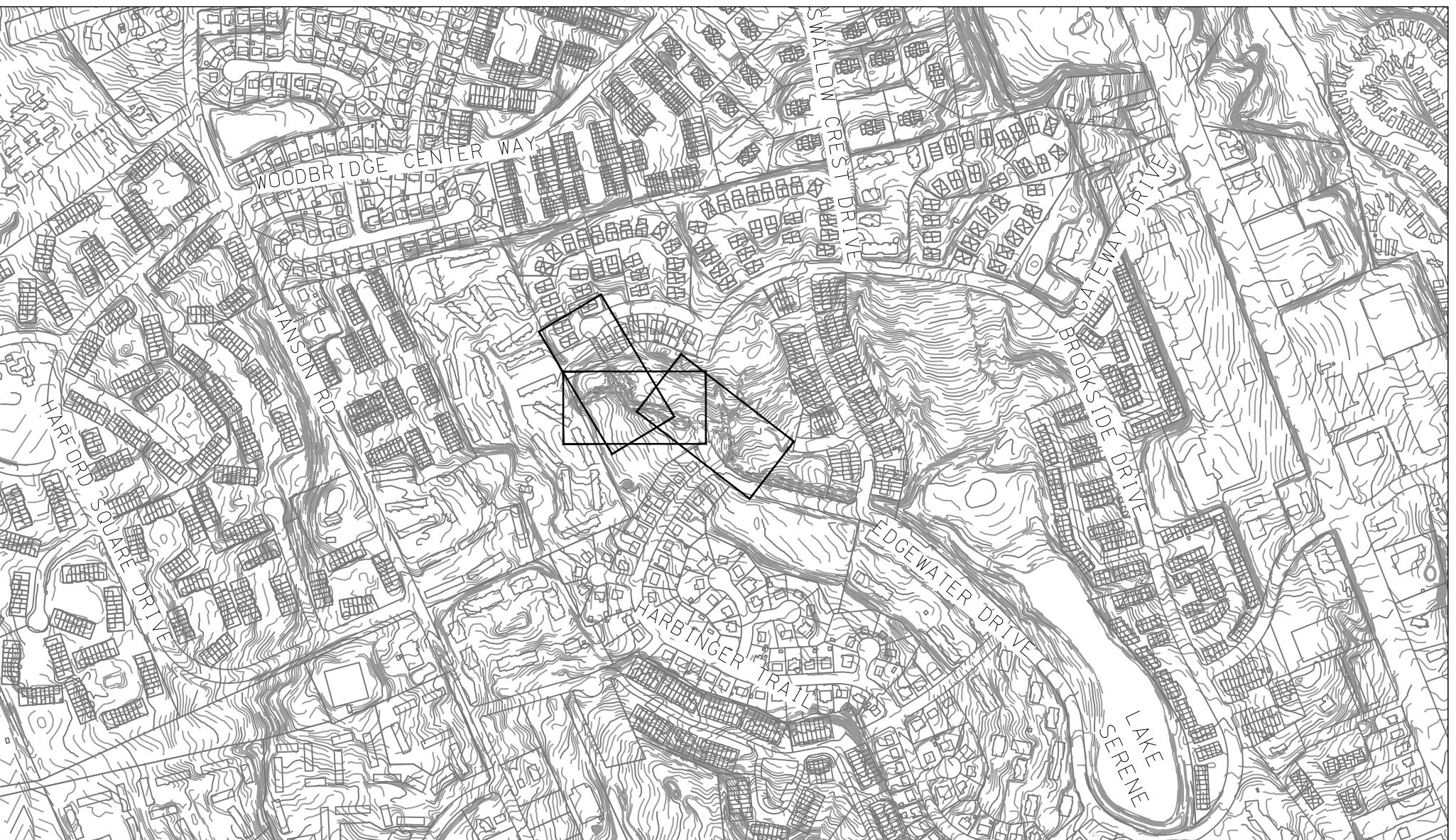


EDGEWATER VILLAGE PARK STREAM RESTORATION

INDEX OF SHEETS

NO.	DESCRIPTION	SHEET NAME
1	TITLE SHEET	GN-01
2	GENERAL CONSTRUCTION NOTES	GN-02
3	SITE PLAN	SP-01
4	EXISTING CONDITIONS	EX-01
5	EXISTING CONDITIONS	EX-02
6	EXISTING CONDITIONS	EX-03
7	TREE INVENTORY	TI-01
8	TREE INVENTORY	TI-02
9	TREE INVENTORY	TI-03
10	TREE INVENTORY TABLE	TI-04
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12	PROPOSED CONDITIONS	SR-02
13	PROPOSED CONDITIONS	SR-03
14	PROFILE VIEW	PR-01
15	PROFILE VIEW	PR-02
16	PROFILE VIEW	PR-03
17	STREAM DETAILS	DE-01
18	STREAM DETAILS	DE-02
19	STREAM DETAILS	DE-03
20	DRAINAGE AREA	DA-01

WATERSHED PROTECTION AND RESTORATION OFFICE
HARFORD COUNTY, MARYLAND
BID NO. : TBD



LOCATION MAP

ALE 1" = 600

00' 0 600' 1200'

SCALE: 1"=600'

PROJECT SUMMARY

TOTAL LENGTH OF STREAM RESTORED: 979 LINEAR FEET

TOTAL LENGTH OF STREAM RESTORED: 515 FT
STREAM USE CLASS: DESIGNATED USE CLASS

STREAM USE CLASS: DESIGNATED USE CLASS I
STREAM CLOSURE PERIOD: MARCH 1 THROUGH JUNE 15

STREAM CLOSURE LOAD REDUCTIONS

REACH	TSS REDUCTION	TN REDUCTION	TP REDUCTION	IMPERVIOUS ACRES	CREDITS
REACH 1&2A	39.0 TONS/YR	49.2 LBS/YR	8.3 LBS/YR		5.4
LT-1	9.9 TONS/YR	12.6 LBS/YR	2.1 LBS/YR		1.4
LT-2	9.44 TONS/YR	11.89 LBS/YR	1.98 LBS/YR		1.3
REACH 2B	34.20 TONS/YR	43.09 LBS/YR	7.18 LBS/YR		4.7

*SEDIMENT AND NUTRIENT LOAD REDUCTIONS WERE DETERMINED IN ACCORDANCE WITH THE MDE APPROVED EXPERT PANEL DOCUMENT RECOMMENDATIONS OF THE EXPERT PANEL TO DEFINE REMOVAL RATES FOR INDIVIDUAL STREAM RESTORATION PROJECTS (BFRG ET AL., 2014) AND SUPPORTING DOCUMENTS.

**SUPPORTED DOCUMENTS CONSULTED INCLUDE "CONSENSUS RECOMMENDATIONS FOR IMPROVING THE APPLICATION OF THE PREVENTED SEDIMENT PROTOCOL FOR STREAM RESTORATION PROJECTS BUILT FOR POLLUTANT REMOVAL CREDIT" DATED SEPTEMBER 2019, "CONSENSUS RECOMMENDATIONS TO IMPROVE PROTOCOLS 2 AND 3 FOR DEFINING STREAM RESTORATION POLLUTANT REMOVAL CREDITS" DATED OCTOBER 2020, AND "RECOMMENDATIONS FOR CREDITING OUTFALL AND GULLY STABILIZATION PROJECTS IN THE CHESAPEAKE BAY WATERSHED" DATED OCTOBER 2018.

STABILIZATION PROJECTS IN THE CHESAPEAKE BAY WATERSHED™ DATED OCTOBER 2019.
***TMDL CALCULATIONS SHOWN ABOVE ARE PRELIMINARY AND INCLUDED FOR REFERENCE ONLY. FINAL LOAD REDUCTIONS
WILL BE UPDATED AND RECALCULATED AS DESIGN PROGRESSES.

Client: HARFORD COUNTY
DEPARTMENT OF PUBLIC WORKS
WATERSHED PROTECTION AND
RESTORATION OFFICE
212 S. BOND STREET
BEL AIR, MD 21014
410-638-3217

Prepared By : **AECOM**
12420 MILESTONE CENTER DRIVE
SUITE 150
GERMANTOWN, MARYLAND 20876
301-820-3000

BILLING NO. XXXXXX
EG-SWMENG- XXXXX-XXXX #XXXX
<u>PROFESSIONAL CERTIFICATION</u>
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

GENERAL NOTES

1. SPECIFICATIONS: ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATIONS STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2022 AND THE MOST RECENT REVISIONS THEREOF AND ADDITIONS THERETO.
2. UTILITIES: UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON LIMITED INFORMATION AVAILABLE. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF THIS INFORMATION. THE COST OF REPAIR OR REPLACEMENT OF ANY SUCH FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE BORNE BY HIM.
CONTACT "MISS UTILITY" PHONE 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THERE SHOULD BE NO EXCAVATION UNTIL THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN DETERMINED.
3. STANDARD DETAILS: REFERENCE MADE TO STANDARDS ARE TAKEN FROM THE HARFORD COUNTY ROAD CODE "BOOK OF STANDARD DETAILS" AND FROM "THE MARYLAND STATE HIGHWAY ADMINISTRATION'S BOOK OF STANDARDS-HIGHWAY AND INCIDENTAL STRUCTURES", IT WILL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE STANDARD DRAWINGS IN HIS POSSESSION ARE THE LATEST REVISED STANDARDS UP TO AND INCLUDING THE DATE OF THE ADVERTISEMENT OF THIS CONTRACT.
4. RIGHT-OF-WAY LINES: RIGHT-OF-WAY LINES SHOWN ON THESE PLANS DO NOT INCLUDE EASEMENTS. THEY ARE FOR ASSISTANCE IN INTERPRETING THE PLANS ONLY. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICIAL FEE RIGHT-OF-WAY AND EASEMENT INFORMATION, SEE THE APPROPRIATE RIGHT-OF-WAY PLATS.
5. SOIL CONSERVATION: THE CONTRACTOR SHALL NOT DISTURB THE EXISTING VEGETATION OUTSIDE THE LIMITS OF DISTURBANCE. IF NECESSARY, A TEMPORARY STOCKPILE SHALL BE PROVIDED WITHIN THE LIMITS OF DISTURBANCE, THE STOCKPILE SHALL BE LOCATED SUCH THAT ANY RUNOFF WILL DRAIN TO AN EXISTING SEDIMENT CONTROL DEVICE (I.E., SUPER SILT FENCE). THE STOCKPILE MAY NOT PROTRUDE UPON NOR ALTER DRAINAGE DIVIDES TO THE SEDIMENT CONTROL DEVICE AT ANY TIME. SOIL STABILIZATION WILL CONFORM TO 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE CONTRACTOR WILL OBTAIN APPROVAL OF THE HARFORD COUNTY SOIL CONSERVATION DISTRICT FOR HIS PLANS IN CONTROLLING SEDIMENT EROSION FOR THE BORROW AREA AND DISPOSING OF ANY WASTE EXCAVATION.
6. EXISTING MAILBOXES AND EXISTING SIGNS: ALL EXISTING MAILBOXES, SIGNS AND PAPER BOXES DISTURBED DURING CONSTRUCTION SHALL BE TEMPORARILY RESET IMMEDIATELY AND PERMANENTLY RESET AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

Y THOSE CONTROL POINTS SHOWN ON THESE PLANS ARE TO
USED FOR THE CONSTRUCTION OF THIS PROJECT.

NOT FOR CONSTRUCTION: 30% DESIGN REVIEW

S/C PLAN # XXXXX	Revisions	EDGEGATE VILLAGE PARK STREAM RESTORATION TITLE SHEET		
GP # XXXXX-XXXX		Drawn By :	CA	Scale : <u>AS SHOWN</u>
SIGN AND SEAL		Designed By :	CA	Date : <u>NOVEMBER 2024</u>
		Reviewed By :	BWA	
		Drawing No.	GN-01 of GN-02	Sheet No.
				01 of 20

GENERAL CONSTRUCTION NOTES

PROJECT DESCRIPTION
THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS, WATERSHED PROTECTION AND RESTORATION DIVISION IS PURSUING THE EDGEWATER VILLAGE STREAM RESTORATION PROJECT. THE PROJECT INCLUDES 1,163 LINEAR FEET OF STREAM RESTORATION ACTIVITIES AS WELL AS 0.05 ACRES OF WETLAND RESTORATION/ENHANCEMENT. THE GOAL OF THE PROJECT IS TO PROVIDE STREAM STABILIZATION AND CHANNEL RESTORATION DESIGNS THAT ARE LOW-MAINTENANCE AND COST-EFFECTIVE. ADDITIONALLY, THESE IMPROVEMENTS WILL SUPPORT THE COUNTY IN MEETING TOTAL MAXIMUM DAILY LOAD (TMDL) RESTORATION GOALS FOR THE CHESAPEAKE BAY WATERSHED.

EXISTING SITE CONDITIONS
THE SITE IS LOCATED IN A SUBURBAN AREA WITHIN THE UNINCORPORATED COMMUNITY OF EDGEWOOD, MARYLAND. THE AREA SURROUNDING THE PROJECT AREA INCLUDES RESIDENTIAL NEIGHBORHOODS, ATHLETIC FIELDS, OPEN SPACE, AND FORESTED BUFFERS. THE SITE IS LOCATED WITHIN THE WINTERS RUN-BUSH RIVER (HUC10: 0206000301) AND BUSH RIVER (HUC12: 020600030105) WATERSHEDS. AREAS LOCATED OUTSIDE THE LOD WILL NOT BE DISTURBED DURING CONSTRUCTION.

CRITICAL EROSION AREAS
EARLY ESTABLISHMENT AND PROPER MAINTENANCE OF PERIMETER CONTROLS WILL PROVIDE SEDIMENTATION CONTROL, STABILIZE AND MAINTAIN CUT AND FILL SLOPES THROUGHOUT PROJECT CONSTRUCTION TO CONTROL EROSION. AREAS THAT MAY HAVE HIGH EROSION POTENTIAL DURING CONSTRUCTION INCLUDE THE STREAMBANKS AND AREAS OF HIGHLY ERODIBLE SOIL. PORTIONS OF THE STREAMBANK WITH SLOPES EXCEEDING 5% LOCATED WITHIN AREAS OF HIGHLY ERODIBLE SOIL WILL BE CONSIDERED CRITICAL AREAS AND WILL BE TREATED WITH EROSION CONTROL MATTING TO ENSURE ADEQUATE STABILIZATION.

ADEQUATE CHANNEL PROTECTION
WATERWAYS DOWNSTREAM OF THE PROJECT SITE WILL BE PROTECTED FROM SEDIMENT DEPOSITION AND INCREASES FROM VOLUME, VELOCITY AND PEAK-FLOW THROUGH USE OF SEDIMENT CONTROL MEASURES DURING CONSTRUCTION, INCLUDING SANDBAG DIKES, COFFERDAMS, PUMPS, AND FILTER BAGS.

SPATIAL DATA
SOURCES FOR ELEVATION DATA INCLUDE THE FOLLOWING:

- 1) SURVEY PERFORMED BY AECOM IN MAY 2024.
- 2) GIS TOPOGRAPHY AVAILABLE FROM THE HARFORD COUNTY GIS DATA DOWNLOAD PORTAL.

PROPOSED WORK
A. COMPLETE ALL PROPOSED WORK CAREFULLY TO MINIMIZE DISTURBANCE TO ADJACENT AREAS.

B. RESTORE ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL OR PROPOSED CONDITION TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.

C. IF WORK IS NOT AS ANTICIPATED OR INVOLVES DESIGN MODIFICATION CONSIDERATIONS, NOTIFY ENGINEER PRIOR TO PROCEEDING.

GENERAL CONSTRUCTION NOTES:

A. THE ENGINEER USED NORMAL STANDARD OF CARE IN LOCATING, IDENTIFYING AND SURVEYING EXISTING UTILITIES. NO SPECIALIZED SUBSURFACE UTILITY ENGINEERING WAS CONDUCTED. ALL EXISTING UTILITIES FOUND DURING SURVEY ARE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES WITHIN THE CONSTRUCTION LIMITS AND VERIFYING THE LOCATION AND DEPTHS OF BURIED UTILITIES PRIOR TO CONSTRUCTION. IF A CONFLICT IS DISCOVERED BETWEEN THE PLANS AND THE EXISTING UTILITIES, THE CONTRACTOR IS TO NOTIFY THE ENGINEER TO ADDRESS THE CONFLICT PRIOR TO BEGINNING CONSTRUCTION.

