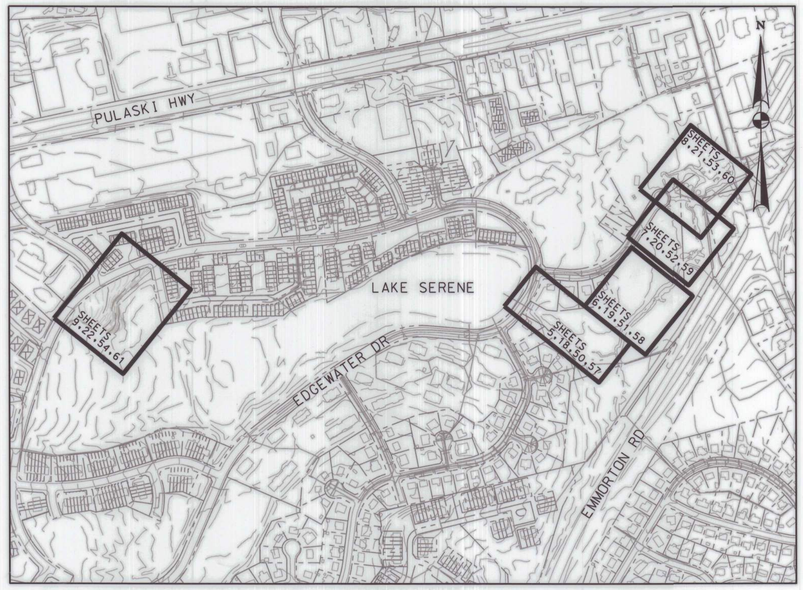
INDEX OF SHEETS

WATERGATE COURT STREAM RESTORATION

WATERSHED PROTECTION AND RESTORATION OFFICE
HARFORD COUNTY, MARYLAND

BID NO.: 25-131



LOCATION MAP

SCALE 1" = 400'

400' 0 400' 800'

SCALE: 1"=400'

PROJECT SUMMARY

TOTAL LENGTH OF STREAM RESTORED:1,907 LINEAR FEET
STREAM USE CLASS: DESIGNATED USE CLASS I
STREAM CLOSURE PERIOD: MARCH 1 THROUGH JUNE 15
LOAD REDUCTIONS:

REACH	TSS REDUCTION	TN REDUCTION	TP REDUCTION
REACH A	14.68 TONS/YR	43.31 LBS/YR	5.15 LBS/YR
REACH B	14.18 TONS/YR	28.59 LBS/YR	6.47 LBS/YR
REACH C	59.73 TONS/YR	112.63 LBS/YR	19.30 LBS/YR
REACH D-1	13.41 TONS/YR	12.72 LBS/YR	3.08 LBS/YR
REACH D-2	25.88 TONS/YR	26.52 LBS/YR	6.47 LBS/YR

*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 (BERG ET AL., 2014) AND SUPPORTING DOCUMENTS.
**SUPPORTED DOCUMENTS CONSULTED INCLUDE "CONCENSUS 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 2019.
***THESE CALCULATIONS SHOWN ABOVE ARE PRELIMINARY AND INCLUDED FOR REFERENCE ONLY. FINAL LOAD REDUCTIONS WILL BE UPDATED AND RECALCULATED AS DESIGN PROGRESSES.

EROSION AND SEDIMENT CONTROL
PLAN #: 59898

TECHNICAL REVIEW BY:

3/17/25

HARFORD COUNTY SOIL CONSERVATION DISTRICT

3/17/25

HARFORD SOIL CONSERVATION DISTRICT

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

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

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 # 59898

GP # GRA-014989-2023

STATE OF MARYLAND
EMILY E BURGESS
51576
PROFESSIONAL ENGINEER

Revisions

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 2024 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.

7. SURVEYS:

   HORIZONTAL CONTROL - COORDINATES SHOWN ON THE PLANS ARE BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM (NAD83) IN U.S. SURVEY FEET.

   VERTICAL CONTROL - ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) IN U.S. SURVEY FEET.

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

250436

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION
TITLE SHEET

Drawn By : ST
Designed By : ST
Reviewed By : BWA

Scale : AS SHOWN
Date : NOVEMBER 2024

Drawing No. GN-01 of GN-02

Sheet No. 01 of 60

GENERAL CONSTRUCTION NOTES

PROJECT DESCRIPTION
THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS, WATERSHED PROTECTION AND RESTORATION DIVISION IS PURSUING THE WATERGATE COURT STREAM RESTORATION PROJECT. THE PROJECT INCLUDES 1,907 LINEAR FEET OF STREAM RESTORATION ACTIVITIES AS WELL AS 0.33 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 FEBURARY 2023 AND MARCH 2023.

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 ABOVE AND SUBSURFACE UTILITIES DURING CONSTRUCTION INCLUDING POWER POLES AND LINES.

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 INCLUDING TREES OF ANY SIZE MARKED FOR CLEARING, SIGNS, DEBRIS 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 SUBSURFACE 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 UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

OVERALL LEGEND

- PROPERTY BOUNDARY
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX.TREELINE
- EX. WETLAND
- WB EX. WETLAND BUFFER
- EX. FENCELINE
- LOS LIMITS OF SURVEY
- EX. BUILDING
- EDGE OF WATER
- WOS WATERS OF THE U.S.
- FP EX. 100-YEAR FLOODPLAIN
- // SOIL BOUNDARY
- SD EX. STORM DRAIN
- SS EX. SANITARY SEWER
- W EX. WATER LINE
- EX. RIPRAP
- SPECIMEN TREE (30"+)
- SIGNIFICANT TREE (24"-29")
- TREE LESS THAN 24"
- CRITICAL ROOT ZONE
- X TREE TO BE REMOVED
- △ SURVEY CONTROL POINT
- ZONING BOUNDARY
- PROPOSED FOREST RETENTION SIGNING, TREE PROTECTION FENCE, AND ROOT PRUNING
- FP PROPOSED 100-YEAR FLOODPLAIN
- LINEAR DEMOLITION
- PROPOSED STREAM CENTERLINE
- PROPOSED BANKFULL
- LOD LIMITS OF DISTURBANCE
- 40 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- ROCK CROSS VANE
- LOG CROSS VANE
- LOG STEP
- CONSTRUCTED RIFFLE
- ROOT WAD
- CLAY PLUG
- WETLAND RESTORATION/ENHANCEMENT AREA
- PROPOSED RIPRAP
- CONSTRUCTION ACCESS ROAD
- STOCKPILE/STAGING AREA
- SCE STABILIZED CONSTRUCTION ENTRANCE
- SF SILT FENCE
- HVF HIGH VISABILITY FENCE
- TEMPORARY SANDBAG DIVERSION
- PUMP AROUND DIVERSION
- FB FILTER BAG
- ELECTICAL UTILITY BOX
- STREET LIGHT
- TP TREE PLANKING

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: JOSEPH J. SIEMEK - DIRECTOR OF DPW
DATE: 3-5-25

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: Emily Burgess
DATE: 3/5/25
P.E. NO.: 51576

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: Emily Burgess
DATE: 9/15/24

STATE OF MARYLAND
EMILY E BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

250437

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

GENERAL CONSTRUCTION NOTES

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	GN-02 OF GN-02	Sheet No.	2 of 66

50' 0 50' 100'
SCALE: 1"=50'

STATE OF MARYLAND
PROFESSIONAL ENGINEER
51576

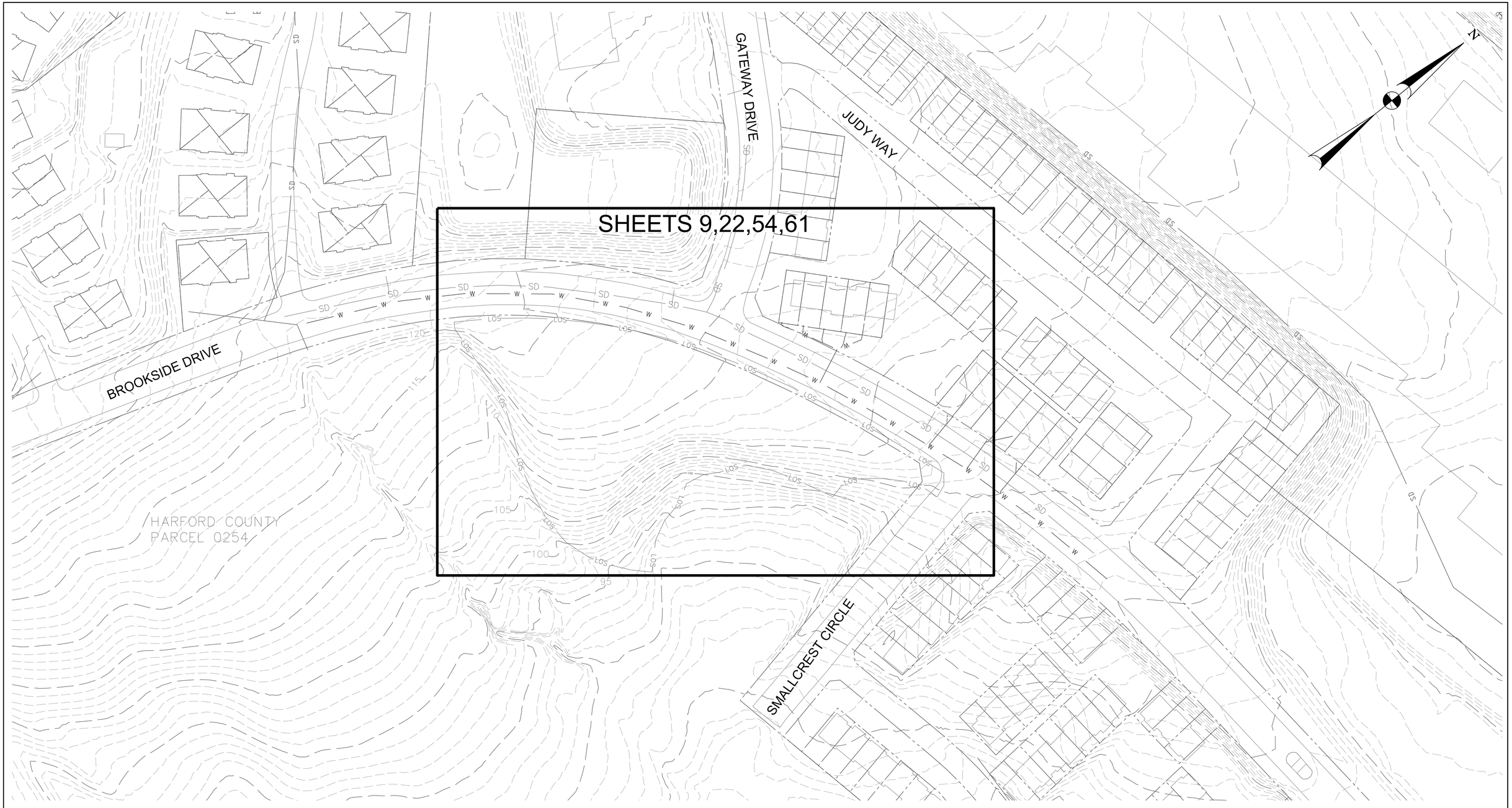
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

OVERALL SITE PLAN

Drawn By :	ST	Scale :	1''=50'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	SP-01 OF SP-02	Sheet No.	3 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



50′ 0 50′ 100′

SCALE: 1"=50′

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

OVERALL SITE PLAN

STATE OF MARYLAND
EMILY E. BURGIN
51576
PROFESSIONAL ENGINEER

Drawn By : ST		Scale : 1′′=50′	
Designed By : ST		Date : NOVEMBER 2024	
Reviewed By : BWA			
Drawing No.	SP-02 OF SP-02	Sheet No.	4 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1"=50'

MATCHLINE SEE SHEET EX-02

N

SANCHEZ DENNYS JOSUE
RODRIGUEZ &
MORALES KELLY
2003 WATERGATE CT
PARCEL 0934

HARFORD COUNTY
WATERGATE CT
PARCEL 0940

MC FADDEN TALBERT J &
MC FADDEN THERESA
2001 WATERGATE CT
PARCEL 0934

FLUSH CUT: T-1

24" RCP INV
EL=41.73

7' CHAIN LINK FENCE

CONCRETE

CONC WALL

CONC WALL

7' CHAIN LINK FENCE

FALLEN TREE & TRASH

WETLANDS

FALLEN TREE
(ROOTS)

EDGE WATER

SAND

FALLEN TREE

FALLEN TREE

FALLEN TREE

HcA

75' FALLEN TREE

TREE DEBRIS

18" FALLEN TREE

TOP OF SEWER LINE

INACTIVE 8" SEWER
PIPE TO BE
DEMOLISHED

4' CHAIN LINK FENCE

EXISTING CHAIN LINK
FENCE TO REMAIN

RuD

EDGEWATER DR

CONCRETE CURB

CONCRETE SIDEWALK

HEADWALL IS
BURIED IN THIS
AREA

FLUSH CUT: T-149,
T-150, T-151

4' CHAIN LINK FENCE

DUAH KWAME
1929 EDGEWATER DR
PARCEL 0936

AGU CLINTON T
1927 HARBINGER TRL
PARCEL 0936

DAY DOLORES J
703 MALLARD CT
PARCEL 0936

18" RCP INV
EL=43.56

CONCRETE HEADWALL

ROSS JENELL T
701 MALLARD CT
PARCEL 0936

Sa

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

EXISTING CONDITIONS PLAN

STATE OF MARYLAND
CAITLIN E BURGESS
51576
PROFESSIONAL ENGINEER
11/21/25

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	EX-01 OF EX-05	Sheet No.	5 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1" = 20'

POINTER, WILLA MAE ETAL
2005 WATERGATE CT
PARCEL 0934

LINDSEY CLAUDE R & F
2007 WATERGATE CT
PARCEL 0934

HARFORD COUNTY
WATERGATE CT
PARCEL 0940

Sa

MATCHLINE SEE SHEET EX-01

MATCHLINE SEE SHEET EX-03

HARVEST EXISTING
6"-24" RIPRAP FOR
REUSE ONSITE

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

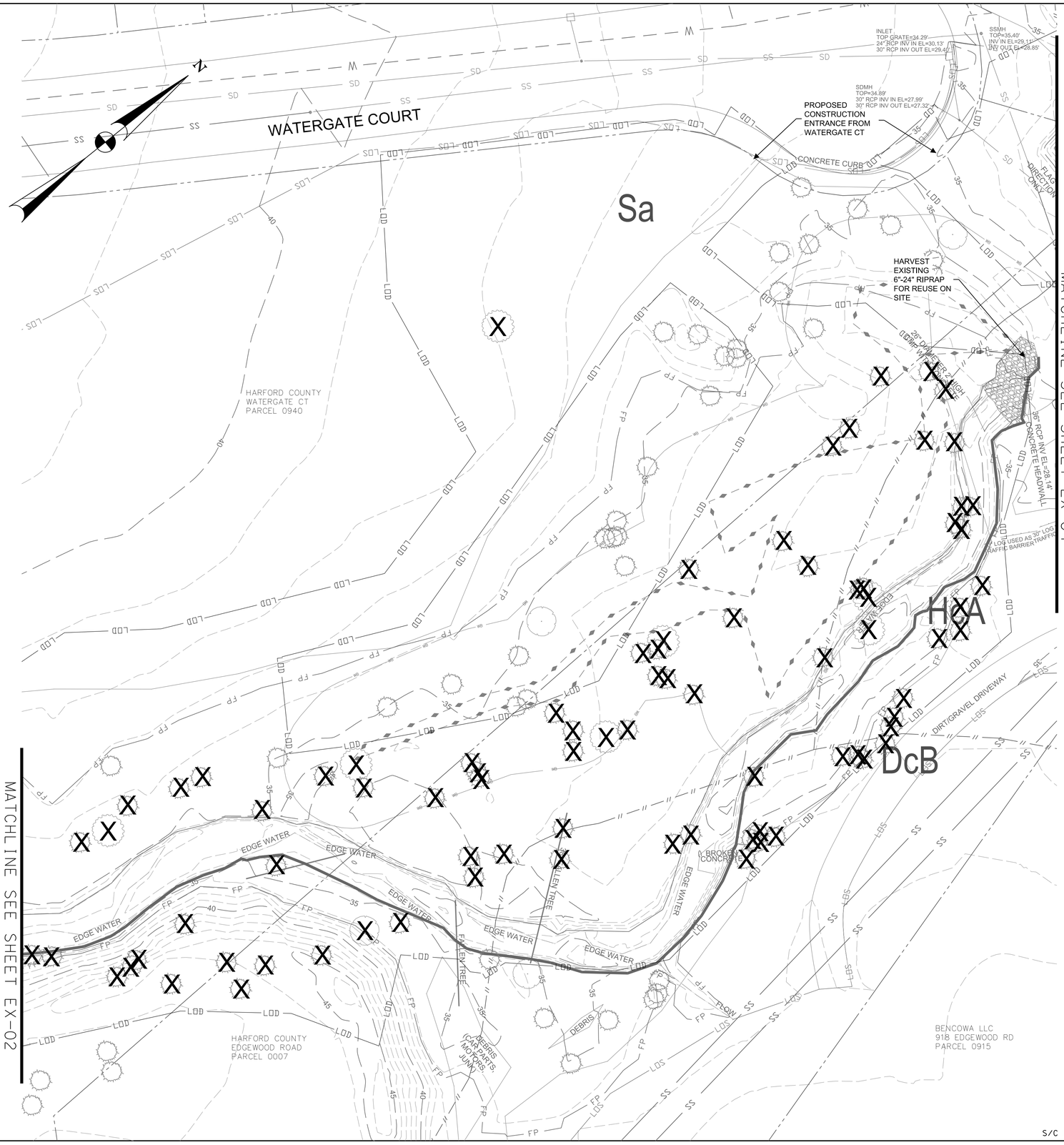
WATERGATE COURT STREAM RESTORATION

EXISTING CONDITIONS PLAN

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. EX-02 OF EX-05	Sheet No. 6 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

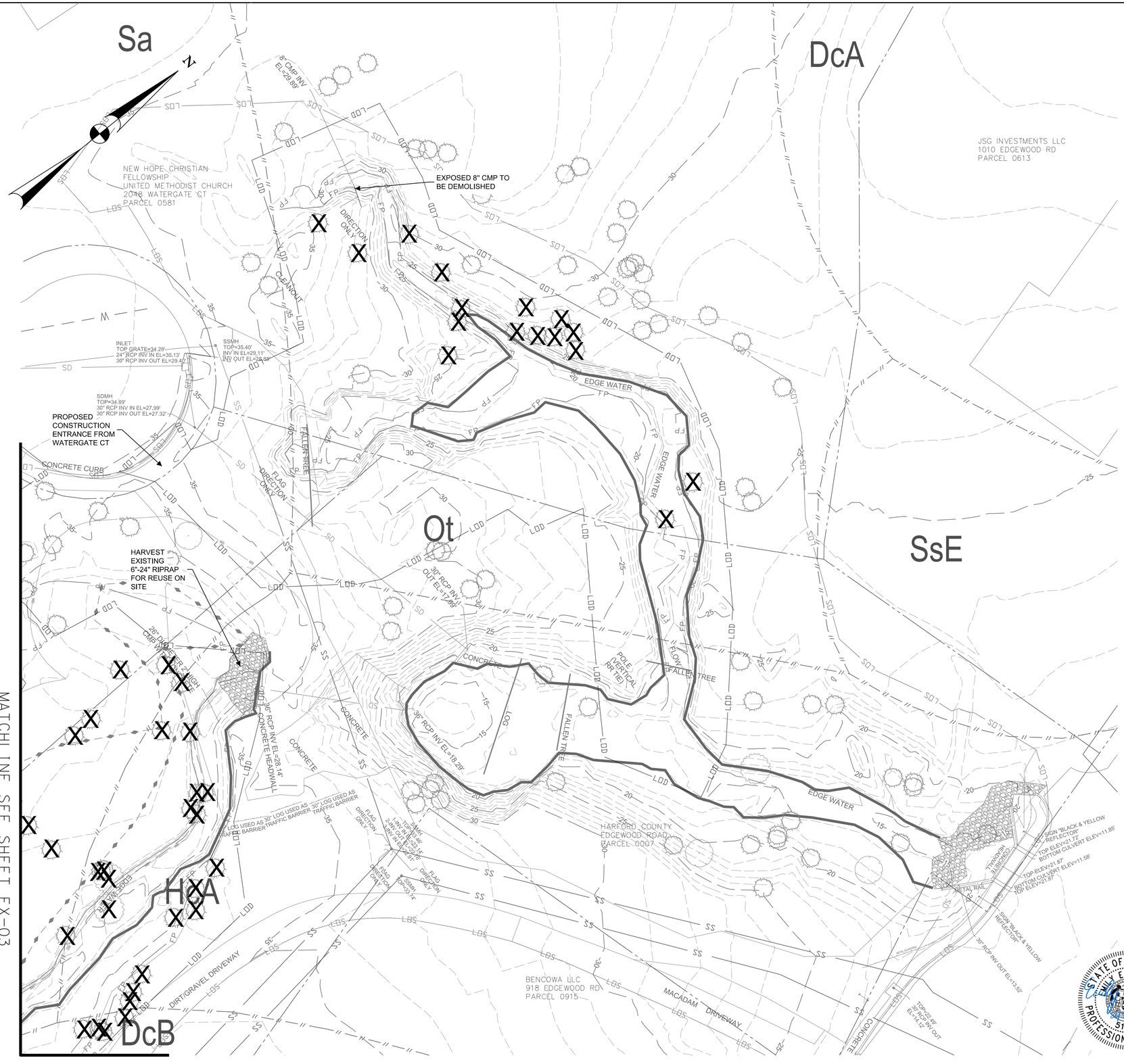
EXISTING CONDITIONS PLAN

STATE OF MARYLAND
KYLE BURGIN
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. EX-03 OF EX-05	Sheet No. 7 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE 1:1



HARFORD COUNTY, MARYLAND

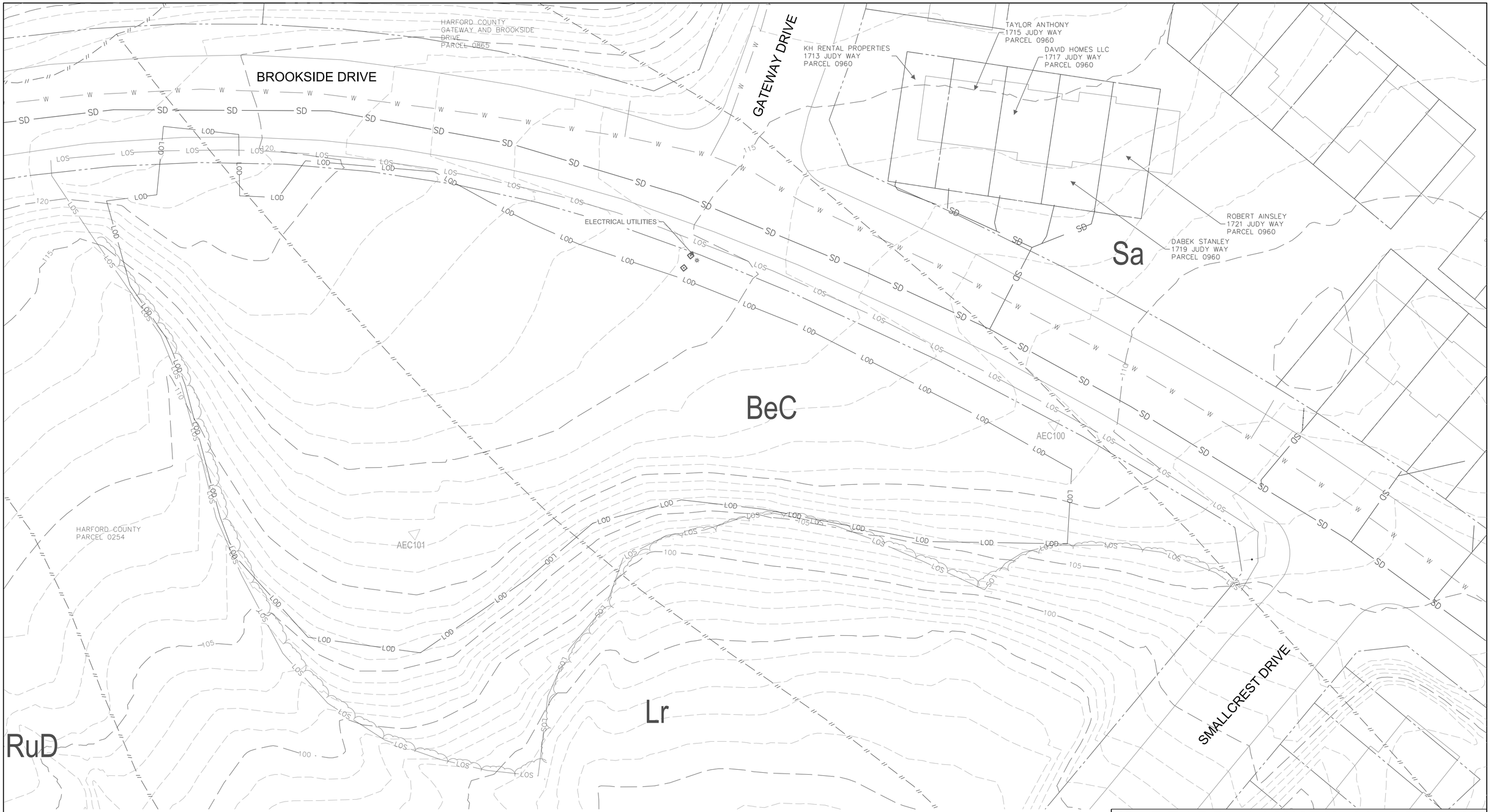
WATERGATE COURT STREAM RESTORATION

EXISTING CONDITIONS PLAN

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. EX-04 OF EX-05	Sheet No. 8 of 66

STATE OF MARYLAND · CHARLES E. BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023



20' 0 20' 40'

SCALE: 1"=20'

STATE OF MARYLAND
CHARLES E BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

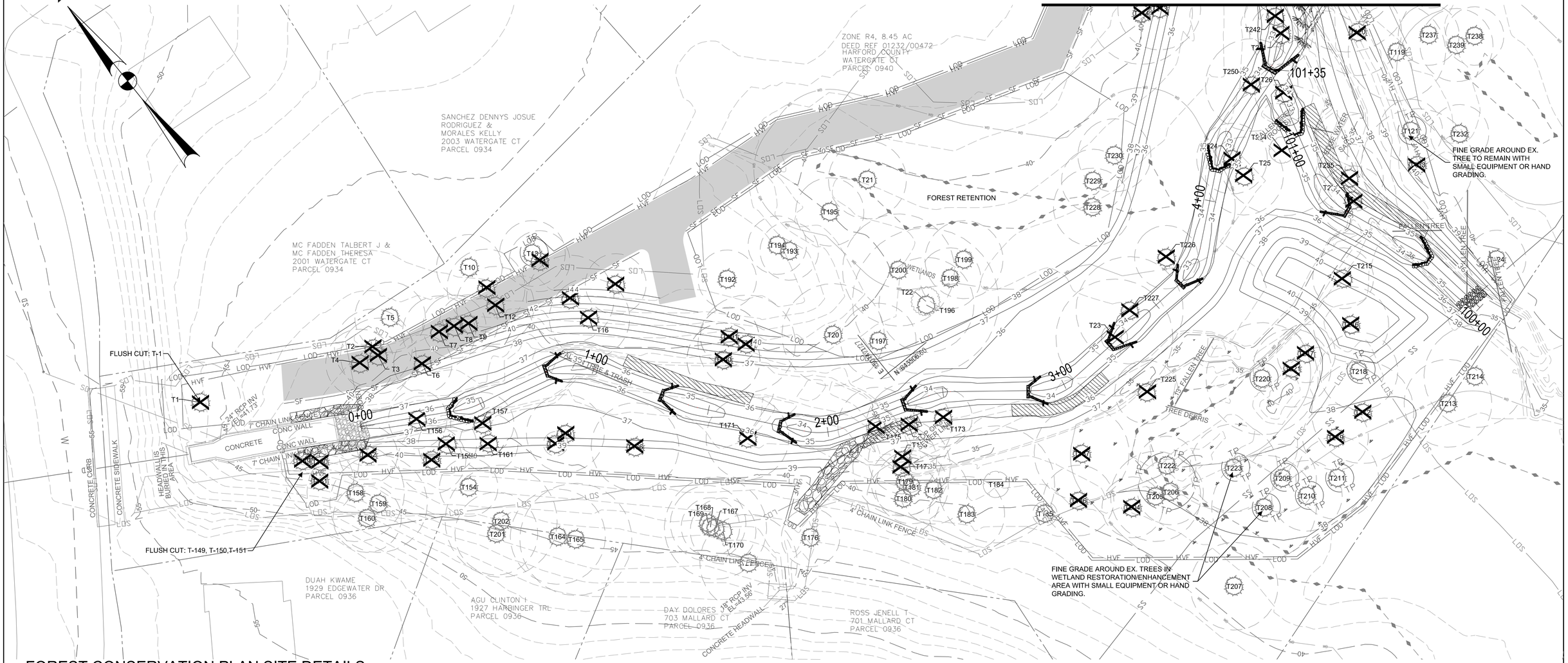
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

EXISTING CONDITIONS PLAN

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. EX-05 OF EX-05	Sheet No. 9 of 66

SCALE: 1"=20'



FOREST CONSERVATION PLAN SITE DETAILS

NET TRACT AREA: 4.71 ACRES
TOTAL FOREST CONSERVATION REQUIRED: 2.27 ACRES
TOTAL FOREST CONSERVATION PROVIDED ON-SITE: 3.08 ACRES
TOTAL WETLAND IMPACTS: 5,843 SF TEMPORARY IMPACTS
TOTAL STREAM IMPACTS: 1,777 LF/21,584 SF PERENNIAL STREAM TEMPORARY IMPACTS;
96 LF/1,602 SF INTERMITTENT STREAM TEMPORARY IMPACTS
TOTAL SPECIMEN TREE IMPACTS: 8 TREES

FOREST PROTECTION NOTES:

1. INDIVIDUAL TREES WITHIN THE LOD THAT ARE NOT MARKED AS REMOVAL AND NOT WITHIN A DESIGNATED AREA OF FOREST RETENTION SHALL BE IDENTIFIED WITH HIGHLY VISIBLE FLAGGING PLACED CONTINUOUSLY AROUND THOSE TREES MARKING THE CLEARING LIMITS. ADDITIONAL NOTE REGARDING LIGHT GRADING AROUND THESE AREAS ARE NOTED WHERE RELELVANT ON THE PLAN SHEETS.
2. CONTRACTOR SHALL USE LOW PRESSURE EQUIPMENT OR HAND GRADING WHEN GRADING WITHIN CRITICAL ROOT ZONES OF TREES THAT ARE NOT MARKED AS REMOVAL.
3. FOREST RETENTION SIGNAGE SHALL BE STAKED ALONG THE EXISTING HIGH VISABILITY FENCING OR SILT FENCE ALONG PORTIONS OF THE LOD MARKED AS FOREST RETENTION AREA. SIGNS SHALL BE SPACED APPROXIMATELY 100 FEET APART WHERE POSSIBLE, WITH A MAXIMUM OF 150 FEET APART. SEE SHEET ED-03 FOR TYPICAL FOREST RETENTION SIGNAGE DETAIL.
4. CONTRACTOR SHALL REFER TO THE FOREST PROTECTION REPORT AND PROJECT SPECIFICATIONS REGARDING ADDITIONAL FOREST/TREE PROTECTION METHODS AND TO BE SUPERVISED BY A LICENSED TREE CARE PROFESSIONAL.

GENERAL NOTES:

1. ALL FOREST RETENTION AND CLEARING ARE PRIORITY 1 DUE TO ON-SITE STREAM AND WETLANDS.
2. PROJECT SEQUENCE OF CONSTRUCTION IS LOCATED ON SHEET SC-01.
3. SITE VICINITY MAP LOCATED ON COVER SHEET.
4. LANDSCAPE PLANS FOUND ON SHEETS LP-01 THROUGH LP-04. LANDSCAPE DETAILS FOUND ON SHEET LD-01.
5. REFER TO REFORESTATION PLANTING REPORT FOR NARRATIVE SUPPLEMENT TO FCP AND LANDSCAPING SHEETS.

20' 0 20' 40'
SCALE: 1"=20'

STATE OF MARYLAND
CHRISTOPHER BURGESS
51576
PROFESSIONAL ENGINEER

FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

JOANNA HIEBLER 11/5/2024

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. FC-01 OF FC-06	Sheet No. 10 of 66

FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

JOANNA HIEBLER 11/5/2024

20' 0 20' 40'

SCALE: 1"=20'

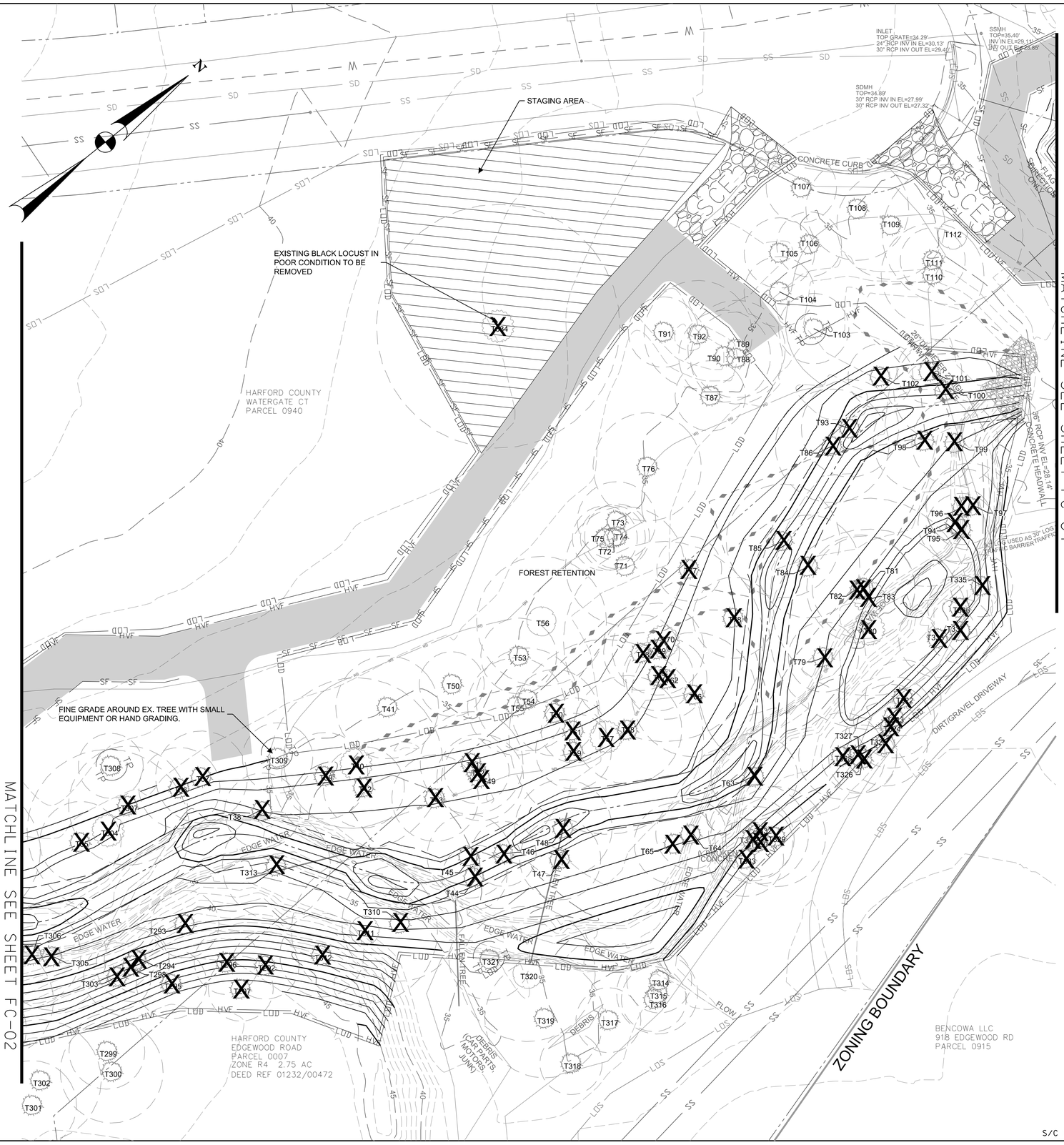
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	FC-02 OF FC-06	Sheet No.	11 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

Joanna Hiebler

JOANNA HIEBLER 11/5/2024

20' 0 20' 40'

SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

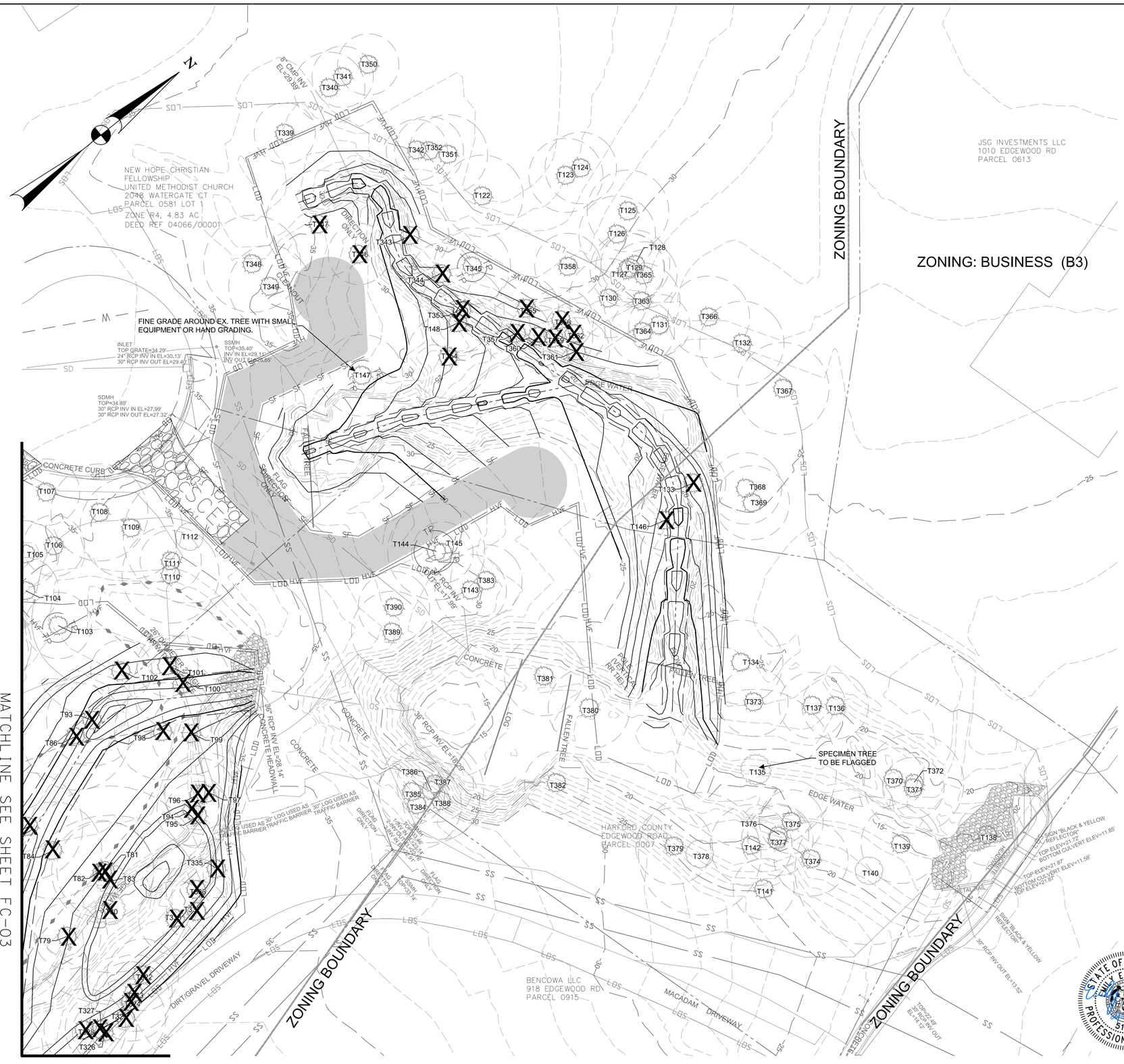
WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	FC-03 OF FC-06	Sheet No.	12 of 66



FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

Joanna Hiebler

JOANNA HIEBLER 11/5/2024

20' 0 20' 40'

SCALE: 1"=20'

STATE OF MARYLAND
STEVE BURGESS
51576
PROFESSIONAL ENGINEER

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. FC-04 OF FC-06	Sheet No. 13 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

Tree ID	Common Name	Scientific Name	DBH	Appraisal	To be removed	Suitable for Re-use (Y/N)	Stress Reduction Measures
T1	Black locust	Robinia pseudoacacia	16	Good	Y	Y	
T2	Red maple	Acer rubrum	16	Good	Y	Y	
T3	Red maple	Acer rubrum	15.5	Good	Y	Y	
T4	Silver maple	Acer saccharinum	14	Fair	Y	N	
T5	Boxelder	Acer negundo	14.5	Good	N	N/A	Root pruning & Tree Protection Fence
T6	Red maple	Acer rubrum	12	Good	Y	Y	
T7	American sweet gum	Liquidambar styraciflua	15	Good	Y	Y	
T8	American sweet gum	Liquidambar styraciflua	13	Fair	Y	N	
T9	Red maple	Acer rubrum	12	Good	Y	Y	
T10	American sweet gum	Liquidambar styraciflua	13.5	Good	N	N/A	
T11	Bigtooth aspen	Populus grandidentata	16	Good	Y	Y	
T12	Bigtooth aspen	Populus grandidentata	16	Good	Y	Y	
T13	Red maple	Acer rubrum	13.5	Good	N	N/A	Root pruning
T14	Bigtooth aspen	Populus grandidentata	12.5	Good	Y	Y	
T15	Loblolly pine	Pinus taeda	18	Good	N	N/A	
T16	Bigtooth aspen	Populus grandidentata	16.5	Good	Y	Y	
T17	Bigtooth aspen	Populus grandidentata	12.5	Good	Y	Y	
T18	American sweet gum	Liquidambar styraciflua	20	Good	Y	Y	
T19	Red maple	Acer rubrum	16	Good	Y	Y	
T20	Red maple	Acer rubrum	21	Good	N	N/A	Root pruning
T21	American sycamore	Platanus occidentalis	16	Good	N	N/A	
T22	Red maple	Acer rubrum	30	Good	N	N/A	Root pruning
T23	American sweet gum	Liquidambar styraciflua	24	Good	Y	Y	
T24	River birch	Betula nigra	14.5/12	Good	Y	Y	
T25	Red maple	Acer rubrum	16	Fair	Y	N	
T26	River birch	Betula nigra	12/12	Fair	Y	N	
T27	Black locust	Robinia pseudoacacia	21	Poor	Y	N	
T28	Red oak	Quercus rubra	12	Good	N	N/A	Tree Protection Fence
T29	Red maple	Acer rubrum	22	Good	Y	Y	
T30	Red maple	Acer rubrum	16	Fair	Y	N	
T31	Silver maple	Acer saccharinum	15	Good	Y	Y	
T32	Red maple	Acer rubrum	19	Fair	Y	N	
T33	Red maple	Acer rubrum	16.5	Poor	Y	N	
T34	Red maple	Acer rubrum	25	Poor	Y	N	
T35	Black cherry	Prunus serotina	15	Fair	Y	N	
T36	Red maple	Acer rubrum	15/13	Good	Y	Y	
T37	Red maple	Acer rubrum	17	Fair	Y	N	
T38	Red maple	Acer rubrum	14	Fair	Y	N	
T39	Red maple	Acer rubrum	16	Fair	Y	N	
T40	Red maple	Acer rubrum	32	Good	Y	Y	
T41	American sweet gum	Liquidambar styraciflua	19	Fair	N	N/A	Vine removal
T42	Red maple	Acer rubrum	15	Fair	Y	N	
T43	Red maple	Acer rubrum	13/14/16	Fair	Y	N	
T44	Black cherry	Prunus serotina	12	Poor	Y	N	
T45	Red maple	Acer rubrum	15.5	Fair	Y	N	
T46	Red maple	Acer rubrum	12	Poor	Y	N	
T47	Red maple	Acer rubrum	15	Poor	Y	N	
T48	Red maple	Acer rubrum	18	Poor	Y	N	
T49	Red maple	Acer rubrum	16	Fair	Y	N	
T50	Red maple	Acer rubrum	12	Fair	Y	N	
T51	American sweet gum	Liquidambar styraciflua	19	Fair	Y	N	
T52	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T53	Red maple	Acer rubrum	14	Fair	N	N/A	Vine removal
T54	Red maple	Acer rubrum	19	Fair	N	N/A	Vine removal
T55	American sweet gum	Liquidambar styraciflua	18	Fair	N	N/A	Vine removal & Root pruning
T56	Red maple	Acer rubrum	24	Poor	N	N/A	Root pruning
T57	Red maple	Acer rubrum	36	Fair	Y	N	
T58	Red maple	Acer rubrum	20	Fair	Y	N	
T59	Red maple	Acer rubrum	14	Fair	Y	N	
T60	Red maple	Acer rubrum	16	Fair	Y	N	
T61	Red maple	Acer rubrum	12	Fair	Y	N	
T62	Red maple	Acer rubrum	15	Good	Y	Y	
T63	Silver maple	Acer saccharinum	16	Good	Y	Y	
T64	Boxelder	Acer negundo	13	Good	Y	Y	
T65	Silver maple	Acer saccharinum	15	Poor	Y	N	
T66	Red maple	Acer rubrum	23	Good	Y	Y	
T67	River birch	Betula nigra	13	Good	Y	Y	
T68	Red maple	Acer rubrum	14	Good	Y	Y	
T69	Red maple	Acer rubrum	17	Fair	Y	N	
T70	Red maple	Acer rubrum	37	Good	N	N/A	Vine removal
T71	Red maple	Acer rubrum	16/22	Good	N	N/A	Vine removal
T72	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T73	Black cherry	Prunus serotina	14.5	Fair	N	N/A	Vine removal
T74	American sweet gum	Liquidambar styraciflua	12	Fair	N	N/A	Vine removal
T75	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T76	Red maple	Acer rubrum	20	Good	N	N/A	Vine removal
T77	American sweet gum	Liquidambar styraciflua	12	Poor	Y	N	
T78	Red maple	Acer rubrum	13/13/15	Good	Y	Y	
T79	Boxelder	Acer negundo	13	Good	Y	Y	
T80	Silver maple	Acer saccharinum	37	Good	Y	Y	
T81	Silver maple	Acer saccharinum	19	Good	Y	Y	
T82	Silver maple	Acer saccharinum	20	Good	Y	Y	
T83	Silver maple	Acer saccharinum	36.5	Good	Y	Y	
T84	Silver maple	Acer saccharinum	19	Fair	Y	N	
T85	Silver maple	Acer saccharinum	21	Good	Y	Y	
T86	Red maple	Acer rubrum	21	Good	Y	Y	
T87	Red oak	Quercus rubra	13	Good	N	N/A	Vine removal
T88	Red maple	Acer rubrum	17	Good	N	N/A	Vine removal
T89	Red maple	Acer rubrum	18	Good	N	N/A	
T90	Red maple	Acer rubrum	17	Good	N	N/A	
T91	Red maple	Acer rubrum	13	Good	N	N/A	Vine removal
T92	Black locust	Robinia pseudoacacia	20	Good	N	N/A	Vine removal
T93	Red maple	Acer rubrum	18	Good	Y	Y	
T94	Red maple	Acer rubrum	14	Good	Y	Y	
T95	Red maple	Acer rubrum	13	Fair	Y	N	
T96	White oak	Quercus alba	14	Poor	Y	N	
T97	Silver maple	Acer saccharinum	16	Fair	Y	N	
T98	Silver maple	Acer saccharinum	19	Good	Y	Y	
T99	Silver maple	Acer saccharinum	16	Good	Y	Y	
T100	Silver maple	Acer saccharinum	19	Good	Y	Y	

