COASTAL engineering co.

260 Cranberry Highway
Orleans, MA 02653
508.255.6511 P 508.255.6700 F
Orleans | Sandwich | Nantucket
coastalengineeringcompany.com

TRANSMITTAL

To:	Provincetown Conservation Commission Attn: Tim Famulare, Agent 260 Commercial Street Provincetown, MA 02657

Date: 7/11/18 **Project No.** C14394.08

Via: ☐ 1st Class Mail ☐ Pick up ☒ Delivery ☐ Fed Ex

Phone:

Fax:

Subject: **Notice of Intent Application Filing Package**
Proposed Funicular & Site Improvements
Cape Cod Pilgrim Memorial Association
1 High Pole Hill Road
Provincetown, MA
Map 12-1 Parcel 27

No. of pages to follow:

☒ **Plans** ☐ **Copy of Letter** ☐ **Specifications** ☒ **Other**

We are sending the following items:

Copies	Date	No.	Description
10	Rev. 7/9/18		Hawk Design, Bradford Access Project
10	Rev. 7/9/18		Coastal Engineering Co., Inc., Plan Showing Proposed Site Improvements

These are transmitted as checked below:

☐ **for approval** ☒ **for your use** ☐ **as requested** ☐ **for review & comment** ☐

Remarks: Enclosed please find copies of the attached plans for the referenced project.

If you have any questions, please contact our office.

cc: Mass. DEP/SERO - Wetlands
Cape Cod Pilgrim Memorial Association
John A. Bologna, Project Manager
Jason R. Norton, Project Manager

By: Jay Norton

D:\DOC\C14300\14394.08\Permitting\NOI\Revised Plan Submittal #2\Transmittal Template.doc

RECEIVED
JUL 11 2018
By

NOTE: If enclosures are not as noted, please contact us at (508) 255-6511

PLANT SCHEDULE SITE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	PLANT SIZE		NATIVE ALTERNATIVE
AR-OG	2	Acer rubrum `October Glory`	October Glory Maple	B & B	3-3.5" CAL.			
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	Cont.	CAL	PLANT SIZE		
PG8	3	Picea glauca	White Spruce	B & B		8-10` HT.		Juniperus virginiana `Idlywild`
FLOWERING TREES	QTY	BOTANICAL NAME	COMMON NAME	Cont.	CAL	PLANT SIZE		
CF-CP	4	Cornus florida `Cherokee Princess`	Cherokee Princess Dogwood	B & B	3-3.5" CAL.			
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	Cont.	CAL	SIZE		
AC-G	4	Amelanchier canadensis `Glennform`	Rainbow Pillar Serviceberry	B & B		6-8` HT.		
DG-N	24	Deutzia gracilis `Nikko`	Slender Deutzia	Cont.		15-18" SPD.		Potentilla fruticosa
HM-CR	65	Hydrangea macrophylla `Cityline Rio`	Cityline Rio Hydrangea	Cont.		15-18" HT.		
HS-A	13	Hibiscus syriacus `Aphrodite`	Aphrodite Rose of Sharon	B & B		5-6` HT.		Clethra alnifolia
HY-Q	12	Hydrangea quercifolia	Oakleaf Hydrangea	B & B		2-2.5` HT.		
IC-ST	16	Ilex crenata `Soft Touch`	Soft Touch Japanese Holly	Cont.		18-24" HT.		Ilex glabra
IM-BP	23	Ilex x meservae `Blue Princess` Shrubform	Blue Princess Holly Shrubform	B & B		3.5-4` HT.		
MP	7	Myrica pensylvanica	Northern Bayberry	B & B		3-3.5` HT.		
R-CW	3	Rhododendron `Cunningham`s White`	Cunningham White Rhododendron	B & B		3-3.5` HT.		
TM-H	34	Taxus x media `Hicksii`	Hicks Yew	B & B		4-5` HT.		
TO-EG	15	Thuja occidentalis `Emerald Green`	Emerald Green Arborvitae	B & B		8-10` HT.		Juniperus virginiana `Idlywild`
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	Cont.			SPACING	
P	83	Perennials	Assorted Perennials	1 gal			18" o.c.	Echinacea purpurea, Rudbekia, Tiarella, Coreopsis rosea, Asclepias tuberosa
RO-AD	18	Rosa x `Apricot Drift`	Apricot Drift Rose	1 gal			24" o.c.	