B. CONTRACTOR SHALL PROVIDE TEMPORARY STABILIZATION OF ALL UTILITIES DURING CONSTRUCTION INCLUDING POWER POLES.

C. VERIFY ALL FIELD CONDITIONS PRIOR TO CONSTRUCTION AND/OR DEMOLITION AND REPORT ANY DIFFERENCE IN SITE CONDITIONS FROM THE DRAWINGS TO THE ENGINEER IMMEDIATELY.

D. PROMPTLY INFORM THE ENGINEER OF ANY ERROR OR DISCREPANCY DISCOVERED IN THESE DRAWINGS OR SPECIFICATIONS OR CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS.

DEMOLITION NOTES:

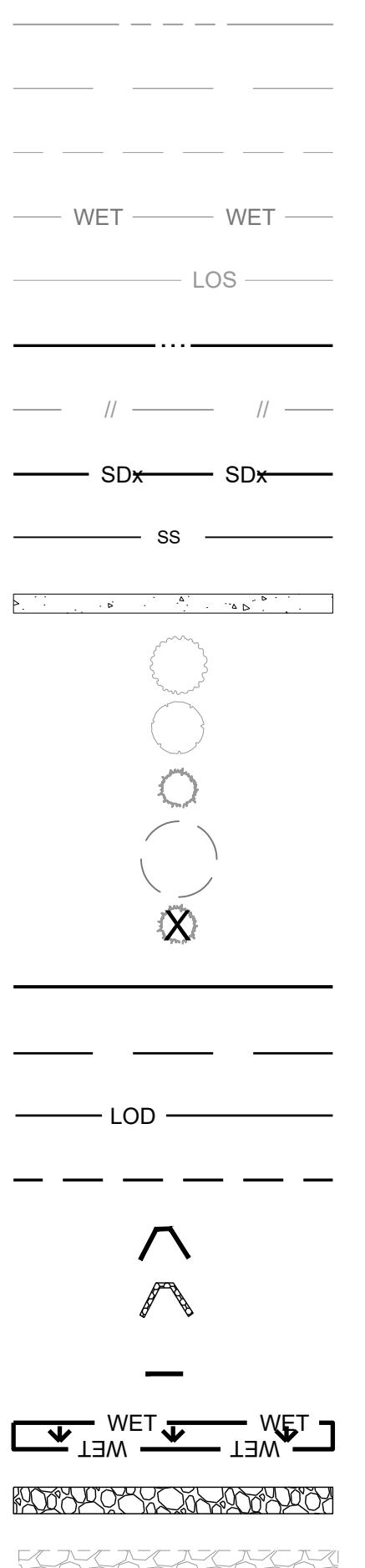
A. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND DEMOLITION OF ANY ELEMENTS WHICH ARE IN CONFLICT WITH PROPOSED NEW CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO FENCES, TREES, DRAINAGE STRUCTURES, POLES, PAVEMENTS, VEGETATION, SIGNS AND OTHER MISCELLANEOUS SITE ELEMENTS.

B. ALL DEMOLITION DEBRIS SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND SPECIFICATIONS, LATEST REVISION.

C. CONTRACTOR SHALL STRIP TOPSOIL AND STOCKPILE IT FOR LATER USE.

D. EXISTING UTILITIES SUCH AS WATER, SEWER, GAS, ELECTRICAL, FIBER, CABLE, ETC. MAY BE PRESENT IN THE AREA. THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED PRIOR TO CONSTRUCTION. ANY AND ALL DAMAGES RESULTING FROM THE FAILURE TO DO SO SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER. CONTACT ANY APPLICABLE LOCAL AND REGIONAL UTILITIES COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

LEGEND



DEVELOPER'S/LANDOWNER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE CONSTRUCTION DRAWING(S) WILL BE ACCOMPLISHED PURSUANT TO THESE PLANS. I/WE ALSO UNDERSTAND THAT IT IS MY/OUR RESPONSIBILITY TO HAVE THE CONSTRUCTION SUPERVISED AND CERTIFIED, INCLUDING THE SUBMITTAL OF "AS-BUILT" PLANS WITHIN 30 DAYS OF COMPLETION, BY A REGISTERED PROFESSIONAL ENGINEER.

SIGNED: _____
PRINT NAME: _____
DATE: _____

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME, OR UNDER MY SUPERVISION, AND MEETS THE MINIMUM STANDARDS OF THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS AND/OR THE UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION.

SIGNED: _____
PRINT NAME: _____
DATE: _____
P.E. NO.: _____

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNED: _____
PRINT NAME: _____
DATE: _____
P.E. NO.: _____

FIELD VERIFICATION CERTIFICATION

I HEREBY CERTIFY THAT I COMPLETED A FIELD VERIFICATION TO THE INFORMATION SHOWN ON THE PLANS ON _____ AND THAT THE INFORMATION SHOWN ON THE PLANS IS IN AGREEMENT WITH THE ACTUAL FIELD CONDITIONS.

SIGNED: _____
PRINT NAME: _____
DATE: _____

HARFORD COUNTY, MARYLAND	
EDGEWATER VILLAGE PARK	
STREAM RESTORATION	
GENERAL CONSTRUCTION NOTES	
Drawn By : CA	Scale : NTS
Designed By : CA	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. GN-02 of GN-02	
Sheet No. 02 of 20	

BID NO.: HCG DWG ID No. : **SCALE : 1 in =**

S/C PLAN # XXXXX **Revisions**

GP # XXXXX-XXXX

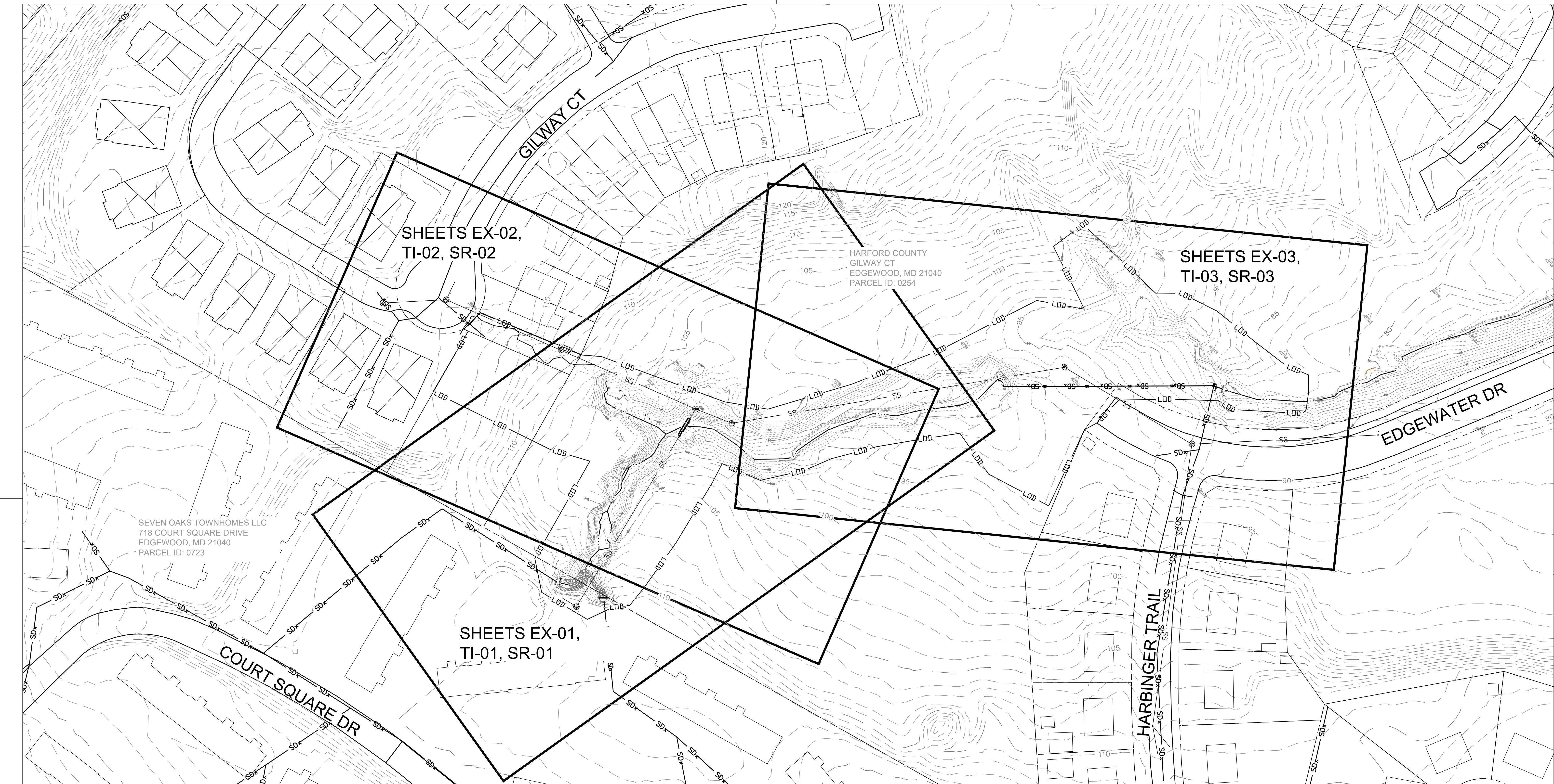
SIGN AND SEAL

BILLING NO. XXXXXX

EG-SWMENG- XXXXXX-XXXX #XXXX

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.



CHARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK STREAM RESTORATION SITE PLAN

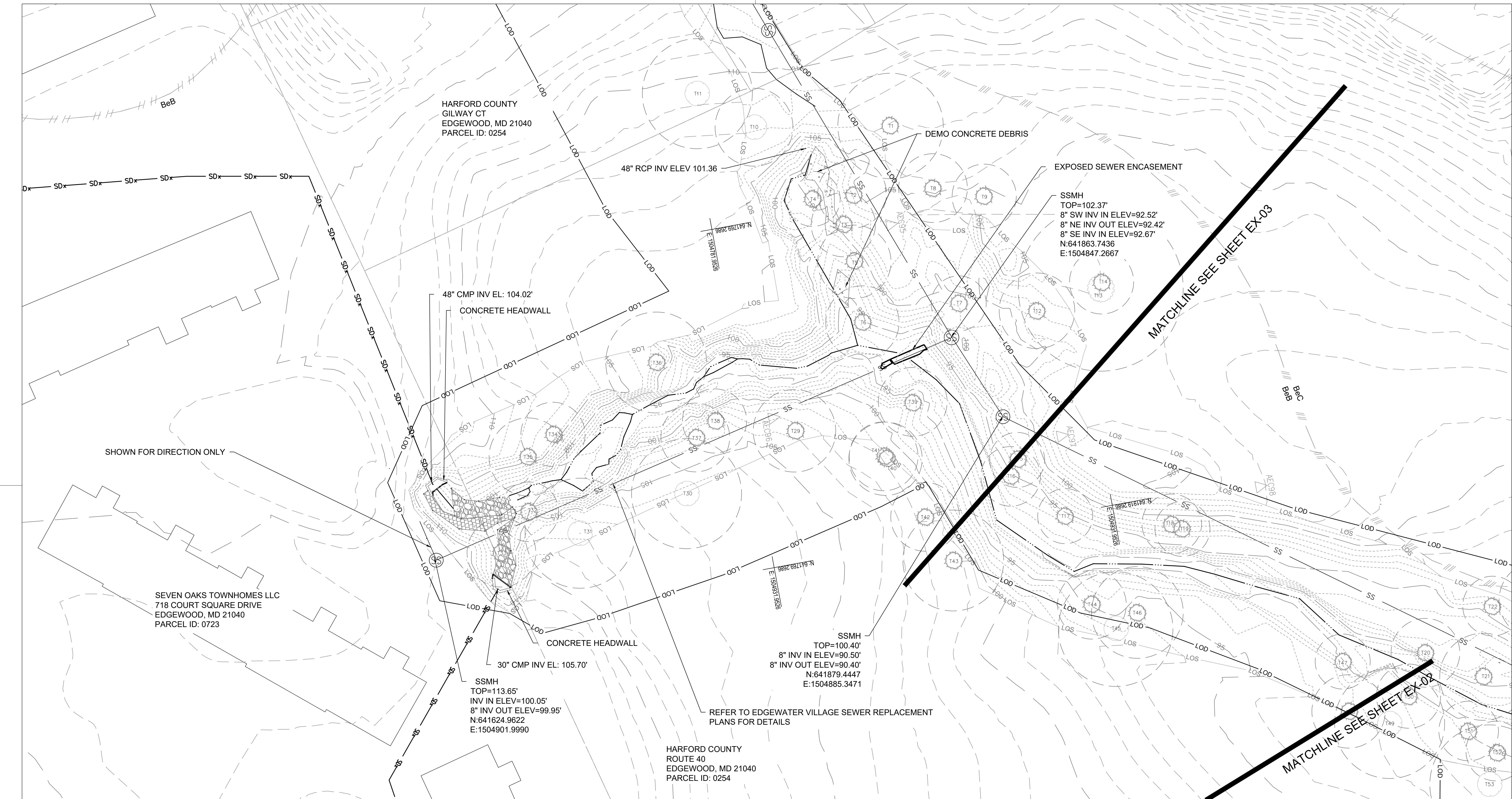
S/C PLAN # XXXXX	Revisions	EDGEWATER VILLAGE PARK STREAM RESTORATION SITE PLAN		
GP # XXXXX-XXXX		Drawn By : CA	Scale : 1" = 50'	
		Designed By : CA	Date : NOVEMBER 2024	
		Reviewed By : BWA		
		Drawing No. SP-01 of SP-01	Sheet No. 03 of 20	
SIGN AND SEAL				

A scale bar consisting of a horizontal line with tick marks. The line is divided into 10 equal segments. The first segment is labeled '50' at its left end. The middle segment is labeled '0' at its center. The next segment is labeled '50' at its right end. The far right end of the line is labeled '1'. Below the line, the text 'SCALE IN FEET 1" = 50'' is written.

I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

BID No.:

SCALE : 1 inch HCCG DWG ID NO. : ..



