

GENERAL NOTES:

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 315-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE, UNLESS ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED.
- THIS PROJECT IS LOCATED IN "NT AND R-ED" ZONES IN ACCORDANCE WITH THE 10/06/2013 COMPREHENSIVE ZONING PLAN AND "CEF-R" PER THE ZONING BOARD - DECISION AND ORDER FOR CASE ZB1104M, APPROVED ON APRIL 6, 2015 AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/02/2003 PER COUNCIL BILL 75-2003.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
- DEVELOPMENT OR CONSTRUCTION OF THIS TRAIL MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, ALTERNATIVE COMPLIANCE, OR BUILDING AND GRADING PERMITS.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON PLATS 23334-23337, RECORDED MAY 2015 BY MORRIS & RITCHIE ASSOCIATES, INC. THE BOUNDARY HAS BEEN VERIFIED BY VOGEL ENGINEERING+TIMMONS GROUP, AUGUST 2018.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON F-18-041 PREPARED BY VOGEL ENGINEERING + TIMMONS GROUP APPROVED ON MARCH 21, 2019.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS BM 35HA AND BM 35HB WERE USED FOR THIS PROJECT.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT. WATER IS PUBLIC. (THERE IS NO PROPOSED WATER SERVICE FOR THIS PROJECT) SEWER IS PUBLIC. (THERE IS NO PROPOSED WATER SERVICE FOR THIS PROJECT)
- THERE ARE NO EXISTING DWELLINGS/STRUCTURES LOCATED ON THIS SITE.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY OR THE COUNTY'S CEMETERY SITE MAP.
- STORM WATER RUNOFF FROM THE PROPOSED TRAIL WILL BE PRIMARILY CONTROLLED BY NON-STRUCTURAL BMPS (N-2 DISCONNECTION OF NON-ROOFTOP RUNOFF). THE REMAINING VOLUME REQUIREMENTS WILL BE MET WITH A STRUCTURAL BMP (I-1 INFILTRATION TRENCH). THE PROPERTY OWNER WILL BE REQUIRED TO PERIODICALLY INSPECT AND MAINTAIN THE PROPOSED BMPS.
- EXISTING UTILITIES ARE BASED ON PLANS OF THE CROSS CREEK SUBDIVISION (A.K.A. SIMPSON OAKS) AS PREPARED BY VOGEL ENGINEERING + TIMMONS GROUP FROM ROAD CONSTRUCTION PLANS (F-18-041) AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
- ANY DAMAGE TO THE COUNTY'S RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING

A&T	1-800-252-1133
BGE (CONSTRUCTION SERVICES)	410-637-8713
BGE (EMERGENCY)	410-685-0123
BUREAU OF UTILITIES	410-585-4900
COLONIAL PIPELINE CO	410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	1-800-743-0033
- WETLANDS AND STREAMS SHOWN FOR THE PROJECT ARE BASED ON THE DELINEATION BY GEO-TECHNOLOGY ASSOCIATES, INC. DATED MAY 31, 2013 AND FEBRUARY 2016 AND APPROVED AUGUST 23, 2016.
- FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY FOREST CONSERVATION MANUAL.
 - THIS PLAN IMPACTS TAX MAP 35 - PARCEL 145 CEDAR CREEK OPEN SPACE LOT 140, PLATS 25254-25269. THE CEDAR CREEK PROJECT FOREST CONSERVATION OBLIGATIONS HAVE BEEN FULLY FULFILLED UNDER F-18-041.
 - FOREST CONSERVATION IS NOT REQUIRED ON TAX MAP 35 - PARCEL 412 AS IT IS A "NT" (NEW TOWN) ZONED PARCEL.
 - THIS PLAN IMPACTS TAX MAP 35 - PARCEL 87 THE LANDS OF ROBINSON NATURE CENTER (HOWARD COUNTY) LIBER 8997 FOLIO 160. THE DEVELOPER IS RESPONSIBLE FOR THE REPLACEMENT OF 0.4 ACRES +/- FROM THE PUBLIC FOREST CONSERVATION EASEMENT PLAT 20408. THE ACTUAL EXTENT OF DISTURBANCE AND AREA OF OBLIGATION SHALL BE DETERMINED WITH AN AS-BUILT WHEN CONSTRUCTION IS COMPLETE.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- FOREST STAND DELINEATION REPORT DATED MAY 29, 2015 AND FEBRUARY 2016 WAS PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC. AND APPROVED AUGUST 23, 2016.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- THE ENVIRONMENTAL CONCEPT PLAN (ECP-15-080) WAS APPROVED PER LETTER DATED AUGUST 23, 2016
- A PRELIMINARY PLAN (P-17-002) WAS APPROVED ON SEPTEMBER 13, 2017.
- A FINAL PLAN (F-18-041) WAS APPROVED ON MARCH 21, 2019.
- THE GEOTECHNICAL AND ESD TEST PIT REPORTS WERE PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC. FEBRUARY 2015 AND JANUARY 2017 RESPECTIVELY.
- SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY HOWARD COUNTY, MARYLAND - CLARKSVILLE NE MAP #17.
- FLOODPLAINS ARE LOCATED ON-SITE. THE FLOODPLAIN SHOWN ON THE SUBJECT PROPERTY (MIDDLE PATUXENT RIVER) IS PER HOWARD COUNTY DIRM. THE ON-SITE FLOODPLAINS ALONG THE VILLAGE OF RIVER HILL AMND W.R. GRACE PROPERTY BOUNDARIES WERE DELINEATED BASED ON A REPORT PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED MAY 2017 AND APPROVED ON OCTOBER 5, 2017.
- STEEP SLOPES OVER 20.000 SF CONTIGUOUS ARE SHOWN HEREON.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. THE LANDSCAPE OBLIGATION FOR THIS PROJECT IS SATISFIED BY THE RETENTION OF EXISTING VEGETATION. SEE SHEET 9.
- THE MAINTENANCE OF PROPOSED STRUCTURES ON THIS PLAN SHALL BE THE OWNER'S RESPONSIBILITY. THE COUNTY SHALL BE PERMITTED TO INSPECT THE FACILITIES ON AT LEAST A TRI-ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER.
- GEOTECHNICAL TESTING FOR THE SUSPENSION BRIDGE TOWERS WAS PERFORMED BY GEO-TECHNOLOGY ASSOCIATES, INC. BLACK FOREST ENGINEERING, LLC ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THEIR WORK.
- APPROVAL OF THIS SDP IS CONTINGENT ON APPROVAL AND RECORDATION OF F-18-041. THE F-18-041 CONSTRUCTION PLANS RECEIVED SIGNATURE APPROVAL IN JUNE 2019. PLATS SHALL BE RECORDED IN ACCORDANCE WITH MILESTONE DATES.
- THIS PROJECT IS SUBJECT TO ALTERNATIVE COMPLIANCE WP-20-008. ON SEPTEMBER 4, 2019, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.156(G)(2). APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: THE DEVELOPER SHALL SUBMIT ANY REQUESTED ADDITIONAL INFORMATION AND A REVISED PLAN THAT ADDRESSES ALL COMMENTS FOUND IN PROJECT DOX TO THE DEPARTMENT OF PLANNING AND ZONING AS INDICATED WITHIN THE DPZ LETTER DATED JUNE 27, 2019, WITHIN 60 DAYS OF THIS LETTER (ON OR BEFORE NOVEMBER 3, 2019).
- THIS PROJECT IS SUBJECT TO ALTERNATIVE COMPLIANCE WP-20-044. ON NOVEMBER 15, 2019, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.156(G)(2). APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: THE DEVELOPER SHALL SUBMIT ANY REQUESTED ADDITIONAL INFORMATION AND REVISED PLAN THAT ADDRESSES ALL COMMENTS FOUND IN PROJECT DOX TO THE DEPARTMENT OF PLANNING AND ZONING AS INDICATED WITHIN THE DPZ LETTER DATED JUNE 27, 2019, WITHIN 60 DAYS OF THIS LETTER (ON OR BEFORE JANUARY 14, 2020).

NOTE:

THE TRAIL WAS INCLUDED IN THE REVIEW AND APPROVAL OF P-17-002 - SIMPSON OAKS PLAN WHICH INCLUDED AN APPROVAL LETTER FROM HSCD DATED MAY 30, 2017.

CONSTRUCTION SEQUENCE

- INSTALL PROPOSED SUPPORT TOWERS, SINGLE-SPAN APPROACH BRIDGE, ROCK CRIB WALL ON EAST LANDING, CABLES AND SUSPENSION BRIDGE. ESTIMATED TIME FRAME: 90 DAYS
- INSTALL PROPOSED TRAIL CONNECTION FROM EXISTING ROBINSON TRAIL TO EAST END OF SUSPENSION BRIDGE. ESTIMATED TIME FRAME: 30 DAYS
- INSTALL PROPOSED TRAIL, BOARDWALK, ROCK CRIB WALLS, AND INFILTRATION TRENCHES ON THE CEDAR CREEK PARCEL (WEST SIDE OF THE SUSPENSION BRIDGE). ESTIMATED TIME FRAME: 120 DAYS

SOILS LEGEND

REFER TO SHEETS 2 AND 3 FOR SOILS LEGEND.