*NOTE:
REFER TO SAFE HARBOR ENVIRONMENTAL "FUNICULAR SLOPE ENVIRONMENTAL MANAGEMENT PLAN" FOR SLOPE RESTORATION AND PLANTING

4-MP

BEGIN MESH FENCE

6-IM-BP 2-PG8 14-TO-EG

WROUGHT IRON FENCE

4-AC-G

6-IM-BP

9-RO-AD 8-P

25-HM-CR

6-DG-N

6-DG-N

LAWN

1-CF-CP

5-P

5-P

16-P

HIGH FESCUE DROUGHT TOLERANT LAWN

6-HY-Q

8-IC-ST

LIMIT OF SEED MIX

8-HM-CR

1-CF-CP

18-TM-H

*NOTE:
ALL DISTURBED GROUND PLANE TO BE PLANTED WITH NEW ENGLAND CONSERVATION/ WILDLIFE MIX OR EQUAL. SEE NOTE BELOW.

13-P

HIGH FESCUE DROUGHT TOLERANT LAWN

5-IM-BP

10-TM-H

1-CF-CP

6-DG-N

5-HM-CR

LIMIT OF SEED MIX

8-IC-ST

13-HS-A

5-P

5-P

1-CF-CP

6-DG-N

19-HM-CR

LAWN

6-TM-H

18-P

HIGH FESCUE DROUGHT TOLERANT LAWN

9-RO-AD 8-P

6-HY-Q

3-MP

1-PG8

BEGIN MESH FENCE

6-IM-BP

WROUGHT IRON FENCE

LAWN

3-R-CW

2-AR-OG

BRADFORD STREET

*NOTE:
REFER TO SAFE HARBOR ENVIRONMENTAL "FUNICULAR SLOPE ENVIRONMENTAL MANAGEMENT PLAN" FOR SLOPE RESTORATION AND PLANTING

New England Conservation/Wildlife Mix

SPECIES: Virginia Wild Rye, (Elymus virginicus), Little Bluestem, (Schizachyrium scoparium), Big Bluestem, (Andropogon gerardii), Creeping Red Fescue, (Festuca rubra), Switch Grass, (Panicum virgatum), Partridge Pea, (Chamaecrista fasciculata), Deer Tongue, (Panicum clandestinum), Indian Grass, (Sorghastrum nutans), Ox Eye Sunflower, (Heliopsis helianthoides), Common Milkweed, (Asclepias syriaca), Spotted Joe Pye Weed, (Eupatorium maculatum), Grass Leaved Goldenrod, (Euthamia graminifolia), Blue Vervain, (Verbena hastata), New England Aster, (Aster novae-angliae), Early Goldenrod, (Solidago juncea).
Source: New England Wetland Plants.

CONSERVATION NOTES

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE DEP ORDER OF CONDITIONS IN ADDITION TO ALL LOCAL ORDINANCES.
2. NO HERBICIDES OR PESTICIDES SHALL BE USED ON SUBJECT PROPERTY.
3. THE LIMIT OF WORK LINE SHALL BE PERMANENTLY MARKED AFTER REMOVAL OF THE HAYBALE LINE OR OTHER APPROVED S.E.C. METHODS.
4. A BUFFER ZONE OF NATURAL VEGETATION SHALL BE LEFT UNDISTURBED OUTSIDE THE WORK LIMIT AREA.
5. ALL EXPOSED SOILS TO BE LOAMED AND SEEDED.
6. LANDSCAPE CONTRACTOR SHALL MEET WITH CONSERVATION AGENT PRIOR TO COMMENCEMENT OF ANY WORK.
7. A TEMPORARY AUTOMATED ABOVE-GROUND IRRIGATION SYSTEM MAY BE REQUIRED FOR THE FIRST TWO-THREE GROWING SEASONS (AFTER WHICH THE SYSTEM IS TO BE REMOVED).

