
Vegetation Management Plan

Head of the Charles Regatta Reunion Village Hospitality Area

2018

Boston, Massachusetts

Prepared for:

Head of the Charles Regatta
PO Box 380052
Cambridge, MA 02238-0052

and

Department of Conservation and
Recreation
251 Causeway Street, Suite 900
Boston, MA 02114-2104

Prepared by:

Weston & Sampson
85 Devonshire Street, Third Floor
Boston, MA 02109
April 4, 2018



April 4, 2018

Ms. Amelia Croteau
Executive Secretary
Boston Conservation Commission
One City Hall Square, Room 709
Boston, MA 02201

Re: **Head of the Charles Regatta Reunion Village Hospitality Area
DEP File No 006-1478**

Dear Ms. Croteau:

On behalf of our client, Head of the Charles Regatta (HOCR), Weston & Sampson is pleased to submit supporting information for use of the Reunion Village Hospitality Area along the Charles River. Enclosed please find eight hard copies of this cover letter, an 11 x 17 site plan, turf remediation plans for 2018 and a draft revised vegetation management plan for the Reunion Village Hospitality Area for the regatta to be held on October 20th and 21st, 2018.

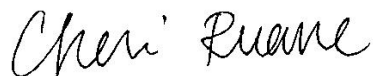
While we are submitting this today, April 4, 2018, per our commitment to you last year. However, we request your consideration that **our actual hearing be scheduled for May 2, 2018**. Many of the project proponents will be away and unable to attend the next scheduled hearing of April 18, 2018 as it falls during Massachusetts school vacation week.

HOCR is committed to return before the Conservation Commission each April to report on the status of the shoreline restoration, exotic invasive eradication efforts, as well as turf re-establishment. At this annual appearance, HOCR will request permission to perform seasonal cutting along this area of the river where vegetation is blocking views of the race. The long-term goal is to remove the exotic invasive plants and replace them with appropriately sized native species that will stabilize the bank, provide meaningful habitat, and preserve views to the amazing resource that is the Charles River without the need for regular pruning.

Moving forward, HOCR is committed to adhering to the protocol set forth in the Order of Conditions as well as participation in the vegetation management for this stretch of the Charles River shoreline. As outlined in the revised VMP, HOCR intends to leverage the stewardship of the Charles River Conservancy and the Charles River Watershed Association as well as its own cadre of volunteers to organize shoreline restoration efforts that will implement the VMP in a phased approach.

We look forward to discussing this submission at the **May 2nd hearing** and would be happy to provide additional information if needed. Please do not hesitate to contact me directly should you have any questions. I can be reached at 617-412-4480 x 7701 or ruanec@wseinc.com.

Sincerely,
WESTON & SAMPSON ENGINEERS, INC.



Cheri Ruane, ASLA
Vice President | Landscape Architecture

Encl: 2018 Vegetation Management Plan with 11x17 site plans, site photographs, turf damage mitigation plan

Reunion Village Vegetative Management Plan

TABLE OF CONTENTS

	Page
TABLE OF CONTENTS	i
LIST OF APPENDICES	ii
1.0 OVERVIEW	1-1
1.1 Introduction	1-1
1.2 Vegetative Management Plan Goals	1-1
1.3 Plan Development and Implementation	1-1
2.0 SITE DESCRIPTION	2-1
2.1 Current Site Conditions	2-1
2.2 Wetland Resource Areas	2-1
2.2.1 Inland Bank	2-1
2.2.2 Bordering Land Subject to Flooding	2-2
2.2.3 Riverfront Area	2-2
3.0 CONTROLS AND MANAGEMENT	3-1
3.1 Management Areas	3-1
3.2 Target Species	3-1
3.3 Selection of Control Techniques	3-2
3.3.1 Mechanical Techniques Considered	3-2
3.3.2 Chemical Techniques Considered	3-3
3.3.3 Rationale for Selection of Technique	3-4
3.4 Replanting	3-5
4.0 MONITORING AND MAINTENANCE PLAN	4-1
4.1 Monitoring	4-1
4.2 Maintenance	4-2

Reunion Village Vegetative Management Plan

LIST OF APPENDICES

Appendix A.....Site Plans

Appendix B Site Photos

Appendix CTurf Damage Remediation Plan

1.0 OVERVIEW

1.1 Introduction

For many years, event organizers have managed the overgrown riverbank vegetation at: Reunion Village in preparation for the Head of the Charles Regatta (HOCR). Prior to 2017, vegetation was cut back every fall to re-establish views of the Charles River. This vegetation management plan (VMP) has been prepared by Weston & Sampson on behalf of the Head of the Charles Regatta (HOCR) in cooperation with the Massachusetts Department of Conservation and Recreation (DCR) to address the need for management by targeting selective invasive and noxious plants along the riverbank at this location.

