

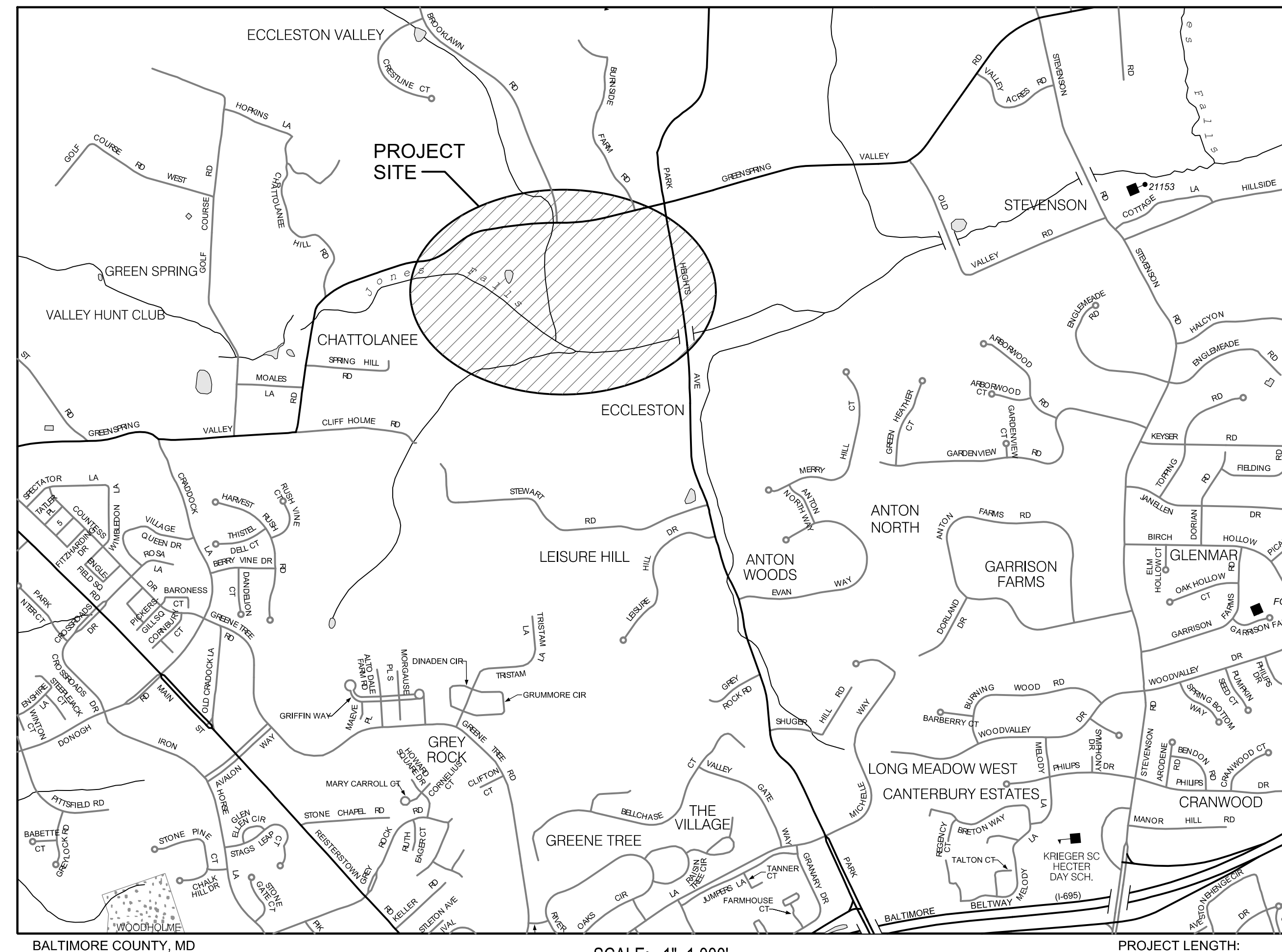
ECCLESTON MITIGATION SITE

INDEX OF SHEETS

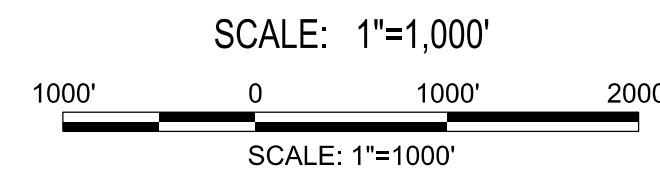
*SEE SHEET NO. 2

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAIN

- 1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS TO 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 THE NONTIDAL WETLAND, 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 MATERIAL 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 THE 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 TO 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 IS TO NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA IS TO BE SEEDING 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:
 USE III WATERS (NON-TIDAL COLD WATER);
 IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD APRIL 30 THROUGH OCT 1, INCLUSIVE, DURING ANY YEAR.
- 10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES TO BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- 11) CULVERTS TO 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.



HORIZONTAL DATUM	NAD 83/91
VERTICAL DATUM	NAVD 88



RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF THE UNDERGROUND AND SURFACE UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO EXCAVATION FOR MARKING AND LOCATION OF UTILITIES.

ENVIRONMENTAL INFORMATION

MDE # XX-MD-XXXX

STANDARD STABILIZATION NOTE:
 FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION:
 I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION

BY: PCRAWFORD



JOHNSON, MIRMIRAN & THOMPSON
 Engineering A Brighter Future®

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. _____, EXPIRATION DATE: _____.

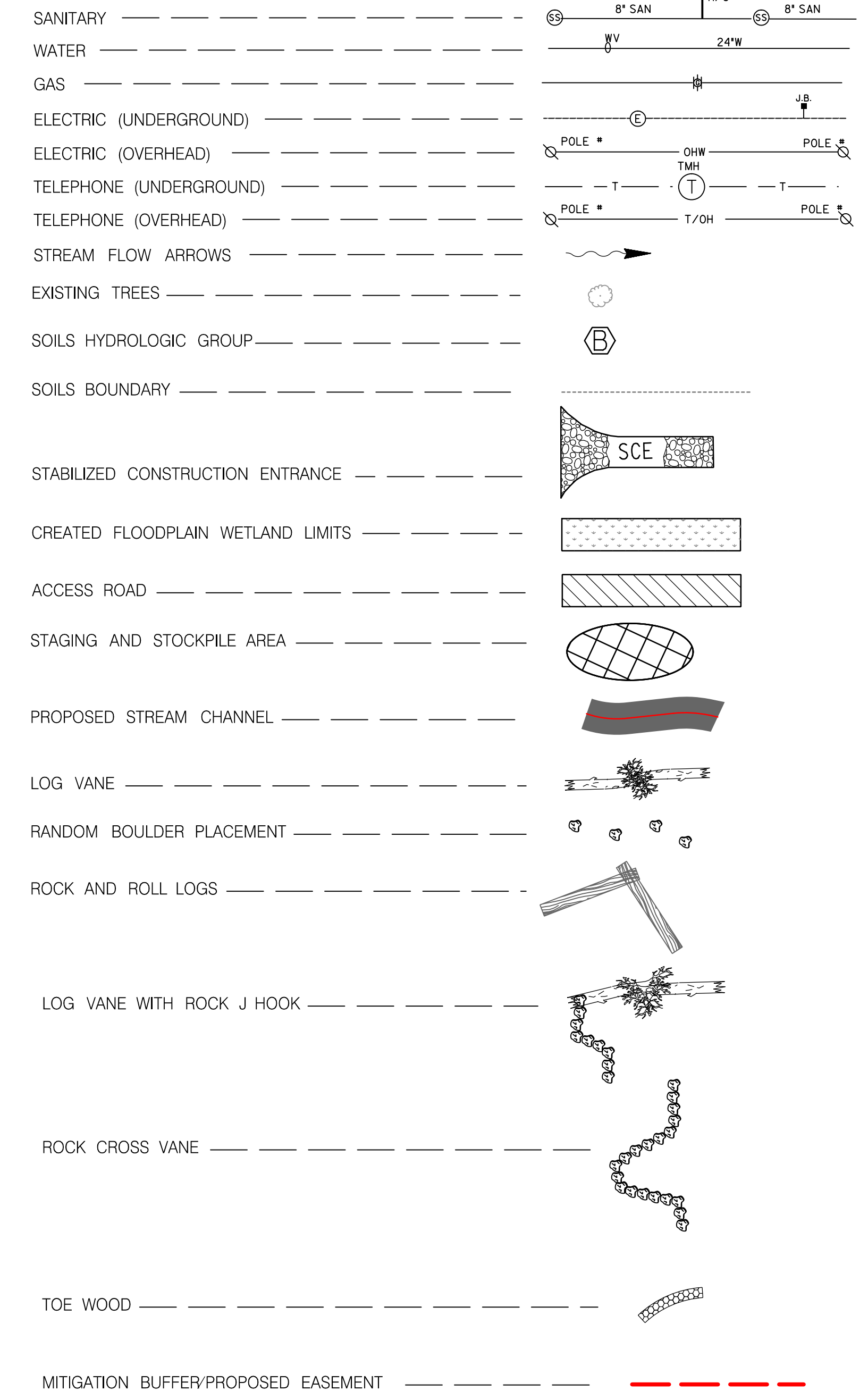
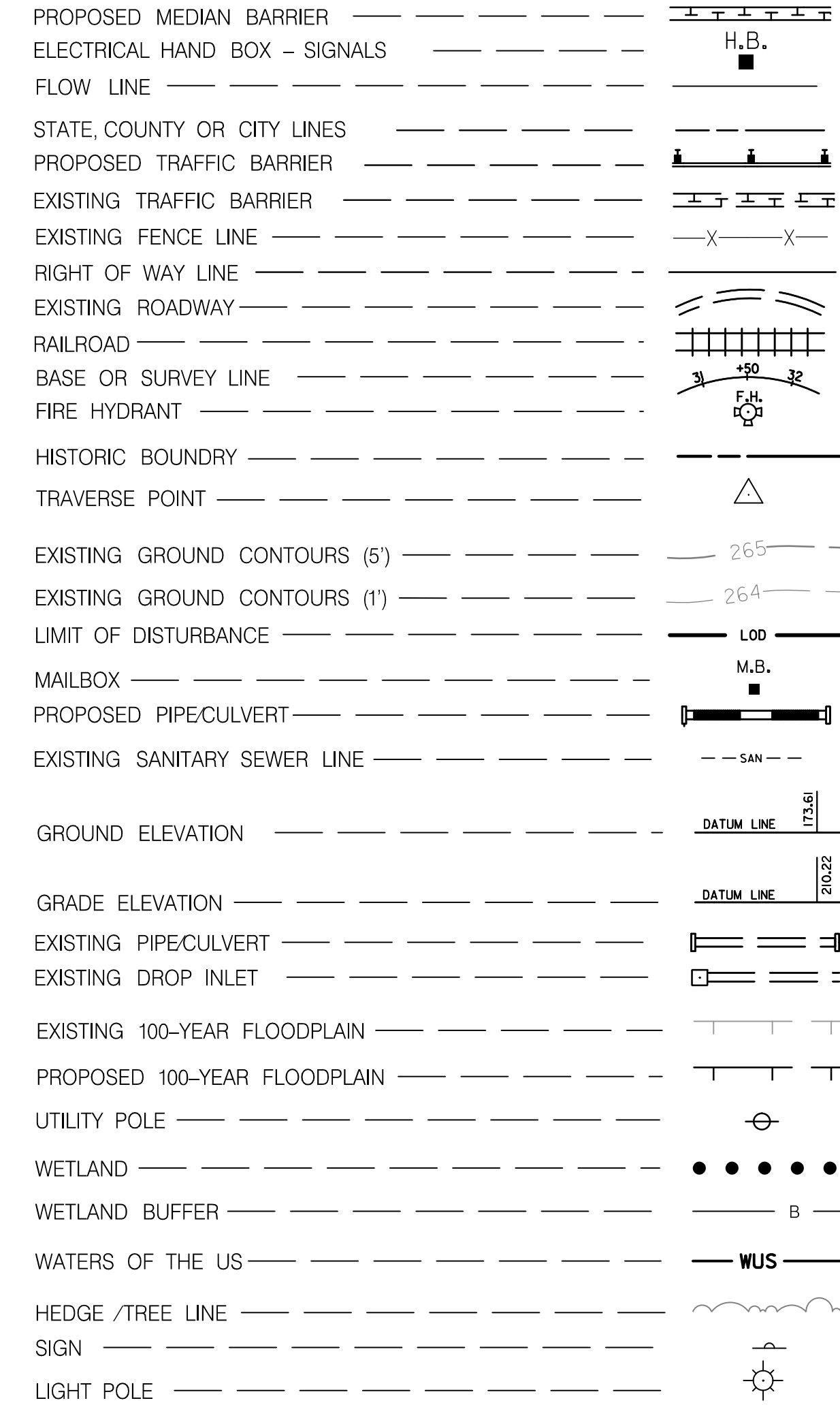
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ABBREVIATIONS

ACCEL – ACCELERATION	IN. – INCH	RW : RW – RIGHT OF WAY
A.A.S.H.T.O. – AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS	I.S.T. – INLET SEDIMENT TRAP	RCP – REINFORCED CONCRETE PIPE
ADT – AVERAGE DAILY TRAFFIC	INV. – INVERT	R.C.C.P. – REINFORCED CEMENT CONCRETE PIPE
AHD – AHEAD	J.B. – JUNCTION BOX	R.Q.D. – ROCK QUALITY DESIGNATION
APPROX. – APPROXIMATE	K – K INLET	R.M. – ROOTMAT
BL : BL – BASELINE	L – LENGTH	S – SOUTH
BK – BACK	L.F. – LINEAR FEET	SAN. – SANITARY SEWER
BIT. – BITUMINOUS	L.L. – LIQUID LIMIT	SB : SB – SOUTH BOUND
B.C. – BITUMINOUS CONCRETE	L.P. – LIGHT POLE	S.D. – STORM DRAIN
B.M. – BENCH MARK	MAC. – MACADAM	S.D.D. – SURFACE DRAIN DITCH
BOT. – BOTTOM	LT. – LEFT	SE – SUPER ELEVATION
CC – CENTER OF CURVE	M.C. – MOISTURE CONTENT	SF – SILT FENCE
CATV – CABLE TELEVISION	MAX. – MAXIMUM	SHT. – SHEET
C.B.R. – CALIFORNIA BEARING RATIO	M.D.D. – MAXIMUM DRY DENSITY	S.P.P. – STRUCTURAL PLATE PIPE
CL : CL – CENTERLINE	MOD. – MODIFIED	S.P.T. – STANDARD PENETRATION TESTING
CL. – CLASS	MIN. – MINIMUM	SSD – STOPPING SIGHT DISTANCE
CLF – CHAINLINK FENCE	N – NORTH	SSF – SUPER SILT FENCE
CMP – CORRUGATED METAL PIPE	N.B. – NORTHBOUND	STD. – STANDARD
C.O. – CLEANOUT	N.E. – NORTHEAST	STA. – STATION
COMB. – COMBINATION	N.P. – NON-PLASTIC	SO. – SINGLE OPENING
CONC. – CONCRETE	O.C. – ON CENTER	S.Y. – SQUARE YARDS
CONSTR. – CONSTRUCTION	OCF – ORANGE CONSTRUCTION FENCE	SWM – STORMWATER MANAGEMENT
COR. – CORNER	OHE – OVERHEAD ELECTRIC	T – TANGENT
CORR. – CORRECTION	O.M. – OPTIMUM MOISTURE	TEL. – TELEPHONE
CPP-SP – CORRUGATED POLYETHYLENE PIPE – TYPE 'S'	PAVT. – PAVEMENT	T.C. – TOP OF COVER
DC – DEGREE OF CURVE	PC – POINT OF CURVATURE	T.G. – TOP OF GRATE
D.H.V. – DESIGN HOURLY VOLUME	PCC – POINT OF COMPOUND CURVATURE	TL : TL – TRAVERSE LINE
D.I. – DROP INLET	PC – POINT OF CROWN	T.M. – TOP OF MANHOLE
DIA. – DIAMETER	PGE – PROFILE GRADE ELEVATION	TP – TRAVERSE POINT
D.O. – DOUBLE OPENING	P.G.L. – PROFILE GRADE LINE	TS – TEMPORARY SWALE
ELEC. – ELECTRIC	PGL – PROFILE GROUND LINE	T.S. – TOP OF SLAB
E – EXTERNAL DISTANCE	PR – POINT OF ROTATION	TYP. – TYPICAL
EA. – EACH	PI – POINT OF INTERSECTION	U.G. – UNDERGROUND
E.B. – EASTBOUND	P.O.C. – POINT ON CURVE	U.P. – UTILITY POLE
ELEV. – ELEVATION	P.O.T. – POINT ON TANGENT	U.S.D.A. – UNITED STATES DEPARTMENT OF AGRICULTURE
E.R.C.C.P. – ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE	PPWP – POLYVINYL CHLORIDE PROFILE WALL PIPE	VCL – VERTICAL CLEARANCE
ES – END SECTION	PROP. – PROPOSED	V.C.L. – VERTICAL CURVE LENGTH
EX. – EXISTING	P.R.C. – POINT OF REVERSE CURVE	W – WATER
FT. – FEET	PT. – POINT	W.B. – WESTBOUND
F : FL – FLOWLINE	PT – POINT OF TANGENCY	WB – WETLAND BUFFER
F.B.D. – FLAT BOTTOM DITCH	PVC – POINT OF VERTICAL CURVATURE	W.M. – WATER METER
F.H. – FIRE HYDRANT	PVI – POINT OF VERTICAL INTERSECTION	W.S. – WRAPPED STEEL
FWD. – FORWARD	PVRC – POINT OF VERTICAL REVERSE CURVE	W.V. – WATER VALVE
G – GAS	PVT – POINT OF VERTICAL CURVE TANGENCY	
GAB – GRADED AGGREGATE BASE	R – RADIUS	
G.V. – GAS VALVE	R.F. – ROCK FRAGMENTS	
H.B. – HANDBOX	RT. – RIGHT	
H.D.P. – HIGH DENSITY POLYETHYLENE		
HDWL. – HEADWALL		
H.E.R.C.P. – HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE		
HMA – HOT MIX ASPHALT		
H.P. – HIGH POINT		

IN. – INCH	RW : RW – RIGHT OF WAY
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INV. – INVERT	R.C.C.P. – REINFORCED CEMENT CONCRETE PIPE
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LT. – LEFT	SE – SUPER ELEVATION
M.C. – MOISTURE CONTENT	SF – SILT FENCE
MAX. – MAXIMUM	SHT. – SHEET
M.D.D. – MAXIMUM DRY DENSITY	S.P.P. – STRUCTURAL PLATE PIPE
MOD. – MODIFIED	S.P.T. – STANDARD PENETRATION TESTING
MIN. – MINIMUM	SSD – STOPPING SIGHT DISTANCE
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O.C. – ON CENTER	S.Y. – SQUARE YARDS
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PVRC – POINT OF VERTICAL REVERSE CURVE	W.V. – WATER VALVE
PVT – POINT OF VERTICAL CURVE TANGENCY	
R – RADIUS	
R.F. – ROCK FRAGMENTS	
RT. – RIGHT	



GENERAL NOTES

1. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM: USE III (NONTIDAL COLD WATER). IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OF OCTOBER 1 TO APRIL 30, INCLUSIVE, DURING ANY YEAR.
2. WHERE REFERENCE IS MADE TO STANDARD PLATES IT IS TO BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN HIS POSSESSION THE LATEST UP TO DATE MSHA STANDARD PLATES AND SHA STANDARD DETAILS FOR CONSTRUCTION AS OF THE DATE OF ADVERTISEMENT FOR THESE PLANS.
3. HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM. (NAD 83/91)
4. VERTICAL CONTROL: THE LOCATION AND ELEVATION OF BENCHMARKS ARE SHOWN ON THE PLANS. ALL ELEVATIONS ARE IN FEET AND ARE BASED ON NAVD 88 DATUM.
5. MATERIALS SALVAGED: MATERIAL SALVAGED DURING CONSTRUCTION TO BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
6. THE CONTRACTOR IS TO USE 2" TOPSOIL FOR ALL GRADED AREAS THAT HAS A SLOPE OF 3:1 OR STEEPER. FOR ALL OTHER GRADED AREAS, 4" TOPSOIL SHOULD BE USED UNLESS OTHERWISE NOTED.
7. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AT ALL TIMES.
8. UTILITIES: THE LOCATIONS OF UNDERGROUND UTILITIES AND AERIAL UTILITY APPURTENANCES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS TO VERIFY ALL UTILITY LOCATIONS PRIOR TO GRADING.

OWNER /DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88	
GREENSPRING VALLEY ROAD SW CORNER PARK HEIGHTS AVE OWINGS MILLS, MD 21117	
BALTIMORE COUNTY ELECTION DISTRICT: 3	COUNCILMANIC DISTRICT 2

ABBREVIATIONS /GENERAL NOTES	
SCALE <u>NA</u> DATE <u>OCTOBER, 2018</u> PROJECT NO. <u>17-10977-001</u>	
DESIGNED BY <u>PVC</u> COUNTY <u>BALTIMORE COUNTY</u>	
DRAWN BY <u>PVC</u> LOGMILE <u></u>	
CHECKED BY <u>JJM /MRG</u> HORIZONTAL SCALE <u>N/A</u>	
F.A.P. NO. <u>SEE TITLE SHEET</u> VERTICAL SCALE <u>N/A</u>	
DRAWING NO. GN- 1 OF 1	SHEET NO. 2 OF 38

DESIGN PROFESSIONAL

JEREMY KOSER

JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030

TEL: 410-329-3100
EMAIL: JKoser@jmt.com

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. 31183 EXPIRATION DATE: 1/13/2021

ECCLESTON MITIGATION SITE

REVISIONS

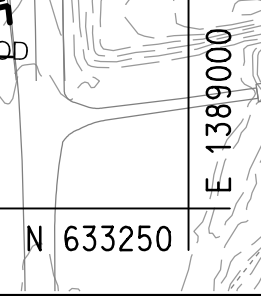
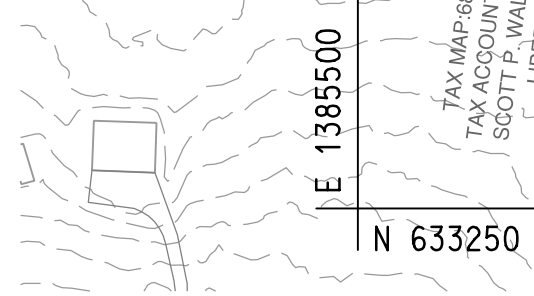
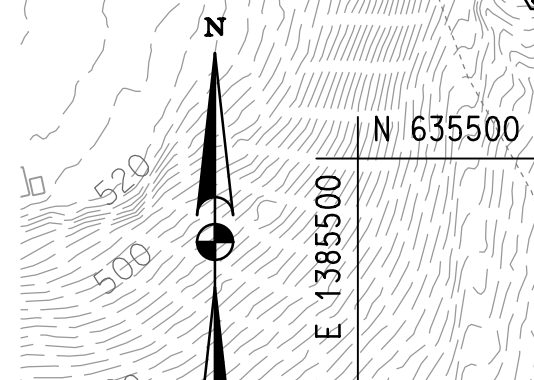
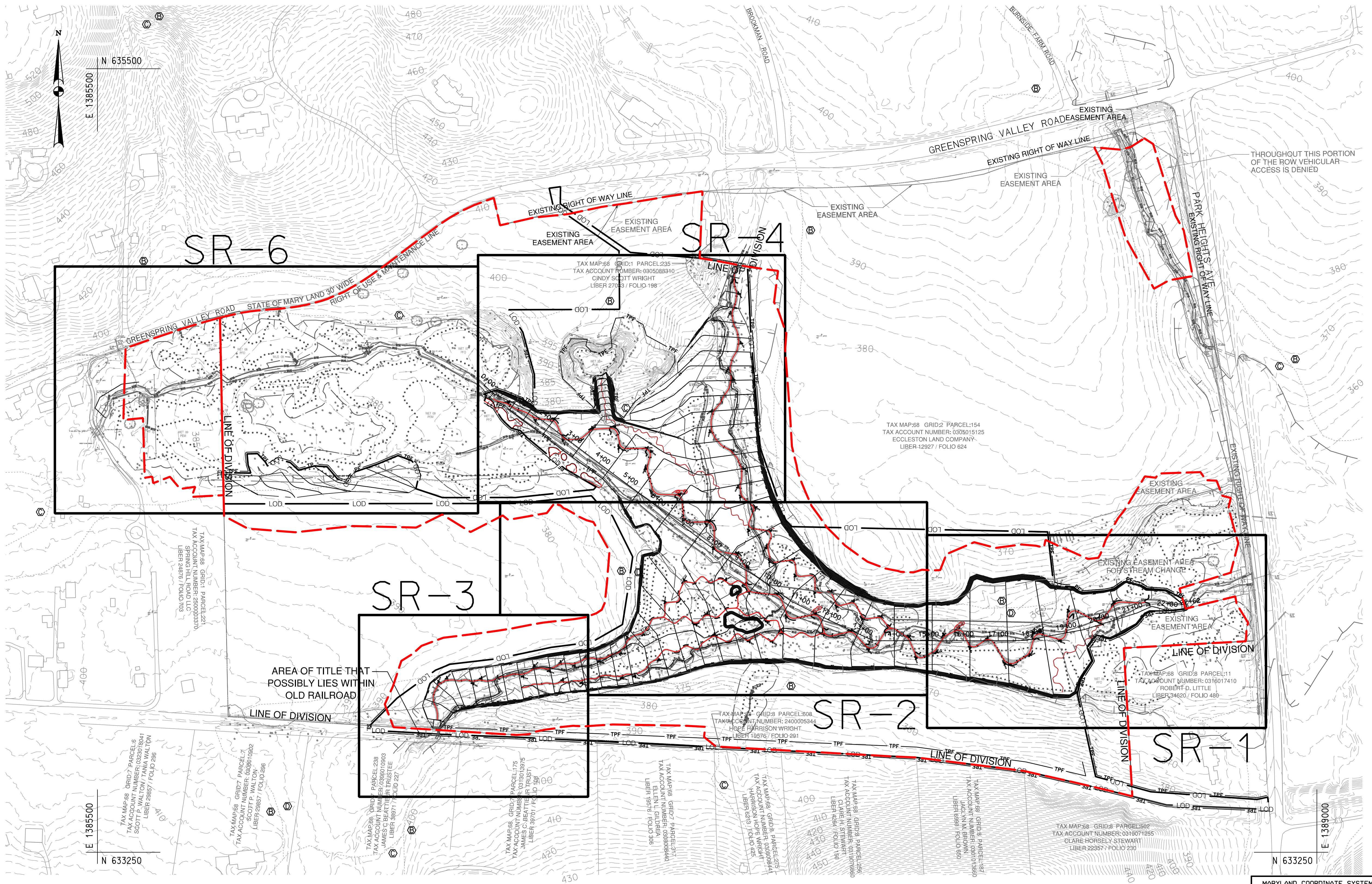
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NOT FOR CONSTRUCTION

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

BY: PCrawford

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PLAN
SCALE: 1"=150'

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

KEY MAP

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. KM - 1 OF 2	SHEET NO. 4 OF 38	



DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON MIRMIRAN & THOMPSON INC.
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TEL: 410-329-3100
EMAIL: JKoser@jmt.com

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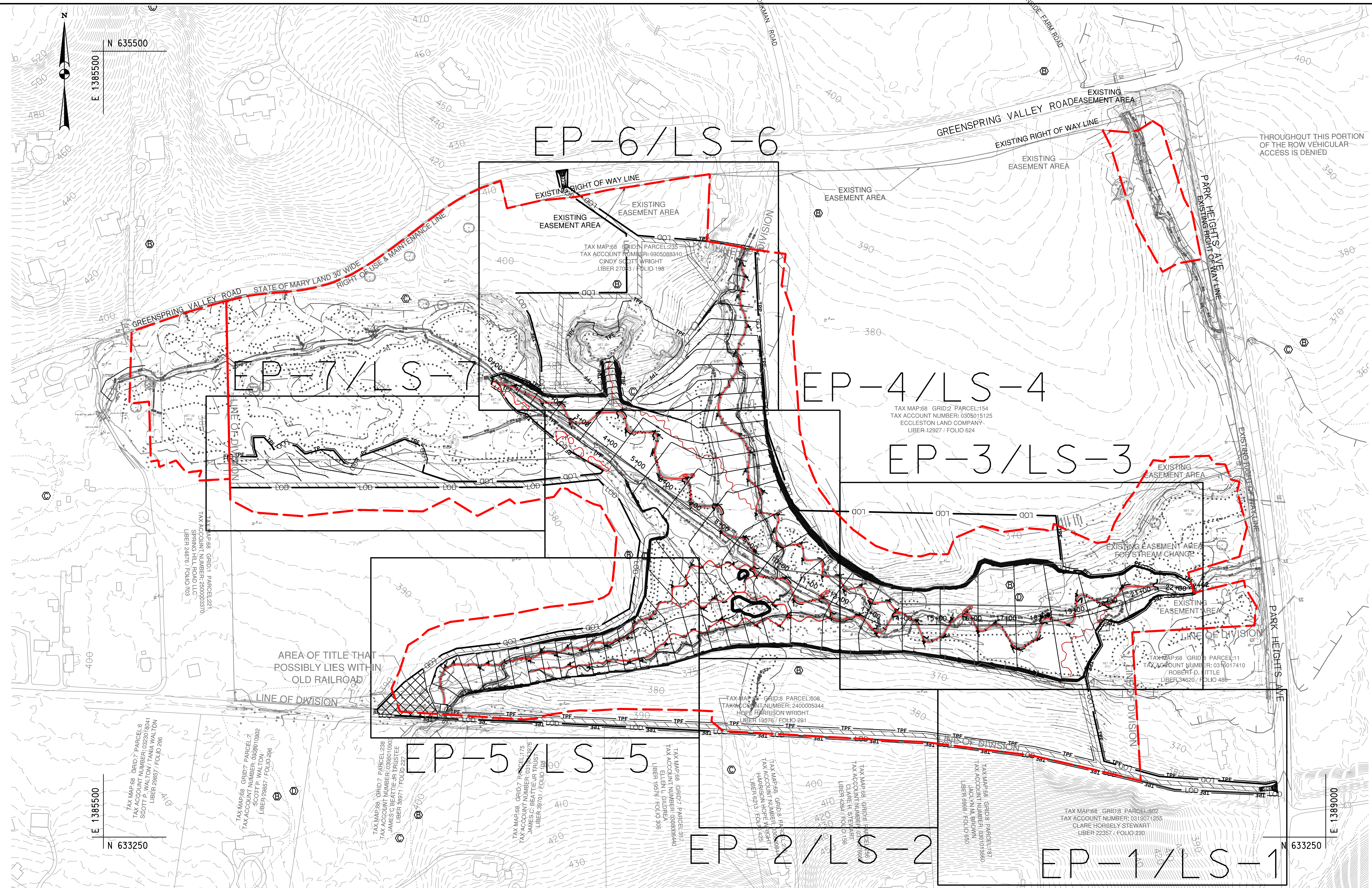
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CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

BY: K Higgins

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PLAN
SCALE: 1"=150'

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CONTACT
JEREMY KOSER 40 WIGHT AVE HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL KEY MAP

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. KM - 2 OF 2	SHEET NO. 5 OF 38	

REVISIONS

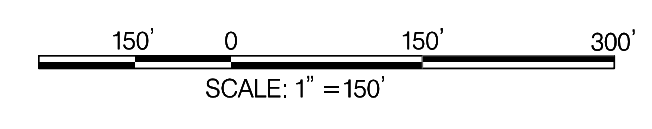
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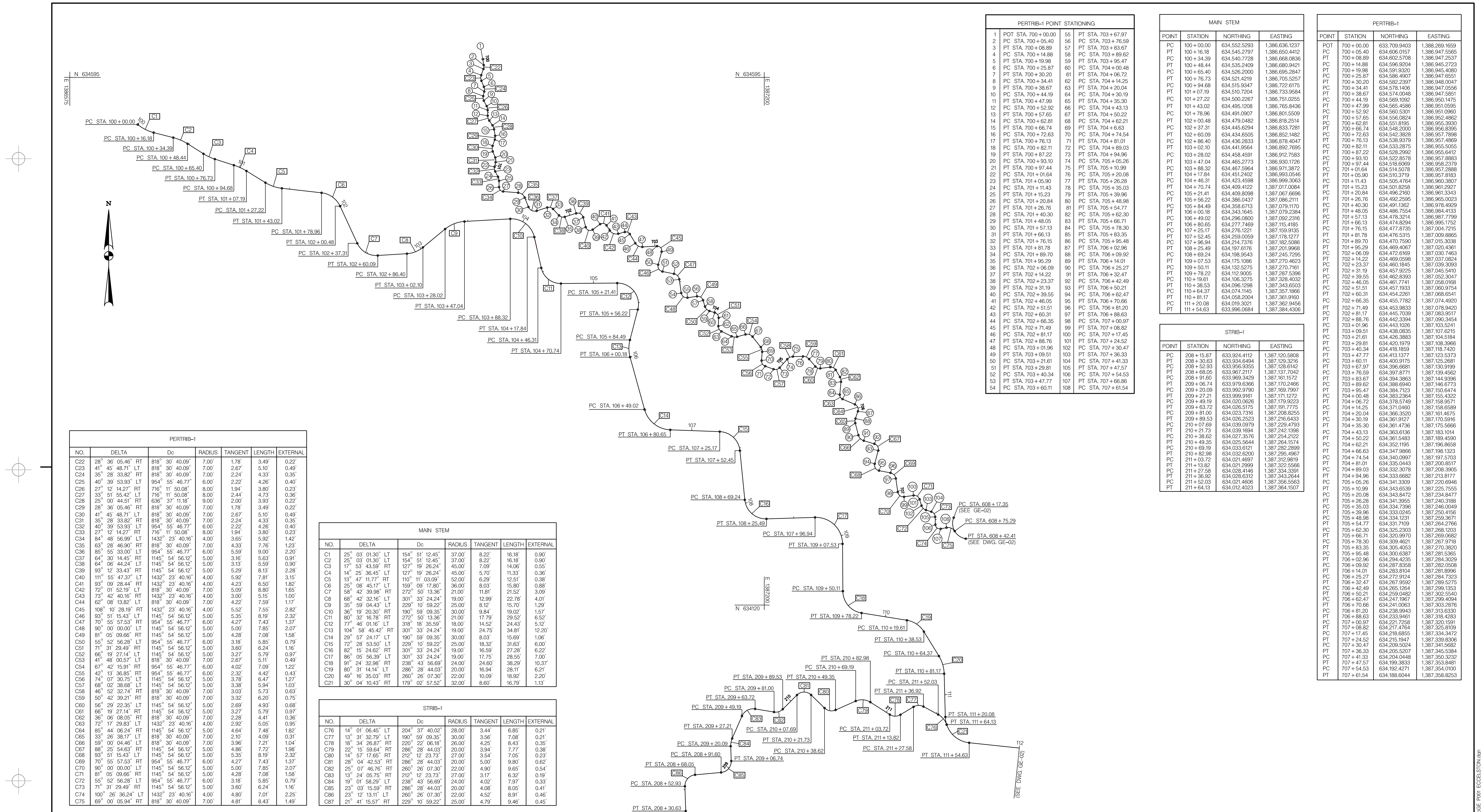
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BY: K. Higgins