CEDAR CREEK SUSPENSION BRIDGE AND TRAIL CONSTRUCTION PLANS

HOWARD COUNTY

MARYLAND

PROJECT #SO-718

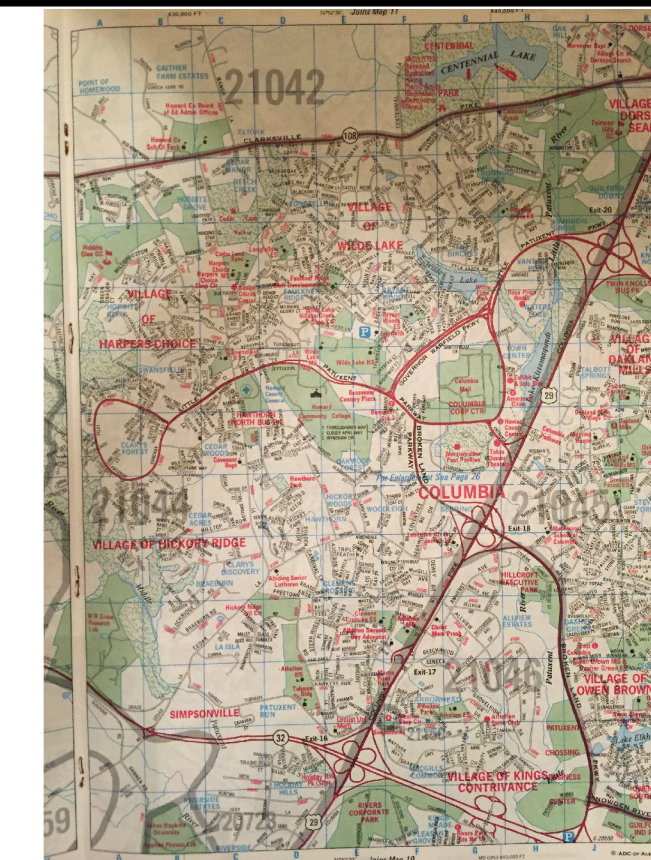
NOVEMBER 7, 2018

FEBRUARY 24, 2019

MAY 25, 2019

DECEMBER 2019

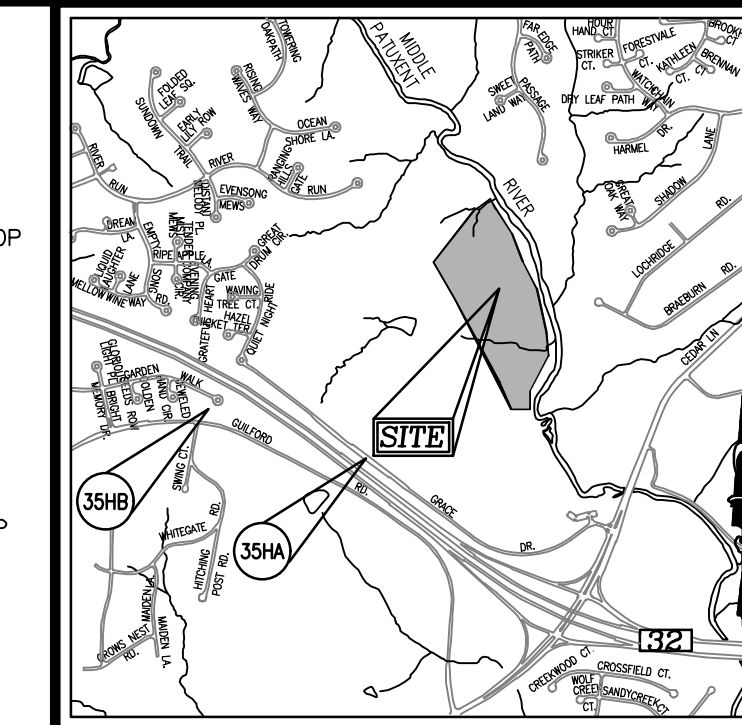
LAST REVISED JUNE 2020



ADC MAP #15
GRID A-10, B-10

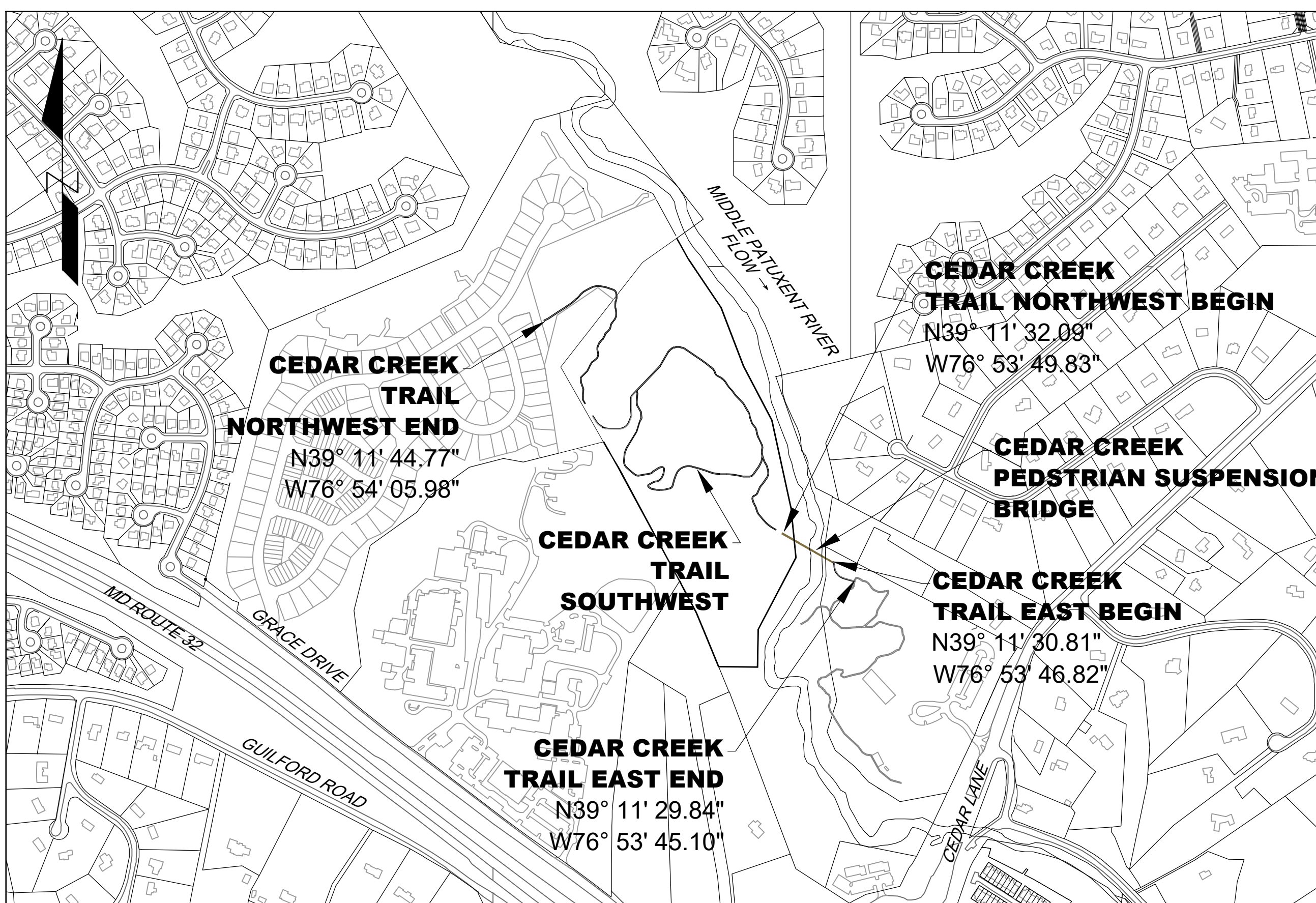
BENCHMARKS

- BM 35HA*
N 553,966.7457 E 1,340,476.9524
NAD 83 (Adj 07)
NAVD 88
ELEV. 404.584
BEING A STAMPED BRASS OR ALUMINUM DISC SET ON TOP OF A 3 FOOT DEEP COLUMN OF CONCRETE APPROXIMATELY 90± NORTH OF GRACE DRIVE AND 160± EAST OF THE EASTERN MOST ENTRY DRIVE FOR THE PROPERTY. (ALSO KNOWN AS "R-109" AND "0068").
- BM 35HB*
N 553,836.4156 E 1,337,888.3861
NAD 83 (Adj 07)
NAVD 88
ELEV. 449.699
BEING A STAMPED BRASS OR ALUMINUM DISC SET ON TOP OF A 3 FOOT DEEP COLUMN OF CONCRETE AT THE INTERSECTION OF GULFORD ROAD AND WHITEGATE ROAD, APPROXIMATELY 5± NORTH OF GULFORD ROAD.



VICINITY MAP

SCALE: 1"=2000'
ADC MAP COORDINATE: 4934 E-9/10,
F-9/10 & 5062 F-1



LOCATION MAP

SCALE: 1"=500'

GENERAL NOTES CONTINUED:

- THIS PROJECT IS SUBJECT TO ALTERNATIVE COMPLIANCE WP-20-094. ON APRIL 21, 2020, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.156(G)(2). APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS: THE DEVELOPER SHALL SUBMIT ADDITIONAL INFORMATION AND A REVISED SITE DEVELOPMENT PLAN TO THE DEPARTMENT OF PLANNING AND ZONING WITHIN 60 DAYS OF ALTERNATIVE COMPLIANCE APPROVAL (ON OR BEFORE JUNE 20, 2020).

SITE ANALYSIS DATA

A. TOTAL GROSS AREA	98.20 AC.
-P/O P.145 F-18-041 OPEN SPACE LOT 140 (P/O PREVIOUS PARCEL C-PLAT 23337)	9.011 AC.
-ROBINSON NATURE CENTER (PARCEL 87)	18.39 AC.
-CONSERVATION PARCEL (PARCEL 412)	31.39 AC.
-NET AREA	64.82 AC.
B. PLAN SUBMISSION	0.39 AC.
C. WETLAND & WETLAND BUFFER AREA:	9.04 AC.
STREA & STREAM BUFFER AREA:	
D. 100 YEAR FLOODPLAIN (PARCEL 145, B-1 & C ONLY):	0.36 AC.
E. FOREST AREA:	43.70 AC.
F. MODERATE SLOPES (15% TO 24.99%) (PARCELS 412 LOT45 & A ONLY):	7.82 AC. ±
CONTIGUOUS STEEP SLOPES (25%+) (PARCELS 412 LOT45 & A ONLY):	11.04 AC. ±
H. ERODIBLE SOILS AREA:	3.17 AC.
I. LIMITS OF DISTURBANCE AREA:	2.39 AC.
J. PROPOSED USE:	NATURE TRAIL
K. TOTAL IMPERVIOUS AREA:	0.53 AC.
L. ZONING:	OPEN SPACE LOT 140 (PARCEL C-PLAT 23337) = CEF-R WR GRACE PARCEL 412 = NT ROBINSON NATURE CENTER PARCEL 87 = R-ED
M. TOTAL OPEN SPACE:	31.39AC
N. NUMBER OF UNITS ALLOWED:	N/A
O. NUMBER OF UNITS ALLOWED:	0
P. DPZ FILE REFERENCES:	PARCEL 412: S-81-04, P-83-018, P-87-19, F-87-105, F-99-122 PLATS 13640-13641, TDP-181-A PART VII (PLATS 3054-A 1755-1762), SDP-90-183 CEDAR CREEK PROJECT (P/O P. 145): WP-09-227, F-10-023, F-10-085, WP-15-094, ZB-1104-M, ECP-15-080, S-15-007, WP-16-038, WP-16-073, P-17-002, WP-17-108, F-18-041 PARCEL 87: COUNCIL RES. 96-2008, WP-09-03, FC-09-002, SDP-09-002, CAPITAL PROJECT N39-60

Stormwater Management Information				
Lot/Parcel Number	ADDRESS CHART	Facility Name & Number	Practice Type (Quantity)	Public
PARCEL 412	8(NO ADDRESS)	ROOFTOP DISCONNECT (N-2)	ALL	Y
PARCEL 87	6692 CEDAR LANE	INFILTRATION TRENCH (I-1)	728 LF INFILTRATION TRENCH	Y
PARCEL C-OS LOT 140	F-18-041	APPROVED UNDER F-18-041	NONE	

*PARCEL IS OPEN SPACE LOT TO BE DEDICATED TO HOWARD COUNTY REC & PARK OR MAINTAINED BY H.O.A.

PERMIT INFORMATION CHART					
SUBDIVISION NAME		SECTION / AREA	LOTS/PARCEL#		
1. VILLAGE OF HICKORY RIDGE		1. S.3 / A.14	1. PARCEL 412 (WR GRACE)		
2. CEDAR CREEK PLAT 25254-25269		2. N/A	2. F-18-041 OPEN SPACE LOT 140,		
3. ROBINSON NATURE CENTER		3. N/A	3. PARCEL 87 (ROBINSON NATURE CENTER)		
PLAT # OR L/F	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
1. PLAT # 13640	16 / 22	1. NT, 2. CEF-R 3. R-ED	35	5	605505
2. PLAT # 25254-25269					
3. PLAT 20408					

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

DRAWING INDEX

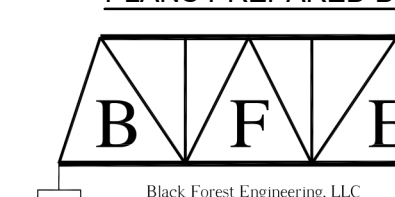
SHEET	OF 28	COVER SHEET
SHEET 2	OF 28	EXIST. FEATURES & NATURAL RESOURCE PLAN(1)
SHEET 3	OF 28	EXIST. FEATURES & NATURAL RESOURCE PLAN(2)
SHEET 4	OF 28	SITE PLAN AND PROFILE
SHEET 5	OF 28	SITE PLAN AND PROFILE
SHEET 6	OF 28	SITE PLAN AND PROFILE
SHEET 7	OF 28	SITE PLAN AND PROFILE
SHEET 8	OF 28	SITE PLAN AND PROFILE
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SHEET 10	OF 28	GRADING AND SOIL EROSION & SEDIMENT CONTROL PLAN
SHEET 11	OF 28	GRADING AND SOIL EROSION & SEDIMENT CONTROL PLAN
SHEET 12	OF 28	NOTES & DETAILS
SHEET 13	OF 28	STORMWATER MANAGEMENT PLAN AND DETAILS
SHEET 14	OF 28	STORMWATER MANAGEMENT PLAN AND DETAILS
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SHEET 21	OF 28	ANCHOR DETAILS 1 - ROCK ANCHOR
SHEET 22	OF 28	ANCHOR DETAILS 2 - MASS ANCHORAGE
SHEET 23	OF 28	ANCHORAGE DETAILS
SHEET 24	OF 28	CABLE DETAILS
SHEET 25	OF 28	FRAMING DETAILS
SHEET 26	OF 28	MISCELLANEOUS SUPERSTRUCTURE DETAILS
SHEET 27	OF 28	SUGGESTED ERECTION DETAILS
SHEET 28	OF 28	

SHEETS 17 THROUGH 28 ARE A SUBSET OF PLANS TITLED "CEDAR CREEK-CONSTRUCTION OF CEDAR CREEK PEDESTRIAN SUSPENSION BRIDGE OVER THE MIDDLE PATUXENT RIVER" AS PREPARED BY CHASE ENGINEERING, LLC, DATED OCTOBER 2018.

CHASE ENGINEERING, LLC

CHASE ENGINEERING LLC
3826 MAGNOLIA DRIVE
EASTON, PA 18045
908-295-7732

PLANS PREPARED BY



BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY PA, 18037
570.239.4499

PENNTAILS

PENN TRAILS
9 DOGWOOD DRIVE
NEWVILLE, PA 17241
717.486.4455



TAHAWUS TRAILS, LLC
P.O. BOX 31
ACCORD, NY 12404
845.591.1537

OWNER / DEVELOPER

SIMPSON OAKS CRP3, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
COVER SHEET
**CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL**

TAX MAP 35 GRID 21 ----- ZONED: NT, R-ED & CEF-R ----- P. 412, P/O PARCEL 145 & P. 87
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
SIMPSON OAKS CRP3, LLC

TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: BFE, CE, PT, TT & VE-TG
DRAWN BY: VE-TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

PROFESSIONAL CERTIFICATE
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. 16193 EXPIRATION DATE: 09-27-2020



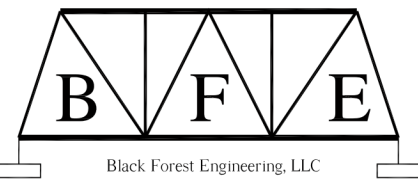
MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERC. INCLUSIONS	K FACTOR	PERC. FROM	TYPE SLOPE
BaA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	NO	0.37	NO	YES
Co	COORBUS & HARBRO SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY*	0.37	NO	YES
GbB	GLENLEIGH LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO
GbD	GLENLEIGH-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.43	YES	YES
GmC	GLENVILLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES
GmP	GLENVILLE-URBAN LAND-WOODHURST COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES
MgB	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO
MgC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO
MoD	MANOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO	YES
MfF	MANOR-BRINKLOW COMPLEX, 25-60% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	YES

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY, MD
 NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL EROSION FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.
 1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 29, 2014. AVAILABLE ON-LINE AT: <http://websoilsurvey.nrcs.usda.gov/pf/home.pl>
 2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LIST, AT: <http://soils.usda.gov/soiluse/hydric/>, CONSULTED ON DECEMBER 29, 2014.

MATCH LINE SHEET 3

PLANS PREPARED BY



BLACK FOREST ENGINEERING
 2455 BLACK FOREST DRIVE
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 570.239.4499

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 845.591.1537

OWNER / DEVELOPER
 SIMPSON OWNERS GROUP, LLC
 4750 OWINGS MILLS BOULEVARD
 OWINGS MILLS, MARYLAND 21117
 410-355-9900

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
 EXISTING FEATURES &
 NATURAL RESOURCES
 CEDAR CREEK
 SUSPENSION BRIDGE AND TRAIL**

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410-461.7666 F: 410-461.8961 www.timmons.com



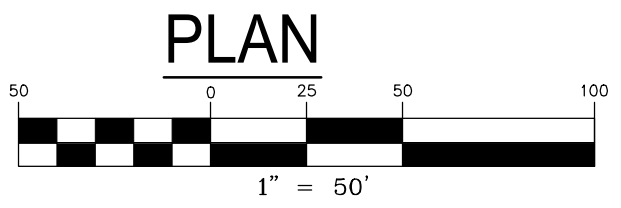
DESIGN BY: BFE, CE, PT, TT & VE+TC
 DRAWN BY: VE+TC
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 DIRECTOR DATE

EXISTING FEATURES LEGEND

	STREAM / RIVER		GRID MARK
	100 YEAR FEMA FLOOD PLAIN		GUIDE RAIL
	25' WETLAND BUFFER		STORM SEWER
	100' STREAM BUFFER		INLET
	WETLANDS		MANHOLE
	CENTERLINE ROAD		CONTOURS
	EASEMENT		15-24.99% SLOPES
	FENCE		>25% SLOPES
	EX. FOREST CONSERVATION EASEMENT		EX. SPECIMEN TREES
			ORDINARY HIGH WATER MARK (FIELD DELINEATED)





MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17									
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYPO	R FACTOR	PERM	W PERCENT	ERODIBLE	ERODIBLE
B0a	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	YES	0.37	NO	NO	YES	NO
Cs	COORUS & HARBRO SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY*	0.37	NO	NO	YES	NO
GsB	GENEGLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO	NO	NO
GsB	GENEGLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO	NO
GsB	GENEGLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.43	YES	NO	YES	NO
GsC	GENEGLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	NO	YES	NO
GsB	GENEGLE-URBAN LAND-UDORHENSIS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	NO	YES	NO
MbB	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MbC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MbD	MANOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO	NO	YES	NO
MbF	MANOR-BRINKLOW COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	NO	YES	NO

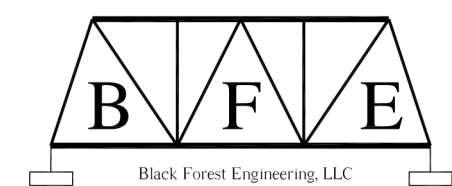
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 29, 2014. AVAILABLE ON-LINE AT <HTTP://WEBSOILSURVEY.NRCS.USDA.GOV/APP/HOME.PAGE.HTM>
2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LIST, AT <HTTP://DROUSILS.USDA.GOV/WEB/PAGE/03A>, CONSULTED ON DECEMBER 29, 2014.