Base plan information provided electronically by Coastal Engineering Company of Orleans, Massachusetts and Brown Lindquist Fenuccio & Raber Achitects, Inc of Yarmouthport, MA.

Hawk Design, Inc.
Landscape Architecture
Land Planning
Sagamore, MA
508-833-8800
info@hawkdesigninc.com

HAWK DESIGN, INC. 2018

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BROWN, LINDQUIST, FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
PH: 508-362-8382
FAX: 508-362-2826

COASTAL ENGINEERING COMPANY, INC.

Date: 04.20.18

Revisions:

Num.	Date	Description
1.	06.07.18	Revised Plan
2.	07.09.18	Revised Plan

4/20/18

Bradford Access Project

Provincetown, Massachusetts

Drawn By: JP | Checked By: DH

Submission Planting Plan

Scale: 1/4" = 1'-0"

Sheet: L1

GENERAL NOTES:

1. THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A FUNICULAR SYSTEM WITH ASSOCIATED SITE IMPROVEMENTS.

2. SUPPLY MATERIAL, EQUIPMENT AND LABOR TO INSTALL THE PROPOSED WORK ALONG THE ACCESS AS DESCRIBED AND SHOWN ON THE PLAN AND DETAILS.

3. PERFORMANCE OF THE WORK SHALL BE IN COMPLIANCE WITH THE PLANS, SPECIFICATIONS, AND ORDER OF CONDITIONS ISSUED BY THE PROVINCETOWN CONSERVATION COMMISSION FOR THE REFERENCED PROJECT AND AS DESCRIBED BELOW.

4. ACCESS TO BE FROM OWNERS PROPERTY, WITH MATERIAL BROUGHT IN FROM BOTH THE UPLAND AND BRADFORD STREET.

5. CONSTRUCTION DETAILS TO BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.

6. ALL DISTURBED AREAS TO BE REVEGETATED TO MATCH PRE-CONSTRUCTION CONDITIONS.

7. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

8. ANY CHANGES TO THE DESIGN AND SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO IMPLEMENTATION.

9. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO EXCAVATION, AND SHALL PROTECT UTILITIES AND STRUCTURES WITHIN THE WORK AREA DURING CONSTRUCTION.

