Tewksbury Town Manager's Office
&
Town of Tewksbury

INVITATION FOR BIDS

"Wamesit Indian Park Upgrade"

TOWN OF TEWKSBURY MASSACHUSETTS 01876
TOWN MANAGER'S OFFICE
464 MAIN STREET

INVITATION TO BID
WAMESIT INDIAN PARK UPGRADE

The Town of Tewksbury acting through its Town Manager will receive bids for the upgrade of Wamesit Indian Park between Rt. 38 and Old Main Street until 2:00PM on July 15, 2015. Sealed bids on bid forms provided within the bid documents and specifications shall be mailed or delivered to the Office of the Town Manager, 464 Main Street Tewksbury, MA 01876 with the designation "WAMESIT INDIAN PARK UPGRADE" on the envelope. The bids will be publicly opened and read aloud in the Meeting Room at 464 Main Street Tewksbury, MA on July 15, 2015 at 2:00PM.

Information and Instructions to Bidders, Contract and Specifications and Bid forms are attached. All bids are subject to MGL Chapter 30B.

Each bid shall be accompanied by a bid deposit in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the Town of Tewksbury in the amount of five percent (5%) of the value of the bid payable to Town of Tewksbury. Such a bond or check will become the property of Town of Tewksbury if the Bidder fails to execute the contract and satisfactory bonds within ten (10) days after the contract has been submitted to the successful bidder for execution

For information pertaining to this bid, please contact Town Manager, Richard Montuori, at 978-640-4300.

The Town of Tewksbury reserves the right to reject any and all bids if it be in the public interest to do so.

INFORMATION AND INSTRUCTIONS TO BIDDERS

1. The awarding authority is the Town Manager Town of Tewksbury.

2. As authorized by M.G.L. Chapter 30B, the Town of Tewksbury will receive bids until 2:00PM on May 8, 2015 at the Office of the Town Manager, 464 Main Street Tewksbury, MA 01876 for WAMESIT INDIAN PARK UPGRADE.

   Sealed bids on bid forms provided herewith shall be mailed or delivered to the Office of the Town Manager, 464 Main Street Tewksbury, MA 01876 with the designation "WAMESIT INDIAN PARK UPGRADE" on the envelope. The bids will be opened publicly and read aloud at the time and place designated above. All forms with the bid specification including Bid Form, Certification of Non-collusion form, certificate of state tax compliance form

3. BID PRICES:

   Each bid shall state the price per unit as specified in the bid form at which the bidder will furnish the delivery, labor, and/or service.

4. TAXES:

   Purchases made by the Town of Tewksbury are exempt from payment of Federal Excise Taxes, and any such taxes must not be included in bid prices. A Federal Excise Tax Exemption Certificate will be furnished to the successful bidder on request.

   The Town of Tewksbury is exempt from payment of Massachusetts Tax on Retail Sales and will furnish the necessary exemption certificate to the successful bidder on request. No sales tax shall be included in the price at which the equipment is offered to the Town.

5. BID DEPOSIT:

   Every bid for such contract shall be accompanied by a bid deposit in the form of a bid bond or cash, or a certified check on, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the Town of Tewksbury. The amount of such bid deposit shall be five percent (5%) of the value of the bid.

6. RETURN OF BID DEPOSIT:

   Bid deposits except those of the three lowest responsible and eligible bidders, will be returned within 10 days after the opening of the bids. The bid deposits of the three lowest responsible and eligible bidders will be returned upon execution of the contract (including delivery of contract, required bond and evidence of insurance to the awarding authority) or at the expiration of thirty (30) days after opening the bids if no award is made; except that, if any bidder fails to perform his/her agreement to execute a contract and furnish the required bond or security deposit, his/her bid deposit shall become and be the property of the Town of Tewksbury as liquidated damages.

7. INFORMATION REQUIRED WITH THE BID:

The bidder shall furnish in the space provided in the bid form, or by attaching additional sheets, the following information:

a) A statement of certain facts concerning the organization, owners, and officers of the bidder as specified in the bid form.

b) The name and address of the company proposed as surety for the required performance bond.

c) A statement of the alternative form of security proposed if a performance bond is not to be furnished.

d) A statement of the terms of all warranties and/or guarantees pertaining to the materials and services offered.

Upon request of the Town Manager, the bidder shall furnish financial statements to indicate the financial soundness of the bidder.

8. DETERMINATION OF AWARD:

a) Award will be made to the lowest responsible and eligible bidder within thirty (30) days after the bid opening and shall be awarded in accordance with the provisions of Massachusetts General Laws, Chapter 30B.

b) No Contract between the Town of Tewksbury and the successful bidder whose bid is accepted shall exist until the written contract shall have been executed by both parties. The Town will not execute the contract until insurance certificates and bonds required by paragraphs 6 and 7 of the contract have been delivered to the awarding authority in acceptable form.

c) The awarding authority reserves the right to reject any or all bids, if it be in the public interest to do so.

9. PROVISION OF SERVICES:

The contractor shall not be held liable for delay or failure due to causes beyond his/her reasonable control, including Acts of God, war, fires, strikes, and embargoes, provided that the contractor shall make every effort to notify the Town by telephone or personal contact at the earliest possible time and further provided that the contractor shall within five days after occurrence, give written explanation of the cause of any such delay or failure to the Town Manager of the Town of Tewksbury.

The successful bidder shall reimburse the Town of Tewksbury for any out-of-pocket costs incurred as a result of damage caused by defective material, improper delivery procedure, or any failure to perform the work in accordance with the provisions of the contract.

10. INSURANCE AND BOND:

Insurance certificates indicating coverage as defined in the form of Agreement shall be provided by the successful bidder.

11. PAYMENT:

The successful bidder, at the end of each month during which work has been performed under the contract, shall submit a requisition for payment in duplicate under the terms specified in the contract.

12. CONTRACT:

A sample of the Town's Standard contract is attached in Appendix B that the successful bidder will be required to sign please read the document carefully there will be no adjustments except by Town Counsel when he finalizes the document to send to the Vendor.

13. COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS:

Before a contract may be executed by the Town, the successful Bidder will be required in accordance with the provisions of M.G.L. Chapter 62C, Section 49A, to execute and file with the Town the **Certifications Form Attached**.

14. WARRANTY:

Town can return product up to 30 days from accepting full delivery
Warranty against defects in materials and workmanship must be for at least one year
Warranty for the work minimum 5 years
Warranty for plantings minimum 2 years
Vendor's option to repair or replace
Neglect or abuse not covered

15. DELIVERY:

Product must be delivered in full and installed within 75 days of executing a contract and notice of award.

a) Specifications for the purchase and installation of upgrades to Wamesit Indian Park are located in Appendix A.
b) Landscape Plan Entitled Wamesit Island Park dated January 2013 prepared by Lorayne Black, ASLA, Landscape Architect

TOWN OF TEWKSBURY MASSACHUSETTS
WAMESIT INDIAN PARK UPGRADE
BID FORM

The undersigned proposes to furnish the following item(s) in accordance with the Town of Tewksbury's terms, conditions, and specifications attached at the process indicated below:

Cost of Wamesit Indian Park installation:

_____

Warranty as stated in specifications: Yes_____ No_____

Delivery Timeframe as stated in specifications: Yes_____ No_____

Authorized Signature: _____

Print Name: _____

Company Name: _____

Address: _____

Telephone: _____

Date: _____

CERTIFICATION OF NON-COLLUSION FORM

Pursuant to M.G.L. Ch. 30b, s10, the undersigned hereby certifies, under penalties of perjury, that this bid or proposal has been made and submitted in good faith and without fraud or collusion with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____ or _____
Social Security Number Federal I.D. Number

Firm Name _____

Business Address _____

_____

Representative _____ Title _____
(Please print)

Signature _____ Date _____

CERTIFICATION OF GOOD FAITH FORM

The undersigned certifies under pains and penalties of perjury that this contract has been obtained in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____
Signature

_____
Name

_____
Title

CERTIFICATE OF STATE TAX COMPLIANCE FORM

Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, _____,
authorized signatory for
Name of signatory
_____, whose
Contractor/Vendor
Principal place of business is at _____,
_____ does hereby certify under the pains and penalties of perjury that
_____ has paid all
Contractor/Vendor
Massachusetts taxes and has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

_____
Signature required

Federal Identification No. of _____: _____
Contractor number

CORPORATE VOTE

At a duly authorized meeting of the Board of Directors of _____
_____ held on _____ at which all the Directors were present or waived notice, it was voted that _____, _____ of this company, be and he/she hereby is authorized to execute contracts and bonds in the name and behalf of said company, and affix its Corporate Seal thereto, and such execution of any contract or obligation in this company's name on its behalf by _____, shall be binding upon this company.

A TRUE COPY ATTEST:

_____
Clerk,

Date of this Contract_____

I hereby certify that I am the Clerk of _____, that
_____ is duly elected _____ of said company, and the above vote has not been amended or rescinded and remains in full force and effect as of the date of this contract.

_____
Clerk Corporate Seal

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____,

_____
Notary Public

If a corporation, complete above or attach to each signed copy of the bid/written request/quotation, a notarized copy of vote of corporation authorizing the signatory to sign this bid/written request/quotation form. If attesting clerk is the same person as the individual executing this contract, have signature notarized above.

Appendix A

Wamesit Indian Park Upgrade
Specifications---General

1. Site Work/ Earth Work in preparation of plantings, walkways, lawn, irrigation system and curbing
2. Installation of Walkways in accordance with plan located in Appendix B
3. Installation of Planting Beds in accordance with plan located in Appendix B
4. Purchase and installation of plants in accordance with plan located in Appendix B
5. Concrete pad installation for bike racks and benches in accordance with plan located in Appendix B
6. Purchase and installation of bike racks and benches in accordance with plan located in Appendix B
7. Installation of lawn areas in accordance with plan located in Appendix B
8. Purchase and installation of granite curbing along Old Main Street side of park as follows:
   a. 525 linear feet of 5" straight granite curb
   b. 16 linear feet of 5" curved granite curb
   c. 40 linear feet of reset granite curb
   d. 581 linear feet of concrete toe
9. Purchase and installation of irrigation system.