MATCH LINE SHEET 2

PLANS PREPARED BY



BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY PA, 18037
570.239.4499

CHASE ENGINEERING, LLC

CHASE ENGINEERING LLC
3626 MAGNOLIA DRIVE
EASTON, PA 18045
908-295-7732

PENNTAILS

PENN TRAILS
9 DOGWOOD DRIVE
NEWVILLE, PA 17241
717.486.4455

TAHAWUS TRAILS LLC

TAHAWUS TRAILS, LLC
P.O. BOX 31
ACCORD, NY 12404
845.591.1537

OWNER / DEVELOPER
SIMPSON OAKS CREEK, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
EXISTING FEATURES &
NATURAL RESOURCES
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CE-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



DESIGN BY: BFE, CE, PT, TT & VE+TG
DRAWN BY: VE+TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2020

3 SHEET OF 28

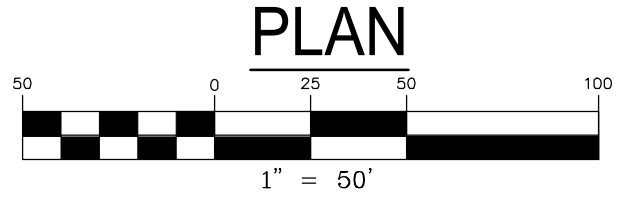
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

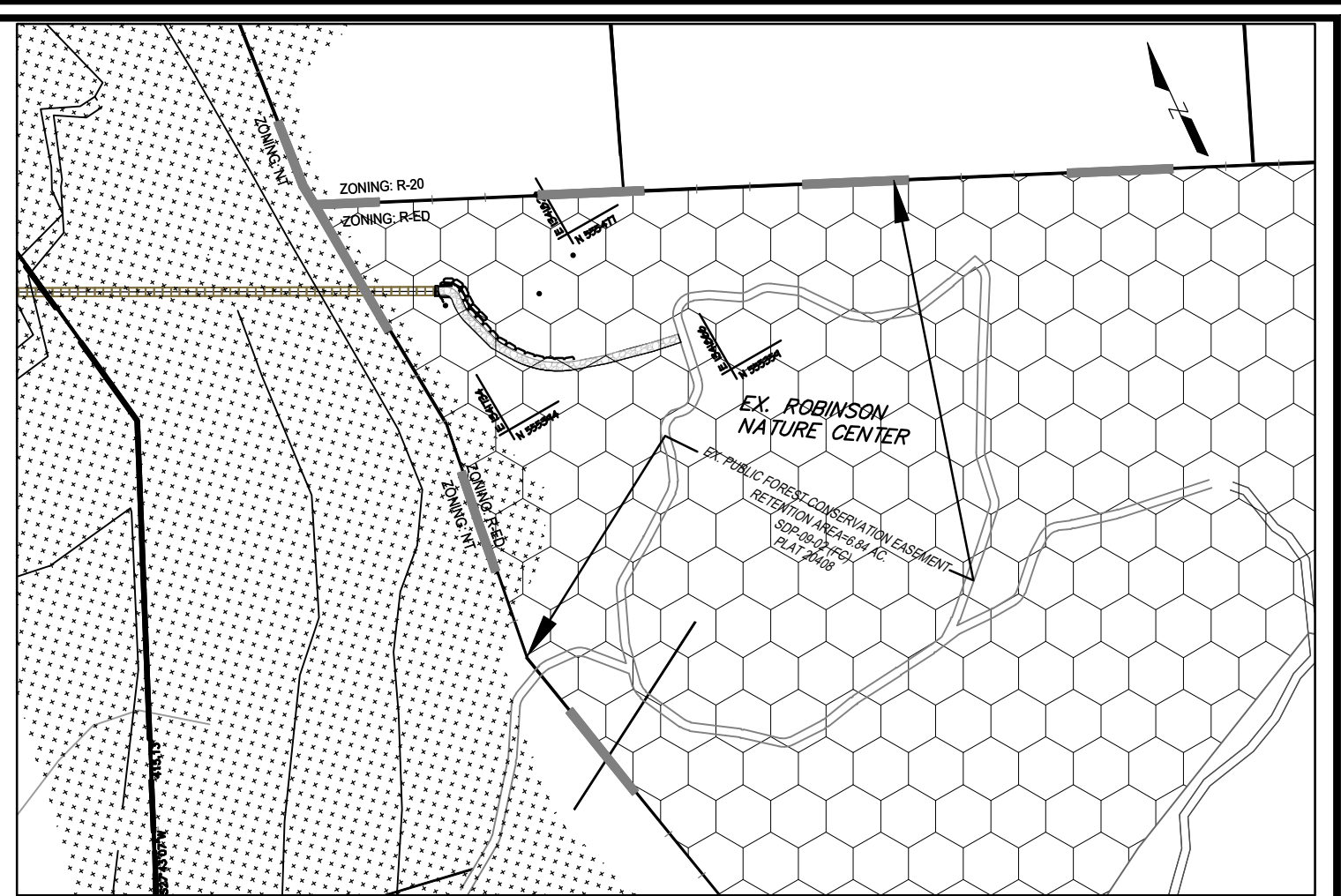
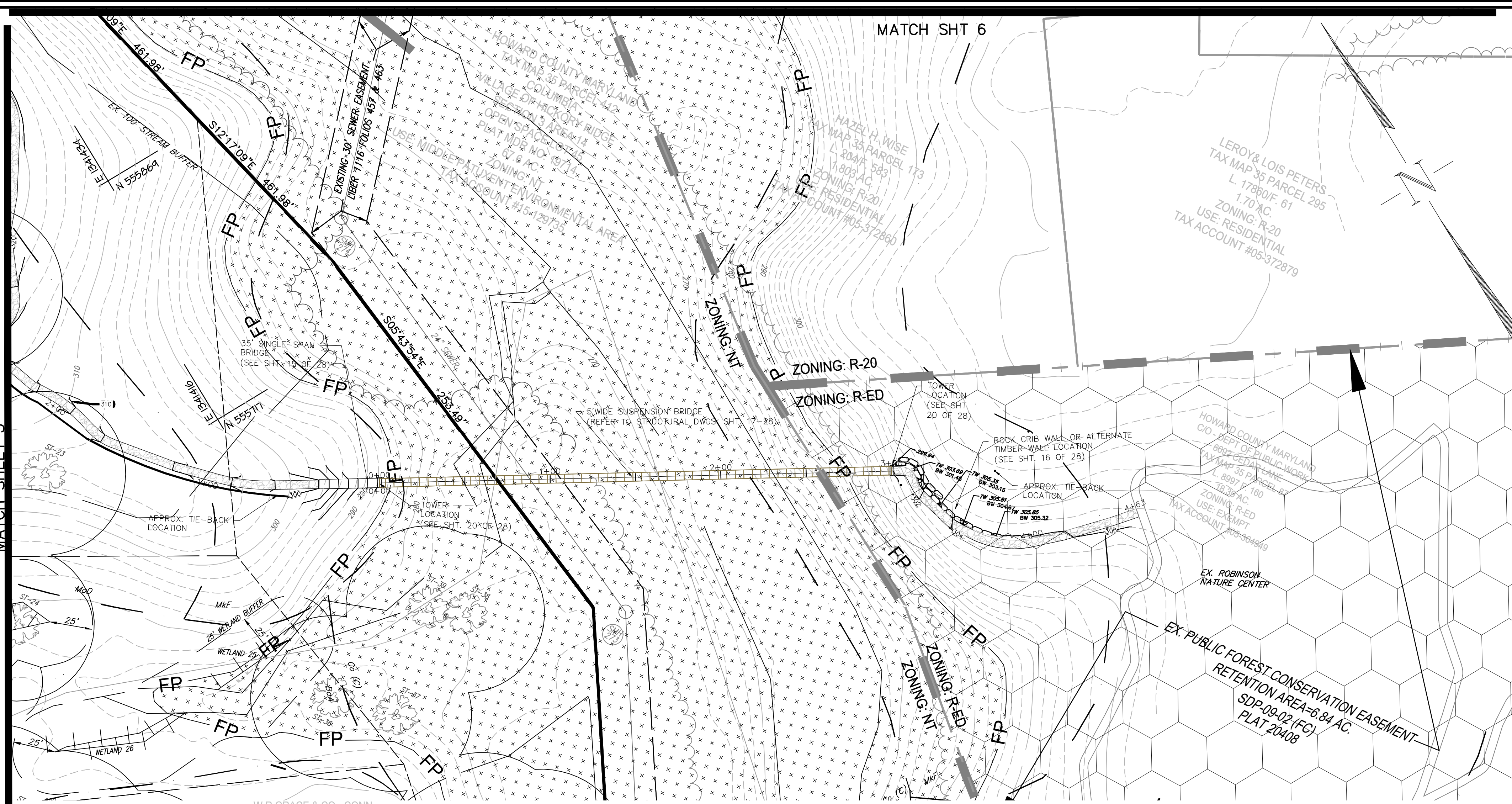
CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

EXISTING FEATURES LEGEND	
	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAIN
	25' WETLAND BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT
	FENCE
	EX. FOREST CONSERVATION EASEMENT
	GRID MARK
	GUIDE RAIL
	STORM SEWER
	CONTOURS
	15-24.99% SLOPES
	>25% SLOPES
	EX. SPECIMEN TREES
	ORDINARY HIGH WATER MARK (FIELD DELINEATED)



PLAN



ROBINSON CENTER TRAIL CONNECTION
SCALE: 1"=100'
(IN FEET)
1 inch = 100 ft.

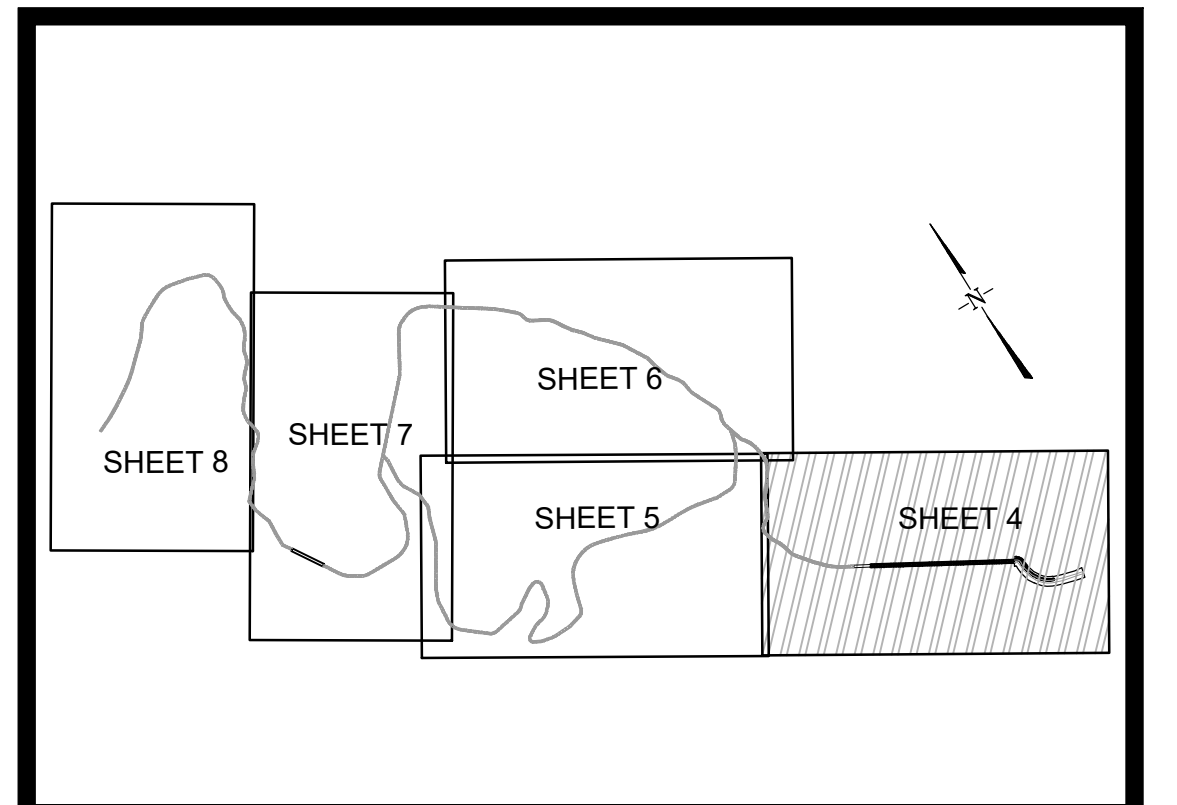
MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERC. INHIBITING	* FACTOR	PERM. / EROSION POTENTIAL
BaA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	YES	0.37	NO YES
Cc	COGONUS & HATHOR SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY*	0.37	NO YES
GbB	GLENVILLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES NO
GbC	GLENVILLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO NO
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.43	YES YES
GmC	GLENVILLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES YES
GmD	GLENVILLE-URBAN LAND-SPORTS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO YES
MbB	MANDOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES NO
MbC	MANDOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES NO
MdD	MANDOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO YES
MfF	MANDOR-BRINKLOW COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO YES