In accordance with Condition 48 from the Order of Conditions (OOC) issued in 2016 by Boston Conservation Commission (BCC), HOCR is submitting this VMP with the intent of appearing before the BCC in May of 2018. The VMP outlines “a proposed schedule for seasonal cuttings, recommendations from an arborist detailing the best measures to be employed in specific management areas, and the best treatment of various species of vegetation existing within those areas.”

HOCR anticipates performing turf mitigation operations after the 2017 HOCR event in accordance with Condition 56 from the 2016 OOC. A current plan for turf damage remediation has been included herein as Attachment C for review and approval.

1.2 Vegetative Management Plan Goals

The short-term goal of this VMP is to reduce the height of the shrub vegetation along the Charles River at the Reunion Village Hospitality Area through seasonal cutting of specifically targeted invasive and noxious plants.

The long-term goal of the DCR’s management plan is to control the growth invasive and noxious fast-growing species along the shore and to restore pilot sections of shoreline with new native plantings. This program will provide a healthier, more diverse habitat, and will reduce the need for annual cutting of the Charles River shoreline long term.

1.3 Plan Development and Implementation

The Charles River Basin Master Plan (DCR, 2002) lays out a comprehensive strategy for the long-term restoration and maintenance of the Charles River shoreline. As discussed in this Master Plan, the DCR performs routine maintenance of the vegetation along the banks of the Charles River in Boston. This VMP draws upon the strategies outlined in the Master Plan for site-specific application at the Reunion Village Hospitality Area.

The management practices described in this VMP are limited to the trimming of false indigo (*Amorpha fruticosa*) and hand removal of purple loosestrife (*Lythrum salicaria*) from the riverbank. The work is proposed to be performed by trained volunteers working under the

.....

direction of HOCR staff. The work is planned to be completed in early October, just prior to the annual Head of the Charles Regatta.

While the management practices described in the 2002 Master Plan will accomplish the immediate goal of restoring river vistas from the Reunion Village Hospitality Area, it is anticipated that the trimmed plants will re-establish themselves in one or two growing seasons. True invasive species management will require a concerted effort that is beyond the scope of this more narrowly focused VMP but may be developed later by DCR for implementation at the Reunion Village site.

This VMP also includes approaches to address Condition 57 from the 2016 OOC that requires “measures to encourage re-colonization by appropriate native species to minimize future needs for cutting and removal, and to promote a healthier and more diverse habitat.” The revised VMP will be presented to the BCC in May of 2018 and will include detailed scope of work that describes means and methods for the requirements above.

Given the aggressive and persistent nature of the exotic invasive and noxious species that have colonized the site, a very strategic and incremental approach is being proposed to facilitate vegetation management as well as to provide the conditions necessary to ensure the greatest chance of success for the new plantings.

.....

2.0 SITE DESCRIPTION

Section 2.0 provides a discussion of current site conditions including wetland resource areas.

2.1 Current Site Conditions

The Reunion Village Hospitality Area is located within the DCR's Charles River Reservation just upstream of the John Weeks Footbridge. It is bordered to the north by the Charles River and to the south by the Paul White Bike Path. It consists of approximately 40,000 square feet of mowed lawn area, as well as a discontinuous fringe of shrub vegetation along the riverbank. The area is relatively flat but also has a gentle incline that rises toward the bike path, which makes it an ideal location for race spectators.

The Reunion Village Hospitality Area, like all of the Charles River Reservation, has been previously altered, having been designed and deliberately shaped to create an expanse of open space adjacent to the river, which was originally lined with parkway trees. There are no areas of naturally occurring vegetation within the hospitality area. Even the dense vegetation along the riverbank is the result of earlier planting efforts, or successional growth, and much of this vegetation is considered invasive or noxious.

2.2 Wetland Resource Areas

Wetland scientists from Epsilon Associates, Inc. ("Epsilon") delineated the Inland Bank associated with the Charles River between the Anderson Memorial Bridge and the John W. Weeks Bridge in Boston, MA (the "Study Area"). One jurisdictional wetland resource area, an inland bank, was field-delineated within the Study Area. Other jurisdictional wetland resource areas occurring within the Study Area but not field-delineated include Riverfront Area ("RFA") and Bordering Land Subject to Flooding ("BLSF"), which includes lands located within the 100-year floodplain. These resource areas are associated with the Charles River, which borders the site to the north. There were no areas of bordering vegetated wetlands observed within the Study Area.