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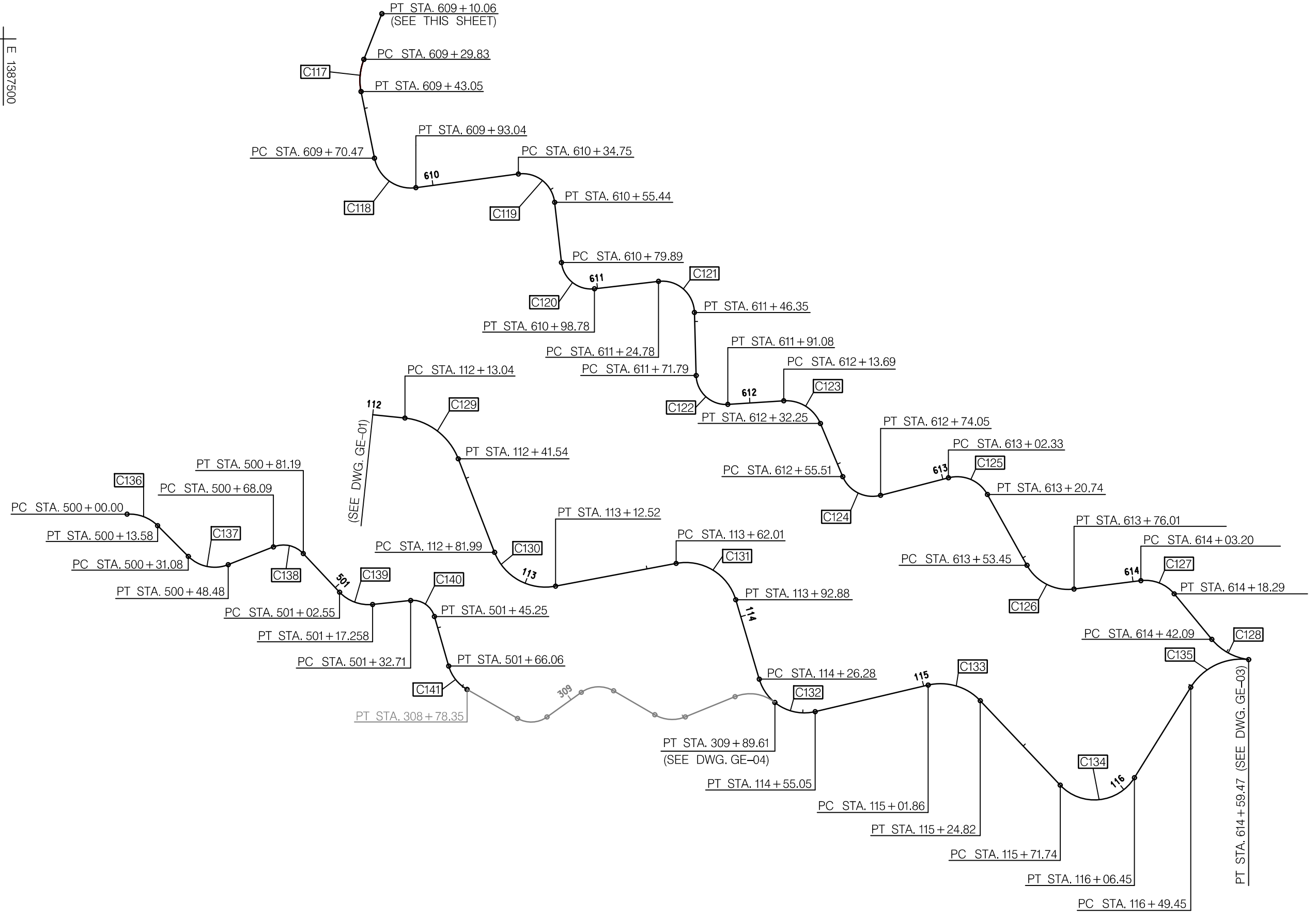
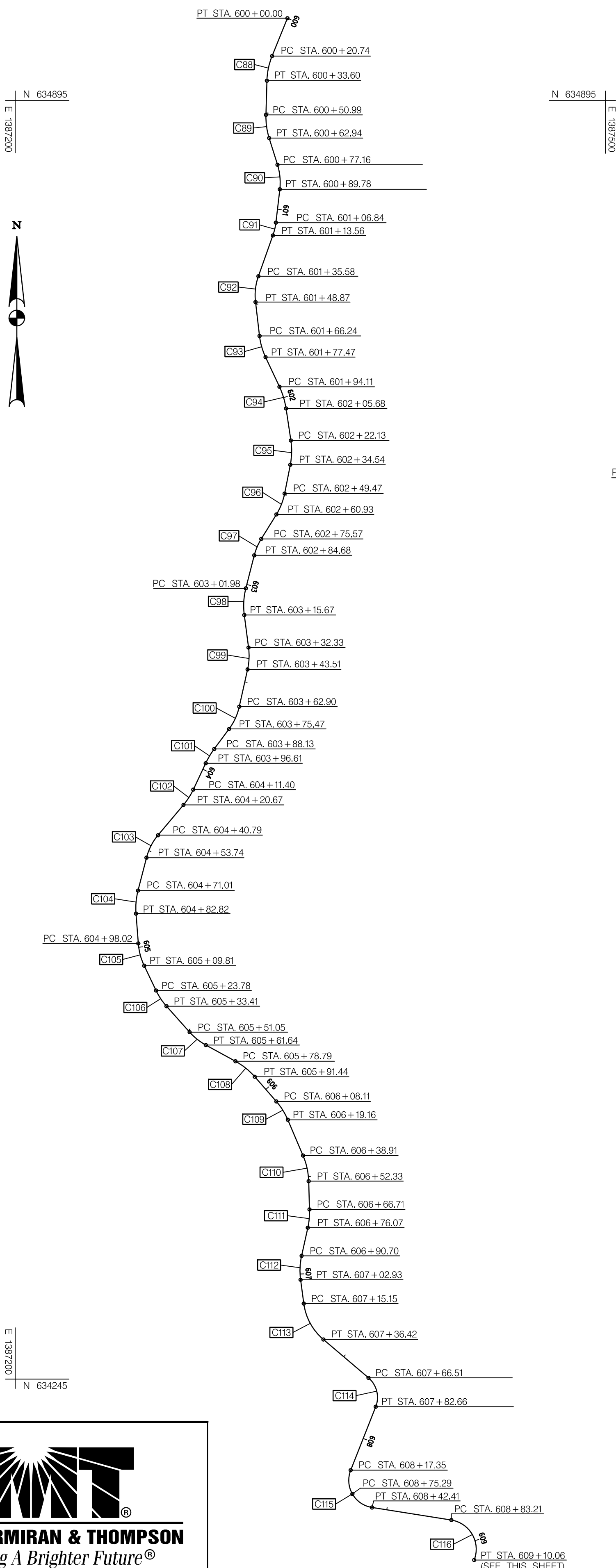
PERTRIB-1							
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL	
C22	28° 36' 05.46"	RT	818° 30' 40.09"	7.00'	1.78'	3.49'	0.22'
C23	41° 45' 48.71"	LT	818° 30' 40.09"	7.00'	2.67'	5.10'	0.49'
C24	35° 28' 33.82"	RT	818° 30' 40.09"	7.00'	2.24'	4.33'	0.35'
C25	40° 39' 53.93"	LT	954° 55' 46.77"	6.00'	2.22'	4.26'	0.40'
C26	27° 12' 14.27"	RT	716° 11' 50.08"	8.00'	1.94'	3.80'	0.23'
C27	33° 51' 55.42"	LT	716° 11' 50.08"	8.00'	2.44'	4.73'	0.36'
C28	25° 00' 44.51"	RT	636° 37' 11.16"	9.00'	2.00'	3.93'	0.22'
C29	28° 36' 05.46"	RT	818° 30' 40.09"	7.00'	1.78'	3.49'	0.22'
C30	41° 45' 48.71"	LT	818° 30' 40.09"	7.00'	2.67'	5.10'	0.49'
C31	35° 28' 33.82"	RT	818° 30' 40.09"	7.00'	2.24'	4.33'	0.35'
C32	40° 39' 53.93"	LT	954° 55' 46.77"	6.00'	2.22'	4.26'	0.40'
C33	27° 12' 14.27"	RT	716° 11' 50.08"	8.00'	1.94'	3.80'	0.23'
C34	34° 48' 56.99"	LT	1432° 23' 40.16"	4.00'	3.65'	5.92'	1.42'
C35	63° 28' 46.90"	RT	818° 30' 40.09"	7.00'	4.33'	7.76'	1.23'
C36	85° 55' 33.00"	LT	954° 55' 46.77"	6.00'	5.59'	9.00'	2.20'
C37	64° 30' 14.45"	RT	1145° 54' 56.12"	5.00'	3.16'	5.63'	0.91'
C38	64° 30' 14.45"	RT	1145° 54' 56.12"	5.00'	3.13'	5.59'	0.90'
C39	93° 12' 33.43"	RT	1145° 54' 56.12"	5.00'	8.13'	2.28'	
C40	111° 55' 47.37"	LT	1432° 23' 40.16"	4.00'	5.92'	7.81'	3.15'
C41	93° 09' 28.44"	RT	1432° 23' 40.16"	4.00'	4.23'	6.50'	1.82'
C42	72° 01' 52.19"	RT	818° 30' 40.09"	7.00'	5.09'	8.80'	1.65'
C43	73° 42' 40.16"	RT	1432° 23' 40.16"	4.00'	3.00'	5.15'	1.00'
C44	62° 08' 13.82"	RT	818° 30' 40.09"	7.00'	4.22'	7.59'	1.17'
C45	108° 10' 28.19"	LT	1432° 23' 40.16"	4.00'	5.52'	7.55'	2.82'
C46	93° 51' 15.43"	LT	1145° 54' 56.12"	5.00'	5.35'	8.19'	2.32'
C47	70° 55' 57.53"	RT	954° 55' 46.77"	6.00'	4.27'	7.43'	1.37'
C48	90° 00' 00.00"	LT	1145° 54' 56.12"	5.00'	5.00'	7.85'	2.07'
C49	81° 05' 09.66"	RT	1145° 54' 56.12"	5.00'	4.28'	7.08'	1.58'
C50	55° 52' 56.28"	LT	954° 55' 46.77"	6.00'	3.18'	5.85'	0.79'
C51	71° 31' 29.49"	RT	1145° 54' 56.12"	5.00'	3.60'	6.24'	1.16'
C52	66° 19' 27.14"	LT	1145° 54' 56.12"	5.00'	3.27'	5.79'	0.97'
C53	41° 48' 00.57"	RT	818° 30' 40.09"	7.00'	2.67'	5.11'	0.49'
C54	67° 42' 15.91"	RT	954° 55' 46.77"	6.00'	4.02'	7.09'	1.22'
C55	42° 13' 36.85"	RT	954° 55' 46.77"	6.00'	2.32'	4.42'	0.43'
C56	74° 07' 30.75"	LT	1145° 54' 56.12"	6.00'	3.78'	6.47'	1.27'
C57	68° 02' 38.68"	LT	1145° 54' 56.12"	5.00'	3.38'	5.94'	1.03'
C58	46° 52' 32.74"	RT	818° 30' 40.09"	7.00'	3.03'	5.73'	0.63'
C59	50° 42' 39.21"	RT	818° 30' 40.09"	7.00'	3.32'	6.20'	0.75'
C60	56° 29' 22.35"	LT	1145° 54' 56.12"	5.00'	2.69'	4.93'	0.68'
C61	96° 19' 27.14"	LT	1145° 54' 56.12"	5.00'	3.27'	5.79'	0.97'
C62	86° 08' 04.00"	RT	818° 30' 40.09"	7.00'	4.41'	2.28'	0.36'
C63	72° 17' 29.83"	LT	1432° 23' 40.16"	4.00'	2.92'	5.05'	0.95'
C64	85° 44' 06.24"	RT	1145° 54' 56.12"	5.00'	4.64'	7.48'	1.82'
C65	33° 26' 38.17"	LT	1145° 54' 56.12"	7.00'	2.10'	4.09'	0.31'
C66	59° 00' 04.46"	LT	818° 30' 40.09"	7.00'	3.96'	7.21'	1.04'
C67	88° 25' 53.63"	RT	1145° 54' 56.12"	5.00'	4.06'	7.72'	1.36'
C68	93° 51' 15.43"	LT	1145° 54' 56.12"	5.00'	5.35'	8.19'	2.32'
C69	70° 55' 57.53"	RT	954° 55' 46.77"	6.00'	4.27'	7.43'	1.37'
C70	90° 00' 00.00"	LT	1145° 54' 56.12"	5.00'	5.00'	7.85'	2.07'
C71	81° 05' 09.66"	RT	1145° 54' 56.12"	5.00'	4.28'	7.08'	1.58'
C72	55° 52' 56.28"	LT	954° 55' 46.77"	6.00'	3.18'	5.85'	0.79'
C73	71° 31' 29.49"	RT	1145° 54' 56.12"	5.00'	3.60'	6.24'	1.16'
C74	100° 26' 36.24"	LT	1432° 23' 40.16"	4.00'	4.80'	7.01'	2.25'
C75	69° 00' 05.94"	RT	818° 30' 40.09"	7.00'	4.81'	8.43'	1.49'

MAIN STEM							
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL	
C1	25° 03' 01.30"	LT	154° 51' 12.45"	37.00'	8.22'	16.18'	0.90'
C2	25° 03' 01.30"	LT	154° 51' 12.45"	37.00'	8.22'	16.18'	0.90'
C3	17° 53' 43.59"	RT	127° 19' 26.24"	45.00'	7.09'	14.06'	0.55'
C4	14° 25' 36.45"	LT	127° 19' 26.24"	45.00'	5.70'	11.33'	0.36'
C5	13° 47' 11.77"	RT	110° 11' 03.09"	52.00'	6.29'	12.51'	0.38'
C6	25° 08' 45.17"	LT	159° 09' 17.80"	36.00'	8.03'	15.80'	0.88'
C7	58° 42' 39.98"	RT	272° 50' 13.36"	21.00'	11.81'	21.52'	3.09'
C8	68° 42' 32.16"	LT	301° 33' 24.24"	19.00'	12.99'	22.78'	4.01'
C9	35° 59' 04.43"	LT	122° 10' 59.22"	25.00'	8.12'	15.70'	1.29'
C10	36° 19' 20.30"	RT	190° 59' 09.35"	30.00'	9.84'	19.02'	1.57'
C11	80° 32' 16.78"	RT	272° 50' 13.36"	21.00'	17.79'	29.52'	6.52'
C12	77° 46' 01.16"	LT	318° 18' 35.59"	18.00'	14.52'	24.43'	5.12'
C13	104° 58' 45.42"	RT	301° 33' 24.24"	19.00'	24.75'	34.81'	12.20'
C14	29° 57' 24.17"	LT	190° 59' 09.35"	30.00'	8.03'	15.69'	1.06'
C15	72° 28' 53.50"	LT	229° 10' 59.22"	25.00'	18.32'	31.63'	6.00'
C16	82° 15' 24.62"	RT	301° 33' 24.24"	19.00'	16.59'	27.28'	6.22'
C17	86° 05' 56.39"	LT	301° 33' 24.24"	19.00'	17.75'	28.55'	7.00'
C18	91° 24' 32.98"	RT	238° 43' 56.69"	24.00'	24.60'	38.29'	10.37'
C19	80° 31' 14.14"	LT	286° 28' 44.03"	22.00'	16.94'	28.11'	6.21'
C20	49° 16' 35.03"	RT	260° 26' 07.30"	20.00'	10.99'	18.92'	2.20'
C21	30° 04' 10.43"	RT	179° 02' 57.52"	32.00'	8.60'	16.79'	1.13'

STRIB-1							
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL	
C76	14° 01' 06.45"	LT	204° 37' 40.02"	28.00'	3.44'	6.85'	0.21'
C77	13° 31' 32.79"	LT	190° 59' 09.35"	30.00'	3.56'	7.08'	0.21'
C78	18° 34' 26.87"	RT	220° 22' 06.18"	26.00'	4.25'	8.43'	0.35'
C79	22° 15' 59.64"	RT	286° 28' 44.03"	20.00'	3.94'	7.77'	0.36'
C80	14° 57' 17.65"	RT	212° 12' 23.73"	27.00'	3.54'	7.05'	0.23'
C81	28° 04' 42.53"	RT	286° 28' 44.03"	20.00'	5.00'	9.80'	0.62'
C82	25° 07' 46.76"	RT	260° 26' 07.30"	22.00'	4.90'	9.65'	0.54'
C83	13° 24' 05.75"	RT	212° 12' 23.73"	27.00'	3.17'	6.32'	0.19'
C84	19° 01' 58.29"	LT	238° 43' 56.69"	24.00'	4.02'	7.97'	0.33'
C85	23° 03' 15.59"	RT	286° 28' 44.03"	20.00'	4.06'	8.05'	0.41'
C86	23° 12' 13.11"	LT	260° 26' 07.30"	22.00'	4.52'	8.91'	0.46'
C87	21° 41' 15.57"	RT	229° 10' 59.22"	25.00'	4.79'	9.46'	0.45'

PERTRIB-1 POINT STATIONING			
1	POT STA. 700+00.00	55	PT STA. 703+67.97
2	PC STA. 700+05.40	56	PC STA. 703+76.59
3	PT STA. 700+08.89	57	PT STA. 703+83.67
4	PC STA. 700+14.88	58	PC STA. 703+89.62
5	PT STA. 700+19.98	59	PT STA. 703+95.47
6	PC STA. 700+25.87	60	PC STA. 704+00.48
7	PT STA. 700+30.20	61	PT STA. 704+06.72
8	PC STA. 700+34.41	62	PC STA. 704+14.25
9	PT STA. 700+38.67	63	PT STA. 704+20.04
10	PC STA. 700+47.99	64	PC STA. 704+30.19
11	PT STA. 700+47.99	65	PT STA. 704+35.30
12	PC STA. 700+52.92	66	PC STA. 704+43.13
13	PT STA. 700+57.65	67	PT STA. 704+50.22
14	PC STA. 700+62.81	68	PC STA. 704+62.21
15	PT STA. 700+66.74	69	PT STA. 704+6.63
16	PC STA. 700+72.63	70	PC STA. 704+74.54
17	PT STA. 700+76.13	71	PT STA. 704+81.01
18	PC STA. 700+82.11	72	PC STA. 704+89.03
19	PT STA. 700+87.22	73	PT STA. 704+94.96
20	PC STA. 700+93.10	74	PC STA. 704+105.26
21	PT STA. 700+97.44	75	PT STA. 704+109.99
22	PC STA. 700+101.64	76	PC STA. 704+120.08
23	PT STA. 700+105.90	77	PT STA. 704+126.28
24	PC STA. 700+114.43	78	PC STA. 704+135.03
25	PT STA. 700+115.23	79	PT STA. 704+139.96
26	PC STA. 700+120.84	80	PC STA. 704+148.98
27	PT STA. 700+126.76	81	PT STA. 704+154.77
28	PC STA. 700+140.30	82	PC STA. 704+162.30
29	PT STA. 700+148.05	83	PT STA. 704+166.71
30	PC STA. 700+157.13	84	PC STA. 704+178.30
31	PT STA. 700+166.13	85	PT STA. 704+183.35
32	PC STA. 700+176.15	86	PC STA. 704+195.48
33	PT STA. 700+181.78	87	PT STA. 704+202.96
34	PC STA. 700+189.70	88	PC STA. 704+215.79
35	PT STA. 700+195.29	89	PT STA. 704+224.01
36	PC STA. 700+208.03	90	PC STA. 704+232.27
37	PT STA. 700+212.22	91	PT STA. 704+240.32
38	PC STA. 700+223.37	92	PC STA. 704+249.49
39	PT STA. 700+231.19	93	PT STA. 704+250.21
40	PC STA. 700+239.55	94	PC STA. 704+262.47
41	PT STA. 700+246.05	95	PT STA. 704+270.66
42	PC STA. 700+251.51	96	PC STA. 704+281.20
43	PT STA. 700+260.31	97	PT STA. 704+288.63
44	PC STA. 700+266.35	98	PC STA. 704+297.00
45	PT STA. 700+271.49	99	PT STA. 704+306.82
46	PC STA. 700+281.17	100	PC STA. 704+317.45
47	PT STA. 700+288.76	101	PT STA. 704+324.52
48	PC STA. 700+301.96	102	PC STA. 704+330.47
49	PT STA. 700+309.51	103	PT STA. 704+336.33
50	PC STA. 700+321.61	104	PC STA. 704+341.33
51	PT STA. 700+329.81	105	PT STA. 704+347.57
52	PC STA. 700+340.34	106	PC STA. 704+354.53
53	PT STA. 700+347.77	107	PT STA. 704+362.99
54	PC STA. 700+360.11	108	PC STA. 704+371.64

MAIN STEM			
POINT	STATION	NORTHING	EASTING
PC	100+00.00	634,552,5293	1,386,636,1237
PT	100+16.18	634,545,2797	1,386,650,4412
PC	100+34.39	634,540,7728	1,386,668,0836
PT	100+48.44	634,535,2409	1,386,680,9421
PC	100+65.40	634,526,2000	1,386,695,2847
PT	100+76.73	634,521,4219	1,386,705,5257
PC	100+94.68	634,515,9347	1,386,722,6175
PT	101+07.19	634,510,7204	1,386,733,9584
PC	101+27.22	634,500,2267	1,386,751,0255
PT	101+43.02	634,495,1208	1,386,765,8436
PC	101+76.96	634,491,	



NTRIB-1						
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C88	20° 28' 16.33"	159' 09' 17.80"	36.00	6.50	12.86	0.58
C89	19° 01' 31.83"	159' 09' 17.80"	36.00	6.03	11.96	0.50
C90	24° 06' 02.82"	190' 59' 09.35"	30.00	6.40	12.62	0.66
C91	12° 49' 20.81"	190' 59' 09.35"	30.00	3.37	6.71	0.19
C92	26° 15' 36.07"	197' 34' 17.95"	29.00	6.76	13.29	0.78
C93	18° 23' 36.05"	163' 42' 08.02"	35.00	5.67	11.24	0.46
C94	16° 33' 57.22"	143' 14' 22.02"	40.00	5.82	11.57	0.42
C95	19° 44' 50.39"	159' 09' 17.80"	36.00	6.27	12.41	0.54
C96	20° 31' 46.73"	179' 02' 57.52"	32.00	5.80	11.47	0.52
C97	17° 24' 30.27"	190' 59' 09.35"	30.00	4.59	9.12	0.35
C98	21° 47' 38.64"	159' 09' 17.80"	36.00	6.93	13.69	0.66
C99	20° 01' 21.14"	179' 02' 57.52"	32.00	5.65	11.18	0.49
C100	24° 01' 05.85"	190' 59' 09.35"	30.00	6.38	12.59	0.67
C101	11° 18' 23.77"	133' 14' 45.60"	43.00	4.26	8.48	0.21
C102	14° 44' 55.90"	159' 09' 17.80"	36.00	4.66	9.27	0.30
C103	25° 34' 39.46"	197' 34' 17.95"	29.00	6.58	12.95	0.74
C104	18° 47' 29.58"	159' 09' 17.80"	36.00	5.96	11.81	0.49
C105	21° 07' 20.47"	179' 02' 57.52"	32.00	5.97	11.80	0.55
C106	16° 13' 16.95"	168' 31' 01.19"	34.00	4.85	9.83	0.34
C107	19° 34' 03.72"	184' 49' 30.34"	31.00	5.35	10.59	0.46
C108	20° 08' 13.91"	159' 09' 17.80"	36.00	6.39	12.65	0.56
C109	18° 06' 07.45"	163' 42' 08.02"	35.00	5.58	11.06	0.44
C110	21° 21' 33.40"	159' 09' 17.80"	36.00	6.79	13.42	0.63
C111	14° 06' 35.40"	150' 46' 42.12"	38.00	4.70	9.36	0.29
C112	20° 01' 24.10"	163' 42' 08.02"	35.00	6.18	12.23	0.54
C113	42° 01' 34.84"	197' 34' 17.95"	29.00	11.14	21.27	2.07
C114	71° 09' 25.16"	440' 44' 12.36"	13.00	9.30	16.15	2.98
C115	102° 32' 50.36"	409' 15' 20.04"	14.00	17.46	25.06	8.38
C116	102° 32' 50.36"	381' 58' 18.71"	15.00	18.71	26.85	8.98
C117	32° 55' 33.27"	249' 06' 43.51"	23.00	6.80	13.22	0.98
C118	86° 13' 03.52"	381' 58' 18.71"	15.00	14.04	22.57	5.55
C119	91° 10' 49.92"	440' 44' 12.36"	13.00	13.27	20.69	5.58
C120	90° 11' 21.74"	477' 27' 53.39"	12.00	12.04	18.89	5.00
C121	95° 03' 04.41"	440' 44' 12.36"	13.00	14.20	21.57	6.25
C122	92° 07' 27.28"	477' 27' 53.39"	12.00	12.45	19.29	5.29
C123	70° 54' 01.12"	381' 58' 18.71"	15.00	10.68	18.56	3.41
C124	81° 42' 30.01"	440' 44' 12.36"	13.00	11.24	18.54	4.19
C125	75° 20' 42.97"	409' 15' 20.04"	14.00	10.81	18.41	3.69
C126	68° 02' 04.30"	301' 33' 24.24"	19.00	12.82	22.56	3.92
C127	57° 38' 11.72"	381' 58' 18.71"	15.00	8.25	15.09	2.12
C128	43° 18' 15.70"	249' 06' 43.51"	23.00	9.13	17.38	1.75

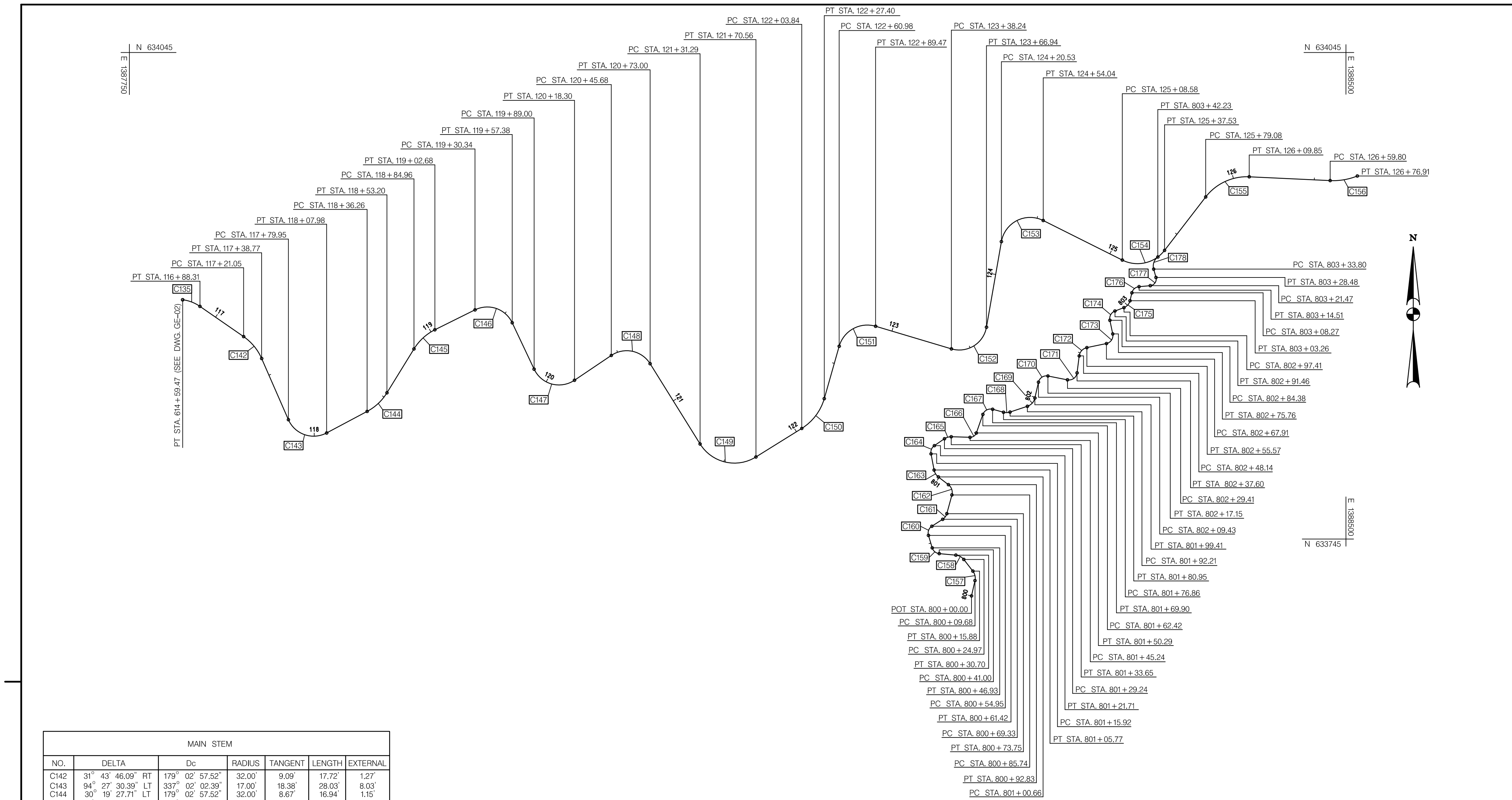
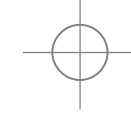
MAIN STEM						
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C129	82° 29' 19.63"	238' 43' 56.69"	24.00	21.04	34.55	7.92
C130	62° 47' 20.15"	220' 22' 06.18"	26.00	15.87	28.49	4.46
C131	79° 29' 32.51"	260' 26' 07.30"	22.00	18.29	30.52	6.61
C132	84° 13' 40.33"	272' 50' 13.36"	21.00	18.98	30.87	7.31
C133	86° 45' 05.51"	301' 33' 24.24"	19.00	17.95	28.77	7.14
C134	59° 48' 52.76"	260' 26' 07.30"	22.00	12.65	22.97	3.38
C135	104° 41' 14.34"	301' 33' 24.24"	19.00	24.62	34.72	12.10

STRIB-4						
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C136	48° 38' 26.62"	358' 05' 55.04"	16.00	7.23	13.58	1.56
C137	66° 27' 55.09"	381' 58' 18.71"	15.00	9.83	17.40	2.93
C138	68° 14' 05.74"	520' 52' 14.60"	11.00	7.45	13.10	2.29
C139	52° 43' 58.38"	358' 05' 55.04"	16.00	7.93	14.73	1.86
C140	79° 51' 54.80"	636' 37' 11.81"	9.00	7.53	12.55	2.74
C141	44° 01' 23.78"	358' 05' 55.04"	16.00	6.47	12.29	1.26

NTRIB-1				
POINT	STATION	NORTHING	EASTING	
POT	600+00.00	633,709.9403	1,388,269.1659	
PC	600+20.74	634,917.6050	1,387,330.5342	
PT	600+33.60	634,905.0841	1,387,327.9042	
PC	600+59.29	634,897.7015	1,387,327.4155	
PT	600+62.94	634,875.9164	1,387,329.0430	
PC	600+77.16	634,862.3448	1,387,333.2957	
PT	600+89.78	634,849.8730	1,387,334.4632	
PC	601+06.84	634,832.9290	1,387,332.4721	
PT	601+13.56	634,826.4039	1,387,330.9520	
PC	601+35.58	634,805.6462	1,387,323.5912	
PT	602+34.54	634,799.5392	1,387,322.1338	
PC	601+66.24	634,775.3062	1,387,324.1606	
PT	601+77.47	634,764.5483	1,387,327.2315	
PC	601+94.11	634,749.4852	1,387,334.2968	
PT	602+05.68	634,738.4548	1,387,337.6367	
PC	602+22.13	634,722.1822	1,387,340.0868	
PT	602+34.54	634,709.5392	1,387,339.8044	
PC	602+49.47	634,695.1973	1,387,336.9093	
PT	602+60.93	634,684.5825	1,387,332.7388	
PC	602+84.67	634,663.7724	1,387,325.0437	
PT	603+01.98	634,647.0171	1,387,317.2217	
PC	603+15.67	634,633.4300	1,387,316.4124	
PT	603+32.33	634,616.9153	1,387,318.9381	
PC	603+43.51	634,605.8002	1,387,318.0934	
PT	603+62.98	634,586.8751	1,387,313.8859	
PC	603+75.47	634,575.5190	1,387,308.7002	
PT	603+88.13	634,565.3528	1,387,301.1631	
PC	603+96.61	634,558.0835	1,387,296.8126	
PT	604+11.40	634,544.7064	1,387,290.5048	
PC	604+20.67	634,536.9227	1,387,285.5200	
PT	604+40.79	634,521.5078	1,387,272.5906	
PC	604+53.74	634,510.0894	1,387,266.7209	
PT	604+71.01	634,493.3587	1,387,262.4198	
PC	604+82.82	634,481.6496	1,387,261.3910	
PT	604+98.02	634,468.4912	1,387,262.5500	
PC	605+09.81	634,455.1633	1,387,265.5733	
PT	605+23.78	634,442.5564	1,387,271.5855	
PC	605+33.41	634,434.5062	1,387,276.8957	
PT	605+51.05	634,421.3922	1,387,289.6408	
PC	605+61.64	634,414.8338	1,387,296.8864	
PT	605+78.79	634,406.5941	1,387,311.9275	
PC	605+91.44	634,398.7096	1,387,321.7399	
PT	606+06.11	634,386.1628	1,387,332.7039	
PC	606+19.16	634,376.8340	1,387,338.5553	
PT	606+38.91	634,358.0660	1,387,346.2845	
PC	606+52.33	634,345.6328	1,387,349.1421	
PT	606+66.71	634,331.2597	1,387,349.5655	
PC	606+76.07	634,321.9663	1,387,348.6923	
PT	606+90.70	634,307.6747	1,387,345.5442	
PC	607+02.93	634,295.5160	1,387,345.0322	
PT	607+15.15	634,283.4097	1,387,346.6477	
PC	607+36.42	634,265.1520	1,387,356.6079	
PT	607+66.51	634,245.6564	1,387,379.5371	
PC	607+82.66	634,230.9816	1,387,393.2091	
PT	608+17.35	634,198.7098	1,387,370.4775	
PC	608+42.41	634,179.7437	1,387,381.3147	
PT	608+83.21	634,173.3726	1,387,421.6193	
PC	609+10.06	634,153.0518	1,387,433.2307	
PT	609+23.93	634,134.6616	1,387,425.9756	
PC	609+43.05	634,121.6765	1,387,424.8242	
PT	609+70.47	634,094.7970	1,387,430.2421	
PC	609+93.04	634,082.8931	1,387,446.9338	
PT	610+34.75	634,068.4196	1,387,468.2785	
PC	610+55.44	634,076.9908	1,387,502.9190	
PT	610+79.89	634,052.6959	1,387,505.6583	
PC	610+98.78	634,042.1205	1,387,518.9667	
PT	611+24.78	634,045.1193	1,387,544.7864	
PC	611+46.35	634,032.5625	1,387,559.2908	
PT	611+71.79	634,007.1295	1,387,559.9884	
PC	611+91.08	633,995.4835	1,387,572.7574	
PT	612+13.69	633,986.9402	1,387,595.9109	
PC	612+32.25	633,987.7830	1,387,610.1062	
PT	612+55.51	633,966.3371	1,387,619.1191	
PC	612+74.05	633,958.7880	1,387,634.3694	
PT	613+02.33	633,965.8714	1,387,661.7419	
PC	613+20.74	633,959.1387	1,387,677.4739	
PT	613+53.45	633,930.5743	1,387,693.4107	
PC	613+76.01	633,920.9811	1,387,712.3819	
PT	614+03.20	633,924.3851	1,387,739.5847	
PC	614+18.29	633,919.0557	1,387,752.7978	
PT	614+42.09	633,900.7044	1,387,767.9557	
PC	614+59.47	633,892.5299	1,387,782.8301	

MAIN STEM				
POINT	STATION	NORTHING	EASTING	
PC	112+13.04	633,989.9679	1,387,442.5216	
PT	112+41.54	633,973.5192	1,387,464.0439	
PC	112+81.99	633,935.9031	1,387,478.6852	
PT	113+12.52	633,922.1477	1,387,503.2919	
PC	113+62.01	633,931.3444	1,387,551.9144	
PT	113+92.88	633,916.6676	1,387,575.9537	
PC	114+26.28	633,884.6594	1,387,585.4291	
PT	114+55.05	633,871.5339	1,387,607.9975	
PC	115+01.86	633,882.2477	1,387,653.5609	
PT	115+24.82	633,875.9525	1,387,674.5767	
PC	115+71.74	633,841.8747	1,387,706.8222	
PT	116+06.45	633,844.8945	1,387,736.7544	
PC	116+49.45	633,881.3968	1,387,759.4709	

STRIB-4				
POINT	STATION	NORTHING	EASTING	
PC	500+00.00	633,951.2055	1,387,330.4508	
PT	500+13.58	633,946.5503	1,387,342.7801	
PC	500+31.08	633,934.1775	1,387,355.1505	
PT	500+48.48	633,930.8229	1,387,371.2458	
PC	500+68.09	633,937.9968	1,387,389.4555	
PT	501+81.19	633,935.2928	1,387,401.5352	
PC	501+02.55	633,919.7272	1,387,416.1630	
PT	501+17.28	633,914.7714	1,387,429.4845	
PC	501+32.71	633,916.3731	1,387,444.8327	
PT	501+4			



MAIN STEM			
POINT	STATION	NORTHING	EASTING
PT	116+88.31	633,888.4546	1,387,793.4996
PC	117+21.05	633,869.8309	1,387,820.4259
PT	117+38.77	633,856.3243	1,387,831.5463
PC	117+79.95	633,816.5869	1,387,848.0339
PT	118+07.98	633,810.3911	1,387,871.0385
PC	118+36.26	633,823.6958	1,387,896.5688
PT	118+53.20	633,835.1593	1,387,908.7670
PC	118+84.96	633,862.2089	1,387,925.4188
PT	119+02.68	633,874.0312	1,387,938.3105
PC	119+30.34	633,886.3167	1,387,951.0901
PT	119+57.38	633,878.3417	1,387,966.0173
PC	119+89.00	633,849.7391	1,387,999.5110
PT	120+18.30	633,842.8988	1,388,024.3922
PC	120+45.68	633,858.2083	1,388,047.0697
PT	120+73.00	633,853.0984	1,388,071.0282
PC	121+31.29	633,803.6159	1,388,101.8302
PT	121+70.56	633,795.6036	1,388,136.2657
PC	122+03.84	633,813.1918	1,388,164.5207
PT	122+27.40	633,831.5787	1,388,178.3619
PC	122+60.98	633,863.8757	1,388,197.5968
PT	122+89.47	633,876.1655	1,388,210.0528
PC	123+38.24	633,862.2411	1,388,256.7852
PT	123+66.94	633,875.6121	1,388,278.3934
PC	124+20.53	633,928.4010	1,388,287.5953
PT	124+54.04	633,941.4082	1,388,313.3806
PC	125+08.58	633,917.0109	1,388,362.1531
PT	125+37.53	633,922.9837	1,388,388.1896
PC	126+08.65	633,968.3613	1,388,440.3690
PT	126+59.80	633,965.9139	1,388,413.5348
PC	126+59.80	633,966.0267	1,388,490.2853
PT	126+76.91	633,968.8484	1,388,507.0216

PERTRIB-2			
POINT	STATION	NORTHING	EASTING
POT	800+00.00	633,709.9403	1,388,269.1659
PC	800+09.68	633,719.3826	1,388,271.3106
PT	800+15.88	633,725.2344	1,388,270.0070
PC	800+24.97	633,732.4092	1,388,264.4188
PT	800+30.70	633,735.0790	1,388,259.5319
PC	800+41.00	633,736.0140	1,388,249.2784
PT	800+46.93	633,739.5527	1,388,244.9445
PC	800+54.95	633,747.2327	1,388,242.6337
PT	800+61.42	633,752.8946	1,388,244.7263
PC	800+69.33	633,757.1471	1,388,251.3860
PT	800+73.75	633,760.6323	1,388,253.9430
PC	800+85.74	633,772.2055	1,388,257.0771
PT	800+92.83	633,778.5373	1,388,254.9340
PC	801+00.66	633,783.3000	1,388,248.7155
PT	801+05.77	633,787.5514	1,388,246.0947
PC	801+15.92	633,797.5201	1,388,244.2017
PT	801+21.71	633,802.5771	1,388,246.2872
PC	801+29.24	633,806.8370	1,388,252.5022
PT	801+33.65	633,808.0601	1,388,256.6643
PC	801+45.24	633,807.7215	1,388,265.2462
PT	801+50.29	633,810.3922	1,388,272.1364
PC	801+62.42	633,821.8349	1,388,276.1623
PT	801+69.90	633,825.0025	1,388,282.1829
PC	801+76.86	633,823.1867	1,388,288.9040
PT	801+80.95	633,823.2994	1,388,292.9307
PC	801+92.21	633,826.6398	1,388,303.6197
PT	801+99.41	633,831.9491	1,388,308.2483
PC	802+09.43	633,841.7218	1,388,310.4458
PT	802+17.15	633,845.5312	1,388,316.2870
PC	802+29.41	633,843.1695	1,388,328.3190
PT	802+37.60	633,847.4449	1,388,334.2421
PC	802+48.14	633,857.8998	1,388,335.5722
PT	802+55.57	633,863.0154	1,388,340.2956
PC	802+67.91	633,865.5429	1,388,352.3782
PT	802+75.76	633,871.4608	1,388,356.2463
PC	802+84.38	633,879.8997	1,388,354.4808
PT	802+91.46	633,885.5998	1,388,357.6049
PC	802+97.41	633,887.7066	1,388,363.1713
PT	803+03.26	633,891.9290	1,388,366.8844
PC	803+08.27	633,896.8002	1,388,368.0437
PT	803+14.51	633,900.6228	1,388,372.4644
PC	803+21.47	633,901.2399	1,388,379.3950
PT	803+28.48	633,906.2953	1,388,382.8942
PC	803+33.80	633,911.4185	1,388,381.4704
PT	803+42.23	633,918.9177	1,388,384.0481

MAIN STEM							
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL	
C142	31° 43' 46.09"	RT	179° 02' 57.52"	32.00'	9.09'	17.72'	1.27'
C143	94° 27' 30.39"	LT	337° 02' 02.39"	17.00'	18.38'	28.03'	8.03'
C144	30° 19' 27.71"	LT	179° 02' 57.52"	32.00'	8.67'	16.94'	1.15'
C145	31° 43' 20.94"	RT	179° 02' 57.52"	32.00'	9.09'	17.72'	1.27'
C146	91° 07' 08.89"	RT	337° 02' 02.39"	17.00'	17.34'	27.04'	7.28'
C147	96° 44' 36.37"	LT	337° 02' 02.39"	17.00'	19.81'	29.30'	9.11'
C148	92° 05' 53.26"	RT	337° 02' 02.39"	17.00'	17.83'	27.33'	7.49'
C149	90° 00' 00.00"	LT	229° 10' 59.22"	25.00'	25.00'	39.27'	10.36'
C150	42° 10' 26.57"	LT	179° 02' 57.52"	32.00'	12.34'	23.55'	2.30'
C151	90° 41' 24.50"	RT	318° 18' 35.59"	18.00'	18.22'	28.49'	7.61'
C152	96° 43' 35.20"	LT	337° 02' 02.39"	17.00'	19.12'	28.70'	8.59'
C153	106° 41' 14.62"	RT	318° 18' 35.59"	18.00'	24.19'	33.52'	12.15'
C154	76° 59' 28.33"	LT	272° 50' 13.36"	21.00'	17.31'	28.95'	6.21'
C155	55° 05' 40.31"	RT	179° 02' 57.52"	32.00'	16.69'	30.77'	4.09'
C156	24° 29' 50.72"	LT	143° 14' 22.02"	40.00'	8.68'	17.10'	0.93'

PERTRIB-2							
NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL	
C157	50° 42' 39.21"	LT	818° 30' 40.09"	7.00'	3.32'	6.20'	0.75'
C158	46° 52' 32.74"	LT	818° 30' 40.09"	7.00'	3.03'	5.73'	0.83'
C159	68° 02' 38.68"	RT	1145° 54' 56.12"	5.00'	3.38'	5.94'	1.03'
C160	74° 07' 30.75"	RT	1145° 54' 56.12"	5.00'	3.78'	6.47'	1.27'
C161	42° 13' 36.85"	LT	954° 55' 46.77"	6.00'	2.32'	4.42'	0.43'
C162	67° 42' 15.91"	LT	954° 55' 46.77"	6.00'	4.02'	7.09'	1.22'
C163	41° 48' 00.57"	RT	818° 30' 40.09"	7.00'	2.67'	5.11'	0.49'
C164	66° 19' 27.14"	RT	1145° 54' 56.12"	5.00'	3.27'	5.79'	0.97'
C165	36° 06' 08.05"	RT	818° 30' 40.09"	7.00'	2.28'	4.41'	0.36'
C166	72° 17' 29.83"	LT	1432° 23' 40.16"	4.00'	2.92'	5.05'	0.95'
C167	85° 44' 06.24"	RT	1145° 54' 56.12"	5.00'	4.64'	7.48'	1.82'
C168	33° 26' 38.17"	LT	818° 30' 40.09"	7.00'	2.10'	4.09'	0.31'
C169	59° 00' 04.46"	LT	818° 30' 40.09"	7.00'	3.96'	7.21'	1.04'
C170	88° 25' 54.63"	RT	1145° 54' 56.12"	5.00'	4.86'	7.72'	1.98'
C171	93° 51' 15.43"	LT	1145° 54' 56.12"	5.00'	5.35'	8.19'	2.32'
C172	70° 55' 57.53"	RT	954° 55' 46.77"	6.00'	4.27'	7.43'	1.37'
C173	90° 00' 00.00"	LT	1145° 54' 56.12"	5.00'	5.00'	7.85'	2.07'
C174	81° 05' 09.66"	RT	1145° 54' 56.12"	5.00'	4.28'	7.08'	1.58'
C175	55° 52' 56.28"	LT	954° 55' 46.77"	6.00'	3.18'	5.85'	0.79'
C176	71° 31' 29.49"	RT	1145° 54' 56.12"	5.00'	3.60'	6.24'	1.16'
C177	100° 26' 36.24"	LT	1432° 23' 40.16"	4.00'	4.80'	7.01'	2.25'
C178	69° 00' 05.94"	RT	818° 30' 40.09"	7.00'	4.81'	8.43'	1.49'