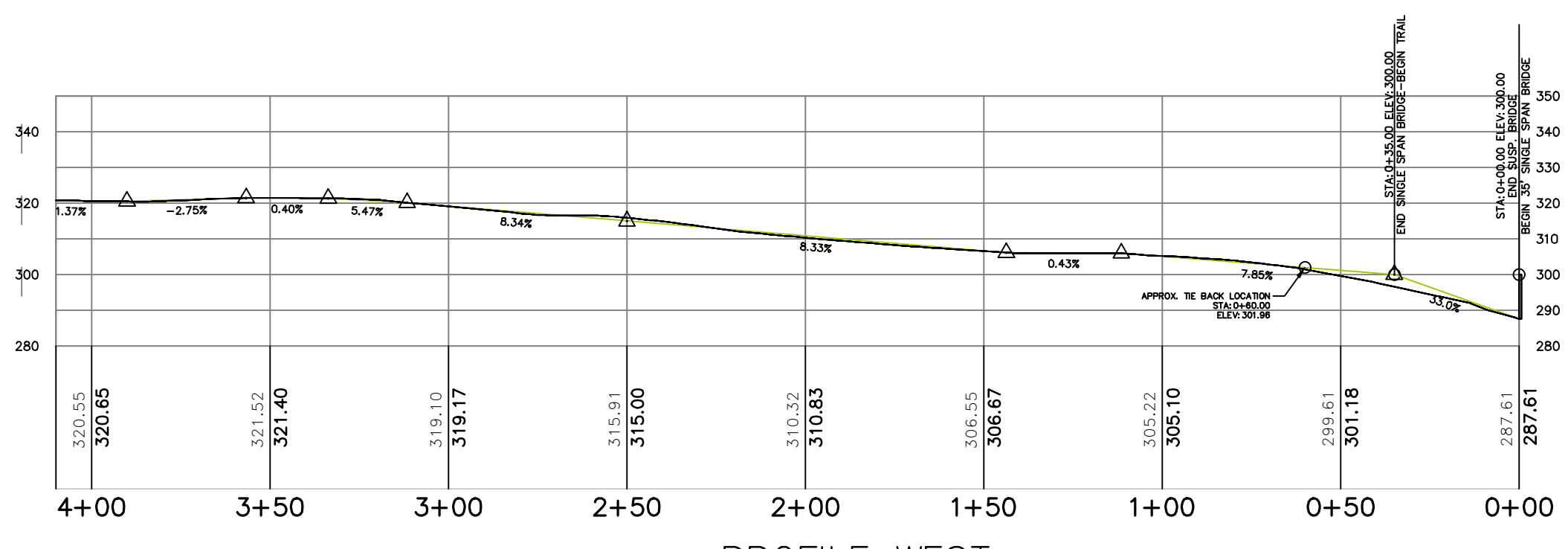
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT
1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 26, 2014. AVAILABLE ON-LINE AT: <http://websoilsurvey.nrcs.usda.gov/app/home.page.html>
2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LEGEND AT: <http://soils.usda.gov/soils/hydric/>, CONSULTED ON DECEMBER 26, 2014.

W R GRACE & CO - CONN
TAX MAP 35 PARCEL 412
COLUMBIA
VILLAGE OF HICKORY RIDGE
SECTION 5 AREA 14
PARCEL A
PLAT MDR NO. 13640
31.4 AC
ZONING: NT
USE: VACANT

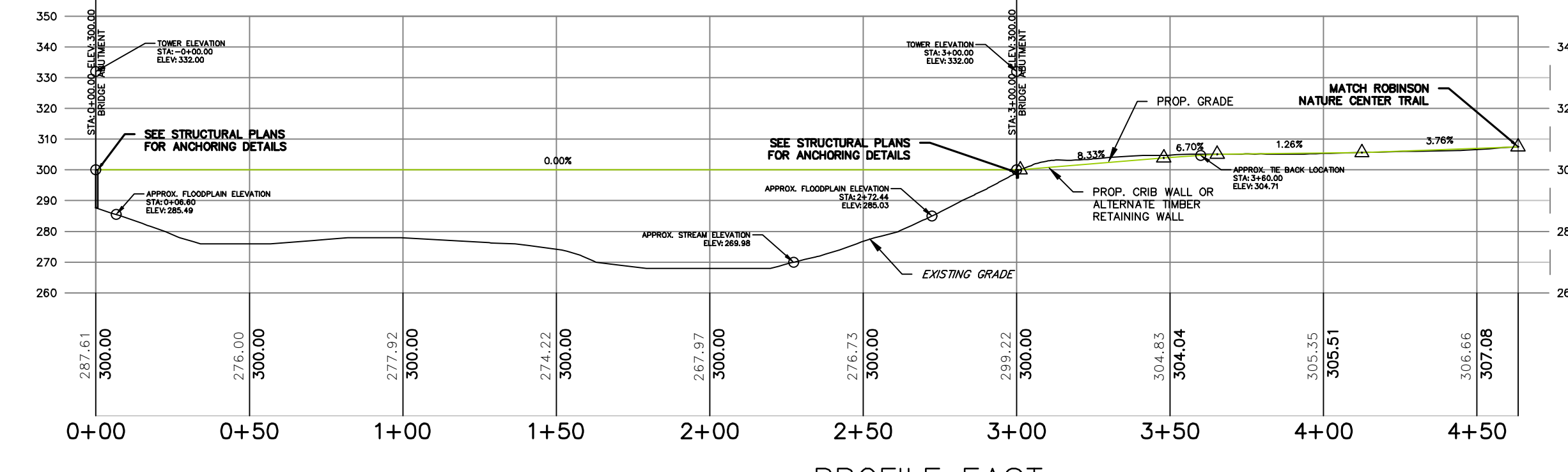
PLAN GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.



KEY MAP
NOT TO SCALE
OWNER / DEVELOPER
SIMPSON OAKS GRP, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900



PROFILE WEST
SCALE: 1"=40' VERT.
1"=40' HORZ.



PROFILE EAST
SCALE: 1"=40' VERT.
1"=40' HORZ.

APPROVED : FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

EXISTING FEATURES LEGEND

	STREAM / RIVER		GRID MARK
	100 YEAR FEMA FLOOD PLAIN		GUIDE RAIL
	25' WETLAND BUFFER		STORM SEWER
	100' STREAM BUFFER		CONTOURS
	WETLANDS		EX. SPECIMEN TREES
	CENTERLINE ROAD		ORDINARY HIGH WATER MARK (FIELD DELINEATED)
	EASEMENT		
	FENCE		
	EX. FOREST CONSERVATION EASEMENT		

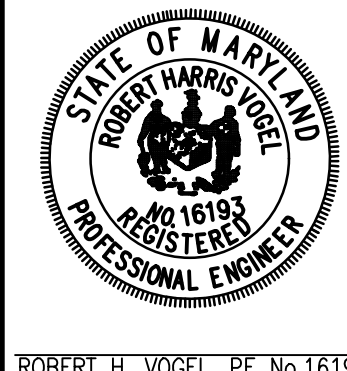
PROPOSED FEATURES LEGEND

	BOARDWALK w/ HANDRAIL
	BRIDGE w/ HANDRAIL
	BOARDWALK w/ TOERAIL
	CRUSHED STONE PATH
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	CONTOURS
	PROP. FENCE

NO.	REVISION	DATE

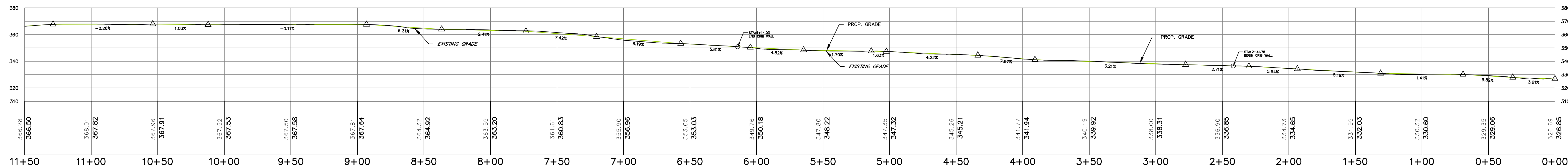
SITE DEVELOPMENT PLAN
SITE PLAN AND PROFILE
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL
TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461.7666 F: 410-461.8961 www.timmons.com

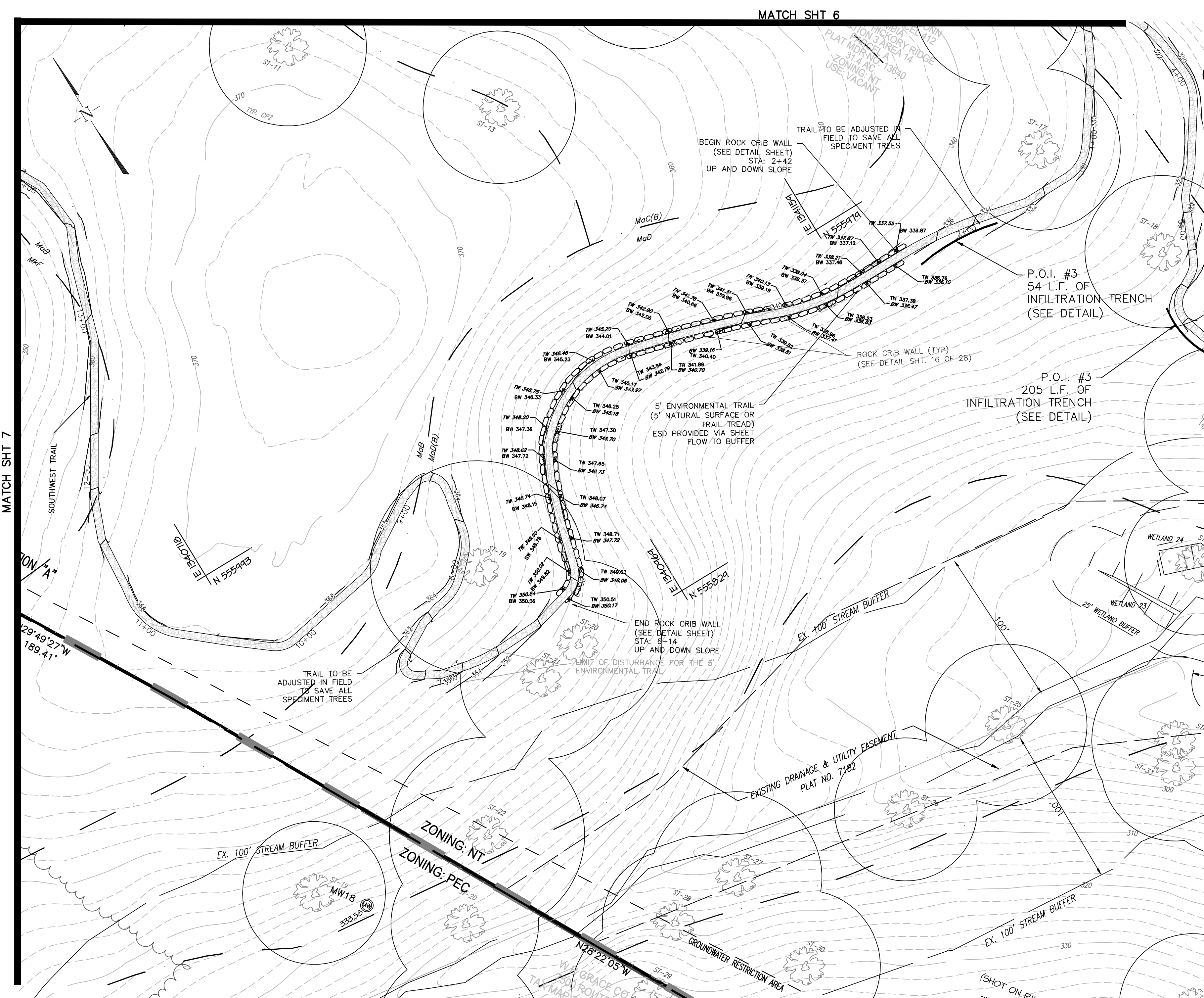
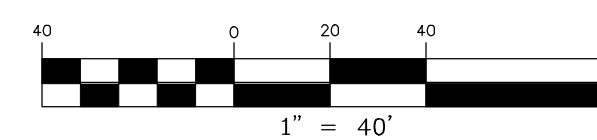


DESIGN BY: BFE, CE, PT, TT & VE+TG
DRAWN BY: VE+TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2020
4 SHEET OF 28



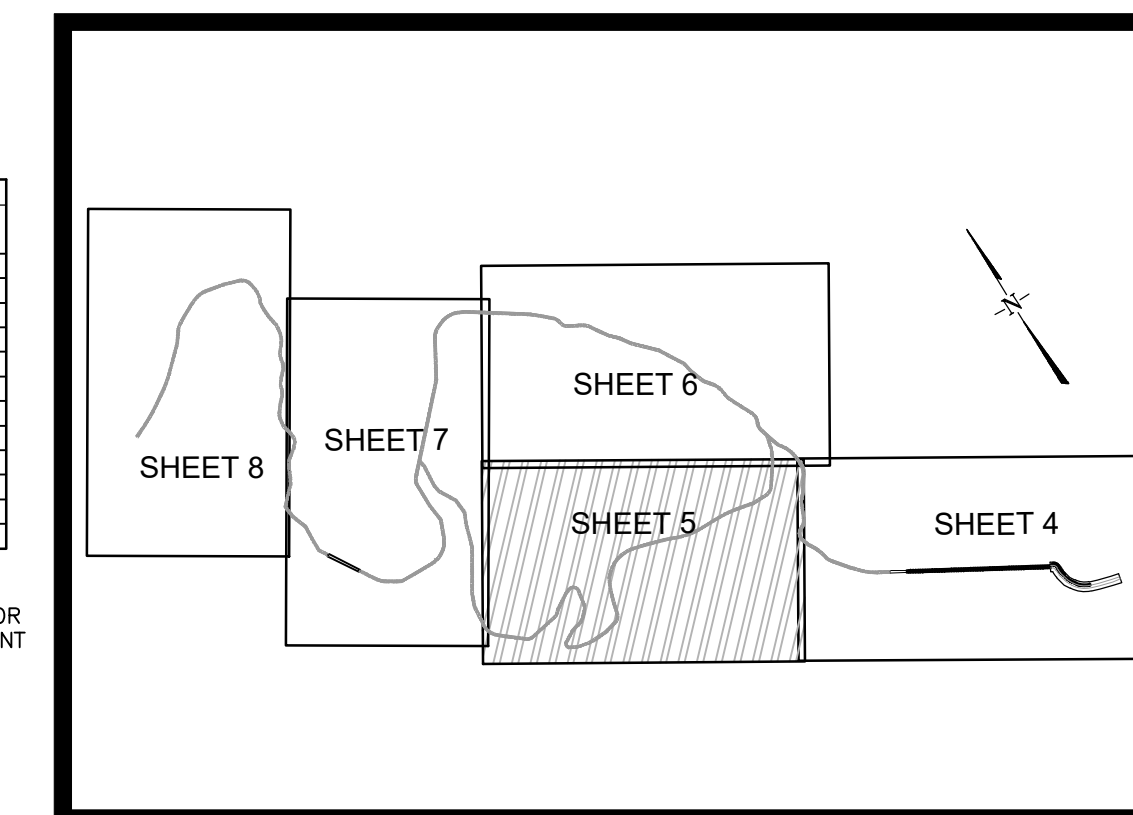
PROFILE
SCALE: 1"=10' VERT.
1"=40' HORZ.



MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17						
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENTS	K FACTOR	ERODIBLE
BaA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	NO	0.37	NO
Cc	COCORUS & HARBORO SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY*	0.37	YES
GhB	GLENNIE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES
GhB	GLENNIE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO
GhB	GLENNIE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.43	YES
GhC	GLENNIE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES
GhB	GLENNIE-URBAN LAND-WOODPHEAS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO
MdB	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES
MdC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	NO
MdD	MANOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO
MdF	MANOR-BRONKOR COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

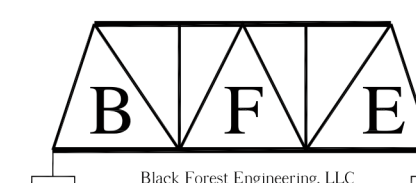
1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 29, 2014. AVAILABLE ON-LINE AT: <http://websoilsurvey.nrcs.usda.gov/app/home.page.html>
2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LIST. AT: <http://soils.usda.gov/ah/hydric/>, CONSULTED ON DECEMBER 29, 2014.



KEY MAP
NOT TO SCALE

OWNER / DEVELOPER
SIMPSON OAKS CRIP, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

PLANS PREPARED BY



BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY PA, 18037
570.239.4499

CHASE ENGINEERING, LLC

CHASE ENGINEERING LLC
3626 MAGNOLIA DRIVE
EASTON, PA 18045
908-295-7732



PENN TRAILS
9 DOGWOOD DRIVE
NEWVILLE, PA 17241
717.486.4455



TAHAWUS TRAILS, LLC
P.O. BOX 31
ACCORD, NY 12404
845.591.1537

NO.	REVISION	DATE

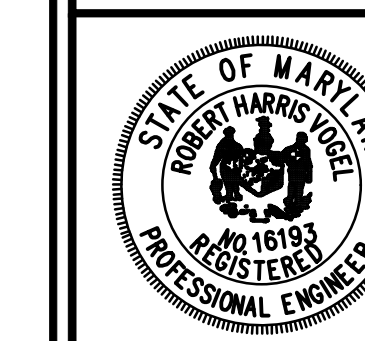
SITE DEVELOPMENT PLAN
SITE PLAN AND PROFILE
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CE-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE
DESIGN BY: BFE, CE, PT, TT & VE+TG
DRAWN BY: VE+TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

5 SHEET OF 28

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

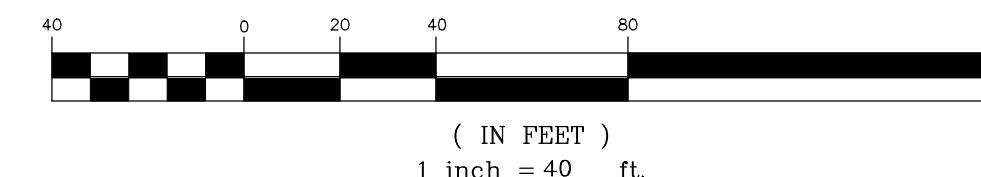
DIRECTOR

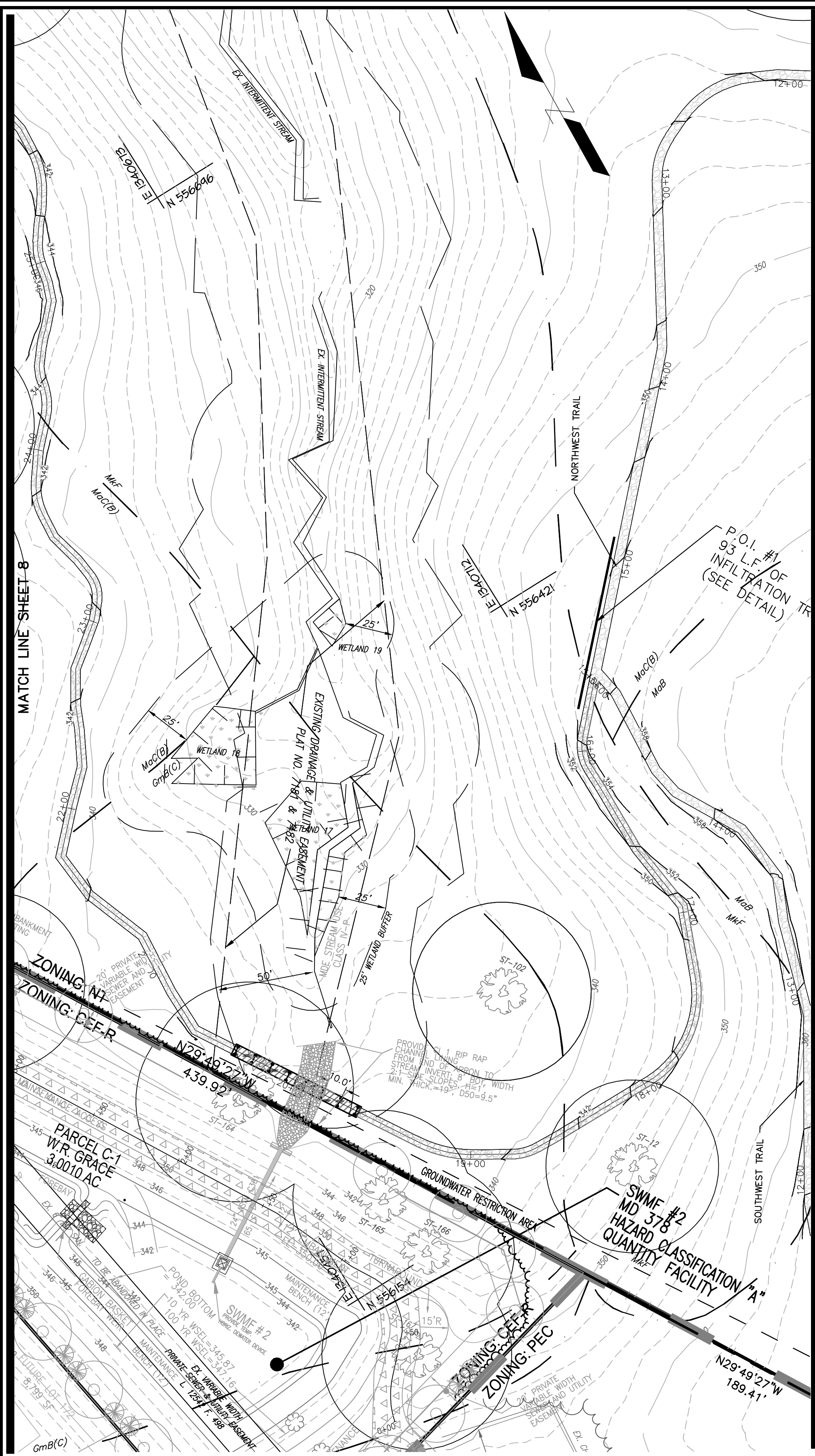
EXISTING FEATURES LEGEND	
	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAIN
	25' WETLAND BUFFER
	100' STREAM BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT
	FENCE
	GRID MARK
	GUIDE RAIL
	STORM SEWER
	CONTOURS
	EX. SPECIMEN TREES
	ORDINARY HIGH WATER MARK (FIELD DELINEATED)

PROPOSED FEATURES LEGEND	
	BOARDWALK w/ HANDRAIL
	BRIDGE w/ HANDRAIL
	BOARDWALK w/ TCRAL
	CRUSHED STONE PATH
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	CONTOURS
	PROP. FENCE

PLAN

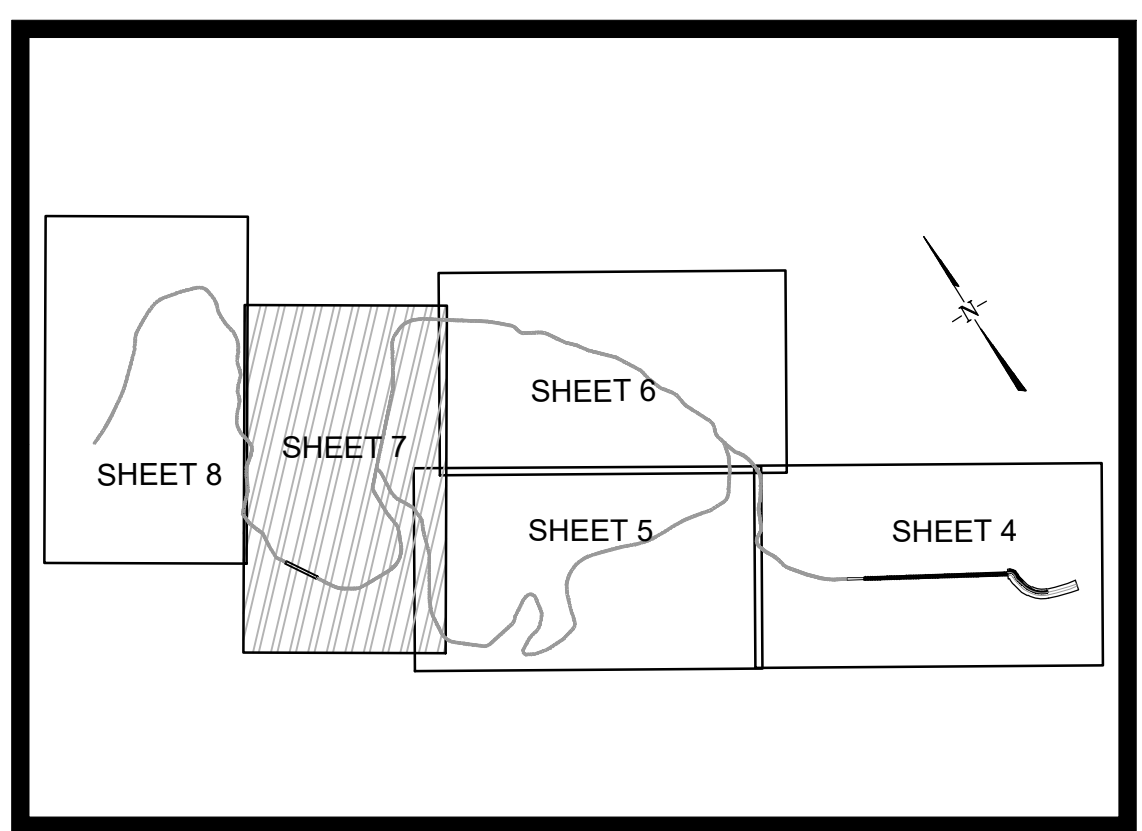
GRAPHIC SCALE



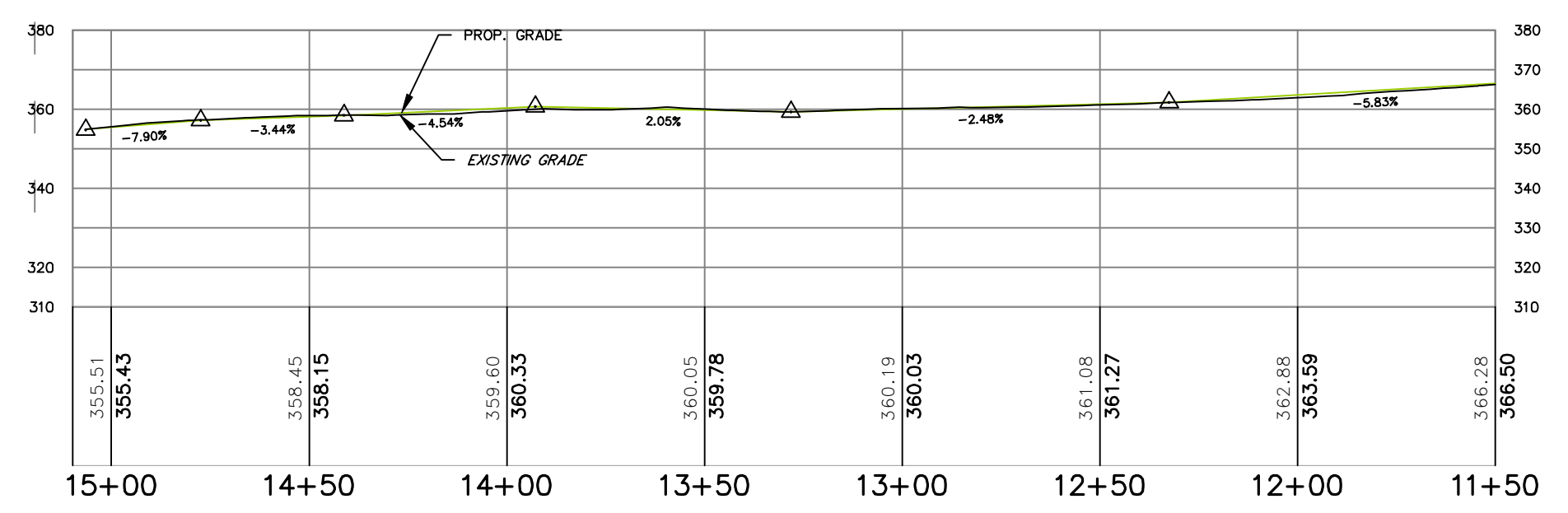


MATCH LINE SHEET 6

MATCH LINE SHEET 5



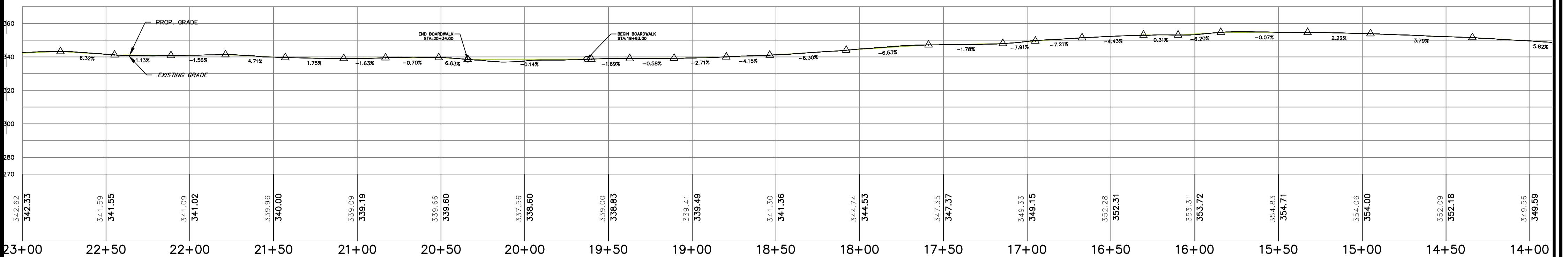
KEY MAP
NOT TO SCALE



PROFILE SOUTHWEST TRAIL
SCALE: 1"=10' VERT.
1"=40' HORZ.