2.2.1 Inland Bank

Observed bank vegetation includes false indigo (*Amorpha fruticosa*), speckled alder (*Alnus incana*), evening primrose (*Oenothera biennis*), purple loosestrife (*Lythrum salicaria*), pokeweed (*Phytolacca americana*), narrowleaf goldenrod (*Euthamia graminifolia*), multiflora rose (*Rosa multiflora*), and morning glory (*Ipomoea sp.*).

Shrub vegetation lines most of the bank along this stretch; however, there are some gaps devoid of vegetation due to bank erosion. Shrub vegetation generally ranges from four to eight feet in height. False indigo, an aggressive nonnative plant that out-competes native species, is the dominant shrub species along the vegetated areas of the bank.

The bank has a northerly aspect with a gradation ranging from moderate in most areas to severe where bank erosion has occurred. Larger rip rap is present along the bank near the Weeks Footbridge. No snags or nesting cavities were observed along the riverbank, but several Canada geese were observed in the area.

The 100-foot buffer zone to bank is an open grassy area that is maintained by periodic mowing. Aside from one large northern red oak (*Quercus rubra*) tree near the Weeks Footbridge, there are no trees present within the buffer zone. There is also another, smaller red oak tree and a plum tree present in the Study Area, but these are located outside of the buffer zone.

2.2.2 Bordering Land Subject to Flooding

Per the applicable Federal Emergency Management Agency - Flood Insurance Rate Map (“FEMA-FIRM”) map for the City of Boston, Community Panel No. 25025C0076G, dated September 25, 2009, the northern portion of the Study Area is located within mapped Zone AE and Zone X. The FIRM identifies the floodplain elevation as 4 feet North American Vertical Datum (NAVD 88).

2.2.3 Riverfront Area

Within the City of Boston the riverfront area is limited to the area within twenty-five feet of the riverbank. At the Reunion Village Hospitality Area, the Riverfront Area consists of bank vegetation and a lawn area between the bike path and the riverbank.

.....

3.0 CONTROLS AND MANAGEMENT

Section 3.0 provides a discussion of control and management strategies.

3.1 Management Areas

The Reunion Village Hospitality Area management area consists of approximately 40,000 square feet of mowed lawn and a discontinuous fringe of shrub vegetation along the riverbank. The area is relatively flat but also has a gentle incline that rises toward the bike path. There are no areas of naturally occurring vegetation within the hospitality area. The dense vegetation along the riverbank is the result of earlier planting efforts and successional growth. Much of the vegetation is considered invasive or noxious.

3.2 Target Species

Target species for management under this VMP have been identified for their tendency to outcompete other species and obstruct views. Two plant species are targeted for management at the site: false indigo and purple loosestrife.

False Indigo Bush (*Amorpha Fruticosa*)

False indigo is a deciduous shrub that typically grows to 4-12' (less frequently to 20') tall with a spread often in excess of its height. It is native to moist open woodland areas, floodplains, stream banks and swamp margins. False indigo can be found in central and eastern Canada, throughout much of the southern United States, and northern Mexico. USDA lists it on the Federal and State Noxious Weeds list (source: <https://plants.usda.gov/java/noxComposite>). False indigo features compound, odd-pinnate leaves (each to 12" long). Each leaf contains 11 to 35 spiny-tipped, oval to elliptic, dull gray-green leaflets (to 2" long) with glandular dots and toothless margins. Tubular scented flowers (each to 3/8" long) bloom in May-June in dense, spike-shaped clusters (racemes) to 8" long.

Each flower has a single-petaled purple corolla and 10 protruding stamens with showy orange-yellow anthers. Flowers are followed by fruits in small, resinous-dotted, 1-2 seeded pods (to 1/2" long) which mature in July and August. This shrub grows much larger than *Amorpha canescens* (lead plant). (Adapted from <http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=280343>.)



