

**Civil  
Site Planning  
Environmental  
Engineering**

133 Court Street  
Portsmouth, NH  
03801-4413

June 25, 2025

Peter Britz, Planning and Sustainability Director  
City of Portsmouth Municipal Complex  
1 Junkins Avenue  
Portsmouth, New Hampshire 03801

**Re: Request for a Conservation Commission Work Session  
Assessor's Map 207, Lot 13  
60 Pleasant Point Drive  
Altus Project No. 5138  
LU 23-180**

**UPLOADED TO VIEWPOINT**

Dear Peter,

On behalf of Michelle and John Morris and 120-0 Wild Rose Lane, LLC, Altus Engineering and the design team respectfully submits a request for a work session with both Planning Staff and the Conservation Commission for the property located at 60 Pleasant Point Drive for shoreland bank stabilization.

On December 21, 2023, the Planning Board approved the Wetland Conditional Use Permit (CUP) from Section 10.1017.50 of the Zoning Ordinance "for the demolition of the existing home and construction of a new dwelling". The project consists of 5,368 sf of impervious surface including a dock, two sets of stairs, a pool, patio, cabana, and a portion of the home, which results in a reduction of 31 sf from the existing conditions. The project includes pervious pavers within the buffer, a long-term storm-water maintenance plan, landscaping plan within the buffer, a bank restoration plan, replacement of the existing lawn with a micro-clover seed mix and the removal of invasive species on site." The original CUP approval was a "living shoreline" designed by landscape architectural firm Matthew Cunningham Landscape Design LLC.

Following the approval of the CUP, the NHDES Wetlands Bureau completed their review of the shoreline stabilization project. NHDES Wetlands Bureau requested engineering computations and submitted requests for more information (RFMI) to support the "Shoreline Stabilization" design approach proposed by the Landscape Architect. TFM was brought on board by the Owner to provide an engineered design solution. Working with NHDES via responses to RFMIs, it was determined, that using a green, soft stabilization approach such as a Living Shoreline alone would not adequately protect the property from future storm events and rising tides. Engineered and NHDES approved is a hybrid stabilized bank that has demonstrated resiliency.

The NHDES Wetlands Bureau Permit was issued on November 4, 2024. Riverside and Pickering Marine Contractors constructed the shoreline stabilization depicted on the TFM plans and approved by NHDES. Inspection by city employees post-construction led to a requirement by the city for this re-submission.

This work session request is only for the Hybrid Living Shoreline aspects of the previously approved CUP. The house demolition/construction, stormwater management improvements, invasive species removal and all other conditions depicted on the November 28, 2023 plan set and the Conditions of approved noted in the December 27, 2023 approval letter will remain in effect and will be carried out as approved, all a significant improvement over long existing conditions.

Enclosed for the Planning staff and Conservation Commission review please find the following:

- Letter of Authorization
- Previously approved November 28, 2023 Site Plans (stabilization work and details only)
- TFM Living Shoreland Plan – Shoreline Stabilization Plan
- TFM response to NHDES RFMI (request for more information), dated August 28, 2024
- TFM response to NHDES RFMI, undated “Responses relative to the construction of the Living Shoreline”

An as-built survey is being completed to confirm the limits of the Hybrid Living Shoreline and will be made available to the City.

We look forward to resolving the issues and allowing Morris to construct their new home. Please feel free to call or email me directly should you have any questions or need any additional information.

Sincerely,

**ALTUS ENGINEERING, LLC**




Enclosure

eCopy: Michelle and John Morris  
R. Timothy Phoenix, Esq.  
Jay Aube, TFM  
Ben Auger, Auger Building Company

wde/5138.00 cup cvr rev 2 ltr.docx

### Letter of Authorization

I, John Morris, of 120-0 Wild Rose Lane, LLC, hereby authorize Altus Engineering, Inc. of Portsmouth, NH to represent me as the Owner and Applicant in all matters concerning the engineering and related permitting of a residential redevelopment on Portsmouth Tax Map 207, Lot 13 located at 60 Pleasant Point Drive, Portsmouth, New Hampshire. This authorization shall include any signatures required for Federal, State and Municipal permit applications.

 _____ Signature	<u>John G. Morris</u> John Morris	<u>2/15/21</u> Date
<u>Michelle Morris</u> Witness	<u>Michelle Morris</u> Print Name	<u>2/15/21</u> Date





**ZONING DATA PER CITY OF PORTSMOUTH ZONING ORDINANCE  
(LAST AMENDED DECEMBER 16, 2019):**

ZONE: Single Residence B (SRB)

**REQUIREMENTS:\***

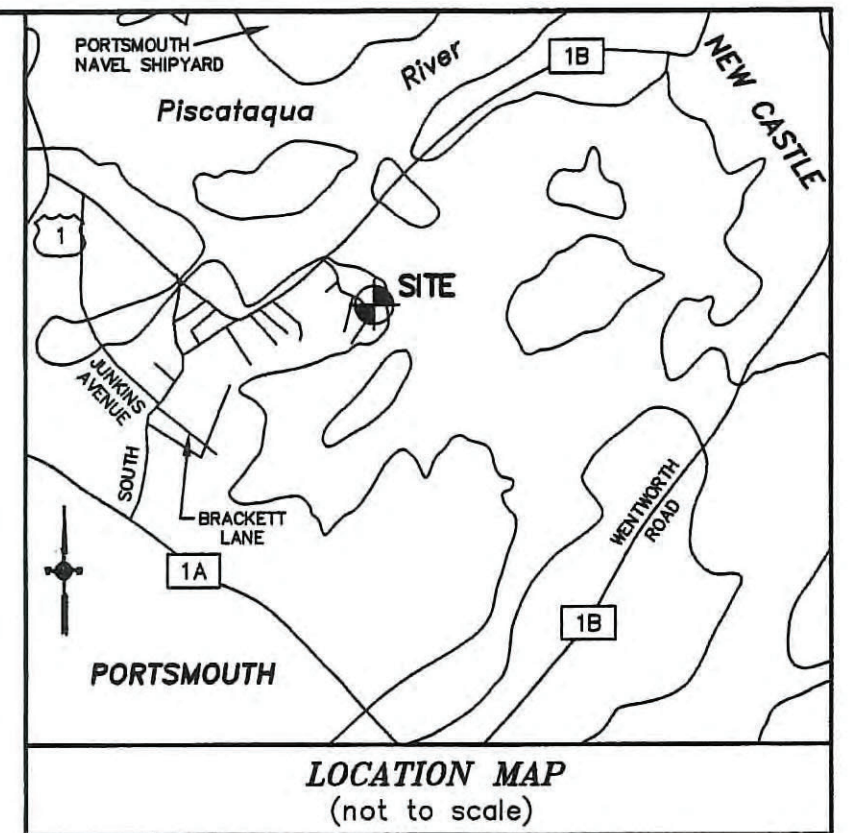
MINIMUM LOT AREA: 15,000 Square Feet  
MINIMUM STREET FRONTAGE: 100 Ft  
MINIMUM LOT DEPTH: 100 Ft  
MINIMUM FRONT SETBACK: 30 Ft  
MINIMUM SIDE SETBACK: 20 Ft  
MINIMUM REAR SETBACK: 40 Ft  
MAXIMUM BUILDING HEIGHT:  
SLOPED ROOF: 35 Ft  
MAXIMUM BUILDING COVERAGE: 20%  
MINIMUM OPEN SPACE: 40%

**BUILDING COVERAGE CALCULATION:**

TOTAL LOT AREA TO H.O.T.: 46,840± SQ. FT.  
HOUSE: 2,621 SQ. FT.  
BUILDING COVERAGE: 5.6%

**OPEN SPACE CALCULATION:**

TOTAL LOT AREA TO H.O.T.: 46,840± SQ. FT.  
DRIVEWAY: 4,910± SQ. FT.  
HOUSE: 2,621± SQ. FT.  
PATIO/POOL: 1,707± SQ. FT.  
DECK: 309± SQ. FT.  
CONCRETE/MISC.: 182± SQ. FT.  
STEPS: 172± SQ. FT.  
RETAINING WALLS: 114± SQ. FT.  
TOTAL COVERAGE: 10,015 SQ. FT.  
OPEN SPACE: 36,825± SQ. FT. (78.6%)



**PLAN REFERENCES:**

1. "EXISTING CONDITIONS PLAN PLEASANT POINT DRIVE ASSESSOR'S PARCEL 207-014 PORTSMOUTH, NEW HAMPSHIRE FOR OWNERS JOAN S. WALDRON KIMBERLY WALDRON LEVY", PREPARED BY JAMES VERRA AND ASSOCIATES, INC., DATED JULY 11, 2005.
2. "PLAN OF LOTS NEW CASTLE AVENUE PORTSMOUTH, N.H. FOR ROBERT A. MOEBUS & HENRY C. SIVK", PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, DATED OCTOBER 1952, AND RECORDED AT THE R.C.R.D. AS PLAN No. 02160-B.
3. "LAND IN PORTSMOUTH, N.H. ROBERT A. MOEBUS TO HENRY C. SIVK AND HENRY C. SIVK TO ROBERT A. MOEBUS", PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, DATED JUNE 1951, REVISED DECEMBER 1953.

**NOTES:**

1. OWNERS OF RECORD:  
TAX MAP 207 LOT 13  
120-0 WLD ROSE, LLC  
R.C.R.D. BOOK 6174 PAGE 1450  
DATED OCTOBER 5, 2020
2. TOTAL EXISTING PARCEL AREA:  
TAX MAP 207 LOT 13  
1.08± Acres To H.O.T.L.
3. BASIS OF BEARING IS NEW HAMPSHIRE S.P.C.
4. APPROXIMATE ABUTTER'S LINES SHOWN HEREON ARE FOR REFERENCE PURPOSES ONLY AND SHALL NOT BE RELIED UPON AS BOUNDARY INFORMATION.
5. EASEMENTS OR OTHER UNWRITTEN RIGHTS MAY EXIST THAT ENCUMBER OR BENEFIT THE PROPERTY NOT SHOWN HEREON.
6. ZONING INFORMATION AND SETBACKS SHOWN HEREON ARE FOR REFERENCE PURPOSES. CONFIRM CURRENT ZONING REQUIREMENTS WITH THE CITY OF PORTSMOUTH PRIOR TO DESIGN OR CONSTRUCTION.
7. THE BOUNDARY SHOWN HEREON IS DETERMINED FROM WRITTEN RECORDS, FIELD EVIDENCE AND PAROL TESTIMONY RECOVERED AT THE TIME OF SURVEY AND MAY BE SUBJECT TO CHANGE IF OTHER EVIDENCE BECOMES AVAILABLE.
8. A PORTION OF THE LOCUS PARCEL FALLS WITHIN SPECIAL FLOOD HAZARD AREA AE, WITH A BASE FLOOD ELEVATION OF 8 FT. PER FEMA FIRM MAP No. 33015C0278F, REVISED JANUARY 29, 2021.
9. THE HIGHEST OBSERVABLE TIDE LINE (HOTL) OF THE PISCATAQUA RIVER, WHICH CORRESPONDS WITH THE COASTAL WETLAND BOUNDARY, WAS DELINEATED BY JOSEPH W. NOEL, NEW HAMPSHIRE CERTIFIED WETLAND SCIENTIST #086 ON DECEMBER 11, 2020. REFER TO LETTER/REPORT DATED DECEMBER 15, 2020 FOR MORE INFORMATION. THE DELINEATION WAS CONDUCTED IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS DOCUMENT "CORPS OF ENGINEERS WETLAND DELINEATION MANUAL", (1987), ALONG WITH THE REQUIRED "REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION", (VERSION 2, JANUARY 2021).

