Urban & Community Forestry Program

Reforestation, Tree Planting, and Maintenance Plan Guidelines

February 2018

NJ URBAN & COMMUNITY FORESTRY

NJ Forest Service | Mail Code 501-04, PO Box 420, Trenton, NJ 08625 | 609.292.2532 | www.communityforesty.nj.gov

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1. Introduction

The following are guidelines for the development and implementation of a tree planting and maintenance plan in conjunction with a NJ Forest Service Urban and Community Forestry Program (NJUCF) Stewardship Grant proposal and award.

One of the grant categories is for Reforestation and Tree Planting, up to $30,000 per grant. A full description of this grant category is provided in the 2017 CSIP Request for Proposals (RFP).

All Reforestation and Tree Planting Grant recipients must submit a tree planting and maintenance plan in accordance with these guidelines and receive NJUCF approval of that plan within six (6) months of start of the work period, as defined in the RFP. Grantees may use up to seven percent (7%) of the grant amount for professional services including the design of the reforestation and tree planting and maintenance plan and supervision of the tree planting contract and work.

2. Tree Planting and Maintenance Plan Components

All tree planting and maintenance plans must be developed in accordance with the most recent tree care industry standards (eg. ANSI Z60.1 and A300) for plant material, handling, shipping, planting/transplanting, and maintenance and forestry best management practices for reforestation.

The tree planting and maintenance plan must have the following components:

I. Project Location

The project location map(s) should clearly represent the project site, to scale, delineating boundaries of the grantee's jurisdiction and the planned tree planting areas. Acceptable formats include but are not limited to:

A. USGS Quad Map (1:24,000).
B. Street Map – ensure that street names are clearly indicated.
C. Municipal tax map.

II. Landscape Plan

A comprehensive landscape plan must include the following parts:

A. Planting Plan

Landscape drawings (Appendix A) must be provided for each site where proposed tree planting is planned. The plan should clearly indicate where each tree will be located

and identifies each location by tree species. A detailed planting plan is preferred, but the applicant may submit a general site plan, as long as it clearly conveys the planting location(s) and number of trees per location.

B. Plant Schedule

Each plan should include a table detailing the scientific name, common name (including cultivar name if applicable), type of root package (bare root, container or ball and burlap – B&B), size (in accordance the root package), and quantity of each tree species to be planted (Appendix B). Tree species that are fall dig hazards should be noted on the schedule.

Elements of a good landscape plan:

The trees selected for the planting should be appropriate for the planting location. Trees' mature height and shape, project longevity, sun and soil requirements, salt tolerance should be considered when developing the plant list. Conflicts with the built environment should be minimized. This includes, but is not limited to avoiding planting large trees under overhead wires, near underground utilities, near building foundations or walls, or using trees with nuts or large fruit near pedestrian areas.

Plans should include a list of alternate species, in case the desired species is not available at the time of planting.

Tree planting should include a diversity of trees species. This is for the long stability and health of the tree canopy within the area as a whole. The species diversity and selection needs to be justified in the planting plan. A good rule is to follow the 30/20/10 rule: In any community, no more than 30 percent of trees should be species within the same family, no more than 20 percent should be from the same genus, and no more than 10 percent should be the same species.

Sample landscape plans and plant schedules can be found in Appendix A and B.

III. Tree Planting & Maintenance Specifications

Specifications for tree planting and maintenance must be developed and submitted in conjunction with the landscape plan. Specifications must incorporate the most recent tree care industry standards (e.g. ANSI Z60.1 and A300) for plant material, handling, shipping, planting/transplanting, and maintenance, or forestry best management practices for reforestation. The following components must be included in the tree planting and maintenance plan.

A. Planting Preparation.

i. Describe how trees will be selected, inspected, and shipped.
ii. Describe how the site will be prepared prior to planting, including the identification of any potential conflicts on the site.
iii. State the timing of the planting.
iv. Describe how the trees will be maintained after delivery, prior to planting.

B. Tree Planting.

i. Describe how the trees and the site will be prepared for planting.
ii. Describe the method used to plant. Include tree planting diagrams (Appendix C).
iii. Detail the method for guying, staking, if applicable.
iv. Describe the post-planting care, including watering, mulching and pruning.

C. 2-year Tree Maintenance and Establishment.

i. Detail the long-term maintenance plan, including the work to be performed, the maintenance schedule, and the personnel responsible for carrying out the work.
ii. Describe the corrective measures to be taken if necessary.

Tree Planting and Maintenance Recommendations:

General:
Trees should be free of damage as the result of handling or transportation. No substitution of plant material is allowed unless approved by NJUCF. All work should conform to accepted horticultural practices and meet or exceed the industry standards.

Layout:
All trees should be located as shown on the plans supplied. All adjustments to the plan must be authorized by the NJUCF. All plans should be detailed enough that someone could find the locations without a guide. Tree species substitutions are permitted with approval by the NJUCF.

Nursery Stock:
Plant species should conform to those indicated on the site plan, planting list, and should follow standard scientific names, with horticultural names when specific varieties will be used.
All landscape nursery stock should conform to the standard specifications of The American Standard for Nursery Stock sponsored by the American association of Nurserymen, Inc. All trees should be grown under climatic conditions similar to the job site for a period of not less than two (2) years immediately prior to this project. Trees being planted within municipal right of ways along streets need a minimal caliper of 1.75” to reduce tree damage. It is recommended to use an average of 2½” caliper between 2”-3” caliper size class. In any other areas a smaller caliper can be used. Provide justification for the size of the material and how it will be protected. If the trees will be specified to be greater than 3” caliper provide justification.

Quality:

Plants should have the habit of growth that is normal for the species or cultivar and should be sound, healthy, vigorous, free from insects, plant diseases and injuries or damage of any nature. An altered growth habit to reduce conflicts with the surrounding environment or for street tree height is acceptable as long as it is in the planting plan, and well justified. All plants should be of the grades specified. Please be aware of fall dig hazards and salt tolerance when selecting trees to plant.

Bare root and de-balled trees should show full root growth in all directions out from the main stem. All poor and circling roots should be pruned before planting.

All plants must be state inspected and a copy of the “Certificate of Inspections" issued by the State Department of Agriculture at the point of origin must accompany shipments from each source.

Shipment, Delivery, Inspection and Acceptance:
The grantee should reserve the right to inspect all plant material at its point of origin. Acceptance at the nursery in which the plant is growing, prior to transplanting, should not preclude rejection at the site for just cause.

The plant material to be delivered should be covered with a tarp, protected from weather and be adequately packed to avoid breakage, sun scald, windburn, desiccation and other damage during loading and shipment. All measures customary in good trade practices should be taken to keep the plants in good condition. Documentation on when the tree was dug, and how it was held at the nursery before shipment should be given to the grantee’s professional and can be presented to the NJUCF upon request. No plants should be planted until they have been inspected and approved on the site by the grantee’s professional.