Coordination will include the following:

1. Town of Tewksbury Department of Public Works for work along Old Main Street.
2. Massachusetts Department of Transportation for Work along Rt. 38.
3. National Grid for gas main easement on property.

Planting Specification

PART 1 – GENERAL

1.1 GENERAL

A. The Work shall be performed in accordance with the following documents:

1. The Standard Specification that includes the Instructions to Bidders and General Conditions.

2. The Contract Specifications which includes the Notice to Bidders; Instructions to Bidders; Form for Bid; Various forms and exhibit.

3. The Contract Drawings.

1.2 SUMMARY

A. This Section contains the following:

1. Planting trees, shrubs, groundcovers, and other woody and herbaceous plant materials.

2. Incorporating of planting additives, bio-stimulants, pruning, mulching, fertilizing and watering plantings.

1.3 REFERENCES

A. Comply with applicable requirements of:

1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridges, Department of Public Works, latest edition.
2. ASTM: American Society of Testing Materials.
3. AAN: American Association of Nurserymen.
4. ISA: International Society of Arboriculture.
5. ANSI: American National Standards Institute.
6. AOAC: Association of Official Agricultural Chemists.
7. USDA: United States Department of Agriculture.

1.4 DEFINITIONS

A. Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1.

B. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required.

C. Finish Grade: Elevation of finished surface of planting soil.

D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

1.5 SUBMITTALS

A. Submittals: in accordance with Section 01300 – SUBMITTALS.

B. Product Data: Submit most recent printed information from manufacturers for:

1. Antidesiccant
2. Liquid Seaweed Concentrate
3. Plant Growth Biostimulant
4. Mycorrhizae Granules
5. Tree Staples for staking
6. Non-biodegradable flagging tape for marking Tree Staples.

C. Samples: Submit samples of:

1. Mulch: Submit one cubic foot sample and manufacturer/supplier's name.
2. Tree Stabilization System.

D. Certificates:

1. Submit manufacturer's certificates of compliance listing analysis for:

a. Bulb Booster

2. Submit certification of Massachusetts state arborist.

E. Landscape Contractor:

1. Submit in writing information and qualifications for the planting subcontractor including name, address, telephone number, experience on projects of a similar size and complexity, a minimum of three references and supervisor for planting subcontractor.

F. Plant List:

1. Within 30 days of award of Contract, submit plant list for review by Landscape Architect, which includes:

    a. plant materials proposed for project and corresponding nursery source where plants are to be selected.

    b. written documentation indicating nursery(s) have available the plants in the species, quantity and size(s) shown on Drawings.

    c. for plants indicating names of plants in accordance with American Joint Committee on Horticultural Nomenclature.

2. Schedule for review at nursery source by Landscape Architect with Contractor present.

3. Substitutions: plant list shall indicate unavailable materials and document a thorough search for materials. For unavailable materials list sources contacted with telephone number, date and person's name at source.

G. Schedules

    1. Submit planting schedule for approval.

1.6 QUALITY ASSURANCE

A. Planting shall be performed by a certified landscape contractor with a minimum of five years planting work experience on projects of a similar size and complexity and under full time supervision of a qualified supervisor.

B. Pruning shall be performed by a Massachusetts certified and/or an International Society of Arboriculture certified arborist. Pruning shall comply with ANSI A300 pruning standards.

1.7 PRE-CONSTRUCTION MEETING

A. At the project pre-construction meeting, the following items relating to the work of this Item shall be specifically discussed:

1. Nursery sources for plant materials.
2. Schedule of plant tagging, delivery and installation.
3. Review benchmark dates at which time Landscape Architect should make site visits.

1.8 SELECTIONS AND INSPECTION OF PLANTS

A. Plants shall be selected by Landscape Architect at place of growth for conformity to specification requirements as to quality, size and variety prior to purchase and planting. Such approval shall not impair right of inspection and rejection upon delivery at site or during progress of work. Cost of replacement shall be borne by Contractor.

B. Source Limitations:

1. Plants shall have been grown under climatic conditions similar to those in the locality of the project for at least the previous two years. Unless approved by the Landscape Architect, plants shall have been grown at a latitude not more than 325 km (200 miles) north or south of the latitude of the project unless the provenance of the plant can be documented to be compatible with the latitude and cold hardiness zone of the planting location.

2. B&B plants shall have been freshly dug (during the most recent favorable harvest season).

3. Color photographs of representative plant material shall be submitted for initial review of alternate nursery sources. Photographs are to include a scale rod or other measuring device and be taken from an angle that depicts the size and condition of the typical plant to be furnished. Photographs must show actual plant material available for selection at that time.

C. Plant Selection / Coordination

1. For trees, within 90 days of the Notice to Proceed, submit tree sources and schedule selection and tagging of trees so Landscape Architect can tag trees for project at place of growth. Landscape Architect with perform on trip to the nursery(s) to select and tag trees and a second trip to the nursery(s) review and confirm the acceptability of the trees immediately prior to digging for delivery to the site. Source information shall state the place of growth and the approximate quantity of trees available for inspection. The Landscape Architect may refuse inspection at this time if, in his or her judgment, sufficient quantities of plants are not available for inspection.

2. For shrubs and other plants, submit plant sources by January 1 of the planting year for Spring plantings, and July 1 for Fall plantings, schedule selection and tagging of shrubs so Landscape Architect can tag representative shrubs for project at place of growth. Source information shall state the place of growth and the approximate quantity of trees available for inspection. The Landscape Architect may refuse inspection at this time if, in his or her judgment, sufficient quantities of plants are not available for inspection.

3. Inform Landscape Architect of selection schedule a minimum of one month (30 day minimum) in advance of selection/tagging dates so Landscape Architect can make proper travel arrangements. If Contractor fails to provide one-month (30 day minimum) notice, any additional travel expenses shall be back-charged to Contractor. If Landscape

Architect has to make additional trips to select/tag plants in the event that inadequate, insufficient or unacceptable plant material was available at the inspection location, then additional travel expenses to be back-charged to Contractor.

4. If nurseries and/or stock submitted for review are not acceptable to Landscape Architect, submit alternate sources within seven (7) business days.

5. If Contractor cannot locate the plant material specified in the Drawings, Contractor shall enlist a plant broker to locate the material. Submit a report from the plant broker describing alternate sources of availability or lack thereof for the specified plant material and sizes.

   a. Trips to nurseries shall be efficiently arranged to allow Landscape Architect to maximize his/her viewing time. Four (2) days of viewing/tagging have been allotted for the materials listed on the Drawings. Only undug trees (trees that are in the ground) shall be considered for approval. Landscape Architect may choose to attach their seal to each plant, or representative samples. Each tree may have a specific location and orientation on the proposed plan that the Contractor shall follow closely during installation.

   b. Plant material that has been sealed shall be secured by Contractor within ten (10) business days of Landscape Architect having reviewed or sealed the material.

   c. Landscape Architect's seals shall not be removed until plantings have been approved by Landscape Architect. Removal of seals prior to Landscape Architect's review of plantings shall be considered grounds for rejection of plant material.

D. Expenses

   1. Contractor to pay for Landscape Architect travel expenses: air fare, car rental, automobile mileage and tolls; meals and overnight accommodations if necessary, for Landscape Architect during time period required to select and tag plant material. Planting subcontractor shall provide representative to travel with Landscape Architect while tagging plant material.

E. Plant Shipment to Site/ On Site Review

   1. Notify Landscape Architect a minimum of five business days prior to each shipment of proposed arrival of plant material on site.

   2. Layout tree locations, bed outlines and individual planting on site for inspection by Landscape Architect prior to planting. Arrange for adequate manpower and equipment on site at time of plant material inspection and installation to provide

complete staked layout and to unload, open and handle plant material during inspection.

1.9 DELIVERY, STORAGE AND HANDLING OF FERTILIZER AND MULCH

A. Packing and Shipping: deliver materials in unopened containers bearing manufacturer's name and guaranteed statement of analysis. Transport materials without damage. Protect materials from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.

B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.

C. Storage and Protection:

1. Materials shall be uniform in composition, dry and free flowing. Store materials in dry place, on pallets, off ground; protect from sun. Store materials in a manner, which does not diminish their usability and effectiveness.

2. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

1.10 DELIVERY, STORAGE AND HANDLING OF PLANTS

A. Plants during shipping and delivery and plants requiring storage on site shall be properly wrapped and covered to prevent wind drying and desiccation of branches, leaves, or buds. Plant balls shall be firmly bound, unbroken, and reasonably moist to indicate watering prior to delivery and during storage. Trees shall be free from fresh scars and damage in handling. Root masses of container grown plants shall be kept moist and containers screened from direct sun.

B. Wrap tree trunks at nursery prior to shipping then unwrap for inspection by Landscape Architect prior to installation. Report damaged plants to Landscape Architect.

C. Apply anti-dessicant to plants before digging at nursery and/or as directed by Landscape Architect once plants are delivered to site.

1.11 PROJECT/SITE CONDITIONS

A. Environmental Requirements: do not deliver or handle soils when dry, wet, or frozen.

1. Field Test

a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.

b. If the soil will not retain shape it is too dry and should not be worked.

c. If the soil retains shape and will not crumble, it is too wet and should not be worked.

