

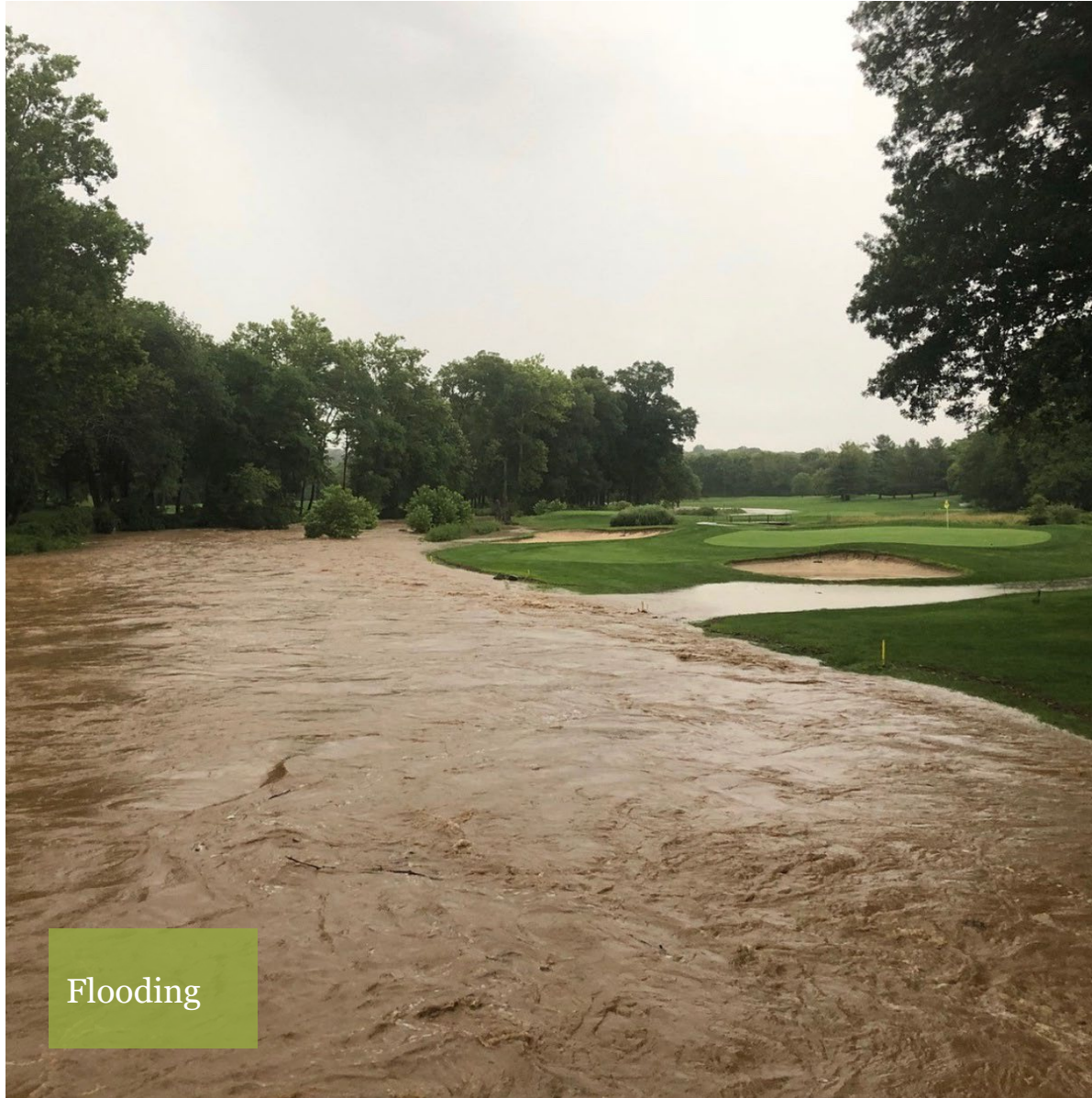


# Winters Run Stream Restoration

*Harford County, MD*



# Previous Conditions



# Project Summary

- Appx. 4,800 linear foot stream restoration
- Design Complete: 2020
- Construction Complete: April 2022
- \$4.9 million
- 14-year repayment schedule

	Nitrogen	Phosphorus	Sediment
Pre-load	2,207 lb/yr	1,983 lb/yr	2,471 ton/yr
Post-load	108 lb/yr	79 lb/yr	115 lb/yr
<b>Reduction</b>	<b>94%</b>	<b>95%</b>	<b>94%</b>

