PUBLIC NOTICE

US Army Corps
of Engineers
New York District
Jacob K. Javits Federal Building
New York, N.Y. 10278-0090
ATTN: Regulatory Branch

In replying refer to:
Public Notice Number: NAN-2020-00438-EMC
Issue Date: September 24, 2021
Expiration Date: October 25, 2021

To Whom It May Concern:

The New York District, Corps of Engineers has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

APPLICANT: The Village of Patchogue
Attn: Marian Russo
14 Baker Street
Patchogue, New York 11772

ACTIVITY: Shoreline stabilization activities and waterfront park improvements

WATERWAY: Little Creek and Patchogue Bay

LOCATION: Shorefront Park, Village of Patchogue, Town of Brookhaven, Suffolk County, New York

A detailed description and plans of the applicant's activity are enclosed to assist in your review.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

ALL COMMENTS REGARDING THE PERMIT APPLICATION MUST BE PREPARED IN WRITING AND E-MAILED TO **Reegan.A.McCaulley@usace.army.mil** TO REACH THIS OFFICE BEFORE THE EXPIRATION DATE OF THIS NOTICE, otherwise, it will be presumed that there are no objections to the activity.

Comments submitted in response to this notice will be fully considered during the public interest

review for this permit application. Comments provided will become part of the public record for this permit application. All written comments, including contact information, will be made a part of the administrative record, available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof, may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any person may request, in writing, before this public notice expires, that a public hearing be held to collect information necessary to consider this application. Requests for public hearings shall state, with particularity, the reasons why a public hearing should be held. It should be noted that information submitted by mail is considered just as carefully in the permit decision process and bears the same weight as that furnished at a public hearing.

Our preliminary determination is that the activity for which authorization is sought herein is not likely to adversely affect any Federally endangered or threatened species or their critical habitat. However, pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the District Engineer is consulting with the appropriate Federal agency to determine the presence of and potential impacts to listed species in the project area or their critical habitat.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act (Public Law 104-267), requires all Federal agencies to consult with the National Oceanic and Atmospheric Administration Fisheries Service (NOAA/FS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The proposed work, fully described in the attached work description, could cause the disruption of habitat for various lifestages of some EFH-designated species as a result of a temporary increase in turbidity during construction. However, the New York District has made the preliminary determination that the site-specific adverse effects are not likely to be substantial because it is expected due to the transient nature of the species, their mobility, and because the activity is confined solely to the limited project area. Further consultation with NOAA/FS regarding EFH impacts and conservation recommendations is being conducted and will be concluded prior to the final decision.

Based upon a review of the latest published version of the National Register of Historic Places, there are no known sites eligible for, or included in, the Register within the permit area. Presently unknown archeological, scientific, prehistorical, or historical data may be lost by work accomplished under the required permit.

Reviews of activities pursuant to Section 404 of the Clean Water Act will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 (b) of the Clean Water Act and the applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to a permit decision. The applicant provided a New York State Department of Environmental Conservation water quality certification, Permit ID 1-4722-01745/00010 with an effective date of January 7, 2021.

Pursuant to Section 307 (c) of the Coastal Zone Management Act of 1972 as amended [16 U.S.C. 1456 (c)], for activities under consideration that are located within the coastal zone of a state which has a federally approved coastal zone management program, the applicant has certified in the permit application that the activity complies with, and will be conducted in a manner that is consistent with, the approved state coastal zone management program. In a letter dated October 15, 2020, subject F-2020-0312, the New York State Department of State stated their concurrence with the consistency certification.

In addition to any required water quality certificate and coastal zone management program concurrence, the applicant has obtained or requested the following governmental authorization for the activity under consideration:

- New York State Department of Environmental Conservation Tidal Wetlands – Under Article 25 Permit ID 1-4722-01745/00009
- New York State Department of Environmental Conservation Excavation & Fill in Navigable Waters – Under Article 15, Title 5 Permit ID 1-4722-01745/00011

It is requested that you communicate the foregoing information concerning the activity to any persons known by you to be interested and who did not receive a copy of this notice. If you have any questions concerning this application, you may contact this office Ms. Reegan A. McCaulley at (917) 790-8523.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

For more information on New York District Corps of Engineers programs, visit our website at http://www.nan.usace.army.mil.

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2021.09.21
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FOR AND IN BEHALF
Stephan A. Ryba
Chief, Regulatory Branch

Encls

WORK DESCRIPTION

The applicant, the Village of Patchogue, has requested Department of the Army authorization for the stream realignment, removal of an existing bulkhead, installation of rock sills, and establishment of tidal wetlands in Patchogue Bay at 14 Baker Street in the Village of Patchogue, Town of Brookhaven, Suffolk County, New York.

Little Creek Stream Realignment
Stream realignment activities include the removal of existing fill, stream widening, and planting of native vegetation. Stream realignment activities consists of the removal of approximately 131 cubic yards (CY) of fill from an approximately 3,766 square foot area below the Ordinary High Water Mark (OHWM). All fill material will be removed and reused on site. The applicant would replace approximately 53 CY (1,013 square feet) of reused bank soil and rock sill material to be used as substrate for native species plantings. Stream alignment activities will result in impacts to a total of approximately 4,779 square feet of waters within Little Creek.

Existing Bulkhead and Outfall Structure Removal
The work would involve the removal of approximately 1,310 linear feet of existing deteriorated bulkhead. Upon removal of the bulkhead, approximately 116 CY of sediment would be excavated waterward of the plane of Spring High Water (SHW) over an area of approximately 1,561 square feet. Additionally, the work includes the removal of three (3) existing outfalls to open tidal flow back between Little Creek and Patchogue Bay.

Shoreline Stabilization Activities

The applicant would conduct shoreline stabilization activities, consisting of placement of armor stone and cobble stone within the following features waterward of the existing plane of SHW from west to east:

Non-vegetated Intertidal Wetland Area 1: 11 CY of sand discharged over an area of approximately 598 square feet
Rock Sill Area 1: 215 CY of armor stone discharged over an area of approximately 1,813 square feet
Sill Gap Area 1: 7 CY of beach cobble discharged over an area of approximately 156 square feet
Rock Sill Area 2: 169 CY of armor stone discharged over an area of approximately 1,538 square feet
Sill Gap Area 2: 7 CY of beach cobble discharged over an area of approximately 159 square feet
Rock Sill Area 3: 164 CY of armor stone discharged over an area of approximately 1,633 square feet
Sill Gap Area 3: 12 CY of beach cobble discharged over an area of approximately 253 square feet
Rock Sill Area 4: 314 CY of armor stone discharged over an area of approximately 2,424 square feet
Low Weir Area at the mouth of Little Creek: 64 CY of beach cobble discharged over an area of approximately 1,379
Rock Sill Area 5: 413 CY of armor stone discharged over an area of approximately 3,048 square feet
Non-vegetated Intertidal Wetland Area 5: 9 CY of sand discharged over an area of approximately 241 square feet
Rock Sill Area 6: 289 CY of armor stone discharged over an area of approximately 2,126 square feet
Sill Gap Area 4: 98 CY of beach cobble discharged over an area of approximately 2,125 square feet
Permittee-Responsible On-Site Mitigation
Rock Sill Area 7: 402 CY of armor stone discharged over an area of approximately 2,953 square feet
Sand Dune Area 1: 1 CY of sand over an area of approximately 3 square feet.

The shoreline stabilization activities will result in impacts to approximately 20,449 square feet of impacts to waters within Patchogue Bay.

Removal and Installation of Overwater Structures
Installation of an approximately 625 square foot fixed deck located landward of Rock Sill Area 4. Over Little Creek the applicant proposes to remove two (2) existing pedestrian foot bridges to be replaced by two (2) approximately 250 square foot pedestrian bridges elevated approximately 3.5 feet above the landward edge of high marsh planting substrate and each respectively positioned north and south of the existing pedestrian bridges over Little Creek. The work also includes the installation of an approximately 330 square foot boardwalk crossing over the mouth of Little Creek and the installation of an approximately 2,150 square foot fixed deck located above Mitigation Zone 3.

Permit Applicant's Statement of Avoidance, Minimization and Mitigation
The applicant has avoided, minimized, and mitigated for impacts by limiting fill and encroachment into the waterway. The applicant will be conducting permittee responsible on-site compensatory mitigation consisting of native plantings in the intertidal areas on the Patchogue Bay shoreline and along the banks of Little Creek. The applicant will use appropriate erosion control features such as a turbidity curtain around the work area.

