galvanized or zinc and large enough to hold wires or wires used.
- L. HOSE
  - 1. Hose shall be corded rubber, uniform in color and either 3/4" to 1" in diameter, depending on the size of the tree.
- M. MULCH
  - 1. Material shall be double shredded composted hardwood bark, such as "silvabark" or approved equivalent.
  - 2. Material shall be mulching grade, uniform in size and free of foreign or harmful matter.

**V. INSPECTION**

- A. Plants may be subject to inspection and approval by the owner or owner's representative at the place of growth for conformity to specification requirements as to quality, size and variety. This will be at the owner's expense.
- B. Plants damaged in handling or transportation may be rejected by the owner or owner's representative.

**II. PLANTING PROCEDURES FOR TREES**

- I. PREPARING TREE PIT
  - A. The tree pit must be a minimum of 2 times the size of the root ball at the top.
  - B. The walls of tree pit shall be dug so that they are scarified.
  - C. The tree pit shall be deep enough to allow 1/3 of the root ball to be above the existing grade. Any loose soil at the bottom of the pit shall be tamped by hand or with the bucket of the backhoe.
  - D. Dig pit 6" deeper than depth required for root ball. Fill bottom of pit with 6" compacted soil mix adjusting depth to insure top of root ball is 1/4 above the surface of the soil.
- II. PLACING TREE IN THE PIT
  - A. Place the tree in the pit by lifting and carrying the tree by its ball (never lift by branches or trunk) and then lowering it into the pit. Contractor is responsible for providing any machinery necessary to lift and move plant material and to insure it is not dropped.
  - B. Set the tree straight and in the center of the pit with the most desirable side of the tree facing toward the prominent view (sidewalk, building, street, etc.).
  - C. Any dropped material may be rejected by owner or representative. Any dropped material should be flagged with red flagging on its trunk and noted on a plan. Should plant die, it will be replaced by the contractor at no cost to the owner.

**III. PLANTING PROCEDURES FOR SHRUBS**

- I. PREPARING SHRUB PIT
  - A. For a single shrub, the pit shall be dug large enough for the proper setting of the root ball (4" wider than root ball at base. 2 to 3 times the width of the root ball at the top).
  - B. For a shrub mass planting, the entire bed area shall be rototilled 3 to 4" deep. Each shrub pit shall be excavated for the proper setting of the root ball.
  - C. For a hedge, a trench shall be dug large enough for the proper setting of all of the plants root balls (the trench shall be 2 times wider than the root balls).
  - D. Form a compacted base in the bottom of the hole to adjust plant height to proper location. Compact sufficiently to prevent settling.
- II. PLANTING SINGLE SHRUBS AND BACKFILLING PIT
  - A. Remove all plastic wraps, twine, containers, etc.
  - B. Place the plant in the pit by lifting and carrying it by the root ball.
  - C. Set the plant straight and in the center of the pit with the most desirable side facing toward the prominent view.
  - D. Use a soil mixture as specified.
  - E. Make sure the plant remains straight during backfilling procedure.
  - F. Backfill side of the pit halfway with soil mixture and tamp as the pit is being filled.
  - G. Pull the burlap back 1/3 the way down the root ball. Make sure burlap does not become exposed above soil surface.
  - H. Finish backfilling the sides of the shrub pit and tamp firmly.
  - I. Form a saucer above the existing grade and around the planting pit.
  - J. Mulch top of root ball and saucer a minimum of 2" depth and not to exceed 3" in depth.
  - K. Water thoroughly, the interior of the shrub saucer to insure root ball is saturated. EVEN IF IT IS RAINING.
  - L. Prune out any dead, conflicting or broken branches.
  - M. Remove all tags, labels, strings, etc. from the plant.

**III. PLANTING A SHRUB MASS**

- A. Follow the same procedure as for a single shrub. (Section II A-M)
- B. Edge and rake the entire planting bed to obtain uniform surface.
- C. Match the entire planting bed a minimum of 2" depth and not to exceed 3" depth.
- D. Water the entire planting bed thoroughly. EVEN IF IT IS RAINING. To saturate top 2" of soil.
- E. Prune out any dead, conflicting or broken branches.
- F. Remove all tags, labels, strings, etc. from the tree.