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION
NOT FOR CONSTRUCTION

SCALE	AS SHOWN	DATE	OCTOBER, 2018	PROJECT NO.	17-10977-001
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY		
DRAWN BY	PVC	LOGMILE			
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A		
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	N/A		
DRAWING NO.	GS-03	OF	04	SHEET NO.	8 OF 38

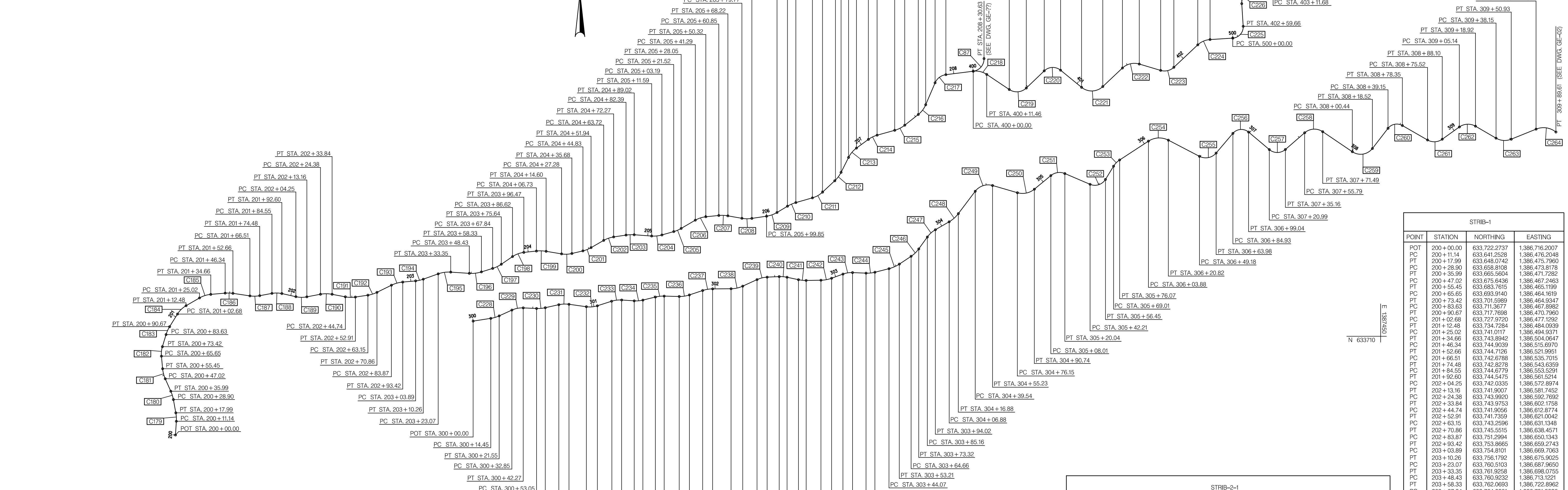
BY: PCrawford



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NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C218	41° 02' 46.80" RT	358° 05' 55.04"	16.00'	5.99'	11.46'	1.08'
C219	77° 37' 46.46" LT	520° 52' 14.60"	11.00'	8.85'	14.90'	3.12'
C220	83° 00' 35.73" RT	572° 57' 28.06"	10.00'	8.85'	14.49'	3.35'
C221	82° 32' 40.52" LT	440° 44' 12.36"	13.00'	11.41'	18.73'	4.30'
C222	59° 54' 47.33" RT	409° 15' 20.04"	14.00'	8.07'	14.64'	2.16'
C223	59° 45' 19.46" LT	520° 52' 14.60"	11.00'	6.30'	11.47'	1.69'
C224	39° 31' 48.72" RT	358° 05' 55.04"	16.00'	5.75'	11.04'	1.00'
C225	89° 56' 13.67" LT	636° 37' 11.18"	9.00'	8.99'	14.13'	3.72'
C226	68° 03' 28.71" RT	572° 57' 28.06"	10.00'	6.75'	11.88'	2.07'
C227	47° 36' 28.67" RT	358° 05' 55.04"	16.00'	7.06'	13.29'	1.49'

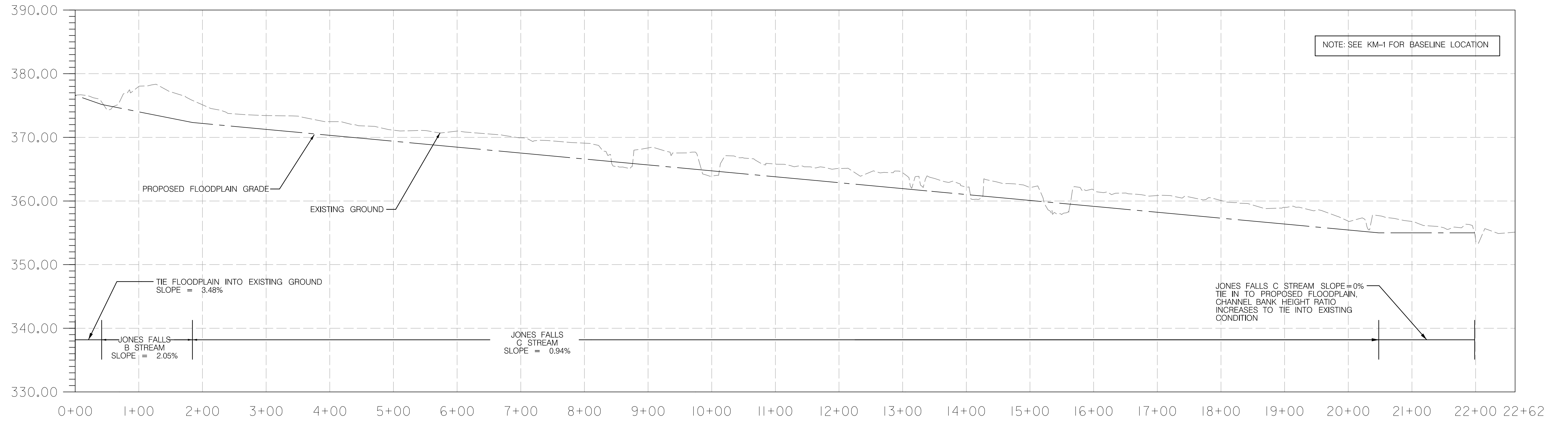
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E 1387450



NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C228	15° 37' 39.56" LT	220° 22' 06.18"	26.00'	3.57'	7.09'	0.24'
C229	26° 59' 23.88" RT	286° 28' 44.03"	20.00'	4.90'	9.42'	0.57'
C230	15° 07' 22.10" LT	212° 12' 23.73"	27.00'	3.58'	7.13'	0.24'
C231	20° 32' 40.67" RT	249° 06' 43.51"	23.00'	4.17'	8.25'	0.37'
C232	25° 44' 47.99" LT	286° 28' 44.03"	20.00'	4.57'	8.99'	0.52'
C233	21° 39' 59.19" RT	260° 26' 07.30"	22.00'	4.21'	8.32'	0.40'
C234	17° 38' 26.48" LT	249° 06' 43.51"	23.00'	3.57'	7.08'	0.28'
C235	15° 11' 43.45" RT	212° 12' 23.73"	27.00'	3.60'	7.16'	0.24'
C236	19° 59' 29.02" LT	238° 43' 56.69"	24.00'	4.23'	8.37'	0.37'
C237	18° 11' 26.19" RT	220° 22' 06.18"	26.00'	4.16'	8.25'	0.33'
C238	24° 17' 33.18" LT	249° 06' 43.51"	23.00'	4.95'	9.75'	0.53'
C239	22° 04' 45.05" RT	260° 26' 07.30"	22.00'	4.29'	8.48'	0.41'
C240	14° 33' 38.80" RT	220° 10' 59.22"	25.00'	3.19'	6.35'	0.20'
C241	12° 48' 14.40" LT	204° 37' 40.02"	28.00'	3.14'	6.26'	0.18'
C242	19° 22' 12.69" RT	220° 22' 06.18"	26.00'	4.44'	8.79'	0.38'
C243	22° 35' 07.31" RT	286° 28' 44.03"	20.00'	3.99'	7.88'	0.39'
C244	16° 35' 09.58" LT	225° 10' 59.22"	25.00'	3.64'	7.24'	0.26'
C245	19° 24' 06.87" LT	212° 12' 23.73"	27.00'	4.62'	9.14'	0.39'
C246	20° 39' 14.31" LT	238° 43' 56.69"	24.00'	4.37'	8.65'	0.40'
C247	24° 10' 16.72" RT	272° 50' 13.36"	21.00'	4.50'	8.86'	0.48'
C248	22° 54' 16.62" LT	229° 10' 59.22"	25.00'	5.06'	9.99'	0.51'
C249	69° 08' 13.13" RT	440° 44' 12.36"	13.00'	8.96'	15.89'	2.79'
C250	55° 44' 32.59" LT	381° 58' 18.71"	15.00'	7.53'	14.59'	1.97'
C251	62° 40' 21.69" RT	520° 52' 14.60"	11.00'	6.70'	12.03'	1.88'
C252	81° 33' 32.56" LT	572° 57' 28.06"	10.00'	8.63'	14.23'	3.21'
C253	25° 17' 09.88" RT	358° 05' 55.04"	16.00'	3.99'	7.06'	0.40'
C254	60° 39' 02.37" RT	358° 05' 55.04"	16.00'	9.36'	16.94'	2.54'
C255	77° 04' 54.50" LT	520° 52' 14.60"	11.00'	7.06'	12.58'	2.08'
C256	89° 49' 26.63" RT	636° 37' 11.18"	9.00'	8.97'	14.11'	3.71'
C257	81° 39' 35.38" LT	572° 57' 28.06"	10.00'	8.56'	14.17'	3.17'
C258	74° 59' 59.94" RT	477° 27' 53.39"	12.00'	9.21'	15.71'	3.13'
C259	86° 18' 14.24" LT	477° 27' 53.39"	12.00'	11.25'	18.08'	4.45'
C260	82° 07' 51.66" RT	636° 37' 11.18"	9.00'	7.84'	12.90'	2.94'
C261	85° 31' 08.53" LT	520° 52' 14.60"	11.00'	7.06'	12.58'	2.08'
C262	65° 48' 33.36" RT	477° 27' 53.39"	12.00'	7.76'	13.78'	2.29'
C263	52° 18' 37.13" LT	409° 15' 20.04"	14.00'	6.88'	12.78'	1.60'
C264	60° 56' 13.96" RT	358° 05' 55.04"	16.00'	9.41'	17.02'	2.56'

NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C179	14° 01' 06.45" LT	204° 37' 40.02"	28.00'	3.44'	6.85'	0.21'
C180	13° 31' 32.73" LT	190° 59' 09.35"	30.00'	3.56'	7.08'	0.21'
C181	18° 34' 26.87" RT	220° 22' 06.18"	26.00'	4.25'	8.43'	0.35'
C182	22° 15' 59.64" RT	286° 28' 44.03"	20.00'	3.94'	7.77'	0.38'
C183	14° 57' 17.65" RT	212° 12' 23.73"	27.00'	3.54'	7.05'	0.23'
C184	28° 04' 42.53" RT	286° 28' 44.03"	20.00'	5.00'	9.80'	0.62'
C185	25° 07' 46.76" RT	260° 26' 07.30"	22.00'	4.90'	9.65'	0.54'
C186	13° 24' 06.75" RT	212° 12' 23.73"	27.00'	3.17'	6.32'	0.19'
C187	19° 01' 58.29" LT	236° 43' 56.69"	24.00'	4.02'	7.97'	0.23'
C188	23° 03' 15.59" RT	286° 28' 44.03"	20.00'	4.08'	8.05'	0.41'
C189	23° 12' 13.11" LT	260° 26' 07.30"	22.00'	4.52'	8.91'	0.46'
C190	21° 41' 15.57" RT	229° 10' 59.22"	25.00'	4.79'	9.46'	0.45'
C191	19° 29' 59.06" LT	236° 43' 56.69"	24.00'	4.12'	8.17'	0.35'
C192	17° 39' 14.94" LT	229° 10' 59.22"	25.00'	3.88'	7.70'	0.30'
C193	15° 32' 52.37" RT	197° 34' 17.95"	29.00'	4.83'	9.55'	0.44'
C194	14° 34' 56.88" RT	229° 10' 59.22"	25.00'	3.20'	6.36'	0.20'
C195	23° 33' 47.18" RT	229° 10' 59.22"	25.00'	5.21'	10.28'	0.54'
C196	21° 00' 02.55" LT	212° 12' 23.73"	27.00'	5.00'	9.90'	0.46'
C197	17° 11' 29.42" LT	220° 22' 06.18"	26.00'	3.93'	7.80'	0.30'
C198	28° 13' 11.93" RT	286° 28' 44.03"	20.00'	5.03'	9.85'	0.62'
C199	15° 32' 52.37" RT	197° 34' 17.95"	29.00'	3.96'	7.87'	0.27'
C200	22° 55' 21.34" LT	272° 50' 13.36"	21.00'	4.26'	8.40'	0.43'
C201	16° 16' 56.56" LT	229° 10' 59.22"	25.00'	3.58'	7.10'	0.25'
C202	21° 18' 01.97" RT	249° 06' 43.51"	23.00'	4.33'	8.55'	0.40'
C203	12° 38' 58.13" RT	190° 59' 09.35"	30.00'	3.33'	6.62'	0.18'
C204	20° 02' 52.58" LT	238° 43' 56.69"	24.00'	4.24'	8.40'	0.37'
C205	14° 23' 16.02" LT	220° 22' 06.18"	26.00'	3.28'	6.53'	0.21'
C206	24° 37' 54.85" RT	272° 50' 13.36"	21.00'	4.58'	9.03'	0.49'
C207	15° 39' 03.28" RT	212° 12' 23.73"	27.00'	3.71'	7.38'	0.25'
C208	18° 28' 29.55" LT	229° 10' 59.22"	25.00'	4.07'	8.06'	0.33'
C209	22° 30' 02.76" LT	249° 06' 43.51"	23.00'	4.58'	9.03'	0.45'
C210	15° 10' 03.61" RT	204° 37' 40.02"	28.00'	3.73'	7.41'	0.25'
C211	27° 10' 47.82" LT	286° 28' 44.03"	20.00'	4.83'	9.49'	0.58'
C212	20° 22' 26.23" LT	238° 43' 56.69"	24.00'	4.31'	8.53'	0.38'
C213	27° 16' 44.25" RT	272° 50' 13.36"	21.00'	5.10'	10.00'	0.61'
C214	20° 32' 28.48" RT	260° 26' 07.30"	22.00'	3.99'	7.89'	0.36'
C215	22° 46' 17.77" LT	249° 06' 43.51"	23.00'	4.63'	9.14'	0.46'
C216	15° 31' 08.53" LT	520° 52' 14.60"	11.00'	7.06'	12.58'	2.08'
C217	59° 41' 47.11" RT	520° 52' 14.60"	11.00'	6.31'	11.46'	1.68'

POINT	STATION	NORTHING	EASTING
POT	200+00.00	633,722.2737	1,386,716.2007
PC	200+11.14	633,641.2528	1,386,476.2048
PT	200+17.99	633,648.0742	1,386,475.7960
PC	200+28.90	633,658.8108	1,386,473.8178
PT	200+35.99	633,665.5604	1,386,471.7282
PC	200+47.02	633,675.6436	1,386,467.2463
PT	200+55.45	633,683.7615	1,386,465.1199
PC	200+65.65	633,693.9140	1,386,464.1619
PT	200+73.42	633,701.5989	1,386,464.9347
PC	200+83.63	633,711.9877	1,386,461.8982
PT	200+90.67	633,717.7698	1,386,470.7960
PC	201+02.68	633,727.9720	1,386,477.1292
PT	201+12.48	633,734.7284	1,386,484.0339
PC	201+25.02	633,741.0117	1,386,494.9371
PT	201+34.66	633,743.8942	1,386,504.0647
PC	201+46.34	633,744.9039	1,386,515.6970
PT	201+52.66	633,744.7126	1,386,521.9951
PC	201+66.51	633,742.6788	1,386,535.7015
PT	201+74.48	633,742.8278	1,386,543.6359
PC	201+84.55	633,744.6779	1,386,553.5291
PT	201+92.67	633,744.5475	1,386,561.5214
PC	202+04.25	633,742.0335	1,386,572.8974
PT	202+13.16	633,741.9007	1,386,581.7452
PC	202+24.38	633,743.9920	1,386,592.7692
PT	202+33.64	633,743.9753	1,386,602.9758
PC	202+44.74	633,741.9164	1,386,615.8774
PT	202+52.91	633,741.7359	1,386,621.0042
PC	202+63.15	633,743.2596	1,386,631.1348
PT	202+70.86	633,745.5515	1,386,638.4571
PC	202+83.87	633,751.2944	1,386,651.1943
PT	202+93.42	633,753.8665	1,386,659.2743
PC	203+03.89	633,754.8101	1,386,669.7063
PT	203+10.26	633,756.1792	1,386,675.9025
PC	203+23.07	633,760.5103	1,386,687.9650
PT	203+33.35	633,761.8258	1,386,698.0755
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PT	203+58.33	633,762.0693	1,386,722.8962
PC	203+67.84	633,764.8801	1,386,731.9826
PT	203+75.64	633,768.2608	1,386,738.9808
PC	203+86.62	633,774.4594	1,386,748.0404
PT	203+96.47	633,777.8377	1,386,757.1879
PC	204+06.73	633,778.9390	1,386,767.3919
PT	204+14.60	633,778.7181	1,386,775.2342
PC	204+27.28	633,776.6256	1,386,787.7371
PT	204+35.68	633,776.9529	1,386,796.0773
PC	204+44.83	633,779.0955	1,386,804.9778
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PC	204+59.54	633,827.3051	1,387,122.2000
PT	204+63.72	633,826.1377	1,387,136.1978
PC	204+72.27	633,826.1377	1,387,136.1978
PT	204+82.39	633,828.9829	1,387,170.0228
PC	204+89.01	633,838.9855	1,387,170.0228
PT	204+98.02	633,838.9855	1,387,170.0228
PC	205+03.19	633,841.6252	1,387,194.6572
PT	205+11.59	633,832.9294	1,387,215.2704
PC	205+21.52	633,832.9294	1,387,215.2704
PT	205+25.02	633,836.6973	1,387,227.4934
PC	205+28.05	633,847.6385	1,387,234.0638
PT	205+33.35	633,852.6264	1,387,238.5879
PC	205+41.29	633,852.6264	1,387,238.5879
PT	205+50.32	633,867.8461	1,387,262.2241
PC	205+58.33	633,868.6498	1,387,278.3612
PT	205+65.65	633,874.1910	1,387,282.8017
PC	205+73.42	633,874.1910	1,387,282.8017
PT	205+83.87	633,874.4295	1,387,301.5782
PC	205+90.67	633,874.0198	1,387,301.7607
PT	206+00.00	633,748.3694	1,386,909.8892



BASELINE OF MAIN STEM VALLEY LONGITUDINAL PROFILE
 SCALE: HOR. 1" = 80'
 VERT. 1" = 8'

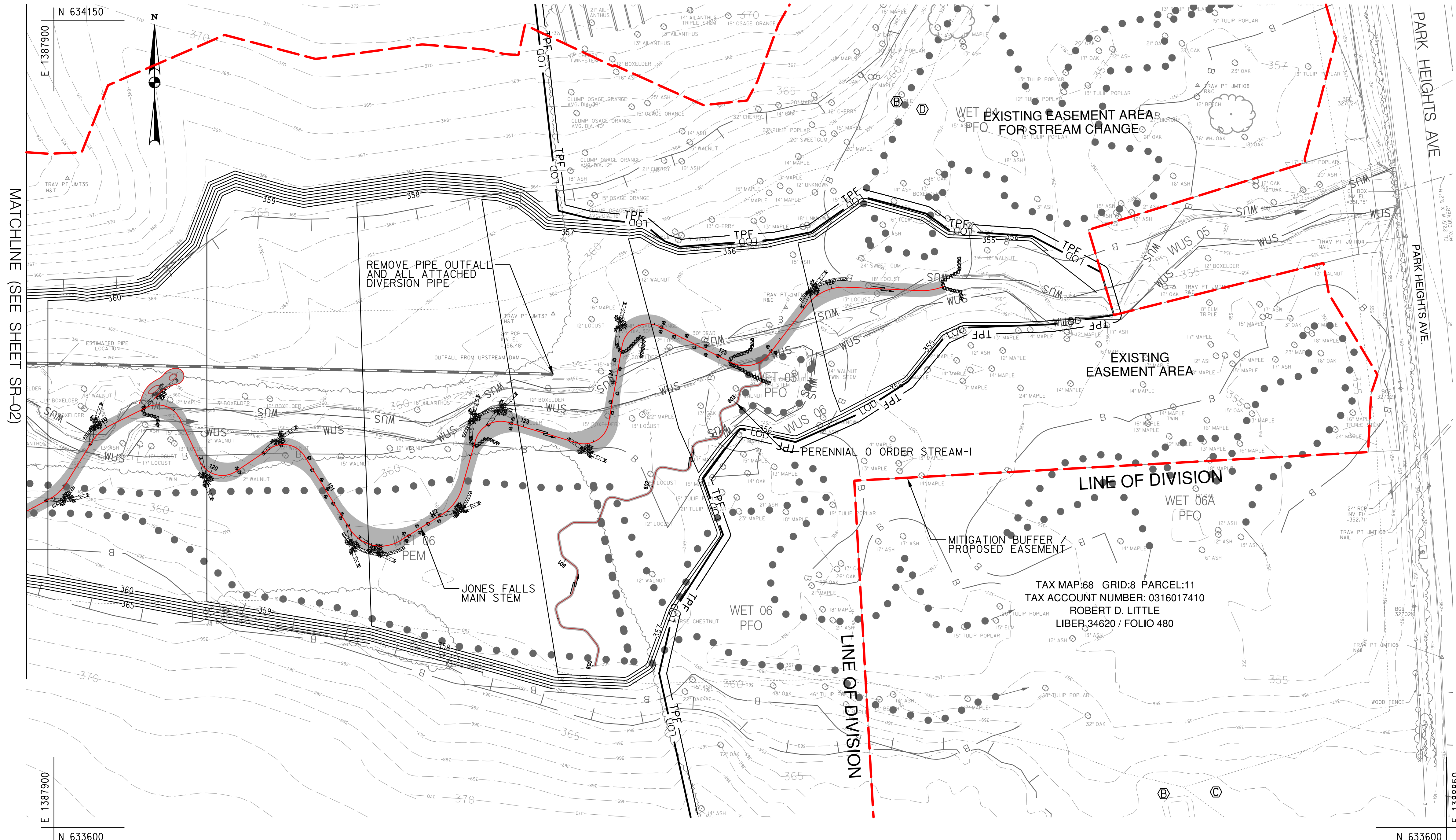
BY: PCrawford



ECCLESTON MITIGATION SITE

REVISIONS	STREAM RESTORATION PROFILE	
CONCEPT SUBMISSION NOT FOR CONSTRUCTION	SCALE AS SHOWN	DATE OCTOBER, 2018
	DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
	DRAWN BY PVC	LOGMILE
	CHECKED BY JJM /MRG	HORIZONTAL SCALE 1" = 80'
	F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE 1" = 8'
DRAWING NO. SRV - 1 OF 1	SHEET NO. 10 OF 38	

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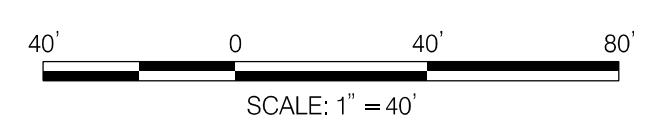
MATCHLINE (SEE SHEET SR-02)

REQUIRED NOTE:

1. THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. HOWEVER, DUE TO BUILDING TYPES AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGED MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.
2. ALL SWALES HAVE BEEN DESIGNATED BY THE ENGINEER TO CONVEY RUNOFF ACCORDING TO BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS.
3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST BUFFER EASEMENT OR OTHER FOREST RETENTION AREAS, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY.
4. STORMWATER MANAGEMENT HAS BEEN ADDRESSED THROUGH STORMWATER MANAGEMENT VARIANCE.

NOTES:

1. CHANNEL BED GRADING AND ADDITIONAL HABITAT FEATURING TO BE INCLUDED FOLLOWING IR/DNR DISCUSSION OF DRAFT MBI.
2. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

STREAM RESTORATION GRADING PLAN

SCALE AS SHOWN DATE OCTOBER, 2018 PROJECT NO. 17-10977-001

DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
DRAWN BY PVC	LOGMILE
CHECKED BY JJM / MRG	HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A

DRAWING NO. **SR-1** OF **5** SHEET NO. 11 OF 38

REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

ECCLESTON MITIGATION SITE

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
EMAIL: JKoser@jmt.com

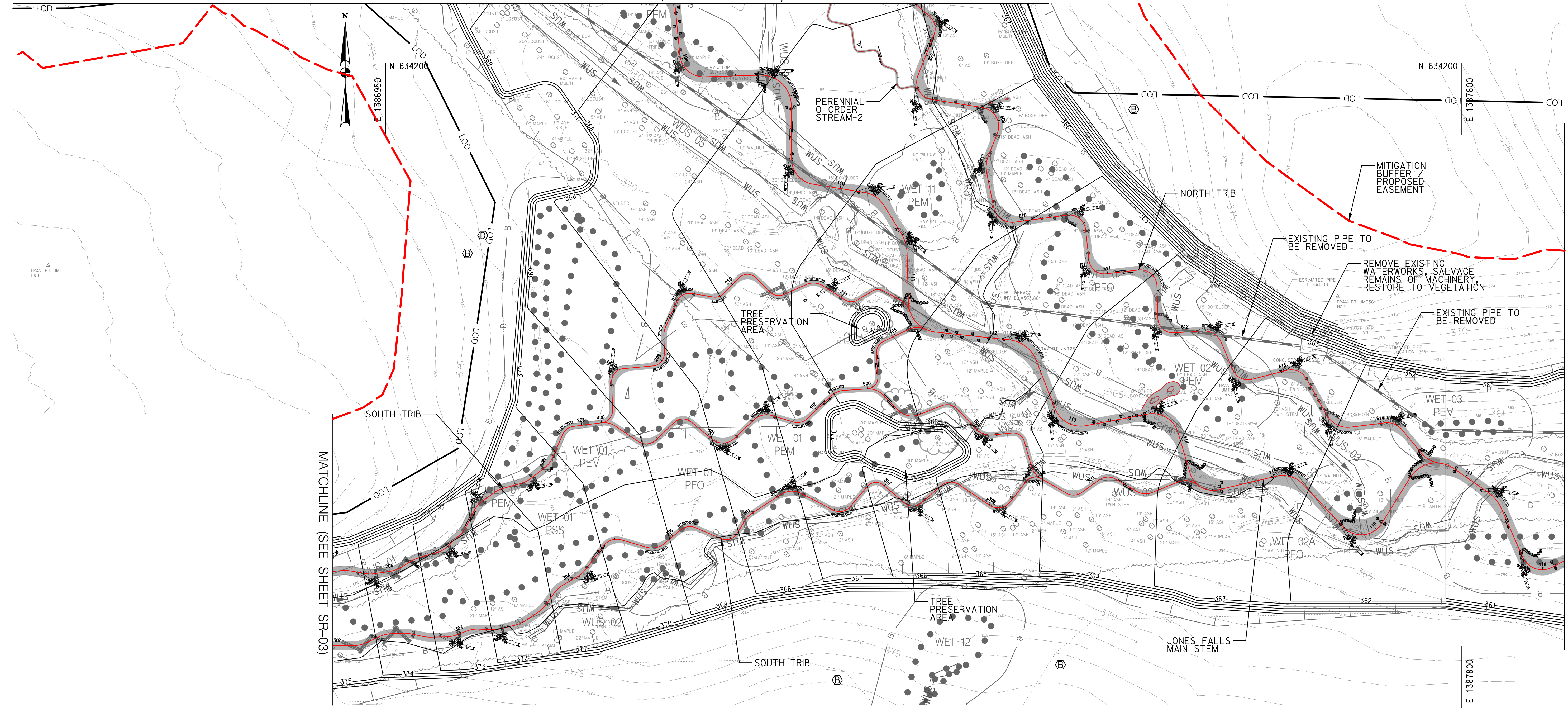
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31183, EXPIRATION DATE: 1/13/2021.



BY: K. Higgins

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MATCHLINE (SEE SHEET SR-04)

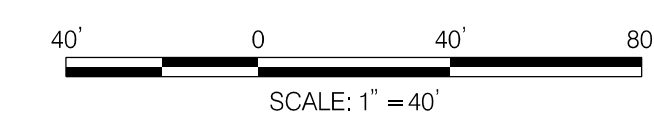


MATCHLINE (SEE SHEET SR-03)

MATCHLINE (SEE SHEET SR-01)

- NOTE:**
1. CHANNEL BED GRADING AND ADDITIONAL HABITAT FEATURING TO BE INCLUDED FOLLOWING IRT&DNR DISCUSSION OF DRAFT MBI.
 2. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.

- REQUIRED NOTES:**
1. THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. HOWEVER, DUE TO BUILDING TYPES AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGED MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.
 2. ALL SWALES HAVE BEEN DESIGNATED BY THE ENGINEER TO CONVEY RUNOFF ACCORDING TO BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS.
 3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST BUFFER EASEMENT OR OTHER FOREST RETENTION AREAS, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY.
 4. STORMWATER MANAGEMENT HAS BEEN ADDRESSED THROUGH STORMWATER MANAGEMENT VARIANCE.



OWNER / DEVELOPER INFORMATION
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CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

STREAM RESTORATION GRADING PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. SR-2 OF 5	SHEET NO. OF 38
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BY: K. Higgins



DESIGN PROFESSIONAL
 JEREMY KOSER
 JOHNSON, MIRMIRAN & THOMPSON, INC.
 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
 EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.

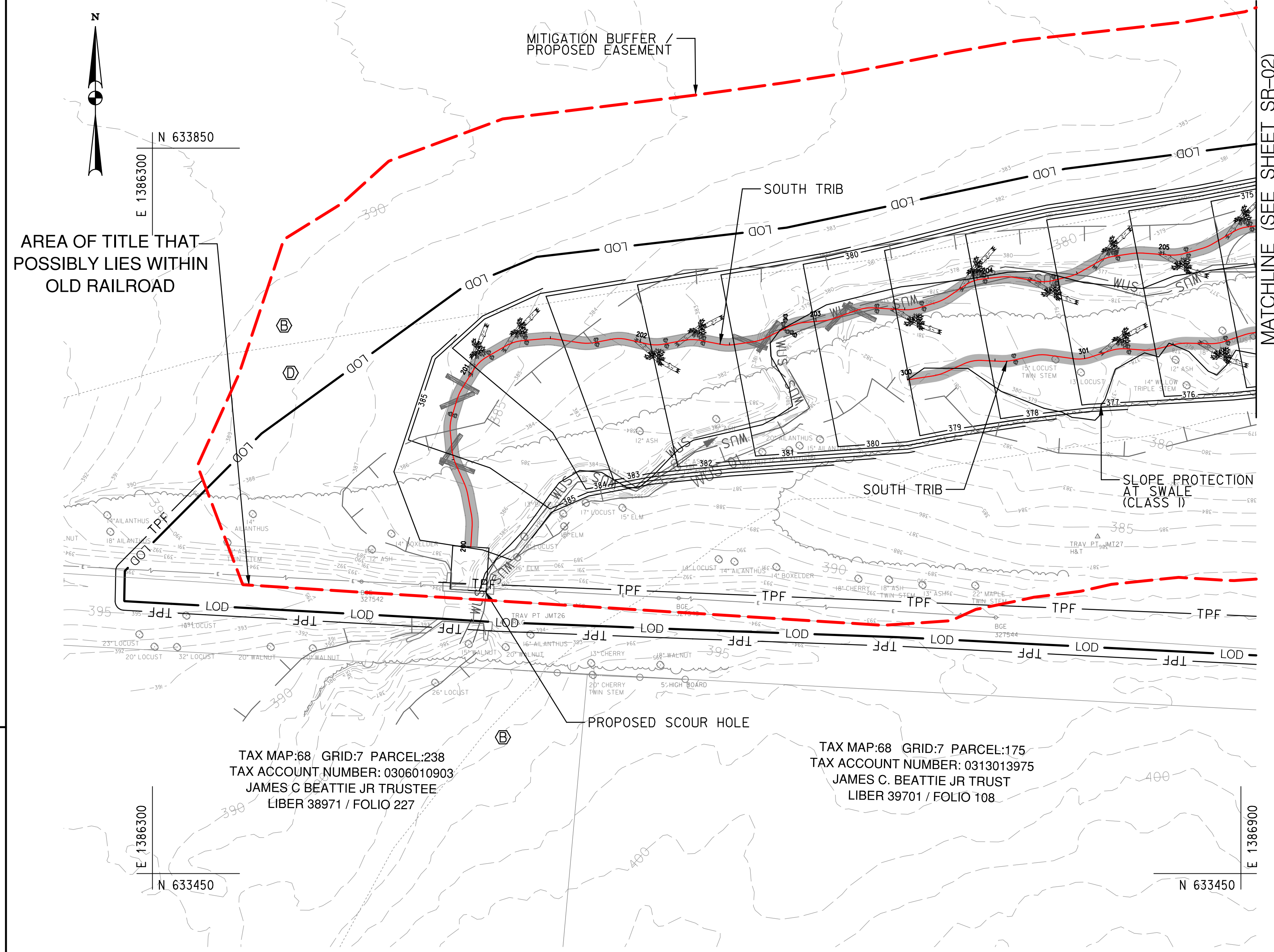
ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

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Wednesday, August 28, 2019 11:17 AM



AREA OF TITLE THAT POSSIBLY LIES WITHIN OLD RAILROAD

MITIGATION BUFFER / PROPOSED EASEMENT

SOUTH TRIB

SLOPE PROTECTION AT SWALE (CLASS 1)

PROPOSED SCOUR HOLE

TAX MAP:68 GRID:7 PARCEL:238
TAX ACCOUNT NUMBER: 0306010903
JAMES C BEATTIE JR TRUSTEE
LIBER 38971 / FOLIO 227

TAX MAP:68 GRID:7 PARCEL:175
TAX ACCOUNT NUMBER: 0313013975
JAMES C. BEATTIE JR TRUST
LIBER 39701 / FOLIO 108

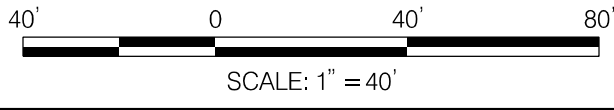
NOTE:

- 1.CHANNEL BED GRADING AND ADDITIONAL HABITAT FEATURING TO BE INCLUDED FOLLOWING IRTDNR DISCUSSION OF DRAFT MBI.
- 2.REMOVE CLAY DRAIN TILE AS ENCOUNTERED.TRACE AND REMOVE THROUGH FLOODPLAIN.

OWNER /DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2



ECCLESTON MITIGATION SITE

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BY: KJiggins -

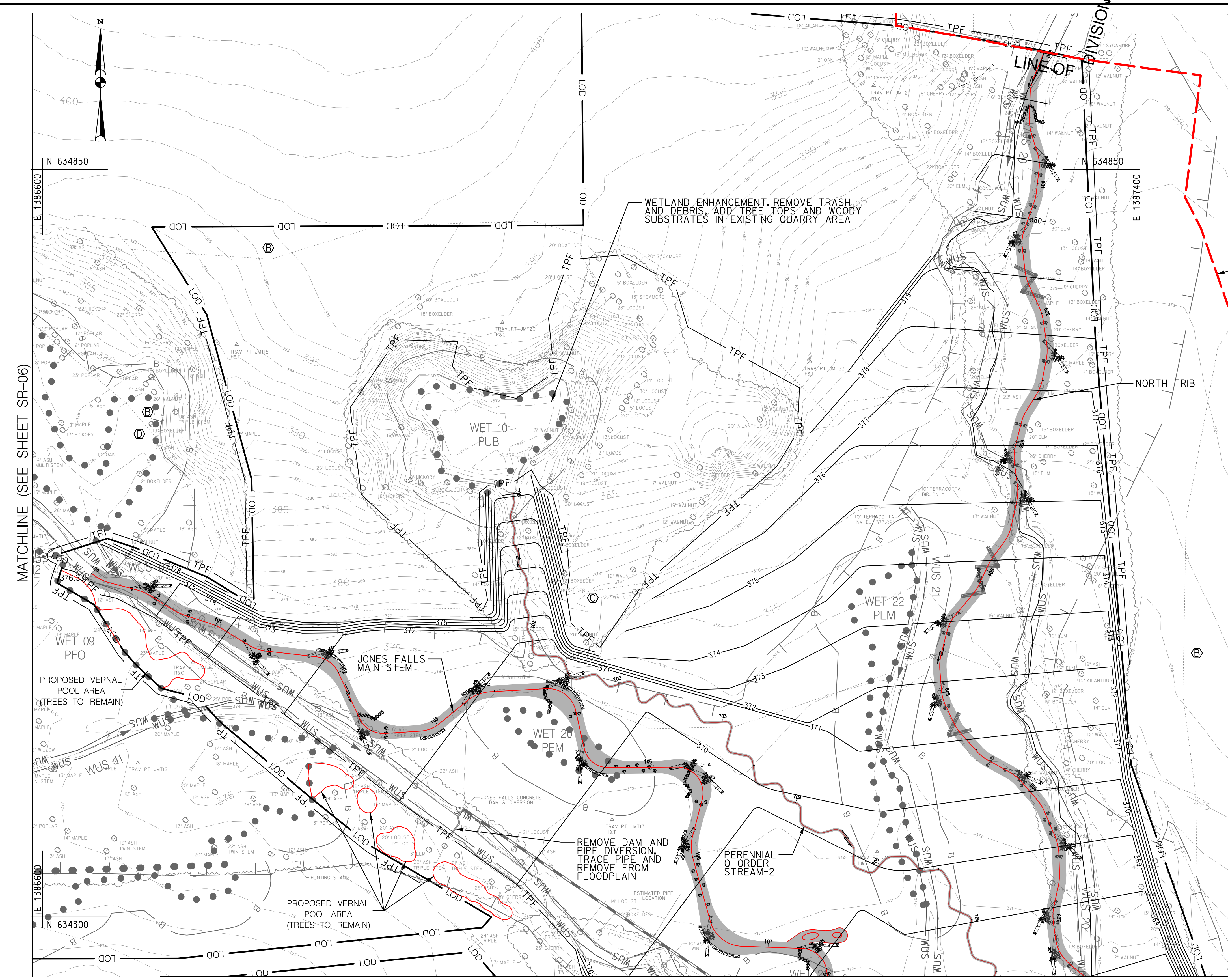
REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. SR-3	OF 5	SHEET NO. 13 OF 38

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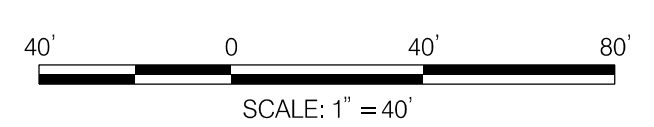
- NOTE:
1. CHANNEL BED GRADING AND ADDITIONAL HABITAT FEATURING TO BE INCLUDED FOLLOWING IRT/DNR DISCUSSION OF DRAFT MBI.
 2. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.

