

U.S. Army Corps  
of Engineers  
Baltimore District  
PN 20-31

# Public Notice

In Reply to Application Number  
NAB-2020-60120 (West River UM Center/Living Shoreline)

Comment Period: June 1, 2020 to June 30, 2020

**THE PURPOSE OF THIS PUBLIC NOTICE IS TO INFORM INTERESTED PARTIES OF THE PROPOSED ACTIVITY AND TO SOLICIT COMMENTS. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.**

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344), as described below:

**APPLICANT:** West River United Methodist Center  
P.O. Box 429  
Churchton, Maryland 20733

**WATERWAY AND LOCATION OF THE PROPOSED WORK:** The proposed project is located in the West River, at 5100 Chalk Point Road, West River, Anne Arundel County, Maryland. Latitude: 38.8311; Longitude: -76.5432

**OVERALL PROJECT PURPOSE:** To provide shoreline erosion protection, coastal resiliency, and creation/improvement of habitat along the property owned by West River United Methodist Center, at 5100 Chalk Point Road, West River, Maryland.

**PROJECT DESCRIPTION:** To remove or cover approximately 323 linear feet of failing bulkhead and 555 LF of failing revetment and construct a living shoreline as follows:

- To emplace 1,350 cubic yards of fill (sand, gravel, cobble, and boulder) to construct a living shoreline. The proposed project will impact approximately 29,354 square feet of estuarine open water and 1,365 square feet of tidal wetland;
- To plant approximately 13,976 square feet with marsh vegetation to create 1,145 linear feet of marsh plantings landward of four cobble headlands. The cobble headlands extend no more than 35 feet channelward of the existing bulkhead and revetment;

All work is proposed in accordance with the attached plans prepared by Underwood & Associates, Inc., entitled "West River United Methodist Church Living Shoreline", dated April 20, 2020, sheets 1 through 20.

## EFFECTS ON AQUATIC RESOURCES:

Activity	WoUS Impact (Sq. Ft.)	Wetland Impact (Sq. Ft.)	Authority (Section 10/404/408)
Fill (sand, gravel, cobble, and boulder)	29,354	1,368	Section 10/404

**LEAD FEDERAL AGENCY:** The U.S. Army Corps of Engineers, as the lead federal agency, is responsible for all coordination pursuant to applicable federal authorities.

**APPLICANT'S PROPOSED AVOIDANCE, MINIMIZATION, AND COMPENSATORY**

**MITIGATION:** As part of the planning process for the proposed project, steps were taken to ensure avoidance and minimization of impacts to aquatic resources to the maximum extent practicable based on the existing site conditions and previously authorized work.

No compensatory mitigation is proposed. No submerged aquatic will be impacted as a result of the proposed project. Approximately 1,368 square feet of existing tidal marsh may be impacted as a result of the proposed project. However, the project would stabilize the shoreline and create 13,976 square feet of new tidal marsh. The creation of natural habitat would enhance the growth of plants and create resting and feeding areas for animals in the immediate area.

**CORPS EVALUATION REQUIREMENTS:** This project will be evaluated pursuant to Corps Regulatory Program Regulations (33 CFR Parts 320-332). The decision whether to issue a permit will be based on an evaluation of the probable impacts, 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 reasonable 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, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people. The evaluation of the impact of this project will also include application of the Clean Water Act Section 404(b)(1) Guidelines promulgated by the Administrator, U.S. Environmental Protection Agency.

**ENDANGERED SPECIES:** A preliminary review of this application indicates that the proposed work will have no effect Federally-listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

**ESSENTIAL FISH HABITAT:** The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH), including species of concern, life cycle habitat, or Habitat Areas of Particular Concern. The project site lies in or adjacent to EFH as described under MSFCMA for managed species under the MSFCMA. The Baltimore District has made a preliminary determination that the project will have no adverse effect on EFH. The Baltimore District has made a preliminary determination that mitigative measures are not required to minimize adverse effects on

EFH at this time. This determination may be modified if additional information indicates otherwise.

**HISTORIC RESOURCES:**

Pursuant to Section 106 of the National Historic Preservation Act of 1966 and applicable guidance, the Corps has reviewed the latest published version of the National Register of Historic Places and initially determined that no registered properties listed as eligible for inclusion, therein, are located at the site of the proposed work. The Corps has made the preliminary determination that the proposed project would have no adverse effect on historic properties. The Corps final eligibility and effect determination will be based on coordination with the State Historic Preservation Office as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps' identified permit area.

**TRIBAL RESOURCES:** Section 106 of the National Historic Preservation Act also requires federal agencies to consult with federally-recognized American Indian tribes that attach religious and cultural significance to historic properties that may be affected by the agency's undertaking. Corps Tribal Consultation Policy mandates an open, timely, meaningful, collaborative, and effective deliberative communication process that emphasizes trust, respect, and shared responsibility. The policy further emphasizes that, to the extent practicable and permitted by law, consultation works toward mutual consensus and begins at the earliest planning stages, before decisions are made and actions taken. The Corps final eligibility and effect determination will be based on coordination with interested tribes, in accordance with the Corps current tribal standard operating procedures as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on tribal resources.

**MODIFICATION OF CIVIL WORKS PROJECTS: 33 USC 408 (SECTION 408):** All Section 408 proposals will be coordinated internally at USACE. The Section 408 decision will be issued along with the Section 404 and/or Section 10 decision. Please see the following link for more information regarding Section 408:  
<https://www.nab.usace.army.mil/section408/>.

**WATER QUALITY CERTIFICATION:** The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act.

**COASTAL ZONE MANAGEMENT PROGRAMS:** Where applicable, the applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the approved Coastal Zone Management (CZM) Program. By this public notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The applicant must obtain any State or local government permits which may be required.

**SUBMISSION OF COMMENTS:** 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 the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments provided will become part of the public record for this action and are subject to release to the public through the Freedom of Information Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the U.S. Army Corps of Engineers, Baltimore District within the comment period specified above through postal mail at the address below or electronic submission to the project manager email address below. Written comments should reference the Application Number NAB-2020-60219.

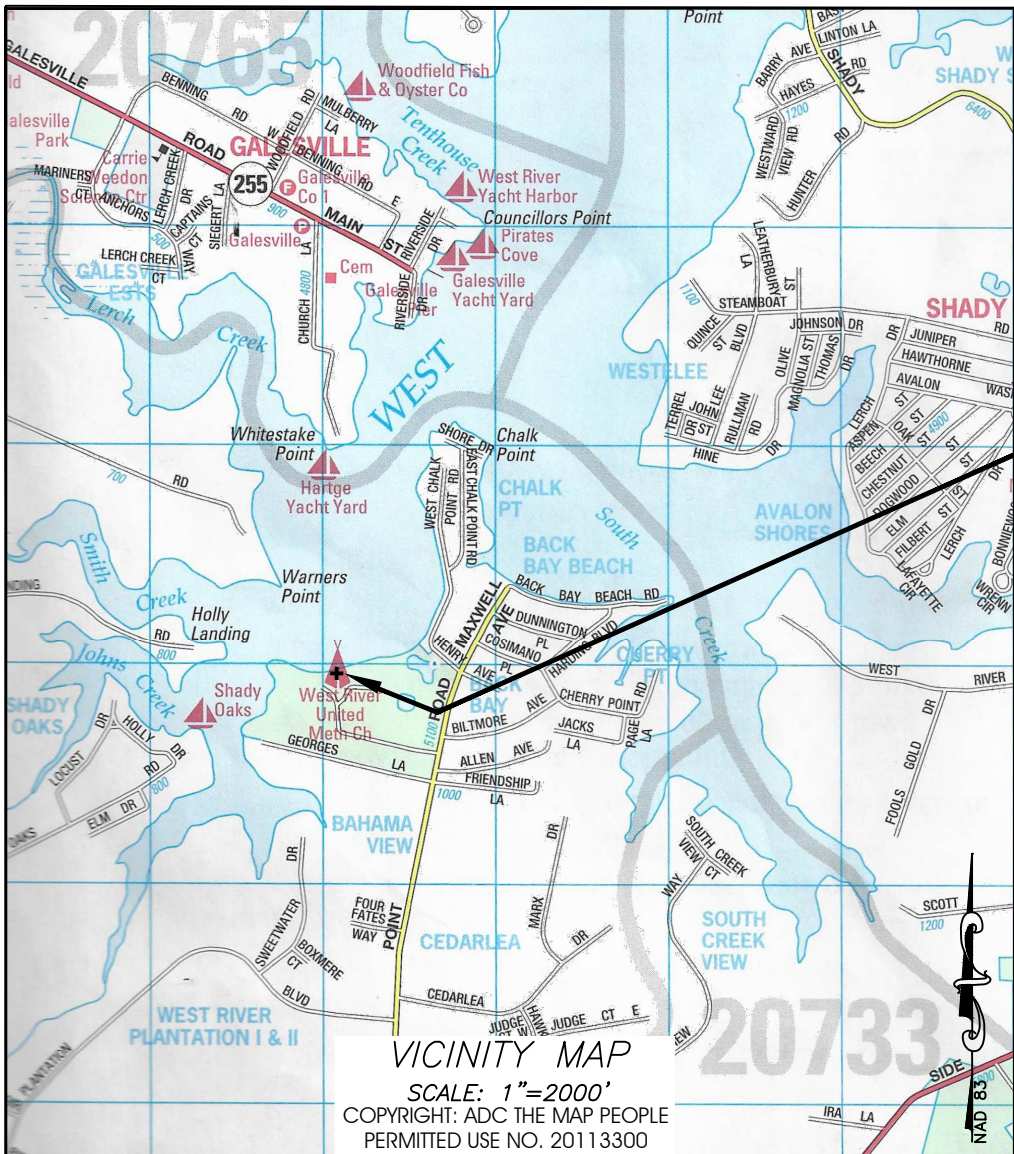
**PUBLIC HEARING REQUESTS:** Any person who has an interest which may be adversely affected by the issuance of this permit may request a public hearing. The request, which must be in writing, must be received within the comment period as specified above to receive consideration. Also it must clearly set forth the interest which may be adversely affected by this activity and the manner in which the interest may be adversely affected. The public hearing request may be submitted by electronic mail or mailed to the following address:

Nicole Voelker  
Nicole.M.Voelker@usace.army.mil  
U.S. Army Corps of Engineers, Baltimore District  
Regulatory Branch  
2 Hopkins Plaza  
Baltimore, Maryland 21201

It is requested that you communicate this information concerning the proposed work to any persons known by you to be interested, who did not receive a copy of this notice.