**IV. PLANTING PROCEDURES FOR GROUND COVER**

- I. PREPARING GROUND COVER BED
  - A. The ground cover bed shall be loosened prior to planting by one of the following methods: rototilling, back-hoeing and rototilling or by picking (generally done on small areas or on slopes). Soil shall be loosened to a depth of 4" to 6".
  - B. Soil additives for the ground cover bed shall be peat and topsoil, (2" deep) after the soil has been loosened and additives then worked into the bed by one of the following methods: rototilling, back-hoeing and rototilling or by picking (in which soil additives are spread by hand into the individual plant pockets and worked into the soil by pick).
  - C. Fertilize in planting hole or use water soluble fertilizer at base of plants after planting.
  - D. Mulch the entire ground cover bed to minimum 1" depth and not to exceed 2" in depth.
- II. PLANTING GROUND COVER
  - A. The ground cover planting holes shall be dug through the mulch with one of the following: hand trowel, shovel, bulb planter or hoe.
- B. Before planting, biodegradable pots shall be crushed and the top edges broken down below the surface. Non-biodegradable pots shall be removed. Unwrap any bound roots, do not break root ball.
- C. The ground cover (either potted or bare root) shall be planted:
  - 1. So that the roots of the plant are surrounded by soil below the mulch; plants being set so that the top of the soil in the pot is even with the existing grade, and bare root plants being covered up to the crown of the plant or soil level.
  - 2. At an equal distance apart (plans and specifications specify the "on center" (o.c.) distance for the ground cover). See spacing guide.
- D. The entire ground cover bed shall be edged and thoroughly watered.