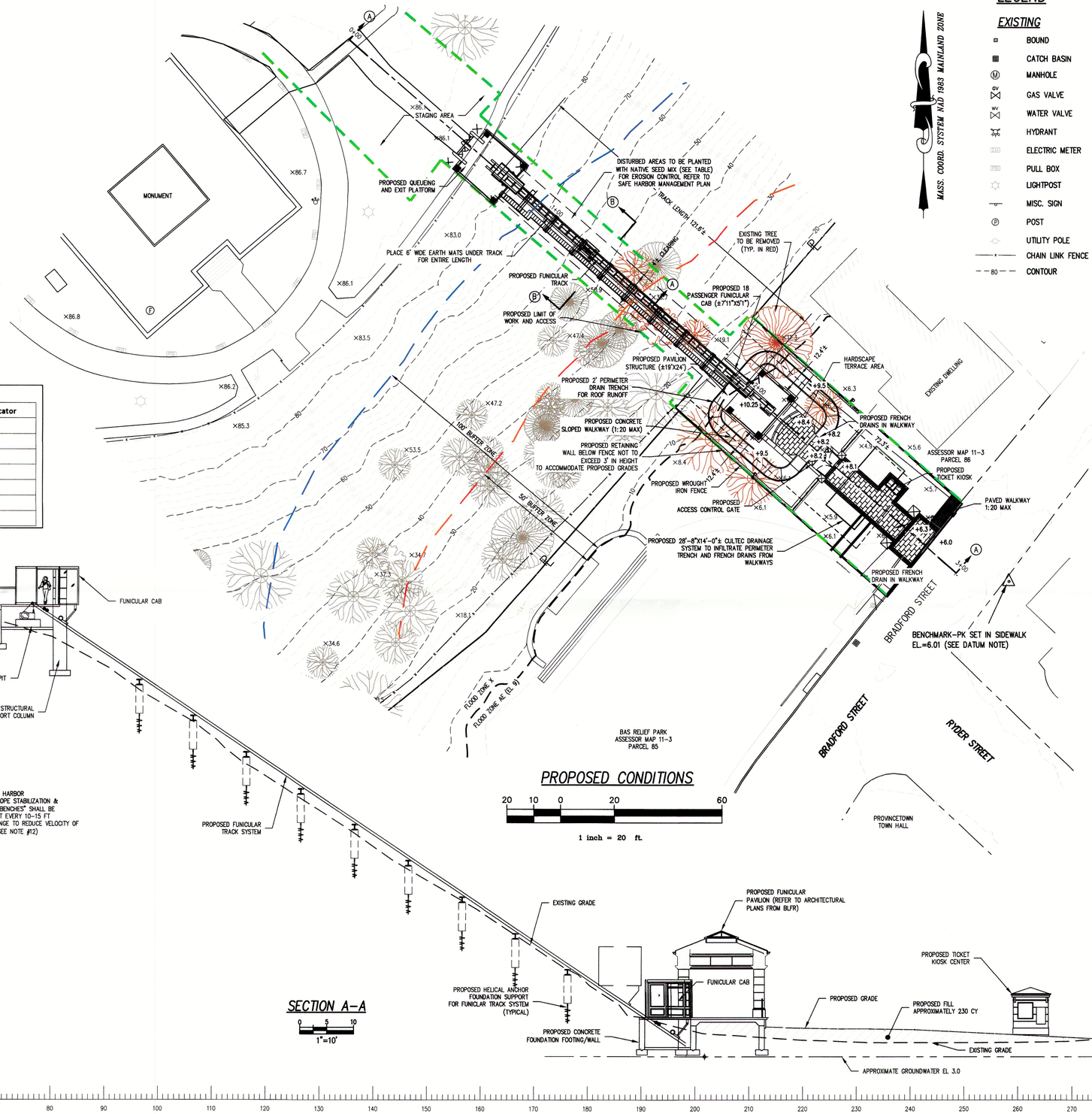
10. NO PART OF THIS DESIGN SHALL BE ALTERED WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER. ALL REQUESTS FOR CHANGES SHALL BE MADE IN WRITING PRIOR TO CONSTRUCTION.

11. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF NON VISIBLE OBSTRUCTIONS.

12. EARTH MAT SHALL BE SECURED USING COMMERCIAL CLAM FARM 24" METAL STAPLES EVERY 3 FT INSTALLED VERTICALLY OVER SAFE HARBOR SLOPE STORM WATER MANAGEMENT MINIMAL BENCHING.

New England Erosion Control/Restoration Mix for Dry Sites

Botanical Name	Common Name	Indicator
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Lolium multiflorum	Annual Ryegrass	
Lolium perenne	Perrenial Ryegrass	
Schizachyrium scoparium	Little Bluestem	FACU
Panicum virgatum	Switch Grass	FAC
Sorghastrum nutans	Indian Grass	UPL



SECTION B-B
0 2.5 5
1"=5'

SECTION A-A
0 5 10
1"=10'

FOR ARCHITECTURAL DETAILS AND LANDSCAPE ARCHITECTURAL DETAILS PLEASE REFER TO SUBMITTED PLANS FROM BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS AND HAWK DESIGN, INC FOR MORE INFORMATION

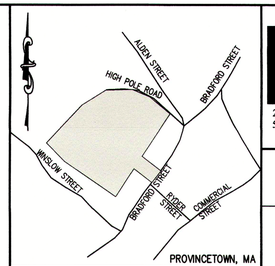
THIS DRAWING IS PREPARED FOR PERMITTING PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. CONTRACTOR SHALL OBTAIN FINAL CONSTRUCTION DETAILS FROM THE ENGINEER PRIOR TO PREPARATION OF CONSTRUCTION BID AND BEFORE BEGINNING ANY WORK.

