PURCHASING DIVISION CITY OF WORCESTER MASSACHUSETTS 01608-1895 ROOM 201 - CITY HALL, 455 MAIN ST. PHONE (508) 799-1220

**SEALED BID INVITATION** (Supplies, Material, Equipment, Services)

AN EOUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER

SEALED BIL	NO.	CR-7777-W2
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**DATE: March 7, 2022** 

CITY OF WORCESTER Christopher J. Gagliastro, MCPPO Purchasing Agent

BUYER: Christopher J. Gagliastro

# NOTICE TO BIDDERS TERMS AND CONDITIONS

All bids are subject to the terms and conditions and specificity herein set forth except where specifically deleted by the City of Worcester in Section No. 5 below.

COMPLETE ORIGINAL COPY (including ALL pages) OF THIS BID MUST BE SUBMITTED IN A SEALED ENVELOPE:				
DATE:	March 30, 2022	TIME: 10:00 A.M. LOCAL TIME		
PLACE:	Purchasing Division, Room 201, Cit	y Hall, Worcester, Massachusetts		
MARK SE	ALED ENVELOPE <u>"<b>Sealed Bid No.</b> C</u>	R-7777-W2, Landscape Maintenance Services – Senior Center/DPF "		
The name and address of the bidder must appear in the upper left hand corner of the envelope. The City of Worcester is not responsible for bids not properly marked.				

#### **GENERAL**

- 1. This Bid Invitation covers: Landscaping Services for the Senior Center for a one (1) year period as per the attached requirements and specifications of the City of Worcester. This contract may be renewed for a second and third one (1) year period at the sole discretion of the City, the option of which to be determined at the end of the first contract year (See Page 10).
- 2. A certified check or bid bond made payable to the "City Treasurer, City of Worcester" in the Amount of \$ N/A must accompany this bid.
- 3. All bids received will be publicly opened and read in the Bid Room at City Hall at date and time shown above. **NO BID WILL BE ACCEPTED AFTER TIME AND DATE SPECIFIED**
- 4. A performance bond in the amount of  $\frac{N}{A}$  of the total dollar award is required.
- 5. A payment bond in the amount of \$N/A of the total dollar award is required.
- 6. All terms and conditions are applicable to this proposal except the following section numbers which are hereby deleted from this invitation: All Apply
- 7. Questions pertaining to this bid <u>must be</u> directed to Chris Gagliastro via email at <u>gagliastroc@worcesterma.gov</u>

A pre-bid meeting will not be held. Bidders are encourage to view the site on their own during regular business hours at 128 Providence Street, Worcester, MA 01604.

Please go to the closed bids page of our site to obtain bid results, www.worcesterma.gov

- 8. The following meanings are attached to the defined words when used in this bid form.
  - a. The word "City" means The City of Worcester, Massachusetts.
  - b. The word "Bidder" means the person, firm or corporation submitting a bid on these specifications or any part thereof.
  - c. The word "Contractor" means the person, firm or corporation with whom the contract is made by carrying out the provisions of these specifications and the contract.
  - d. The words "Firm Price" shall mean a guarantee against price increases during the life of the contract.
- 9. Any prospective bidder requesting a change in or interpretation of existing specifications of terms and conditions must do so within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date. All requests are to be in writing to the Purchasing Division (or e-mailed at:gagliastroc@worcesterma.gov). No changes will be considered or any interpretation issued unless the request is in our hands within five (5) days (Saturdays, Sundays and Holidays excluded) BEFORE scheduled bid opening date.
- 10. The contractor will be required to indemnify and save harmless the City of Worcester, for all damages to life and property that may occur due to his negligence or that of his employees, subcontractors, etc., during this contract.
- 11. The Contract Agreement will be in the form customarily employed by the City of Worcester and is on file in the Purchasing Division at City Hall.
- 12. Bids which are incomplete, not properly endorsed, or signed, or otherwise contrary to these instructions will be rejected as informal by the Purchasing Agent. **Conditional bids will not be accepted.**
- 13. The Bidder must certify that no official or employee of the City of Worcester, Massachusetts is pecuniarily interested in this proposal or in the contract which the bidder offers to execute or in expected profits to arise therefrom, unless there has been compliance with provisions of G.L. C. 43 Sec. 27, and that this bid is made in good faith without fraud or collusion or connection with any other person submitting a proposal.
- 14. As the City of Worcester is exempt from the payment of Federal Excise Taxes and Massachusetts Sales Tax, prices quoted herein are not to include these taxes.
- 15. All prices are to be firm F.O.B. Destination, City of Worcester, Massachusetts, unless otherwise indicated by the City. **Time reserved for award is ninety days.**
- 16. In case of error in the extension prices quoted herein, the unit price will govern.
- 17. It is understood and agreed that should any price reductions occur between the opening of this bid and delivery of any order, the benefit of all such reductions will be extended to the City.
- 18. The City of Worcester reserves the right to reject any and all bids, wholly or in part, and to make awards in a manner deemed in the best interest of the City.
- 19. Awards will be made to the bidder quoting the lowest net price in accordance with the specifications.
- 20. The supplier will be bound by all applicable statutory provisions of law of the Federal Government, the Commonwealth of Massachusetts, the City of Worcester, and the Department of Public Safety of the Commonwealth of Massachusetts.
- 21. Any bid withdrawn after time and date specified, the bidder shall forfeit deposit on bid as liquidated damages.
- 22. The contractor will not be permitted to either assign or underlet the contract, not assign either legally or equitably any monies hereunder, or its claim thereto without the previous written consent of the City Treasurer and of the Purchasing Agent of the City of Worcester.
- 23. If this bid shall be accepted by the City, and the bidder shall fail to contract as aforesaid and to give a bond in the amount as specified in Section 4, within ten (10) days, (not including Sunday or a legal Holiday) from the date of the mailing of a notice from the City to him/her, according to the address given herewith, that the contract is ready for signature, the City may by option determine that the bidder has abandoned the contract and thereupon the proposal and

- acceptance shall be null and void and the bid security accompanying this proposal shall become the property of the City as liquidated damages.
- 24. When quoting, the bidder shall submit a signed copy of this bid form, and if bid accepted by the City shall constitute part of the contract of purchase. Do not detach any part of this form 30B (Sealed Bid Goods & Services) when submitting a bid. Bidder must sign and return complete form 30B (Sealed Bid Goods & Services).
- 25. If in the judgment of the Purchasing Agent any property is needlessly damaged by an act or omission of the contractor or his/her employees, servants or agent, the amount of such damages shall be determined by the Purchasing Agent of the City of Worcester and such amount shall be deducted from any money due the contractor or may be recovered from said contractor in actions at law.
- 26. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents and/or Acts of God.

#### INSURANCE AND WORKER'S COMPENSATION

- 27. <u>COMMERCIAL GENERAL LIABILITY INSURANCE</u>: Contractor to supply the City of Worcester with certificates of insurance evidencing general liability coverage of not less than \$ 1,000,000.00 per occurrence / \$ 2,000,000.00 aggregate.
- 28. <u>AUTOMOBILE LIABILITY INSURANCE:</u> Contractor to supply the City of Worcester with certificates of insurance evidencing automobile liability coverage, bodily injury and property damage combined single limit, of \$ 1,000,000.00 (all owned, hired, and non-owned autos).
- 29. <u>COMPENSATION INSURANCE</u>: The contractor shall furnish the City of Worcester with certificates showing that all of his/her employees who shall be connected with this work are protected under statutory worker's compensation insurance policies.
- 30. The Contractor shall carry public liability insurance with an insurance company satisfactory to the City so as to save the City harmless from any and all claims for damages arising out of bodily injury to or death of any person or persons, and for all claims for damages arising our of injury to or destruction of property caused by accident resulting from the use of implements, equipment or labor used in the performance of the contractor or from any neglect, default or omission, or want of proper care, or misconduct on the part of the Contractor or for anyone of his employ during the execution of the contract.
- 31. Prior to starting on this contract, the Contractor shall deposit with the Contracting Officer certificates from the insurer to the effect that the insurance policies required in the above paragraphs have been issued to the Contractor. The certificates must be on a form satisfactory to the Purchasing Agent.
- 32. Except as may otherwise be stated herein, the Contractor shall also carry bodily injury and property damage insurance in an amount not less than those set forth above covering the operation of all motor powered vehicles owned or operated by the Contractor and engaged in this contract.

### **DISCOUNT**

- 33. Prompt pay discounts will be considered when determining the low bid except when discounts are for a period of less than 30 days. In this event discounts will not be taken into consideration when determining low bid.
- 34. Time, in connection with discount offered, will be computed from date of completion and/or delivery and acceptance at destination, or from date correct bill or voucher properly certified by the contract is received if the latter date is later than the date of completion and acceptance and/or delivery and acceptance.

#### **GUARANTEE**

35. The bidder to who a contract is awarded guarantees to the City of Worcester all equipment, materials and or workmanship for a period of one (1) year after final inspection and acceptance and shall replace promptly any defective equipment, materials and/or workmanship required without additional cost to the City.

#### **DELIVERIES AND COMPLETION**

- 36. It is understood and agreed that in the event of failure on the part of the bidder to indicate date of delivery and/or completion, delivery and/or completion will be made within twelve (12) days from date of notification. Should the successful bidder fail to make delivery or complete contract within time specified, the City reserves the right to make the purchase on such orders at the open market and charge any excess over contract price to the account of the successful bidder, who shall pay the same.
- 37. The contractor shall familiarize himself with the location and facilities for storage.
- 38. The City through its Purchasing Division reserves the right to divert delivery from one location to another, and to allow for any change in operating conditions or for any other cause not now foreseen and to proportion deliveries according to available storage facilities.