**PURPOSE OF PLAN:**

THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS FOR DESIGN PURPOSES. THIS PLAN IS NOT A STANDARD BOUNDARY SURVEY AND IS NOT INTENDED TO BE RECORDED, USED FOR CONVEYANCE, OR ANY OTHER TITLE PURPOSE.

**VEGETATION LEGEND:**

- DECIDUOUS TREE
- CONIFEROUS TREE
- "SIGNIFICANT" SHRUB
- "HIGH TIDE BUSH" (Iva Frutescens)

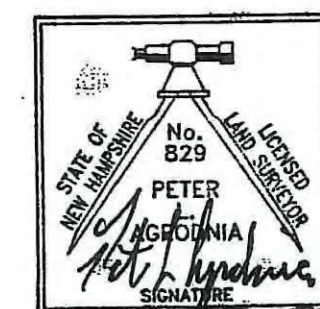
**GRAPHIC SCALE**



( IN FEET )  
1 inch = 20 ft.  
VERTICAL DATUM - NGVD29

PISCATAQUA RIVER

PISCATAQUA RIVER



10/19/2023

**EXISTING CONDITIONS PLAN**

FOR PROPERTY AT

60 Pleasant Point Drive

Portsmouth, Rockingham County, New Hampshire

OWNED BY

120-0 Wild Rose Lane, LLC

c/o Altus Engineering, Att. Erik Soari, V.P.  
133 Court Street, Portsmouth, New Hampshire 03801

North

EASTERLY  
SURVEYING

SURVEYORS IN N.H. & MAINE 1021 GOODWIN ROAD, UNIT #1  
(207) 439-6333 ELIOT, MAINE 03903

REV.	DATE	STATUS	BY	CHKD	APPD.
A	4/2/21	ADDED ADDITIONAL TREES & ABUTTER BUILDINGS	A.H.P.	P.L.A.	P.L.A.

SCALE: 1" = 20'	PROJECT NO. 20770	DATE: 02/04/21	SHEET: 1 OF 1	DRAWN BY: A.H.P.	CHECKED BY: P.L.A.
DRAWING No: 20770 EXISTING CONDITIONS FIELD BOOK No: "Portsmouth #17"				Tax Map 207 Lot 13	



## PLANTING SCHEDULE

ID	Latin Name	Common Name	Scheduled Siz
<b>TREES</b>			
AGA	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	10-12' B&B
CC	Cercis canadensis	Redbud	4-4.5" cal. B&B
COG	Chamaecyparis obtusa 'Gracilis'	Gracilis Hinoki Falsecypress	10-12' B&B
CK	Cornus kousa	Kousa Dogwood	8-10' B&B
CVW	Crataegus viridis 'Winter King'	Winter King Hawthorne	4-4.5" cal. B&B
HD	Hamamelis x intermedia 'Diane'	Diane Witchhazel	3-4' ht. B&B
IO	Ilex opaca	American Holly	10-12' B&B
JV	Juniperus virginiana	Eastern Red Cedar	8-10' B&B
PA2	Picea abies	Norway Spruce	10-12' ht. B&B
PA	Picea abies	Norway Spruce	10-12' ht. B&B
PO	Picea orientalis	Oriental Spruce	10-12' ht. B&B
TP	Thuja plicata 'Green Giant'	Green Giant Arborvitae	10-12' ht. B&B

## SHRUBS

AE	Aesculus parviflora	Bottlebrush Buckeye	5-6' ht. B&B
AAB	Aronia arbutifolia 'Brilliantissima'	Red Chokeberry	#7 cont.
CL	Clethra alnifolia	Summersweet	3-4' ht. B&B
CP	Comptonia peregrina	Sweetfern	#3 cont.
FMA	Fothergilla x intermedia 'Mount Airy'	Mount Airy Fothergilla	3-4' ht. B&B
HPE	Hydrangea anomala petiolaris	Climbing Hydrangea	#3 cont.
HAA	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	#5 cont.
HLL	Hydrangea paniculata 'Little Lime'	Little Lime Hydrangea	2.5-3' ht. B&B
HQA	Hydrangea quercifolia 'Alice'	Alice Oakleaf Hydrangea	3-3.5' ht. B&B
HQP	Hydrangea quercifolia 'Pee Wee'	Pee Wee Oakleaf Hydrangea	2-2.5' ht. B&B
HS	Hydrangea serrata 'Bluebird'	Bluebird Lacecap Hydrangea	#5 cont.
IGS	Ilex glabra 'Shamrock'	Dwarf Inkberry	3.5-4' ht. B&B
IVR	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry	2-3' ht. B&B
IVS	Ilex verticillata 'Southern Gentleman'	Southern Gentleman Winterberry	#2 cont.
LB	Lindera benzoin	Spicebush	3-4' ht. B&B
MG	Myrica gale	Sweetgale	#3 cont.
MP	Myrica pensylvanica	Northern Bayberry	3-3.5' ht. B&B
PM	Prunus maritima	Beach Plum	3-4' ht. B&B
RCW	Rhododendron 'Cunningham's White'	Cunningham's White Rhododendron	2.5-3' ht. B&B
RCA	Rhododendron catawbiense 'Album'	White Catawba Rhododendron	3-4' ht. B&B
RM	Rhododendron maximum	Rosebay Rhododendron	5-6' ht. B&B
WR	Viburnum nudum 'Winterthur'	Winterthur Viburnum	4-5' ht. B&B

## PERENNIALS

ARA	Actaea racemosa	Snakeroot	#1 cont.
AMO	Alchemilla mollis	Lady's Mantle	#1 cont.
ADL	Astilbe 'Delft Lace'	Delft Lace Astilbe	#1 cont.
ABV	Astilbe 'Bridal Veil'	Bidal Veil Astilbe	#1 cont.
CPN	Carex pensylvanica	Oak Sedge	#1 cont.
DPU	Dennstaedia punctiloba	Hay-Scented Fern	#1 cont.
GRZ	Geranium 'Rozanne'	Rozanne Cranesbill	#1 cont.
LIP	Lavandula intermedia 'Phenomenal'	Phenomenal Lavender	#1 cont.
MST	Matteuccia struthiopteris	Ostrich Fern	#1 cont.
NWL	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	#1 cont.
PLF	Paeonia lactiflora 'Festiva Maxima'	Festiva Maxima Peony	#2 cont.
PLS	Paeonia lactiflora 'Sarah Bernhardt'	Sarah Bernhardt Peony	#2 cont.
PAH	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	#2 cont.
PAT	Perovskia atriplicifolia	Russian Sage	#2 cont.
SSC	Schizachyrium scoparium 'Carousel'	Carousel Little Bluestem	#2 cont.
SH	Sporobolus heterolepis	Prairie Dropseed	#2 cont.

## RESTORATION PLANT LIST

## SHRUBS

Scientific Name	Common Name
Rosa virginiana	Virginia Rose
Prunus maritima	Beach Plum
Ilex glabra	Inkberry
Myrica pensylvanica	Bayberry
Viburnum dentatum	Arrowwood Viburnum
Comptonia peregrina	Sweetfern
Arctostaphylos uva-ursi	Bearberry

## GRASSES (SEED)

Scientific Name	Common Name
Panicum amarum	Atlantic Coastal Panic Grass
Panicum virgatum	Switch Grass
Eragrostis spectabilis	Purple Love Grass
Juncus gerardii	Salt Meadow Rush
Sporobolus heterolepis	Prairie Dropseed
Ammophila breviligulata	American Beachgrass
Bouteloua gracilis	Blue Gramma
Schizachyrium scoparium	Little Bluestem
Festuca rubra	Red Fescue

## PLUGS AND CONTAINERS

Scientific Name	Common Name
Amorpha canescens	Lead Plant
Amsonia Spp.	Blue Star
Aquilegia canadensis	Eastern Columbine
Asclepias tuberosa	Butterfly Milkweed
Baptisia australis	Blue False Indigo
Eurybia spectabilis	Eastern Showy Aster
Heuchera americana	American Alumroot
Liatris aspera	Button Blazing Star
Penstemon digitalis	Bear-Tongue
Solidago sempervirens	Seaside Goldenrod
Waldsteinia fragarioides	Barren Strawberry

## NOTES:

- LANDSCAPE ARCHITECT TO SUBSTITUTE PLANTS WITH PLANT OF COMPARABLE SIZE AND SPECIES AT TIME OF INSTALLATION.
- RESTORATION PLANT PALETTE IS NOT FINALIZED BUT WILL ONLY INCLUDE PLANTS FROM THIS LIST. ALL PLANTS LISTED ARE NATIVE.



## PLANTING LEGEND:

---	PROPERTY LINE / LIMIT OF WORK
---	BUILDING SETBACK
---	APPROXIMATE LIMIT OF WORK
L.O.W.	
	LAWN
	PLANT BED
	EXISTING DECIDUOUS TREE TO REMAIN AND BE PROTECTED
	EXISTING EVERGREEN TREE TO REMAIN AND BE PROTECTED
	PROPOSED DECIDUOUS TREE PLANTING
	PROPOSED EVERGREEN TREE PLANTING
	PROPOSED SHRUB PLANTING
	PROPOSED PERENNIAL PLANTING

## Morris Residence

60 Pleasant Point Drive  
Portsmouth, NH

## General Notes:

- Existing conditions and topographic data are from a site plan of land dated 8 February 2021; prepared by Altus Engineering, INC., 133 Court Street, Portsmouth, NH 03801 - Tel: (603) 433.2335
- Existing conditions supplemented from data collected by: Matthew Cunningham Landscape Design LLC, 411 Main Street, Stoneham, MA 02108 / 366 Fore Street, Portland, ME 04101 - Tel: (617) 905.2246

## Planting Notes:

- The contractor shall supply all plant material in quantities sufficient to complete the planting shown on all drawings.
- All plant material shall conform to the guidelines established by "The American Standard for Nursery Stock" published by The American Association of Nurserymen, latest edition.
- All plant material shall be warranted for 1 year after substantial completion.
- All plants shall be balled and burlap unless otherwise noted on the plant list/ schedule.
- All plants shall be approved by Landscape Designer prior to their installation at the site.
- Contractor shall stake all plant locations in the field. Obtain approval of Landscape Designer before starting plant installations.
- Plants to be transplanted shall be flagged and exact planting locations staked in the field.
- All areas disturbed by construction shall be restored to a pre-construction state unless otherwise noted by landscape architect or plans.