ISSUED FOR REGULATORY (PCC) REVIEW 7/10/18

LEGEND

EXISTING

- BOUND
- CATCH BASIN
- MANHOLE
- GAS VALVE
- WATER VALVE
- HYDRANT
- ELECTRIC METER
- PULL BOX
- LIGHTPOST
- MISC. SIGN
- POST
- UTILITY POLE
- CHAIN LINK FENCE
- 80 CONTOUR



KEY MAP
NO SCALE

PLAN REFERENCES:

ASSESSORS MAP 12-1, PARCEL 27

PLAN BOOK 8, PAGE 129

L.C.P. 16813A

A PORTION OF THE TOPOGRAPHIC DATA SHOWN HEREON IS FROM NORTH EAST 2011 LIDAR TERRAIN DATA DOWNLOADED FROM NOAA WEBSITE JANUARY, 2015. TOPOGRAPHIC DATA SHOWN WITHIN PAVED ACCESS DRIVE'S, EDGE OF PAVEMENT, BRICK WALKS AND MONUMENT AREA ON BRADFORD STREET, TAKEN FROM ON THE GROUND SURVEY.

FLOOD NOTE:

FLOOD ZONE AE (EL 9) AS SHOWN ON FEMA FIRM PANEL #25001C0112J & #25001C0116J DATED JULY 16, 2014

DATUM NOTE:

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

COASTAL ENGINEERING COMPANY, INC.
260 Cranberry Hwy. Orleans, MA 02653
508.255.6511 Fax: 508.255.6700

NO.	DATE	REVISION	BY
2	2018-07-09	ADD SECTION B-B, REMOVE STONE RIP RAP UNDER TRACK	JRN
1	06-14-18	REVISED STRUCTURES	KES

SEAL
COMMONWEALTH OF MASSACHUSETTS
ROGER PAUL MICHNIEWICZ
CIVIL
No. 39924
REGISTERED PROFESSIONAL ENGINEER

PROJECT
CAPE COD PILGRIM MEMORIAL ASSOCIATION
PROVINCETOWN, MA
ONE HIGH POLE HILL ROAD

SHEET TITLE
PLAN SHOWING PROPOSED SITE IMPROVEMENTS

SCALE: AS NOTED
DRAWING FILE: C1439404-NOI 03-2018.dwg
DATE: ~~04-30-18~~
DRAWN BY: KES/JRN
CHECKED BY: JRN

C1.2.1

1 OF 2 SHEETS

PROJECT NO. C14394.08

Coastal Engineering Co., Inc. © 2018

F:\SITES\PROJ\C14000\C14394\C14394-08 - Tramway\C1439404-NOI 03-2018.dwg Jul 11, 2018 - 10:48am

COASTAL engineering co.

260 Cranberry Highway
Orleans, MA 02653
508.255.6511 P 508.255.6700 F
Orleans | Sandwich | Nantucket
coastalengineeringcompany.com

TRANSMITTAL

To:	Provincetown Conservation Commission Attn: Tim Famulare, Agent 260 Commercial Street Provincetown, MA 02657

Date: 7/12/18 **Project No.** C14394.08

Via: ☐ 1st Class Mail ☐ Pick up ☒ Delivery ☐ Fed Ex

Phone:

Fax:

Subject: **Notice of Intent Application Filing Package**
Proposed Funicular & Site Improvements
Cape Cod Pilgrim Memorial Association
1 High Pole Hill Road
Provincetown, MA
Map 12-1 Parcel 27

No. of pages to follow:

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☐ **Plans** ☒ **Copy of Letter** ☐ **Specifications** ☒ **Other**

We are sending the following items:

Copies	Date	No.	Description
10	7/12/18		Funicular Construction Methodology

These are transmitted as checked below:

☐ **for approval** ☒ **for your use** ☐ **as requested** ☐ **for review & comment** ☐

Remarks: Enclosed please find copies of the attached documents for the referenced project.