General information regarding the Corps' permitting process can be found on our website at <https://www.nab.usace.army.mil/Missions/Regulatory.aspx>. This public notice has been prepared in accordance with Corps implementing regulations at 33 CFR 325.3. If you have any questions concerning this specific project, or would like to request a paper copy of this public notice, please contact Nicole Voelker, Nicole.m.voelker@usace.army.mil. This public notice is issued by the Chief, Regulatory Branch.





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## UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION

A DESIGN/BUILD Co.

1753 EBLING TRAIL ♦ ANNAPOLIS, MD 21401  
 tel. 410-849-3211 fax. 410-849-2136

SHEET 1 OF 21

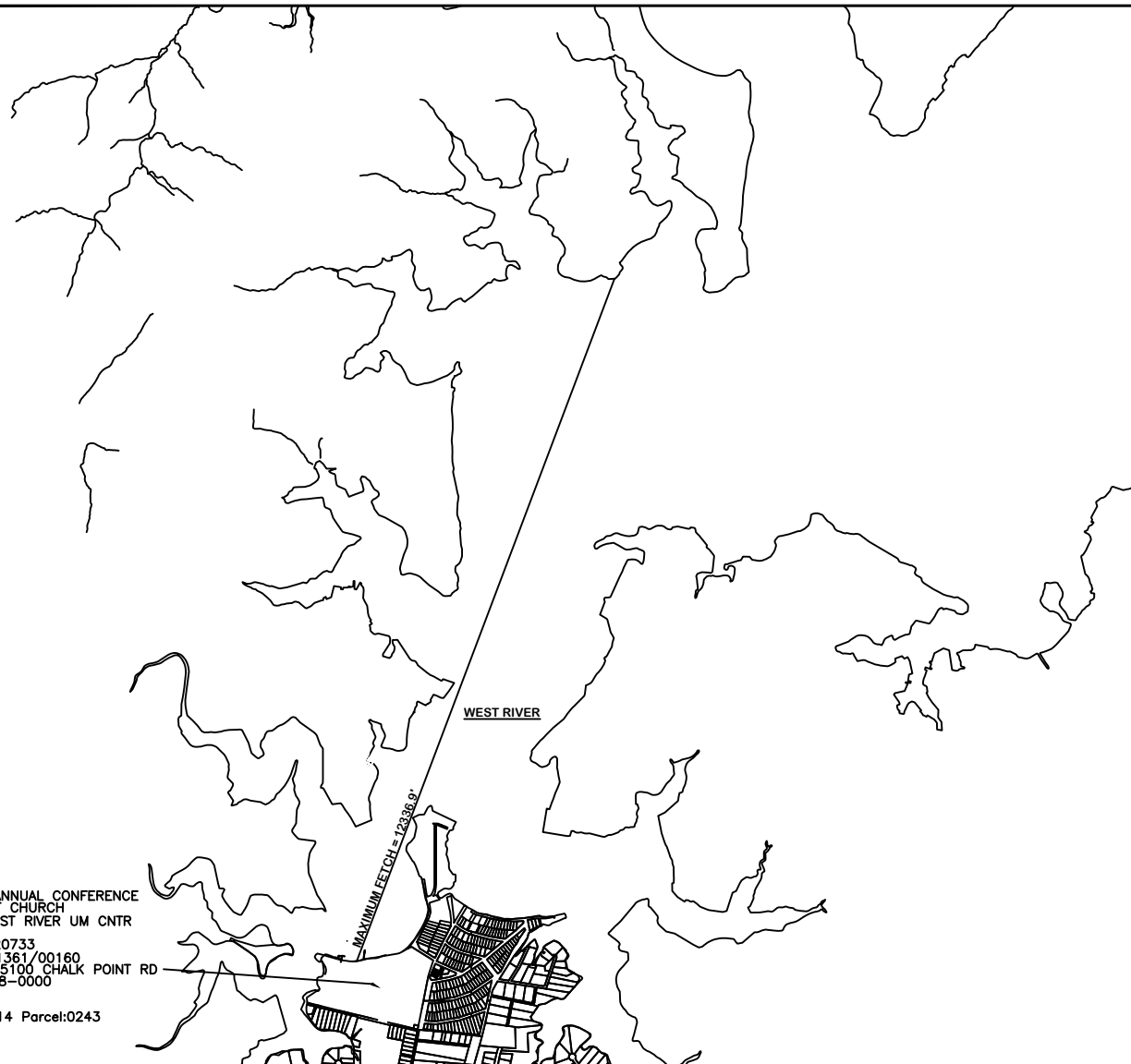
APRIL 20, 2020

## VICINITY MAP AND AERIAL PHOTO

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
 WEST RIVER UM CNTR, 5100 CHALK POINT RD  
 WEST RIVER, MARYLAND, 20733  
 MAP 5656, GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

CH- BALTIMORE ANNUAL CONFERENCE  
 UNITED METHODIST CHURCH  
 C/O MANAGER WEST RIVER UM CNTR  
 PO BOX 429  
 CHURCHTON MD 20733  
 Deed Reference:01361/00160  
 Premises Address:5100 CHALK POINT RD  
 WEST RIVER 20778-0000  
 44.586 ACRES  
 WEST RIVER  
 Map:0069 Grid:0014 Parcel:0243



**PLAN** SCALE: 1"=3000'

SHEET 2 OF 21

APRIL 20, 2020

## UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

♦ ECOLOGICAL RESTORATION

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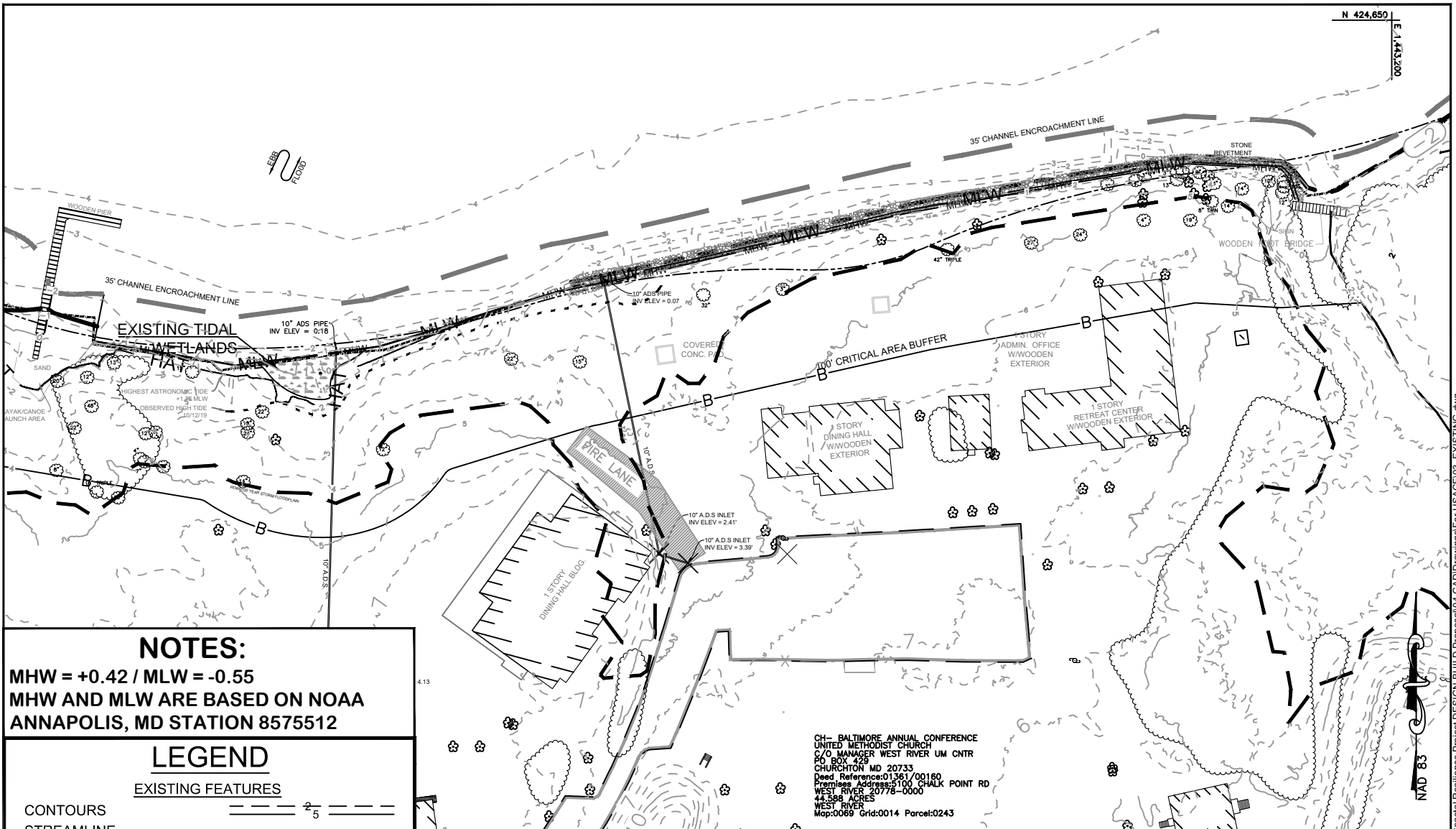