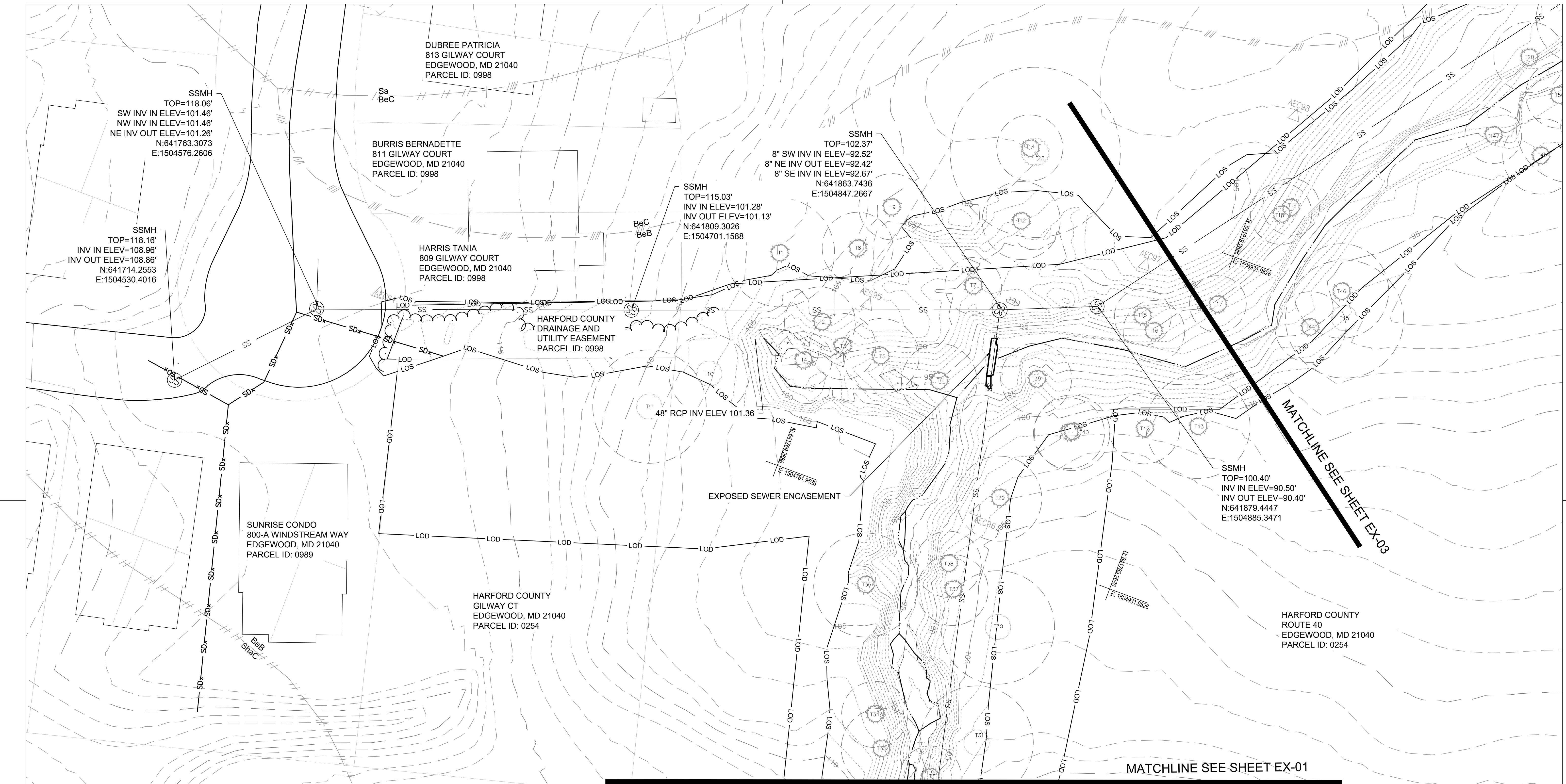
SOILS TABLE						
SOIL SYMBOL	SOIL NAME	PERCENT SLOPE	KF VALUE	HYDRIC (Y/N)	HIGHLY ERODIBLE SOILS	HSG
BeB	BELTSVILLE SILT LOAM	2%-5%	0.3700	N	YES	C
BeC	BELTSVILLE SILT LOAM	5%-10%	0.4300	N	YES	C
Sa	SAND AND GRAVEL PITS	N/A	N/A	N/A	N/A	N/A

A diagram of a wedge-shaped embankment. The wedge is formed by two lines meeting at a point on the right. The left side of the wedge is a curved line. A horizontal line extends from the top of the wedge. At the top of the wedge, there is a circle divided into four quadrants. Below the wedge, a horizontal scale bar is shown with markings at 20, 0, 20, and 4. Below the scale bar, the text "SCALE IN FEET 1\" data-bbox="111 380 886 400" is written.

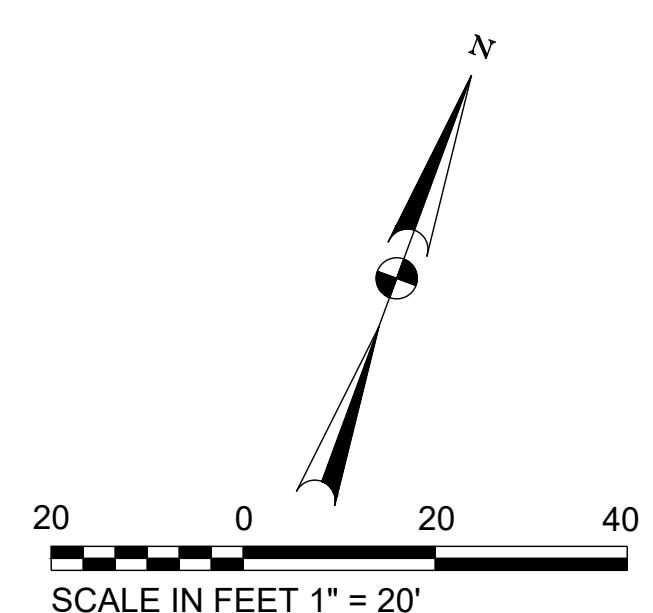
Z	BILLING NO. XXXXXX
0	EG-SWMENG- XXXXX-XXXX #XXXX
	<u>PROFESSIONAL CERTIFICATION</u>
	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS THE STATE OF MARYLAND. LICENSE NO. XXXXX, EXPIRATION DATE: XX/XX/XXXX

HARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK
STREAM RESTORATION
EXISTING CONDITIONS



SOILS TABLE						
SOIL SYMBOL	SOIL NAME	PERCENT SLOPE	KF VALUE	HYDRIC (Y/N)	HIGHLY ERODIBLE SOILS	HSG
BeB	BELTSVILLE SILT LOAM	2%-5%	0.3700	N	YES	C
BeC	BELTSVILLE SILT LOAM	5%-10%	0.4300	N	YES	C
Sa	SAND AND GRAVEL PITS	N/A	N/A	N/A	N/A	N/A

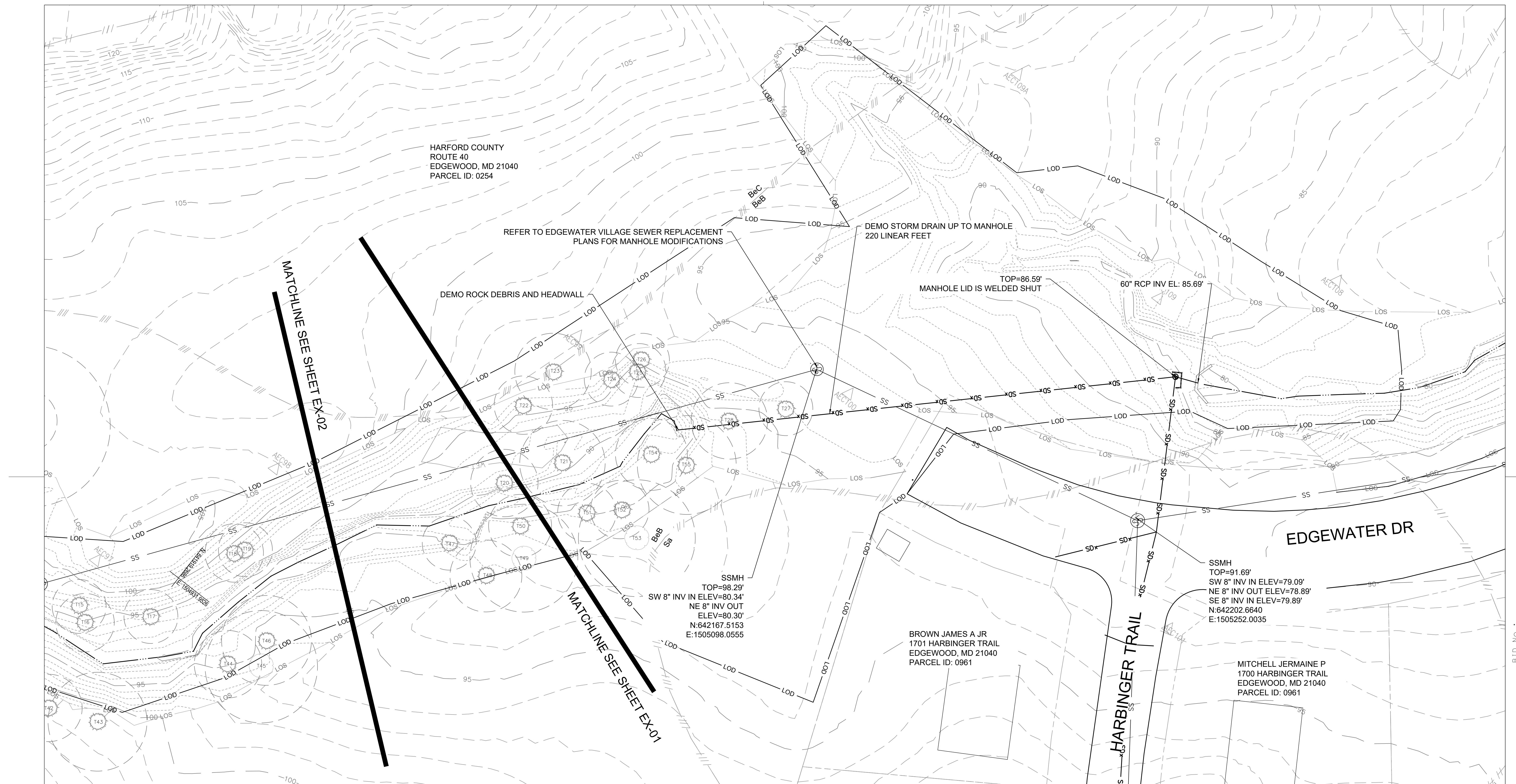


BILLING NO. XXXXXX
EG-SWMENG- XXXXXX-XXXX #XXXX
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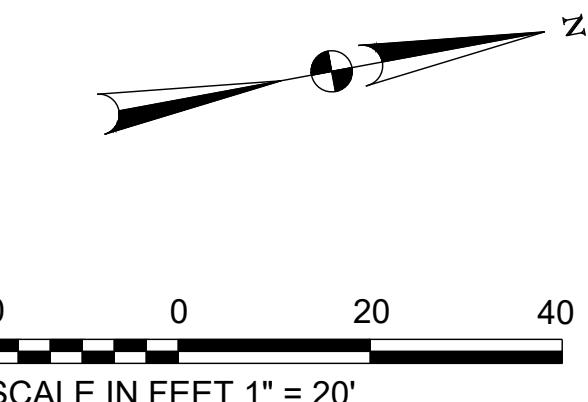
S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
SIGN AND SEAL	

CHARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK
STREAM RESTORATION
EXISTING CONDITIONS



SOILS TABLE						
SOIL SYMBOL	SOIL NAME	PERCENT SLOPE	KF VALUE	HYDRIC (Y/N)	HIGHLY ERODIBLE SOILS	HSG
BeB	BELTSVILLE SILT LOAM	2%-5%	0.3700	N	YES	C
BeC	BELTSVILLE SILT LOAM	5%-10%	0.4300	N	YES	C
Sa	SAND AND GRAVEL PITS	N/A	N/A	N/A	N/A	N/A



BILLING NO. XXXXXX
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HARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK STREAM RESTORATION EXISTING CONDITIONS

Drawn By :	CA	Scale :	1" = 20'
Designed By :	CA	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	EX-03	Sheet No.	06 of 20



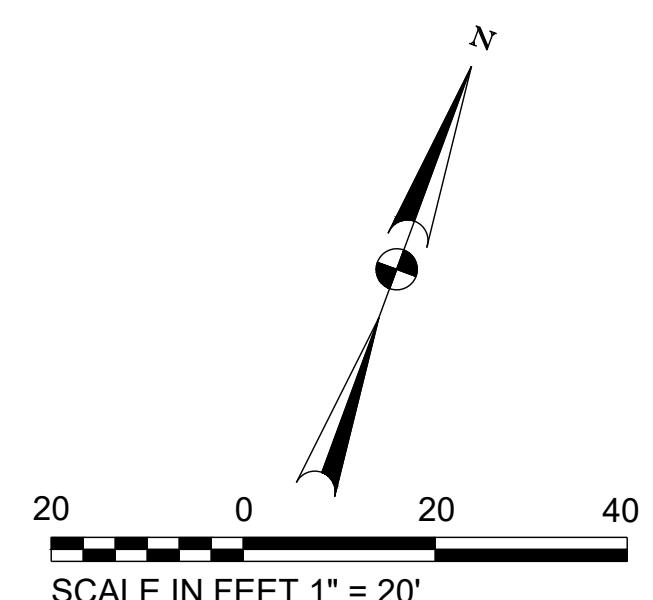
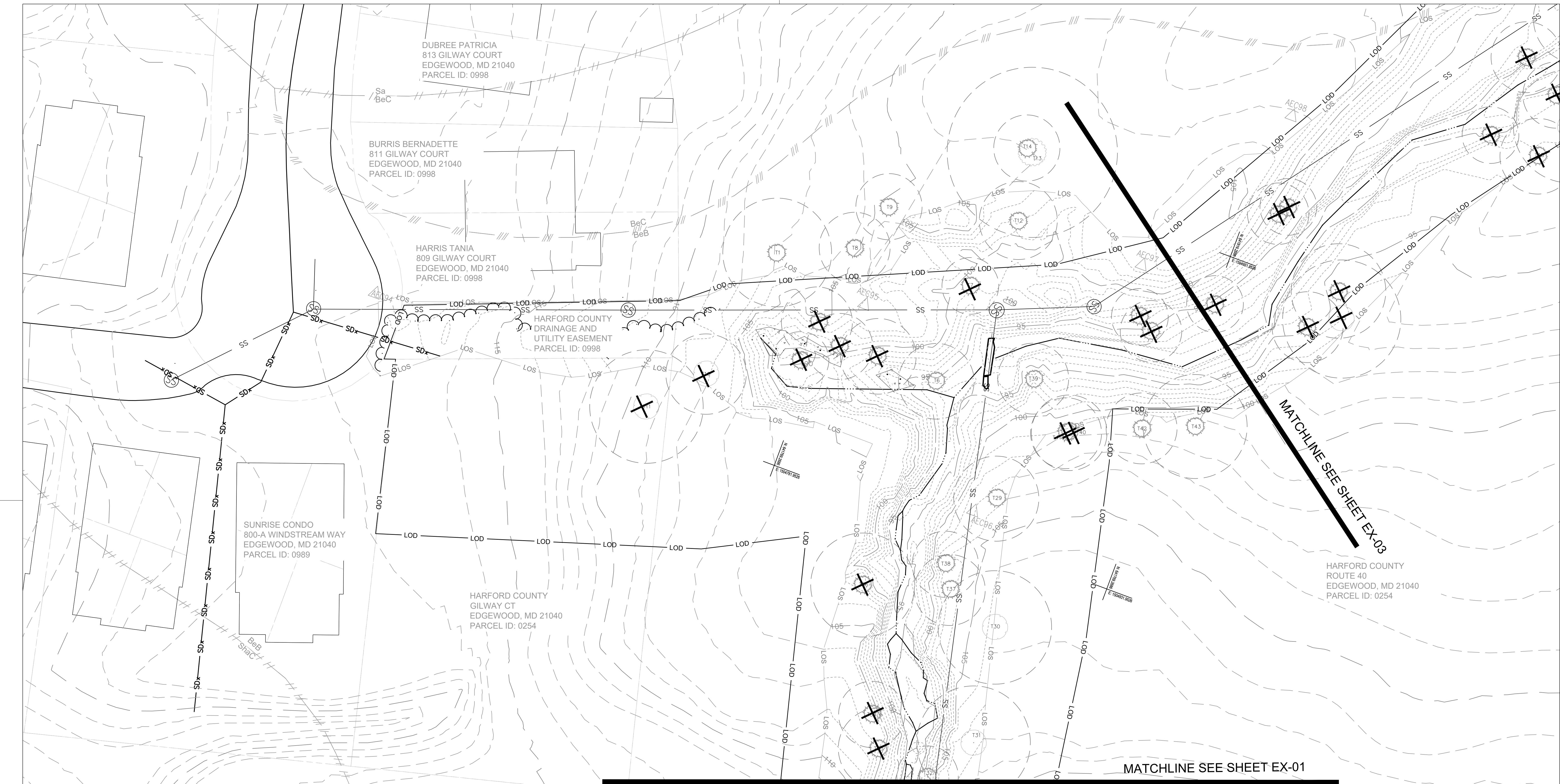
HARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK STREAM RESTORATION TREE INVENTORY

Drawn By : CA	Scale : 1 " = 20'
Designed By : CA	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. TI-01 of TI-04	Sheet No. 07 of 20

SCALE IN FEET 1" = 20'

BILLING NO. XXXXXX
EG-SWMENG- XXXXXX-XXXX #XXXX
<u>PROFESSIONAL CERTIFICATION</u>
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.