#### **SAMPLING AND ANALYSIS**

- 39. Each bidder must state the commercial name of the product quoted, name, and address of operator or agent from whom the product will be purchased and in addition shall furnish an analysis of the product, date of analysis, by whom made and their address.
- 40. Samples of the product to be delivered may be taken by a representative of the City, either prior to delivery or while it is being delivered in the storage facilities at destination, or will be taken from the storage facilities to which the product has been delivered as determined from time to time by the Purchasing Agent. Bidder agrees to furnish the necessary manual labor, without additional cost required to assemble the physical samples, which is to be performed under the direction of the City representative.
- 41. The representative of the City taking the samples shall be given the opportunity, while sampling, to affix his or her signature to the delivery slip each item represented in his/her sample.
- 42. Any product after the sampling and analysis, not found meeting the requirements of the contract shall be sufficient cause for the cancellation of the contract at the option of the Purchasing Agent.
- 43. If any product is found that does not meet the analysis submitted by the bidder in his/her proposal, the Purchasing Agent may, at his or her option, exercise his/her right to reject the product and require that all or any part thereof shall be removed promptly by and at the expense of the contractor and replace it forthwith with a product satisfactory to the Purchasing Agent, or to retain the product and compensate the contractor in an amount as determined by the Purchasing Agent and the City Manager.
- 44. It is understood and agreed that it shall be a material breach of any contract resulting from this bid for the Contractor to engage in any practice which shall violate any provisions of Massachusetts General Laws, Chapter 151B, relative to discrimination in hiring, discharge, compensation, or terms, conditions or privileges of employment because of race, color, religious creed, national origin, sex, age or ancestry.
- 45. The undersigned as bidder, declares that the only parties interested in this proposal as principals are named herein; that this proposal is made without collusion with any other person, firm or corporation, that no officer or agent of the City is directly or indirectly interested in this bid; and he/she proposes and agrees that if this proposal is accepted he/she will contract with the City in accordance with the specifications, also the terms and conditions as spelled out in this bid form.
- 46. No Person, including but not limited to corporations, partnerships, limited partnerships or limited liability corporations, shall be eligible to receive a contract under this invitation to bid and/or requires for proposal if that person has been convicted of any felony offense involving the distribution of controlled substances as that term is defined under Chapter 94C of the General Laws and, for contracts to be performed for on-site services to the Worcester Public Schools, if that person or any person to be employed by that person in the performance of such on-site services has been convicted of a "sex offense" or a "sex offense involving a child" or a "sexually violent offense" or would meet the definition of "sexually violent predator" as those terms are defined in Section 178C of the General Laws and who must register with the sex offender registry board.

- 47. The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ for work or services relating to this contract any unfit person or anyone not skilled in the task assigned to him. In light of the fact that the performance of this contract requires the Contractor and its employees to have significant interaction with the public, the Contractor shall require all employees who may perform services under this contract to conduct themselves in a courteous, professional manner. If the Contractor is notified by the Contract Officer that any person engaged upon the work is incompetent, unfaithful, disorderly, discourteous, or otherwise unsatisfactory, then such person shall be discharged from providing services or work pursuant to this contract. Without limiting the generality of the foregoing, intimidation, threats and/or violent conduct of any kind or nature directed to members of the public are absolutely prohibited. Failure to comply with this requirement shall be grounds for termination of the contract.
- 48. The Contractor's performance may be evaluated on an ongoing basis including but not limited to consideration of complaints received from members of the public. In order to facilitate this evaluation, the Contractor shall provide the City with documents and records upon request. The Contractor shall further obtain from its employees authorization that appropriate City personnel may obtain all available criminal offender information ("CORI") from the Criminal History Systems Board. A high number of unresolved complaints, any number of complaints that are particularly severe, or employment of individuals who have been convicted or assault or other violent crimes shall be grounds for the early termination or non-renewal of the contract by the City.
- 49. The procurement officer shall award the contract to the lowest responsible and responsive bidder. The term "responsible bidder" means "a person who has the capability to perform fully the contract requirements, and the integrity and reliability which assures good faith performance." Consistent with its duty to maintain public order and promote public safety, the City has determined that this contract is of a type and nature so as to be particularly sensitive due, at least in part, to the contractor's inherent access and dealings with the members of the general public. Therefore, the City has concluded that additional scrutiny is justified as it determines whether a particular bidder is responsible, having the integrity and reliability to properly perform the requested services. This may entail consideration of the contractor's system of oversight, training and supervision of its employees, including but not limited to its requirement of a high standard of customer service and courtesy in its dealings with the public. The bidder's care and diligence in hiring and assigning its employees will also be considered. In making its determination, the City reserves the right to examine any and all information at its disposal, including but not limited to prior City contracts, the experiences and information obtained from current and former customers (whether identified by the bidder as references or not), as well as other sources available to the City, including but not limited to court documents, newspapers, financial reports (such as DUNS), and certain police data and reports.
- 50. The Contractor, acting through its owner(s) or any of its employees, or its agents or sub-contractors and any of their employees, shall not engage in any behavior, whether during the course of its duties under this contract or at any other time, that is illegal, criminal or otherwise shocking or offensive to the general public. The determination whether any particular behavior is illegal, criminal or shocking to the general public shall rest in the sound judgment of the Contracting Officer or the City Manager. In making such determination, the Contracting Officer or the City Manager shall apply the general standards of the community. No criminal conviction or formal charges shall be required to make such determination. Such behavior need be something more than trivial and something which would cause the general public to have concerns either about the safety of individuals coming in contact with the Contractor or about the character and integrity of the individuals with which the City does business. Violation of this provision shall be grounds for immediate and unilateral termination of this contract by the City upon five days' notice as otherwise provided herein

#### GIVE FULL NAMES AND RESIDENCES OF ALL PERSONS INTERESTED IN THE FOREGOING PROPOSAL.

	Name	Address		Zip Code
JND	OLY FURNISH THE FOLL	OWING INFORMATION REGARDING BIDDER:		
1)	If a Proprietorship			
	Name of Owner			
	Business Address			
	Zip Code	Telephone No		
	Home Address			
	Zip Code	Telephone No		
2)	If a Partnership Full names and addresses of	f all partners		
	<u>Name</u>	Address_		Zip Code
			Zip Code	

If a Corporation				
Full Legal Name				
State of Incorporation	Qualified	l in Massachusetts?	Yes	No
Principal Place of Business				
	City/Town	State	Zip	
Telepl	none No.			
Place of Business in Massachusetts	Street		P.O. Box	
	Street		1.O. Dox	
	City/Town	State	Zip	
	City/Town Telephone No		Zip	
HE FOLLOWING INFORMATION Full Legal Name of Surety Compar	Telephone No	ETY COMPANY		
	Telephone No  REGARDING SUR	ETY COMPANY		
Full Legal Name of Surety Compar	Telephone No  TREGARDING SUR  TREGARDING SUR  Admitted in Massa	ETY COMPANY achusetts ? Yes		- No
Full Legal Name of Surety Compar State of Incorporation	Telephone No  REGARDING SUR  ny  Admitted in Massa	ETY COMPANY achusetts ? Yes		No
Full Legal Name of Surety Compar State of Incorporation	Telephone No  TREGARDING SUR  TREGARDING SUR  Admitted in Massa	ETY COMPANY achusetts ? Yes		No
Full Legal Name of Surety Compar State of Incorporation Principal Place of Business	Telephone No  TREGARDING SUR  TREGARDING	ETY COMPANY  achusetts ? Yes  State	P.O. Box Zip	No
Full Legal Name of Surety Compar State of Incorporation	Telephone No  TREGARDING SUR  TREGARDING	ETY COMPANY  achusetts ? Yes  State	P.O. Box Zip P.O. Box	No
Full Legal Name of Surety Compar State of Incorporation Principal Place of Business	Telephone No  TREGARDING SUR  Treat  Tr	ETY COMPANY  achusetts ? Yes  State	P.O. Box Zip	No

# The Office of the Attorney General, Washington, D.C. requires the following information on all bid proposals amounting to \$1,000.00 or more. F.I.D. Number of bidder This number is regularly used by companies when filing their "EMPLOYER'S FEDERAL TAX RETURN, U.S." Treasury Department Form 941. AUTHORIZED SIGNATURE OF BIDDER \_\_\_\_\_\_PLEASE SIGN DATE BID SECURITY \$ The name of Customer Service Representative and the Contract Administrator responsible for servicing this account in the event of contract award are: TEL. NO. NAME (PLEASE PRINT) Customer Service Rep. NAME (PLEASE PRINT) Contract Administrator TEL. NO. **FAX NUMBER** FAX # \_\_\_\_\_ **E-MAIL** (Customer Service Rep.): **E-MAIL (Contract Administrator):** UNDER MASSACHUSETTS GENERAL LAWS, CHAPTER 30B: SECTION 10, THE FOLLOWING CERTIFICATION MUST BE PROVIDED: Section 10. A person submitting a bid or a proposal for the procurement or disposal of supplies, or services to any governmental body shall certify in writing, on the bid or proposal, as follows: "The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted 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." (Please Print) Name of Person Signing Bid Signature of Person Signing Bid Company No award will be made without vendor certification of the above.