MATTHEW  
CUNNINGHAM  
LANDSCAPE  
DESIGN LLC

matthew-cunningham.com

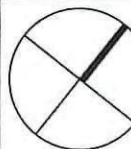
411 Main Street, Stoneham, MA 02180  
366 Fore Street, Portland, ME 04101  
617.905.2246 p | 617.321.4014 f

## REVISIONS:

#:	DATE:	DESCRIPTION:

SCALE: 1"= 20'-0"

DATE: 25 October 2023



0' 10' 20' 40'

SHEET TITLE:

Planting Plan

SHEET NUMBER:

L0.2

NOT FOR CONSTRUCTION



General Notes:

1. Existing conditions and topographic data are from a site plan of land dated 8 February 2021; prepared by Altus Engineering, INC., 133 Court Street, Portsmouth, NH 03801 - Tel: (603) 433.2335
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matthew-cunningham.com

411 Main Street, Stoneham, MA 02180  
366 Fore Street, Portland, ME 04101  
617.905.2246 p | 617.321.4014 f

REVISIONS:

#	DATE:	DESCRIPTION:

SCALE: AS SHOWN      DATE: 25 October 2023

SHEET TITLE:

Planting Details

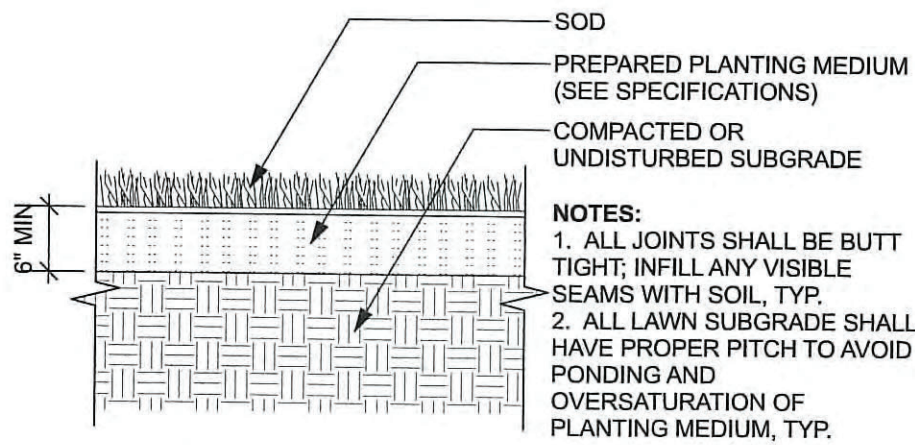
SHEET NUMBER:

L0.3

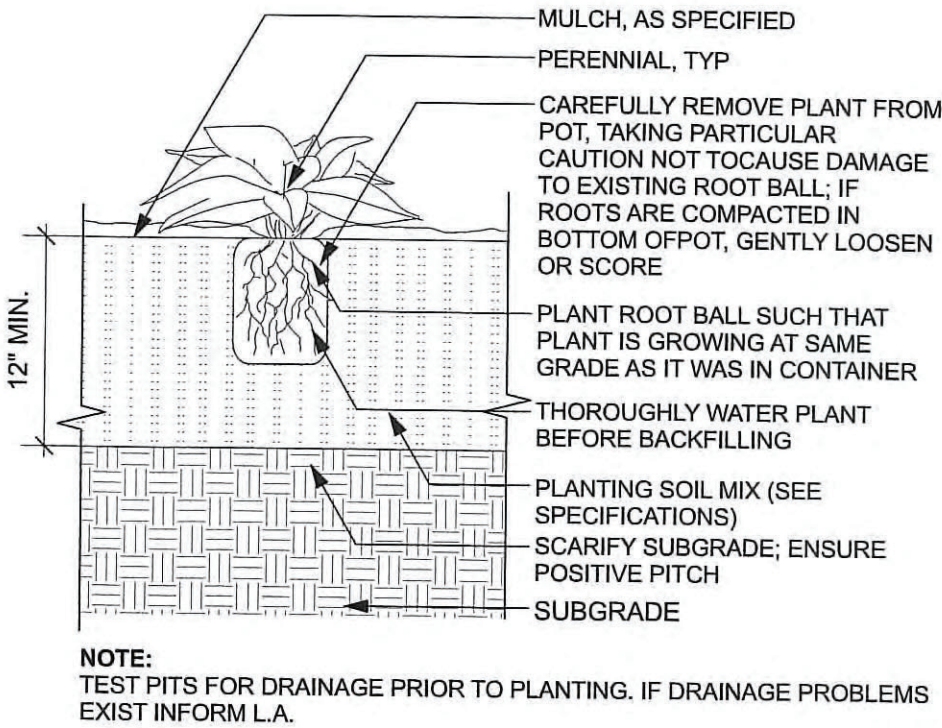
NOT FOR CONSTRUCTION

SODCO MICRO CLOVER BLEND	
%	PRODUCT
97.00%	BLACK BEAUTY TURF **
3.00%	WHITE CLOVER
**SEE BLACK BEAUTY TURF BELOW	

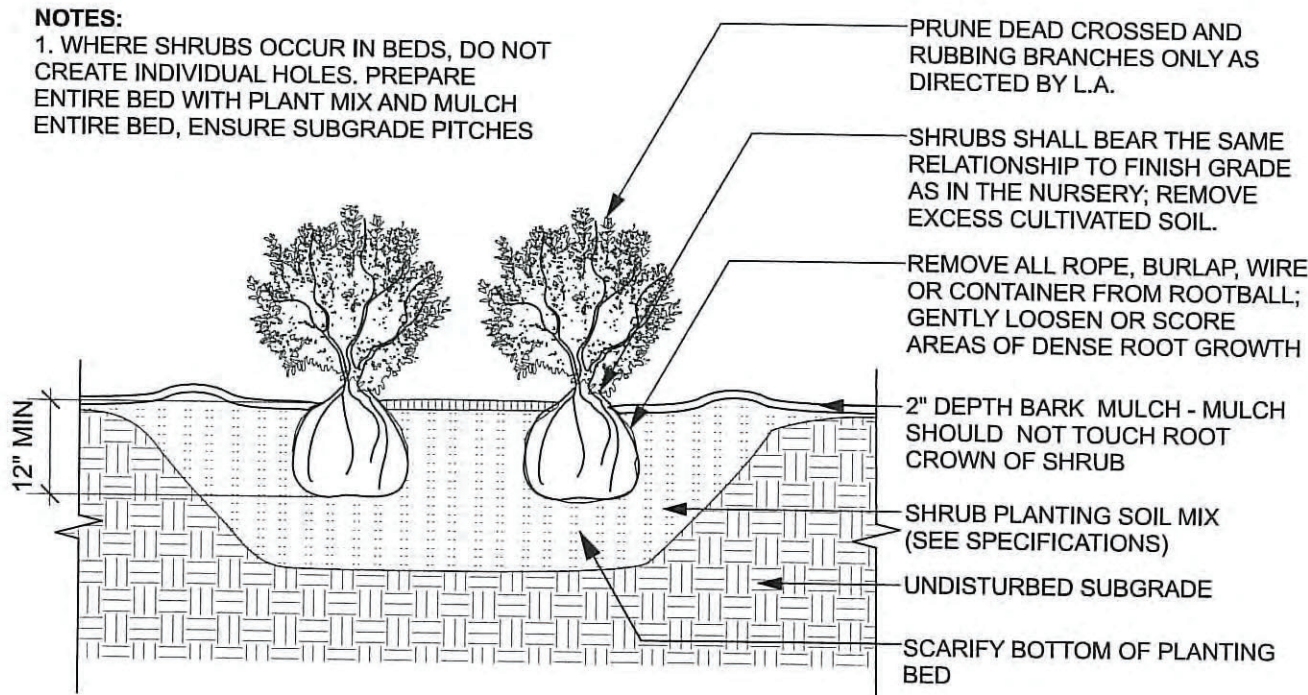
** BLACK BEAUTY TURF	
%	PRODUCT
29.72%	GOLCONDA TALL FESCUE
19.88%	MONTANA TALL FESCUE
19.74%	DORADO TALL FESCUE
11.72%	DEEPBLUE KENTUCKY BLUEGRASS
7.91%	PROSPERITY KENTUCKY BLUEGRASS
4.97%	FRONTIER PERENNIAL RYEGRASS
4.92%	SINGULAR PERENNIAL RYEGRASS
1.14%	INERT MATTER