\*Chesapeake Bay Edge-of-Tide delivery factors applied



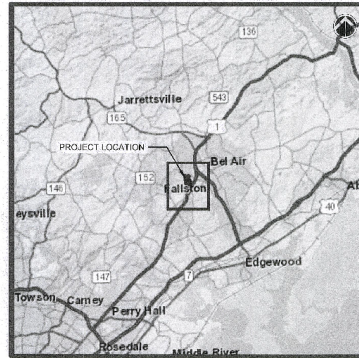
# Design Plan

## WINTERS RUN GOLF CLUB STREAM RESTORATION

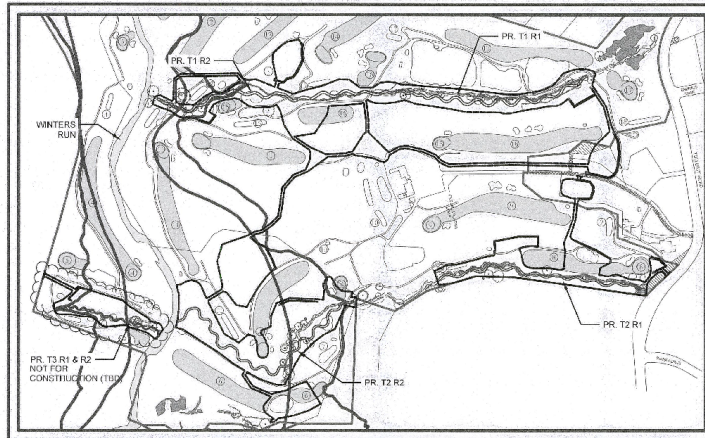
### HARFORD COUNTY, MARYLAND

### DESIGN

VICINITY MAP



USGS TOPOGRAPHIC QUAD MAP



**LEGEND:**

- EX. SOILS BOUNDARY/TEXT
  - EX. MAJOR CONTOUR
  - EX. MINOR CONTOUR
  - EX. BUILDING
  - EX. TOP OF BANK
  - EX. STREAM HATCH
  - EX. STREAM CENTERLINE
  - EX. FOREST STAND
  - EX. CART PATH/PAVEMENT
  - EX. TEE
  - EX. FAIRWAY
  - EX. GREEN
  - EX. BUNKER
  - EX. GOLF HOLE NUMBER
  - EX. TREES
  - EX. WETLAND
  - EX. CULVERT
  - EX. FOOTBRIDGE
  - EX. IRRIGATION LINE
  - EX. IRRIGATION VALVE
  - EX. 100-YEAR FEMA FLOODPLAIN LIMITS
  - EX. 100-YEAR FEMA FLOODWAY LIMITS
- 
- PR. MAJOR CONTOUR
  - PR. MINOR CONTOUR
  - PR. STREAM CENTERLINE
  - PR. STREAM BANKFULL
  - PR. LIMITS OF DISTURBANCE
  - PR. RIFFLE HATCH
  - PR. STILLING BASIN
  - PR. CASCADE BED HATCH
  - PR. LOG SILL
  - PR. STOCKPILE/STAGING AREA
- 
- ESC. DRAINAGE DIVIDE
  - ESC. EARTHDIKE (ED#)
  - ESC. SUPER SILT FENCE (SSF)
  - ESC. SILT FENCE (SF)
  - ESC. TREE PROTECTION (TP)
  - ESC. TREE CLEARING
  - ESC. PUMP AROUND (P)
  - ESC. STABILIZED CONSTRUCTION ENTRANCE (SCE)
  - ESC. DEWATERING DEVICE
  - ESC. MOUNTABLE BERM (MB)

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	SITE OVERVIEW
4	ESC DRAINAGE MEAS PLAN
5	ESC-PHASE 1-OVERVIEW
6	ESC-PHASE 1-1
7	ESC-PHASE 1-2
8	ESC-PHASE 1-3
9	ESC-PHASE 2-OVERVIEW
10	ESC-PHASE 2-1
11	ESC-PHASE 2-2
12	ESC-PHASE 2-3
13	ESC-PHASE 3
14	ESC-DETAILS-1
15	ESC-DETAILS-2
16	ESC-DETAILS-3
17	SITE OVERVIEW-TOPOGRAPHIC WORK-MAP-OVERALL
18	TOPOGRAPHIC WORK-MAP-PR T1 R1
19	TOPOGRAPHIC WORK-MAP-PR T1 R2
20	TOPOGRAPHIC WORK-MAP-PR T2 R1 & T3