**NOTE** 

	ntities shown he period of the	herein are estimated only and the Contractor will be required to the contract.	furnish all quant	ities ordered by the City
YES 2	X NO	<u></u>		
Delivery	to be made to	o: As required by the City of Worcester		
This Bid	l includes adde	enda numbered		
N	O PRICE AI	DJUSTMENTS ALLOWED. PRICES QUOTED ARE FINA	L. CHECK BE	FORE SIGNING!
		BIDE	DER TO COME	PLETE ITEMS BELOV
Item #	Estimated Annual	Description	Unit Price	Total Amount
#	Qty.	Description	Unit Price	1 otal Amount
		Landscaping Services for the Senior Center as per the requirements and specifications of the City of Worcester.		\$ Total Annual Price – All Services
DELIVI NOTIFI	ERY AND/O	PAY DISCOUNT% 30 DAYS, NET 45 DAYS.  R COMPLETION TO BE MADE WITHINAS REQUIRE  THE CITY	<u>D</u> DAYS	FROM DATE OF

Bidders must state and identify the product offered, such as manufacturer's name, trade name, brand name and quality next to each item. WE MUST KNOW WHAT HAS BEEN OFFERED.

# **DISCLOSURE OF CONTRACT RENEWAL**

This contract may be renewed for a second and third year at the sole discretion of the City of Worcester, the option of which will be determined at the end of the current contract year.

In no event will increase exceed % for the second contract year.			
In no event will increase exceed % for the third contract year.			
(TO BE COMPLETED BY BIDDER)			
Name Date			
Title			
IF VENDOR DOES NOT WISH TO BE CONSIDERED FOR A SECOND OR THIRD YEAR OPTION, PLEASE INDICATE BY CHECKING THIS BOX: $\Box$			
<u>IMPORTANT</u>			
It is understood and agreed, that failure by the bidder to complete the above increase statement, it is the bidders intent to accept a second and third year option at zero (0) percent increase.			
All other Terms and Conditions to remain the same.			

#### <u>LANDSCAPE MAINTENANCE SERVICES – SENIOR CENTER / DPF ~ BID #: CR-7777-W2</u>

#### GENERAL SPECIFICATIONS

- 1. Spring Cleaning include raking, weeding, mulching all existing beds and lawn dethatching. Mulch to be Hemlock Bark.
- 2. Fertilize three (3) applications. One weed control application, one lime application and one aeration of all lawn areas.
- 3. Fall Cleaning include raking all existing beds and lawns. Remove all debris.
- 4. Mowing include all lawns. Remove all grass clippings.

resource efficient manner.

The Contractor shall furnish all equipment, labor and materials necessary to complete the maintenance of grass, perennials, groundcovers, shrubs and trees from April through October.
Maintenance shall consist of watering, weeding, mulching, pruning/cutting back, plant replacement/re-seeding (as needed), mowing/trimming and other tasks as described in Landscape Maintenance Specifications.
The Contractor shall reference the landscape drawings titled L-1 Landscape Plan, L-2 Landscape Schedule & Details and L-3 Landscape Notes dated March 13, 2020 for plant species and locations.
It is the intent of the Owner for this site to be maintained in a sustainable, cost effective and

#### PREBID CONFERENCE

- A. A pre-bid conference will not be held but prospective bidders are encouraged to visit the site.
- B. This is a very active and important facility for the City of Worcester. People come and go from the facility frequently. There is a public bus stop adjacent to the main entrance which runs on a regular schedule daily. Visitors use the property year round for exercising at the Fit Lot. They plant herbs, vegetables and flowers in raised planters from Spring through the Fall. Contractor must be diligent and courteous with any and all patrons at all times.

## Landscape Maintenance Services - Specifications:

#### **Worcester Senior Center**

#### 1. **GENERAL**

#### 1.01 DESCRIPTION OF WORK

- A. The Contractor shall furnish all labor, equipment and materials necessary to complete the maintenance of grasses, groundcovers, perennials, shrubs and trees.
- B. Maintenance shall consist of watering, weeding, mulching, plant replacement/re-seeding, mowing/trimming as needed and other tasks described herein.
- C. The Contractor shall reference the landscape drawings titled Worcester Senior Center Sheets L-1 Landscape Plan, L-2 Landscape Schedule & Details and L-3 Landscape Notes dated March 13, 2020.
- D. It is the intent of the Owner for this site to be maintained in a sustainable, cost effective and resource efficient manner.

#### 1.03 CONTRACTOR STAFF TRAINING AND EXPERIENCE

A. All work shall be performed under the direct on site supervision of a qualified landscape professional with a minimum of five years horticultural education and experience.

#### 1.04 LANDSCAPE SERVICE, SCHEDULING AND RECORD KEEPING

- A. The Contractor shall develop a written schedule for regular maintenance activities by area and submit to the Owner for review prior to beginning maintenance work.
- B. The Contractor shall maintain a log of activities performed and shall provide a printed copy monthly to the Owner.

#### 1.05 GUARANTEE AND REPLACEMENT

- A. The Contractor shall replace any grass or plant materials damaged as a result of improper maintenance or neglect at no additional cost to the Owner; and any grass area or plant the is dead or dying according to the schedule described in this document. Replacement material shall be of the same size, species and variety and same seed mix as the dead, dying or damaged material.
- B. The Contractor is not responsible for repair or replacement of damaged work or plant material resulting from vandalism, theft, extreme weather conditions or the acts of others over whom they have no reasonable control.
- C. The Contractor shall inform the Owner on a monthly basis of plant losses, the cause of such loss and shall provide pricing for plant replacement due to loss or damages that are not the Contractor's fault.

#### 2. WATERING

#### 2.01 GENERAL

- A. All planted and seeded areas shall receive supplemental water (as needed) from May through October of each year as described in this section.
- B. Automatic sprinklers shall <u>not</u> be used for watering trees, shrubs or woody groundcovers. Trees shall be hand watered with a hose unless noted otherwise. Shrubs and groundcovers may be watered with soaker hoses.
- C. Slow release watering bags shall not be used for trees after first year of maintenance.
- D. For the purpose of determining areas to water the Contractor shall assume that the diameter of each tree and shrub root zone is approximately 1.5 time its height.
- E. If the Commonwealth of Massachusetts prohibits hand watering during any declared drought watering shall not take place.

#### 2.02 WATERING GRASSES

A. Grass areas shall receive a minimum of ½ inch of water every two weeks through precipitation, watering or combination thereof.

#### 3. **WEEDING**

#### 3.01 GENERAL

A. All weeds, clippings, seedlings and pruned material shall be disposed of off-site.

#### 3.02 WEEDING LANDSCAPE AREAS

A. Once a month from May through October of each year the Contractor shall inspect all plant areas and remove all weeds by hand or mechanical methods, taking care to remove the entire plant including roots.

- B. The Contractor shall be able to distinguish between weeds and perennials that were originally planted and seeded to avoid removing the wrong plants. The Contractor shall keep a field guide of plant available for help with identification when necessary.
- C. During these monthly inspections/weeding activities the contractor shall also remove any tree seedlings including roots.

#### 4. **MULCHING**

#### 4.01 MULCHING BIORETENTION AREAS

- A. The mulch on the side slopes and the bases of swales and basins shall be checked in June of each year and any mulch that has decomposed to the point of being densely matted shall be removed and replaced with two (2) inches of new double shredded hardwood mulch (non-dyed). Any of these areas that no longer have mulch shall also be re-mulched as describe above. This work shall take place after perennial growth has emerged from the soil and after weeding has been completed for that month.
- B. Areas that cannot be accessed due to dense perennial (non-weed) or shrub growth do not need to be re-mulched.

#### 4.02 MULCHING ALL OTHER BEDS

- A. All remaining plant beds shall be re-mulched as needed according to 4.01 (A.) above except that these beds shall receive three (3) inches of new mulch after old mulch removal.
- B. Where shrubs and groundcovers have low growth that covers the ground mulch does not need to be replaced.
- C. At the bases of all trees mulch shall be pulled back so there is a bare soil area surrounding the entire trunk, six (6) inches from the edge of the trunk.

#### 5. CUTTING BACK

#### 5.01 GENERAL

A. All perennial cuttings shall be disposed of off site.

#### 5.02 CUTTING BACK PERENNIALS IN SPRING

- A. The Contractor shall trim down the perennial plant stems of the previous year's growth in April or Early May of each year to two (2) inches above the ground when new growth starts to emerge from the soil.
- B. If Hypericum shrubs die back during the winter the Contractor shall trim the dead stems back to three (3) inches above the base of the plant in April or early May of each year after new growth starts to emerge.

#### 6. PLANT REPLACEMENT AND RE-SEEDING

#### 6.01 GENERAL

A. All replacement planting and seeding work shall be done in accordance with the drawings noted in 1.01 © of these specifications.

#### 6.02 REPLACING PERENNIALS

- A. During the months of May and September of each year the Contractor shall replace all dead, dying and damaged perennials with the same species and varieties of plugs in basins and swales and the same seed mix as shown on the drawings noted in 1.01 (C).
- B. The Contractor may divide existing healthy perennials on the site to use as replacements for dead, dying and damaged plants of the same species if approved by the Owner. Dividing shall be done in accordance with established horticultural practices.

#### 6.03 REPLACING TREES, SHRUBS AND GROUNDCOVERS

A. During the months of May and October of each year the Contractor shall replace all dead, dying and severely damaged trees, shrubs and groundcovers with the same species as those specified on the drawings noted in 1.01 (C).

#### 6.04 RESEEDING GRASS

A. During the FIRST HALF OF September of each year dead and dying grass areas shall be re-seeded in accordance with the notes in the drawings noted in 1.01 (C).

#### 7. **MOWING AND TRIMMING**

#### 7.01 GENERAL

A. The Contractor is responsible for any mower and trimmer damage to trees, shrubs, groundcovers and perennials and shall repair or replace any such damaged materials at no cost to the Owner as directed by the Owner.