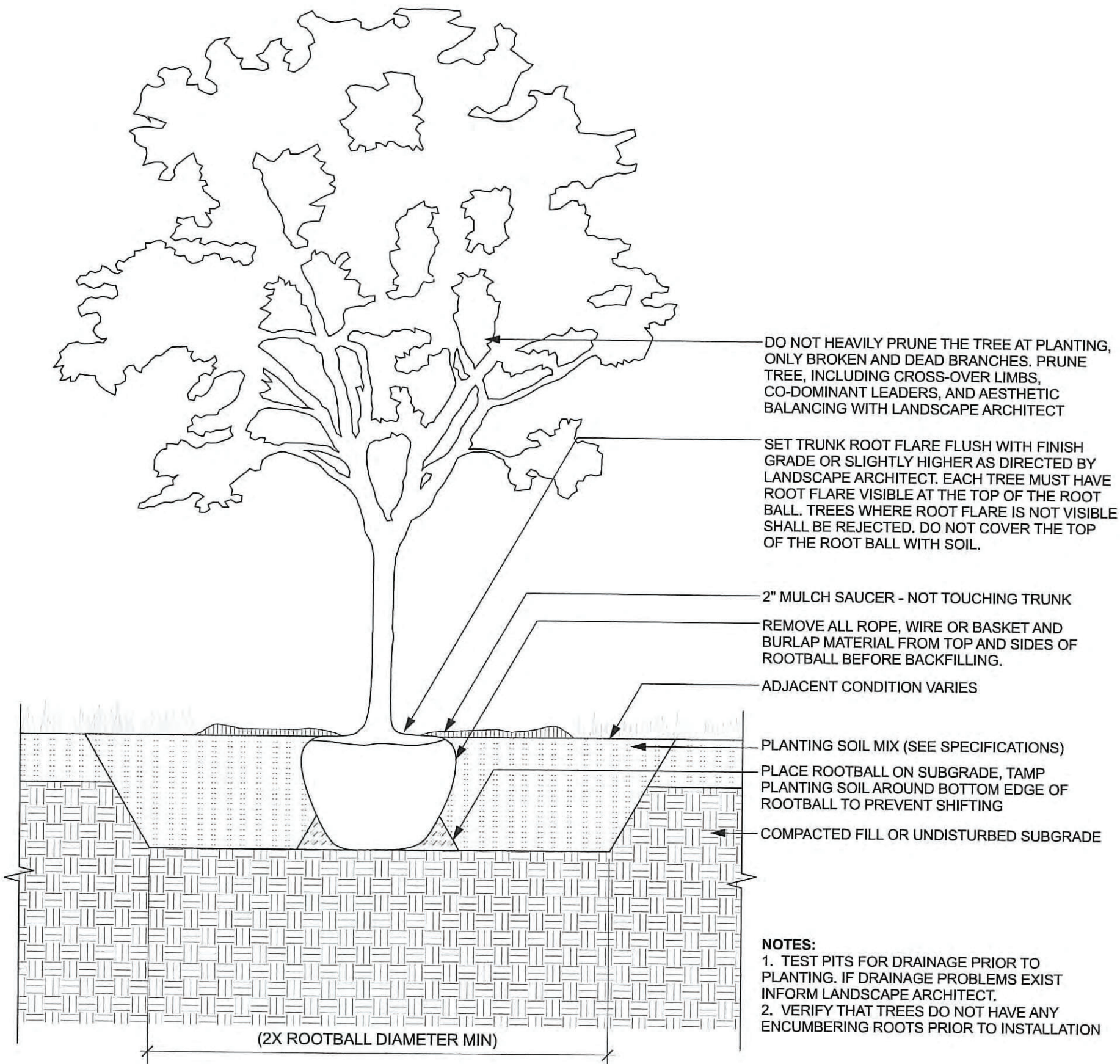
1 MICRO CLOVER SOD  
Scale: NTS



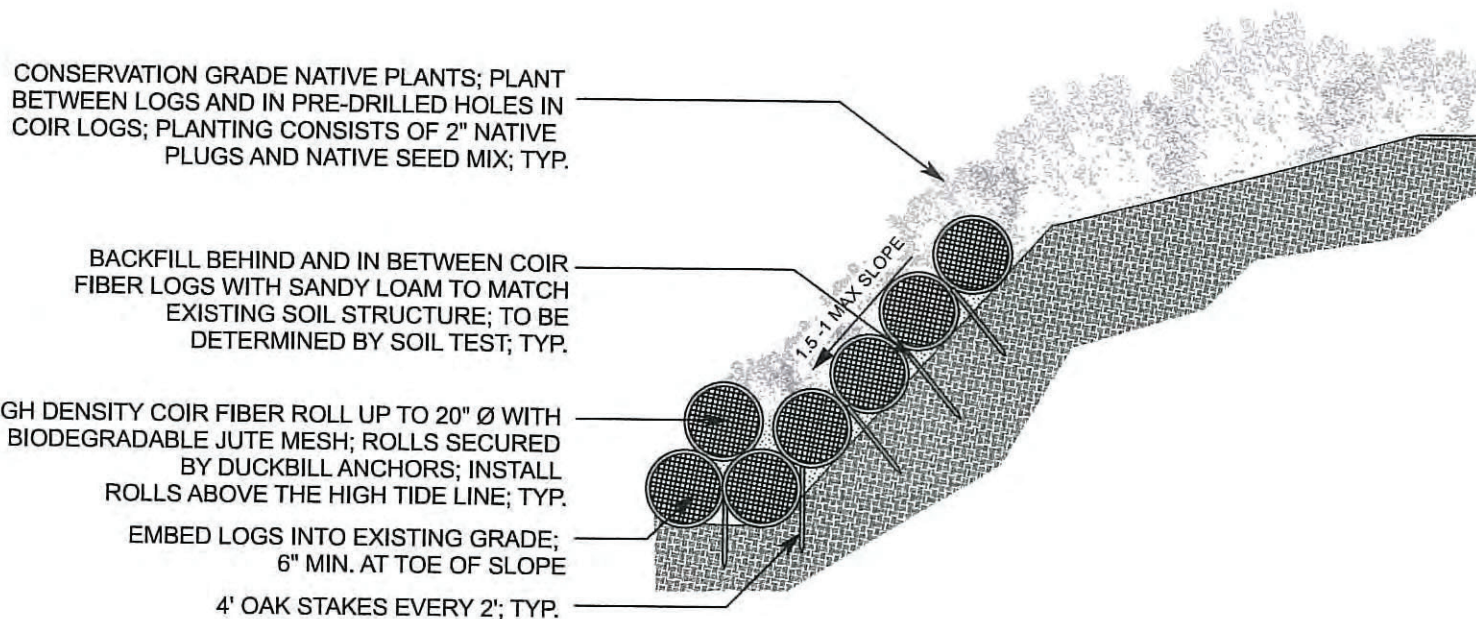
3 PERENNIAL PLANTING  
Scale: NTS



4 SHRUB PLANTING  
Scale: NTS



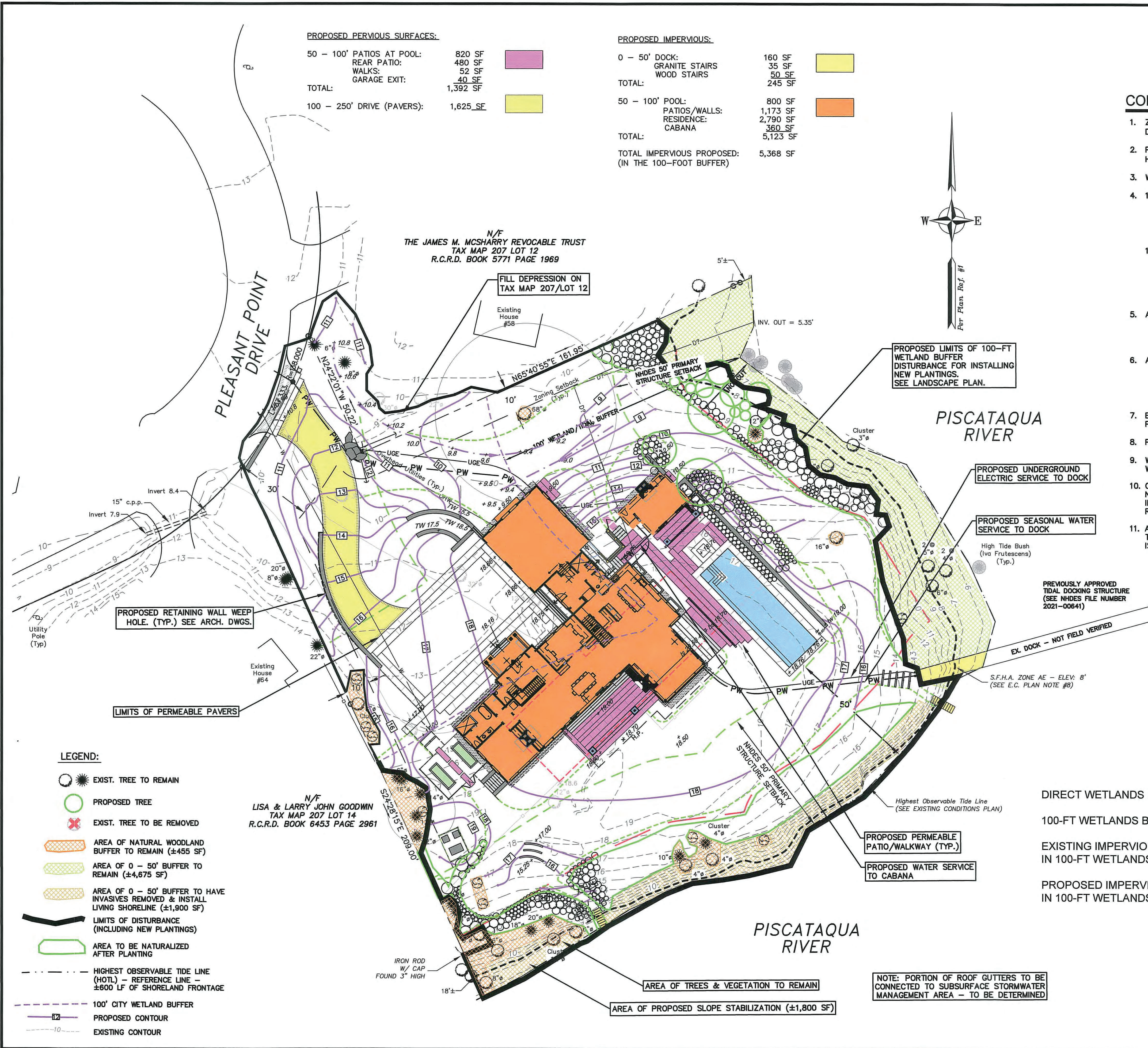
5 TREE PLANTING  
Scale: NTS



6 Coir Fiber Rolls on Coastal Bank Edge  
Scale: NTS

- NOTES:
1. COASTAL BANK TO BE PREPARED IN ADVANCE BY MANAGING INVASIVE PLANT SPECIES AND CLEARING ANY DEBRIS SO THAT COIR LOGS WILL COME IN DIRECT CONTACT WITH SOILS; SEE LAND MANAGEMENT PLAN FOR DETAILS ON METHOD OF EXISTING INVASIVE SPECIES REMOVAL.
2. LINEAR FOOTAGE OF COIR FIBER ROLLS TO BE VERIFIED IN THE FIELD.
3. LIMIT OF WORK IS INTENDED TO BE LANDWARD OF THE HOTL.





APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE

### CONDITIONAL USE PERMIT NOTES

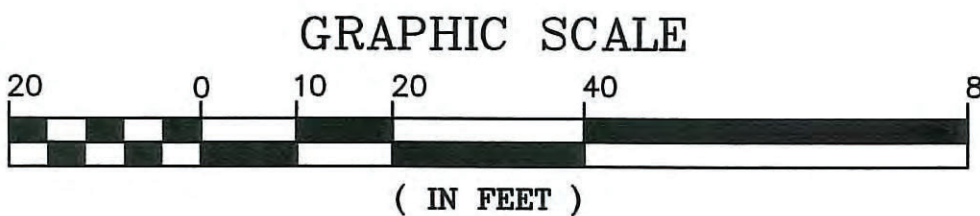
- ZONING SECTION 10.1016 - CONDITIONAL USE PERMIT REQUIRED FOR EARTH DISTURBANCE IN THE 100' CITY WETLAND BUFFER.
- PROJECT PARCEL: MAP 207 LOT 13, 46,840 S.F.± (1.08 ACRES±) TO HIGHEST OBSERVABLE TIDE LINE (HOTL).
- WETLAND AREA ON LOT: 0 S.F. (0 ACRES)
- 100' WETLAND BUFFER ANALYSIS (EXISTING CONDITIONS):  
LAWN/LANDSCAPING: ±22,553 S.F.  
BRUSH/TREES: ± 6,575 S.F.  
PERVIOUS SURFACES: ±1,392 S.F.  
IMPERVIOUS: ± 5,399 S.F.  
TOTAL BUFFER: ±34,527 S.F. (±0.79 ACRES)
- 100' WETLAND BUFFER ANALYSIS (PROPOSED CONDITIONS):  
LAWN/LANDSCAPING: ±16,662 S.F.  
BRUSH/TREES: ±11,105 S.F.  
PERVIOUS SURFACES: ±1,392 S.F.  
IMPERVIOUS: ±5,368 S.F.  
TOTAL BUFFER: ±34,527 S.F. (±0.79 ACRES)
- AREA OF 100' WETLAND BUFFER IMPACT:  
ONSITE: ±31,300 S.F.  
OFFSITE: ± 20 S.F. (REPLACE PORTION OF STEPS BELOW HOTL)  
TOTAL: ±31,320 S.F. (±0.56 ACRES)
- AREA OF TREE/BRUSH REMOVAL IN 100' WETLAND BUFFER:  
0-25': ± 0 S.F.  
25'-50': ± 0 S.F.  
50'-100': ±40 S.F. (REMOVE 1 TREE)  
TOTAL: ±40 S.F. (DOES NOT INCLUDE INVASIVES)
- EXISTING IMPERVIOUS SURFACES IN 50-FOOT BUFFER: 868 S.F.  
PROPOSED IMPERVIOUS SURFACES IN 50-FOOT BUFFER: 245 S.F.
- PROPOSED WETLAND IMPACT: 20 S.F. (REPLACE STAIRS)
- WETLANDS (HOTL) WERE DELINEATED BY JOSEPH W. NOEL, NH CERTIFIED WETLANDS SCIENTIST #086, ON DECEMBER 11, 2020.
- CONSTRUCTION ACTIVITIES SHALL BE MANAGED IN STRICT ACCORDANCE WITH NH RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES. NO INVASIVE SPECIES SHALL BE INSTALLED ON THE PROJECT SITE FOR ANY REASON.
- AREAS WHERE EXISTING INVASIVE SPECIES ARE TO BE REMOVED & ROOTS TREATED ARE NOT INCLUDED IN AREAS OF DISTURBANCE BECAUSE THERE IS NO DISTURBANCE TO THE EXISTING GRADES.

### CONSERVATION COMMISSION RECOMMENDATIONS:

- IN ACCORDANCE WITH SECTION 10.1018.40 OF THE ZONING ORDINANCE, APPLICANT SHALL INSTALL PERMANENT WETLAND BOUNDARY MARKERS ALONG THE 25' VEGETATIVE BUFFER DURING PROJECT CONSTRUCTION. THESE CAN BE PURCHASED THROUGH THE CITY OF PORTSMOUTH PLANNING AND SUSTAINABILITY DEPARTMENT.
- APPLICANT SHALL PROVIDE MONTHLY INVASIVE MANAGEMENT AND PLANTING UPDATES TO THE PLANNING AND SUSTAINABILITY DEPARTMENT ONCE REMOVAL BEGINS AND UNTIL THE END OF THE RESTORATION PROCESS (SEE MANAGEMENT CALENDAR FOR TREATMENT AND PLANTING). THESE UPDATES SHALL BE A REPORT SUMMARIZING THE ACTIVITIES PERFORMED, THE SUCCESS RATES, ANY PROPOSED PLAN CHANGES, AND ANY UPCOMING ACTIVITIES INVOLVING THE 25' VEGETATIVE BUFFER ON SITE. IF PLANTS HAVE NOT ACHIEVED AN 80% SUCCESS RATE OR GREATER AFTER ONE YEAR, APPLICANTS WILL REPLANT AND REPORT BACK TO THE PLANNING AND SUSTAINABILITY DEPARTMENT ONE YEAR AFTER PLANTING IS COMPLETE AND EACH SUBSEQUENT YEAR UNTIL AN 80% PLANTING SUCCESS RATE HAS BEEN ACHIEVED.

### WETLANDS IMPACT TABLE

DIRECT WETLANDS IMPACTS	= 20 SF (REPLACE STEPS)
100-FT WETLANDS BUFFER IMPACTS	= 31,300 SF
EXISTING IMPERVIOUS AREA IN 100-FT WETLANDS BUFFER	= 5,399 SF
PROPOSED IMPERVIOUS AREA IN 100-FT WETLANDS BUFFER	= 5,368 SF



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NOT FOR CONSTRUCTION

ISSUED FOR:  
CONSERVATION COMM. REVIEW

ISSUE DATE:  
NOVEMBER 28, 2023

REVISIONS

NO. DESCRIPTION	BY DATE
0 INITIAL SUBMISSION	EDW 10/27/23
1 ADD CON. COMM. REC.	EDW 11/28/23

DRAWN BY: RLH  
APPROVED BY: EDW  
DRAWING FILE: 5138SITE.dwg

SCALE:  
(22"x34") 1" = 20'  
(11"x17") 1" = 40'

OWNER:  
120-0 WILD ROSE LANE, LLC  
209 WATER STREET  
NEWBURYPORT, MA 01950

APPLICANT:  
120-0 WILD ROSE LANE, LLC  
209 WATER STREET  
NEWBURYPORT, MA 01950

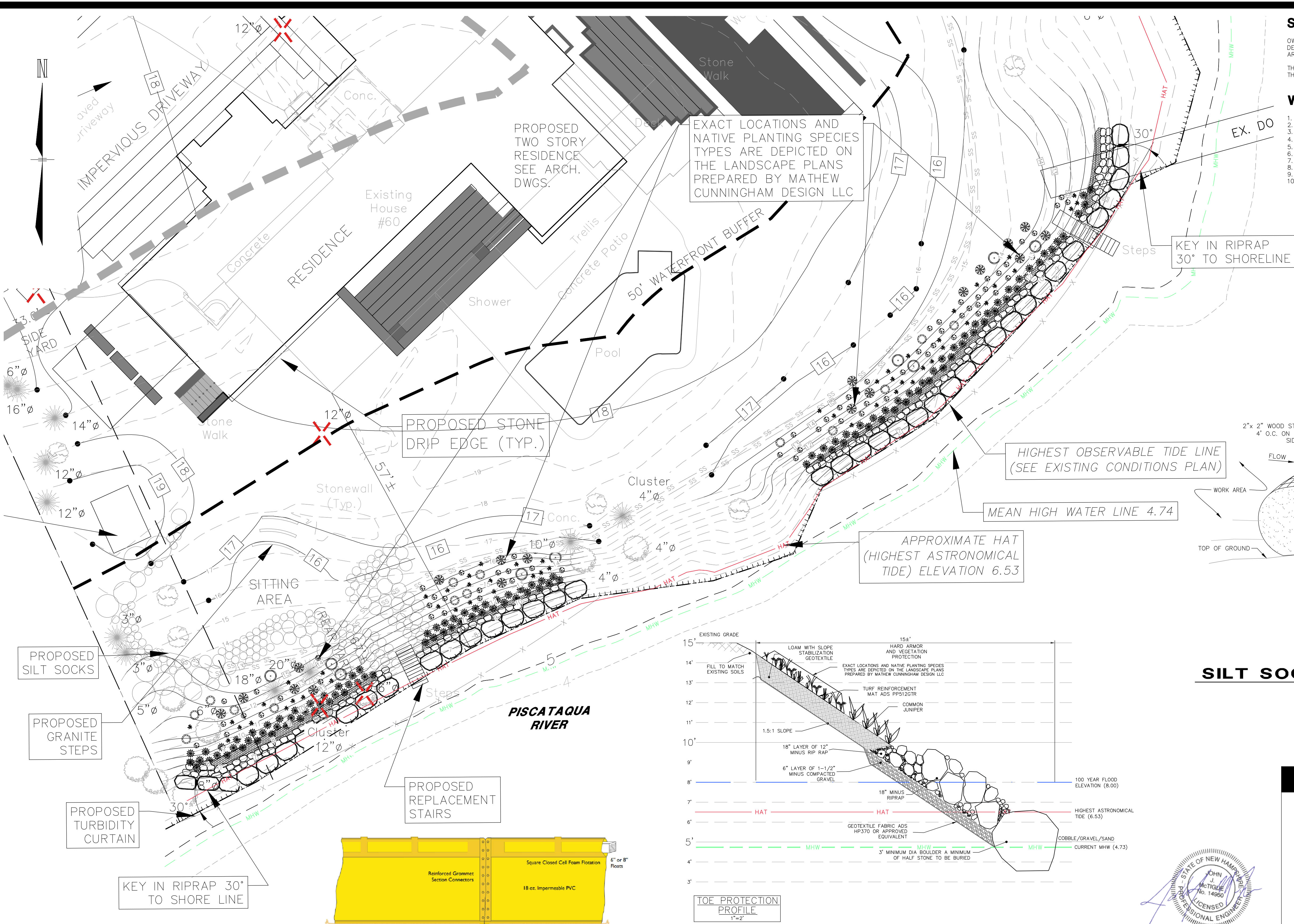
PROJECT:  
JOHN & MICHELLE  
MORRIS  
RESIDENCE  
TAX MAP 207, LOT 13  
60 PLEASANT POINT DRIVE  
PORTSMOUTH, NH

TITLE:  
CONDITIONAL USE  
PERMIT PLAN

SHEET NUMBER:  
1 OF 1



Sep 09, 2024 - 5:36pm  
F:\MISC Projects\47307-20 - Pleasant Point Dr - Portsmouth\47307-20 - Living Shoreline-plan.dwg



## SITE DATA

OWNER: OWNER OF RECORD OF MAP 207 LOT 13: 120-0 WILD ROSE LANE, LLC  
DEED REFERENCE TO PARCEL IS BK #6174 PG #1450  
AREA OF PARCEL = 50530± SF OR 1.16± ACRES