MITIGATION BUFFER / PROPOSED EASEMENT

MATCHLINE (SEE SHEET SR-06)

MATCHLINE (SEE SHEET SR-02)

OWNER / DEVELOPER INFORMATION	
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

STREAM RESTORATION PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. SR-4	OF 5	SHEET NO. 14 OF 38
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DESIGN PROFESSIONAL
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40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
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ECCLESTON MITIGATION SITE

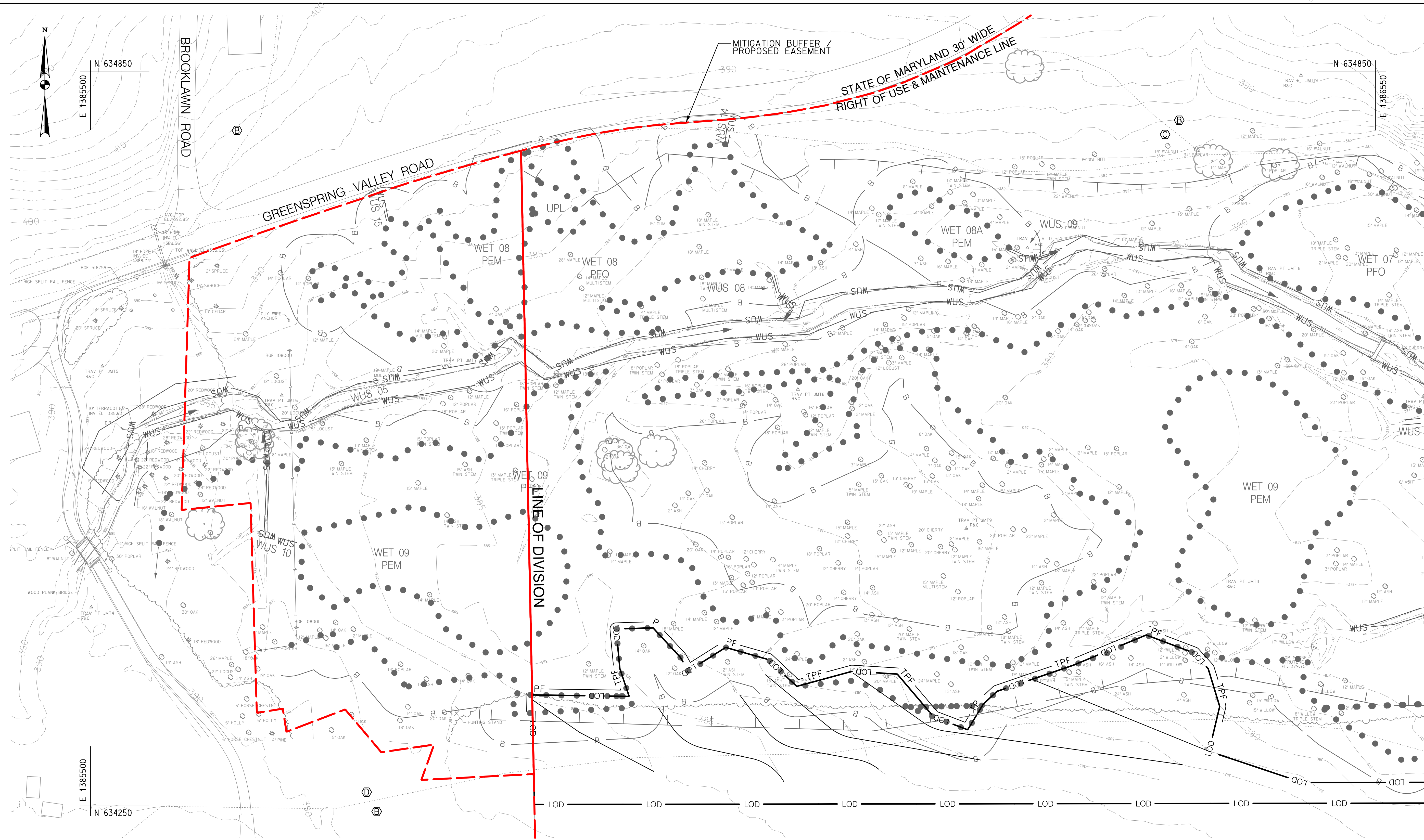
REVISIONS

CONCEPT SUBMISSION

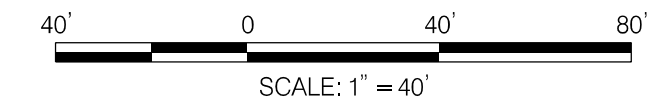
NOT FOR CONSTRUCTION

BY: K. Higgins

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Wednesday, August 28, 2019 11:18 AM



MATCHLINE (SEE SHEET SR-04)



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

STREAM RESTORATION PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. SR-5 OF 5	SHEET NO. 15 OF 38	

- NOTE:**
1. CHANNEL BED GRADING AND ADDITIONAL HABITAT FEATURING TO BE INCLUDED FOLLOWING IRT/DNR DISCUSSION OF DRAFT MBI.
 2. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.
 3. NO CHANNEL WORK ON JONES FALLS, THIS SHEET.



DESIGN PROFESSIONAL
JEREMY KOSER
 JOHNSON, MIRMIRAN & THOMPSON, INC.
 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
 EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.

ECCLESTON MITIGATION SITE

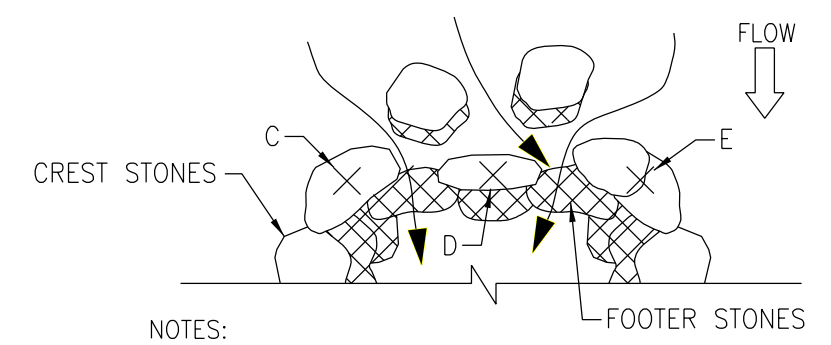
REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

BY: KJiggins -

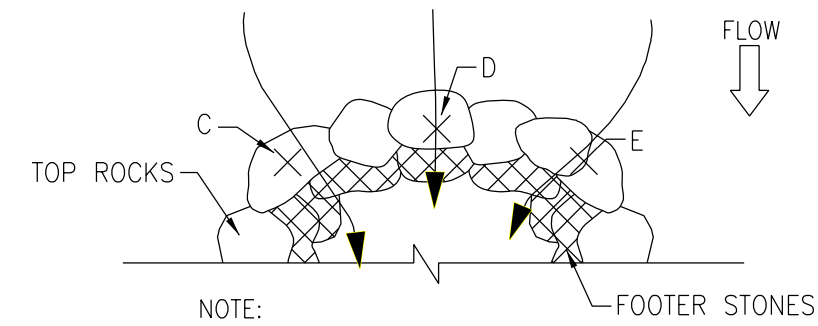
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Wednesday, August 28, 2019 11:20 AM



- NOTES:
1. GAP CREST STONES 6-12" TO MANIPULATE AVERAGE DAILY FLOW WATER SURFACE FOR DESIRED SLOPE OF RIFFLE UPSTREAM OF STRUCTURE AND FOR FISH PASSAGE.
 2. FOOTER STONES ARE FIT FLUSH AND FORM A CONTINUOUS THROAT AND SHOULD BE SUBMERGED UNDER AVERAGE DAILY FLOW CONDITIONS.

BROKEN THROAT DETAIL

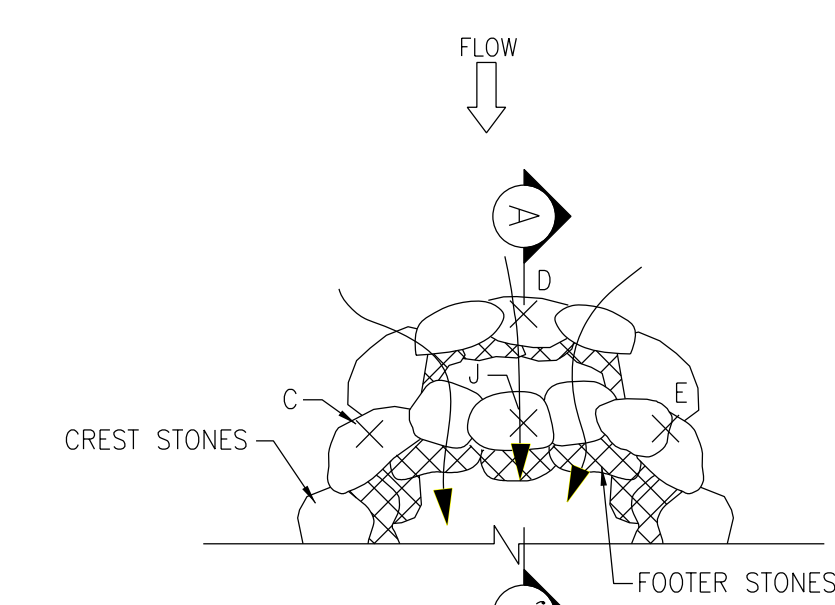
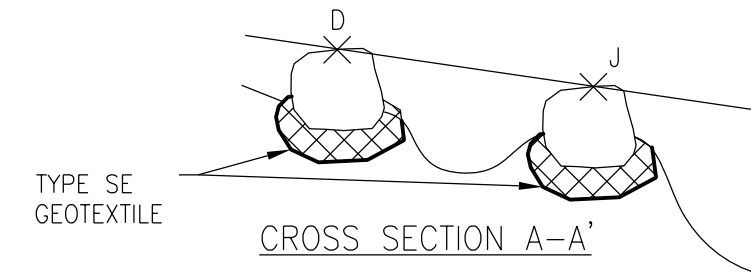
NOT TO SCALE - NOT PROPOSED AT THIS TIME
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)



- NOTE:
- GAP THROAT CREST AND FOOTER STONES SO GAP IS LESS THAN D50 OF RIFFLE MATERIAL, OR WITH NO GAP FOR MAXIMUM AVERAGE DAILY FLOW WATER SURFACE INFLUENCE.

CLOSED-GAP THROAT DETAIL

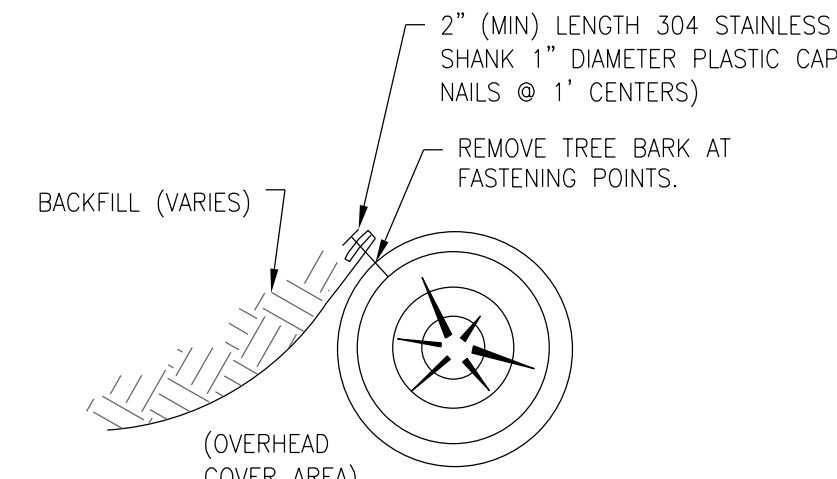
NOT TO SCALE
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)



- NOTES:
1. ALLOW NO MORE THAN 6" DROP IN AVERAGE DAILY FLOW WATER SURFACE BETWEEN STEPS.
 2. UPSTREAM THROAT MAY BE BROKEN AS IN VIEW 1, COUPLED WITH STEP FOR FLOW DIVERSITY.
 3. INVERT OF THROAT VARIES.

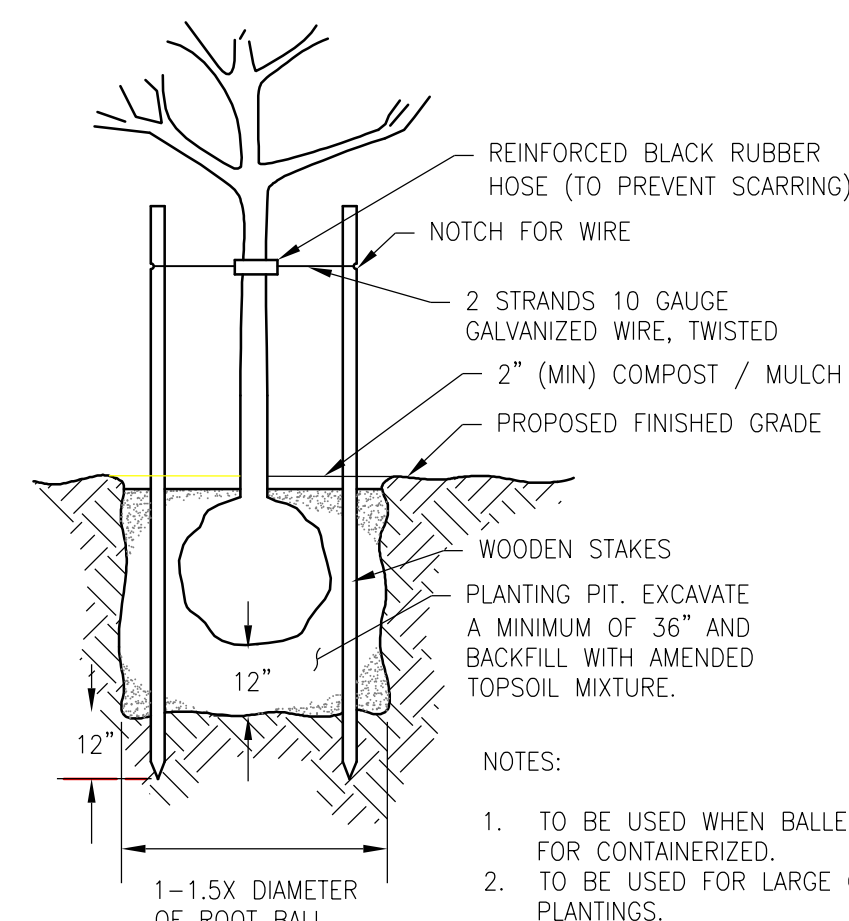
STEPPED THROAT DETAIL (AS DIRECTED)

NOT TO SCALE - NOT PROPOSED AT THIS TIME
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES. NOT USED FOR THIS PROJECT, BUT AVAILABLE FOR IN-FIELD CHANGES AS REQUIRED)



LOG GEOTEXTILE FASTENING DETAIL

NOT TO SCALE



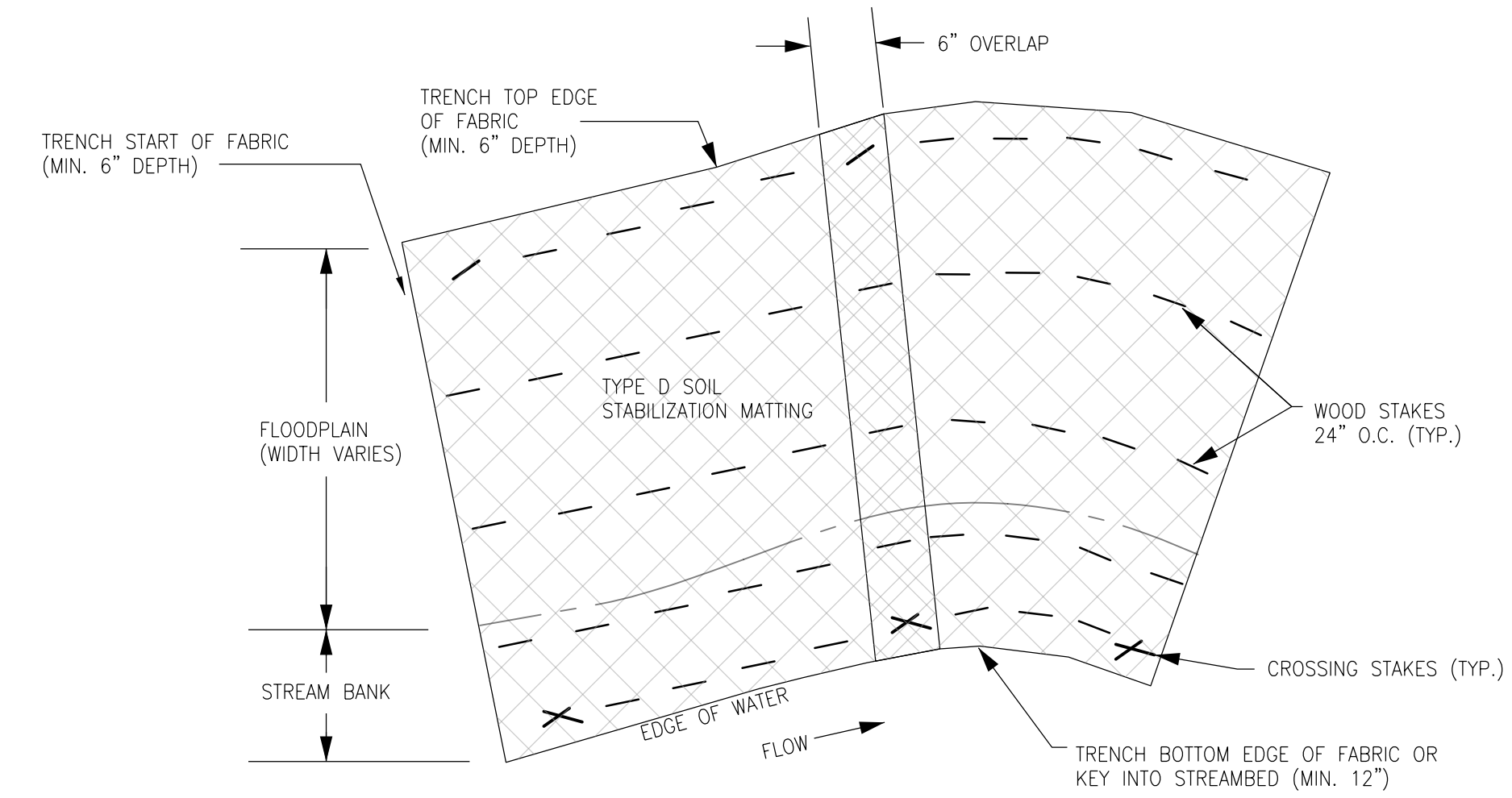
- NOTES:
1. TO BE USED WHEN BALLED STOCK IS SUBSTITUTED FOR CONTAINERIZED.
 2. TO BE USED FOR LARGE CALIPER, HIGH-VISIBILITY PLANTINGS.

BALLED TREE PLANTING AND STAKING DETAIL

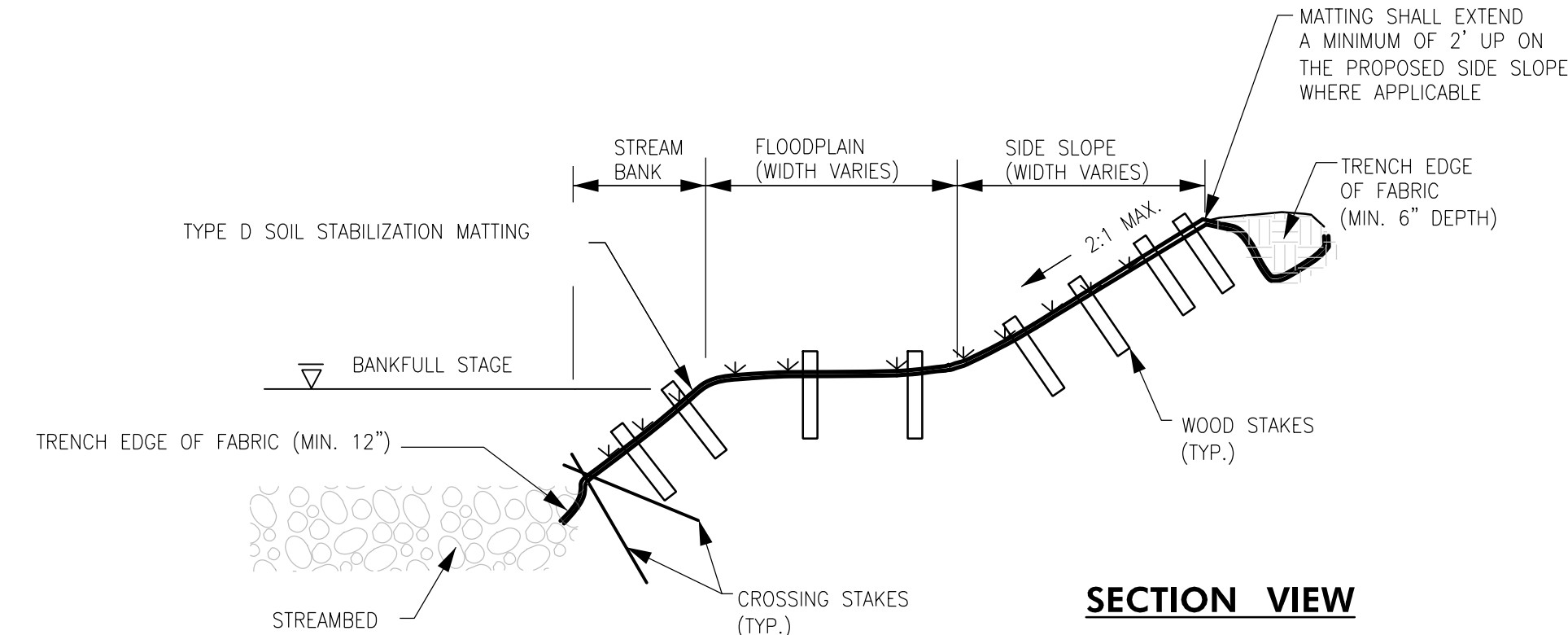
NOT TO SCALE

STREAMBANK/FLOODPLAIN STABILIZATION DETAILS

NOT TO SCALE

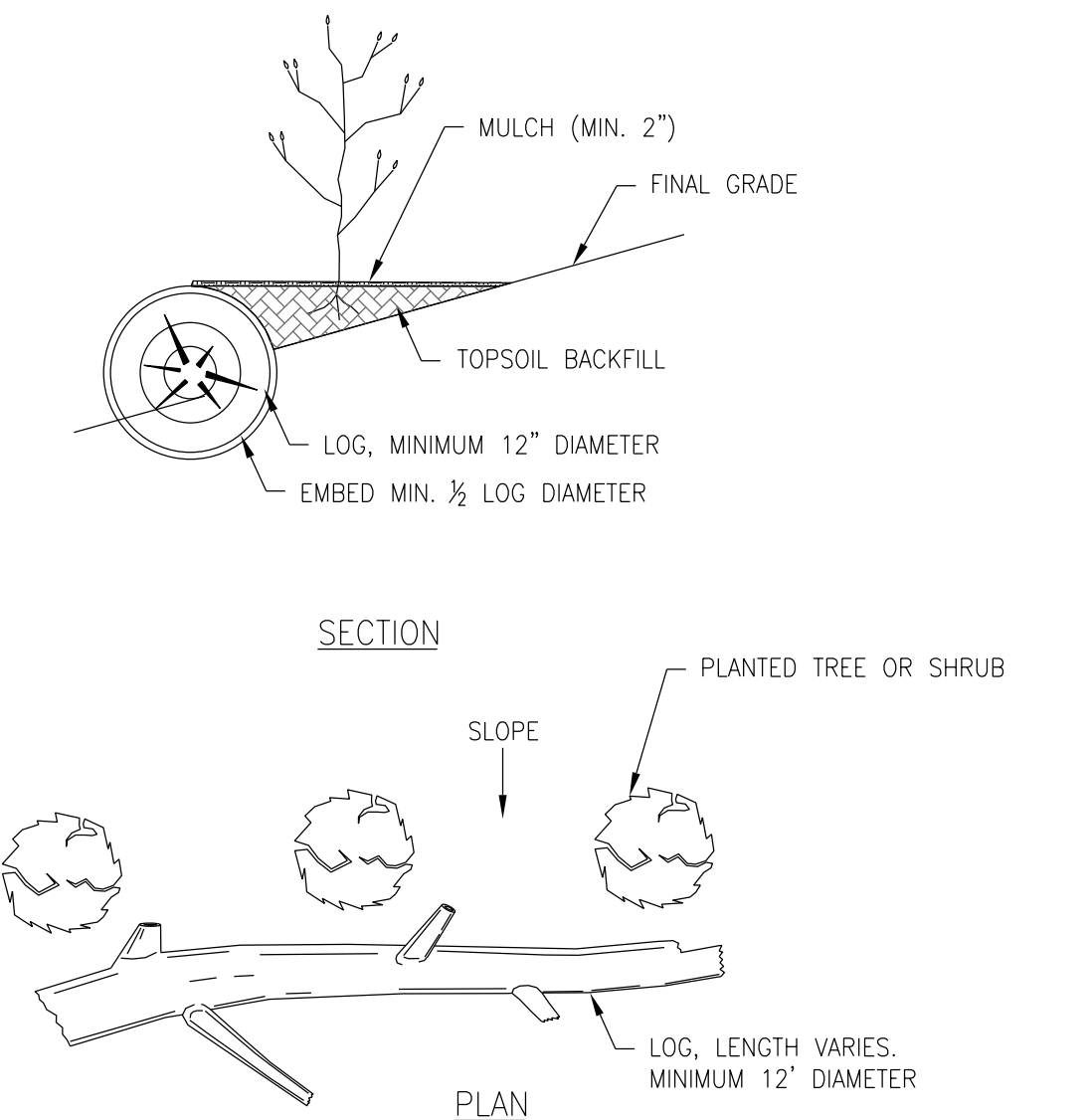


PLAN VIEW



SECTION VIEW

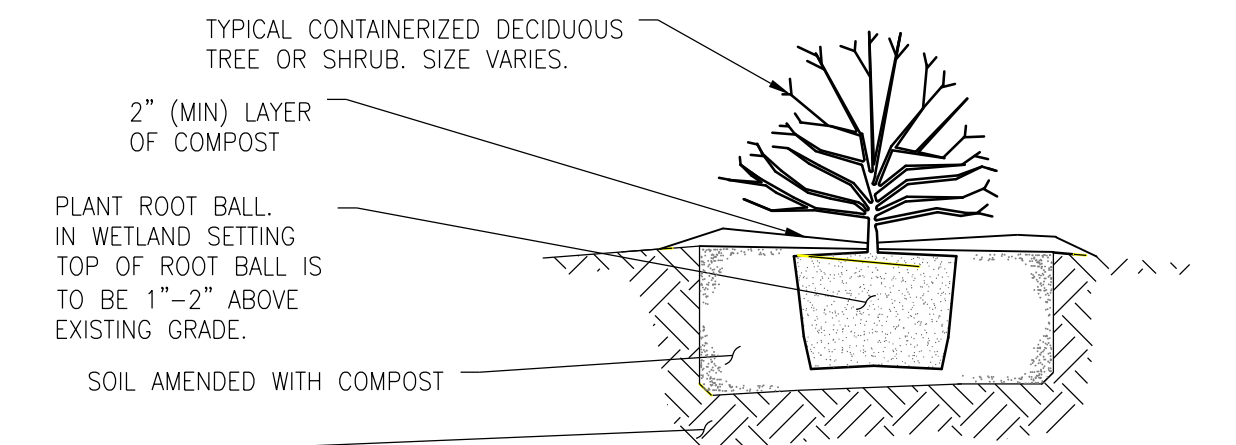
- NOTES:
1. TYPE D SOIL STABILIZATION MATTING (SSM) SHALL BE OVERLAPPED "SHINGLE" STYLE OR PERPENDICULAR TO THE CHANNEL, WITH THE UPSTREAM SECTION OF MATTING OVERLAPPING THE NEXT DOWNSTREAM SECTION OF MATTING.
 2. SPECIFIED SEED MIX SHALL BE APPLIED FIRST AND IMMEDIATELY COVERED WITH THE SSM.
 3. THE SSM SHALL BE 100 PERCENT BIODEGRADABLE COIR FIBER MATTING.
 4. THE SSM SHALL CONFORM TO THE SPECIFICATIONS.
 5. WOOD CROSSING STAKES SHALL BE UTILIZED TO SECURE ENDS OF THE SSM WHERE IT IS NOT FEASIBLE TO TRENCH OR KEY-IN THE END OF THE FABRIC.
 6. WOOD STAKES SHALL BE UNTREATED HARDWOOD OR SOUTHERN YELLOW PINE WITH A SAW-FORMED POINT ON ONE END, 1 INCH BY 2 INCHES IN SIZE AND A MINIMUM OF 18 INCHES IN LENGTH.
 7. STAPLES ARE NOT AN ACCEPTABLE SUBSTITUTE FOR STAKES.
 8. IN THE EVENT OF LOSS OF FABRIC PRIOR TO GROWTH OF VEGETATION, THE CONTRACTOR SHALL INSTALL NEW SEED AND TOPSOIL TO PROPOSED FINISHED GRADE AND RE-MAT AREAS AT NO ADDITIONAL COST TO THE AUTHORITY.



- NOTES:
1. TO BE USED AS PART OF WOODY DEBRIS PLACEMENT.
 2. EXCAVATE AREA TO PLACE LOG IN TO 1/2 DIAMETER OF LOG AND BACKFILL UP GRADIENT WITH TOPSOIL FILL.
 3. PLANT PER DETAILS ON THIS SHEET.
 4. THIS WOODY DEBRIS PLACEMENT PRACTICE IS TO BE USED TO ACCOMMODATE MINOR GRADE CHANGES AROUND EXISTING TREES AND OTHER AT-GRADE FEATURES TO BE PRESERVED.

LOG PLANTING TERRACE DETAIL

NOT TO SCALE, TO BE USED AT DIRECTION OF ENGINEER



- NOTES:
1. SHRUB PIT CONFORMS WITH DEPTHS AND WIDTHS IN SPECIFICATIONS.
 2. PRUNE SHRUBS ONLY AFTER INSTALLED AND AFTER THE PLANT HAS BEEN SUFFICIENTLY WATERED.
 3. MULCH DIAMETER OF PLANTING HOLE, MINIMUM 2" DEPTH, WITH COMPOST.

CONTAINER STOCK PLANTING DETAIL

NOT TO SCALE

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT
SUBMISSION

NOT FOR
CONSTRUCTION

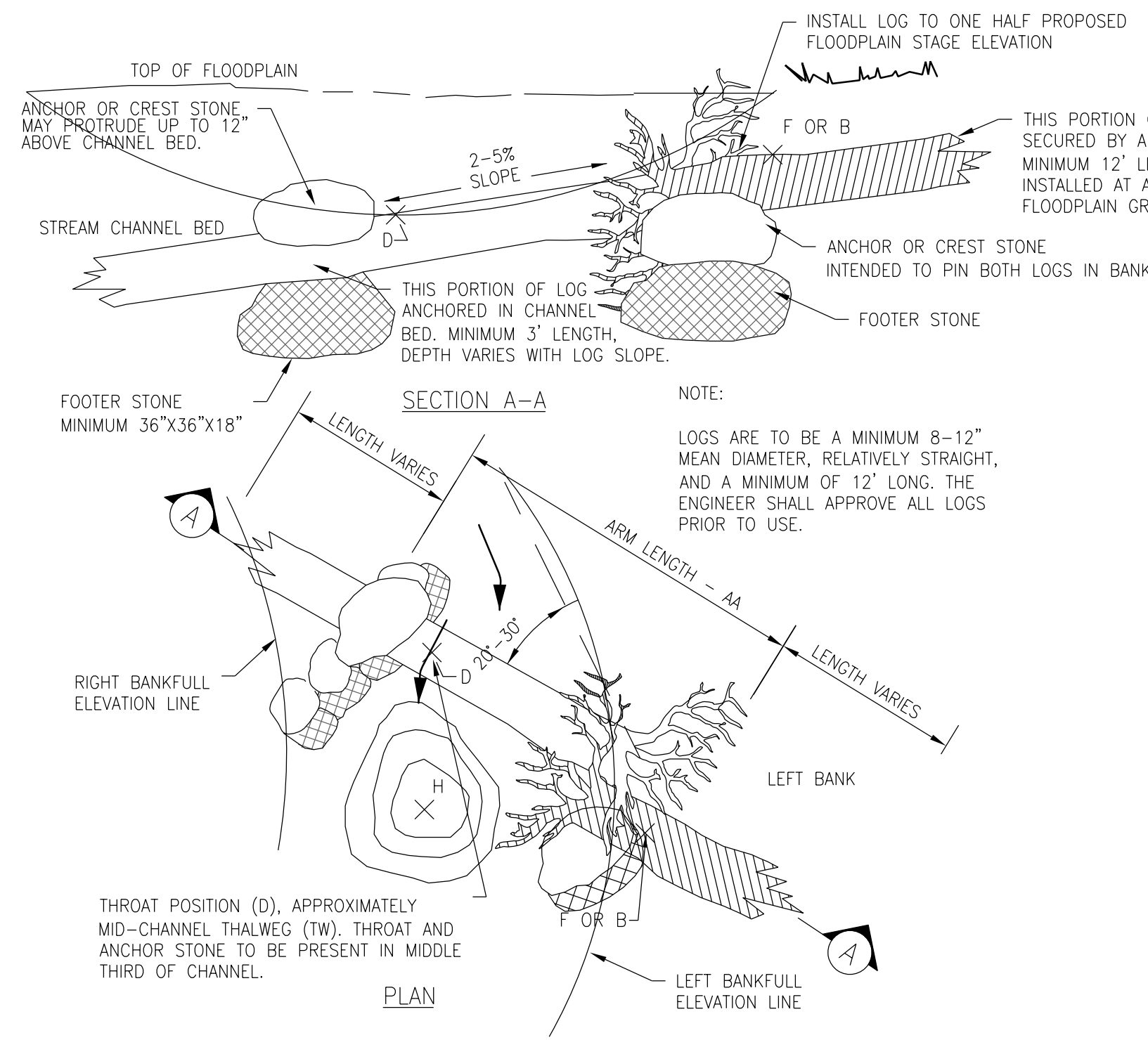
STREAM RESTORATION DETAILS

SCALE N.T.S. DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. SRD - 1 OF 3 SHEET NO. 16 OF 38

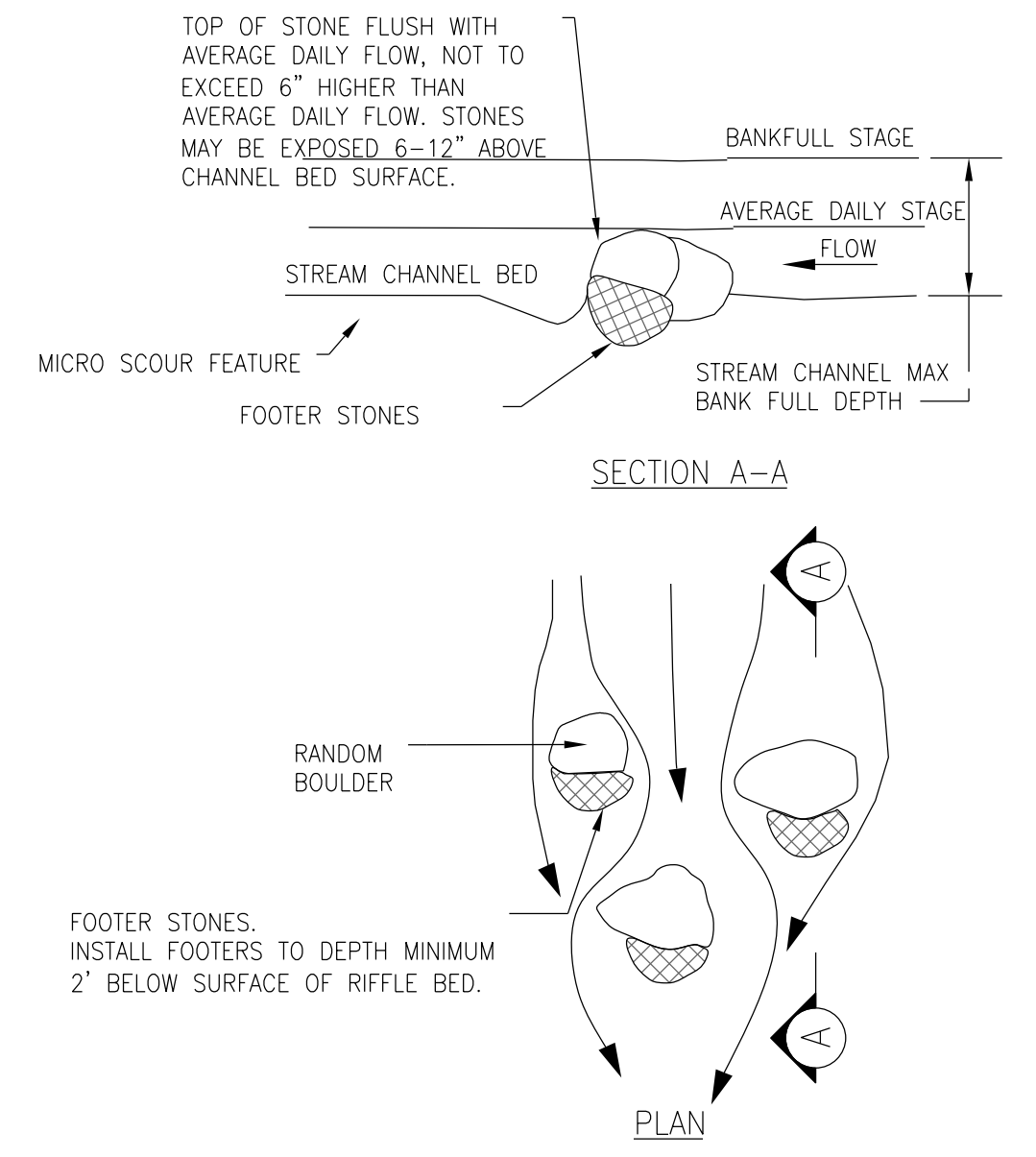


TOE WOOD STRUCTURE DETAILS



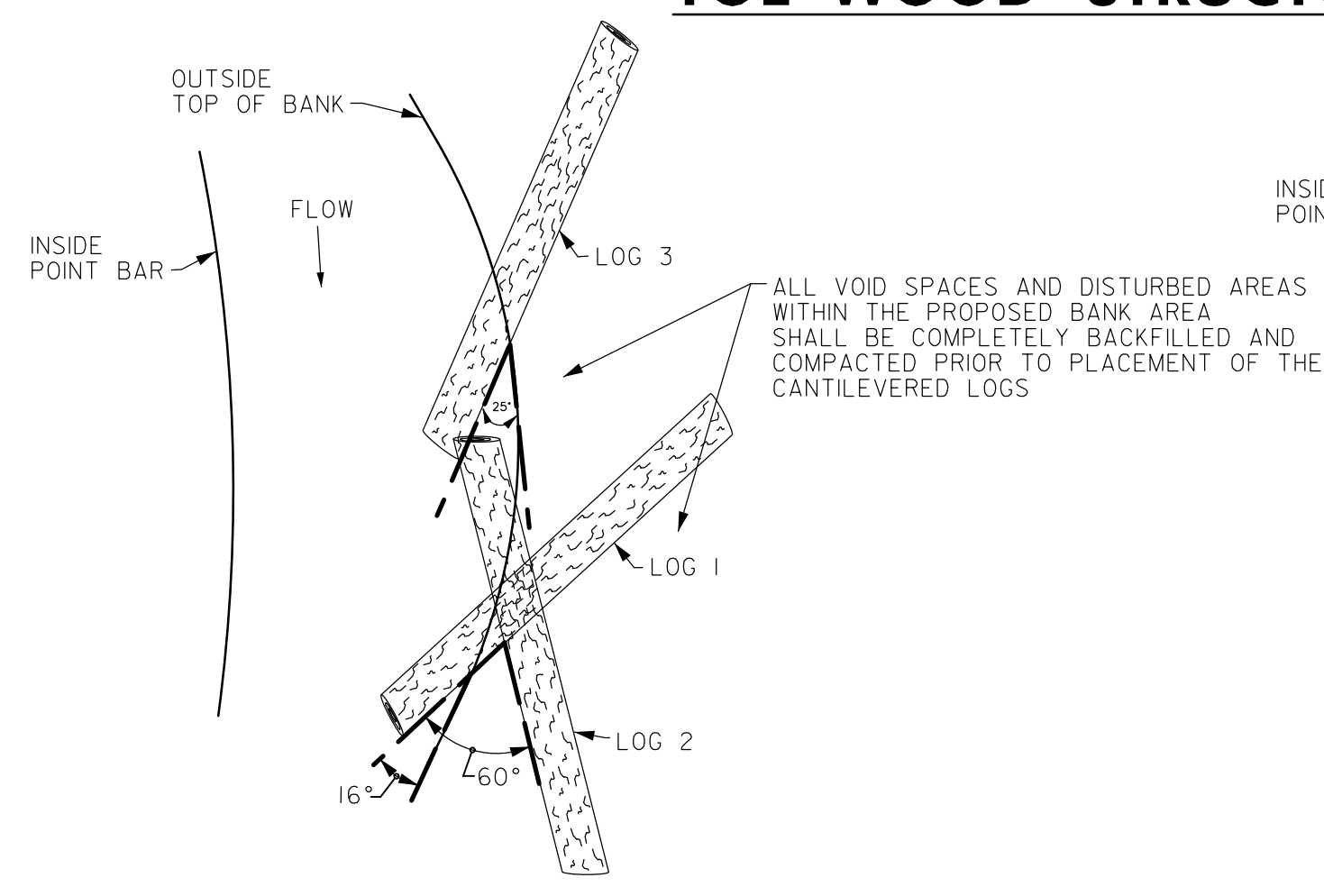
LOG VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION MAY VARY AS DIRECTED BY ENGINEER. USED FOR SMALL-SCALE GRADE CONTROL IN THALWEG GRADING



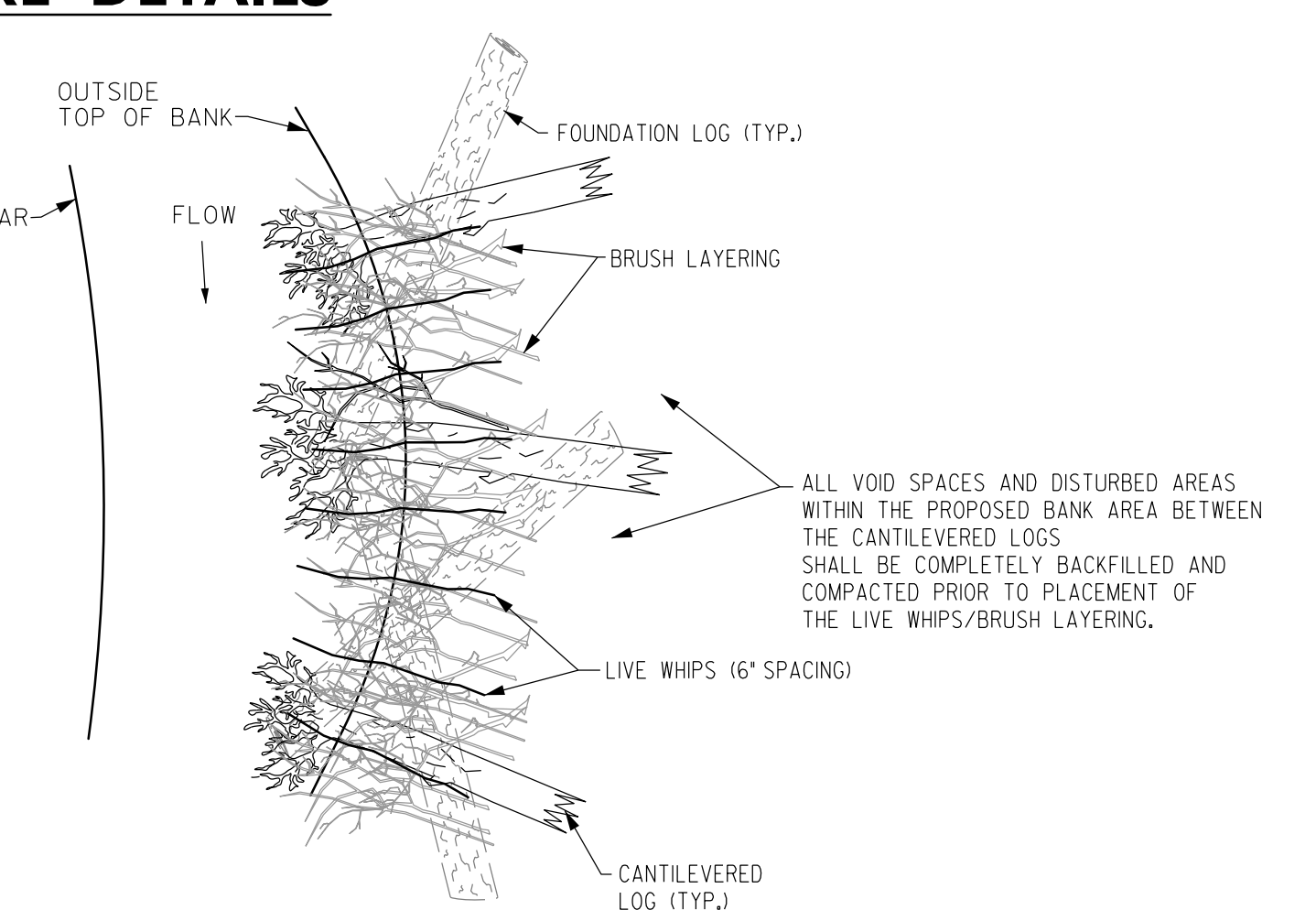
RANDOM BOULDER PLACEMENT

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.