Tree ID	Common Name	Scientific Name	DBH	Appraisal	To be removed	Suitable for Re-use	
T101	Red maple	Acer rubrum	12	Good	Y	Y	
T102	Red maple	Acer rubrum	12	Good	Y	Y	
T103	Red maple	Acer rubrum	13	Good	N	N/A	Tree Protection Fence
T104	American sweet gum	Liquidambar styraciflua	13	Fair	N	N/A	
T105	American sweet gum	Liquidambar styraciflua	13	Fair	N	N/A	
T106	Red maple	Acer rubrum	12	Good	N	N/A	
T107	Red mulberry	Morus rubra	13	Good	N	N/A	
T108	Loblolly pine	Pinus taeda	19	Good	N	N/A	Vine removal
T109	Red maple	Acer rubrum	20	Good	N	N/A	
T110	Willow oak	Quercus phellos	19	Good	N	N/A	
T111	Red maple	Acer rubrum	12	Good	N	N/A	
T112	Red maple	Acer rubrum	26	Good	N	N/A	
T113	Willow oak	Quercus phellos	12	Good	Y	Y	
T114	Red maple	Acer rubrum	12.5	Fair	Y	N	
T115	Black oak	Quercus velutina	19	Good	Y	Y	
T116	American sweet gum	Liquidambar styraciflua	12	Good	N	N/A	Root pruning
T117	Pin oak	Quercus palustris	12	Good	N	N/A	Root pruning
T118	Red oak	Quercus rubrum	12	Good	N	N/A	
T119	Red maple	Acer rubrum	20	Good	N	N/A	Root pruning
T120	Red maple	Acer rubrum	18	Good	Y	Y	
T121	Red maple	Acer rubrum	13	Fair	N	N/A	Vine removal & Tree Protection Fence
T122	American sweet gum	Liquidambar styraciflua	16	Good	N	N/A	
T123	American sweet gum	Liquidambar styraciflua	14.5	Good	N	N/A	
T124	American sweet gum	Liquidambar styraciflua	14	Good	N	N/A	
T125	American sweet gum	Liquidambar styraciflua	16	Good	N	N/A	
T126	American sweet gum	Liquidambar styraciflua	15	Good	N	N/A	
T127	American sweet gum	Liquidambar styraciflua	14.5	Fair	N	N/A	Vine removal
T128	American sweet gum	Liquidambar styraciflua	13.5	Fair	N	N/A	Vine removal
T129	American sweet gum	Liquidambar styraciflua	13.5	Fair	N	N/A	Vine removal
T130	American sweet gum	Liquidambar styraciflua	15.5	Good	N	N/A	
T131	American sweet gum	Liquidambar styraciflua	12	Good	N	N/A	
T132	American sweet gum	Liquidambar styraciflua	16.5	Good	N	N/A	Vine removal
T133	American sycamore	Platanus occidentalis	12.5	Fair	Y	N	
T134	American sweet gum	Liquidambar styraciflua	16.5	Good	N	N/A	Vine removal
T135	American sycamore	Platanus occidentalis	31.5	Good	N	N/A	Vine removal
T136	American sweet gum	Liquidambar styraciflua	13	Poor	N	N/A	
T137	American sweet gum	Liquidambar styraciflua	13	Poor	N	N/A	
T138	American sycamore	Platanus occidentalis	12	Good	N	N/A	
T139	American sycamore	Platanus occidentalis	15.5	Good	N	N/A	
T140	American sycamore	Platanus occidentalis	29	Good	N	N/A	Vine removal
T141	Black locust	Robinia pseudoacacia	12	Poor	N	N/A	
T142	Red maple	Acer rubrum	16	Good	N	N/A	
T143	Red maple	Acer rubrum	14	Good	N	N/A	Vine removal
T144	Black locust	Robinia pseudoacacia	19	Fair	N	N/A	Vine removal & Tree Protection Fence
T145	Black locust	Robinia pseudoacacia	12	Poor	N	N/A	
T146	American sycamore	Platanus occidentalis	12	Good	Y	Y	
T147	Red maple	Acer rubrum	16	Good	N	N/A	Tree Protection Fence
T148	American sycamore	Platanus occidentalis	12	Fair	Y	N	
T149	Red maple	Acer rubrum	10	Good	Y	N	
T150	Red maple	Acer rubrum	16	Good	Y	Y	
T151	Red maple	Acer rubrum	14	Good	Y	Y	
T152	Red maple	Acer rubrum	12	Good	Y	Y	
T153	Red maple	Acer rubrum	14	Good	Y	Y	
T154	American sweet gum	Liquidambar styraciflua	12	Good	N	N/A	
T155	American sweet gum	Liquidambar styraciflua	12	Good	Y	Y	
T156	Red maple	Acer rubrum	12	Good	Y	Y	
T157	American sweet gum	Liquidambar styraciflua	13	Good	Y	Y	
T158	Red maple	Acer rubrum	20	Good	N	N/A	Root pruning
T159	Red maple	Acer rubrum	20	Good	N	N/A	
T160	Black cherry	Prunus serotina	14	Good	N	N/A	
T161	Red maple	Acer rubrum	12	Fair	Y	N	
T162	Silver maple	Acer saccharinum	5	Fair	Y	N	
T163	Red maple	Acer rubrum	15	Good	N	N/A	
T164	Loblolly pine	Pinus taeda	19.5	Good	N	N/A	
T165	Loblolly pine	Pinus taeda	23	Good	N	N/A	
T166	Silver maple	Acer saccharinum	18	Good	Y	Y	
T167	Silver maple	Acer saccharinum	21	Good	N	N/A	
T168	Silver maple	Acer saccharinum	12	Good	N	N/A	
T169	Silver maple	Acer saccharinum	15.5	Good	N	N/A	
T170	Silver maple	Acer saccharinum	13.5	Good	N	N/A	
T171	Red maple	Acer rubrum	17	Good	Y	Y	
T172	Black cherry	Prunus serotina	12	Fair	N	N/A	
T173	American sycamore	Platanus occidentalis	12	Good	Y	Y	
T174	Tulip poplar	Liriodendron tulipifera	17.5	Good	Y	Y	
T175	Red maple	Acer rubrum	16	Good	Y	Y	
T176	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T177	Red maple	Acer rubrum	20	Fair	Y	N	
T178	Red maple	Acer rubrum	14	Fair	Y	N	
T179	American sweet gum	Liquidambar styraciflua	14	Fair	N	N/A	Vine removal & Root pruning
T180	American sweet gum	Liquidambar styraciflua	15	Fair	N	N/A	Vine removal
T181	American sweet gum	Liquidambar styraciflua	15	Good	N	N/A	Root pruning
T182	Red maple	Acer rubrum	14	Fair	N	N/A	Vine removal & Root pruning
T183	American sweet gum	Liquidambar styraciflua	15.5	Fair	N	N/A	Vine removal
T184	Red maple	Acer rubrum	24	Good	N	N/A	Root pruning
T185	Black cherry	Prunus serotina	5	Poor	N	N/A	
T186	Red maple	Acer rubrum	14.5	Good	Y	Y	
T187	Silver maple	Acer saccharinum	19.5	Good	Y	Y	
T188	Red maple	Acer rubrum	15	Good	N	N/A	
T189	Black cherry	Prunus serotina	12	Fair	N	N/A	
T190	Red maple	Acer rubrum	15	Good	Y	Y	
T191	Black cherry	Prunus serotina	12	Fair	Y	N	
T192	Black cherry	Prunus serotina	12	Good	N	N/A	
T193	Black locust	Robinia pseudoacacia	12	Good	N	N/A	
T194	Black locust	Robinia pseudoacacia	12	Fair	N	N/A	
T195	Red maple	Acer rubrum	14	Fair	N	N/A	
T196	Red maple	Acer rubrum	19.5	Good	N	N/A	Root pruning
T197	American sycamore	Platanus occidentalis	15.5	Fair	N	N/A	Root pruning
T198	Red maple	Acer rubrum	12.5	Good	N	N/A	
T199	Red maple	Acer rubrum	16	Good	N	N/A	
T200	American sweet gum	Liquidambar styraciflua	23	Good	N	N/A	

FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

Joanna Hiebler

JOANNA HIEBLER 11/5/2024

STATE OF MARYLAND · CLAYTON E. BURGESS · 31576 · PROFESSIONAL ENGINEER

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN TABLES

Drawn By : ST

Designed By : ST

Reviewed By : BWA

Scale : NTS

Date : NOVEMBER 2024

Drawing No. FC-05 OF FC-06

Sheet No. 14 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

Tree ID	Common Name	Scientific Name	DBH	Appraisal	To be removed	Suitable for Re-use	
T201	Loblolly pine	Pinus taeda	17	Fair	N	N/A	Vine removal
T202	Loblolly pine	Pinus taeda	23	Fair	N	N/A	Vine removal
T203	Red maple	Acer rubrum	20	Good	N	N/A	
T204	Red maple	Acer rubrum	12.5	Good	Y	Y	
T205	Red maple	Acer rubrum	18.5	Good	N	N/A	Root pruning & Tree Protection Fence
T206	Red maple	Acer rubrum	13.5	Good	N	N/A	Tree Protection Fence
T207	Oak species	Quercus sp.	18	Good	N	N/A	
T208	Red maple	Acer rubrum	21.5	Fair	N	N/A	Vine removal & Tree Protection Fence
T209	Red maple	Acer rubrum	14	Good	N	N/A	Tree Protection Fence
T210	Red maple	Acer rubrum	14.5	Good	N	N/A	Root pruning & Tree Protection Fence
T211	Red maple	Acer rubrum	17	Good	N	N/A	Root pruning & Tree Protection Fence
T212	Silver maple	Acer saccharinum	21	Good	Y	Y	
T213	Silver maple	Acer saccharinum	18	Good	N	N/A	Root pruning
T214	Tulip poplar	Liriodendron tulipifera	21	Good	N	N/A	Root pruning
T215	Red maple	Acer rubrum	12.5	Good	Y	Y	
T216	Red maple	Acer rubrum	15.5	Good	Y	Y	
T217	Red maple	Acer rubrum	12	Good	Y	Y	
T218	Red maple	Acer rubrum	16	Good	N	N/A	Tree Protection Fence
T219	Red maple	Acer rubrum	13.5	Good	Y	Y	
T220	Red maple	Acer rubrum	23	Good	N	N/A	Vine removal & Tree Protection Fence
T221	Tulip poplar	Liriodendron tulipifera	16	Good	Y	Y	
T222	Red maple	Acer rubrum	12	Good	N	N/A	Tree Protection Fence
T223	American sweet gum	Liquidambar styraciflua	18	Good	N	N/A	Tree Protection Fence
T224	Red maple	Acer rubrum	12	Good	N	N/A	
T225	Red maple	Acer rubrum	13	Good	Y	Y	
T226	Red maple	Acer rubrum	13	Good	Y	Y	
T227	Red maple	Acer rubrum	22	Good	Y	Y	
T228	American sycamore	Platanus occidentalis	16	Good	N	N/A	
T229	American sycamore	Platanus occidentalis	13	Good	N	N/A	
T230	American sycamore	Platanus occidentalis	15	Good	N	N/A	Root pruning
T231	Red maple	Acer rubrum	14	Good	Y	Y	
T232	Red maple	Acer rubrum	12	Good	N	N/A	
T233	White oak	Quercus alba	23	Fair	Y	N	
T234	American sycamore	Platanus occidentalis	27	Good	Y	Y	
T235	Silver maple	Acer saccharinum	14	Good	Y	Y	
T236	American sweet gum	Liquidambar styraciflua	13	Good	N	N/A	
T237	American sweet gum	Liquidambar styraciflua	12.5	Good	N	N/A	
T238	American sweet gum	Liquidambar styraciflua	12	Good	N	N/A	
T239	American sweet gum	Liquidambar styraciflua	15	Good	N	N/A	
T240	Red oak	Quercus rubrum	12	Good	N	N/A	
T241	Red maple	Acer rubrum	13	Good	Y	Y	
T242	Red maple	Acer rubrum	12.5	Good	Y	Y	
T243	Loblolly pine	Pinus taeda	17	Good	Y	N	
T244	Loblolly pine	Pinus taeda	21	Good	Y	N	
T245	Black locust	Robinia pseudoacacia	17.5	Poor	N	N/A	Root pruning & Tree Protection Fence
T246	River birch	Betula nigra	16.5	Good	Y	Y	
T247	Red maple	Acer rubrum	12	Good	Y	Y	
T248	Red maple	Acer rubrum	18	Good	Y	Y	
T249	Red maple	Acer rubrum	26	Poor	Y	N	
T250	Red maple	Acer rubrum	19	Fair	Y	N	
T251	Red maple	Acer rubrum	15	Good	Y	Y	
T252	Red maple	Acer rubrum	16	Fair	Y	N	
T253	Silver maple	Acer saccharinum	21.5	Good	Y	Y	
T254	Red maple	Acer rubrum	14	Good	Y	Y	
T255	American sweet gum	Liquidambar styraciflua	14.5	Good	Y	Y	
T256	American sweet gum	Liquidambar styraciflua	18.5	Good	Y	Y	
T257	American sweet gum	Liquidambar styraciflua	17	Fair	Y	N	
T258	American sweet gum	Liquidambar styraciflua	21	Good	Y	Y	
T259	Red maple	Acer rubrum	14.5	Good	Y	Y	
T260	Red maple	Acer rubrum	13	Good	Y	Y	
T261	Red maple	Acer rubrum	12.5	Good	Y	Y	
T262	Red maple	Acer rubrum	13.5	Fair	Y	N	
T263	Red maple	Acer rubrum	32	Good	Y	Y	
T264	Tulip popular	Tulip popular	22	Good	Y	Y	
T265	Red maple	Acer rubrum	16.5	Good	Y	Y	
T266	American sycamore	Platanus occidentalis	16	Good	Y	Y	
T267	Red maple	Acer rubrum	23.5	Good	Y	Y	
T268	Red oak	Quercus rubrum	15.5	Good	Y	Y	
T269	American sweet gum	Liquidambar styraciflua	12.5	Good	Y	Y	
T270	American sweet gum	Liquidambar styraciflua	22	Good	Y	Y	
T271	Red maple	Acer rubrum	16	Good	Y	Y	
T272	Red maple	Acer rubrum	12	Good	Y	Y	
T273	Red maple	Acer rubrum	13.5	Good	Y	Y	
T274	Red maple	Acer rubrum	13.5	Good	Y	Y	
T275	Red maple	Acer rubrum	13.5	Good	Y	Y	
T276	Red maple	Acer rubrum	19	Fair	Y	N	
T277	Red maple	Acer rubrum	16	Fair	N	N/A	Vine removal & Tree Protection Fence
T278	Red maple	Acer rubrum	14	Poor	N	N/A	Tree Protection Fence
T279	Red maple	Acer rubrum	16	Poor	N	N/A	Tree Protection Fence
T280	Oak sp.	Quercus sp.	21	Good	Y	Y	
T281	Red oak	Quercus rubrum	18.5	Good	Y	Y	
T282	Black cherry	Prunus serotina	18	Poor	Y	N	
T283	Red maple	Acer rubrum	11.5	Good	Y	N	
T284	Red maple	Acer rubrum	11.5	Good	Y	N	
T285	Red maple	Acer rubrum	13	Good	Y	Y	
T286	Black cherry	Prunus serotina	14	Good	Y	Y	
T287	Red maple	Acer rubrum	18	Good	Y	Y	
T288	Tulip popular	Liriodendron tulipifera	19.5	Good	Y	Y	
T289	Red maple	Acer rubrum	12	Good	Y	Y	
T290	Red maple	Acer rubrum	12	Poor	N	N/A	Tree Protection Fence
T291	Red maple	Acer rubrum	14	Fair	N	N/A	Vine removal & Tree Protection Fence
T292	Black cherry	Prunus serotina	12.5	Good	Y	Y	
T293	Red maple	Acer rubrum	12.5	Good	Y	Y	
T294	Red maple	Acer rubrum	12	Good	Y	Y	
T295	Black cherry	Prunus serotina	13	Fair	Y	N	
T296	Black cherry	Prunus serotina	12	Good	Y	Y	
T297	Red maple	Acer rubrum	12	Good	Y	Y	
T298	Black cherry	Prunus serotina	13.5	Fair	Y	N	
T299	Red maple	Acer rubrum	14	Poor	N	N/A	Root pruning
T300	River birch	Betula nigra	19	Good	N	N/A	

Tree ID	Common Name	Scientific Name	DBH	Appraisal	To be removed	Suitable for Re-use	
T301	Red maple	Acer rubrum	16.5	Good	N	NA	
T302	Red maple	Acer rubrum	22.5	Good	N	N/A	
T303	Black cherry	Prunus serotina	12.5	Poor	Y	N	
T304	Red maple	Acer rubrum	30	Good	Y	Y	
T305	Black cherry	Prunus serotina	20	Good	Y	Y	
T306	Red maple	Acer rubrum	18	Good	Y	Y	
T307	Red maple	Acer rubrum	22	Fair	Y	N	
T308	Red maple	Acer rubrum	12	Good	N	N/A	Tree Protection Fence
T309	Red maple	Acer rubrum	13	Fair	N	N/A	Vine removal & Tree Protection Fence
T310	Red maple	Acer rubrum	21.5	Good	Y	Y	
T311	Black oak	Quercus velutina	27	Good	Y	Y	
T312	Red maple	Acer rubrum	15.5	Good	Y	Y	
T313	Red maple	Acer rubrum	20	Fair	Y	N	
T314	Red maple	Acer rubrum	12	Poor	N	N/A	
T315	Red maple	Acer rubrum	15	Fair	N	N/A	Vine removal
T316	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T317	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T318	Red maple	Acer rubrum	11.5	Fair	N	N/A	Vine removal
T319	Red maple	Acer rubrum	22	Good	N	N/A	
T320	Tulip popular	Liriodendron tulipifera	25	Good	N	N/A	Root pruning
T321	Red maple	Acer rubrum	15	Good	N	N/A	Root pruning & Tree Protection Fence
T322	Black locust	Robinia pseudoacacia	14	Poor	Y	N	
T323	Black locust	Robinia pseudoacacia	15	Poor	Y	N	
T324	Red maple	Acer rubrum	15.5	Good	Y	Y	
T325	Red maple	Acer rubrum	15.5	Fair	Y	N	
T326	Red maple	Acer rubrum	12.5	Fair	Y	N	
T327	Red maple	Acer rubrum	14	Fair	Y	N	
T328	Red maple	Acer rubrum	16	Poor	Y	N	
T329	Red maple	Acer rubrum	18.5	Good	Y	Y	
T330	Red maple	Acer rubrum	13	Good	Y	Y	
T331	Red maple	Acer rubrum	15.5	Good	Y	Y	
T332	American sweet gum	Liquidambar styraciflua	18.5	Good	Y	Y	
T333	Red maple	Acer rubrum	14	Fair	Y	N	
T334	Black locust	Robinia pseudoacacia	30	Poor	Y	N	
T335	Red maple	Acer rubrum	11.5	Good	Y	N	
T336	American sweet gum	Liquidambar styraciflua	12	Fair	Y	N	
T337	American sweet gum	Liquidambar styraciflua	12	Poor	Y	N	
T338	Silver maple	Acer saccharinum	14.5	Good	Y	Y	
T339	Black locust	Robinia pseudoacacia	12	Poor	N	N/A	
T340	Loblolly pine	Pinus taeda	14	Good	N	N/A	
T341	American sweet gum	Liquidambar styraciflua	12	Fair	N	N/A	
T342	American sweet gum	Liquidambar styraciflua	12	Fair	N	N/A	Vine removal
T343	American sweet gum	Liquidambar styraciflua	15	Good	Y	Y	
T344	American sweet gum	Liquidambar styraciflua	12	Good	Y	Y	
T345	American sweet gum	Liquidambar styraciflua	15	Good	N	N/A	Tree Protection Fence
T346	American sweet gum	Liquidambar styraciflua	12	Good	Y	Y	
T347	Loblolly pine	Pinus taeda	21	Good	Y	N	
T348	Loblolly pine	Pinus taeda	19	Good	N	N/A	Vine removal
T349	Loblolly pine	Pinus taeda	16	Good	N	N/A	Vine removal
T350	Loblolly pine	Pinus taeda	12	Good	N	N/A	
T351	Bigtooth aspen	Populus grandidentata	15.5	Good	N	N/A	
T352	American sycamore	Platanus occidentalis	13.5	Good	N	N/A	Vine removal
T353	Tulip popular	Liriodendron tulipifera	16.5	Good	Y	Y	
T354	Loblolly pine	Pinus taeda	16.5	Good	Y	N	
T355	American sweet gum	Liquidambar styraciflua	12.5	Good	Y	Y	
T356	American sweet gum	Liquidambar styraciflua	12.5	Good	Y	Y	
T357	Black cherry	Prunus serotina	13	Good	Y	Y	
T358	Black oak	Quercus velutina	13	Good	N	N/A	Vine removal
T359	American sweet gum	Liquidambar styraciflua	15	Good	Y	Y	
T360	Black cherry	Prunus serotina	12	Good	Y	Y	
T361	Red maple	Acer rubrum	13	Good	Y	Y	
T362	Red maple	Acer rubrum	12	Good	Y	Y	
T363	American sweet gum	Liquidambar styraciflua	15	Good	N	N/A	
T364	Black cherry	Prunus serotina	12.5	Good	N	N/A	
T365	American sweet gum	Liquidambar styraciflua	13	Good	N	N/A	
T366	American sweet gum	Liquidambar styraciflua	16	Good	N	N/A	
T367	Red maple	Acer rubrum	18	Fair	N	N/A	Vine removal
T368	American sweet gum	Liquidambar styraciflua	14	Fair	N	N/A	Vine removal & Root pruning
T369	American sweet gum	Liquidambar styraciflua	14.5	Fair	N	N/A	Vine removal & Root pruning
T370	Red maple	Acer rubrum	12	Fair	N	N/A	Vine removal
T371	Red maple	Acer rubrum	12	Good	N	N/A	Vine removal
T372	Red maple	Acer rubrum	19.5	Good	N	N/A	Vine removal
T373	American sweet gum	Liquidambar styraciflua	13.5	Fair	N	N/A	Vine removal
T374	American sycamore	Platanus occidentalis	14.5	Good	N	N/A	
T375	Red maple	Acer rubrum	12.5	Good	N	N/A	
T376	River birch	Betula nigra	12	Good	N	N/A	
T377	River birch	Betula nigra	14	Good	N	N/A	
T378	Red oak	Quercus rubrum	24	Good	N	N/A	
T379	American beech	American beech	15	Good	N	N/A	
T380	Red maple	Acer rubrum	16	Good	N	N/A	
T381	Red maple	Acer rubrum	15.5	Fair	N	N/A	Vine removal
T382	American beech	Fagus grandifolia	12.5	Good	N	N/A	
T383	American sweet gum	Liquidambar styraciflua	14	Poor	N	N/A	
T384	Black locust	Robinia pseudoacacia	17.5	Poor	N	N/A	
T385	Black locust	Robinia pseudoacacia	13	Poor	N	N/A	
T386	Black locust	Robinia pseudoacacia	20.5	Poor	N	N/A	
T387	Black locust	Robinia pseudoacacia	15	Poor	N	N/A	
T388	Black locust	Robinia pseudoacacia	15	Poor	N	N/A	
T389	Red maple	Acer rubrum	16	Good	N	N/A	Vine removal
T390	Red maple	Acer rubrum	14	Fair	N	N/A	Vine removal

FOREST CONSERVATION ACT QUALIFIED PROFESSIONAL

JOANNA HIEBLER 11/5/2024

STATE OF MARYLAND · CARLY E. BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

FOREST CONSERVATION PLAN TABLES

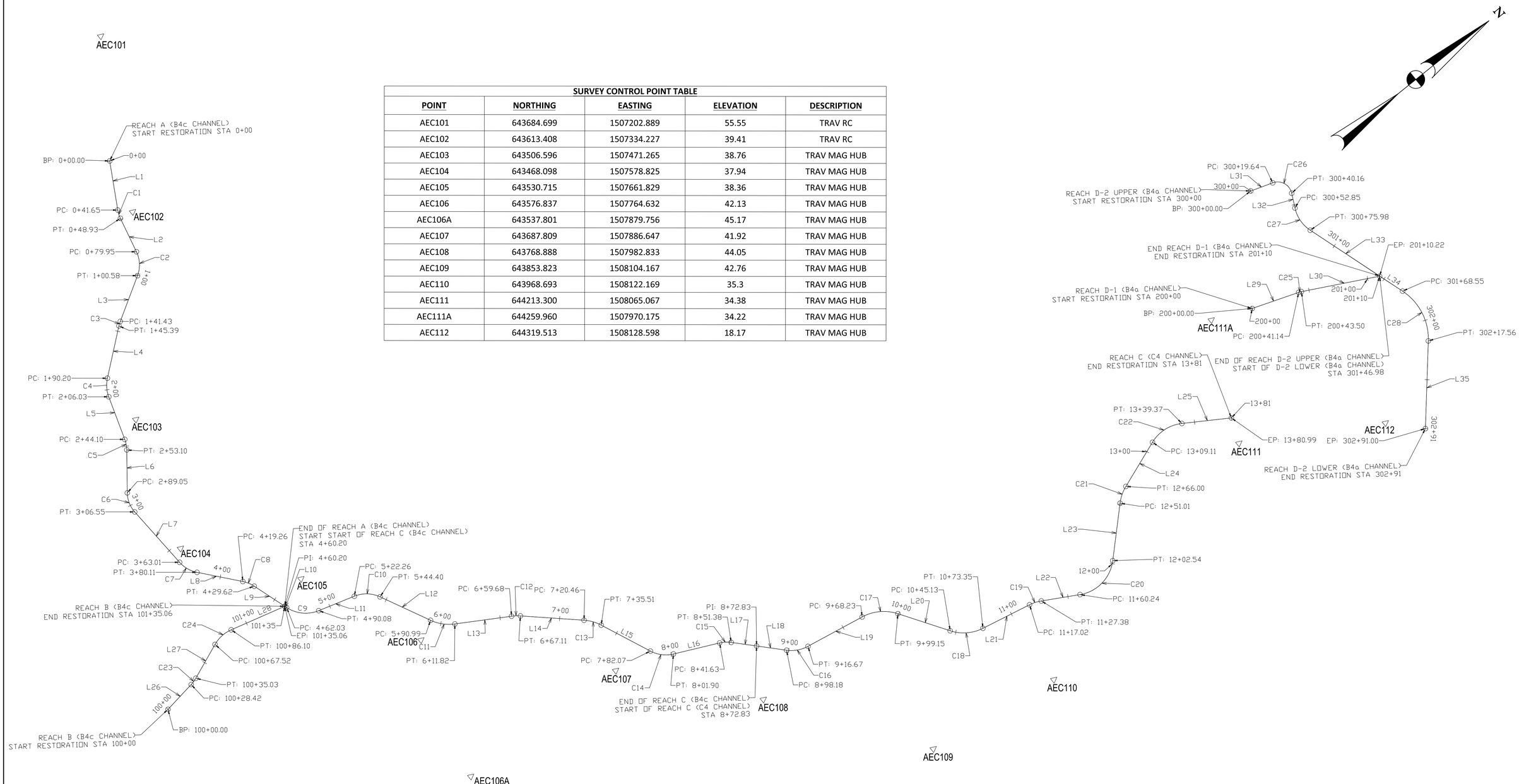
Drawn By : ST
Designed By : ST
Reviewed By : BWA

Scale : NTS
Date : NOVEMBER 2024

Drawing No. FC-06 OF FC-06

Sheet No. 15 of 66

SCALE 1" = 100'



SURVEY CONTROL POINT TABLE				
POINT	**NORTHING**	**EASTING**	**ELEVATION**	**DESCRIPTION**
AEC101	643684.699	1507202.889	55.55	TRAV RC
AEC102	643613.408	1507334.227	39.41	TRAV RC
AEC103	643506.596	1507471.265	38.76	TRAV MAG HUB
AEC104	643468.098	1507578.825	37.94	TRAV MAG HUB
AEC105	643530.715	1507661.829	38.36	TRAV MAG HUB
AEC106	643576.837	1507764.632	42.13	TRAV MAG HUB
AEC106A	643537.801	1507879.756	45.17	TRAV MAG HUB
AEC107	643687.809	1507886.647	41.92	TRAV MAG HUB
AEC108	643768.888	1507982.833	44.05	TRAV MAG HUB
AEC109	643853.823	1508104.167	42.76	TRAV MAG HUB
AEC110	643968.693	1508122.169	35.3	TRAV MAG HUB
AEC111	644213.300	1508065.067	34.38	TRAV MAG HUB
AEC111A	644259.960	1507970.175	34.22	TRAV MAG HUB
AEC112	644319.513	1508128.598	18.17	TRAV MAG HUB

40′ 0 40′ 80′
SCALE: 1"=40′

STATE OF MARYLAND
CAMILLE E BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

GEOMETRIC LAYOUT

Drawn By :	ST	Scale :	1′′=40′
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	GS-01 OF GS-02	Sheet No.	16 of 66

Line Table: Reach A

Line #	Length	Direction	Start Point	End Point
L1	41.65	S60° 33' 19.79"E	(1507288.91,643625.01)	(1507325.18,643604.53)
L2	31.02	S76° 53' 52.43"E	(1507331.94,643601.90)	(1507362.15,643594.87)
L3	40.85	S30° 32' 52.54"E	(1507378.33,643582.99)	(1507399.10,643547.81)
L4	44.81	S38° 47' 36.44"E	(1507401.34,643544.56)	(1507429.42,643509.63)
L5	38.06	S71° 47' 09.57"E	(1507442.26,643500.74)	(1507478.41,643488.84)
L6	35.95	S51° 57' 28.10"E	(1507486.31,643484.62)	(1507514.63,643462.46)
L7	56.47	N87° 07' 36.09"E	(1507530.95,643457.29)	(1507587.35,643460.12)
L8	39.15	N50° 10' 20.48"E	(1507602.99,643466.24)	(1507633.06,643491.31)
L9	30.58	N72° 09' 04.04"E	(1507642.08,643496.28)	(1507671.19,643505.65)

Curve Table: Reach A

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	25.50	7.27	S68° 43' 36.11"E	(1507325.18,643604.53)	(1507331.94,643601.90)
C2	25.50	20.63	S53° 43' 22.49"E	(1507362.15,643594.87)	(1507378.33,643582.99)
C3	27.50	3.96	S34° 40' 14.49"E	(1507399.10,643547.81)	(1507401.34,643544.56)
C4	27.50	15.84	S55° 17' 23.00"E	(1507429.42,643509.63)	(1507442.26,643500.74)
C5	26.00	9.00	S61° 52' 18.83"E	(1507478.41,643488.84)	(1507486.31,643484.62)
C6	24.50	17.50	S72° 24' 56.00"E	(1507514.63,643462.46)	(1507530.95,643457.29)
C7	26.50	17.09	N68° 38' 58.28"E	(1507587.35,643460.12)	(1507602.99,643466.24)
C8	27.00	10.36	N61° 09' 42.26"E	(1507633.06,643491.31)	(1507642.08,643496.28)

Line Table: Reach B

Line #	Length	Direction	Start Point	End Point
L26	28.42	N8° 06' 22.64"W	(1507677.17,643375.43)	(1507673.16,643403.57)
L27	32.49	N21° 37' 58.31"W	(1507671.47,643409.94)	(1507659.49,643440.14)
L28	48.96	N15° 04' 56.13"E	(1507658.45,643458.38)	(1507671.19,643505.65)

Curve Table: Reach B

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C23	28.00	6.61	N14° 52' 10.47"W	(1507673.16,643403.57)	(1507671.47,643409.94)
C24	29.00	18.58	N3° 16' 31.09"W	(1507659.49,643440.14)	(1507658.45,643458.38)

Line Table: Reach C

Line #	Length	Direction	Start Point	End Point
L10	1.83	N72° 09' 04.05"E	(1507671.19,643505.65)	(1507672.93,643506.21)
L11	32.18	N16° 43' 28.67"E	(1507691.82,643525.47)	(1507701.08,643556.29)
L12	46.58	N63° 42' 45.71"E	(1507714.98,643572.72)	(1507756.74,643593.35)
L13	47.86	N31° 00' 38.50"E	(1507771.86,643607.27)	(1507796.52,643648.30)
L14	53.34	N42° 40' 41.55"E	(1507800.97,643654.23)	(1507837.13,643693.45)
L15	46.56	N66° 38' 46.49"E	(1507849.32,643702.10)	(1507892.07,643720.55)
L16	39.73	N25° 20' 08.80"E	(1507906.02,643734.03)	(1507923.02,643769.94)
L17	21.45	N46° 49' 33.94"E	(1507928.73,643777.78)	(1507944.37,643792.45)
L18	25.35	N46° 49' 33.94"E	(1507944.37,643792.45)	(1507962.86,643809.80)
L19	51.56	N10° 18' 16.20"E	(1507971.55,643825.76)	(1507980.78,643876.49)
L20	45.98	N56° 55' 07.47"E	(1507997.42,643901.54)	(1508035.95,643926.63)
L21	43.67	N12° 00' 02.86"E	(1508051.51,643949.31)	(1508060.59,643992.02)
L22	32.85	N29° 28' 16.23"E	(1508064.25,644001.68)	(1508080.41,644030.28)
L23	48.47	N43° 58' 57.20"W	(1508075.43,644069.44)	(1508041.77,644104.31)
L24	43.11	N20° 07' 29.02"W	(1508033.87,644116.92)	(1508019.04,644157.40)
L25	41.62	N32° 25' 06.16"E	(1508022.17,644186.45)	(1508044.48,644221.58)

Curve Table: Reach C

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C9	29.00	28.05	N44° 26' 16.36"E	(1507672.93,643506.21)	(1507691.82,643525.47)
C10	27.00	22.14	N40° 13' 07.19"E	(1507701.08,643556.29)	(1507714.98,643572.72)
C11	36.50	20.83	N47° 21' 42.11"E	(1507756.74,643593.35)	(1507771.86,643607.27)
C12	36.50	7.43	N36° 50' 40.03"E	(1507796.52,643648.30)	(1507800.97,643654.23)
C13	36.00	15.06	N54° 39' 44.02"E	(1507837.13,643693.45)	(1507849.32,643702.10)
C14	27.50	19.83	N45° 59' 27.65"E	(1507892.07,643720.55)	(1507906.02,643734.03)
C15	26.00	9.75	N36° 04' 51.37"E	(1507923.02,643769.94)	(1507928.73,643777.78)
C16	29.00	18.49	N28° 33' 55.07"E	(1507962.86,643809.80)	(1507971.55,643825.76)
C17	38.00	30.92	N33° 36' 41.84"E	(1507980.78,643876.49)	(1507997.42,643901.54)
C18	36.00	28.22	N34° 27' 35.17"E	(1508035.95,643926.63)	(1508051.51,643949.31)
C19	34.00	10.37	N20° 44' 09.55"E	(1508060.59,643992.02)	(1508064.25,644001.68)
C20	33.00	42.31	N7° 15' 20.49"W	(1508080.41,644030.28)	(1508075.43,644069.44)
C21	36.00	14.99	N32° 03' 13.11"W	(1508041.77,644104.31)	(1508033.87,644116.92)
C22	33.00	30.26	N6° 08' 48.57"E	(1508019.04,644157.40)	(1508022.17,644186.45)

Line Table: Reach D-1

Line #	Length	Direction	Start Point	End Point
L29	41.14	N19° 39' 42.14"E	(1507984.03,644292.60)	(1507997.87,644331.33)
L30	66.71	N27° 38' 18.19"E	(1507998.82,644333.50)	(1508029.77,644392.60)

Curve Table: Reach D-1

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C25	17.00	2.37	N23° 39' 00.16"E	(1507997.87,644331.33)	(1507998.82,644333.50)

Line Table: Reach D-2

Line #	Length	Direction	Start Point	End Point
L31	19.64	N18° 24' 47.84"E	(1507906.60,644353.20)	(1507912.81,644371.83)
L32	12.70	S63° 37' 12.52"E	(1507929.53,644378.79)	(1507940.90,644373.15)
L33	92.57	N72° 12' 53.71"E	(1507963.39,644371.46)	(1508051.54,644399.74)
L34	92.57	N72° 12' 53.71"E	(1507963.39,644371.46)	(1508051.54,644399.74)
L35	73.44	S49° 17' 22.91"E	(1508097.51,644390.42)	(1508153.18,644342.52)

Curve Table: Reach D-2

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C26	12.00	20.52	N67° 23' 47.66"E	(1507912.81,644371.83)	(1507929.53,644378.79)
C27	30.00	23.12	S85° 42' 09.41"E	(1507940.90,644373.15)	(1507963.39,644371.46)
C28	48.00	49.00	S78° 32' 14.60"E	(1508051.54,644399.74)	(1508097.51,644390.42)

STATE OF MARYLAND
CAMILLE E. BURGESS
11/27/2024
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

GEOMETRIC LAYOUT

Drawn By : ST
Designed By : ST
Reviewed By : BWA
Drawing No. GS-02 OF GS-02

Scale : NTS
Date : NOVEMBER 2024
Sheet No. 17 of 66

SCALE 1 inch

MATCHLINE SEE SHEET SR-02

N

EDGEWATER DR

SANCHEZ DENNYS JOSUE
RODRIGUEZ &
MORALES KELLY
2003 WATERGATE CT
PARCEL 0934

HARFORD COUNTY
WATERGATE CT
PARCEL 0940

MC FADDEN TALBERT J &
MC FADDEN THERESA
2001 WATERGATE CT
PARCEL 0934

DUAH KWAME
1929 EDGEWATER DR
PARCEL 0936

AGU CLINTON I
1927 HARBINGER TRL
PARCEL 0936

DAY DOLORES J
703 MALLARD CT
PARCEL 0936

ROSS JENELL T
701 MALLARD CT
PARCEL 0936

END OF REACH A
START OF REACH C
(B4c CHANNEL)
STA 4+60.20

REACH B
TIE-IN STA 101+29.10

CLAY PLUG (TYP.)

ARMOURED UTILITY CROSSING. SEE UTILITY PROTECTION DETAIL ON SHEET DE-02.

TREE/WETLAND
PRESERVATION AREA

LOG CROSS VANE
(TYP.)

RIPRAP SLOPE
PROTECTION
5'X30'X2.6'
TWO LAYERS OF
CLASS II RIP RAP,
32" DEPTH

REACH A
START RESTORATION
STA 0+00

ROCK CROSS VANE
(TYP.)

INACTIVE 8" SEWER
PIPE TO BE
DEMOLISHED

RIPRAP INFLOW PROTECTION
PLACE CLASS I RIPRAP OR
EQUIVALENT HARVESTED
RIPRAP
5'X36'X1.5'
TWO LAYERS OF CLASS I
RIP RAP, 18" DEPTH

REACH B
START RESTORATION
STA 100+00

WETLAND
RESTORATION/ENHANCEMENT
AREA

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

PROPOSED CONDITIONS PLAN VIEW

STATE OF MARYLAND
CRAIG E. BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SR-01 OF SR-05	Sheet No. 18 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

POINTER, WILLA MAE ETAL
2005 WATERGATE CT
PARCEL 0934

LINDSEY CLAUDE R & F
2007 WATERGATE CT
PARCEL 0934

HARFORD COUNTY
WATERGATE CT
PARCEL 0940

N

ROOTWAD BANK
STABILIZATION (TYP.)

LOG CROSS VANE (TYP.)

CLAY PLUG (TYP.)

END OF REACH C
(B4c CHANNEL)
START OF REACH C
(C4 CHANNEL)
STA 8+72.83

5+00

6+00

7+00

8+00

9+00

LOG

CONCRETE

EDGE WATER

EDGEWATER

FLOW

MATCHLINE SEE SHEET SR-01

MATCHLINE SEE SHEET SR-03

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

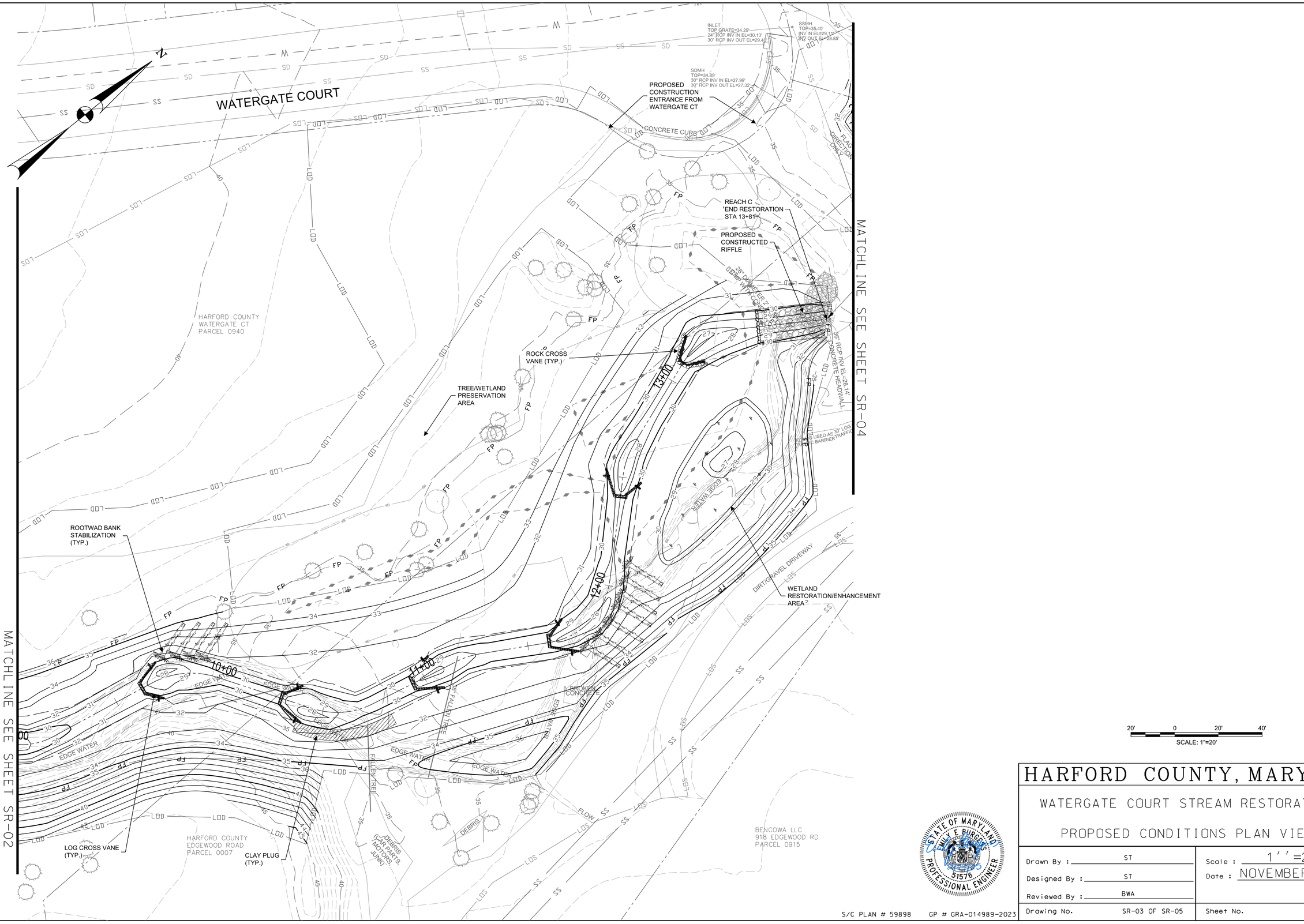
WATERGATE COURT STREAM RESTORATION

PROPOSED CONDITIONS PLAN VIEW

STATE OF MARYLAND
CHARLES E BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SR-02 OF SR-05	Sheet No. 19 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



HARFORD COUNTY, MARYLAND

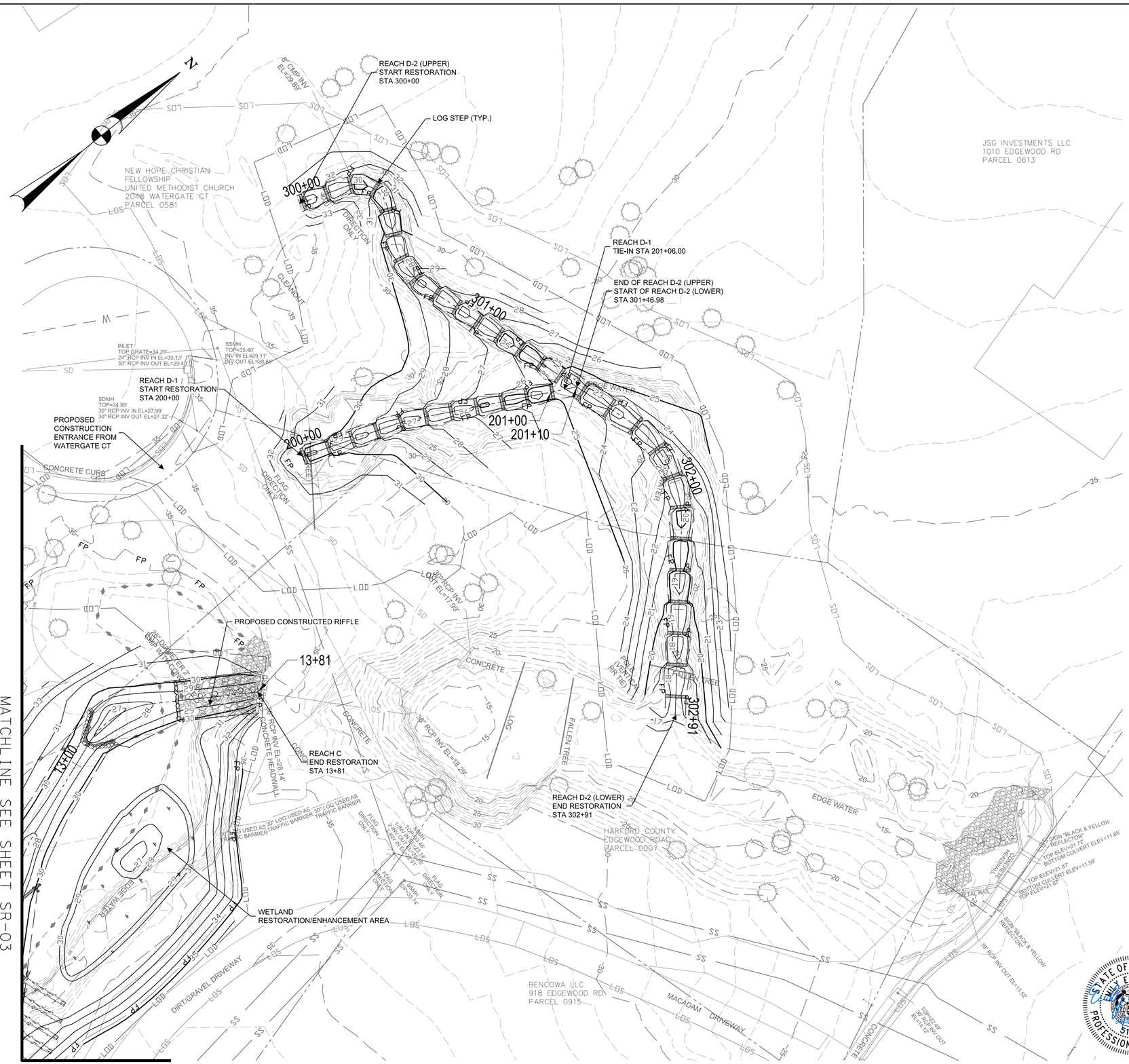
WATERGATE COURT STREAM RESTORATION

PROPOSED CONDITIONS PLAN VIEW

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	SR-03 OF SR-05	Sheet No.	20 of 66



20' 0 20' 40'

SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

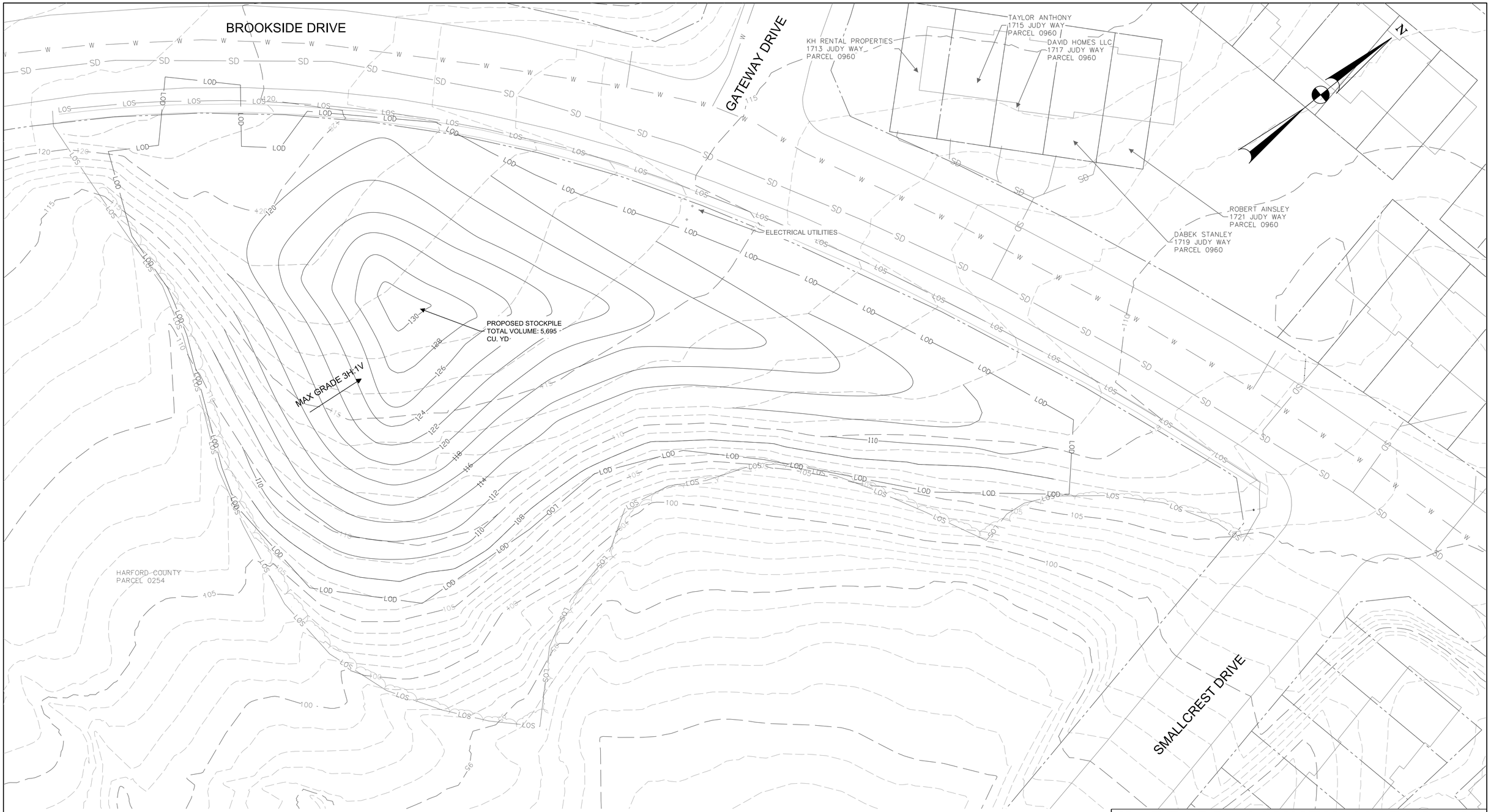
WATERGATE COURT STREAM RESTORATION

PROPOSED CONDITIONS PLAN VIEW

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SR-04 OF SR-05	Sheet No. 21 of 66

STATE OF MARYLAND
CARLYLE BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023



STATE OF MARYLAND
CHARLES E BURGESS
51576
PROFESSIONAL ENGINEER

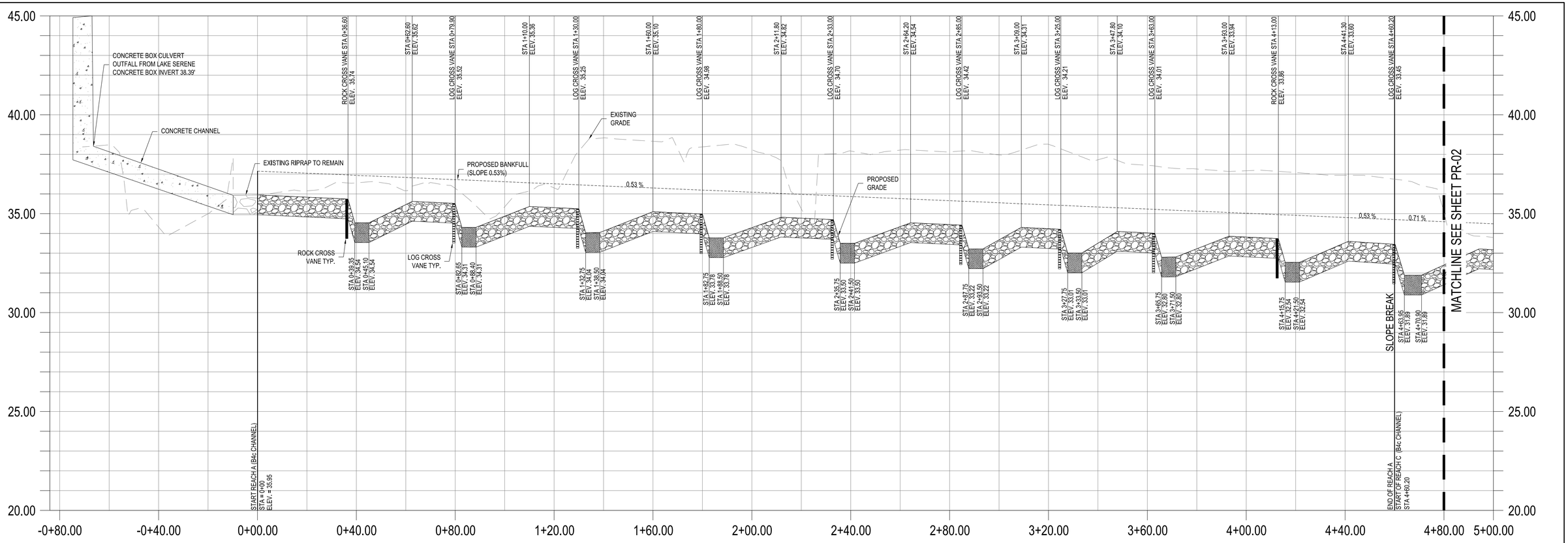
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

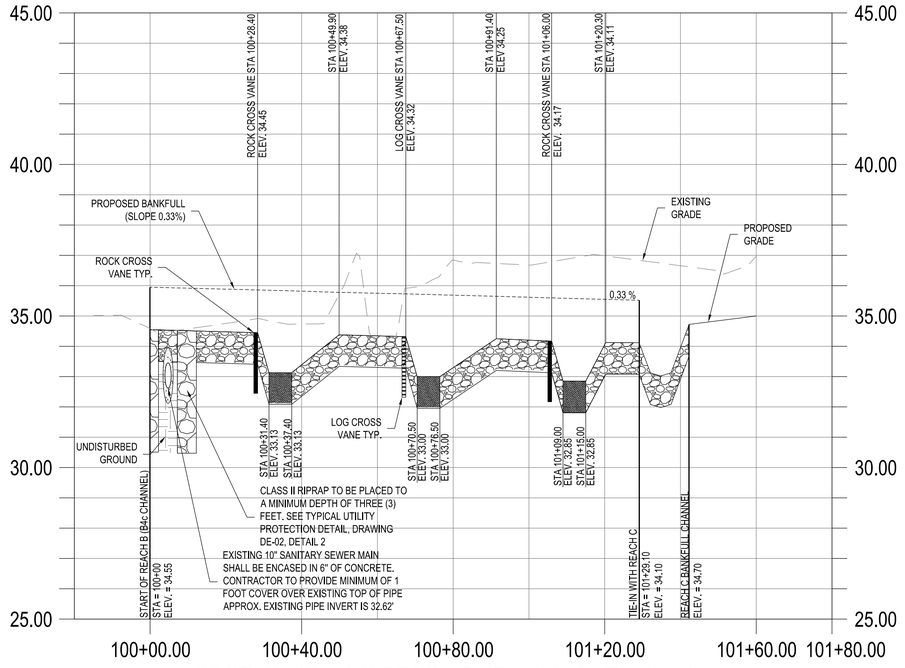
WATERGATE COURT STREAM RESTORATION

PROPOSED CONDITIONS PLAN VIEW

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SR-05 OF SR-05	Sheet No. 22 of 66



PROFLE VIEW OF MAIN CHANNEL (REACH A AND C) STA 0+00 TO 4+80



PROFLE VIEW OF REACH B STA 100+00 TO 101+29

NOTE: SEE STREAM SUBSTRATE MIXTURE TABLE ON DETAIL SHEET DE-04 AND CROSS SECTION SHEETS XS-01 TO XS-07 FOR SUBSTRATE SPECIFICATIONS. SUBSTRATE DEPTH IS NOT DRAWN TO SCALE.