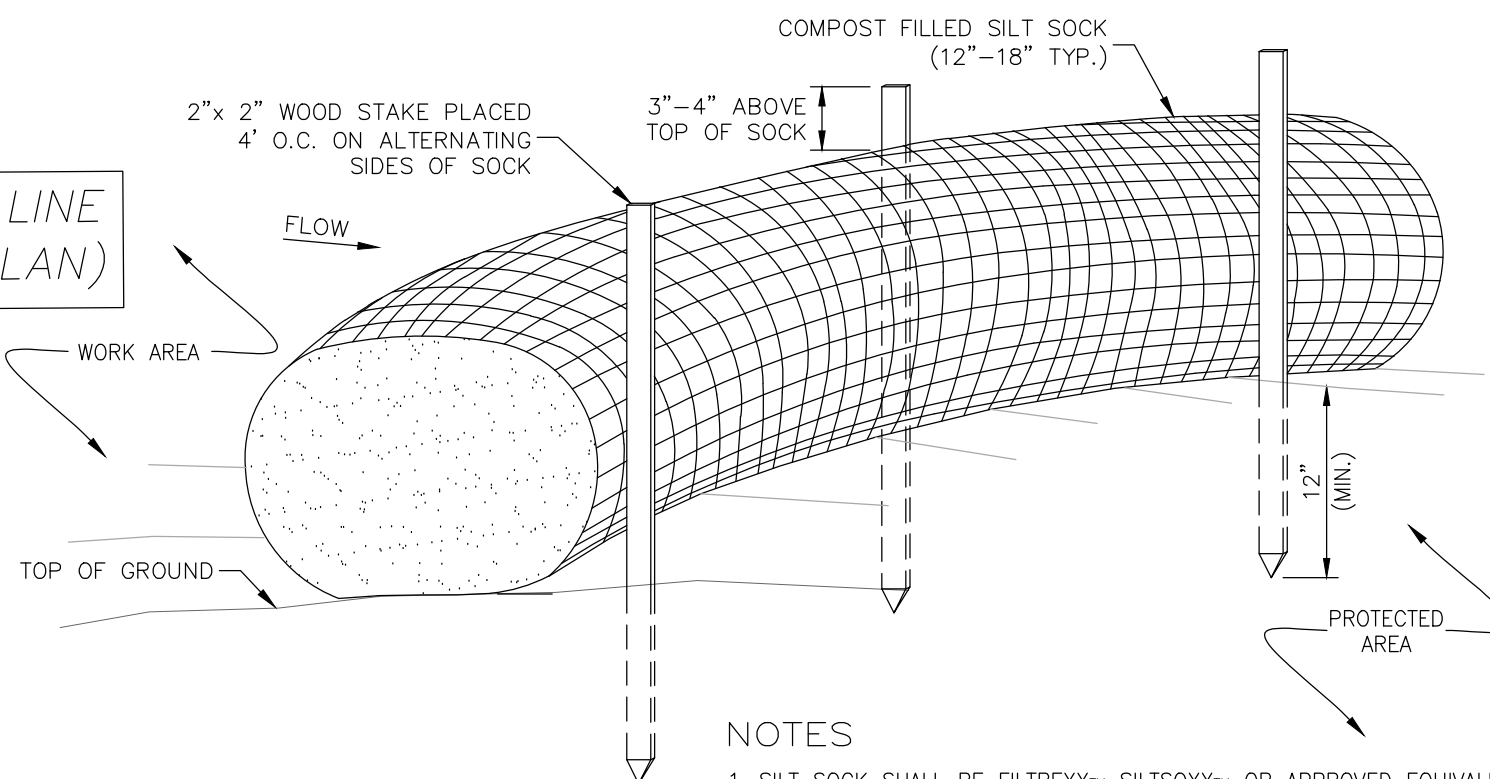
THE PURPOSE OF THIS PLAN IS TO DEPICT A SHORELINE STABILIZATION PROJECT THAT INCORPORATES BOTH HARD ARMOR AND VEGETATION ELEMENTS

## WORK SEQUENCE NOTES

1. REMOVE ALL INVASIVE VEGETATION
2. LAY FILTER FABRIC
3. 2-3 TON-TON STONES
4. 16"-18" ARMOR STONE
5. 7"-12" RIP RAP
6. CHINK WHERE NEEDED WITH SMALLER STONE
7. IMPLEMENT WEEP HOLES TO ALLOW DRAINAGE
8. INTEGRATE VEGETATION BEHIND RIP RAP WALL
9. SLOPE OF BANK IS 1.5:1
10. TO THE GREATEST EXTENT PRACTICABLE EXISTING TREES WILL REMAIN

## LEGEND

TURBIDITY CURTAIN	— X — X —
SILT SOCKS	— SS — SS —
EXISTING CONTOURS	— 16 — 16 —
PROPOSED CONTOURS	— 16 —
HOTL	TTTTTTTTTTTTTTTT
COMMON JUNIPER	
3' MINIMUM DIA BOULDERS	
18" MINUS RIPRAP	
12" MINUS RIPRAP	

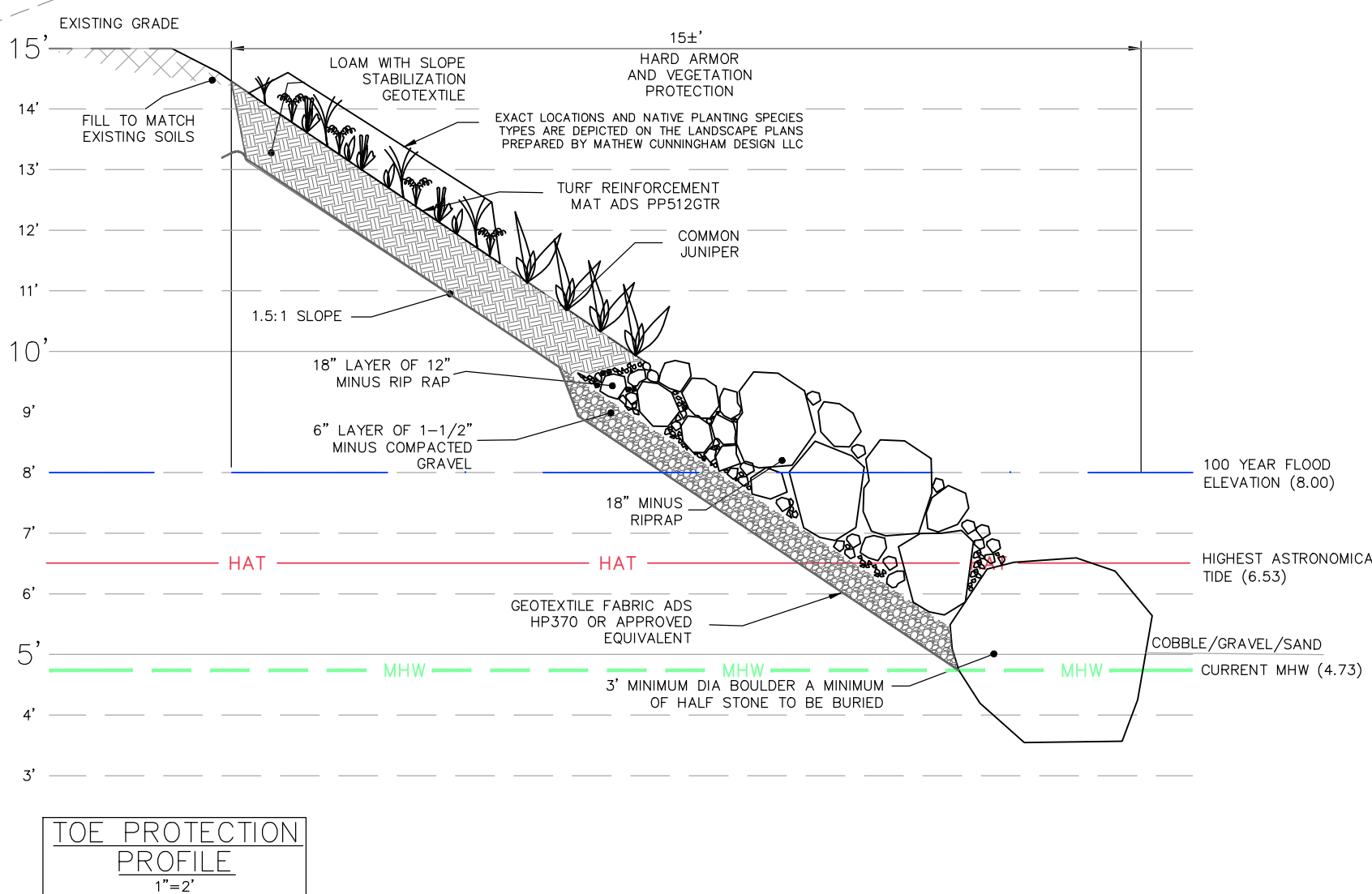


## NOTES

1. SILT SOCK SHALL BE FILTREXX<sup>TM</sup> SILT SOCK<sup>TM</sup> OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

## SILT SOCK

NOT TO SCALE



TOE PROTECTION PROFILE  
1"=2'

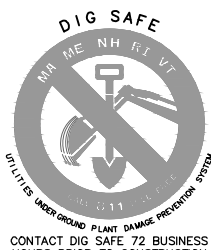


REV	DATE	DESCRIPTION	DR	CK
1	9/9/2024	REVISE RIPRAP TIES TO SHORE	JJM	JRA

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



Drawing is for illustrative purposes only. Not to scale.  
Copyright © GEI Works 2018  
Natural forces such as current, wind, waves, and location affect your project and may require engineering, additional anchoring, and recombination.

	772-646-0597 www.GEIWorks.com info@geiworks.com
Type 1 DOT Turbidity Curtain	
Scale:	Not to Scale
Drawing:	Revision:
Date:	01/04/2018
By:	MK

## SITE DEVELOPMENT PLANS

TAX MAP 207 LOT 13  
**LIVING SHORELINE PLAN**  
**SHORELINE STABILIZATION**  
**60 PLEASANT POINT DRIVE, PORTSMOUTH NH**  
OWNED AND PREPARED FOR  
**120-0 WILD ROSE LANE, LLC**

1"=20' (11"X17")  
SCALE: 1"=10' (22"X34")

JUNE 10, 2024



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

48 Constitution Drive  
Bedford, NH 03110  
Phone (603) 472-4488  
Fax (603) 472-9747  
www.tfmoran.com

FILE	47307.20	DR	VPB	FB	—	—	—	—	—
CK	JRA	CADFILE	LIVING-SHORELINE-PLAN	C-01					



# Memo



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

To: Kristin Duclos, DES Wetlands Permitting Specialist  
From: Jack McTigue, NH Professional Engineer, TFMoran, Inc.  
CC: Eben Lewis, DES Southeast Region Supervisor  
Date: August 28, 2024  
Re: Response to DES Request for More Information (RFMI) letter dated August 12, 2024 – DES Permit Application: 2023-03138

Dear Kristen,

In response to the NHDES Request for More Information (RFMI) letter dated August 12, 2024, we offer the following information to supplement the materials we provided to you on July 12, 2024. This information further demonstrates conformance with Env-Wt 609.07(b)(1)-(3).