B. Planting Season: planting seasons shall be those indicated below. Plants planted out-of-season shall receive special attention as directed. Out-of-season planting and or transplanting shall be at Contractor's risk and expense. No planting shall be done in frozen or muddy ground or when snow covers ground, or soil is otherwise in an unsatisfactory condition for planting.

1. Seasons for Planting:

Spring:	Deciduous Materials – April 1 to June 15
	Evergreen Materials – April 1 to June 15
Fall:	Deciduous Materials – September 1 - October 15
	Evergreen Materials – September 1 - October 15

2. Variance: If special conditions exist that warrant a variance in the above planting dates, a written request shall be submitted to the Landscape Architect a minimum of 4 weeks prior to the scheduled planting date stating the special conditions and the proposed variance. Permission for the variance will be given if warranted in the opinion of the Landscape Architect and upon condition that the Guarantee Period be extended for an additional period of up to 24 months at no additional cost to the Owner.

1.12 SEQUENCING AND SCHEDULING

A. Plant after acceptance of fine grading.
B. Trees to be installed first.
C. Shrubs to be located by Landscape Architect prior to arrival of perennials/groundcovers on site.
D. Perennials to be located by Landscape Architect after installation of shrubs.

1.13 SUBSTANTIAL COMPLETION

A. See Section 02970 – LANDSCAPE MAINTENANCE.

1.14 MAINTENANCE

A. See Section 02970 – LANDSCAPE MAINTENANCE.

1.15 ACCEPTANCE

A. See Section 02970 – LANDSCAPE MAINTENANCE.

1.16 GUARANTY

A. Start of Guaranty Period: when Landscape Architect issues Letter of Acceptance.

B. Term: One year for plants.

C. Requirements: plant material to be alive and in healthy, vigorous condition.

1. Quarterly reviews will be made with Contractor and Landscape Architect during guaranty period. Reviews will assess condition of installed plant materials.

2. Replace plants that are dead or, as determined by Landscape Architect, are in an unhealthy or unsightly condition, and have lost their natural shape due to dead branches, or other causes.

D. End of Guaranty Period: when Landscape Architect issues letter of Final Acceptance, two years from date of substantial completion.

E. If a Planting Season Variance is granted, the Guarantee Period for the affected plant materials shall extend through the spring (June 30) of the 12-month period following the initial Guarantee Period, without further cost to the City.

1.17 FINAL ACCEPTANCE

A. Landscape Architect reviews work and finds it complete and in accordance with Drawings and Specifications.

B. Landscape Architect will issue a letter of Final Acceptance, at which time project becomes responsibility of Owner.

PART 2 - PRODUCTS

2.1 PLANTS

A. Plant Identification and Standards: Nomenclature conforms to current edition of Standardized Plant Names, published by American Joint Committee on Horticultural Nomenclature. Plants conform to varieties and sizes specified in plant list, and to code of standards set forth by American Association of Nurserymen, Inc. in American Standard for Nursery Stock, ANSI Z60.1 - latest edition. Substitutions shall not be permitted without consent of Landscape Architect. Plants shall be properly identified with plant labels securely attached to plants, in order to identify plants on site.

Information regarding sources of plant material shall be furnished to Architect/ Landscape Architect.

B. Plant List: If there are discrepancies between the quantities shown on plant list and work shown on Drawings, Contractor shall supply plants necessary to complete work as intended on Drawings. Where size of plant on the plant list is a variation between a minimum and maximum dimension, the sizes of plants furnished shall be equal to average of two dimensions. Where a single dimension is given, dimension represents the minimum size of plants to be furnished.

C. General Plants: Unless specified otherwise, plants shall be nursery grown under climatic conditions similar to those in locality of project and shall have been previously been transplanted or root pruned at least once in last three years. Plants shall possess a normal balance between height and spread. Plants shall be typical of their species and variety with a normal habit of growth, densely foliated when in leaf, and a well-developed branch structure with a fibrous, healthy root system with no girdling roots. Plants shall be sound and healthy, free from dead wood, defects, disfiguring knots, sunscald, injuries or abrasions of roots or bark. Plants shall be freshly dug. No heeled-in plants or plants from cold storage shall be used. Parts of plant shall be moist and show active green cambium when cut. Plants shall be free of plant diseases, insects, pests, eggs, larvae, and forms of infestations.

D. Plant relationship between Root Flare and Finished Grade: nursery source shall properly plant, maintain and dig plants to maintain the natural relationship of the plants roof flare slightly above the soil of the root ball. Plants which have or show signs of previously having soil placed over their root flares from planting too deep when initially lined out, maintenance practices that turn over and mound up the soil to keep down weeds and or placing excavated soils over original root flare and root ball soil level will be rejected.

E. Balled and Burlapped Plants: Plants designated on plant list as "B&B" shall be dug with root systems as solid units. Diameter and depth of balls of soil must be sufficient to encompass fibrous and feeding root system necessary for healthy development of plants. Balls shall be wrapped firmly with biodegradable material, and bound carefully with twine or cord. Tree balls may also be placed in a wire basket of diameter suitable for the size of the root ball. No plant shall be accepted when ball of earth surrounding roots has been badly cracked or broken, either before or during process of planting, or after burlap, ropes, etc., required for transplanting have been unfastened. Plants and root balls shall remain intact as a unit during operations. Plants that cannot be planted at once must be protected and watered.

F. Bare Root Plants: Plants designated "BR" on the plant list shall be dug while dormant. Bare root plants shall be maintained in a healthy condition during storage, transportation, and operations.

G. Container-Grown Plants: Container plants shall have been acclimatized for one growing season in container. Container plants shall be well established in container, and shall have sufficient roots to hold earth intact after removal, without being in a root-bound condition. Plants shall remain in container until planted.

H Trees:

1. Tree branching height to begin at 7' above finished grade without adversely impacting the overall appearance of the tree.

2. Tree canopies, except when a clump form is designated should be straight and symmetrical with a crown having a persistent single, main leader, tapered trunk free of co-dominant stems and growing from a single, unmutilated crown of roots, and typical of the species or cultivar. No part of trunk shall be conspicuously crooked as compared with normal trees of same variety. Crown shall be free of large voids and not be significantly deformed by wind, pruning practices, pests, or other factors. Live crown ratio (distance which supports healthy foliage from bottom of canopy to the top/tree height) should be at least 60%.

3. Trunk shall be free of wounds (except for properly-healed pruning wounds), damaged bark or branches, abrasions, disfiguring knots, sunscald, conks, bleeding, galls, signs of insects or disease, and girdling ties, sunscald, frost cracks, or wounds resulting from abrasions, fire, or other causes. No pruning wounds shall be present having diameter of more than two inches (2") and wounds must show vigorous bark on edges. Pruning wounds over 3/4 inch in diameter must be completely calloused over.

4. Trees shall stand erect without a supporting stake.

5. Main scaffold branches shall be less than 2/3 the trunk diameter, free of bark inclusions (places where bark is embedded within the crotch preventing the formation of a normal branch bark ridge), and well-spaced. They should be distributed radially around and vertically along the trunk, forming a generally symmetrical crown typical for the species.

6. Evergreen trees shall be branched to within one foot of ground. Height of trees, measured from crown of roots to top of top branch, and caliper, measured as specified herein, shall not be less than minimum size designated in plant list.

7. Take caliper measurements 6 in. above ground on trees up to and including 4 in. caliper, and at 12 in. above ground for larger sizes.

I. Shrubs and Small Plants: Shrubs and small plants, unless otherwise designated, shall be well-formed and bushy with well-spaced side branches, and shall have a crown and stem(s) typical of species and variety. Plants shall be well-branched to ground. Plants shall meet requirements for spread and/or height stated in Plant List. Measurements for height are to be taken from ground level to average height of top of shrub and not to

longest branch. Thickness of each shrub shall correspond to trade classification "No. 1". Single stemmed or thin plants will not be accepted.

J. Plants larger than those specified in the Plant List may be used if approved by Landscape Architect, but use of such plants shall not increase the Contract Price. If use of larger plants is approved, spread of roots or ball of earth shall be increased in proportion to size of plant.

2.2 PLANTING ADDITIVES

A. Liquid Seaweed Concentrate: Dry, water soluble seaweed extract powder from Ascophym nodosum. Stress-X as manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277, or equal.

B. Plant Growth Biostimulant: Dry, water soluble plant growth biostimulant made form beneficial bacteria humic extracts, cold water sea kelp extract, essential amino acids, vitamins, root growth factors and sugars. Bio- Magic as manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277, or equal.

C. Mycorrhizae granules: transplant granules for inoculating plants with beneficial mycorrhizal fungi prior to planting. Myco-Magic as manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277, or equal.

2.3 BULB BOOSTER

A. Bulb booster: fine ground, organic source of phosphate and shall contain the following available plant food by weight:

Nitrogen	Phosphorus	Potash
0%	12%	0%

2.4 MULCH

A. Bark mulch: shredded granular outer bark of evergreen trees and minimum of hardwood bark and shall be aged for period of at least 6 months and not longer than two years. Bark mulch shall not have be subjected to anaerobic conditions and must be partially decomposed and dark brown in color, Bark chunks shall average 1/2 inch to 2 inches in length and no chunks three inches or more in size and thicker than 1/4 inch shall be left on site. Moisture content shall be 40 percent or more, retained with normal watering and/or rainfall. Mulch shall be free of dirt, leaves, twigs, and other materials deleterious to plant life. Mulch shall not contain chipped construction materials.

2.5 POST PLANTING FERTILIZER

A. Post Planting Fertilizer:

1. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition

2. Pro Start 5-3-4 manufactured by North Country Organics, Bradford, Vermont 05033, ph# 802.222.4277.

3. Fertilizer to be delivered in original unopened standard size bags showing weigh, analysis ingredients and manufacturer's name.

2.6 WATER

A. Water: furnished by Contractor, unless otherwise specified, and suitable for irrigation and free from ingredients harmful to plant life. Hose and other watering equipment required for work shall be furnished by Contractor.