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## PROJECT VICINITY CONDITIONS

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



PLAN

SCALE:  
1"=100'

SHEET 3 OF 21

APRIL 20, 2020

## UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

ECOLOGICAL RESTORATION

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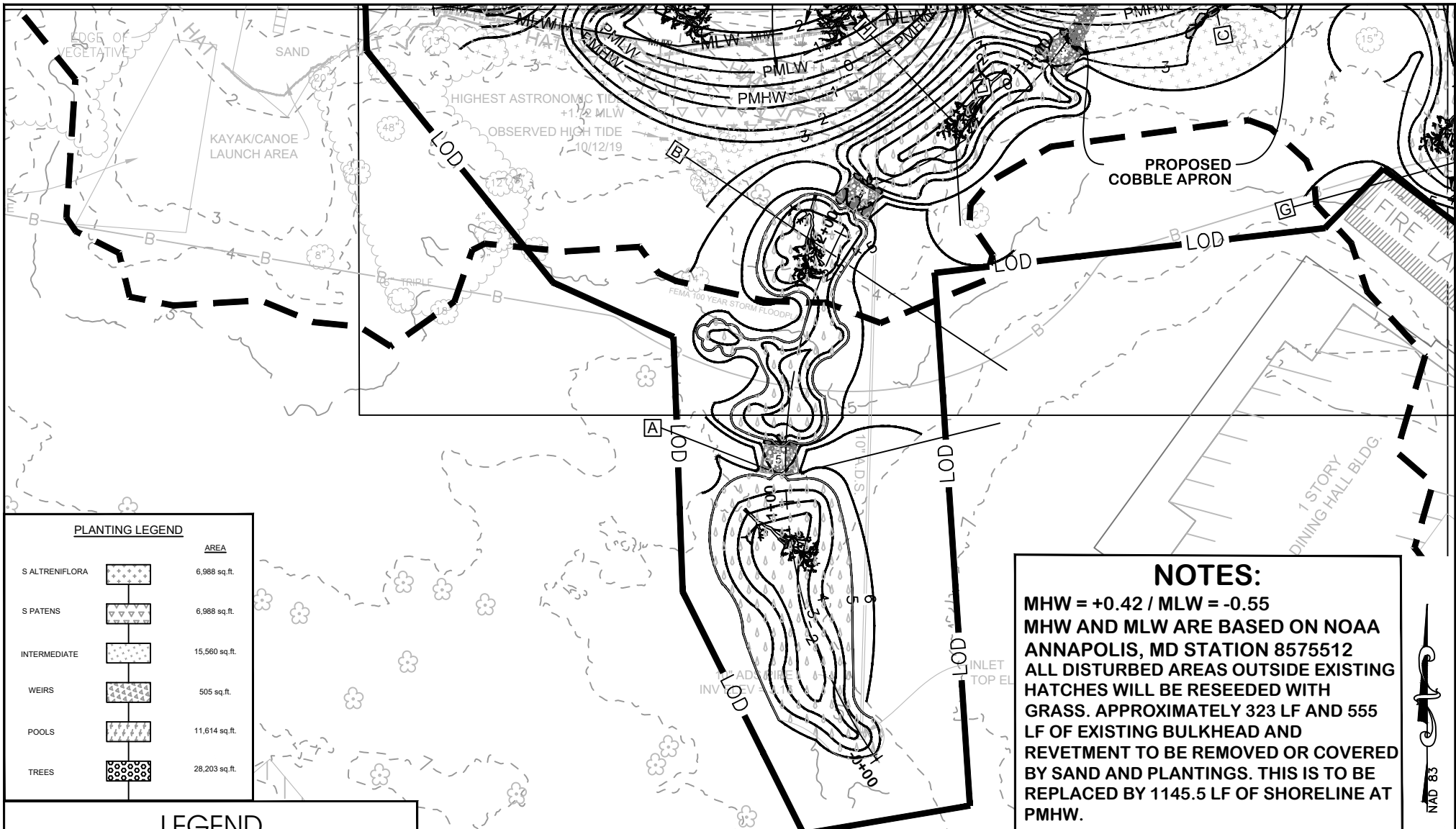
## EXISTING CONDITIONS

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXX  
 WEST RIVER UM CNTR, 5100 CHALK POINT RD  
 WEST RIVER, MARYLAND, 20733  
 MAP 5656 , GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY







LEGEND	
PROPOSED FEATURES	
CONTOUR	— 1 —
100 ft BUFFER LINE	— B —
MEAN HIGH WATER	— MHW —
MEAN LOW WATER	— MLW —
SUBMERGED COBBLE TOE	
WELL GRADED MIX	
BOULDERS	
COARSE WOODY DEBRIS	

**PLAN** SCALE: 1"=50'

**UNDERWOOD & ASSOCIATES**  
 LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION  
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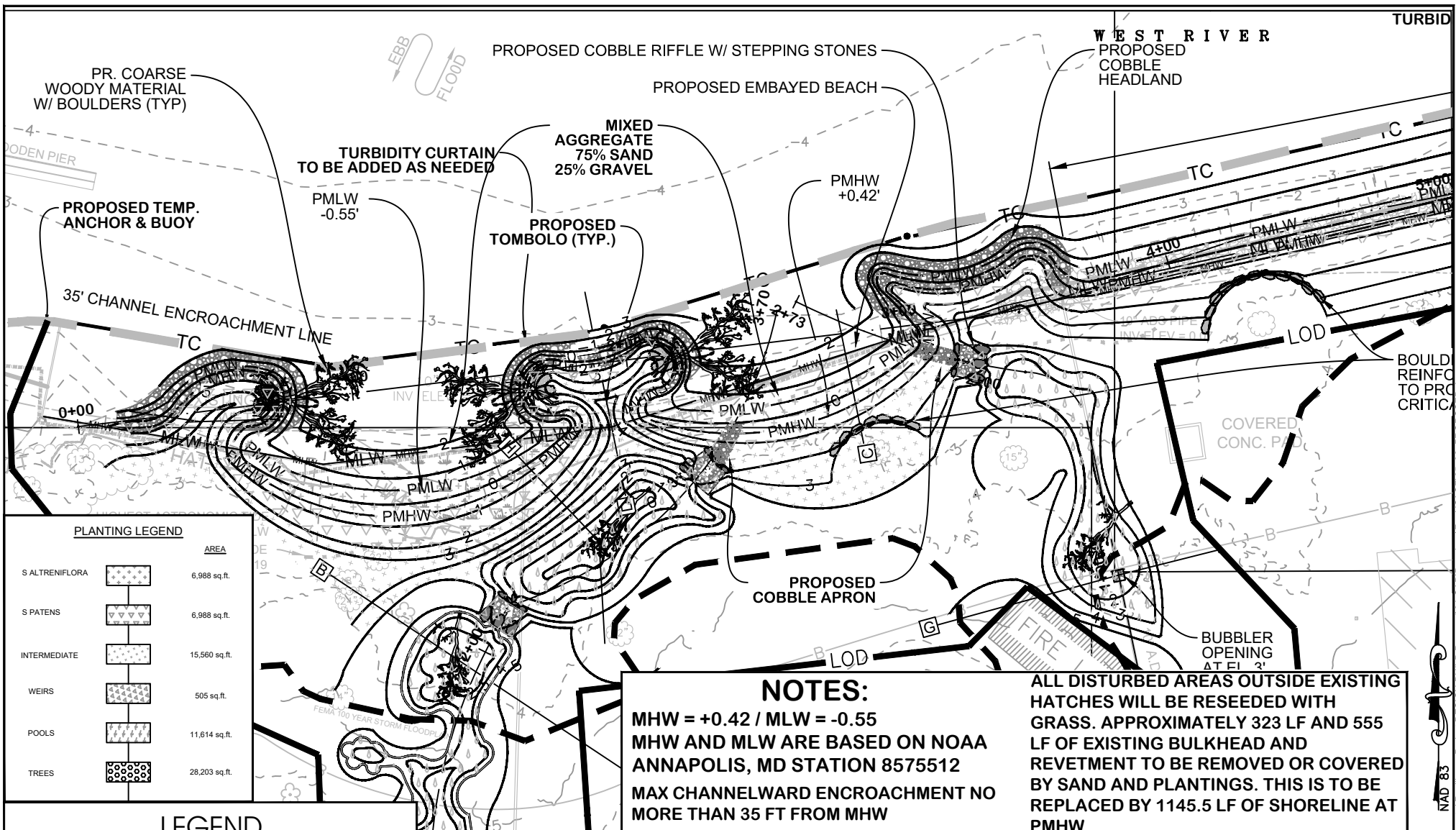
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SHEET 5 OF 21 APRIL 20, 2020

**PROPOSED CONDITIONS**

**WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE**

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
 WEST RIVER UM CNTR, 5100 CHALK POINT RD  
 WEST RIVER, MARYLAND, 20733  
 MAP 5656, GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



#### PLANTING LEGEND

	AREA
S ALTRENFLORA	6,988 sq.ft.
S PATENS	6,988 sq.ft.
INTERMEDIATE	15,560 sq.ft.
WEIRS	505 sq.ft.
POOLS	11,614 sq.ft.
TREES	28,203 sq.ft.