### **Env-Wt 609.07 (b)(1)**

The area of the existing bank/shoreline that was impacted during the January storm events is, on average, 2 to 2.5-feet above the Highest Astronomical Tide (HAT) elevation of 6.53-feet. These impacts are largely the result of significant levels of storm surge coinciding with astronomically high tides during coastal storm events. Given the former vegetated bank, essentially a natural “living shoreline”, was unable to resist the erosive forces associated with these storm events, we elected to stabilize the shoreline with a hybrid approach as outlined within the NOAA publication, “Guidance for Considering the Use of Living Shorelines” as prescribed by NHDES Wetlands Bureau Administrative Rule Env-Wt 609.05. This hybrid design improves/flattens the steepest existing slopes, incorporates large toe stones, and applies a layer of riprap to those areas of the slope where vegetation alone, in the previous storm events, was ineffective at stabilizing the shoreline. This hybrid approach to shoreline stabilization includes a robust planting plan that incorporates common juniper plants that have demonstrated a high degree of resilience in past storm events.

It is our professional opinion that, in this instance, a hybrid approach is the most effective approach for shoreline stabilization because the heavier stones resist the scour caused by the transverse flow of the water, and the angular shape of the riprap provides energy dissipation which reduces the velocity of the transverse flows and waves.







Photo 1: Undercutting occurring to existing, formerly vegetated, shoreline.

The images below depict the undercutting of a bank, typical of scouring caused by horizontal flow of the water, not directional wave energy. Scouring is the direct removal of bank material at or below water level by the physical action of flowing water. In this instance, decreasing the steepest slopes and applying riprap will be an effective solution because it will slow the flow along the shoreline.

(c) Bank undercutting

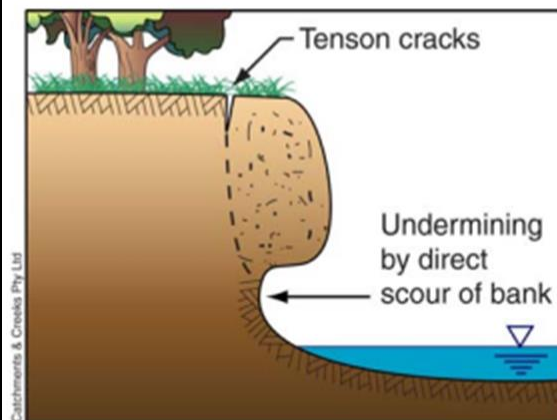


Figure 4 – Bank undercutting



Photo 4 – Bank undercutting (Qld)

Bank undercutting is the removal of material from the lower portion of a channel bank by 'bank scour'. This erosion results in the creation of an overhanging bank that usually fails in a more violent motion than occurs in 'bank slumping'. In effect, bank undercutting is a combination of bank scour within the lower bank, which ultimately causes upper bank slumping. The two actions may not occur simultaneously.

Reference 1: Saadon, Azlinda & Abdullah, Jazuri & Muhammad, Nur Shazwani & Ariffin, Junaidah. (2020). Development of riverbank erosion rate predictor for natural channels using NARX-QR Factorization model: a case study of Sg. Bernam, Selangor, Malaysia. Neural Computing and Applications. 1-11. 10.1007/s00521-020-04835-5.



**Env-Wt 609.07 (b)(2)**

As evidenced within photo 1 above, the scour was produced by a high energy environment and the existing vegetated shoreline alone was unable to resist the erosive forces associated with the tidal flows. During storm events, this high-energy environment cannot be stabilized by soft vegetative techniques alone.

**Env-Wt 609.07 (b)(3)**

The proposed riprap will be applied to the areas above highest astronomical tide elevation (HAT) that were impacted during the January storm events. During the majority of the yearly tidal cycles, tidal waters will not interface with the proposed riprap section of the living shoreline. The proposed riprap areas of the living shoreline will only interface with tidal waters that coincide with large storm events. As discussed above, the angled stone coupled with the improved/flattened steepest slopes dissipates energy so that the project also will not have adverse effects on the abutting properties. At the downstream terminal end of proposed riprap, we have keyed in the riprap at a 30-degrees angle to prevent scour on the neighboring property.

Respectfully,

A handwritten signature in black ink, appearing to read "Jack McTigue". The signature is fluid and cursive, with the first name "Jack" and last name "McTigue" clearly distinguishable.

Jack McTigue, PE, CPESC  
Project Manager



# TFMoran's Response to NHDES Request for More Information (RFMI) letter dated February 2, 2024.

## NHDES Wetlands Permit Application 2023-03138

Responses to questions relative to the construction of a *Living Shoreline*.

**4. Please identify all known causes of erosion associated with this project and identify how each cause of erosion is being addressed as a part of the proposed bank stabilization project in accordance with Env-Wt 609.01(d).**

**Response:** As a result of multiple coastal storm events that coincided with astronomically high tides over the last two years, the shoreline of this property experienced some erosion. These storm events produced significant levels of storm surge that undercut the bank of the shoreline in some locations. More specifically, when the storm surge, coupled with the high tides receded, by virtue of the hydrodynamics in this area, lateral movement of water along the toe of slope scoured and undercut the toe of slope.

Through the construction of a living shoreline designed with the use of the publication, "Guidance for Considering the Use of Living Shorelines," prepared by the National Oceanic Atmospheric Administration (NOAA), we're confident this property will be more resilient to future coastal storm events. The use of large toe stones, construction of a flatter 1.5:1 slope, and the implementation of robust native planting plan prepared by a NH Licensed Landscape Architect ensures this increased resiliency.

**5. Please provide documentation demonstrating how the proposed technique or combination of techniques used as part of the proposed tidal shoreline stabilization project addresses the criteria listed in Env-Wt 609.02(b)(1) through (7), as required in accordance with Env-Wt 609.02(b).**

**Response:** In accordance with NHDES Wetlands Bureau Administrative Rule Env-Wt 609.02, as indicated on the plans submitted with this permit application, the proposed Living Shoreline addresses each of the following:

**Env-Wt 609.02(b)(1)** – By way of the Functional Assessment submitted with this permit application, this project proposes no adverse impacts to the functions and values of the neighboring tidal resources. This project will enhance many of the resource's functions and values. Constructing a "Living Shoreline" is the prescribed method of attaining shoreline stabilization and resiliency against anticipated sea level rise by the NHDES Wetlands Bureau and the Piscataqua Region Estuaries Partnership (PREP).

**Env-Wt 609.02(b)(2)** – As a result of multiple coastal storm events that coincided with astronomically high tides over the last two years, the shoreline of this property experienced some erosion. These storm events produced significant levels of storm surge that undercut the bank of the shoreline in some locations. More specifically, when the storm surge, coupled with the high tides receded, by virtue of the hydrodynamics in this area, lateral movement of water along the toe of slope scoured and undercut the toe of slope.

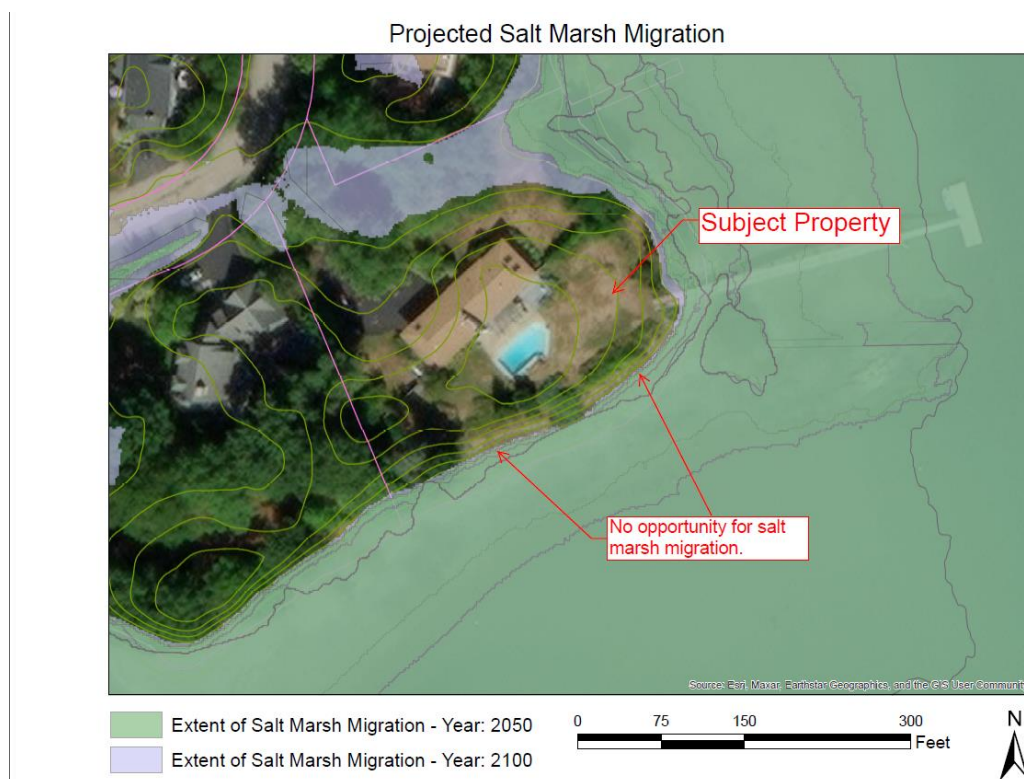


**Env-Wt 609.02(b)(3)** – On areas of the shoreline, the lateral tidal forces associated with large storms events that produced storm surge have undercut and scoured the toe of slope. Left unabated, the shoreline will be exposed to future coastal storm events.

**Env-Wt 609.02(b)(4)** – The proposed Living Shoreline is within an area of NH’s seacoast that does not experience *frequent* high tidal or wave action erosive forces. While some boat traffic occurs in the area during high tide, it is not significant enough to have a bearing on this project. The proposed geometry and orientation of living shoreline will not amplify the existing minimal tidal forces. The Living Shoreline Plan, bearing the stamp of Professional Engineer, Jack McTigue, demonstrates each of these factors have been considered during the design of this Living Shoreline. As demonstrated within the Coastal Vulnerability Assessment submitted with the permit application, the proposed Living Shoreline will be able to withstand future storm surge and extreme precipitation events.