HORIZONTAL SCALE 1"=20'

20' 0 20' 40'

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE 1"=2.5'

5' 0 2.5' 5'

VERTICAL SCALE: 1"=2.5'

S/C PLAN # 59898

GP # GRA-014989-2023

STATE OF MARYLAND
CARLY E. BURGESS
51576
PROFESSIONAL ENGINEER

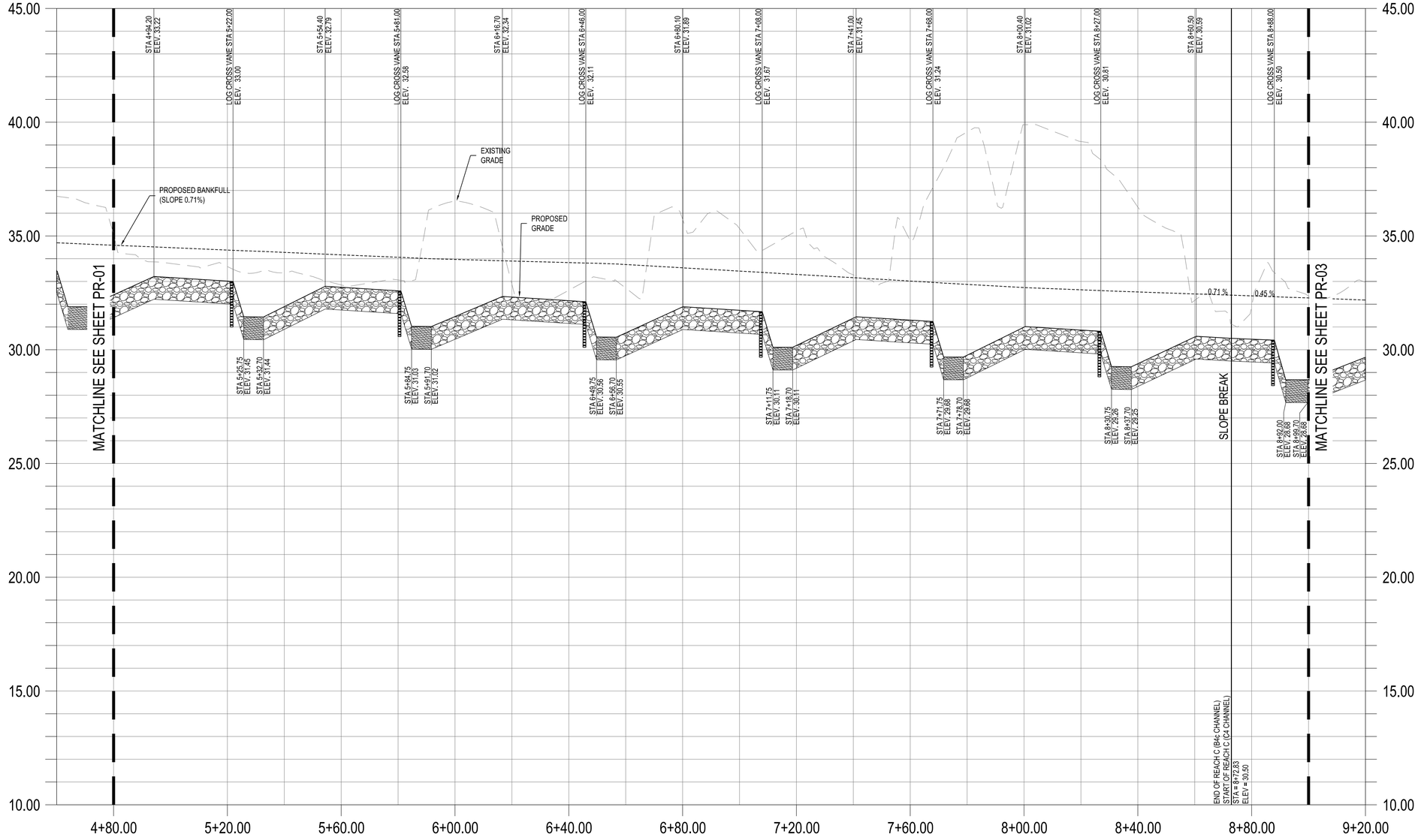
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

PROFILE VIEW

Drawn By :	ST	Scale :	AS SHOWN
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	PR-01 OF PR-04	Sheet No.	23 of 66

SCALE: 1" = 20'



PROFLE VIEW OF MAIN CHANNEL (REACH A AND C) STA 4+80 TO 9+00

HORIZONTAL SCALE 1"=20'

20' 0 20' 40'

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE 1"=2.5'

5' 0 2.5' 5'

VERTICAL SCALE: 1"=2.5'

NOTE: SEE STREAM SUBSTRATE MIXTURE TABLE ON DETAIL SHEET DE-04 AND CROSS SECTION SHEETS XS-01 TO XS-07 FOR SUBSTRATE SPECIFICATIONS. SUBSTRATE DEPTH IS NOT DRAWN TO SCALE.

STATE OF MARYLAND
EMILY E. BURGER
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

PROFILE VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. PR-02 OF PR-04	Sheet No. 24 of 66

PROFLE VIEW OF MAIN CHANNEL (REACH A AND C) STA 9+00 TO 13+81

HORIZONTAL SCALE 1"=20'

VERTICAL SCALE 1"=2.5'

NOTE: SEE STREAM SUBSTRATE MIXTURE TABLE ON DETAIL SHEET DE-04 AND CROSS SECTION SHEETS XS-01 TO XS-07 FOR SUBSTRATE SPECIFICATIONS. SUBSTRATE DEPTH IS NOT DRAWN TO SCALE.

STATE OF MARYLAND PROFESSIONAL ENGINEER 51576

HARFORD COUNTY, MARYLAND

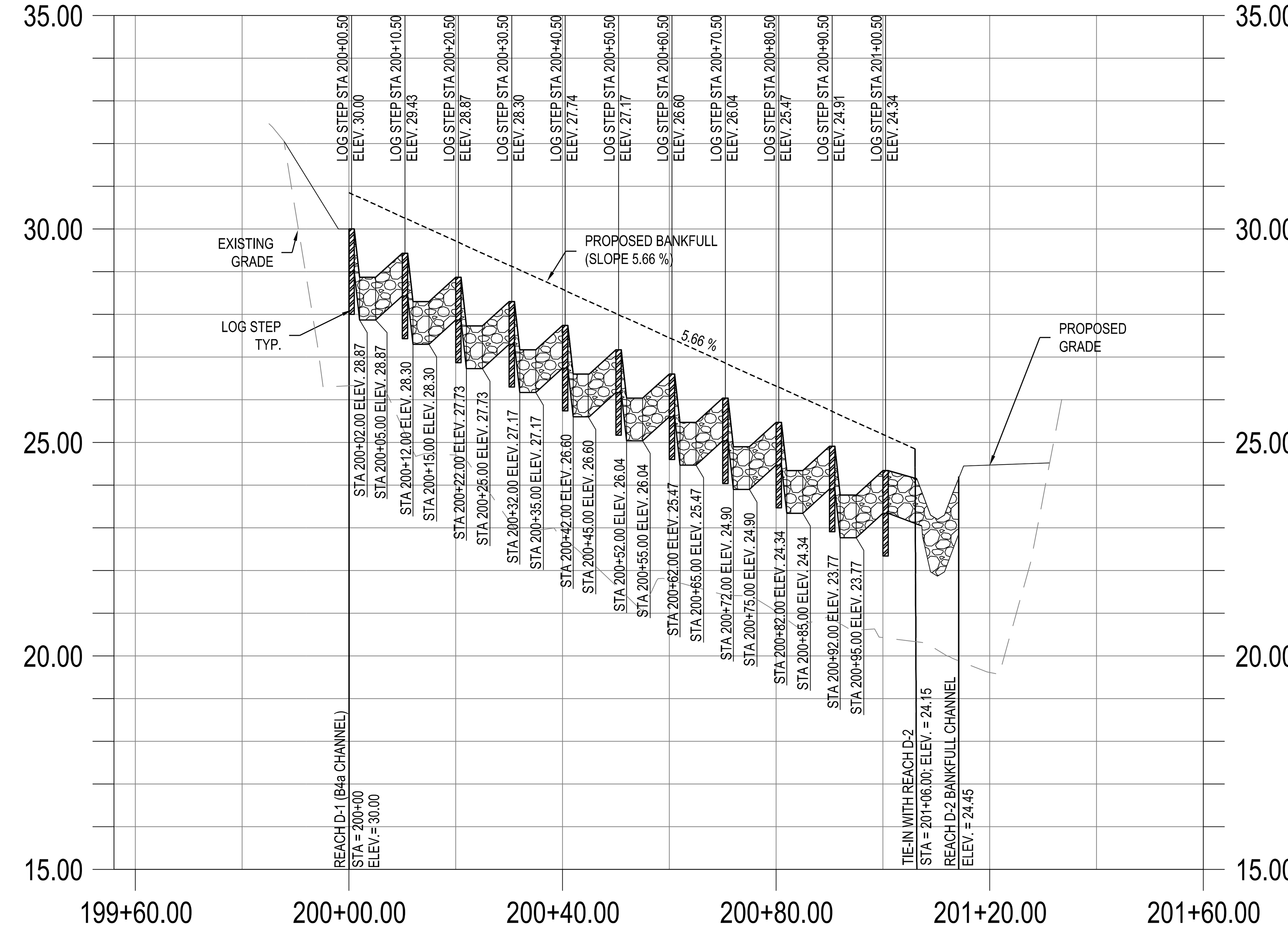
WATERGATE COURT STREAM RESTORATION

PROFILE VIEW

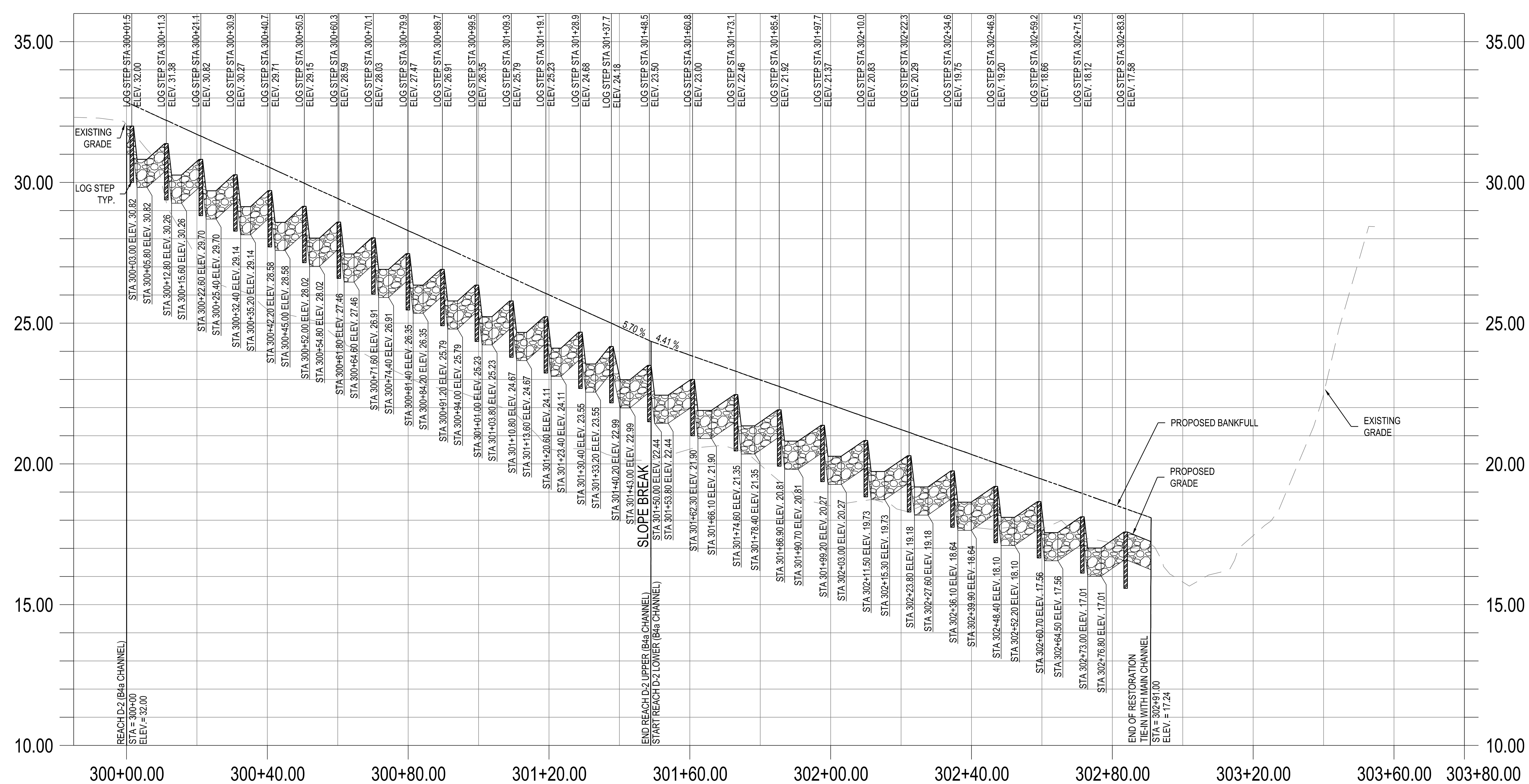
Drawn By : ST
Designed By : ST
Reviewed By : BWA
Drawing No. PR-03 OF PR-04

Scale : AS SHOWN
Date : NOVEMBER 2024
Sheet No. 25 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



PROFLE VIEW OF REACH D-1 STA 200+00 TO 201+06



PROFLE VIEW OF REACH D-2 STA 300+00 TO 302+91

NOTE: SEE STREAM SUBSTRATE MIXTURE TABLE ON DETAIL SHEET DE-04 AND CROSS SECTION SHEETS XS-01 TO XS-07 FOR SUBSTRATE SPECIFICATIONS. SUBSTRATE DEPTH IS NOT DRAWN TO SCALE.

HORIZONTAL SCALE 1"=20'

20' 0 20' 40'

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE 1"=2.5'

5' 0 2.5' 5'

VERTICAL SCALE: 1"=2.5'

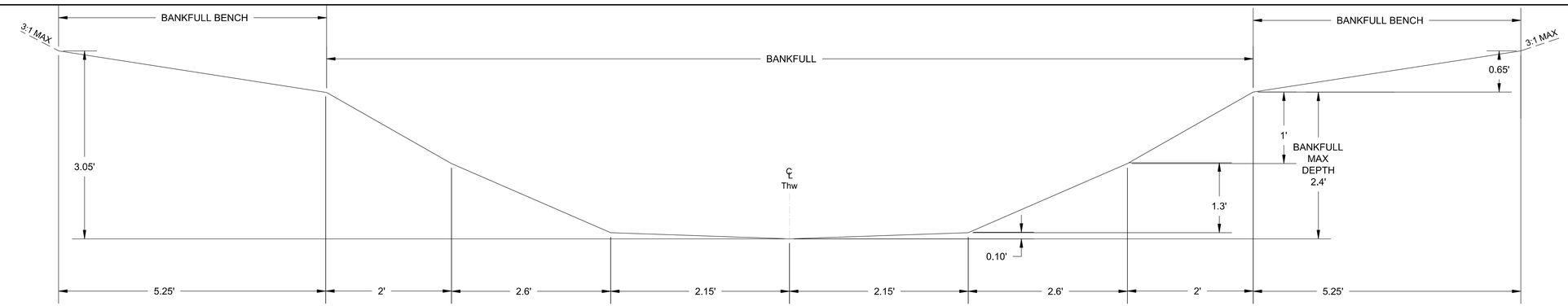
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

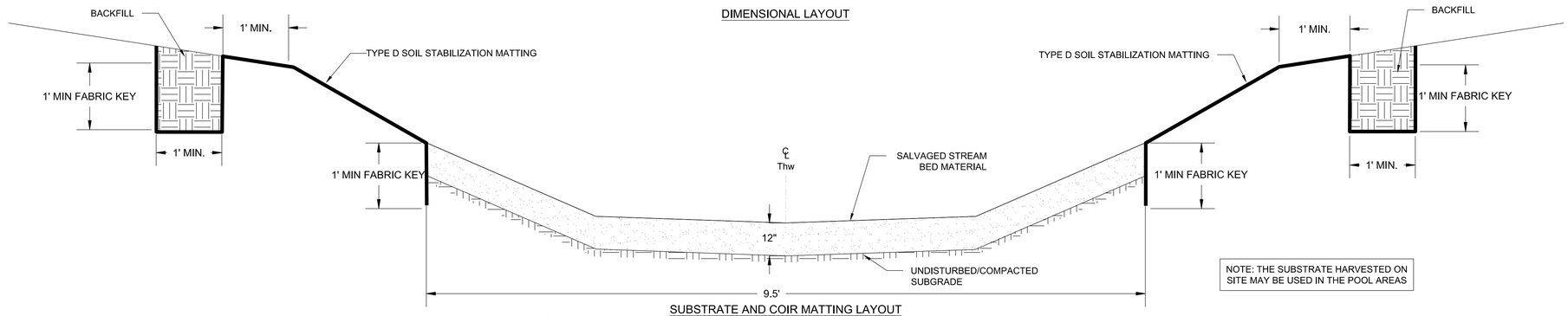
PROFILE VIEW

Drawn By :	ST	Scale :	AS SHOWN
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	PR-04 OF PR-04	Sheet No.	26 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



DIMENSIONAL LAYOUT



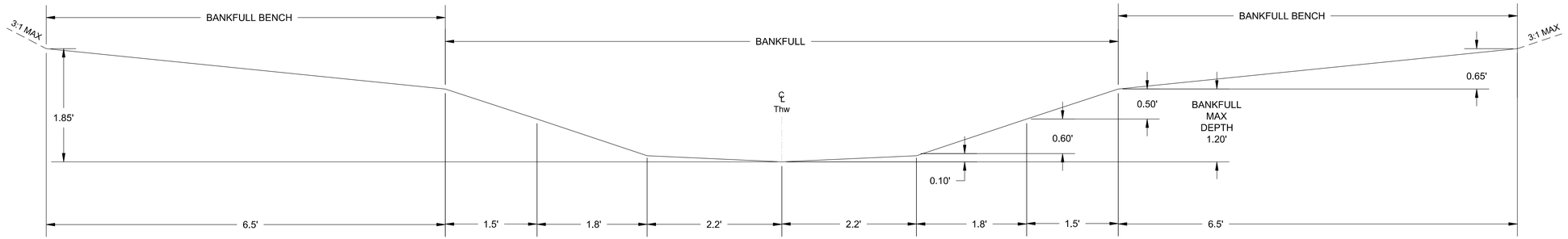
SUBSTRATE AND COIR MATTING LAYOUT

NOTE: THE SUBSTRATE HARVESTED ON SITE MAY BE USED IN THE POOL AREAS

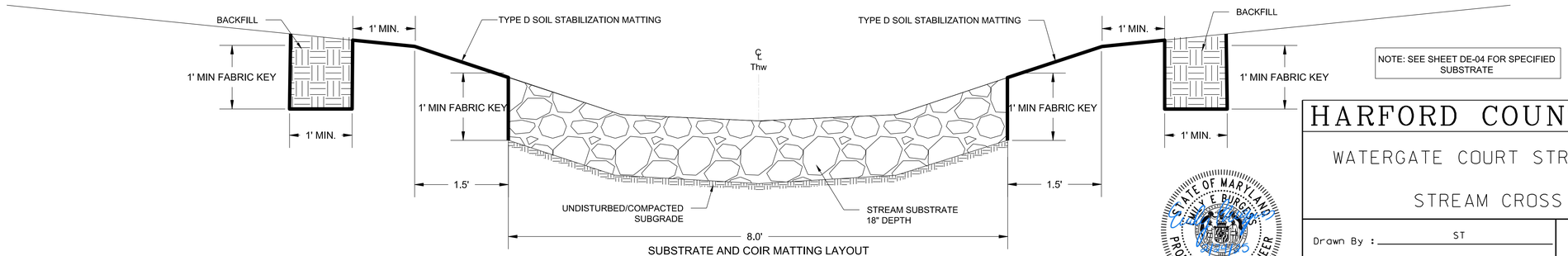
1
XS-01

REACH A (B4c CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



DIMENSIONAL LAYOUT



SUBSTRATE AND COIR MATTING LAYOUT

NOTE: SEE SHEET DE-04 FOR SPECIFIED SUBSTRATE

2
XS-01

REACH A (B4c CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

S/C PLAN # 59898 GP # GRA-014989-2023

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

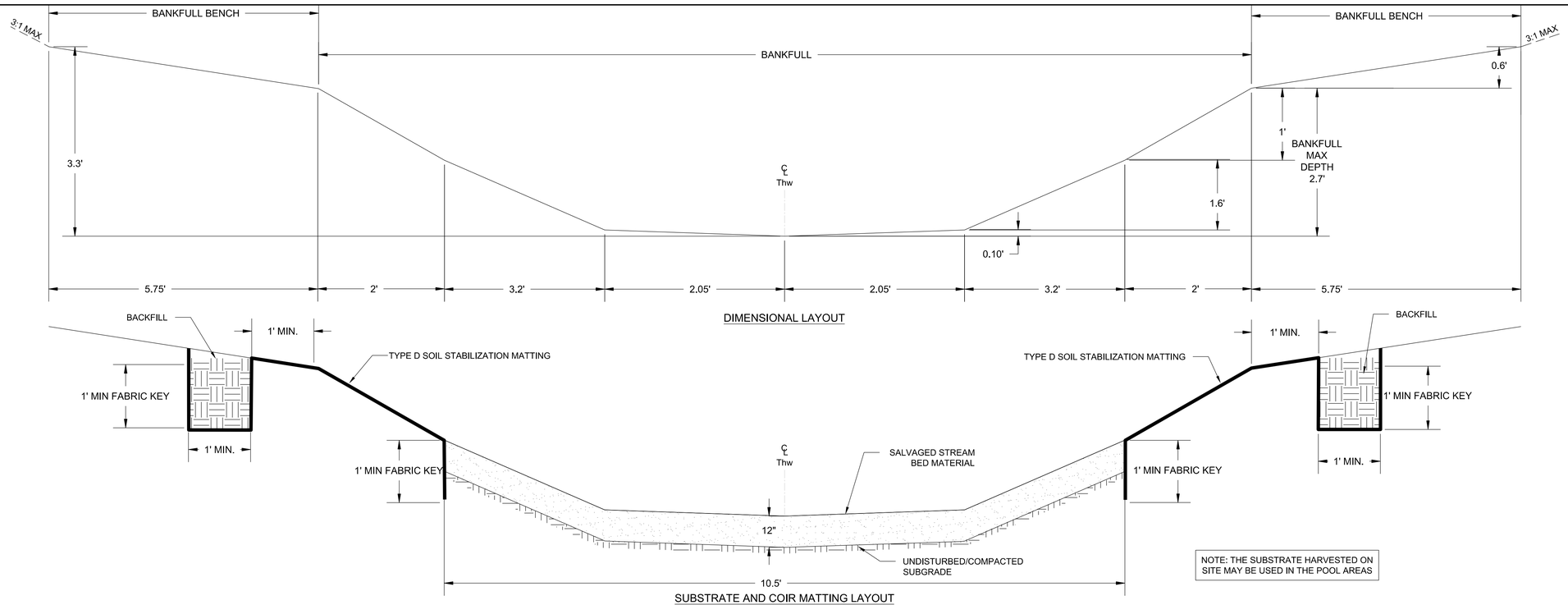
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	XS-01 OF XS-07	Sheet No.	27 of 66

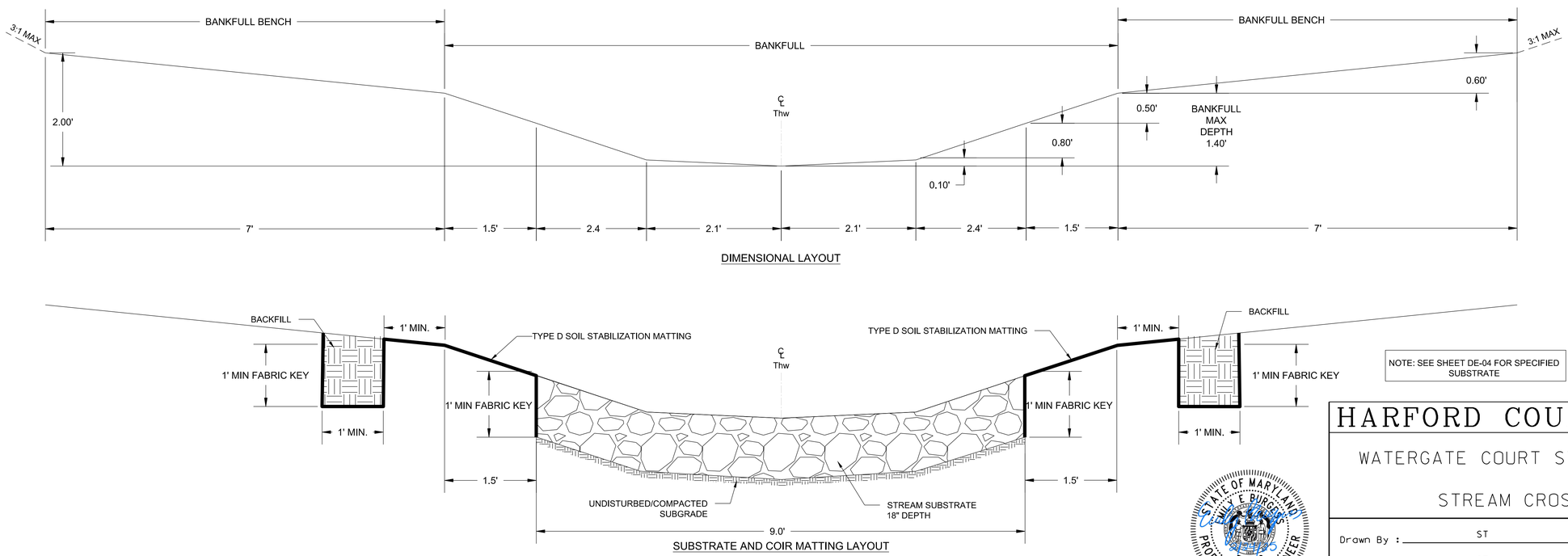
SCALE: 1" = 1'



1
XS-02

REACH B (B4c CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



2
XS-02

REACH B (B4c CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

STATE OF MARYLAND
CAMILLE E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

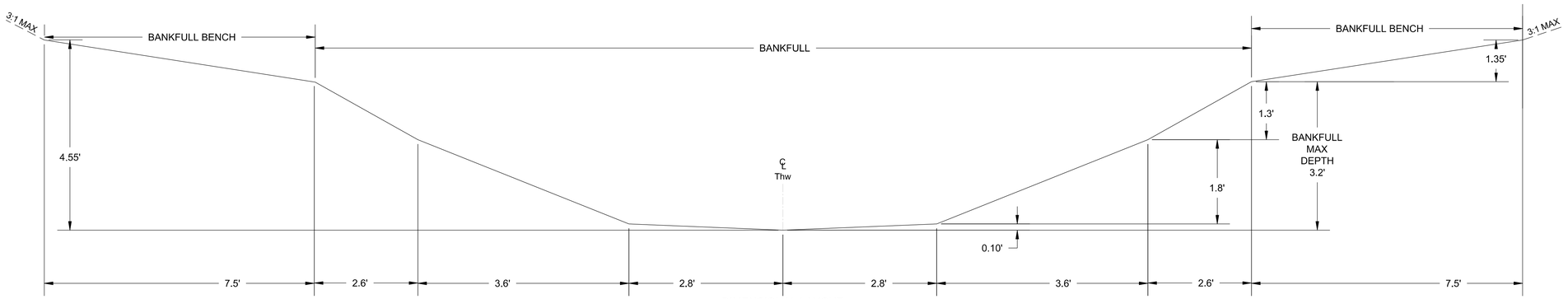
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. XS-02 OF XS-07	Sheet No. 28 of 66

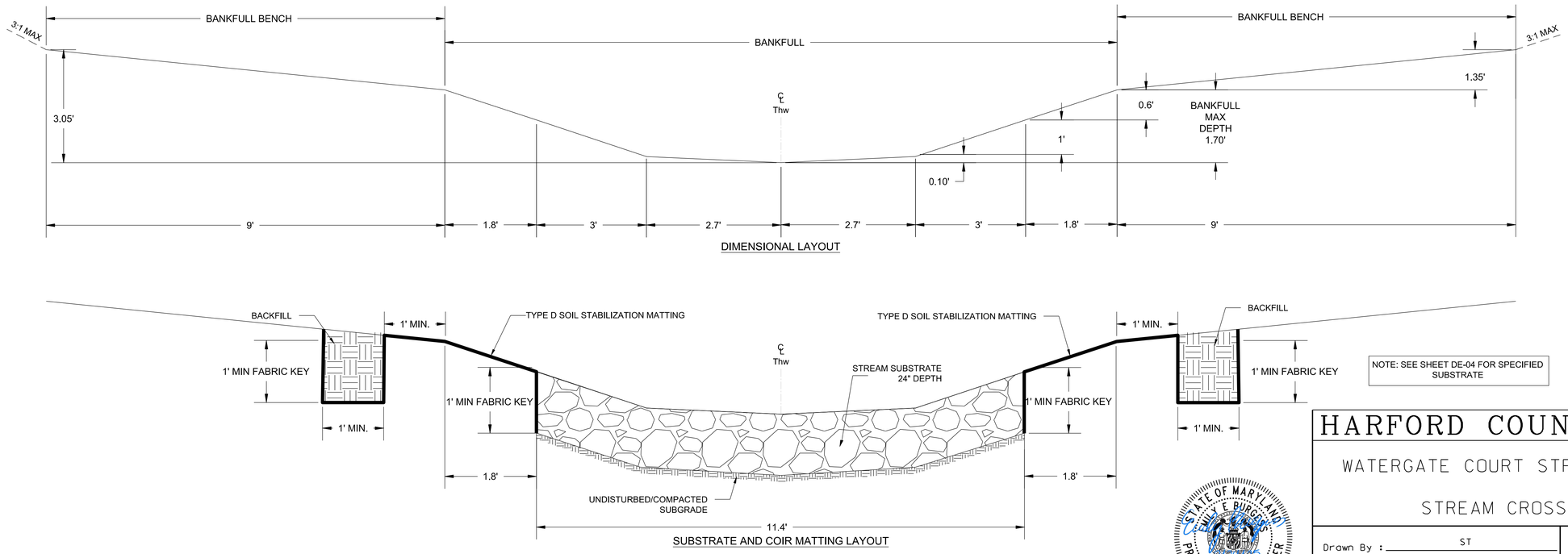
SCALE: 1" = 1'



NOTE: THE SUBSTRATE HARVESTED ON SITE MAY BE USED IN THE POOL AREAS

1 / XS-03 REACH C (B4c CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



NOTE: SEE SHEET DE-04 FOR SPECIFIED SUBSTRATE

2 / XS-03 REACH C (B4c CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

STATE OF MARYLAND · CAMILLE E. BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

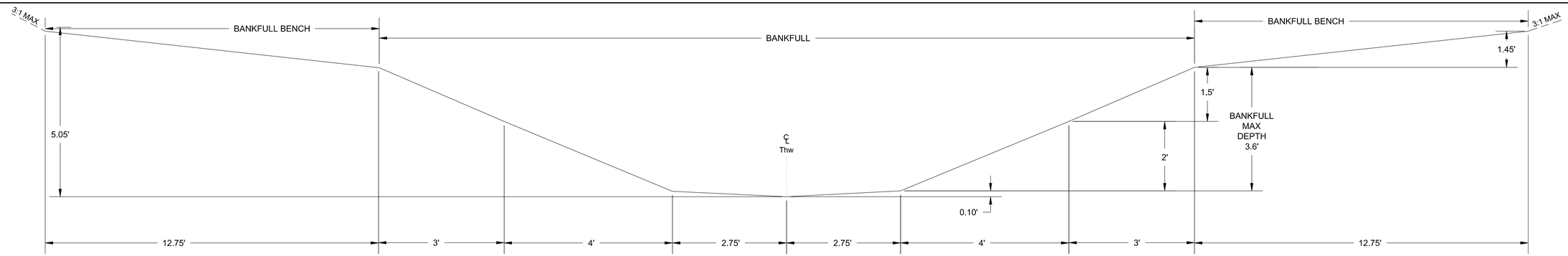
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	XS-03 OF XS-07	Sheet No.	29 of 66

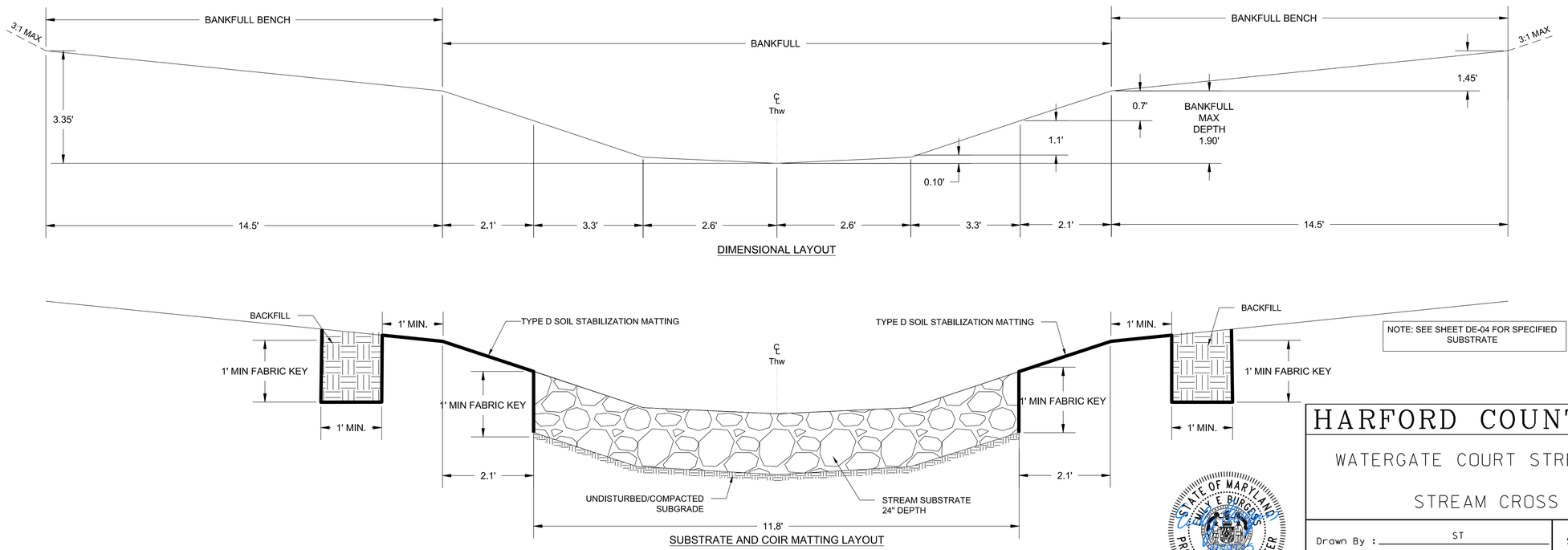
SCALE: 1" = 1'



1 XS-04

REACH C (C4 CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



2 XS-04

REACH C (C4 CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

S/C PLAN # 59898 GP # GRA-014989-2023

STATE OF MARYLAND CARLY E. BURGESS 51576 PROFESSIONAL ENGINEER

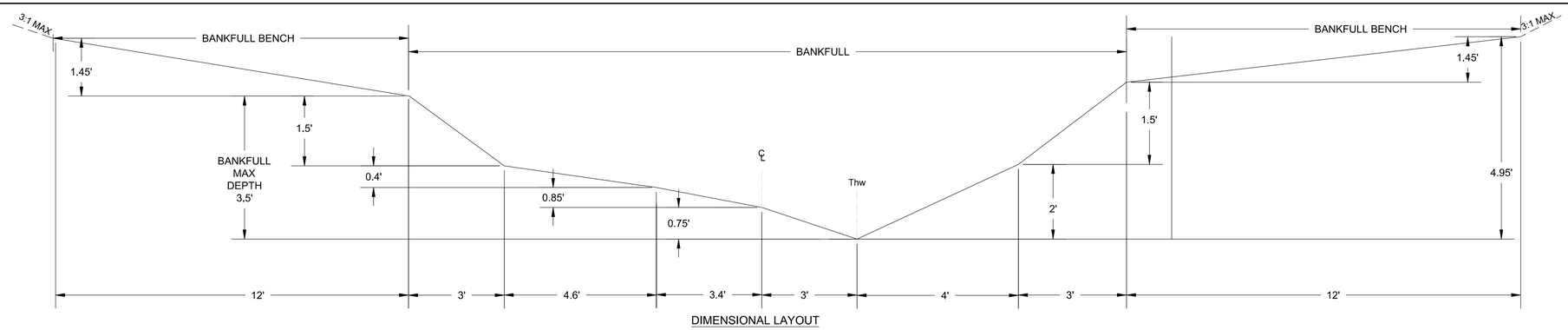
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

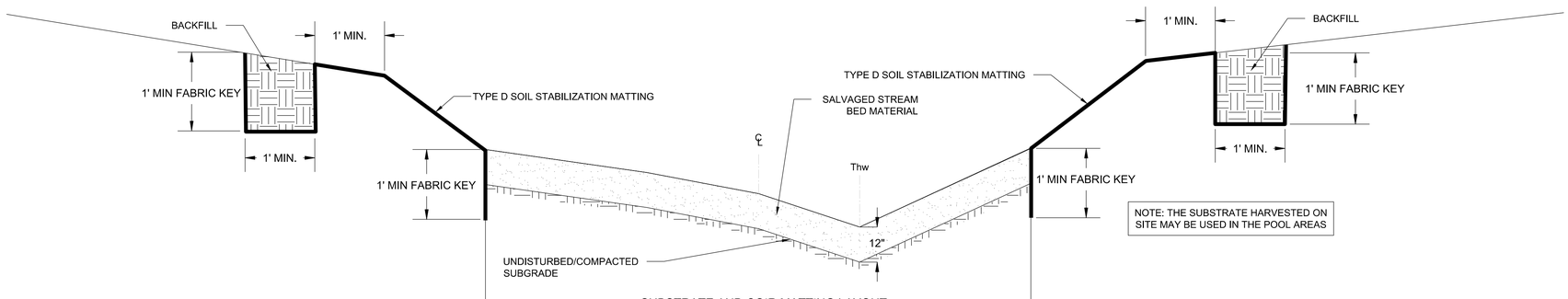
STREAM CROSS SECTIONS

Drawn By : ST		Scale : NTS	
Designed By : ST		Date : NOVEMBER 2024	
Reviewed By : BWA			
Drawing No.	XS-04 OF XS-07	Sheet No.	30 of 66

SCALE: 1" = 1'



DIMENSIONAL LAYOUT



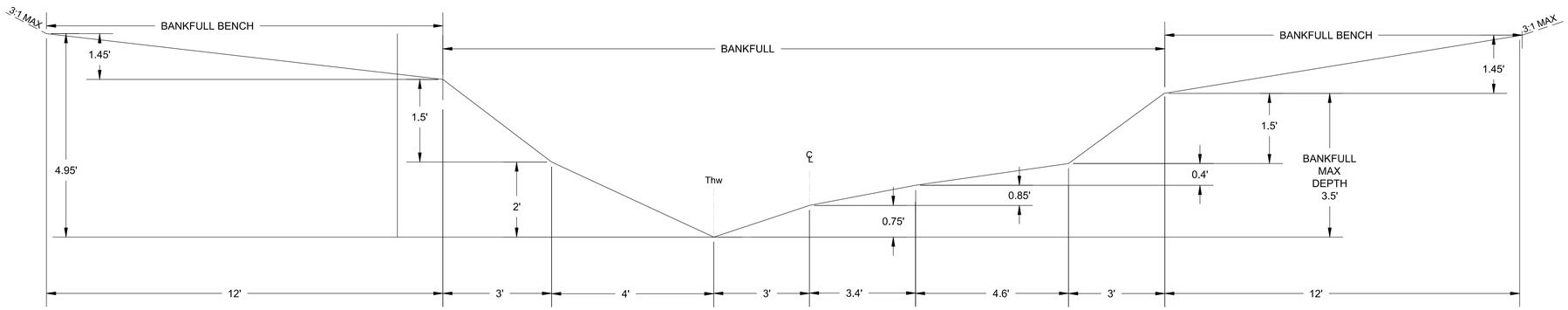
SUBSTRATE AND COIR MATTING LAYOUT

15.2'

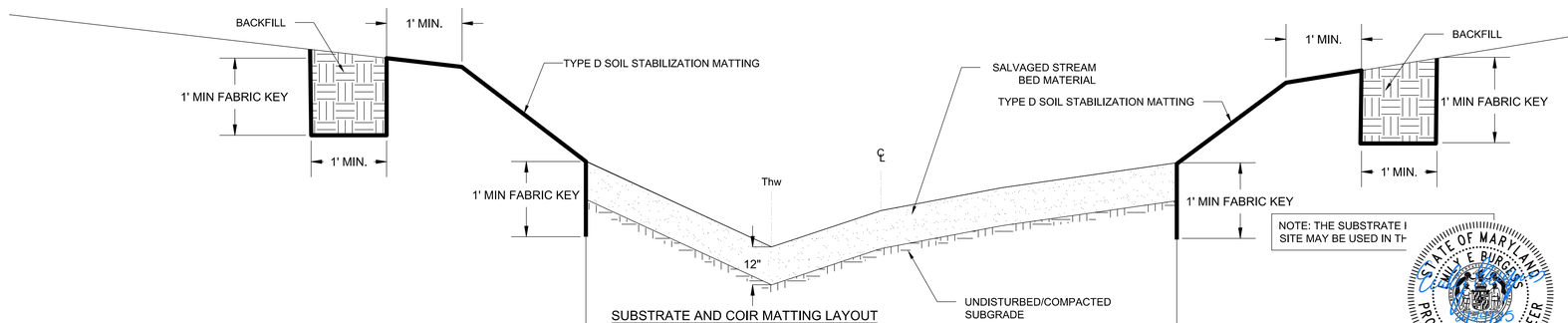
1 / XS-05

REACH C (C4 CHANNEL) TYPICAL RIGHT POOL SECTION

NOT TO SCALE



DIMENSIONAL LAYOUT



SUBSTRATE AND COIR MATTING LAYOUT

17'

NOTE: SEE SHEET DE-04 FOR SPECIFIED SUBSTRATE

2 / XS-05

REACH C (C4 CHANNEL) TYPICAL LEFT POOL SECTION

NOT TO SCALE

STATE OF MARYLAND — CHARLES E. BURGESS — 51576 — PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

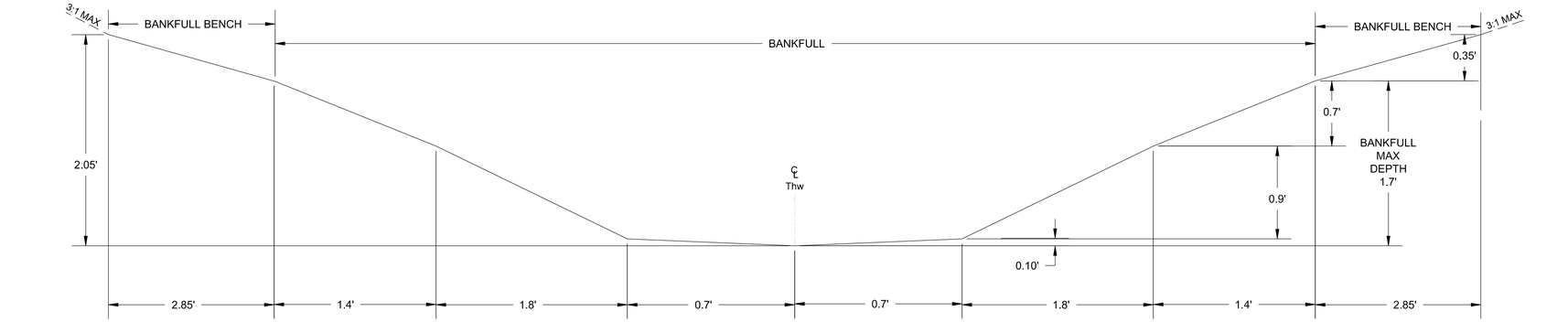
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. XS-05 OF XS-07	Sheet No. 31 of 66

SCALE: 1" = 10'

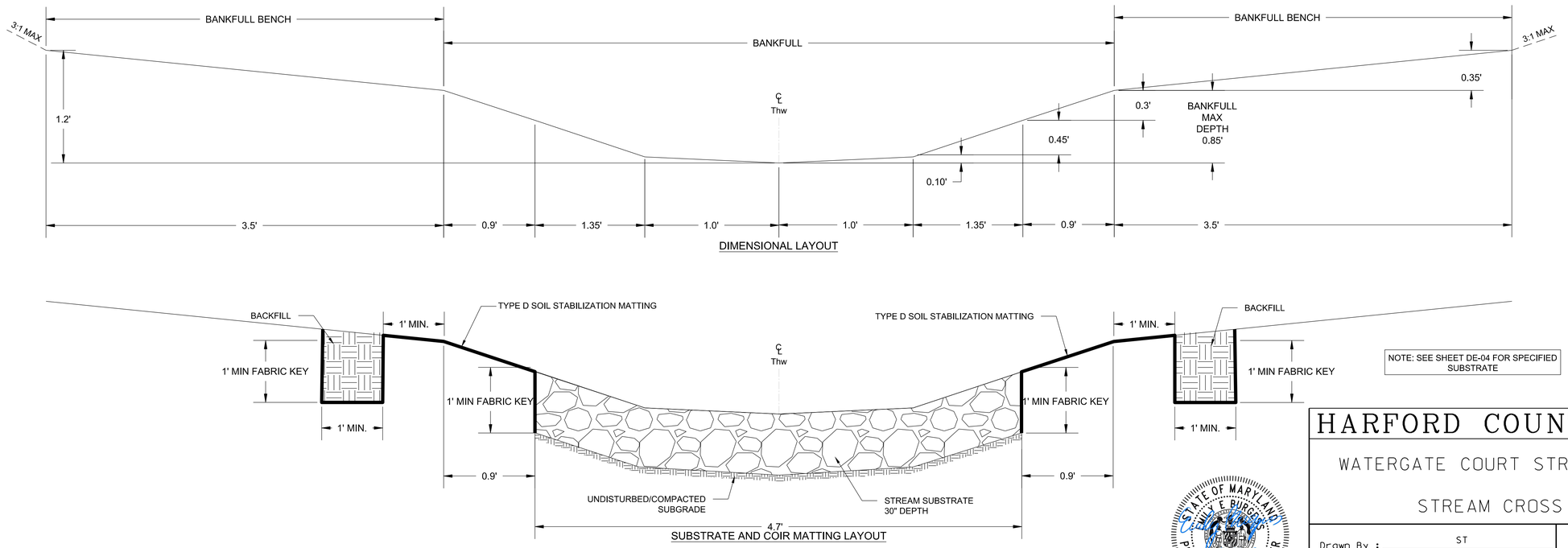


NOTE: THE SUBSTRATE HARVESTED ON SITE MAY BE USED IN THE POOL AREAS

1
XS-06

REACH D-1 & D-2 UPPER (B4a CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



NOTE: SEE SHEET DE-04 FOR SPECIFIED SUBSTRATE

2
XS-06

REACH D-1 & D-2 UPPER (B4a CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

STATE OF MARYLAND · CHARLES E. BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

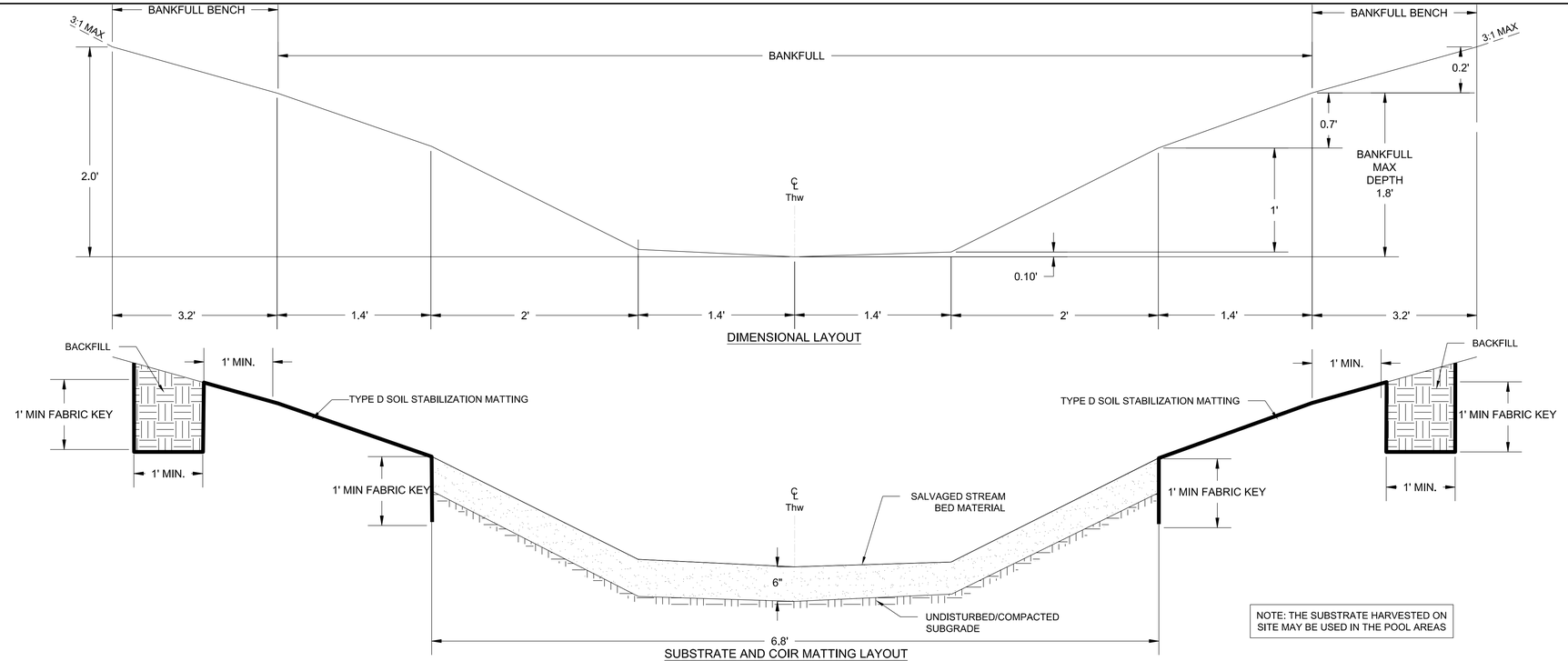
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	XS-06 OF XS-07	Sheet No.	32 of 66