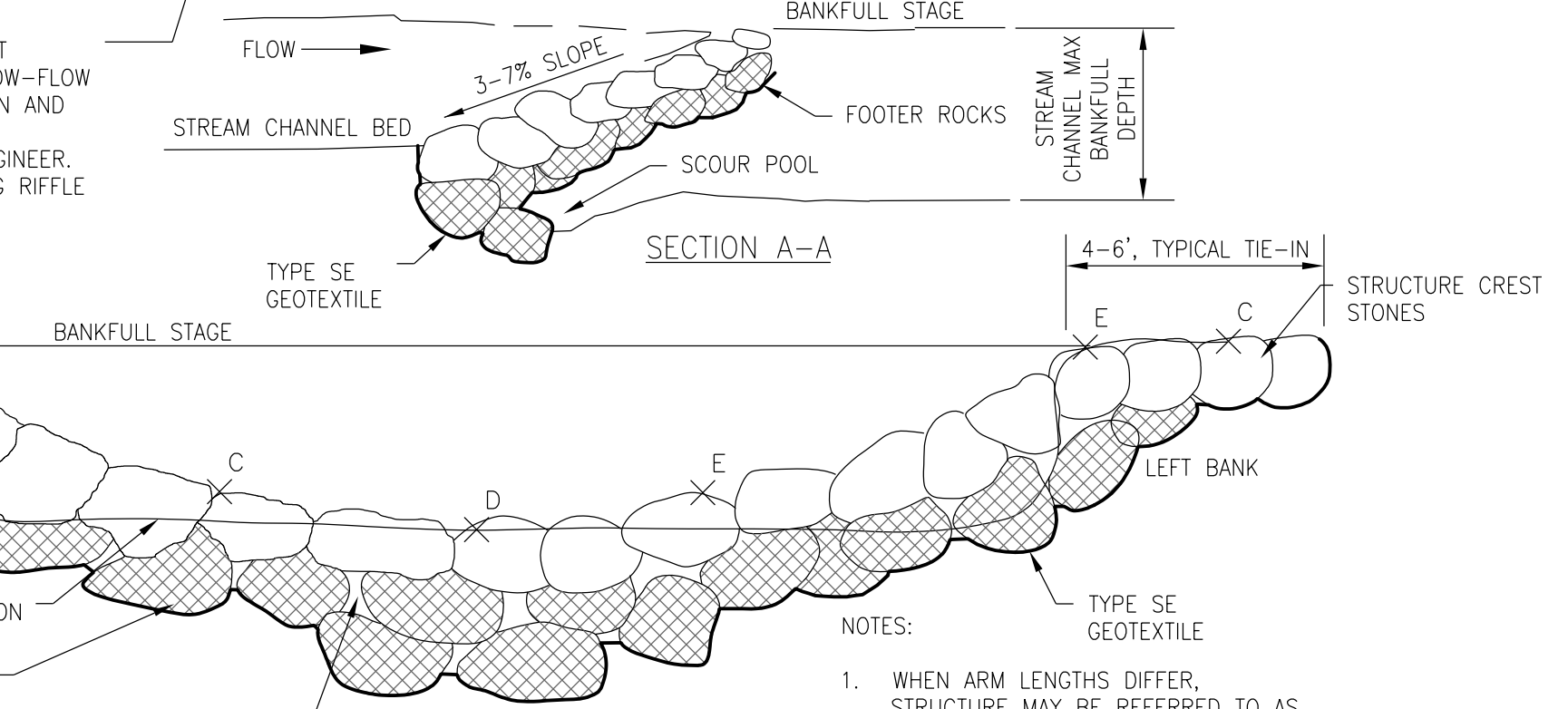
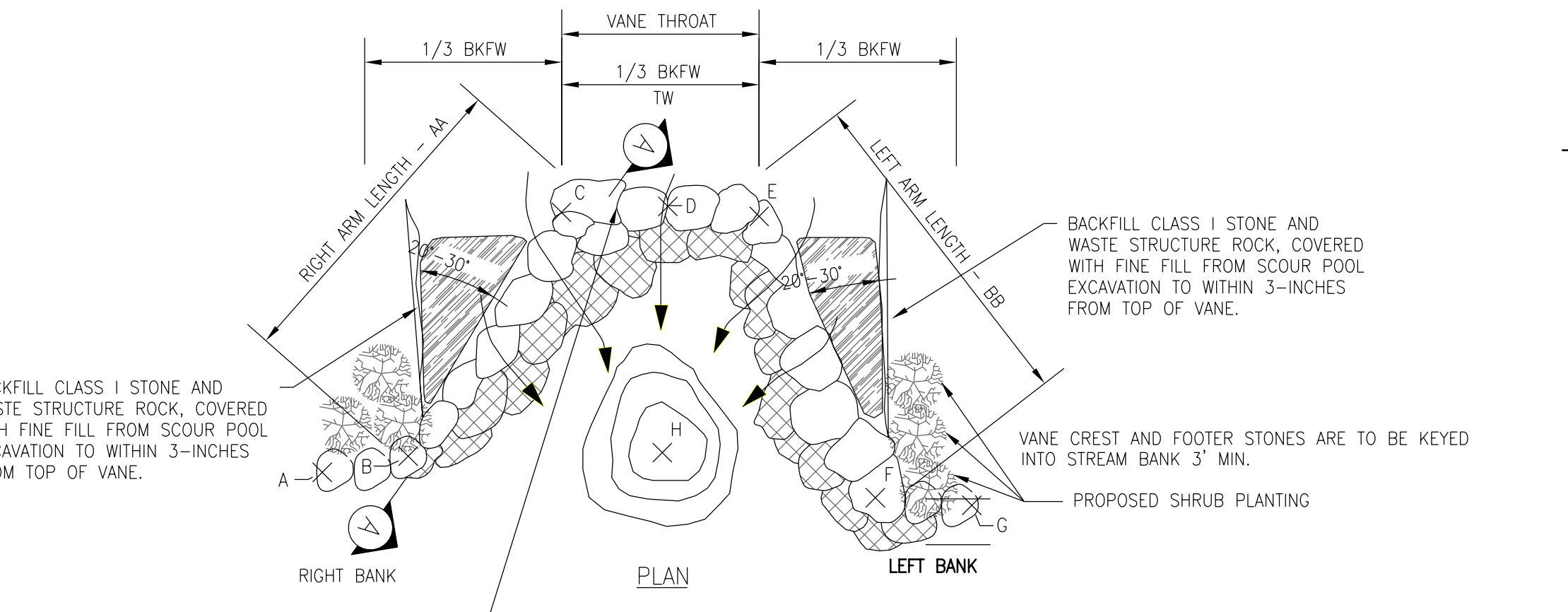
FOUNDATION LOGS - PLAN VIEW

- NOTES:
- LOGS UTILIZED SHALL HAVE A DIAMETER OF 6" TO 8" AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
 - LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH, WITH 3/4 OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
 - FOUNDATION LOG 2 SHALL BE PLACED ON TOP OF FOUNDATION LOG 1.
 - EXACT ANGLES AND PLACEMENT OF THE LOGS WILL BE SITE DEPENDENT BASED ON LOCAL SITE CONDITIONS.
 - FOUNDATION LOGS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF THE CANTILEVERED LOGS.



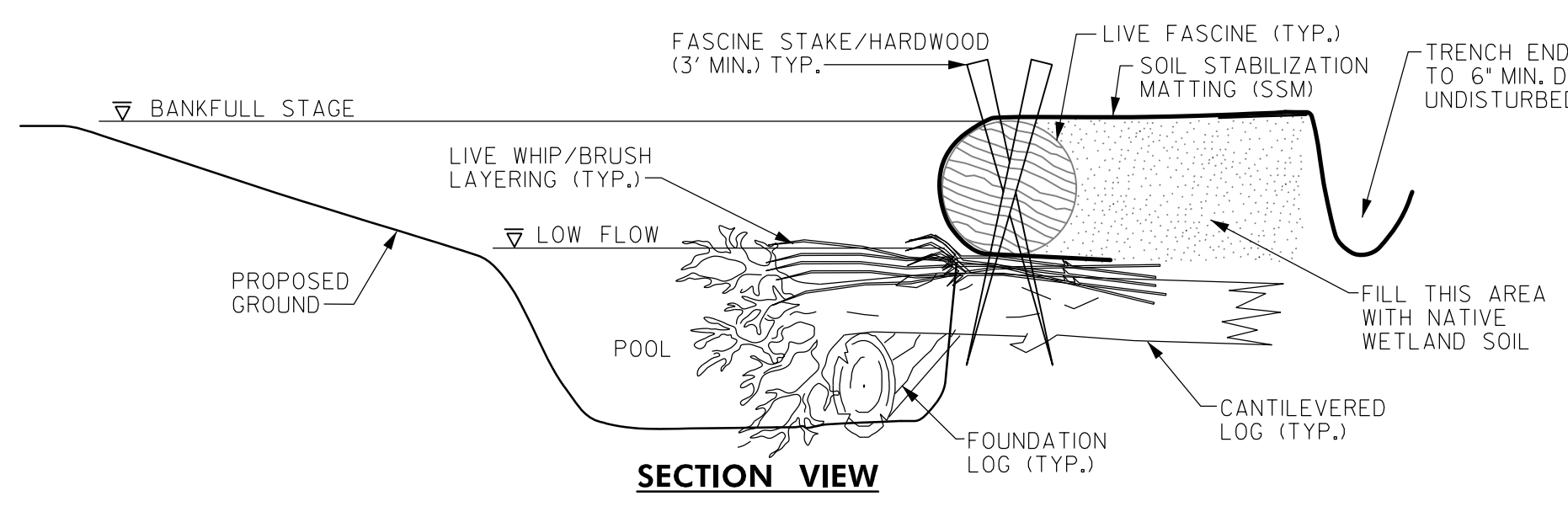
CANTILEVERED LOGS & LIVE BRUSH LAYERING / MATTRESS PLACEMENT - PLAN VIEW

- NOTES:
- CANTILEVERED LOGS SHALL HAVE A DIAMETER OF 6" TO 8" WITH ROOT WAD INTACT AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
 - CANTILEVERED LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH AND PLACED ON TOP OF THE FOUNDATION LOGS WITH 1/2 OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
 - LIVE BRUSH LAYER OR MATTRESS MATERIAL SHALL BE PLACED IN BETWEEN THE PARALLEL TO CANTILEVERED LOGS.
 - ALL FOUNDATION AND CANTILEVERED LOGS AND BRUSH LAYER SHALL REMAIN PERMANENTLY SUBMERGED TO PREVENT WOOD DETERIORATION.
 - FILL IN AND COMPACT ALL VOID SPACES BETWEEN CANTILEVERED LOGS PRIOR TO PLACEMENT OF THE LIVE BRUSH LAYERING/MATTRESSES.
 - BRUSH LAYER WILL CONSIST OF SCRAP TREE BRANCHES/TOPS OF TREES HARVESTED IN APPROVED LIMIT OF DISTURBANCE.



ROCK CROSS VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



SECTION VIEW

- NOTES:
- SOIL STABILIZATION MATTING SHALL BE PLACED ON TOP OF LIVE BRUSH LAYERING / MATTRESSES AND WRAPPED AROUND THE FRONT FACE OF THE INSTALLED LIVE FASCINE ACCORDING THE DETAILS.
 - A SILL LOG SHALL BE INSTALLED FLUSH WITH THE PROPOSED FLOODPLAIN SURFACE, DEFINING THE UPSTREAM AND DOWNSTREAM LIMITS OF THE TOEWOOD SECTION AS SHOWN ON THE PLAN SHEETS.
 - SEE THE BRUSH LAYERING / MATTRESSES (LIVE WHIP PLANTING SCHEDULE) ON SHEET SLP-8 FOR SIZES AND SPECIES.
 - LIVE WHIPS SHALL BE LAID FLAT AND PLACED ON 6' CENTERS WITHIN THE BRUSH LAYER.
 - SEE PLAN SHEETS FOR LOCATIONS.

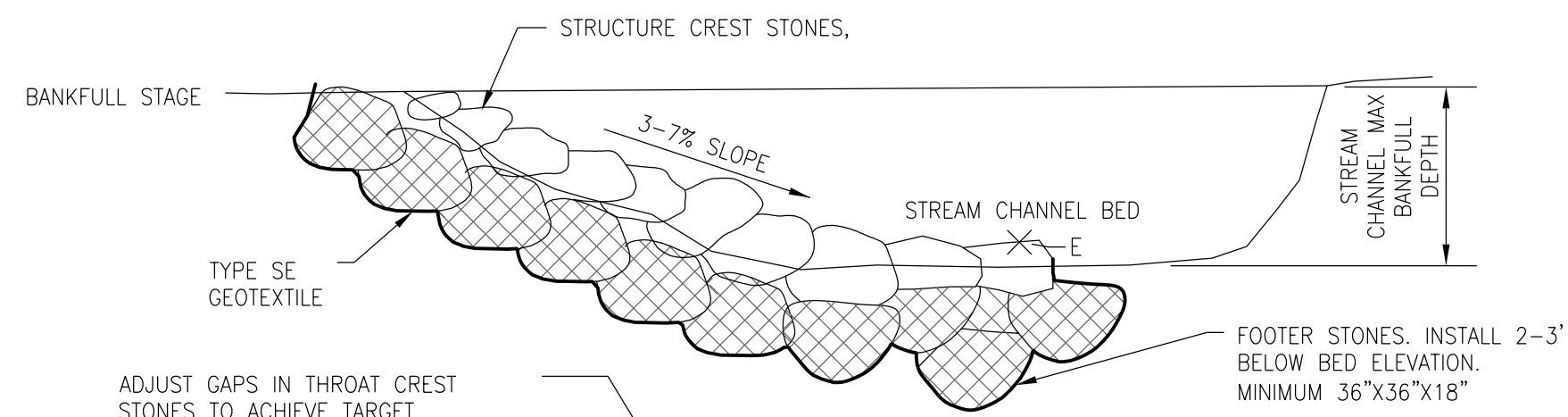
ECCELESTON MITIGATION SITE

REVISIONS	STREAM RESTORATION DETAILS	
DESIGNED BY PVC	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DRAWN BY PVC	COUNTY BALTIMORE COUNTY	
CHECKED BY JJM /MRG	LOGMILE	
F.A.P. NO. SEE TITLE SHEET	HORIZONTAL SCALE N/A	
	VERTICAL SCALE N/A	
DRAWING NO. SRD - 2	OF 3	SHEET NO. 17 OF 38



BY: PCrawford

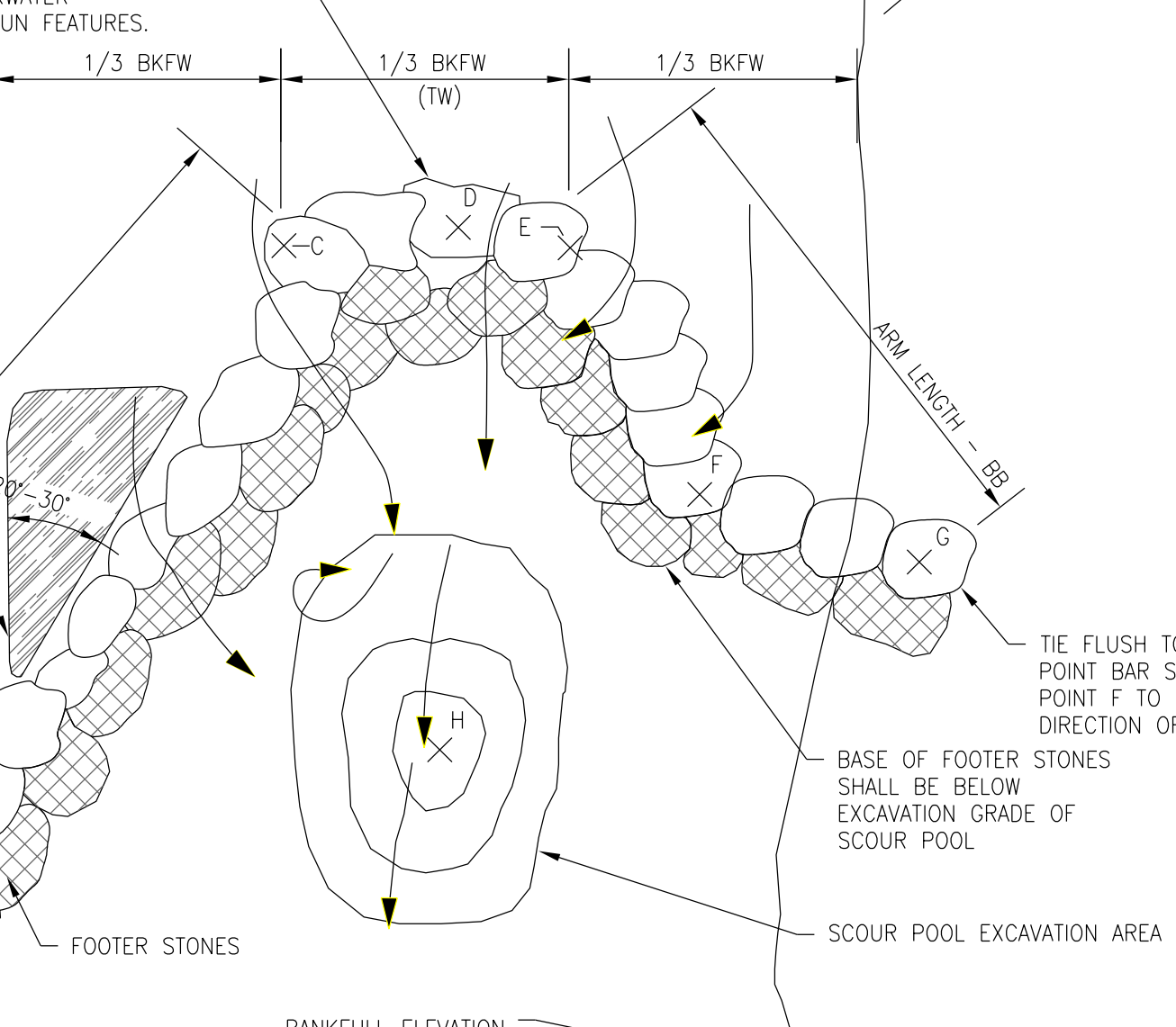
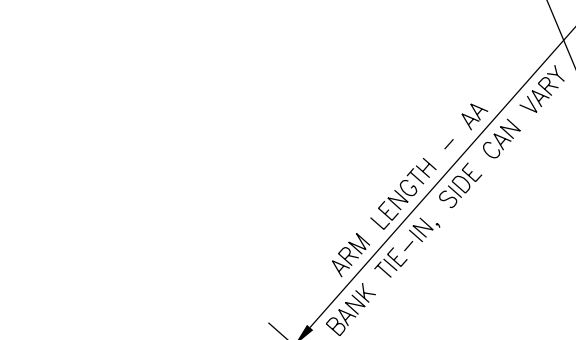
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ADJUST GAPS IN THROAT CREST STONES TO ACHIEVE TARGET LOW-FLOW WATER SURFACE SLOPE OF RUN AND RIFLE BEHIND STRUCTURE AS DIRECTED BY THE ON-SITE ENGINEER. DO NOT BACKWATER PRECEDING RIFLE OR RUN FEATURES.

SECTION A-A

BACKFILL CLASS 1 STONE AND WASTE STRUCTURE ROCK, COVERED WITH FINE FILL FROM SCOUR POOL EXCAVATION TO WITHIN 3-INCHES FROM TOP OF VANE.

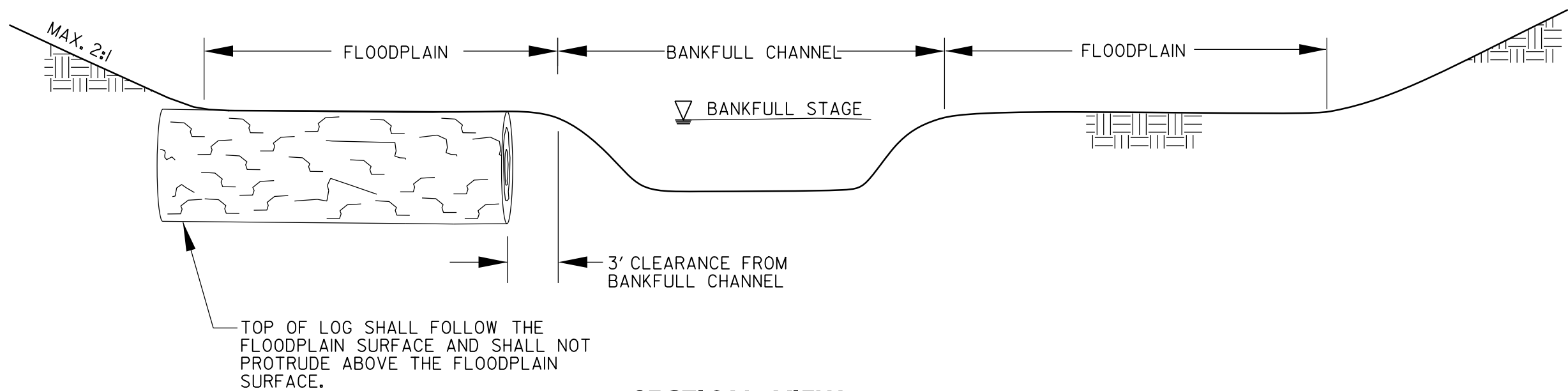


ROCK J HOOK VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.

FLOODPLAIN LOG SILL DETAIL

N.T.S.

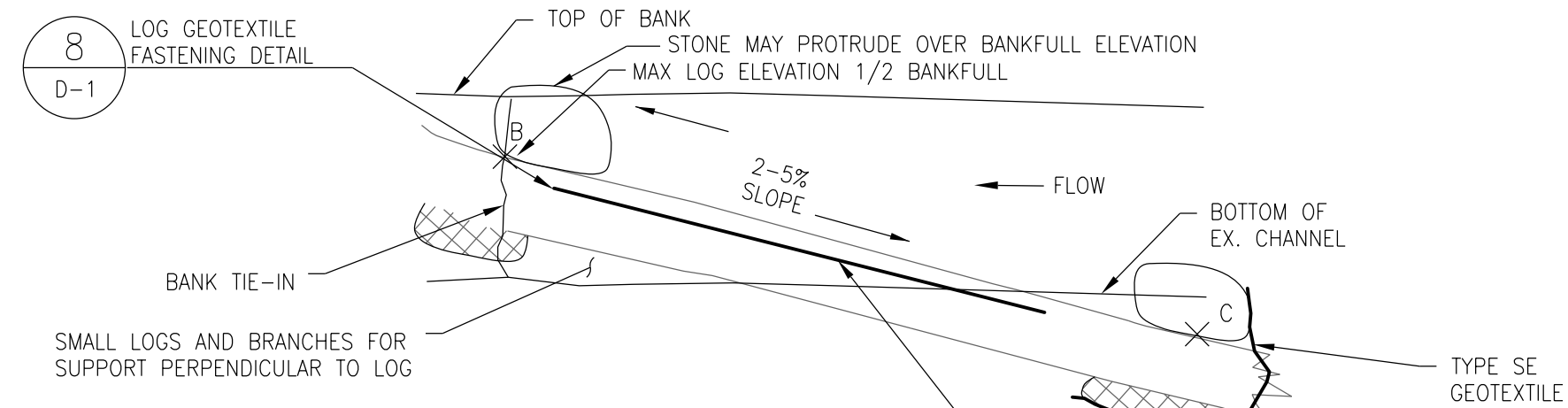


TOP OF LOG SHALL FOLLOW THE FLOODPLAIN SURFACE AND SHALL NOT PROTRUDE ABOVE THE FLOODPLAIN SURFACE.

SECTION VIEW

NOTES:

1. FLOODPLAIN LOG SILLS SHALL HAVE A MINIMUM DIAMETER OF 12".
2. TOP OF FLOODPLAIN LOGS WILL BE SET AT THE ELEVATION OF THE PROPOSED FLOODPLAIN.
3. THE ENDS OF MULTIPLE LOGS USED TO CONSTRUCT A FLOODPLAIN LOG SILL SHALL OVERLAP (EXTEND) PAST ONE ANOTHER BY A MINIMUM OF 2 FEET.
4. BRANCHES AND OTHER IRREGULARITIES MAY PROTRUDE ABOVE THE FLOODPLAIN SURFACE.
5. DEPRESSED AREAS OR OLD CHANNEL OXBOWS MAY CONTAIN ADDITIONAL LOGS AND/OR WOODY DEBRIS.
6. THE PLACEMENT OF ADDITIONAL MATERIALS SUCH AS TREE TOPS, BRANCHES, ROOTS AND OTHER PORTIONS OF THE HARVESTED / FURNISHED TREES (ADDITIONAL WOODY MATERIALS) SHALL BE INSTALLED UNDER THE DIRECTION OF THE DESIGNATED STREAM SPECIALIST OR STREAM RESTORATION SPECIALIST.

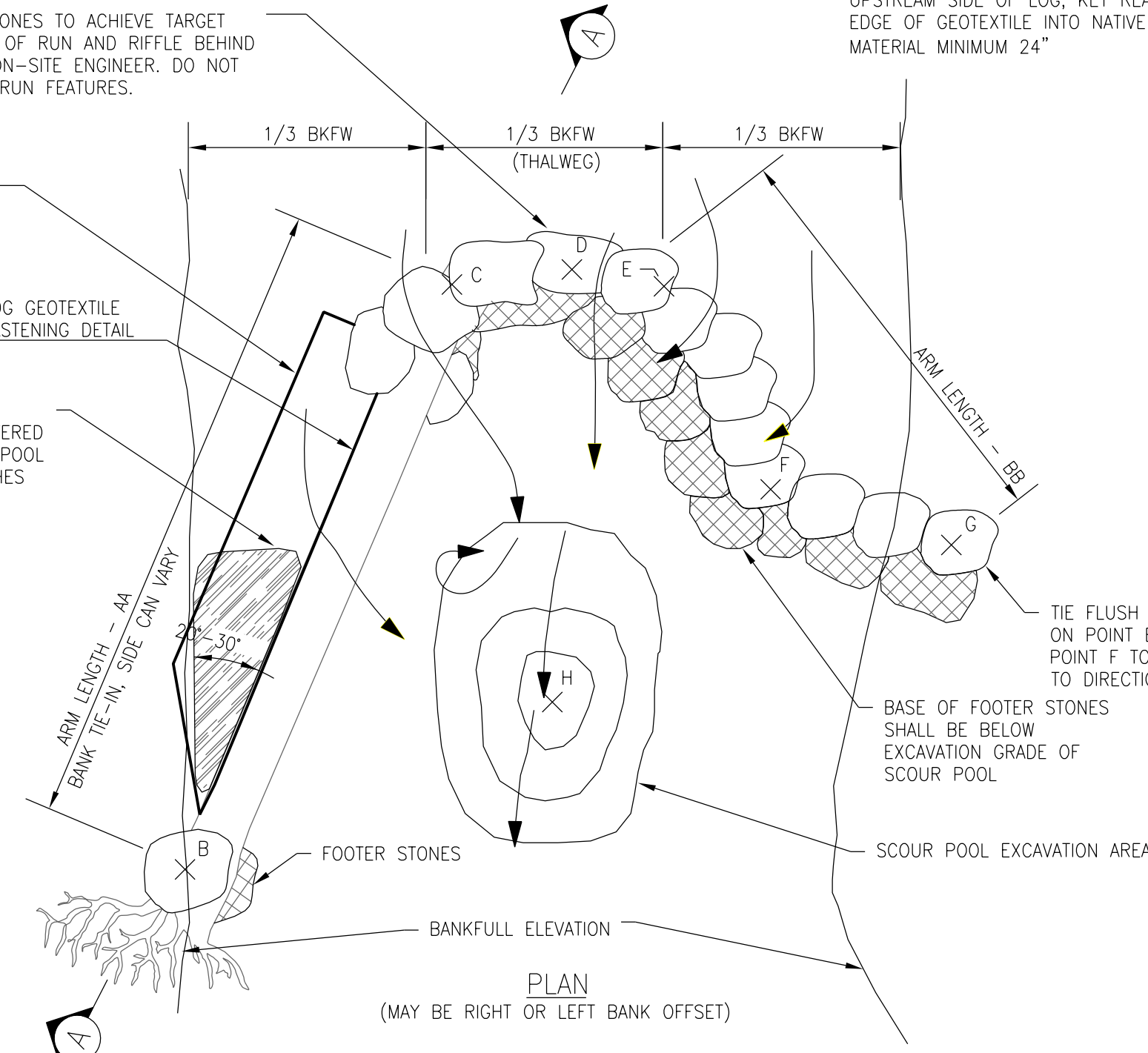


SECTION A-A

ADJUST GAPS IN THROAT CREST STONES TO ACHIEVE TARGET LOW-FLOW WATER SURFACE SLOPE OF RUN AND RIFLE BEHIND STRUCTURE AS DIRECTED BY THE ON-SITE ENGINEER. DO NOT BACKWATER PRECEDING RIFLE OR RUN FEATURES.

WOVEN GEOTEXTILE, UNDERLAY WITH SMALL LOGS AND BRANCHES FOR SUPPORT PERPENDICULAR TO MAIN LOG. KEY REAR EDGE OF GEOTEXTILE INTO NATIVE MATERIAL.

BACKFILL CLASS 1 STONE AND WASTE STRUCTURE ROCK, COVERED WITH FINE FILL FROM SCOUR POOL EXCAVATION TO WITHIN 3-INCHES FROM TOP OF VANE.

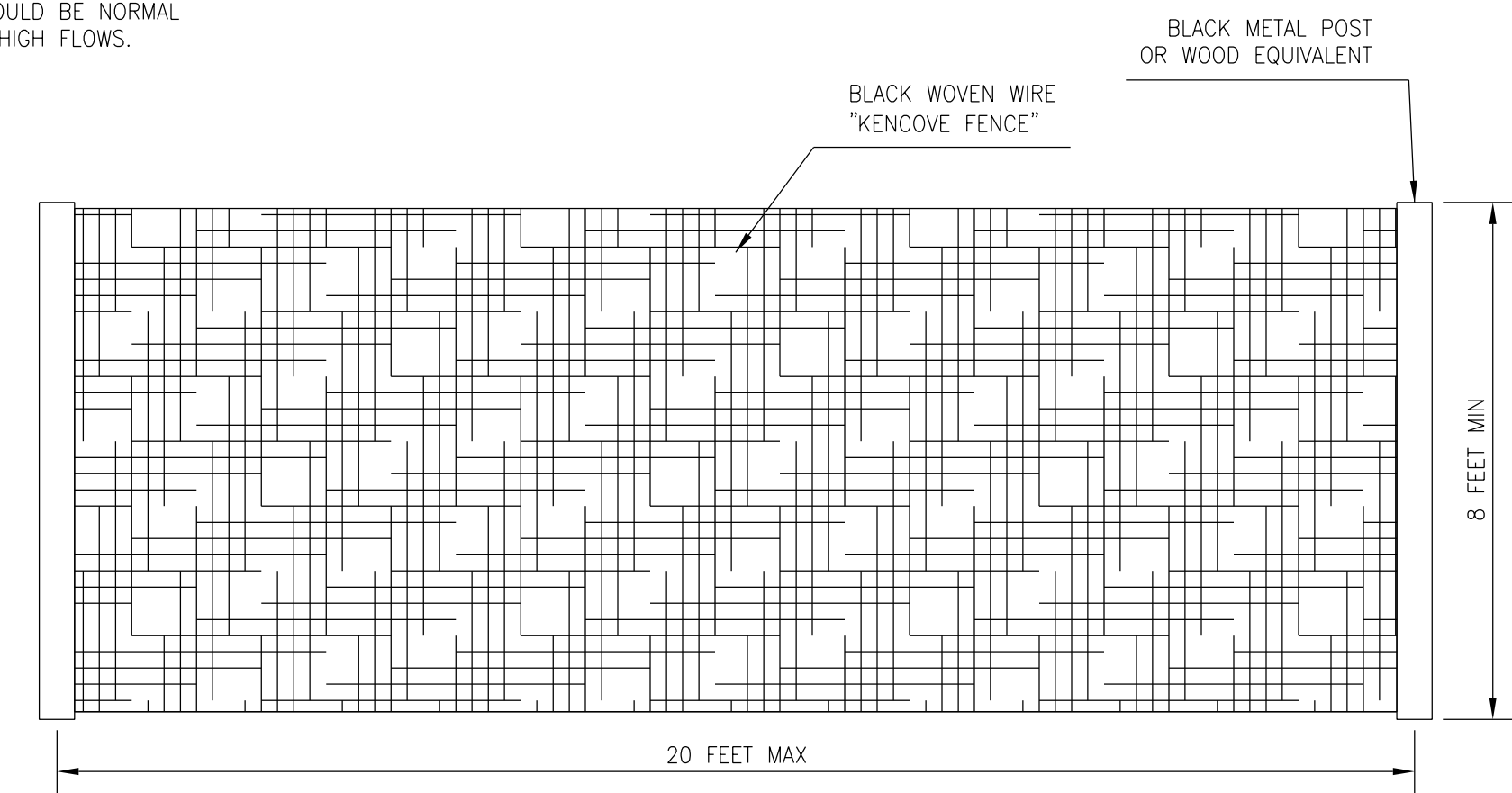


LOG J HOOK VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.

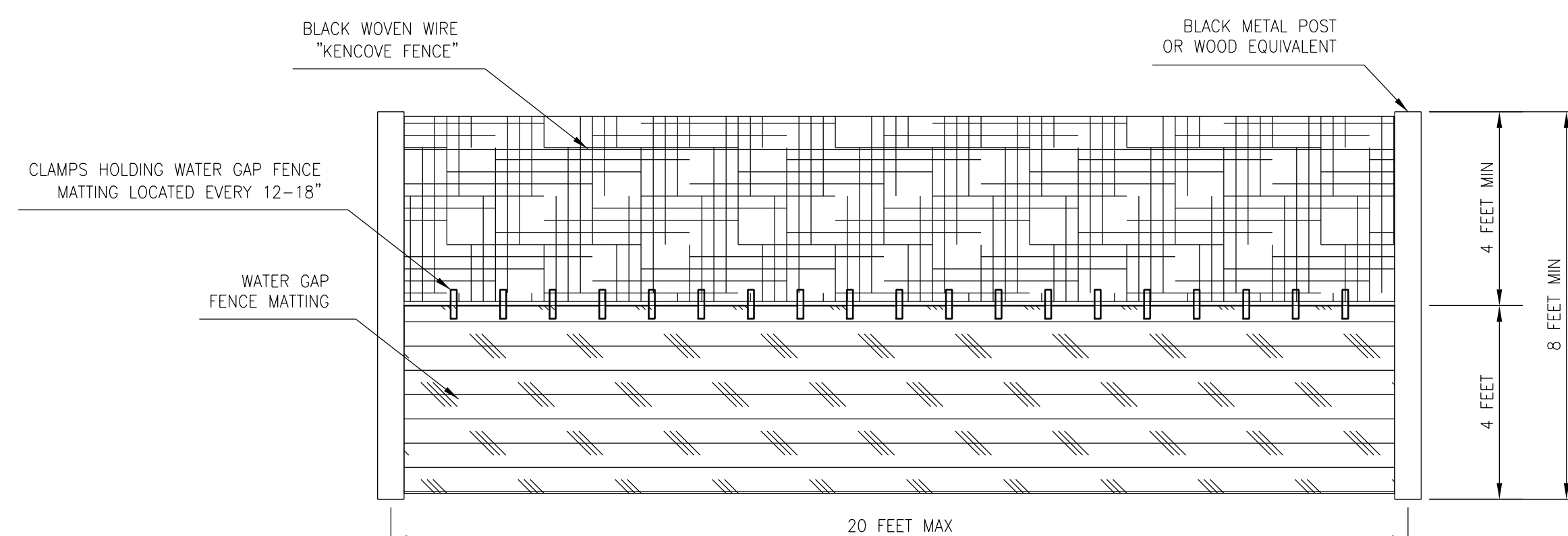
NOTES:

1. FOR DIMENSIONS AND CRITICAL ELEVATIONS, SEE SHEET D-3.



DEER FENCE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.