If you have any questions, please contact our office.

cc: Mass. DEP/SERO - Wetlands
Cape Cod Pilgrim Memorial Association
John A. Bologna, Project Manager
Jason R. Norton, Project Manager

By: Jay Norton

D:\DOC\C14300\14394.08\Permitting\NOI\Revised Plan Submittal #2\Transmittal Template2.doc

NOTE: If enclosures are not as noted, please contact us at (508) 255-6511

COASTAL
engineering co.

July 12, 2018

Project # C14394.08

By Hand Delivery

Conservation Commission
Attn: Tim Famulare, Agent
260 Commercial Street
Provincetown, MA 02657

Re: **Funicular Construction Methodology**
Proposed Funicular & Site Improvements
Cape Cod Pilgrim Memorial Association
1 High Pole Hill Road
Provincetown, MA
Map 12-1 Parcel 27

On behalf of our client, Cape Cod Pilgrim Memorial Association, this letter is intended to provide general information regarding the construction methodology of the Funicular project. It has been broken down into 6 categories as follows: Mobilization and Site Preparation, Support Foundation System, Funicular Construction, Pavilion Construction, Landscaping and Hardscaping, and Operations and Commissioning.

Mobilization and Site Preparation (Duration: Approximately 1-2 Weeks)

At the commencement of construction, the contractor will mobilize equipment to the site including but not limited to: crane, excavator, pick-up trucks with equipment and tools. The crane will be positioned at either the top of the hill or the bottom of the hill depending on contractor preference. The contractor will also initiate limits of work fencing to demarcate the construction zone.

Figure 1 - Typical Crane

The site will be prepared as shown on the design plans, with the majority of the clearing to be conducted by hand. The slope is too steep for machines, so a crane might be used to supplement areas that cannot be achieved by foot.

Erosion control measures as consistent with Safe Harbor Environmental protocols will be implemented immediately following site preparation to aid in stabilization and the control of runoff.

Figure 2 - Helical Anchor

Support Foundation System (Duration: Approximately 4 weeks)

Upon completion of the site preparation, the contractor shall install the low impact support foundation system that consists of helical anchors. The helical anchors are mechanically torqued into the ground to alleviate vibratory forces to the substrate and surrounding areas. The helical anchors are embedded into the substrate to a depth of approximately 30'. There are approximately 2 helical piers per every 10 feet. This is achieved by either crane, or by hand torque equipment. Once the anchors have reached their required embedment depth, the contractor shall prepare the connection system to accept the funicular track and associated bracket supports. You can see from Figure 3 the ground surrounding the funicular and helical anchor system is very much intact.

Figure 3 - Similar installation

Funicular Construction (Duration: Approximately 4 weeks)

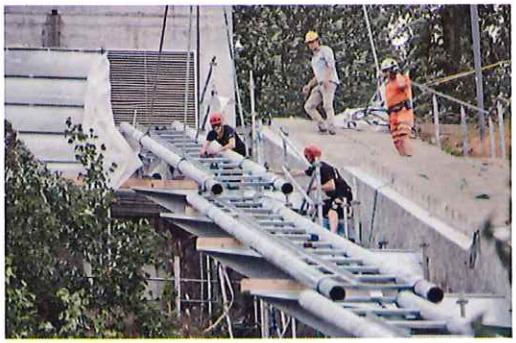


Figure 4 - Laying the track system

After the support foundation is complete, the contractor shall commence on the installation of the elevator pit and machine room areas at the top and bottom of the funicular system. The tension weight frame is then placed in the machine room prior to the installation of the track system.

The track system and associated emergency access stairway is then installed with a crane starting from the bottom and working their way to the top of the funicular system. Once the track is installed, the cable system is constructed and the cab is then attached to the track and cable system.