#### LEGEND

##### PROPOSED FEATURES

CONTOUR	— 1 —
100 ft BUFFER LINE	— B —
MEAN HIGH WATER	— MHW —
MEAN LOW WATER	— MLW —
SUBMERGED COBBLE TOE	
WELL GRADED MIX	
BOULDERS	
COARSE WOODY DEBRIS	

#### PLAN

SCALE: 1"=50'

SHEET 6 OF 21

APRIL 20, 2020

#### UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

ECOLOGICAL RESTORATION

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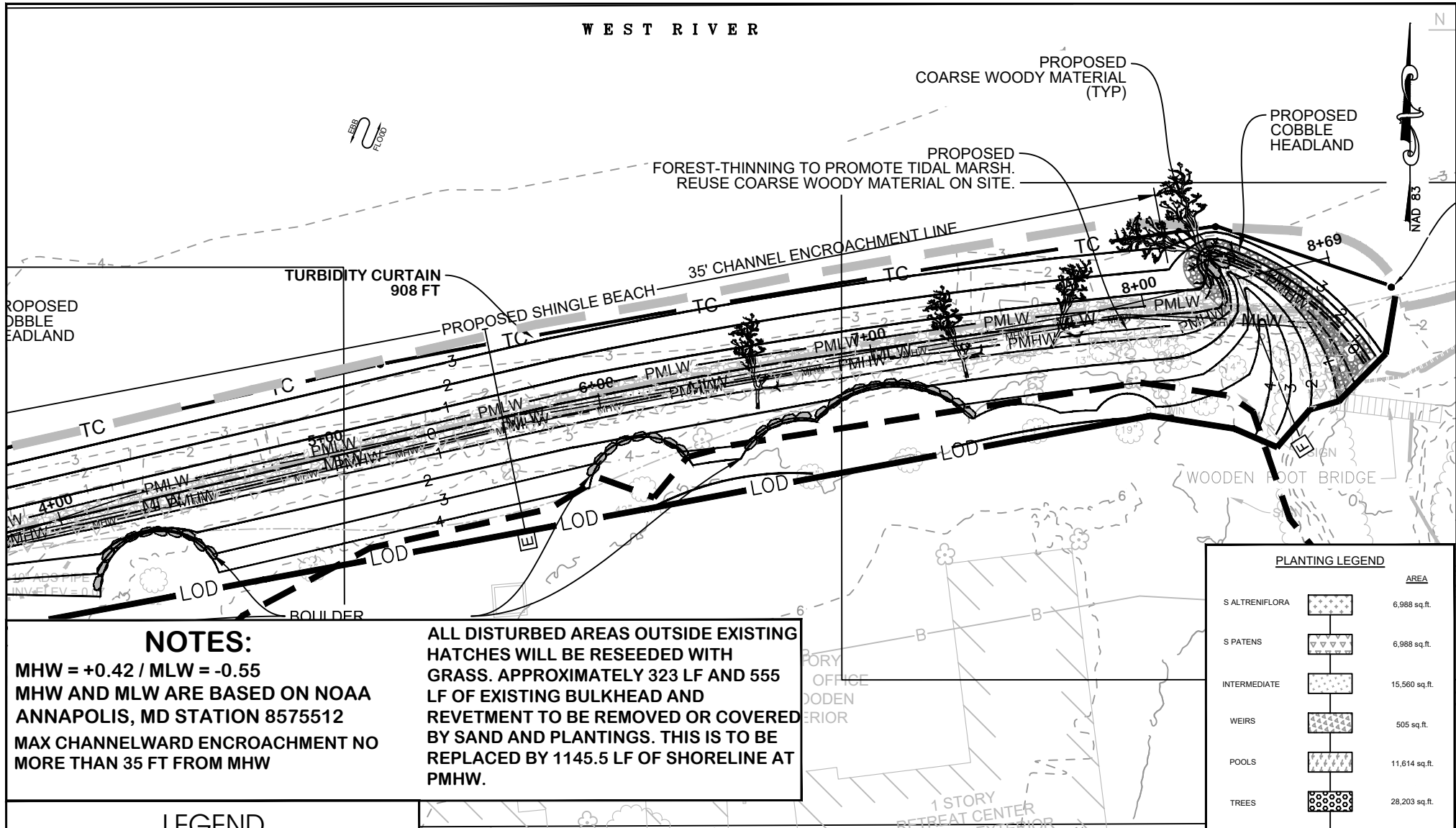
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#### PROPOSED CONDITIONS

#### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

# WEST RIVER



## NOTES:

MHW = +0.42 / MLW = -0.55  
 MHW AND MLW ARE BASED ON NOAA ANNAPOLIS, MD STATION 8575512  
 MAX CHANNELWARD ENCROACHMENT NO MORE THAN 35 FT FROM MHW

ALL DISTURBED AREAS OUTSIDE EXISTING HATCHES WILL BE RESEED WITH GRASS. APPROXIMATELY 323 LF AND 555 LF OF EXISTING BULKHEAD AND REVETMENT TO BE REMOVED OR COVERED BY SAND AND PLANTINGS. THIS IS TO BE REPLACED BY 1145.5 LF OF SHORELINE AT PMHW.

## LEGEND

### PROPOSED FEATURES

CONTOUR	1
100 ft BUFFER LINE	B
MEAN HIGH WATER	MHW
MEAN LOW WATER	MLW
SUBMERGED COBBLE TOE	
WELL GRADED MIX	
BOULDERS	
COARSE WOODY DEBRIS	

## PLANTING LEGEND

	AREA
S ALTRENFLORA	6,988 sq.ft.
S PATENS	6,988 sq.ft.
INTERMEDIATE	15,560 sq.ft.
WEIRS	505 sq.ft.
POOLS	11,614 sq.ft.
TREES	28,203 sq.ft.

## PLAN

SCALE: 1"=50'

SHEET 7 OF 21

APRIL 20, 2020

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LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION

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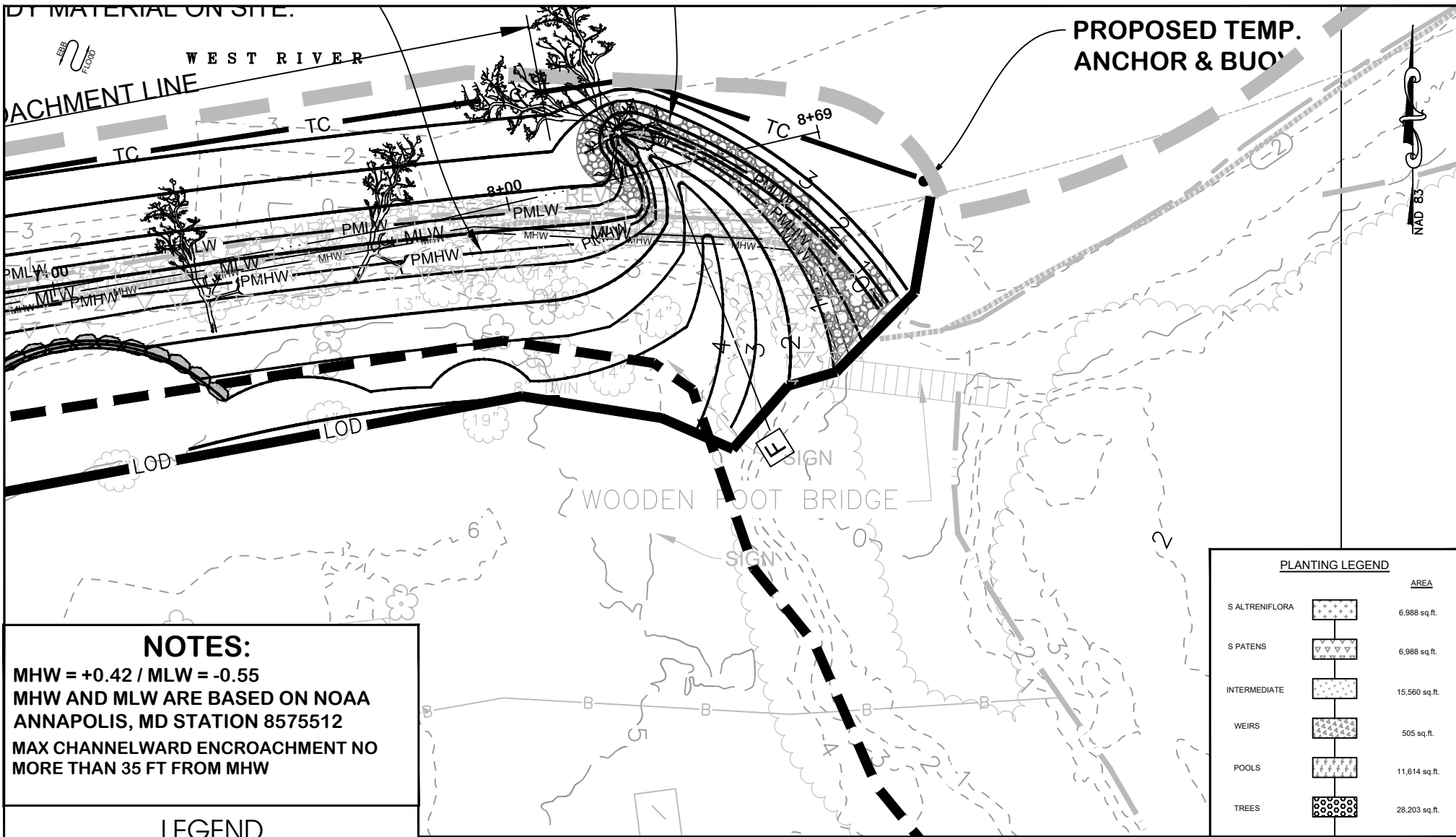
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## PROPOSED CONDITIONS

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
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 MAP 5656, GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY















**NOTES:**

MHW = +0.42 / MLW = -0.55  
 MHW AND MLW ARE BASED ON NOAA  
 ANNAPOLIS, MD STATION 8575512  
 MAX CHANNELWARD ENCROACHMENT NO  
 MORE THAN 35 FT FROM MHW

**LEGEND**

**PROPOSED FEATURES**

- CONTOUR — 1 —
- 100 ft BUFFER LINE — B —
- MEAN HIGH WATER — MHW —
- MEAN LOW WATER — MLW —
- SUBMERGED COBBLE TOE 
- WELL GRADED MIX 
- BOULDERS 
- COARSE WOODY DEBRIS 

PLANTING LEGEND		AREA
S ALTRENIFLORA		6,988 sq. ft.
S PATENS		6,988 sq. ft.
INTERMEDIATE		15,560 sq. ft.
WEIRS		505 sq. ft.
POOLS		11,614 sq. ft.
TREES		28,203 sq. ft.