**DEVELOPER**  
 THE FOLLOWING ARE ASSOCIATED WITH THIS PROPERTY:  
 • CRENSHAW BAY CRITICAL AREA  
 • FRESHWATER FISH HABITAT PROMOTIVE SPACES

**ENVIRONMENTAL INFORMATION**  
 THIS PROPERTY DOES CONTAIN THE FOLLOWING:  
 • 100A 100-YR FLOODPLAIN  
 • FRESHWATER CONSTRUCTION GRADIENTS  
 • STEEP SLOPES OR FROGIBLE SOILS  
 • NOXIOUS WEEDS

**PROJECT NARRATIVE**  
 THIS PROJECT WILL RESTORE APPROXIMATELY 6663 LINEAR FEET OF HIGH-CHANNEL STREAM USING NATURAL CHANNEL DESIGN. THE REMOVAL OF CHANNEL WILL BE CONNECTED TO AN ACTIVE FLOODPLAIN.

**SWM SIT ANALYSIS**

TOTAL SITE AREA: 202.80 AC ±  
 215 TO 100 YR FLOOD AREA: 27.54 AC ±  
 545 TO 100 YR FLOOD AREA: 0.00 AC ±  
 3000 HAZARDOUS WASTE/RESIDUAL (CERCLA/PCPC)

CONTAMINANT	TOTAL POLLUTANT LOAD REMOVAL TABLE
SEDIMENT	28,400.00
TOXICITY	1,600.00
CO <sub>2</sub> EMISSIONS	2,098.4

**NOTE:**  
 NO UNDERGROUND UTILITIES WERE MARKED BY MISS UTILITY PRIOR TO THE SURVEY. CONTRACTOR SHALL CALL MISS UTILITY 48 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE TO TEST, PATCH, AND REPAIR ANY POTENTIAL DAMAGE AS A RESULT OF PROPOSED GRADING AND PROPOSED UTILITY CROSSING ANY EXISTING UTILITIES. ANY DISCREPANCY SHALL BE REPORTED TO HIS LLC. RES COMPANY PRIOR TO ANY OTHER WORK BEING STARTED.

SIC PLAN #52543  
 GRADING PERMIT #17378-2020

Professional Seal  
 I hereby certify these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28786, Expiration Date: 07/23/2021

Environ and Spec. Contr. Dist. Inc.  
 Rec'd needed for Approval  
 2/12/2021  
 Linda O. O'Brien  
 Harford County DPW/DCR

Technical Concurrence  
 Approved  
 Signature of Owner/Developer  
 Date: 02/23/2021

**ENGINEER CERTIFICATE**  
 I certify that this plan for Erosion and Sediment Control and Stormwater Management represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the Standards and Specifications for Soil Conservation and Stormwater Control, latest edition.  
 Date: 2/12/2021  
 Reg. No. 28786

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY THAT THE FACTS SHOWN ON THIS PLAN WERE CORRECTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPLICABLE STANDARDS AND SPECIFICATIONS.  
 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 EXPIRATION DATE: \_\_\_\_\_

**res**  
 HGS, LLC  
 CORPORATE: 818-770-0000 (TOLL FREE)  
 PROJECTS: 410-221-1100  
 WWW.HGS.US

WINTERS RUN GOLF CLUB STREAM RESTORATION  
 COVER SHEET  
 HARFORD COUNTY, MD

STAMP: STATE OF MARYLAND  
 2021  
 DATE: 02/12/2021

REVISIONS:  
 REVISION PER COMMENTS DATED 1/19/2020  
 REVISION PER COMMENTS DATED 1/22/2020

REVISIONS:  
 REVISION PER COMMENTS DATED 1/19/2020  
 REVISION PER COMMENTS DATED 1/22/2020

SHEET NO. 1 OF 20

An aerial photograph of a golf course restoration project. The image shows a large, winding water feature, possibly a stream or canal, that has been excavated and lined with concrete. The water is dark, and the surrounding areas are mostly brown and bare, indicating a lack of vegetation. There are several sand traps scattered throughout the course. In the upper left, there is a construction site with a yellow excavator and a truck. A paved road runs along the right side of the water feature. The overall scene is one of active construction and restoration.

Mid-Restoration  
Pre-Vegetation

# Mid-Restoration



# Vegetation Establishment

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## Contact Us

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