#### 7.02 GRASS MOWING

- A. All turfgrass shall be mowed once every two (2) weeks during the growing season with the exception of the grass swale that enters the basin at the southeast end of the site. That swale shall not be mowed or trimmed.
- B. Prior to each mowing the Contractor shall remove all litter and debris from lawn areas. Grass areas shall be maintained at a height of ne less that 1-1/2 inches and no more than 2-1/2 inches.
- C. Grass clippings shall be swept or blown from all surfaces after each mowing in order to minimize obstructions that may reduce accessibility of visitors. Grass clippings shall be mulched or bagged and removed from the site.

#### 7.03 GRASS TRIMMING

A. The Contractor shall mechanically trim all grass edges at guardrails and other vertical edges with every mowing.

#### 8. **FERTILIZATION**

#### 8.01 GENERAL

A. The Contractor shall not fertilize plants other than turfgrass.

#### 8.02 TURFGRASS FERTILIZATION

A. Turfgrass shall be fertilized in September or October with a low-nitrogen, high-potassium feed at the rated recommended by the manufacturer.

#### 9. GENERAL AREA MAINTENANCE

#### 9.01 LEAF REMOVAL

A. In Autumn of each year fallen leaves shall only be removed from turf areas and woody groundcover beds (not from perennial/shrub/tree beds).

#### 9.02 LANDSCAPE TRASH REMOVAL

A. The Contractor shall remove all trash from plant beds and grass areas once every two (2) weeks year round. Trash may be placed in the dumpsters on site or disposed off site.

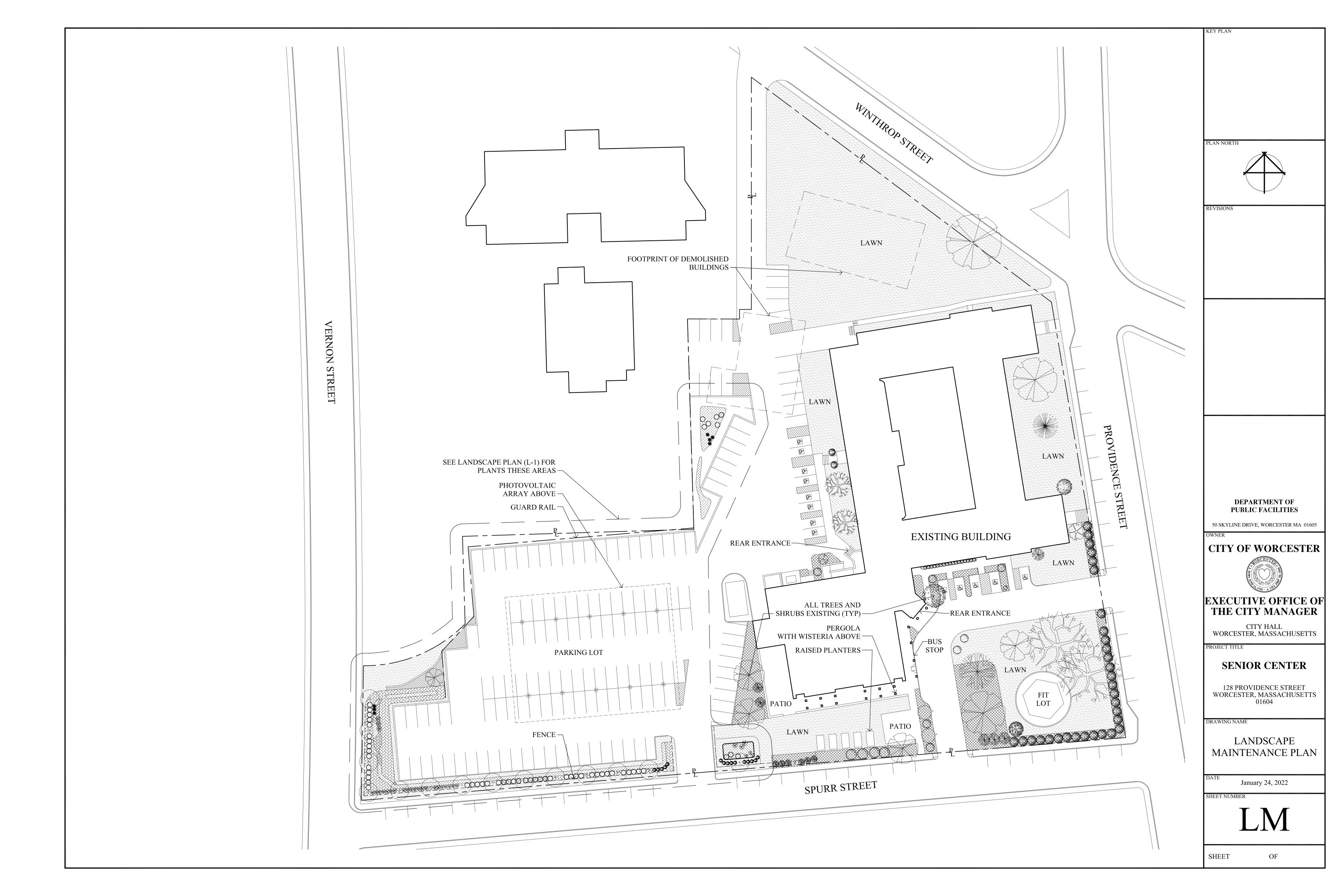
#### 9.03 SEDIMENT REMOVAL FROM SWALES AND BASINS

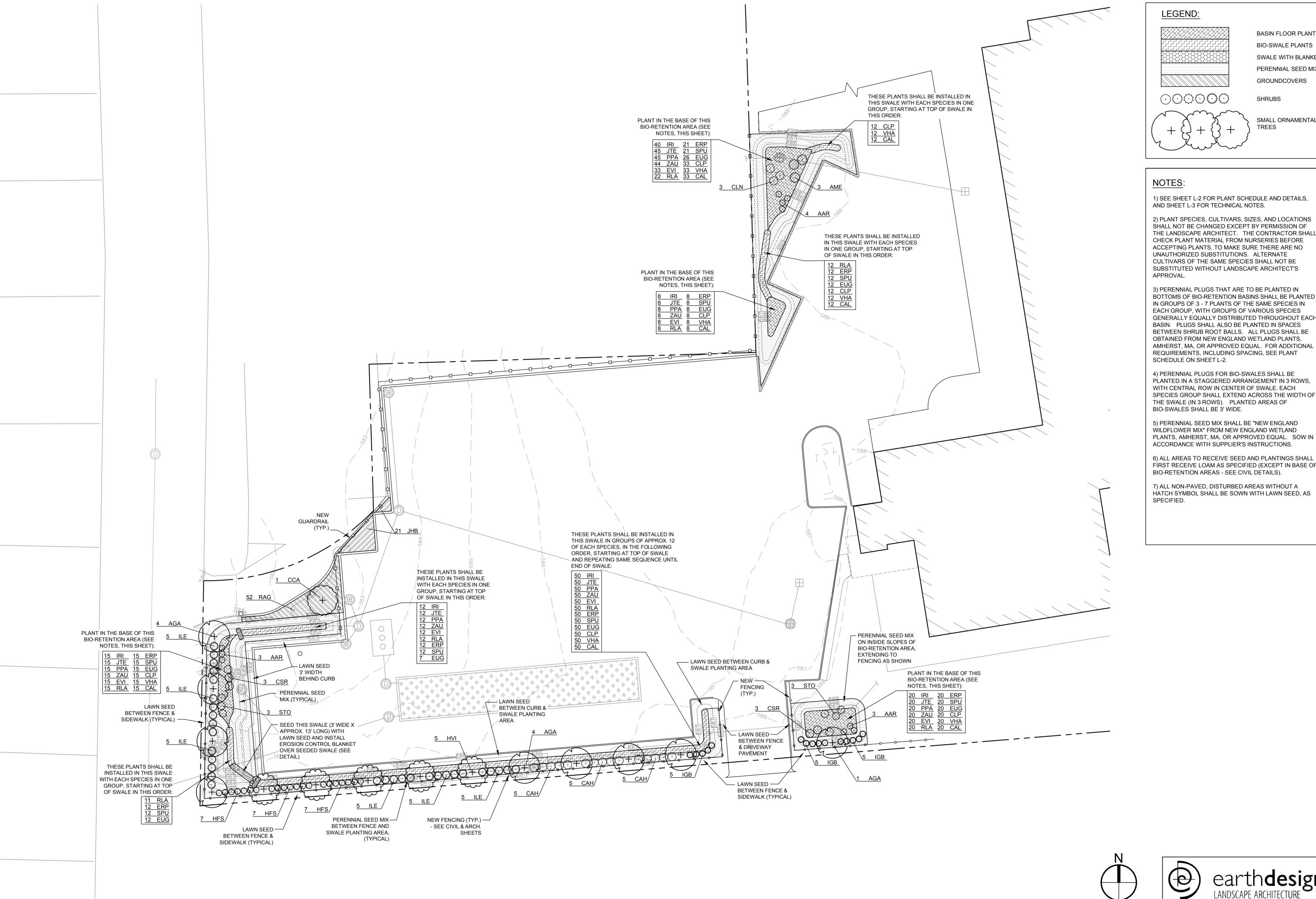
A. In October of each year the Contractor shall remove sediment which has accumulated in swales and basins with a flat shovel taking care not to disturb the perennials and shrubs. Sediment shall be disposed off site.

#### 9.04 REPAIR OF ERODED AREAS

A. The Contractor shall perform monthly inspections of the site to identify eroded soil and mulch areas which shall be promptly repaired.