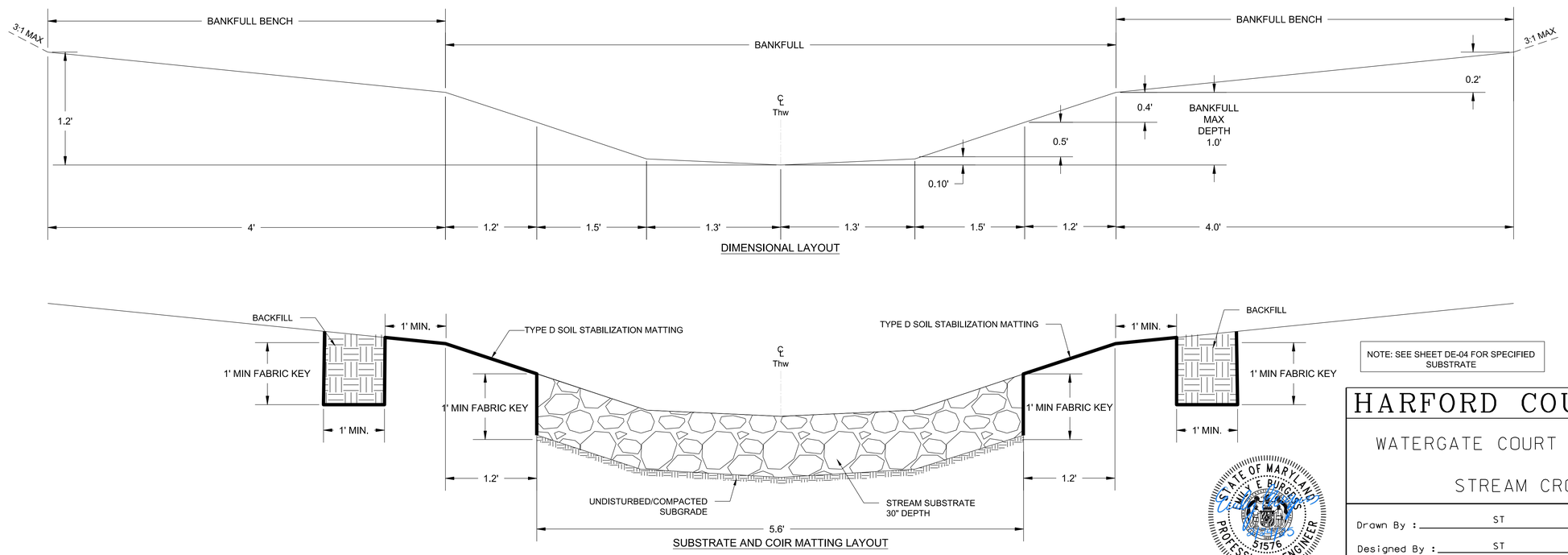
SCALE: 1" = 1'



1
XS-07

REACH D-2 LOWER (B4a CHANNEL) TYPICAL CENTER POOL SECTION

NOT TO SCALE



2
XS-07

REACH D-2 LOWER (B4a CHANNEL) TYPICAL RIFFLE SECTION

NOT TO SCALE

S/C PLAN # 59898 GP # GRA-014989-2023

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM CROSS SECTIONS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. XS-07 OF XS-07	Sheet No. 33 of 66

SCALE: 1" = 1'

REACH A STRUCTURES

REACH A IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
0+37 ROCK CROSS VANE					
1	643609.70	1507327.21	36.02	5.0%	Arm Tie
2	643608.62	1507321.70	35.74		Arm Tip
3	643607.01	1507320.79	35.74		Center
4	643605.40	1507319.88	35.74		Arm Tip
5	643598.52	1507324.87	36.16	5.0%	Arm Tie
0+80 LOG CROSS VANE					
1	643597.37	1507370.99	35.94	5.0%	Arm Tie
2	643596.68	1507362.52	35.52		Arm Tip
3	643594.87	1507362.15	35.52		Center
4	643593.08	1507361.68	35.52		Arm Tip
5	643588.38	1507364.34	35.79	5.0%	Arm Tie
1+30 LOG CROSS VANE					
1	643556.77	1507400.19	35.53	5.0%	Arm Tie
2	643558.59	1507394.88	35.25		Arm Tip
3	643557.65	1507393.29	35.25		Center
4	643556.71	1507391.69	35.25		Arm Tip
5	643548.25	1507392.45	35.67	5.0%	Arm Tie
1+80 LOG CROSS VANE					
1	643517.70	1507429.99	35.26	5.0%	Arm Tie
2	643518.74	1507424.47	34.98		Arm Tip
3	643517.58	1507423.03	34.98		Center
4	643516.42	1507421.59	34.98		Arm Tip
5	643508.15	1507423.55	35.41	5.0%	Arm Tie
2+33 LOG CROSS VANE					
1	643495.13	1507476.88	35.12	5.0%	Arm Tie
2	643494.07	1507468.45	34.70		Arm Tip
3	643492.31	1507467.87	34.70		Center
4	643490.55	1507467.29	34.70		Arm Tip
5	643484.69	1507473.44	35.12	5.0%	Arm Tie
2+85 LOG CROSS VANE					
1	643466.66	1507518.19	34.70	5.0%	Arm Tie
2	643466.42	1507512.58	34.42		Arm Tip
3	643464.96	1507511.44	34.42		Center
4	643463.50	1507510.30	34.42		Arm Tip
5	643456.01	1507514.32	34.85	5.0%	Arm Tie
3+25 LOG CROSS VANE					
1	643464.09	1507556.77	34.64	5.0%	Arm Tie
2	643460.06	1507549.29	34.21		Arm Tip
3	643458.21	1507549.38	34.21		Center
4	643456.37	1507549.48	34.21		Arm Tip
5	643453.11	1507557.33	34.64	5.0%	Arm Tie
3+63 LOG CROSS VANE					
1	643466.12	1507590.70	34.28	5.0%	Arm Tie
2	643461.97	1507587.24	34.01		Arm Tip
3	643460.12	1507587.35	34.01		Center
4	643458.27	1507587.43	34.01		Arm Tip
5	643456.07	1507595.64	34.43	5.0%	Arm Tie
4+13 ROCK CROSS VANE					
1	643496.40	1507630.62	34.28	5.0%	Arm Tie
2	643488.69	1507627.03	33.86		Arm Tip
3	643487.27	1507628.22	33.86		Center
4	643485.85	1507629.40	33.86		Arm Tip
5	643485.78	1507635.02	34.14	5.0%	Arm Tie

Reach A Bank Reinforcement Structures	N	E	Baseline Start and End Station
Clay Plug			
River Left			
1	643577.07	1507388.22	1+11
2	643532.25	1507418.30	1+66
Clay Plug			
River Right			
1	643492.40	1507450.02	2+16
2	643485.92	1507469.68	2+37
Clay Plug			
River Right			
1	643464.85	1507502.65	2+78
2	643452.21	1507539.49	3+15

REACH B STRUCTURES

Reach B Bank Reinforcement Structures	N	E	Baseline Start and End Station
Clay Plug			
River Right			
1	643411.77	1507677.20	100+35
2	643484.73	1507671.76	101+15

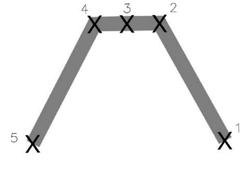
REACH B STRUCTURES CONTINUED

REACH B IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
100+28 ROCK CROSS VANE					
1	643406.15	1507666.45	34.74	5.3%	Arm Tie
2	643403.30	1507671.18	34.45		Arm Tip
3	643403.57	1507673.16	34.45		Center
4	643403.83	1507675.15	34.45		Arm Tip
5	643412.67	1507676.84	34.92	5.3%	Arm Tie
100+68 LOG CROSS VANE					
1	643446.20	1507651.62	34.80	5.3%	Arm Tie
2	643439.39	1507657.64	34.32		Arm Tip
3	643440.12	1507659.50	34.32		Center
4	643440.86	1507661.36	34.32		Arm Tip
5	643445.73	1507664.02	34.61	5.3%	Arm Tie
101+06 ROCK CROSS VANE					
1	643486.90	1507659.92	34.65	5.3%	Arm Tie
2	643478.09	1507661.76	34.17		Arm Tip
3	643477.57	1507663.69	34.17		Center
4	643477.05	1507665.62	34.17		Arm Tip
5	643483.85	1507671.53	34.65	5.3%	Arm Tie

REACH C STRUCTURES

REACH C IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
4+60 LOG CROSS VANE					
1	643514.93	1507674.32	33.81	4.5%	Arm Tie
2	643508.03	1507670.42	33.45		Arm Tip
3	643505.65	1507671.19	33.45		Center
4	643503.27	1507671.95	33.45		Arm Tip
5	643503.16	1507683.85	33.99	4.5%	Arm Tie
5+22 LOG CROSS VANE					
1	643568.65	1507698.92	33.54	4.5%	Arm Tie
2	643556.76	1507698.61	33.00		Arm Tip
3	643556.04	1507701.00	33.00		Center
4	643555.32	1507703.40	33.00		Arm Tip
5	643558.75	1507710.34	33.35	4.5%	Arm Tie
5+81 LOG CROSS VANE					
1	643598.51	1507750.25	32.95	4.5%	Arm Tie
2	643591.17	1507746.68	32.58		Arm Tip
3	643588.93	1507747.79	32.58		Center
4	643586.69	1507748.89	32.58		Arm Tip
5	643587.00	1507760.79	33.11	4.5%	Arm Tie
6+46 LOG CROSS VANE					
1	643649.68	1507788.60	32.65	4.5%	Arm Tie
2	643637.85	1507787.32	32.11		Arm Tip
3	643636.56	1507789.47	32.11		Center
4	643635.28	1507791.61	32.11		Arm Tip
5	643641.95	1507801.46	32.65	4.5%	Arm Tie
7+08 LOG CROSS VANE					
1	643697.31	1507830.49	32.20	4.5%	Arm Tie
2	643685.98	1507826.84	31.67		Arm Tip
3	643684.29	1507828.68	31.67		Center
4	643682.59	1507830.52	31.67		Arm Tip
5	643683.95	1507838.57	32.03	4.5%	Arm Tie
7+68 LOG CROSS VANE					
1	643724.42	1507882.10	31.60	4.5%	Arm Tie
2	643717.27	1507878.16	31.24		Arm Tip
3	643714.97	1507879.15	31.24		Center
4	643712.68	1507880.14	31.24		Arm Tip
5	643712.37	1507891.93	31.77	4.5%	Arm Tie
8+27 LOG CROSS VANE					
1	643769.66	1507914.59	31.35	4.5%	Arm Tie
2	643757.78	1507914.50	30.81		Arm Tip
3	643756.71	1507916.76	30.81		Center
4	643755.64	1507919.02	30.81		Arm Tip
5	643763.18	1507928.12	31.34	4.5%	Arm Tie

POINT GUIDE FOR CONTROL POINTS (CROSS VANE)



NOTE: LOOKING DOWNSTREAM GRADE CONTROL VANE STRUCTURE IDS INCREASE FROM LEFT BANK SIDE TO RIGHT BANK SIDE.

REACH C STRUCTURES CONTINUED

REACH C IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
8+88 LOG CROSS VANE					
1	643813.14	1507954.73	30.92	5.0%	Arm Tie
2	643804.83	1507953.55	30.50		Arm Tip
3	643802.86	1507955.40	30.50		Center
4	643800.89	1507957.24	30.50		Arm Tip
5	643804.74	1507969.14	31.13	5.0%	Arm Tie
9+63 LOG CROSS VANE					
1	643884.01	1507974.45	30.70	5.0%	Arm Tie
2	643871.83	1507977.24	30.07		Arm Tip
3	643871.35	1507979.84	30.07		Center
4	643870.86	1507982.45	30.07		Arm Tip
5	643876.31	1507988.90	30.49	5.0%	Arm Tie
10+30 LOG CROSS VANE					
1	643928.64	1508024.38	30.33	5.0%	Arm Tie
2	643920.59	1508021.82	29.91		Arm Tip
3	643918.37	1508023.26	29.91		Center
4	643916.15	1508024.71	29.91		Arm Tip
5	643917.83	1508037.10	30.53	5.0%	Arm Tie
10+94 CROSS VANE					
1	643982.21	1508050.33	30.10	5.0%	Arm Tie
2	643970.05	1508053.21	29.47		Arm Tip
3	643969.50	1508055.80	29.47		Center
4	643968.95	1508058.40	29.47		Arm Tip
5	643978.88	1508065.98	30.10	5.0%	Arm Tie
11+60 CROSS VANE					
1	644039.09	1508075.55	29.57	5.0%	Arm Tie
2	644031.37	1508077.98	29.17		Arm Tip
3	644030.07	1508080.29	29.17		Center
4	644028.76	1508082.60	29.17		Arm Tip
5	644037.38	1508091.65	29.79	5.0%	Arm Tie
12+41 CROSS VANE					
1	644099.69	1508035.13	29.42	5.0%	Arm Tie
2	644095.26	1508046.82	28.79		Arm Tip
3	644097.10	1508048.73	28.79		Center
4	644098.94	1508050.64	28.79		Arm Tip
5	644107.36	1508049.94	29.21	5.0%	Arm Tie
13+09 CROSS VANE					
1	644166.38	1508009.09	29.11	5.0%	Arm Tie
2	644156.38	1508016.60	28.48		Arm Tip
3	644157.29	1508019.08	28.48		Center
4	644158.20	1508021.57	28.48		Arm Tip
5	644165.39	1508025.25	28.89	5.0%	Arm Tie

CONSTRUCTED RIFFLE STA 13+50 TO STA 13+80	Northing	Easting	Elevation	Description
1	644194.97	1508027.58	28.35	Structure Start
2	644221.58	1508044.48	28.2	Structure End

Reach C Bank Reinforcement Structures	N	E	Baseline Start and End Station
Rootwad			
River Right			
1	643504.01	1507687.62	4+72
2	643529.90	1507700.94	4+96
Rootwad			
River Left			
1	643570.39	1507699.34	5+33
2	643583.79	1507722.62	5+56
Clay Plug			
River Left			
1	643711.32	1507851.76	7+41
2	643726.52	1507886.96	7+80
Rootwad			
River Left			
1	643885.86	1507974.90	9+74
2	643904.58	1507988.18	9+94
Clay Plug			
River Right			
1	643917.00	1508035.82	10+40
2	643953.17	1508060.51	10+79
Rootwad			
River Right			
1	644037.38	1508091.65	11+71
2	644083.83	1508072.93	12+13

NOTE: SEE DETAIL SHEET DE-03 FOR MINIMUM LOG LENGTH FOR FOUNDATION, ROOTWAD AND FACE LOGS BY BANKFULL WIDTH

REACH D-1 STRUCTURES

REACH D-1 IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
200+01 LOG STEP					
	644293.00	1507984.18	30.00		Log Step
200+11 LOG STEP					
	644302.41	1507987.54	29.43		Log Step
200+21 LOG STEP					
	644311.93	1507990.94	28.87		Log Step
200+31 LOG STEP					
	644321.25	1507994.27	28.30		Log Step
200+41 LOG STEP					
	644330.66	1507997.63	27.74		Log Step
200+51 LOG STEP					
	644339.63	1508002.03	27.17		Log Step
200+61 LOG STEP					
	644348.49	1508006.67	26.60		Log Step
200+71 LOG STEP					
	644357.35	1508011.31	26.04		Log Step
200+81 LOG STEP					
	644366.21	1508015.95	25.47		Log Step
200+91 LOG STEP					
	644375.07	1508020.59	24.91		Log Step
201+01 LOG STEP					
	644383.93	1508025.23	24.34		Log Step

REACH D-2 STRUCTURES

REACH D-2 IN-STREAM STRUCTURES (THALWEG STATION)	Northing	Easting	Elevation	Arm Grade	Description
300+02 LOG STEP					
	644354.62	1507907.08	32.00		Log Step
300+11 LOG STEP					
	644363.92	1507910.17	31.38		Log Step
300+21 LOG STEP					
	644373.19	1507913.35	30.82		Log Step
300+31 LOG STEP					
	644379.47	1507920.52	30.27		Log Step
300+41 LOG STEP					
	644378.55	1507930.01	29.71		Log Step
300+51 LOG STEP					
	644374.20	1507938.79	29.15		Log Step
300+60 LOG STEP					
	644370.70	1507947.91	28.59		Log Step
300+70 LOG STEP					
	644370.22	1507957.66	28.03		Log Step
300+80 LOG STEP					
	644372.65	1507967.13	27.47		Log Step
300+90 LOG STEP					
	644375.63	1507976.47	26.91		Log Step
301+00 LOG STEP					
	644378.60	1507985.81	26.35		Log Step
301+09 LOG STEP					
	644381.57	1507995.14	25.79		Log Step
301+19 LOG STEP					
	644384.55	1508004.48	25.23		Log Step
301+29 LOG STEP					
	644387.52	1508013.82	24.68		Log Step
301+38 LOG STEP					
	644390.19	1508022.21	24.18		Log Step
301+49 LOG STEP					
	644393.48	1508032.49	23.50		Log Step
301+61 LOG STEP					
	644397.32	1508044.18	23.00		Log Step
301+73 LOG STEP					
	644400.92	1508055.93	22.46		Log Step
301+85 LOG STEP					
	644401.99	1508068.15	21.92		Log Step
301+98 LOG STEP					
	644399.93	1508080.24	21.37		Log Step
302+10 LOG STEP					
	644394.88	1508091.42	20.83		Log Step
302+22 LOG STEP					
	644387.33	1508101.11	20.29		Log Step
302+35 LOG STEP					
	644379.30	1508110.43	19.75		Log Step
302+47 LOG STEP					
	644371.28	1508119.75	19.20		Log Step
302+59 LOG STEP					
	644363.26	1508129.08	18.66		Log Step
302+72 LOG STEP					
	644355.24	1508138.40	18.12		Log Step
302+84 LOG STEP					
	644347.21	1508147.72	17.58		Log Step

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

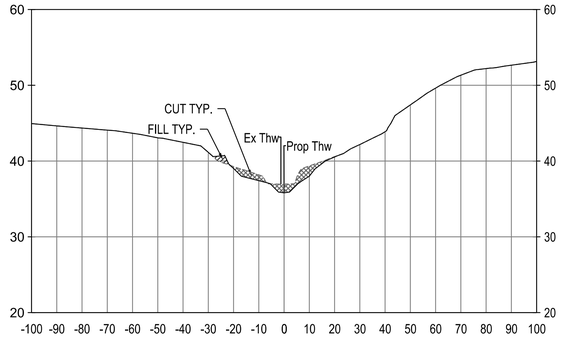
STRUCTURE TABLES

Drawn By : ST
Designed By : ST
Reviewed By : BWA
Scale : NTS
Date : NOVEMBER 2024

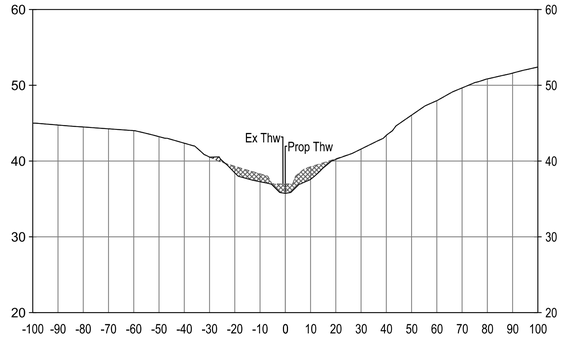
S/C PLAN # 59898 GP # GRA-014989-2023

Drawing No. ST-01 OF ST-01
Sheet No. 34 of 66

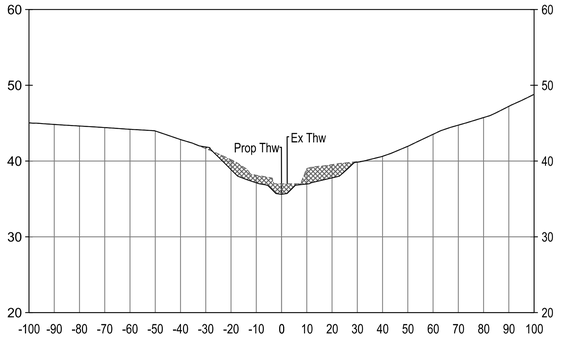
MAIN CHANNEL (REACH A AND C) - STATION 0+25



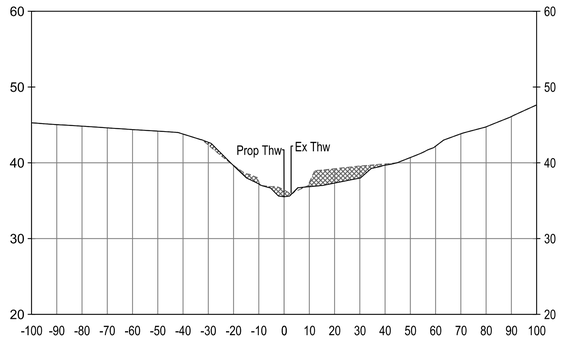
MAIN CHANNEL (REACH A AND C) - STATION 0+37



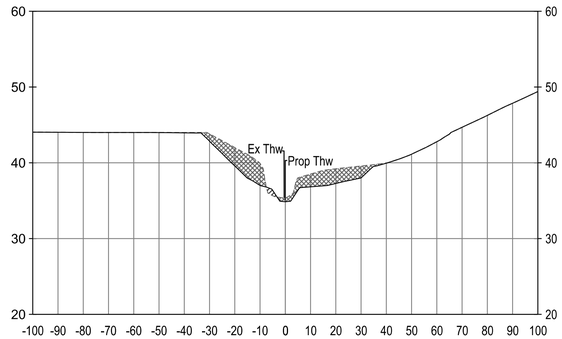
MAIN CHANNEL (REACH A AND C) - STATION 0+65



MAIN CHANNEL (REACH A AND C) - STATION 0+80

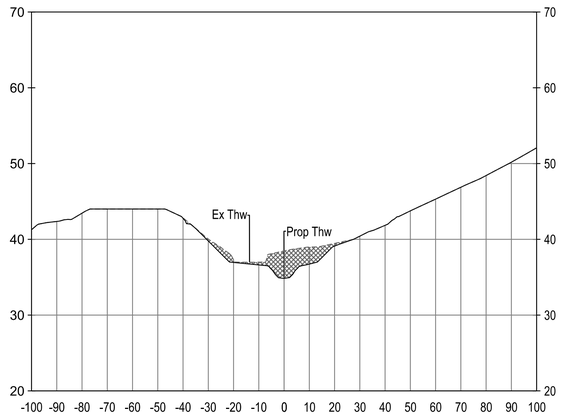


MAIN CHANNEL (REACH A AND C) - STATION 1+00

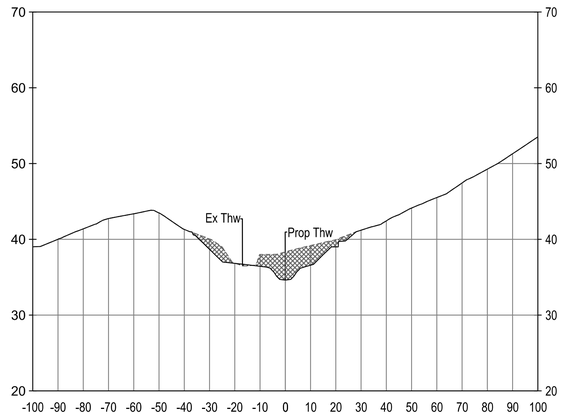


MAIN CHANNEL (REACH A AND C) - STATION 1+30

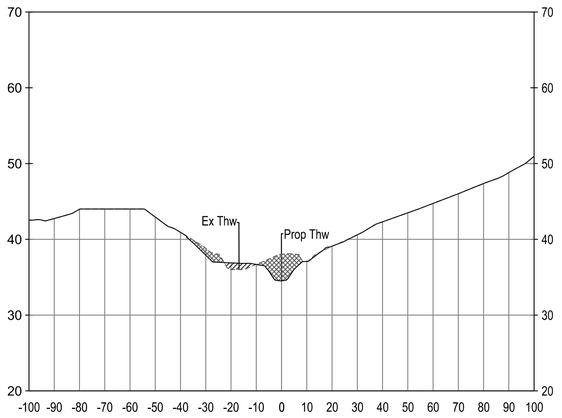
MAIN CHANNEL (REACH A AND C) - STATION 1+55



MAIN CHANNEL (REACH A AND C) - STATION 1+80



MAIN CHANNEL (REACH A AND C) - STATION 2+05



HORIZONTAL SCALE 1"=30'

HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE 1"=10'

VERTICAL SCALE: 1"=10'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

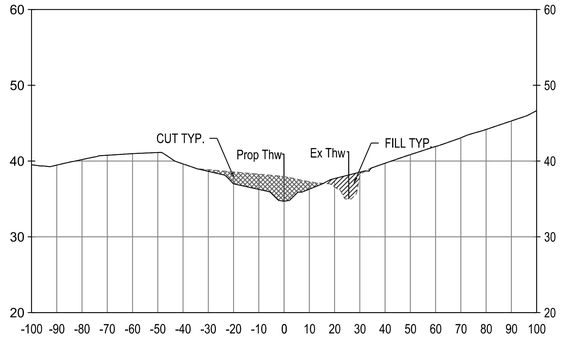
SECTION VIEW

STATE OF MARYLAND
CARLY E. BURGESS
5157
PROFESSIONAL ENGINEER

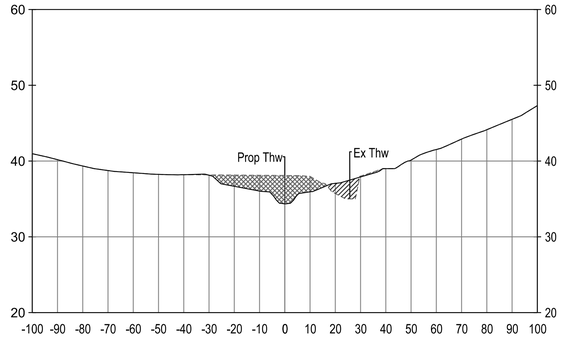
Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-01 OF SE-11	Sheet No. 35 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

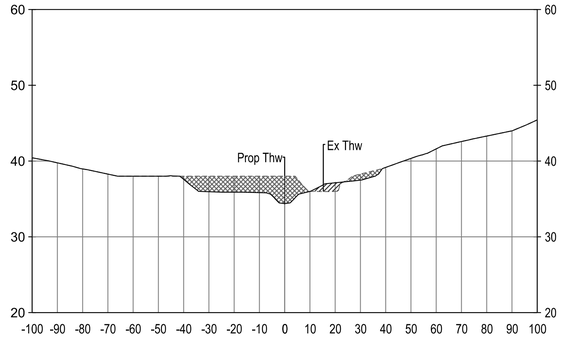
MAIN CHANNEL (REACH A AND C) - STATION 2+33



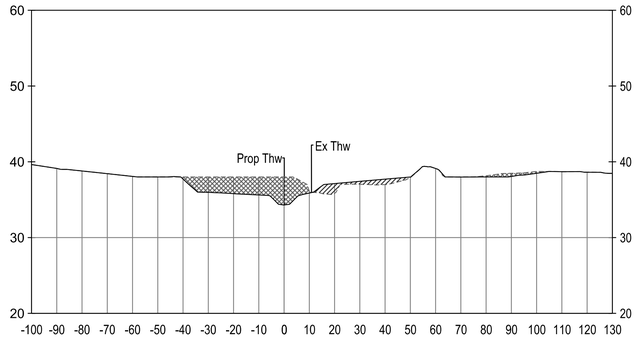
MAIN CHANNEL (REACH A AND C) - STATION 2+60



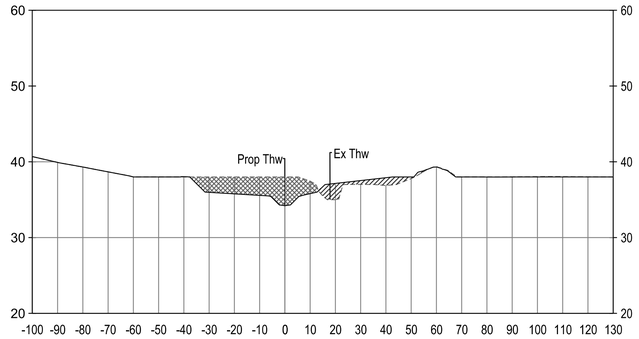
MAIN CHANNEL (REACH A AND C) - STATION 2+85



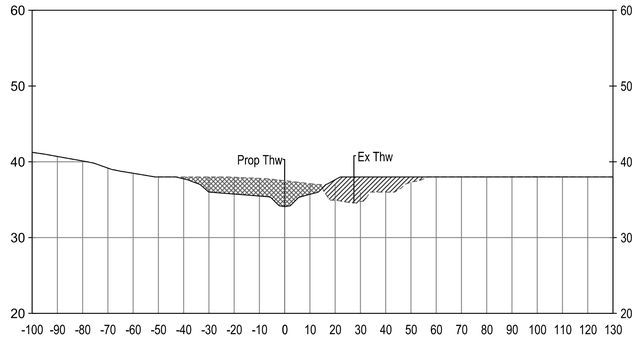
MAIN CHANNEL (REACH A AND C) - STATION 3+10



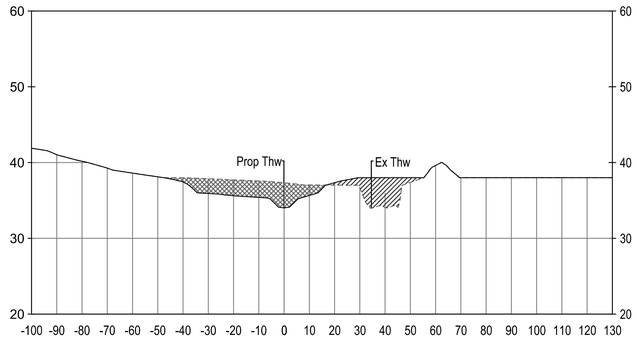
MAIN CHANNEL (REACH A AND C) - STATION 3+25



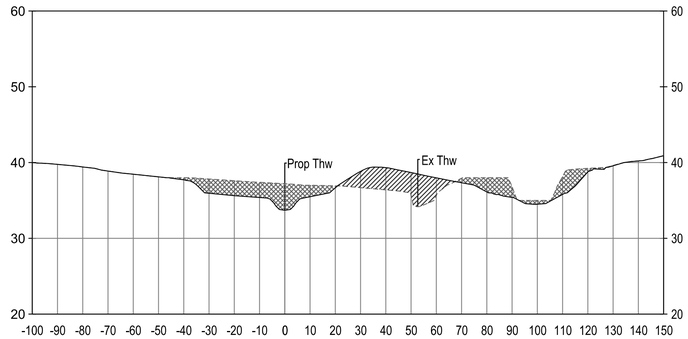
MAIN CHANNEL (REACH A AND C) - STATION 3+50



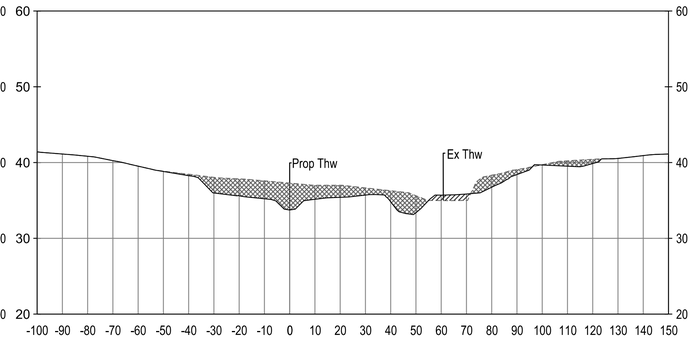
MAIN CHANNEL (REACH A AND C) - STATION 3+63



MAIN CHANNEL (REACH A AND C) - STATION 3+90

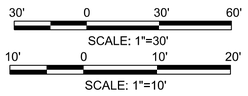


MAIN CHANNEL (REACH A AND C) - STATION 4+13



HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=10'



S/C PLAN # 59898 GP # GRA-014989-2023

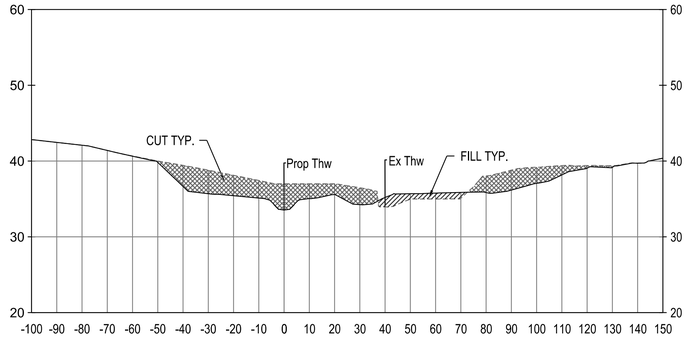
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

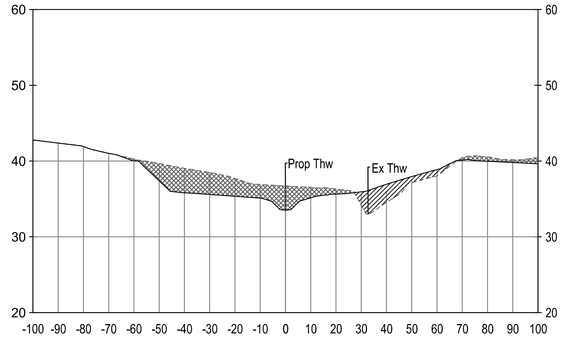
SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-02 OF SE-11	Sheet No. 36 of 66

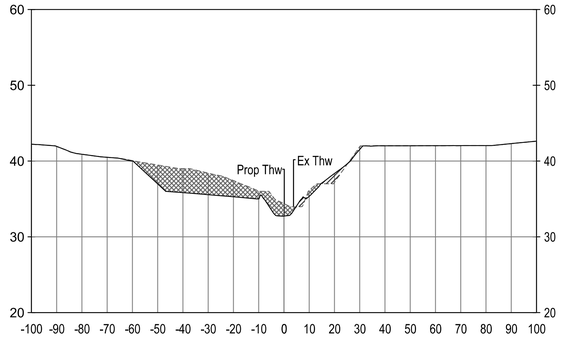
MAIN CHANNEL (REACH A AND C) - STATION 4+40



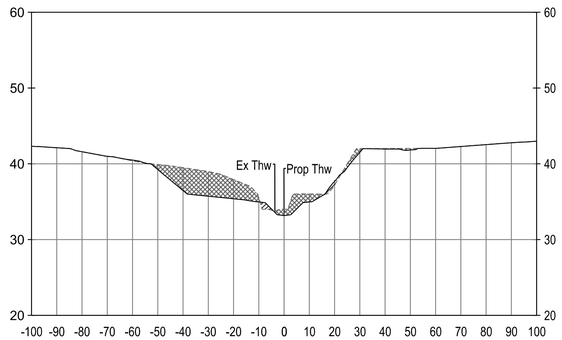
MAIN CHANNEL (REACH A AND C) - STATION 4+60



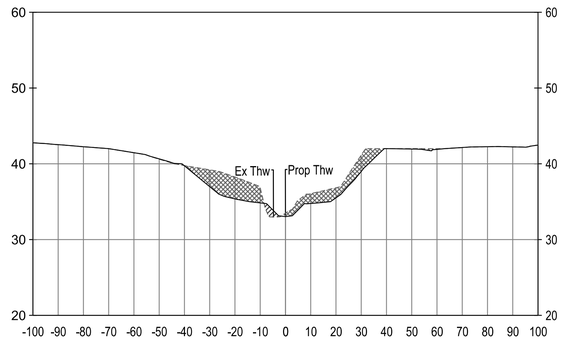
MAIN CHANNEL (REACH A AND C) - STATION 4+85



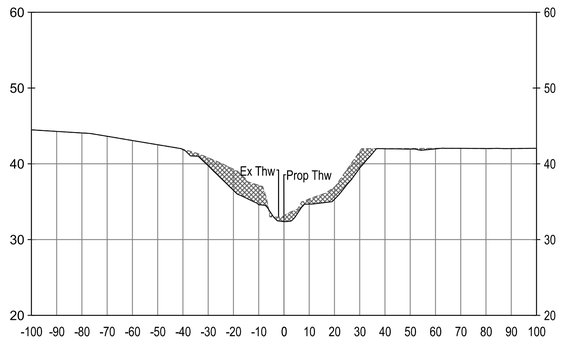
MAIN CHANNEL (REACH A AND C) - STATION 5+05



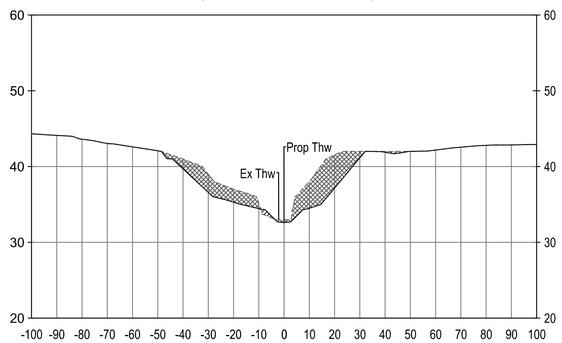
MAIN CHANNEL (REACH A AND C) - STATION 5+22



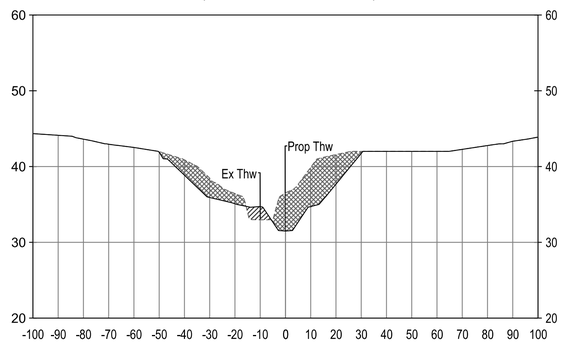
MAIN CHANNEL (REACH A AND C) - STATION 5+47



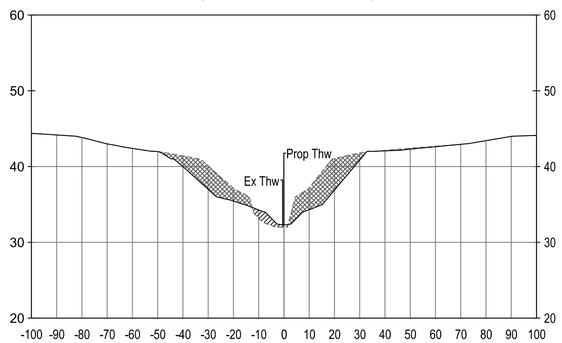
MAIN CHANNEL (REACH A AND C) - STATION 5+81



MAIN CHANNEL (REACH A AND C) - STATION 6+00

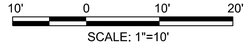


MAIN CHANNEL (REACH A AND C) - STATION 6+25



HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=10'



HARFORD COUNTY, MARYLAND

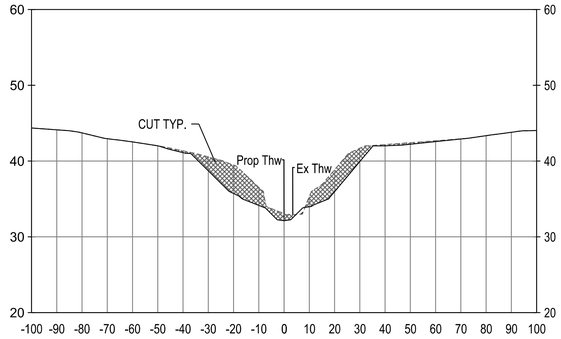
WATERGATE COURT STREAM RESTORATION

SECTION VIEW

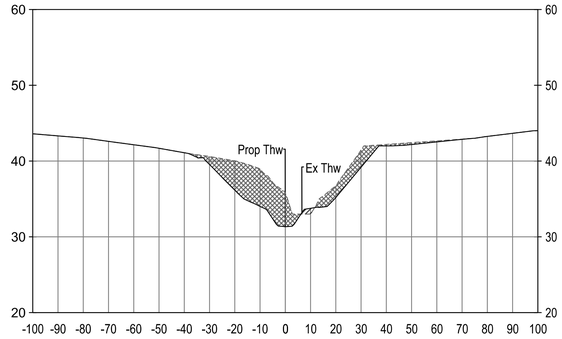
Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-03 OF SE-11	Sheet No. 37 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

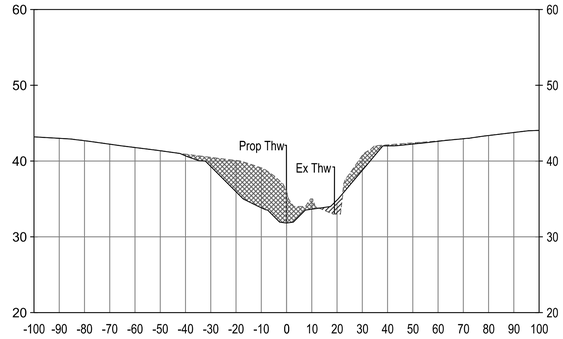
MAIN CHANNEL (REACH A AND C) - STATION 6+46



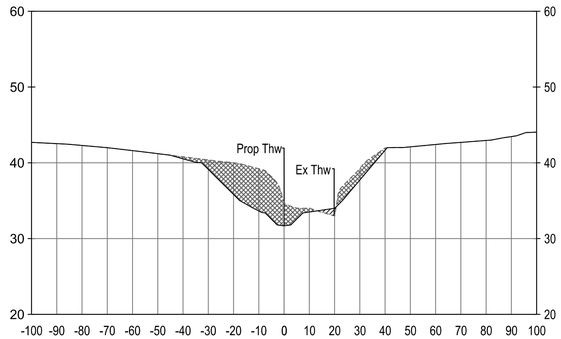
MAIN CHANNEL (REACH A AND C) - STATION 6+70



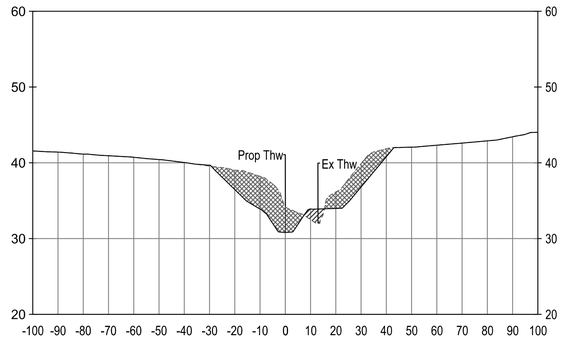
MAIN CHANNEL (REACH A AND C) - STATION 6+90



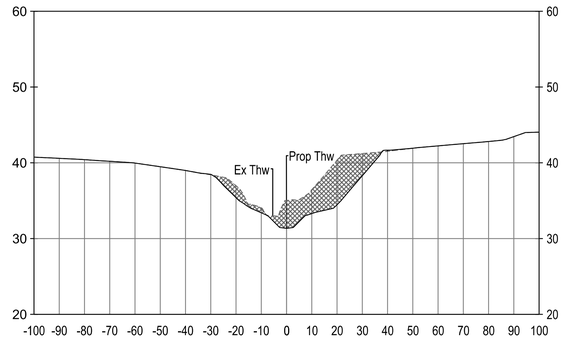
MAIN CHANNEL (REACH A AND C) - STATION 7+08



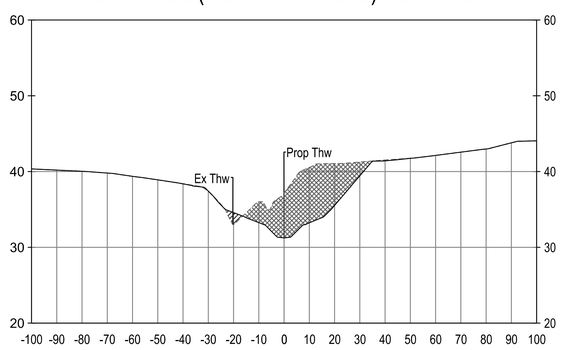
MAIN CHANNEL (REACH A AND C) - STATION 7+30



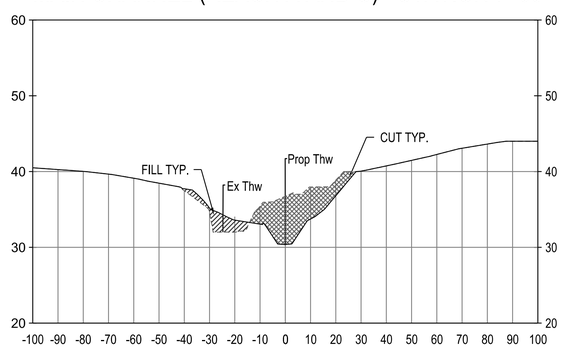
MAIN CHANNEL (REACH A AND C) - STATION 7+55



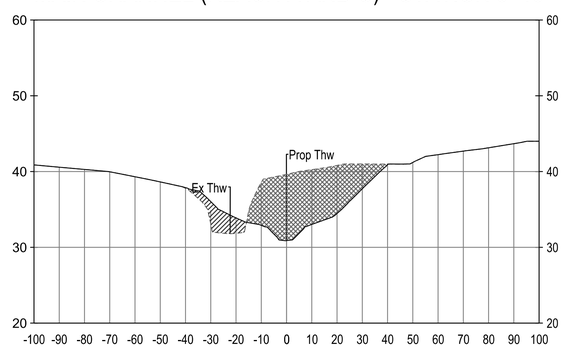
MAIN CHANNEL (REACH A AND C) - STATION 7+68



MAIN CHANNEL (REACH A AND C) - STATION 7+90



MAIN CHANNEL (REACH A AND C) - STATION 8+10



HORIZONTAL SCALE 1"=30'

30' 0 30' 60'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'

10' 0 10' 20'

SCALE: 1"=10'

STATE OF MARYLAND
CHARLES E BURGESS
5157
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

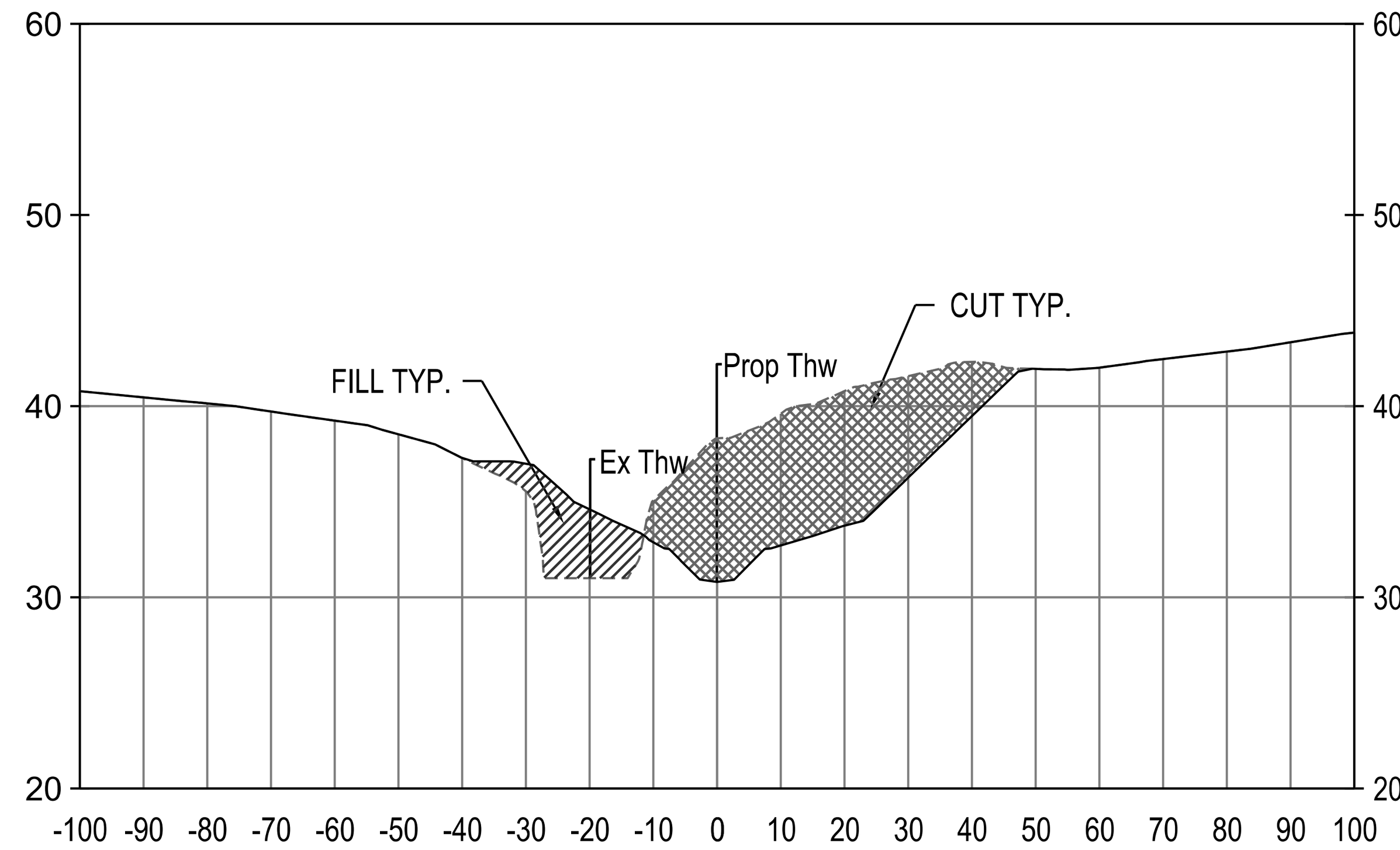
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