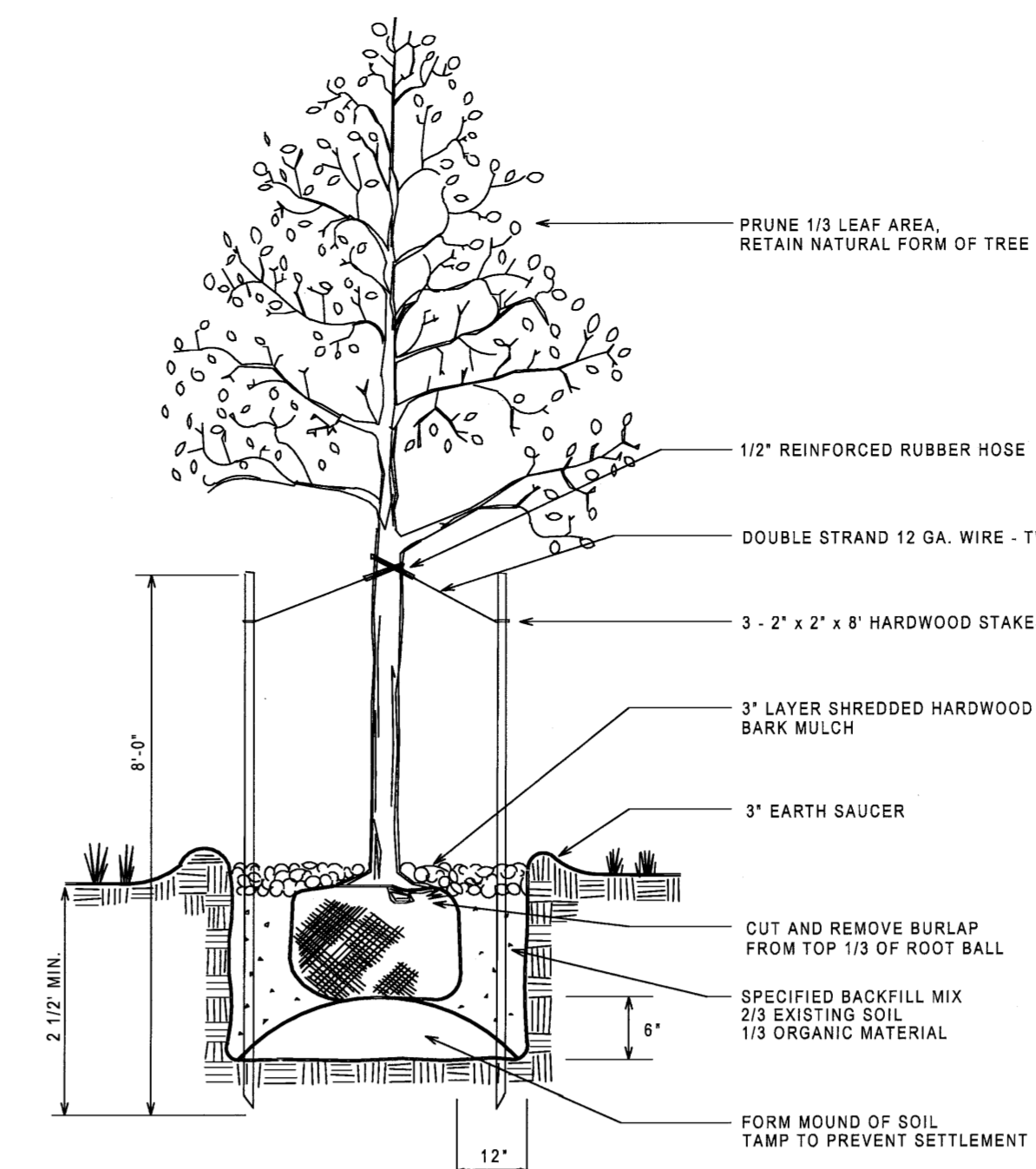
**V. SEEDING**

- I. TEMPORARY SEEDING
  - A. Vegetation - Annual Rye grass or Japanese Millet shall be used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetation cover, permanent seeding is required.
    - 1. Seed Mixtures - Temporary Seeding
      - Preferred: Annual Rye - Winter, 200-300 lbs/acre (1/2 that amount for over seeding) Japanese Millet - Summer, 25lbs/acre. (These are preferred because existing and proposed native grasses and wildflowers may not compete well with certain grass species)
      - 2. If seed mixtures used are other than those preferred they must be from table 26 of "Standards and Specifications for Soil Erosion and Sediment Control" by the Maryland Department of Environmental Protection. Temporary plant material must be removed prior to seeding of other material.
      - 3. For sites having soil tests performed, the seeding and amendment rates shown in table 26 of "Standards and Specifications for Soil Erosion and Sediment Control" shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for temporary seeding.
- II. PERMANENT SEEDING
  - A. Seeding grass and legumes to establish ground cover for a minimum period of one year on all disturbed areas generally receiving low maintenance.
    - Seed mixtures:
      - 1. Seed mixtures not from table 26 of "Standard and Specifications for Soil Erosion and Sediment Control" by the Maryland department of Environmental Protection, must be similar or approved by landscape architect. Additional planting specifications for exceptional sites such as shore lines, stream banks or dunes, or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 342 - Critical Area Planting.
      - 2. For sites having disturbed areas over 5 acres, the rates shown in table 26 of "Standards and Specification for Soil Erosion and Sediment Control" shall be deleted and the rates recommended by the soil testing agency shall be written in.
      - 3. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/acre). The above recommended soil amendments and hose stated in the soil test to be performed at the time of seeding, or as recommended by state agency and manufacturers products.
      - 4. Do not fertilize area to be seeded around storm water management facilities.
      - 5. Contractor to provide a final product of grass crop creating a lawn of uniform color and texture after three mowings.