#### END OF SPECIFICATIONS





BASIN FLOOR PLANTS BIO-SWALE PLANTS SWALE WITH BLANKET

PERENNIAL SEED MIX GROUNDCOVERS

SMALL ORNAMENTAL

1) SEE SHEET L-2 FOR PLANT SCHEDULE AND DETAILS,

SHALL NOT BE CHANGED EXCEPT BY PERMISSION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL CHECK PLANT MATERIAL FROM NURSERIES BEFORE ACCEPTING PLANTS, TO MAKE SURE THERE ARE NO

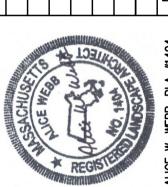
BOTTOMS OF BIO-RETENTION BASINS SHALL BE PLANTED IN GROUPS OF 3 - 7 PLANTS OF THE SAME SPECIES IN EACH GROUP, WITH GROUPS OF VARIOUS SPECIES GENERALLY EQUALLY DISTRIBUTED THROUGHOUT EACH BASIN. PLUGS SHALL ALSO BE PLANTED IN SPACES BETWEEN SHRUB ROOT BALLS. ALL PLUGS SHALL BE OBTAINED FROM NEW ENGLAND WETLAND PLANTS, AMHERST, MA, OR APPROVED EQUAL. FOR ADDITIONAL REQUIREMENTS, INCLUDING SPACING, SEE PLANT

PLANTED IN A STAGGERED ARRANGEMENT IN 3 ROWS, SPECIES GROUP SHALL EXTEND ACROSS THE WIDTH OF

PLANTS, AMHERST, MA, OR APPROVED EQUAL. SOW IN

FIRST RECEIVE LOAM AS SPECIFIED (EXCEPT IN BASE OF

WORCESTER, MA ● 508.852.2644



CONCEPTUAL LOW IMPACT DEVELOPMENT IN WORCESTER, MASSACHUSETTS

DATE: MARCH 13, 2020

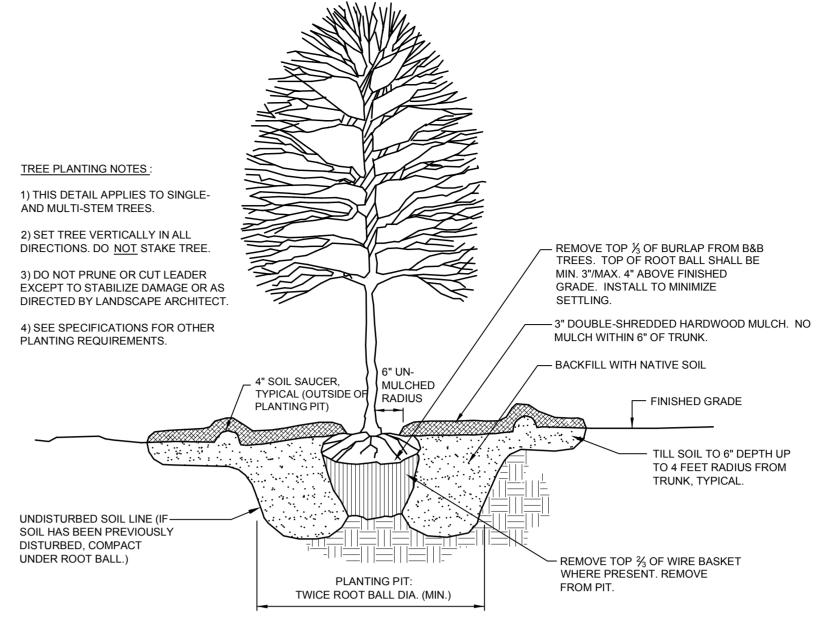
SHEET L-1

LANDSCAPE PLAN

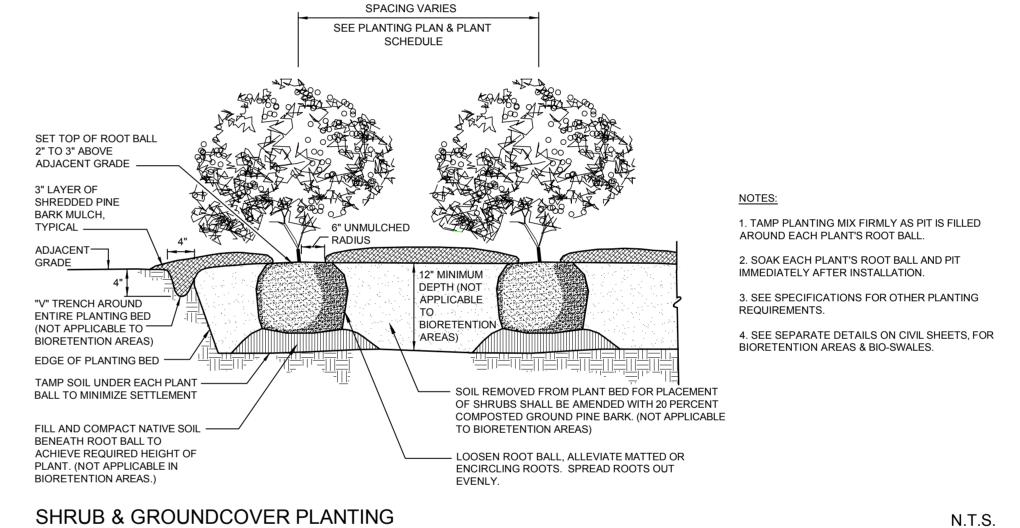
PLANT SCHEDULE					
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE AT PLANTING	PLANT SPACING & NOTES
SMALL TREE	ES			-	
AGA	9	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	TOTAL CALIPER OF STEMS AT LEAST 3.5"	MULTI-STEM, PLANT 25' ON CENTER
CCA	1	CERCIS CANADENSIS	EASTERN REDBUD	7 - 8' HEIGHT	PLANT WHERE SHOWN
HVI	5	HAMAMELIS VIRGINIANA	COMMON WITCHHAZEL	TOTAL CALIPER OF STEMS AT LEAST 3.5"	MULTI-STEM, PLANT 25' ON CENTER
SHRUBS & C	GROUND	COVERS*		•	
AAR	10	ARONIA ARBUTIFOLIA*	RED CHOKEBERRY*	18" - 24" HEIGHT	PLANT 3' ON CENTER, OR FURTHER APART WHERE SHOWN
AME	3	ARONIA MELANOCARPA*	BLACK CHOKEBERRY*	18" - 24" HEIGHT	PLANT 4' ON CENTER, OR FURTHER APART WHERE SHOWN
CAH	15	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	# 3 POT	PLANT 4' ON CENTER
CLN	3	CLETHRA ALNIFOLIA*	SUMMERSWEET*	18" - 24" HEIGHT	PLANT 4' ON CENTER, OR FURTHER APART WHERE SHOWN
CSR	6	CORNUS SERICEA*	REDOSIER DOGWOOD*	18" - 24" HEIGHT	PLANT 4' ON CENTER, OR FURTHER APART WHERE SHOWN
HFS	21	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	# 3 POT	PLANT 3' ON CENTER
IGB	15	ILEX GLABRA 'GEM BOX'	GEM BOX INKBERRY	# 3 POT	PLANT 3' ON CENTER
ILE	30	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	# 3 POT	PLANT 4' ON CENTER
JHB	21	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR JUNIPER	#3 POT	PLANT 3' ON CENTER
RAG	52	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	#3 POT	PLANT 3' ON CENTER
STO	6	SPIRAEA TOMENTOSA*	STEEPLEBUSH*	18" - 24" HEIGHT	PLANT 4' ON CENTER, OR FURTHER APART WHERE SHOWN
PERENNIAL	S FOR BI	O-RETENTION BASINS & BIO-SWALES*	•	•	•
CAL	150	CALAMAGROSTIS CANADENSIS	BLUE JOINT GRASS	2" PLUG	PLANT 14" ON CENTER
CLP	150	CAREX LUPULINA	HOP SEDGE	2" PLUG	PLANT 14" ON CENTER
EVI	138	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	2" PLUG	PLANT 14" ON CENTER
ERP	150	ELYMUS RIPARIUS	RIVERBANK WILD RYE	2" PLUG	PLANT 14" ON CENTER
EUG	150	EUTHAMIA GRAMINIFOLIA	GRASS-LEAVED GOLDENROD	2" PLUG	PLANT 14" ON CENTER
IRI	145	IRIS VERSACOLOR	BLUE FLAG IRIS	2" PLUG	PLANT 14" ON CENTER
JTE	150	JUNCUS TENUIS	PATH RUSH	2" PLUG	PLANT 14" ON CENTER
PPA	150	POA PALUSTRIS	FOWL BLUEGRASS	2" PLUG	PLANT 14" ON CENTER
RLA	150	RUDBECKIA LACINATA	CUT-LEAFED CONEFLOWER	2" PLUG	PLANT 14" ON CENTER
SPU	150	SCHOENOPLECTUS PUNGENS	THREE SQUARE BULLRUSH	2" PLUG	PLANT 14" ON CENTER
VHA	150	VERBENA HASTATA	BLUE VERVAIN	2" PLUG	PLANT 14" ON CENTER
ZAU	149	ZIZIA AUREA	GOLDEN ALEXANDERS	2" PLUG	PLANT 14" ON CENTER

\*ALL STRAIGHT-SPECIES SHRUBS AND ALL PERENNIALS ARE AVAILABLE AT NEW ENGLAND WETLAND PLANTS, AMHERST, MA.