DEER FENCE STREAM CROSSING FENCE

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION
NOT FOR CONSTRUCTION

STREAM RESTORATION DETAILS

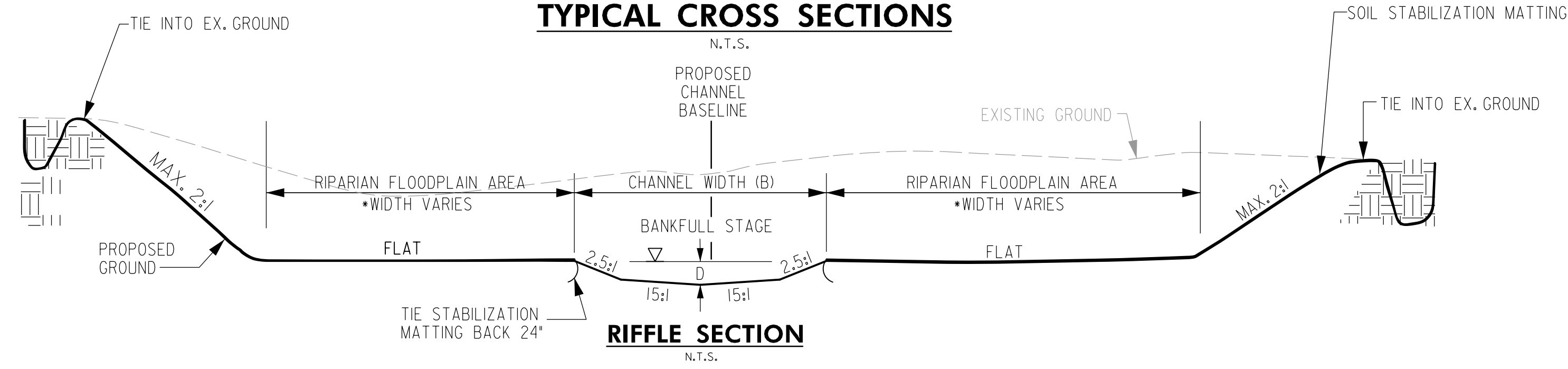
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DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY		
DRAWN BY	PVC	LOGMILE			
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A		
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	N/A		
DRAWING NO.	SRD - 3 OF 3	SHEET NO.	18 OF 38		

BY: PCrawford



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Wednesday, January 02, 2019 10:03:04 PM

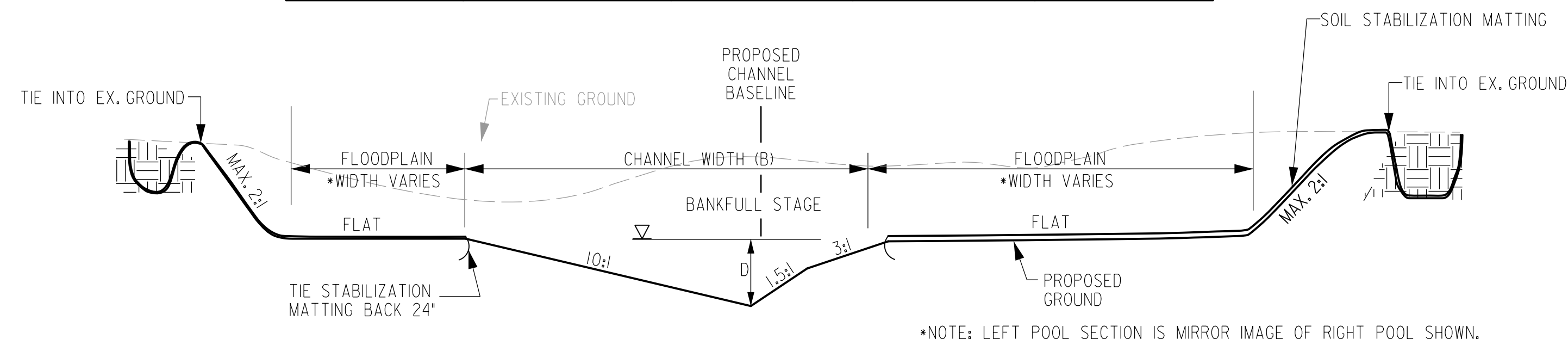
TYPICAL CROSS SECTIONS



RIFFLE SECTION
N.T.S.

RIFFLE DIMENSION TABLE

LOCATION	STA. TO STA.	STREAM TYPE	BANKFULL DEPTH (D)	CHANNEL WIDTH (B)
MAIN STEM	100+00 TO 101+43.02	B	1.00'	12.5'
MAIN STEM	101+43.02 TO 126+76.91	C	0.80'	9.0'
NORTH TRIBUTARY	600+00 TO 607+36.42	B	0.80'	10.0'
NORTH TRIBUTARY	607+36.42 TO 614+59.47	C	0.60'	6.5'
SOUTH TRIBUTARY	200+00 TO 207+62.80	B	0.70'	7.0'
SOUTH TRIBUTARY	300+00 TO 304+16.88	B	0.70'	7.0'
SOUTH TRIBUTARY	207+62.80 TO 211+64.13	C	0.50'	4.5'
SOUTH TRIBUTARY	304+16.88 TO 309+89.61	C	0.50'	4.5'
SOUTH TRIBUTARY	400+00 TO 403+27.10	C	0.50'	4.5'
SOUTH TRIBUTARY	500+00 TO 501+78.35	C	0.50'	4.5'



POOL SECTION
N.T.S.

RIFFLE DIMENSION TABLE

LOCATION	STA. TO STA.	STREAM TYPE	BANKFULL DEPTH (D)	CHANNEL WIDTH (B)
MAIN STEM	100+00 TO 101+43.02	B	1.5-3'	12.5' - 16.5'
MAIN STEM	101+43.02 TO 126+76.91	C	1.5-3'	13.8' - 20.7'
NORTH TRIBUTARY	600+00 TO 607+36.42	B	1-2'	10.0' - 13.4'
NORTH TRIBUTARY	607+36.42 TO 614+59.47	C	1-2'	10.0' - 14.9'
SOUTH TRIBUTARY	200+00 TO 207+62.80	B	1-2'	7.0' - 10.0'
SOUTH TRIBUTARY	300+00 TO 304+16.88	B	1-2'	7.0' - 10.0'
SOUTH TRIBUTARY	207+62.80 TO 211+64.13	C	1-2'	6.9' - 10.3'
SOUTH TRIBUTARY	304+16.88 TO 309+89.61	C	1-2'	6.9' - 10.3'
SOUTH TRIBUTARY	400+00 TO 403+27.10	C	1-2'	6.9' - 10.3'
SOUTH TRIBUTARY	500+00 TO 501+78.35	C	1-2'	6.9' - 10.3'

NOTES:

1. POOL CROSS-SECTION REPRESENTS THE MAXIMUM POOL CONDITION. POOL CROSS-SECTION WILL NEED TO TRANSITION INTO RIFFLE CROSS-SECTION.
2. THE FLOODPLAIN AREAS SHOWN AS FLAT ON THE TYPICAL SECTIONS, WILL ACTUALLY CONTAINED VARIED MICROTOPOGRAPHY TO BE CREATED DURING CONSTRUCTION UNDER THE GUIDANCE OF THE DESIGNATED SPECIALIST.

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT
SUBMISSION

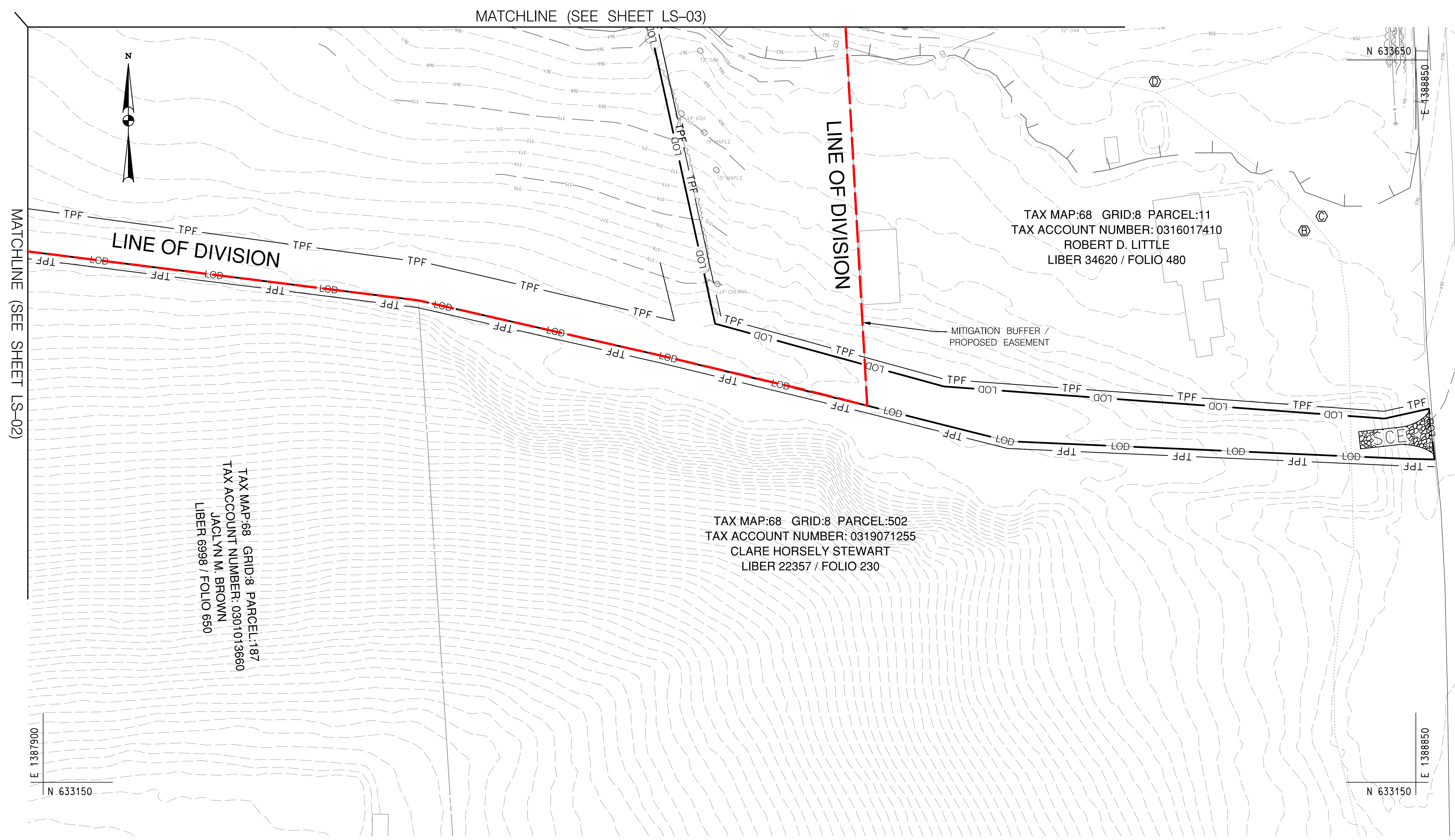
NOT FOR
CONSTRUCTION

TYPICAL SECTIONS

SCALE N.T.S. DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
 DESIGNED BY PVC COUNTY BALTIMORE COUNTY
 DRAWN BY PVC LOGMILE _____
 CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
 F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

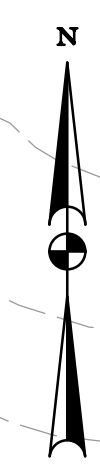
DRAWING NO. **TS- 1 OF 1** SHEET NO. 19 OF 38





MATCHLINE (SEE SHEET LS-02)

MATCHLINE (SEE SHEET LS-03)



LINE OF DIVISION

LINE OF DIVISION

TAX MAP:68 GRID:8 PARCEL:11
TAX ACCOUNT NUMBER: 0316017410
ROBERT D. LITTLE
LIBER 34620 / FOLIO 480

MITIGATION BUFFER /
PROPOSED EASEMENT

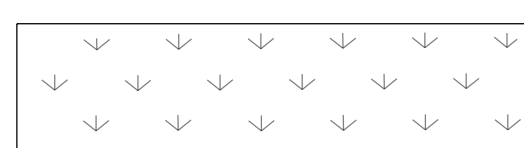
TAX MAP:68 GRID:8 PARCEL:187
TAX ACCOUNT NUMBER: 0301013660
JACLYN M. BROWN
LIBER 6998 / FOLIO 650

TAX MAP:68 GRID:8 PARCEL:502
TAX ACCOUNT NUMBER: 0319071255
CLARE HORSELY STEWART
LIBER 22357 / FOLIO 230

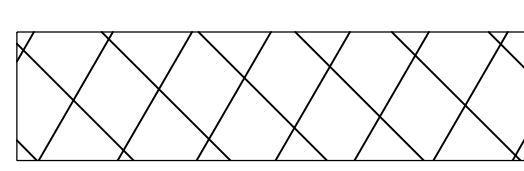
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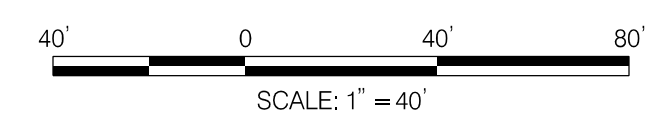
LEGEND



CREATED FLOODPLAIN
WETLAND LIMITS



UPLAND PLANTING LIMITS



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. **LS - 1** OF **7** SHEET NO. 20 OF 38

BY: K Higgins



DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.

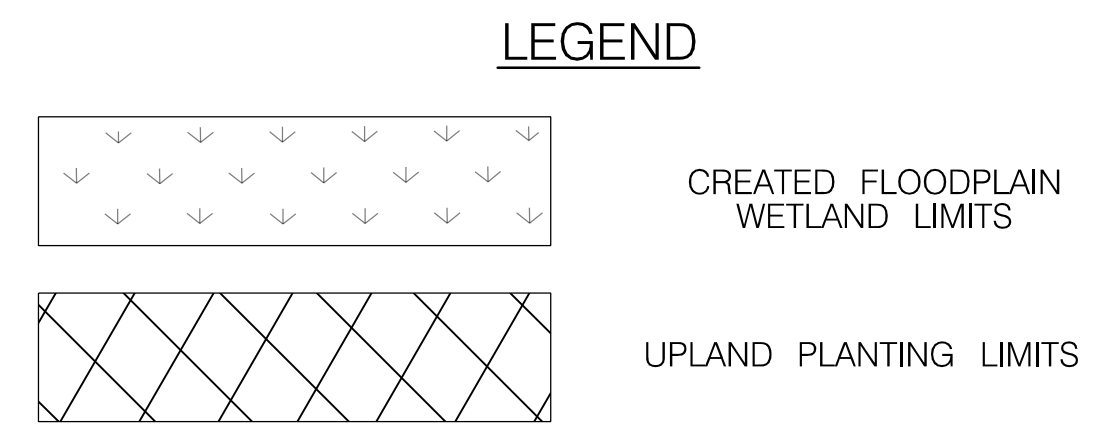
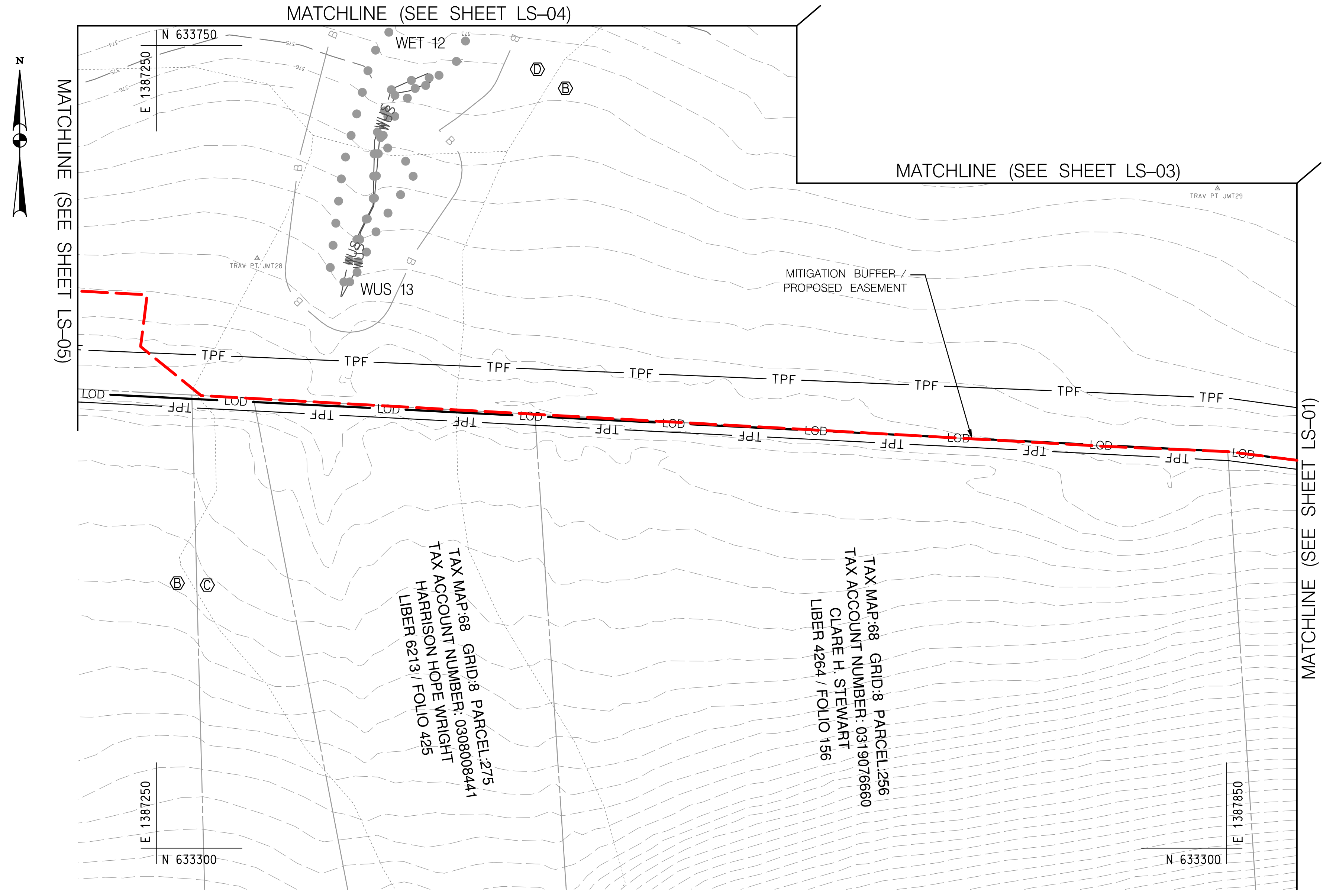
ECCLESTON MITIGATION SITE

REVISIONS

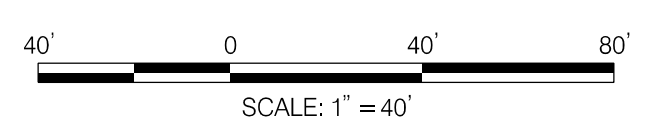
CONCEPT
SUBMISSION

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CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100



MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2



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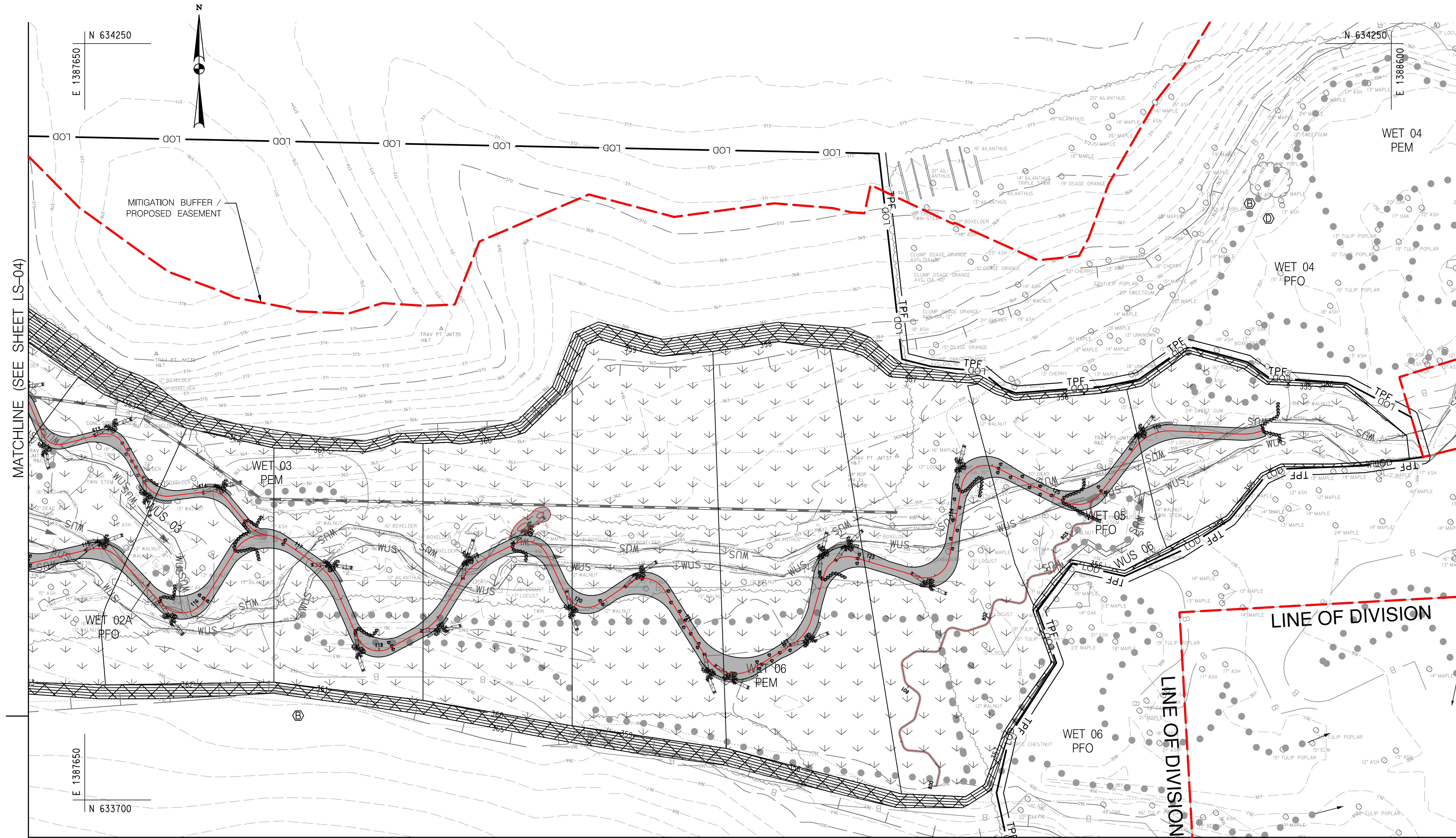
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CONCEPT SUBMISSION
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LANDSCAPING PLAN	
SCALE AS SHOWN	DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
DRAWN BY PVC	LOGMILE
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A
DRAWING NO. LS - 2 OF 7	SHEET NO. 21 OF 38

BY: K. Higgins

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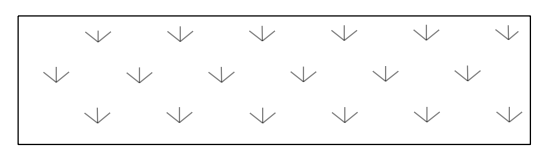
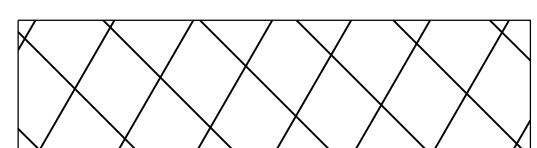


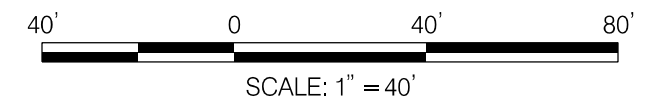
MATCHLINE (SEE SHEET LS-04)

MATCHLINE (SEE SHEET LS-02)

MATCHLINE (SEE SHEET LS-01)

LEGEND

-  CREATED FLOODPLAIN WETLAND LIMITS
-  UPLAND PLANTING LIMITS



OWNER / DEVELOPER INFORMATION
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. **LS - 3** OF **7** SHEET NO. 22 OF 38

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON MIRMIRAN & THOMPSON INC.
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ECCLESTON MITIGATION SITE

REVISIONS

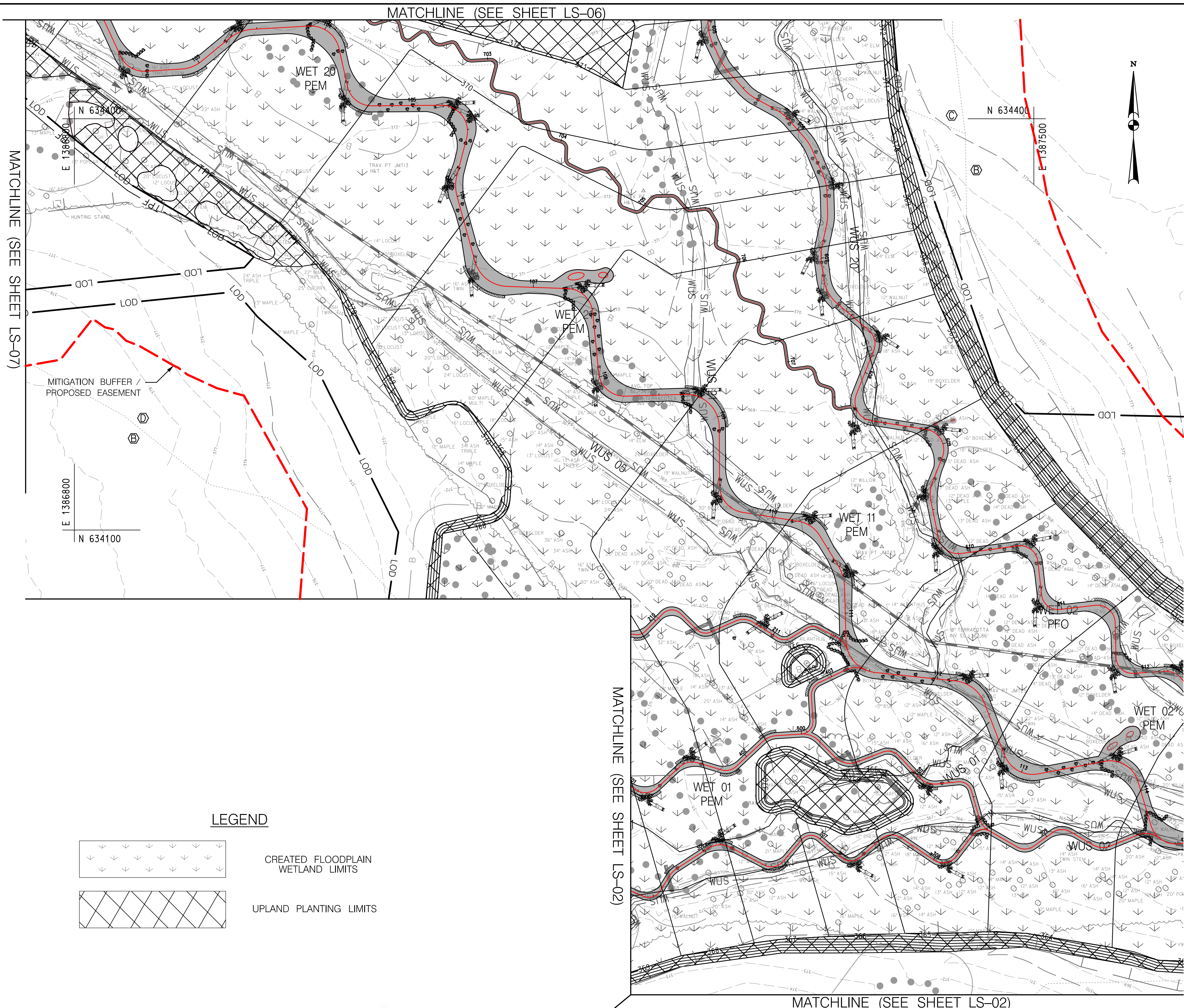
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BY: K. Higgins

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MATCHLINE (SEE SHEET LS-07)

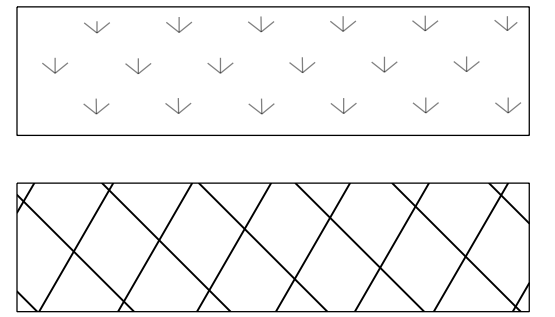
MATCHLINE (SEE SHEET LS-06)

MATCHLINE (SEE SHEET LS-02)

MATCHLINE (SEE SHEET LS-02)

MITIGATION BUFFER / PROPOSED EASEMENT

LEGEND



CREATED FLOODPLAIN WETLAND LIMITS
UPLAND PLANTING LIMITS

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

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F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. LS - 4 OF 7	SHEET NO. 23 OF 38
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ECCLESTON MITIGATION SITE

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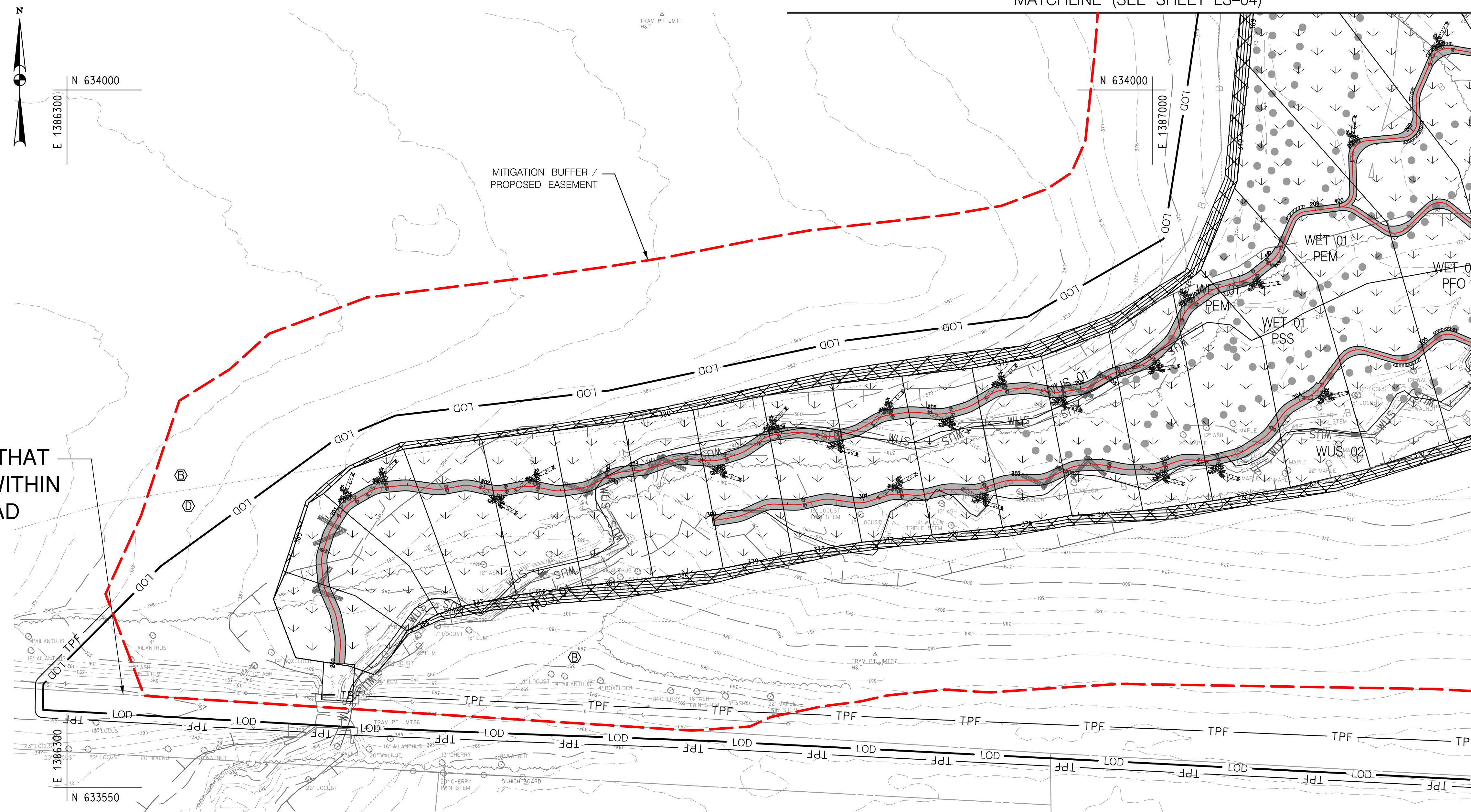


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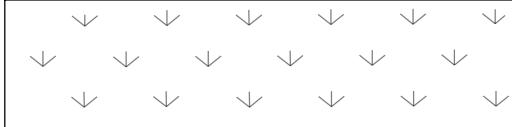

MATCHLINE (SEE SHEET LS-04)

AREA OF TITLE THAT POSSIBLY LIES WITHIN OLD RAILROAD



MATCHLINE (SEE SHEET LS-02)

LEGEND

-  CREATED FLOODPLAIN WETLAND LIMITS
-  UPLAND PLANTING LIMITS



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE COCKEYSVILLE, MD 21030
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

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F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	

DRAWING NO. **LS - 5** OF **7** SHEET NO. 24 OF 38



DESIGN PROFESSIONAL
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ECCLESTON MITIGATION SITE

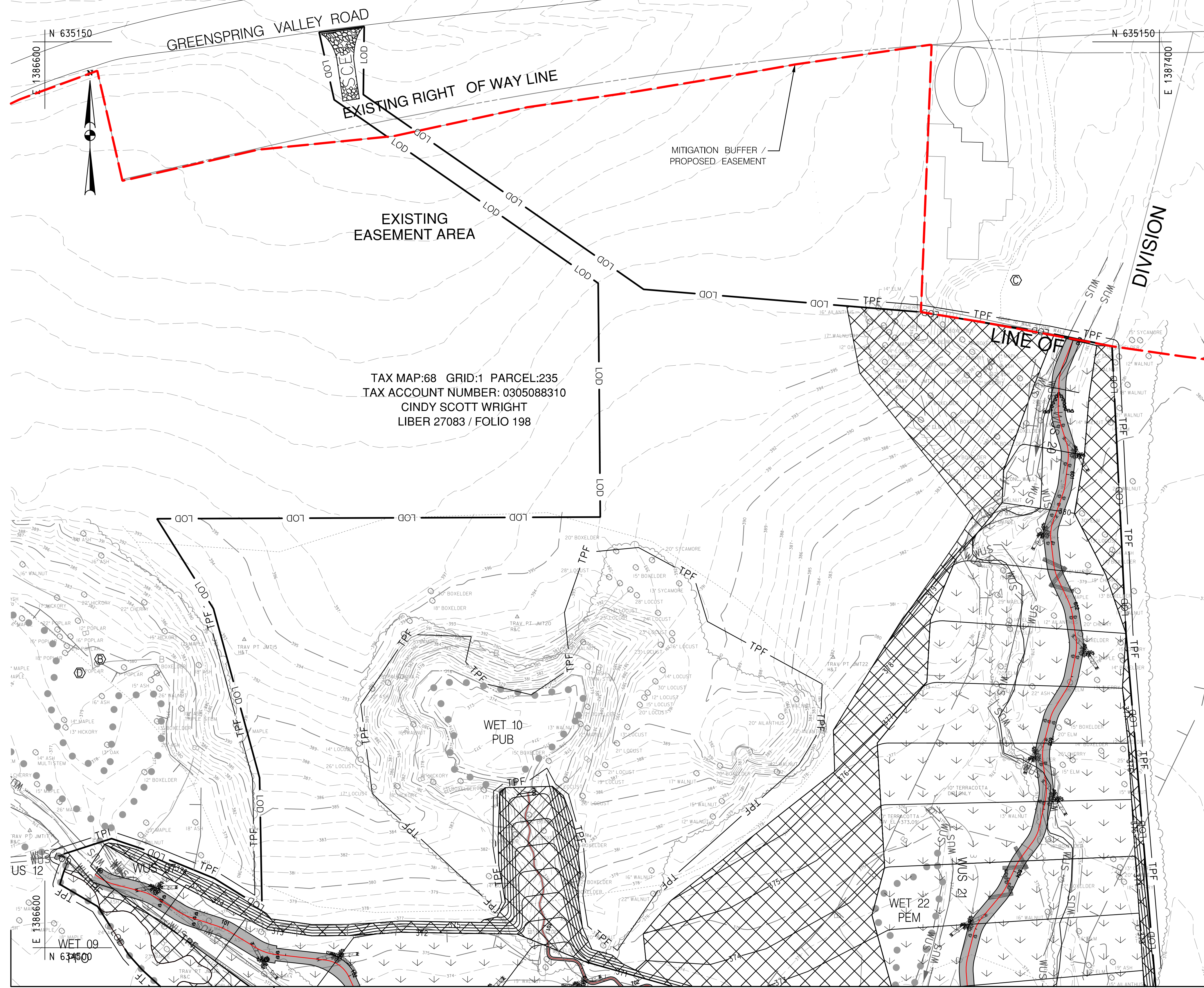
REVISIONS

CONCEPT SUBMISSION

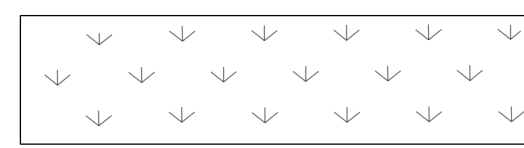

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BY: K. Higgins

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LEGEND

-  CREATED FLOODPLAIN WETLAND LIMITS
-  UPLAND PLANTING LIMITS

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE COCKEYSVILLE, MD 21030
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

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F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. LS - 6	OF 7	SHEET NO. 25 OF 38

REVISIONS

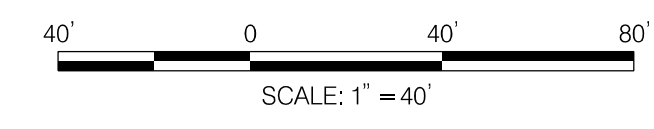
CONCEPT SUBMISSION

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ECCLESTON MITIGATION SITE

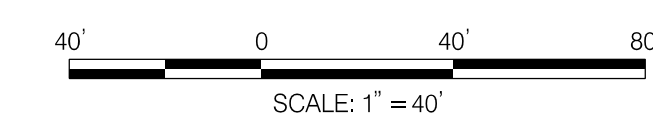
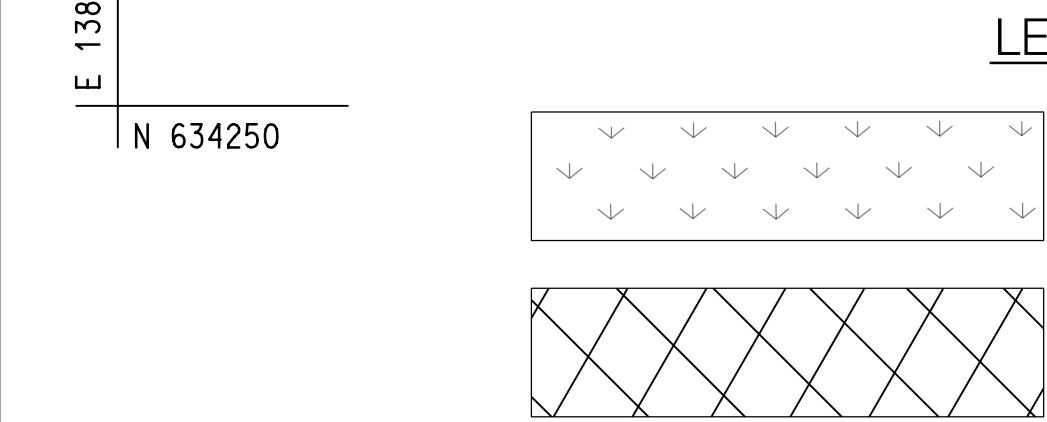
DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON MIRMIRAN & THOMPSON INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
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BY: KJiggins

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MATCHLINE (SEE SHEET LS-04)

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING PLAN

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DRAWING NO. LS - 7	OF 7	SHEET NO. 26 OF 38

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UPLAND SEED MIX	
SEED MIX	PERCENT (%) BY WEIGHT
Sorghastrum nutans /Indiangrass, PA Ecotype	53.0
Elymus virginicus /Virginia Wildrye, PA Ecotype	15.0
Tridens flavus /Purpletop, VA Ecotype	8.0
Andropogon gerardii/Big Bluestem	5.0
Chamaecrista fasciculata /Partridge Pea, PA Ecotype	5.0
Rudbeckia hirta /Blackeyed Susan, NC Ecotype	3.0
Lespedeza virginica /Slender Lespedeza, VA Ecotype	2.0
Asclepias syriaca /Common Milkweed, PA Ecotype	1.0
Aster novae-angliae /New England Aster, PA Ecotype	1.0
Aster sagittifolius /Arrowleaf (Sagittate) Aster, PA Ecotype	1.0
Helopsis helianthoides /Oxeye Sunflower, PA Ecotype	1.0
Penstemon digitalis /Tall White Beardtongue, PA Ecotype	1.0
Penstemon hirsutus /Hairy Beardtongue	1.0
Senna hebecarpa /Wild Senna, VA & WV Ecotype	1.0
Solidago juncea /Early Goldenrod, VA Ecotype	1.0
Monarda fistulosa /Wild Bergamot, PA Ecotype	0.8
Pycnanthemum tenuifolium /Narrowleaf Mountainmint	0.3

*APPLIED AT 20 LBS/ACRE

SEED MIX SCHEDULE (TOTAL)		
SEED MIX	SQUARE YARDS (SY)	SQUARE FEET (SF)
FLOODPLAIN SEED MIX	79,523	715,705
UPLAND SEED MIX	9,522	85,700

MATTING SCHEDULE (TOTAL)	
TYPE	SQUARE YARDS (SY)
TYPE 'D' SOIL STABILIZATION MATTING	168,903

WETLAND TREE PLANTING SCHEDULE (TOTAL)					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT. CLASS	SPACING/REMARKS
AR	<i>Acer rubrum</i>	Red Maple	1" cal.	#7	12' o.c.
AS	<i>Acer saccharinum</i>	Silver Maple	1" cal.	#7	12' o.c.
CC	<i>Carpinus caroliniana</i>	America Hornbeam	1" cal.	#7	12' o.c.
BN	<i>Betula nigra</i>	River Birch	1"-3" cal.**	#7, b&b**	12' o.c.
PO	<i>Platanus occidentalis</i>	American Sycamore	1"-3" cal.**	#7, b&b**	12' o.c.
QB	<i>Quercus bicolor</i>	Swamp White Oak	1" cal.	#7	12' o.c.
QP	<i>Quercus palustris</i>	Pin Oak	1" cal.	#7	12' o.c.
SN	<i>Salix nigra</i>	Black Willow	1" cal.	#7	12' o.c.
TD	<i>Taxodium distichum</i>	Bald Cypress	1" cal.	#7	12' o.c.
CT	<i>Chamaecyparis thyoides</i>	Atlantic White Cedar	1" cal.	#7	12' o.c.