SECTION VIEW

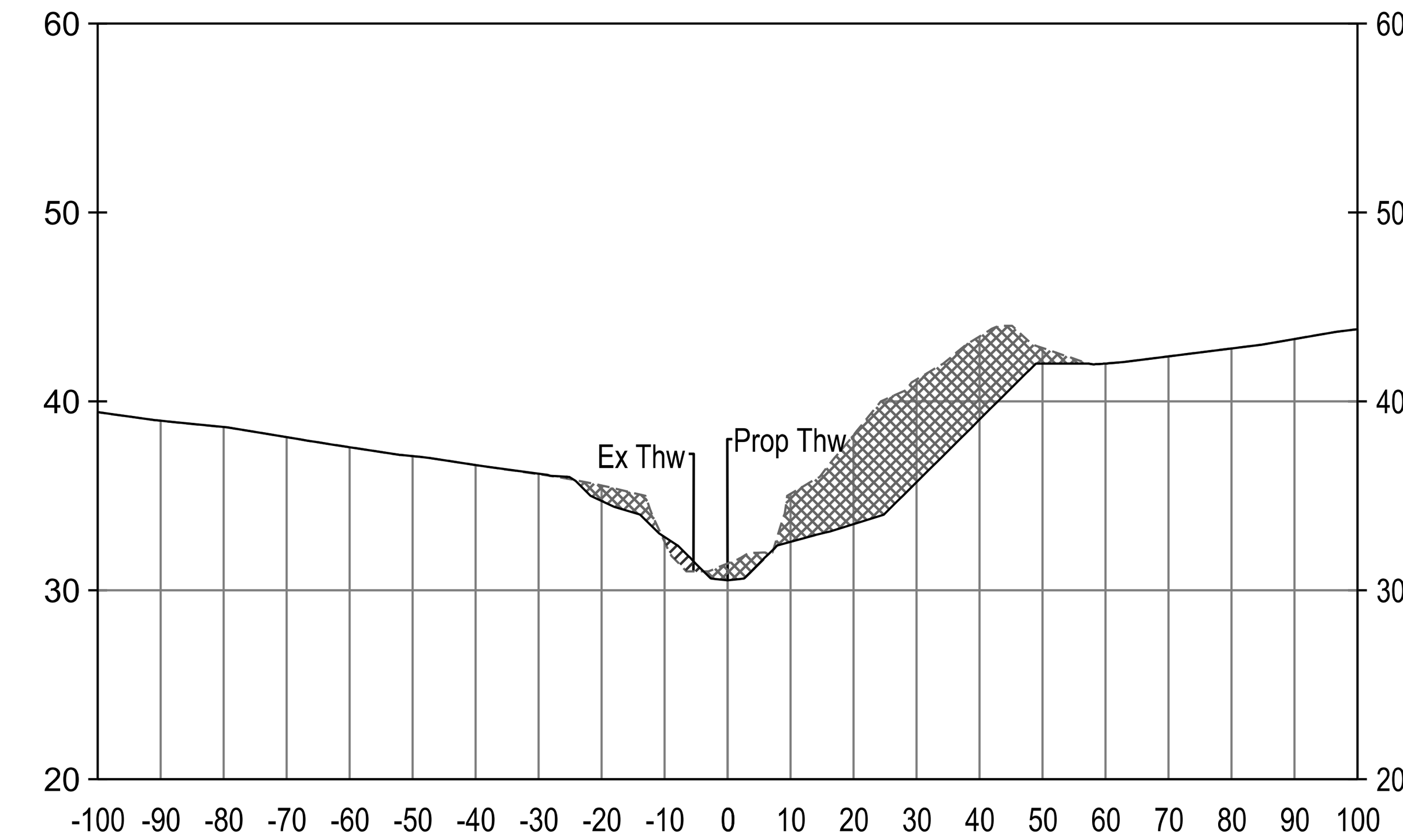
Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-04 OF SE-11	Sheet No. 38 of 66

MAIN CHANNEL (REACH A AND C) - STATION 8+27

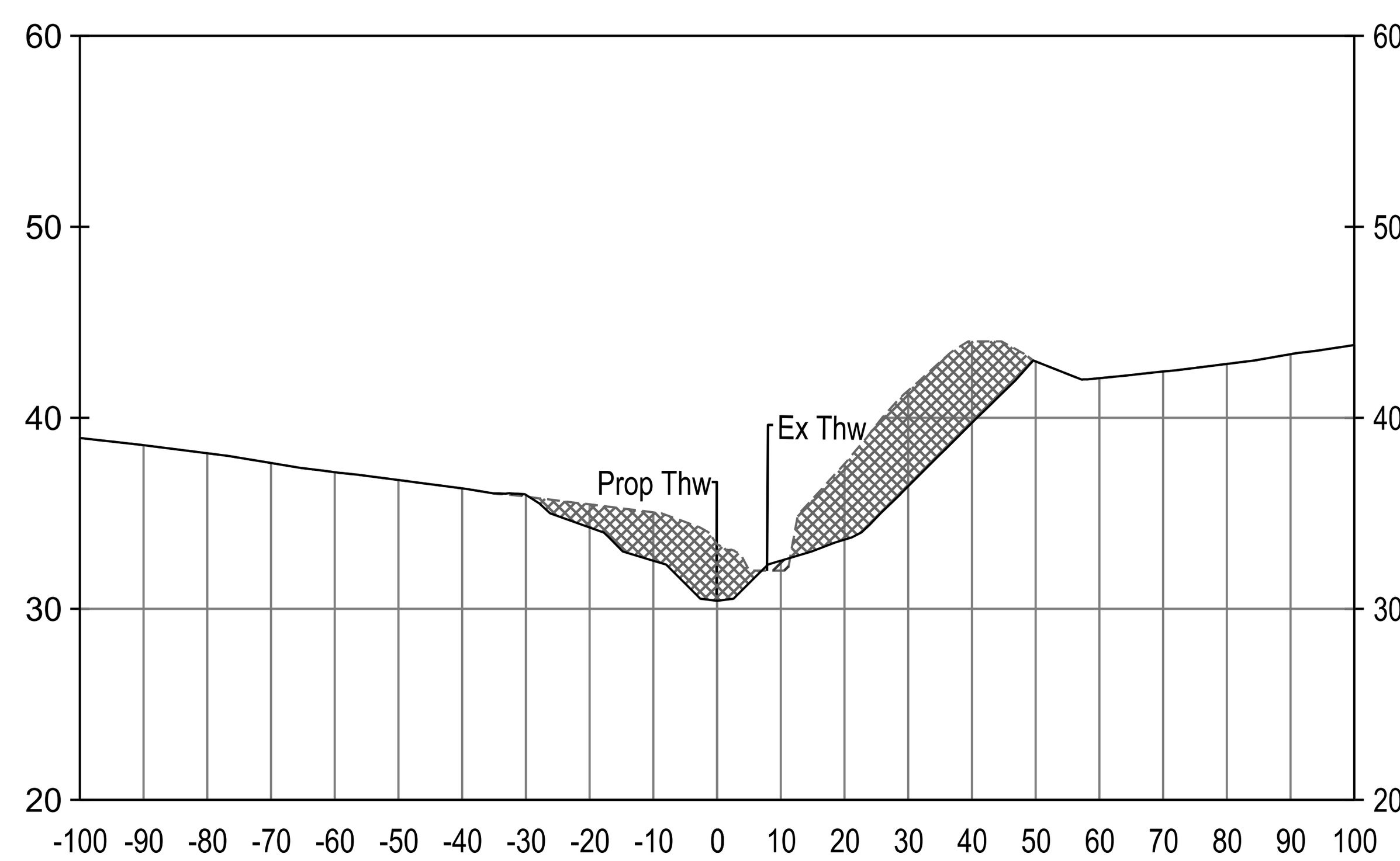


MAIN CHANNEL (REACH A AND C) - STATION 8+50

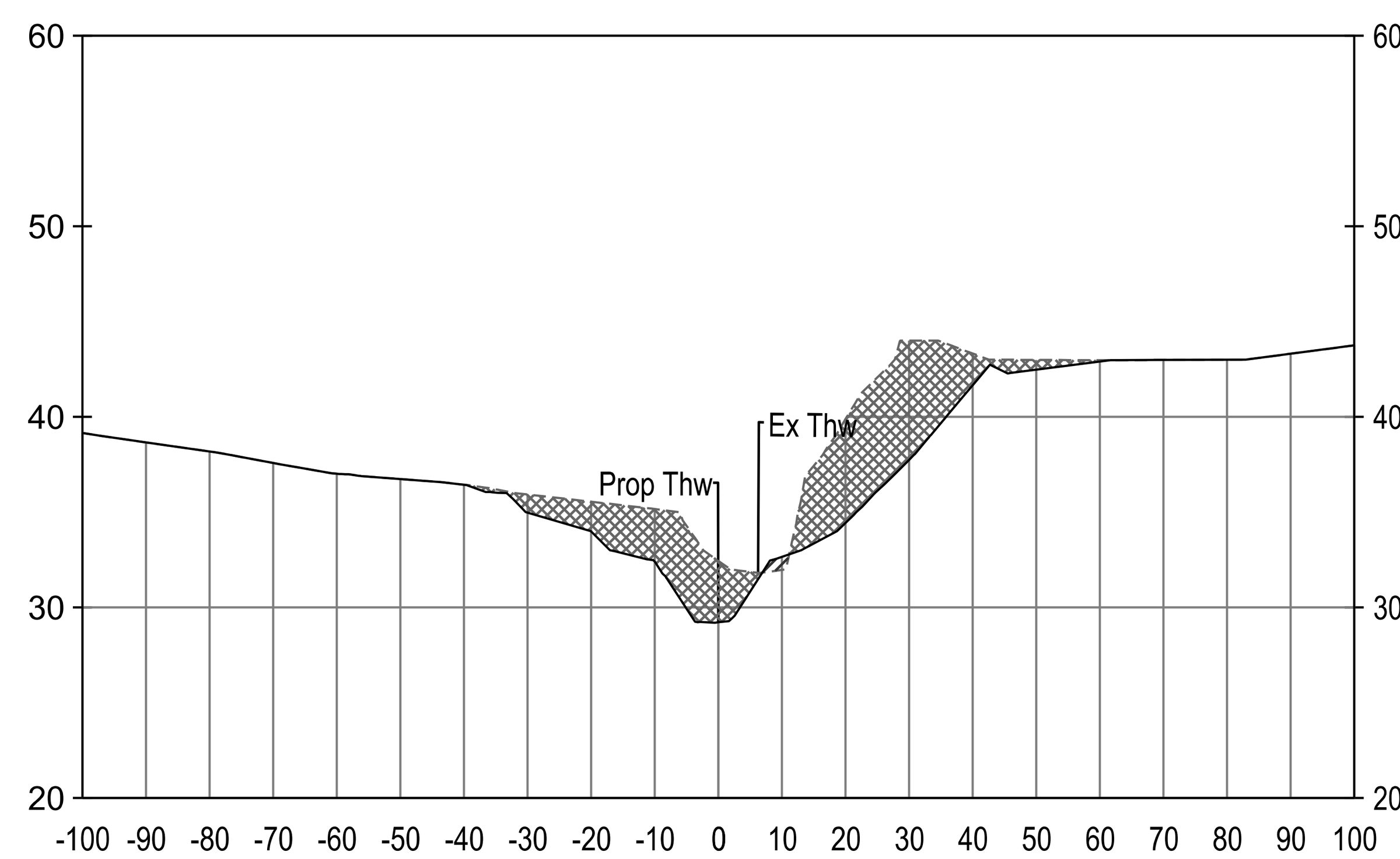
MAIN CHANNEL (REACH A AND C) - STATION 8+70



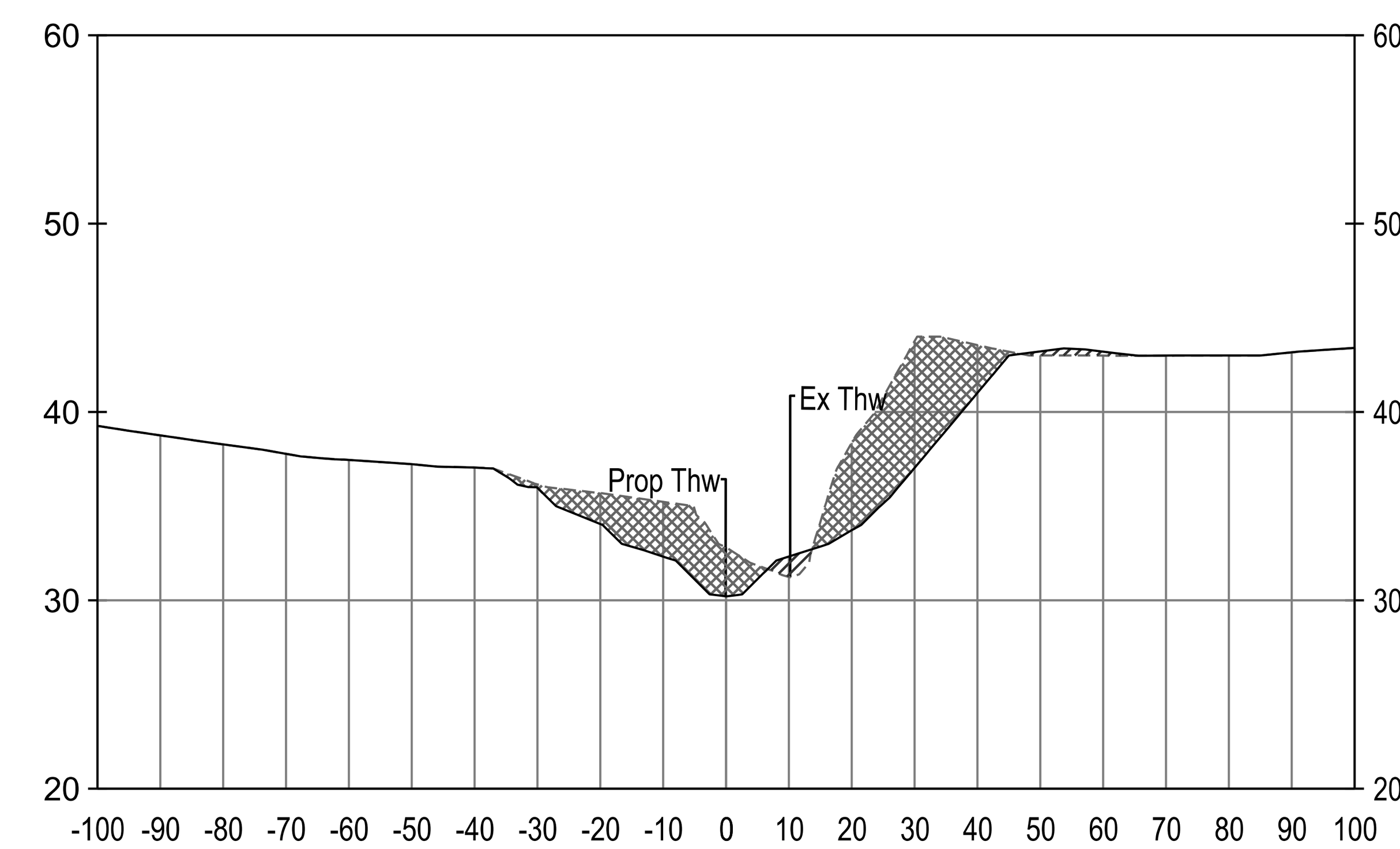
MAIN CHANNEL (REACH A AND C) - STATION 8+88



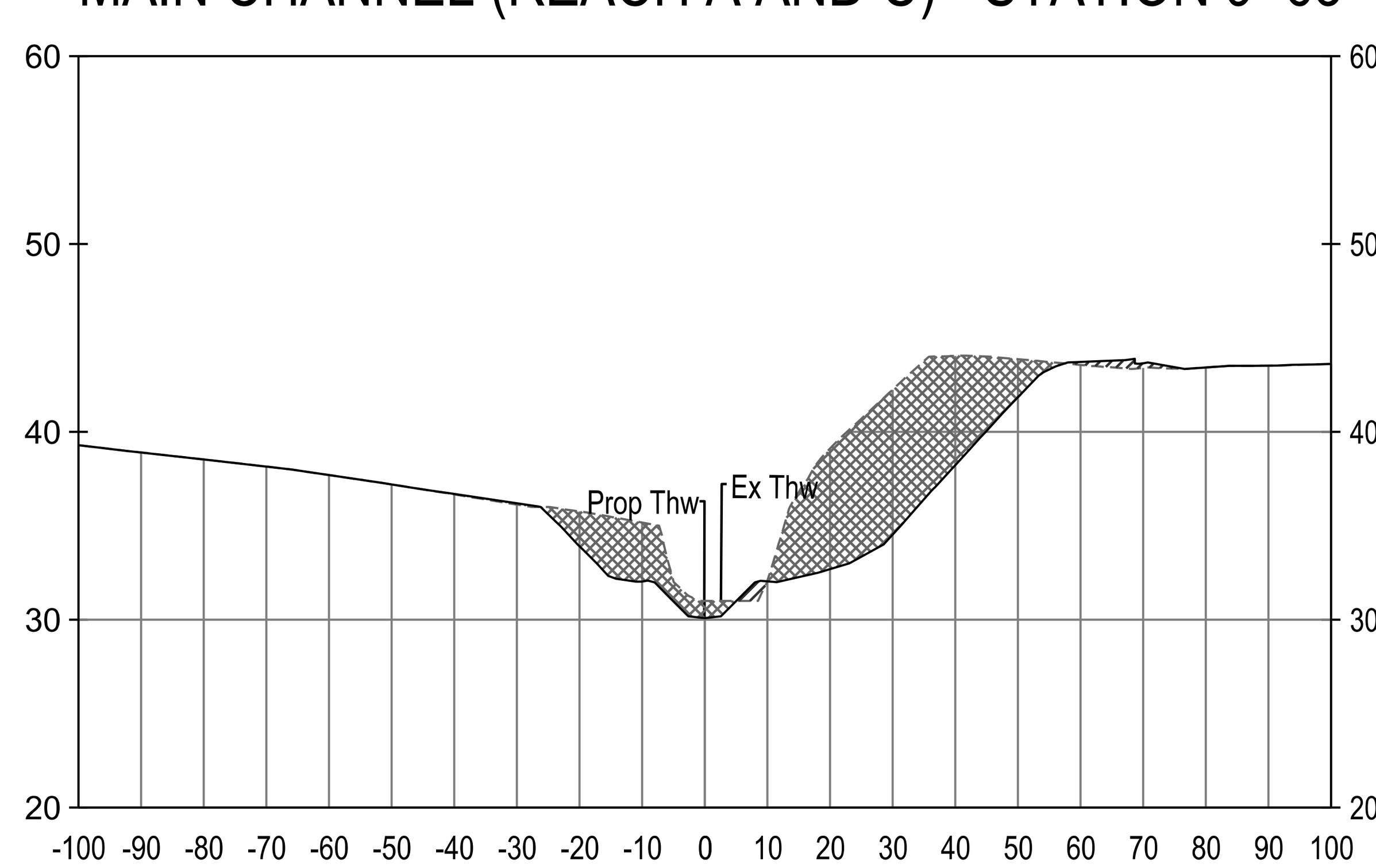
MAIN CHANNEL (REACH A AND C) - STATION 9+10



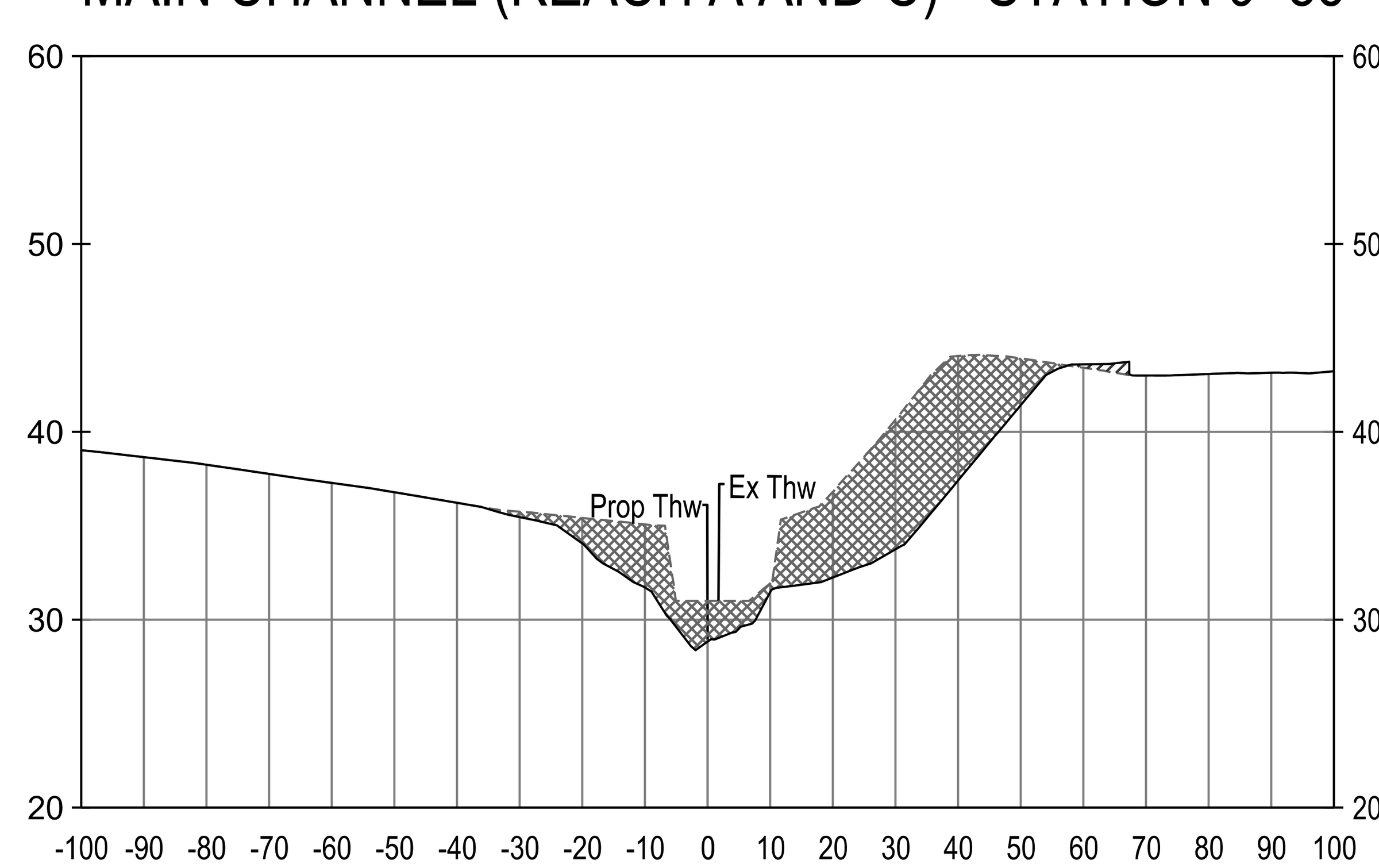
MAIN CHANNEL (REACH A AND C) - STATION 9+35



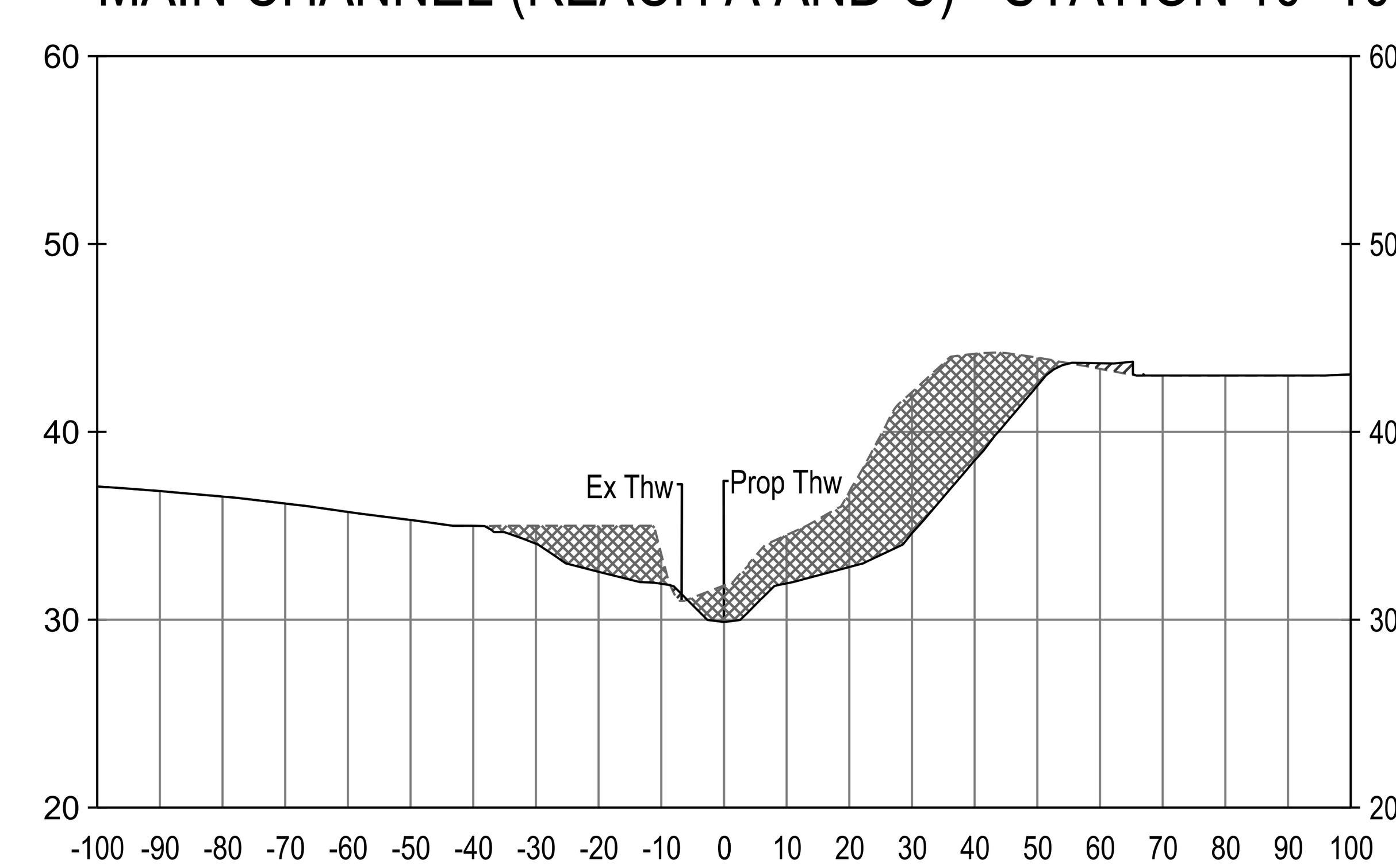
MAIN CHANNEL (REACH A AND C) - STATION 9+63



MAIN CHANNEL (REACH A AND C) - STATION 9+85



MAIN CHANNEL (REACH A AND C) - STATION 10+10



HORIZONTAL SCALE 1"=30' — 30' 0 30' 60' — SCALE: 1"=30'

VERTICAL SCALE 1"=10' — 10' 0 10' 20' — SCALE: 1"=10'

S/C PLAN # 59898 GP # GRA-014989-2023

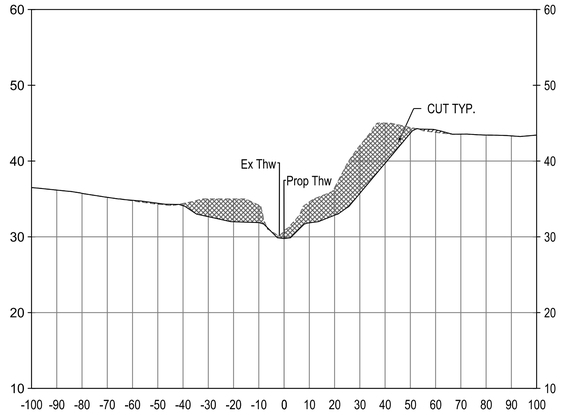
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

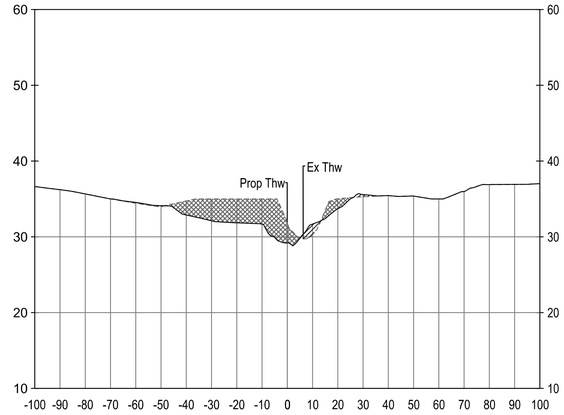
SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-05 OF SE-11	Sheet No. 39 of 66

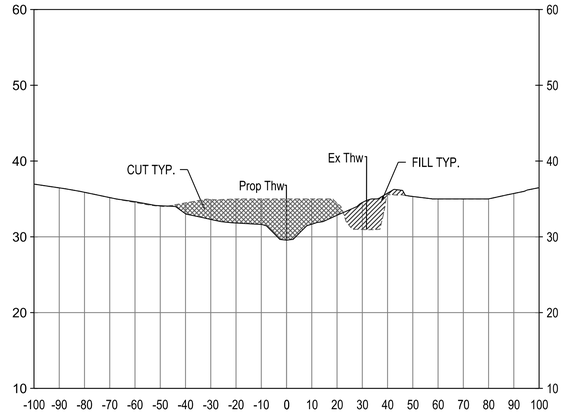
MAIN CHANNEL (REACH A AND C) - STATION 10+30



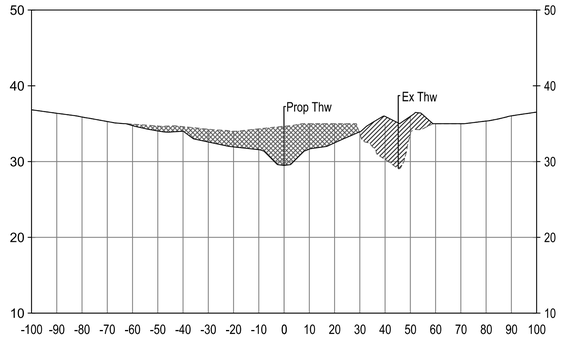
MAIN CHANNEL (REACH A AND C) - STATION 10+60



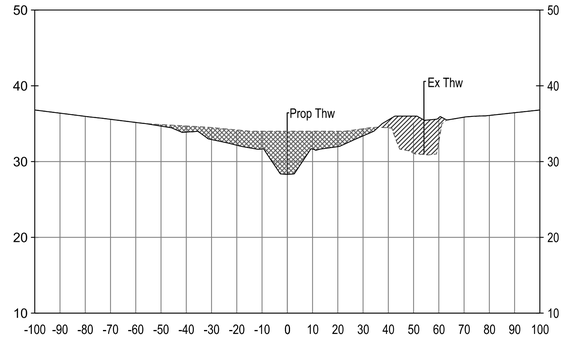
MAIN CHANNEL (REACH A AND C) - STATION 10+80



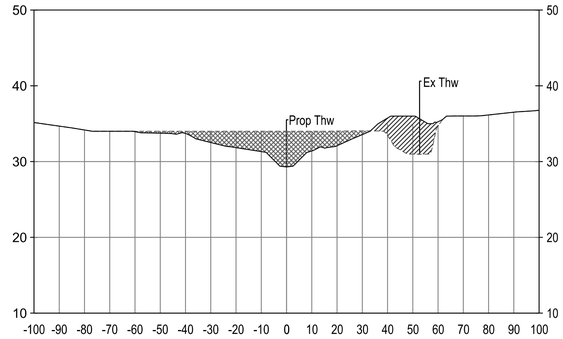
MAIN CHANNEL (REACH A AND C) - STATION 10+94



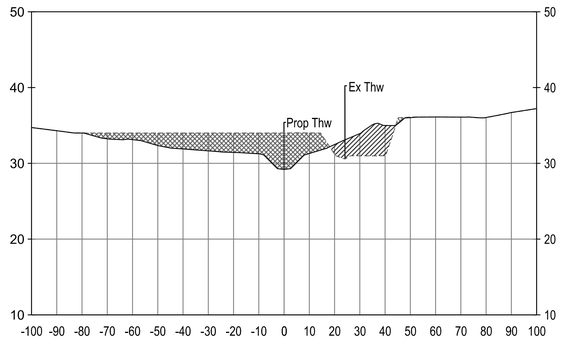
MAIN CHANNEL (REACH A AND C) - STATION 11+15



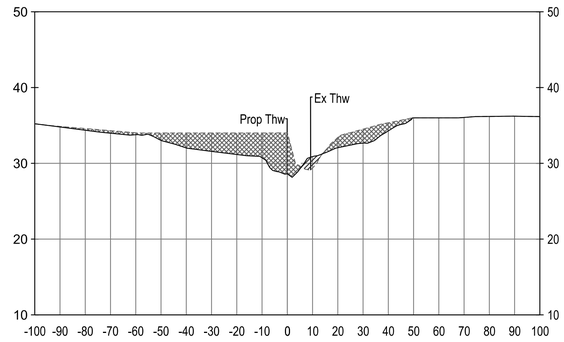
MAIN CHANNEL (REACH A AND C) - STATION 11+40



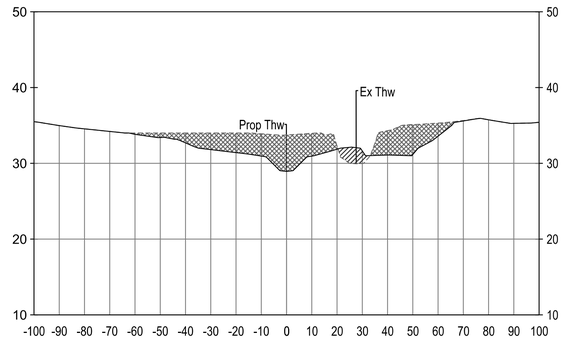
MAIN CHANNEL (REACH A AND C) - STATION 11+60



MAIN CHANNEL (REACH A AND C) - STATION 12+00



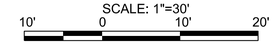
MAIN CHANNEL (REACH A AND C) - STATION 12+20



HORIZONTAL SCALE 1"=30'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'



SCALE: 1"=10'

STATE OF MARYLAND
STEVEN E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

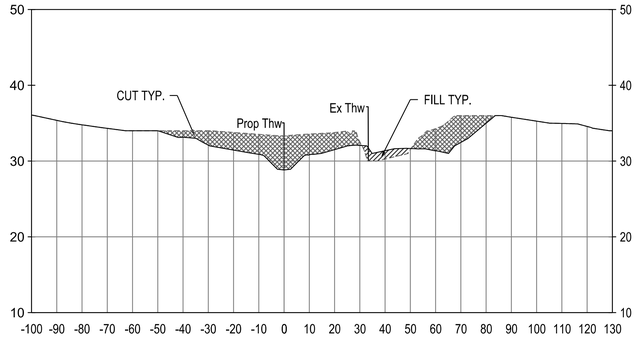
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

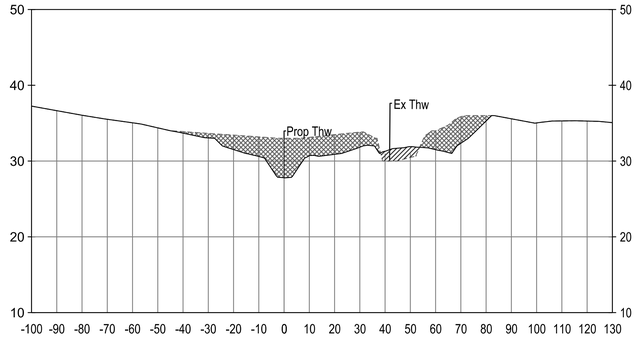
SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-06 OF SE-11	Sheet No. 40 of 66

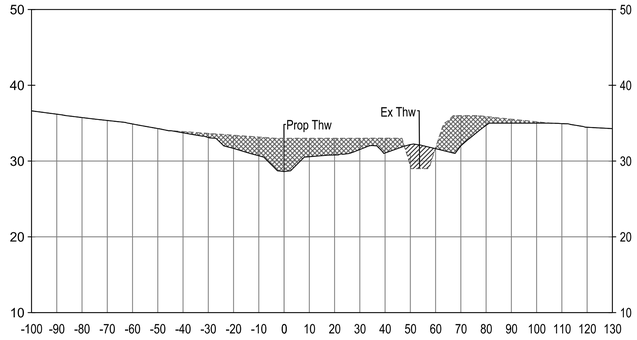
MAIN CHANNEL (REACH A AND C) - STATION 12+41



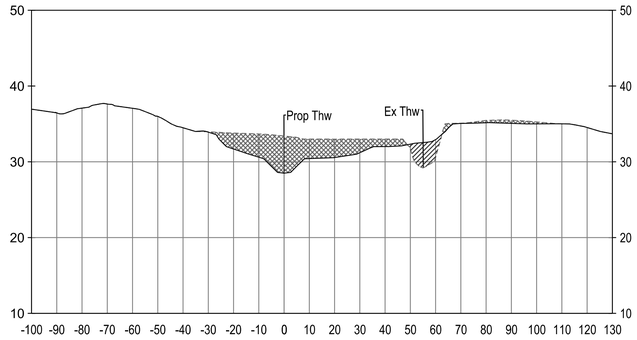
MAIN CHANNEL (REACH A AND C) - STATION 12+65



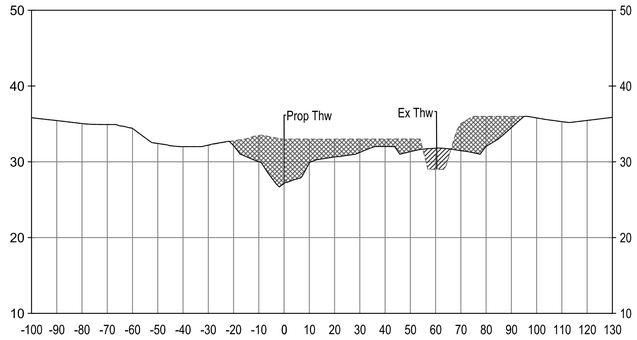
MAIN CHANNEL (REACH A AND C) - STATION 12+90



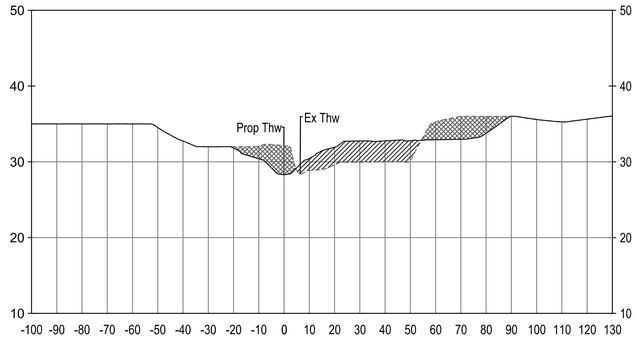
MAIN CHANNEL (REACH A AND C) - STATION 13+09



MAIN CHANNEL (REACH A AND C) - STATION 13+30



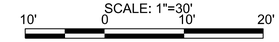
MAIN CHANNEL (REACH A AND C) - STATION 13+60



HORIZONTAL SCALE 1"=30'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'



SCALE: 1"=10'

STATE OF MARYLAND
SALLY E BURGESS
5157
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

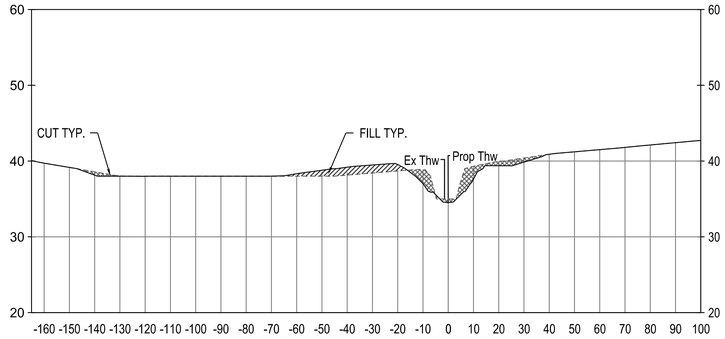
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

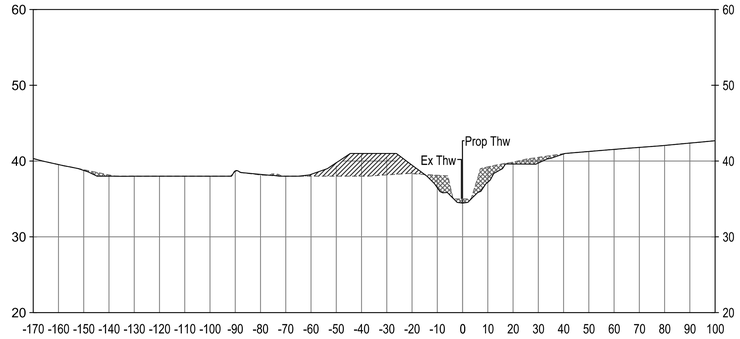
SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-07 OF SE-11	Sheet No. 41 of 66

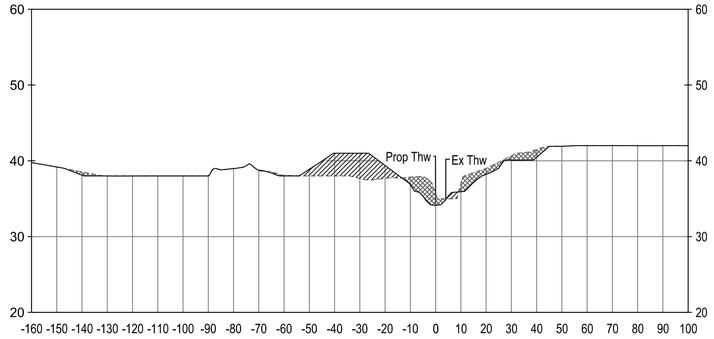
REACH B - STATION 100+15



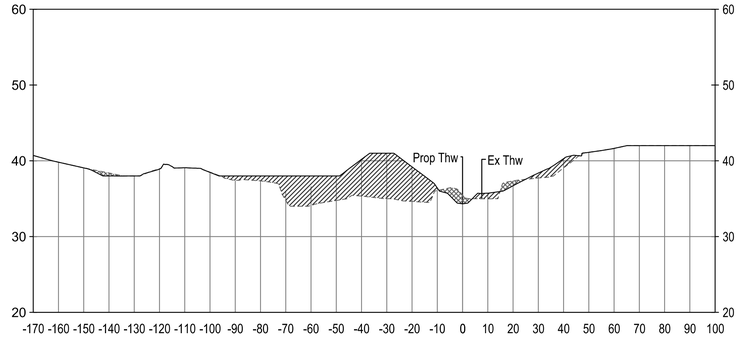
REACH B - STATION 100+28



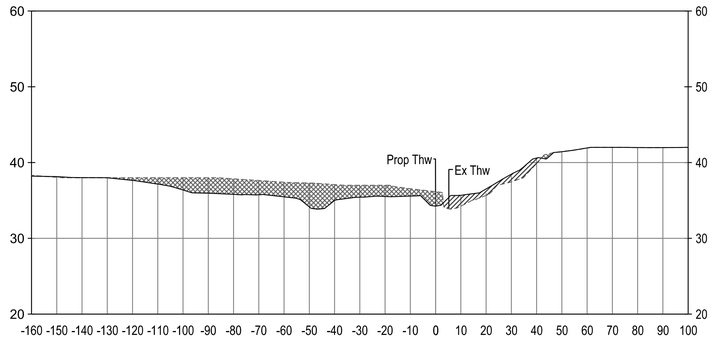
REACH B - STATION 100+50



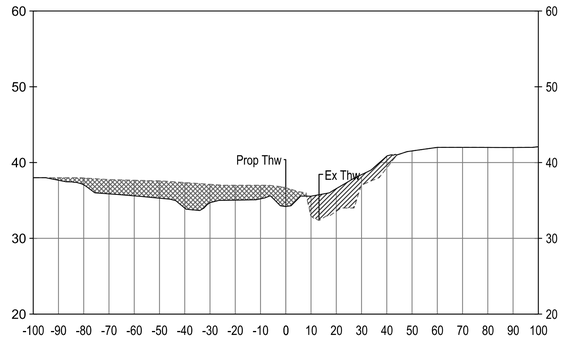
REACH B - STATION 100+68



REACH B - STATION 100+92



REACH B - STATION 101+06



HORIZONTAL SCALE 1"=30'

30' 0 30' 60'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'

10' 0 10' 20'

SCALE: 1"=10'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

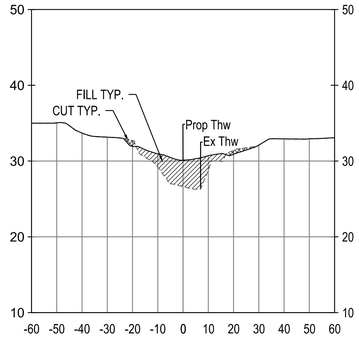
SECTION VIEW

STATE OF MARYLAND · SALLY E BURGESS · 51576 · PROFESSIONAL ENGINEER

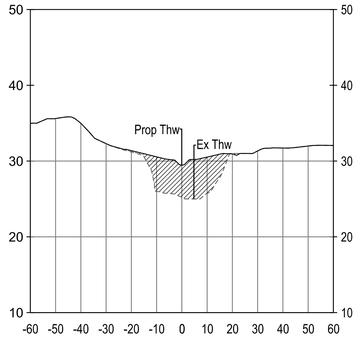
Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-08 OF SE-11	Sheet No. 42 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

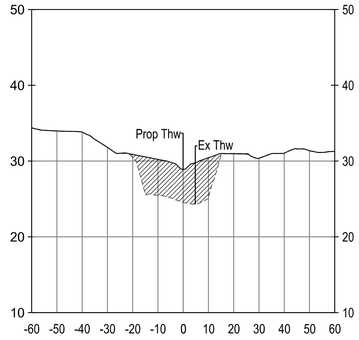
REACH D-1 - STATION 200+00



REACH D-1 - STATION 200+10



REACH D-1 - STATION 200+21



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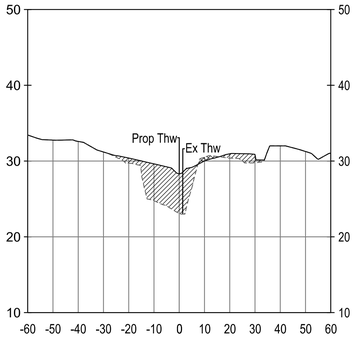
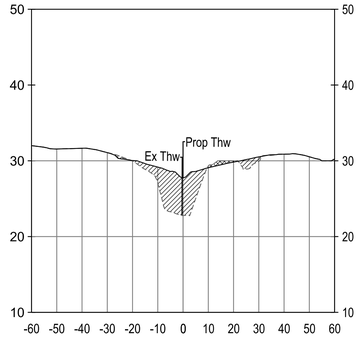


REACH D-1 - STATION 200+41



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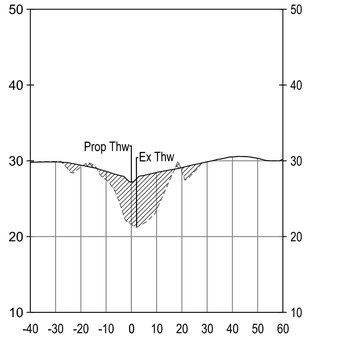

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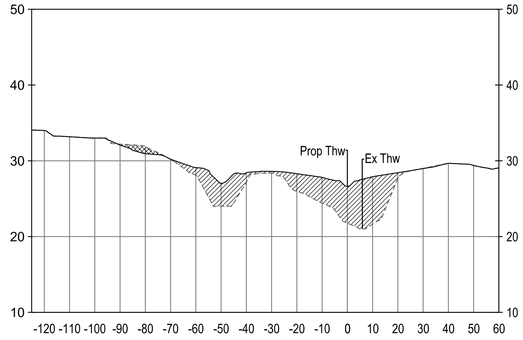

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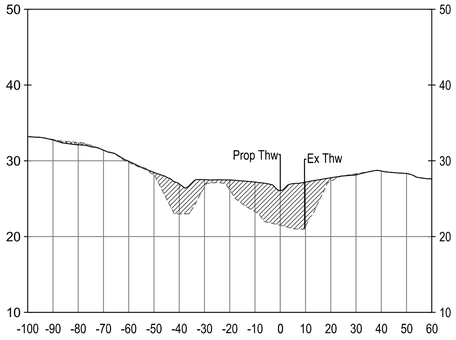

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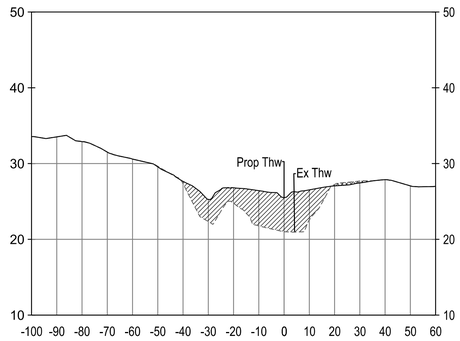

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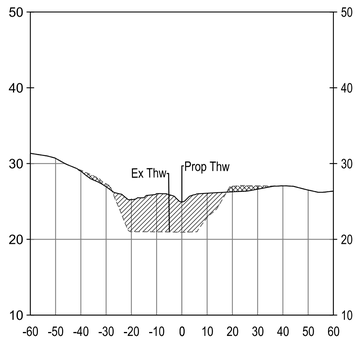
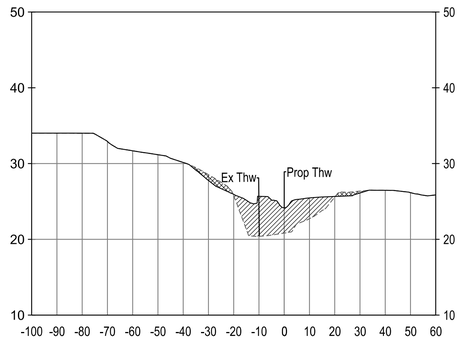


REACH D-1 - STATION 200+98



HORIZONTAL SCALE 1"=30'

30' 0 30' 60'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'

10' 0 10' 20'

SCALE: 1"=10'

STATE OF MARYLAND
CHARLES E BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

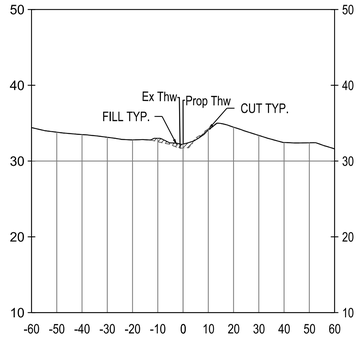
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

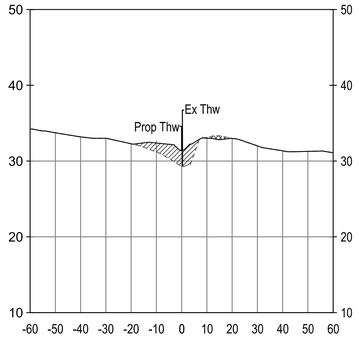
SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-09 OF SE-11	Sheet No. 43 of 66

REACH D-2 - STATION 300+02



REACH D-2 - STATION 300+11



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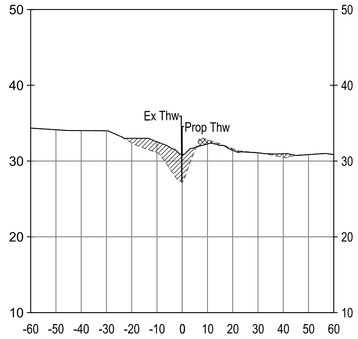
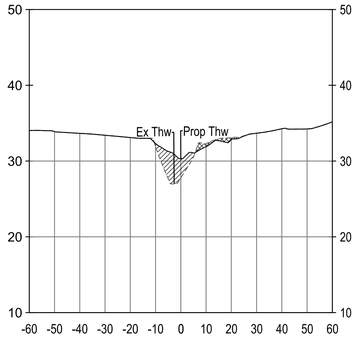
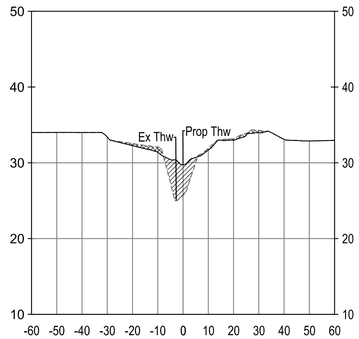