Figure 1—False Indigo Bush
(*Amorpha Fruticosa*)

Source:

https://www.wildflower.org/plants/result.php?id_plant=amfr

Purple Loosestrife (*Lythrum salicaria*)

Purple loosestrife is an herbaceous wetland perennial that can grow 0.5-1.5 meters tall. The leaves are normally opposite and in pairs, however the leaves can be alternate and found in whorls of three. Leaves are lance-shaped and 3-10 cm long. The flowers are purple to pink. They are numerous and borne on spikes that are between 10 and 40 cm long. Each flower has 5-7 petals. The flowers are in bloom from July to September. The fruits are capsules, each containing numerous reddish-brown seeds. Purple loosestrife is listed by Massachusetts Invasive Plant Advisory Group (MIPAG) as invasive and is noted overtake wetlands (MIPAG, 2005). Purple loosestrife was first reported in North America in the early 1800s.



Figure 2— Purple Loosestrife (*Lythrum salicaria*)

Source:

<https://www.mass.gov/files/documents/2017/09/06/purple-loosestrife.pdf>

Purple loosestrife invades and destroys habitat along rivers, streams, and wetlands. It grows in dense patches that choke out native plants and deter wildlife. Purple loosestrife is a prolific seed producer and its light seeds are carried by wind and often take hold in nearby wetlands. (Adapted from <http://peiinvasives.ca/purple-loosestrife>.)

3.3 Selection of Control Techniques

This VMP proposes management of invasive, noxious, and visually obstructive plant species with the intent of allowing for observation of the Charles River Regatta.

Although there are many control techniques available for the management and removal of invasive and obstructive plant species, they are broken down into the following three categories:

- Mechanical
- Chemical
- Biological

Each category has its own advantages and limitations, and each can be applied in specific cases where other methods may not be as applicable. Mechanical methods include any type of physical removal of the plant biomass. This could include pulling, mowing/cutting, digging or burning (among other techniques). Chemical treatments include the application of herbicides. This technique is often used in conjunction with mechanical removal, for instance cut and dabbing is the process of cutting invasive species to ground level and then dabbing the stems with an herbicide. The final category of control, biological, utilizes pest or insects as predators for target species and is much less routinely recommended as it involves the introduction of one or more species, which can be ecologically risky.

3.3.1 Mechanical Techniques Considered

Mechanical methods are commonly the go-to approach to manage invasive plant species. Mechanical methods can be used with no special licensing or handling of chemicals. Most of the work can be done with the assistance of either volunteers or a hired landscape crew. However, mechanical removal methods can require long-term commitment and continued maintenance of the invasive species zones to ensure that the plants removed do not grow back. Depending on the breadth and extent of the

population mechanical management may also require large areas of disturbance, especially when digging is required. These disturbed areas may be susceptible to erosion and can become prime breeding grounds for re-growth or encroachment of other invasive species. Two types of methods that have proven effective are highlighted below.

Pull or Dig: Large herbaceous and wood plant species can often be pulled out and have their roots dug up, if found in limited quantities. When this method is used, it is important to remove as much of the plant material as possible including root mass, stolons, and rhizomes. Some species can re-infest an area if as little as a small root is left behind. Instead of using a shovel, digging with a fork or similar tool may be preferred. Shovels can often cut through a root, leaving a portion behind, where as a fork will tend to pull the entire root system. In some instances, where large stands are present, it may be beneficial to work with a small excavator or bobcat to remove large portions of infested soil. This work should be done in the early spring where seeds have yet to mature and the soil is still moist. The moist soils will allow for easier pulling of most species and if the seeds have not matured it will reduce the risk of seed transport to other areas.

Light Barriers: The introduction of light barriers is another method used to remove small seedlings and other small herbaceous plants that can't be readily pulled. This method involves the placement of any light-blocking material (usually plastic sheeting or weed block) over the infestation. This material should be staked or weighed down and should extend outside of the infestation area. This material can either be left in place or loamed and seeded over. This technique will kill all species, both invasive and native, that are trapped under the barrier.

3.3.2 Chemical Techniques Considered

Herbicides are one of the most effective ways to treat invasive species; however, careful consideration should be taken when using any chemicals, especially when adjacent to a natural resource area. Chemical methods are usually accomplished in two manners: large scale spraying (often seen on power line easements) and small scale localized applications.

Due to the location of the Target Species Weston & Sampson does not recommend large scale spraying. Instead, if chemical treatment is considered it should be conducted through localized applications. Localized applications could and should be performed in conjunction with mechanical methods such as cutting. Timing is paramount to any successful chemical treatment to interrupt the lifecycle of the plant. Two chemical treatment methods that have proven effective are highlighted below.