Pavilion Construction (Duration: Approximately 4 weeks)

Following the installation of the funicular system, the associated pavilion structure shall be constructed at the base of the system as well as the platform system at the top of the funicular. In parallel with this phase, the electrical and mechanical components of the funicular system will be finalized.

Landscaping, Lighting, Hardscaping and Drainage (Duration: Approximately 3 Weeks)

This phase can occur in conjunction with the pavilion structure phase as long as there are no site conflicts. The drainage system is to be installed first, with the hardscaping, landscaping and lighting to follow in accordance with the design plans.

Operations/Commissioning of System (Duration: Approximately 1-2 Weeks)

Lastly, the operation component shall be finalized including kiosk implementation and associated operational components. The commissioning of the system is required to ensure proper functionality and safety.

Furthermore, as specifically stated in Safe Harbor's Long-Term Funicular Slope Management Plan, the site will be inspected daily during construction. This document has also been submitted as part of the supplemental information for the commission. If you have any questions or require additional information, please give our office a call. Thank you.

Sincerely,

COASTAL ENGINEERING CO., INC.

Jay R. Norton
Senior Project Manager

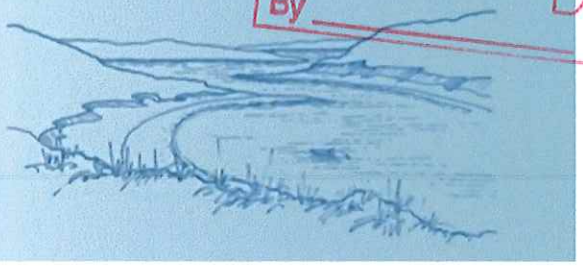
Enclosures: as stated

cc: Mass. DEP/SERO - Wetlands
Cape Cod Pilgrim Memorial Association
John A. Bologna, Project Manager

RECEIVED
JUL 0 9 2018
By

SAFE HARBOR

ENVIRONMENTAL MANAGEMENT
HABITAT RESTORATION



Date: July 9, 2018
To: Provincetown Conservation Commission
From: Safe Harbor Environmental Services
Contact: PO Box 275, Provincetown MA gordonpeabody@gmail.com
phone 508-237-3724
Re: Pilgrim Monument and Provincetown Museum

REVISED: FUNICULAR SLOPE ENVIRONMENTAL MANAGEMENT PLAN

I. Slope Characteristics and Condition

1. Provincetown consists entirely of **Post Glacial, unconsolidated** sediments. These materials have settled and gravity compacted, during the past 2,000 years, most having a slender profile of overburden. These materials exhibit exceptional percolation properties.
2. This particular dune was among the first created in Provincetown, as the stable, Harbor shoreline (Dynamic Equilibrium, Graham Geise) allowed the landform to expand to the north. Abundant sand supply was delivered from the then Ocean beach, which is where the current Church Cemetery is now.
3. Now that this historic landform is no longer collecting sand or eroding to nourish the Ocean beach, it is no longer performing as a dune and cannot qualify for protection as such (Graham Geise CCS; Jim Mahala DEP)
4. Similar to parallel landforms along Bradford Street, this landform is stable.

II. Excavation protocol

1. Helical anchors shall be used to avoid excavation

III. Concrete protocol

1. To protect slope ground water from high pH concrete percolate, poly liners shall be used beneath forms and to collect over pour.
2. Concrete shall be managed per Safe Harbor guidelines "***Managing Concrete in Sensitive Areas***" Safe Harbor 2018, 6 pages.

IV. Erosion Control

1. Raw areas shall be stabilized with jute netting secured by cornstarch ground staples.
2. Multiple lines of minimal, horizontal benching shall be created to manage and recharge storm water.
3. Zero discharge performance standards shall be maintained with integrated biolog-silt fence erosion control systems, as described in, ***"Biolog-Silt fence Erosion Control System",*** Safe Harbor 2017 (7 pages).
4. A semi-permeable filter fabric shall be used as a silt fence.
5. The filter fabric shall be properly pressed (not dug) into the grade 4-6 in. using a lawn-edging tool.
6. The filter fabric shall be vertically stapled to additional Oak stakes inserted every 5 ft.
7. Low impact jute netting/straw biologs shall be installed on the activity-area-side of the silt fence.
8. Biologs shall be 12-16 in. in diameter, as required to maintain zero discharge performance standards.
9. The biologs shall be secured with 6 in. cornstarch ground staples, every ft.
10. Anytime sediment buildup against the biolog exceeds 4 in. the load shall be removed by hand, to a location outside the LOW.
11. These erosion control systems shall be regularly inspected
12. This system shall be inspected weekly and following storm pulse events and serviced to maintain performance standards.
13. Where EC systems intersect site access areas, necessary openings shall be reclosed at end of day.

V. Slope Restoration

1. No changes to native species are proposed for the slope.
2. Invasive vegetation shall be removed using Safe Harbor protocols for working with invasive vegetation. Protocols are described in ***"The Dirty Dozen of Cape Cod, Third edition"*** Safe Harbor, 2017 (20 pages).
3. Specific, low impact protocols are modeled after successful, exceptionally steep Safe Harbor slope stabilization projects. (***see images below)***
4. Stabilization and revegetation are ongoing, linked projects
5. Slopes shall be stabilized using Safe Harbor natural systems, as described in Safe Harbor Booklet ***"Stabilizing Steep and Very Steep Slopes Using Natural Systems"*** Safe Harbor, 2017 (15 pages).
6. Native plantings will be supervised by Safe Harbor, using established, Safe Harbor protocols.
7. End of growing season report shall be provided to the Commission.

VI. Slope Restoration Model : Images by G. Peabody, over 5 month period

VII. Funicular Slope Planting Plan

1. Native vegetation on slope removal area will be transplanted on adjacent slope when feasible.
2. Transplanting shall be performed by trained Safe Harbor workers.
3. All vegetation removal work shall be done by hand.
4. Trees shall be removed by professional arborist
5. Tree removal may require crane assist.
6. A portion of removed trees may be left on adjacent slope as habitat.
7. Removed trees dbh > 12" will be replaced 3-1, same species, 7 ft tall, and 3- 1 gal native Bear oaks
8. Removed trees dbh 12"-6" will be replaced 2-1, same species, 7 ft tall, and 3- 1 gal native Bear oaks.
9. Removed trees dbh 6"-4" will be replaced 1-1, same species, 7 ft tall and 3- 1 gal native Bear oaks.
10. Trees will be sited in open areas and installed a minimum of 10' away from any funicular components to avoid any future conflicts.
11. Tree replacement plantings shall be performed by trained Safe Harbor workers.
12. Invasive vegetation shall be removed from the Funicular slope area by trained Safe Harbor workers in areas immediate to the funicular structure.
13. Remaining bare areas beneath Funicular shall be seeded with native grasses.
14. Additional areas on adjacent slopes, equal to the total square footage of slope disturbance, shall be seeded with native shade grass seed mix.
15. Limited, seasonal above ground irrigation, shall be incorporated as necessary, to protect survivability.

VIII. LONG RANGE FUNICULAR SLOPE MANAGEMENT PLAN (5 YRS)

1. **GOALS:** The goal of this plan is to establish long term monitoring protocols to protect the performance standards of the funicular area slope.
2. **PERFORMANCE STANDARDS:** Maintaining effective stability; erosion control; storm water management; water quality; and habitat restoration.
3. **STRATEGIES:** Our core strategy is based on using natural systems, utilizing native vegetation and existing profiles, creating minimal disturbance.
4. **INSPECTIONS: Short Term:** During construction-daily; First growing season-weekly; Off season: monthly; and post Pulse event.
5. **INSPECTIONS: Long Term**: Second growing season-biweekly; Therein after-monthly; and post Pulse event.
6. **REPORTS:** Written, photo documented reports shall be filed with the Commission: project updates during construction; planting activity reports.
   Annually for 5 years: end of growing season report; end of year report assessing the performance of individual and integrated natural systems in maintaining project goals.