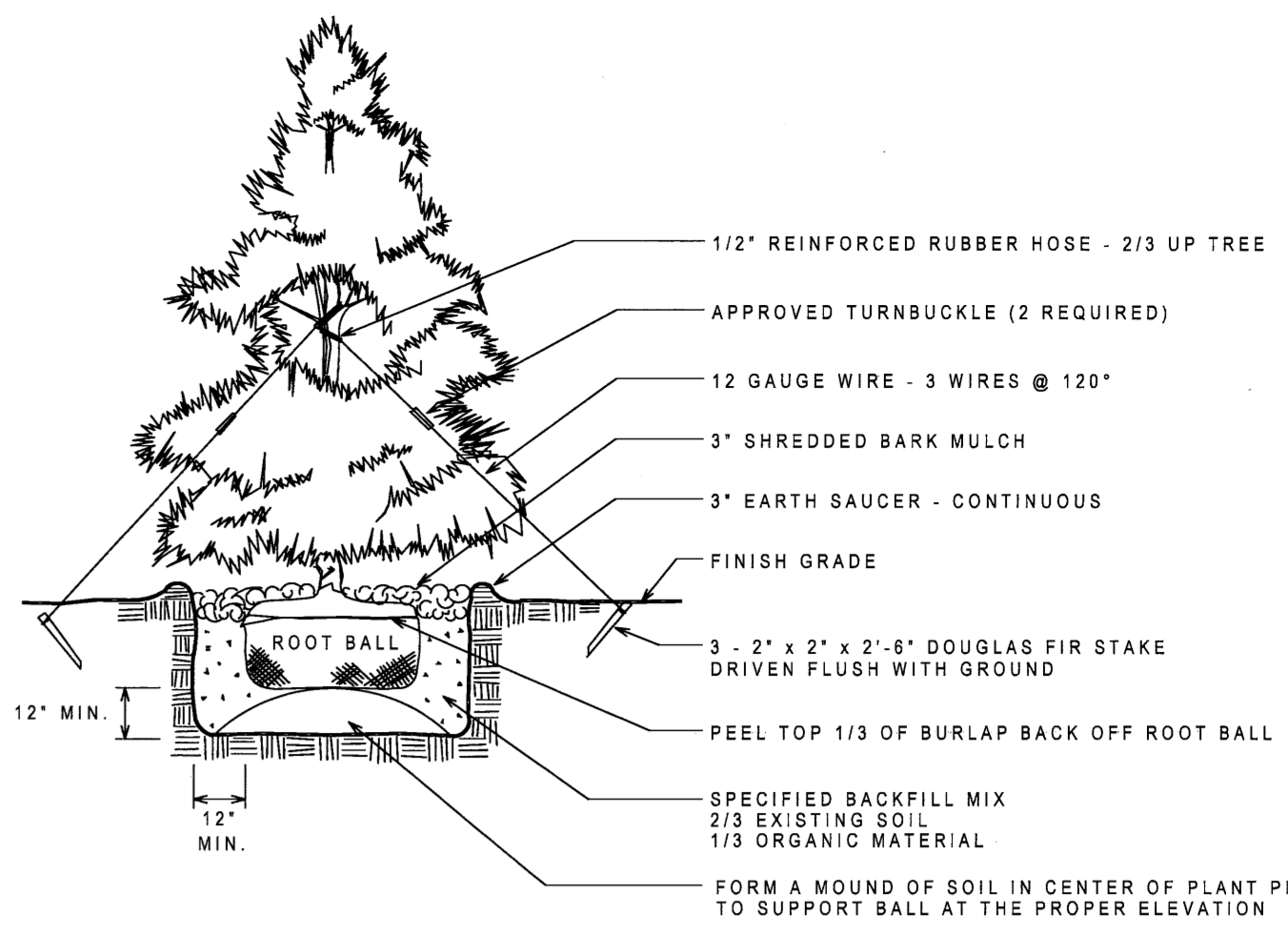
**VI. SOIL TESTING**

- 1. Contractor to perform soil test as per accepted methods by the local agricultural extension service.
- 2. Samples to be tested by reputable lab.
- 3. Contractor will be held responsible for notifying owner of any problems or deficits determined by the test results.
- 4. Corrections will be discussed and cost negotiated with owner.
- 5. Plant failure based on soil deficits or problems due to failure of contractor to take samples, will be replaced at the cost of the contractor after corrections have been made.