All bare root trees should be dug and shipped during tree dormant periods. The dormant period is after the first major frost after leaf-drop, and before the swelling of the buds. If bare root stock is to be held longer than two (2) days before shipping, or to be held one day after receiving shipment, storage method needs to be mentioned in the plan. The method that will be used to keep the roots moist and protected prior to planting must be mentioned in the plan. The roots must be kept moist and never allowed to dry out.

Time of Planting:
Planting operations should be performed within the planting season when weather and soil conditions are suitable and in accordance with the acceptable local practice. Trees should be installed during the following fall and spring seasons depending upon the location of the proposed trees.

Fall	September – December
Spring	March – May

It is advisable to ensure that fall dig hazard species are identified and avoided in the schedule for fall planting.

Protection of Utilities:
The plan should cover utility conflicts and mitigation with the tree planting and future tree growth issues that may arise. Species and locations need to be selected to minimize utility/tree conflicts. The plan must include a plan if a conflict is found in the field how the problem will be addressed including having some alternate sites. The plan should state who will be responsible for the one-call and utility mark-outs.

Planting Preparations:
Prior to backfilling, B&B trees should have wire, burlap and twine removed from around the crown, trunk, root collar and at least the top two-thirds (2/3) of the root ball. Soil should be removed from the top of the root ball to expose the root flare.

Planting:
Unless otherwise specified within the specifications, all work should conform to accepted arboricultural practices. Plants should be protected upon arrival at the site by being thoroughly watered and properly maintained until properly planted and watered. Unplanted stock should be "healed-in" a bed of material approved by the municipal tree expert upon delivery to the site unless they will be planted within four (4) hours after delivery.

All trees should be planted in pits two (2) times the diameter of the rootball. The depth of the pits should be at the proper depth so that the root flare is at the level of the neighboring ground in a level planting area. On slopes the tree should be planted so that the top of the root ball after the root flare is exposed is at the same level of the adjacent highest point of the hole. The tree should be centered in the hole and then back filled one-half the depth of the soil ball with topsoil. The backfill should be lightly but thoroughly tamped and well-watered. The remainder of the hole is then to be backfilled with topsoil to a depth that after settling will assure the tree will be at the same level it was previously growing at in the nursery. The tree should be well watered again before mulch is placed over the surface of the root ball.

Additional planting specifications:
Any planting specifications that go beyond the standard tree planting specifications must be listed. All plantings should note if the tree will be staked and wired or not.

Guying, Staking and Wrapping:
Staking is not required. The installation of tree stakes and supporting materials should be done to those trees that the municipal tree expert deems necessary after planting. Tie materials should have some type of protection for the tree, with room for a minimum of 2 fingers to fit on the tension side of the tree ties. Damage caused by wiring may cause a tree to fail the establishment inspection. Material should be removed after one growing season and before the next spring. Materials must be removed before the final inspection.

Watering:
The plants should be thoroughly watered after planting. The plan must identify how future watering will be conducted and include contingencies for droughts or long dry periods.

Mulching:
All tree pits and planting beds should be mulched to a depth of 2”-3” with shredded hardwood bark mulch or compost. Mulch should be free of debris and placed around all plantings at the time of planting to a depth no higher than three inches (3"). Care should be exercised to keep mulch at least four inches (4") away from the trunk of the tree.

Pruning:
If the trees need any pruning the cut must follow industry standards and be kept to a minimum. Trees selected at the nursery must have fully sealed wounds and not need pruning to meet specifications. Any dead, diseased or damaged branches should be pruned.

3. Tree Survivorship & Establishment Criteria

All trees must be healthy and established two (2) years after planting. The tree planting and maintenance plan must address the replacement of trees to satisfy this requirement. The following criteria are general conditions and characteristics used by NJUCF to determine that a tree is established. NJUCF makes the final determination on whether a tree is established.

- The terminal or topmost shoot, the central leader, of the tree is alive (species-specific characteristic).
- Two-thirds (2/3) or more of a tree’s canopy is alive and healthy (a branch or shoot is dead when no live cambium is present in the stem).
- There are no major wounds on the truck or root collar. A major wound occurs when one-third or more of the cambium is injured over the circumference of the bole.
- There is no major insect, disease or fungal infestation or affliction.
- Adventitious stems and/or roots are not present.
- There are no j-roots or girdling roots.

Final payment under the grant will be contingent upon satisfaction of the establishment requirement.

4. Professional Plan Development Requirement

All planting and maintenance plans should be by prepared by a NJ Certified/Approved Forester, Licensed Tree Expert, Certified Arborist, licensed Landscape Architect, or other professional as appropriate. The professional’s qualifications must be included with the plan submission.

5. Tree Planting Inspections

The purpose of NJUCF inspections is to ensure that the implementation of the tree planting grant is in accordance with the approved plan, and the required survivability threshold is attained.

NJUCF may perform a minimum of three (3) inspections to monitor the grantee's compliance with the approved tree planting and maintenance plan. These inspections include:

1. **Initial Tree Quality and Planting Inspection** - This inspection verifies the planting of the required number of trees under the grant agreement, and that the trees meet the specifications for quality and planting in the approved plan. This inspection may take place throughout the delivery and installation of the trees.

   NJUCF must be notified at least seven (7) business days prior to the anticipated start date for tree delivery and planting. Any plant material or tree planting that does not conform to the specifications of the approved plan should be rejected by the grantee. Trees that do not conform in form and planting methods to the approved plan specifications may not be counted toward the survivorship threshold.

   NJUCF must be notified in writing by the grantee when the entire tree planting is complete. A final plant list based on the actual planting, and an as-built drawing indicating final planting locations must be provided to NJUCF (See Appendix E for an example as-built plan). NJUCF will issue a Notice of Planting Completion after all the required information is received, and the planting complies with the approved plan. The date of this Notice will trigger the two-year establishment period for the project.

2. **Year-1 Tree Establishment Inspection** - This inspection verifies that the required maintenance is taking place according to the specifications in the approved plan, and that the trees are on track for meeting the survivorship threshold for the final inspection. This inspection occurs one (1) year following the issuance of the Notice of Planting Completion.

   NJUCF may provide a one (1) year inspection report to the grantee stating that the planting is on track to meet the survivorship threshold, or that it appears that the maintenance schedule in the approved compensatory reforestation plan is not being followed, and the planting may not meet the required survivorship threshold at the final inspection.

3. **Final Tree Establishment Inspection** - This inspection verifies whether the survivorship threshold for the grant was met or not. This inspection occurs two (2) years following the issuance of the Notice of Planting Completion. Final payment will only be made if the survivorship threshold is met.