BILLING NO. XXXXXX	
EG-SWMENG- XXXXXX-XXXX #XXXX	
<u>PROFESSIONAL CERTIFICATION</u>	
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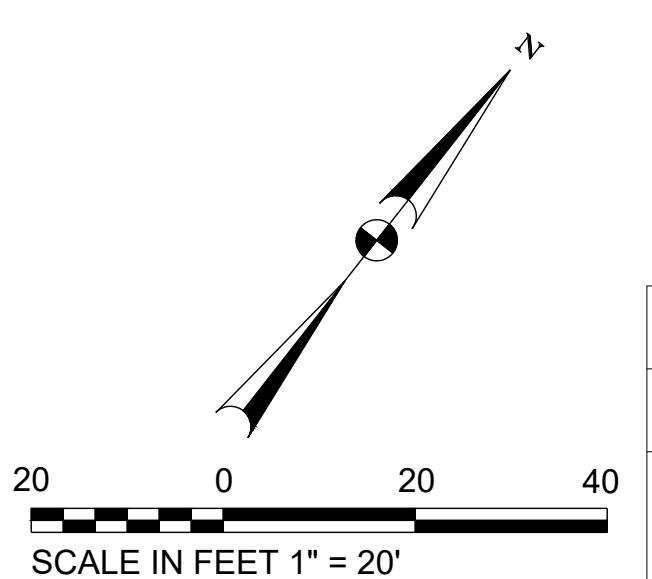
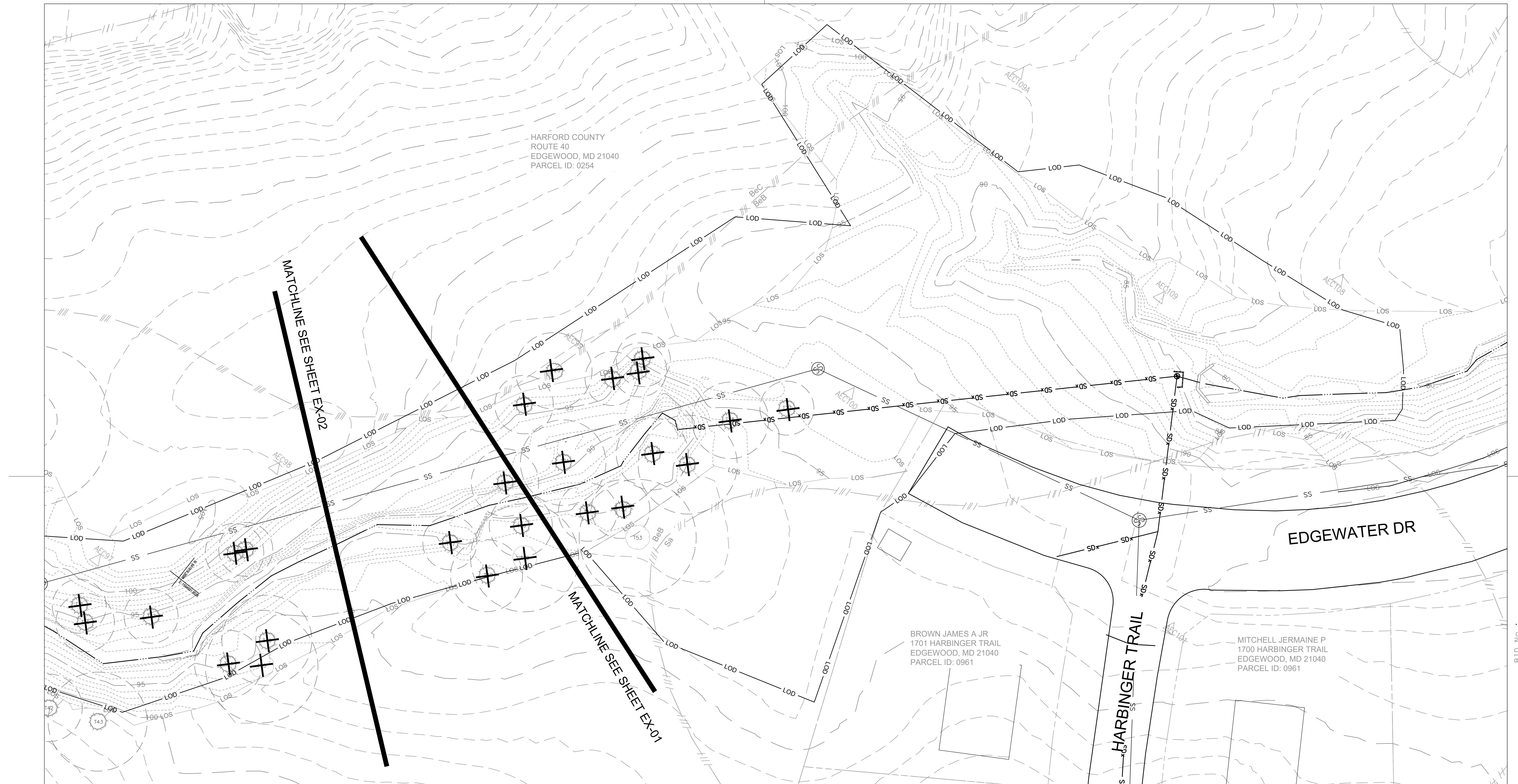
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME
AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
THE STATE OF MARYLAND. LICENSE NO. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
SIGN AND SEAL	

HARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK STREAM RESTORATION TREE INVENTORY

Drawn By : CA	Scale : <u>1" = 20'</u>
Designed By : CA	Date : <u>NOVEMBER 2024</u>
Reviewed By : BWA	
Drawing No. TI-02 of TI-04	Sheet No. 08 of 20



BILLING NO. XXXXXX
EG-SWMENG- XXXXXX-XXXX #XXXX
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	SIGN AND SEAL

HARFORD COUNTY, MARYLAND

EDGEWATER VILLAGE PARK
STREAM RESTORATION
TREE INVENTORY

Drawn By : CA
Designed By : CA
Reviewed By : BWA

Scale : 1" = 20'
Date : NOVEMBER 2024

Drawing No. TI-03 of TI-04
Sheet No. 09 of 20

SCALE 1' from HCG DWG ID No. : 1'

Tree ID	Common Name	Scientific Name	DBH (in)	Appraisal	Suitable for Re-use (Y/N)	Specimen Tree	Within LOD (Y/N)	To be Removed
1	American sycamore	Platanus occidentalis	23	Good	Y	N	N	N
2	Tulip poplar	Liriodendron Tulipifera	15	Good	Y	N	Y	Y
3	Red maple	Acer rubrum	14	Good	Y	N	Y	Y
4	Red maple	Acer rubrum	12	Good	N	N	Y	Y
5	Tulip poplar	Liriodendron Tulipifera	16	Good	Y	N	Y	Y
6	Red maple	Acer rubrum	16	Good	Y	N	Y	N/A
7	Tulip poplar	Liriodendron Tulipifera	12	Good	N	N	Y	Y
8	Pitch pine	Pinus Rigida	15	Poor	N	N	N	N
9	Red maple	Acer rubrum	14	Good	Y	N	N	N
10	Tulip poplar	Liriodendron Tulipifera	17	Good	Y	N	Y	Y
11	Chestnut oak	Quercus prinus	24	Poor	N	N	Y	Y
12	Tulip poplar	Liriodendron Tulipifera	16.5	Good	Y	N	N	N
13	Red maple	Acer rubrum	36	Poor	N	Y	N	N
14	Red maple	Acer rubrum	14	Fair	N	N	N	N
15	Tulip poplar	Liriodendron Tulipifera	12	Good	N	N	Y	Y
16	Tulip poplar	Liriodendron Tulipifera	13	Good	Y	N	Y	Y
17	Tulip poplar	Liriodendron Tulipifera	12	Fair	N	N	Y	Y
18	Red maple	Acer rubrum	13	Good	Y	N	Y	Y
19	Silver maple	Acer Saccharinum	12	Good	N	N	Y	Y
20	Red maple	Acer rubrum	15	Good	Y	N	Y	Y
21	Tulip poplar	Liriodendron Tulipifera	19	Good	Y	N	Y	Y
22	Red maple	Acer rubrum	13	Good	Y	N	Y	Y
23	Red maple	Acer rubrum	17	Good	Y	N	Y	Y
24	Black gum	Nyssa sylvatica	12	Good	N	N	Y	Y
25	Red maple	Acer rubrum	14	Good	Y	N	Y	Y
26	Red maple	Acer rubrum	18	Good	Y	N	Y	Y
27	Black locust	Robinia Pseudoacacie	12	Fair	N	N	Y	Y
28	Black locust	Robinia Pseudoacacie	17	Fair	N	N	Y	Y
29	Chestnut oak	Quercus prinus	18	Good	Y	N	Y	N/A
30	Chestnut oak	Quercus prinus	24	Poor	N	N	Y	N/A
31	Scarlet oak	Quercus coccinea	24	Good	Y	N	Y	N/A
32	Tulip poplar	Liriodendron Tulipifera	13	Good	Y	N	Y	N/A
33	Tulip poplar	Liriodendron Tulipifera	15	Good	Y	N	Y	N/A
34	American beech	Fagus grandifolia	14	Good	Y	N	Y	Y
35	Tulip poplar	Liriodendron Tulipifera	17	Good	Y	N	Y	Y
36	Tulip poplar	Liriodendron Tulipifera	22	Good	Y	N	Y	Y
37	Tulip poplar	Liriodendron Tulipifera	15	Good	Y	N	Y	N/A
38	Chestnut oak	Quercus prinus	14	Good	Y	N	Y	N/A
39	Pitch pine	Pinus Rigida	15	Good	Y	N	Y	N/A
40	Chestnut oak	Quercus prinus	16	Good	Y	N	Y	Y
41	Chestnut oak	Quercus prinus	15	Good	Y	N	Y	Y
42	Scarlet oak	Quercus coccinea	15	Good	Y	N	N	N
43	Chestnut oak	Quercus prinus	22	Good	Y	N	N	N
44	Swamp white oak	Quercus bicolor	15	Good	Y	N	Y	Y
45	White oak	Quercus alba	25	Good	Y	N	N	N
46	Chestnut oak	Quercus prinus	20	Good	Y	N	Y	Y
47	Tulip poplar	Liriodendron Tulipifera	12	Good	N	N	Y	Y
48	Chestnut oak	Quercus prinus	16	Good	Y	N	Y	Y
49	Chestnut oak	Quercus prinus	24	Good	Y	N	Y	Y
50	Tulip poplar	Liriodendron Tulipifera	14	Good	Y	N	Y	Y
51	Chestnut oak	Quercus prinus	13	Good	Y	N	Y	Y
52	Tulip poplar	Liriodendron Tulipifera	12	Good	N	N	Y	Y
53	White oak	Quercus alba	26	Good	Y	N	Y	Y
54	Red maple	Acer rubrum	16	Fair	N	N	Y	Y
55	Tulip poplar	Liriodendron Tulipifera	22	Good	Y	N	Y	Y

* TREES MARKED "N/A" IN THE TO BE REMOVED COLUMN ARE BEING REMOVED IN THE EDGEWATER VILLAGE PARK SEWER REPLACEMENT.

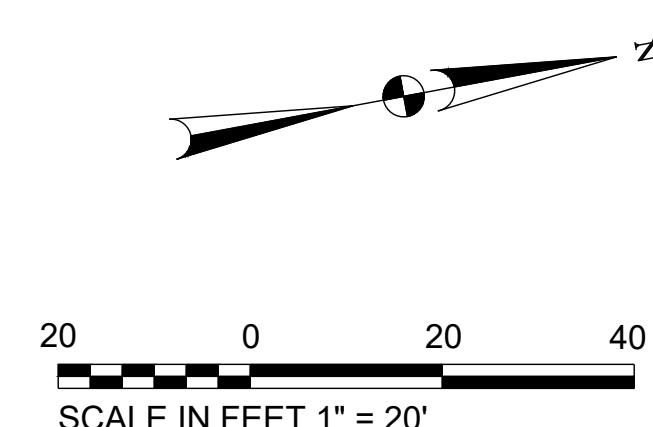
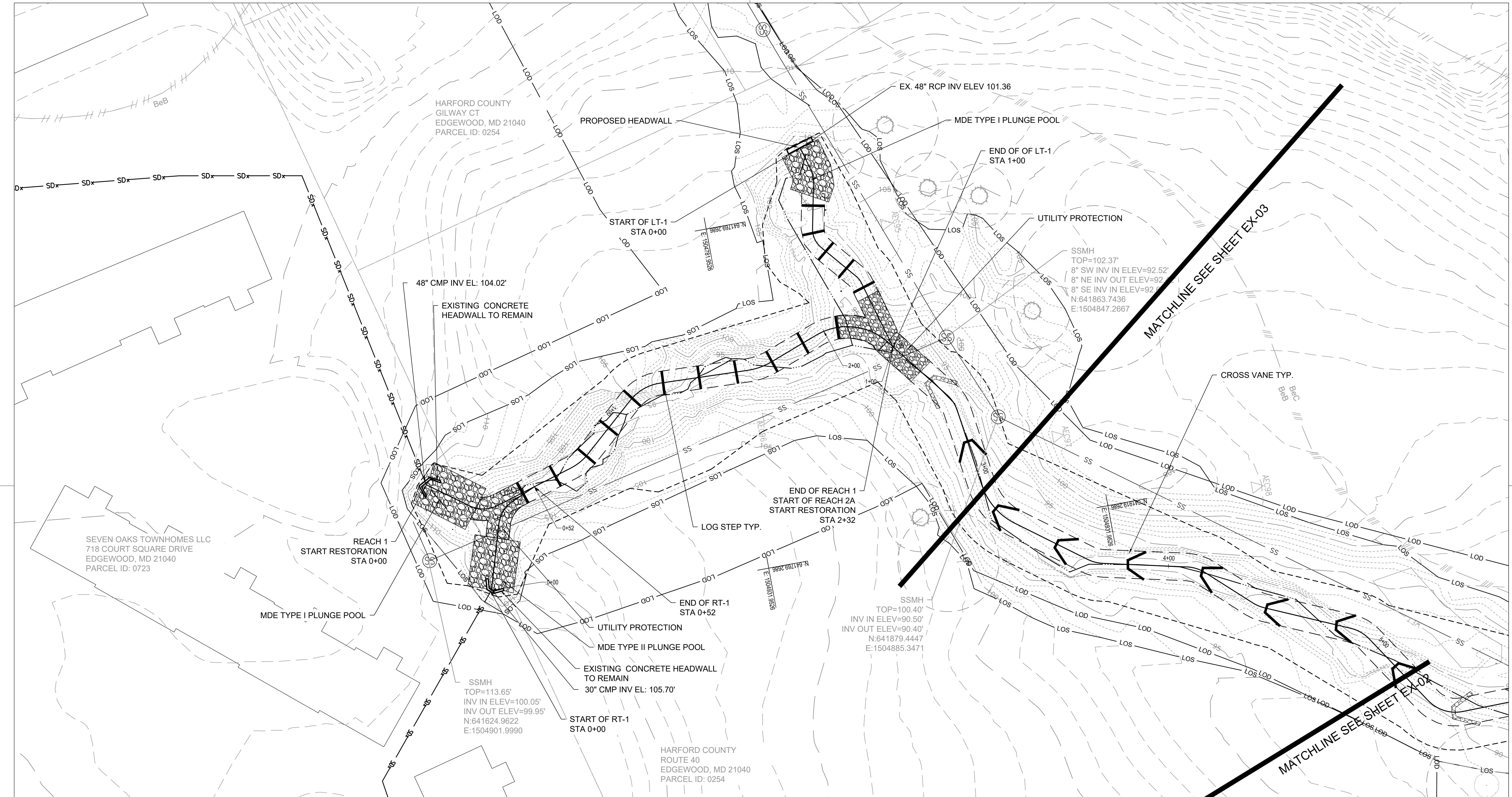
BID No. :

HCG DWG ID No. :

SCALE : 1' from HCG DWG ID No. :