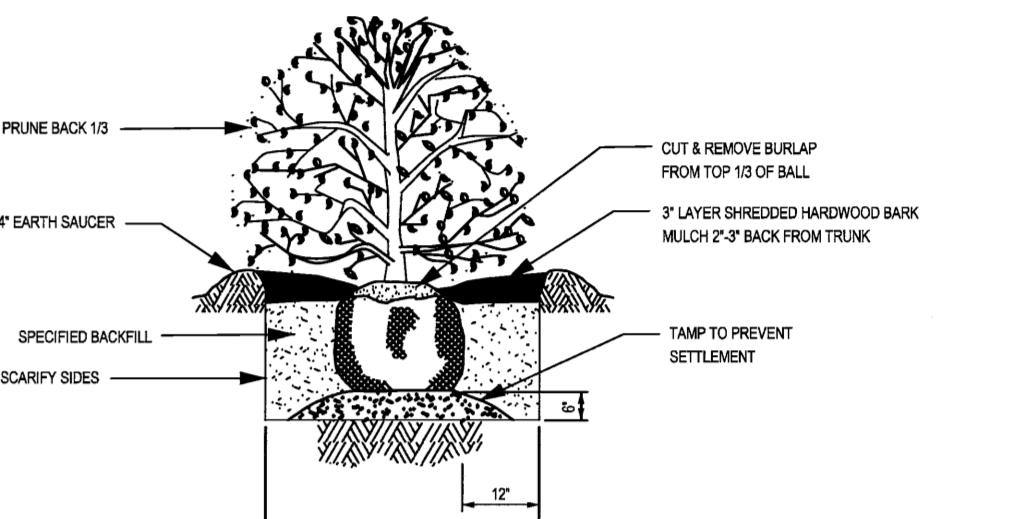
Common Name / Botanical Name	Annual Growth Rate	Planting Height	Planting Caliper	Height after 5 yrs	Ultimate Height / Spread	Native
<b>Evergreen</b>						
Cryptomeria japonica / Japanese Cedar	1'-3"	8'	18"	50-60' tall / 25-30' wide	No	
Ilex opaca / American Holly	1'-1.5"	8'	14"	40' tall / 15-25' wide	Yes	
Juniperus virginiana / Eastern Red Cedar	1'-1.5"	8'	14"	40-50' tall / 8-15' wide	Yes	
Picea abies / Norway Spruce	1'-3"	8'	18"	40-60' tall / 30-35' wide	No	
Pinus strobus / Eastern White Pine	1.5-3"	8'	18"	50-80' tall / 15-20' wide	Yes	
Pseudotsuga menziesii / Douglas Fir	1'-3"	8'	18"	50-70' tall / 20-30' wide	No	
Thuja plicata 'Green Giant' / Green Giant Arborvitae	3-6"	8'	28"	25-30' tall / 10' wide	No	
Thuja plicata 'Green Giant' / Green Giant Arborvitae	3-5"	16"	30"	25-30' tall / 10' wide	No	
Cupressocyparis leylandii / Leyland Cypress	2-4"	8'	23"	65' tall / 12' wide	No	
Cupressocyparis leylandii / Leyland Cypress	2-4"	16"	31"	65' tall / 12' wide	No	
Cupressocyparis leylandii / Leyland Cypress	2-4"	22"	37"	65' tall / 12' wide	No	
<b>Deciduous</b>						
Gleditsia triacanthos / Honeylocust	2-3"	12-14'	1.75-2"	19'	40' tall / 35-45' wide	Yes
Liquidambar styraciflua / Sweetgum	1-1.5"	12-14'	1.75-2"	16'	50' tall / 25-30' wide	Yes
Liriodendron tulipifera / Tulip Poplar	1.5-3"	12-14'	1.75-2"	17'	70-90' tall / 25-30' wide	Yes
Quercus alba / White Oak	1"	12-14'	1.75-2"	14'	60-80' tall / 60-80' wide	Yes
Quercus palustris / Pin Oak	1.5-3"	12-14'	1.75-2"	17'	40-60' tall / 35-40' wide	Yes
Quercus palustris / Pin Oak	1.5-3"	12-14'	8-7"	17'	40-60' tall / 35-40' wide	Yes
<b>Ornamental</b>						
Cercis canadensis / Eastern Redbud	1-1.5"	10-12'	1-1.5"	15'	30' tall / 25' wide	Yes
Crataegus phaenopyrum / Washington hawthorn	1-1.5"	10-12'	1-1.5"	15'	28' tall / 23' wide	No
Prunus yedoensis / Yoshino Cherry	1-1.5"	10-12'	1-1.5"	15'	25' tall / 30' wide	No
<b>Shrubs</b>						
Ilex x 'Nellie R. Stevens' / Nellie R. Stevens Holly	12-18"	3"	8"	15-20' tall / 10' wide	No	
Juniperus chinensis 'Pfitzeriana' / Blue Pfitzer Juniper	12-18"	3"	8"	4-5' tall / 5-8' wide	No	
Physocarpus opulifolius / Ninebark	12-18"	3"	8"	6-10' tall and wide	Yes	
Sambucus canadensis / Elderberry	16-24"	3"	10.5"	5-12' tall and wide	Yes	
Ilex glabra / Inkberry Holly	9"-12"	3"	7"	7' tall / 9' wide	Yes	
Viburnum prunifolium / Blackhaw Viburnum	12-18"	3"	8"	up to 15' tall / 12' wide	Yes	
Viburnum x pragensis / Prague Viburnum	12-18"	3"	8"	6-10' tall and wide	Yes	
Viburnum x thyridophylloides 'Alleghany' / Alleghany Viburnum	12-18"	3"	8"	8-10' tall and wide	Yes	



**TREE PLANTING DETAIL**  
NOT TO SCALE  
\*Note: Specific planting for larger stock to be specified by installer at time of installation.