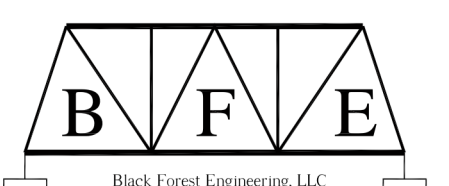
MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17									
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PROSC	K FACTOR	PERM	STP	STP	STP
		C/D	YES/NO	NO/YES	NO/YES	FARM/NO	NO/YES	NO/YES	NO/YES
BaA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	NO	NO	0.37	NO	NO	NO	NO
Co	COORUS & HARBOR SILT LOAM, 0-3% SLOPES	C	PARTIALLY*	PARTIALLY*	0.37	NO	NO	NO	NO
GmB	GLENLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO	NO	NO
GmC	GLENLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO	NO
GmB	GLENLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY*	PARTIALLY*	0.43	YES	YES	YES	YES
GmC	GLENLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES	YES	YES
GmB	GLENLE-URBAN LAND-WOODSHEDS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES	YES	YES
MgB	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MgC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MdD	MANOR LOAM, 15-20% SLOPES	B	NO	NO	0.28	NO	YES	YES	YES
MkF	MANOR-BRONKLOW COMPLEX, 20-60% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	NO	YES	YES

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT



PROFILE NORTHWEST TRAIL
SCALE: 1"=10' VERT.
1"=40' HORZ.

PLANS PREPARED BY



BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY, PA, 18037
570.239.4499

CHASE ENGINEERING, LLC

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OWNER / DEVELOPER
SIMPSON OAKS CREEK, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

EXISTING FEATURES LEGEND		PROPOSED FEATURES LEGEND	
	STREAM / RIVER		BOARDWALK w/ HANDRAIL
	100 YEAR FEMA FLOOD PLAIN		BRIDGE w/ HANDRAIL
	25' WETLAND BUFFER		BOARDWALK w/ TOERAIL
	100' STREAM BUFFER		CRUSHED STONE PATH
	WETLANDS		SUSPENSION BRIDGE
	CENTERLINE ROAD		ROCK CRIBBING WALL
	EASEMENT		CONTOURS
	FENCE		PROP. FENCE
	GRID MARK		STORM SEWER INLET
	GUIDE RAIL		MANHOLE
	STORM SEWER		CONTOURS
	CONTOURS		EX. SPECIMEN TREES
	EX. SPECIMEN TREES		ORDINARY HIGH WATER MARK (FIELD DELINEATED)

SITE DEVELOPMENT PLAN
SITE PLAN AND PROFILE
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461.7666 F: 410-461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE

DESIGN BY: BFE, CE, PT, TT & VE-TG
DRAWN BY: VE-TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

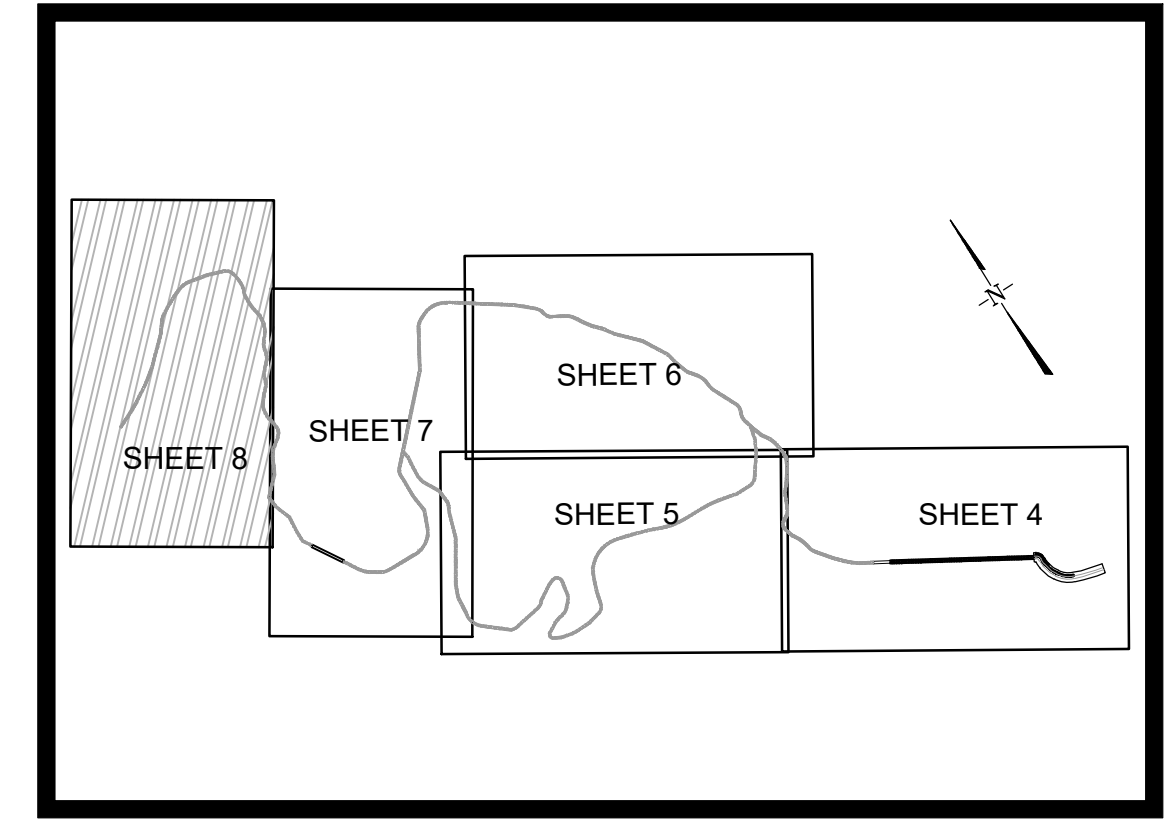
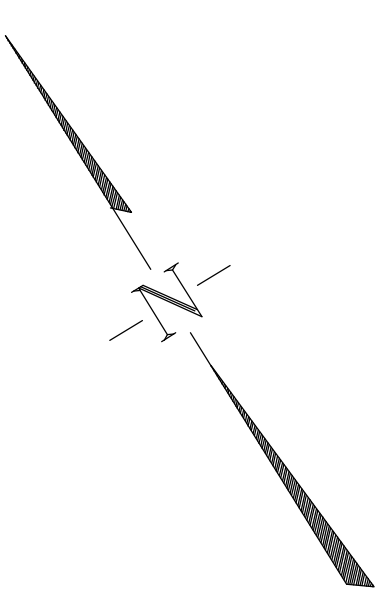
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16143, EXPIRATION DATE: 09-27-2020

ROBERT H. VOGEL, PE No.16193

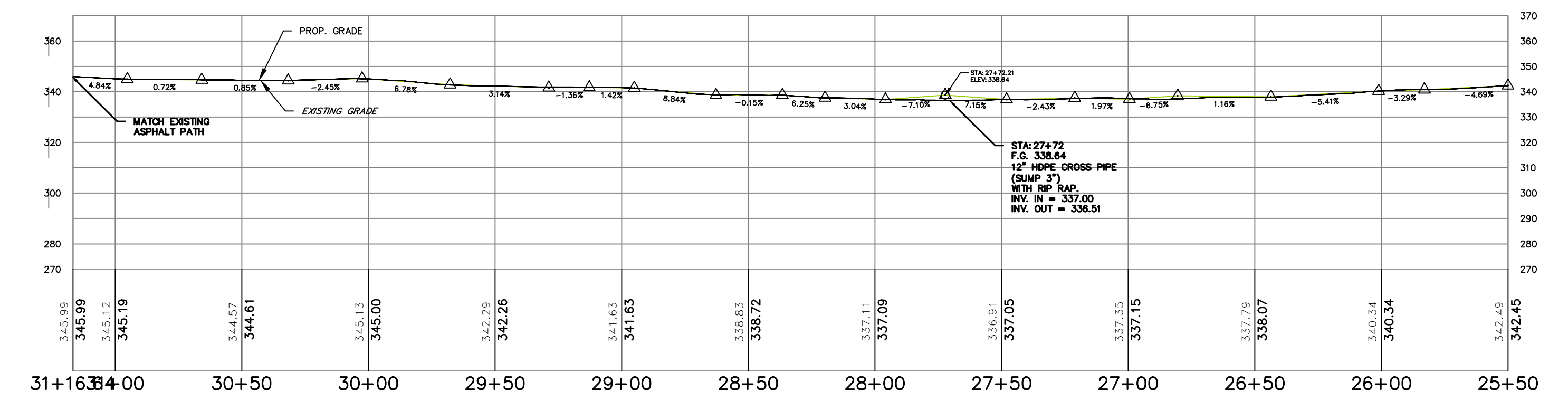
7 SHEET OF 28



MATCH LINE SHEET 7



KEY MAP
NOT TO SCALE



PROFILE
SCALE: 1"=10' VERT.
1"=40' HORZ.

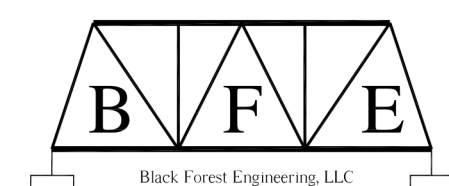
MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	PERC. INCLUSIONS	K FACTOR	PERC. FARMLAND POTENTIAL	PERC. FOREST POTENTIAL
SaA BARE SILT LOAM, 0 TO 3 PERCENT SLOPES	D/D	YES	YES	0.37	NO	YES
Co COGOLUS & HATBORG SILT LOAM, 0-3% SLOPES	C	PARTIALLY*	PARTIALLY*	0.37	NO	YES
GaB GLENELL LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO
GcB GLENELL-HUMAN LAND COMPLEX, 0-3% SLOPES	B	NO	NO	0.28	NO	NO
GmB GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY*	PARTIALLY*	0.43	YES	YES
GmC GLENVILLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES
GwB GLENVILLE-HUMAN LAND-DEGRADATION COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES
MaB MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO
MaC MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO
MaD MANOR LOAM, 15-20% SLOPES	B	NO	NO	0.28	NO	YES
MaF MANOR-BRINLOW COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	YES

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
 NOTE:
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

OWNER / DEVELOPER
 SIMPSON OWNS CRP3, LLC
 4750 OWINGS MILLS BOULEVARD
 OWINGS MILLS, MARYLAND 21117
 410-366-9900

PLANS PREPARED BY



BLACK FOREST ENGINEERING
 2455 BLACK FOREST DRIVE
 COPLAY PA, 18037
 570-239-4499

CHASE ENGINEERING, LLC

CHASE ENGINEERING LLC
 3626 MAGNOLIA DRIVE
 EASTON, PA 18045
 908-295-7732



PENNI TRAILS
 9 DOGWOOD DRIVE
 NEWVILLE, PA 17241
 717-486-4455



TAHAWUS TRAILS, LLC
 P.O. BOX 31
 ACCORD, NY 12404
 845.591.1537

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

EXISTING FEATURES LEGEND		PROPOSED FEATURES LEGEND	
	STREAM / RIVER		BOARDWALK w/ HANDRAIL
	100 YEAR FEMA FLOOD PLAIN		BRIDGE w/ HANDRAIL
	25' WETLAND BUFFER		BOARDWALK w/ TOE RAIL
	100' STREAM BUFFER		CRUSHED STONE PATH
	WETLANDS		SUSPENSION BRIDGE
	CENTERLINE ROAD		ROCK CRIBBING WALL
	EASEMENT		CONTOURS
	FENCE		PROP. FENCE
	EX. SPECIMEN TREES		ORDINARY HIGH WATER MARK (FIELD DELINEATED)
	GRID MARK		STORM SEWER
	GUIDE RAIL		CONTOURS
	STORM SEWER		STORM SEWER
	CONTOURS		CONTOURS