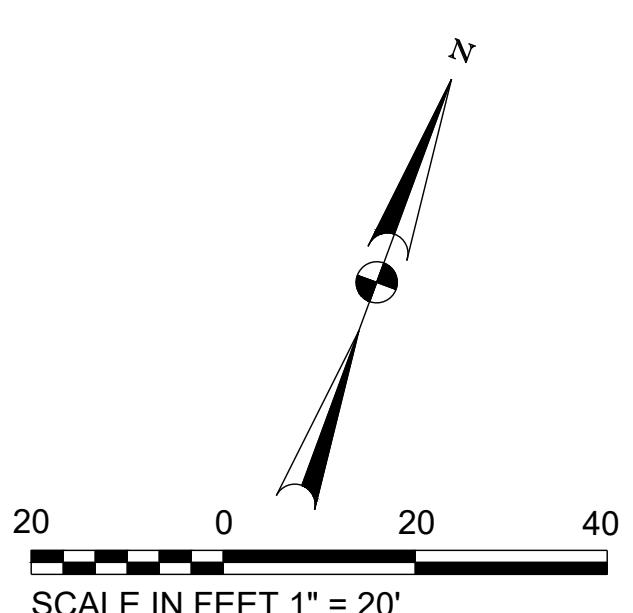
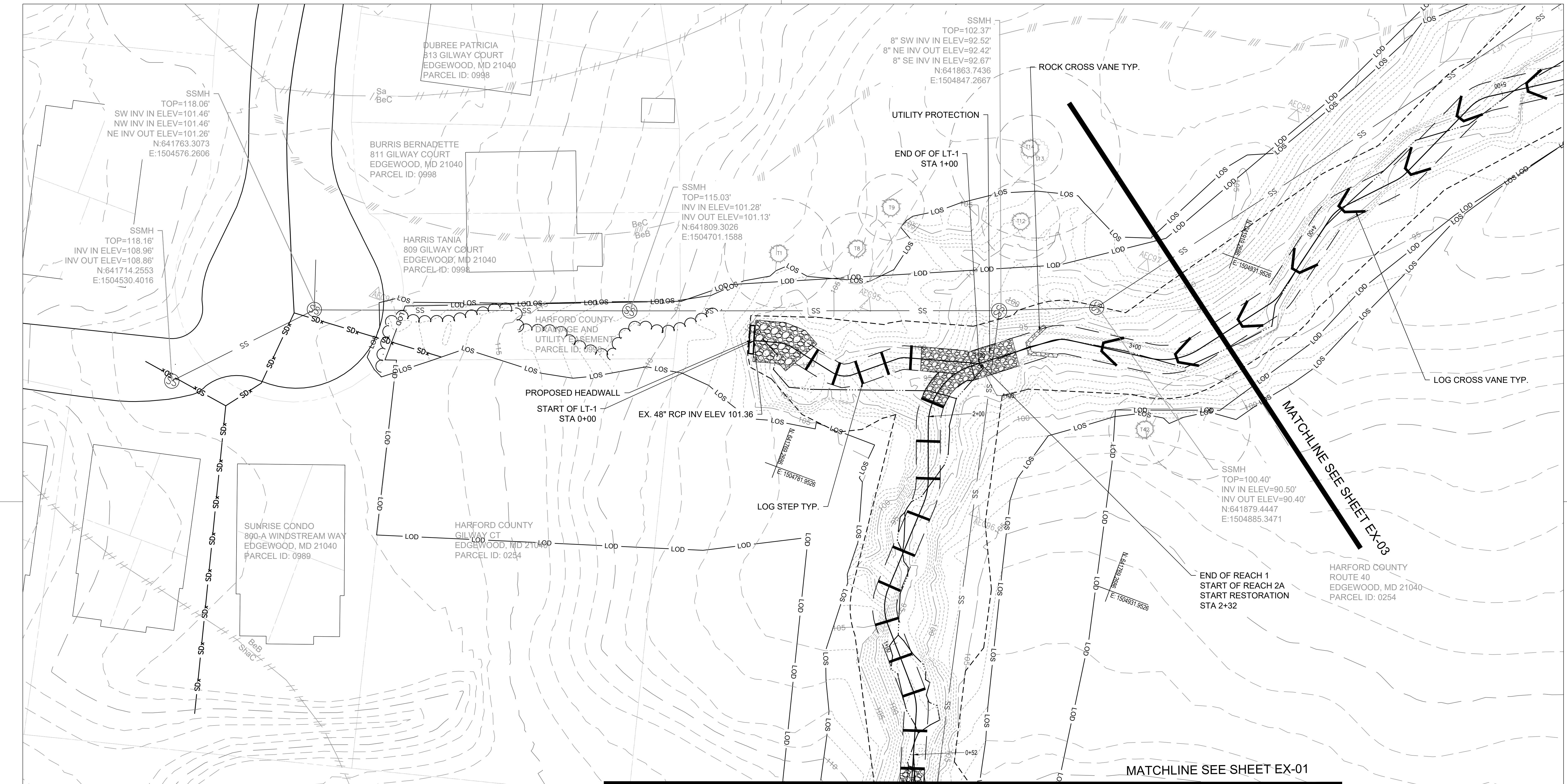
HARFORD COUNTY, MARYLAND	
EDGEWATER VILLAGE PARK	
STREAM RESTORATION	
TREE INVENTORY TABLE	
Drawn By : CA	Scale : NA
Designed By : CA	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. TI-04 of TI-04	Sheet No. 10 of 20

S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
SIGN AND SEAL	
BILLING NO. XXXXXX	
EG-SWMENG- XXXXXX-XXXX #XXXX	
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.	



SCALE IN FEET 1" = 20'

S/C PLAN # XXXXX		Revisions
GP # XXXXX-XXXX		SIGN AND SEAL
BILLING NO. XXXXXX		
EG-SWMENG- XXXXXX-XXXX #XXXX		
PROFESSIONAL CERTIFICATION		
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.		
Drawn By : CA		Scale : 1" = 20'
Designed By : CA		Date : NOVEMBER 2024
Reviewed By : BWA		
Drawing No. SR-01 of SR-03		Sheet No. 11 of 20



BILLING NO. XXXXXX	
EG-SWMENG- XXXXXX-XXXX #XXXX	
<u>PROFESSIONAL CERTIFICATION</u>	
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.	

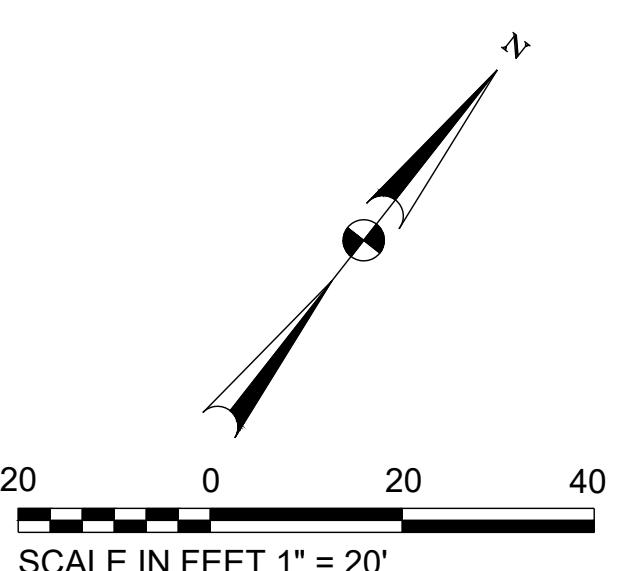
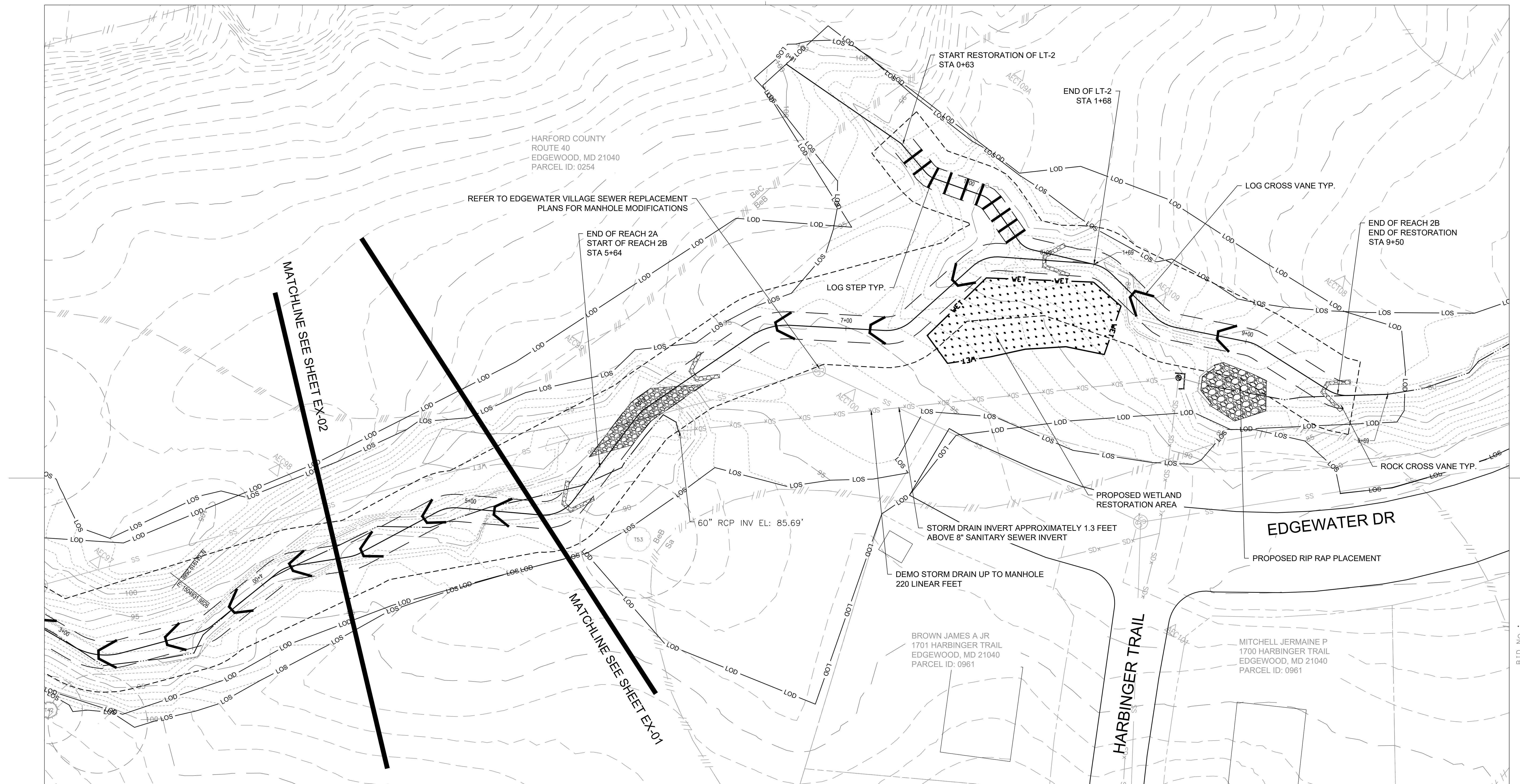
S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
SIGN AND SEAL	

HARFORD COUNTY, MARYLAND

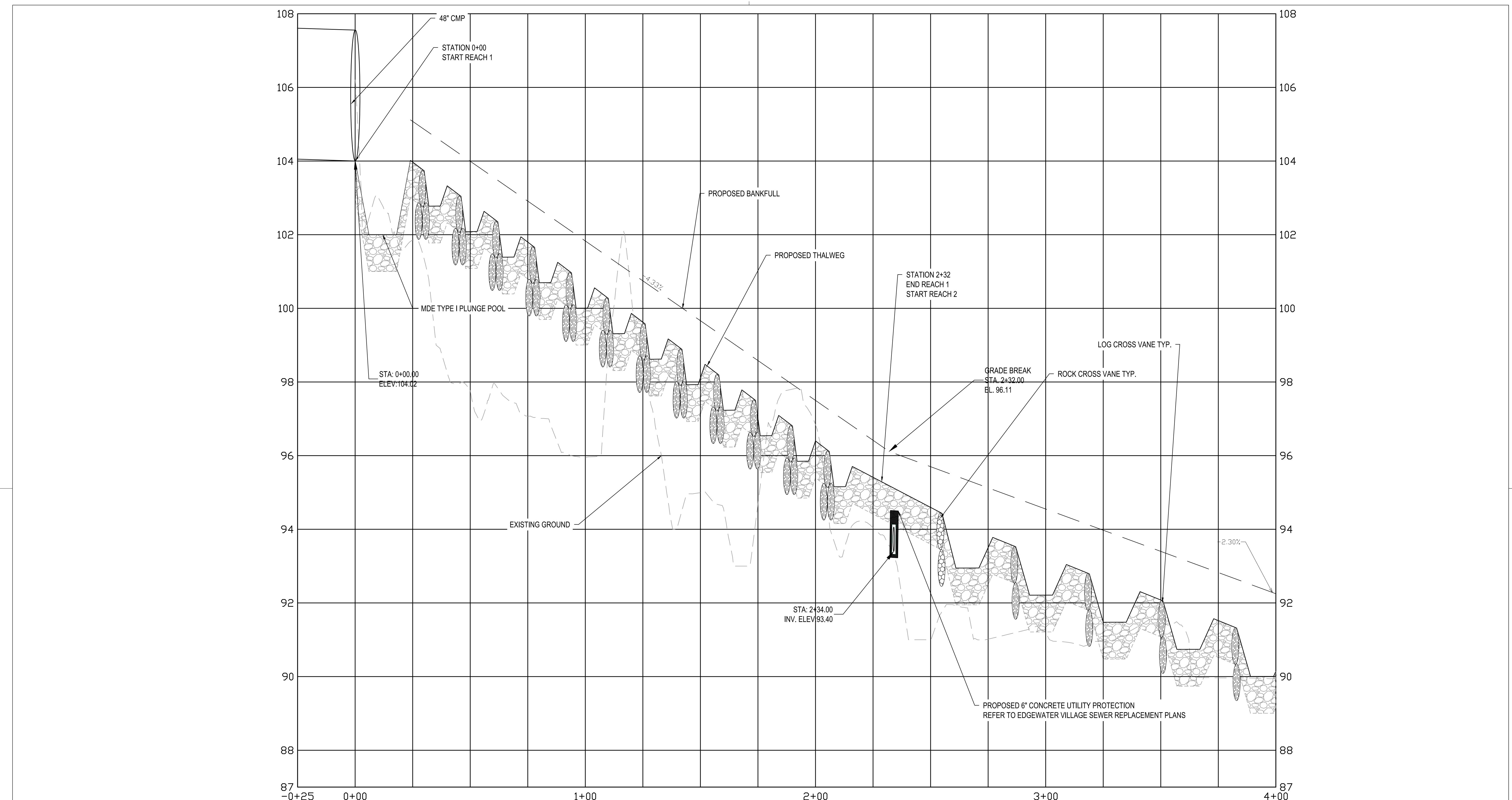
EDGEWATER VILLAGE PARK STREAM RESTORATION PROPOSED CONDITIONS

EDGEWATER VILLAGE PARK STREAM RESTORATION POSED CONDITIONS

Drawn By :	CA	Scale :	1" = 20'
Designed By :	CA	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	SR-02	of	SR-03