6. Tree Planting and Maintenance Plan Submission Instructions

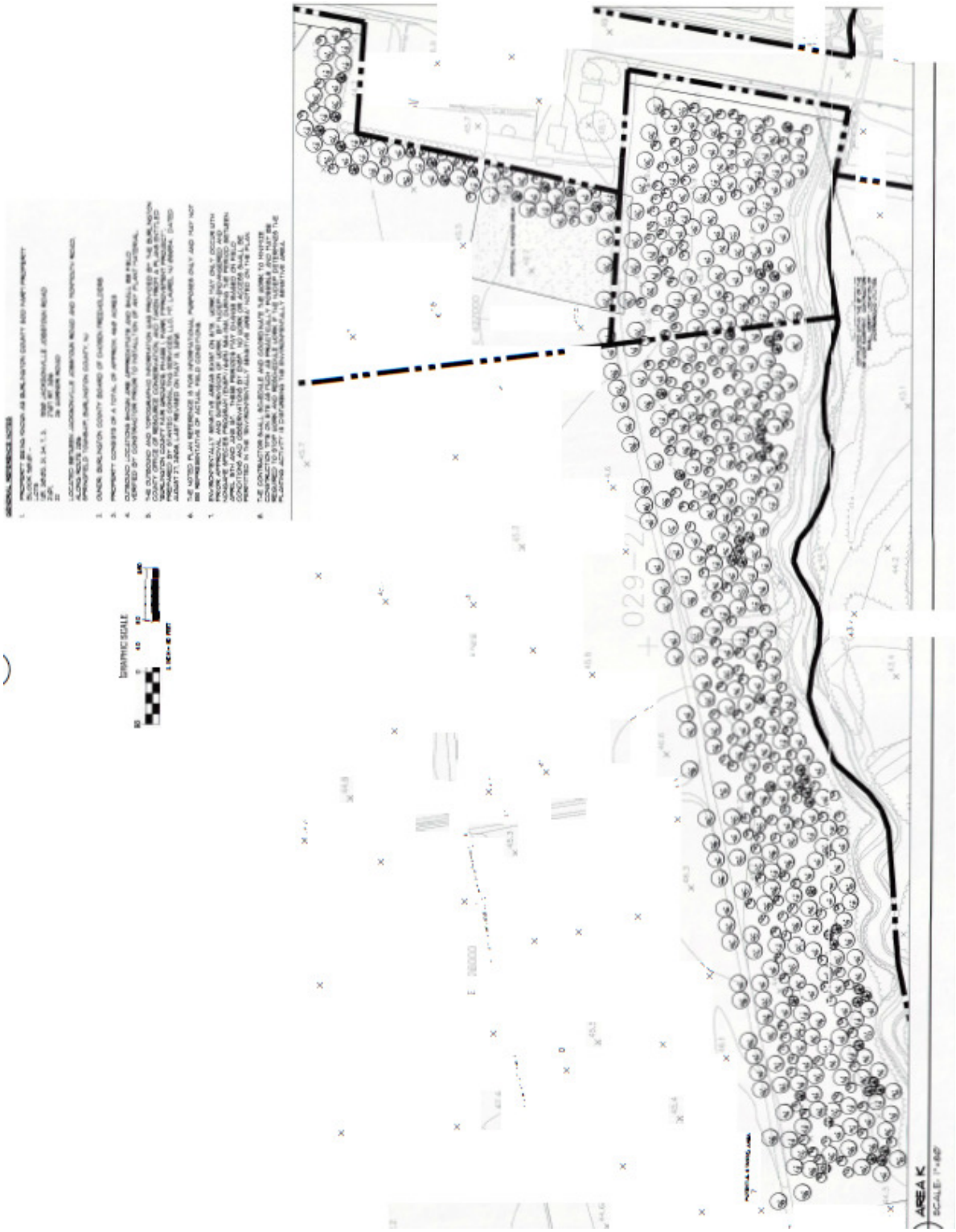
Reforestation and Tree Planting Plans must be submitted and approved by NJUCF within six (6) months of that start of the work period, as defined in the RFP. Applicants should submit a complete plan, including all of the elements in Section 2, well enough in advance of that date to allow NJCUF review and comment.

One (1) hard copy and one (1) electronic copy of the reforestation and tree planting plan should be submitted to:

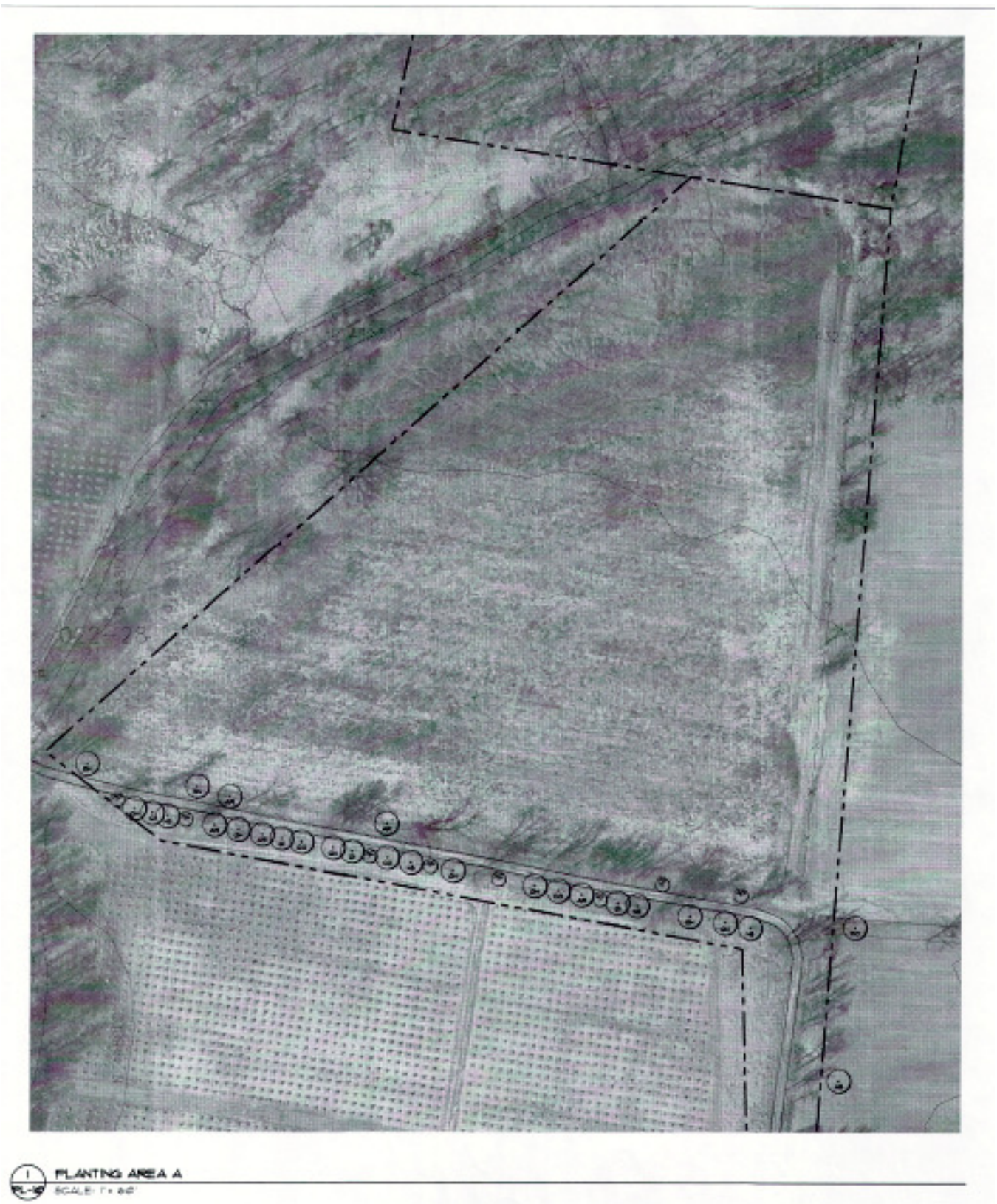
Hard copy:	Electronic copy:
NJ DEP Forest Service Urban and Community Forestry Program – 2017 CSIP Grant Mail Code 501-04 PO Box 420 Trenton, NJ 08625-0420	Brian.McDonald@dep.nj.gov