NOTE: PLANT SPECIES, CULTIVARS, SIZES, AND LOCATIONS SHALL NOT BE CHANGED EXCEPT BY PERMISSION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL CHECK PLANT MATERIAL FROM NURSERIES BEFORE ACCEPTING PLANTS, TO MAKE SURE THERE ARE NO UNAUTHORIZED SUBSTITUTIONS. ALTERNATE CULTIVARS OF THE SAME SPECIES SHALL NOT BE SUBSTITUTED WITHOUT LANDSCAPE ARCHITECT'S APPROVAL.



TREE PLANTING



N.T.S.

# NOTES:

1) LINER TYPE SHALL BE STRAW WITH BIODEGRADABLE NET, INSTALLED IN SWALE AFTER TURFGRASS SEEDING.

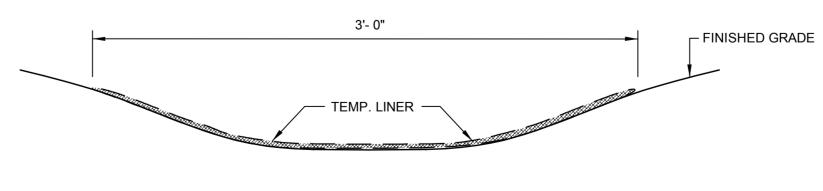
2) LINERS SHALL BE LAID OUT WITH LENGTH PARALLEL TO DIRECTION OF FLOW.

3) LINERS SHALL BE SECURED WITH 6" LONG METAL STAPLES, SET 3' APART IN STAGGERED ROWS.

4) TERMINAL ENDS OF LINER SHALL BE BURIED 6" AND SECURED WITH ROW OF STAPLES, 4" APART. TERMINAL SIDES SHALL BE STAPLED IN SAME MANNER, UNBURIED.

5) PLACE LINER SECTIONS END OVER END: BURY END OF DOWN-SLOPE LINER 6" AND LAP END OF UP-SLOPE LÍNER 6" OVER TOP. SECURE WITH ROW OF STAPLES, 4" APART.

6) FOR SWALES WITH MULTIPLE ROWS OF LINERS, ONE ROW SHALL BE PLACED DOWN CENTER OF SWALE, AND SIDE ROWS SHALL OVERLAP ROWS 6", SECURED WITH ROW OF STAPLES, 12" APART.

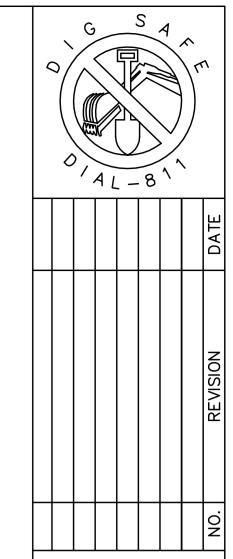


SWALE LINER (FOR TURFGRASS SWALE ONLY)

N.T.S.

N.T.S.







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CONCEPTUAL LOW IMPACT DEVELOPMENT IN WORCESTER, MASSACHUSETTS

DATE: MARCH 13, 2020

LANDSCAPE SCHEDULE & DETAILS

SHEET L-2

# TECHNICAL NOTES FOR LOAM BORROW:

1) <u>SCOPE OF WORK</u>: FOR THIS PROJECT, THE WORK SHALL INCLUDE PLACING LOAM ALL AREAS TO RECEIVE PLANTS AND TURFGRASS SEEDING, WITH THE EXCEPTION OF THE BASES OF BIO-RETENTION BASINS.

2) THE CONTRACTOR SHALL FURNISH A CERTIFIED LABORATORY REPORT SHOWING THE SOILS CLASSIFICATION AND NUTRIENT ANALYSIS OF REPRESENTATIVE SAMPLES OF THE LOAM THIS IS PROPOSED TO BE USED, INCLUDING THE EXTENT OF LIME AND FERTILIZER REQUIRED. ALL COSTS FOR SUCH WORK SHALL BE BORNE BY THE CONTRACTOR.

3) IN ACCORDANCE WITH THE SPECIFIC REQUIREMENTS OF THIS PROJECT, EXISTING ON-SITE SOIL MAY BE RE-USED AS LOAM BORROW ONLY IF IT MEETS THIS SPECIFICATION. EXISTING TOPSOIL THAT DOES NOT MEET THIS SPECIFICATION MAY BE RE-USED ONLY UP TO THE SUBGRADE ELEVATION WITHIN THE LIMITS OF AREAS TO RECEIVE NEW LOAM BORROW. THE CONTRACTOR SHALL FURNISH ALL REQUIRED LOAM BORROW, FROM OFF-SITE SOURCES, AS NECESSARY, TO COMPLETE THE

4) SCREENED LOAM SHALL BE "FINE SANDY LOAM" OR "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS (ASTM D-422) AND BASED ON THE "USDA CLASSIFICATION SYSTEM". SCREENED LOAM SHALL HAVE THE FOLLOWING MECHANICAL ANALYSIS:

TEXTURAL CLASS PERCENTAGE	PERCENTAGE OF TOTAL WEIGHT	AVERAGE PERCENTAGE
SAND (0.05 - 2.0 MM)	45 - 75	60
SILT (0.002 - 0.05 MM)	5 - 35	25
CLAY (LESS THAN 0.002 MM)	5 - 20	15

5) SCREENED LOAM SHALL BE A NATURAL PRODUCT CONSISTING PRIMARILY OF NATURAL TOPSOIL, FREE FROM SUBSOIL, AND OBTAINED FROM AN AREA THAT HAS NEVER BEEN STRIPPED BEFORE. SCREENED LOAM SHALL NOT CONTAIN LESS THAN FIVE PERCENT (5%) NOR MORE THAN TEN PERCENT (10%) ORGANIC MATTER. TO ADJUST ORGANIC MATTER CONTENT, THE SOIL MAY BE AMENDED, PRIOR TO SITE DELIVERY, BY THE ADDITION OF COMPOSTED LEAF MOLD OR PEAT MOSS. NO MIXING OR AMENDING OF LOAM IS PERMITTED ON SITE.

## 6) THE LOAM SHALL NOT BE DELIVERED IN A WET OR FROZEN CONDITION.

7) SCREENED LOAM SHALL CONSIST OF FERTILE, FRIABLE, LOAM CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. LOAM SHALL BE WITHOUT ADMIXTURE OF SUBSOIL AND REFUSE. IT SHALL BE A HOMOGENEOUS MATERIAL FREE OF STONES GREATER THAN ONE-HALF (1/2) INCH IN THE LONGEST DIMENSION; FREE OF LUMPS, PLANTS, GRASS, ROOTS, STICKS, EXCESSIVE STONE CONTENT, DEBRIS, AND EXTRANEOUS MATTER AS DETERMINED BY THE OWNER.

8) SCREENED LOAM SHALL BE WITHIN THE PH RANGE OF 6.0 TO 6.5. IT SHALL BE UNCONTAMINATED BY SALT WATER, FOREIGN MATTER, AND SUBSTANCES HARMFUL TO PLANT GROWTH. THE MAXIMUM SOLUBLE SALT INDEX SHALL BE 100. SCREENED LOAM SHALL NOT HAVE LEVELS OF ALUMINUM GREATER THAN 200 PARTS PER MILLION.

9) SEE TURFGRASS NOTES FOR LIME AND FERTILIZER REQUIREMENTS FOR LAWN AREAS.

10) TOPSOIL STRUCTURE SHALL NOT BE DESTROYED THROUGH EXCESSIVE AND UNNECESSARY HANDLING OR COMPACTION. INAPPROPRIATE HANDLING LEADING TO THE COMPACTION OF DETERIORATION OF SOIL STRUCTURE WILL RESULT IN REJECTION OF TOPSOIL FOR USE.

# 11) AT NO TIME SHALL EQUIPMENT OR MATERIAL REST ON THE SOIL.

12) THE CONTRACTOR SHALL FURNISH AND SPREAD LOAM TO A MINIMUM 6 INCH DEPTH (AFTER SOIL SETTLEMENT) IN ALL LAWN AREAS, AND A MINIMUM 8 INCH DEPTH IN ALL PLANT BED AREAS (EXCEPT BIORETENTION AREAS -- SEE CIVIL SHEETS FOR THOSE). SUBSOIL SHALL BE SCARIFIED PRIOR TO PLACEMENT OF LOAM. THE TOP OF THE SETTLED LOAM BORROW LAYER SHALL BE TO GRADES SPECIFIED ON THE DRAWINGS. NO COMPACTION SHALL BE REQUIRED BEYOND THAT EXTENT NECESSARY TO PLACE SOD OR OR TO PLANT TREES AND SHRUBS TO ENSURE AGAINST UNEVENNESS OR SETTLING BELOW ACCEPTED GROWTH LINES.

# TECHNICAL NOTES FOR TURFGRASS & PERENNIAL SEEDING:

1) SCOPE OF WORK: FOR THIS PROJECT, THE WORK SHALL INCLUDE SEEDING AREAS DENUDED BY CONSTRUCTION.

2) ALL AREAS SHALL BE SEEDED WITHIN 30 DAYS AFTER FINISHED GRADES ARE ESTABLISHED AND OTHER ELEMENTS INCLUDED IN THIS CONTRACT ARE CONSTRUCTED.

#### 3) SEED SPECIFICATIONS:

A) CERTAIN AREAS ON THE PLAN SHALL BE SEEDED WITH PERENNIAL SEED MIXES AS LABELED ON SHEET L-1. THESE SEED MIXES SHALL BE SUPPLIED BY NEW ENGLAND WETLAND PLANTS, AMHERST, MA, PHONE # 413-548-8000; OR APPROVED EQUAL. PREPARE SOIL AND SOW SEED IN ACCORDANCE WITH THIS COMPANY'S INSTRUCTIONS FOR EACH TYPE OF SEED MIX.