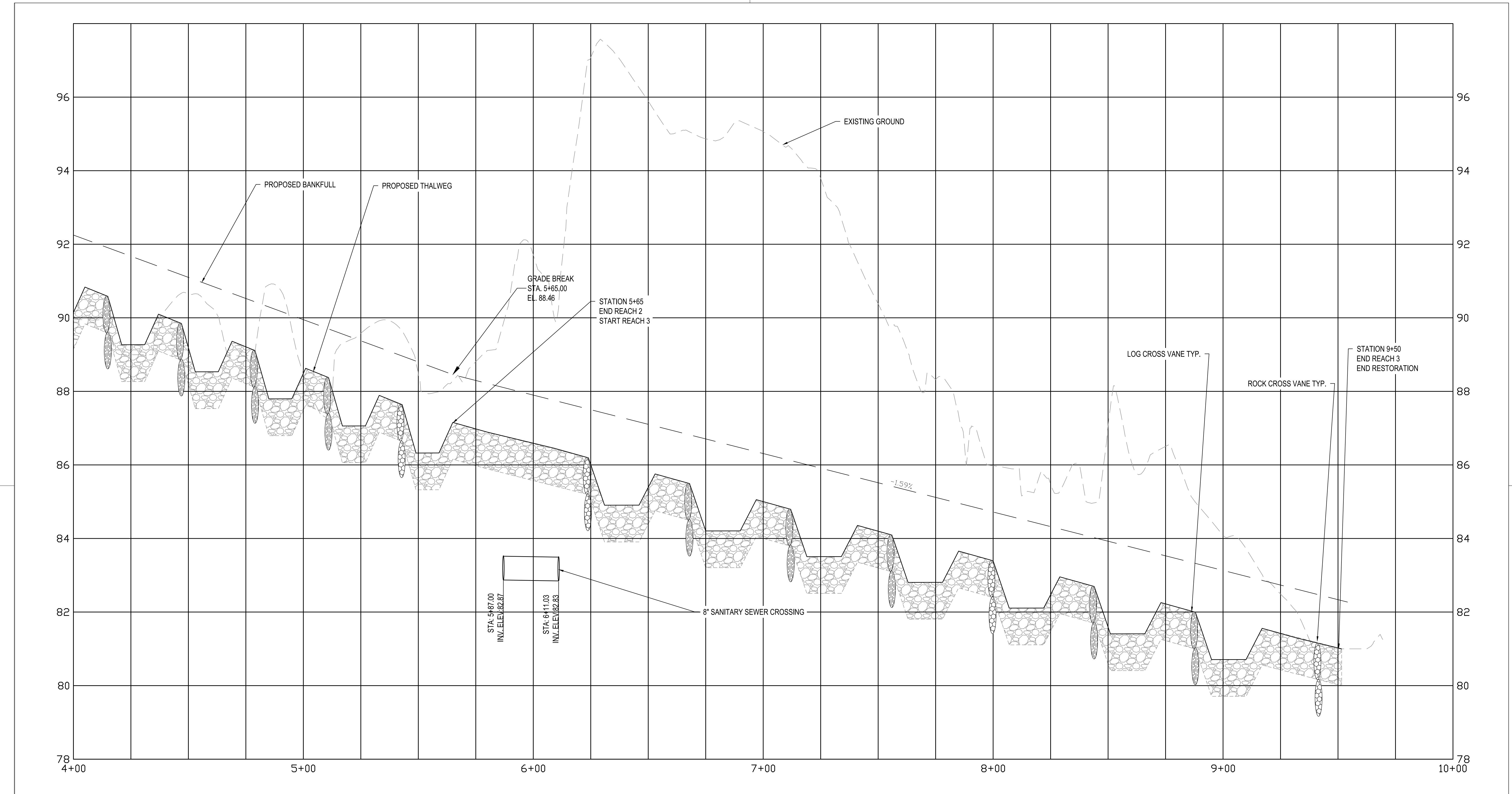
S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	SIGN AND SEAL
BILLING NO. XXXXXX	
EG-SWMENG- XXXXXX-XXXX #XXXX	
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. XXXXXX, EXPIRATION DATE: XX/XX/XXXX.	
Drawn By : CA	Scale : 1" = 20'
Designed By : CA	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SR-03 of SR-03	Sheet No. 13 of 20



1 REACH 1 & 2A PROFILE STA 0+00-4+00

SCALE: HORIZONTAL 1" = 20'; VERTICAL 1" = 2.5'

S/C PLAN # XXXXX		Revisions	HARFORD COUNTY, MARYLAND		
GP # XXXXX-XXXX		SIGN AND SEAL	EDGEWATER VILLAGE PARK STREAM RESTORATION PROFILE VIEW		
BILLING NO. XXXXX			Drawn By : CA	Scale : AS SHOWN	
EG-SWMENG- XXXXX-XXXX #XXXX			Designed By : CA	Date : NOVEMBER 2024	
PROFESSIONAL CERTIFICATION			Reviewed By : BWA		
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.		Drawing No. PR-01 of PR-03	Sheet No. 14 of 20		



1 REACH 2A & 2B PROFILE STA 4+00-10+00

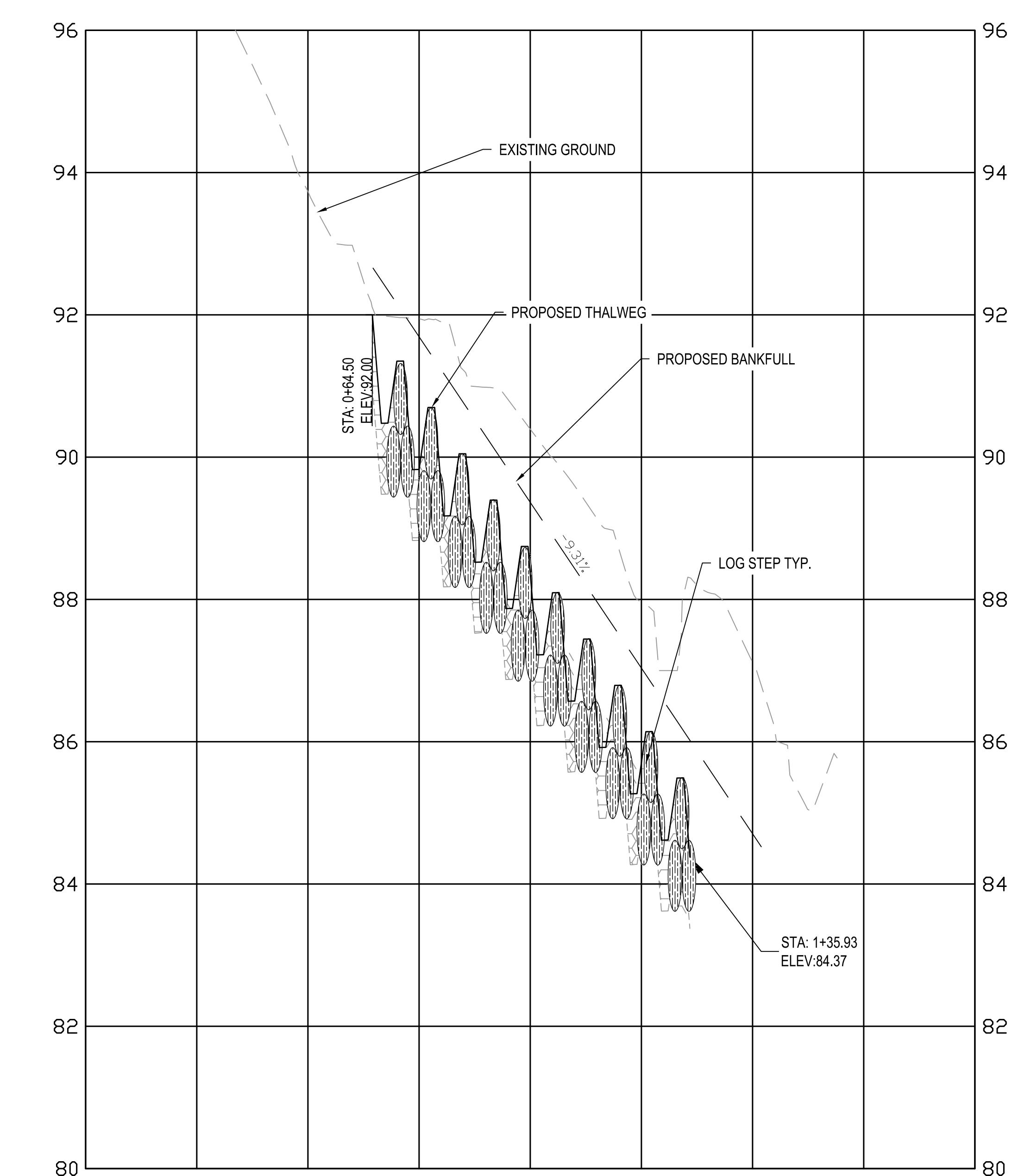
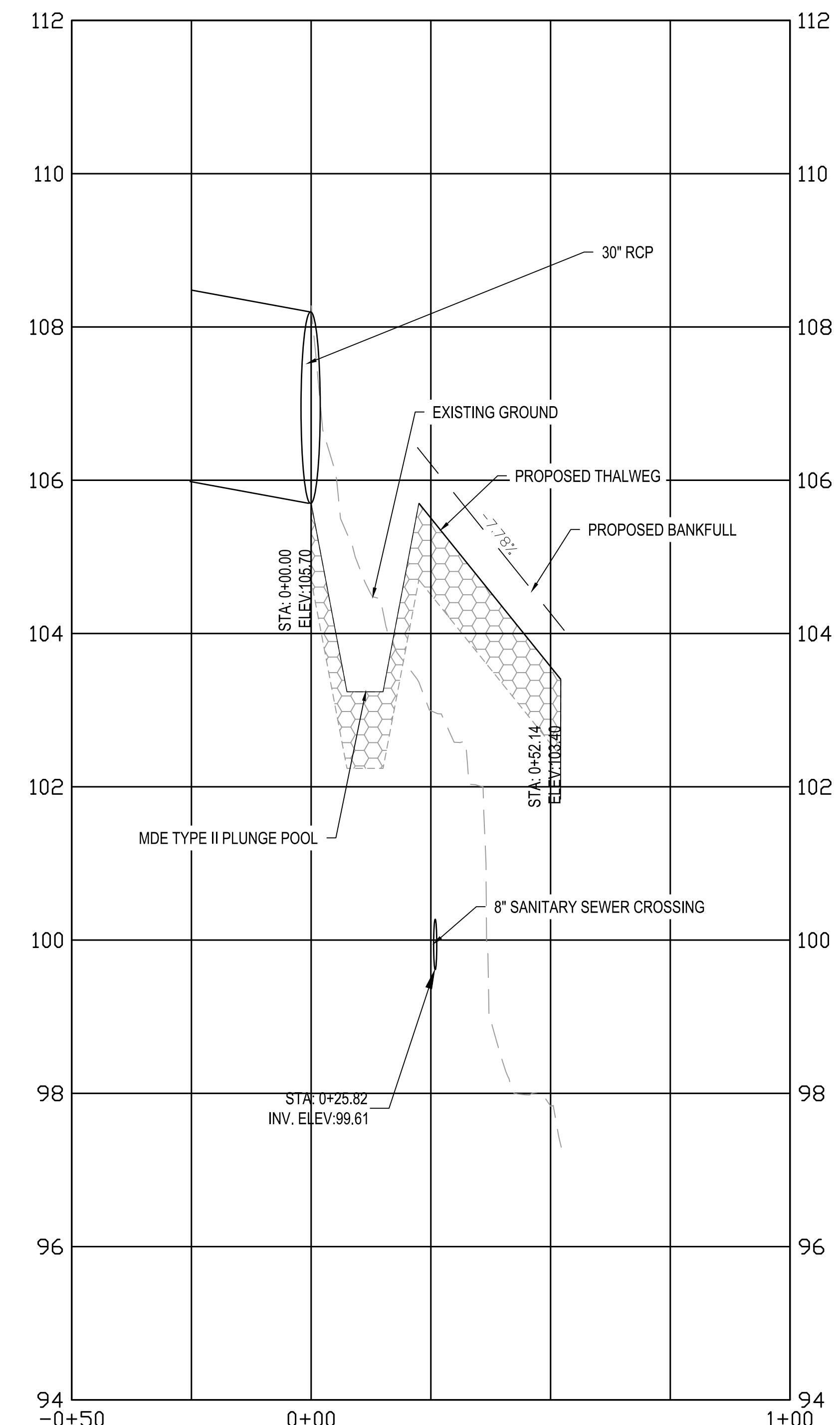
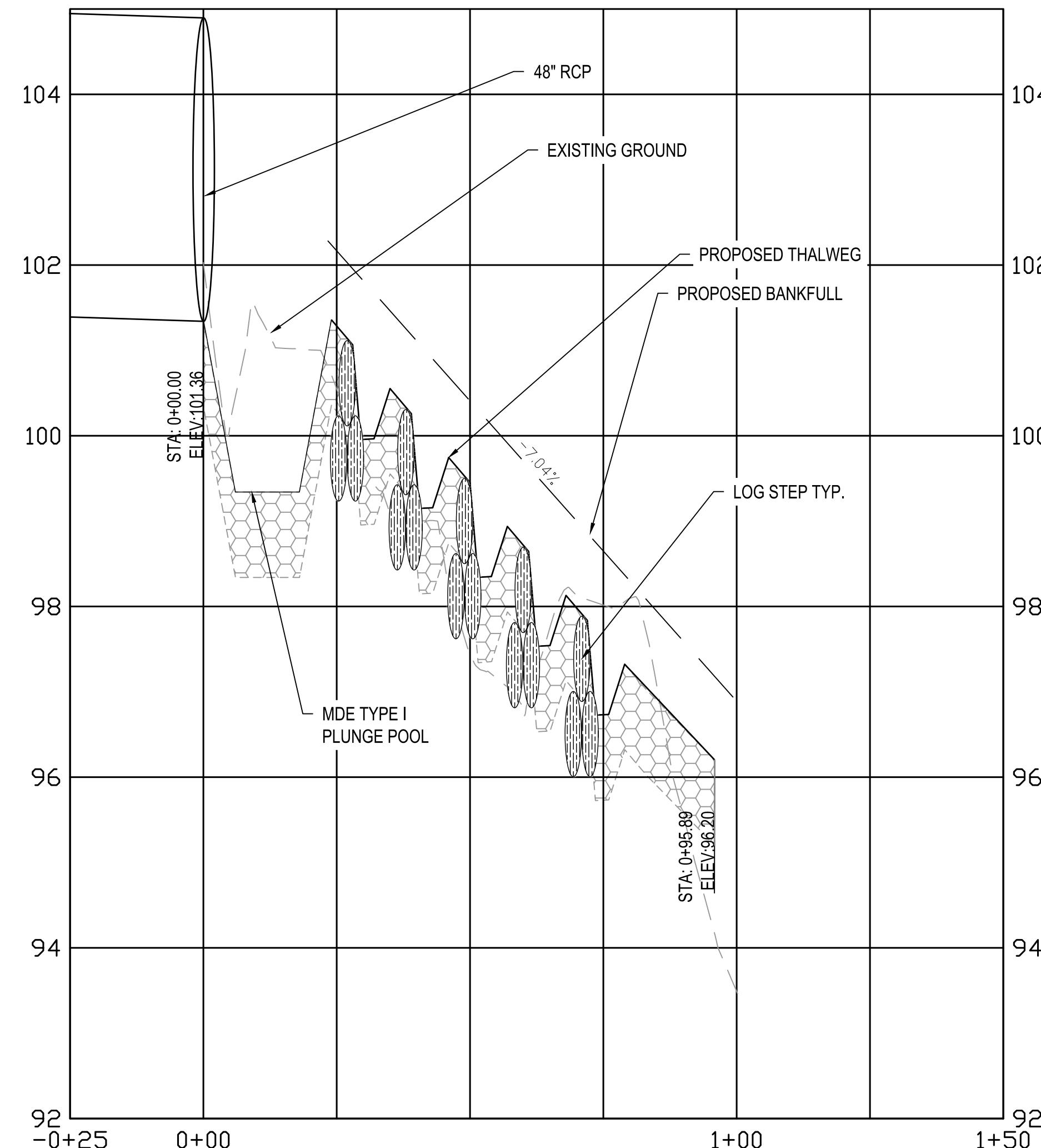
SCALE: HORIZONTAL 1" = 20'; VERTICAL 1" = 2.5'