For more information, contact:
Brian McDonald, Forester
Brian.McDonald@dep.nj.gov
609.292.8191

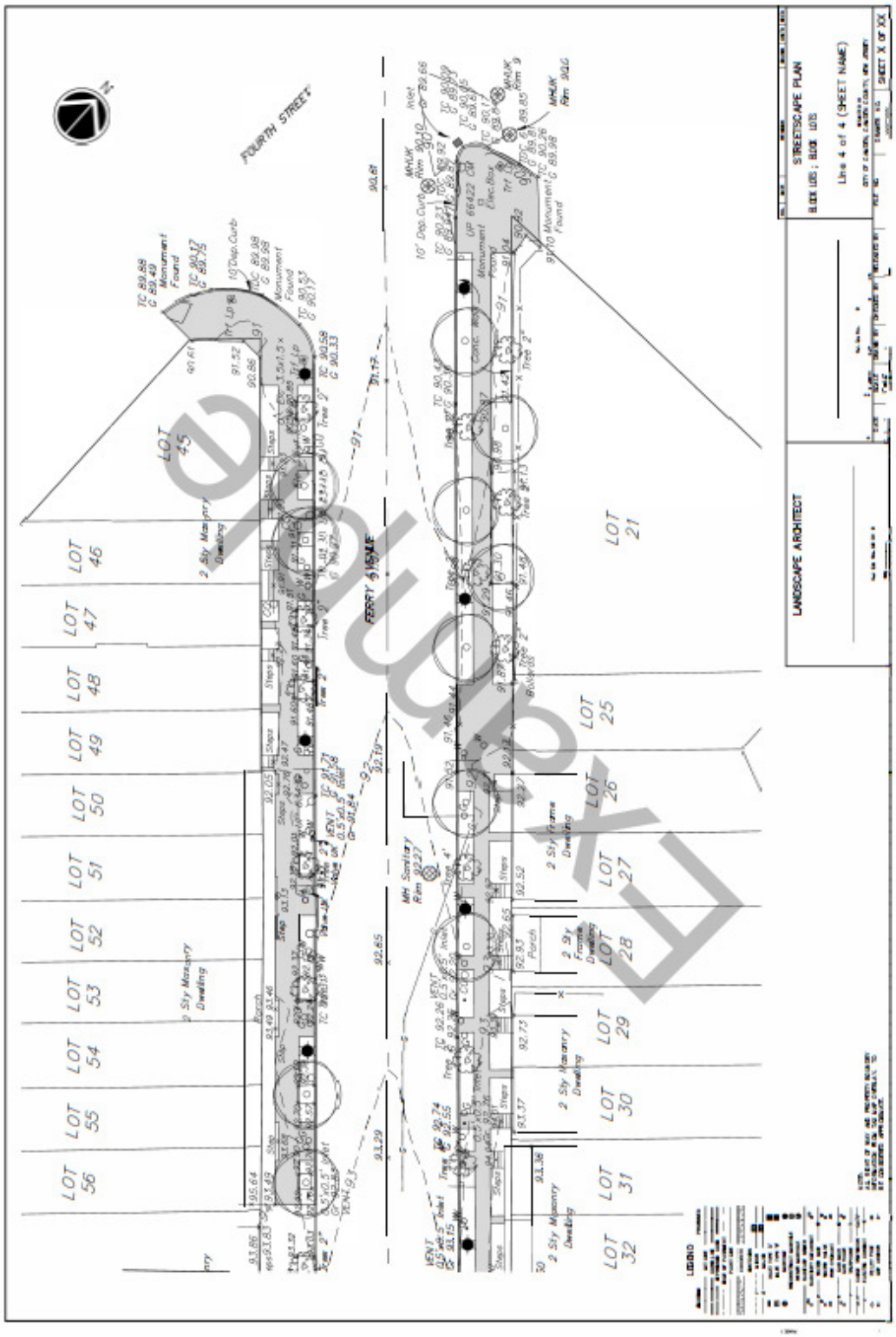
Appendix A – Sample Landscape Plans



Sample Plan 1: Park planting/reforestation Landscape Drawing



Sample Plan 2: Park planting on aerial photograph



Sample Plan 3: Streetscape Plan Landscape Drawing

Appendix B – Sample Plant Schedules

Example Plant Schedule Format

Key	Qty.	Scientific Name	Common Name	Size	Caliper	Root	Comments
AR	8	*Acer rubrum* "Red Sunset"	Red Sunset Red Maple	10'-12'	2" – 2 ½"	B&B	
CC	10	*Cercis canadensis*	Eastern Redbud	9'-10'	1" min.	B&B	Multi-stemmed
IO	5	*Ilex opaca*	American Holly	8'-10'	---	B&B	
QR	20	*Quercus rubra* *	Eastern Red Oak	10'-12'	2" – 2 ½"	B&B	No branching to 6'