UPLAND SMALL SHRUB PLANTING SCHEDULE (TOTAL)					
KEY	BOTANICAL NAME	COMMON NAME	HEIGHT (FT)	CONT. CLASS	SPACING/REMARKS
CS	<i>Cornus sericea</i>	Red Osier Dogwood	1.5	#1	3'-5' o.c.
CA	<i>Cornus amomum</i>	Silky Dogwood	1.5	#1	3'-5' o.c.
VD	<i>Viburnum dentatum</i>	Northern Arrowwood Viburnum	1.5	#1	3'-5' o.c.

UPLAND TREE PLANTING SCHEDULE (TOTAL)					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT. CLASS	SPACING/REMARKS
RP	<i>Robinia pseudoacacia</i>	Black Locust	1" cal.	#7	12' o.c.
AS	<i>Acer saccharum</i>	Sugar Maple	1"-3" cal.**	#7, b&b**	12' o.c.
JV	<i>Juniperus virginiana</i>	Eastern Red Cedar	1" cal.	#7	12' o.c.
CC	<i>Cercis canadensis</i>	Eastern Redbud	1" cal.	#7	12' o.c.
AT	<i>Asimina triloba</i>	Paw Paw	1" cal.	#7	12' o.c.
PD	<i>Populus deltoides</i>	Eastern Cottonwood	1" cal.	#7	12' o.c.
NS	<i>Nyssa sylvatica</i>	Black Gum	1" cal.	#7	12' o.c.
QR	<i>Quercus rubra</i>	Northern Red Oak	1" cal.	#7	12' o.c.
QM	<i>Quercus macrocarpa</i>	Bur Oak	1" cal.	#7	12' o.c.

*NO TREES ARE TO BE PLANTED ON SEWER LINES OR MANHOLES, 10' CENTER TO CENTER.

**86 TREES OF THE SELECTED SPECIES MUST BE PLANTED AT A SIZE OF 2.5"-3" CAL. AS A B&B. THE CONTRACTOR SHALL COORDINATE ALL LOCATIONS WITH THE COUNTY PRIOR TO PLANTING.

TREE, SHRUB, AND PERENNIAL PLANTING DATES:
 SPRING PLANTING SEASON: FEBRUARY 1 - JUNE 30
 FALL PLANTING SEASON: AUGUST 1 - DECEMBER 31

FLOODPLAIN SEED MIX	
SEED MIX	PERCENT (%) BY WEIGHT
Panicum clandestinum /Deertongue	20.6
Elymus riparius /Riverbank Wildrye, PA Ecotype	20.0
Andropogon gerardii/Big Bluestem	10.0
Carex lurida /Lurid (Shallow) Sedge, PA Ecotype	10.0
Carex vulpinoidea /Fox Sedge	10.0
Carex scoparia /Blunt Broom Sedge, PA Ecotype	8.0
Panicum virgatum /Switchgrass	8.0
Verbena hastata /Blue Vervain, PA Ecotype	4.0
Juncus effusus /Soft Rush	3.0
Asclepias incarnata /Swamp Milkweed, PA Ecotype	1.0
Aster novae-angliae /New England Aster, PA Ecotype	1.0
Desmodium paniculatum /Panicleleaf Ticktrefoil, PA Ecotype	1.0
Eupatorium fistulosum /Joe Pye Weed, PA Ecotype	1.0
Eupatorium perfoliatum /Boneset, PA Ecotype	0.7
Helenium autumnale /Common Sneezeweed, PA Ecotype	0.5
Monarda fistulosa /Wild Bergamot, PA Ecotype	0.5
Vernonia noveboracensis /New York Ironweed, PA Ecotype	0.5
Mimulus ringens /Square Stemmed Monkeyflower, PA Ecotype	0.2

*APPLIED AT 20 LBS/ACRE

TREE & SHRUB INSTALLATION THROUGH SOIL STABILIZATION MATTING

SOIL STABILIZATION MATTING

- ① MAKE CUT WITH SHARP KNIFE THROUGH SOIL STABILIZATION MATTING - SEE SOLID LINE IN DIAGRAM. NOTE THAT ALL CUTS IN THE MATTING SHALL BE A MINIMUM OF 2 FEET CLEAR OF ALL MATTING SEAMS, OVERLAPS AND EDGES.
- ② TEMPORARILY PIN BACK MATTING WITH 4 STAPLES TO INSTALL TREE OR SHRUB - SEE DASHED LINE IN DIAGRAM.
- ③ INSTALL PLANT THROUGH PINNED BACK MATTING. INSTALL PLANT AT PROPER GRADE TO GROUND PLANE.
- ④ REMOVE 4 STAPLES PLACED IN STEP 2 ABOVE THAT WERE USED TO TEMPORARILY PIN BACK THE MATTING DURING ROOT BALL INSTALLATION.
- ⑤ PLACE 4 STAPLES IN EACH OF FOUR CUT SECTIONS TO WELL ANCHOR SOIL STABILIZATION MATTING BACK OVER TOP OF THE ROOT BALL.
- ⑥ FOR TREE INSTALLATIONS, INSTALL TREE STAKES THROUGH MATTING, ONCE RE-ANCHORED OVER ROOT BALL.

OWNER /DEVELOPER INFORMATION
 JOHNSON MIRMIRAN AND THOMPSON
 40 WIGHT AVE.
 COCKEYSVILLE, MD 21030

CONTACT
 JEREMY KOSER
 40 WIGHT AVE.
 HUNT VALLEY, MD 21030
 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
 SW CORNER PARK HEIGHTS AVE
 OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

LANDSCAPING NOTES AND DETAILS

SCALE NA DATE OCTOBER, 2018 PROJECT NO. 17-10977-001

DESIGNED BY PVC COUNTY BALTIMORE COUNTY
 DRAWN BY PVC LOGMILE _____
 CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
 F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. **LSD -1** OF **1** SHEET NO. 27 OF 38

ECCLESTON MITIGATION SITE

DESIGN PROFESSIONAL
 JEREMY KOSER
 JOHNSON MIRMIRAN & THOMPSON, INC.
 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
 EMAIL: JKoser@jmt.com

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. 31183 EXPIRATION DATE: 1/13/2021



B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES

ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, RE-STABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

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.

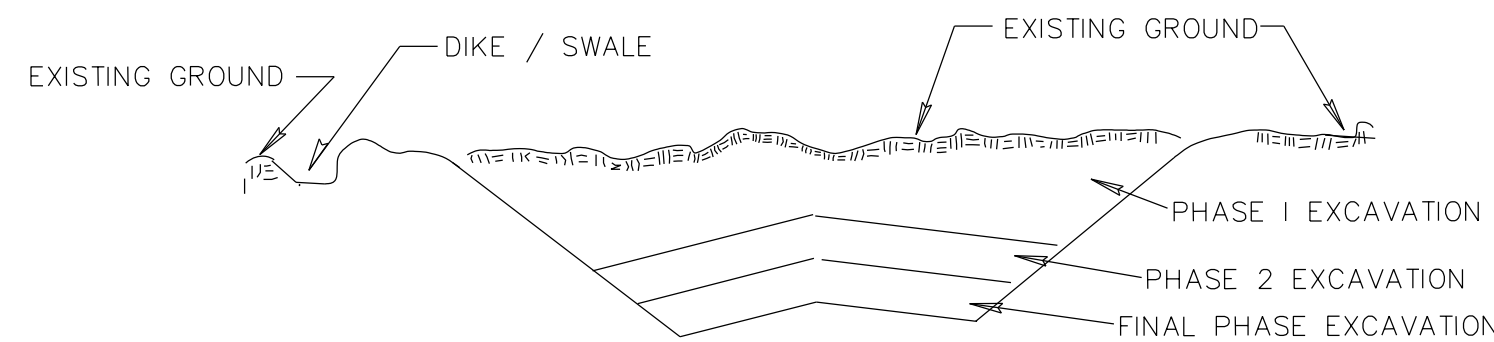
CONDITIONS WHERE PRACTICE APPLIES

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 1 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 SEEDER 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.

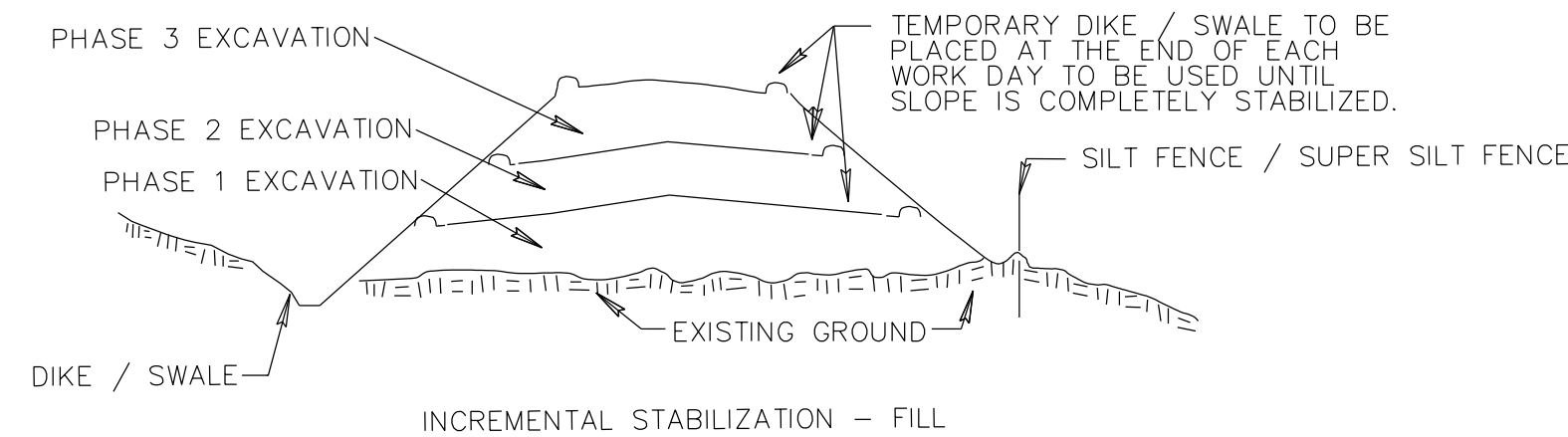


INCREMENTAL STABILIZATION – CUT

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 SEEDER 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.



B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

- A. SOIL PREPARATION
 1. TEMPORARY STABILIZATION
 - A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 2. PERMANENT STABILIZATION
 - A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - I. SOIL PH BETWEEN 6.0 AND 7.0.
 - II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- B. TOPSOILING
 1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER. 5/8 INCHES IN DIAMETER.
 - B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

- A. SEEDING
 1. SPECIFICATIONS
 - A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING.
 - D. IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - E. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

Hardiness Zone (from Figure B.3):		7a		Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
Annual Ryegrass	40	2-15 to 4-30 and 8-15 to 11-30	0.5 in.	436 lb/ac (10lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
Foxtail Millet	30	5-1 to 8-14	0.5 in.		
Pearl Millet	20	5-1 to 8-14	0.5 in.		

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SCALE N.T.S. DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
 DESIGNED BY PVC COUNTY BALTIMORE COUNTY
 DRAWN BY PVC LOGMILE _____
 CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
 F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. **EN-1** OF **4** SHEET NO. 28 OF 38



B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEEDING MIXTURES

- GENERAL USE
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

PERMANENT SEEDING SUMMARY

Hardiness Zone (from Figure B.3): <u>7a</u>		Seed Mixture (from Table B.3):		Fertilizer Rate (10-20-20)			Lime Rate
MIX	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ O
1	Switch Grass	10	2-15 to 4-30 and 5-1 to 5-31	1/2 in.	45 lb/ac (1.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)
	Creeping Red Fescue	15	2-15 to 4-30 and 5-1 to 5-31	1/2 in.			
	Wild Indigo	2	2-15 to 4-30 and 5-1 to 5-31	1/2 in.			
8	Tall Fescue	100	2-15 to 4-30 and 8-15 to 10-31	1/2 in.			2 tons (90 lb/1000 sf)

PERMANENT SEEDING SUMMARY FOR WETLANDS

Hardiness Zone (from Figure B.3): <u>7a</u>		Seed Mixture (from Table B.3):		Fertilizer Rate (10-20-20)			Lime Rate
MIX	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ O
3	Sheep Fescue	20	2-15 to 4-30 and 5-1 to 5-31	1/2 in.	45 lb/ac (1.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)	90 lb/ac (2.0lb/1000 sf)
	Redtop	1	2-15 to 4-30 and 5-1 to 5-31	1/2 in.			
	Canada Wild Rye	3	2-15 to 4-30 and 5-1 to 5-31	1/2 in.			
	Common Lespedeza	10	2-15 to 4-30 and 5-1 to 5-31	1/2 in.			

2. TURFGRASS MIXTURES

- AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MAISTURE BY WEIGHT.
 - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1? TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77 "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".
CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION, AND ASSURES A PURE GENETIC LINE.

- IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
- TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS OR ON ADVERSE SITES.

B-4-8 STANDARDS AND SPECIFICATIONS 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

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- 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.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- 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.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- 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.
- 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 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.

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION		STANDARD SYMBOL
		TSSMS > 2 lbm ²
CONSTRUCTION SPECIFICATIONS		
<ol style="list-style-type: none"> USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. 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. 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 1 1/2 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. 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. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING. 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. 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. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. 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
*TO BE TYPE D STABILIZATION MATTING AS DESCRIBED IN SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.		

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

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 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 MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- 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.
- RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- 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 (UNIOIA 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.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:
 - USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- 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.

OWNER /DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE COCKEYSVILLE, MD 21030
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JEREMY KOSER 40 WIGHT AVE HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SCALE	N.T.S.	DATE	OCTOBER, 2018	PROJECT NO.	17-10977-001
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY		
DRAWN BY	PVC	LOGMILE			
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A		
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	N/A		
DRAWING NO.	EN- 2	OF	4	SHEET NO.	29 OF 38

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.

ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION

NOT FOR CONSTRUCTION

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measures for diverting in-channel construction sites

DISCUSSION

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE

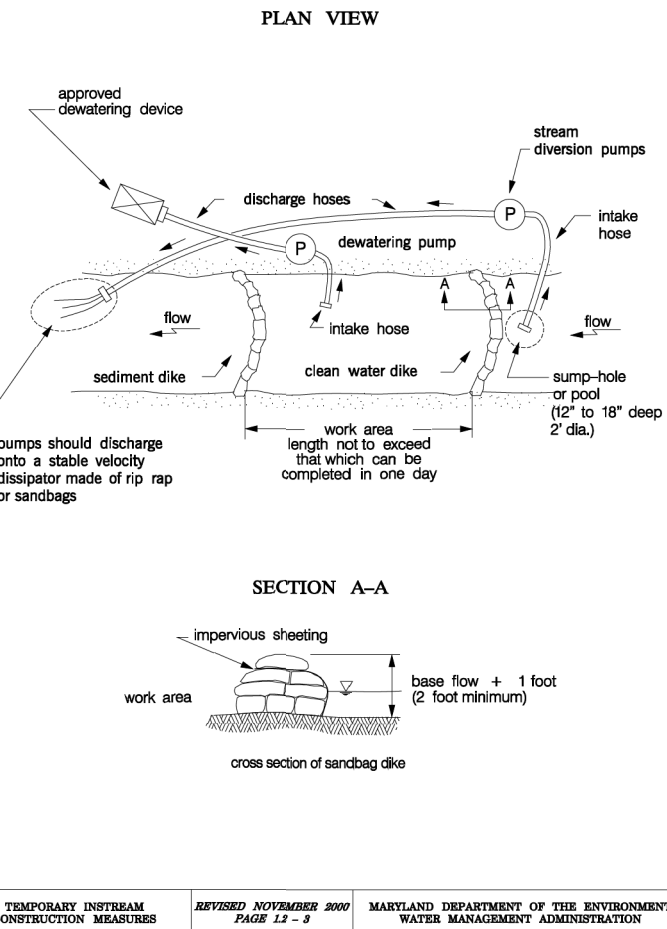
Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-way have been acquired. All existing utilities should be located in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 4 days before beginning construction. Additionally, the contractor should address the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the response of construction. The contractor should take all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all areas within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
5. 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 at the upstream section and proceed downstream beginning with the establishment of additional construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor obtains written approval for deviation from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
6. Sanding dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of rip rap or sandbags.

MGWC 1.2: PUMP-AROUND PRACTICE

7. Water from the work area should be pumped to a sediment filtering structure such as a dewatering tank, sediment bag, or other approved device. The structure should be located such that the water drains back into the channel below the downstream sanding dike.
8. Traversing a channel trench with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a trench for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings; Maryland Guidelines to #Waterway Construction).
9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and mulch as specified on the plans.
10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
11. A pump around must be installed on any tributary or steep drain outfall which contributes headwater to the work area. This should be accomplished by locating a sanding dike at the downstream end of the tributary or stream drain and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
14. After construction, all disturbed areas should be graded and revegetated as per the planting plan.

**Maryland's Guidelines to Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE**



H-1 STANDARDS AND SPECIFICATIONS

FOR

MATERIALS

Table H-1: Geotextile Fabrics

PROPERTY	TEST METHOD	MINIMUM AVERAGE ROLL VALUES					
		WOVEN NET FLEM GEOTEXTILE		NONWOVEN GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	170 lb	150 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Triplicate Tensile Strength	ASTM D-4911	75 lb	75 lb	100 lb	100 lb	40 lb	40 lb
Fracture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size ¹	ASTM D-4751	U.S. Sieve 30 (0.60 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Puncture Resistance	ASTM D-4491	0.05 sec ²		0.28 sec ²		1.1 sec ²	
Triplicate Puncture Resistance	ASTM D-4355	70% strength		70% strength		70% strength	

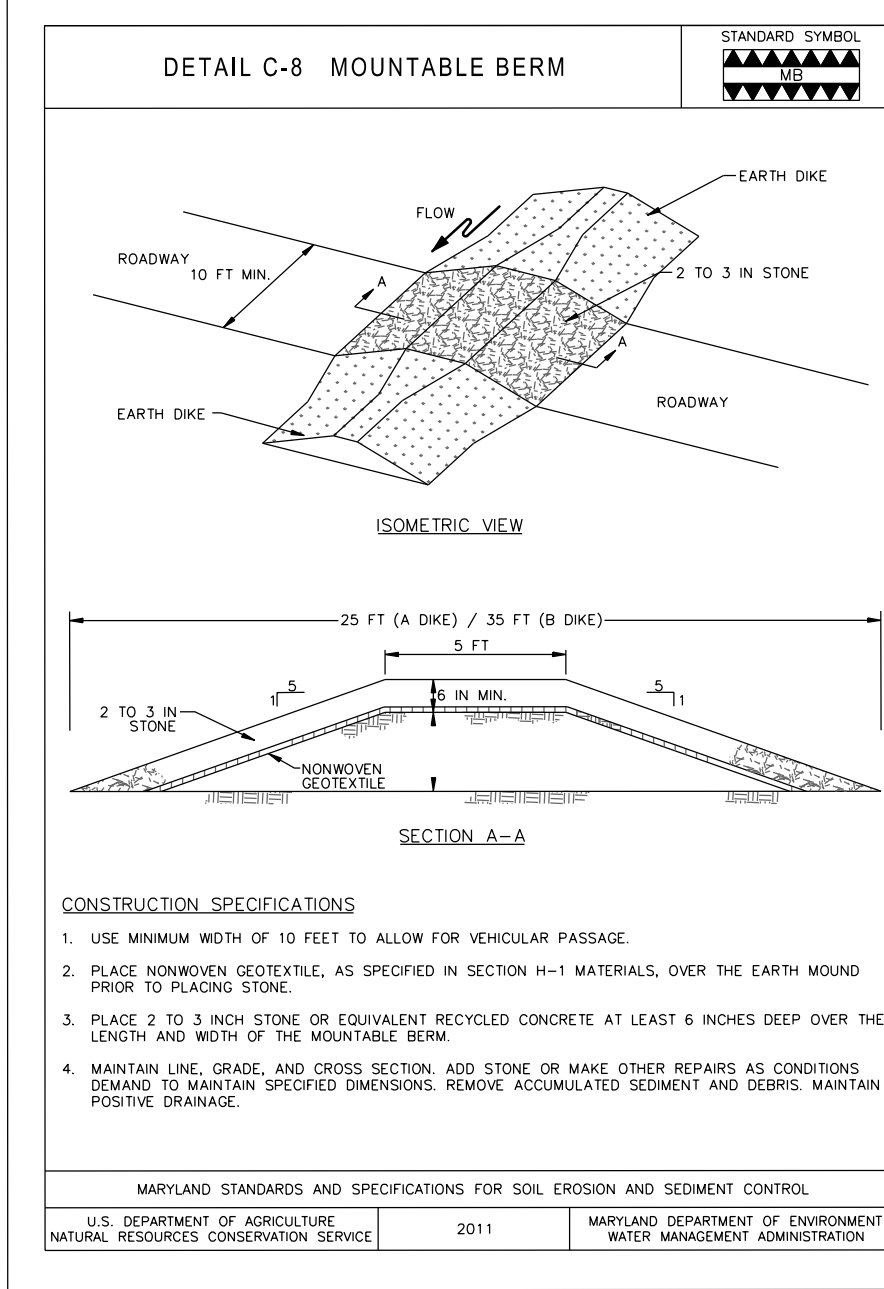
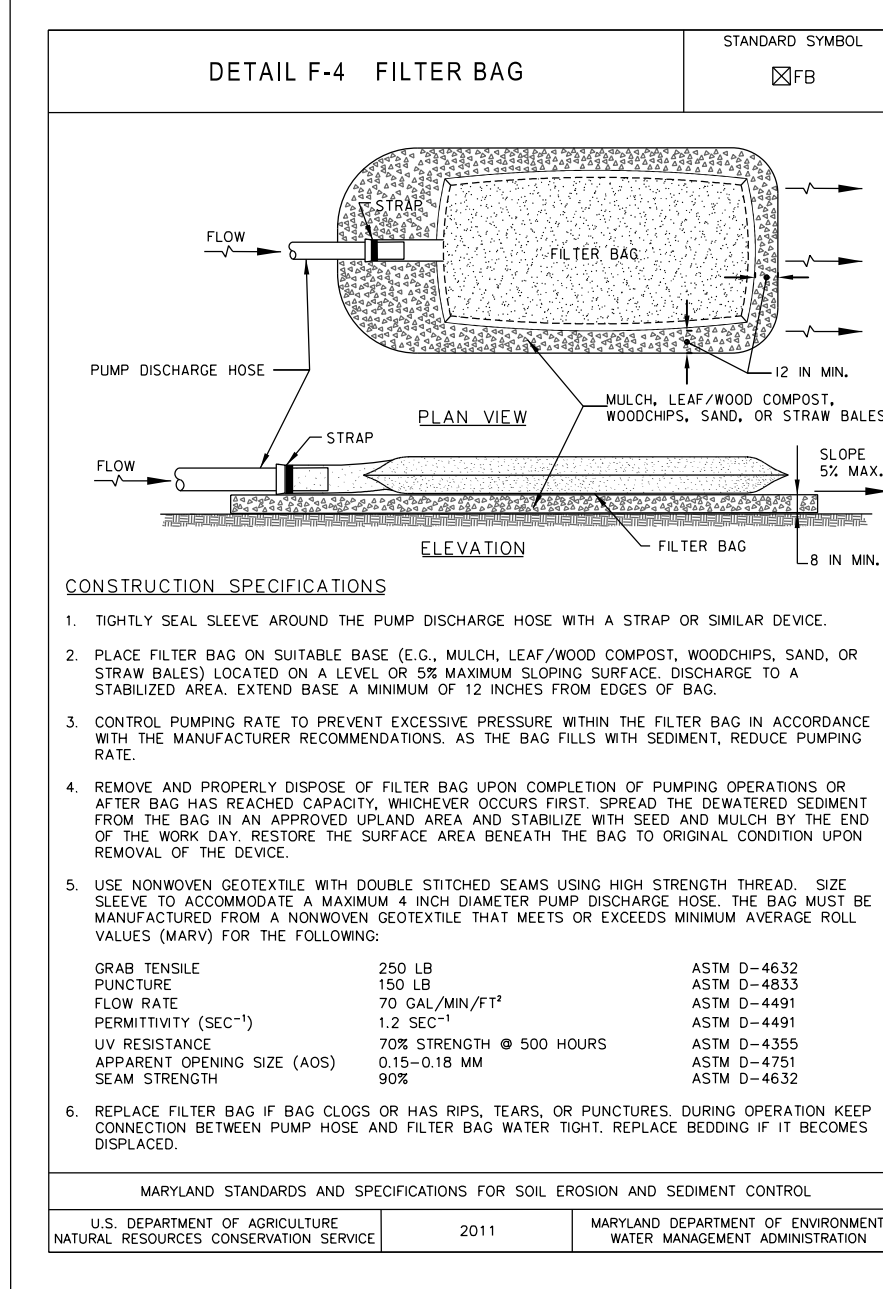
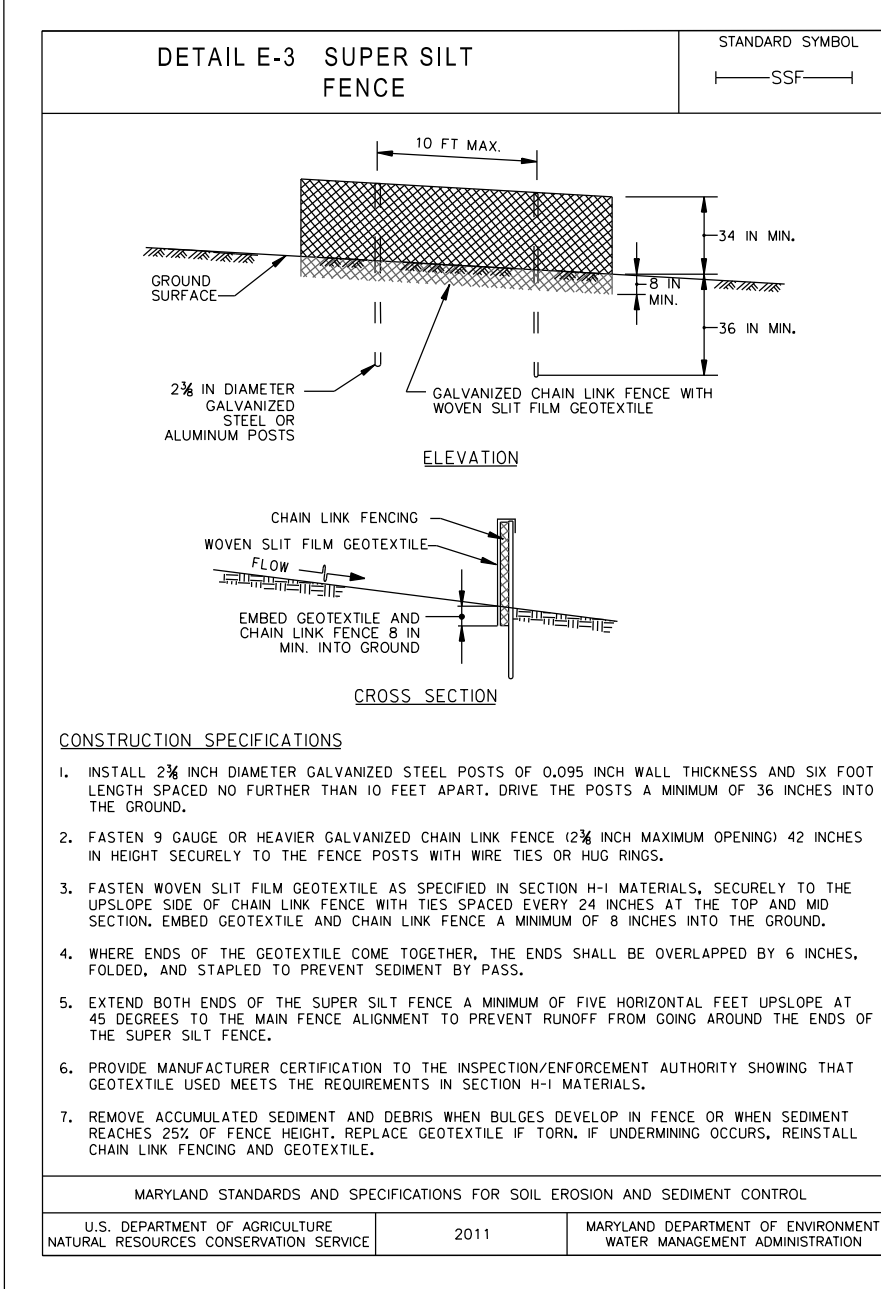
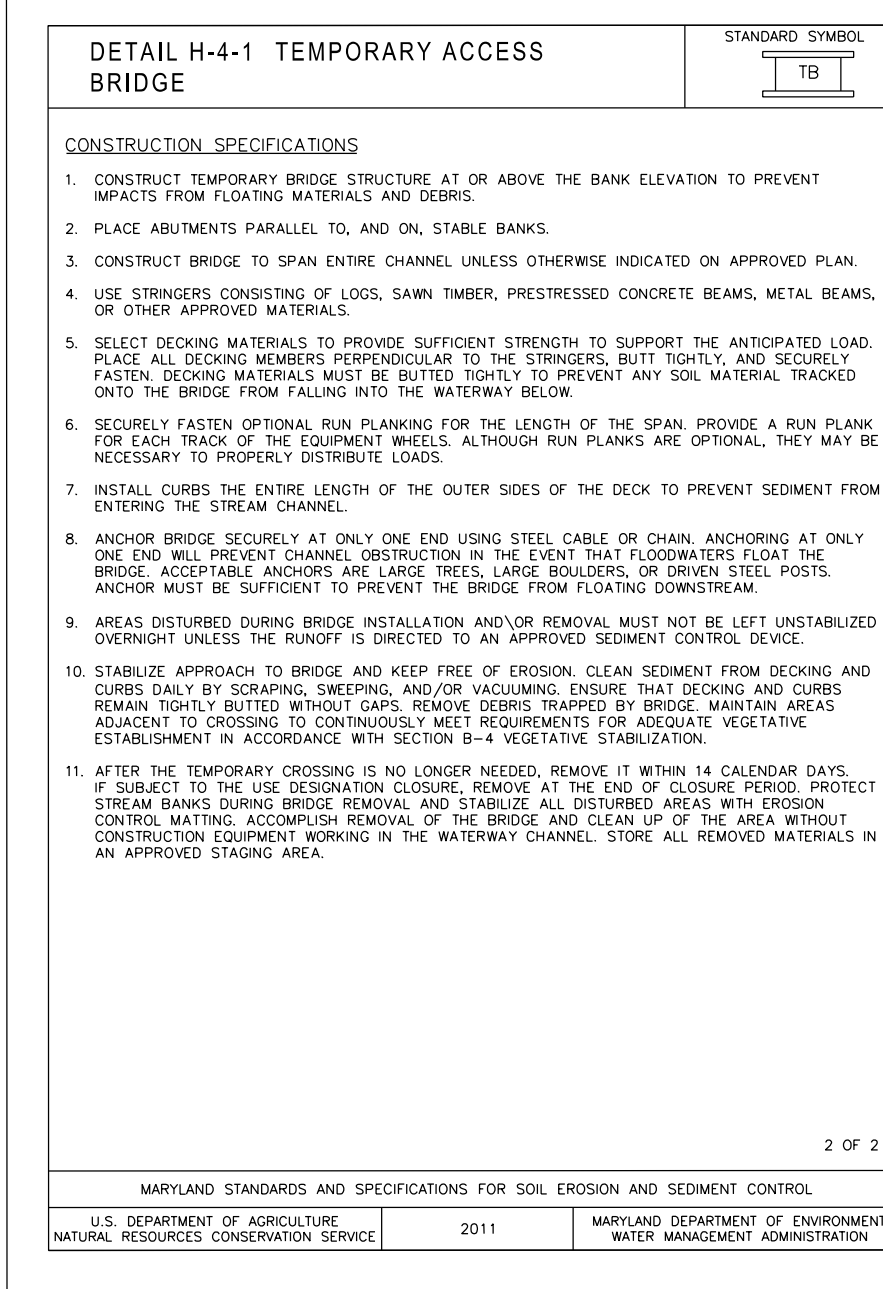
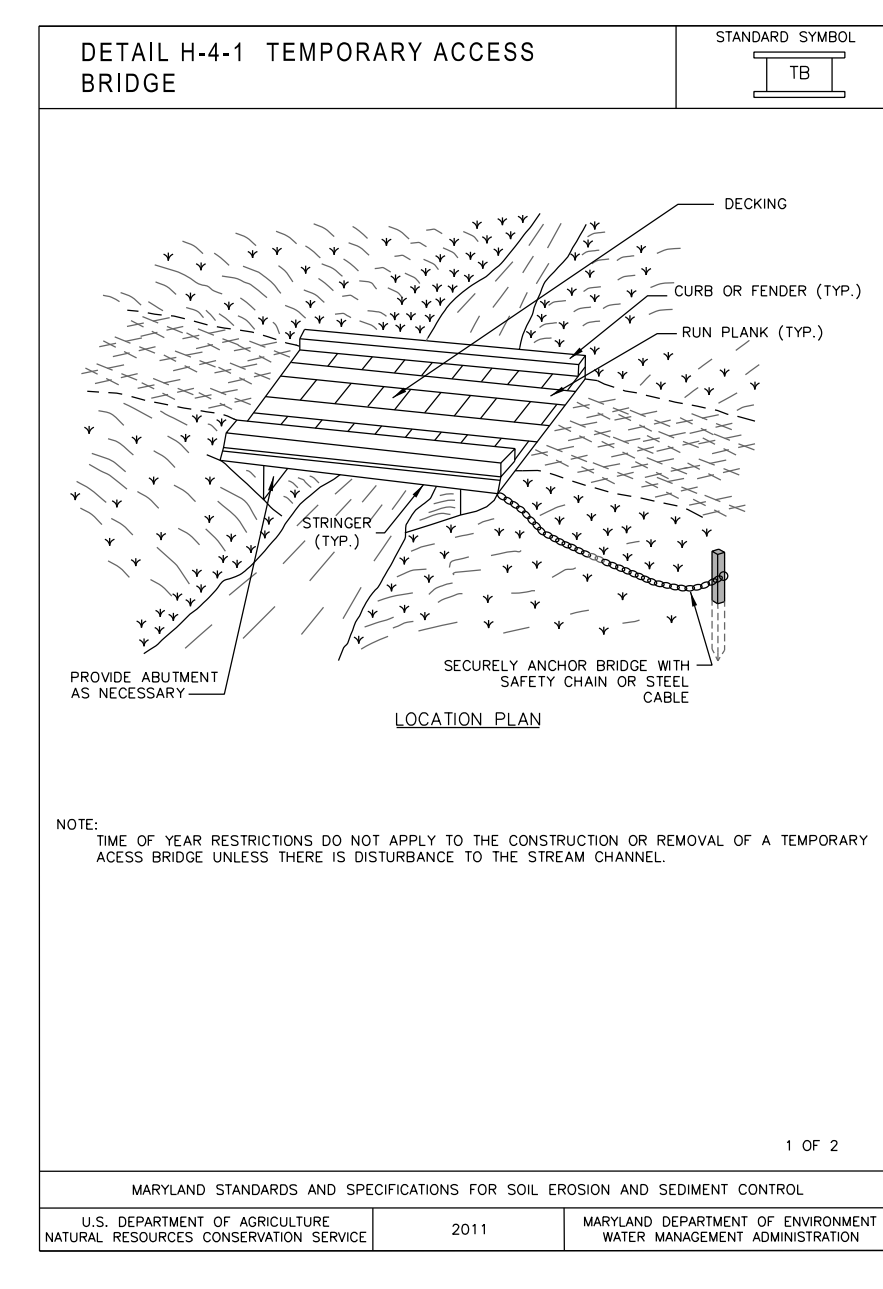
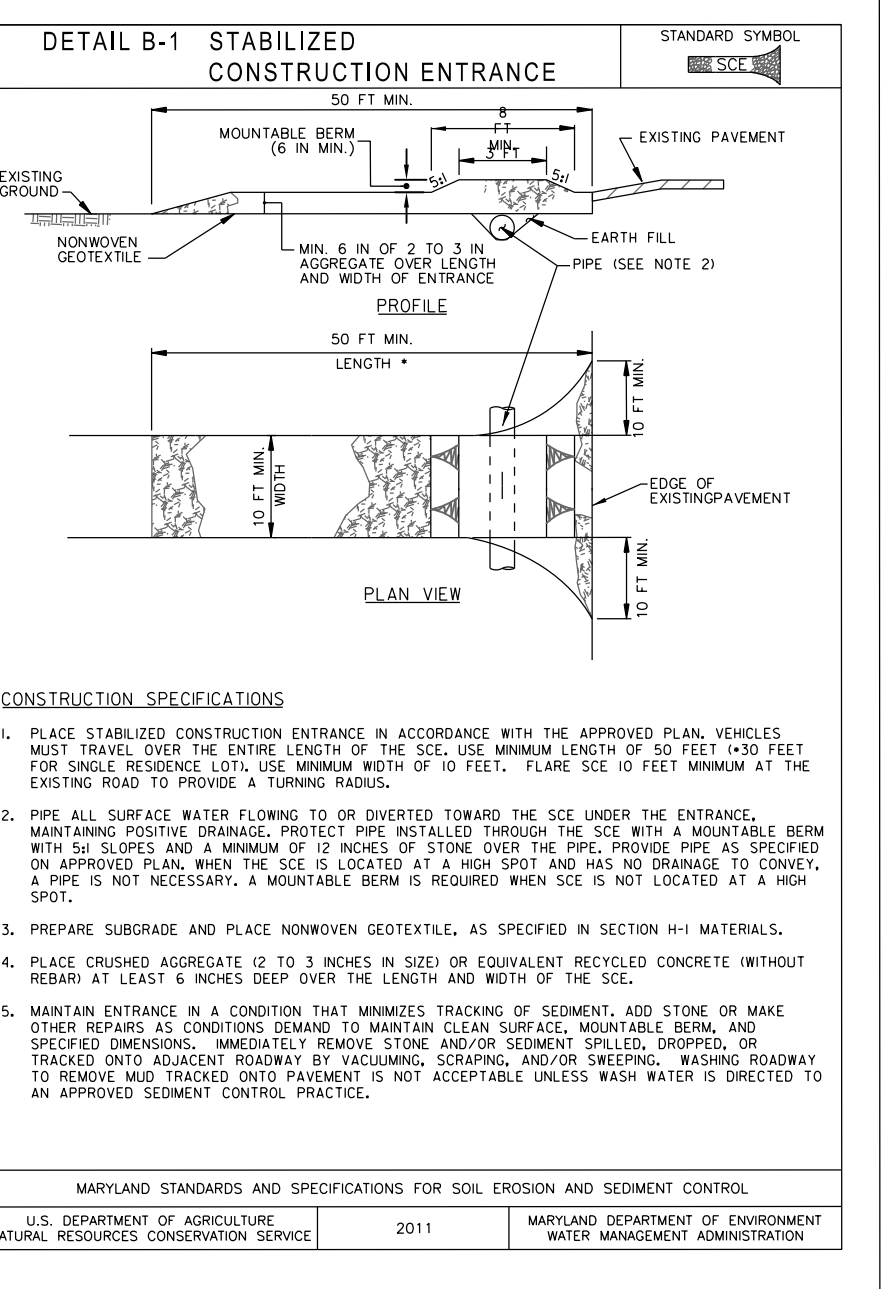
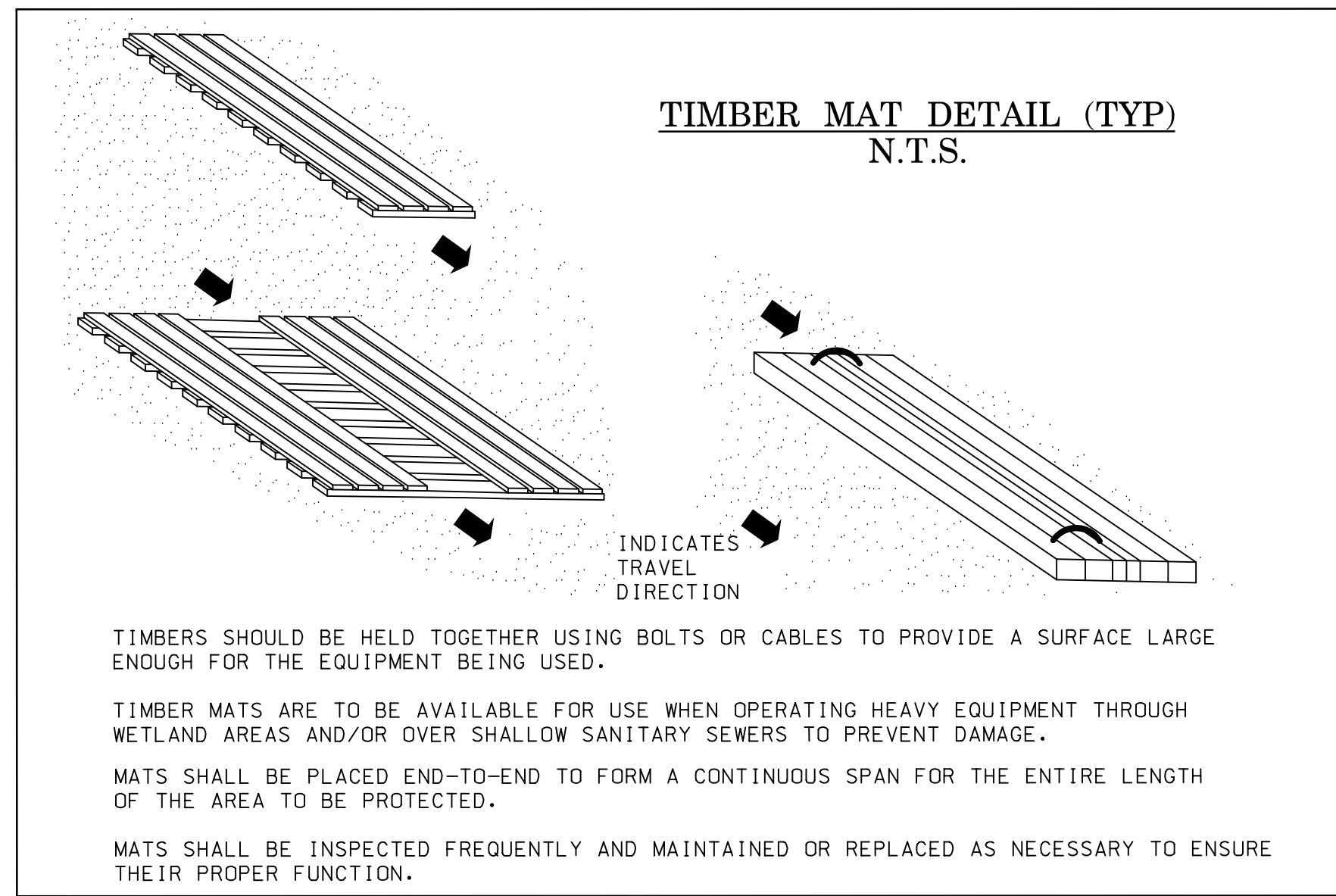
¹ All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

² Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPPEP) and conform to the values in Table H-1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyethylene or polypropylene, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be joined with the approved method. Equipment must not run over exposed fabric. When placing rip rap on geotextile, do not exceed a one foot drop height.