Small Scale Spray Applications: Utilizing a backpack sprayer or equivalent (such as a small handheld sprayer) chemical treatments of monocultures or individual invasive plants can be performed. Spray applications have proven useful against herbaceous species that are difficult to manage with mechanical methods. Spray applications are a practical alternative for some woody species that grow in dense stands. It is generally recommended that the mixture contain no more than 5% of the active ingredient. Treatment should occur in early spring when the plants are growing to interrupt the life cycle and stop future growth. It is also recommended that spraying take place when no rain is in the forecast for several days after. This will ensure the treatment does not wash away.

Cut and Dab: The cut and dab method combines mechanical and chemical treatments. The goal is to avoid large ground disturbances caused by digging up roots; instead, a chemical treatment is applied to cut stems and/or roots. These treatments require a higher concentration of the active ingredient than

is used in small scale spray applications. A 25-35% solution of the active ingredient should be used. Stems should be cut as close to the ground as possible and herbicide should be applied directly to the cut surface. This application should be done as soon as possible after the plant is cut to ensure effectiveness of the herbicide. The herbicide can be applied in many different methods including spray bottle, rag, brush, or sponge. The idea is to thoroughly wet the cut surface so that the herbicide absorbs into the plant tissues. This technique is most effective in late summer or early fall.

3.3.3 *Rationale for Selection of Technique*

This VMP proposes the cut and dab method as it is cost effective, low risk, and can be readily conducted in conjunction with replanting. Cutting will be completed by volunteers and followed by herbicidal application done by a licensed herbicide applicator. The cut and dab method is proposed for the following specific reasons:

- Cutting is a low-cost control method that can be executed using volunteers. The HOCR has ready access to volunteers willing to assist with plant management. Dabbing requires a licensed applicator but is a relatively in expensive control method.
- Cutting will create little or no disturbance of soil. Soil disturbance presents a risk at the management site where riverbank erosion and sloughing are of concern. Other mechanical methods involve digging and the removal of root systems, which may destabilize already compromised riverbank areas.
- Cutting keeps root systems intact and maintains soil matrix stability while replantings take root.
- Dabbing is relatively low cost and provides for more certainty of effectiveness than mechanical removal alone.
- Cutting and dabbing can be completed selectively, which will allow for comprehensive control of more invasive species (i.e., purple loosestrife and false indigo bush) while allowing for selective control of less invasive species (i.e., pokeweed).
- Dabbing is done discretely on individual plant stems; therefore, the risk is minimized to the environment as compared to broadcast applications of herbicides.
- Since dabbing is a very discrete application of herbicide, it has little or no potential to interfere with replanting and continued growth of desirable species.
- Dabbing is more thorough and effective than use of mechanical methods alone. This helps to ensure the effectiveness of replanting and site restoration.

3.4 Replanting

Replanting of the shoreline will occur in a series of selected areas experiencing extensive erosion and dense stands of false indigo bush (*Amorpha fruticosa*). In the first year, three areas measuring 15' long by 3' wide will be planted and stabilized utilizing erosion control measures and native plant restoration methods.

Planting areas are situated between existing stands of false indigo where limited herbaceous vegetation or turf currently exists. The selected areas are subject to bank sloughing as the waves collide with the shore and river levels rise and fall. To stabilize the shoreline, biodegradable coir (fiber from the outer husk of the coconut) erosion control logs will be placed parallel to the contour at the edge of the existing shoreline. Backfill soil will be placed behind the coir log at a shallow slope up to the edge of the eroded bank. A coir erosion control mat will be attached to the coir log and staked into the ground over the backfilled soil. Plantings will be placed directly into the erosion mat in a clustered pattern (refer Appendix A: Planting Details).

The following native plants have been chosen for the initial phase of planting and shoreline restoration: Pennsylvania sedge (*Carex pensylvanica*), harebell (*Campanula rotundifolia*), wild lupine (*Lupinus perennis*), and blue flag Iris (*Iris versicolor*). These plants are adapted to shoreline conditions and will contribute to soil stability, provide habitat value, and will promote species diversity upon establishment.



Figure 3--Eroded shoreline/proposed planting area

4.0 MONITORING AND MAINTENANCE PLAN

Section 4.0 discusses the proposed monitoring and maintenance plan for the Reunion Village site.

4.1 Monitoring

A bank restoration monitoring program will be conducted at the project site (refer to site plans in Appendix A). The project limits of work include a total area of approximately 250 SF. Monitoring will be conducted throughout the limits of work. Three 15-foot by 3-foot plots will be established within the limit of work.