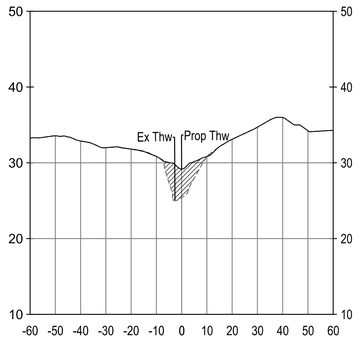
REACH D-2 - STATION 300+31



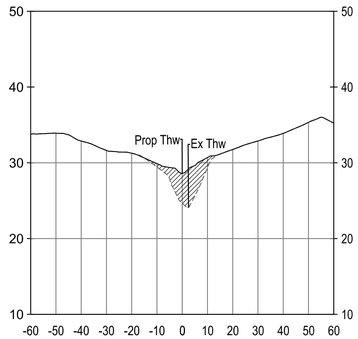
REACH D-2 - STATION 300+41



REACH D-2 - STATION 300+50



REACH D-2 - STATION 300+60



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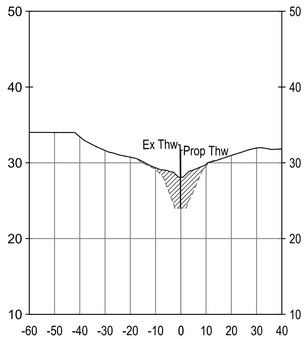
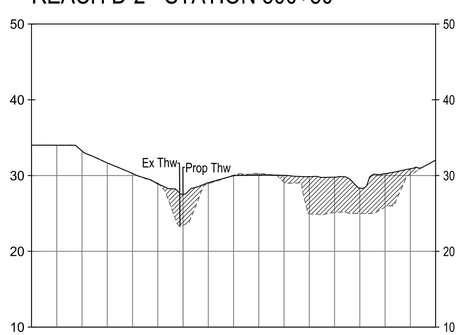


REACH D-2 - STATION 300+80



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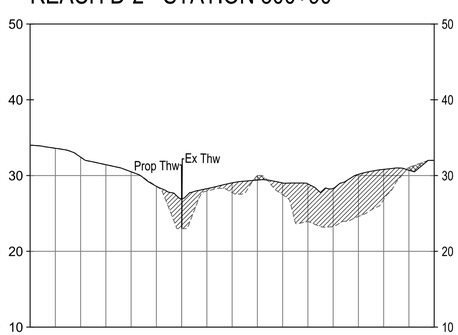

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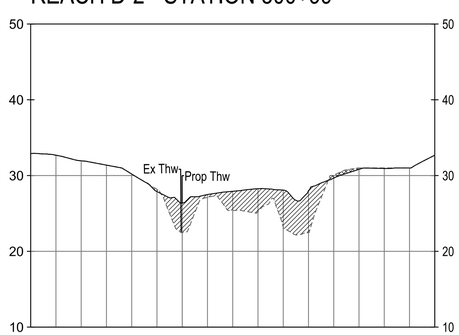

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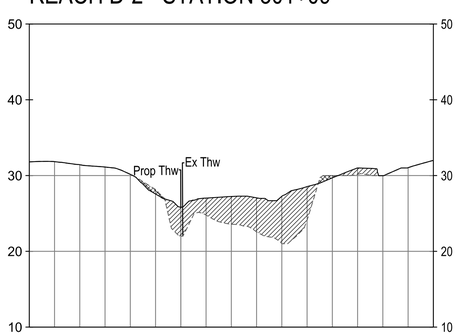


HORIZONTAL SCALE 1"=30'

30' 0 30' 60'

SCALE: 1"=30'

VERTICAL SCALE 1"=10'

10' 0 10' 20'

SCALE: 1"=10'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

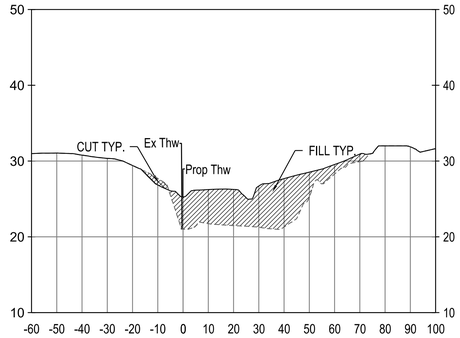
SECTION VIEW

STATE OF MARYLAND · CHARLES E. BURGESS · 5157 · PROFESSIONAL ENGINEER

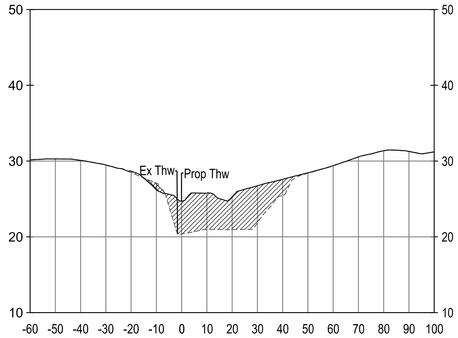
Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-10 OF SE-11	Sheet No. 44 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

REACH D-2 - STATION 301+19



REACH D-2 - STATION 301+29



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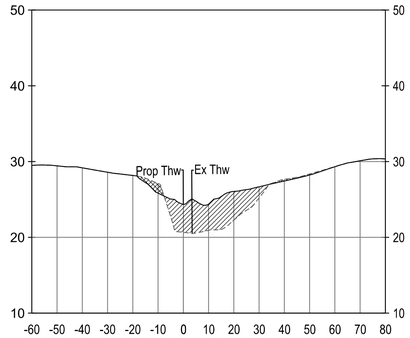

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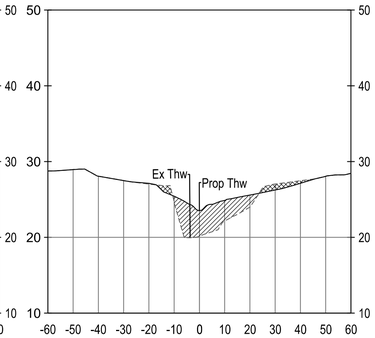

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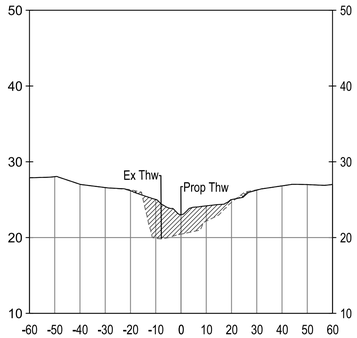

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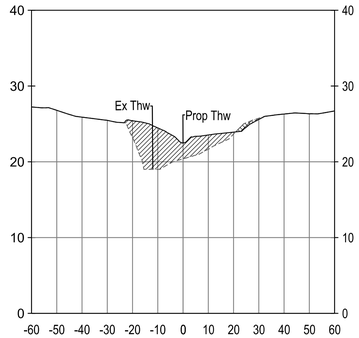

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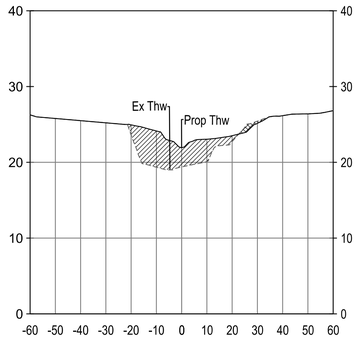
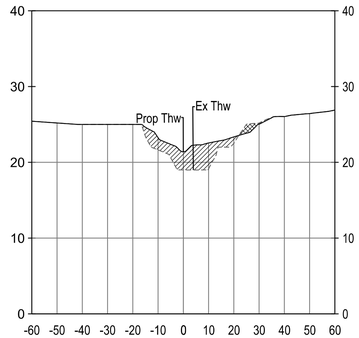
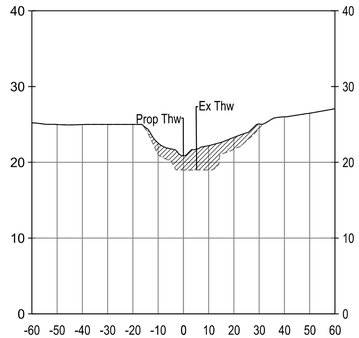


REACH D-2 - STATION 301+98



REACH D-2 - STATION 302+10



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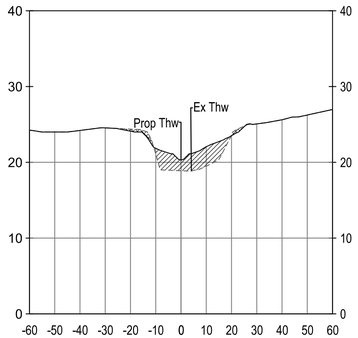

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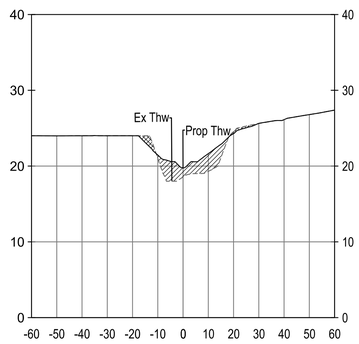

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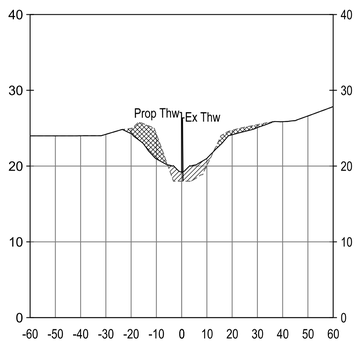
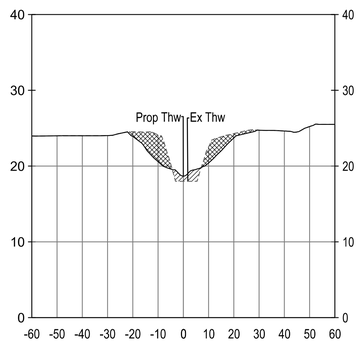
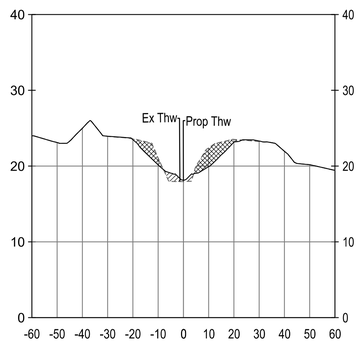


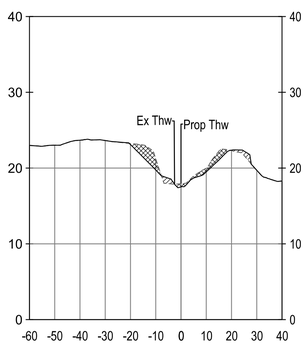
REACH D-2 - STATION 302+59



REACH D-2 - STATION 302+71



REACH D-2 - STATION 302+80



STATE OF MARYLAND
CHRISTINE BURGESS
51576
PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=10'

30' 0 30' 60'
HORIZONTAL SCALE: 1"=30'

10' 0 10' 20'
VERTICAL SCALE: 1"=10'

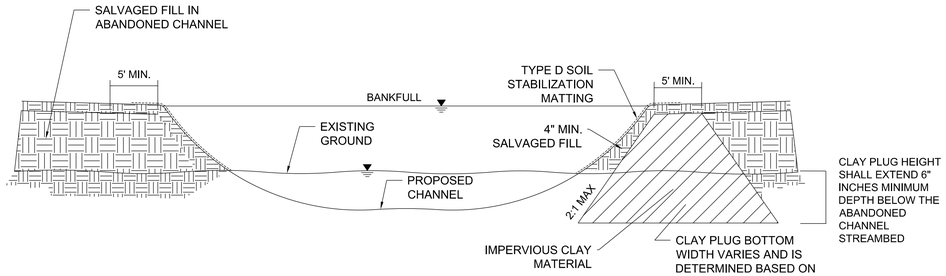
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

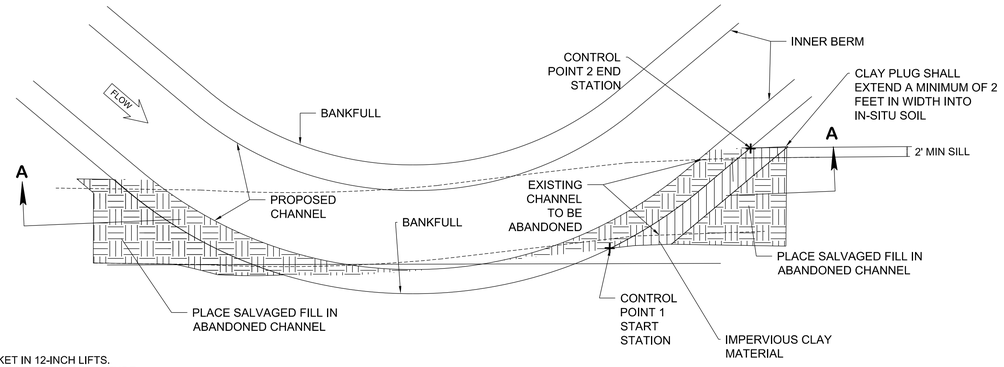
WATERGATE COURT STREAM RESTORATION

SECTION VIEW

Drawn By : ST	Scale : AS SHOWN
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. SE-11 OF SE-11	Sheet No. 45 of 66



SECTION A-A



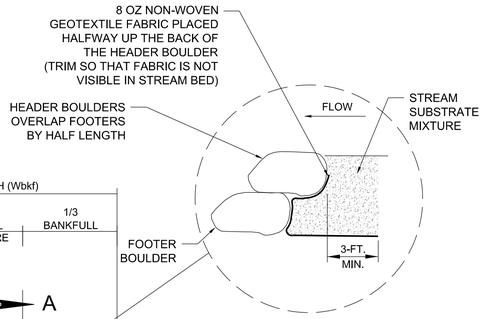
PLAN VIEW

NOTES:

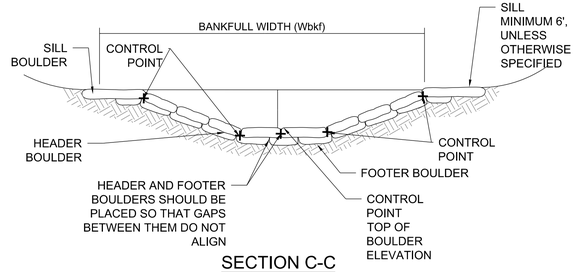
1. IMPERVIOUS CLAY MATERIAL SHOULD BE COMPACTED WITH EXCAVATOR BUCKET IN 12-INCH LIFTS.
2. IF STREAM BANK PROTECTION IS UTILIZED, INSTALL CLAY PLUG BEHIND BANK PROTECTION STRUCTURE.
3. SEE STRUCTURE TABLE ON SHEET ST-01 FOR LOCATION OF CONTROL POINTS. CONTROL POINTS INDICATE THE LOCATIONS ALONG THE FACE OF THE STRUCTURE WHERE THE STRUCTURE BEGINS AND ENDS.

1 / DE-01 CLAY CHANNEL PLUG

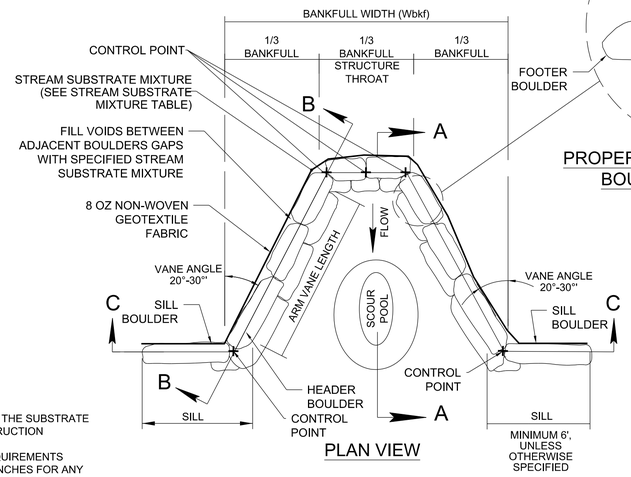
NOT TO SCALE



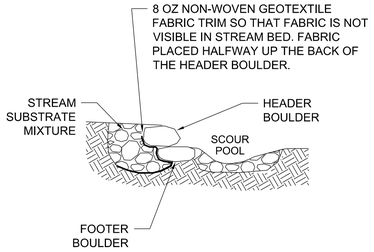
PROPER HEADER AND FOOTER BOULDER PLACEMENT



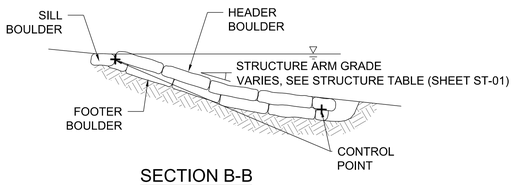
SECTION C-C



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. HEADER AND FOOTER BOULDER SHALL MEET THE SUBSTRATE SIZING GUIDELINES OUTLINED IN THE CONSTRUCTION SPECIFICATIONS.
2. BOULDERS THAT DO NOT MEET THE SIZE REQUIREMENTS OUTLINED IN THE SPECIFICATIONS WITHIN 3 INCHES FOR ANY PARAMETER MUST BE APPROVED FOR USE BY THE PROJECT ENGINEER.
3. CONTROL POINT ELEVATIONS ARE MEASURED AT THE TOP OF BOULDERS. GRADE CONTROL VANE CONTROL POINT IDS INCREASE FROM LEFT BANK SIDE TO RIGHT BANK SIDE WHEN LOOKING DOWNSTREAM. SEE SHEET ST-01 FOR DETAILS.

2 / DE-01 ROCK CROSS VANE

NOT TO SCALE

STATE OF MARYLAND · CHARLES E. BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

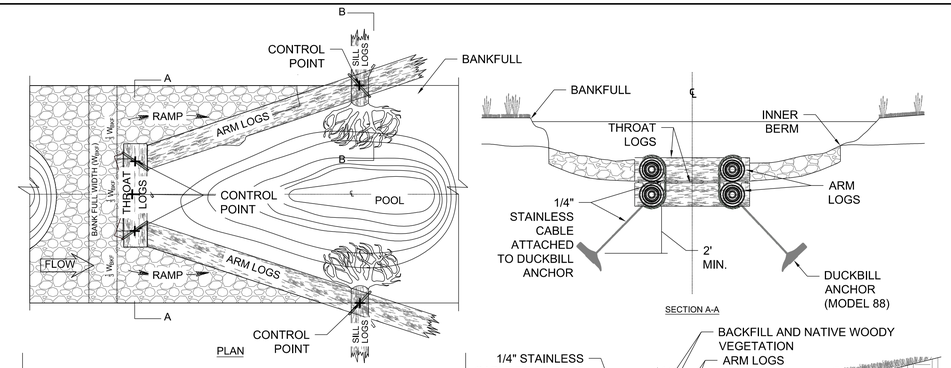
HARFORD COUNTY, MARYLAND

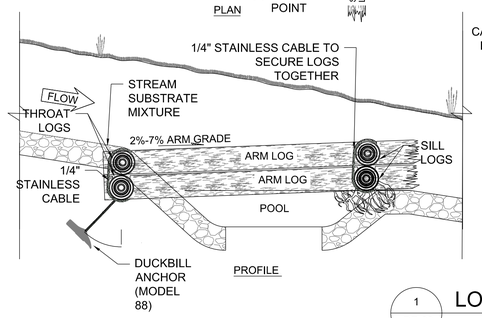
WATERGATE COURT STREAM RESTORATION

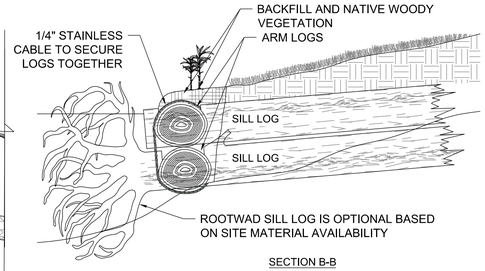
STREAM RESTORATION DETAILS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. DE-01 OF DE-04	Sheet No. 46 of 66

SCALE: 1" = 1'-0"







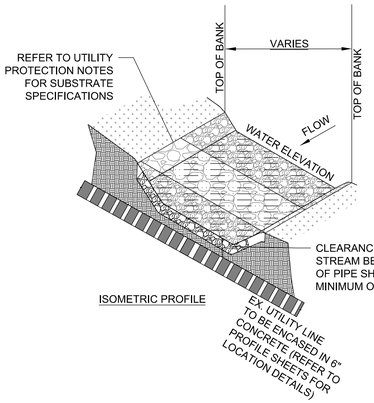
1 DE-02

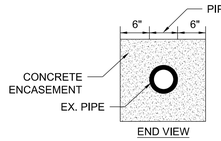
LOG CROSS VANE

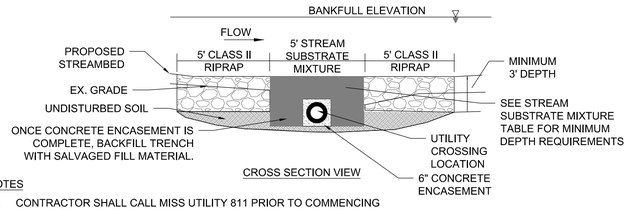
NOT TO SCALE

NOTE:

1. TREES SALVAGED DURING CLEARING ACTIVITIES FROM THE PROJECT MAY BE UTILIZED FOR LOG CROSS VANES MATERIAL ON APPROVAL BY THE ENGINEER OF RECORD. SEE SALVAGED LOGS SPECIFICATIONS FOR MINIMUM SIZE AND ACCEPTABLE TREE CHARACTERISTICS.
2. NOTCHES ARE CUT IN THROAT LOGS AND SILL LOGS TO ACCOMMODATE ARM 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.







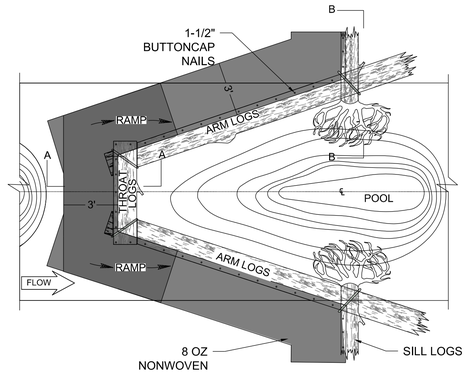
NOTES

1. CONTRACTOR SHALL CALL MISS UTILITY 811 PRIOR TO COMMENCING ANY WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF ANY DAMAGES TO UTILITIES CAUSED BY THE CONSTRUCTION, AND WILL BE REQUIRED TO PERFORM REPAIRS AT THE COUNTY'S REQUEST.
3. STREAM SUBSTRATE MIXTURE SHALL BE USED AS FILL MATERIAL TO RAISE THE EXISTING GRADE TO THE ELEVATION SPECIFIED IN PROFILE SHEETS.
4. CLASS II RIPRAP SHALL BE PLACED TO A MINIMUM DEPTH OF THREE (3) FEET.
5. CONCRETE ENCASEMENT SHALL EXTEND A MINIMUM OF 5 FEET BEYOND THE TOP OF BANK ON THE LEFT AND RIGHT.
6. CONCRETE USED FOR THE ENCASEMENT SHALL BE 3000 P.S.I. OR GREATER.

2 DE-02

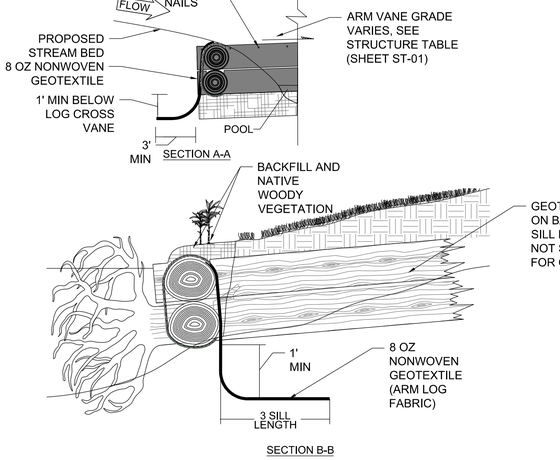
UTILITY PROTECTION DETAIL

NOT TO SCALE



NOTES:

1. 8 OZ NONWOVEN GEOTEXTILE SHOULD BE INSTALLED ON THE UPSTREAM SIDE OF THE LOGS USING 1-1/2" BUTTONCAP NAILS ANY EXCESS FABRIC SHALL BE TRIMMED. GEOTEXTILE SHALL SECURE TO HEADER LOG APPROXIMATELY HALFWAY UP LOG BACKSIDE.
2. UPSTREAM FABRIC SHALL OVERLAP WITH FABRIC PLACED ALONG ARM LOGS IN ORDER TO PREVENT PUMPING OF FINES BY A MINIMUM OF 3 FEET.



3 DE-02

LOG CROSS VANE GEOTEXTILE DETAILS

NOT TO SCALE

STATE OF MARYLAND
CHELLY E. BURGOS
51576
PROFESSIONAL ENGINEER

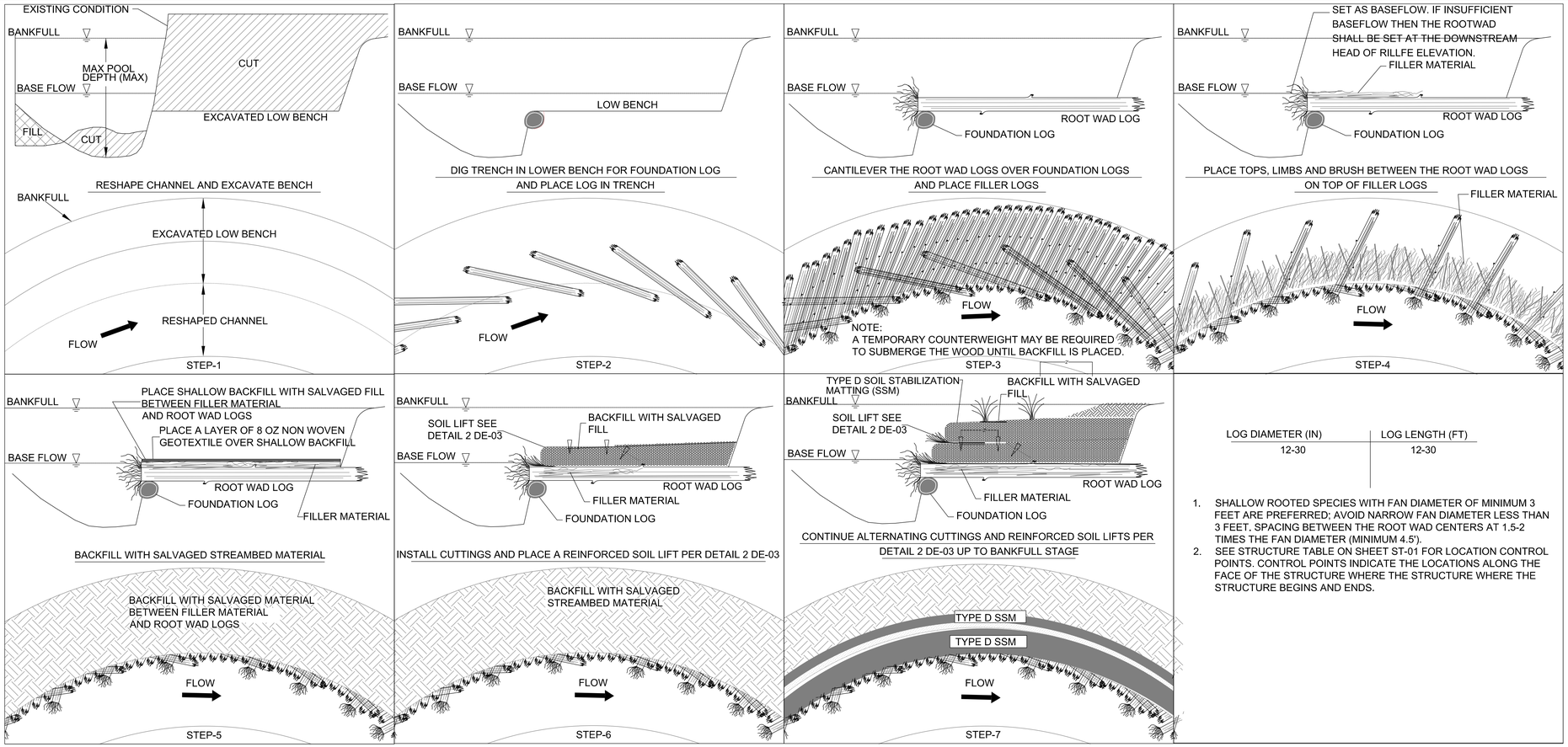
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM RESTORATION DETAILS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. DE-02 OF DE-04	Sheet No. 47 of 66

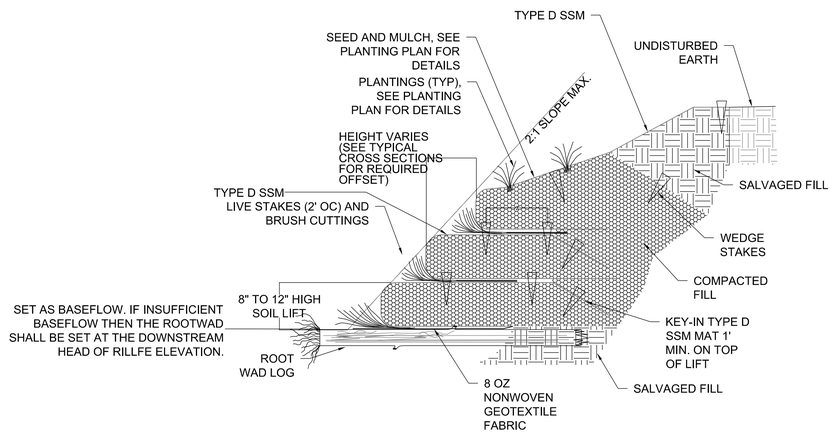


LOG DIAMETER (IN)	LOG LENGTH (FT)
12-30	12-30

1. SHALLOW ROOTED SPECIES WITH FAN DIAMETER OF MINIMUM 3 FEET ARE PREFERRED; AVOID NARROW FAN DIAMETER LESS THAN 3 FEET. SPACING BETWEEN THE ROOT WAD CENTERS AT 1.5-2 TIMES THE FAN DIAMETER (MINIMUM 4.5').
2. SEE STRUCTURE TABLE ON SHEET ST-01 FOR LOCATION CONTROL POINTS. CONTROL POINTS INDICATE THE LOCATIONS ALONG THE FACE OF THE STRUCTURE WHERE THE STRUCTURE WHERE THE STRUCTURE BEGINS AND ENDS.

1 / DE-03 **ROOT WAD**

NOT TO SCALE



2 / DE-03 **REINFORCED SOIL LIFT**

NOT TO SCALE

NOTES:
1. SOIL LIFT SHALL ONLY EXTEND TO THE HEIGHT OF BANKFULL

STATE OF MARYLAND
CAMILLE E. BURGESS
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PROFESSIONAL ENGINEER

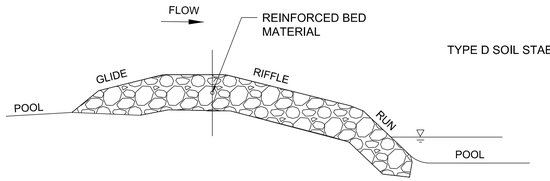
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

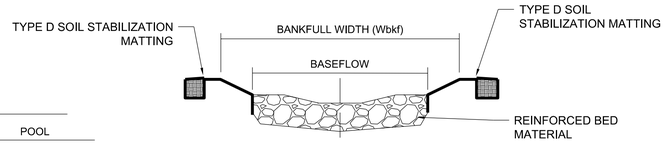
WATERGATE COURT STREAM RESTORATION

STREAM RESTORATION DETAILS

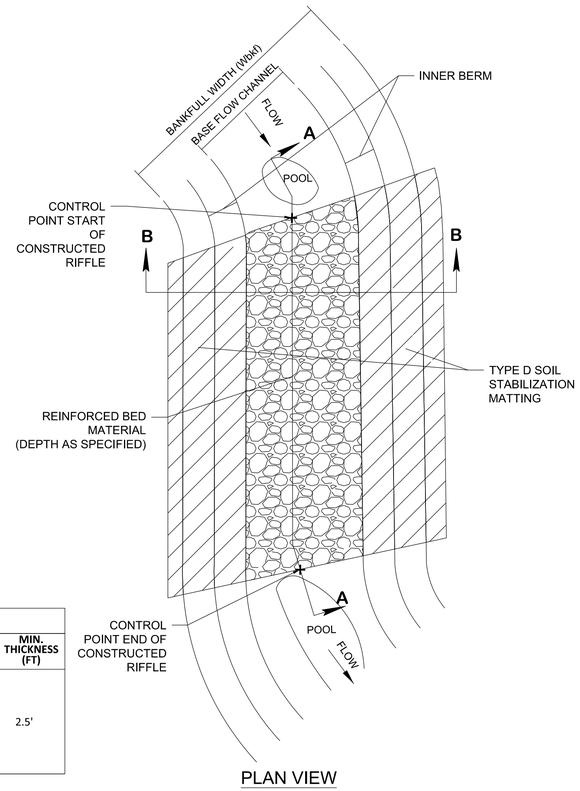
Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. DE-03 OF DE-04	Sheet No. 48 of 66



SECTION A-A



SECTION B-B

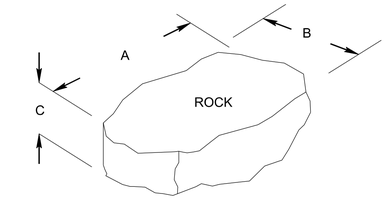


PLAN VIEW

REINFORCED BED MATERIAL		
MATERIAL CLASSIFICATION	APPROX. % BY VOLUME	MIN. THICKNESS (FT)
CLASS 0 RIPRAP – (4" -7") D50 = 5.5"	15%	2.5'
CLASS 1 RIPRAP – (5 " -15 ") D50 = 10 "	35%	
CLASS 2 RIPRAP – (12 " -24 ") D50 = 16 "	50%	

NOTE:
1. SEE STRUCTURE TABLE ON SHEET ST-01 FOR LOCATION OF CONTROL POINTS. CONTROL POINTS INDICATE THE LOCATIONS ALONG THE FACE OF STRUCTURE WHERE THE STRUCTURE BEGINS AND ENDS.

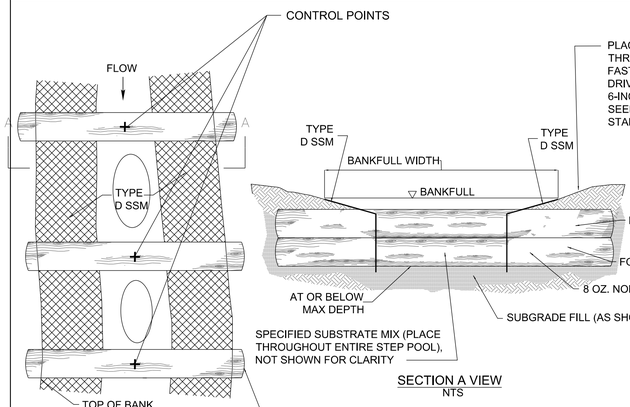
1 DE-04 CONSTRUCTED RIFFLE
NOT TO SCALE



NOTES:
1. EACH STREAM SUBSTRATE SHALL CONTAIN THE PERCENTAGE BY VOLUME OF THE MATERIALS SPECIFIED IN THE STREAM SUBSTRATE TABLE.
2. SUBSTRATE WILL BE NATURAL IN COLOR (BROWN, YELLOW, TAN, OR GRAY).
3. SUBSTRATE SHALL BE FREE OF IMPURITIES AND CONTAMINANTS.
4. SUBSTRATE SHALL BE NATURAL AND FREE OF SLAG.
5. SIZING IS BASED ON THE B-AXIS OF THE ROCK.
6. FOR MIN. THICKNESS DEPTHS GREATER THAN 1.5 FEET THE BED MIXTURE SHOULD BE PLACED IN LIFTS NO GREATER THAN 12 INCHES. THE CONTRACTOR SHALL INSPECT THE INSTALLATION OF STREAM SUBSTRATE TO ENSURE THE PLACEMENT IS INSTALLED AS HOMOGENEOUS AS POSSIBLE VISUALLY FREE OF LARGE VOIDS.
7. SALVAGED STREAMBED MATERIAL SHALL BE WASHED INTO THE STREAM SUBSTRATE TO FILL VOIDS.
8. REFER TO THE GRADING PLAN AND PROFILE FOR THE LIMITS OF PLACEMENT, TYPE AND DEPTH OF THE STREAM SUBSTRATE.
9. STREAM SUBSTRATE BED SHALL BE UTILIZED IN THE BED OF THE STREAM TO PROVIDE CHANNEL BED STABILITY. NOTE THAT SALVAGE STREAMBED MATERIAL MEETING THE GUIDELINES OUTLINED IN THE CONSTRUCTION SPECIFICATIONS MAY BE USED IN THE POOL AREAS, EXCEPT ALONG HIGH GRADIENT STEP POOL CHANNELS WHERE THE SPECIFIED FURNISHED STREAM SUBSTRATE SHALL BE USED IN ALL POOLS, RUNS, AND GLIDES. SEE CROSS SECTION SHEETS XS-01 TO XS-07 FOR PLACEMENT OF SALVAGED STREAM BED MATERIAL.

STREAM SUBSTRATE TABLE				
ID	MATERIAL CATEGORY	INTERMIEDIATE B -AXIS SIZE RANGE	APPROX. % BY VOLUME	MIN. THICKNESS (FT)
REACH A	LARGE STONE	CLASS 1 RIPRAP – (5 " -15 ") D50 = 10 "	25%	1.5'
	SMALL STONE	CLASS 0 RIPRAP – (4" -7") D50 = 5.5"	50%	
	FINE AGGREGATE	2 – 3 " STONE D50 = 2.5 "	25%	
REACH B	LARGE STONE	CLASS 1 RIPRAP – (5" -15") D50 = 10"	25%	1.5'
	SMALL STONE	CLASS 0 RIPRAP – (4" -7") D50 = 5.5"	50%	
	FINE AGGREGATE	2 – 3 " STONE D50 = 2.5"	25%	
REACH C (B4c CHANNEL)	LARGE STONE	CLASS 1 RIPRAP – (5" -15") D50 = 10"	60%	2.0'
	SMALL STONE	CLASS 0 RIPRAP – (4" -7") D50 = 5.5"	20%	
	FINE AGGREGATE	2 – 3 " STONE D50 = 2.5"	20%	
REACH C (C4 CHANNEL)	LARGE STONE	CLASS 1 RIPRAP – (5" -15") D50 = 10"	60%	2.0'
	SMALL STONE	CLASS 0 RIPRAP – (4" -7") D50 = 5.5"	20%	
	FINE AGGREGATE	2 – 3 " STONE D50 = 2.5"	20%	
REACH D1 AND D2 UPPER	LARGE STONE	CLASS 2 RIPRAP – (12 " -24 ") D50 = 16 "	60%	2.5 '
	SMALL STONE	CLASS 1 RIPRAP – (5" -15") D50 = 10"	40%	
REACH D2 LOWER	LARGE STONE	CLASS 2 RIPRAP – (12" -24") D50 = 16"	60%	2.5 '
	SMALL STONE	CLASS 1 RIPRAP – (5" -15") D50 = 10"	40%	

2 DE-04 STREAM SUBSTRATE SPECIFICATIONS
NOT TO SCALE



PLACE TYPE D SOIL STABILIZATION MATTING FROM TOE OF SLOPE THROUGH FULL WIDTH OF TIE-IN TO EXISTING GRADE. SECURELY FASTEN TYPE D SOIL STABILIZATION MATTING WITH STAKES DRIVEN VERTICALLY INTO THE SOIL AND KEY IN A MINIMUM OR 6-INCHES. SOIL OR SEEDBED PREPARATION AND PERMANENT SEEDING SHALL BE COMPLETE PRIOR TO THE PLACEMENT OF SOIL STABILIZATION MATTING

SECTION A VIEW
NTS

PLAN VIEW
NTS

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.

3 DE-04 LOG STEP POOL
NOT TO SCALE

STATE OF MARYLAND
EMILY E. BURGIO
51576
PROFESSIONAL ENGINEER

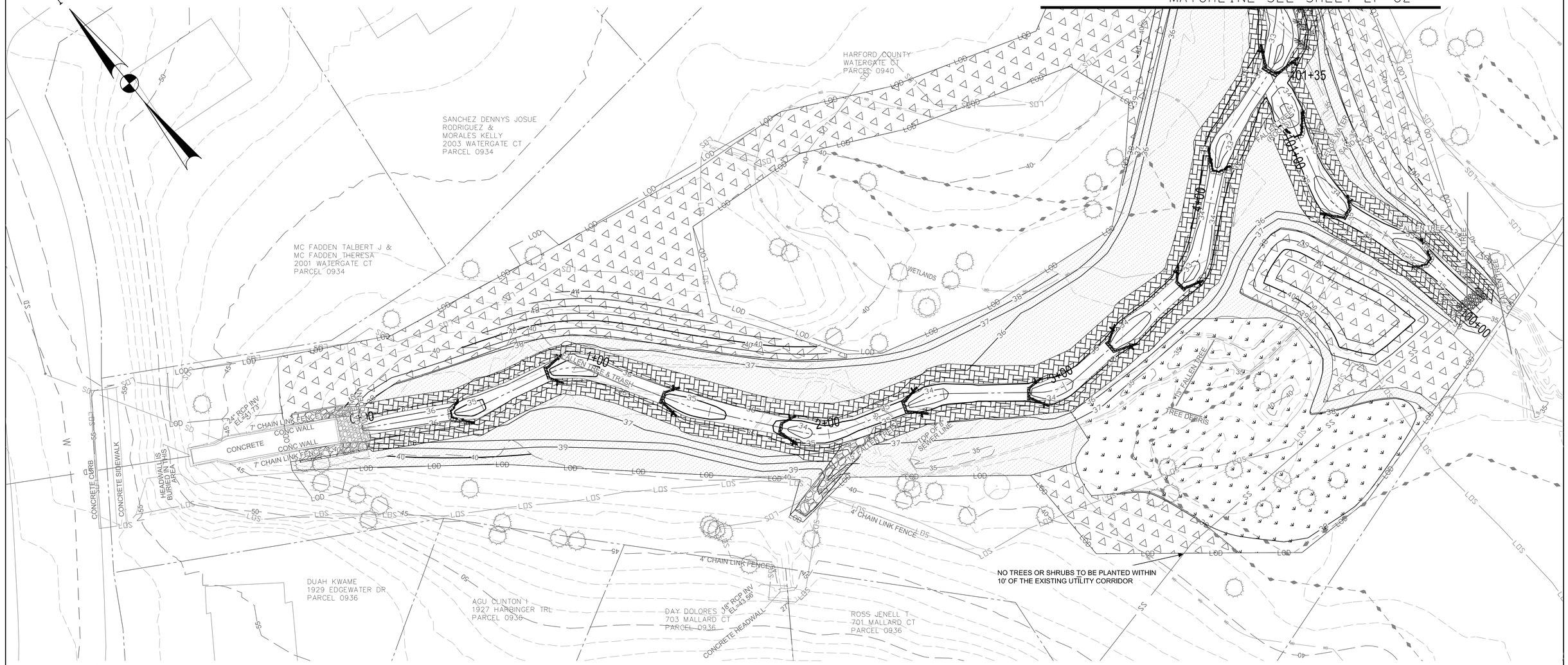
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

STREAM RESTORATION DETAILS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. DE-04 OF DE-04	Sheet No. 49 of 66



PLANTING ZONES

ZONE 1: UPLAND TREE AND SEED MIX

ZONE 2: RIPARIAN TREE, SHRUB, AND SEED MIX AND TYPE D SOIL STABILIZATION MATTING

ZONE 3: LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA AND TYPE D SOIL STABILIZATION MATTING

ZONE 4: WETLAND TREE AND SEED MIX

ZONE 5: TURF SOD

NOTE: THE CONTRACTOR SHALL FURNISH AND PLACE TOPSOIL TO A DEPTH OF 4 INCHES THROUGHOUT ALL AREAS THAT HAVE BEEN DISTURBED AND REQUIRE PERMANENT SEEDING. THE CONTRACTOR SHALL USE SALVAGED TOPSOIL PRIOR TO USING FURNISHED TOPSOIL

20' 0 20' 40'
SCALE: 1"=20'

STATE OF MARYLAND
CINDY E. BURGESS
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PROFESSIONAL ENGINEER

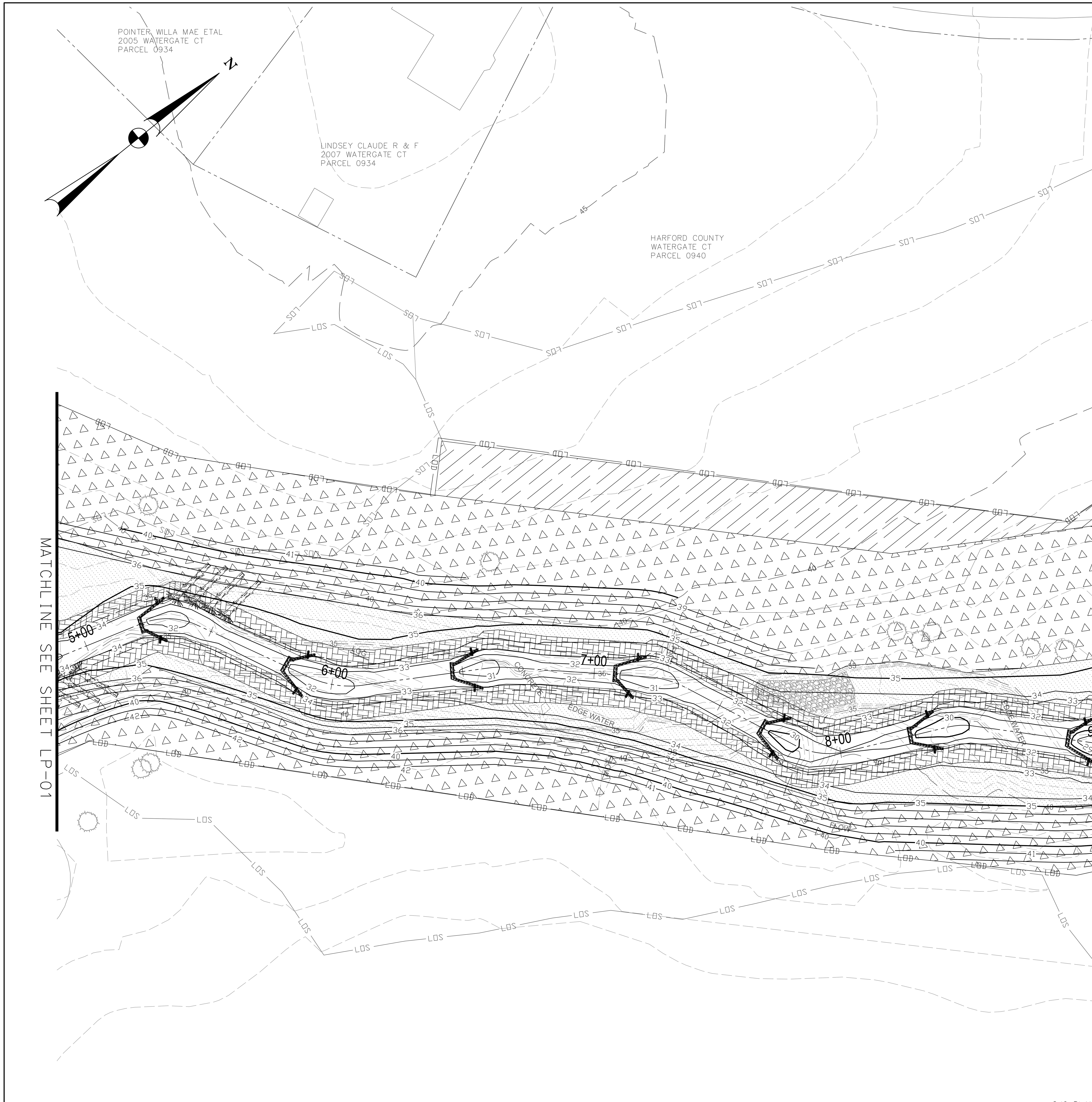
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING PLAN PLAN VIEW

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. LP-01 OF LP-05	Sheet No. 50 of 66



PLANTING ZONES

	ZONE 1: UPLAND TREE AND SEED MIX
	ZONE 2: RIPARIAN TREE, SHRUB, AND SEED MIX AND TYPE D SOIL STABILIZATION MATTING
	ZONE 3: LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA AND TYPE D SOIL STABILIZATION MATTING
	ZONE 4: WETLAND TREE AND SEED MIX
	ZONE 5: TURF SOD

20' 0 20' 40'
SCALE: 1"=20'

STATE OF MARYLAND
EMILY E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING PLAN PLAN VIEW

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	LP-02 OF LP-05	Sheet No.	51 of 66

PLANTING ZONES

- ZONE 1: UPLAND TREE AND SEED MIX
- ZONE 2: RIPARIAN TREE, SHRUB, AND SEED MIX AND TYPE D SOIL STABILIZATION MATTING
- ZONE 3: LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA AND TYPE D SOIL STABILIZATION MATTING
- ZONE 4: WETLAND TREE AND SEED MIX
- ZONE 5: TURF SOD

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING PLAN PLAN VIEW

STATE OF MARYLAND
CHELLE BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	LP-03 OF LP-05	Sheet No.	52 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

PLANTING ZONES

- ZONE 1: UPLAND TREE AND SEED MIX
- ZONE 2: RIPARIAN TREE, SHRUB, AND SEED MIX AND TYPE D SOIL STABILIZATION MATTING
- ZONE 3: LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA AND TYPE D SOIL STABILIZATION MATTING
- ZONE 4: WETLAND TREE AND SEED MIX
- ZONE 5: TURF SOD

NEW HOPE CHRISTIAN FELLOWSHIP
UNITED METHODIST CHURCH
2048 WATERGATE CT
PARCEL 0581

JSG INVESTMENTS LLC
1010 EDGEWOOD RD
PARCEL 0613

HARFORD COUNTY
EDGEWOOD ROAD
PARCEL 0007

BENCOWA LLC
918 EDGEWOOD RD
PARCEL 0915

8" CMP INV EL=29.86'

INLET
TOP GRATE=34.29'
24" RCP INV IN EL=30.13'
30" RCP INV OUT EL=29.40'

SSMH
TOP=35.40'
INV IN EL=29.11'
INV OUT EL=28.86'

SDMH
TOP=34.89'
30" RCP INV IN EL=27.99'
30" RCP INV OUT EL=27.32'

300+00
301+00
200+00
201+00
201+10
302+00
302+91
13+00
13+81

NO TREES OR SHRUBS TO BE PLANTED WITHIN 10 FEET OF THE EXISTING UTILITY CORRIDOR

WETLAND RESTORATION/ENHANCEMENT AREA

MATCHLINE SEE SHEET LP-03

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING PLAN PLAN VIEW

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. LP-04 OF LP-05	Sheet No. 53 of 66

STATE OF MARYLAND · CARLYE BURGESS · 51576 · PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

PLANTING ZONES

- ZONE 1: UPLAND TREE AND SEED MIX
- ZONE 2: RIPARIAN TREE, SHRUB, AND SEED MIX AND TYPE D SOIL STABILIZATION MATTING
- ZONE 3: LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA AND TYPE D SOIL STABILIZATION MATTING
- ZONE 4: WETLAND TREE AND SEED MIX
- ZONE 5: TURF SOD

20' 0 20' 40'

SCALE: 1"=20'

STATE OF MARYLAND
BRIAN W. ANDERSON
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING PLAN PLAN VIEW

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. LP-05 OF LP-05	Sheet No. 54 of 66

ZONE 1: UPLAND SEED MIX - 1.70 ACRES
ERNMX-731 OR APPROVED EQUAL

SCIENTIFIC NAME	COMMON NAME	TYPE	%TOTAL COMPOSITION
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	HERB	65.90%
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	HERB	17.00%
RUDBECKIA HIRTA	BLACKEYED SUSAN	HERB	3.00%
LESPEDEZA VIRGINICA	SLENDER LESPEDEZA	HERB	2.50%
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	HERB	2.00%
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	HERB	1.50%
SENNA HEBECARPA	WILD SENNA	HERB	1.50%
ASTER PILOSUS	HEATH ASTER	HERB	1.20%
PYCNANTHEMUM TENUIFOLIUM	NARROWLEAF MOUNTAINMINT	HERB	1.20%
AQUILEGIA CANDENSIS	EASTERN COLUMBINE	HERB	1.00%
GEUM CANADENSE	WHITE AVENS	HERB	1.00%
CHAMAECRISTA NICTITANS	SENSITIVE PEA	HERB	0.50%
SISYRINCHIUM ANGUSTIFOLIUM	NARROWLEAF BLUE EYED GRASS	HERB	0.50%
OENOTHERA FRUTICOSA	SUNDROPS	HERB	0.30%
SOLIDAGO BICOLOR	WHITE GOLDENROD	HERB	0.30%
SOLIDAGO NEMORALIS	GRAY GOLDENROD	HERB	0.30%
ASTER LATERIFLORUS	CALICO ASTER	HERB	0.20%
SOLIDAGO JUNCEA	EARLY GOLDENROD	HERB	0.10%

ZONE 1: UPLAND TREE AND SHRUB MIX - 1.70 ACRES

SCIENTIFIC NAME	COMMON NAME	TYPE	1"-2" CALIPER/#7 CONTAINER	1" CALIPER/#5 CONTAINER	1.5-2"CALIPER/#2 CONTAINER
QUERCUS ALBA	WHITE OAK	SINGLE STEM TREE	36	18	0
POPULUS GRANDIDENTATA	BIG TOOTH ASPEN	SINGLE STEM TREE	26	13	0
LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	SINGLE STEM TREE	26	13	0
QUERCUS RUBRA	RED OAK	SINGLE STEM TREE	46	23	0
QUERCUS PALUSTRIS	PIN OAK	SINGLE STEM TREE	46	23	0
FAGUS GRANDIFOLIA	AMERICAN BEECH	SINGLE STEM TREE	46	23	0
LIRIODENDRON TULIPIFERA	TULIP TREE	SINGLE STEM TREE	36	18	0
ACER RUBRUM	RED MAPLE	SINGLE STEM TREE	38	19	0
VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	SHRUB	0	0	32
VACCINIUM VACILLANS	LOWBUSH BLUEBERRY	SHRUB	0	0	32
		TOTAL	300	150	64

ZONE 3 & ZONE 4
WETLAND AND STREAMBANK MIX - 0.65 ACRES
ERNMX-733 OR APPROVED EQUAL

SCIENTIFIC NAME	COMMON NAME	TYPE	%TOTAL COMPOSITION
CAREX VULPINOIDEA	FOX SEDGE	HERB	25.00%
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	HERB	18.00%
PANICUM RIGIDULUM	REDTOP PANICGRASS	HERB	17.00%
CAREX LURIDA	LURID SEDGE	HERB	16.70%
CAREX SCOPARIA	BLUNT BROOM SEDGE	HERB	10.00%
CAREX CRINITA	FRINGED SEDGE	HERB	3.00%
JUNCUS EFFUSUS	SOFT RUSH	HERB	3.00%
ASCLEPIAS INCARNATA	SWAMP MILKWEED	HERB	2.00%
EUPATORIUM PERFOLIATUM	BONESET	HERB	1.00%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	HERB	1.00%
JUNCUS TENUIS	PATH RUSH	HERB	1.00%
VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	HERB	1.00%
SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD	HERB	0.70%
MIMULUS RINGENS	SQUARE STEMMED MONKEYFLOWER	HERB	0.30%
SCIRPUS CYPERINUS	WOOLGRASS	HERB	0.30%

ZONE 2: RIPARIAN SEED MIX - 1.05 ACRES
ERNMX-732 OR APPROVED EQUAL

SCIENTIFIC NAME	COMMON NAME	TYPE	%TOTAL COMPOSITION
SORGHASTRUM NUTANS	INDIANGRASS	HERB	39.70%
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	HERB	20.00%
PANICUM VIRGATUM	SWITCHGRASS	HERB	18.00%
PANICUM RIGIDULUM	REDTOP PANICGRASS	HERB	10.00%
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	HERB	3.00%
RUDBECKIA HIRTA	BLACKEYED SUSAN	HERB	3.00%
HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER	HERB	2.00%
ASCLEPIAS INCARNATA	SWAMP MILKWEED	HERB	1.00%
VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	HERB	0.90%
EUPATORIUM PERFOLIATUM	BONESET	HERB	0.80%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	HERB	0.80%
SOLIDAGO RUGOSA	WRINKLELEAF GOLDENROD	HERB	0.80%

ZONE 2: RIPARIAN TREE AND SHRUB MIX - 1.05 ACRES

SCIENTIFIC NAME	COMMON NAME	TYPE	1"-2" CALIPER/#7 CONTAINER	1" CALIPER/#5 CONTAINER	1.5-2"CALIPER/#2 CONTAINER
LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	SINGLE STEM TREE	30	15	0
ACER RUBRUM	RED MAPLE	SINGLE STEM TREE	30	15	0
BETULA NIGRA	RIVER BIRCH	SINGLE STEM TREE	12	6	0
PLATANUS OCCIDENTAILS	AMERICAN SYCAMORE	SINGLE STEM TREE	29	15	0
QUERCUS PHELLOS	WILLOW OAK	SINGLE STEM TREE	29	15	0
ALNUS SERRULATA	SMOOTH ALDER	MULTI STEM TREE	29	15	0
QUERCUS BICOLOR	SWAMP WHITE OAK	SINGLE STEM TREE	29	15	0
LINDERA BENZOIN	SPICEBUSH	SHRUB	0	0	27
		TOTAL	188	96	27

ZONE 4: WETLAND TREE AND SHRUB MIX - 0.33 ACRES

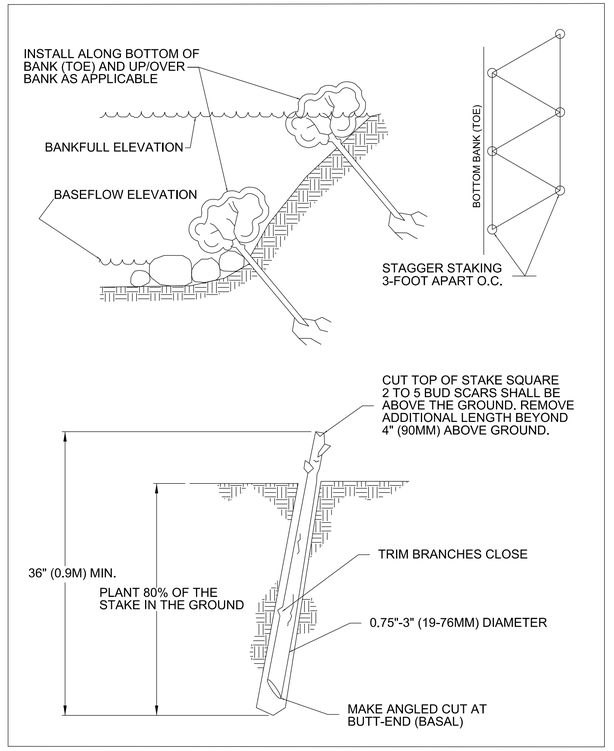
SCIENTIFIC NAME	COMMON NAME	TYPE	1"-2" CALIPER/#7 CONTAINER	1" CALIPER/#5 CONTAINER	1.5-2"CALIPER/#2 CONTAINER
QUERCUS BICOLOR	SWAMP WHITE OAK	SINGLE STEM TREE	8	4	0
NYSSA SYLVATICA	BLACK TUPELO	SINGLE STEM TREE	8	4	0
BETULA NIGRA	RIVER BIRCH	SINGLE STEM TREE	8	4	0
QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	SINGLE STEM TREE	8	4	0
PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	SINGLE STEM TREE	10	5	0
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	SHRUB	0	0	12
MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	MULTI STEM TREE	8	4	0
RHODODENDRON CANESCENS	MOUNTAIN AZALEA	SHRUB	0	0	12
		TOTAL	49	25	24

ZONE 3: STREAMBANK LIVE STAKES MIX - 0.33 ACRES

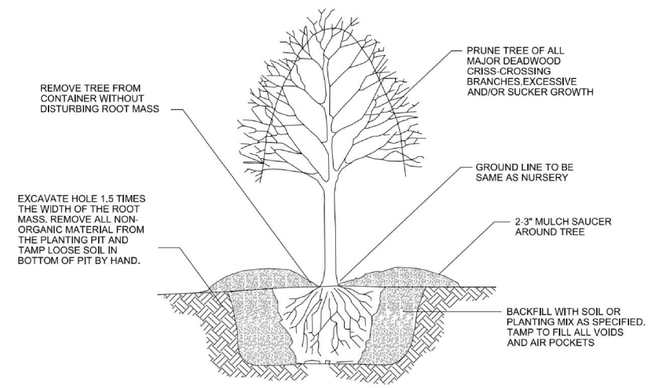
SCIENTIFIC NAME	COMMON NAME	QUANTITY
SALIX NIGRA	BLACK WILLOW	503
CORNUS AMOMUM	SILKY DOGWOOD	503
CORNUS SERICEA	RED OSIER DOGWOOD	503
SALIX SERICEA	SILKY WILLOW	503
	TOTAL	2012

ZONE 5: TURF SEED

AREA	UNITS
70,688	SQUARE FEET



1 / LD-01 LIVE STAKING
NOT TO SCALE



2 / LD-01 TREE SHRUB PLANTING
NOT TO SCALE

GENERAL NOTES
1. QUANTITIES ARE BASED ON ESTIMATED PLANTING AREA OF 5.7 ACRES. ANY ADDITIONAL DISTURBANCE REQUIRING PLANTING SHALL BE SEEDED AND PLANTED AT THE RATE SPECIFIED ABOVE FOR UPLAND SEED MIX.
2. SEEDING SHALL OCCUR PRIOR TO INSTALLATION OF EROSION CONTROL COIR MATTING FABRIC AND LIVESTAKE PLANTING.
3. LIVE STAKES SHALL BE INSTALLED ALONG NEWLY GRADED BANKS WITHIN PLANTING ZONE 3 AS INDICATED ON THE LANDSCAPING PLANS. THE DENSITY OF LIVE STAKES IS BASED ON AN ESTIMATED AREA OF STREAM BANK AND SPACED ACCORDING TO THE LIVE STAKING DETAIL.
4. LIVE STAKES WILL BE PLANTED WITH 2 ROWS ON EACH SPECIFIED STREAM BANK AT 3'X3' SPACING.
5. TREES AND SHRUBS SHALL BE SPACED 12 FT ON CENTER. TREES SHOULD BE SPACED IN A NATURAL PATTERN, SUCH THAT SPECIES ARE DISPERSED EVENLY THROUGHOUT THE SITE.
6. MULCHING SHALL BE PERFORMED WITHIN 48 HOURS OF SEEDING. GRAIN STRAW MULCH SHOULD BE APPLIED ON SEEDED AREAS AT A RATE OF 2 TONS PER ACRE AND APPLIED UNIFORMLY.
7. SPECIES LISTED ABOVE SHOULD BE PLANTED. HOWEVER, IF UNAVAILABLE, SUBSTITUTIONS OF OTHER IN-STOCK NATIVE MATERIAL WILL BE ALLOWED BASED ON THE TREE SUPPLY NURSERY WITH REVIEW AND APPROVAL.
8. UPLAND SEED MIX SHALL BE APPLIED EVENLY AT A RATE OF 20 LBS PER ACRE WITH A COVER CROP OF OATS AT 30 LBS PER ACRE, BROWN TOP MILLET AT 10 LBS PER ACRE, OR GRAIN RYE AT 30 LBS PER ACRE.
9. WETLAND AND STREAMBANK SEED MIX SHALL BE APPLIED EVENLY AT A RATE OF 20 LBS PER ACRE WITH A COVER CROP OF JAPANESE MILLET AT 10 LBS PER ACRE OR GRAIN RYE AT 30 LBS PER ACRE.
10. RIPARIAN SEED MIX SHALL BE APPLIED EVENLY AT A RATE OF 20 LBS PER ACRE WITH A COVER CROP OF GRAIN OATS AT 30 LBS PER ACRE, BROWN TOP MILLET AT 10 LBS PER ACRE, OR GRAIN RYE AT 30 LBS PER ACRE.
11. ALL SINGLE STEM TREES LOCATED WITHIN ZONE 1 SHALL RECEIVE BLACK HIGH DENSITY POLYETHYLENE DEER PROTECTION SHELTERS 3' IN HEIGHT BY 4" IN DIAMETER.
12. ALL SHRUB PLANTINGS AND MULTI STEM TREES LOCATED WITHIN ZONE 1 SHALL BE ENCLOSED USING 3' TALL, 14 GAUGE WELDED WIRE FENCE SECURED TO 6' HARDWOOD STAKES 2' INTO THE GROUND.

STATE OF MARYLAND — CAMILLE E. BURGESS — 51576 — PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

LANDSCAPING DETAILS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. LD-01 OF LD-01	Sheet No. 55 of 66

SEQUENCE OF CONSTRUCTION

PHASE 1 PROJECT INITIATION AND CONSTRUCTION OF MAIN CHANNEL (REACH A AND C) STATION 0+00 TO STATION 4+90

1. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE COUNTY AND CONDUCT REQUIRED PRE-CONSTRUCTION MEETINGS AS OUTLINED IN THE CONSTRUCTION SPECIFICATIONS PRIOR TO COMMENCING CONSTRUCTION.

2. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER A MINIMUM OF ONE (1) WEEK PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES FOR VERIFICATION THEY ARE IN ACCORDANCE WITH THE APPROVED PERMITS.

3. CONTRACTOR TO FIELD MARK LIMIT OF DISTURBANCE AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING, GRADING, SETTING UP OF STAGING AREA, MARKING STOCKPILE, OR ANY SEDIMENT CONTROL MEASURE INSTALLATION. ONCE ALL TREE PROTECTION DEVICES HAVE BEEN INSTALLED, THE APPLICANT SHALL CONTACT THE COUNTY AND SCHEDULE AN INSPECTION OF THE FOREST PROTECTION DEVICES. A STAFF MEMBER OF THE COUNTY SHALL INSPECT AND APPROVE THE INSTALLATION OF ALL PROTECTION DEVICES BEFORE ANY GRADING ACTIVITIES SHALL BE PERMITED.

4. PLACE CONSTRUCTION CLOSURE SIGNS AS INDICATED ON THE PLANS TO PREVENT SITE ACCESS DURING ACTIVE CONSTRUCTION.

5. THE CONTRACTOR SHALL INSTALL THE INITIAL EROSION AND SEDIMENT CONTROL MEASURES AND NOTIFY THE PROJECT ENGINEER OF THE COMPLETED INSTALLATION. LIMITED CONSTRUCTION ACCESS ROUTES ARE SPECIFIED ON THE CONSTRUCTION DRAWINGS. ALTERNATIVES OR DEVIATIONS SHALL BE APPROVED BY THE PROJECT ENGINEER AND OWNER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR PROPOSED ALTERNATIVES WITH DELINEATION OF ENTRANCE LOCATIONS AND ACCESS PATHS SHALL BE INCLUDED IN THE PROPOSED WORKFLOW PLAN. DEVIATIONS FROM THE PROVIDED ACCESS ROUTES WILL REQUIRE WRITTEN AGREEMENT WITH THE PROPERTY OWNER.

6.THE PROJECT ENGINEER SHALL PROVIDE THE NPDES INSPECTOR 48-HOUR NOTIFICATION TO SCHEDULE AN ONSITE PRE-CONSTRUCTION MEETING TO INSPECT THE INSTALLATION OF EROSION AND SEDIMENT MEASURES, PRIOR TO LAND DISTURBANCE.

7. BEGIN DEMOLITION ACTIVITY AS SHOWN ON THE PLAN. SAME DAY STABILIZATION SHALL BE APPLIED TO ANY PORTION OF THE SITE WITHIN THE LIMIT OF DISTURBANCE.

8. BEGIN CONSTRUCTION OF PHASE 1, WHICH ENCOMPASSES THE CONTRUCTION OF THE MAIN CHANNEL (REACH A AND C) FROM STATION 0+00 TO STATION 4+90. THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM, UNLESS OTHERWISE SPECIFIED.

9. BASED ON A 3-DAY DRY WEATHER FORECAST, PLACE TEMPORARY SANDBAG DIVERSION AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA, AS INDICATED ON THE PLANS. WHERE INDICATED, STREAM FLOW SHOULD BE PUMPED AROUND THE WORK AREA AND THE PUMP SHOULD BE DISCHARGED ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS.

10. WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING DEVICE, SUCH AS A DEWATERING BASIN, FILTER BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS INTO THE EXISTING CHANNEL. APPROXIMATE LOCATIONS FOR DEWATERING MEASURES ARE INDICATED ON THE PLANS AND THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION AS NEEDED TO ENSURE THE WORK AREA IS MAINTAINED IN DRY CONDTION.

11. THE CONTRACTOR SHALL BEGIN WORK AT REACH A, STATION 0+00, WORKING FROM UPSTREAM TO DOWNSTREAM UNTIL REACHING REACH A, STATION 1+05.

12. CONTRACTOR SHALL COMPLETE CHANNEL RELOCATION SECTIONS OF REACH A WHERE CHANNEL IS REALIGNED ALONG THE ADJACENT FLOODPLAIN AND CHANNEL CONSTRUCTION CAN BE COMPLETED IN THE DRY. THE CONTRACTOR SHALL ATTEMPT TO CONSTRUCT SECTIONS OF REACH A FROM STATION 1+50 TO STATION 2+00; STATION 2+30 TO STATION 2+80; AND STATION 3+15 TO STATION 4+45 IN DRY CONDITIONS.

13. ONCE THE SPECIFIED CHANNEL SEGMENTS WHICH ARE TO BE CONSTRUCTED IN THE DRY HAVE BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE THE DOWNSTREAM CONNECTION OF PROPOSED REACH A WITH THE EXISTING MAIN CHANNEL, COMPLETING THE CONSTRUCTION OF THE MAIN CHANNEL FROM STATION 4+45 TO STATION 4+90.

14. THE CONTRACTOR SHALL CONSTRUCT REMAINING SEGMENTS OF REACH A TO COMPLETE THE DIVERSION OF STREAM FLOW FROM THE ABANDONED EXISTING CHANNEL INTO THE NEWLY CONSTRUCTED REACH A CHANNEL.

15. ONCE GRADING WORK HAS BEEN COMPLETED FOR PHASE 1, THE ABANDONED CHANNEL WILL BE GRADED AS INDICATED BY THE PLANS.

16. ONCE FINAL GRADE IS ACHIEVED FOR PHASE 1 AND PRIOR TO THE REMOVAL OF SEDIMENT CONTROL DEVICES, THE DISTURBED AREA SHALL BE TOP DRESSED WITH A 4-IN (MIN) OF TOPSOIL, SEEDED WITH A NATIVE SEED MIX (PER SEEDING SCHEDULE), AND CRITICAL EROSION AREAS SHALL BE MATTED WITH TYPE D SOIL STABILIZATION MATTING.

17. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.

PHASE 2 CONSTRUCTION OF REACH B STATION 1+00 TO 2+35

1. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHOULD BEGIN WORK ON PHASE 2, WHICH ENCOMPASSES PORTIONS OF REACH B FROM STATION 1+00 TO STATION 2+35 (END OF REACH B). THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM, UNLESS OTHERWISE SPECIFIED.

2. BASED ON A 3-DAY DRY WEATHER FORECAST, PLACE TEMPORARY SANDBAG DIVERSION AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA, AS INDICATED ON THE PLANS. WHERE INDICATED, STREAM FLOW SHOULD BE PUMPED AROUND THE WORK AREA AND THE PUMP SHOULD BE DISCHARGED ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS.

3. WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE, SUCH AS A DEWATERING BASIN, FILTER BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS INTO THE EXISTING CHANNEL. APPROXIMATE LOCATIONS FOR DEWATERING MEASURES ARE INDICATED ON THE PLANS AND THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION AS NEEDED TO ENSURE THE WORK AREA IS MAINTAINED IN DRY CONDTION.

4. THE CONTRACTOR SHALL BEGIN WORK AT REACH B, STATION 1+00, WORKING FROM UPSTREAM TO DOWNSTREAM UNTIL REACHING REACH B, STATION 1+50.

5. THE CONTRACTOR SHALL COMPLETE THE DOWNSTREAM CONNECTION OF REACH B WITH THE MAIN CHANNEL, COMPLETING THE CONSTRUCTION OF REACH B FROM STATION 2+05 THROUGH THE CONFLUENCE WITH THE MAIN CHANNEL.

6. THE CONTRACTOR SHALL CONSTRUCT REMAINING SEGMENTS OF REACH B TO COMPLETE THE DIVERSION OF STREAM FLOW FROM THE ABANDONED EXISTING CHANNEL INTO THE NEWLY CONSTRUCTED REACH B CHANNEL.

7. ONCE FINAL GRADE IS ACHIEVED FOR PHASE 2 AND PRIOR TO THE REMOVAL OF SEDIMENT CONTROL DEVICES, THE DISTURBED AREA SHALL BE TOP DRESSED WITH A 4-IN (MIN) OF TOPSOIL, SEEDED WITH A NATIVE SEED MIX (PER SEEDING SCHEDULE), AND CRITICAL EROSION AREAS SHALL BE MATTED WITH TYPE D SOIL STABILIZATION MATTING.

8. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.

TEMPORARY/PERMANENT STABILIZATION NOTE

ALL DISTURBED AREAS THAT ARE NOT BROUGHT TO FINAL GRADE WITHIN SEVEN (7) CALENDAR DAYS AFTER INITIATING DISTURBANCE SHALL BE STABILIZED USING TEMPORARY SEED AND MULCH. 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 AND ADJACENT SLOPES WITHIN PLANTING ZONE 2 (RIPARIAN PLANTING ZONE) AND PLANTING ZONE 3 (LIVESTAKE PLANTING AND STREAMSIDE SEEDING AREA) SHALL BE TREATED WITH TYPE D SOIL STABILIZATION MATTING TO ENSURE ADEQUATE STABILIZATION.

FOREST CONSERVATION NOTE

UNDER THE SUPERVISION OF A LICENSED TREE CARE PROFESSIONAL, THE LIMITS OF THE PROJECT WILL BE EVALUATED FOR ADDITIONAL TREE PROTECTION MEASURES NEEDED AS OUTLINED IN THE FOREST CONSERVATION PLAN TABLES ON SHEETS FC-05 AND FC-06. PARTICULAR ATTENTION WILL BE MADE TO SPECIMEN TREES (>= 30'' DBH) FOR NEEDED STRESS REDUCTION MEASURES.

SAME DAY STABILIZATION NOTE

ALL WORK SHOWN IN THE DESIGNATED AREA SHALL BE DONE USING THE METHOD OF SAME DAY STABILIZATION. NO MORE LAND AREA OR LENGTH OF CHANNEL SHALL BE DISTURBED THAN CAN BE BACKFILL, COMPACTED, AND STABILIZED BY THE END OF THE SAME WORKDAY. ALL DISTURBED AREAS THAT DO NOT DRAIN TO A SEDIMENT CONTROL DEVICE SHALL BE STABILIZED BY THE END OF THE SAME WORKDAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE.

SITE ANALYSIS

TOTAL SITE AREA:	5. 9 ACRES
TOTAL DISTURBED AREA:	5.9 ACRES
AREA TO BE PAVED:	0.0 ACRES
AREA TO BE STABILIZED:	5.7 ACRES
TOTAL CUT:	7985 CU YD
TOTAL FILL:	7985 CU YD

NPDES I.D. POINT N: 644333.5490' E: 1508159.5350'

PHASE 3 CONSTRUCTION OF MAIN CHANNEL (REACH A AND C) STATION 4+90 TO 13+81

1. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHOULD BEGIN WORK ON PHASE 3, WHICH ENCOMPASSES THE CONTRUCTION OF THE MAIN CHANNEL (REACH A AND C) FROM STATION 4+90 TO STATION 13+81. THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM, UNLESS OTHERWISE SPECIFIED.

2. BASED ON A 3-DAY DRY WEATHER FORECAST, PLACE TEMPORARY SANDBAG DIVERSION AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA, AS INDICATED ON THE PLANS. WHERE INDICATED, STREAM FLOW SHOULD BE PUMPED AROUND THE WORK AREA AND THE PUMP SHOULD BE DISCHARGED ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS.

3. WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE, SUCH AS A DEWATERING BASIN, FILTER BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS INTO THE EXISTING CHANNEL. APPROXIMATE LOCATIONS FOR DEWATERING MEASURES ARE INDICATED ON THE PLANS AND THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION AS NEEDED TO ENSURE THE WORK AREA IS MAINTAINED IN DRY CONDTION.

4. THE CONTRACTOR SHALL BEGIN WORK AT REACH C, STATION 4+90, WORKING FROM UPSTREAM TO DOWNSTREAM UNTIL REACHING REACH C, STATION 10+30.

5. CONTRACTOR SHALL COMPLETE CHANNEL RELOCATION SECTIONS OF REACH C WHERE CHANNEL IS REALIGNED ALONG THE ADJACENT FLOODPLAIN AND CHANNEL CONSTRUCTION CAN BE COMPLETED IN THE DRY. THE CONTRACTOR SHALL ATTEMPT TO CONSTRUCT SECTIONS OF REACH C FROM STATION 10+70 TO STATION 11+60; AND STATION 12+10 TO STATION 13+50 IN DRY CONDITIONS.

6. ONCE THE SPECIFIED CHANNEL SEGMENTS WHICH ARE TO BE CONSTRUCTED IN THE DRY HAVE BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE THE DOWNSTREAM CONNECTION OF PROPOSED REACH C WITH THE EXISTING MAIN CHANNEL, COMPLETING THE CONSTRUCTION OF THE MAIN CHANNEL FROM STATION 13+50 TO STATION 13+81.

7. THE CONTRACTOR SHALL CONSTRUCT REMAINING SEGMENTS OF REACH C TO COMPLETE THE DIVERSION OF STREAM FLOW FROM THE ABANDONED EXISTING CHANNEL INTO THE NEWLY CONSTRUCTED REACH C CHANNEL.

8. ONCE GRADING WORK HAS BEEN COMPLETED FOR PHASE 3, THE ABANDONED CHANNEL WILL BE GRADING AS INDICATED BY THE PLANS.

9. ONCE FINAL GRADE IS ACHIEVED FOR PHASE 3 AND PRIOR TO THE REMOVAL OF SEDIMENT CONTROL DEVICES, THE DISTURBED AREA SHALL BE TOP DRESSED WITH A 4-IN (MIN) OF TOPSOIL, SEEDED WITH A NATIVE SEED MIX (PER SEEDING SCHEDULE), AND CRITICAL EROSION AREAS SHALL BE MATTED WITH TYPE D SOIL STABILIZATION MATTING.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.

PHASE 4 CONSTRUCTION OF REACH D-1 STATION 2+00 TO 3+10 AND REACH D-2 STATION 3+00 TO 5+91

NOTE: PHASE 4 WORK CAN BEGIN ANY TIME AFTER PHASE 1, STEP 7 OF THE CONSTRUCTION SEQUENCE. THIS WORK CAN HAPPEN CONCCURENTLY TO PHASE 1, PHASE 2, OR PHASE 3 STREAM RESTORATION WORK

1. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHOULD BEGIN WORK ON PHASE 4, WHICH ENCOMPASSES THE CONTRUCTION OF REACH D-1 AND REACH D-2. THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM, UNLESS OTHERWISE SPECIFIED.

2. BASED ON 3-DAY DRY WEATHER FORECAST, PLACE TEMPORARY SANDBAG DIVERSION AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA, AS INDICATED ON THE PLANS.

3. REACH D-1 AND REACH D-2 ARE TYPICALLY STORMWATER FED AND ARE NOT EXPECTED TO CONVEY FLOW DURING NORMAL BASEFLOW CONDITIONS. IF PRESENT, STREAM FLOW OR WATER FROM GROUNDWATER INFILTRATION SHOULD BE PUMPED AROUND THE WORK AREA AND THE PUMP SHOULD BE DISCHARGED ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS.

4. WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE, SUCH AS A DEWATERING BASIN, FILTER BAG, OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS INTO THE EXISTING CHANNEL. APPROXIMATE LOCATIONS FOR DEWATERING MEASURES ARE INDICATED ON THE PLANS AND THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION AS NEEDED TO ENSURE THE WORK AREA IS MAINTAINED IN DRY CONDTION.

5. THE CONTRACTOR SHALL BEGIN WORK AT REACH D-1, STATION 2+00, WORKING FROM UPSTREAM TO DOWNSTREAM UNTIL REACHING STATON 2+71, BRINGING THE CHANNEL TO THE FINAL PROPOSED GRADE.

6. THE CONTRACTOR SHALL CONTRUCT A TEMPORARY STABLE CONVEYANCE CHANNEL TO CONVEY FLOWS FROM THE NEWLY GRADED REACH D-1 CHANNEL TO THE EXISTING REACH D-2 CHANNEL, GRADING FROM STATION 2+71 TO THE CONFLUENCE WITH REACH D-2 AT A MAXIMUM CHANNEL SLOPE OF 4:1.

7. THE CONTRACTOR SHALL BEGIN WORK AT REACH D-2, STATION 3+00, WORKING FROM UPSTREAM TO DOWNSTREAM UNTIL REACHING STATION 4+38, BRINGING THE CHANNEL TO THE FINAL PROPOSED GRADE.

8. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED CONFLUENCE OF REACH D-1 AND REACH D-2, COMPLETING THE RESTORATION OF REACH D-1 THROUGH STATION 3+10 (END OF REACH) AND COMPLETING THE RESTORATION OF REACH D-2 THROUGH STATION 4+60.

9. UPON COMPLETING THE PROPOSED CONFLUENCE OF REACH D-1 AND REACH D-2, THE CONTRACTOR SHALL CONTINUE CONSTRUCTING THE PROPOSED CHANNEL FOR REACH D-2, WORKING FROM UPSTREAM TO DOWNSTREAM TO COMPLETE THE CONSTRUCTION OF REACH D-2 FROM STATION 4+60 THROUGH THE CONFLUENCE WITH THE MAIN CHANNEL.

10. ONCE FINAL GRADE IS ACHIEVED FOR PHASE 4 AND PRIOR TO THE REMOVAL OF SEDIMENT CONTROL DEVICES, THE DISTURBED AREA SHALL BE TOP DRESSED WITH A 4-IN (MIN) OF TOPSOIL, SEEDED WITH A NATIVE SEED MIX (PER SEEDING SCHEDULE), AND CRITICAL EROSION AREAS SHALL BE MATTED WITH TYPE D SOIL STABILIZATION MATTING.

11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, AND 100 YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.

6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:

ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.)AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
A. USE I WATERS (WITHOUT YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
B. USE I WATERS (WITH YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
C. USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THORUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
D. USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

ENGINEER'S CERTIFICATION

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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE 1994 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

Emily Burgess 2/24/25

ENGINEER DATE

STATE OF MARYLAND EMILY E BURGESS 51576 PROFESSIONAL ENGINEER

OWNER'S CERTIFICATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HARFORD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, OR AS DEEMED NECESSARY.

3-5-25

OWNER DIRECTOR OF DPW DATE

S/C PLAN # 59898 GP # GRA-014989-2023

250438

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

SEQUENCE OF CONSTRUCTION

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	SC-01 OF SC-01	Sheet No.	56 of 66

SCALE 1 INCH

MATCHLINE SEE SHEET ES-02

N

EDGEWATER DR

SANCHEZ DENNYS JOSUE
RODRIGUEZ &
MORALES KELLY
2003 WATERGATE CT
PARCEL 0934

HARFORD COUNTY
WATERGATE CT
PARCEL 0940

MC FADDEN TALBERT J &
MC FADDEN THERESA
2001 WATERGATE CT
PARCEL 0934

DUAH KWAME
1929 EDGEWATER DR
PARCEL 0936

AGU CLINTON I
1927 HARBINGER TRL
PARCEL 0936

DAY DOLORES M
703 MALLARD CT
PARCEL 0936

ROSS JENELL T
701 MALLARD CT
PARCEL 0936

SWAMP MATS TO BE USED WHERE TRAVEL IS NECESSARY THROUGH DESIGNATED WETLAND AREAS OR BUFFERS

PROPOSED CONSTRUCTION ACCESS ROUTE

TREE/WETLAND PRESERVATION AREA

END OF REACH A
START OF REACH C
(B4c CHANNEL)
STA 4+60.20

REACH B
TIE-IN STA 101+29.10

REACH A
START RESTORATION
STA 0+00

REACH B
START RESTORATION
STA 100+00

SWAMP MATS TO BE USED WHERE TRAVEL IS NECESSARY THROUGH DESIGNATED WETLAND AREAS OR BUFFERS

WETLAND RESTORATION/ENHANCEMENT AREA

0+00 1+00 2+00 3+00 4+00 100+00 101+35

24" RCP INV EL=41.73

7' CHAIN LINK FENCE

CONC WALL

CONCRETE

CONCRETE CURB

CONCRETE SIDEWALK

HEADWALL IS WITHIN THIS BURIED AREA

4' CHAIN LINK FENCE

18" RCP INV EL=45.56

CONCRETE HEADWALL

TOP OF N SEWER LINE

WETLANDS

15" FALLEN TREE

TREE DEBRIS

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

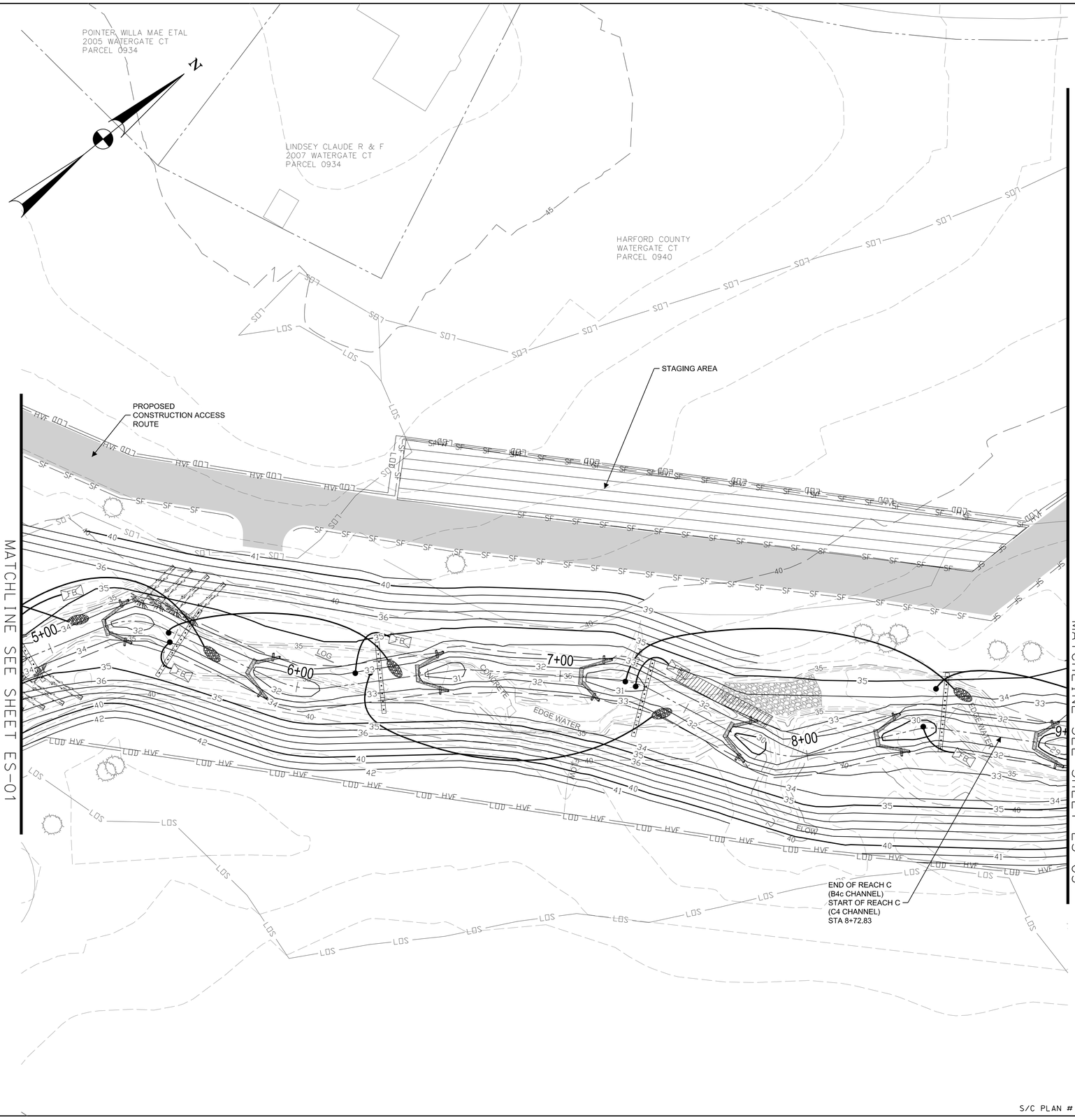
EROSION AND SEDIMENT CONTROL PLAN

STATE OF MARYLAND
EMILY E BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. ES-01 OF ES-05	Sheet No. 57 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1"=20'



IMPORTANT NOTICE: DUE TO PROJECT PROXIMITY TO AN ACTIVE COUNTY PARK THERE WILL BE AN INCREASED LIKELIHOOD OF CHILDREN TRESSPASSING ON THE CONSTRUCTION SITE. CONTRACTOR SHALL MAINTAIN SITE SECURITY BY PERFORMING REGULAR SECURITY PATROLS, INSPECTING HIGH VISIBILTY SAFETY FENCE REGULARLY, MAKING PROMPT REPAIRS, AND ENSURING ITS MAINTAINED AT A SUFFICIENT HEIGHT FREE OF GAPS. IF TRESSPASSERS OR CHILDREN ARE OBSERVED ON THE CONSTRUCTION SITE, IMMEDIATELY NOTIFY THE COUNTY AND TAKE APPROPRIATE ACTION TO SAFELY GUIDE THEM AWAY FROM THE CONSTRUCTION SITE. REPORT ALL INCIDENTS OF TRESSPASSING TO THE COUNTY FOR DOCUMENTATION AND POTENTIAL FOLLOW-UP ACTIONS.

20' 0 20' 40'
SCALE: 1"=20'

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

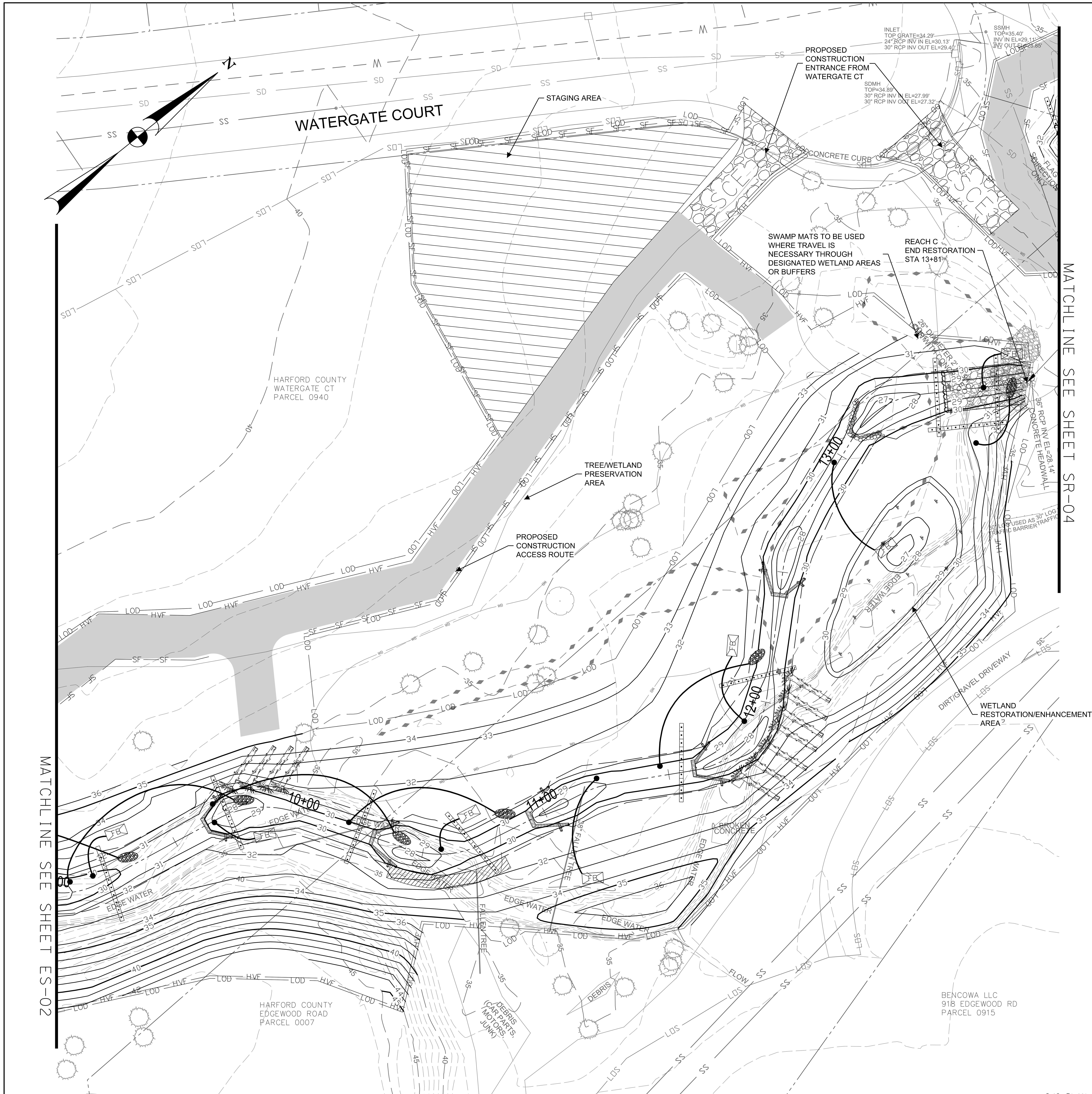
EROSION AND SEDIMENT CONTROL PLAN

STATE OF MARYLAND
BRIAN W. ANDERSON
51576
PROFESSIONAL ENGINEER

Drawn By : ST	Scale : 1''=20'
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. ES-02 OF ES-05	Sheet No. 58 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1"=20'


WATERGATE COURT
N
STAGING AREA
PROPOSED CONSTRUCTION ENTRANCE FROM WATERGATE CT
INLET TOP GRATE=34.29' 24" RCP INV IN EL=30.13' 30" RCP INV OUT EL=29.40'
SDMH TOP=34.89' 30" RCP INV IN EL=27.99' 30" RCP INV OUT EL=27.32'
CONCRETE CURB
SWAMP MATS TO BE USED WHERE TRAVEL IS NECESSARY THROUGH DESIGNATED WETLAND AREAS OR BUFFERS
REACH C END RESTORATION STA 13+81
MATCHLINE SEE SHEET SR-04
HARFORD COUNTY WATERGATE CT PARCEL 0940
TREE/WETLAND PRESERVATION AREA
PROPOSED CONSTRUCTION ACCESS ROUTE
36" RCP INV EL=28.14' CONCRETE HEADWALL
EDGE WATER
DIRT/GRAVEL DRIVEWAY
WETLAND RESTORATION/ENHANCEMENT AREA
13+00
12+00
11+00
10+00
BROKEN CONCRETE
FALLEN TREE
FLOW
DEBRIS
DEBRIS (CAR PARTS, MOTORS, JUNK)
MATCHLINE SEE SHEET ES-02
HARFORD COUNTY EDGEWOOD ROAD PARCEL 0007
BENCOWA LLC 918 EDGEWOOD RD PARCEL 0915

SCALE: 1"=20'

STATE OF MARYLAND
EMILY E. BURGESS
51576
PROFESSIONAL ENGINEER

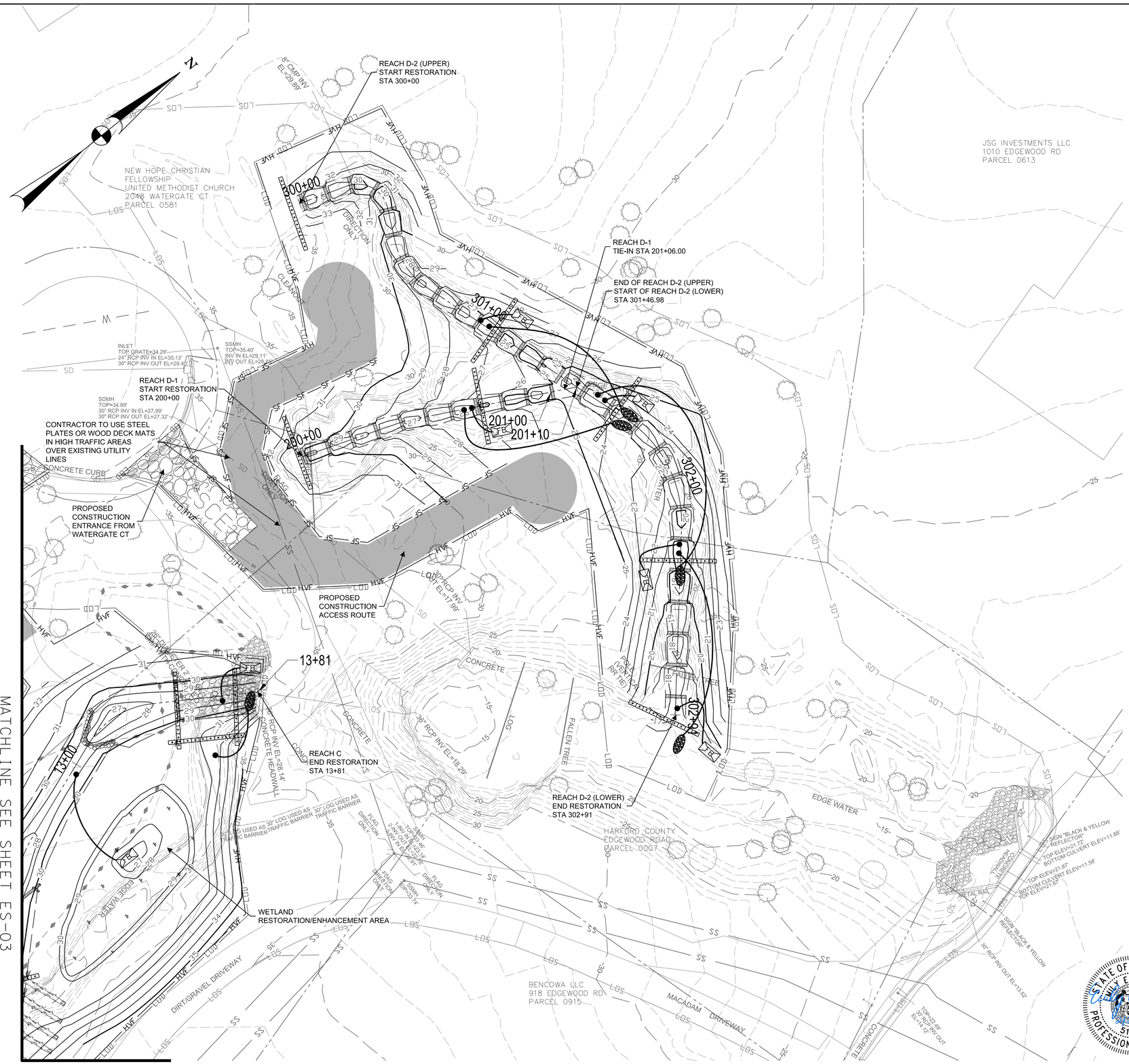
HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL PLAN

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	ES-03 OF ES-05	Sheet No.	59 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



HARFORD COUNTY, MARYLAND

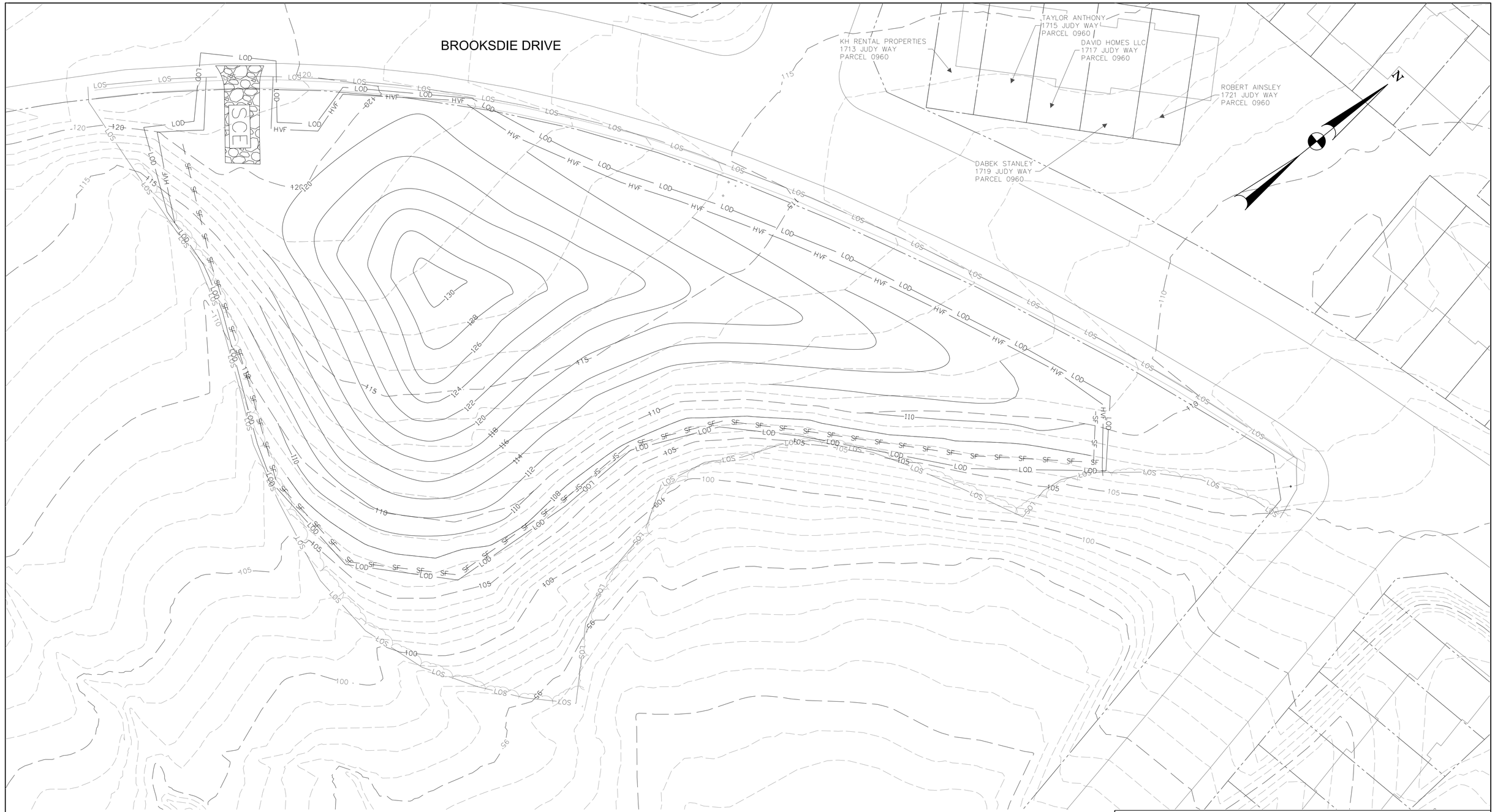
WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL PLAN