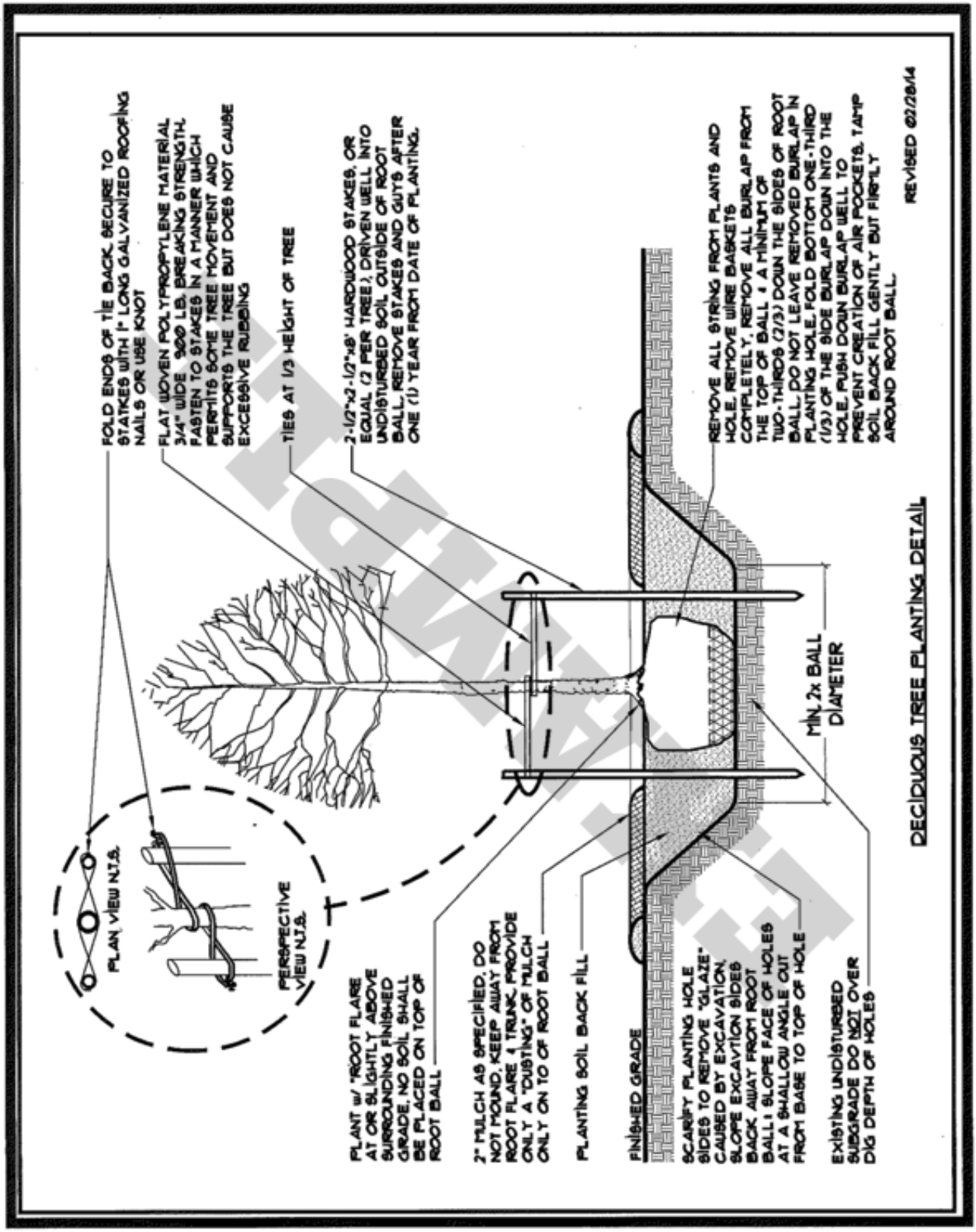
* Fall dig hazard: These species have a high risk of failure when dug in the fall