2.7 TREE STABILIZATION MATERIALS

A. Tree Stabilization: Contractor responsible for providing a subsurface tree stabilization system which uses below grade shed anchors/ ground stakes at four corners auguered to a 4' minimum depth with straps located below grade over the root ball, connected to the anchors/ stakes to secure the tree and root ball in place. Maintain planting in plumb condition and in order to withstand the environmental conditions of the site. Submit system to Landscape Architect for approval.

2.8 ANTIDESSICANT

A. Antidessicants: emulsions or materials which provide a protective film over plant surfaces permeable enough to permit transpiration and specifically manufactured for that purpose. Antidesiccant shall be delivered in manufacturer's containers and used according to manufacturer's instructions.

2.9 CHEMICALS, HERBICIDES, FUNGICIDES AND INSECTICIDES

A. Provide chemicals, herbicides, fungicides and insecticides, as needed, for fungus or pest control. Chemicals and insecticides shall be approved by Massachusetts Department of Environmental Protection for intended used and application rates. No pesticides shall be used on site without knowledge and approval of Landscape Architect. Pesticides shall be handled by State licensed operators only.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: in the event field conditions are not in conformance with Contract Documents, notify Landscape Architect in writing.

1. Spot and Invert Elevations: verify that field elevations of site improvements such as drainage and utility fixtures, pavements, existing plantings, and subsurface piping conform to Drawings.

2. Finish Grade: verify specified elevations and prior grading operations have shaped, trimmed, and finished gradients.

3.2 PREPARATION

A. Protection:

1. Contact "Dig Safe" prior to doing excavation on site. If work is to be done around underground utilities, appropriate authority of utility must be notified of impending work. Hand excavate areas adjacent to utilities. Contractor shall be responsible for damages done by himself or his personnel to existing utilities, which shall be repaired or paid for by Contractor.

2. Dust Control: provide dust control.

3. Erosion Control: provide erosion control.

4. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.

3.3 DIGGING, HANDLING, AND PROTECTION OF PLANTS

A. Dig balled and burlapped (B & B) plants with firm natural balls of earth, of sufficient diameter and depth to include fibrous roots and conforming to standards of American Nurserymen Association. No synthetic burlap will be accepted. No plant moved with a ball will be accepted if ball is cracked or broken before or during planting operations.

B. Protect roots or balls of plants from sun and drying winds.

C. For balled and burlapped plants which cannot be planted immediately upon delivery, set plants on ground in shady location and protect with soil, bark mulch, or other acceptable materials,. Water stored plants and regularly verify rootballs are moist. Landscape Architect will reject stored plants found with dried rootballs.

D. Open bundles of plants immediately and plants and separate before roots are covered. Care shall be taken to prevent air pockets among roots. During planting operations, bare roots shall be covered with canvas, hay or other suitable material. No plant shall be bound with wire or rope as to damage the bark or break branches.

3.4 OBSTRUCTIONS BELOW GROUND OFF STRUCTURE

A. If rock, underground construction work, or other obstructions are encountered in plant pit excavation work, alternate locations may be selected by Landscape Architect at no additional cost to Owner.

B. Where locations cannot be changed, obstruction shall be removed, subject to Landscape Architect's approval, to a depth of not less than three feet (3') below grade and no less than six inches (6") below bottom of ball or roots when plant is properly set at required grade.

C. Removal of rock and underground obstructions encountered as specified in Section 02300 – Earthwork.

3.5 PLANTING OPERATIONS OVER STRUCTURE

A. In planting areas over structure, provide protective measures and perform planting operations in a manner which does not damage the waterproofing assembly and subsurface drainage and does not adversely affect the planting soil profiles.

B. For planting operations over structure, confirm weight limitations of structure and weights of proposed equipment prior to commencing planting operations.

3.6 PREPARATION AND PLACEMENT OF PLANTING MEDIUMS AND UNDERDRAINAGE COMPONENTS

3.7 PLANTING OPERATIONS

A. Stake out locations of plants and secure Landscape Architect's approval before excavating plant pits.

B. Excavating

1. Place tree next to tree pit excavation and remove burlap from top of root ball. If trunk flair is not visible gently loosen and remove soil with a blunt tool or air spade until trunk flair and large horizontal lateral roots are located. Use care not to damage root system. Following removal of excess soil over root ball measure depth of root ball to determine depth of tree pit excavation.

2. Dig tree pits and plant pits by hand and take care not to disturb utilities. If utilities are disturbed during planting operation, Contractor shall repair damage at Contractor's expense.

3. Excavate plant pits with sloping sides so planting hole is saucer shaped. Plant pit shall be no deeper than root ball.

4. Tree pits shall be four times diameter of soil ball in width.

C. Setting, Backfilling and Fertilizing

1. In the event trees are containerize in wire baskets, lay tree on its side and cut the bottom of the cage off, roll the tree into the hole and remove the sides of the wire basket.

2. Solar Orientation: Trees marked on the north side of the trunk while growing at the Nursery shall be planted with the same orientation as they originally grew to reduce trunk damage due to sun-scald, wherever feasible.

3. Set plants in center of pits plumb, straight and at an elevation where after settlement the root flare and lateral roots of plant will be at surrounding finished grade. Root ball shall not be broken. When trees are set, compact base material under the root balls to fill voids and support plants at proper height. Remove burlap and rope from upper two thirds of balls and have Landscape Architect inspect removal prior to backfilling.

4. Remove groundcovers and perennials from containers immediately before planting. Handle plants carefully to prevent damaging roots. Groundcover plants may be planted after bark mulch is placed.

5. Following removal of top 1/3 of burlap in accordance with manufacturer's recommendations, sprinkle michorrhizal granules continuously around perimeter of root ball as well as incorporating granules into top of rootball.

6. Mix liquid seaweed concentrate or plant growth bio-stimulant with water at a rate of 3 grams of liquid seaweed concentrate powder per gallon of water or 1 teaspoon of plant growth biostimulant per gallon of water.

7. Before backfilling around root balls and with the burlap removed, roughen the surface of the nursery ball sides. This action will serve to break and score any glazing of the nursery soil which frequently occurs through digging and handling. The micro-fissures so created help to decrease hydraulic barriers between these soils.

8. Backfill hole around plants to two-thirds full, sprinkle michorrhizal granules continuously around perimeter of root ball and on top of rootball, firm soil, flood with water mixed with additives, after water has drained away backfill to finished grade without additional firming. Immediately after plant pit is backfilled, a shallow basin

slightly larger than pit shall be formed with ridge of soil to facilitate and contain water. After planting, cultivate soil in shrub beds between shrub pits, rake smooth and outline beds neatly.

3.9 DRAINAGE TEST

A. Perform drainage test on trees and in representative shrub beds.

1. After excavation, fill pit twice successively with water.
2. Water shall drain out of plant pit minimum 2 inches per hour.
3. Plant pits draining slower than 2 inches per hour will require provision for drainage.

B. Documentation: note on the planting plan, pits that pass drainage test and plants that fail drainage test.

3.10 FIELD QUALITY CONTROL

A. Observation:

1. Landscape Architect to review plant pits without positive drainage.

2. Landscape Architect to review plant pit excavation and planting.

3.11 GUYING, AND STAKING

A. Guying and staking plants is only required if Contractor deems it necessary. Contractor responsible for maintaining plants in upright, vertical position and for maintaining guying and staking materials. If Contractor determines below grade guying and staking is preferred, Contractor shall submit recommendations for Landscape Architect's approval.

3.12 PRUNING

A. Pruning to be performed in accordance with American Nurserymens' Association Standards to and will be overseen by an MCLP or certified Arborist. Pruning to preserve natural character of plant and as directed by Landscape Architect. No leaders shall be cut.

B. Prune trees and shrubs only with approval of Landscape Architect to remove limbs that are below 7' above finished grade to maintain pedestrian clearance, dead, broken and crossing branches. Plants shall not be heavily pruned at the time of planting. In no case shall more than one-quarter of the branching structure be removed.

C. Pruning is required at planting time to correct defects in the tree structure, including removal of injured branches, double leaders, waterspouts, suckers, and interfering branches. Healthy lower branches and interior small twigs should not be removed except as necessary to clear walks and roads. Retain the normal or natural shape of the plant.

D. Prune with clean, sharp tools. Dead wood or suckers and broken or badly bruised branches shall be removed back to live bud, branch, or stem.

E. Pruning above head height shall be done from a hydraulic man-lift or using other mechanisms such that it is not necessary to climb the tree.

3.13 PLACEMENT OF MULCH

A. Immediately after planting operations are completed, cover tree and shrub pits and planting beds with a two-inch layer of specified mulch. Taper depth of mulch to be two inches at mulched perimeter and decreasing in depth toward trunk to be flush where trunk or stem meets root ball. Do not place mulch against trunk or stem. Cover tree, shrub and groundcover planting beds with bark mulch.

3.14 WATERING

A. Flood plants with water twice within first 24 hours of time of planting, and water plants during the maintenance period at least twice per week. At each watering thoroughly saturate the soil around each tree or shrub. If sufficient moisture is retained in soil, as determined by Landscape Architect, required watering may be reduced. Each tree will require a minimum of ten gallons of water.

3.15 POST PLANTING FERTILIZER

A. Apply uniform application of Post Planting Fertilizer (5-3-4) at rate of 5 lbs. per 1000 square feet, 30 days after planting.

3.16 CLEANING

A. Wash and sweep clean paving, site improvements and building surfaces. Clean spills and over-sprays immediately. Remove and dispose off-site excess planting mixture, soil and debris.

B. Following Acceptance at the end of 90 Maintenance Period of planting areas, remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations which do not interfere with Owner's maintenance of accepted lawns or other construction operations.