**PLAN**

SCALE: 1"=30'

SHEET 8 OF 21

APRIL 20, 2020

**UNDERWOOD & ASSOCIATES**

LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION

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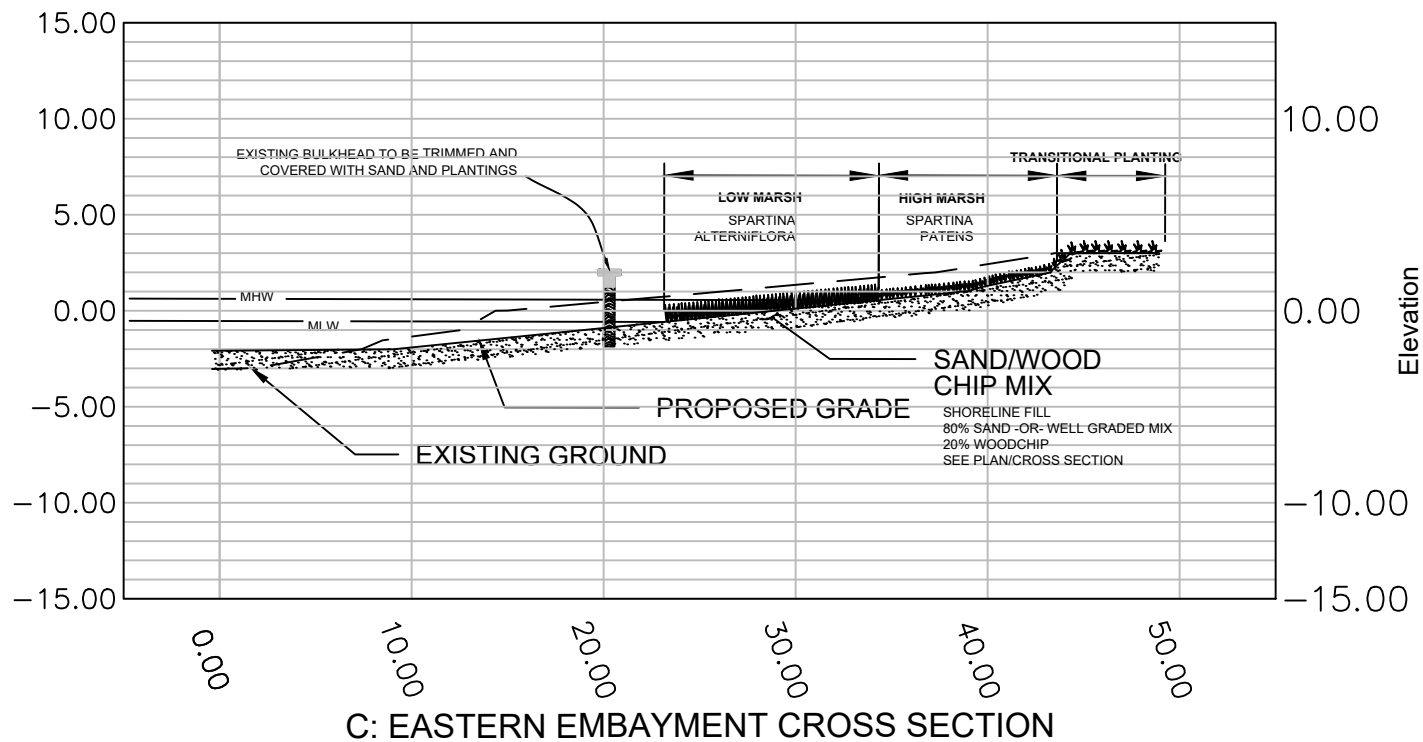


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**PROPOSED CONDITIONS**

**WEST RIVER UNITED METHODIST  
 CHURCH LIVING SHORELINE**

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
 WEST RIVER UM CNTR, 5100 CHALK POINT RD  
 WEST RIVER, MARYLAND, 20733  
 MAP 5656 , GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	---
MEAN HIGH WATER (MHW)	---
MEAN LOW WATER (MLW)	---
SAND/WOOD CHIP MIX	---
SUBMERGED COBBLE	---
BOULDER OUTCROP	---
SPARTINA PATENS	---
SPARTINA ALTERNIFLORA	---

### CROSS SECTIONS

SCALE: 1"=10'

SHEET 9 OF 21

APRIL 20, 2020

### UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

ECOLOGICAL RESTORATION

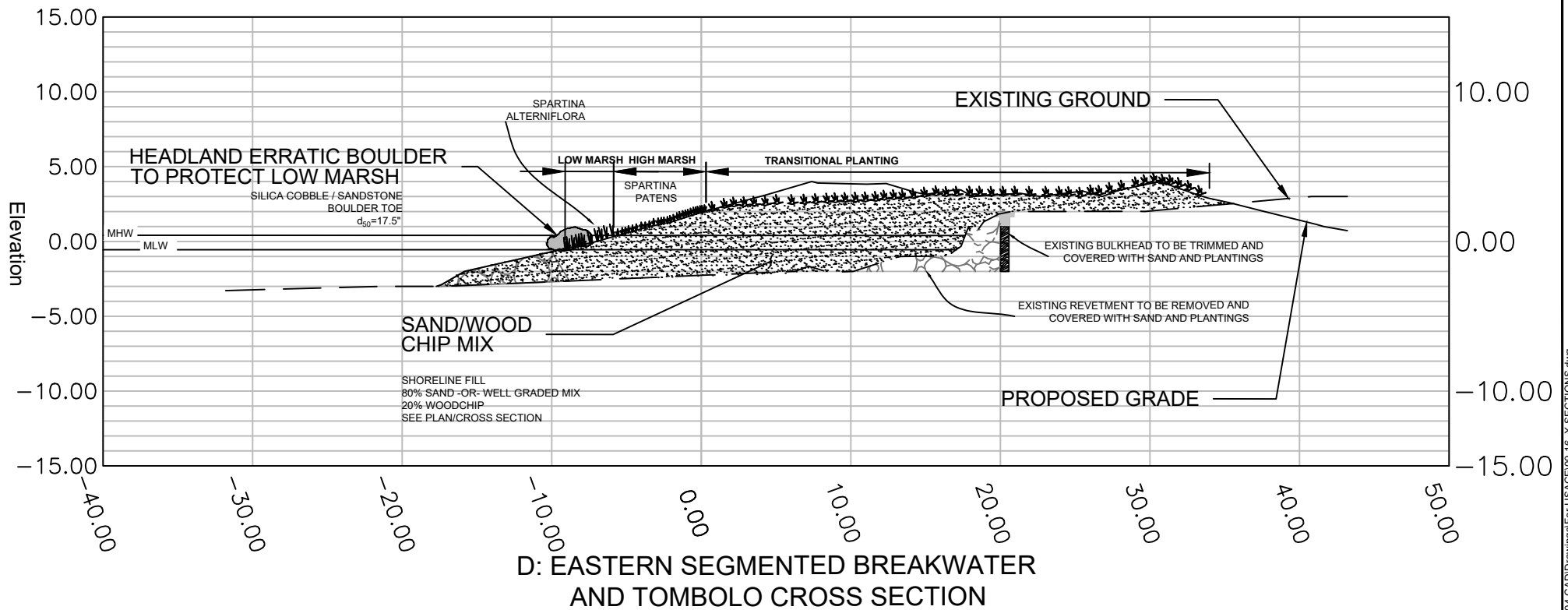
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### PROJECT CROSS SECTION

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



**NOTE:**  
BOULDER OUTCROPS NOT TO SCALE.  
GRAPHICAL REPRESENTATION ONLY.

### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	—
MEAN HIGH WATER (MHW)	----
MEAN LOW WATER (MLW)	----
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: 1"=10'

SHEET 10 OF 21

APRIL 20, 2020

### UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION

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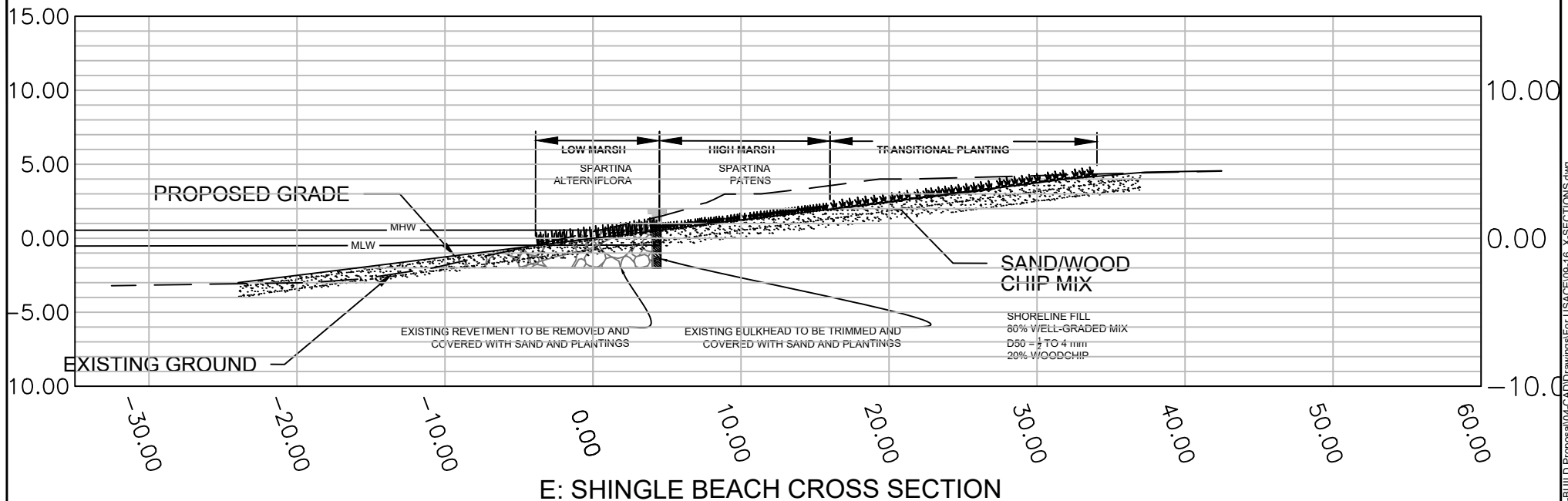