## B) TURFGRASS: AREAS RECEIVING FULL SUN OR PART SHADE

FESCUE/BLUEGRASS/PERENNIAL RYEGRASS MIXTURE:
MIXTURE REQUIREMENTS ARE AS FOLLOWS (WITH APPROXIMATE PERCENTAGES):

35% FINE FESCUE (ENDOPHYTIC) 35% KENTUCKY BLUEGRASS

30% PERENNIAL RYEGRASS (ENDOPHYTIC)

## C) TURFGRASS: AREAS RECEIVING MOSTLY SHADE:

<u>FESCUE/PERENNIAL RYEGRASS MIXTURE:</u>
MIXTURE REQUIREMENTS ARE AS FOLLOWS (WITH APPROXIMATE PERCENTAGES):

90% FINE FESCUE (ENDOPHYTIC) 10% PERENNIAL RYEGRASS (ENDOPHYTIC)

D) ANY PROPOSED SUBSTITUTIONS SHALL BE PRESENTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO SEEDING.

E) ALL TURFGRASS SEED SHALL HAVE A MINIMUM PURITY OF 98 PERCENT AND A GERMINATION RATE OF 85 PERCENT.

F) ALL TURFGRASS SEED SHALL BE LABELED TO SHOW THAT IT IS WITHIN THE REQUIREMENTS OF THE USDA AS TO PURITY, GERMINATION, AND PRESENCE OF RESTRICTED OR PROHIBITED WEEDS.

4) <u>BED PREPARATION FOR AREAS TO BE SEEDED WITH TURFGRASS:</u> A ROTOVATOR, CHISEL PLOW, OR CULTIVATOR SHALL BE USED TO WORK THE SOIL TO A DEPTH OF SIX INCHES. AFTER THIS OPERATION, REMOVE AND DISPOSE OF STICKS, STONES OVER 1 INCH DIAMETER, AND RUBBISH TO A MINIMUM DEPTH OF TWO INCHES.

5) LIME AND NUTRIENTS FOR TURFGRASS AREAS: LIME SHALL BE GROUND DOLOMITIC LIMESTONE, APPLIED AT THE RATE OF 50 POUNDS PER 1000 SQUARE FEET. LIME SHALL BE WELL-MIXED INTO THE TOP THREE INCHES OF LOAM.

6) <u>FERTILIZER FOR TURFGRASS AREAS:</u> FERTILIZER SHALL BE A COMMERCIAL GRADE WITH A MINIMUM OF 50 PERCENT OF THE NITROGEN COMPONENT IN A CONTROLLED RELEASE FORM LABELED TO RELEASE NITROGEN FOR A MINIMUM OF SIX WEEKS. FERTILIZER SHALL HAVE AN N/P/K RATIO IN THE RANGE OF 1:1:1 TO 1:2:2. IT SHALL BE APPLIED AT A RATE WHICH ACHIEVES ONE POUND OF NITROGEN PER 1000 SQUARE FEET.

7) <u>SEEDING PROCEDURE FOR TURFGRASS:</u> SOWING OF SEED SHALL BE DONE ONLY AFTER THE PREPARED SOIL, TO WHICH LIME AND FERTILIZER HAVE BEEN ADDED AS SPECIFIED, HAS BEEN THOROUGHLY SETTLED BY RAINFALL OR ARTIFICIAL WATERING. IMMEDIATELY BEFORE ANY SEED IS SOWN, THE GROUND SHALL BE SCARIFIED AS SPECIFIED. LAWN AREAS SHALL BE SEEDED EVENLY WITH A MECHANICAL SPREADER. SEED MIXTURES SHALL BE SOWN AT A RATE OF 5 POUNDS PER 1000 SQUARE FEET. AFTER SEEDING, THE LAWN SHALL BE LIGHTLY RAKED, ROLLED WITH A 200-POUND ROLLER, AND WATERED WITH A FINE SPRAY. THIS METHOD OF SEEDING MAY BE VARIED AT THE DISCRETION OF THE CONTRACTOR ON HIS OWN RESPONSIBILITY TO ESTABLISH A SMOOTH, UNIFORMLY GRASSED LAWN.

8) SEED FOR PERMANENT TURFGRASS SHALL ONLY BE SOWN FROM THE THIRD WEEK IN APRIL THROUGH JUNE AND DURING THE MONTH OF SEPTEMBER.

9) TEMPORARY SEEDING FOR EROSION CONTROL: IN THE EVENT THAT THE CONTRACT IS SUSPENDED, TEMPORARY SEEDING SHALL BE USED ON ANY BARE AREAS THAT MAY BE SUBJECT TO EROSION AND WHERE TEMPORARY VEGETATION CAN BE USED TO RETARD EROSION FROM 2 TO 12 MONTHS. THE SEED TYPE USED FOR TEMPORARY COVER SHALL BE 100 PERCENT TALL FESCUE APPLIED AT A RATE OF 300 POUNDS PER ACRE.

10) MAINTENANCE: MAINTAIN THE TURFGRASS FROM TIME OF INSTALLATION UNTIL THE FINAL INSPECTION IMMEDIATELY PRIOR TO THE BEGINNING OF THE GUARANTEE PERIOD. MAINTENANCE SHALL INCLUDE WATERING OF TURF AREAS, REPAIRS TO TURF AREAS, AND OTHER NECESSARY OPERATIONS. THE MAINTAINED TURF AREAS SHALL BE MOWED TO A UNIFORM HEIGHT OF APPROXIMATELY TWO AND ONE-HALF INCHES. MOWING SHALL BE PROVIDED AS REQUIRED SO THAT THE TURF NEVER EXCEEDS FOUR INCHES IN HEIGHT. TURF SHALL BE PROTECTED AND REPLANTED AS NECESSARY TO ESTABLISH A UNIFORM STAND OF THE SPECIFIED TURF AND UNTIL ACCEPTANCE. SCATTERED BARE SPOTS, NONE OF WHICH IS LARGER THAN ONE SQUARE FOOT, WILL BE ALLOWED UP TO A MAXIMUM OF THREE PERCENT OF ANY TURF AREA. WHEN TURF AREAS ARE READY FOR FINAL INSPECTION, THE MAINTAINED TURF AREAS SHALL BE NEATLY MOWED TO THE UNIFORM HEIGHTS AS NOTED ABOVE. THE LAWNS SHALL BE CONSIDERED ESTABLISHED ONLY WHEN THE SPECIFIED GRASS IS VIGOROUS AND GROWING WELL IN ADDITION TO MEETING THE OTHER REQUIREMENTS SPECIFIED. AT THE TIME OF ACCEPTANCE FOLLOWING FINAL INSPECTION, THE CONTRACTOR IS RELIEVED OF ROUTINE MAINTENANCE RESPONSIBILITIES FOR THE TURF UNDER THIS CONTRACT.

11) FINAL INSPECTION, CLEANUP AND COMPLETION: FINAL INSPECTION SHALL BE FOR THE COMPLETED LANDSCAPE AND SHALL BE MADE AT THE CONCLUSION OF THE LANDSCAPE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL EQUIPMENT AND OTHER ARTICLES USED. ALL EXCESS SOIL, STONES, AND DEBRIS SHALL BE REMOVED FROM THE SITE. ALL WORK AREAS SHALL BE LEFT IN A CLEAN AND NEAT CONDITION. ALL DAMAGE TO EXISTING CONSTRUCTION CAUSED BY THE LANDSCAPING OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S EXPENSE.

12) <u>GUARANTY AND REPLACEMENT:</u> IF A SATISFACTORY STAND OF MAINTAINED TURF HAS BEEN PRODUCED AT THE TIME OF FINAL INSPECTION, IT SHALL BE GUARANTEED THROUGH ONE COMPLETE GROWING SEASON. IF RENOVATION AND/OR RESEEDING ARE REQUIRED AT THE END OF THE GUARANTEE PERIOD, THIS WORK SHALL BE DONE IN CONFORMANCE WITH THE REQUIREMENTS NOTED ABOVE. IF A SATISFACTORY STAND OF MAINTAINED TURF HAS <u>NOT</u> BEEN PRODUCED AT THE TIME OF FINAL INSPECTION, NECESSARY REPAIRS SHALL BE PERFORMED IN CONFORMANCE WITH THE REQUIREMENTS NOTED ABOVE. UPON COMPLETION OF THESE REPAIRS, THE TURF GRASS SHALL BE GUARANTEED AS NOTED ABOVE.

# TECHNICAL NOTES FOR TREE, SHRUB, GROUNDCOVER, AND PERENNIAL PLANTINGS:

1) NOMENCLATURE: THE NAMES OF PLANTS REQUIRED UNDER THIS CONTRACT SHALL CONFORM TO THOSE GIVEN IN STANDARDIZED PLANT NAMES, 1942 EDITION, PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF VARIETIES NOT INCLUDED THEREIN SHALL CONFORM GENERALLY WITH NAMES ACCEPTED IN THE NURSERY TRADE.

2) QUALITY AND SIZE: PLANTS SHALL HAVE A HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES AND SHALL BE SOUND, HEALTHY, VIGOROUS, AND FREE FROM INSECT PESTS, PLANT DISEASES, AND INJURIES. ALL PLANTS SHALL EQUAL OR EXCEED THE MEASUREMENTS SPECIFIED IN THE PLANT LIST, WHICH ARE MINIMUM ACCEPTABLE SIZES. THEY SHALL BE MEASURED BEFORE PRUNING IS DONE AT TIME OF PLANTING. REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING, AND BURLAPPING OF PLANTS IN THE PLANT LIST SHALL FOLLOW THE CODE OF STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN ASSOCIATIONS OF NURSERYMEN, INC., IN THE AMERICAN STANDARD FOR NURSERY STOCK.