PART 4 – MEAUREMENT AND PAYMENT

4.1 GENERAL

Separate measurement and payment will not be made for the work of this section, but all costs in connection therewith are included in the contract price.

END OF SECTION

Seeded Lawn

PART 2 – GENERAL

2.1 GENERAL

A. The Work shall be performed in accordance with the following documents as issued by the Town of Tewksbury:

1. The Standard Specification, which includes the Instructions to Bidders; and General Conditions.

2. The Contract Drawings.

2.2 SUMMARY

A. This Section contains the following:

1. Seeded Lawn.
2. Watering, fertilizing, mowing and maintenance of seeded lawn.

B. Related Sections include the following:

1. PLANTING

2.3 REFERENCES

A. Comply with applicable requirements of:

1. American Association of Nurserymen, American Standards for Nursery Stock, (ANSI Z60.1), latest edition, published by the American Association of Nurserymen, 1250 I Street, N.W., Suite 500 Washington, D.C. 20005.

2. ASTM: American Society of Testing Materials.

3. ANSI: American National Standards Institute.

4. AOAC: Association of Official Agricultural Chemists.

5. USDA: United Stated Department of Agriculture.

2.4 SUBMITTALS

A. Product Data: Submit manufacturer's information for:

1. Maintenance Fertilizer
2. Seed Mixtures
3. Protective fencing materials.
4. Erosion control blanket.

B. Certificates: Submit:

1. Submit manufacturer's certificates of compliance with each shipment of each seed type. Certificate from seed supplier shall indicate seed is true to variety indicated on packaging. Certificates shall include guaranteed percentages of purity, weed content and germination of seed, net weight and date of shipment. No seed may be sown until certificates have been submitted.

C. Schedules: Submit:

1. Seeded installation schedule for approval.

2.5 QUALITY ASSURANCE

A. Qualifications: contractor shall have minimum five years experience in seed installation.

B. Regulatory Requirements

1. Secure permits, licenses, and pay fees including traffic control.

2. Comply with laws, regulations, and quarantines for agricultural and horticultural products.

2.6 DELIVERY, STORAGE AND HANDLING OF FERTILIZER AND SOIL AMENDMENTS

A. Packing and Shipping: deliver materials in unopened containers bearing the manufacturer's name and guaranteed statement of analysis. Transport materials without damage. Protect finishes from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.

B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.

C. Storage and Protection:

1. Materials shall be uniform in composition, dry and free flowing.

2. Store materials in dry place, on pallets, off the ground; protect from sun. Store materials in a manner, which does not diminish their usability and effectiveness.

3. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

2.7 PROJECT CONDITIONS

A. Environmental Requirements: do not deliver, handle or place soils when dry, wet, or frozen.

1. Field Test

a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.

b. If soil will not retain shape it is too dry and should not be worked.

c. If soil retains shape and will not crumble, it is too wet and should not be worked.

B. Seed Planting Seasons:

1. Spring (March 15 to May 1)

2. Autumn (August 15 to October 1)

3. Seeding other than within the above season shall be allowed only when ordered by Landscape Architect or when Contractor submits written request for permission to do so and permission is granted. Newly seeded areas, if seeded out of season, must be continuously watered according to good practice if seeding is done between June 1 and September 1.

2.8 SEQUENCING AND SCHEDULING

A. Perform seeding work only after planting and other work affecting ground surface has been completed.

2.9 SUBSTANTIAL COMPLETION

A. Upon completion of seed installation, request Landscape Architect's review to determine if work is substantially complete. Submit request a minimum of five days prior to the anticipated inspection date. If work is substantially complete, Landscape Architect will issue a Substantial Completion letter identifying commencement of 90 day Maintenance Period.

1. If work is not substantially complete, Landscape Architect will issue a written list of outstanding work to be done on a timely schedule agreed upon by Contractor and Landscape Architect.

2. Contractor shall notify Landscape Architect when outstanding work is completed and ready for review. When outstanding work is complete, as determined by Landscape Architect, a letter of Substantial Completion will be issued.

2.10 90 DAY MAINTENANCE PERIOD

A. Maintain seeded lawn areas until Final Acceptance.

2.11 FINAL ACCEPTANCE

A. After the 90 day maintenance period seeded lawn areas will be reviewed for final acceptance.

B. Conditions of Final Acceptance

1. Lawn acceptance shall be given for entire lawn area. No partial acceptance shall be given.

2. Lawns shall exhibit uniform, thick, well-developed stand of grass. Lawn areas shall have no bare spots in excess of four inches in diameter and bare spots shall comprise no more than two percent of total area of lawn.

3. No lawn areas shall exhibit signs of damage from erosion, washouts, gullies, or other causes.

4. Pavement surfaces and site improvements adjacent to lawn areas shall be clean and free of spills from placing or handling of loam borrow and seeding operations.

C. Inspection and Final Acceptance

1. Upon completion of 90 Day Maintenance Period, request Landscape Architect's review to determine if work is acceptable. Submit request a minimum of five days prior to anticipated inspection date. If work is acceptable, Landscape Architect will issue a Final Acceptance letter. From this date forward, lawn maintenance will be the responsibility of the Owner. Following acceptance of lawns, Owner will be given access to lawn areas for maintenance work.

a. If work is not accepted, Landscape Architect will issue a written list of outstanding work. Maintenance period to be extended until completion of work.

b. Contractor shall notify Landscape Architect when outstanding work is completed and ready for review. When work is complete, as determined by Landscape Architect, a letter of Final Acceptance will be issued.

PART 3 - PRODUCTS

3.1 MAINTENANCE FERTILIZER

A. Maintenance Fertilizer to be mixed with soil:

1. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition:

	Nitrogen	Phosphorus	Potash
Lawns	5%	3%	4%

2. Fertilizer: Pro Gro 5-3-4 manufactured by North Country Organics, Bradford, Vermont 05033, (802) 222-4277, or approved equal.

3. Fertilizer to be delivered in original unopened standard size bags showing weigh, analysis ingredients and manufacturer's name.

3.3 WATER

A. Water: furnished by Contractor, suitable for irrigation and free from ingredients harmful to plant life. Hose and other watering equipment furnished by Contractor.

3.4 SEE MIXTURES

A. Seed Mixtures:

1. Seed Mix shall be 'Midwest Mix', as supplied by Pennington Seed, Inc., P.O. Box 290, Madison, GA 30650, (800) 285-7333, or approved equal.

   a. Rate: 6 pounds / 1,000 SF

3.5 PROTECTIVE FENCING

A. Protect areas adjacent to walks with snow fencing or other approved temporary fencing material.

3.6 TEMPORARY PROTECTIVE COVERINGS

A. As temporary protective coverings on ground areas subject to erosion, provide one of the following protective measures, as directed by the Landscape Architect:

1. Mulch Materials

   a. Hay or Straw: 50 lbs / 1,000 SF.

2. Mesh or Blanket Matting: Matting for erosion control on seeded or hydroseeded slopes, on planted surfaces, drainage swales and on temporary or permanently finished slopes of 3:1 or steeper shall be:

   a. Heavy jute mesh shall be of a uniform open plain weave of unbleached singe jute yarn. The yarn shall be of a loosely twisted construction having an average twist of not less than 1.6 turns per inch and shall not vary in thickness by more than one half its normal diameter. The jute mesh shall be furnished in approximately 90 pound rolled strips and shall meet the following requirements:

   b. Length – approximately 75 yards. Width – 48" plus or minus 1". .78 warp ends per width of cloth. 41 weft ends per yard. Weight of cloth to average 1.22 pounds per linear yard with a tolerance of plus or minus 5%.

   c. Staples shall be of a #11 guage steel wire formed into a "U" shape 6" long.

   d. Erosion control matting shall be "Soil Saver" as manufactured by Jim Walls Co., Dallas, TX or "Heavy Duty Jute Mesh" as manufactured by Lewis International Corp., Springfield, NJ.

PART 4 - EXECUTION

4.1 EXAMINATION

A. Verification of Conditions: in the event field conditions are not in conformance with Contract Documents, notify Landscape Architect in writing.

1. Spot and Invert Elevations: verify field elevations of site improvements such as drainage and utility fixtures, pavements, existing plantings, and subsurface piping conform to Drawings.

2. Finish Grades: verify specified elevations to ensure that fine grading operations have shaped, trimmed, and finished seed bed true to elevation with smooth sloped parallel to finished grade.

4.2 PREPARATION FOR NEW LAWN AREAS

A. Protection:

1. Dust Control: upon acceptance of finish grade provide dust control.

2. Erosion Control: upon acceptance of finish grade provide erosion control.

3. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.

B. Surface Preparation:

1. Clean seed bed, pavement or other site improvements prior to installation.

4.4 SOIL PREPARATION

A. Thoroughly irrigate areas to receive seed.

B. Scarification: cross rake areas to receive seed so surface of soil will be receptive to holding seed.

C. Grade lawn areas smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.

D. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.

4.5 SOWING OF SEED

A. Seeding: Seeding shall consist of soil preparation, seeding, raking, rolling, weeding, watering and otherwise providing labor and materials necessary to secure establishment of acceptable turf.

B. Sowing of Seed: Immediately before seed is sown, ground shall be scarified, or raked lightly until surface is smooth, friable, and of uniformly fine texture. No seeding shall be done during windy weather. Sow seed in two directions right angles to each other, applying 3 lbs. of seed per 1,000 sq. feet in each direction. Sow seed evenly using a culti-packer or approved seeding device (if culti-packer is not used, cover seed with thin layer of landscape soil by dragging, light raking or other approved method). Roll in both directions with hand roller weighing approximately one hundred pounds per foot of width, and water with fine spray. Provide protective fencing where required to keep area undisturbed until grass is established.