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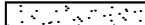




### PROJECT CROSS SECTION

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	—
MEAN HIGH WATER (MHW)	----
MEAN LOW WATER (MLW)	----
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: 1"=10'

**UNDERWOOD & ASSOCIATES**  
 LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION  
 A DESIGN/BUILD Co.



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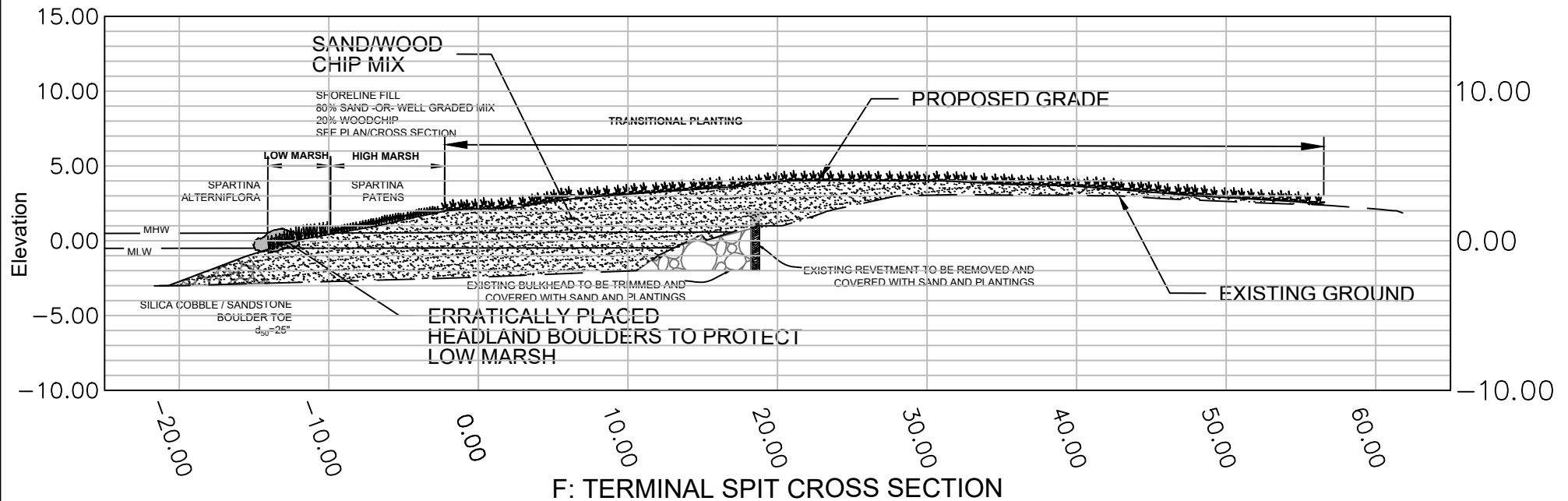
SHEET 11 OF 21

APRIL 20, 2020

### PROJECT CROSS SECTION

#### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



**NOTE:**  
BOULDER OUTCROPS NOT TO SCALE.  
GRAPHICAL REPRESENTATION ONLY.

### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	—
MEAN HIGH WATER (MHW)	----
MEAN LOW WATER (MLW)	----
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: 1"=10'

**UNDERWOOD & ASSOCIATES**  
LANDSCAPE ARCHITECTURE ♦ ECOLOGICAL RESTORATION  
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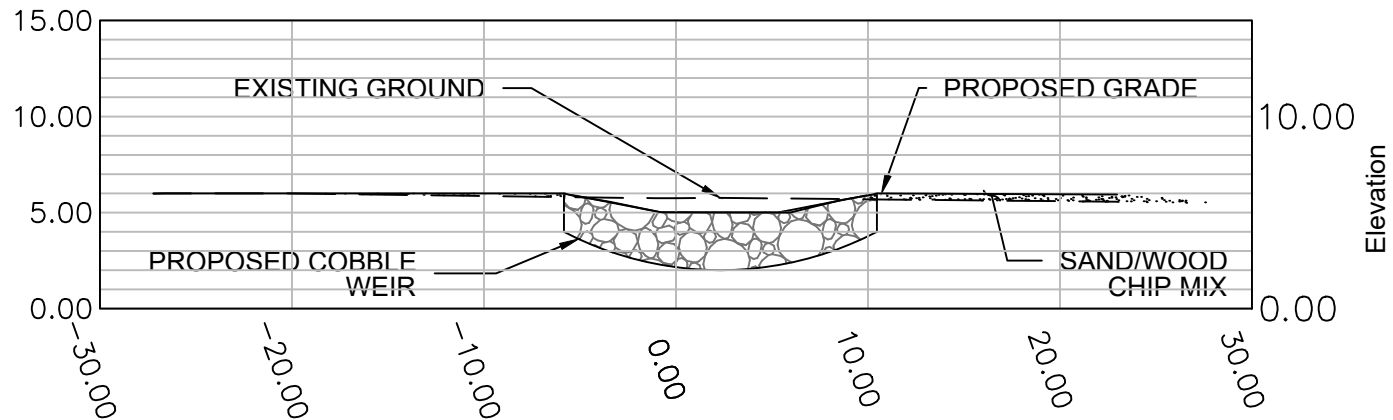
SHEET 12 OF 21

APRIL 20, 2020

### PROJECT CROSS SECTION

#### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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A: WEIR 5 CROSS SECTION

### LEGEND

EXISTING GRADE	— — — —
PROPOSED GRADE	— — — —
MEAN HIGH WATER (MHW)	— ··· —
MEAN LOW WATER (MLW)	— ··· —
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: 1"=10'

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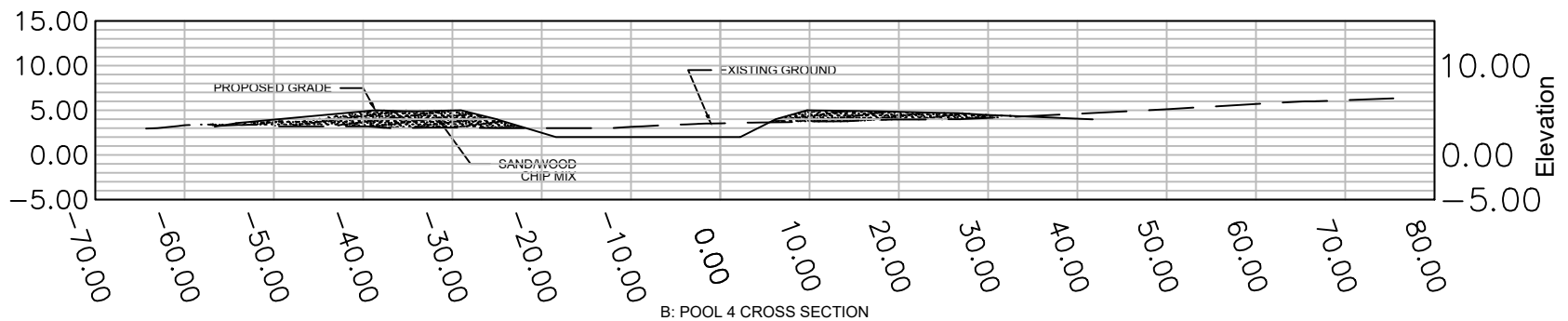
SHEET 13 OF 21

APRIL 20, 2020

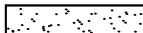




### PROJECT CROSS SECTION

#### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
 WEST RIVER UM CNTR, 5100 CHALK POINT RD  
 WEST RIVER, MARYLAND, 20733  
 MAP 5656 , GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	—
MEAN HIGH WATER (MHW)	----
MEAN LOW WATER (MLW)	----
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: HORI. 1"=20', VERT. 1"=20'

SHEET 14 OF 21

APRIL 20, 2020

### UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE



ECOLOGICAL RESTORATION

A DESIGN/BUILD Co.