3) <u>SUBSTITUTIONS:</u> SUBSTITUTIONS WILL BE PERMITTED ONLY UPON SUBMISSION OF PROOF THAT ANY PLANT AS SPECIFIED IS NOT OBTAINABLE DURING THE SCHEDULED PLANTING SEASON. WRITTEN AUTHORIZATION BY THE LANDSCAPE ARCHITECT SHALL BE REQUIRED FOR ANY SUBSTITUTION. THE NEAREST EQUIVALENT SIZE OR VARIETY OF PLANT HAVING THE SAME ESSENTIAL CHARACTERISTICS SHALL BE USED.

4) BALLED AND BURLAPPED MATERIALS: PLANTS DESIGNATED "B&B" IN THE PLANT LIST SHALL BE BALLED AND BURLAPPED. THEY SHALL BE DUG WITH FIRM, NATURAL BALLS OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS THE FIBROUS AND FEEDING ROOT SYSTEM NECESSARY FOR FULL RECOVERY OF THE PLANT. MATERIAL SHALL BE IN A CONDITION WHERE THE NATURAL ROOT COLLAR OF THE PLANT IS WITHIN APPROXIMATELY TWO (2) INCHES OF THE SOIL LEVEL OF THE BALL. BALLS SHALL BE FIRMLY WRAPPED WITH BURLAP OR SIMILAR MATERIAL AND BOUND WITH TWINE, CORD, OR WIRE MESH. NO SYNTHETIC FABRIC IS ALLOWED. WHERE NECESSARY TO PREVENT BREAKING OR CRACKING OF THE BALL DURING THE PROCESS OF PLANTING, THE BALL MAY BE SECURED TO A PLATFORM. BALLS SHALL BE KEPT MOIST AND SHADED UNTIL THEY ARE PLANTED. REMOVE ALL BALL TIES OR STRAPPING FROM ROOT BALL PRIOR TO PLANTING. PLANT IN ACCORDANCE WITH TREE AND SHRUB PLANTING DETAILS.

5) CONTAINER-GROWN MATERIALS: PLANTS NOT DESIGNATED OTHERWISE IN THE PLANT LIST MAY BE PURCHASED AS CONTAINER-GROWN OR BALLED/BURLAPPED. CONTAINER-GROWN PLANTS, IF STORED ON THE SITE, SHALL BE WATERED THOROUGHLY AT LEAST ONCE EVERY 48 HOURS. ROOT SYSTEMS OF CONTAINER-GROWN PLANTS SHALL BE WELL-DEVELOPED BUT NOT IN "POT-BOUND" CONDITION OF DENSE, ENCIRCLING ROOTS. THE ROOT BALL OF THE PLANT SHALL BE LOOSENED TO ALLEVIATE ENCIRCLING ROOTS AND TO PROVIDE AN INCREASED ROOT INTERFACE WITH THE FILL SOIL. PLANT IN ACCORDANCE WITH TREE, SHRUB, AND GROUNDCOVER PLANTING DETAILS.

6) <u>PROTECTION OF PLANTS PRIOR TO INSTALLATION:</u> THE ROOT ZONE OF ALL PLANTS NOT YET INSTALLED SHALL BE PROTECTED FROM FREEZING, DRYING, AND DIRECT SUNLIGHT.

7) <u>MULCHING:</u> DOUBLE-SHREDDED HARDWOOD MULCH SHALL BE USED AS THE MULCH FOR ALL PLANT BEDS INDICATED ON THE LANDSCAPE PLAN, INCLUDING AREAS SURROUNDING THE PLANTS AS SHOWN ON THE TREE, SHRUB, AND GROUNDCOVER PLANTING DETAILS.

8) <u>PLANTING SEASON:</u> THE NORMAL PLANTING SEASON IS APRIL THROUGH NOVEMBER. SOME PLANTS SPECIFIED AS BALLED AND BURLAPPED CANNOT BE DUG DURING PORTIONS OF THIS PLANTING SEASON -- CHECK WITH NURSERIES FOR SPECIFICS. PLANTING OPERATIONS SHALL BE CONDUCTED UNDER FAVORABLE WEATHER CONDITIONS DURING THE NORMAL PLANTING SEASON.

9) <u>WEATHER CONDITIONS:</u> PLANTING SHALL NOT TAKE PLACE WHEN SOILS ON SITE ARE FROZEN OR WET AND IN POOR TILTH.

10) <u>LAYOUT:</u> NEW PLANTINGS SHALL BE LOCATED ACCORDING TO THE LANDSCAPE PLAN. THE CONTRACTOR SHALL STAKE THE PLANT LOCATIONS. AND SHALL THEN CONTACT THE LANDSCAPE ARCHITECT FOR APPROVAL.

11) <u>SETTING PLANTS:</u> ALL PLANTS SHALL BE PLANTED IN PREPARED SOILS BEDS, AND SET ON FIRM SOIL TO SUCH DEPTH AS INDICATED IN THE PLANTING DETAILS. TREES, SHRUBS, GROUNDCOVERS, AND PERENNIALS SHALL BE SET SO THAT THE PLANT'S NATURAL ROOT COLLAR OR CROWN IS ABOVE FINISHED GRADE AT THE HEIGHTS INDICATED IN THE PLANTING DETAILS. NO BURLAP SHALL BE PULLED FROM UNDER THE BALLS. ROOTS ON BARE-ROOT PLANTS SHALL BE SPREAD IN THEIR NORMAL POSITION. ALL BROKEN OR FRAYED ROOTS SHALL BE CUT OFF CLEANLY. PREPARED SOIL SHALL BE PLACED AND COMPACTED CAREFULLY TO AVOID INJURY TO ROOTS, TO FILL ALL VOIDS, AND TO MINIMIZE ROCKING OF ROOT BALL. ADD WATER AND TAMP THE BACKFILL UNTIL THE BACKFILL IS COMPLETELY SATURATED, THEN ALLOW IT TO SOAK AWAY. FILL THE HOLE TO FINISHED GRADE, AND FORM A SHALLOW SAUCER AROUND EACH TREE AND SHRUB BY PLACING A RIDGE OF TOPSOIL AROUND THE EDGE OF EACH PIT. AFTER THE GROUND SETTLES, ADDITIONAL SOIL SHALL BE FILLED IN TO THE LEVEL OF THE FINISHED GRADE.

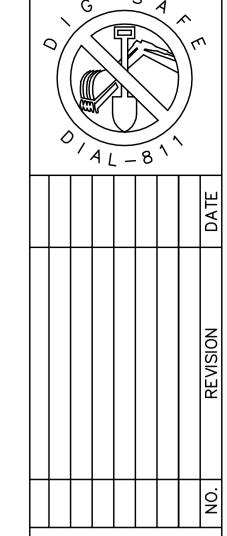
12) <u>STAKING TREES:</u> DO NOT STAKE TREES, UNLESS TREES ARE PLANTED ON STEEP SLOPES, IN WHICH CASE THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT FOR PERMISSION TO STAKE THOSE TREES.

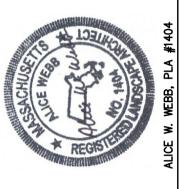
13) MAINTENANCE: MAINTAIN PLANTS AND PLANT BEDS FROM THE TIME OF INSTALLATION UNTIL THE FINAL INSPECTION IMMEDIATELY PRIOR TO COMMENCEMENT OF THE GUARANTEE PERIOD. MAINTENANCE SHALL INCLUDE WATERING AND PROTECTION OF PLANTINGS AND OTHER NECESSARY OPERATIONS.

14) <u>FINAL INSPECTION:</u> WHEN THE TREE AND SHRUB PLANTINGS ARE READY FOR FINAL INSPECTION, ALL MULCHED AREAS SHALL BE FREE FROM WEEDS AND MULCHED TO THE EXTENT INDICATED ON THESE DRAWINGS. PLANT TAGS SHALL BE REMOVED BY THE CONTRACTOR PRIOR TO THE INSPECTION FOR ACCEPTANCE.

15) <u>GUARANTEE:</u> AFTER ACCEPTANCE AT TIME OF FINAL INSPECTION, ALL PLANTS SHALL BE GUARANTEED FOR ONE (1) YEAR. PLANTINGS SHALL BE ALIVE AND IN SATISFACTORY VIGOR AT THE END OF THE GUARANTEE PERIOD.

16) REPLACEMENT: AT THE END OF THE GUARANTEE PERIOD, ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR IN POOR VIGOR SHALL BE REMOVED FROM THE SITE. THESE AND ANY MISSING PLANTS SHALL BE REPLACED AS SOON AS CONDITIONS PERMIT, BUT DURING THE NORMAL PLANTING SEASON. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AS ORIGINALLY PLANTED AND SHALL BE OF SIZE EQUAL TO THAT ATTAINED BY ADJACENT PLANTS OF THE SAME KIND AT THE TIME REPLACEMENT IS MADE. ONLY ONE REPLACEMENT WILL BE REQUIRED FOR EACH PLANT DECLARED DEAD, IN AN UNHEALTHY OR BADLY IMPAIRED CONDITION, OR MISSING AT THE TIME OF FINAL INSPECTION





NAULT ARCHITECTS
PROPERTY OWNER:
CITY OF WORCESTER

NCEPTUAL LOW IMPACT DEVELOPMENT PLAN
IN WORCESTER, MASSACHUSETTS

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DATE: MARCH 13, 2020

LANDSCAPE NOTES

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