The plots will be monitored by a wetland scientist during the subsequent two (2) growing seasons to determine percent dominance and percent cover of invasive/noxious species identified within the investigation area. The growing season will be April 15 to October 15. The wetland scientist will take photographs at the same specified locations from a fixed point so that visual comparisons can be made during future monitoring events.

After each monitoring event, proper documentation will be kept for reference and to be used for future monitoring and control of each site.

Table 1. Summary of Work to be Completed During Monitoring Efforts	
Visual Inspections	Inspect the riverbank in the restored area for presence of potential impacts, including but not limited the identification of wildlife damage, vegetative distress, and evidence of surface water concerns, if present.
Invasive Species Monitoring	Monitor the Bank Restoration Area for invasive species by evaluating established monitoring plots for the presence of more than 10% of invasive species.
Vegetation	Monitor of bank health including vegetation that has been cut back.
Stability Monitoring	Evaluate the stability of the Bio stabilization techniques including the presence of breaches, lack of vegetation, erosion, sloughing, or any other failures.

The following monitoring schedule has been established: site monitoring in the Winter of 2018 and post construction monitoring in the Spring of 2019.

At any time during the monitoring period, if 10% of invasive species or more are found within any plot, work will be conducted to remove all invasive species from the entire investigation area. Removal operations will be conducted by HOOCR volunteers and overseen by a trained wetlands scientist.

.....

If invasive species are found, all plant material including root mass, stolons, and rhizomes will be removed to prevent re-sprouting from occurring. This will occur using hand tools. The vegetation will be placed inside plastic bags, so seeds do not spread to any non-impacted areas.

When leaving the work area, all equipment and clothing used during removal will be cleaned to remove seed material before entering non-impacted areas.

The information gathered during the monitoring events will be incorporated into annual reports, to be completed at the end of 2019. The annual reports will detail the following:

- Invasive species identification.
- Methods of invasive species control (if necessary).
- Timing and frequency of control.
- Success of control methods.
- Anticipated follow-up monitoring efforts.
- Photographs of monitoring plots.

4.2 Maintenance

Maintenance will begin immediately after each plant is planted and will continue until plants are established. Plants will be watered, cultivated and otherwise maintained and protected.

Settled plants will be reset to proper grade and position and dead materials removed and replaced.

HOCR will make arrangements to water plant materials until establishment.

Plants will be kept healthy, free of pests and disease. Plants will exhibit vigorous growth, will bear foliage of normal density, size and color and will have no less than seventy five percent (75%) of their branches alive at the end of the guarantee period. If the leader of any single leader species is dead, the entire plant will be considered dead.

Reunion Village Vegetative Management Plan

ATTACHMENT A - EXISTING SITE



HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



ATTACHMENT A - SITE PLAN



HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



ATTACHMENT A - RESTORATION PLAN



CHARLES RIVER

NATIVE PLANT RESTORATION PLANTING
AREAS (THREE 15' X 3' SECTIONS)
WITH COIR EROSION CONTROL
MATTING & COIR FIBER LOGS.

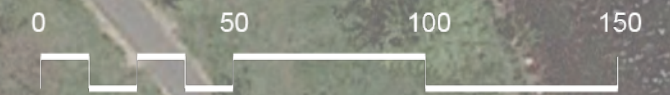
REUNION VILLAGE
HOSPITALITY AREA

DR. PAUL DUDLEY WHITE BIKE PATH

100' WETLAND BUFFER

SOLDIERS FIELD ROAD

JOHN W. WEEKS FOOTBRIDGE



SCALE 1" = 50'-0"

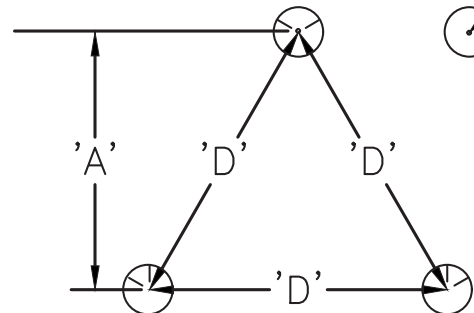


HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



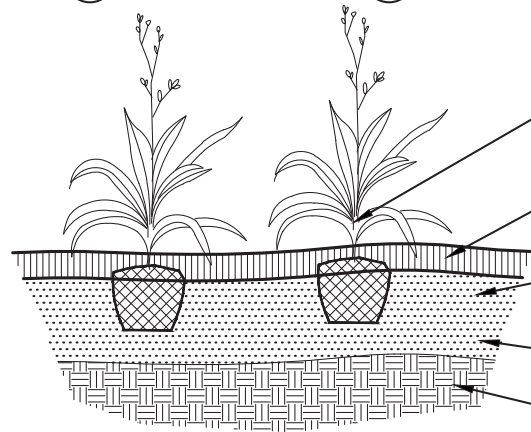
ATTACHMENT A - PLANTING DETAILS

NOTE: GRASSES AND PERENNIALS TO BE INSTALLED WITH TRIANGULAR SPACING



PLANT SPACING ' D '	ROW ' A '
8" O.C.	6.93" O.C.
10" O.C.	8.66" O.C.
12" O.C.	10.4" O.C.
18" O.C.	15.6" O.C.
24" O.C.	20.8" O.C.
36" O.C.	30.0" O.C.
48" O.C.	31.5" O.C.

PLANT (TYP.)



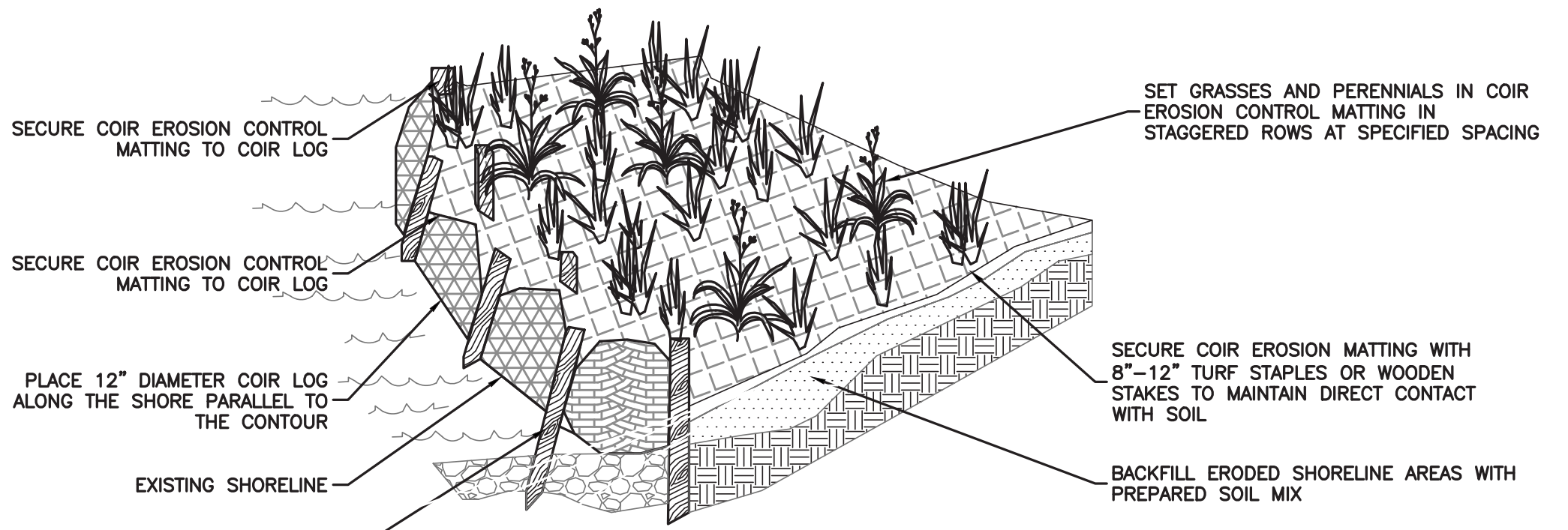
SET GRASSES AND PERENNIALS IN STAGGERED ROWS AT SPECIFIED SPACING

COIR EROSION CONTROL MATTING

EXCAVATE AREA TO DEPTH OF 6" AND PLACE PLANTING SOIL MIX

PREPARED BACKFILL SOIL MIXTURE (TOPSOIL AND AMENDMENTS).

UNDISTURBED SOIL PEDESTAL



SECURE COIR EROSION CONTROL MATTING TO COIR LOG

SECURE COIR EROSION CONTROL MATTING TO COIR LOG

PLACE 12" DIAMETER COIR LOG ALONG THE SHORE PARALLEL TO THE CONTOUR

EXISTING SHORELINE

HARDWOOD POSTS
2" X 2" X 3'

SET GRASSES AND PERENNIALS IN COIR EROSION CONTROL MATTING IN STAGGERED ROWS AT SPECIFIED SPACING

SECURE COIR EROSION MATTING WITH 8"-12" TURF STAPLES OR WOODEN STAKES TO MAINTAIN DIRECT CONTACT WITH SOIL

BACKFILL ERODED SHORELINE AREAS WITH PREPARED SOIL MIX

COIR LOG PLACEMENT

1. EXCAVATE A SHALLOW 4" TRENCH ON SLOPE CONTOUR AT SHORELINE.
2. PLACE THE ROLL IN THE TRENCH AND ANCHOR WITH 2"X2" POSTS PLACED ON BOTH SIDES OF THE ROLL AND SPACED LATERALLY ON 2' TO 4' CENTERS. TRIM THE TOP OF THE POSTS EVEN WITH THE EDGE OF THE ROLL, IF NECESSARY.
3. NOTCH THE POSTS AND TIE TOGETHER, ACROSS THE ROLL, WITH 9-GAUGE GALVANIZED WIRE OR 1/8" DIAMETER BRAIDED NYLON ROPE.
4. PLACE SOIL EXCAVATED FROM THE TRENCH BEHIND THE ROLL AND HAND TAMP. VEGETATION SHALL BE PLACED IMMEDIATELY ADJACENT TO THE ROLL TO PROMOTE ROOT GROWTH INTO THE FIBER. HERBACEOUS VEGETATION MAY BE PLANTED INTO THE FIBER ROLL.

COIR LOG AND EROSION CONTROL MATTING

PLANTING LAYOUT

PLANTING SCHEDULE

KEY	BOTANIC NAME	COMMON NAME	QUANTITY	SIZE	REMARKS
GRASSES					
CP	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	40	#1 CONT.	CONTAINER, FULL TO BASE
PERENNIALS					
CR	CAMPANULA ROTUNDIFOLIA	HAREBELL	40	#1 CONT.	CONTAINER, FULL TO BASE
LP	LUPINUS PERENNIS	WILD LUPINE	40	#1 CONT.	CONTAINER, FULL TO BASE
IV	IRIS VERSICOLOR	BLUE FLAG IRIS	40	#1 CONT.	RHIZOME, CONTAINER, FULL TO BASE

HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



ATTACHMENT B - SITE PHOTOS



P1- PANORAMIC VIEW FROM CORNER OF WALK

HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



ATTACHMENT B - SITE PHOTOS



P2- PANORAMIC VIEW FROM DR. PAUL DUDLEY WHITE BIKE PATH



P3- PANORAMIC VIEW FROM DR. PAUL DUDLEY WHITE BIKE PATH



HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA



ATTACHMENT B - SITE PHOTOS



HEAD OF THE CHARLES REGATTA
REUNION VILLIAGE HOSPITALITY AREA
BOSTON, MA

Head of the Charles Regatta
Reunion Village Hospitality Area
DEP File No. 006-1478

ATTACHMENT C - TURF DAMAGE REMEDIATION PLAN

The following plan has been developed specifically for the Head of the Charles Reunion Village Hospitality Area in response to Condition 56 of the Order of Conditions issued September 16, 2016 by the Boston Conservation Commission, DEP File No. 006-1478. This area is roughly one acre in size, as shown on the 2017 site plan.

Soil Testing: Soil samples will be taken and testing performed once every five years to determine nutrient deficiencies. Testing results will be analyzed and a site-specific fertilization strategy will be developed that responds to soil conditions as well as the immediate proximity to the Charles River.

Fertilizer / Lime: Appropriate fertilizer shall be applied mid-spring and late October. The chemical profile of the fertilization will be drafted in response to the soil testing results. Given the adjacency to the Charles River a low or no-phosphorus ratio will be used. Lime will be applied as needed to maintain an optimal pH of 6.0 – 6.7.

Aeration: Deep tine aeration will be performed mid-spring. Aeration reduces ground hardness and compaction of soil, allowing roots to breathe and grow more easily, and makes turf more resilient.

Mowing: DCR will perform their typical mowing regime March through October and as needed from October to November. Mowing schedules should not be reduced when fields are resting or otherwise inactive, as regular mowing helps to ensure thick and vigorous turf growth.

Irrigation: Newly seeded areas will be watered regularly through germination.

Seeding: Seeding will take place mid-spring. Given the compaction of the soils in this area slice seeding will be performed. The seed mix shall have a high salt tolerance and suitable for full sun exposure, be drought tolerant and disease resistant. The seed shall require low to average fertility and maintenance programs.

Pesticides: Unless there is a serious pest problem impacting the grass, pesticides will NOT be used at this site.

Excess Thatch Removal: Thatch shall be removed every five years when the soil samples are taken.