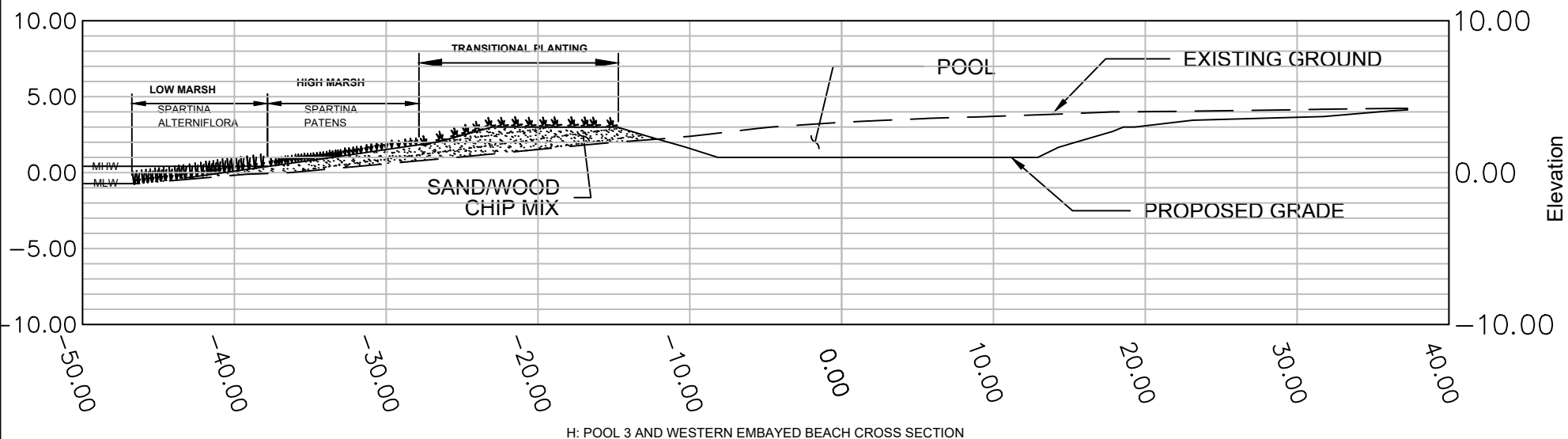
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tel. 410-849-3211 fax. 410-849-2136

### PROJECT CROSS SECTION

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

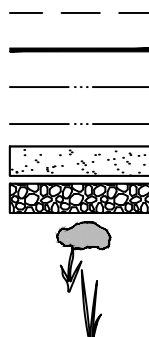
AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
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7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY





### LEGEND

EXISTING GRADE  
PROPOSED GRADE  
MEAN HIGH WATER (MHW)  
MEAN LOW WATER (MLW)  
SAND/WOOD CHIP MIX  
SUBMERGED COBBLE  
BOULDER OUTCROP  
SPARTINA PATENS  
SPARTINA ALTERNIFLORA



### CROSS SECTIONS

SCALE: 1"=10'

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APRIL 20, 2020

### UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

ECOLOGICAL RESTORATION

A DESIGN/BUILD Co.

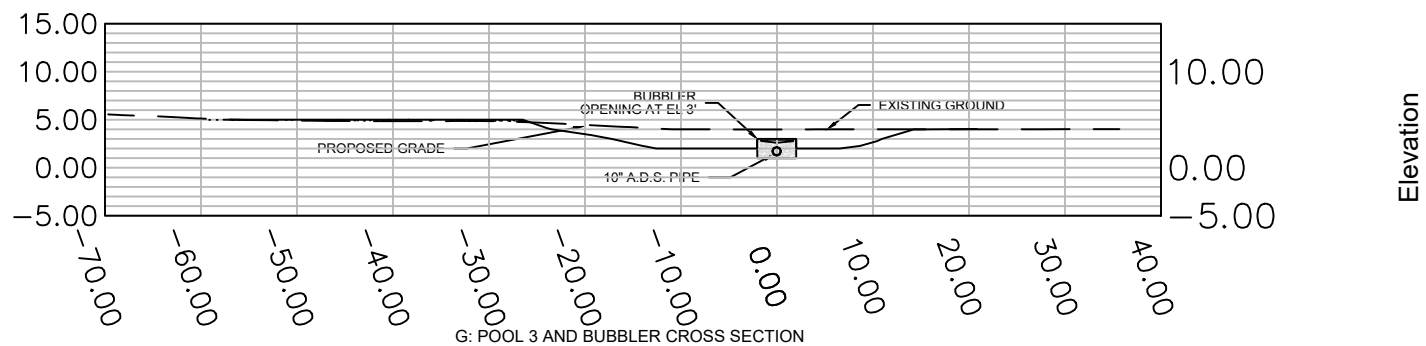


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### PROJECT CROSS SECTION

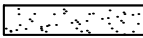




### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY



**NOTE:**  
 PROPOSED STORM DRAIN DIFFUSER  
 EXISTING PVC PIPES TO BE CUT AND REMOVED.  
 SLOTTED HDPE TO RUN BEHIND BOULDER OUTCROP  
 AND UNDERNEATH IMPORTED MATERIAL.  
 SLOTTED HDPE TO BE INSTALLED LEVEL ALONG THE  
 SHORELINE, BEDDED IN GRAVEL, SET AT MLW, AND  
 CAPPED AT EACH END SUCH THAT STORMWATER  
 INFILTRATES ALONG ENTIRE LENGTH OF PIPE.

### LEGEND

EXISTING GRADE	---
PROPOSED GRADE	---
MEAN HIGH WATER (MHW)	---
MEAN LOW WATER (MLW)	---
SAND/WOOD CHIP MIX	
SUBMERGED COBBLE	
BOULDER OUTCROP	
SPARTINA PATENS	
SPARTINA ALTERNIFLORA	

### CROSS SECTIONS

SCALE: 1"=20'

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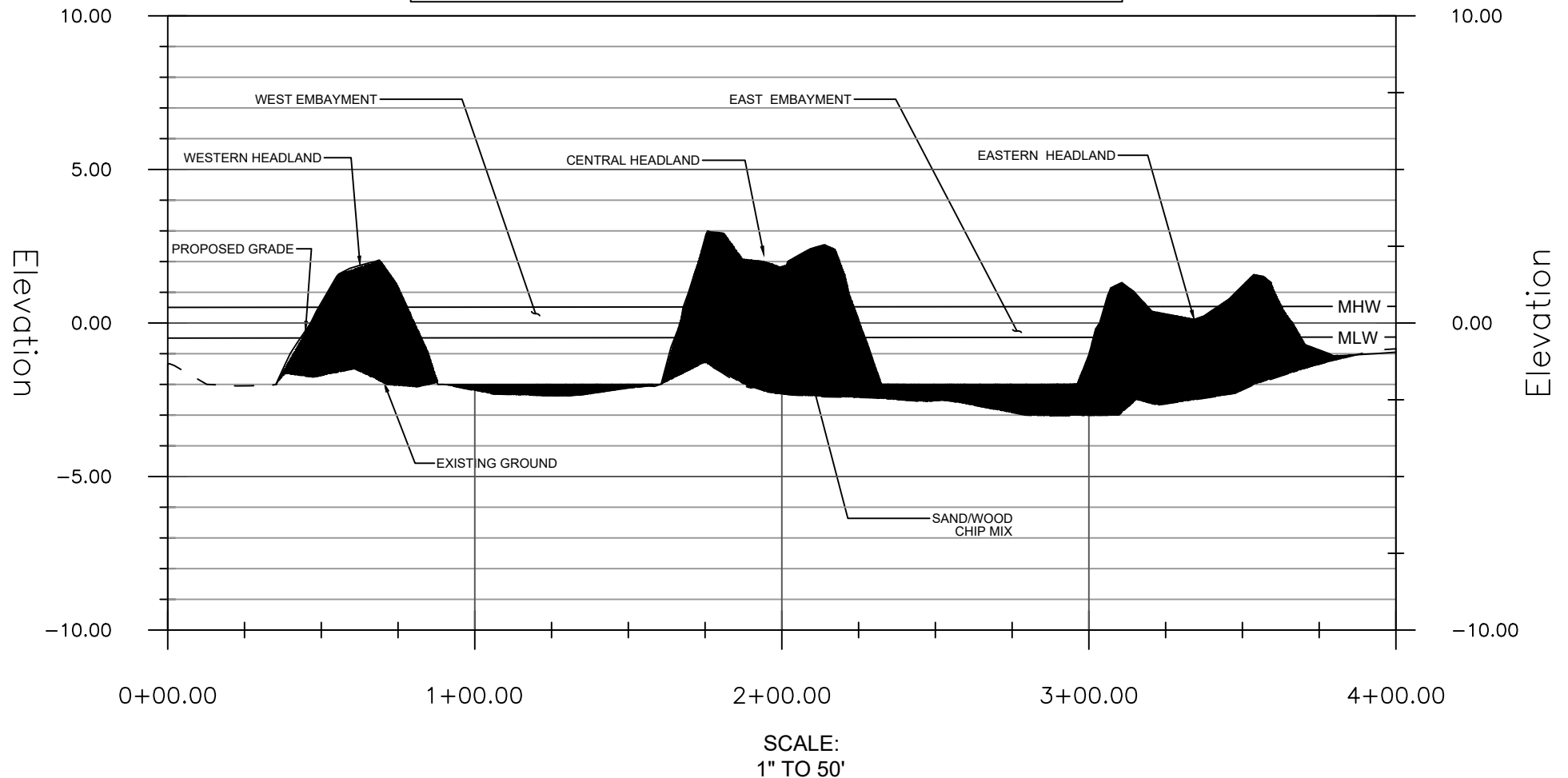
APRIL 20, 2020

### PROJECT CROSS SECTION

#### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXXX  
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# HEADLAND AND BAY PROFILE



NOTE: THIS IS A PROFILE OF THE SHORE-PARALLEL CENTERLINE. THIS PROFILE HAS BEEN CLIPPED AT 400' TO FOCUS ON THE HEADLANDS AND BAYS.