**Env-Wt 609.02(b)(5)** – The proposed Living Shoreline is within an area that does not experience *frequent* high tidal action erosive forces. As demonstrated within the Coastal Vulnerability Assessment submitted with the permit application, the proposed Living Shoreline will allow the property to become significantly more resilient to anticipated sea level rise.

**Env-Wt 609.02(b)(6)** – We have utilized the Sea Level Affecting Marshes Model (SLAMM) GIS data layers available on NH GRANIT. Given the topography of the site, the property *does not* lend itself well to future salt marsh migration. The proposed living shoreline does propose a wide variety of upland, salt tolerant native species – see **Figure 1** below.



**Figure 1-** Sea Level Affecting Marshes Model (SLAMM).



**Env-Wt 609.02(b)(7)** – As demonstrated within the permit application and supporting materials, this project meets all the relevant Design Requirements of Env-Wt 514.04. Further, we have demonstrated how this project meets each provision of Env-Wt 514.04 below:

**Env-Wt 514.04 (a)** – Sheet flow naturally runs in the opposite direction and stormwater management techniques, including new pervious surfaces are proposed. The proposed regrading does not transfer any additional discharge towards the proposed Living Shoreline.

**Env-Wt 514.04 (b)** – To the maximum extent practicable, existing native trees and shrubs will be retained. Significant levels of invasive species will be removed as well.

**Env-Wt 514.04 (c)** – The bank is proposed to be regraded from a 1:1 slope to a flatter, 1.5:1 slope and a robust native planting plan is proposed.

**Env-Wt 514.04 (d)** – Impacts to adjacent properties and infrastructure have been avoided.

**Env-Wt 514.04 (e)** – Sound erosion and sediment control devices will be utilized, monitored, and adjusted as required throughout the duration of the project.

**Env-Wt 514.04 (f)** – Through our coordination with other relevant state and federal agencies, this project avoids and minimizes impacts to sensitive resources. The proposed Living Shoreline will result in an increase in the overall ecological integrity of the resource area.

**Env-Wt 514.04 (g)** – This is a coastal marine system, and therefore, this provision is not applicable.

**Env-Wt 514.04 (h)** – This is a coastal marine system, and therefore, this provision is not applicable.

**Env-Wt 514.04 (i)** – This is a coastal marine system, and therefore, this provision is not applicable.

**6. Please revise the plans to show that the proposed living shoreline project will meet the all of the criteria listed in Env-Wt 609.05(b)(1) through (8), as required in accordance with Env-Wt 609.05(b), including but not limited to detailed plan views and cross sections of the existing slopes and proposed living shoreline treatments at representative stations along the length of the project; details regarding the proposed plantings; details regarding the methods for how all proposed bioengineered stabilization treatments will be securely anchored; etc.**

**Response:** We referenced the “Guidance for Considering the Use of Living Shorelines” when designing this Living Shoreline. The existing and proposed shoreline is relatively uniform in shape, and therefore, a single cross section of proposed Living Shoreline will suffice. As demonstrated on the Living Shoreline Details Plan included with the permit application, the proposed Living Shoreline meets all the criteria of **Env-609.05(b)**, specifically:

**Env-Wt 609.05(b)(1)** – The proposed Living Shoreline uses native vegetation and limits the use of unnatural hardened structures.

**Env-Wt 609.05(b)(2)** – The proposed Living Shoreline mimics the natural landscape.

**Env-Wt 609.05(b)(3)** – This rule is not applicable as there are no beaches or dunes in this area.



**Env-Wt 609.05(b)(4)** – The proposed sill is at the lowest possible elevation.

**Env-Wt 609.05(b)(5)** – The proposed Living Shoreline maintains the shoreline’s ability to absorb and mitigate storm impacts and adapt to the landward progression of the sea.

**Env-Wt 609.05(b)(6)** – The proposed Living Shoreline will not impact neighboring properties. The proposed living shoreline will connect to existing shorelines.

**Env-Wt 609.05(b)(7)** – The bank is being cut back from a 1:1 to a flatter, 1.5:1 slope and will be planted with native vegetation.

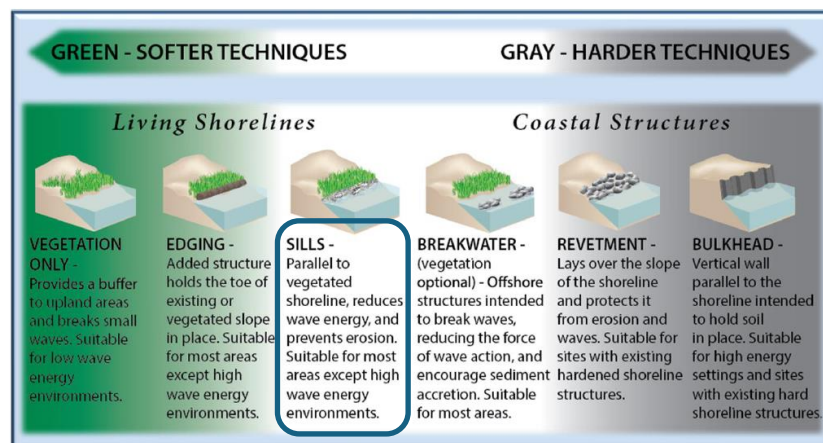
**Env-Wt 609.05(b)(8)** – The proposed Living Shoreline will enhance habitat for wildlife and aquatic species.

**7. Please revise the plans to include a plan of all plantings proposed in the waterfront buffer, showing the proposed location(s) and Latin names and common names of proposed species in accordance with Env-Wt 610.04(f). Please note that this includes all plantings proposed as part of the living shoreline tidal bank stabilization project.**

**Response:** A revised planting plan prepared by Licensed Landscape Architect, Matthew J. Cunningham, depicting the specifics of the proposed plantings is included with this response.

**8. Please provide documentation that the proposed living shoreline design plan has been reviewed relative to delineations of wetlands and stamped by a certified wetland scientist in accordance with "Guidance for Considering the Use of Living Shorelines", NOAA (2015) as required in accordance with Env-Wt 609.05(a).**

**Response:** We referenced the “Guidance for Considering the Use of Living Shorelines” when designing this Living Shoreline. As demonstrated on the Living Shoreline Details Plan included with the permit application, the proposed Living Shoreline is considered a “Green – Softer Technique” because only hard armor is proposed for sill materials for toe protection and greater resiliency for future, larger coastal storm events.



**Figure 2** – Green, soft approach to constructing a Living Shoreline from the NOAA 2015 publication, “Guidance for Considering the Use of Living Shorelines.”



NH Certified Wetland Scientist (CWS), Jay Aube and Professional Engineer (PE), Jack McTigue have stamped the plans.

### **Additional Supporting Information:**

The following supporting information demonstrates how this project meets NHDES Wetland Bureau Administrative Rule Env-Wt 609.07 relative to the use of Hard-Scape or Rip-Rap in Tidal Shoreline Stabilization projects.

**Env-Wt 609.07(a)(1)(a)** – During storm events that coincide with astronomically high tides, the receding tide water produces lateral movements of water along the shoreline with a velocity that is too great to be treated with soft stabilization methods alone. Referencing the publication, “Guidance for Considering the Use of Living Shorelines,” prepared by the National Oceanic Atmospheric Administration (NOAA), as prescribed by the NHDES Wetlands Bureau and the Piscataqua Region Estuaries Partnership (PREP), the professional engineers associated with this project have used a combination of soft and hard techniques to design this Living Shoreline.

**Env-Wt 609.07(a)(1)(b)** – The bulk of this Living Shoreline is proposed to be constructed with soft stabilization techniques. As result decreasing the slope to a flatter 1.5:1 slope and using angled stone, this project will have no adverse effect on neighboring properties.

**Env-Wt 609.07(a)(2)** – As evidenced by the plan prepared by professional engineers, the boulders and rip-rap are components used as a sill to stabilize the toe of slope and it is not the primary or dominant component of this Living Shoreline. This technique is outlined within the publication, “Guidance for Considering the Use of Living Shorelines,” prepared by the National Oceanic Atmospheric Administration (NOAA).

**Env-Wt 609.07(b)(1)** – As evidenced by the photos below, TFMoran professional engineers have determined that soft stabilization techniques alone cannot adequately address this erosion. Using the methods outlined with the publication, “Guidance for Considering the Use of Living Shorelines,” prepared by the National Oceanic Atmospheric Administration (NOAA), as prescribed by NHDES, hard armor is required to stabilize this shoreline and construct a sill at the toe of slope.



**Photo 1 & 2** – Images depicting how the toe of slope has been undercut and compromised.



**Env-Wt 609.07(b)(2)** – During storm events that coincide in with astronomically high tides, the receding tide water produces lateral movements of water along the shoreline with a velocity that is too great to be treated with soft stabilization methods alone. Referencing the publication, “Guidance for Considering the Use of Living Shorelines,” prepared by the National Oceanic Atmospheric Administration (NOAA), as prescribed by the NHDES Wetlands Bureau and the Piscataqua Region Estuaries Partnership (PREP), the professional engineers associated with this project have used a combination of soft and hard techniques to design this Living Shoreline.

**Env-Wt 609.07(b)(3)** – The professional engineers have determined the proposed rip-rap for toe protection will have no impact on neighboring properties. Adjusting the existing 1:1 slope to a flatter 1.5:1 slope and using minimal angled stone at the toe of slope ensures this Living Shoreline design will not accelerate tidal energy in a manner that adversely affects neighboring properties.

**Env-Wt 609.07(b)(4)** – The Living Shoreline Plan included with this RFMI response provides details relative to the sizes of all materials proposed for this Living Shoreline. Only a slight superficial layer of rip-rap is proposed above the toe stones equating to just 28 cubic yards distributed over 168-linear feet of proposed Living Shoreline.

**Env-Wt 609.07(b)(5)** – A cross section of the Living Shoreline is depicted on Living Shoreline Plan included with this response.

**Env-Wt 609.07(b)(6)** – Detailed plans were submitted with the original permit application that depict the relationship of the project to fixed points or reference, abutting properties, and features of the natural shoreline.

**Env-Wt 609.07(c)(1)** – The Living Shoreline Plan included with this response bears the stamp of NH Professional Engineer, Jack McTigue.

**Env-Wt 609.07(c)(2)** – The plans provided with the original permit application materials depict the proposed impact areas and the location of the Mean High Water (MHW) elevation. This Living Shoreline is proposed entirely within uplands and immediately adjacent to the Highest Astronomical Tide Line (HOTL).