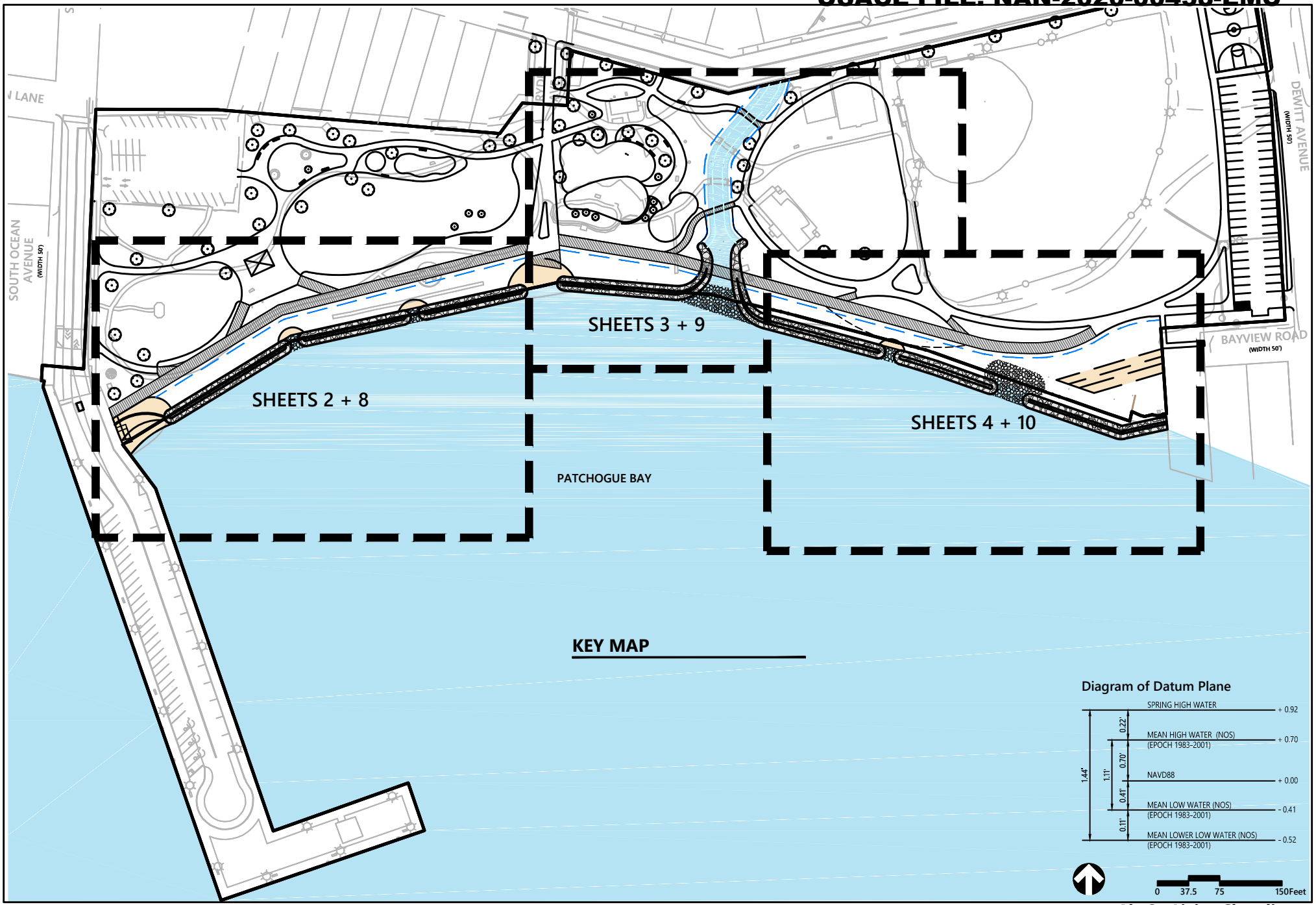
The shoreline stabilization activity will result in filling approximately 20,449 square foot area in Patchogue Bay and the Little Creek realignment activities will result in impacts to a total of approximately 4,779 square feet of waters within Little Creek.

The applicant proposes to mitigate for impacts to Patchogue Bay by establishing approximately 28,496 square feet of vegetated tidal wetlands. The total mitigation in Patchogue Bay is divided into three zones; from west to east, Mitigation Zone 1: 10,286 square feet, Mitigation Zone 2: 3,858 square feet, and Mitigation Zone 3: 14,352 square feet. This results in a 1:1.39 mitigation ratio.

The applicant proposes to mitigate for impacts to Little Creek by restoring historical tidal flow and establishing vegetated tidal wetlands. The mitigation activities within Little Creek would take place over an approximately 8,928 square foot area consisting of approximately; 4,212 square feet of habitat reestablishment through planting native wetland vegetation, and the creation of approximately 4,716 square feet of new habitat by widening Little Creek and restoring its connection to Patchogue Bay. This results in a 1:2.12 mitigation ratio.

The stated purpose of this project is to replace an existing, deteriorated bulkhead with a new erosion control system at Shorefront Park that will provide a level of protection during storm events through wave height reduction and wave energy attenuation, while also enhancing habitat conditions, biodiversity, water quality, aesthetic values, recreational opportunities, and public access to the waterfront.

USACE FILE: NAN-2020-00438-EMC



Village of Patchogue Shorefront Park
Living Shoreline & Little Creek Restoration
So. Ocean Ave., Smith St, & Dewitt Ave.
Village of Patchogue, New York

Juan Carlos Vargas, Jr.
N.Y.S. LIC. No. 002183

GENERAL NOTES
1. EXISTING CONDITIONS INFORMATION BASED ON SURVEY PREPARED BY VHB DATED 06/27/2018, REVISED 10/20/2020.
2. HORIZONTAL DATUM: NYS PLANE LONG ISLAND NAD83; VERTICAL DATUM: NAVD88
3. DRAWINGS ARE CONCEPTUAL AND FOR THE SOLE PURPOSE OF PERMITTING, NOT FOR CONSTRUCTION. PROJECT COMPONENTS AND FEATURES HAVE NOT BEEN FULLY DESIGN AND ENGINEERED, BUT ARE REPRESENTATIVE, IN GOOD FAITH, OF THE EXTENT OF WORK ANTICIPATED.
4. CONSTRUCTION FOR ALTERNATIVE No.3 IS ANTICIPATED TO BE PERFORMED ON-LAND, HOWEVER, UP TO 2 BARGES AND 1 TUG MAY BE REQUIRED AS TEMPORARY VESSELS AND SUBJECT TO CONTRACTOR MEANS AND METHODS.
5. STREAM RESTORATION WORK TO BE COMPLETED PRIOR TO RECONNECTION TO PATCHOGUE BAY.
6. PRELIMINARY PEDESTRIAN BRIDGE DECK SURFACE ELEVATIONS SHOWN ON PLAN; ASSUMING PRELIMINARY BRIDGE STRUCTURE DEPTH = 1.7'±, CLEARANCE ABOVE SHW ELEVATION = 0.88'±MIN. FOR TWO NORTHERN PEDESTRIAN BRIDGES AND 2.38'± MIN. FOR SOUTHERN BOARDWALK BRIDGE

vhb
Engineering, Surveying, Landscape Architecture & Geology, PC
100 Motor Parkway
Suite 350
Hauppauge, NY 11788
631.787.3400

Alt. 3 - Living Shoreline & Stream Restoration

Sheet 1 of 17

04/13/2020
rev: 10/14/2020
rev: 04/09/2021
rev: 06/03/2021

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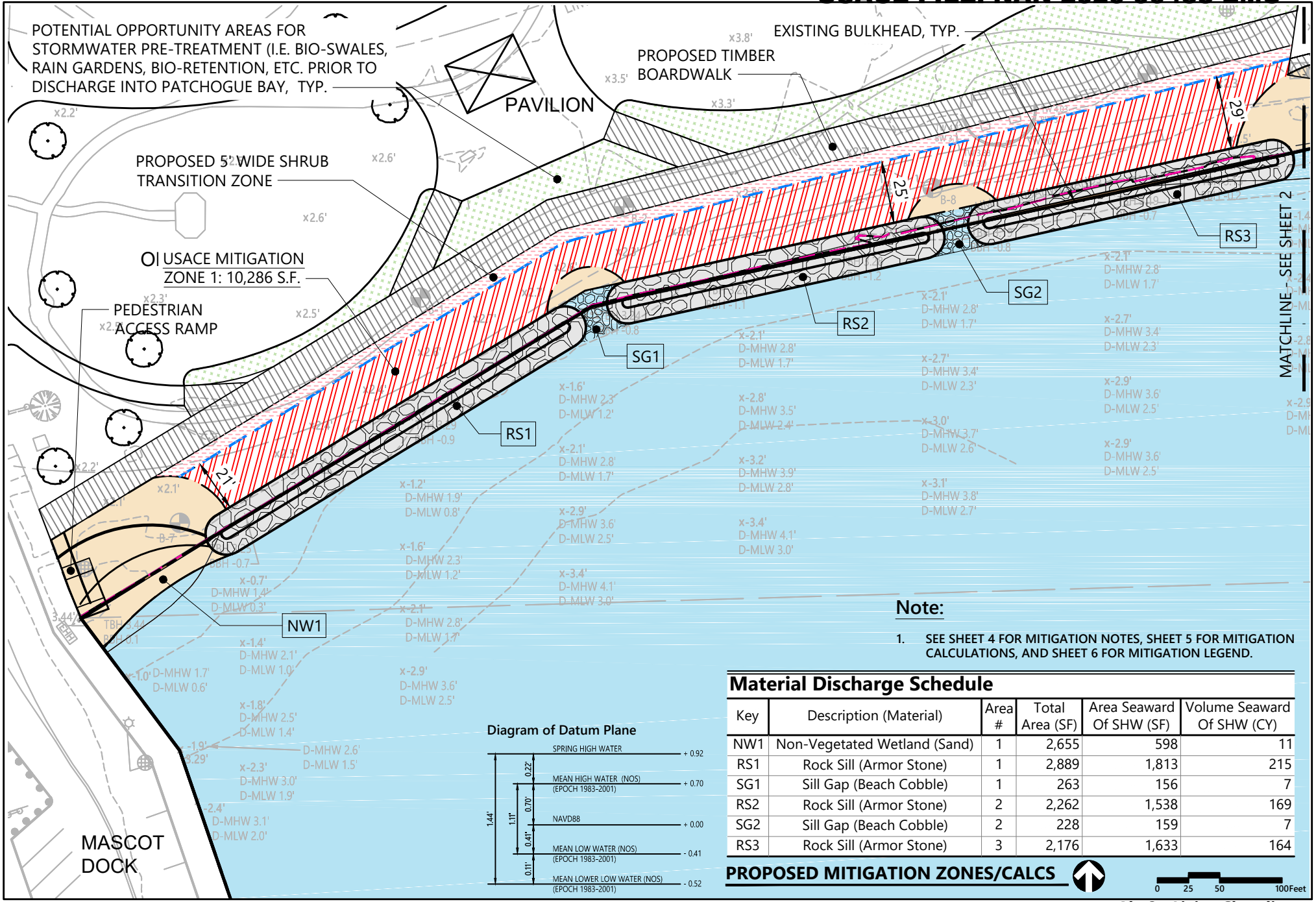

Note:

1. SEE SHEET 4 FOR MITIGATION NOTES, SHEET 5 FOR MITIGATION CALCULATIONS, AND SHEET 6 FOR MITIGATION LEGEND.

Material Discharge Schedule

Key	Description (Material)	Area #	Total Area (SF)	Area Seaward Of SHW (SF)	Volume Seaward Of SHW (CY)
NW1	Non-Vegetated Wetland (Sand)	1	2,655	598	11
RS1	Rock Sill (Armor Stone)	1	2,889	1,813	215
SG1	Sill Gap (Beach Cobble)	1	263	156	7
RS2	Rock Sill (Armor Stone)	2	2,262	1,538	169
SG2	Sill Gap (Beach Cobble)	2	228	159	7
RS3	Rock Sill (Armor Stone)	3	2,176	1,633	164

PROPOSED MITIGATION ZONES/CALCS

0 25 50 100 Feet

Diagram of Datum Plane

Village of Patchogue Shorefront Park
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Alt. 3 - Living Shoreline & Stream Restoration

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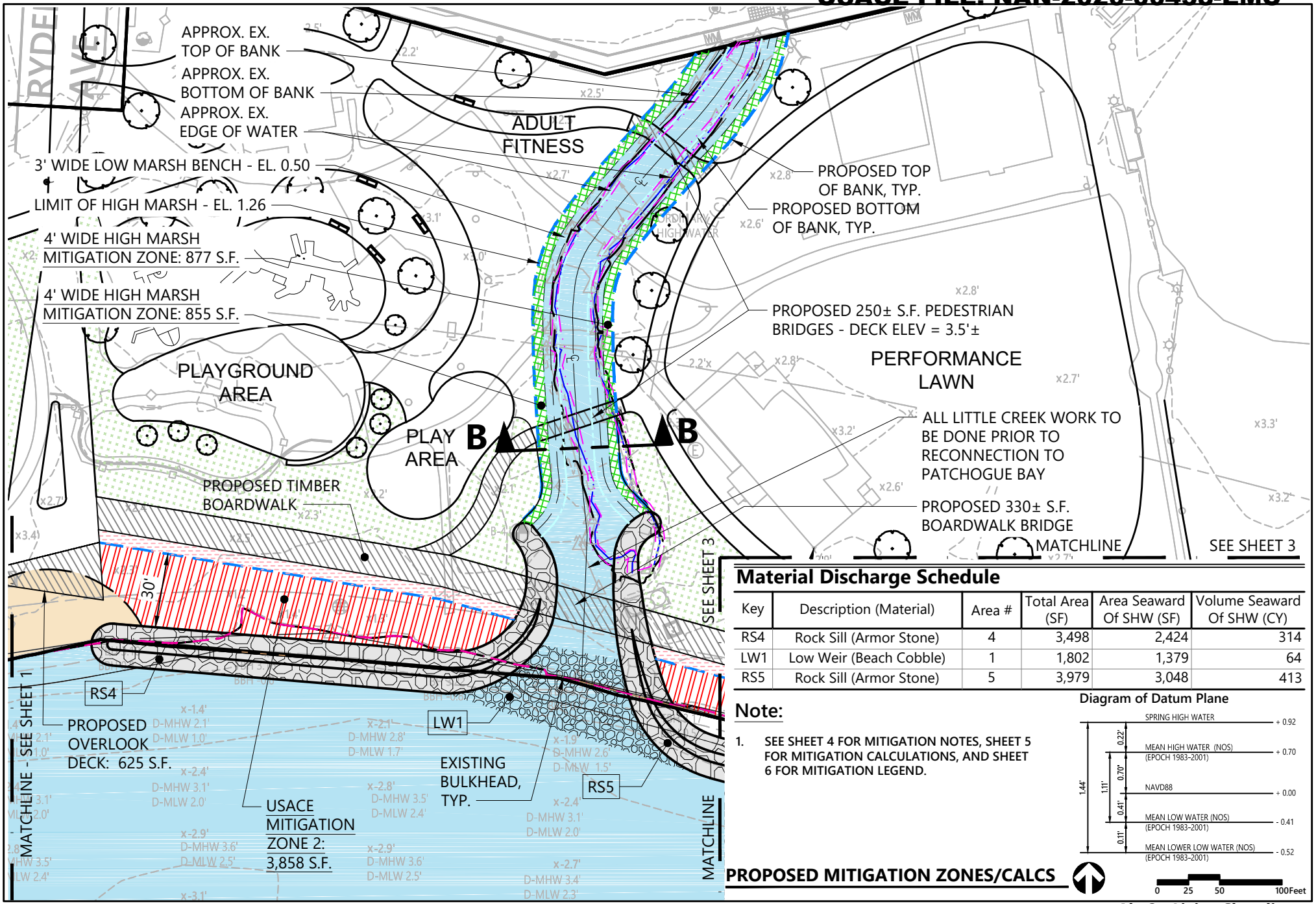

Material Discharge Schedule

Key	Description (Material)	Area #	Total Area (SF)	Area Seaward Of SHW (SF)	Volume Seaward Of SHW (CY)
RS4	Rock Sill (Armor Stone)	4	3,498	2,424	314
LW1	Low Weir (Beach Cobble)	1	1,802	1,379	64
RS5	Rock Sill (Armor Stone)	5	3,979	3,048	413

Note:

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Diagram of Datum Plane

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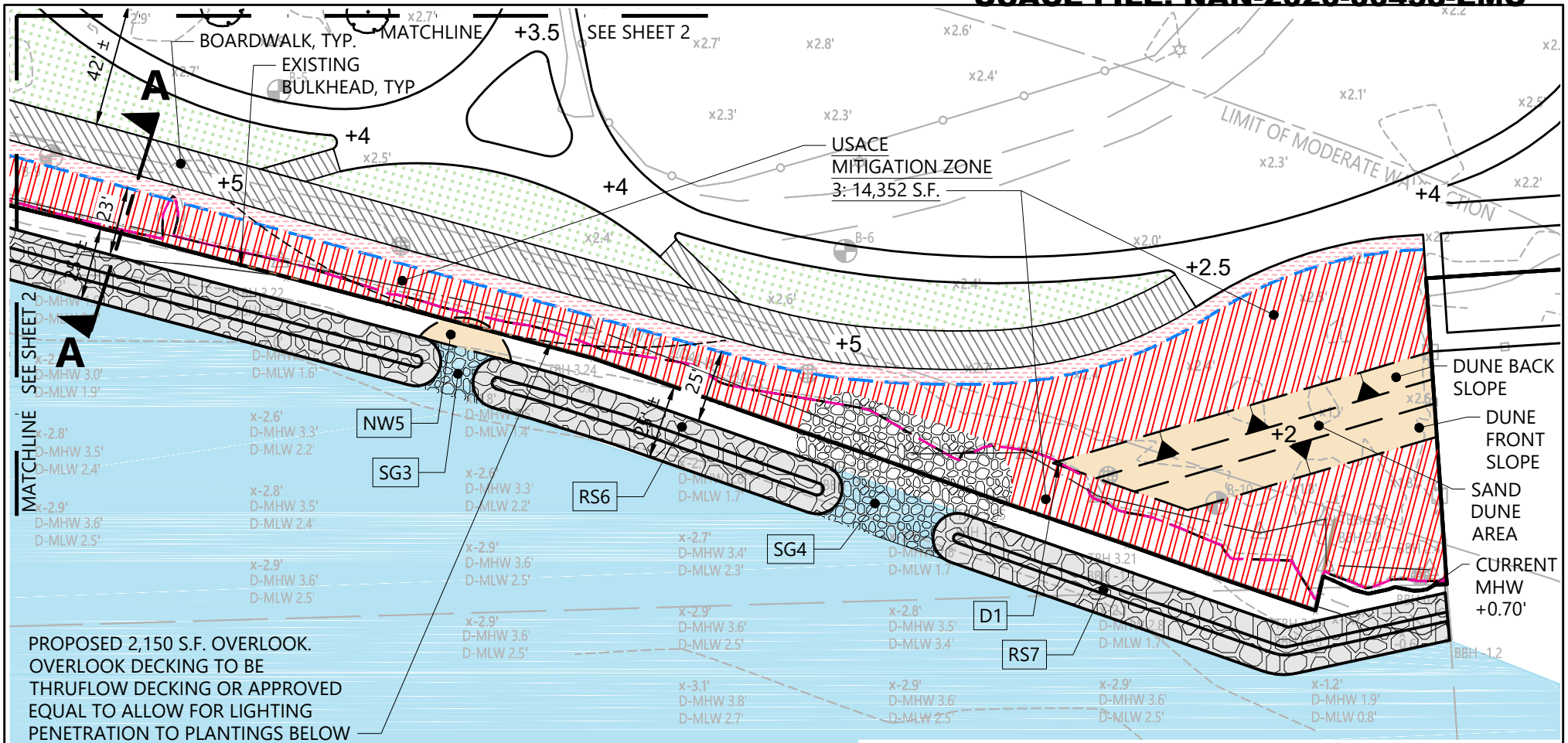
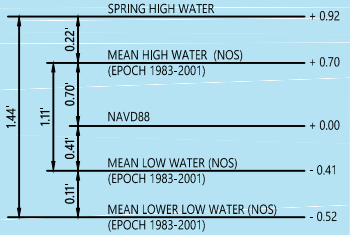


Material Discharge Schedule

Key	Description (Material)	Area #	Total Area (SF)	Area Seaward Of SHW (SF)	Volume Seaward Of SHW (CY)
NW5	Non-Vegetated Wetland 5 (Sand)	5	241	241	9
SG3	Sill Gap (Beach Cobble)	3	253	253	12
RS6	Rock Sill (Armor Stone)	6	2,126	2,126	289
SG4	Sill Gap (Beach Cobble)	4	2,449	2,125	98
RS7	Rock Sill (Armor Stone)	7	2,953	2,953	402
D1	Dune (Sand)	1	3,083	3	1

Diagram of Datum Plane



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0 25 50 100 Feet

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Alt. 3 - Living Shoreline & Stream Restoration

Mitigation Notes

Mitigation Notes

1. FROM THE ARTICLE *Spring High Water, Map Elevations, and Tidal Wetlands by Titus and Wang (2008)*, SPRING HIGH WATER (SHW) ELEVATION IS DEFINED AS 20% GREATER THAN THE TIDE RANGE. THEREFORE, 1.2 x TIDE RANGE (1.11') = 1.33', INCREASE OF 0.22' ABOVE MEAN HIGH WATER. +0.7 (MHW) +0.22 = +0.92' AS THE APPROXIMATE SPRING HIGH WATER ELEVATION.

2. WATER / TIDE ELEVATIONS:
   - 2.1. MEAN HIGH WATER (MHW) = EL. 0.70'
   - 2.2. MEAN LOW WATER (MLW) = EL. -0.41'
   - 2.3. SPRING HIGH WATER (SHW) = EL. 0.92'

3. UPPER LIMIT OF HIGH MARSH = MID-TIDE RANGE + MEAN HIGH WATER ELEVATION
   - 3.1. MID TIDE RANGE CALCULATION:
     - 3.1.1. MHW - MLW/2
     - 3.1.2. 0.70 - -0.41 = 1.11'
     - 3.1.3. 1.11 / 2 = .56'
     - 3.1.4. .56 = MID-TIDE RANGE
   - 3.2. UPPER LIMIT OF HIGH MARSH CALCULATION:
     - 3.2.1. MID-TIDE RANGE + MHW
     - 3.2.1. .56 + 0.70' = 1.26'

4. USACE MITIGATION:
   - 4.1. 1:1 MITIGATION RATIO REQUIRED
   - 4.2. USACE JURISDICTION IS FROM SPRING HIGH WATER OR EL. 0.92' SEAWARD
   - 4.3. USACE PROPOSED MITIGATION IS FROM SPRING HIGH WATER OR EL. 0.92' LANDWARD TO LIMIT OF HIGH MARSH OR EL. 1.26' (SEE CALCULATIONS ABOVE - NO. 3)

5. SEE MITIGATION CALCULATION CHART FOR PROPOSED IMPROVEMENTS / DISTURBANCE AREAS AND THE REQUIRED MITIGATION SQUARE FOOTAGES

6. MAXIMUM ALLOWABLE SLOPE WITHIN HIGH MARSH AREA SHALL BE 8H:1V OR 12.50%

7. APPROXIMATE NUMBER OF PILES REQUIRED FOR PROPOSED BOARDWALK = 505 PILES

Alternative Analysis / Summary

Impacts Associated with Alternatives

1. ALTERNATIVE No. 1: BREAKWATER
   - 1.1. USACE DISTURBANCE.....143,920 S.F.
     - *1.1.1. 143,920 S.F. OF MITIGATION REQUIRED (1 TO 1 RATIO)*

2. ALTERNATIVE No. 2: SEAWARD LIVING SHORELINE
   - 2.1. USACE DISTURBANCE.....30,172 S.F.
     - *2.1.1. 30,172 S.F. OF MITIGATION REQUIRED (1 TO 1 RATIO)*

3. ALTERNATIVE No. 3: LANDWARD LIVING SHORELINE (SELECTED ALTERNATIVE)
   - 3.1. USACE DISTURBANCE.....20,449 S.F.
     - *3.1.1. 20,449 S.F. OF MITIGATION REQUIRED (1 TO 1 RATIO)*

4. ALTERNATIVE NO. 4: REPLACE-IN-KIND BULKHEAD
   - 4.1. TEMPORARY DISTURBANCE ONLY
   - 4.2. NO MITIGATION REQUIRED

5. ALTERNATIVE NO. 5: STRUCTURE-FREE NATURAL SHORELINE
   - 5.1. TEMPORARY DISTURBANCE ONLY
   - 5.2. NO MITIGATION REQUIRED

6. ALTERNATIVE NO. 6: NO ACTION
   - 6.1. NO DISTURBANCE
   - 6.2. NO MITIGATION REQUIRED

PROPOSED MITIGATION NOTES

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Alt. 3 - Living Shoreline & Stream Restoration

04/13/2020
rev: 10/14/2020
rev: 05/09/2021
rev: 06/03/2021

Disturbance & Mitigation Calculations

USACE Mitigation Calculations - Alternative No. 3

Proposed Shoreline Treatment (Disturbance Area)	Total Square Footage	Square Footage within USACE Jurisdiction
Beach	5,222	839
Beach Cobble	3,193	2,693
Dune	3,083	3
Low Weir	1,802	1,379
Rock Sill	19,893	15,535
TOTAL	**33,193**	**20,449**
REQUIRED MITIGATION RATIO		**1 to 1**
MITIGATION AREA REQUIRED		**20,449**
MITIGATION AREA PROVIDED LANDWARD OF MHW (+0.70) TO LIMIT OF HIGH MARSH (+1.65)		**28,496** (1,334± LF)
LIVING SHORELINE ESTABLISHMENT MITIGATION RATIO PROVIDED		**1 to 1.39**
LITTLE CREEK REESTABLISHMENT MITIGATION (AREA WITHIN EX. OHW)		**4,212** (243± LF)
LITTLE CREEK ESTABLISHMENT MITIGATION (PROPOSED WIDENING & RECONNECTION)		**4,716** (37± LF)
LITTLE CREEK MITIGATION RATIO		**1 to 2.12**

Area Of Native Plantings

LANDWARD OF SHW	37,785 S.F.
SEAWARD OF SHW	3,380 S.F.
LITTLE CREEK HIGH MARSH MITIGATION ZONE	1,738 S.F.
LITTLE CREEK LOW MARSH BENCH	1,304 S.F.
	44,207 S.F.

1. SHW = SPRING HIGH WATER
2. LANDWARD OF SHW INCLUDES THE FOLLING PLANTING AREAS: DUNE, SHRUB TRANSITION ZONE, MARSH UNDER OVERLOOK AREAS

Mitigation Area Plant List

%	Botanical Name	Common Name
Intertidal Zone: MLW (-0.41) to MHW (+0.70)		
100	SPARTINA ALTERNIFOLIA	SMOOTH CORDGRASS
High Marsh Zone: MHW (+0.70) to Upper Limit of High Marsh (+1.26)		
50	SPARTENA PATENS	SALT MEADOW CORDGRASS
15	DISTICHILIS SPICATA	SPIKE GRASS
15	JUNCUS GERARDII	BLACK GRASS
10	LIMONIIUM CAROLINIANUM	SEA LAVENDER
10	PLUCHEA ODORATA	SALT MARSH FLEABANE
Sand Dune Area		
100	AMMOPHILA BREVILIGULATA	AMERICAN BEACHGRASS

1. ALL PLANTS SHALL BE 2" PLUGS PLANTED AT 18" ON CENTER

PROPOSED MITIGATION CALCULATIONS

Village of Patchogue Shorefront Park
Living Shoreline & Little Creek Restoration
So. Ocean Ave., Smith St, & Dewitt Ave.
Village of Patchogue, New York

Juan Carlos Vargas, Jr.
N.Y.S. LIC. No. 002183

GENERAL NOTES
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Alt. 3 - Living Shoreline & Stream Restoration

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Mitigation Legend

- PROPOSED USACE MITIGATION AREAS
- 5' WIDE SHRUB TRANSITION ZONE (5,890 S.F. - NOT COUNTED TOWARDS MITIGATION)
- POTENTIAL OPPORTUNITY AREAS FOR STORMWATER PRE-TREATMENT
- CURRENT SPRING HIGH WATER OR EL. + 0.92' (USACE JURISDICTION LINE)
- EXISTING BULKHEAD OR MEAN HIGH WATER OR EL. + 0.70'
- LIMIT OF HIGH MARSH OR EL. + 1.26'

Little Creek Legend

- PROPOSED TOP OF BANK OR LIMIT OF HIGH MARSH (EL. 1.26)
- PROPOSED 3' WIDE LOW MARSH BENCH (EL. 0.50)
- PROPOSED BOTTOM OF BANK (EL. 0.00)
- PROPOSED STREAM CENTER LINE
- EXISTING TOP OF BANK (APPROXIMATE)
- EXISTING STREAM (EDGE OF WATER)
- EXISTING BOTTOM OF BANK (APPROXIMATE)

PROPOSED MITIGATION LEGEND

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Sheet 7 of 17
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rev: 06/03/2021

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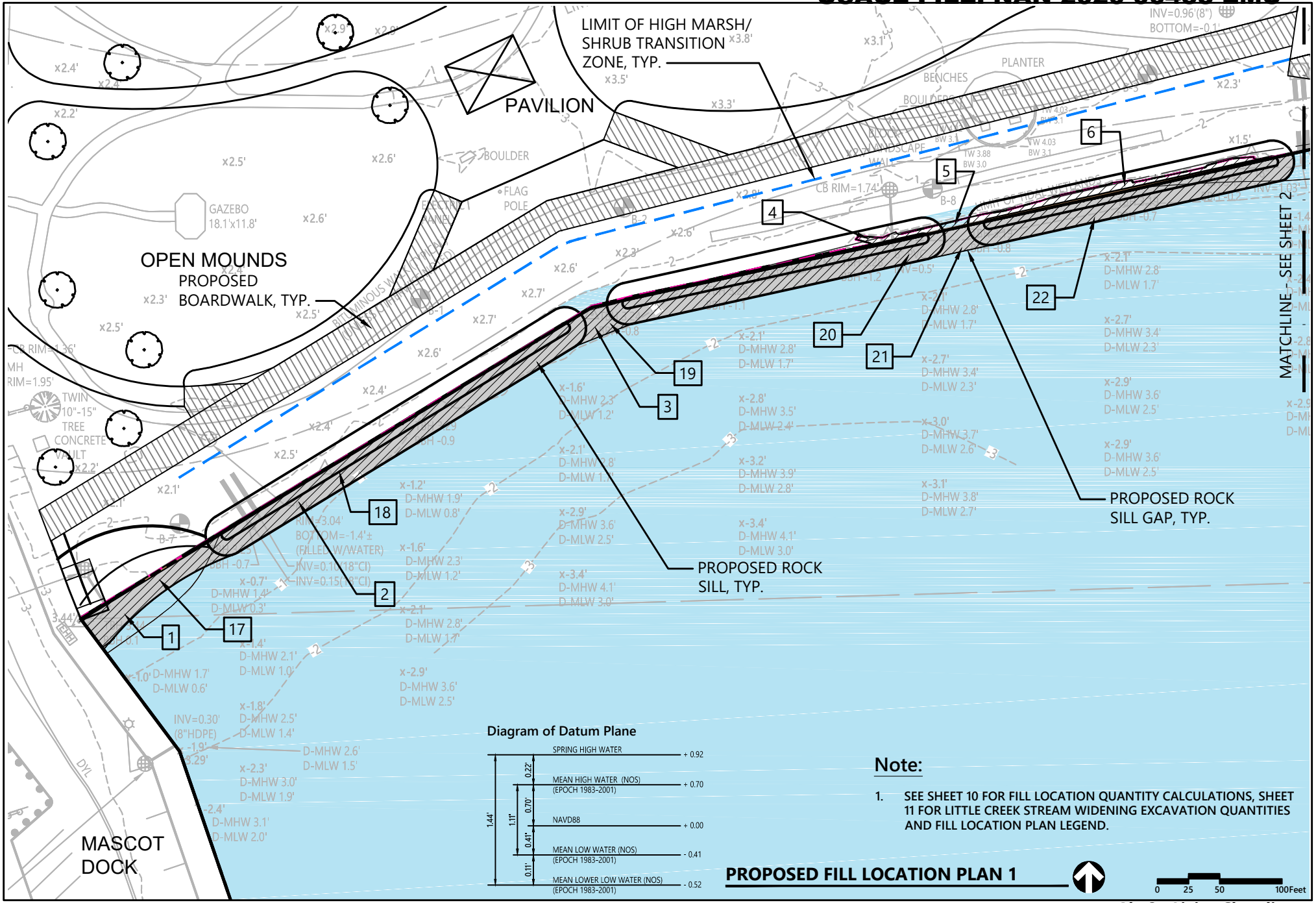

Diagram of Datum Plane

Note:

1. SEE SHEET 10 FOR FILL LOCATION QUANTITY CALCULATIONS, SHEET 11 FOR LITTLE CREEK STREAM WIDENING EXCAVATION QUANTITIES AND FILL LOCATION PLAN LEGEND.

PROPOSED FILL LOCATION PLAN 1

0 25 50 100 Feet

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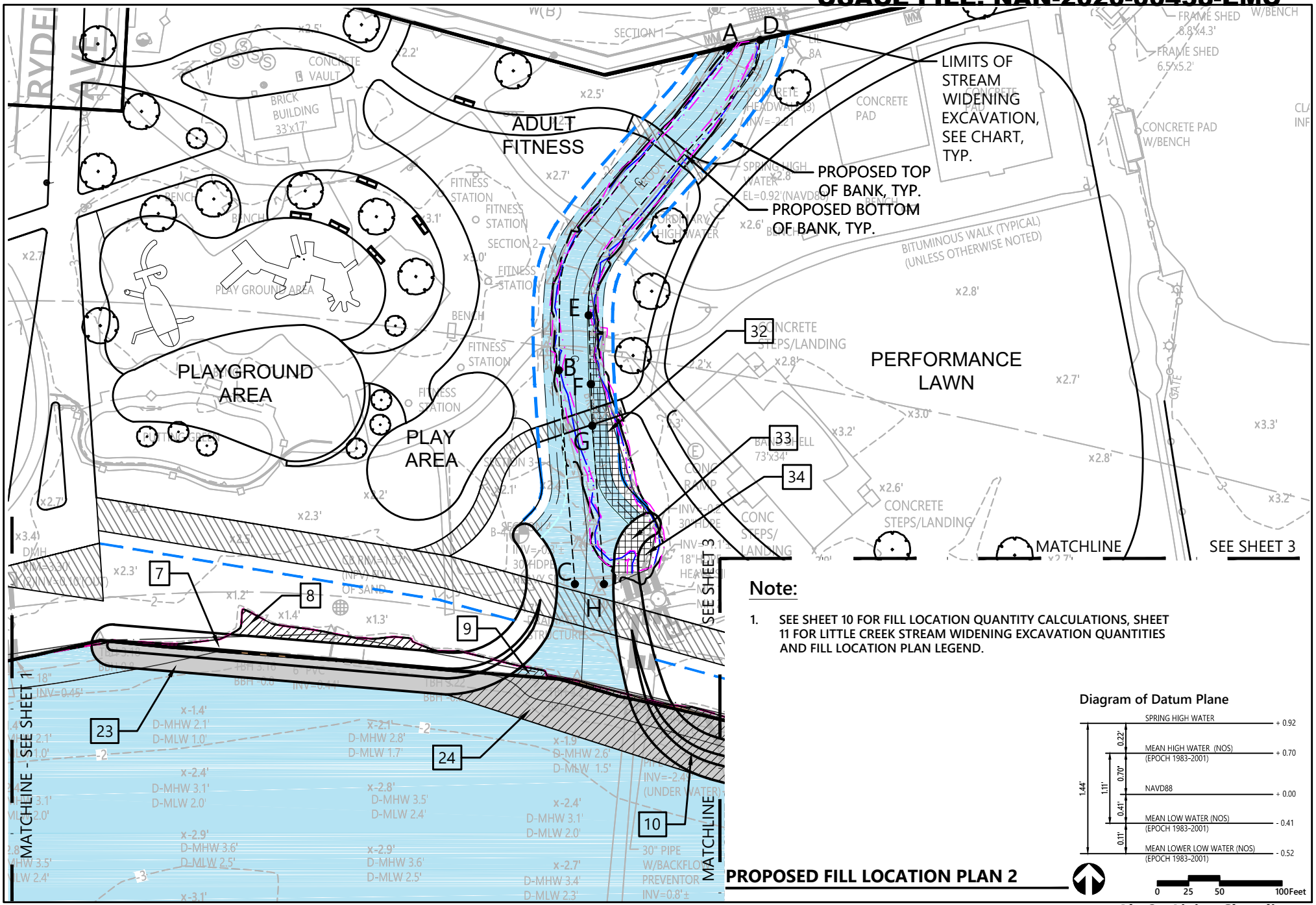

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Diagram of Datum Plane

PROPOSED FILL LOCATION PLAN 2

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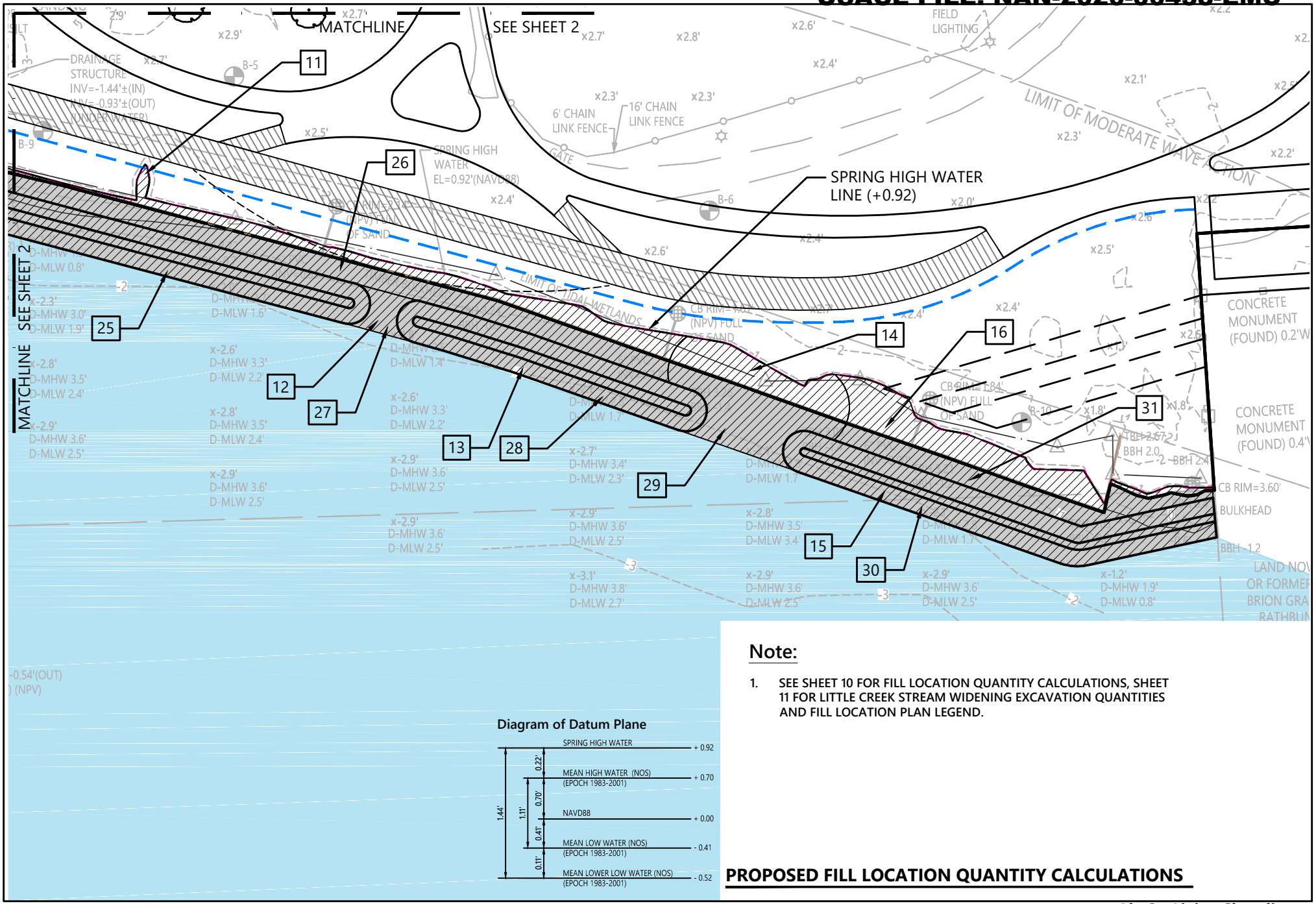

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Diagram of Datum Plane

PROPOSED FILL LOCATION QUANTITY CALCULATIONS

Village of Patchogue Shorefront Park
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Fill Quantities By Type, Location, Jurisdiction

Alternative No. 3 - Material Fill Volume by Jurisdiction

Fill Item No.	Material Description	Calculation	Cubic Yardage of Fill (CY)	Square Footage of Fill (SF)	Comments
Fill Seaward of Spring High Water (SHW)					
1	Sand (marsh)	598 SF x 0.5' depth / 27 CF	11	598	Seaward of bulkhead
2	Rock Sill (partial)	176 LF x 33 SF / 27 CF	215	1,813	33 SF = Cross sectional area seaward of SHW
3	Beach Cobble (partial)	156 SF x 1.25' depth / 27 CF	7	156	
4	Rock Sill (partial)	138 LF x 33 SF / 27 CF	169	1,538	33 SF = Cross sectional area seaward of SHW
5	Beach Cobble (partial)	159 SF x 1.25' depth / 27 CF	7	159	
6	Rock Sill (partial)	134 LF x 33 SF / 27 CF	164	1,633	33 SF = Cross sectional area seaward of SHW
7	Rock Sill (partial)	[44 LF x 33 SF] + [119 LF x 59 SF] / 27 CF	314	2,424	33 SF & 59 SF = Cross sectional areas seaward of SHW
8	Sand (marsh)	364 SF x 0.5' depth / 27 CF	7	364	Landward of bulkhead
9	Beach Cobble (partial)	1,379 SF x 1.25' depth / 27 CF	64	1,379	Low weir at Little Creek mouth
10	Rock Sill (partial)	186 LF x 60 SF / 27 CF	413	3,048	60 SF = Cross sectional area seaward of SHW
11	Sand (marsh)	[2,299 SF x 1' depth] + [1,283 SF x 0.5' depth] / 27 CF	109	3,582	Seaward of bulkhead and landward of bulkhead, respectively
12	Beach Cobble	253 SF x 1.25' depth / 27 CF	12	253	
13	Rock Sill	130 LF x 60 SF / 27 CF	289	2,126	60 SF = Cross sectional area seaward of SHW
14	Beach Cobble (partial)	2,125 SF x 1.25' depth / 27 CF	98	2,125	
15	Rock Sill	181 LF x 60 SF / 27 CF	402	2,953	60 SF = Cross sectional area seaward of SHW
16	Sand (marsh)	[1,285 x 1' depth] + [1,360 x 0.5' depth] / 27 CF	73	2,645	Seaward of bulkhead and landward of bulkhead, respectively
Fill below Mean High Water (MHW)					
17	Sand (beach)	563 SF x 0.5' depth / 27 CF	10	563	Seaward of bulkhead
18	Rock Sill (partial)	176 LF x 18 SF / 27 CF	117	1,738	18 SF = Cross sectional area below MHW
19	Beach Cobble (partial)	149 SF x 1.25' depth / 27 CF	7	149	
20	Rock Sill (partial)	138 LF x 18 SF / 27 CF	92	1,328	18 SF = Cross sectional area below MHW
21	Beach Cobble (partial)	128 SF x 1.25' depth / 27 CF	6	128	
22	Rock Sill (partial)	134 LF x 18 SF /27 CF	89	1,261	18 SF = Cross sectional area below MHW
23	Rock Sill (partial)	161 LF x 18 SF /27 CF	108	1,557	18 SF = Cross sectional area below MHW
24	Beach Cobble (partial)	1,323 SF x 1.25' Depth / 27 CF	61	1,323	Low weir at Little Creek mouth
25	Rock Sill (partial)	186 LF x 34 SF / 27 CF	234	3,048	34 SF = Cross section area below MHW
26	Sand (marsh)	2,299 SF x 1' depth / 27 CF	85	2,299	Seaward of bulkhead
27	Beach Cobble	253 SF x 1.25' Depth / 27 CF	12	253	
28	Rock Sill	130 LF x 34 SF / 27 CF	164	2,126	34 SF = Cross section area below MHW
29	Beach Cobble (partial)	1,246 SF x 1.25' depth / 27 CF	58	1,246	
30	Rock Sill	181 LF x 34 SF / 27 CF	228	2,953	34 SF = Cross section area below MHW
31	Sand (marsh)	1,285 SF x 1' depth / 27 CF	48	1,285	Seward of bulkhead
Fill Waterward of Ordinary High Water (OHW)					
32	Re-used Ex. Bank Soil	674 SF x 1.0 Avg. Depth / 27 CF	25	674	Avg. depth based on 10 SF cross-sectional bank per 10' bank width
33	Rock Sill (partial)	30 LF x 23 SF / 27 CF	26	278	23 SF = Cross sectional area waterward of OHW
34	Re-used Ex. Bank Soil	61 SF x 1.0 Avg Depth / 27 CF	2	61	Avg. depth based on 10 SF cross-sectional bank per 10' bank width

* Partial = indicates the portion of material quantity within/below/seaward of MHW, SHW, or OHW and is not representative of the entire volume of material quantities proposed.

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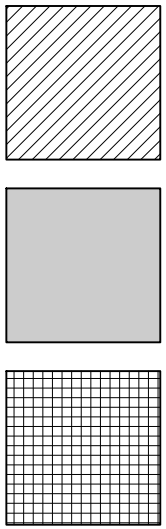
Fill Legend By Jurisdiction



FILL BELOW SPRING HIGH WATER (SHW)

FILL BELOW MEAN HIGH WATER (MHW)

FILL BELOW ORDINARY HIGH WATER (OHW)

Little Creek Stream Widening Excavation Quantities (Landward Of Existing Top Of Bank To Proposed Top Of Bank)

Stream Segment Excavation Volume Calculation	Cubic Yardage of Excavation (CY)	Square Footage of Excavation (SF)
A - B: 152 LF x 6 SF CROSS SECTIONAL EXCAVATION AREA / 27 SF	34	1,252
B - C: 86 LF x 23 SF CROSS SECTIONAL EXCAVATION AREA / 27 SF	74	1,386
D - E: 134 LF x 4 SF CROSS SECTIONAL EXCAVATION AREA / 27 SF	20	1061
E - F: 28 LF x 3 SF CROSS SECTIONAL EXCAVATION AREA / 27 SF	3	67
F - G: PROPOSED STREAM BANK REQUIRES FILL - NO EXCAVATION	0	0
G - H: PROPOSED STREAM BANK REQUIRES FILL - NO EXCAVATION	0	0
Totals:	131	3,766

FILL LOCATION PLAN LEGEND AND LITTLE CREEK CALCULATIONS

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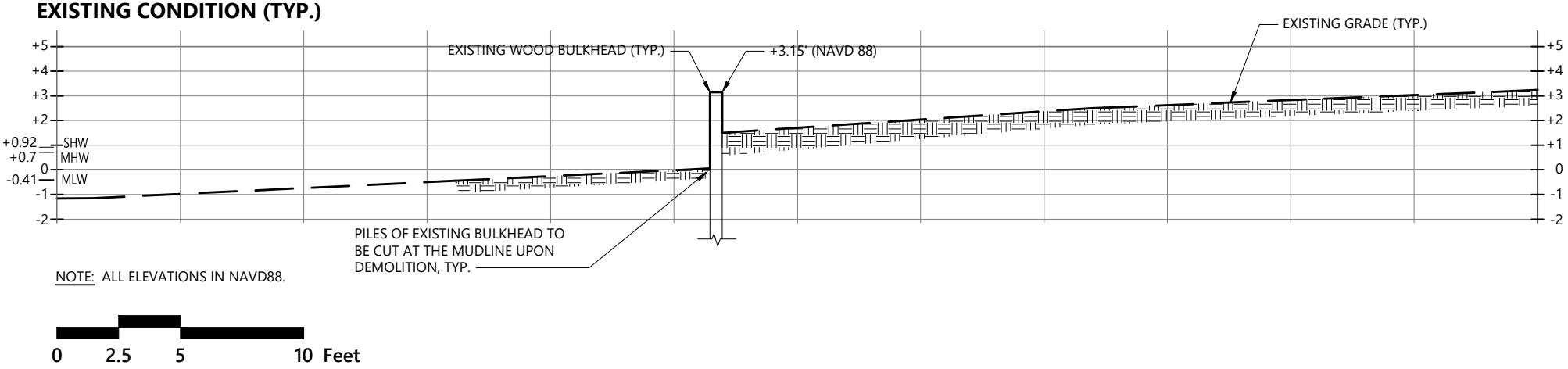
EXISTING CONDITION (TYP.)

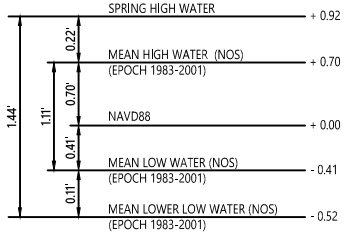


NOTE: ALL ELEVATIONS IN NAVD88.

0 2.5 5 10 Feet

TYPICAL SECTION VIEWS - 1

Diagram of Datum Plane



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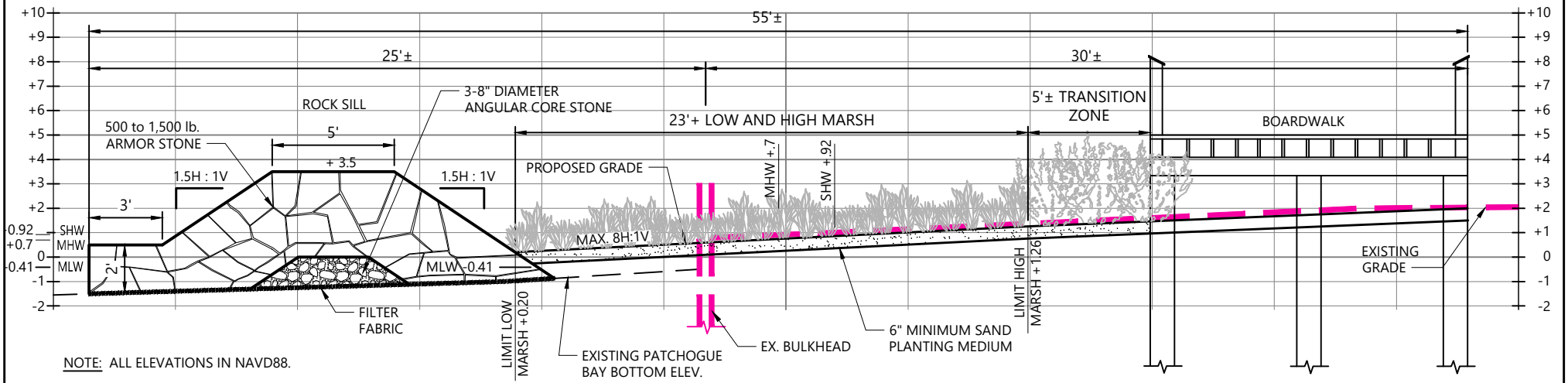
SECTION A-A: SEAWARD LIVING SHORELINE



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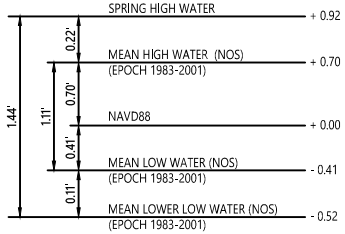
TYPICAL SECTION VIEWS - 1

Diagram of Datum Plane



Village of Patchogue Shorefront Park
Living Shoreline & Little Creek Restoration
So. Ocean Ave., Smith St, & Dewitt Ave.
Village of Patchogue, New York

Juan Carlos Vargas, Jr.
N.Y.S. LIC. No. 002183

GENERAL NOTES
1. EXISTING CONDITIONS INFORMATION BASED ON SURVEY PREPARED BY VHB DATED 06/27/2018, REVISED 10/20/2020.
2. HORIZONTAL DATUM: NYS PLANE LONG ISLAND NAD83; VERTICAL DATUM: NAVD88
3. DRAWINGS ARE CONCEPTUAL AND FOR THE SOLE PURPOSE OF PERMITTING, NOT FOR CONSTRUCTION. PROJECT COMPONENTS AND FEATURES HAVE NOT BEEN FULLY DESIGN AND ENGINEERED, BUT ARE REPRESENTATIVE, IN GOOD FAITH, OF THE EXTENT OF WORK ANTICIPATED.
4. CONSTRUCTION FOR ALTERNATIVE No.3 IS ANTICIPATED TO BE PERFORMED ON-LAND, HOWEVER, UP TO 2 BARGES AND 1 TUG MAY BE REQUIRED AS TEMPORARY VESSELS AND SUBJECT TO CONTRACTOR MEANS AND METHODS.
5. STREAM RESTORATION WORK TO BE COMPLETED PRIOR TO RECONNECTION TO PATCHOGUE BAY.
6. PRELIMINARY PEDESTRIAN BRIDGE DECK SURFACE ELEVATIONS SHOWN ON PLAN; ASSUMING PRELIMINARY BRIDGE STRUCTURE DEPTH = 1.7'±, CLEARANCE ABOVE SHW ELEVATION = 0.88'±MIN. FOR TWO NORTHERN PEDESTRIAN BRIDGES AND 2.38'± MIN. FOR SOUTHERN BOARDWALK BRIDGE