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SHEET 17 OF 21

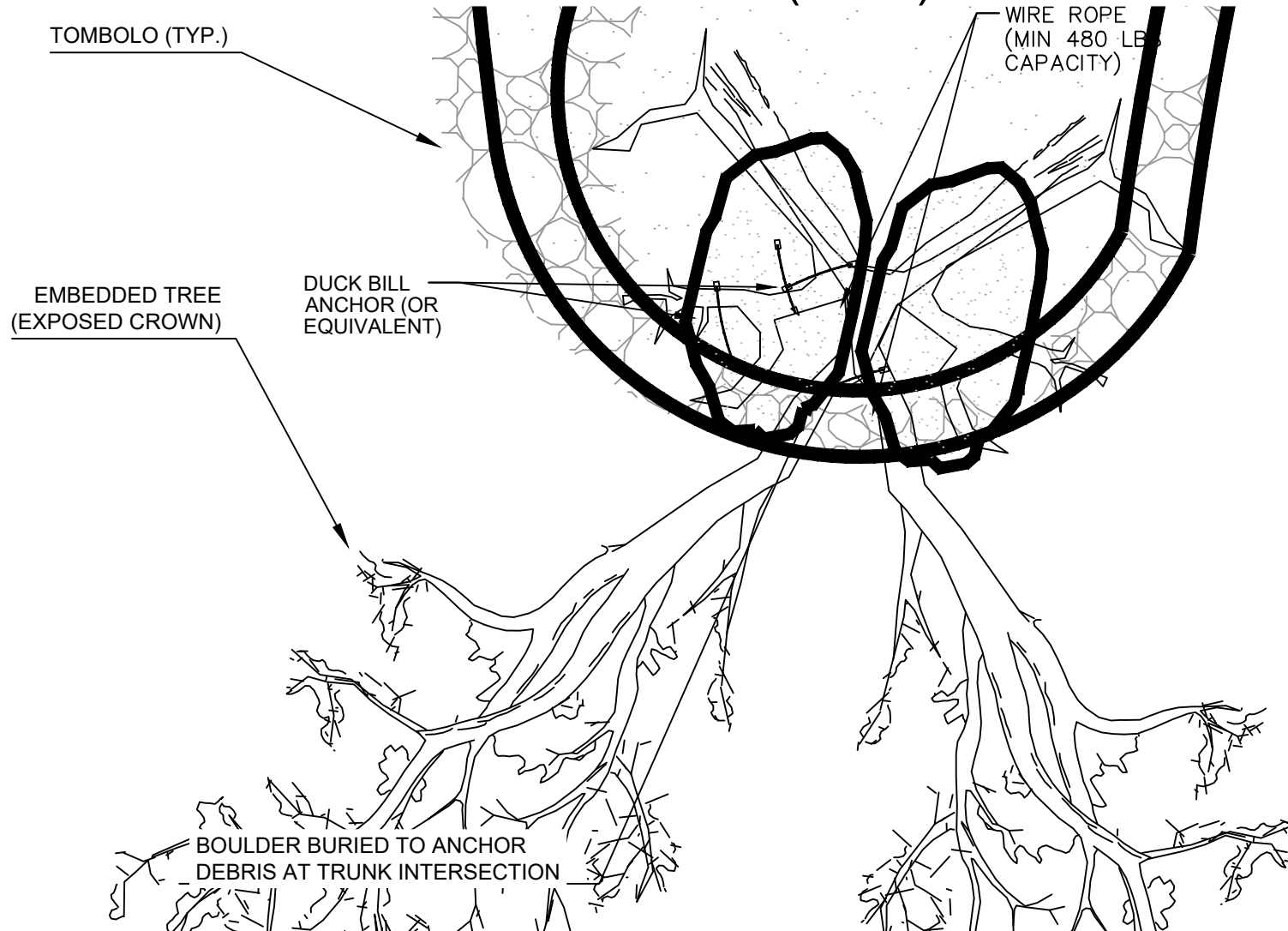
APRIL 20, 2020

## HEADLAND PROFILE

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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# WOODY DEBRIS ANCHORING (TYP.) - PLAN VIEW



SHEET 18 OF 21

APRIL 20, 2020

## UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE

♦ ECOLOGICAL RESTORATION

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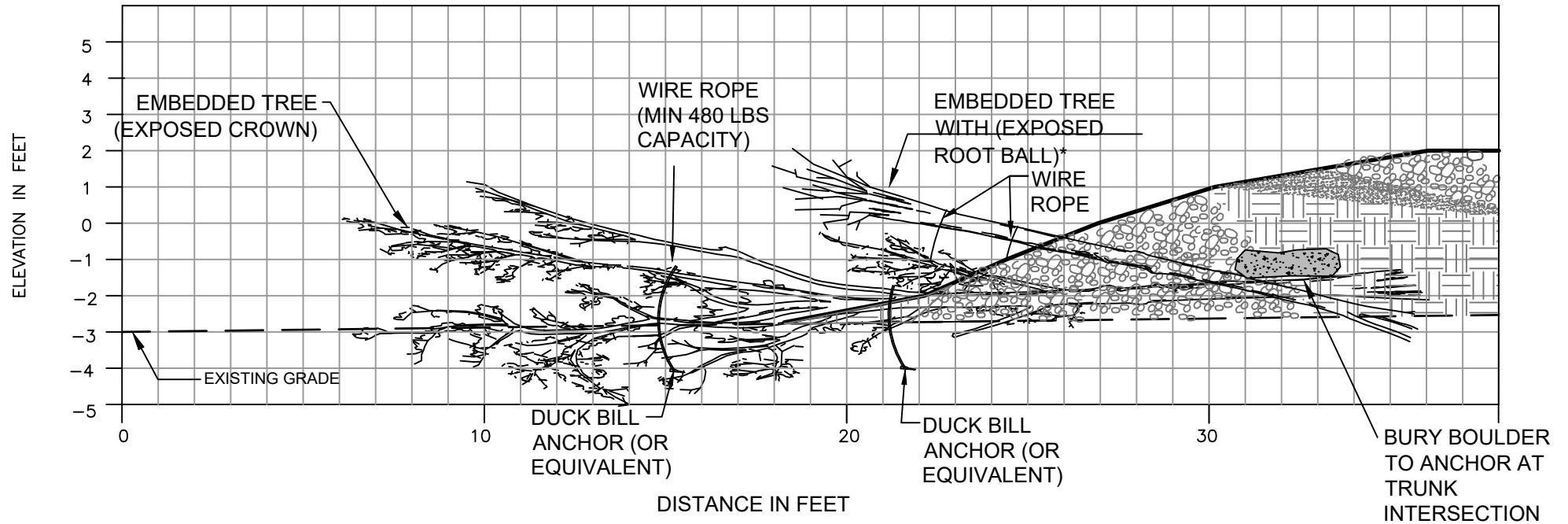
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## PROJECT DETAILS

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

# WOODY DEBRIS ANCHORING (TYP.) - PROFILE VIEW



\*NOTE: THE EMBEDDED TREE WITH EXPOSED ROOT BALL IS SET AT THE EXISTING GRADE. THIS DETAIL SHOWS THE ROOT BALL SLIGHTLY ELEVATED IN ORDER TO DISPLAY BOTH TREES. SEE PLAN VIEW FOR ALIGNMENT.

SHEET 19 OF 21

APRIL 20, 2020

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 tel. 410-849-3211 fax. 410-849-2136

## PROJECT DETAILS

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

AI# XXXXXX- AP.# XX-XX-XXXX- TRACKING # XXXXXXXXX  
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 MAP 5656 , GRID C7, C8 & D7, D8, PARCEL 0243  
 7TH ELECTION DISTRICT, ANNE ARUNDEL COUNTY

# SEQUENCE OF CONSTRUCTION

## CONSTRUCTION SEQUENCE:

1. STAKE OUT, FLAG, OR OTHERWISE DELINEATE THE LIMITS OF DISTURBANCE **(1 DAY)**
2. NOTIFY APPLICABLE STATE AND COUNTY AGENCIES THAT WORK WILL COMMENCE IN 10 DAYS. NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS. **(1 DAY)**
3. INSTALL PERIMETER SEDIMENT AND EROSION CONTROL MEASURES, SUCH AS STABILIZED CONSTRUCTION ENTRANCE, REINFORCED SILT FENCE, AND TURBIDITY CURTAIN AS NEEDED OR AT THE DISCRETION OF THE INSPECTOR. **(3 DAYS)**
4. AFTER OBTAINING APPROVAL FROM THE ANNE ARUNDEL COUNTY SEDIMENT AND EROSION CONTROL INSPECTOR, BEGIN CONSTRUCTION OF THE HAUL ROAD FOR SHORELINE ACCESS, INCLUDING NECESSARY GRADING, CLEARING, AND GRUBBING, IN ACCORDANCE WITH THE APPROVED PLANS. CUT AND REMOVE AND/OR BURY EXISTING BULKHEAD AND REVETMENT WHERE NECESSARY TO INSTALL HAUL ROAD. **(10 DAYS)**
5. CONSTRUCT LIVING SHORELINE BY INSTALLING VEGETATED BREAKWATERS, TOMBOLOS, AND BOULDER OUTCROPS IN ACCORDANCE WITH THE APPROVED PLANS. CUT AND REMOVE AND/OR BURY EXISTING BULKHEAD AND REVETMENT WHERE NECESSARY TO INSTALL LIVING SHORELINE FEATURES **(15 DAYS)**
6. CONSTRUCT SPSC FEATURES BY INSTALLING PEA GRAVEL SEAM, COBBLE WEIRS, AND EXCAVATED POOLS. **(8 DAYS)**
7. COMPLETE SITE PLANTINGS IN ACCORDANCE WITH THE PLANTING PLAN AND SPECIFICATIONS. **(3 DAYS)**
8. ONCE THE SITE IS 95% STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR, REMOVE ALL OF THE REMAINING SEDIMENT AND EROSION CONTROL DEVICES. **(3 DAYS)**

TOTAL PROJECT DURATION: **44 DAYS**

SHEET 20 OF 21

APRIL 20, 2020

## UNDERWOOD & ASSOCIATES

LANDSCAPE ARCHITECTURE



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## SEQUENCE OF CONSTRUCTION

### WEST RIVER UNITED METHODIST CHURCH LIVING SHORELINE

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