HARFORD COUNTY, MARYLAND

EDGEMARSH VILLAGE PARK
STREAM RESTORATION
PROFILE VIEW

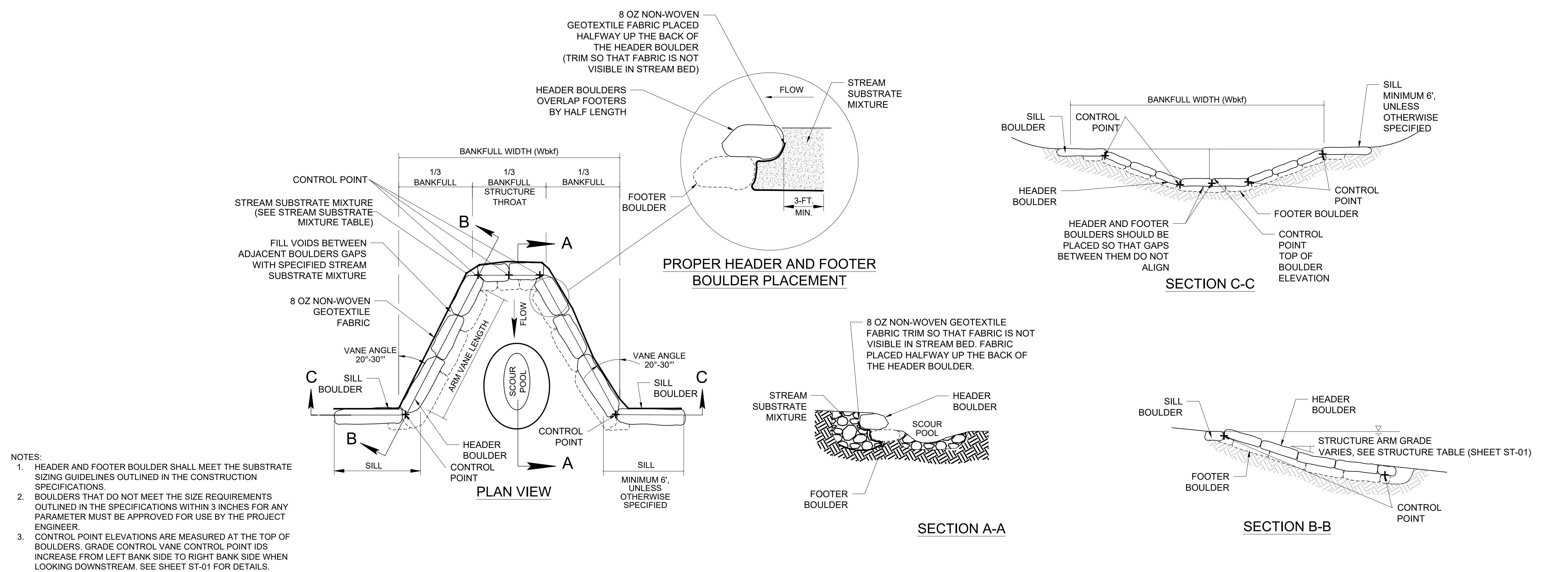
S/C PLAN # XXXXX	Revisions	AS SHOWN	
GP # XXXXX-XXXX			Date : NOVEMBER 2024
SIGN AND SEAL			
Drawn By : CA		Scale : AS SHOWN	
Designed By : CA			
Reviewed By : BWA			
Drawing No. PR-02	of PR-03	Sheet No.	15 of 20

BILLING NO. XXXXXX
EG-SWMENG- XXXXXX-XXXX #XXXX
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.



HARFORD COUNTY, MARYLAND	
EDGEMARSH VILLAGE PARK STREAM RESTORATION PROFILE VIEW	
S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
SIGN AND SEAL	
Drawn By : CA	Scale : AS SHOWN
Designed By : CA	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. PR-03 of PR-03	Sheet No. 16 of 20

BILLING NO. XXXXXX
EG-SWMENG- XXXXXX-XXXX #XXXX
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT 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. XXXXXX, EXPIRATION DATE: XX/XX/XXXX.

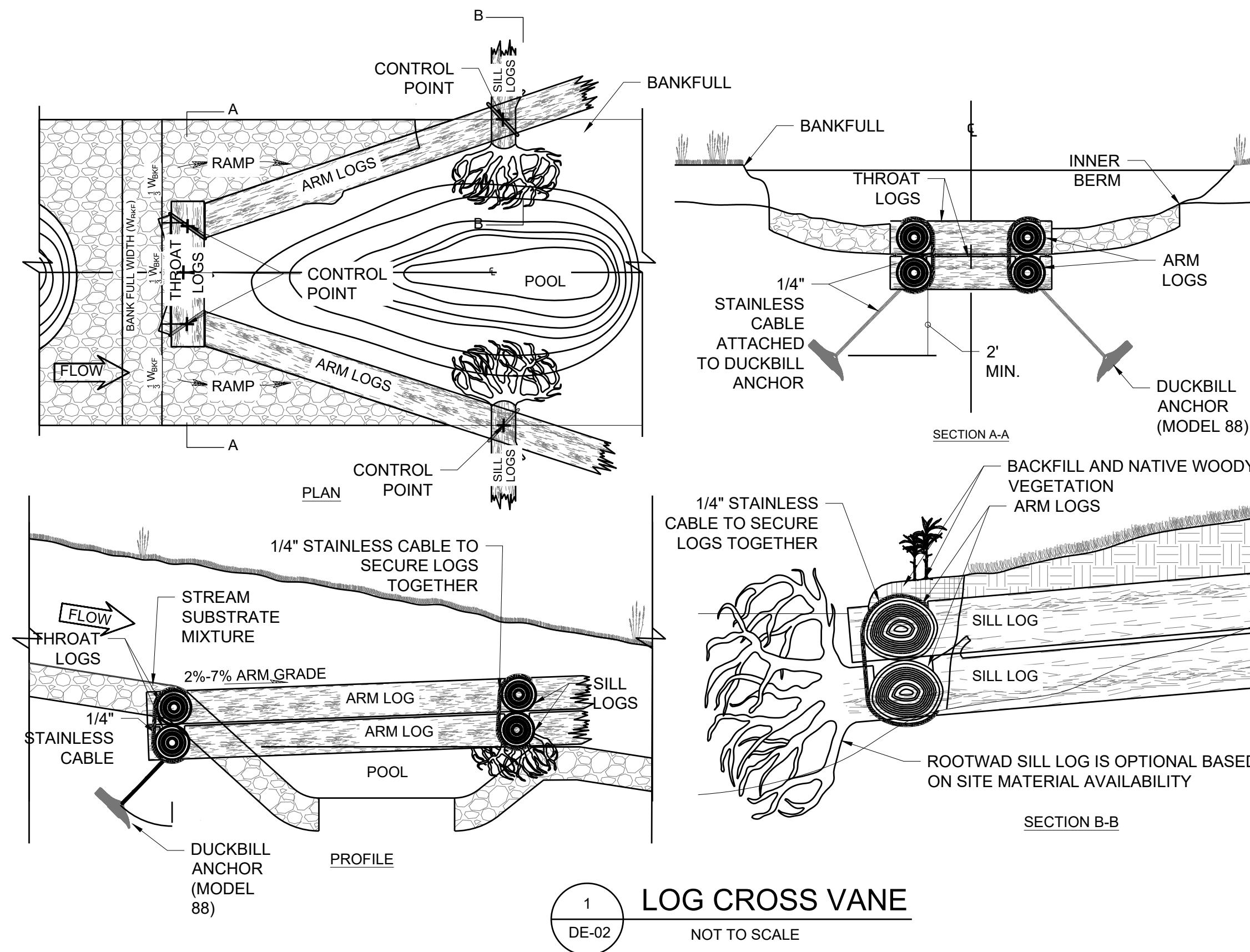


2
DE-01 ROCK CROSS VANE
NOT TO SCALE

BILLING NO. XXXXX
EG-SWMENG- XXXXX-XXXX #XXXX
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	SIGN AND SEAL

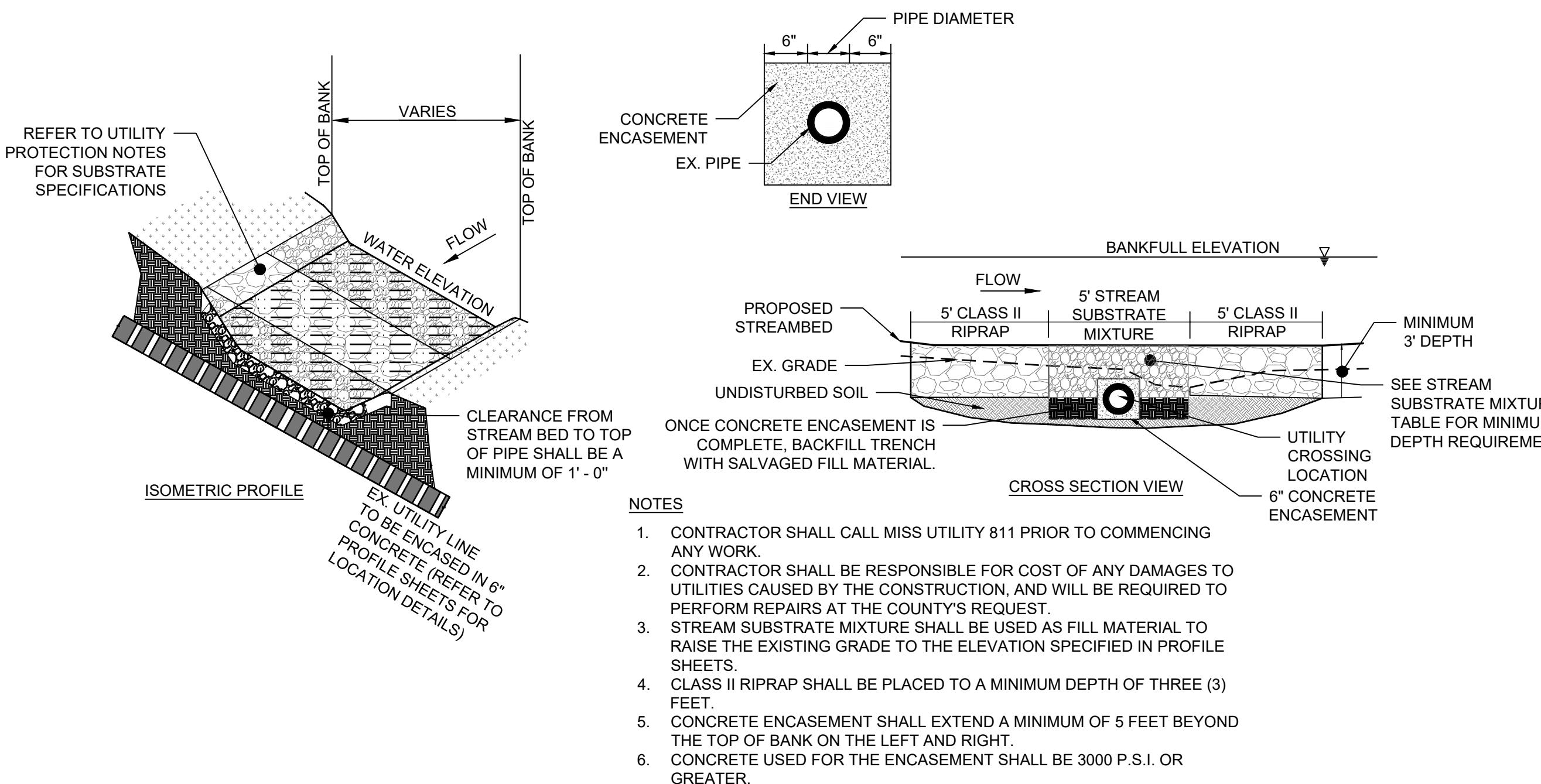
HARFORD COUNTY, MARYLAND	
EDGEMARSH VILLAGE PARK	
STREAM RESTORATION DETAILS	
Drawn By :	CA
Designed By :	CA
Reviewed By :	BWA
Drawing No.	DE-01 of DE-03
Sheet No.	17 of 20



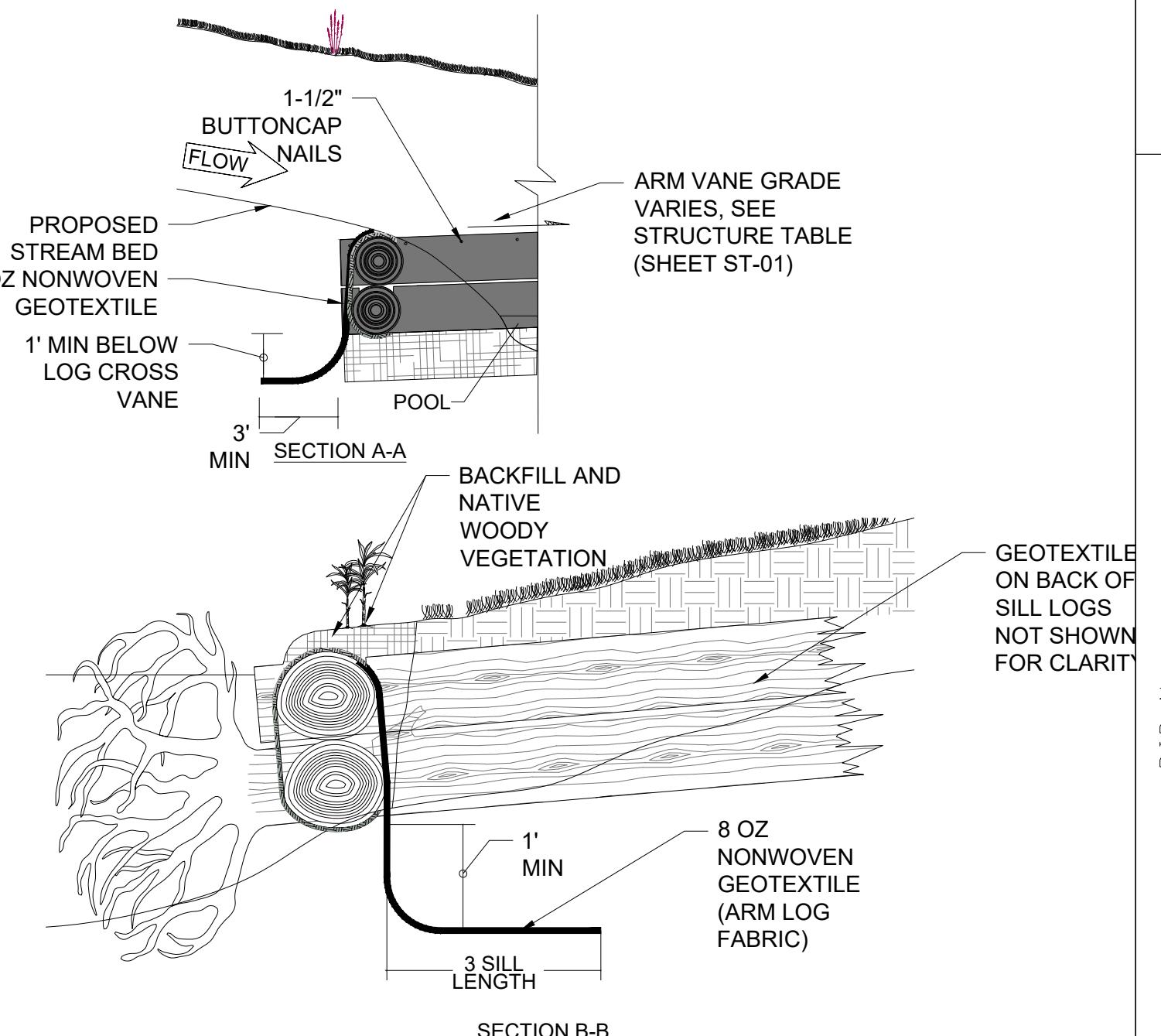
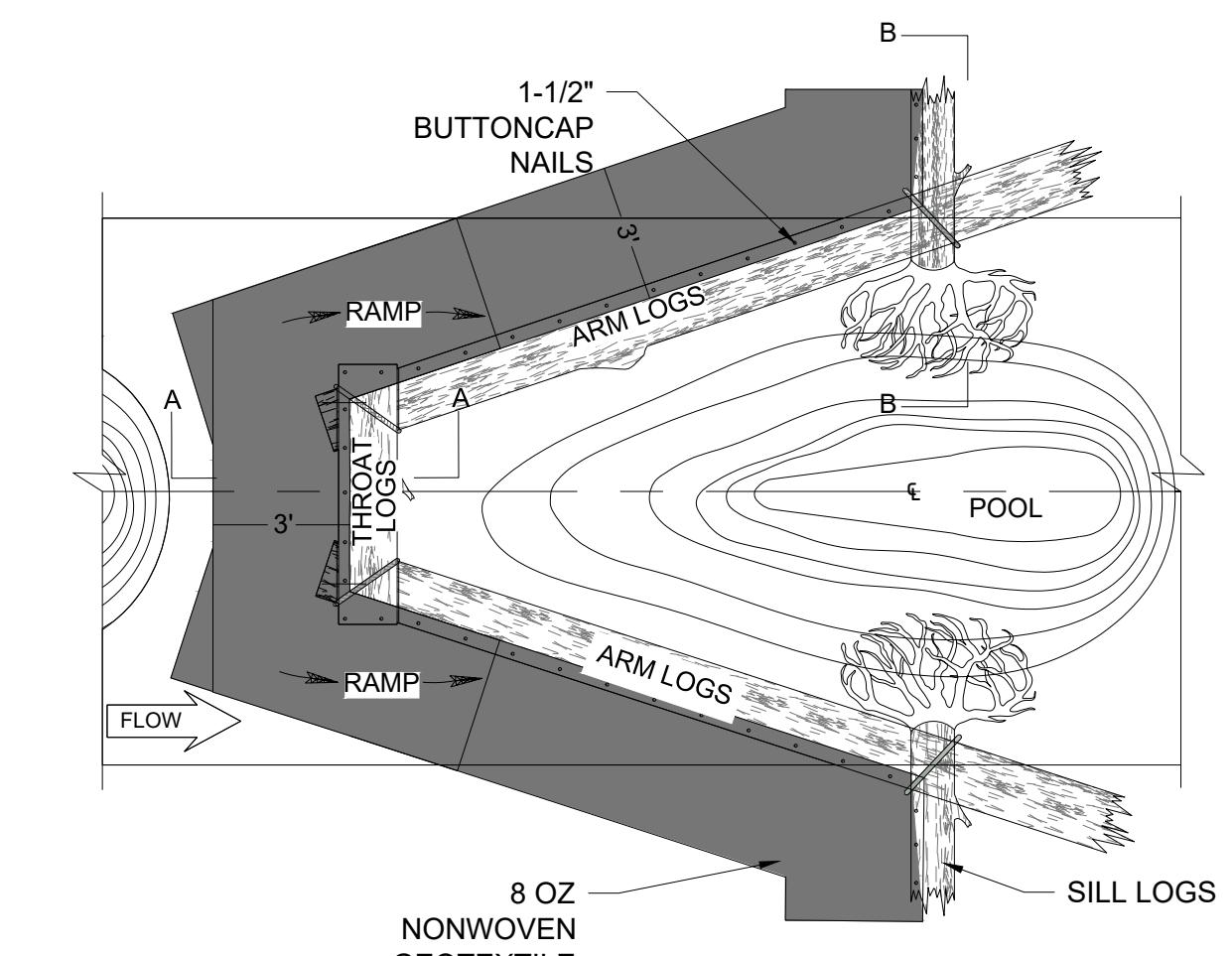
NOTE:

1. TREES SALVAGED DURING CLEARING ACTIVITIES FROM THE PROJECT MAY BE UTILIZED FOR LOG CROSS VANE MATERIAL ON APPROVAL BY THE ENGINEER OF RECORD. SEE SALVAGED LOGS SPECIFICATIONS FOR MINIMUM SIZE AND ACCEPTABLE TREE CHARACTERISTICS.
2. NOTCHES ARE CUT THROAT LOGS ALONG AS DESCRIBED IN THE SPECIFICATIONS. CONSULT PROJECT ENGINEER IF GUIDANCE IS REQUIRED FOR PROPER LOG JOINING TECHNIQUE.
3. SEE STREAM SUBSTRATE MIXTURE TABLE ON SHEET DE-04 FOR SUBSTRATE SPECIFICATIONS.
4. CONTROL POINT ELEVATIONS ARE MEASURED AT THE TOP OF LOGS. LOG CROSS VANE CONTROL POINT IDS INCREASE FROM LEFT BANK SIDE TO RIGHT BANK SIDE WHEN LOOKING DOWNSTREAM. SEE SHEET ST-01 FOR DETAILS.

1 DE-02 LOG CROSS VANE
NOT TO SCALE



2 DE-02 UTILITY PROTECTION DETAIL
NOT TO SCALE



3 DE-02 LOG CROSS VANE GEOTEXTILE DETAILS
NOT TO SCALE

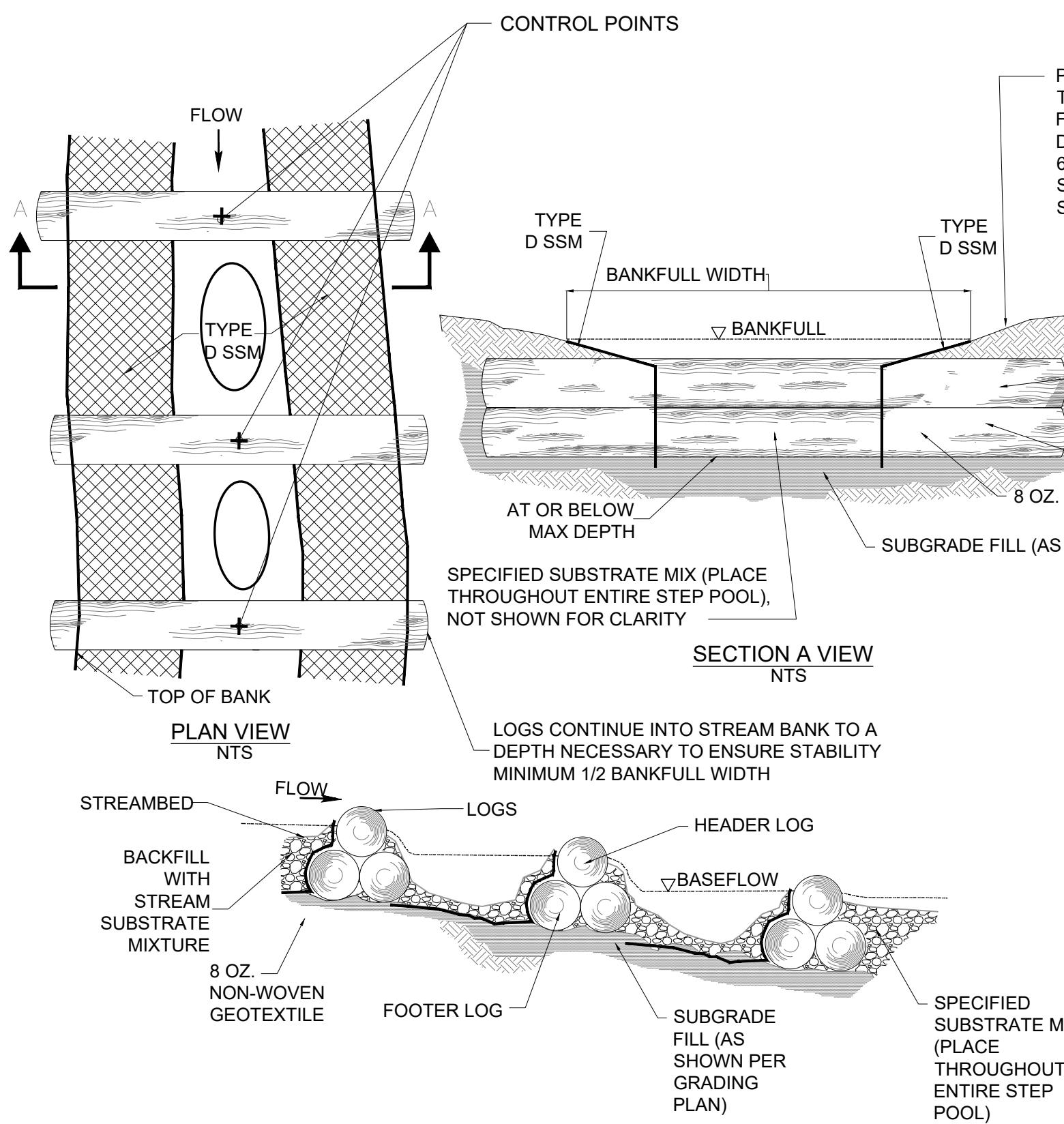
S/C PLAN # XXXXX	Revisions
GP # XXXXX-XXXX	
BILLING NO. XXXXX	
EG-SWMENG- XXXXX-XXXX #XXXX	
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. XXXXX, EXPIRATION DATE: XX/XX/XXXX.	

Drawn By : CA	Scale : AS NOTED
Designed By : CA	
Reviewed By : BWA	
Drawing No. DE-02 of DE-03	Date : NOVEMBER 2024
Sheet No.	18 of 20

1 DE-02	2 DE-02	3 DE-02
---------	---------	---------

1 DE-02	2 DE-02	3 DE-02
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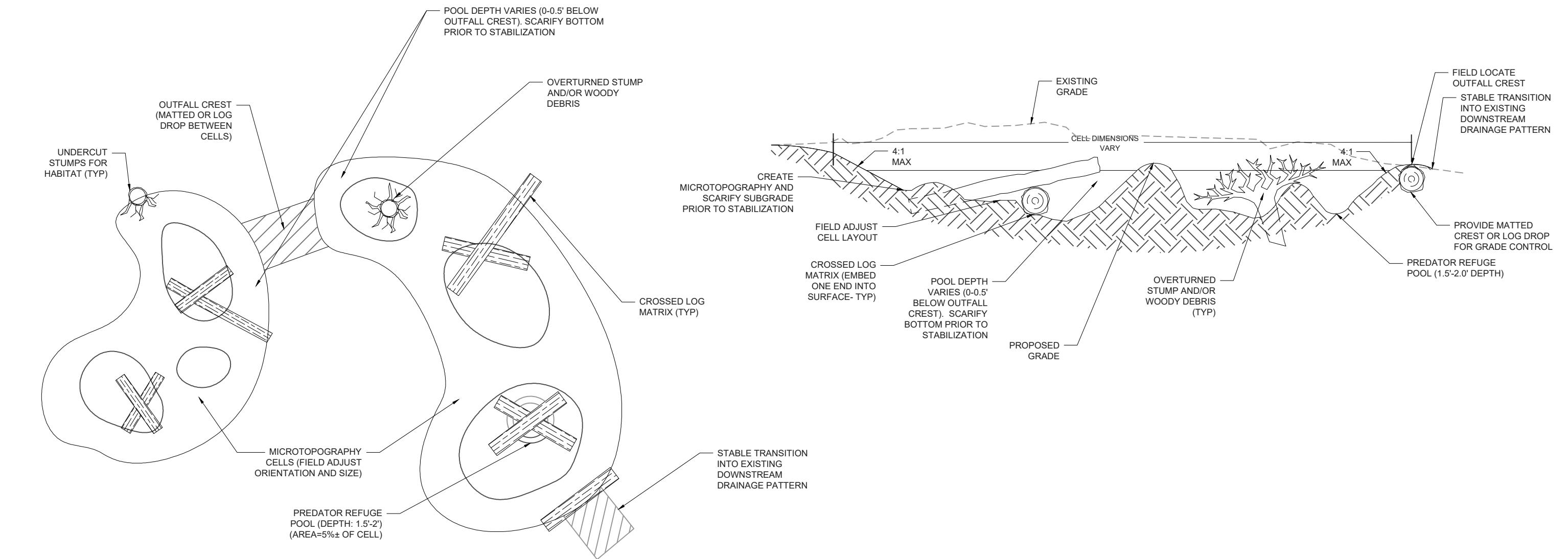
1 DE-02	2 DE-02	3 DE-02
---------	---------	---------



NOTE:

1. 8 OZ. NONWOVEN GEOTEXTILE SHOULD BE INSTALLED ON THE UPSTREAM SIDE OF THE LOGS USING 1-1/2" BUTTONCAP NAILS AND EXCESS FABRIC SHALL BE TRIMMED. GEOTEXTILE SHALL SECURE TO HEADER LOG APPROXIMATELY HALFWAY UP LOG BACKSIDE
2. SEE STRUCTURE TABLE ON SHEET ST-01 FOR LOCATION OF CONTROL POINTS. CONTROL POINT ELEVATIONS ARE MEASURED AT THE TOP OF THE HEADER LOG.

1 LOG STEP
DE-03 NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL COORDINATE WITH COUNTY OR ITS REPRESENTATIVE TO LAY OUT CRITICAL POINTS OF STRUCTURE PRIOR TO CONSTRUCTION. ALL DIMENSIONS AND ELEVATIONS MAY BE FIELD ADJUSTED IN COORDINATION WITH THE COUNTY OR ITS REPRESENTATIVE TO ENSURE PROPER DIMENSIONS, STABLE INSTALLATION, MINIMIZATION OF NATURAL RESOURCE IMPACTS, AND SMOOTH TIE-IN TO EXISTING STREAMBED.
2. UTILIZE ON-SITE WOODY MATERIAL PLACEMENT TO ENHANCE HABITAT VALUE AS AVAILABLE ON-SITE.
3. LOCATE PREDATOR REFUGE POOL AS FAR FROM ACTIVE USE AREAS AS FEASIBLE.
4. WHEN ROCKS (LARGER THAN 6" ACROSS) ARE AVAILABLE ON-SITE, INCORPORATE INTO SURFACE IN SMALL PILES.

2 WETLAND MICROTOPOGRAPHY
DE-03 NOT TO SCALE

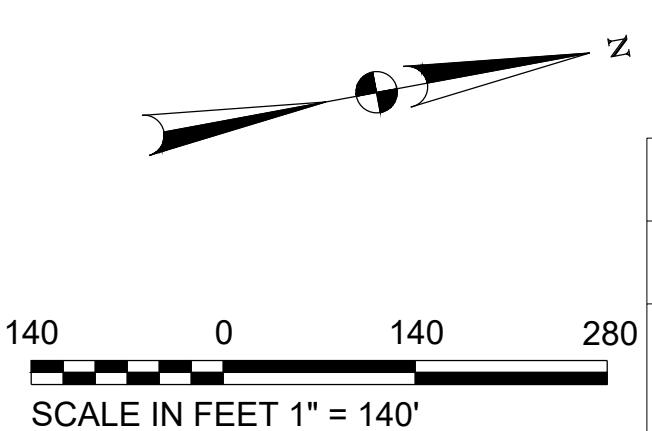
HARFORD COUNTY, MARYLAND		EDGEMARSH VILLAGE PARK STREAM RESTORATION	
STREAM RESTORATION DETAILS		AS NOTED	
S/C PLAN # XXXXX		Scale : <u>1</u> in 1' (1:64)	
GP # XXXXX-XXXX		Date : <u>NOVEMBER 2024</u>	
SIGN AND SEAL		Drawn By : <u>CA</u>	Reviewed By : <u>BWA</u>
		Designed By : <u>CA</u>	
		Drawing No. <u>DE-03</u> of <u>DE-03</u>	Sheet No. <u>20</u> of <u>20</u>

BILLING NO. XXXXX
EG-SWMENG- XXXXX-XXXX #XXXX
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT 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. XXXXX, EXPIRATION DATE: XX/XX/XXXX.



DRAINAGE AREAS		
POI	DRAINAGE AREA (SQ. MI)	PERCENT IMPERVIOUS (%)
REACH 1	0.05	40%
RT-1	0.01	40%
REACH 2A	0.08	33%
REACH 2B	.09	33%
LT-1	0.02	28.3%
LT-2	0.01	11.9%

— DRAINAGE AREA BOUNDARY
— SUB-DRAINAGE AREA BOUNDARY
X POINT OF INTEREST (POI)



BILLING NO. XXXXXX
 EG-SWMENG- XXXXXX-XXXX #XXXX
 PROFESSIONAL CERTIFICATION
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 THE STATE OF MARYLAND LICENSE NO. XXXXX, EXPIRATION DATE: XX/XX/XXXX.

S/C PLAN # XXXXX
 GP # XXXXX-XXXX
 SIGN AND SEAL

HARFORD COUNTY, MARYLAND
 EDGEWATER VILLAGE PARK
 STREAM RESTORATION
 DRAINAGE AREA
 Drawn By : CA
 Designed By : CA
 Reviewed By : BWA
 Drawing No. DA-01 of DA-01
 Sheet No. 21 of 20
 Scale : 1"=140'
 Date : NOVEMBER 2024
 HCG DWG ID No. :
 SCALE : 1"=140' Tren