C. On slopes of 3:1 or greater, Contractor can, at his option, use erosion control blanket pre-seeded with specified mixtures. Erosion control blanket shall be installed with two staples minimum per square yard.

4.6 WATERING

A. First Week: Water to establish acceptable lawn. In absence of adequate rainfall, water daily during first week to maintain moist soil to two inch minimum depth.

B. Second and Subsequent Weeks: Water lawn to maintain moisture in upper 5 inches of soil.

C. Water with uniform coverage while preventing erosion due to application of excessive quantities over small areas, and prevent damage to finished surface by watering equipment. Provide sufficient watering equipment to apply one complete coverage to seeded areas in eight-hour period.

4.7 MAINTENANCE

A. Maintenance begins immediately after seed is installed and continues until Final Acceptance as follows:

1. a uniform, thick, well-developed stand of grass is established.

2. Mow seed at seven-day intervals.

    a. First mowing: when grass has grown to 2" to 2 1/4" height. Cut grass to 1 3/4" height.

    b. Subsequent mowings shall cut grass to 1 3/4" height.

    c. Mow in Autumn until growth of grass ceases, and resume in Spring when grass grows to 2 1/4" height.

3. Mow sloped areas a minimum of once during maintenance period. 90 day maintenance period shall be extended to include required cutting. Cut grass to 3" height.

4. Apply uniform application of maintenance fertilizer (5-3-4) at rate of 20 per 1000 square feet 30 days after new lawn has been installed.

5. Continue watering as described above.

6. After grass has started, areas failing to show uniform, thick, well-developed stand of grass shall be immediately re-seeded until areas are covered with satisfactory growth of grass as determined by Landscape Architect.

7. Repair damage from erosion, gullies, washouts, or other causes immediately by filling with loam borrow, tamping, re-fertilizing and re-seeding.

4.8 CLEANING

A. Wash and sweep clean paving, site improvements and building surfaces. Clean spills and oversprays immediately. Remove and dispose off-site excess planting mixture, soil and debris.

B. Following Final Acceptance of lawn areas, remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations that do not interfere with Owner's maintenance of accepted lawns or other construction operations.

4.9 PROTECTION

A. Protect lawn areas until Final Acceptance.

PART 5 – MEAUREMENT AND PAYMENT

5.1 GENERAL

A. Separate measurement and payment will not be made for the work of this section, but all costs in connection therewith are included in the contract price.

END OF SECTION

Site Furnishings

PART 6 - GENERAL

6.1 DESCRIPTION

A. This Section includes the following:

1. Benches
2. Bicycle Rack

6.2 SUBMITTALS

A. Comply with Submittal Procedures

B. Product Data – submit the following information:
   1. Product literature
   2. CAD drawings
   3. Made in the USA Statement
   4. Proprietary information

C. Samples – submit manufacturer's color sample, standard or custom

D. Warranty – submit manufacturer's standard warranty

E. Shop Drawings: Submit shop drawings for the following components showing attachment methods, fabrication, casting and hardware. Shop drawings for wood and metal benches and metal handrail shall be signed by a structural engineer licensed in the Commonwealth of Massachusetts certifying structural performance and anchorage meeting the performance criteria specified herein:

   1. Benches
   2. Bicycle Rack

6.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Manufacturer nationally-recognized, patented designer and manufacturer of quality site amenities since 1995

B. References: Provide references of previous public-use purchasers of manufacturer's site furniture

C. A firm which has at least five (5) years experience in work of the type and size required by this Section and which is acceptable to the Landscape Architect

D. Metal work performed under this Section shall be performed by workmen experienced and familiar with media blasting, application of patinas and microcrystalline wax including and under full time supervision of a qualified foreman.

6.4 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver products to site in manufacturer's clearly-marked original, unopened containers and packaging. Upon delivery, examine packages immediately to ensure all products are complete and undamaged

B. Storage: Store products in a protected, dry area in manufacturer's unopened containers and packaging until installation.

C. Handling: Protect product's finish from damage during handling and installation. Other components may be stored inside or outside per Owners discretion.

6.5 WARRANTY

A. Material is warranted against material and workmanship defects for THREE YEARS from the date of shipment from manufacturer, assuming products are installed and maintained according to manufacturer's instruction.

B. Products damaged by abnormal use, vandalism or acts of nature are not eligible for this factory warranty.

C. Manufacturer will repair or replace any part found defective upon written notification and inspection by our manufacturer's representative.

PART 7 - MATERIALS

7.1 MANUFACTURER

Keystone Ridge Designs, Inc.
670 Mercer Road · Butler, PA 16001 USA
Toll Free: (800) 284-8208

Phone: (724) 284-1213 · Fax: (724) 284-1253
E-mail: sales@krdusa.com
Web: http://keystoneridgedesigns.com

7.2 BENCH WITH BACK

A. Product Name: Schenley bench with back

B. Product Definition: Patent no. des. D629,233 fully-assembled metal powder coated bench with cast aluminum legs and either steel, rod, sustainable hardwood or recycled lumber seat slats; made in the USA; complete weld seams where two pieces of steel touch to reduce chance of corrosion

C. Length/Part Number
   a. 4' Schenley bench with back: SC24

D. Metal pieces powder coated in standard colors as listed in current annual catalog

7.3 BIKE RACK

A. Product Name: Sonance bike rack

B. Product Definition: Exclusive By Design™ fully-assembled metal powder coated bike rack; made in the USA; complete weld seams where two pieces of steel touch to reduce chance of corrosion

C. Type/Part Number
   a. Sonance three loop, capacity 5: SN03-5

D. Metal pieces powder coated in standard colors as listed in current annual catalog

7.4 MATERIALS

A. Commercial-grade materials, at least 25% recycled raw steel, 100% recyclable steel; completely welded for optimum strength and stability according to Keystone Ridge Designs, Inc. CAD drawing; teardrop cast aluminum leg ends bolted to 1" SH 40 and 1" 11 GA tubing center frame with either 1/8" x ¾" x 1-1/2" steel rectangular tubing

B. Accessories

1. Anchor Bolts:

a. ½ dia. – 13 threads x 5-1/2" length threaded rods, magni-coated
b. ½ dia. - 13 threads hot dip galvanized hex nuts
c. galvanized steel flat washers.

7.5 FINISHES

A. Metal: The KEYSHIELD® finish protects each piece of furniture from chipping, cracking, UVA damage and provides unparalleled corrosion resistance. Steel products are finished with a two-coat powder coating process applied to a 7-15 mil thickness. Substrate preparation includes sandblasting to a white finish to remove all surface contaminants, the ultimate degree in powder coat preparation. The raw product then receives a corrosion-inhibiting phosphate coating prior to the application of the powder coating. The first coat applied to the substrate is zinc rich epoxy powder primer used exclusively on sandblasted parts. The second coat is a colored polyester powder coating. Both coats are electro-statically applied and oven cured according to powder coating manufacturing specifications to create a smooth, satin-like finish.

7.6 MANUFACTURER EXPERTISE

A. Trained consultants provide expertise on product specifications, technical inquiries and project timelines directly from the manufacturing home office.

B. Landscape Feature shall be the Schenley Bench, as manufactured by Keystone Ridge. Local Representative:

C. Style:

1. Backed
a. Depth: 24 5/16 inches
b. Overall Height: 31 11/16 inches
c. Length: 48 7/8 inches

2. Mounting:

a. Surface mount at grade

D. Materials:

1. Support: 6 ¾" wide x 3/8" thick steel plate, welded together, Hot Dip Galvanized per ASTM A123 / A123-09.

2. Hardware: Seat and back panels are bolted to supports with 1/2" x 3" lag screws and washers with hot-dipped galvanized coating.

E. Accessories

1. Anchor Bolts:

a. ½ dia. – 13 threads x 5-1/2" length threaded rods, magni-coated
b. ½ dia. - 13 threads hot dip galvanized hex nuts
c. galvanized steel flat washers.

F. FABRICATION

1. Shop assembled supports.

G. FINISHES

1. Finish on Metal: Hot dipped galvanized with a black color.

a. To ASTM A123 / A123-09

7.7 MISCELLANEOUS METAL MATERIALS

A. Welding Electrodes and Filler Metal: Type and alloy of filler metal and electrodes as recommended by producer of metal to be welded, complying with applicable AWS specifications, and for color match, strength, and compatibility in fabricated items.

B. Fasteners: Use fasteners of same basic metal as fastened metal, unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.

C. Dissimilar Metals: When dissimilar metals abut one another, use neoprene washers or sleeves to create a separation between the surfaces.

7.8 METAL FABRICATION

A. Fabricate metalwork in shapes and sizes, lines and angles to comply with requirements indicated for design, dimension, details, finish, and member sizes, including wall thickness of hollow members, post spacing, and anchorage, but not less than those required to support structural loads.

B. Cut, reinforce, drill and tap components, as indicated, to receive finish hardware, screws, fasteners and similar items. Use concealed fasteners wherever possible.

C. Shear, punch, laser or water-jet cut material cleanly and accurately. Remove burrs from exposed cut edges.

D. For handrails, ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing work.

E. Mill joints to a tight, hairline fit. Cope or miter corner joints. Form joints exposed to weather to exclude water penetration.

F. Provide weep holes, or other means to evacuate entrapped water, in hollow members that are exposed to exterior or to moisture from condensation or others sources.

G. Remove mill scale, dirt, grease and other foreign matter prior to welding. Protect adjacent surfaces from damage due to weld sparks, spatter or tramp metal.

H. Comply with AWS for recommended practices in shop welding and brazing. Clamp members and alternate welds to prevent warping or misalignment. Provide welds and brazes behind finished surfaces without distortion or discoloration or exposed side. Fully weld continuously and ground flush and smooth connections in a uniform manner.

