Presentation for:

Town of Dewey Beach

RESILIENCE AND SUSTAINABILITY COMMITTEE MEETING

December 19, 2025
3:00 PM – 4:00 PM

STRAUGHAN ENVIRONMENTAL

Meet the Presenters

Larry Trout, Jr., PE
Project Manager

- ✓ Extensive experience leading mitigation planning and implementation as well as climate adaptation/resiliency.
- ✓ Led multiple coastal assessment, green infrastructure and restoration projects in Delaware since 2010.
- ✓ Expert in preparing grant applications and implementing and managing grant funding once it has been secured.

STRAUGHAN ENVIRONMENTAL

Who is Straughan Environmental?

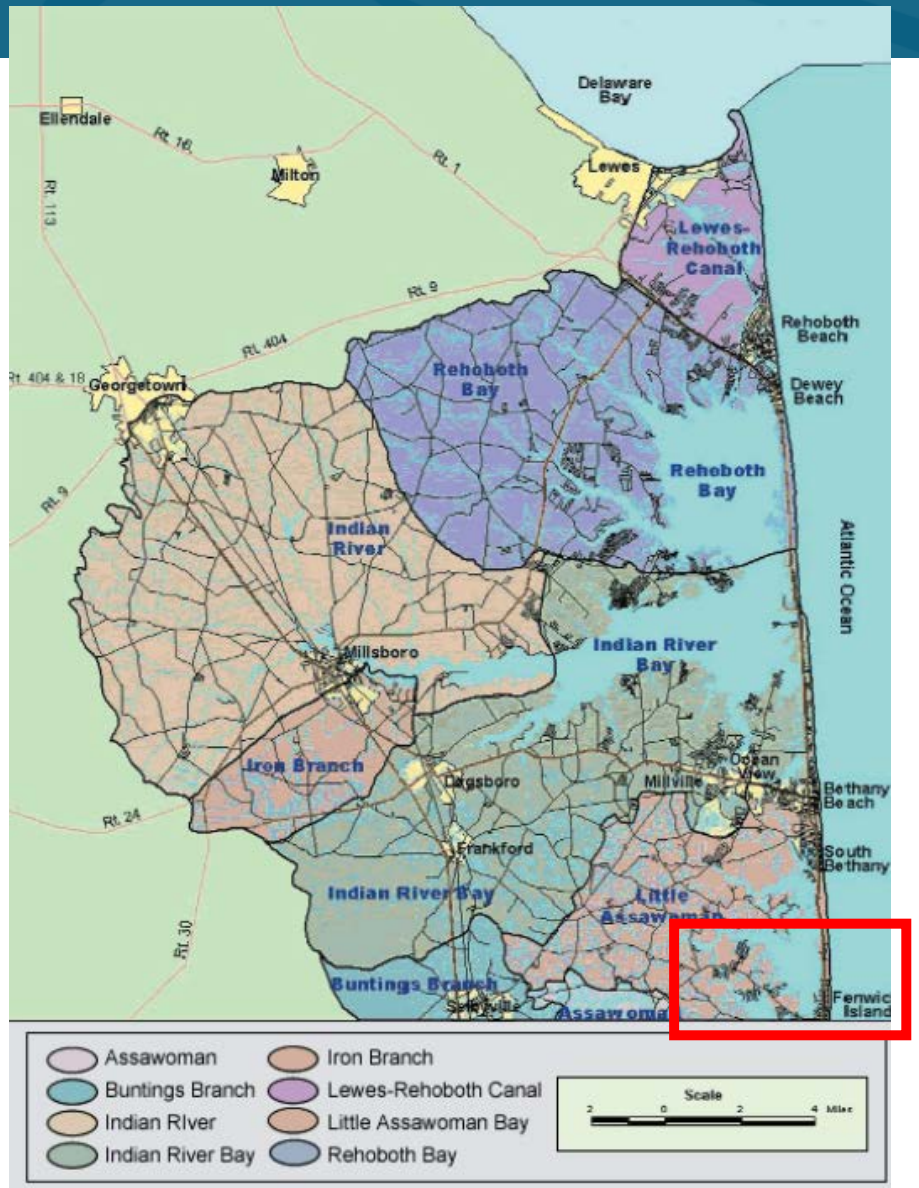
- Women owned company of over 90 water resources engineers and environmental conservation professionals
- 30+ year history of supporting environmental and restoration projects throughout the Mid-Atlantic region
- Offer a wide range of services to support flooding resiliency projects –
  - ✓ watershed, flooding, shoreline and geomorphic assessments
  - ✓ stream and wetland restoration; outfall stabilization
  - ✓ shoreline management
  - ✓ forest planting
  - ✓ soil amendment
  - ✓ hydrologic and hydraulic (H&H) modeling (1D/2D)
  - ✓ NPDES/TMDL permit management and compliance and crediting
  - ✓ environmental permitting and delineations involving wetlands/Waters of the US and forests
  - ✓ erosion and sediment control (ESC)
  - ✓ preparation of engineering plans, cost estimates, and specifications for construction.

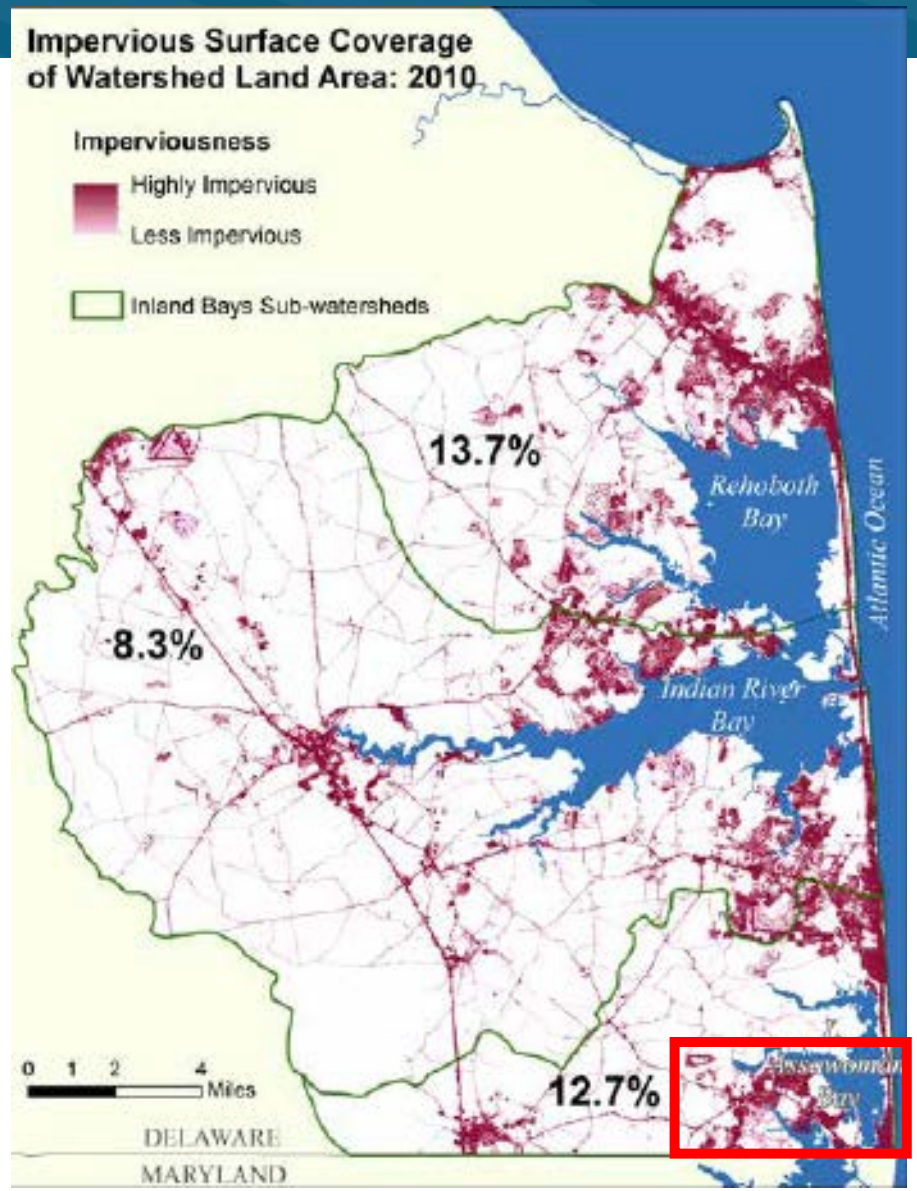
Grant Funding Experience with Communities

Identification and Preparation of Grant Funding and Management of Awarded Grants

- *Delaware Water Infrastructure Advisory Council (DWIC) Surface Water Matching Planning Grant-Town of Dewey Beach*
- *Delaware Department of Natural Resources and Environmental Control (DNREC) Community Water Quality Improvement Program (CWQIP) – Anchorage Canal, Town of Dewey, Eli Walls Tax Ditch*
- *DNREC Watershed Improvement Projects Implementation Initiative (WIPII)-Stockley Center, Dewey Beach*
- *DNREC Strategic Opportunity Fund for Adaptation (SOFA)-SR 1*
- *National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund, Chesapeake Bay Stewardship Fund (CBSF) Grant-Dewey Beach, MD 249*
- *Federal Highway Administration (FHWA) Green Infrastructure Techniques for Coastal Highway Resilience Research Grant-SR 1*

Project Background





Drainage areas to multiple stormdrain outfalls are comprised of highly impervious acres that increase runoff and contribute pollutant loads to DE Inland Bays.

Increased frequency of bayside flooding in many areas in Town of Dewey Beach due to extreme high tides, Nor'easters, and hurricanes

Causes bayside shoreline erosion at many street dead ends in Town of Dewey Beach

CITY OF BALTIMORE PROJECT NO. 1367

Example Approach-Project Background

Planning, Assessment and Concept Development-Dewey Beach Example

Town of Dewey Beach Phase II Stormwater Planning

- **Objective:**
  - Develop Prioritized Green Infrastructure Stormwater Plan
  - Innovative Stormwater Management/Living Shoreline Techniques
  - Address Stormwater Management Nutrient Reductions and Flooding
- **Project Partners:**
  - Delaware Center for Inland Bays (CIB)
  - Town of Dewey Beach
  - Delaware Department of Transportation (DelDOT)
  - RK&K
- **Funding Sources:**
  - Delaware Water Infrastructure Advisory Council (DWIC) Surface Water Matching Planning Grant
  - Town of Dewey Beach
  - DelDOT In-kind
  - CIB In-kind

Example Approach-Project Background

Planning, Assessment and Concept Development

Coastal Green Infrastructure Techniques for the Protection of SR 1

- **Objective:**
  - Perform Vulnerability Assessment and Opportunity Identification
  - Complete a Demonstration Project
  - Overall goal to identify coastal green infrastructure techniques that could be implemented along the SR 1 corridor
- **Project Partners:**
  - DelDOT
  - CIB
  - Delaware Department of Natural Resources and Environmental Control (DNREC)
  - Sovereign Consulting, RK&K and Storm and Stream Solutions
- **Funding Sources:**
  - DNREC Strategic Opportunity Fund for Adaptation (SOFA)
  - Federal Highway Administration (FHWA) Green Infrastructure Techniques for Coastal Highway Resilience research project grant.

wey Beach Phase II Stormwater Planning

Dewey Beach Outfall Drainage Map

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ewey Beach Phase II Stormwater Planning

Dewey Beach Proposed BMP Location Map

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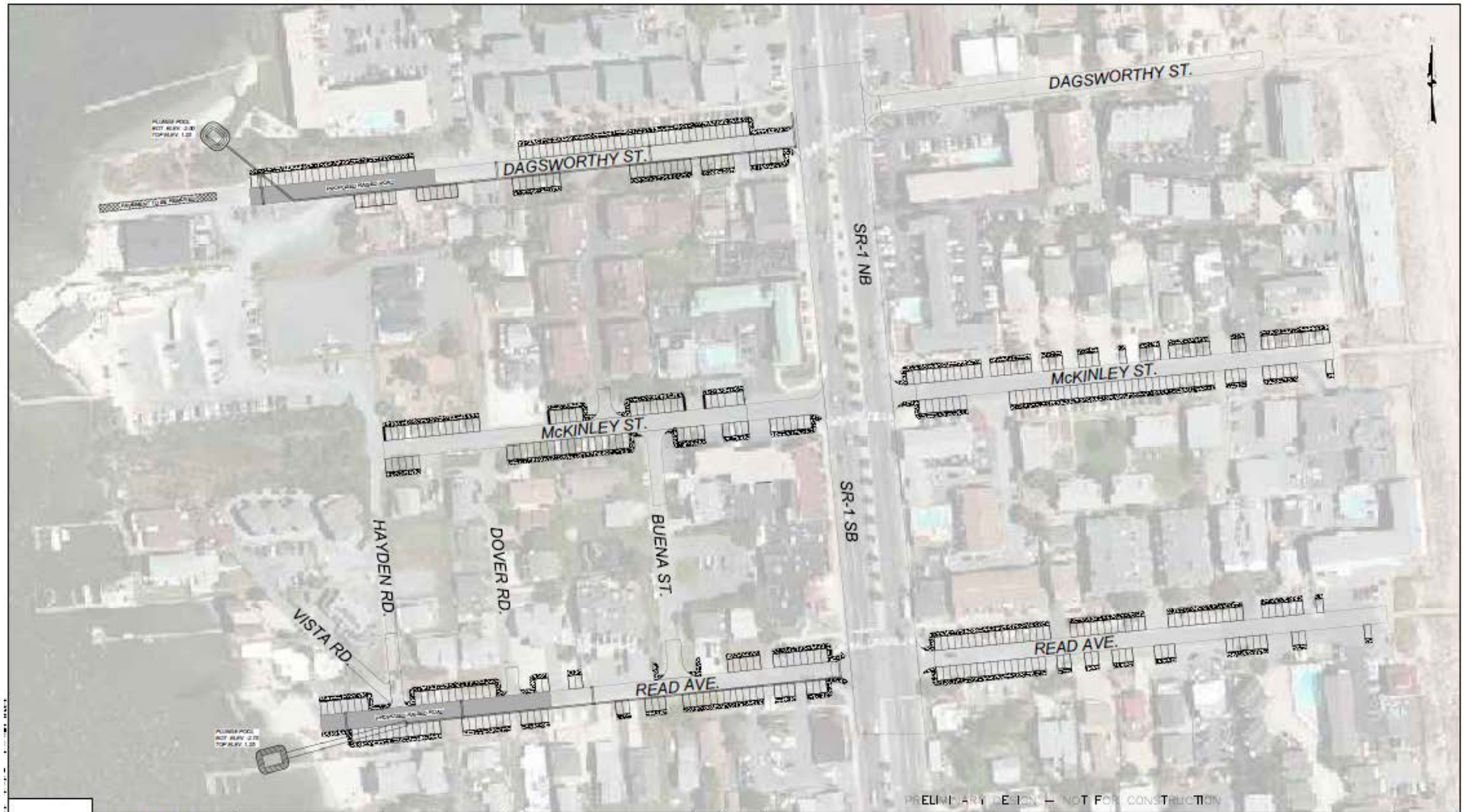
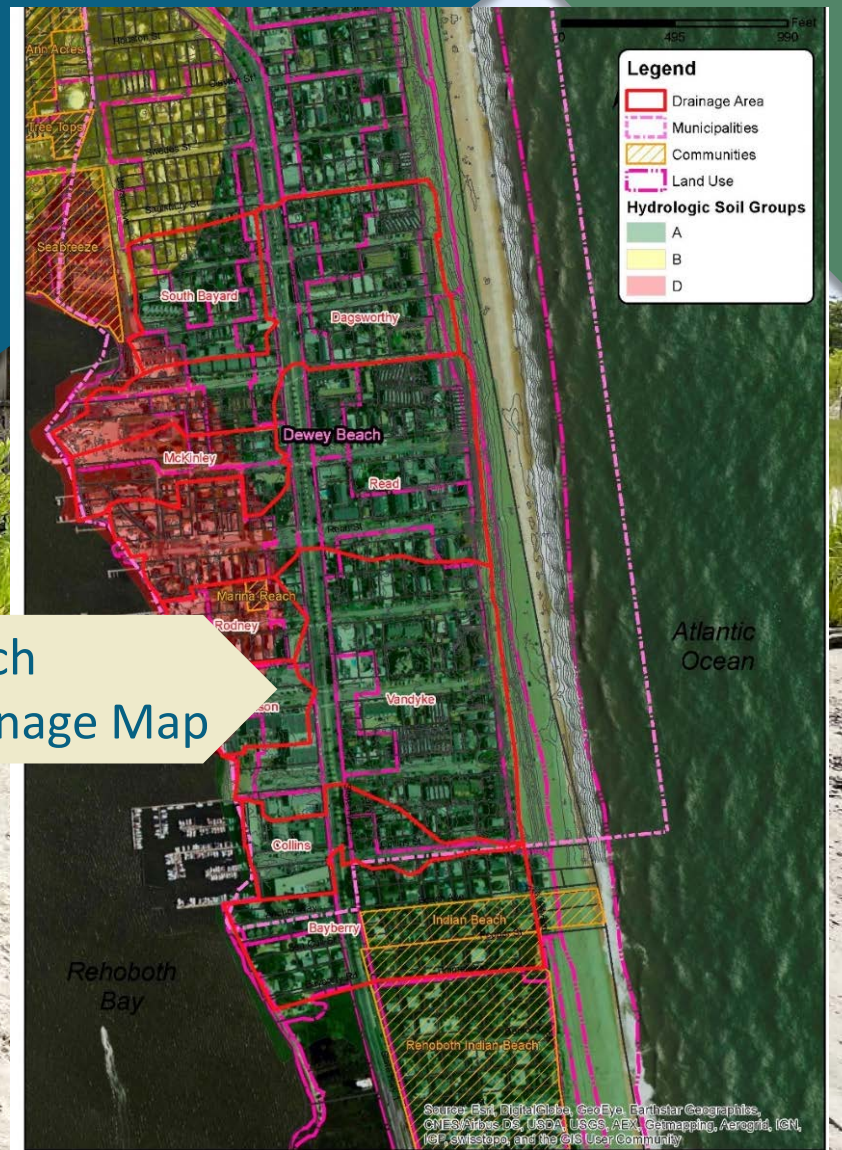

DAGSWORTHY ST.
DAGSWORTHY ST.
SR-1 NB
SR-1 SB
McKINLEY ST.
McKINLEY ST.
HAYDEN RD.
DOVER RD.
BUENA ST.
VISTA RD.
READ AVE.
READ AVE.
PRELIMINARY DESIGN – NOT FOR CONSTRUCTION

Town of Dewey Beach Flood Resilience Planning Study

Planning, Assessment and Concept Development

- **Phase 1: Data Collection/Review and Stakeholder Engagement:**
  - Compile/Review Data
  - Review/Communicate with Partners Previous Work
  - Review Existing GIS to ID/Screen Potential Projects
- **Phase 2: Data Analysis and Prioritization of Mitigation Measures and BMPs:**
  - PCSWMM Modeling
  - Analyze Data to Develop Screening Criteria Matrix
  - Develop Roster of Prioritized Mitigation/BMP Opportunities
- **Phase 3: Property Owner Contact and Field Assessments:**
  - Assist with Outreach to Property Owners and Field Assessments
- **Phase 4: Concept Design and Report:**
  - Develop Report and 30 Concept Level Designs

Example Approach-Flood Resilience Planning Study – Phase 1



Dewey Beach
Outfall Drainage Map

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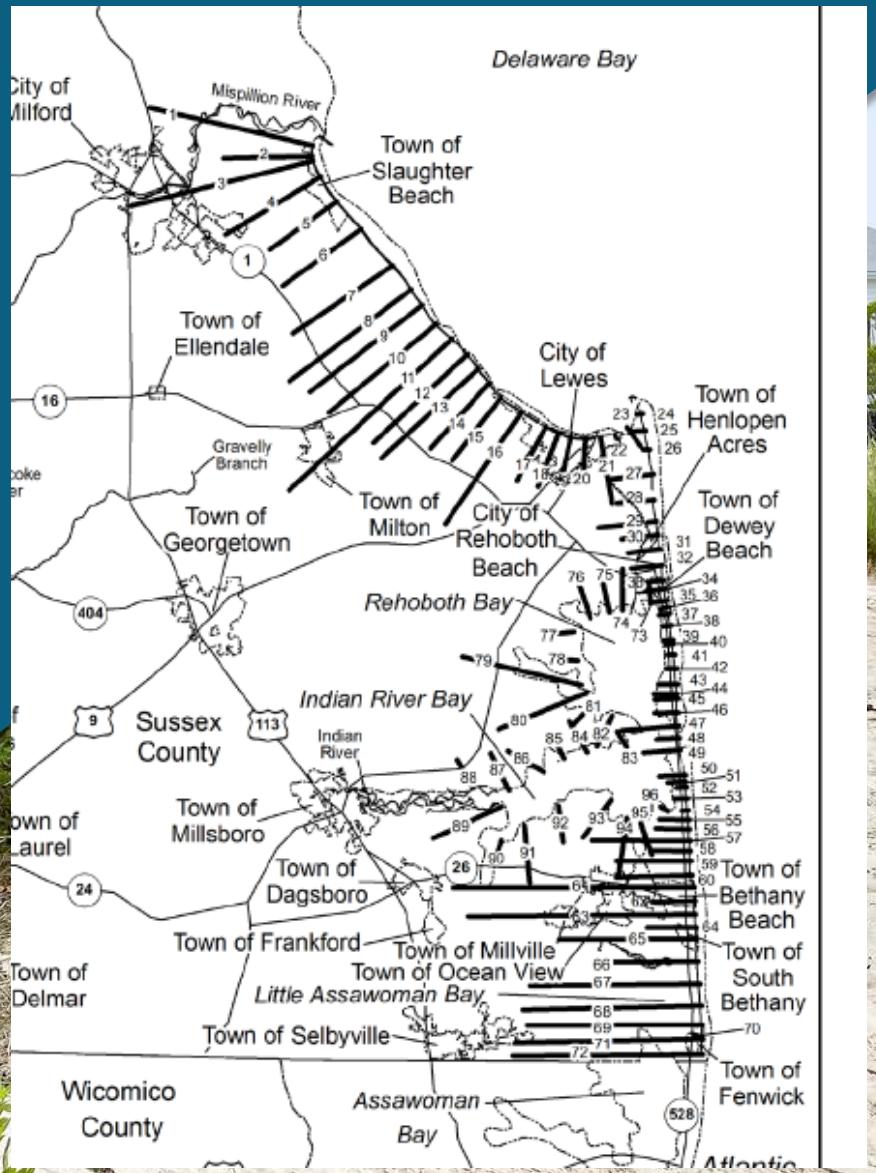
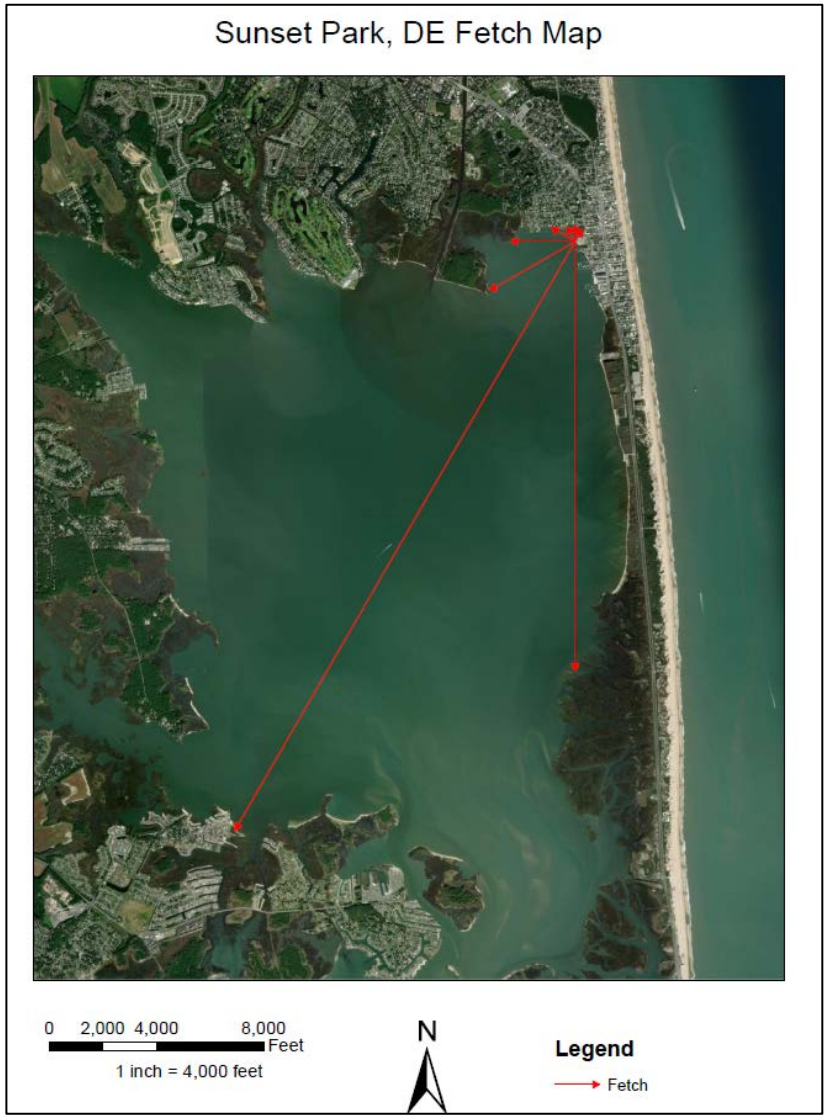
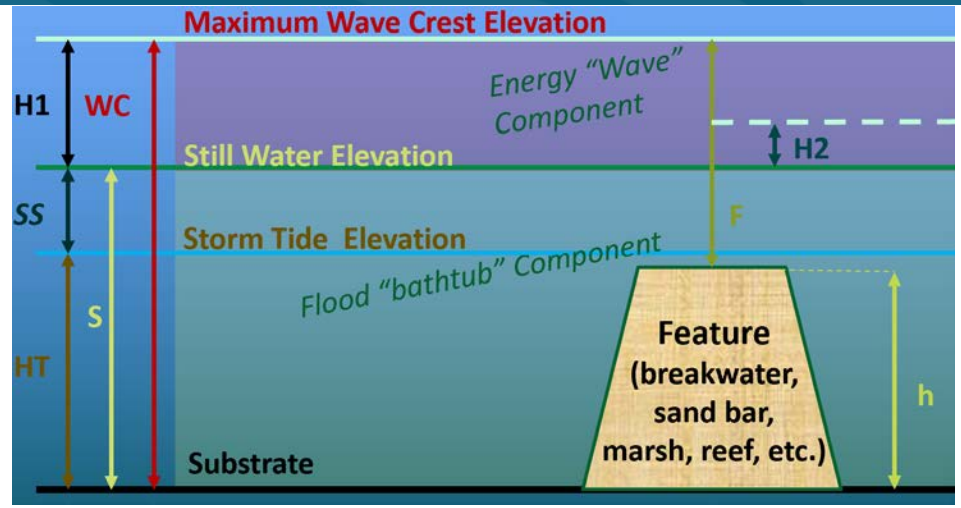
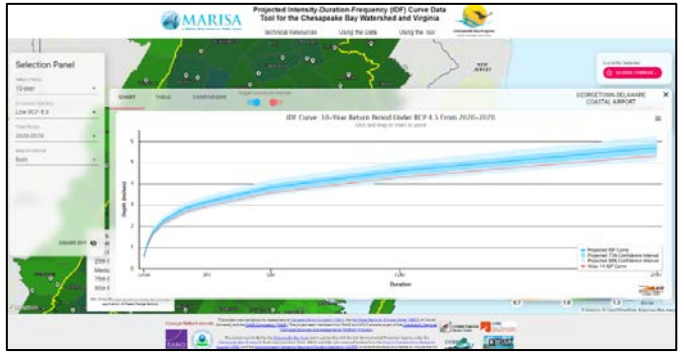
Example Approach-Flood Resilience Planning Study – Phase 1

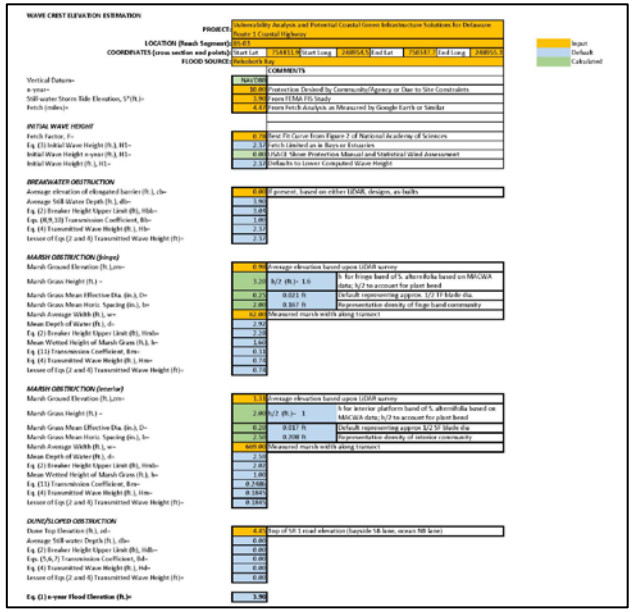


Example Approach-Flood Resilience Planning Study Phase 2



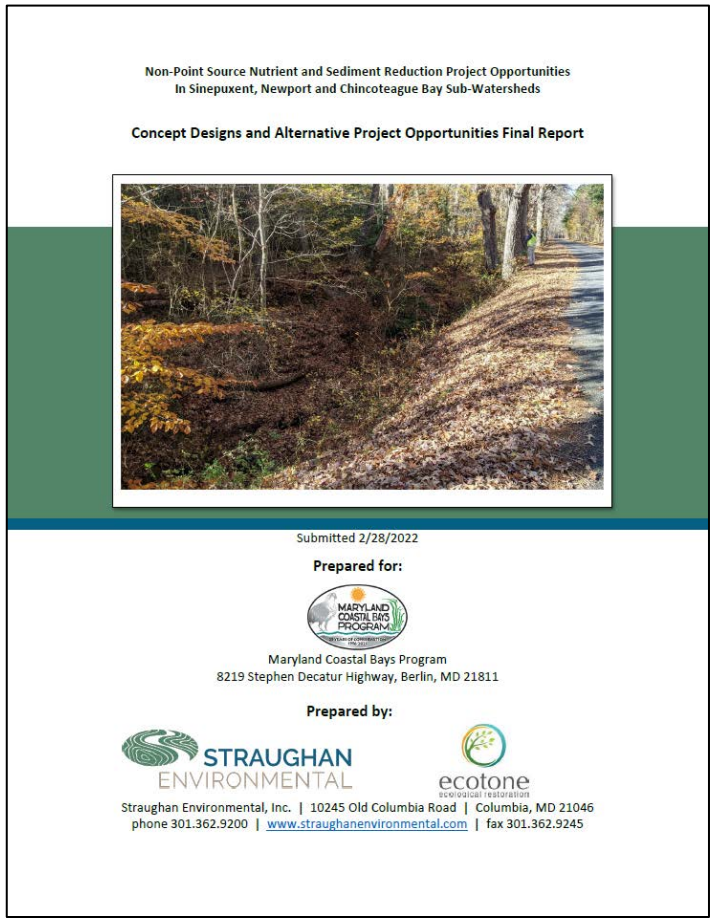






Example Approach-Flood Resilience Planning Study Phase 3

Example Approach-Flood Resilience Planning Study Phase 4



Non-Point Source Nutrient and Sediment Reduction Project Opportunities
In Sinepuxent, Newport and Chincoteague Bay Sub-Watersheds

Concept Designs and Alternative Project Opportunities Final Report

Submitted 2/28/2022

Prepared for:

Maryland Coastal Bays Program
8219 Stephen Decatur Highway, Berlin, MD 21811

Prepared by:

STRAUGHAN ENVIRONMENTAL

ecotone ecological restoration

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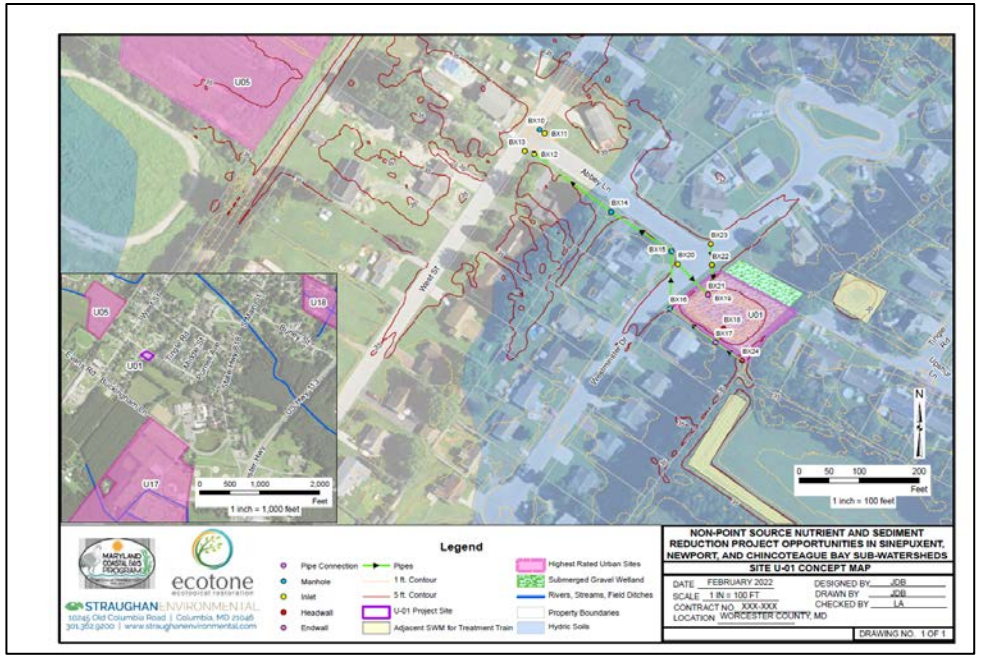
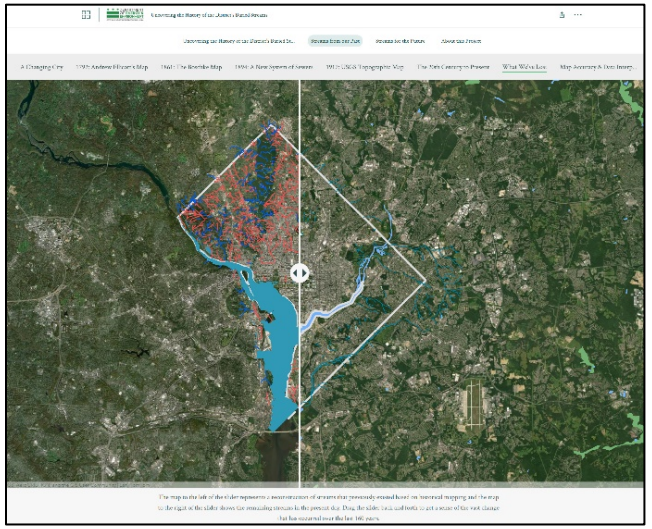
phone 301.362.9200 | www.straughanenvironmental.com | fax 301.362.9245





Example Implementation Project #1

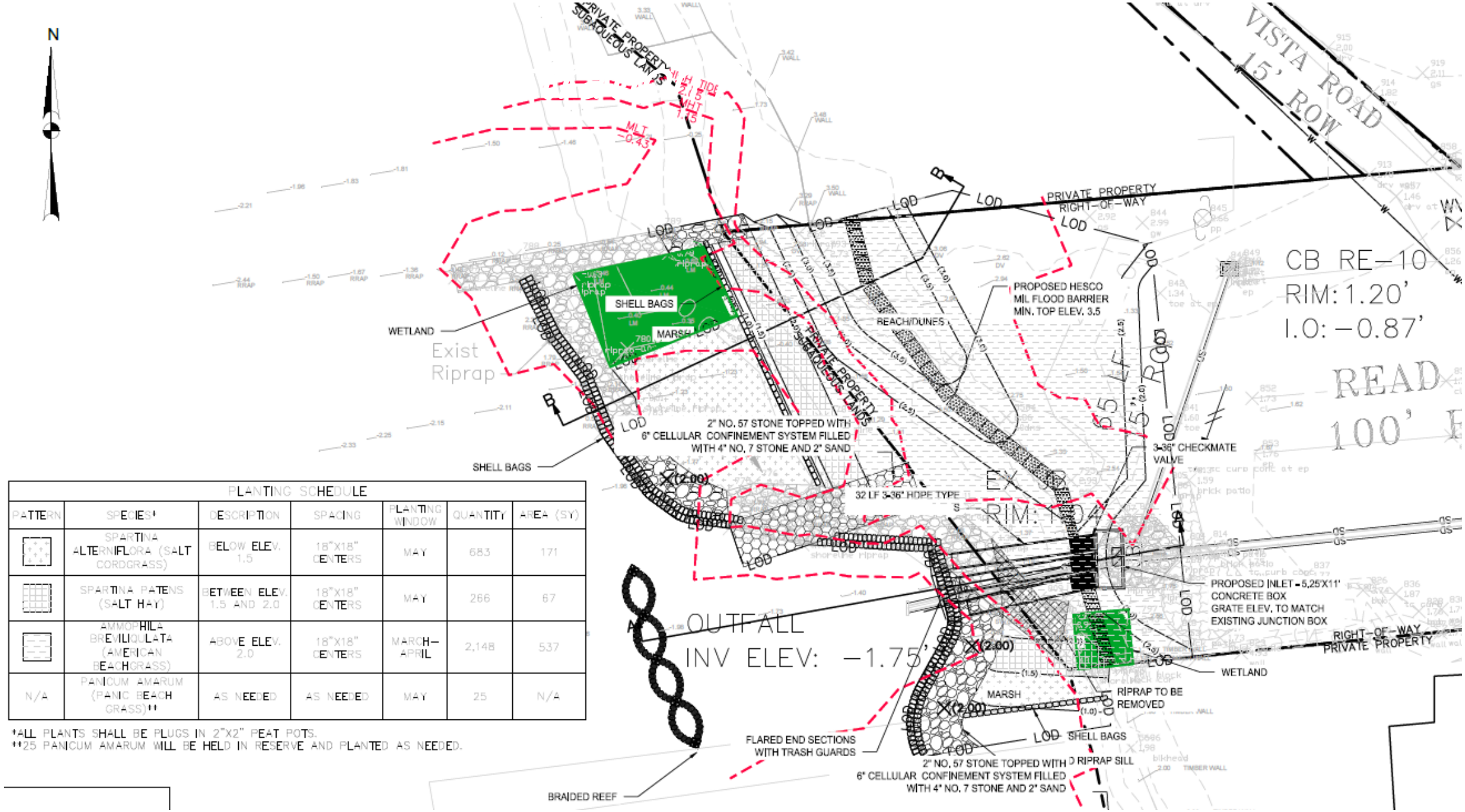
Monigle Park was constructed in 2008 to protect shoreline from erosion.

Example Implementation Project #1

West End of Read Avenue in Monigle Park

- **Project Goals:**
  - Shoreline Stabilization
  - Reduce Flooding
  - Improve Water Quality

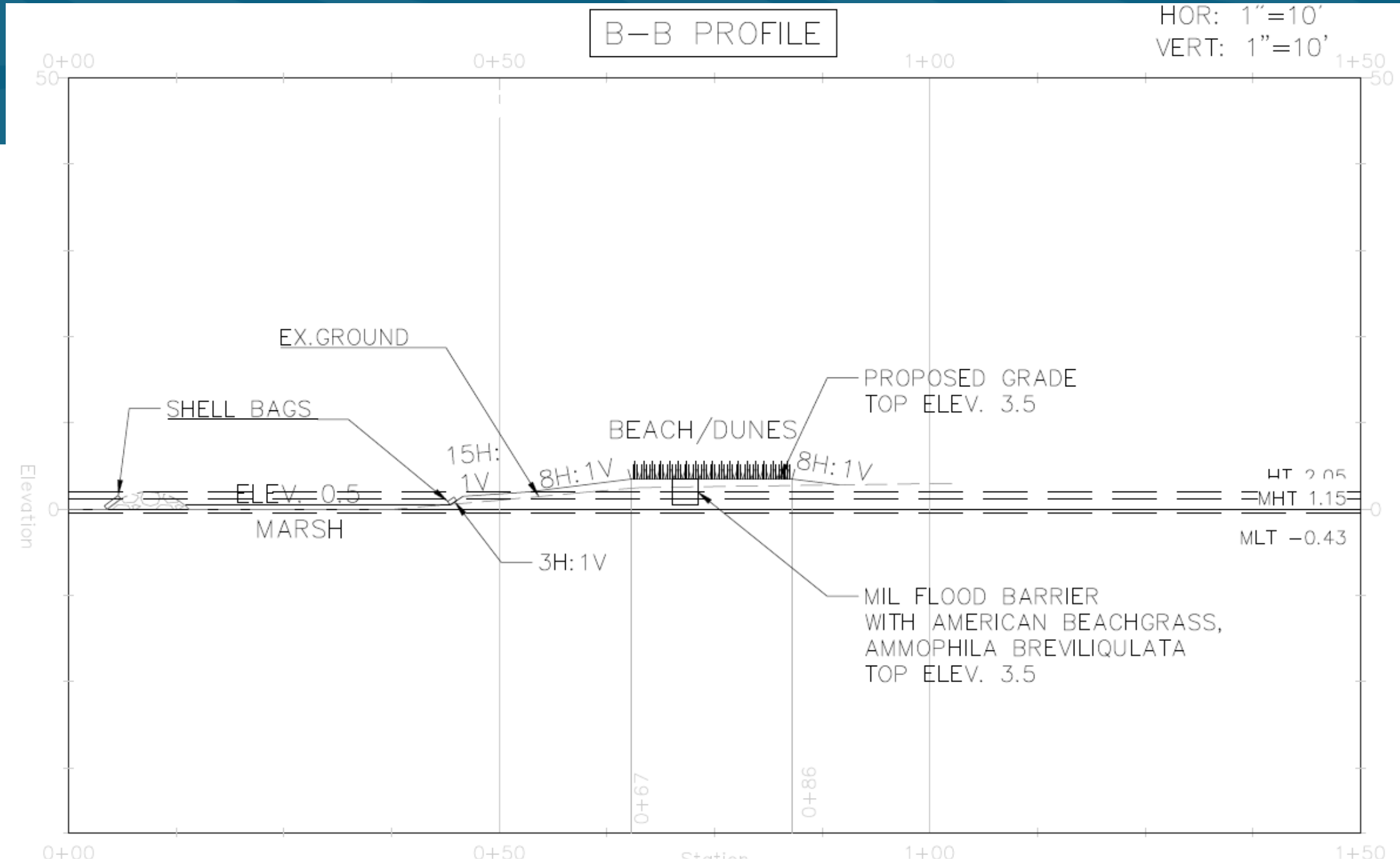
- **Funding Sources:**
  - DWIC Community Water Quality Improvement Grant
  - DNREC SOFA/FHWA Green Infrastructure Techniques for Coastal Highway Resilience research project grant



PLANTING SCHEDULE						
PATTERN	SPECIES*	DESCRIPTION	SPACING	PLANTING WINDOW	QUANTITY	AREA (SY)
	SPARTINA ALTERNIFLORA (SALT CORDGRASS)	BELOW ELEV. 1.5	18"X18" CENTERS	MAY	683	171
	SPARTINA PATENS (SALT HAY)	BETWEEN ELEV. 1.5 AND 2.0	18"X18" CENTERS	MAY	266	67
	AMMOPHILA BREVILIGULATA (AMERICAN BEACHGRASS)	ABOVE ELEV. 2.0	18"X18" CENTERS	MARCH-APRIL	2,148	537
N/A	PANICUM AMARUM (PANIC BEACH GRASS)**	AS NEEDED	AS NEEDED	MAY	25	N/A

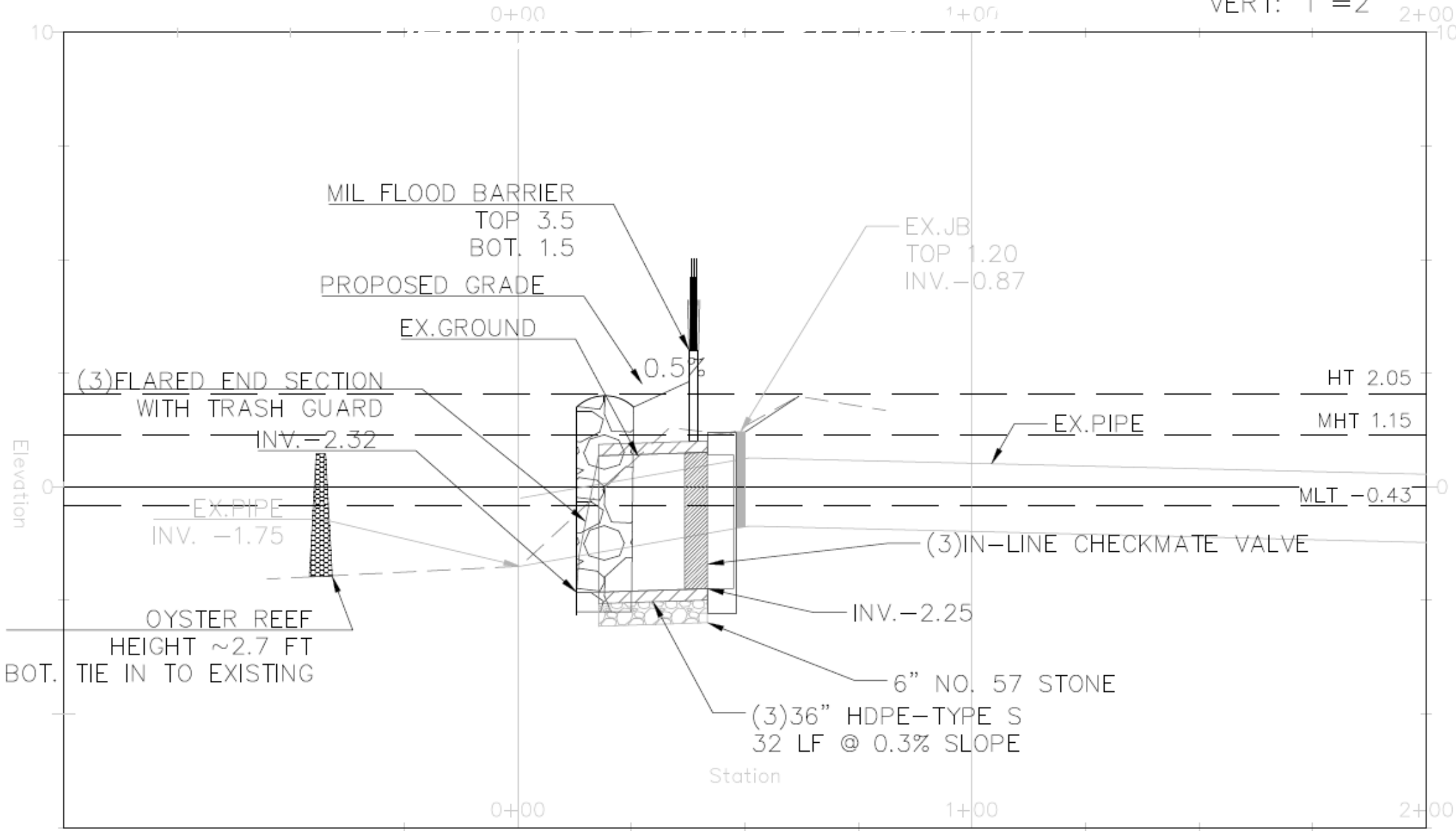
*ALL PLANTS SHALL BE PLUGS IN 2"X2" PEAT POTS.
**25 PANICUM AMARUM WILL BE HELD IN RESERVE AND PLANTED AS NEEDED.

t #1

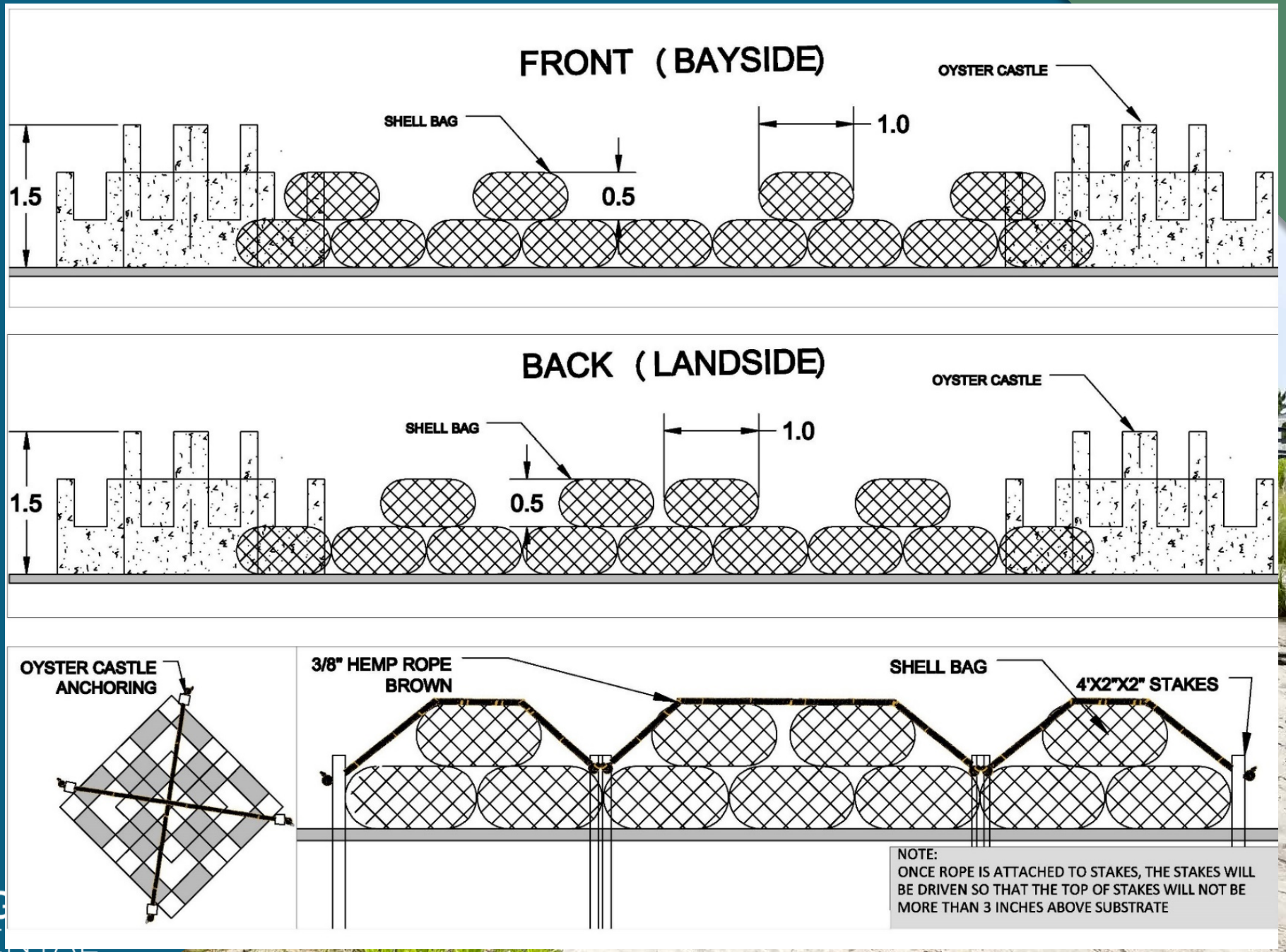

B–B PROFILE
HOR: 1"=10'
VERT: 1"=10'
0+00
0+50
1+00
1+50
EX.GROUND
PROPOSED GRADE
TOP ELEV. 3.5
SHELL BAGS
BEACH/DUNES
15H: 1V
8H: 1V
8H: 1V
ELEV. 0.5
MARSH
MHT 1.15
MLT −0.43
3H: 1V
MIL FLOOD BARRIER
WITH AMERICAN BEACHGRASS,
AMMOPHILA BREVILIQULATA
TOP ELEV. 3.5
Elevation
0+67
0+86
Station

A–A PROFILE

HOR: 1"=20'
VERT: 1"=2'



Example Implementation Projec



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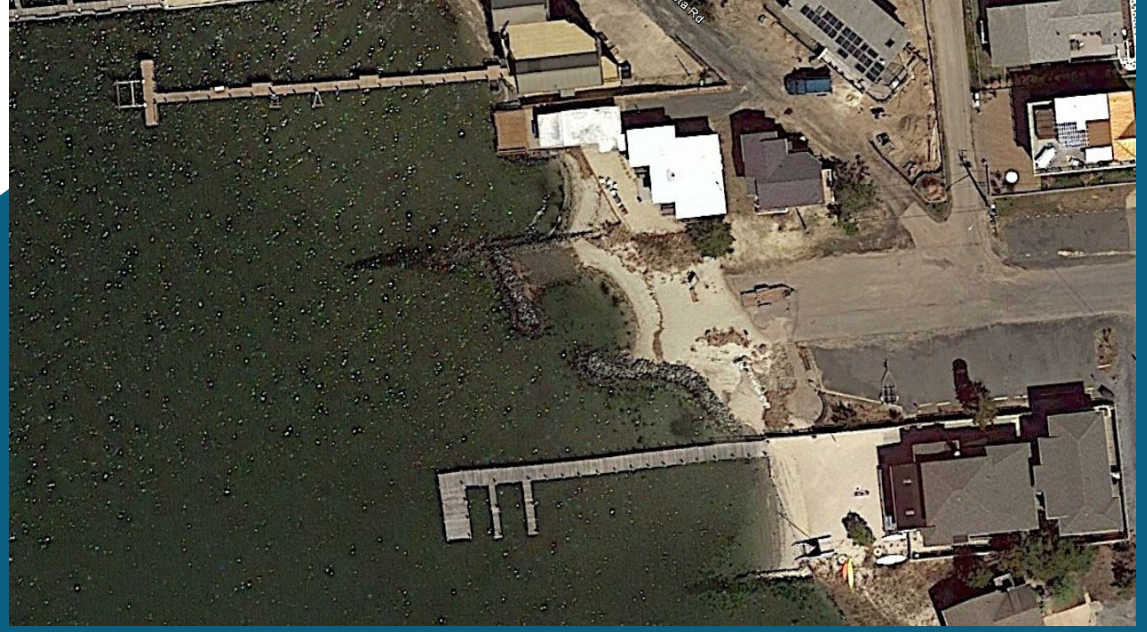
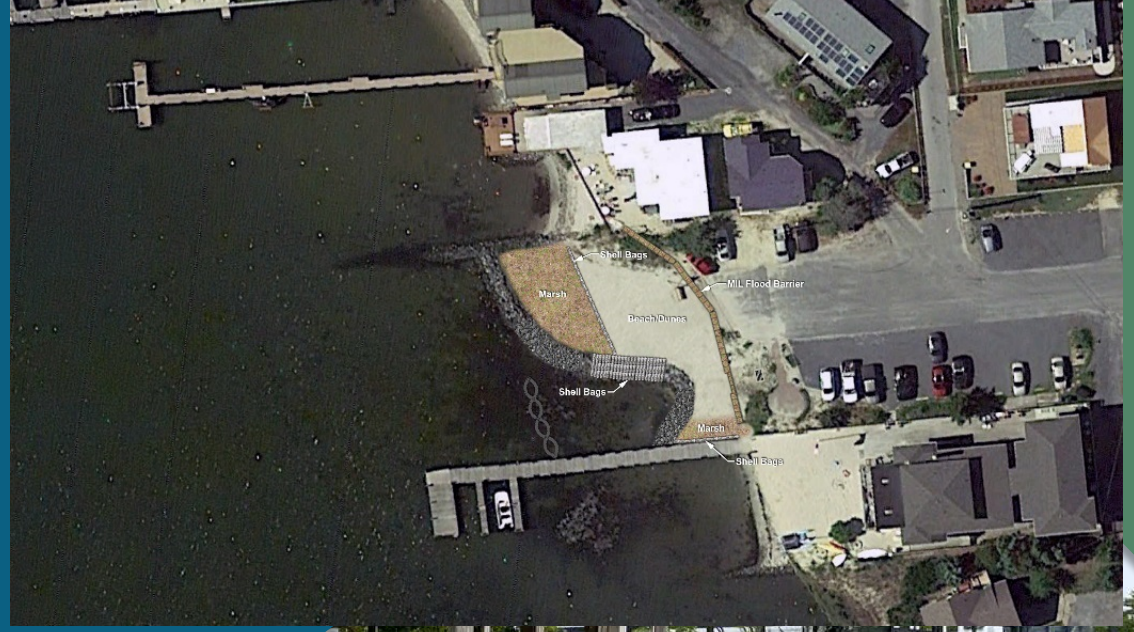
Example Implementation Projec





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Example Implementation Projec

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Example Project #1

Example Implementation Project #1

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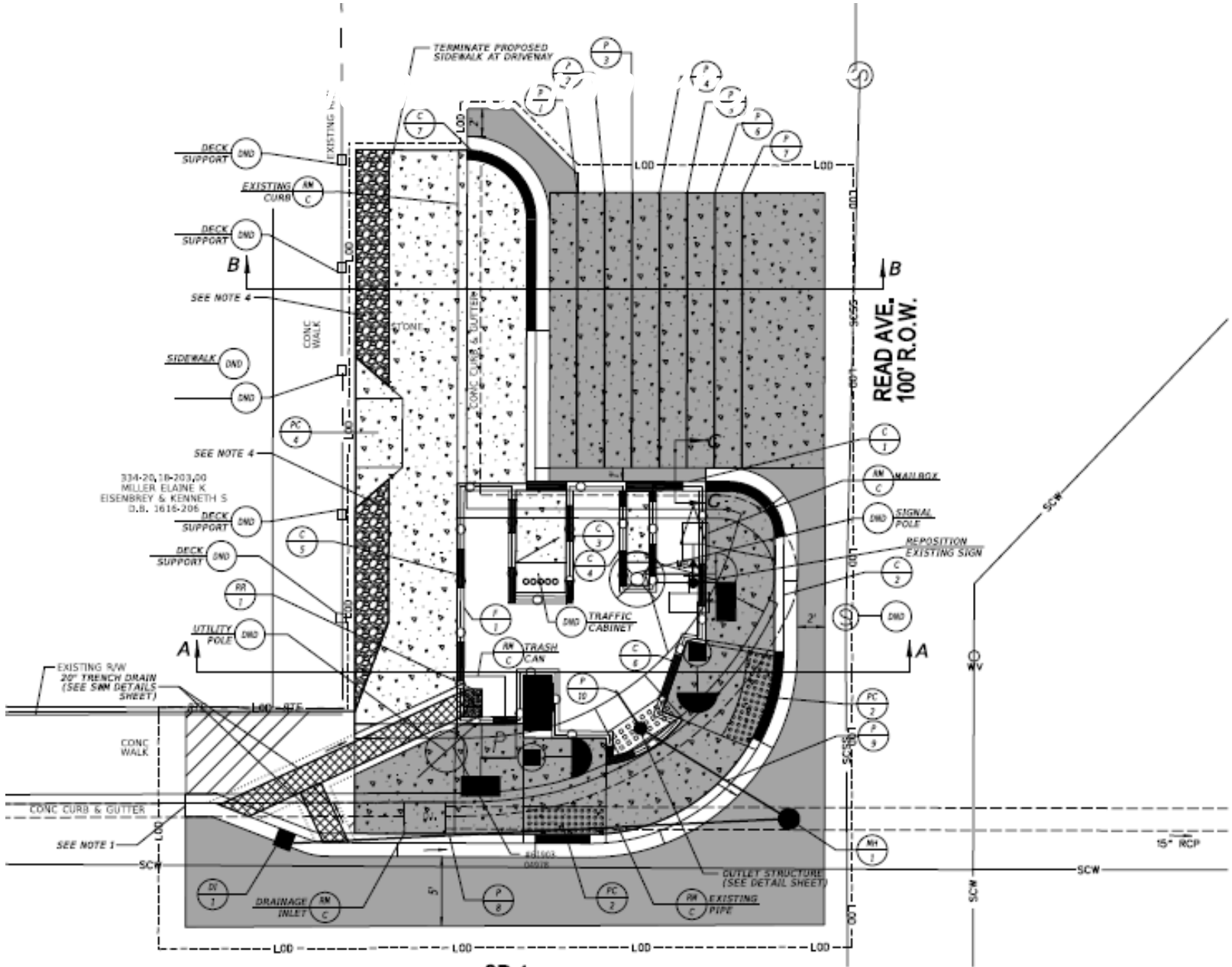
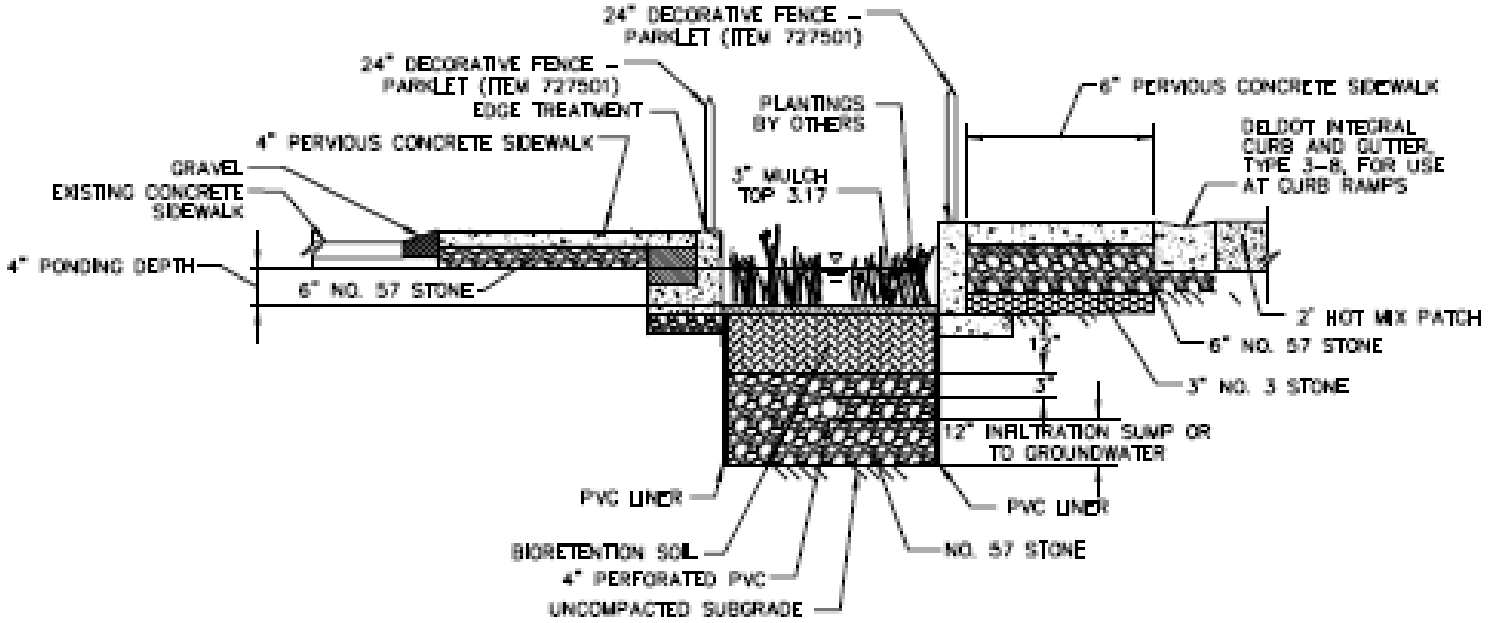
Example Implementation Project #2

Northeast Corner of Read Ave/SR 1 Intersection

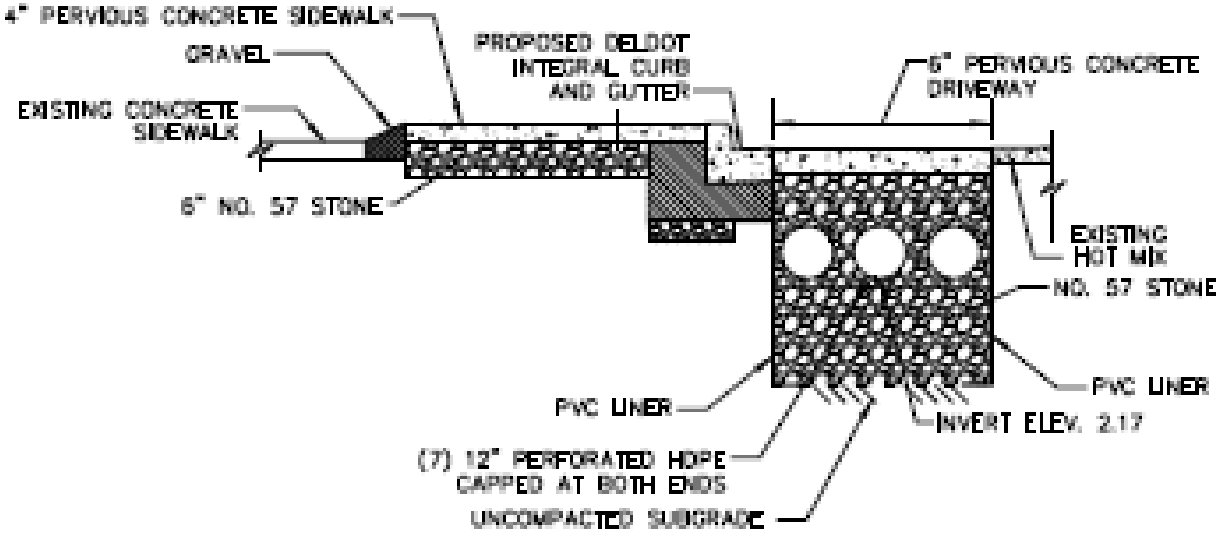
- **Project Goals:**
  - Reduce Runoff
  - Improve Water Quality
- **Funding Sources:**
  - DWIC Community Water Quality Improvement Grant
  - DelDOT Paving and Sidewalk Improvements


TERMINATE PROPOSED SIDEWALK AT DRIVEWAY
DECK SUPPORT
EXISTING CURB
SEE NOTE 4
CONC WALK
SIDEWALK
334-20,18-203.00
MILLER ELAINE K
EISENBREY & KENNETH S
D.B. 1616-206
UTILITY POLE
EXISTING R/W
20' TRENCH DRAIN (SEE SWM DETAILS SHEET)
CONC CURB & GUTTER
SEE NOTE 1
DRAINAGE INLET
TRAFFIC CABINET
TRASH CAN
OUTLET STRUCTURE (SEE DETAIL SHEET)
EXISTING PIPE
MAILBOX
SIGNAL POLE
REPOSITION EXISTING SIGN
READ AVE.
100' R.O.W.
15" RCP
LOD
SCW
WV
A
B
C

SR-1



BIORETENTION FACILITY
SECTION A–A



BIORETENTION FACILITY
SECTION B–B

Example Implementation Project #2

Example Implementation Project #2

Example Implementation Project #2

Example Implementation Project #2

Example Implementation Project #2

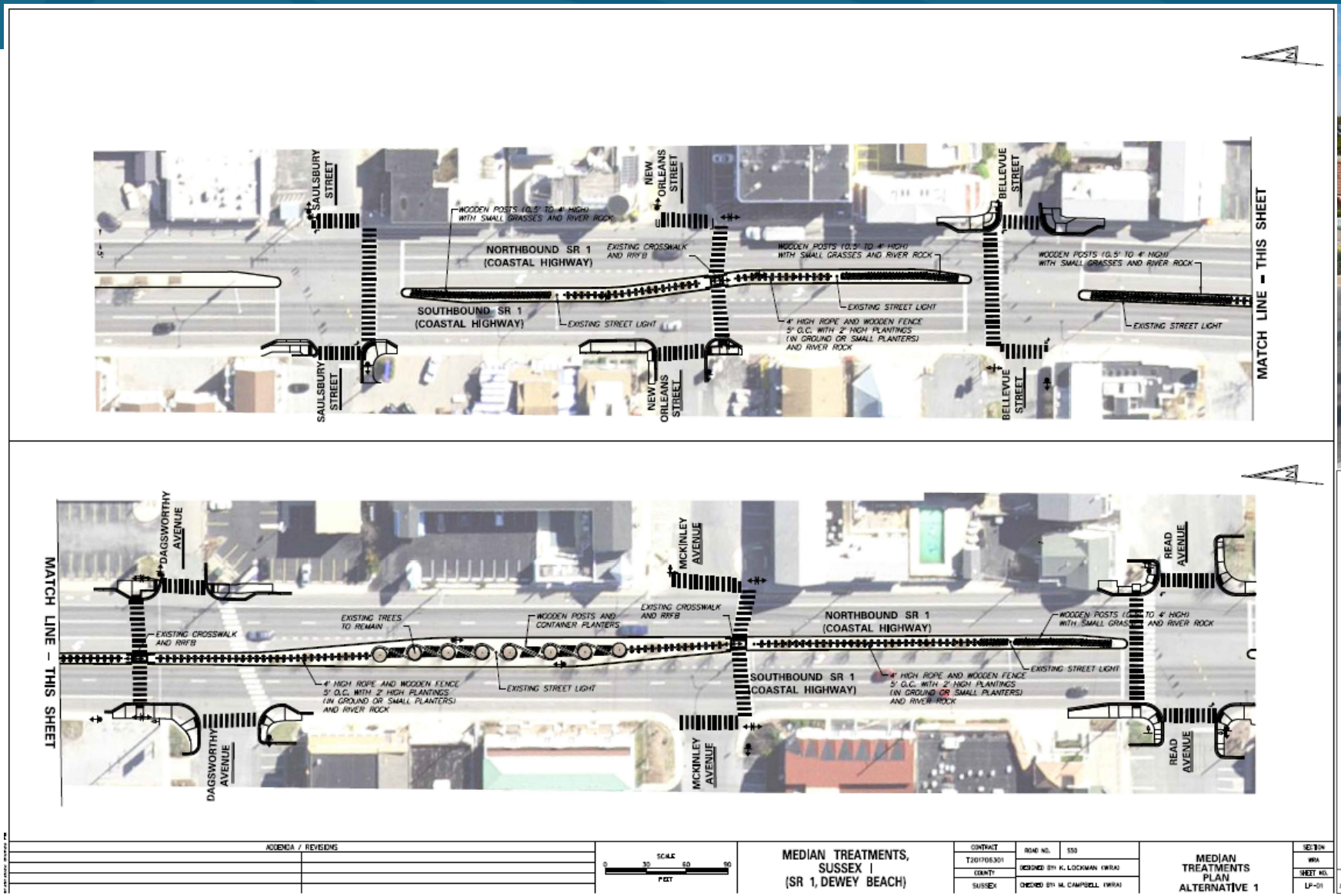
Example Implementation Project #3

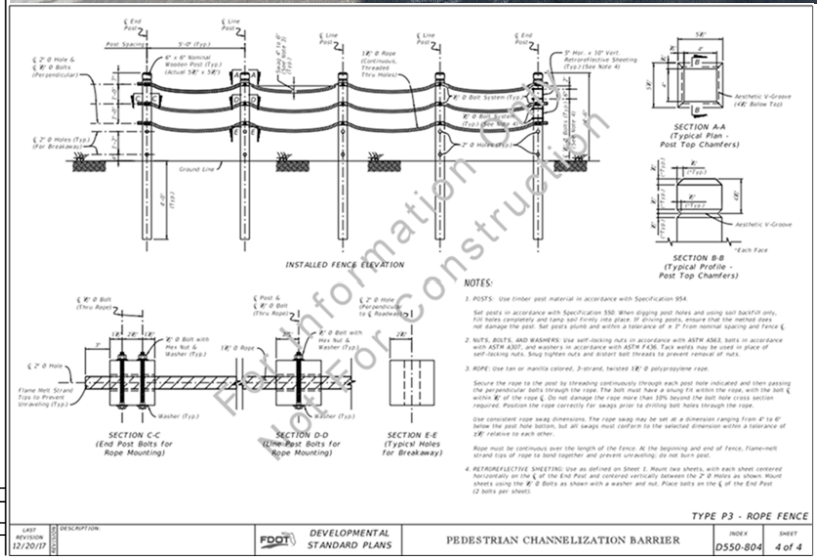
SR 1 Median Concrete Removal and Pedestrian Safety

- **Project Goals:**
  - Reduce Runoff
  - Improve Water Quality
  - Improve pedestrian safety by deterring mid-block crossings with addition of fence within median

- **Funding Sources:**
  - DelDOT Paving and Sidewalk Improvements

Example Implementation Project #3





ADDENDA / REVISIONS

SCALE 0 30 60 90 FEET

MEDIAN TREATMENTS, SUSSEX I (SR 1, DEWEY BEACH)

CONTRACT	ROAD NO.	550
T201706301	DESIGNED BY K. LOCKMAN (WRA)	
COUNTY	CHECKED BY M. CAMPBELL (WRA)	
SUSSEX		

MEDIAN TREATMENTS PLAN ALTERNATIVE 1

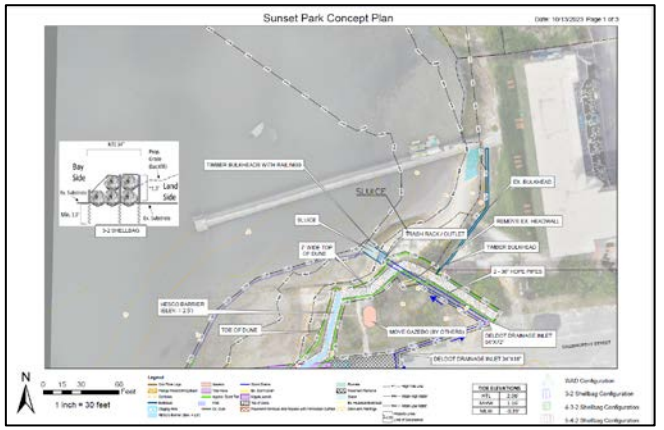
SECTION WRA SHEET NO. LP-01

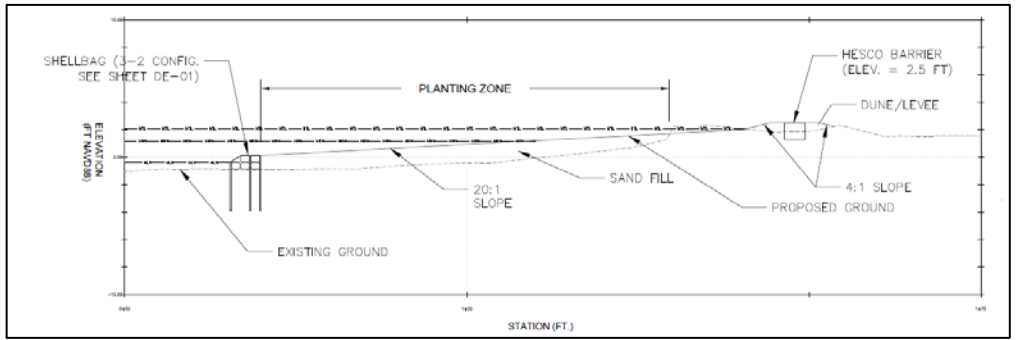
Straughan Implementation Project

Sunset Park Integrated Coastal Green Infrastructure

- **Project Goals:**
  - Shoreline Stabilization
  - Reduce Flooding
  - Reduce Runoff
  - Improve Water Quality
- **Proposed Improvements:**
  - Dune w/ HESCO Barrier
  - Wave Attenuation Devices (WADs)
  - Shellbag Toe Structure w/ Marsh Creation
  - SWM Infrastructure w/ Tidal Valves
  - Pavement removal/permeable pavement

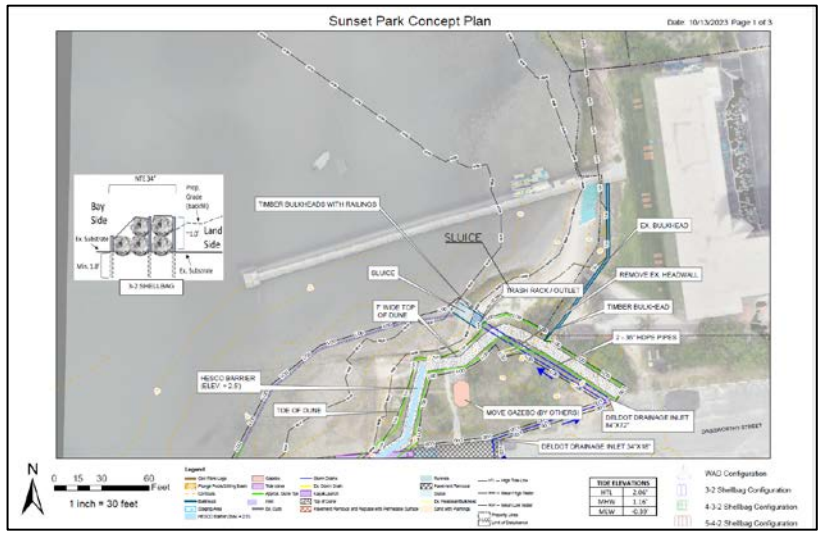
- **Funding Sources:**
  - National Estuary Program Bipartisan Infrastructure Law (NEP-BIL)

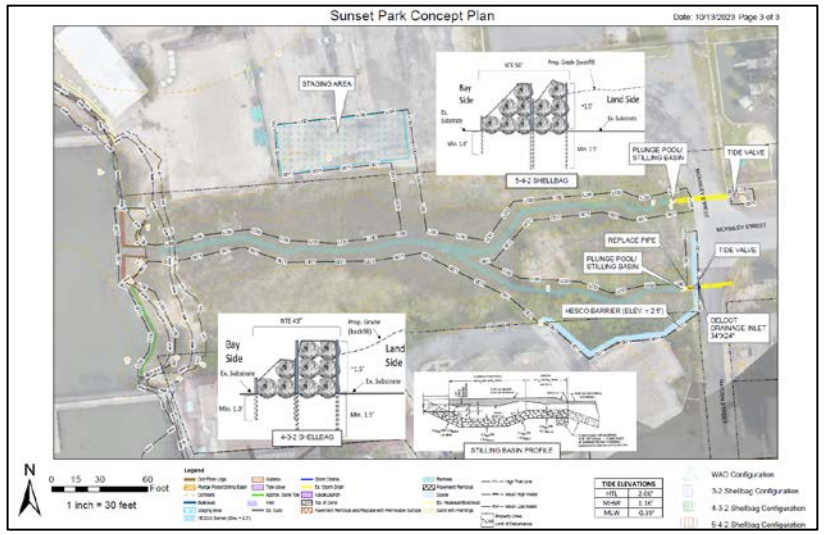


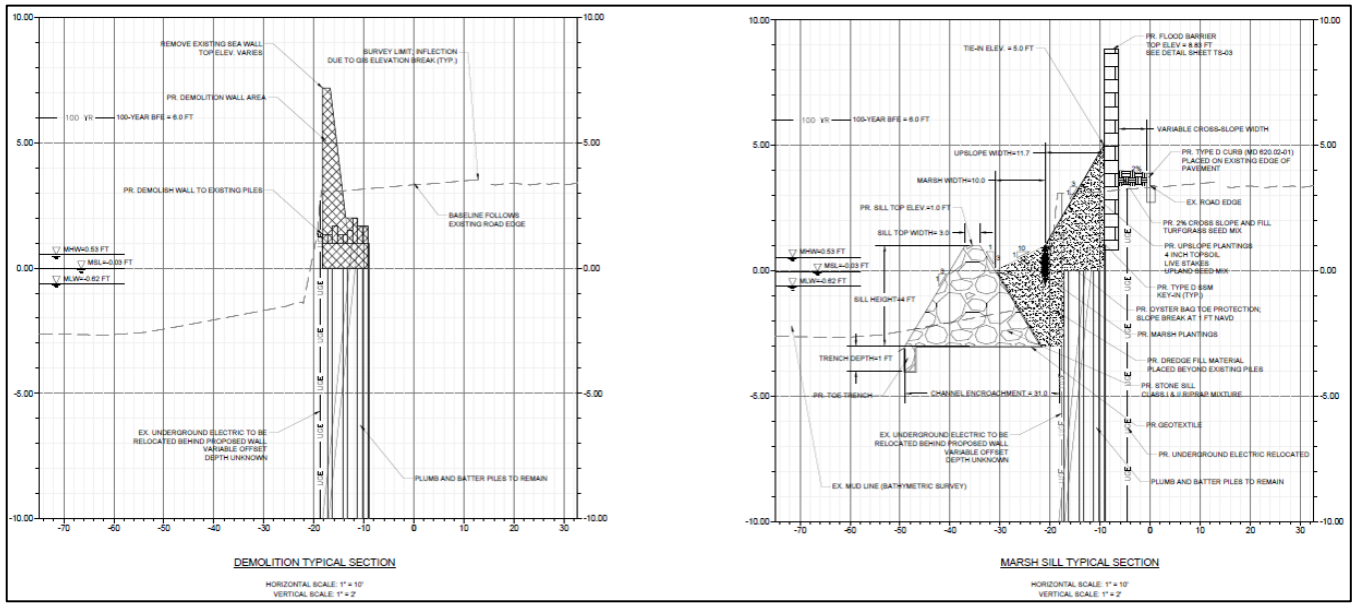


Straughan Implementation Project

Sunset Park Integrated Coastal Green Infrastructure







QUESTIONS?

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