STATE OF MARYLAND
STEVEN E. BURGESS
51576
PROFESSIONAL ENGINEER

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	ES-04 OF ES-05	Sheet No.	60 of 66

S/C PLAN # 59898 GP # GRA-014989-2023



20' 0 20' 40'

SCALE: 1"=20'

STATE OF MARYLAND
CHARLES E. BURGESS
51576
PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

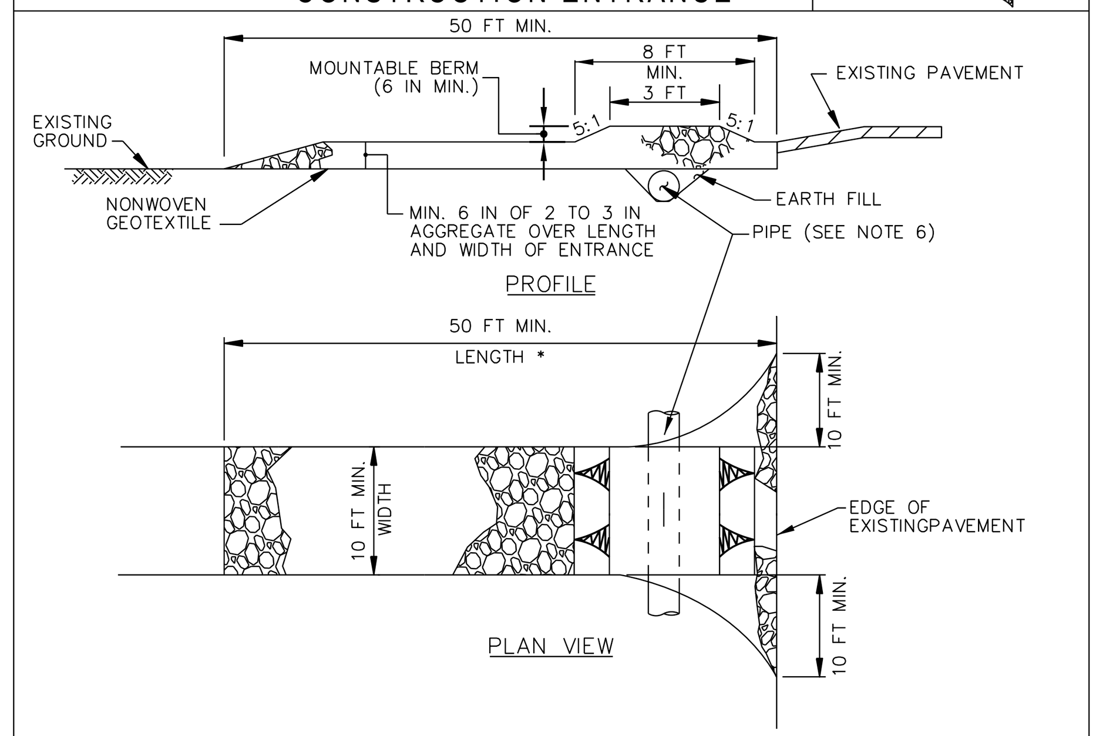
WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL PLAN

Drawn By :	ST	Scale :	1''=20'
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	ES-05 OF ES-05	Sheet No.	61 of 66

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

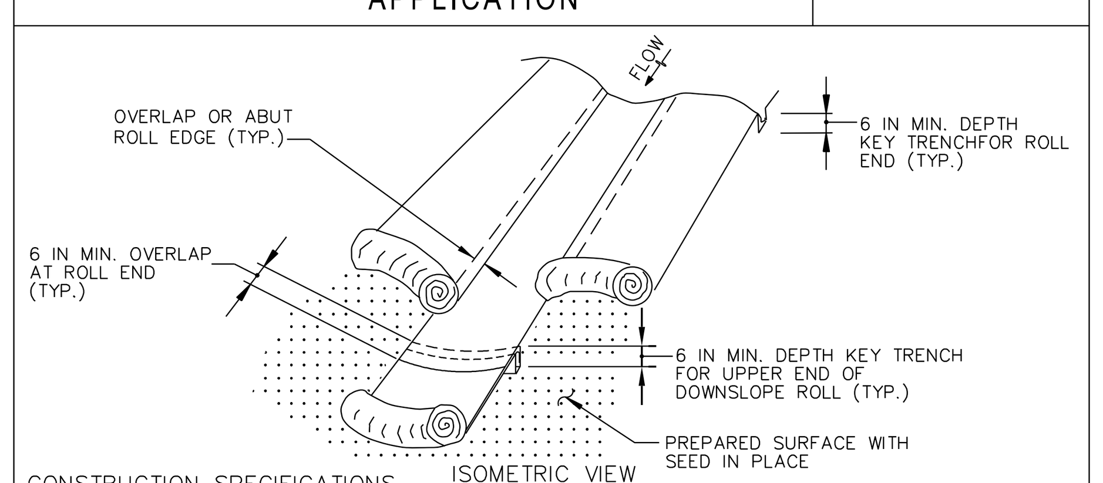
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	201 1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

1 ED-01 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL TSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

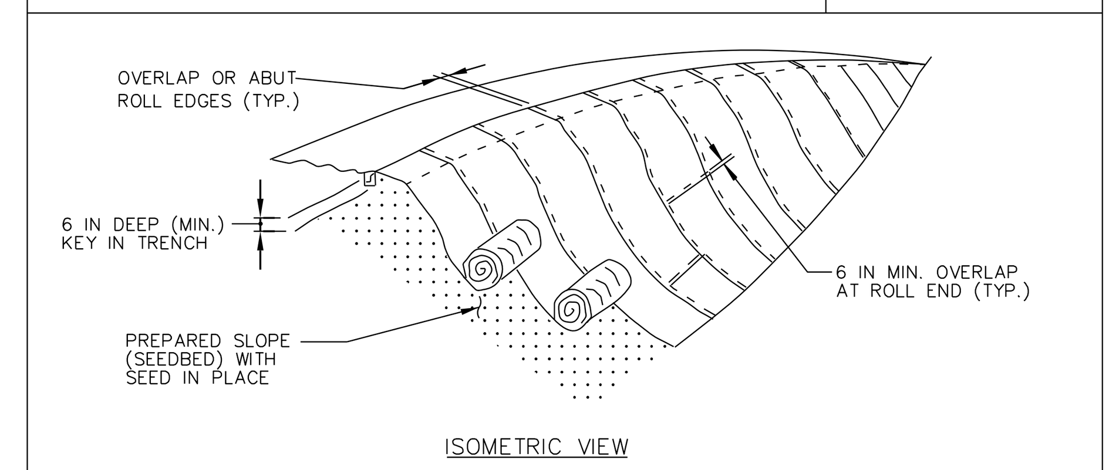
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

2 ED-01 TEMPORARY SOIL STABILIZATION MATTING - CHANNEL APPLICATION
NOT TO SCALE

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL TSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

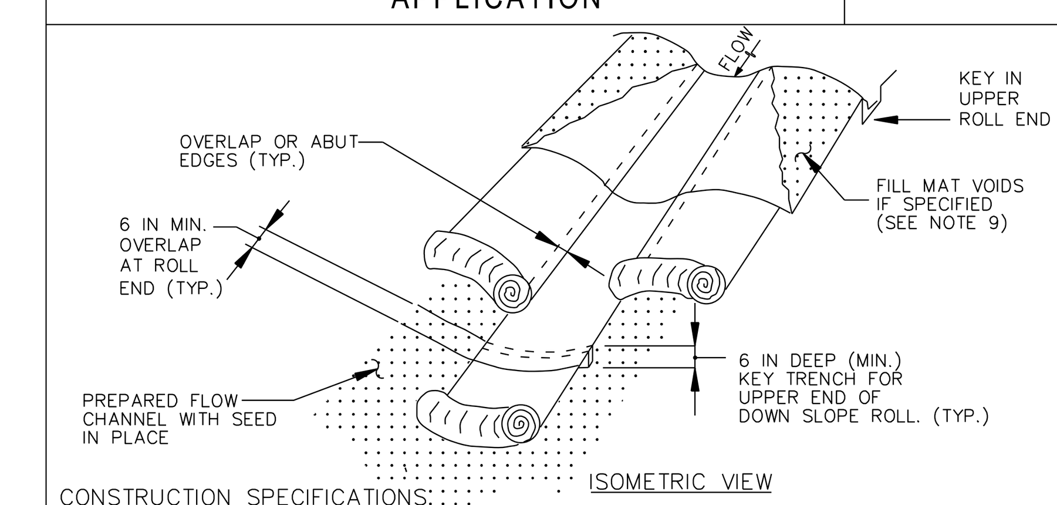
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

3 ED-01 TEMPORARY SOIL STABILIZATION MATTING - SLOPE APPLICATION
NOT TO SCALE

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL PSSMC – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

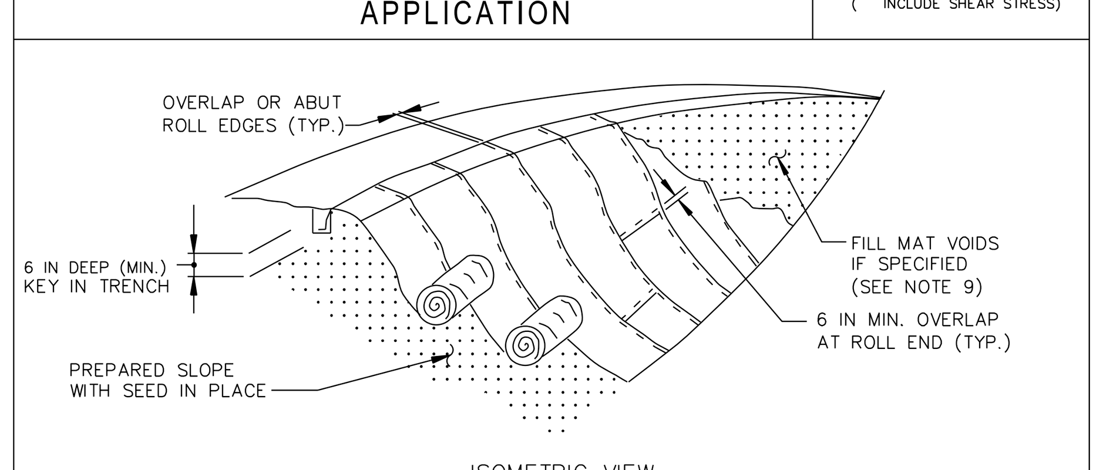
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

4 ED-01 PERMANENT SOIL STABILIZATION MATTING - CHANNEL APPLICATION
NOT TO SCALE

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL PSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

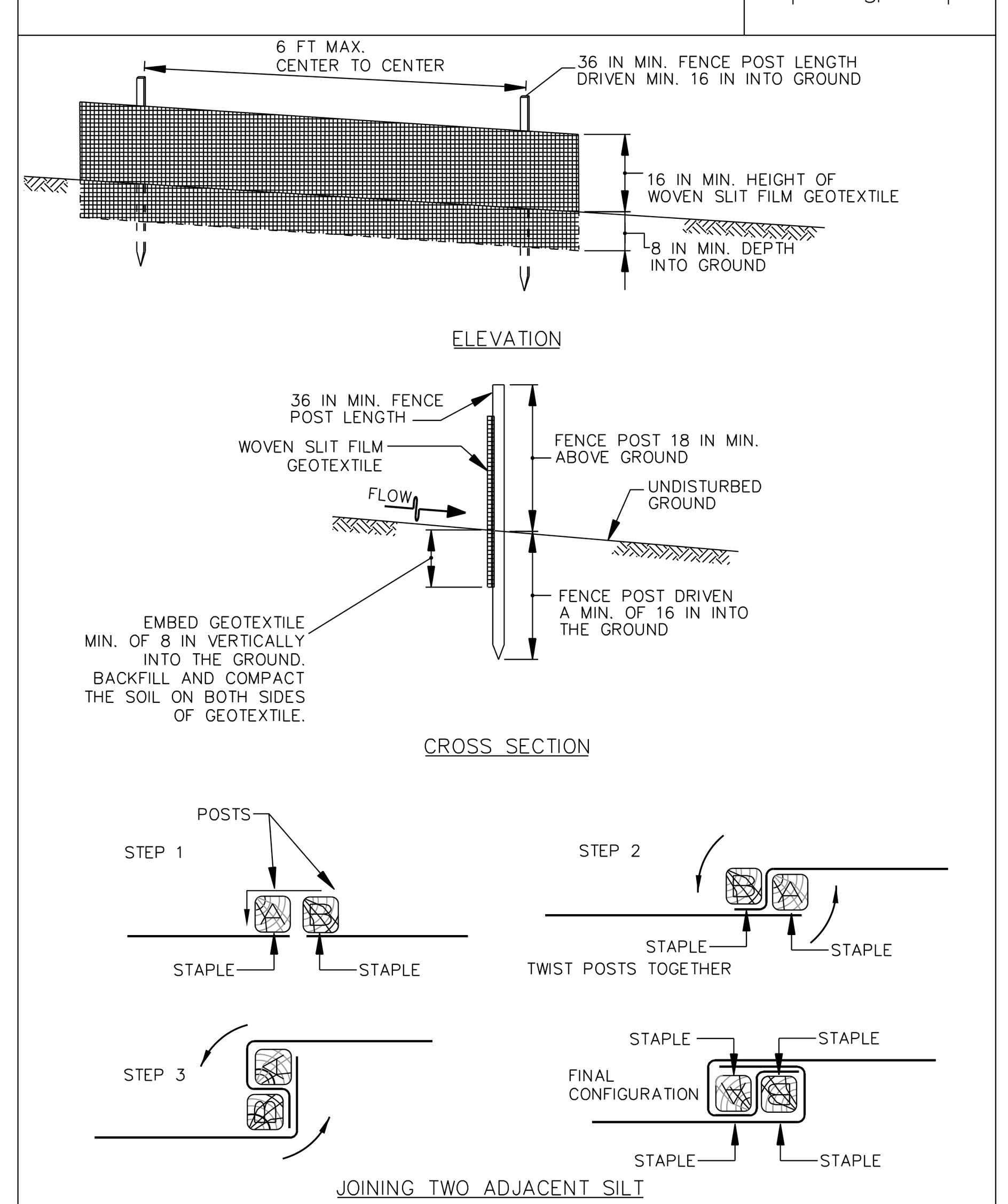
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

5 ED-01 PERMANENT SOIL STABILIZATION MATTING - SLOPE APPLICATION
NOT TO SCALE

DETAIL E-1 SILT FENCE

STANDARD SYMBOL —SF—



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

6 ED-01 SILT FENCE - TYPICAL DETAIL
NOT TO SCALE

DETAIL E-1 SILT FENCE

STANDARD SYMBOL —SF—

CONSTRUCTION SPECIFICATIONS

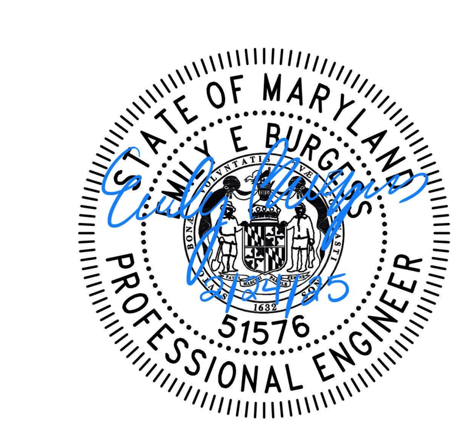
1. USE WOOD POSTS 1¾ X 1¾ ± ¹⁄₁₆ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

7 ED-01 SILT FENCE - CONSTRUCTION SPECIFICATIONS
NOT TO SCALE



HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

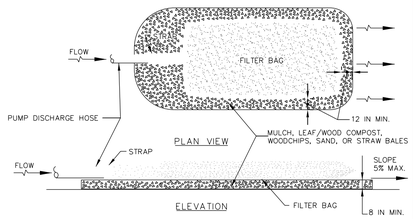
EROSION AND SEDIMENT CONTROL DETAILS

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	ED-01 OF ED-04	Sheet No.	62 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ⊠FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

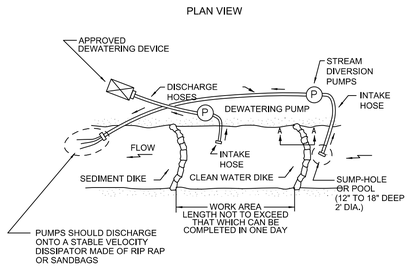
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

1 ED-02 — FILTER BAG — NOT TO SCALE

DETAIL 1.2: PUMP-AROUND PRACTICE

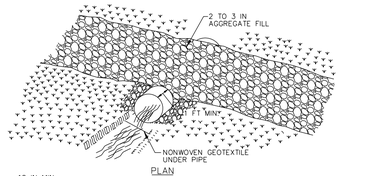


REVISED NOVEMBER 2000
PAGE 1.2 - 3

2 ED-02 — PUMP AROUND PRACTICE — NOT TO SCALE

DETAIL H-4-2 TEMPORARY ACCESS CULVERT

STANDARD SYMBOL: TAC



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

3 ED-02 — TEMPORARY ACCESS CULVERT — NOT TO SCALE

DETAIL H-4-2 TEMPORARY ACCESS CULVERT

STANDARD SYMBOL: TAC

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS CULVERT WILL NOT BE PERMITTED DURING THE FOLLOWING PERIODS:

USE I AND IP	MARCH 1 – JUNE 15
USE II	JUNE 1 – SEPTEMBER 30 AND DECEMBER 16 – MARCH 14
USE III AND IIIP	OCTOBER 1 – APRIL 30
USE IV	MARCH 1 – MAY 31
SAV* (ALL FLOWING STREAMS)	APRIL 15 – OCTOBER 15
*SUBMERGED AQUATIC VEGETATION	

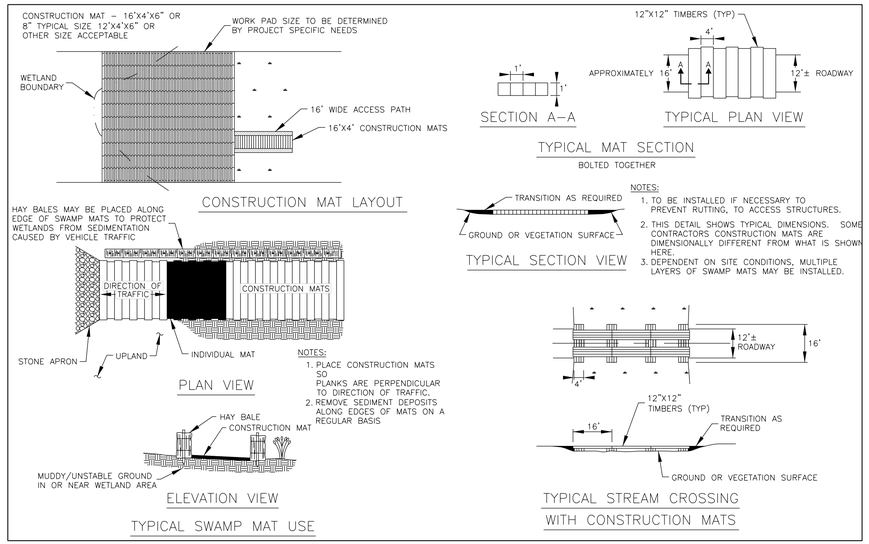
2. EXTEND THE CULVERT(S) A MINIMUM OF ONE FOOT BEYOND THE UPSTREAM AND DOWNSTREAM TOE OF THE AGGREGATE PLACED AROUND THE CULVERT.
3. PLACE NONWOVEN GEOTEXTILE ON THE STREAM BED AND STREAM BANKS PRIOR TO PLACEMENT OF THE PIPE CULVERT(S) AND AGGREGATE. COVER THE STREAM BED WITH THE GEOTEXTILE AND EXTEND IT A MINIMUM SIX INCHES AND A MAXIMUM OF ONE FOOT BEYOND THE END OF THE CULVERT AND BEDDING MATERIAL. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. GEOTEXTILE REDUCES SETTLEMENT AND IMPROVES CROSSING STABILITY.
4. PLACE CULVERT(S) ON THE NATURAL STREAM BED GRADE TO MINIMIZE INTERFERENCE WITH FISH PASSAGE.
5. COVER THE CULVERT WITH A MINIMUM OF ONE FOOT OF WASHED AGGREGATE. FOR MULTIPLE CULVERTS PROVIDE AT LEAST 12 INCHES OF COMPACTED AGGREGATE FILL BETWEEN CULVERTS.
6. STABILIZE ALL AREAS DISTURBED DURING CULVERT INSTALLATION WITHIN 24 HOURS OF THE DISTURBANCE IN ACCORDANCE WITH STANDARDS FOR PERMANENT STABILIZATION, SECTION B-4-5, OR TEMPORARY STABILIZATION, SECTION B-4-4, AS APPLICABLE.
7. STABILIZE APPROACH TO CROSSING AND KEEP FREE OF EROSION. REPLACE DISPLACED STONE, AND MAINTAIN HIGH FLOW AREAS. REMOVE DEBRIS TRAPPED BY CULVERT. REPLACE DAMAGED PIPE(S). MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING CULVERT REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE CULVERT AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

4 ED-02 — TEMPORARY ACCESS CULVERT — NOT TO SCALE



5 ED-02 — CONSTRUCTION MAT - LAYOUT AND PLAN VIEW — NOT TO SCALE

CONSTRUCTION MAT BEST MANAGEMENT PRACTICES

INSTALLATION

- MATS SHOULD BE IN GOOD CONDITION TO ENSURE PROPER INSTALLATION, USE AND REMOVAL.
- OPERATING HEAVY EQUIPMENT IN WETLANDS SHALL BE MINIMIZED, AND SUCH EQUIPMENT OTHER THAN FIXED EQUIPMENT (DRILL RIGS, FIXED CRANES, ETC.) SHALL NOT BE STORED, MAINTAINED, FUELED OR REPAIRED IN WETLANDS UNLESS THE EQUIPMENT IS BROKEN DOWN AND CANNOT BE EASILY REMOVED.
- AN ADEQUATE SUPPLY OF SPILL CONTAINMENT EQUIPMENT SHALL BE MAINTAINED ON SITE.
- MATS SHOULD BE PLACED IN POSITION AS OPPOSED TO DRAGGING.
- WOODY VEGETATION (TREES, SHRUBS, ETC.) SHALL BE CUT AT OR ABOVE GROUND LEVEL AND NOT UPROOTED IN ORDER TO PREVENT DISRUPTION TO THE WETLAND SOIL STRUCTURE AND TO ALLOW STUMP SPROUTS TO REVEGETATE THE WORK AREA.
- WHERE FEASIBLE, PLACE MATS IN A LOCATION THAT WOULD MINIMIZE THE AMOUNT NEEDED FOR THE WETLANDS CROSSING.
- MINIMIZE IMPACTS TO WETLAND AREAS DURING INSTALLATION, USE, AND REMOVAL.
- INSTALL ADEQUATE EROSION AND SEDIMENT CONTROLS AT APPROACHES TO MATS TO PROMOTE A SMOOTH TRANSITION TO, AND MINIMIZE SEDIMENT TRACKING ONTO, SWAMP MATS.
- IN MOST CASES, CONSTRUCTION MATS SHOULD BE PLACED ALONG THE TRAVEL AREA SO THAT THE INDIVIDUAL BOARDS ARE RESTING PERPENDICULAR TO THE DIRECTION OF TRAFFIC. NO GAPS SHOULD EXIST BETWEEN MATS. PLACE MATS FAR ENOUGH ON EITHER SIDE OF THE RESOURCE AREA TO REST ON FIRM GROUND.

WETLAND/STREAM CHANNEL CROSSING

- AT "DRY" CROSSINGS WHERE NO FLOW IS PRESENT OR ANTICIPATED DURING PROJECT CONSTRUCTION, THE MATS MAY BE PLACED DIRECTLY ONTO THE GROUND IN ORDER TO PREVENT EXCESSIVE RUTTING, PROVIDED STREAM BANKS AND BOTTOMS ARE NOT ADVERSELY ALTERED.
- CONSTRUCTION MATS MAY BE USED AS A TEMPORARY BRIDGE OVER A STREAM TO ALLOW VEHICLES ACCESS TO THE WORK SITE. SMALL SECTIONS OF MAT ARE PLACED WITHIN AND ALONG THE STREAM PARALLEL TO THE FLOW OF WATER. MATS MAY THEN BE PLACED PERPENDICULAR TO THE STREAM, RESTING ON TOP OF THE INITIAL CONSTRUCTION MAT SUPPORTS. IT MAY BE NECESSARY TO PLACE ADDITIONAL REINFORCEMENT FOR EXTRA STABILITY AND TO MINIMIZE THE AMOUNT OF SEDIMENT THAT COULD FALL BETWEEN THE SPACES OF EACH TIMBER.
- IN AREAS WHERE WILDLIFE PASSAGE OR MIGRATION IS A CONSIDERATION, MATS MAY BE INSTALLED IN ACCORDANCE WITH THE DIAGRAM "TYPICAL STREAM CROSSING WITH SWAMP MATS."
- MATS SHOULD NOT BE PLACED SO THAT THEY RESTRICT THE NATURAL FLOW OF THE STREAM.
- MINIMIZE NUMBER OF STREAM/WETLAND CROSSINGS. WHERE FEASIBLE, LOCATE CROSSING SITE WHERE STREAM CHANNEL IS NARROW FOR THE SHORTEST POSSIBLE CLEAR SPAN AND WHERE STREAM BANKS ARE STABLE AND WELL DEFINED. FOR LARGE WETLAND COMPLEXES, CONSIDER ACCESSING STRUCTURES FROM OPPOSITE SIDES WHERE POSSIBLE TO AVOID CROSSING THE ENTIRE WETLAND.
- MORE THAN ONE LAYER OF MATS MAY BE NECESSARY IN AREAS WHICH ARE INUNDATED OR HAVE DEEP ORGANIC WETLAND SOILS.

MAINTENANCE

- MATTED WETLAND CROSSINGS SHOULD BE MONITORED TO ASSURE CORRECT FUNCTIONING OF THE MATS. INSPECT MATS AFTER USE. LOOK FOR ANY DEFECTS OR STRUCTURAL PROBLEMS. MATS WHICH BECOME COVERED WITH SOILS OR CONSTRUCTION DEBRIS SHOULD BE CLEANED AND THE MATERIALS REMOVED AND DISPOSED OF IN AN UPLAND LOCATION. THE MATERIAL SHOULD NOT BE SCRAPED AND SHOVELED INTO THE RESOURCE AREA. MATS WHICH BECOME IMBEDDED MUST BE RESET OR LAYERED TO PREVENT MUD FROM COVERING THEM OR WATER PASSING OVER THEM.

REMOVAL

- MATTING SHOULD BE REMOVED BY "BACKING" OUT OF THE SITE, REMOVING MATS ONE AT A TIME. ANY RUTTING OR SIGNIFICANT INDENTATIONS IDENTIFIED DURING MAT REMOVAL SHOULD BE REGRADED IMMEDIATELY, TAKING CARE NOT TO COMPACT SOILS.
- MATS SHOULD BE CLEANED BEFORE TRANSPORT TO ANOTHER WETLAND LOCATION TO REMOVE SOIL AND ANY INVASIVE PLANT SPECIES SEED STOCK OR PLANT MATERIAL.
- MATS SHALL BE CLEANED OF SOIL AND ANY INVASIVE PLANT SPECIES SEED STOCK OR PLANT MATERIAL FROM BEFORE INSTALLATION.
- CLEANING METHODS MAY INCLUDE BUT ARE NOT LIMITED TO SHAKING OR DROPPING MATS IN A CONTROLLED MANNER WITH A PIECE OF MACHINERY TO KNOCK OFF ATTACHED SOIL AND DEBRIS, SPRAYING WITH WATER OR AIR, AND SWEEPING.
- CROSSINGS SHOULD BE INSPECTED FOLLOWING MAT REMOVAL TO DETERMINE THE LEVEL OF RESTORATION REQUIRED.

RESTORATION

- SPECIAL PRECAUTIONS SHOULD BE TAKEN TO PROMPTLY STABILIZE AREAS OF DISTURBED SOIL LOCATED NEAR WETLANDS AND STREAMS. MATTED AREAS WITHIN WETLANDS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION. THIS MAY INVOLVE NATURAL REVEGETATION FROM EXISTING ROOT AND SEED STOCK OF NATIVE PLANT SPECIES. CONDITIONS MAY WARRANT PLANTING AND THE BROADCAST OF A WETLAND SEED MIX OVER THE MATTED AREA TO SUPPLEMENT THE EXISTING SEED AND ROOTSTOCK. SEED MIXES AND VEGETATION SHALL CONTAIN ONLY PLANT SPECIES NATIVE TO WEST VIRGINIA. THE USE OF MULCH IN WETLANDS SHALL CONSIST OF WEED- FREE MULCH TO MITIGATE THE RISK OF THE SPREAD OF INVASIVE PLANT SPECIES.

6 ED-02 — CONSTRUCTION MAT - BEST MANAGEMENT PRACTICE — NOT TO SCALE

STATE OF MARYLAND — KYLE E. BURGESS — 51576 — PROFESSIONAL ENGINEER

HARFORD COUNTY, MARYLAND

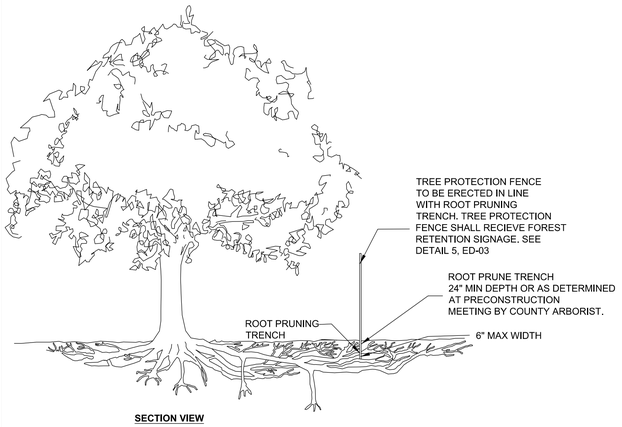
WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL DETAILS

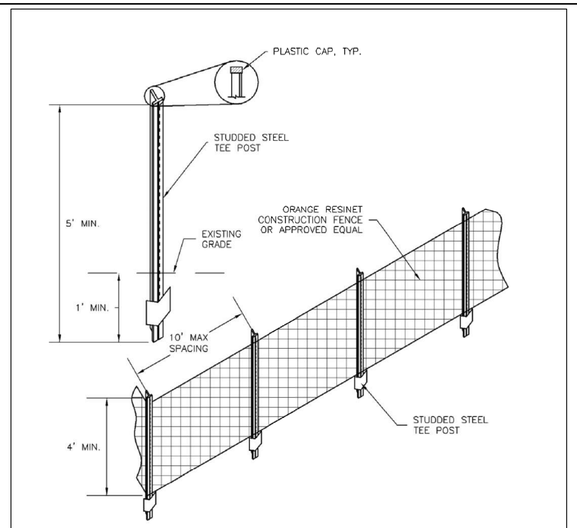
Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. ED-02 OF ED-04	Sheet No. 63 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1" = 1'0"



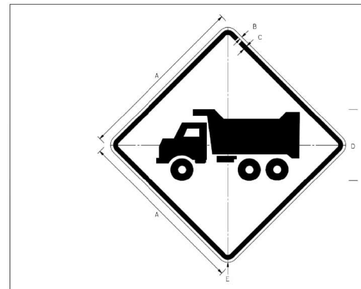
1 ED-03 **ROOT PRUNING**
NOT TO SCALE



CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

2 ED-03 **HIGH VISIBILITY FENCE**
NOT TO SCALE



NOTE: FOR SYMBOL DESIGN CONTACT SHA SIGN SHOP.

SIGN SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
STD	48	3/4	1-1/4	20	3

REFERENCES
MdMUTCD SECTION - 6F.34

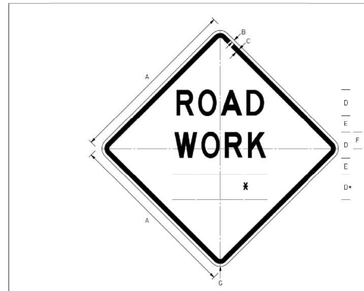
COLORS
LEGEND - BLACK
BACKGROUND - FLUORESCENT ORANGE

APPROVED Tom Hicks (signature on file)
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL + SHA NUMBERS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 03-25-2007	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
MARYLAND STANDARD HIGHWAY SIGNS
TRUCK CROSSING (SYMBOL)
SIGN NUMBER W11-10(1)

3 ED-03 **VEHICULAR WARNING SIGN**
NOT TO SCALE



* REFER TO DISTANCE DETAILS IN WORK AREA SECTION FOR LINE 3 MESSAGE AND DIMENSIONS

SIGN SIZE	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	G
MIN	36	5/8	7/8	50	3-1/2	3-1/4	2-1/4
STD	48	3/4	1-1/4	70	4-3/4	4-1/2	3
EXPWY	60	3/4	1-1/4	90	6	5	3

REFERENCES
MdMUTCD SECTION - 6F.17

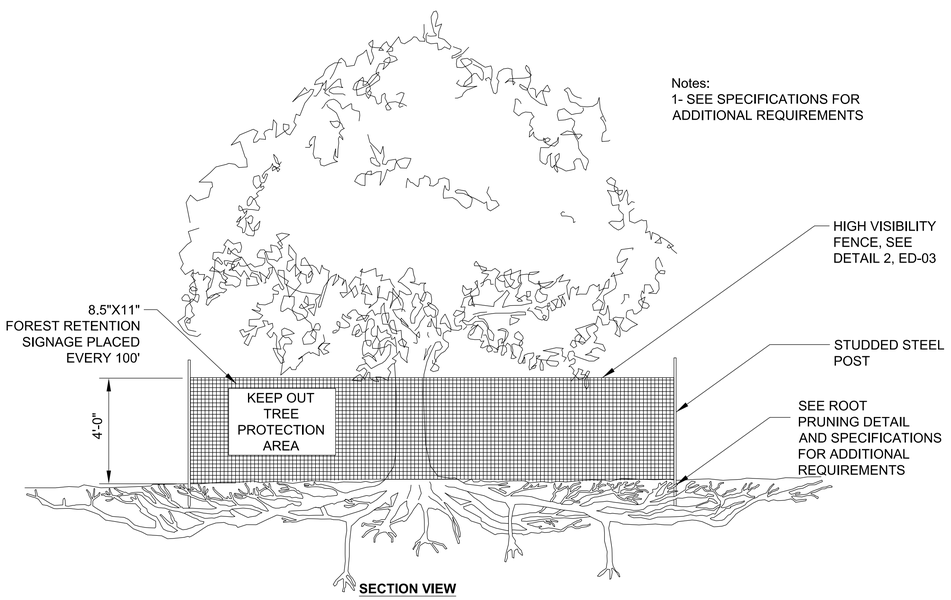
COLORS
LEGEND - BLACK
BACKGROUND - FLUORESCENT ORANGE

APPROVED Tom Hicks (signature on file)
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

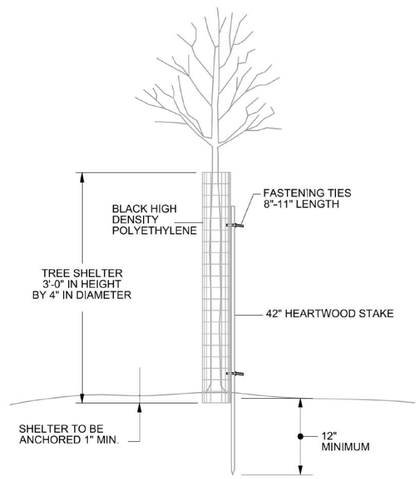
APPROVAL + SHA NUMBERS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 03/02/2009	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
MARYLAND STANDARD HIGHWAY SIGNS
ROAD WORK _____
SIGN NUMBER W20-1(1)

4 ED-03 **WORK ZONE WARNING SIGN**
NOT TO SCALE

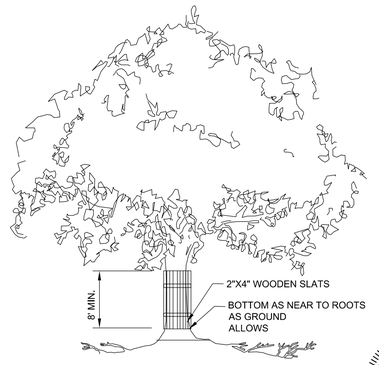


5 ED-03 **TREE PROTECTION FENCE**
NOT TO SCALE



NOTES:
1. UP TO 2" OF SOIL CAN BE MOUNTED AROUND THE OUTSIDE OF TREE SHELTER.

6 ED-03 **DEER PROTECTION FENCE**
NOT TO SCALE



7 ED-03 **TREE PLANKING**
NOT TO SCALE

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL DETAILS

Drawn By :	ST	Scale :	NTS
Designed By :	ST	Date :	NOVEMBER 2024
Reviewed By :	BWA		
Drawing No.	ED-03 OF ED-04	Sheet No.	64 of 66

S/C PLAN # 59898 GP # GRA-014989-2023

SCALE: 1" = 1'-0"

FOR

STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

TEMPORARY VEGETATION STABILIZATION NOTES

A) SEEDBED PREPARATION:
Loosen a minimum of three inches along upper soil by discing, raking or other acceptable means.

B) SOIL AMENDMENTS:
Soil amendments may only be added in areas greater than 10 feet away from any stream, waterway, or wetland. if soil amendments are to be added, incorporate 436 lbs. per acre of 10-20-20 fertilizer and two (2) tons per acre of lime by discing or other acceptable means.

C) SEEDING:
FOR PERIODS OF MARCH 1 TO APRIL 30 AND AUGUST 15 TO NOVEMBER 15: Seed with 2.5 bu. per acre of Cereal Rye or 40 lbs. per acre of Annual Ryegrass.
FOR PERIOD OF MAY 1 TO AUGUST 14: Seed with 3 lbs. per acre of Weeping Lovegrass or 30 lbs. per acre of Pearl or Foxtail Millet.
FOR THE PERIOD OF NOVEMBER 16 TO FEBRUARY 28: Protect the site by applying two (2) tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

D) MULCHING SPECIFICATIONS:
Mulch shall be applied to all seeded areas immediately after seeding.

Apply two (2) tons per acre of straw over all seeded areas. If a mulch anchoring tool is to be used, the rate shall be increased to 2.5 tons per acre.**

Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind and water. The type of mulch anchoring used must comply with the 2011 MARYLAND STANDARD AND SPECIFICATIONS. 1

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED, THEY MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATIONS, B-4-4: “TEMPORARY SEEDING”, TABLE B-1 (PAGE B.20).

** IF A DIFFERENT TYPE OF MULCH IS TO BE USED, IT MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATION, B-4-3: “SEEDING AND MULCHING” (PAGES B.15 B.17).

2 ED-04 TEMPORARY STABILIZATION NOTES
NOT TO SCALE

B-4-1 STANDARDS AND SPECIFICATIONS

FOR

INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
   a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
   b. Perform Phase I excavation, prepare seedbed, and stabilize.
   c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
   d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

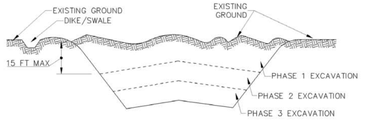


Figure B.1: Incremental Stabilization – Cut

1 ED-04 STOCKPILE
NOT TO SCALE

PERMANENT VEGETATIVE STABILIZATION NOTES

ALL DISTURBED AREAS, WHICH ARE NOT TO BE PAVED, SHALL BE PERMANENTLY STABILIZED AS FOLLOWS:
A) SEEDBED PREPARATION:
Loosen a minimum of three inches along upper soil by raking, discing, or other acceptable means after spreading four inches of topsoil.

B) SOIL AMENDMENTS:
Soil amendments may only be added in areas greater than 10 feet away from any stream, waterway, or wetland. if soil amendments are to be added, incorporate 225 lbs. per acre of 10-20-20 fertilizer and two tons per acre of lime by discing or other acceptable means.

C) SEEDING: *
Please see sheets LP-01 through LP-05 and LD-01 for the landscaping plan and schedule. This will specify all permanent seeding placement and schedule

D) MULCHING SPECIFICATIONS:
Mulch shall be applied to all seeded areas immediately after seeding.

Apply two (2) tons per acre of straw over all seeded areas. If a mulch anchoring tool is to be used, the rate shall be increased to 2.5 tons per acre. **

Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind and water. The type of mulch anchoring used must comply with the 2011 MARYLAND STANDARD AND SPECIFICATIONS.

* IF OTHER SEED MIXES ARE TO BE SUBSTITUTED, THEY MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATIONS, B-4-5: “PERMANENT SEEDING”, TABLE B-3 (PAGES B.26 TO B.31)

** IF A DIFFERENT TYPE OF MULCH IS TO BE USED, IT MUST COMPLY WITH THE 2011 MARYLAND STANDARD AND SPECIFICATION, B-4-3: “SEEDING AND MULCHING” (PAGES B.15 B.17)

3 ED-04 PERMANENT STABILIZATION NOTES
NOT TO SCALE

B. Incremental Stabilization - Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
   a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
   b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   c. Place Phase 1 fill, prepare seedbed, and stabilize.
   d. Place Phase 2 fill, prepare seedbed, and stabilize.
   e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

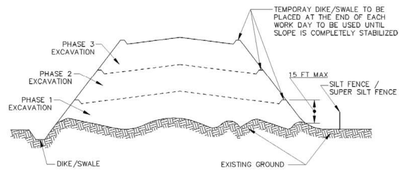


Figure B.2: Incremental Stabilization – Fill

NOTE:
PER THE STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION FILL SHOW ON SHEET SR-05 THE PROPOSED PERMANENT STOCKPILE SHALL BE STABILIZED IN 2 INCREMENTAL PHASES DUE TO ITS HEIGHT EXCEEDING THE 15 FOOT MAXIMUM VERTICAL HEIGHT.

PHASE 1: FILL 108' TO 123'
PHASE 2: FILL 123' TO 130'

STATE OF MARYLAND
CLAY E. BURGESS
51576
PROFESSIONAL ENGINEER

HARFORD COUNTY SEDIMENT CONTROL NOTES

1. The contractor/owner is responsible for obtaining all necessary permits. Further, no construction activity shall take place until all required permits have been obtained.
2. The limits of disturbance shall be clearly delineated in the field prior to grading of the site to ensure compliance with approved plans. All Forest Retention areas will be delineated with High Visibility Safety Fence as well as any SWM infiltration practice prior to any clearing. Work beyond the limits of disturbance and in any area inside the Forest Retention and SWM infiltration area is considered to be a violation of this plan.
3. All sediment control practices must be installed prior to any construction activity. Upon completion of the installation of perimeter sediment control practices the site must be inspected by the Department of Public Works (DPW). No additional construction activity will be authorized without the approval from DPW.
4. All points of ingress and egress shall be protected to prevent tracking of mud into public ways. During construction, every means will be taken to control soil erosion and siltation. If necessary a wash rack may need to be established.
5. Earth dikes, sediment traps, etc. will be located as shown on these drawings. Field changes and minor adjustments are permissible as long as the installation functions and conforms to specifications. The site inspector prior to installation must approve all such changes. Major changes to the approved plan will require re-approval by the Harford Soil Conservation District.
6. Following initial soil disturbance or re-disturbance permanent or temporary stabilization shall be completed within:
a) Seven calendar days as to all disturbed or graded areas of the project site.
7. Dust Control must be managed as part of all Sediment Control plans. Failure to do so is a violation of this plan.
8. Sediment basins must be built to design specifications shown on the plan. If the basin is to be used as a future SWM facility, the basin will be built in accordance with the latest MD-378 standards and specifications. Specified materials must be used. No changes or modifications will be made without written authorization of the Harford Soil Conservation District.
9. Temporary fencing shall be placed around all sediment basins, traps, and ponds during construction and site grading.
10. At the end of each working day all sediment control practices will be inspected and left operational. A weekly log will be kept in accordance with NOI/NPDES regulations. A copy of the approved sediment control plans shall be available at the site at all times.
11. Ensure positive drainage to all road inlets during all phases of road construction to ensure positive flow to traps and or basins.
12. Cut and/or fill shall be done in conformance with 2011 Erosion and Sediment Control Standards and Specifications for land grading.
13. Surface flows over cut and fill slopes shall be controlled by either redirecting flows from traversing the slopes or by installing mechanical devices to safely convey water down slopes without causing erosion.
14. Off-site waste or borrow areas shall have an approved erosion and sediment control plan prior to the import or export of material to/from the project site.
15. All material originating from the development of the property and deposited on the public right-of-way shall be immediately removed.
16. Storm drain inlets and outlets shall be protected per 2011 Erosion and Sediment Control standards and specifications.
17. Topsoil, liming, fertilizing, seeding, mulching, sod, etc. are all essential parts of the sediment control plan and must be completed along with all other practices.
18. Traps to be removed shall be dewatered as per the 2011 Erosion and Sediment Control standards and specifications.
19. Prior to removal of traps or conversion of sediment basins to SWM facilities, the storm drains will be flushed.
20. Sediment control practices will be maintained until all disturbed areas for which the practices were installed have been stabilized. Sediment control practices may be removed only with the authorization of the DPW inspector. All disturbed areas resulting from the removal of sediment control devices shall be stabilized immediately. Removal prior to inspector’s approval constitutes a violation.

4 ED-04 SEDIMENT CONTROL NOTES
NOT TO SCALE

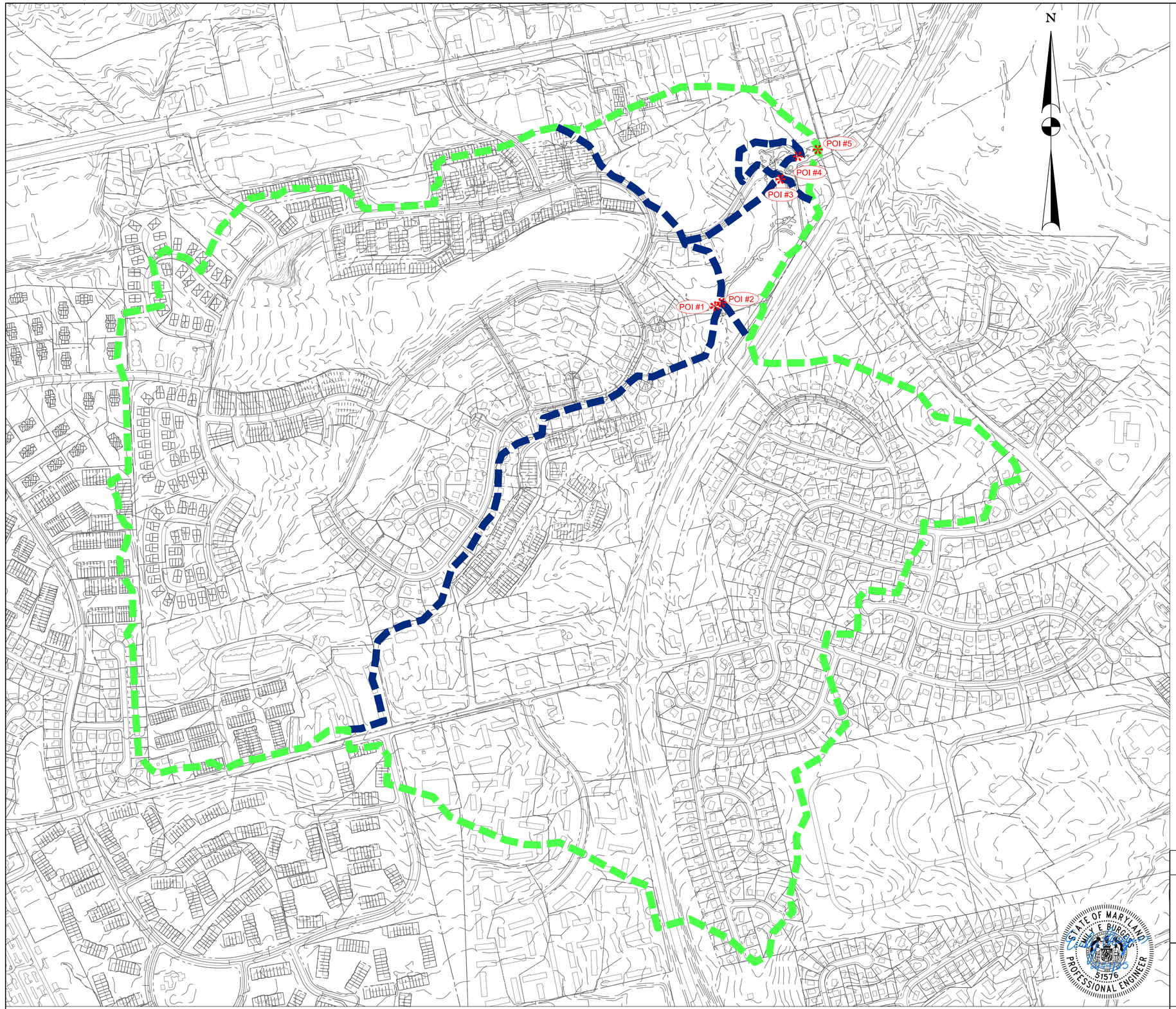
S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

EROSION AND SEDIMENT CONTROL DETAILS

Drawn By : ST	Scale : NTS
Designed By : ST	Date : NOVEMBER 2024
Reviewed By : BWA	
Drawing No. ED-04 OF ED-04	Sheet No. 65 of 66



POI	DRAINAGE AREA (SQ. MI)	PERCENT IMPERVIOUS (%)
POI #1	0.31	26.8
POI #2	0.30	22.9
POI #3	0.63	24.4
POI #4	0.002	6.5
POI #5	0.65	24.1

LEGEND

- EX. MAJOR CONTOURS
- POINT OF INTEREST (POI)
- DRAINAGE AREA BOUNDARY
- SUB-DRAINAGE AREA BOUNDARY

SCALE 1"=300' 300' 0 300' 600'

HORIZONTAL SCALE: 1"=30'

STATE OF MARYLAND
CARLY E. BURGER
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PROFESSIONAL ENGINEER

S/C PLAN # 59898 GP # GRA-014989-2023

HARFORD COUNTY, MARYLAND

WATERGATE COURT STREAM RESTORATION

DRAINAGE AREA MAP

Drawn By : ST
Designed By : ST
Reviewed By : BWA

Scale : 1''=300'
Date : NOVEMBER 2024

Drawing No. DA-01 OF DA-01

Sheet No. 66 of 66

SCALE 1"=300'