I. Clean exposed, welded and brazed joints of flux and dress exposed and contact surfaces.

J. Chip out and replace welding showing cracks, slag inclusion, lack of fusion, bad undercut and other defects ascertained by visual or other means of inspection.

K. Provide castings that are sound and free of warp, cracks, blow hoes, or other defects that impair strength or appearance. Grind, wire brush, sandblast, and buff castings to remove seams, gatemarks, casting flash, and other casting marks unless part of the intended finish.

L. Finish exposed surfaces to smooth, sharp, well-defined lines and arrises.

M. Assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

7.9 FINISHES – GENERAL

A. Comply with MAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable temporary covering prior to shipment.

7.10 PAINT FINISH SYSTEM

A. Paint finish:

1. for ferrous metal surfaces consisting of: Water and Aeration Sump to Frame Transition and Water and Aeration Frame.
2. for cast iron surfaces consisting of: Water and Aeration Grate.

B. High Performance Paint Coatings: Provide products of one of the following manufacturers that meet or exceed specified requirements:

1. DuPont.
2. Porter International (Porter).
3. Tnemec Company, Inc. (Tnemec).

C. Materials used shall be best grade products of their respective kinds. The Painting Schedule is based on products the above named manufacturers. These are specified to establish a standard of quality and kind of material desired. Provide these products, or equals as approved by Landscape Architect.

D. Note: If substitutes are proposed, submit complete schedule showing materials specified and equivalent materials proposed as substitutes. Provide complete manufacturer's product data on proposed materials. Substitutes must be approved by Landscape Architect before commitment for materials is made.

E. The following finish system refers to produces of Tnemec Company, unless otherwise indicated. Provide these systems or comparable systems from specified manufacturers.

1. Exterior Ferrous Metal

a. Surface Preparation: Near White Metal Blast Cleaning surfaces as per Paint Council designation SSPC-SP#6 standard.

b. Shop applied coatings accordance with manufacturer's recommendations and as follows:

1. Coat 1: Tnemec Series 90-97 Tnemec-Zinc (shop applied) at 3.0 mils DFT
2. Coat 2: Tnemec 27 Typoxy (shop applied) at 3.0 mils DFT
3. Coat 3: Tnemec Series 73 Endura-Shield II at 3.0 mils DFT
4. Coat 4: Tnemec Series 1071/1072 Flouronar or Tnemec Series 1078 Flouronar Metallic at 2.5 mils DFT

c. Field Preparation: (Surface Preparation: SSPC-SP11), followed by spot reapplication of Series 90-1K97, Series N69F Epoxoline II, and Series 1071/1072 Flouronar or 1078 Fluoronar Metallic at damaged areas, welds etc:

2. Exterior Galvanized Metal

a. Surface Preparation: SSPC-SP1 - Followed by SSPC-SP3 or SP7 to establish uniform anchor profile)
b. Shop applied coatings accordance with manufacturer's recommendations and as follows:

1. Coat 1: Tnemec Series 27 Typoxy at 2.5-3.0 mils DFT

2. Coat 2: Tnemec Series 73 Endura-Shield at 2.5-3.0 mils DF
3. Coat 3: Tnemec Series 1071/1072 Flouronar or Tnemec Series 1078 Flouronar Metallic at 2.5 mils DFT

3. Exterior Cast Iron

a. Surface preparation guidelines for cast iron are as follows:

1. Solvent Cleaning: inspect and preclean surfaces with appropriate solvents to remove grease, oil and other soluble contaminants. The preferred method of precleaning is thorough scrubbing of the surface with stiff bristle brushes soaked in solvent. Prior to evaporation remove solvent by wiping with clean, lint-free cloth rags. Remove rag residue (if any) with dry, oil free compressed air.

2. Surface Profile: measure surface profile (anchor pattern) in accordance with ASTM D 4417, Method C (attached).

a. If surface profile is less than 1.5 mils then proceed with brush-off blast cleaning in accordance with No. 3 below.

b. If surface profile is 1.5 mils or greater then proceed with hand or power tool cleaning in accordance with No. 4 below.

c. Note: Certain high film thickness coating systems (20 mils DFT and higher) will require a minimum profile greater than 1.5 mils. Check with our manufacturer of paint system for advice regarding high thickness systems.

3. Brush-Off Blast Cleaning: Remove loose annealing oxides, loose rust, dirt and other foreign matter by compressed air nozzle abrasive blast cleaning using a fine abrasive. Any dust or other contaminants remaining after blasting shall be removed with dry, oil free compressed air or by vacuum cleaning. Recheck surface profile prior to painting. A profile depth of at least 1.5 mils is required.

4. Hand Or Power Tool Cleaning: Remove loose annealing oxides, loose rust, dirt and other foreign matter with the use of hand or power tools. Do not use cleaning tools that burnish or smooth the natural roughness (profile) of the cast iron surface. Any dust or other contaminants remaining after hand or power tool cleaning shall be removed with dry, oil free compressed air or by vacuum cleaning.

5. Protect From Moisture: The cleaned cast iron surfaces shall be protected from conditions of high humidity, rainfall and surface moisture. Surfaces must be dry, clean and at least 5 F. above the dew point during application of protective coatings.

6. Shop applied coatings accordance with manufacturer's recommendations and as follows:

1. Coat 1: Tnemec Series 394 Perime-Prime at 2.5-3.0 mils DFT

2. Coat 2: Tnemec Series 73 Endura-Shield at 2.5-3.0 mils DF
3. Coat 3: Tnemec Series 1071/1072 Flouronar or Tnemec Series 1078 Flouronar Metallic at 2.5 mils DFT

7. For horizontal grate surfaces: incorporate non-slip aggregate into final paint coat.

PART 8 - EXECUTION

8.1 PREPARATION

A. Coordinate and furnish anchorages and setting drawings, diagrams, templates, instructions and directions for installing items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to the site.

8.2 BENCHES

A. Install benches in accordance with manufacturer's instructions at locations indicated on the Drawings.

1. Install benches level
2. Install benches securely in place
3. Remove and replace damaged components that cannot be successfully repaired as determined by the Landscape Architect.

8.3 BICYCLE RACKS

8.4 INSTALLATION

A. Install product in accordance with manufacturer's instructions at locations indicated on the drawings.

B. Install product level and plumb.

C. Anchor product securely in place. Use 3/8"diameter stainless steel anchor bolt no shorter than 6" in length, do not over-tighten.

8.5 PROTECTION

A. Contractor to wrap all site furnishings components for duration of construction period with protective wrap if not previously wrapped by manufacturer. Remove protective covering at the time of Substantial Completion.

B. Restore finishes damaged during installation and construction so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit; or provide new units.

8.6 CLEANING

A. Clean work, removing excess dirt and foreign materials, restoring finishes, leaving work in condition acceptable to Landscape Architect.

B. Repair surface damage immediately following installation of individual site furnishings.

PART 9 – MEAUREMENT AND PAYMENT

9.1 GENERAL

A. Separate measurement and payment will not be made for the work of this section, but all costs in connection therewith are included in the contract price.

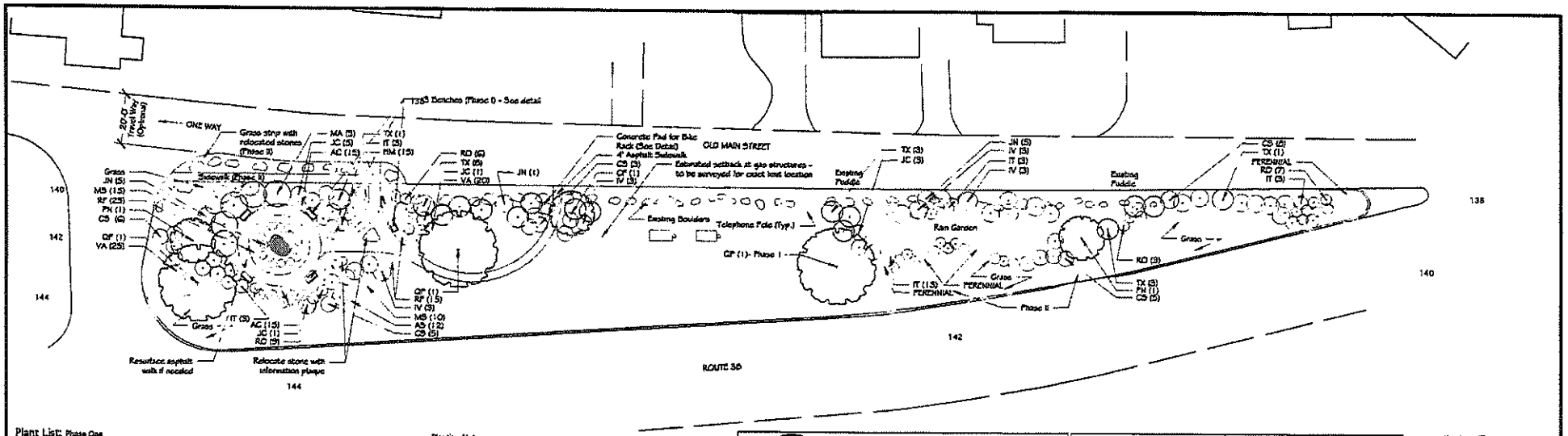
END OF SECTION

WAMESIT INDIAN PARK

UPGRADE

LANDSCAPE PLAN

APPENDIX B



Plant List: Phase One

TREES (B&B unless otherwise specified)

No.	Key	Botanical Name	Common Name	Size	Remarks
1	CF	Cornus florida 'Cherokee Princess'	Dogwood	4-5 ft. B&B	White flowers in May/ 20 ft.
5	MA	Amelanchier grandiflora 'Robin Hill'	Serviceberry	6-7 ft. B&B	White flowers early spring/ Dbl color/ 15 ft.
1	PN	Pinus nigra	Austrian Pine	5-6 ft.	Evergreen/ specimen/ 50 ft.
3	QP	Quercus palustris	Pin Oak	2-2.5" cal.	Native/ fall color/ good street tree/ 65 ft.

SHRUBS

No.	Key	Botanical Name	Common Name	Size	Remarks
14	CS	Cornus sericea' Allman's Compacta'	Allman's Redtwig Dogwood	#5 pot	Native/ Mass red winter bark/ White flowers/ 5 ft.
6	IT	Ilex virginica 'Henry's Garnet'	Sweetspire	#5 pot	White flowers in June/ Fall color/may volunteer/ 3 ft.
8	IV	Ilex verticillata 'Winter Red'	Winterberry	#5 pot	Native/ red berries in the winter/ 8 ft.
1	IV	Ilex verticillata 'Jim Dandy'	Male Winterberry	#5 pot	Male pollinator
6	JC	Juniperus chinensis 'Gold Star'	Gold Star Juniper	#3 pot	Evergreen/ 3 ft. x 6 ft.
8	JN	Juniperus chinensis 'Pfitzer Columnaris'	Columnar Hetz Juniper	#5 ft. B&B	Evergreen screen/ upright/ 10-15 ft.
15	RO	Knockout Rose	Shrub Rose	#3 pot	Summer flowering/ disease resistant/ 3 ft.
9	TX	Taxus media 'Hicksi'	Hicks Yew	#5 pot	Evergreen/columnar/ 12 ft. x 6 ft.

GROUNDCOVERS & PERENNIALS

No.	Key	Botanical Name	Common Name		Remarks
38	AC	Achillea ventilon	Yarrow	#1 pot	summer flowers 24 "
12	AS	Aster novae-angliae	New England Asters	#1 pot	Purple daisy blossoms, late summer 3 ft.
30	HM	Hemerocallis 'Happy Returns'	Daylilies	#1 pot	summer flowers
25	MS	Miscanthus sinensis 'Morning Light'	Maiden Grass	#2 pot	Soft, green foliage/ 3 to 4 ft.
40	RF	Rudbeckia 'Indian Summer'	Black eyed susan	#1 pot	yellow summer flowers
45	VA	Vaccinium angustifolium	Low Bush Blueberry	1 quart pot	Native, naturalizing groundcover/ 12 inches

Plant List: Phase Two

TREES (B&B unless otherwise specified)

No.	Key	Botanical Name	Common Name	Size	Remarks
1	PN	Pinus nigra	Austrian Pine	5-6 ft.	Evergreen/ specimen/ 50 ft.

SHRUBS

No.	Key	Botanical Name	Common Name	Size	Remarks
13	CS	Cornus sericea' Allman's Compacta'	Allman's Redtwig Dogwood	#5 pot	Native/ Mass red winter bark/ White flowers/ 5 ft.
19	IT	Ilex virginica 'Henry's Garnet'	Sweetspire	#3 pot	White flowers in June/ Fall color/may volunteer/ 3 ft.
4	IV	Ilex verticillata 'Winter Red'	Winterberry	#5 pot	Native/ red berries in the winter/ 8 ft.
3	JC	Juniperus chinensis 'Gold Star'	Gold Star Juniper	#3 pot	Evergreen/ 3 ft. x 6 ft.
6	JN	Juniperus chinensis 'Pfitzer Columnaris'	Columnar Hetz Juniper	4-5 ft. B&B	Evergreen screen/ upright/ 10-15 ft.
10	RO	Knockout Rose	Shrub Rose	#3 pot	Summer flowering/ disease resistant/ 3 ft.
7	TX	Taxus media 'Hicksi'	Hicks Yew	#5 pot	Evergreen/columnar/ 12 ft. x 6 ft.

GROUNDCOVERS & PERENNIALS

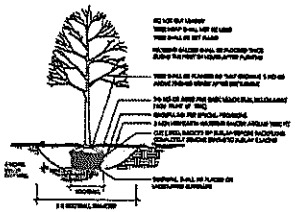
No.	Key	Botanical Name	Common Name		Remarks
10	AC	Achillea ventilon	Yarrow	#1 pot	summer flowers 24 "
15	HM	Hemerocallis 'Happy Returns'	Daylilies	#1 pot	summer flowers
9	MS	Miscanthus sinensis 'Morning Light'	Maiden Grass	#2 pot	Soft, green foliage/ 3 to 4 ft.
25	RF	Rudbeckia 'Indian Summer'	Black eyed susan	#1 pot	yellow summer flowers

Planting Notes

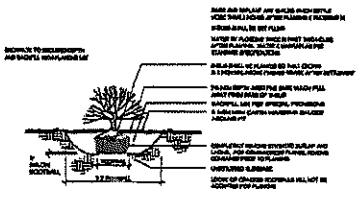
1. The Contractor shall locate and verify all utilities prior to starting work. Contractor to verify that adequate drainage exists prior to planting.
2. The Contractor shall supply all plant materials in quantities sufficient to complete the planting shown on all Drawings. Plant counts are for convenience only. Contractor shall use sufficient plant materials to fulfill design intent, but in no case shall Contractor use fewer plants than listed.
3. All material shall conform to the guidelines established by the "American Standard for Nursery Stock", published by the American Association of Nurserymen.
4. All plant materials are subject to the approval of the Landscape Architect at the nursery and at the site. All trees shall have a single leader unless specified otherwise. All unapproved substitutions will be rejected. Plant species and caliper, size and quantity shall not change without approval of Landscape Architect.
5. Location of all trees and shrubs shall be marked for the approval of the project Landscape Architect. Marking shall be completed the day prior to commencement of planting.
6. All plants shall bear the same relationship to the finished grade as original grade before digging. Plants to be transplanted shall be dug carefully, with adequate root-balls and planted according to ANA standard practice. Trees with more than 1/4" of soil will be rejected prior to installation. Set plants plumb.
7. All trees and shrubs shall be tagged at nursery or containerized, unless specified otherwise. No root-bound container grown stock will be accepted. All plants that wrapping and metal wire baskets shall be carefully removed at the time of planting, except wire that is directly under the root-ball.
8. After completing soil tests within planting areas, the Contractor is responsible for providing planting topsoil and/or amendments for backfilling at all plants, as necessary. Submit certain compost analysis or Permaflage, for approval. The planting topsoil is to be a sandy loam modified with organic components to have at least 4% organic matter but not more than 6% organic matter, dry weight basis, a composited minimum infiltration rate of 2.5 cm/hr, pH range of 5.5 to 6.5, and no stone fragments over 2.5 cm in size.
9. Contractor shall place 3" to 3" of fine shredded, aged 2 years, dark brown pine bark mulch throughout the bed areas. Do not place mulch in contact with tree trunk. Submit sample of mulch for approval.
10. All evergreen plants shall be sprayed with an anti-dessicant the first week of November the first winter following planting.
11. Plant plants thoroughly prior immediately after planting and twice during the first twenty-four hour period after planting.
12. Existing sod shall be taken out to nearest existing plant materials, except those specifically noted "to be transplanted or removed". Any plant injured or destroyed shall be replaced with a plant of equal or greater size and species at the Contractors expense.
13. Do not wrap trunk of tree.
14. Staking of trees is not recommended except in windy sites or for large evergreen trees.
15. The Contractor shall maintain the plants for a minimum of 60 days following installation, or longer if contracted by the Owner. Before the end of the 60-day period, the Contractor shall provide a written maintenance outline to the Owners and the Contractor shall be available to answer questions or comments at that time.
16. The Contractor shall guarantee all plants for a minimum of two years from final acceptance by Owner/Rep. The Contractor shall replace any dead materials at his/her own expense.

Notes:

1. All site information represented on the plan is illustrative, and must be verified by the engineer and/or the architect.
2. Base plan information provided by Client. "Topographic Map" prepared by James H. Sweet Company, Old Town, ME, March 29, 1993.



1 TREE PLANTING DETAIL
NOT TO SCALE



2 SHRUB PLANTING DETAIL
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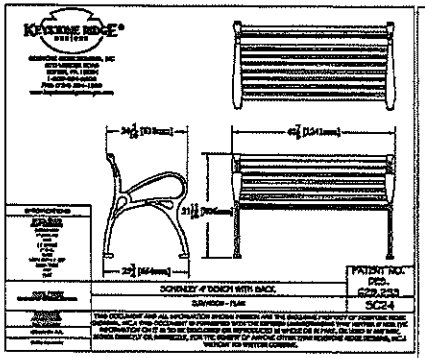
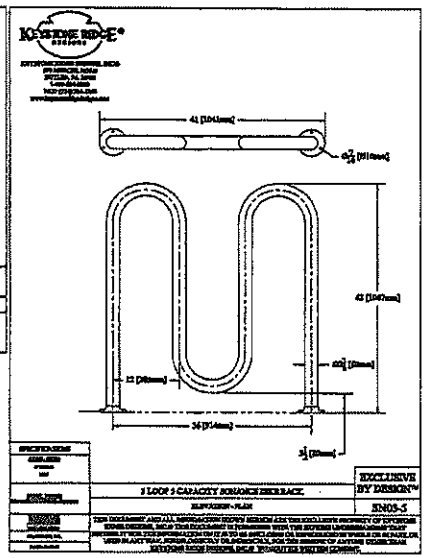


3 BENCH DETAIL
OR EQUAL



4 BIKE RACK DETAIL
OR EQUAL

North

0 10 20 40

Lorayne Black ASLA
Landscape Architect

Prepared For:
Community Development
Department
Tewksbury, MA

Project:
Wamesit Island Park
Tewksbury, MA

Drawing Title:
Landscape Plan

Date: January 2013
Scale: 1" = 20'-0"

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Revisions: