

BACK RIVER LIVING SHORELINE

OLD SAYBROOK, CT

60% CONCEPTUAL DESIGN

OWNER

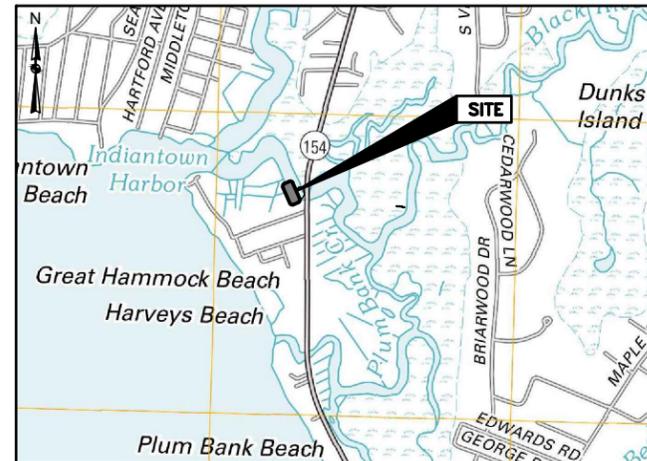
TOWN OF OLD SAYBROOK
302 MAIN STREET
OLD SOYBROOK, CT 06475

PROJECT ENGINEER

 GZA GEOENVIRONMENTAL, INC.
249 VANDERBILT AVE
NORWOOD, MA 02062

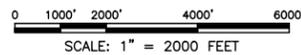
APPROVED:

GZA HAS DESIGNED THE LIVING SHORELINE USING A DESIGN APPROACH AND METHODOLOGIES CONSISTENT WITH THE CURRENT STATE OF PRACTICE USED BY PRACTITIONERS FOR SIMILAR PROJECTS. LIVING SHORELINES ARE DYNAMIC SYSTEMS, INCLUDING NATURAL MATERIALS THAT ARE SUSCEPTIBLE TO CHANGE DUE TO EXPOSURE TO NORMAL COASTAL PROCESSES AND TO MINOR TO SEVERE DAMAGE DURING COASTAL STORMS. DAMAGE AND MAINTENANCE SHOULD BE EXPECTED



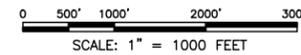
PROJECT LOCUS MAP

SOURCE: THIS MAP CONTAINS THE USGS TOPOGRAPHIC MAPS (US TOPO), PUBLISHED 2012 BY THE U.S. GEOLOGICAL SURVEY AND UPDATED AS NEEDED. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.



AERIAL MAP

SOURCE: THIS MAP CONTAINS THE ESRI ARCGIS ONLINE WORLD IMAGERY (CLARITY) MAP SERVICE, CREATED JUNE 11, 2020 BY ESRI ATLAS AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.



INDEX OF DRAWINGS

1. SITE LOCUS AND INDEX OF DRAWINGS
2. EXISTING CONDITIONS PLAN
3. EXISTING CONDITIONS SECTIONS
4. PROPOSED CONDITIONS PLAN
5. PROPOSED CONDITIONS SECTIONS
6. CONSTRUCTION LAY-DOWN AND SEDIMENTATION AND EROSION CONTROL

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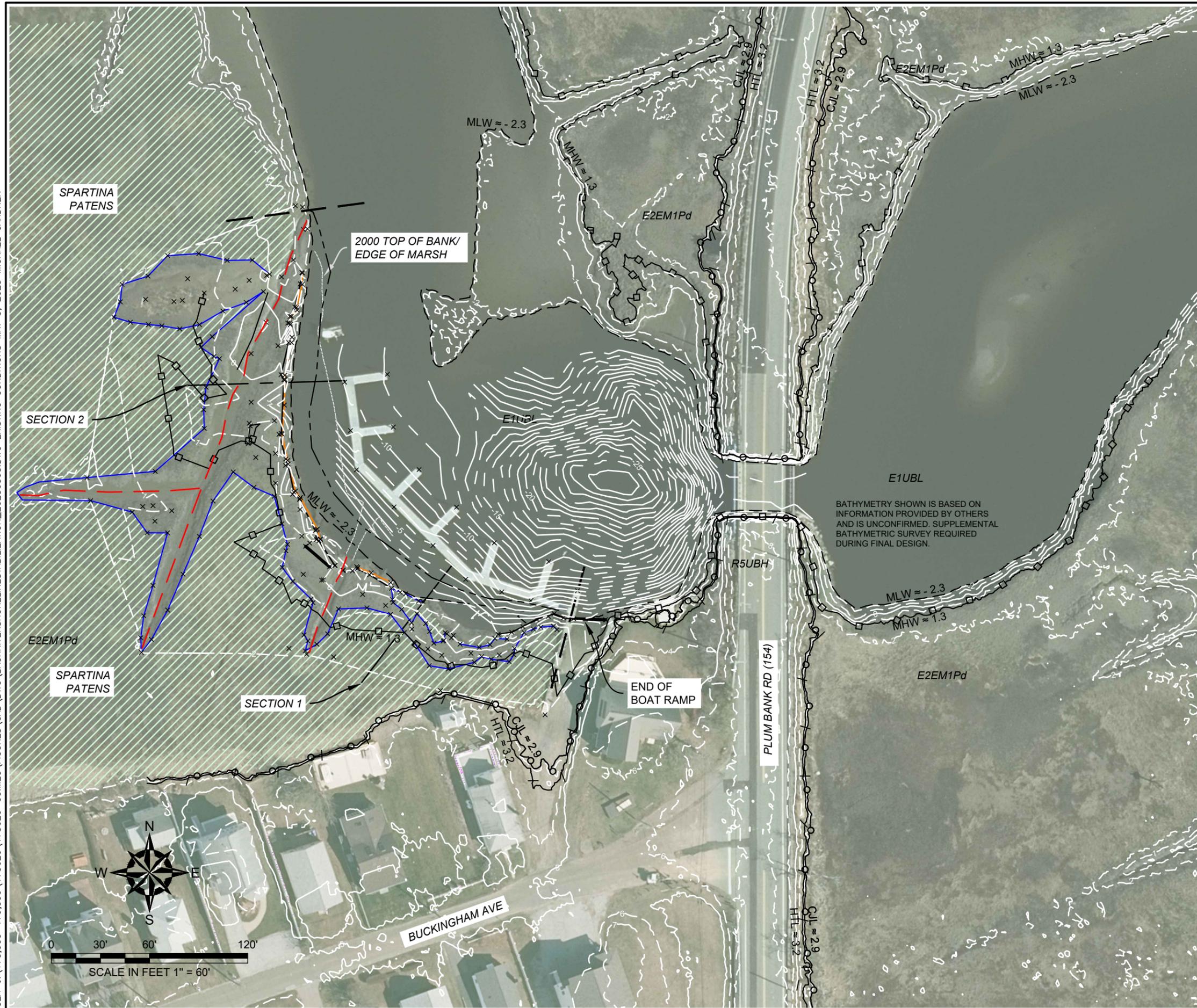
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**BACK RIVER LIVING SHORELINE
OLD SAYBROOK, CT**

SITE LOCUS & INDEX OF DRAWINGS

| | |
|---|--|
| PREPARED BY:  GZA GeoEnvironmental, Inc. www.gza.com | PREPARED FOR: TOWN OF OLD SAYBROOK 302 MAIN STREET OLD SAYBROOK, CT |
| PROJ MGR: MEG REVIEWED BY: DES CHECKED BY: CKD DESIGNED BY: DES DRAWN BY: FMR SCALE: AS SHOWN DATE: MARCH 2023 PROJECT NO. 01.0175620.00 REVISION NO. 1 | SHEET 1 |

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 GZA-J:\170,000-179,999\175620\175620-00.MEG\FIGURES\CAD\DWG\BACKRIVERSHORELINE\STABILIZATION_20230303.DWG EXISTING CONDITIONS MAY 3, 2023 MICHAEL GARDNER



LEGEND

- × SPOT ELEVATIONS BY GZA
- 5 EXISTING CONTOURS - MAJOR (5' INTERVAL)
- 2 EXISTING CONTOURS - MINOR (1' INTERVAL)
- EXISTING CONTOURS (FROM HEC-RAS MODEL) (5' INTERVAL)
- LIMIT OF EXISTING MARSH VEGETATION
- BANK EDGE
- BANK BOTTOM
- DITCH CENTER LINE
- MEAN LOW WATER (MLW)
- MEAN HIGH WATER (MHW)
- HIGH TIDE LINE (HTL)
- COASTAL JURISDICTION LINE (CJL)
- PROJECT LIMITS (APPROXIMATE)
- EXISTING VEGETATED MARSH

NATIONAL WETLAND INVENTORY

- E1UBL ESTUARINE AND MARINE DEEPWATER
- R5UBH PERENNIAL STREAM
- E2EM1Pd ESTUARINE AND MARINE WETLAND

- GENERAL NOTES**
- TIDAL LINES ELEVATIONS AND STREAMBED CONTOURS DEVELOPED FROM CTDEEP PERMIT# 202010786 & 202010787. OTHER CONTOURS DEPICTED ON THIS DRAWING ARE FROM A COMBINATION OF FIELD SURVEY PERFORMED BY GZA ON AUG 12, 2022, LIDAR DATA FROM 2016 CTECO LIDAR DATA ACCESSED OCT 2022, AND CT DOT HEC-RAS 2D MODEL BATHYMETRY.
 - AERIAL IMAGERY SHOWN ON THIS DRAWING IS FROM CTECO 2019 ORTHOPHOTOGRAPHY DATA.
 - ELEVATIONS SHOWN ON DRAWINGS ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) IN UNITS OF FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1983 (NAD83).
 - WETLAND BOUNDARIES SHOWN ON THIS DRAWING ARE FROM THE U.S. FISH & WILDLIFE SERVICE, NATIONAL WETLAND INVENTORY. ACCESSED OCT, 2022.
 - POCKETS OF LOW MARSH HAVE BEEN OBSERVED ALONG THE SHORELINE. NOT INDICATED ON PLAN.

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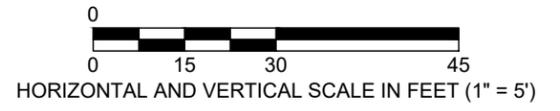
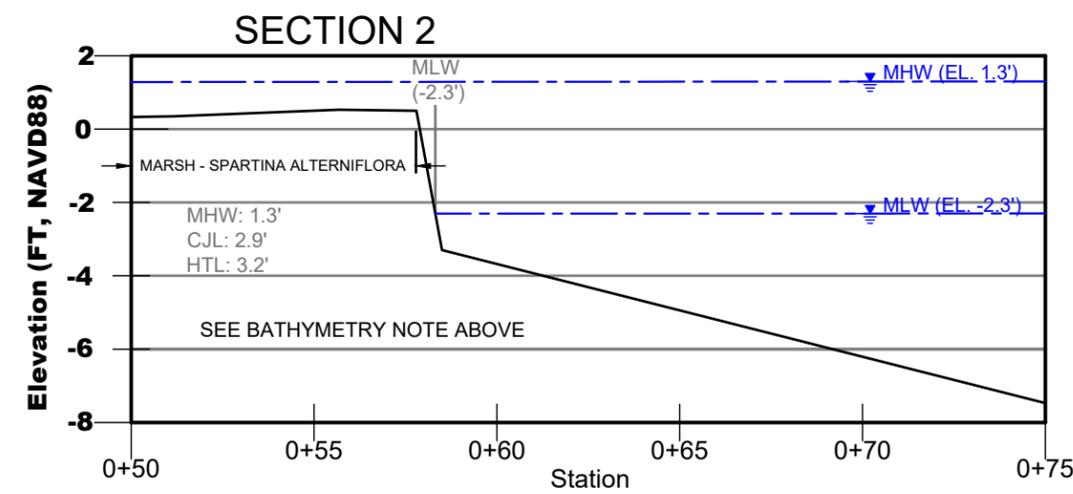
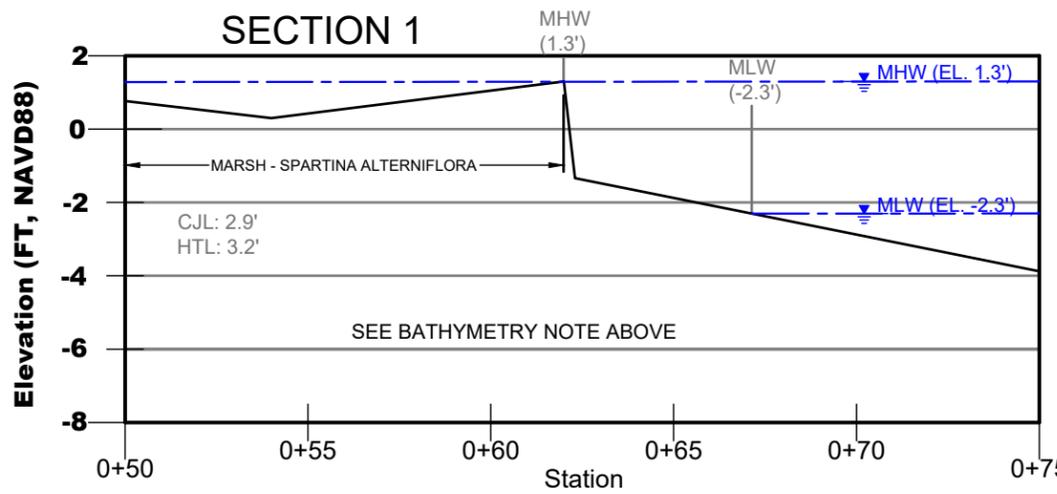
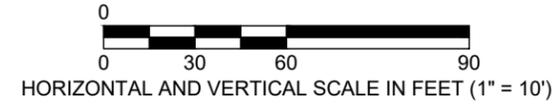
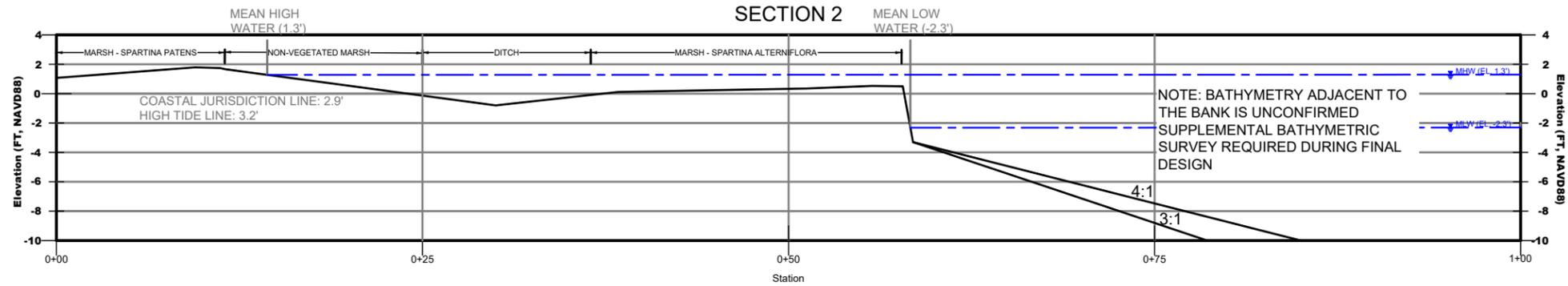
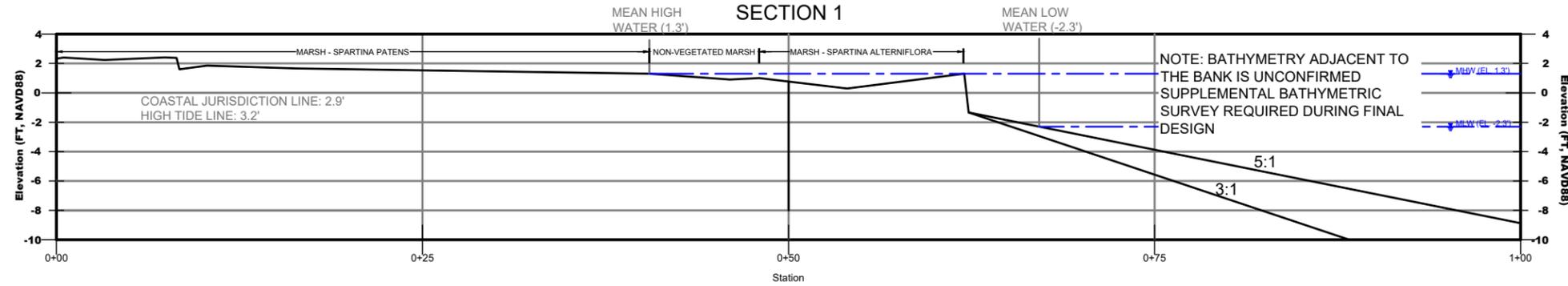
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**BACK RIVER LIVING SHORELINE
 OLD SAYBROOK, CT**

EXISTING CONDITIONS PLAN

| | | | |
|--|--|--------------------|-------------------|
| PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com | PREPARED FOR: TOWN OF OLD SAYBROOK 302 MAIN ST OLD SAYBROOK, CT | | |
| PROJ MGR: MEG | REVIEWED BY: DES | CHECKED BY: CKD | SHEET 2 |
| DESIGNED BY: DES | DRAWN BY: FMR | SCALE: AS SHOWN | |
| DATE: MARCH 2023 | PROJECT NO.: 01.0175620.00 | REVISION NO.: 1 | |

© 2023 - GZA GeoEnvironmental, Inc. GZA-J:\170,000-179,999\175620\175620-00.MEG\FIGURES\CAD\DWG\BACKRIVERSHORELINE\STABILIZATION_20230303.DWG EXISTING X-SECTIONS MAY 3, 2023 MICHAEL GARDNER



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GENERAL NOTES

1. APPROXIMATE LOCATIONS OF SECTION LINES ARE DEPICTED ON THE EXISTING CONDITIONS PLAN (FIG 1)
2. THE PURPOSE OF THE PROFILES IS TO GENERALLY DESCRIBE THE TOPOGRAPHY NEAR THE BACK RIVER SHORELINES. SUBMERGED SLOPES MAY DIFFER FROM THE ACTUAL EXISTING CONDITIONS.
3. TIDAL LINES ELEVATIONS (i.e., MLW AND MHW) ARE BASED ON CTDEEP PERMIT# 202010786 & 202010787.
4. PROFILES ON THIS DRAWING ARE DEVELOPED FROM A COMBINATION OF SPOT ELEVATIONS FROM FIELD SURVEY PERFORMED BY GZA ON AUG 12, 2022, LIDAR DATA FROM 2016 CTECO LIDAR DATA ACCESSED OCT 2022, AND CT DOT HEC-RAS 2D MODEL BATHYMETRY.
5. ELEVATIONS DEPICTED ON DRAWINGS ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) IN UNITS OF FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1983 (NAD83).

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**BACK RIVER LIVING SHORELINE
OLD SAYBROOK, CT**

EXISTING CONDITIONS SECTIONS

| | | | |
|--|---------------------------|---|-------------------|
| PREPARED BY: | | PREPARED FOR: | |
| GZA GeoEnvironmental, Inc. www.gza.com | | TOWN OF OLD SAYBROOK 302 MAIN ST OLD SAYBROOK, CT | |
| PROJ MGR: MEG | REVIEWED BY: DES | CHECKED BY: CKD | SHEET 3 |
| DESIGNED BY: DES | DRAWN BY: FMR | SCALE: AS SHOWN | |
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| LEGEND | |
|--------|---|
| | LIMIT OF EXISTING MARSH VEGETATION |
| | HIGH TIDE LINE (HTL) |
| | COASTAL JURISDICTION LINE (CJL) |
| | PROJECT LIMITS (APPROXIMATE) |
| | EXISTING VEGETATED MARSH |
| | PROPOSED MARSH REVETMENT/ SILL |
| | PROPOSED MARSH SEDIMENT FILL AND RE-PLANTING INCLUDING HISTORICAL DITCHES |

NATIONAL WETLAND INVENTORY

| | |
|---------|--|
| E1UBL | ESTUARINE AND MARINE DEEPWATER (E1UBL) |
| R5UBH | PERENNIAL STREAM (R5UBH) |
| E2EM1Pd | ESTUARINE AND MARINE WETLAND (E2EM1Pd) |

- GENERAL NOTES**
- TIDAL LINES ELEVATIONS AND STREAMBED CONTOURS DEVELOPED FROM CTDEEP PERMIT# 202010786 & 202010787. OTHER CONTOURS DEPICTED ON THIS DRAWING ARE FROM A COMBINATION OF FIELD SURVEY PERFORMED BY GZA ON AUG 12, 2022, LIDAR DATA FROM 2016 CTECO LIDAR DATA ACCESSED OCT 2022, AND CT DOT HEC-RAS 2D MODEL BATHYMETRY.
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 - POCKETS OF LOW MARSH HAVE BEEN OBSERVED ALONG THE SHORELINE.

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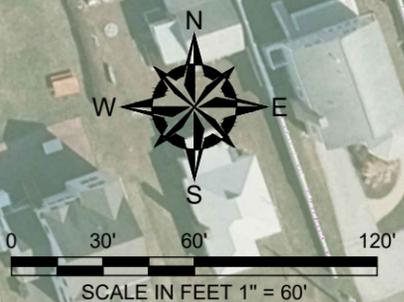
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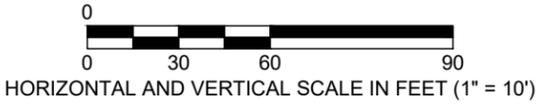
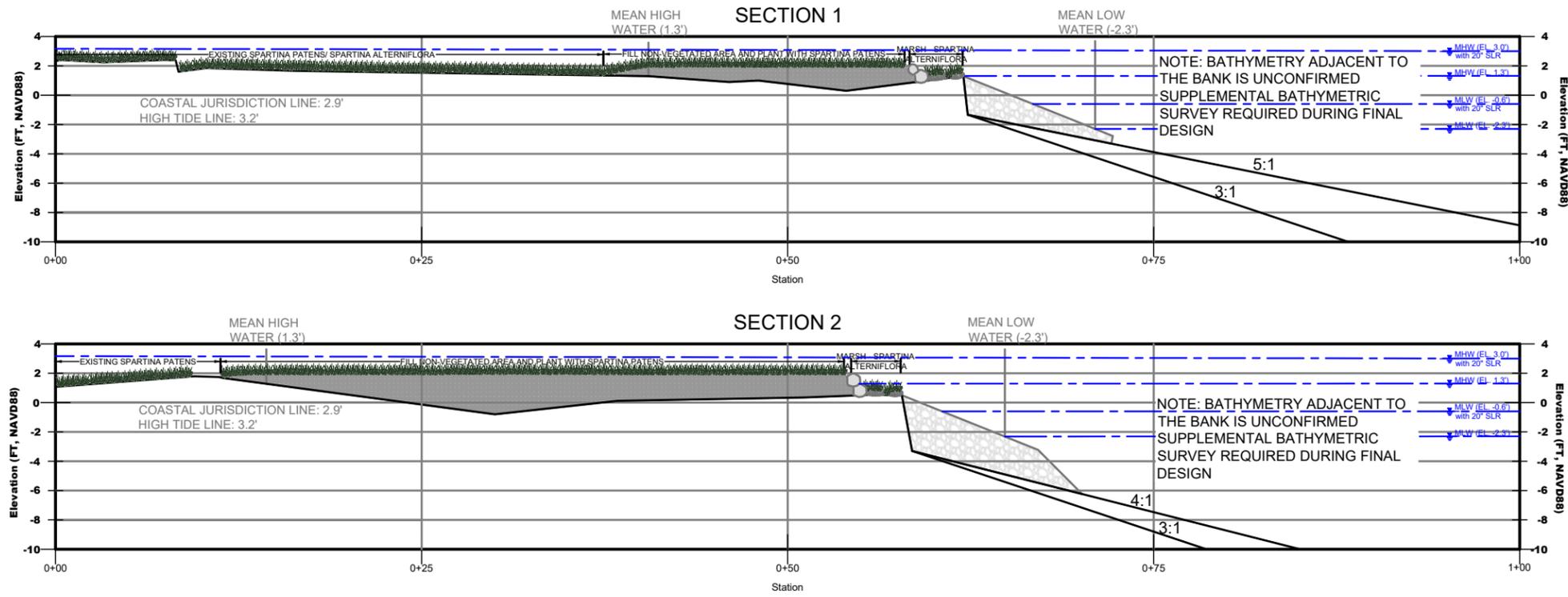
**BACK RIVER LIVING SHORELINE
OLD SAYBROOK, CT**

PROPOSED CONDITIONS PLAN

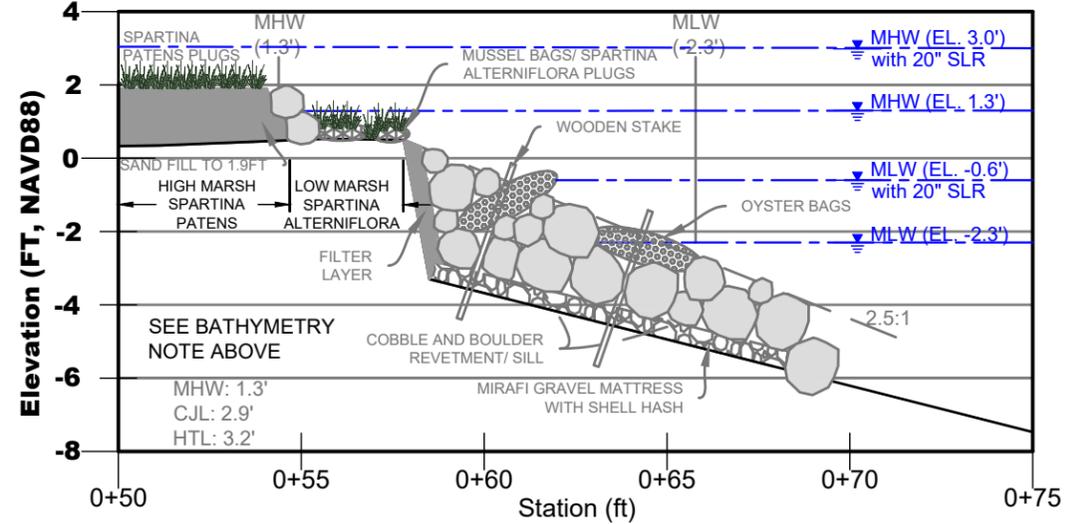
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| PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com | | PREPARED FOR: TOWN OF OLD SAYBROOK 302 MAIN ST OLD SAYBROOK, CT | |
| PROJ MGR: MEG | REVIEWED BY: DES | CHECKED BY: CKD | SHEET 4 |
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| DATE: MARCH 2023 | PROJECT NO. 01.0175620.00 | REVISION NO. 1 | |



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TYPICAL DETAIL



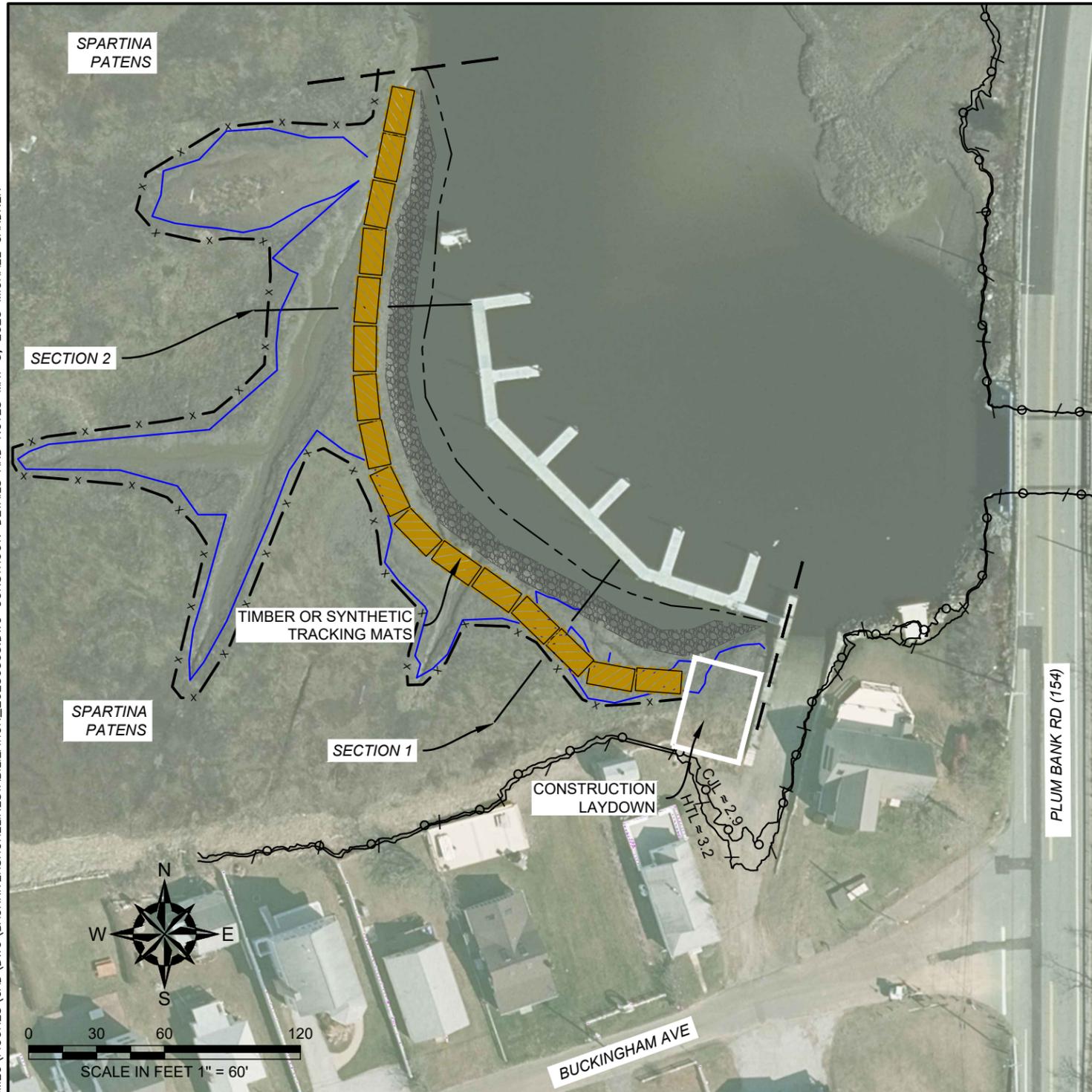
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GENERAL NOTES

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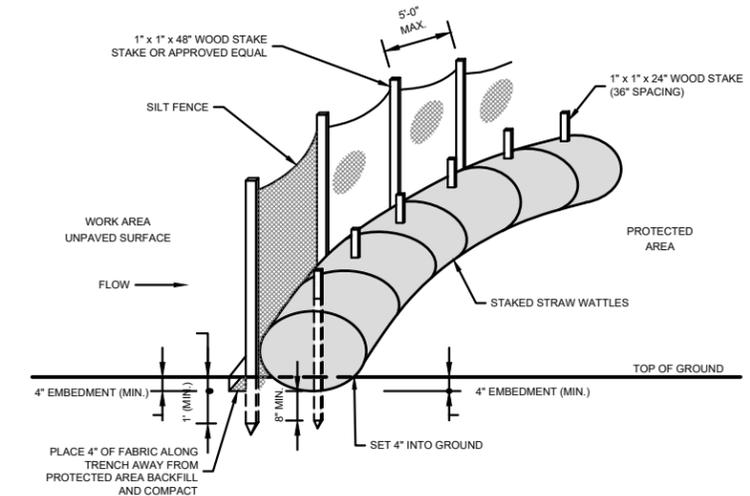
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| <p>BACK RIVER LIVING SHORELINE OLD SAYBROOK, CT</p> | | | |
| <p>PROPOSED CONDITIONS SECTIONS</p> | | | |
| PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com | | PREPARED FOR: TOWN OF OLD SAYBROOK 302 MAIN ST OLD SAYBROOK, CT | |
| PROJ MGR: MEG | REVIEWED BY: DES | CHECKED BY: CKD | 5 |
| DESIGNED BY: DES | DRAWN BY: FMR | SCALE: AS SHOWN | |
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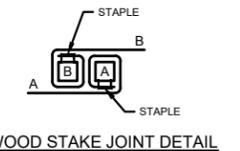
LEGEND

- LIMIT OF EXISTING MARSH VEGETATION
- HIGH TIDE LINE (HTL)
- COASTAL JURISDICTION LINE (CJL)
- PROJECT LIMITS (APPROXIMATE)
- TURBIDITY CURTAIN
- COIR LOG AND SILT FENCE TO BE LAID OUTSIDE UNVEGETATED AREAS
- PROPOSED MARSH REVETMENT/ SILL
- TIMBER OR SYNTHETIC TRACKING MATS

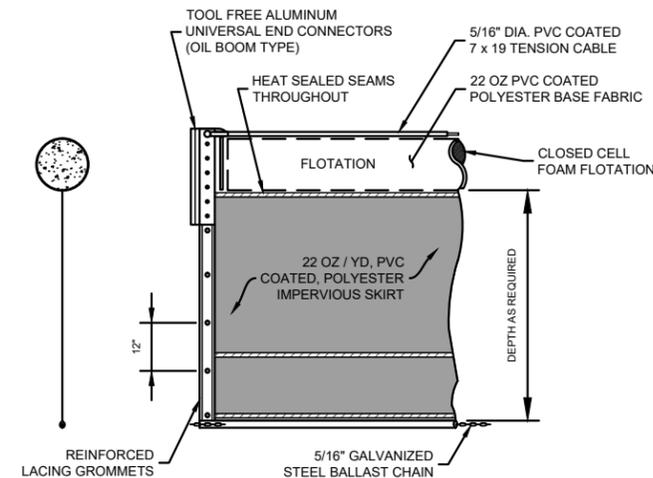


NOTES

1. WHERE SILT FENCES OVERLAP, OVERLAP DISTANCE SHALL BE 36-INCHES.
2. INSPECTION SHALL BE DAILY AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
3. STRAW WATTLES SHALL BE REMOVED ONLY AS DIRECTED BY ENGINEER.



SILT FENCE EROSION CONTROL BARRIER
NOT TO SCALE



FLOATING SILT CURTAIN (TURBIDITY CURTAIN)
NOT TO SCALE

NOTE: DEBRIS BOOM SHALL BE PROVIDED ON THE SEAWARD SIDE OF CURTAIN FOR ALL LIVING SHORELINE WATER WORK.

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GENERAL NOTES

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**BACK RIVER LIVING SHORELINE
OLD SAYBROOK, CT**

**CONSTRUCTION LAY-DOWN AND
SEDIMENTATION AND EROSION CONTROL**

| | | | |
|--|----------------------------|--|-------------------|
| PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com | | PREPARED FOR: TOWN OF OLD SAYBROOK 302 MAIN ST OLD SAYBROOK, CT | |
| PROJ MGR: MEG | REVIEWED BY: DES | CHECKED BY: CKD | SHEET 6 |
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| DATE: MARCH 2023 | PROJECT NO.: 01.0175620.00 | REVISION NO.: 1 | |