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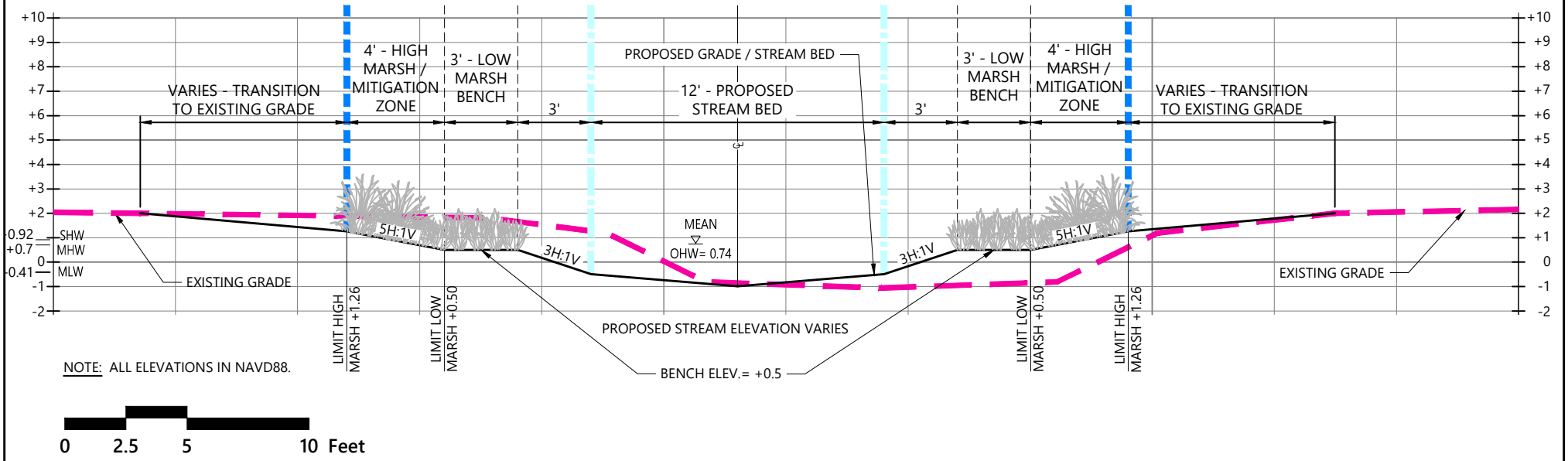
SECTION B-B: LITTLE CREEK PROPOSED TYPICAL SECTION

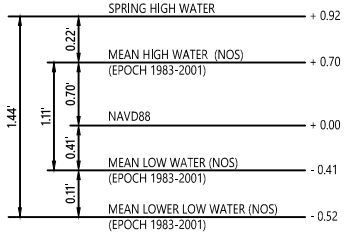


NOTE: ALL ELEVATIONS IN NAVD88.

0 2.5 5 10 Feet

TYPICAL SECTION VIEWS - 3

Diagram of Datum Plane



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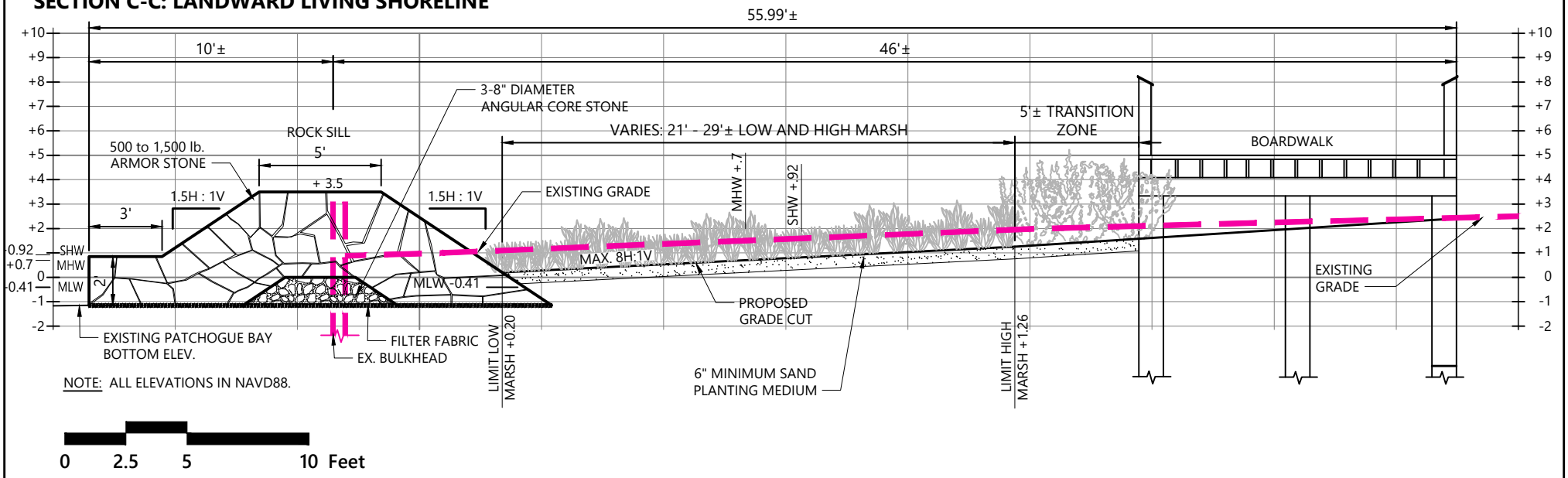
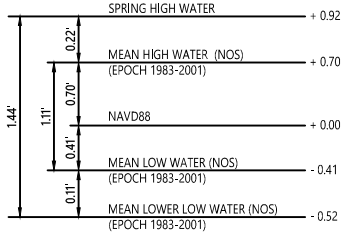
SECTION C-C: LANDWARD LIVING SHORELINE



TYPICAL SECTION VIEWS - 4

Diagram of Datum Plane



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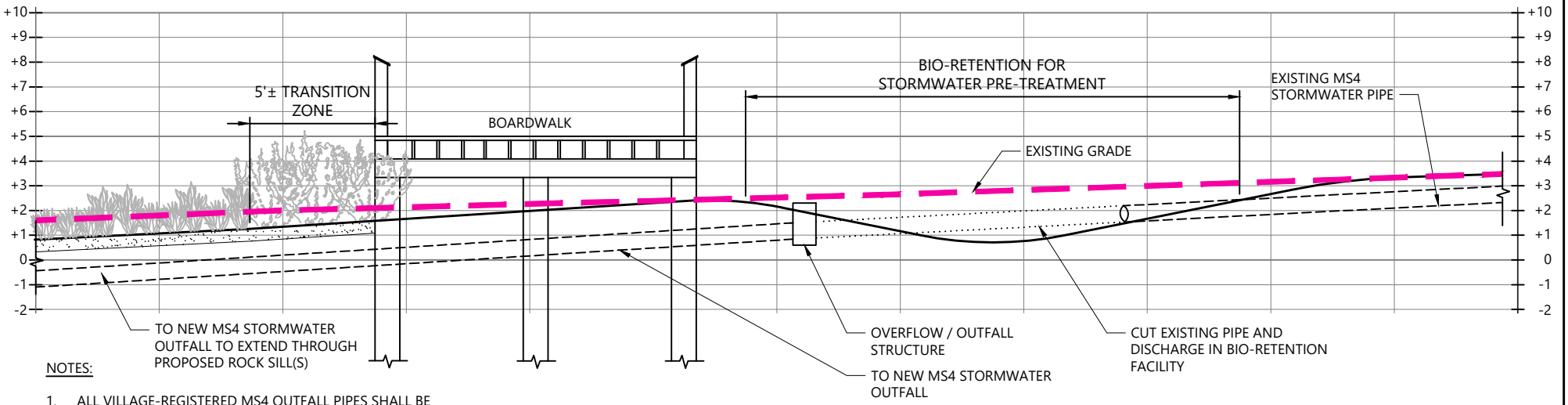
TYPICAL STORMWATER PIPE TREATMENT CONCEPT

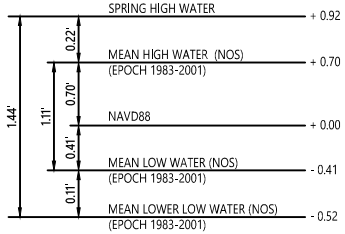


NOTES:

1. ALL VILLAGE-REGISTERED MS4 OUTFALL PIPES SHALL BE PRESERVED AFTER CONSTRUCTION
2. MS4 PIPES ELIGIBLE FOR PRE-TREATMENT TO BE DETERMINED IN DESIGN AND ENGINEERING PHASE
3. ALL ELEVATIONS IN NAVD88.

TYPICAL SECTION VIEWS - 5

Diagram of Datum Plane



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