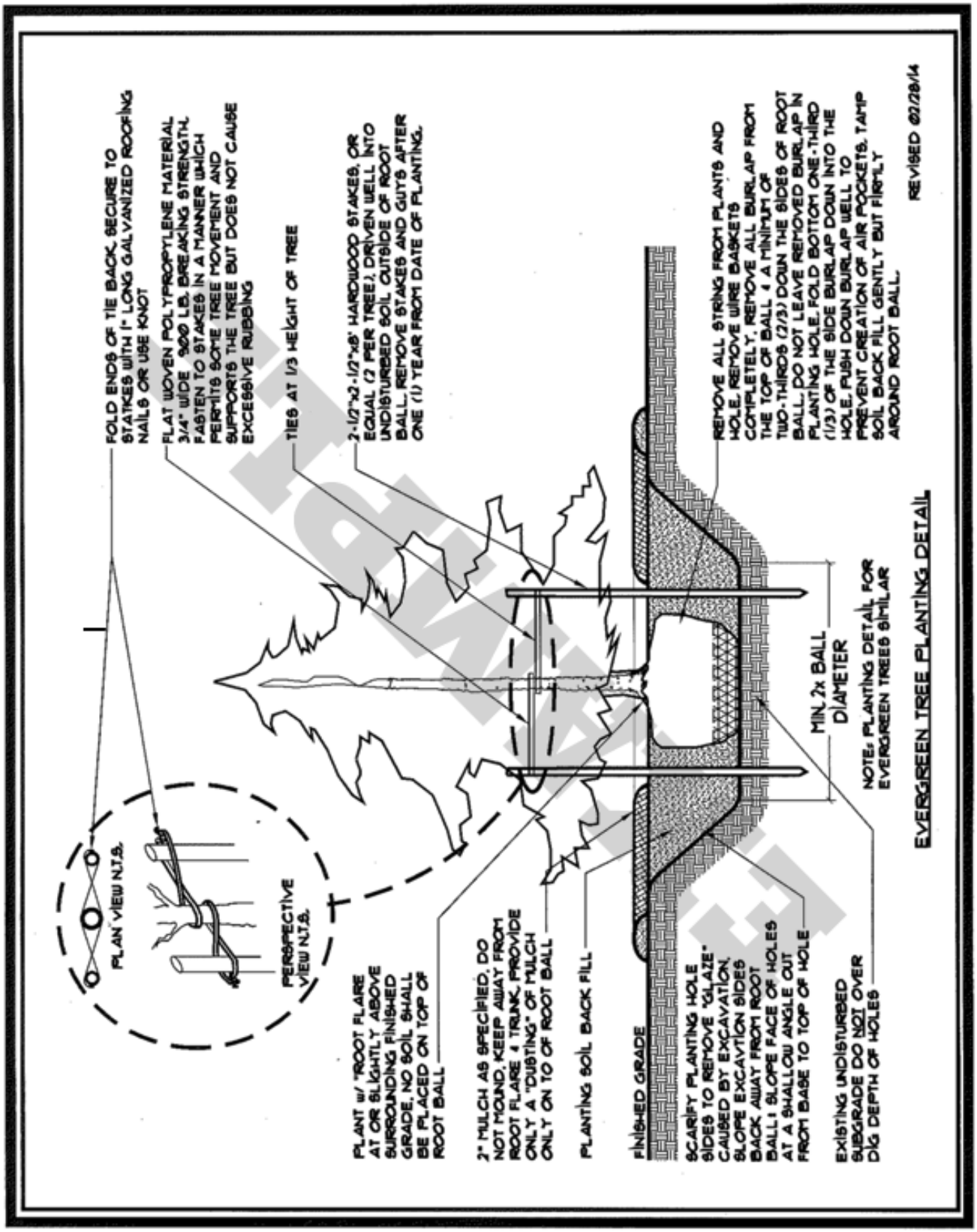
Sample Plant Schedule: Multi-Park

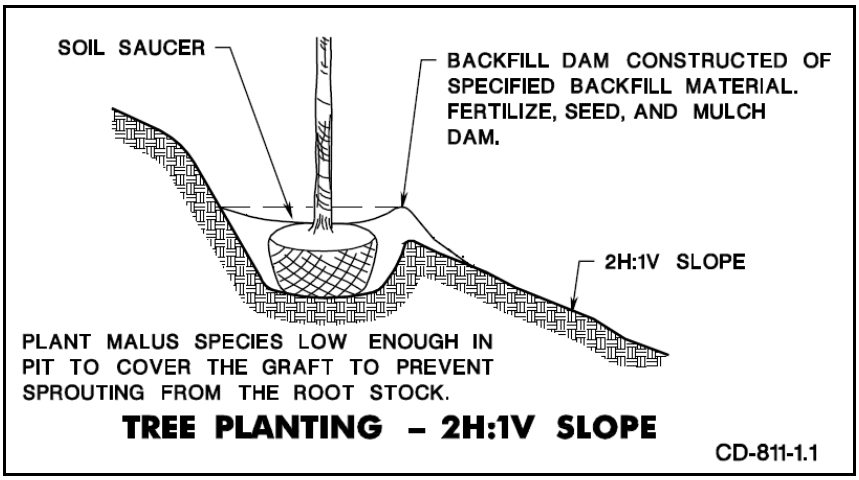
PLANT LIST- NO NET LOSS REFORESTATION 2014 - QUANTITIES BY SITE

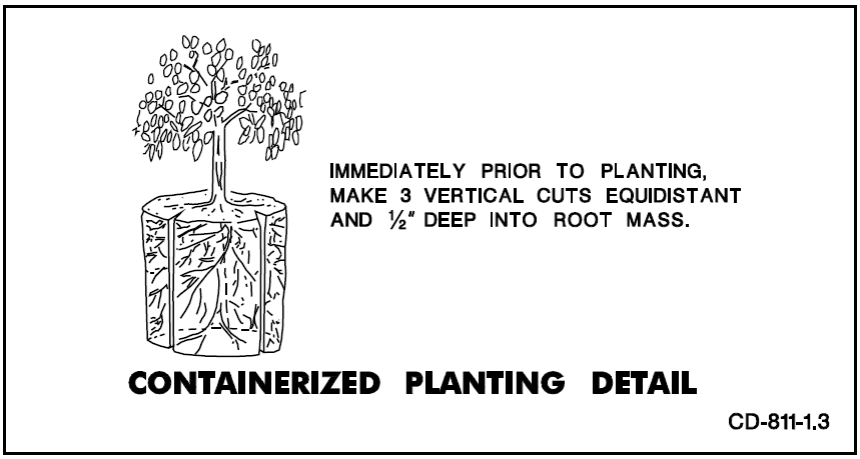
KEY	BOTANICAL NAME	COMMON NAME	CAL.	HT.	ROOT	COMMENTS	B.C. Resource Recovery Complex	B.C. DPW Section #2 Facility	B.C. Fairgrounds	B.C. Sod Farm Property	B.C. Crystal Lake Park	B.C. Kinkora Trail Segment	N. Burlington County Regional Campus	John Hydock Elementary School	Mansfield Twp. Com. Park	Civic and Athletic Club	BASE/BID Plant Quantities	ALT. A Plantings at Various Burl. Co. Sites	ALT. B Joint Base McQuire Dix Lakehurst	TOTAL BASE BID & ALTS. A & B Plant Quantities
	SHADE TREES																			
AA	Acer ginnala 'Flame'	Flame Amur Maple	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	27							1			28		12	40
AF	Acer rubrum 'Frank Jr.'	Redpointe Red Maple	2"-2.5"	12'-14'	B&B	Uniform heads, headed to 6'			5	168	12						185			185
AH	Acer campestre	Hedge Maple	2"-2.5"	10'-12'	B&B	Full Specimens, headed to 6'											0	25	7	32
AL	Acer saccharum 'Legacy'	Legacy Sugar Maple	2"-2.5"	12'-14'	B&B	Uniform heads, headed to 6'							1	3			4	25	11	40
AO	Acer rubrum 'October Glory'	October Glory Red Maple	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'			3	27						14	44	50	85	179
AR	Acer rubrum 'Red Sunset'	Red Sunset Red Maple	2"-2.5"	12'-14'	B&B	Uniform heads, headed to 6'	59	31	20			5	10				125		65	190
AS	Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				10		1	7				18	25		43
BN	Betula nigra 'Heritage'	Heritage River Birch		10'-12'	B&B	Full Specimens, 3 trunk minimum			7	40		2					49		16	65
CH	Carpinus caroliniana	American Hornbeam	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				9							9	25	7	41
CO	Celtis occidentalis	Common Hackberry	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	27		4	25	12	3				1	72		1	73
FP	Fraxinus pennsylvanica 'Patmore'	Patmore Green Ash	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				35	3		13				51			51
GT	Gleditsia triacanthos 'Halka'	Halka Honeylocust	2"-2.5"	12'-14'	B&B	Uniform heads, headed to 6'	19						10	14			43	50	196	289
LS	Liquidambar styraciflua 'Happy Daze'	Happy Daze' Sweetgum	2"-2.5"	10'-12'	B&B	Full Specimens, headed to 6'	13	6		228	13					5	265		65	330
LT	Liriodendron tulipifera	Tuliptree	2"-2.5"	11'-13'	B&B	Full Specimens, headed to 6'				5							5	25		30
NS	Nyssa sylvatica	Blackgum	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				127		4					131		54	185
PA	Platanus acerfolia 'Bloodgood'	Bloodgood London Planetree	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'			27	6	5			1			39		38	77
PO	Platanus occidentalis	American Sycamore	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'			6	23		1					30		1	31
QA	Quercus acutissima	Sawtooth Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				8							8	50		58
QB	Quercus bicolor	Swamp White Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				57							57	25	48	130
QC	Quercus coccinea	Scarlet Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	21			35							56	25	13	94
QH	Quercus phellos	Willow Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	48	3	38	166		7	3		7	4	276	25	81	382
QI	Quercus imbricaria	Shingle Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	19				3	4					26		4	30
QP	Quercus palustris	Pin Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'				51	16		4				71		10	81
QR	Quercus rubra (borealis)	Red Oak	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	8			21							29		4	33
SR	Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'											0	25	7	32
TT	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2"-2.5"	12'-14'	B&B	Full Specimens, headed to 6'	37										37		15	52
ZS	Zelkova serrata	Green Vase Zelkova	2"-2.5"	12'-14'	B&B	Uniform heads, headed to 6'							8				8			8
	EVERGREEN TREES																			
CL	Cupressocyparis leylandii	Leyland Cypress		8'-10'	CONT.	Full Specimens, branched to the ground							3				3	25	11	39
IO	Ilex opaca	American Holly		6'-7'	B&B	Full Specimens, branched to the grour	31			218	6						255		15	270
JV	Juniperus virginiana	Eastern Red Cedar		7'-8'	B&B	Full Specimens, branched to the grour	48			116							164		10	174
PI	Picea abies	Norway Spruce		7'-8'	B&B	Full Specimens, branched to the grour	38	75	4	15	1		56			36	225		6	231
PM	Psuedotsuga menziesii	Douglas Fir		7'-8'	B&B	Full Bodies	31		6								37	25		62
PS	Pinus strobus	Eastern White Pine		7'-8'	B&B	Full Specimens, branched to the ground							33				33	25	15	73
PT	Pinus thunbergiana	Japanese Black Pine		7'-8'	B&B	Full Bodies							31				31			31
TC	Tsuga canadensis	Eastern Hemlock		7'-8'	B&B	Full Specimens, branched to the grour	37										37			37
TO	Thuja occidentalis 'Nigra'	Nigra American Arborvitae		6'-8'	B&B	Full Bodies	66						53	40			159			159
	ORNAMENTAL TREES																			
AC	Amelanchier canadensis	Downy Shadblow		7'-8'	B&B	Heavy, multi-stemmed specimens	4	2	5	47	16	7	12			13	106	25	9	140
AG	Amelanchier x grandifolia 'Autumn Brilliance'	Autumn Brilliance Serviceberry		7'-8'	B&B	Heavy, multi-stemmed Specimens	34	9		100					4		147		69	216
AM	Amelanchier laevis	Allegeny Serviceberry	2"-2.5"	12'-14'	B&B	Tree form, headed to 6'				20							20			20
CC	Cercis canadensis	Eastern Redbud		8'-10'	B&B	Heavy, multi-stemmed specimens		5		85			8				98	25	32	155
CF	Cornus florida 'Cherokee Princess'	Cherokee Princess Flowering Dogwood		7'-8'	B&B	Full, Heavy Specimens	26	8		32	6	1				8	81	25	54	160
CK	Cornus kousa	Kousa Dogwood		7'-8'	B&B	Full, Heavy Specimens							10				10			10
CM	Cornus mas	Cornelian Dogwood		7'-8'	B&B	Multi-stem, Heavy Specimens				66			5				71	50		121
CV	Chionanthus virginicus	Multi-stem Fringetree		6'-7'	B&B	Heavy, multi-stemmed Specimens	28			26			10				64			64
MA	Malus 'Donald Wyman'	Donald Wyman' Crabapple	2"-2.5"	8'-9'	B&B	Full, Heavy Specimens			6								6	25	59	90
MV	Magnolia virginiana	Sweetbay Magnolia		7'-8'	B&B	Multi-stem, Heavy Specimens			4	47			23		6	4	84			84
OC	Prunus x 'Okame'	Okame Cherry	2"-2.5"		B&B	Uniform heads		16									16	25	18	59
	SHRUBS																			
VD	Viburnum dentatum	Arrowwood Viburnum		6'-8'	B&B	Full Plants, spaced approx. 5' O.C.	21	54					14				89			89
VL	Viburnum lentago	Nannyberry Viburnum		6'-8'	B&B	Full Plants, spaced approx. 5' O.C.							14				14	50		64
VP	Viburnum prunifolium	Blackhaw Viburnum		6'-8'	B&B	Full Plants, spaced approx. 5' O.C.							14				14	50		64
VT	Viburnum trilobum	American Cranberry Viburnum		6'-8'	B&B	Full Plants, spaced approx. 5' O.C.							7				7	50		57
VR	Viburnum rhytidophyllum or Viburnum x pragense	Leatherleaf Viburnum or Prague Viburnum		6'-8'	B&B	Full Plants, spaced approx. 5' O.C.	341	54									395		25	420
OVERALL TREE TOTALS BY SITE							**983**	**263**	**135**	**1813**	**93**	**35**	**349**	**59**	**17**	**85**	**3832**	**775**	**1063**	**5670**

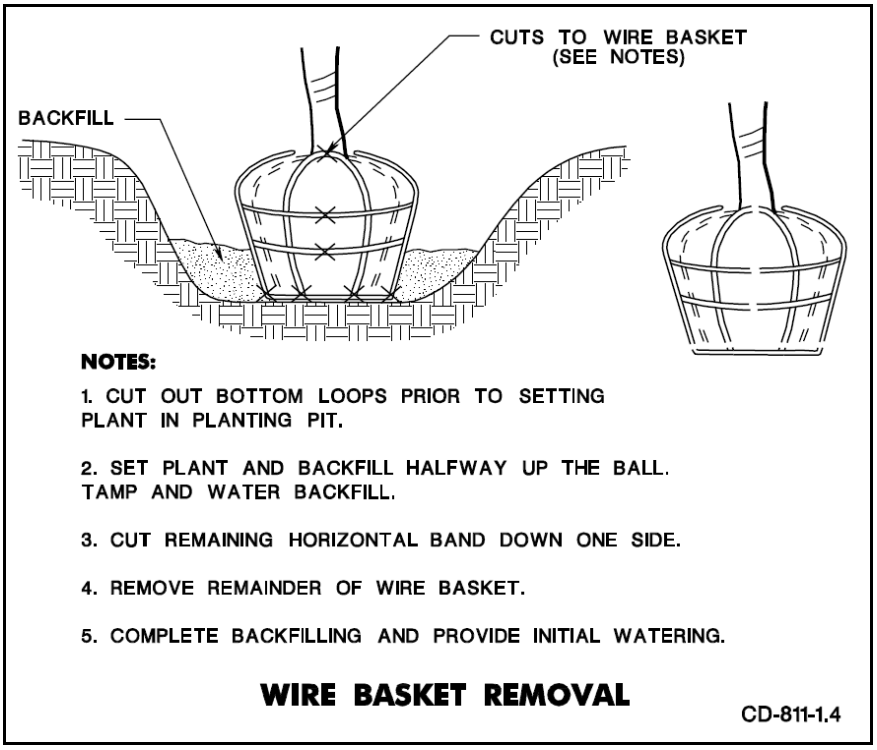
Appendix C – Tree Planting Diagrams




FOLD ENDS OF TIE BACK, SECURE TO STAKES WITH 1" LONG GALVANIZED ROOFING NAILS OR USE KNOT
FLAT WOVEN POLYPROPYLENE MATERIAL 3/4" WIDE 900 LB. BREAKING STRENGTH. FASTEN TO STAKES IN A MANNER WHICH PERMITS SOME TREE MOVEMENT AND SUPPORTS THE TREE BUT DOES NOT CAUSE EXCESSIVE RUBBING
TIES AT 1/3 HEIGHT OF TREE
2-1/2"x2-1/2"x8' HARDWOOD STAKES, OR EQUAL (2 PER TREE), DRIVEN WELL INTO UNDISTURBED SOIL OUTSIDE OF ROOT BALL. REMOVE STAKES AND GUYS AFTER ONE (1) YEAR FROM DATE OF PLANTING.
REMOVE ALL STRING FROM PLANTS AND HOLE. REMOVE WIRE BASKETS COMPLETELY. REMOVE ALL BURLAP FROM THE TOP OF BALL & A MINIMUM OF TWO-THIRDS (2/3) DOWN THE SIDES OF ROOT BALL. DO NOT LEAVE REMOVED BURLAP IN PLANTING HOLE. FOLD BOTTOM ONE-THIRD (1/3) OF THE SIDE BURLAP DOWN INTO THE HOLE. PUSH DOWN BURLAP WELL TO PREVENT CREATION OF AIR POCKETS. TAMP SOIL BACK FILL GENTLY BUT FIRMLY AROUND ROOT BALL.
REVISED 02/28/14
PLAN VIEW N.T.S.
PERSPECTIVE VIEW N.T.S.
PLANT w/ "ROOT FLARE AT OR SLIGHTLY ABOVE SURROUNDING FINISHED GRADE. NO SOIL SHALL BE PLACED ON TOP OF ROOT BALL
2" MULCH AS SPECIFIED. DO NOT MOUND. KEEP AWAY FROM ROOT FLARE & TRUNK. PROVIDE ONLY A "DUSTING" OF MULCH ONLY ON TO OF ROOT BALL
PLANTING SOIL BACK FILL
FINISHED GRADE
SCARIFY PLANTING HOLE SIDES TO REMOVE "GLAZE" CAUSED BY EXCAVATION. SLOPE EXCAVTION SIDES BACK AWAY FROM ROOT BALL: SLOPE FACE OF HOLES AT A SHALLOW ANGLE OUT FROM BASE TO TOP OF HOLE
EXISTING UNDISTURBED SUBGRADE DO NOT OVER DIG DEPTH OF HOLES
MIN. 2x BALL DIAMETER
NOTE: PLANTING DETAIL FOR EVERGREEN TREES SIMILAR
EVERGREEN TREE PLANTING DETAIL


SOIL SAUCER
BACKFILL DAM CONSTRUCTED OF SPECIFIED BACKFILL MATERIAL. FERTILIZE, SEED, AND MULCH DAM.
2H:1V SLOPE
PLANT MALUS SPECIES LOW ENOUGH IN PIT TO COVER THE GRAFT TO PREVENT SPROUTING FROM THE ROOT STOCK.
TREE PLANTING – 2H:1V SLOPE
CD-811-1.1


IMMEDIATELY PRIOR TO PLANTING, MAKE 3 VERTICAL CUTS EQUIDISTANT AND ½" DEEP INTO ROOT MASS.
CONTAINERIZED PLANTING DETAIL
CD-811-1.3


CUTS TO WIRE BASKET (SEE NOTES)
BACKFILL
NOTES:
1. CUT OUT BOTTOM LOOPS PRIOR TO SETTING PLANT IN PLANTING PIT.
2. SET PLANT AND BACKFILL HALFWAY UP THE BALL. TAMP AND WATER BACKFILL.
3. CUT REMAINING HORIZONTAL BAND DOWN ONE SIDE.
4. REMOVE REMAINDER OF WIRE BASKET.
5. COMPLETE BACKFILLING AND PROVIDE INITIAL WATERING.
WIRE BASKET REMOVAL
CD-811-1.4

Appendix D – Example Maintenance Plan

Description of Work	Timing	Comments	Responsible Person/Department
Tree watering	Throughout	As needed, especially during dry periods. Continue until ground freezes	Contractor
Stake removal	After 1 year		Contractor
Mulching	Throughout	Refresh and replace as needed	Contractor
Inspect for disease or insect problems	Annually	Start approximately 1 year after planting	Project Manager
Apply pesticides/herbicides		If annual inspection	Contractor
Monitor health & vigor	Annually	Start approximately 1 year after planting	Project Manager
Replace dead trees	After 1 year	At direction of Project Manager. Planting should take place within 3 weeks of annual inspection. Follow planting guidelines	Contractor
Prune	After 1 year	Remove no more than ¼ of foliage in one season. Retain lower branches.	Contractor
Fertilize	After 3 years	If needed	DPW

Appendix E – Example As-Built Plan

Additional Resources

ANSI A300 (Parts 1-9). Available from the Tree Care Industry Association. https://tcia.org/TCIA/BUSINESS/ANSI_A300_Standards_/TCIA/BUSINESS/A300_Standards/A300_Standards.aspx?hkey=202ff566-4364-4686-b7c1-2a365af59669

ANSI Z60.1 – American Standard for Nursery Stock. 2014. American Nursery and Landscape Association. Available electronically at: http://americanhort.org/documents/ANSI_Nursery_Stock_Standards_AmericanHort_2014.pdf

Do I remove root ball packing materials? What do the experts say? by Michael Kuhns, Extension Forestry Specialist, Utah State University and Brook Lee, Community Forester, Utah Division of Forestry, Fire & State Lands http://forestry.usu.edu/htm/city-and-town/tree-planting/do-i-remove-root-ball-packing-materials

New Jersey Forestry and Wetlands Best Management Practices Manual. New Jersey Forest Service. http://www.state.nj.us/dep/parksandforests/forest/nj_bmp_manual1995.pdf

New Jersey Tree Foundation - http://njtreefoundation.org

Utility Friendly Tree List http://bit.ly/1URuOlo