ECCLESTON MITIGATION SITE

REVISIONS	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	
CONCEPT SUBMISSION	SCALE N.T.S.	DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
NOT FOR CONSTRUCTION	DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
	DRAWN BY PVC	LOGMILE
	CHECKED BY JMM /MRG	HORIZONTAL SCALE N/A
	F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A
	DRAWING NO. EN-3 OF 4	SHEET NO. 30 OF 38

BY: PCrawford

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SEQUENCE OF CONSTRUCTION

1. MDE TRACKING/PERMIT NUMBER IS XX. IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OF OCTOBER 1 TO APRIL 30.
2. CONTRACTOR SHALL OBTAIN GRADING PERMIT FROM BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS PRIOR TO BEGINNING CONSTRUCTION. THE REFERENCE NUMBER TO THE NPDES PERMIT IS XX.
3. CONTRACTOR SHALL CONTACT BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS AT (410) 887-3353 TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN.
4. WATERWAY CONSTRUCTION TO BE DONE IN ACCORDANCE WITH MDE STANDARDS AND DETAILS AS SHOWN ON THE PLANS.
5. THE LIMIT OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR OTHER LAND DISTURBING ACTIVITIES.
6. CLEAR AND GRUB FOR THE MINIMUM AREA REQUIRED FOR INSTALLATION OF THE STABILIZED CONSTRUCTION ENTRANCES, ACCESS ROADS AND STAGING/STOCKPILE AREA.
7. AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL STABILIZE ANY DISTURBED AREA WITHIN THE LOD NOT DIRECTED TO AN EROSION AND SEDIMENT CONTROL DEVICE AND AS NOTED.
8. WORK WITHIN THE FLOODPLAIN SHALL BE CONDUCTED IN AN ORDER WHICH DOES NOT REQUIRE THE CONTRACTOR TO TRACK OVER FINISHED GRADING OR CROSS OVER THE STREAM IN ANY AREAS OTHER THAN THOSE SHOWN ON THE PLANS. THE ACCESS ROAD AND ANY STOCKPILE AREAS WILL BE REMOVED DURING THE FLOODPLAIN GRADING WORK IN EACH CONSTRUCTION PHASE AND SHALL NOT BE REMOVED UNTIL EACH WORK AREA IS PERMANENTLY STABILIZED.
9. THE STREAM WORK IS DIVIDED INTO PHASES. JMT TO COORDINATE WITH BALTIMORE COUNTY SCD VIA MEETING TO DISCUSS EROSION AND SEDIMENT CONTROL PHASING. WORK IN THE STREAM AREAS MUST OCCUR IN ORDER FROM DOWNSTREAM TO UPSTREAM UNLESS OTHERWISE SPECIFIED.
10. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH APPROVAL OF THE EROSION CONTROL INSPECTOR, CONTRACTOR IS TO REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROLS AND IMMEDIATELY STABILIZE ANY DISTURBANCE CAUSED BY THE REMOVAL.

Owner/Developer Certification:

"I/We certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Owner's/Developer's Signature _____ Date _____

Printed Name & Title _____

Design Certification:

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature _____ Date _____

Printed Name _____ MD Registration No. _____
P.E., R.L.S., or R.L.A. (circle one)

Professional Certification:

"I hereby certify these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland."

License No. _____ Expiration Date: _____
31183 1/13/2019

NOTE:

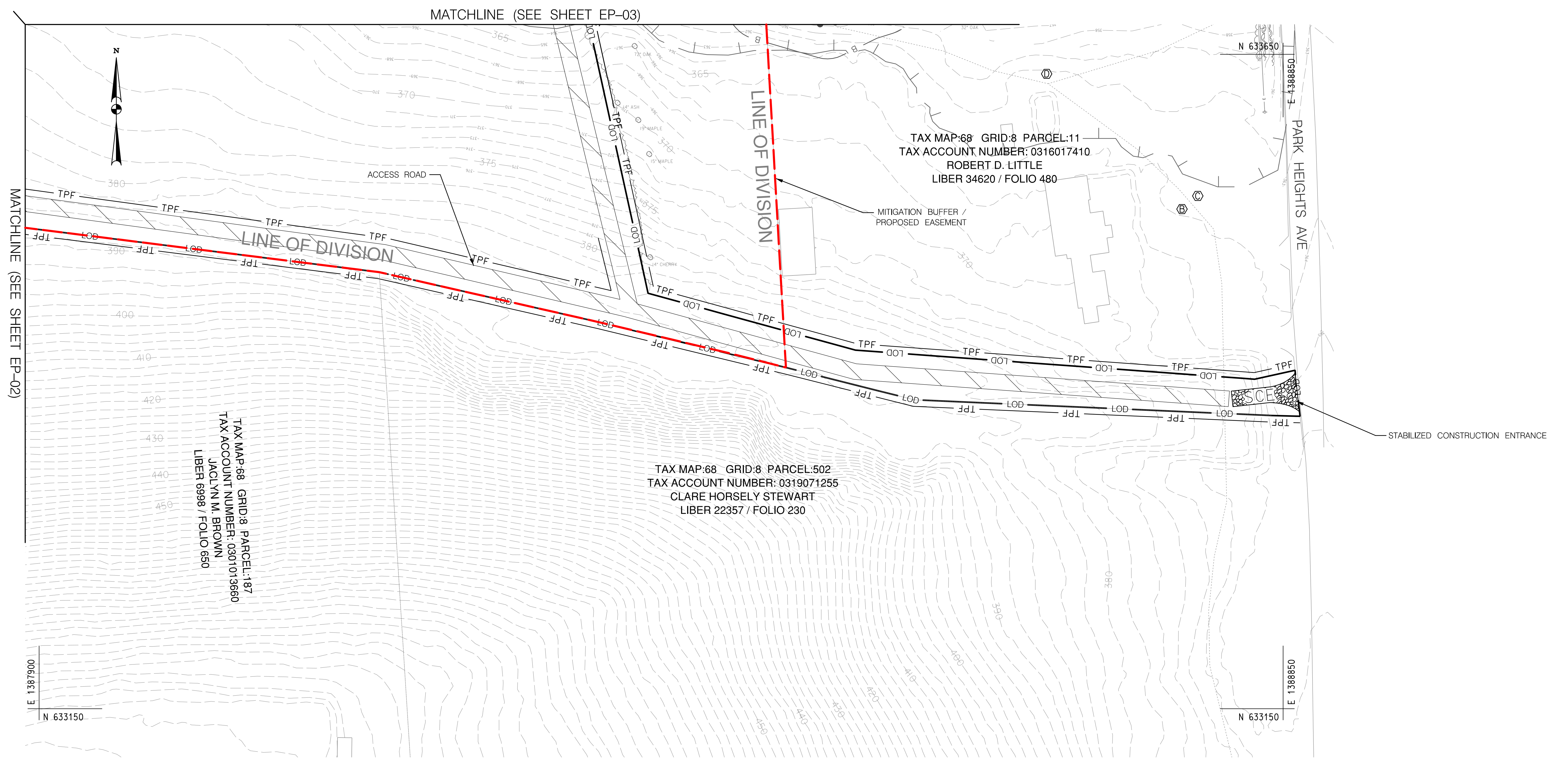
JMT TO COORDINATE WITH BALTIMORE COUNTY SCD VIA MEETING TO DISCUSS EROSION AND SEDIMENT CONTROL PHASING.

BY: PCrawford

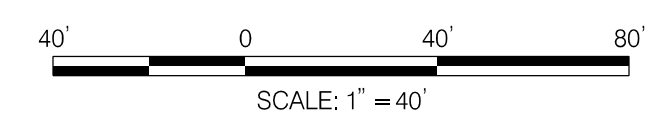


ECCLESTON MITIGATION SITE

REVISIONS	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
CONCEPT SUBMISSION NOT FOR CONSTRUCTION	SCALE _____ N.T.S. _____ DATE <u>OCTOBER 2018</u> PROJECT NO. <u>17-10977-001</u> DESIGNED BY _____ PVC _____ COUNTY <u>BALTIMORE COUNTY</u> DRAWN BY _____ PVC _____ LOGMILE _____ CHECKED BY <u>JJM /MRG</u> _____ HORIZONTAL SCALE <u>N/A</u> F.A.P. NO. _____ SEE TITLE SHEET N.T.S. _____ VERTICAL SCALE <u>N/A</u> DRAWING NO. EN-4 OF 4 SHEET NO. 31 OF 38



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100



MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88
 GREENSPRING VALLEY ROAD
 SW CORNER PARK HEIGHTS AVE
 OWINGS MILLS, MD 21117
 BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN	
SCALE AS SHOWN	DATE OCTOBER, 2018 PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
DRAWN BY PVC	LOGMILE
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A
DRAWING NO. EP-1 OF 7	SHEET NO. 32 OF 38

DESIGN PROFESSIONAL
 JEREMY KOSER
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 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
 EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.



ECCLESTON MITIGATION SITE

REVISIONS

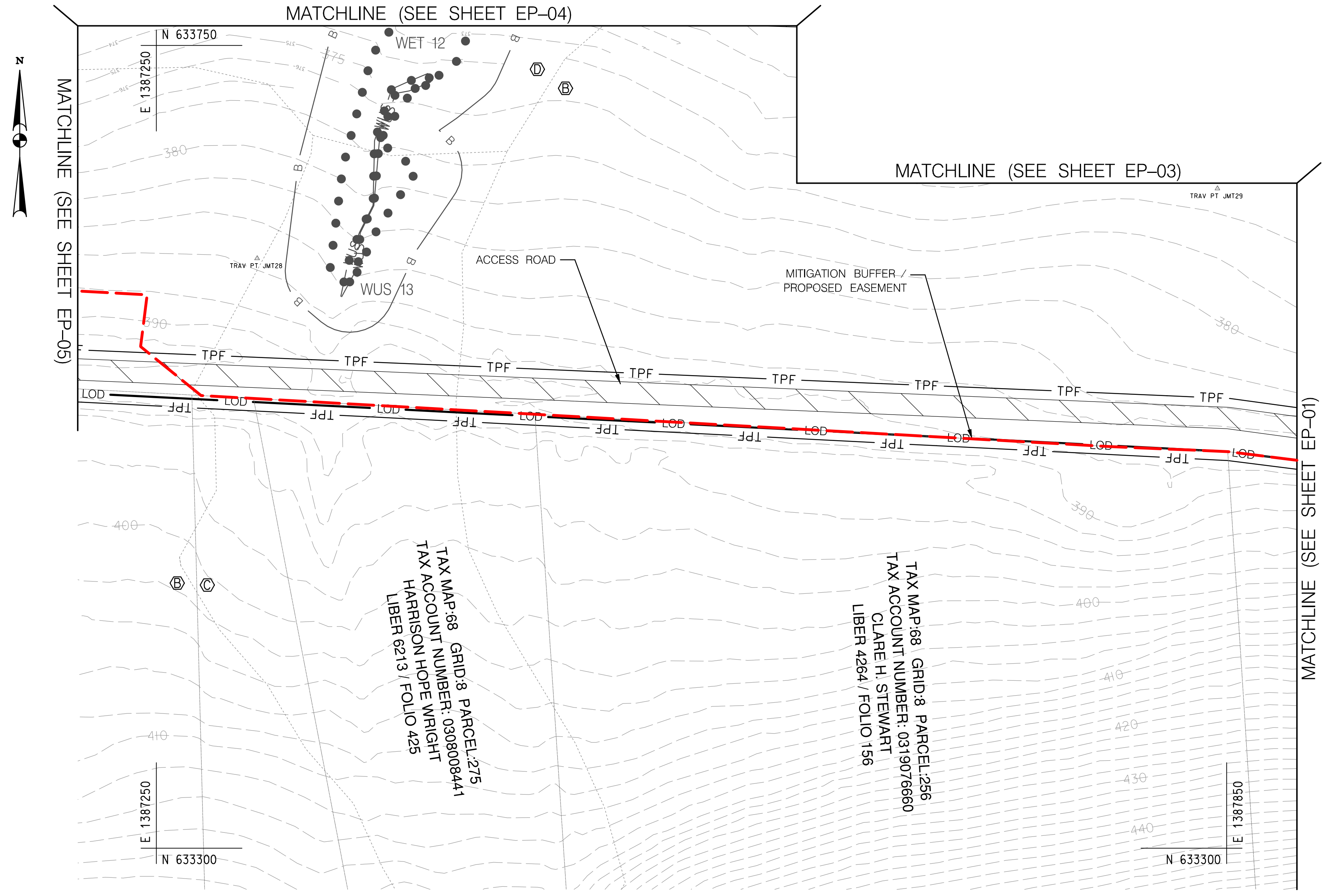
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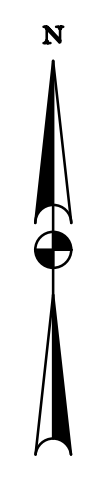
BY: K. Higgins

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 Wednesday, August 28, 2019 10:31 AM



TAX MAP: 68 GRID: 8 PARCEL: 275
 TAX ACCOUNT NUMBER: 0308008441
 HARRISON HOPE WRIGHT
 LIBER 6213 / FOLIO 425

TAX MAP: 68 GRID: 8 PARCEL: 256
 TAX ACCOUNT NUMBER: 0319076660
 CLARE H. STEWART
 LIBER 4264 / FOLIO 156



MATCHLINE (SEE SHEET EP-05)

MATCHLINE (SEE SHEET EP-04)

MATCHLINE (SEE SHEET EP-03)

MATCHLINE (SEE SHEET EP-01)

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
 SW CORNER PARK HEIGHTS AVE
 OWINGS MILLS, MD 21117

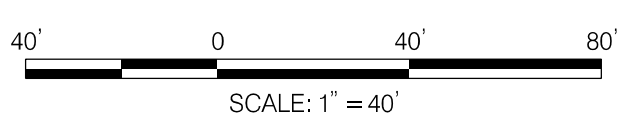
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

SCALE AS SHOWN DATE OCTOBER, 2018 PROJECT NO. 17-10977-001

DESIGNED BY PVC COUNTY BALTIMORE COUNTY
 DRAWN BY PVC LOGMILE
 CHECKED BY JJM / MRG HORIZONTAL SCALE N/A
 F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. **EP-2** OF **7** SHEET NO. 33 OF 38



DESIGN PROFESSIONAL
 JEREMY KOSER
 JOHNSON, MIRMIRAN & THOMPSON, INC.
 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
 EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2021.

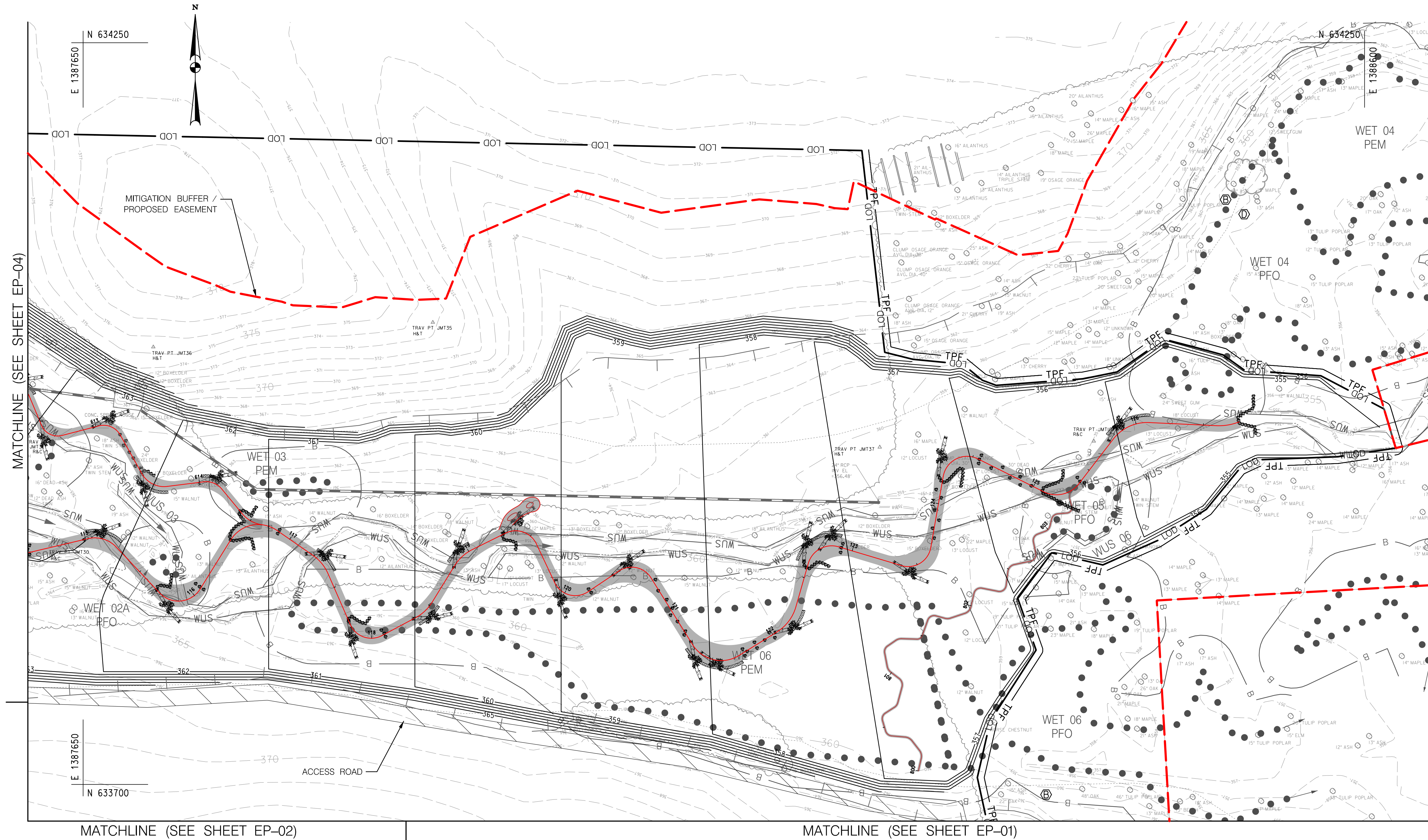
ECCLESTON MITIGATION SITE

REVISIONS

CONCEPT SUBMISSION
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BY: K. Higgins

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MATCHLINE (SEE SHEET EP-04)

MATCHLINE (SEE SHEET EP-02)

MATCHLINE (SEE SHEET EP-01)

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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SW CORNER PARK HEIGHTS AVE
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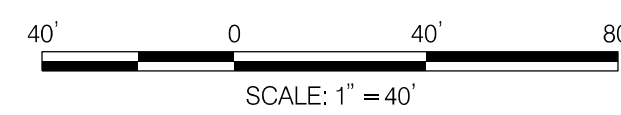
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

SCALE AS SHOWN DATE OCTOBER, 2018 PROJECT NO. 17-10977-001

DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. **EP-3** OF **7** SHEET NO. 34 OF 38



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DESIGN PROFESSIONAL
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JOHNSON MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
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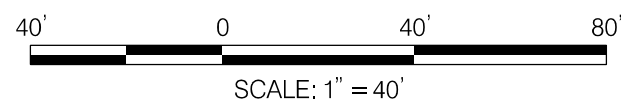
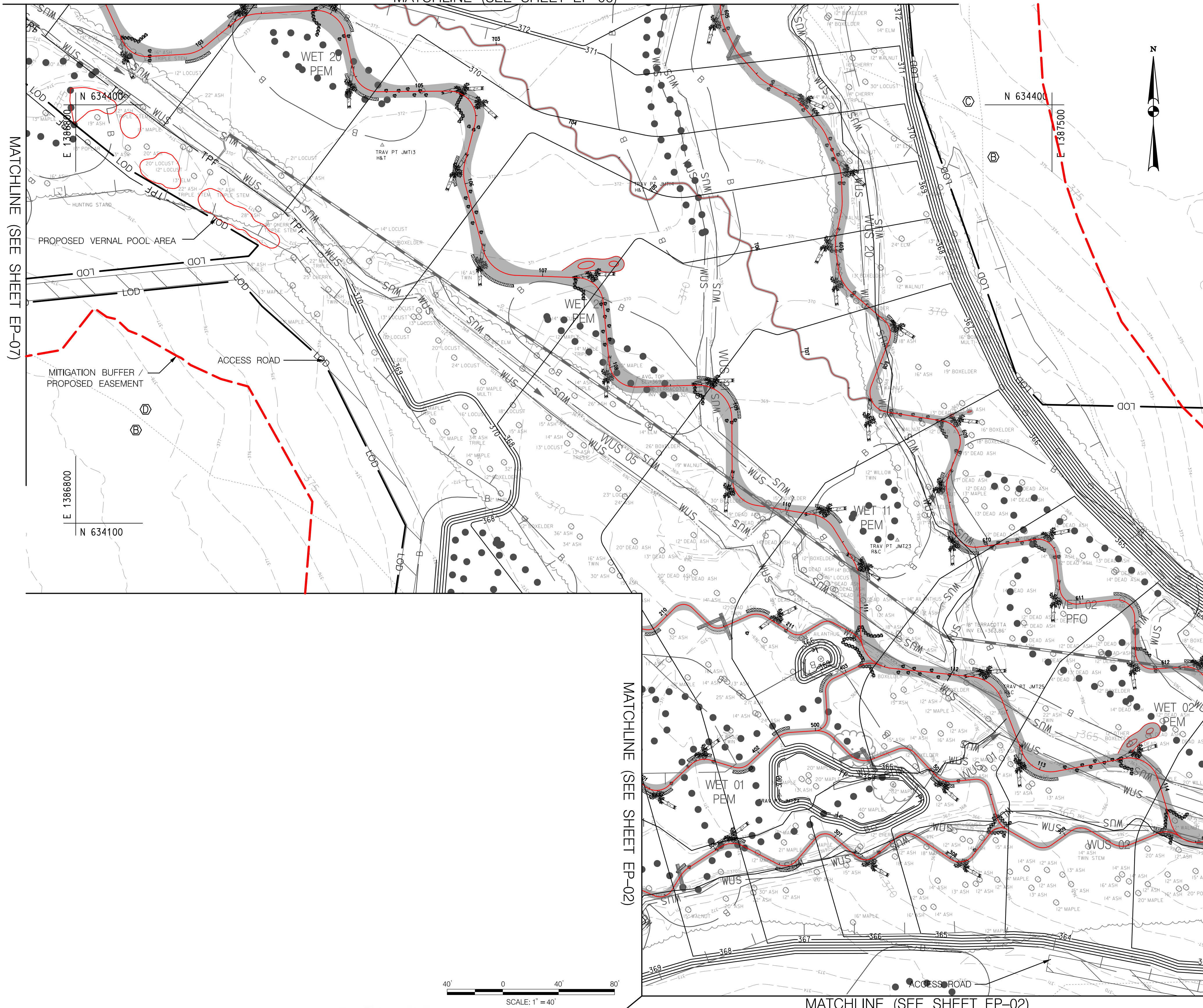
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BY: K. Higgins

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MATCHLINE (SEE SHEET EP-06)



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE. HUNT VALLEY, MD 21030 TEL: 410-329-3100

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

SCALE AS SHOWN DATE OCTOBER, 2018 PROJECT NO. 17-10977-001

DESIGNED BY PVC	COUNTY BALTIMORE COUNTY
DRAWN BY PVC	LOGMILE
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A

DRAWING NO. **EP - 4** OF **7** SHEET NO. 35 OF 38

ECCLESTON MITIGATION SITE

DESIGN PROFESSIONAL
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JOHNSON MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-329-3100
EMAIL: JKoser@jmt.com

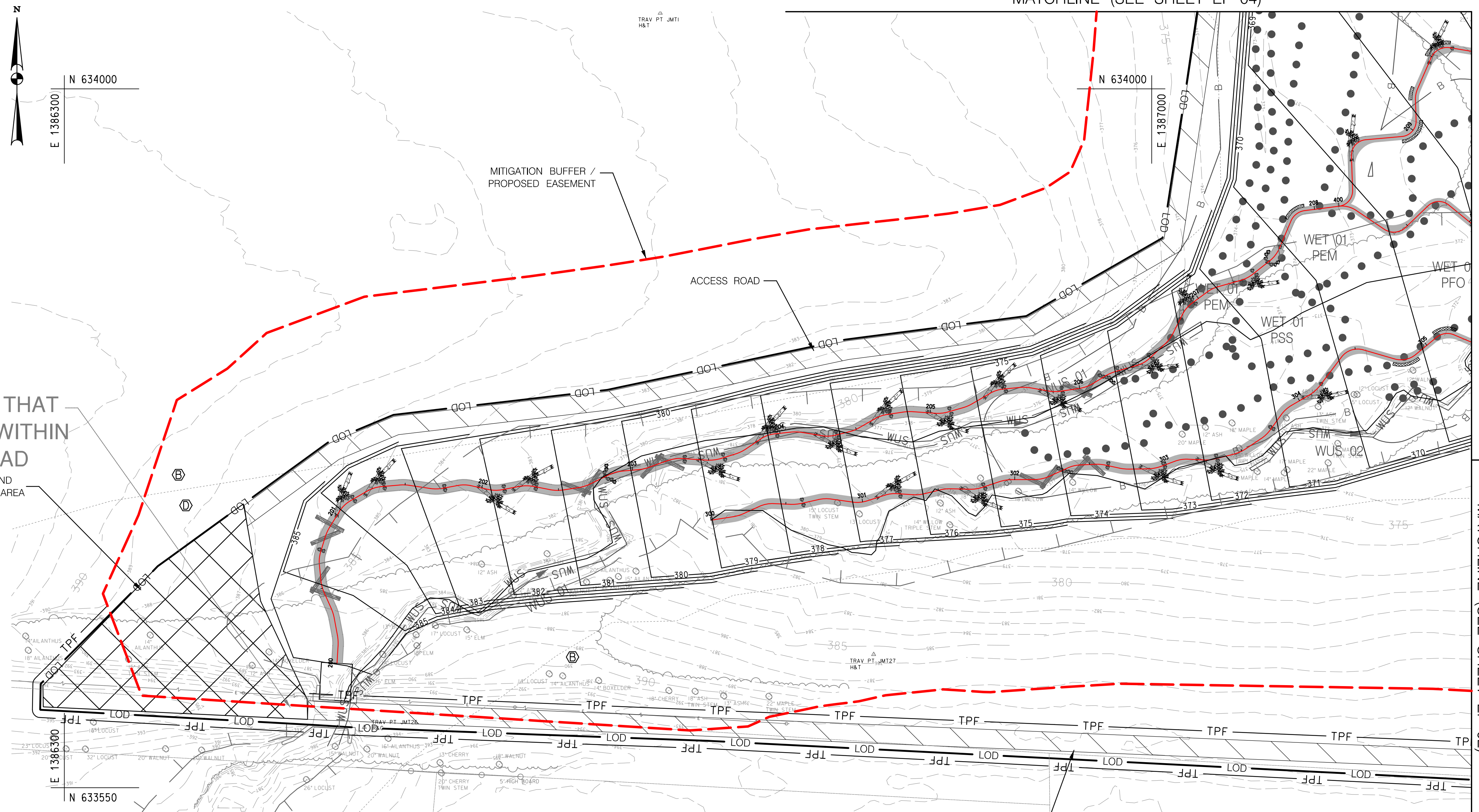
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BY: K-Higgins

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Wednesday, August 28, 2019 AT 11:32 AM

MATCHLINE (SEE SHEET EP-04)



AREA OF TITLE THAT POSSIBLY LIES WITHIN OLD RAILROAD

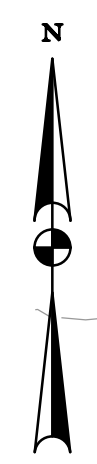
STAGE AND STOCKPILE AREA

MITIGATION BUFFER / PROPOSED EASEMENT

ACCESS ROAD

ACCESS ROAD

MATCHLINE (SEE SHEET EP-02)



N 634000

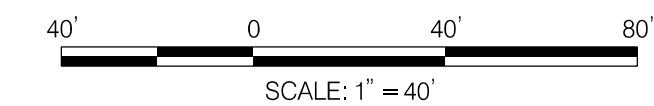
E 1386300

N 634000

E 1387000

E 1386300

N 633550



OWNER / DEVELOPER INFORMATION	
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE. COCKEYSVILLE, MD 21030	
CONTACT	
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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

SCALE	AS SHOWN	DATE	OCTOBER, 2018	PROJECT NO.	17-10977-001
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY		
DRAWN BY	PVC	LOGMILE			
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A		
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	N/A		

DRAWING NO.	EP - 5	OF	7	SHEET NO.	36 OF 38
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DESIGN PROFESSIONAL
 JEREMY KOSER
 JOHNSON MIRMIRAN & THOMPSON, INC.
 40 WIGHT AVENUE, HUNT VALLEY, MD 21030
 TEL: 410-329-3100
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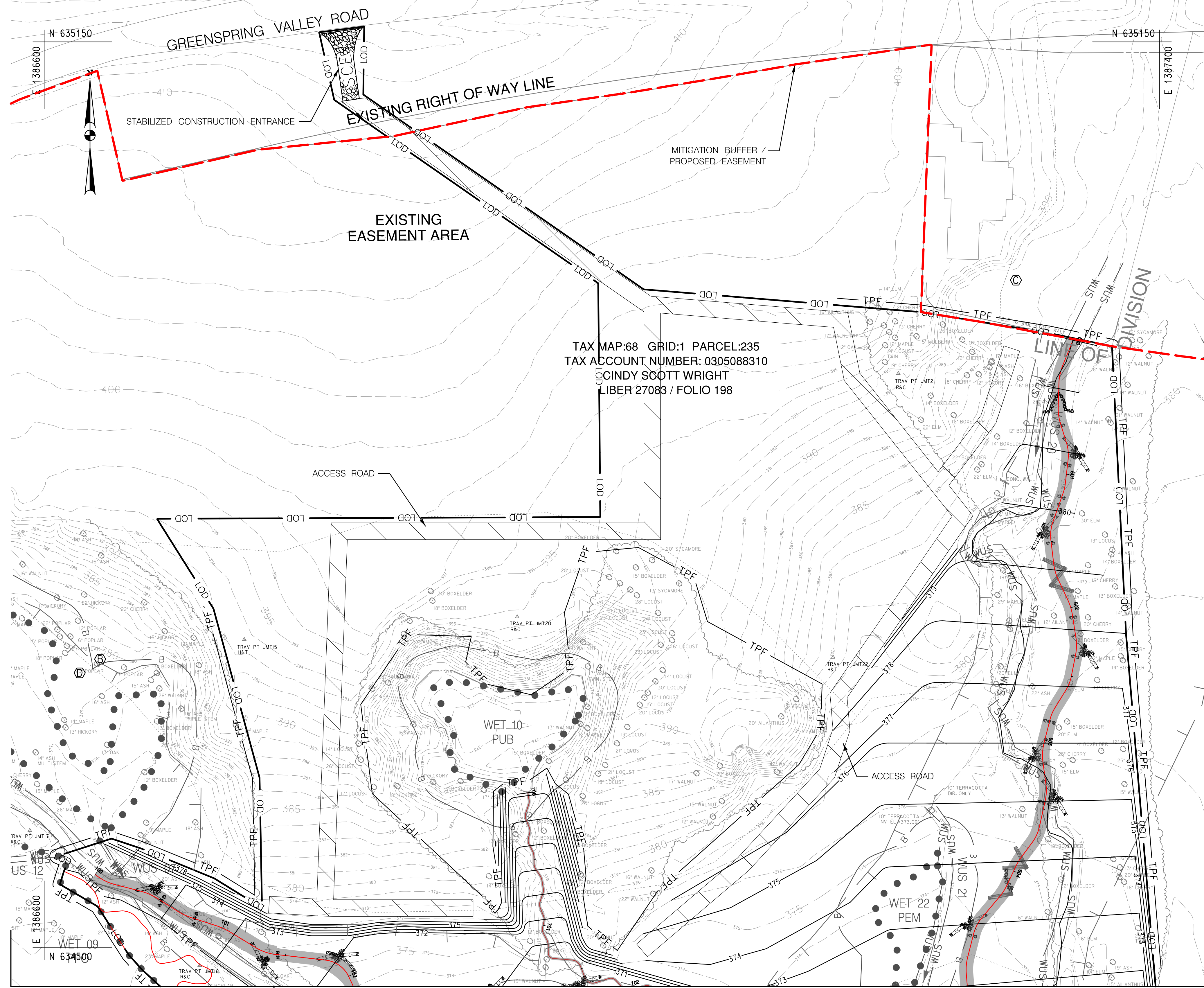
CONCEPT SUBMISSION

NOT FOR CONSTRUCTION



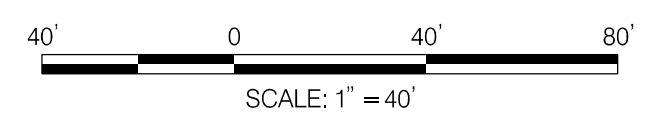
BY: KJiggins

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Wednesday, August 28, 2019 11:34 AM



TAX MAP:68 GRID:1 PARCEL:235
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 CINDY SCOTT WRIGHT
 LIBER 27083 / FOLIO 198

OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON 40 WIGHT AVE COCKEYSVILLE, MD 21030
CONTACT
JEREMY KOSER 40 WIGHT AVE HUNT VALLEY, MD 21030 TEL: 410-329-3100



MATCHLINE (SEE SHEET EP-07)

MATCHLINE (SEE SHEET EP-04)



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MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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 OWINGS MILLS, MD 21117

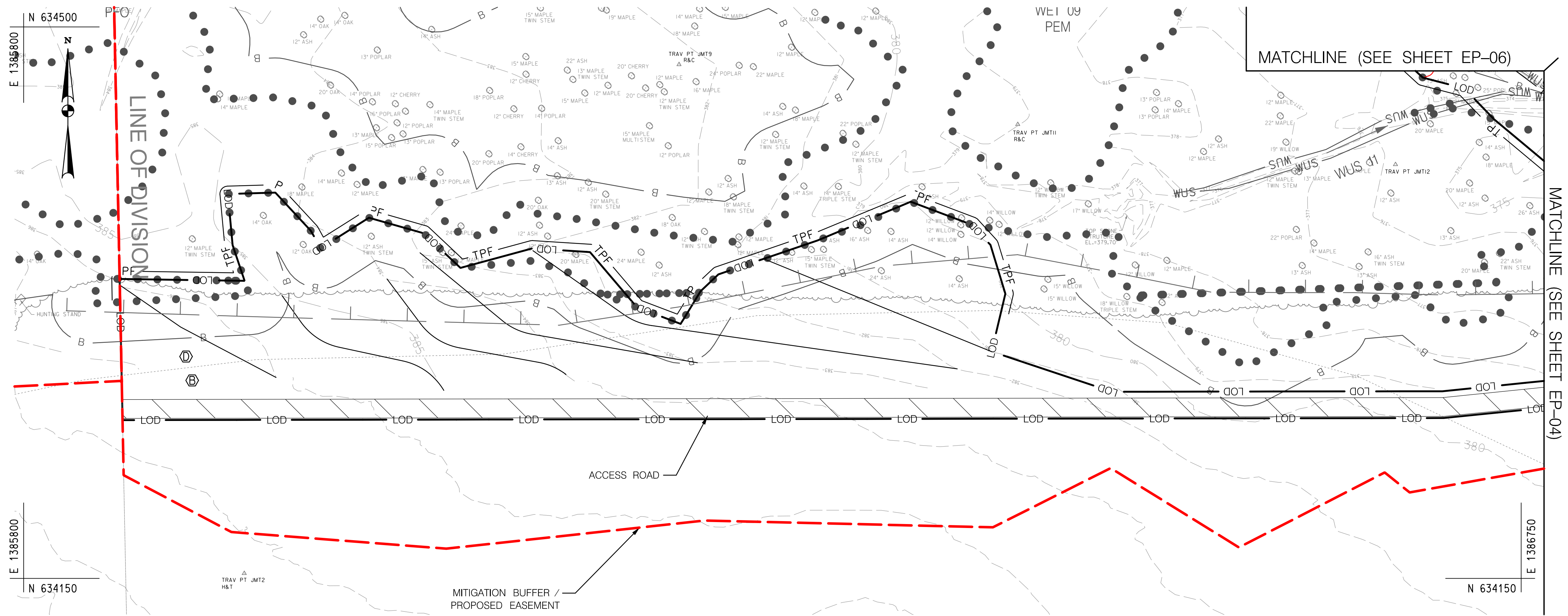
BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

SCALE AS SHOWN	DATE OCTOBER, 2018	PROJECT NO. 17-10977-001
DESIGNED BY PVC	COUNTY BALTIMORE COUNTY	
DRAWN BY PVC	LOGMILE	
CHECKED BY JJM /MRG	HORIZONTAL SCALE N/A	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE N/A	
DRAWING NO. EP-6	OF 7	SHEET NO. 37 OF 38

BY: KJiggins

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MATCHLINE (SEE SHEET EP-06)

MATCHLINE (SEE SHEET EP-04)

N 634500
E 1385600
N 634150
E 1385600

N 634150
E 1386750



OWNER / DEVELOPER INFORMATION
JOHNSON MIRMIRAN AND THOMPSON
40 WIGHT AVE.
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BALTIMORE COUNTY ELECTION DISTRICT: 3 COUNCILMANIC DISTRICT 2

EROSION AND SEDIMENT CONTROL PLAN

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F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE N/A

DRAWING NO. **EP-7** OF **7** SHEET NO. 38 OF 38



DESIGN PROFESSIONAL
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BY: K. Higgins

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