**TREE PLANTING DETAIL - EVERGREEN TREE**  
NOT TO SCALE  
\*Note: Specific planting for larger stock to be specified by installer at time of installation.



**DETAIL - SHRUB PLANTING**  
NOT TO SCALE

**Plant Schedule**

Symbol	Quantity	Scientific Name	Common Name	Planting Size	Comments
	55	Gleditsia triacanthos	Honey Locust	1 1/2'-Cal	
	42	Liquidambar styraciflua	American Sweetgum	1-1/2'-Cal	
	54	Liriodendron tulipifera	Tulip Tree	1 1/2'-Cal	
	31	Quercus alba	White Oak	1 1/2'-Cal	
	47	Quercus palustris	Pin Oak	1 1/2'-Cal	
	22	Quercus palustris	Pin Oak	6-7'-Cal	

Quantity	Scientific Name	Common Name	Planting Size	Comments
169	Cupressocyparis leylandii	Leyland Cypress	8-10' ht. B&B	
58	Cupressocyparis leylandii	Leyland Cypress	16-18' B&B	
78	Cupressocyparis leylandii	Leyland Cypress	22-24' B&B	
86	Ilex opaca	American Holly	7-8' B&B	
65	Ilex x 'Nellie R. Stevens'	Nellie Stevens Holly	7-8' B&B	
44	Juniperus virginiana	Eastern Red Cedar	7-8' B&B	
248	Picea abies	Norway Spruce	7-8' B&B	
214	Pinus strobus	Eastern White Pine	7-8' B&B	
180	Pseudotsuga menziesii	Douglas Fir	7-8' B&B	
253	Thuja plicata 'Green Giant'	Green Giant Arborvitae	8-10' ht. B&B	
98	Thuja plicata 'Green Giant'	Green Giant Arborvitae	16-18' B&B	

Quantity	Scientific Name	Common Name	Planting Size	Comments
45	Cercis canadensis	Eastern Redbud	8-10' ht. B&B	
13	Crataegus phaenopyrum	Washington Hawthorn	1 1/2'-Cal	
18	Prunus yedoensis	Yoshino Cherry	1 1/2'-Cal	

Quantity	Scientific Name	Common Name	Planting Size	Comments
310	Abelia grandiflora	Glossy Abelia	2-Gal	
579	Ilex glabra	Inkberry Holly	2-Gal	
233	Juniperus chinensis 'Pfitzeriana Glauca'	Blue Pfitzer Juniper	2-Gal	
37	Physocarpus opulifolius	Ninebark	2-Gal	
141	Sambucus canadensis	American Elderberry	2-Gal	
125	Viburnum prunifolium	Blackhaw Viburnum	2-Gal	
219	Viburnum x pragensis	Prague Viburnum	2-Gal	
33	Viburnum x thyridophylloides 'Alleghany'	Alleghany Viburnum	2-Gal	

NOTE: SHADING DENOTES LARGER THAN STANDARD LANDSCAPE MATERIAL.

**LANDSCAPE AND SCREENING NOTES AND DETAILS**

**KEMPTOWN SUBSTATION**

SITUATED AT THE INTERSECTION OF BARTHOLOWS ROAD AND WEST OAK DRIVE  
NEW MARKET ELECTION DISTRICT NO. 9  
FREDERICK COUNTY, MARYLAND

SHEET **19** OF **23**
  
 PROJECT NO. 1814-00-00

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NO.	DATE	CAD STANDARDS VERSION	REVISIONS	BY	DATE
DESIGNED:	AUGUST 2010	V8 - 2010			
TECHNICIAN:	G.P.	G.M.M.			

**MISS UTILITY NOTE**

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM PUBLIC RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DRIVING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1(800)257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION, IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS. CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE