



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, NY 12232
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Comments
04-T-1687
OGC
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January 17, 2006

Honorable Jaclyn A. Brilling
Secretary
Public Service Commission
3 Empire State Plaza
Albany, NY 12223-1350

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Dear Secretary Brilling:

**RE: PSC Case 04-T-1687
Long Island Power Authority
Newbridge Road Connector Project
EM&CP Phase 2**

Thank you for the opportunity to comment on Long Island Power Authority's Environmental Management and Construction Plan (EM&CP) for Phase 2 of the Newbridge Road Connector Project. NYSDOT offers the following general comments and specific comments referenced to the numbered paragraphs and drawings in the EM&CP.

The Long Island Power Authority (LIPA) has applied for two Highway Work Permits. The first highway work permit includes the transverse crossings of state owned highways and is currently under review by NYSDOT. The second highway work permit includes the longitudinal installation along NY135 which is pending until the Federal Highway Administration grants the NYS Department of Transportation an exception to our Utility Accommodation Plan. Comments on these Highway Work Permits will be sent to LIPA under separate cover.

GENERAL COMMENTS

- All lane and shoulder closures shall conform to the NYS MUTCD requirements. Submit Maintenance and Protection of Traffic (M&PT) plans to NYSDOT for approval prior to starting work in the State ROW which should include travel lane, shoulder and sidewalk closures. Plans should include day and night time closures as well as long duration closures.
- Permanent pavement restoration should be completed within 4 months. Permanent pavement should be placed as soon as work is completed in the specific area.
- Provide legends on plan sheets.
- Show existing vegetation line and removals on the plans.

- The plans should include the "Supplemental Landscape Development Specifications" provided with these comments by NYSDOT.
- Include a note to clean out existing adjacent drainage structures after completion of construction.
- Add a note that "The Regional Director's office will be notified of any lane closures on State highways "one week prior" to implementing the closures. Information to be included: name of highway, direction(s), hours of closure and type of work performed in the closure".
- Clearly show all existing trees, drainage structures and traffic signal control devices above ground and underground, location and dimensions of existing highway pavement, curb, sidewalk, median, median openings, guide rail, utilities, signs (including size and text), pavement markings, bus stops, overhead and underground traffic signal equipment, right-of-way lines, controlled access lines and property lines on the plans.

SPECIFIC COMMENTS

- Add the following Traffic Signal notes to the plan sheets in the General Notes:
 - The contractor shall be responsible for and replace all signal interconnect cable, detector cable, conduit and all underground accessory equipment damaged during construction.
 - Prior to starting any work at all locations, the contractor shall notify the NYSDOT that a tone-out of signal equipment is needed. NYSDOT telephone number is (631) 952-6777.
 - All traffic signals shall be maintained in a traffic responsive operation and all interconnect, where existing, shall be maintained. The contractor shall pay a liquidated damages charge of \$500.00 per calendar day if actuation and coordination is not maintained.
- Page 2-4, On NY135 there are three designated areas for laydown including 2- large areas that coincide with the Access Roads. These are large areas and may require lane closures. Clarify why the laydown area needed appears to be greater than just the vicinity of the HDD pit.
- Page 2-7 Table 2-1, Clarify the requirements for the replacement of vegetation. Clarify how replacements will be determined on caliper inch of removal. Include costs for landscape restoration.
- Page 2-7, Sta.338+30 -342+40 on MSP. Identify the clearing and grubbing limits and include on the plans. The amount of replacement plantings cannot be determined.
- Page 2-8 Table 2-1, Station 455+53 - 458+23, Show vegetation line on the Wantagh State Parkway on the plans.
- Page 2-8 Table 2-1, Station 464 +50 - Sta. 465+00, Show specific vegetation on plans and table.

- Page 2-16 Landscaping. This only deals with the landscaping at the substations. Provide landscaping details for the areas along the State ROW where the laydown areas are located, pits for drilling, tree removal for the trenching (if applicable).
- Page 3-1 Construction Methods. Add a note that Code 753 will be followed to ensure that all utilities will be marked out. In addition, existing utilities must be maintained or supported by their contractor during their operations; this must be stated on the plans.
- Page 3-1 Construction Methods, The weak mix encasement should be the same 3000psi mix currently being used for the Neptune Regional Transmission Project. NYSDOT wants to ensure that while performing routine maintenance such as driving a pole/post, the installation can not be damaged by a post pounder. The mix should comply with the specification for Class A Concrete Mix in NYSDOT Standard Specifications. The specification to be used shall be submitted to NYSDOT for approval. The warning tape will not be seen when using a post driver.
- Page 3-2 Jacking/HDD, LIPA only mentioned the MSP entrance ramp to be jacked/HDD. Clarify whether the entire width of MSP needs to be jacked/HDD.
- Section 3.2 Trench Shoring, This section states that the Construction Manager will determine the adequacy of the shoring for trenching along the Seaford Oyster Bay Expressway. Change note to read "The determination of the adequacy of the shoring for trenching shall be made by the NYSDOT Engineer-In-Charge of the permit and shall adhere to all NYSDOT and OSHA Standards and specifications."
- Page 7-1, Provide specifics on areas of tree removal shown on the plans and in table 7-1. Provide protection around the drip-line of the trees. Note the location size and amount of trees on the plans to create a landscape restoration plan. Include a note that "The Contractor must erect a vegetation barrier around the dripline of the trees in the workzone. This will ensure that the roots are not compacted or damaged. If a tree, located behind the barrier, is killed or damaged within the dripline, the contractor will be fined \$100 per caliper inch for each tree affected or the Engineer in Charge can mandate that the Contractor replace the tree with a similar species at a rate of 2 times the caliper of the original." This note is a standard note included in all Highway Work Permits issued in Region 10 to protect trees along ALL State Roads.
- Page 7-2 Table 7-1 Tree Locations, The "vegetation description" column should indicate caliper and quantity of all tree removals over 6".
- Page 7-2 Table 7-1 Tree Locations, Shrubs to be cleared and grubbed should be listed by acreage.
- Page 7-2 Table 7-1 Tree Locations, Table 7-1 doesn't match Table 2-1 in the "cover type" column.
- Page 7-3 Vegetation Trimming and Necessary Removal, Second paragraph, 1st sentence: Change note to read "...conducted by ~~qualified and appropriate personnel~~ a Landscape Architect or Certified Arborist...".
- Page 7-3 Vegetation Trimming, See penalties under comments for page 7-1 for trees that are not replaced per caliper inch or if plant material is poor quality or does not survive.

- Page 8-3 Pavement Restoration, Include a note to repair damaged concrete sidewalk curb and asphalt shoulder as ordered by NYS Engineer-in-Charge with the latest NYSDOT standard construction details and item numbers.
- Page 10-1 Access Roads; LIPA proposes three Access Roads to NY135 with gates. This proposal needs to be approved by FHWA since it breaks the Control of Access. Access gates are identified as "double-locked", but this arrangement has not been approved. Access details will be provided in the future. Include a note in the plans that all requests for access to NYSDOT right-of-way from the locations along NY Route 135 shall be made in writing to the Regional Directors Office and the Garden City Residency. LIPA will be billed for any Over Time incurred by NYSDOT during access to our right-of-way. Include a detail for the construction of the access road.
- Page 10-1 Section 10.1, Add "Additionally, all access to the cable system is to be in accordance with the Permit for the Use and Occupancy of State-owned Property (NYSDOT assigned Rental Account #01967 to this Permit)."
- Page 10 Section 10-2, States that construction may close a lane, but that there will always be a lane open for traffic. Include a note that travel lane closure times shall be determined by NYSDOT and may require nighttime closures depending on the nature of operation. Regarding restrictions that apply to NYSDOT expressways/parkways. LIPA would be allowed a single lane and shoulder closures NB NY135 weekdays 10am to 3pm. No closures on Memorial Day to Labor Day. On NY Routes 106, 107 and 110 a single lane closure is permitted on weekdays 10am to 3pm. Multiple lane closure requests will be reviewed on a case-by-case basis. Daytime shoulder lane closures (with or without minor encroachment & minimum 10' travel lane) are permissible weekdays from 8am to 4pm on all state highways (other than Limited Access Highways). For Meadowbrook Parkway and Wantagh State Parkway lane closures are only at NIGHT NB 8PM - 6AM; SB Midnight - 7AM.
- Page 10-3 Traffic Control Plan, LIPA has initiated the procurement of a Highway Work Permit from NYSDOT. The Highway Work Permit cannot be granted by NYSDOT until FHWA has granted an exception to our Utility Accommodation Plan.
- The line is not going to be in a sleeve when it goes under our State roads (MSP, WSP, NY106, NY107 and NY110), therefore LIPA needs to provide a corrective action plan in the event the line breaks (e.g. another HDD). LIPA needs to provide another Chapter, "Maintenance of the Line" that will address how LIPA will maintain their line. These crossings of State roadways are referenced on the following sheets: NY106 - HV145-FU-01000-1; NY107 - HV145-FU-01009-0; NY110 - HV145-FU-01032-1; WSP - HLC45-FU-01084-0; and MSP HLC45-FU-01060-1, HLC45-FU-01061-1, and HLC45-FU-01062-1.

SPECIFIC COMMENTS ON THE PLANS

- LIPA must indicate the Quality Level of the Utility Designation. The Quality Levels are as follows:
 - Quality Level A: The highest degree of accuracy; the utility information on the contract plans have been field located and verified by excavation, when appropriate (shown as QLA).
 - Quality Level B: Subsurface geophysical locating techniques (that is, underground cameras, radar, sonar, tone outs, etc) and existing record plans have been used to locate utilities. No excavations were performed (shown as QLB).
 - Quality Level C: Record information provided by utility owners was plotted on the contract plans. Depths were not verified. Physical surface features like manholes, valve boxes and hydrants have been field located (shown as QLC).
 - Quality Level D: Existing NYSDOT and Utility Company records were used to locate subsurface utilities (shown as QLD).
 - If test holes are needed to verify the location of a utility they require removal and replacement of existing pavement as well as M&PT.
- Drawing Nos. Sheet F- 81348 - F-81354 on Route 135, Include a note to construct a visual screen such as a wooden noise barrier along this highway in this area if the buffer is compromised and/or vegetation is removed.
- Drawing No. HV145-FU-01000-1, Provide greater details for the proposed drill pits. The Pit for Newbridge Road is shown to be 14' deep adjacent to a State highway. Detail the distance the pit will be from the edge of pavement and sidewalk area. Travel lane closures, lane shifts, temporary concrete barrier, sheet piling may be required. Provide all appropriate construction details in accordance with NYSDOT standard plans and specifications. Operations within 12' of travel lanes typically require travel lane closures.
- Drawing No. HV145-FU-01012-1, For a short distance at the LIRR Station 643+25 (approximately), the proposal overlaps a remediation project proposed by the Department of the Navy. The plans should indicate the Navy Proposal.
- Drawing No. HV145-FU-0104-1, At LIPA Station 13+00, a staging area exists. If there is an overlap between the time that the staging area will be vacated and LIPA begins work, the plans should be amended so that there is no conflict.
- Drawing No. HV145-FU-0104-1, LIPA Station 21+00, the potential area for tree removal/pruning extends into a privately-owned lot on Thorne Drive which should be avoided.
- Drawing No. HV145-FU-01016-1, Between LIPA Station 50+35 and 53+00, a portion of manhole #30-W, as well as the proposed cable, crosses Reservation Area #2, which is reserved for parkway purposes only. Therefore, LIPA is to obtain written consent Office of Parks, Recreation, and Historic Preservation (OPRHP) to the installations within Reservation #2.
- Drawing No. HV145-FU-01016-1, The Matchline Station 53+00 is incorrect.
- Drawing No. HV145-FU-01017-1, Station 53+00 is shown incorrectly.

Honorable Jaclyn Brillig
January 17, 2006
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If you have any questions, please contact Diane Kenneally of my office at (518) 485-0887.

Sincerely,



Brian O. Rowback, P.E.
Chief Operating Officer

cc: Monique Brechter
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SUPPLEMENTAL LANDSCAPE DEVELOPMENT SPECIFICATIONS

CLEARING AND GRUBBING

SOIL EROSION AND SEDIMENT CONTROL

ESTABLISHING TURF

PLANTING SPECIFICATION

TOPSOIL

CARE OF TREES

SELECTIVE THINNING

TREE REMOVAL

WATERING VEGETATION

SPECIAL NOTES:

1. CLEARING AND GRUBBING:

LIMITS OF WORK AREAS: The Contractor shall contact the New York State Department of Transportation Regional Landscape Architect (NYSRLA), through the New York State Department of Transportation Engineer in Charge (NYSEIC) of this project before locating or erecting tree/vegetation protection barriers.

PROTECTION AND RESTORATION: The Contractor shall take care not to damage any existing vegetation that is to remain. Any damage through carelessness of the Contractor shall be repaired and/or replaced at the Contractor's expense, as ordered by the NYSEIC.

2. SOIL EROSION AND SEDIMENT CONTROL

CONSTRUCTION DETAILS

General. The contractor shall supply a sample of the Erosion Control Materials and a

copy of the performance specifications to the NYSRLV through the NYSEIC prior to ordering materials.

Erosion control materials shall be installed as per the manufacturer's specifications and as specified on the erosion control plans and in the contract documents. The contractor shall submit a schedule of operation and materials list to the NYSEIC prior to final grading operations.

Inspection and Maintenance. All areas where intermediate and permanent erosion control materials have been used and have been damaged shall be repaired by the contractor within 24 hours of notification or as directed by the NYSEIC to the satisfaction of the NYSEIC and NYSRLA.

Rolled Erosion Control Products and Soil Stabilizers

A. Ground Preparation and Installation.

1. Rolled Erosion Control Products shall be placed not less than three (3) widths in swells and ditches as per the manufacturer's recommendations.

2. Rolled erosion control products shall be anchored as per manufacturer's specifications and as approved by the NYSEIC. No metal anchors allowed in the center medians.

In addition to stapling as specified, staples shall also be spaced **0.3 m** apart transversely at intervals as specified by the manufacturer.

3. All areas where rolled erosion control products and soil stabilizers have been satisfactorily placed shall be seeded in accordance with Turf Establishment, the erosion control products and soil stabilizer manufacturers recommendations and/or as further specified in the contract documents. Seeding shall also conform to the requirements of the turf establishment.

3. ESTABLISHING TURF:

DETAIL SPECIFICATIONS FOR SEED

- A. Min. Germination
- B. Min. % Germination and Hard Seed
- C. Grams Pure Live Seed per m²

NAME	VARIETY	A	B	C
<u>Seed Mix No. 1</u>				
Tall Fescue (Festuca arundinacea)	Commercial Improved Varieties	85		6.2 g

Fine Leaf Fescues (Festuca Var.)	Commercial Improved Varieties	85	1.1 g
Perennial Rye Grass (Lolium perenne)	Commercial Improved Varieties	90	4.6 g
TOTAL GRAMS OF PURE LIVE SEED PER m²			11.8 g

Approved variety equals will be accepted by the NYSRLA when requested, in writing, by the Contractor prior to the start of work.

FERTILIZER - (10-6-4) (50% N/UF). 50% of total nitrogen shall be derived from urea form furnishing a minimum of 3.5% water insoluble nitrogen (3.5% WIN).

The balance of nitrogen shall be present as methylene urea, water soluble urea, nitrate, and ammoniacal compounds.

LIME - Limestone shall be ground limestone having a minimum total neutralizing value of 88% calcium carbonate equivalence. A minimum of 90% shall pass the 0.85 mm mesh sieve and a minimum of 60% shall pass the 0.15 mm mesh sieve.

MULCH - Shall be Hay, Straw, Wood Fiber, or equivalent approved material. Paper fiber (cellulose) shall not be used. Hay or straw only shall be used on slopes 1:3 or steeper.

MULCH ANCHORAGE - for straw shall be chemical mulch binder or other methods as approved by the NYSRLA.

SEED RATES - 11.8 g of pure live seed per m².

FERTILIZER RATE - 112.0 g per m²

LIME RATE - As follows:

Approved Tested Topsoil PH	kg/m ²
6.5 - 7.0	0
6.0 - 6.5	0.11
5.5 - 6.0	0.22

MULCH RATE - Hay or straw mulch shall be placed at a minimum rate of approximately **0.44 kg per square meter**. Mulching is required on all seeded areas. Wood fiber mulch shall be applied at a rate of **0.16 kg per meter squared**.

MULCH ANCHORAGE RATE - manufacturer's recommended rate.

GROUND PREPARATION AND SEEDING: Areas to be seeded shall be

scarified sufficiently to break up the surface crust immediately before seeding except where, in judgment of the NYSEIC, the ground is already loose and friable as immediately following grading. Where topsoil is not specified, all loose stones and other objects over 50mm in greatest dimension, or other sizes as specified shall be removed and disposed of as approved. All embedded stones and other objects protruding more than 50 mm above the surface, or other heights specified, shall also be removed and disposed of as approved. Where topsoil is specified the maximum loose stone size shall be 50mm. Unless otherwise specified in the contract documents and approved by the NYSRLA, only limestone and/or fertilizers may be mixed together with the seeds (including legume inoculants when required) immediately before sowing. Any method of sowing that does not injure the seeds in the process of spreading will be suitable.

Areas with pavement removal must be loosened to a depth of **450 mm** prior to placing topsoil. Seeding shall take place between March 1 to May 15 or August 15 to November 1 unless otherwise directed.

4. PLANTING:

All planting locations shall be laid out by the contractor and approved by the NYSRLA.

PLANTS: See the landscape plant list on the plans. All plants shall be B&B or container grown. Ball diameters shown are for B&B material. Container grown plants with root ball 25% less in diameter and depth than that specified for B&B material will be acceptable for plants specified as B&B. A 15% tolerance will be allowed in diameter and depth providing that the volume of the resultant root ball is not less than the volume of the root ball specified.

The contractor shall submit all sources of nursery stock prior to the start of work to the NYSRLA.

All plant material shall be subject to inspection and rejection by the NYSEIC or RLA upon arrival at the project site if plant material does not meet the specifications and if water is not applied immediately following planting, as per the watering specifications.

PLANTING MATERIALS:

TOPSOIL: Approved organic material shall be premixed with topsoil at the rate of one part organic material to seven parts topsoil. Container grown shrubs may be planted in existing soil with the incorporation of an approved organic material equal to one quarter ($\frac{1}{4}$) the pit volume as ordered by the NYSEIC.

ORGANIC MATERIAL: Humus or Peat or Rotted Manure or other as approved. Approved compost may be used, with the incorporation of an approved Mycorrhizae Inoculant for each tree PH, as approved by the NYSRLA.

Fertilizer for all plants shall be:
slow release bio-fertilization planting tablets (12-3-5) with organic forms derived from urea form (nitroform), methylene ureas, (nutralene), ammoniated phosphates, other organic soil conditioners and beneficial bacteria's or as approved by the NYSRLA.

MULCH: Woodchips. Contractor shall submit samples from all intended wood chip suppliers to the NYSDOT Regional Landscape Office for approval, prior to the shipping to the project site.

PLANTING SEASON:

DECIDUOUS B&B MATERIAL:	March 1 to May 1 October 15 to December 15
C.G. MATERIAL:	March 1 to June 1 August 15 to December 15
EVERGREEN B&B MATERIAL:	March 1 to May 15 August 15 to November 1

All landscape planting installed outside the Regional planting season shall be at the contractor's own risk and watered with a biostimulant liquid complex of seaweed extract, humic acid extract enzymes, and non-ionic wetting agents or an approved equal. All rates are as specified by the manufacturer.

Plants not protected as specified or that have not been planted within two (2) calendar days of delivery shall be rejected as ordered by the NYSEIC.

LAYOUT - SETBACK RESTRICTIONS: Permission to plant on private property must be obtained from the owner by the NYSEIC prior to the planting season, using form HC 91b. If permission cannot be obtained, the plants for those areas will be deleted from this contract, as ordered by the NYSEIC.

All planting items shall be laid out in the field by the contractor and verified by the NYSEIC and/or RLA prior to digging.

Layout for all trees shall be done in the field using painted wooded lathe stakes. The top portion/tip of the stake shall have one color to determine the species and the bottom portion of the stake shall have another color to specify the size of the pit. The contractor shall submit a color coded table to the NYSRLA for approval prior to the start of work. Layout shall be done by the contractor with final review and/or approval by the NYSEIC/ RLA. All shrub beds shall be laid out, outlined, in the field using spray paint, as approved by the NYSEIC.

No plant shall be planted within 1.5 m of any fence. Shrubs are not to be planted closer than 2.4 m to the center of any major, minor, or evergreen pit. The minimum setback from the traffic face of guide rail to the center of plant pit shall be 1.5 m. All shrubs shall be in planting beds unless noted otherwise.

All trees shall be a minimum of **9.0 m** from mainline pavement and a minimum of **7.5 m** from pavement on service roads and ramps except where guide rail exists.

PLANT PIT DIAMETER: The minimum plant pit diameter shall bear the following relationship to the diameter of the root spread or root balls of the plants to be planted in them unless otherwise specified in the contract documents.

<p>Root Ball <u>Diameter</u> 0 - 0.6 m 0.6 m - 1.2 m >1.2 m</p>	<p><u>Plant Pit Diameter</u> Twice the root/ball diameter Equal to the root/ball diameter +0.6 m 1½ times the root/ball diameter</p>
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All areas of pavement removal to be planted shall have the soil made loose and friable to a depth of **0.90 m**.

Pit sizes for vines and ground cover and emergent freshwater plants shall be large enough to permit satisfactory planting, as ordered by the NYSEIC.

PLANTING BEDS: All planting areas are considered planting beds and shall be mulched.

Planting bed areas shall be harrowed, disked or otherwise completely cultivated to a state of tillage acceptable to the engineer to a minimum depth of **200 mm**.

All plant beds adjacent to pavement, walls, fencing, guide rail or other fixed objects shall extend to the structural element up to **3 m** away.
All vegetation shall be removed from planting beds or made weed free prior to planting through repeated methods as approved by the NYSRLA.

After all planting beds are weed free, they shall be rototilled or otherwise be made loose and friable to a depth of **450 mm**.

DRAINAGE: When there is standing water in dug plant pits, the plant shall be relocated as directed by the NYSEIC/RLA.

PLANTING SOIL: Fertilize plant pit before setting plants at the following rates:

Bio-fertilizer Planting Tablets (12-3-5) 21g

Planting Specification Per Manufacturer									
21 gram Plant Tablet 12-3-5 (24 month release)									
Container/Ball Size:									
	3.79L	11.36L	18.93L	37.85L	56.78L	.51-.61M	.76-.91M	1.07-1.22M	1.37-1.52M
# of Tablets:	1	2	3	4	5	5	6	7-8	10-12

DISPOSAL OF EXCESS SOIL: As material is excavated from tree pits, it shall be immediately removed from the planting areas and disposed of in a manner acceptable to the Engineer.

All soil used to form the plant pit saucer shall have 100mm topsoil and immediately seeded as per Regional Turf Establishment specifications.

SETTING PLANTS:

The contractor shall submit a work order to establish the number of days to obtain materials, start dates, completion schedule, schedule of planting operations, within 10 working days prior to the start of work.

All substitutions and changes shall be in writing by the contractor to the NYSEIC and/or RLA.

The contractor shall not be allowed to plant unless the planting schedule and watering schedule are approved and all materials, invoices are approved by NYSEIC/RLA.

The contractor shall limit their operation to those areas approved by the NYSEIC and covered in the field by State approved inspectors.

GENERAL: Where trees and shrubs are located together, the tree pits should be dug before the shrub pits are dug.

Saucer depth shall be **75 mm** for shrubs and **125 mm** for trees. For all shrubs, saucers shall be constructed **75 mm** larger than the pit sizes. For all trees, saucers shall be constructed **150 mm** larger than the pit size. Saucers shall remain in place for the duration of the contract. At least three waterings for the compaction of the planting soil after setting plants and before applying mulch shall be provided as ordered by the NYSEIC.

All the provisions of Setting Plants shall be accomplished within five (5) calendar days after the plant is set in the pit except that the NYSEIC shall take into consideration unexpected interruptions in work due to emergencies, storms, etc. severe enough to stop work. Scheduled non-work days such as weekends, holidays, etc. shall not be a reason for extending the (5) day limitation.

If this sequence is not adhered to and as a result the operations subsequent to setting and backfilling are not being accomplished within the specified time, the NYSEIC may stop all setting and backfilling of plants, and any other planting operations he may deem necessary, until such time as he is satisfied that the sequence of planting operations is again on schedule.

BALLED PLANTS: Synthetic burlap shall not be used on the root ball. (When wire baskets are used on the root ball, the Contractor shall remove at least the upper one-third ($\frac{1}{3}$) of the wire basket from the sides and top of the ball to a maximum depth of **450 mm** at the time of planting).

The top one-third ($\frac{1}{3}$) of the wire basket shall be placed outside the plant pit until the NYSDOT Inspector approves the planting installation. The Contractor shall remove all wire basket remnants within 24 hours of plant installation approval.

WRAPPING: All deciduous trees over **50 mm** in diameter shall be wrapped immediately after planting unless otherwise approved. Wrapping shall extend beyond the point where hose and wires pass around the tree trunk.

STAKING, GUYING AND ANCHORING: All trees shall be firmly staked, guyed or anchored at the time of planting as shown on the current standard sheet unless otherwise approved. Stakes will be generally parallel to the road and not injure plant balls. Wires used for tying the trunk to stakes or for guying shall be secured to the tree by passing through an approved hose to prevent chafing and injury to the trees. Guy wires fastened to stakes shall be tightened by driving the stakes, leaving the wires to be twisted for tightening during establishment. Stakes shall be cut so the tops are even.

Prior to the beginning Period of Establishment (POE) all tree replacements shall be staked.

At the end of the Period of Establishment the contractor shall remove all wrapping, wires, and stakes from the entire project site.

PRUNING: All plant material shall meet specified sizes after pruning, although no pruning more than specified in the standard specification is required. Approval shall be obtained from the NYSRLA for all landscape materials pruned prior to shipping and/or planting.

MULCHING: Mulch may not be unloaded within the planting bed area.

A **75 mm** layer of mulch shall be uniformly placed in the area of all plant pits and planting beds. After mulching fertilizer type No. 3 (10-6-4) shall be evenly applied to all mulched areas at a rate of **0.7 kg** of fertilizer per **square meter**. A second application of 10-6-4, at the same rate shall be made on the mulched areas at the end of the Period of Establishment.

RESTORATION: The outer portions of the tree pit saucers shall be restored to a satisfactory condition as specified for existing turf areas.

WATERING: All plants shall be watered immediately following planting. Watering for compaction shall be limited to two (2) waterings within one day, with a minimum allowance of five (5) hours draw down time.

Plants shall have a minimum of 14 waterings between April 1 and October 1 (every other week). The intervals between watering operation can be modified in writing by the NYSRLA. Each watering shall provide 75 L/m² (75 mm layer of water). Approximate quantities for each of the 14 waterings are as follows:

Major Deciduous Tree	- 114 L each
Minor Deciduous Tree	- 76 L each
Evergreen Tree	- 95 L each
Shrubs	- 30 L each
Vines/Groundcover/Special Plants	- 4 L each

All landscape material planted out of seasons shall be watered with a biostimulant liquid complex of seaweed extract, humic acid extract, enzymes and non-ionic wetting agents, as approved by the NYSDOT-RLA.

WEEDING: Plant bed weeding shall begin on June 1 and planting beds shall be weed free by July 1 and begin again on August 15 and planting beds shall be weed free by September 1.

ANTI-DESICCANTS: All plants, except seedlings and rooted cuttings, shall be sprayed with an anti-desiccant meeting the requirements of Materials for Protection of Plants. The anti-desiccant shall be applied according to the manufacturer's directions to thoroughly cover all above ground parts. The time of application shall be as follows, unless otherwise approved:

Evergreen: Apply within ten (10) days following planting.

Deciduous: Spring Planting - Apply when leaves have reached at least seventy-five percent (75%) of mature size.

Fall Planting - Apply in October or November when the temperature is 5⁰ C or above.

5. PERIOD OF ESTABLISHMENT:

The Contractor shall be required to continue the work specified under 611-3.05 "Care of Plantings" for a period of one (1) year following the satisfactory completion of the planting on the contract as confirmed in writing by the NYSEIC, or for the duration of the contract, whichever is later. The Period of Establishment applies to all planting unless otherwise specified. This includes replacement of dead material before the end of each spring and fall planting season for one year.

REQUIREMENTS: All plants that are dead, missing, or in an unhealthy or badly impaired condition, as determined in writing by the NYSDOT-RLA, shall be removed and replaced with new healthy plant material as specified within two (2) weeks of that determination or during the first two (2) weeks of the succeeding planting season if the determination is not made during a

favorable planting season. All plants shall receive the same care as required for the original plants through the Period of Establishment.

6. TOPSOIL:

The contractor shall submit sources of topsoil for testing four weeks prior to start of contract work. No topsoil shall be placed within the contract limits until written approvals are granted by the NYSRLA.

TOPSOIL THICKNESS: 100 mm.

7. CARE OF TREES:

Care of Trees: All work shall be performed by a certified arborist. Documentation shall be submitted to the NYSEIC prior to the start of work.

Fertilizer: 10-6-4 fertilizer shall be applied at a rate of **54 g/mm** of D.B.H.

Seasons: No fertilization will be allowed between July 1 and December 1.

8. FERTILIZING:

The holes shall be made with a soil auger and care shall be taken to avoid unnecessary injury to the root system. Soil removed to make the holes shall be replaced and tamped to fill the holes to grade.

54 g of granular fertilizer per **mm** of D.B.H. shall be placed in equal proportions at the drip line in the bottom of each hole or as determined for each job.

All trees shall be watered as per the planting plan and with a bio-stimulant liquid complex of seaweed extract, humic acid extract, enzymes and non-ionic wetting agents as approved by the NYSRLA. The specified rate as per manufacturer's recommendations.

CLEANUP AND DISPOSAL: All auger holes shall be seeded as directed by the NYSEIC.

9 SELECTIVE THINNING:

CARE OF TREES PRUNING ONLY: Pruning of tree limbs and roots shall be performed by the Certified Arborist where excavation for pavements, curbs, walls, footings, trenching for subsurface utilities, removals, strip and storing of topsoil, unclassified excavation, clearing and grubbing is required adjacent to trees and shrubs and/or to permit establishment of grass, ground cover and other plant material.

No trees shall be pruned except as directed by the NYSEIC. Pruning of the

crown shall be in such a manner as to maintain the shape of the particular species and the balance and symmetry of the tree in general while retaining as much fine growth as possible.

The line of excavation shall be routed to minimize damage to roots within the drip line of existing trees. Tree roots over **25 mm** diameter encountered in the areas described shall be pruned by the arborist with proper tools to minimize damage to the tree.

In reducing overall size, attention is to be given to symmetrical appearance. Top is to be higher and sides reduced in order to maintain a tree-like form and be typical of their species. In reducing overall tree size (cutting back) to compensate for cutting roots when excavating foundations, not more than one-third ($\frac{1}{3}$) of the total area should be reduced at a single operation.

Trees are to be watered during the period when the excavated area is open to insure that a minimum of **25 mm** of water is applied over the entire root area within the drip line each week. Soil within the root area should not be allowed to dry out under any circumstances. Water should be applied using "soaker hoses" to insure slow complete penetration in root zone during growing seasons.

Prior to backfilling excavation, all roots shall be once again pruned back to sound tissue with clean cuts by the arborist.

All pruned material and all other debris shall be removed from the site of the contract within 24 hours and disposed of as directed by the NYSEIC.

All pruning of limbs and roots must be performed by an arborist or firm recognized as a tree surgeon or pruning specialist with a minimum of five (5) years of experience. Verification and qualification must be submitted for NYSDOT Landscape Division's approval prior to any pruning operations.

10. TREE REMOVAL:

Stump holes shall be backfilled with topsoil and seeded according to the provisions in Turf Establishment.

DISPOSAL OF WOOD: All material shall be moved from site within 24 hours of cutting and disposed of as ordered by the NYSEIC.

11. WATERING VEGETATION:

Watering plants required.

PLANTS: All plants shall be watered using a water wand supplied with water under low pressure

MATERIALS:

TANK TRUCK(Watering Truck) - Shall be equipped with a clearly visible, working, water flow meter.

CONSTRUCTION DETAILS:

WATERING -The contractor shall submit a schedule of watering for the entire project as specified prior to the start of the operation for all watering

The contractor shall contact the NYSEIC (48) hours prior to watering.
The watering operation can be cancelled by the NYSEIC due to precipitation, field testing and/or improper water application.