SITE DEVELOPMENT PLAN
 SITE PLAN AND PROFILE
CEDAR CREEK
 SUSPENSION BRIDGE AND TRAIL

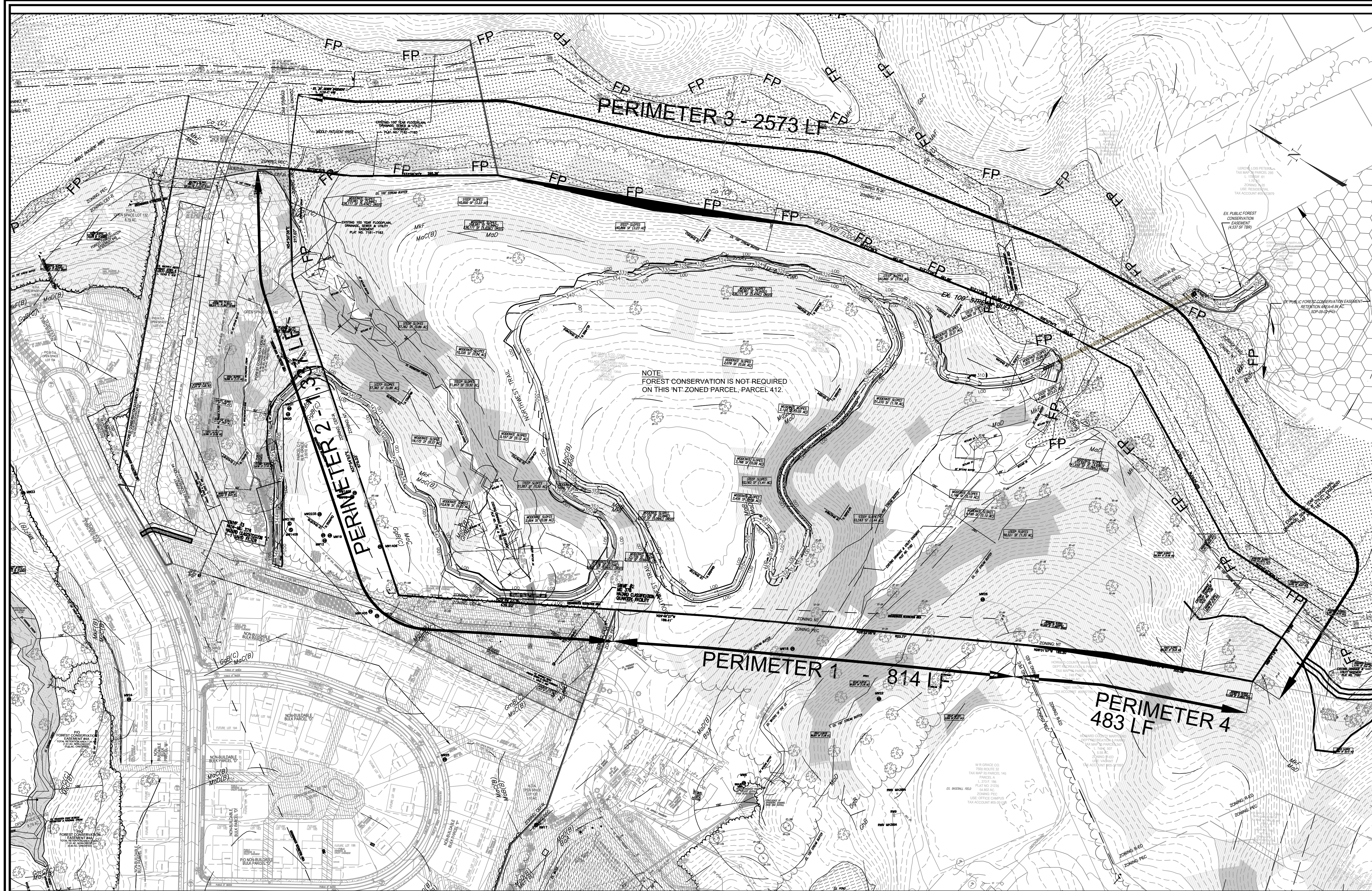
TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT

VOGEL ENGINEERING
 TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410-461-7666 F: 410-461-8961 www.timmons.com

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2023

DESIGN BY: BFE, CE, PT, TT & VE+TG
 DRAWN BY: VE+TG
 CHECKED BY: RHV
 DATE: JUNE 2020
 SCALE: AS SHOWN
 W.O. NO.: 15-55

8 SHEET OF 28



CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES				TOTAL
	1	2	3	4	
PERIMETERFRONTAGE DESIGNATION	A	C	A	A	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	814	1,337	2,573	483	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES	YES	YES	YES	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	160	140	160	160	0
NUMBER OF PLANTS PROVIDED	0	0	0	0	0
NUMBER OF PLANTS PROVIDED (EX. SPECIMEN TREES TO REMAIN DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	0	0	0	0	0

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. THE LANDSCAPE OBLIGATION FOR THIS PROJECT IS SATISFIED BY THE RETENTION OF EXISTING VEGETATION.

- LANDSCAPING NOTES**
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIBER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
 - THE REMOVAL OF TREES 30" OR GREATER DBH IS PROHIBITED WITHOUT COUNTY APPROVAL.

SPECIMEN TREE NOTE:
THE AREA OF THE PROPOSED TRAIL WILL BE ADJUSTED FOR THE PRESERVATION OF EXISTING SPECIMEN TREES. EXISTING VEGETATION OUTSIDE OF TRAIL SURFACE AREA IS TO REMAIN. NO ADDITIONAL PLANTINGS ARE REQUIRED FOR THE 30 ACRE PARCEL (T.M. 35 PARCEL 412, PLAT MDR NO. 13640).

- FOREST CONSERVATION NOTES:**
- CEDAR CREEK - OPEN SPACE LOT 140 - F-18-041 PROVIDED THE REQUIRED FOREST FOREST CONSERVATION OBLIGATION FOR THE RESIDENTIAL PROJECT. SEE F-18-041 PLAN, (A.K.A. SIMPSON OAKS), SHEETS 44-52.
 - FOREST CONSERVATION IS NOT REQUIRED ON THIS 'NT' ZONED PARCEL, PARCEL 412.
 - THIS PLAN IMPACTS TAX MAP 35 - PARCEL 204087, THE LANDS OF ROBINSON NATURE CENTER (HOWARD COUNTY) LIBER 8997 FOLIO 160.

AS REQUIRED BY THIS PLAN, A DISTURBANCE TO THE EXISTING PUBLIC FOREST CONSERVATION EASEMENT (PLAT 20408) REQUIRES MITIGATION. THE DEVELOPER IS RESPONSIBLE FOR THE REPLACEMENT OF 0.1 ACRES+ FROM THE EXISTING PUBLIC FOREST CONSERVATION EASEMENT.

THE ACTUAL EXTENT OF DISTURBANCE AND AREA OF OBLIGATION SHALL BE DETERMINED WITH AN AS-BUILT WHEN CONSTRUCTION IS COMPLETE.

- SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION:**
- PRECONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
 - STAKE OUT LIMITS OF DISTURBANCE AND SPECIMEN TREE PROTECTION FENCING LOCATIONS.
 - INSTALL SPECIMEN TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
 - TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED TRAIL GRADING HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

- FOREST AREA RETENTION AND NOTES:**
- THE WETLANDS AND WETLAND BUFFERS ARE LOCATED AS SHOWN HEREON.
 - NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
 - FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAMS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE.
 - CHANGES IN GRADING AND RUNOFF WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED RUNOFF TO STORMWATER MANAGEMENT FACILITIES. RETAIN SEDIMENT WITHIN THE CONSTRUCTION AREA AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.

OWNER / DEVELOPER
SIMPSON OAKS CROSS, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

NO.	REVISION	DATE

EXISTING FEATURES LEGEND

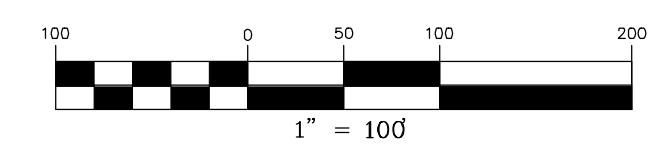
	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAIN
	25' WETLAND BUFFER
	100' STREAM BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT
	FENCE
	EX. FOREST CONSERVATION EASEMENT

PROPOSED FEATURES LEGEND

	GRID MARK
	GUIDE RAIL
	STORM SEWER
	CONTOURS
	15-24.99% SLOPES
	>25% SLOPES
	EX. SPECIMEN TREES
	ORDINARY HIGH WATER MARK (FIELD DELINEATED)

PROPOSED FEATURES LEGEND (continued)

	BOARDWALK w/ HANDRAIL
	HANDRAIL
	BOARDWALK w/ HANDRAIL
	CRUSHED STONE
	PATH
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	LIMIT OF DISTURBED AREA
	CONTOURS
	PROP. FENCE



FOREST CONSERVATION IS NOT REQUIRED ON NT ZONED PARCEL 412.

MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	WATER INCLUSIONS	K FACTOR	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT ORGANIC
BsA	SANDY SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D	YES	YES	0.37	NO	YES	NO	NO
Co	COARSE & MEDIUM SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	YES	NO	NO
GcE	GLENVILLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO	NO	NO
GcB	GLENVILLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO	NO
GcE	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.43	YES	YES	NO	NO
GmC	GLENVILLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES	NO	NO
GcB	GLENVILLE-URBAN LAND-APARTMENTS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	NO	NO	NO
MdE	MINOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MdC	MINOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO	NO
MdD	MINOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO	YES	NO	NO
MdF	MINOR-BRINKLOW COMPLEX, 25-45% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	YES	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 1% PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT
1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 29, 2014. AVAILABLE ON-LINE AT: HTTP://WEB01.SURF.NRCS.USDA.GOV/WWW/PAGE/HYDRA
2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LIST, AT: HTTP://SOILS.USDA.GOV/USE/HYDRIC/PA, CONSULTED ON DECEMBER 29, 2014.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

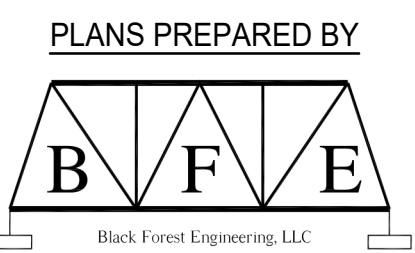
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE OF DEVELOPER	DATE
------------------------	------

TAHAWUS TRAILS, LLC
TAHAWUS TRAILS, LLC
P.O. BOX 31
ACCORD, NY 12404
845.591.1537

PENNTAILS
PENN TRAILS
9 DOGWOOD DRIVE
NEWVILLE, PA 17241
717.486.4455

CHASE ENGINEERING, LLC
CHASE ENGINEERING LLC
3626 MAGNOLIA DRIVE
EASTON, PA 18045
908-295-7732



BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY PA, 18037
570.239.4499

SITE DEVELOPMENT PLAN
WAYFINDING SIGNAGE, LANDSCAPE AND FOREST CONSERVATION PLAN
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410.461.7666 F: 410.461.8961 www.timmons.com

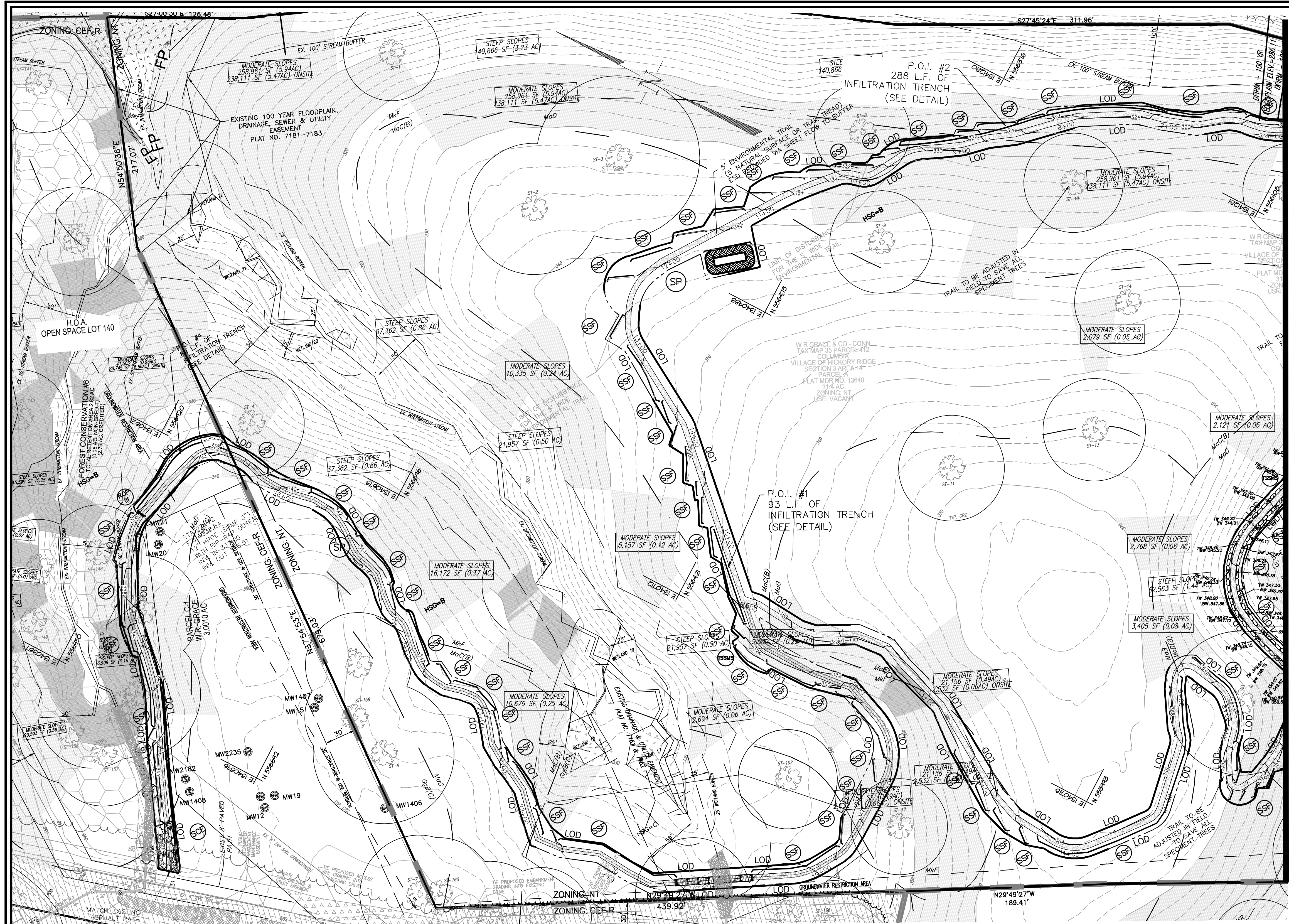
PROFESSIONAL CERTIFICATE

DESIGN BY: BFE, CE, PT, TT & VE+TG
DRAWN BY: VE+TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
S.W.O. NO.: 15-55

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. 16193 EXPIRATION DATE: 09-27-2020

ROBERT H. VOGEL, PE NO.16193

9 SHEET OF 28



PLAN
1" = 50'

EXISTING FEATURES LEGEND	
	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAIN
	25' WETLAND BUFFER
	100' STREAM BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT
	FENCE
	EX. FOREST CONSERVATION EASEMENT
	GRID MARK
	GUIDE RAIL
	STORM SEWER
	INLET
	MANHOLE
	CONTOURS
	15-24.99% SLOPES
	>25% SLOPES
	TREES
	ORDINARY HIGH WATER MARK (FIELD DELINEATED)
	EX. SPECIMEN TREES

PROPOSED FEATURES LEGEND	
	BOARDWALK w/ HANDRAIL
	BRIDGE w/ HANDRAIL
	BOARDWALK w/ TRENCH
	CRUSHED STONE PATH
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	CONTOURS
	PROP. FENCE

EROSION AND SEDIMENT POLLUTION CONTROL LEGEND	
	TOPSOIL STOCKPILE
	STABILIZED CONSTRUCTION ENTRANCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	PROJECT AREA
	ROCK OUTFALL PROTECTION
	ROCK FILTER
	CHANNEL EROSION CONTROL MATTING
	SLOPE EROSION CONTROL MATTING (NAG S75)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY THAT I AM A REGISTERED PERIODIC ON-SITE EVALUATOR BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

OWNER/DEVELOPER SIGNATURE DATE

PRINTED NAME & TITLE

DESIGNER 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 I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND AND LICENSE NO. 16193. I CERTIFY THAT I AM A REGISTERED PERIODIC ON-SITE EVALUATOR BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

DESIGNER'S SIGNATURE DATE

ROBERT H. VOGEL MD REGISTRATION NO. 16193 PRINTED NAME (circle one)

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. DATE

PLANS PREPARED BY

B F E
Black Forest Engineering, LLC
BLACK FOREST ENGINEERING
2455 BLACK FOREST DRIVE
COPLAY PA, 18037
570.239.4499

CHASE ENGINEERING, LLC
CHASE ENGINEERING LLC
3626 MAGNOLIA DRIVE
EASTON, PA 18045
908-295-7732

- HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES**
- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
 - Prior to the start of earth disturbance.
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
 - Prior to the start of another phase of construction or opening of another grading unit.
 - Prior to the removal or modification of sediment control structures.
 - Other grading or inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
 - All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
 - All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), temporary seeding (Sec. B-4-5), permanent seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with 3:1 of cut and/or fill. Slopes shall be stabilized in excess of 20 ft. must be benched with stable cut. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
 - All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
 - Site Analysis:

Total Area of Site	990 +	Acres
Area Disturbed	2.95	Acres
Area to be roofed or paved	0.000	Acres
Area to be vegetative stabilized	1.58	Acres
Total Cut	292.00	Cu. Yds.
Total Fill	385.00	Cu. Yds.
 - Offsite waste/borrow area location:
 - Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
 - Inspection date
 - Inspection type (routine, pre-storm event, during rain event)
 - Name and title of inspector
 - Weather information (current conditions as well as time and amount of last recorded precipitation)
 - Brief description of project's status (e.g., percent complete) and/or current activities
 - Evidence of sediment discharges
 - Identification of plan deficiencies
 - Identification of sediment controls that require maintenance
 - Identification of missing or improperly installed sediment controls
 - Compliance status regarding the sequence of construction and stabilization requirements
 - Photographs
 - Monitoring/sampling
 - Maintenance and/or corrective action performed
 - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
 - Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
 - Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
 - Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
 - Wash water from any equipment, vehicles, pavement, and other sources must be treated in a sediment basin or other approved wash structure.
 - Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
 - Use I and IP March 1 - April 15
Use II and III October 1 - April 30
Use IV March 1 - May 31
 - A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

- SEQUENCE OF CONSTRUCTION**
- Construction is scheduled to begin in the Spring of 2020. The Erosion and Sediment Control Plans and Narrative must be available on site at all times during earth disturbance.
- At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in these activities, the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer (570-239-4499) to an on-site meeting.
 - Temporary and permanent seeding shall be in accordance with requirements listed and as listed on the detail sheets. Super Silt Fence shall be installed downslope of all topsoil stockpiles as indicated in the Topsoil Stockpile detail.
 - Prior to any seeding and lime and fertilizer application, a soil test shall be performed to determine the pH factor. Additional lime and fertilizer may be required.
 - All disturbed areas should be immediately stabilized if earth disturbance/construction has ceased.
 - Clear and grub areas of the site that are to be disturbed.
 - Topsoil should be stripped and stockpiled prior to all earthwork. Only strip the amount of topsoil necessary to perform earthwork. No areas shall remain unstabilized and shall be stabilized immediately if disturbance/construction has ceased.
 - Place the stabilized construction entrance at location shown on the plan. This shall be the only approved site entrance. All construction vehicles must use this entrance to enter and exit the site. On a daily basis, the Contractor must inspect and clean off any sediment that is tracked onto existing roads.
 - Install super silt fence as indicated on the plans and details.
 - If underground water is encountered, a pumped water filter bag shall be utilized.
 - Trail alignment may shift due to protection of specimen trees. Contractor shall review this with owner prior to construction.
 - Begin rough grading the site, which includes crushed stone trail, boardwalk, and pedestrian bridge. Fill should be compacted in layers so as to minimize sliding, slumping and erosion of soil. All newly graded areas are to be stabilized immediately. Slopes greater than 3:1 shall be sodded or shall be stabilized with jute matting prior to seeding. Rock filters and culverts shall be installed as indicated on the plans.
 - Inspection - all erosion control facilities shall be inspected after every runoff event and on a weekly basis, any necessary repairs must be made immediately. Under each detail is the required maintenance and inspection of each BMP.
 - After the site is stabilized, remove the rock construction entrance, silt fence, construction protection fencing, and any remaining temporary bmp protection. Immediately stabilize any areas disturbed by the removal of the erosion and sediment pollution controls.
 - An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding or other movements.

MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	WATER	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
SbA	SHALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	YES	0.37	NO	YES	NO	NO	NO	NO
Cn	COARSE & MEDIUM SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	YES	NO	NO	NO	NO
GcBt	GLENNVILLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO	NO	NO	NO	NO
GcBt	GLENNVILLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO	NO	NO	NO
GcBt	GLENNVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.43	YES	YES	NO	NO	NO	NO
GcBt	GLENNVILLE SILT LOAM, 8-10% SLOPES	C	NO	NO	0.43	YES	YES	NO	NO	NO	NO
GcBt	GLENNVILLE-URBAN LAND-URBANTHENS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES	NO	NO	NO	NO
MbBt	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO	NO	NO	NO
MbC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO	NO	NO	NO
MbD	MANOR LOAM, 15-20% SLOPES	B	NO	NO	0.28	NO	YES	NO	NO	NO	NO
MbF	MANOR-BROOKLAND COMPLEX, 20-65% SLOPES, VERY ROUGH	B	NO	NO	0.32	NO	YES	NO	NO	NO	NO

TAKEN FROM: USDA, SCS-WEED SOIL SURVEY, HOWARD COUNTY

NOTE: HYDRIC SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 1% PERCENT OF THOSE SOILS WITH A SOIL EROSION FACTOR GREATER THAN 0.50 AND WITH A SLOPE GREATER THAN 6 PERCENT.

OWNER / DEVELOPER
TIMMONS OAKS CRE3, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

NO. _____ REVISION _____ DATE _____

SITE DEVELOPMENT PLAN
GRADING AND SOIL EROSION & SEDIMENT CONTROL PLAN

CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CE-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT

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PROFESSIONAL CERTIFICATE
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 AND LICENSE NO. 16193 EXPIRATION DATE: 09-27-2020

DESIGN BY: BFE, CE, PT, TT & VE-TG
DRAWN BY: VE-TG
CHECKED BY: RHY
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

10 SHEET OF 28



MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	WATER INCLUSIONS	PERCENT FINE SAND	PERCENT SILT	PERCENT CLAY	PERCENT ORGANIC MATTER
B3A	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	NO	0.37	NO	YES	NO
C3	CODRUS & HARBORD SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY*	0.37	NO	YES	NO
G3B	GLENGLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	YES	NO	NO
G3B	GLENGLE-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO
G3B	GLENGLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.43	YES	YES	YES
G3C	GLENGLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES	YES
G3B	GLENGLE-URBAN LAND-SLOPETHILLS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES	NO
MAC	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO
MAC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO
MAC	MANOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO	YES	NO
MAC	MANOR-BROOKLEW COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE: * HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GRADIENT OF 15 PERCENT OR GREATER AND WITH A SOIL EROSION FACTOR OF GREATER THAN 0.35 AND WITH A SLOPE GRADIENT OF 4 PERCENT OR GREATER.

1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEB SOIL SURVEY, CONSULTED ON DECEMBER 29, 2014. AVAILABLE ON-LINE AT: <http://websoilsurvey.nrcs.usda.gov/app/home.pl>

2. HYDRIC SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRIC SOILS LIST, AT: <http://www.nrcs.usda.gov/ce/npfrc/hydro/>, CONSULTED ON DECEMBER 29, 2014.

PROPOSED FEATURES LEGEND

	BOARDWALK w/ HANDRAIL
	BRIDGE w/ HANDRAIL
	BOARDWALK w/ TOERAIL
	CRUSHED STONE
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	CONTOURS
	PROP. FENCE

EXISTING FEATURES LEGEND

	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAIN
	25' WETLAND BUFFER
	100' STREAM BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT
	FENCE
	EX. FOREST CONSERVATION EASEMENT

EROSION AND SEDIMENT POLLUTION CONTROL LEGEND

	TOPSOIL STOCKPILE
	STABILIZED CONSTRUCTION ENTRANCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	PROJECT AREA
	ROCK OUTFALL PROTECTION
	ROCK FILTER
	CHANNEL EROSION CONTROL MATTING
	SLOPE EROSION CONTROL MATTING



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

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 ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE 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/DEVELOPER 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 _____

ROBERT H. VOGEL _____ M.D. REGISTRATION NO. 16193

PRINTED NAME _____ R.L.S., OR R.L.A. (circle one)

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. _____ DATE _____

PLANS PREPARED BY

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Black Forest Engineering, LLC

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CHASE ENGINEERING, LLC

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717.486.4455

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TAHAWUS TRAILS, LLC
P.O. BOX 31
ACCORD, NY 12404
845.591.1537

OWNER / DEVELOPER
EMERSON GAVES CRP, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN

GRADING AND SOIL EROSION & SEDIMENT CONTROL PLAN

CEDAR CREEK

SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CE-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

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PROFESSIONAL CERTIFICATE

DESIGN BY: BEE, CE, PT, TT & VE+TG

DRAWN BY: VE+TG

CHECKED BY: RHW

DATE: JUNE 2020

SCALE: AS SHOWN

W.O. NO.: 15-55

ROBERT H. VOGEL, PE No.16193

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2020

11 SHEET OF 28

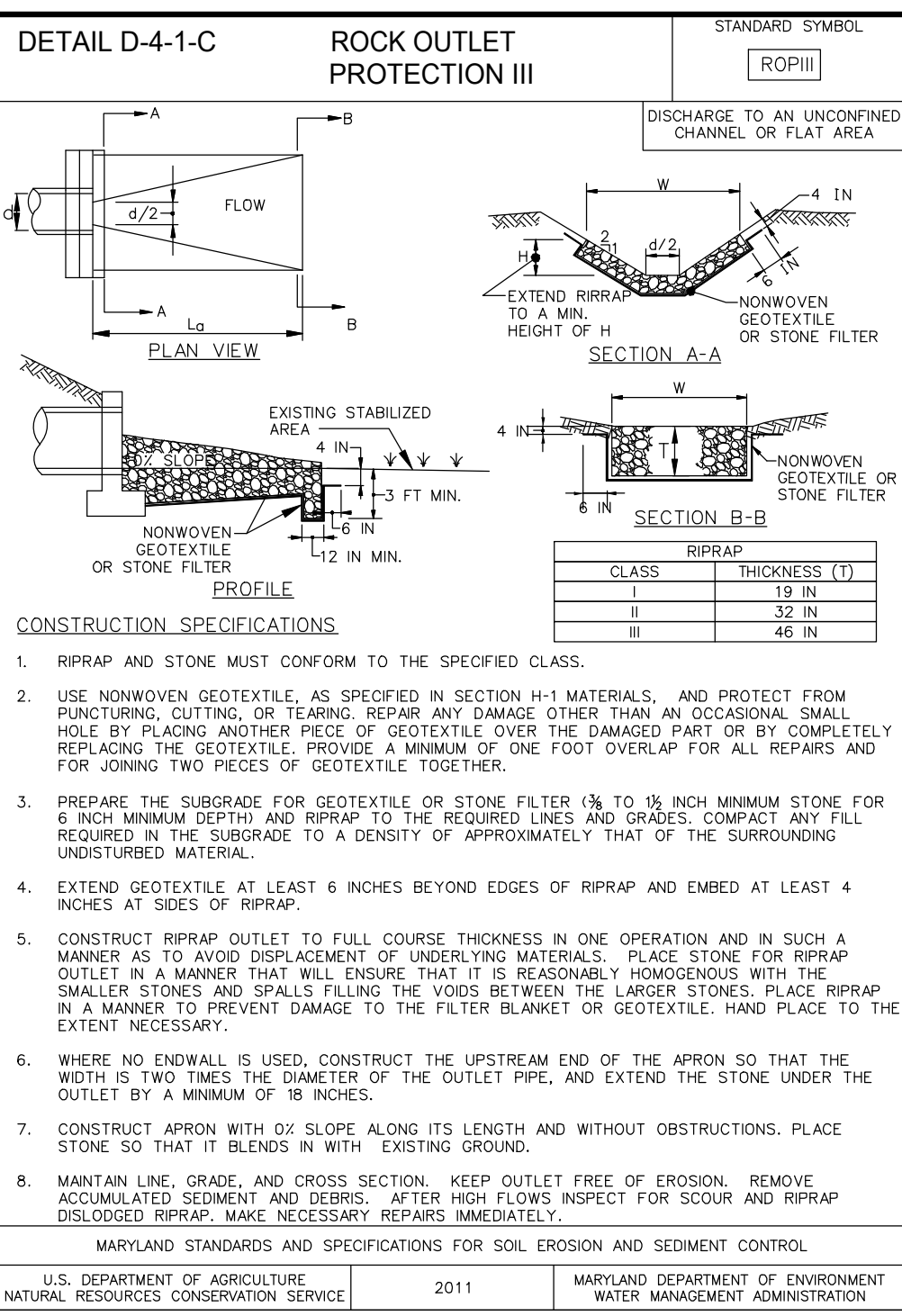
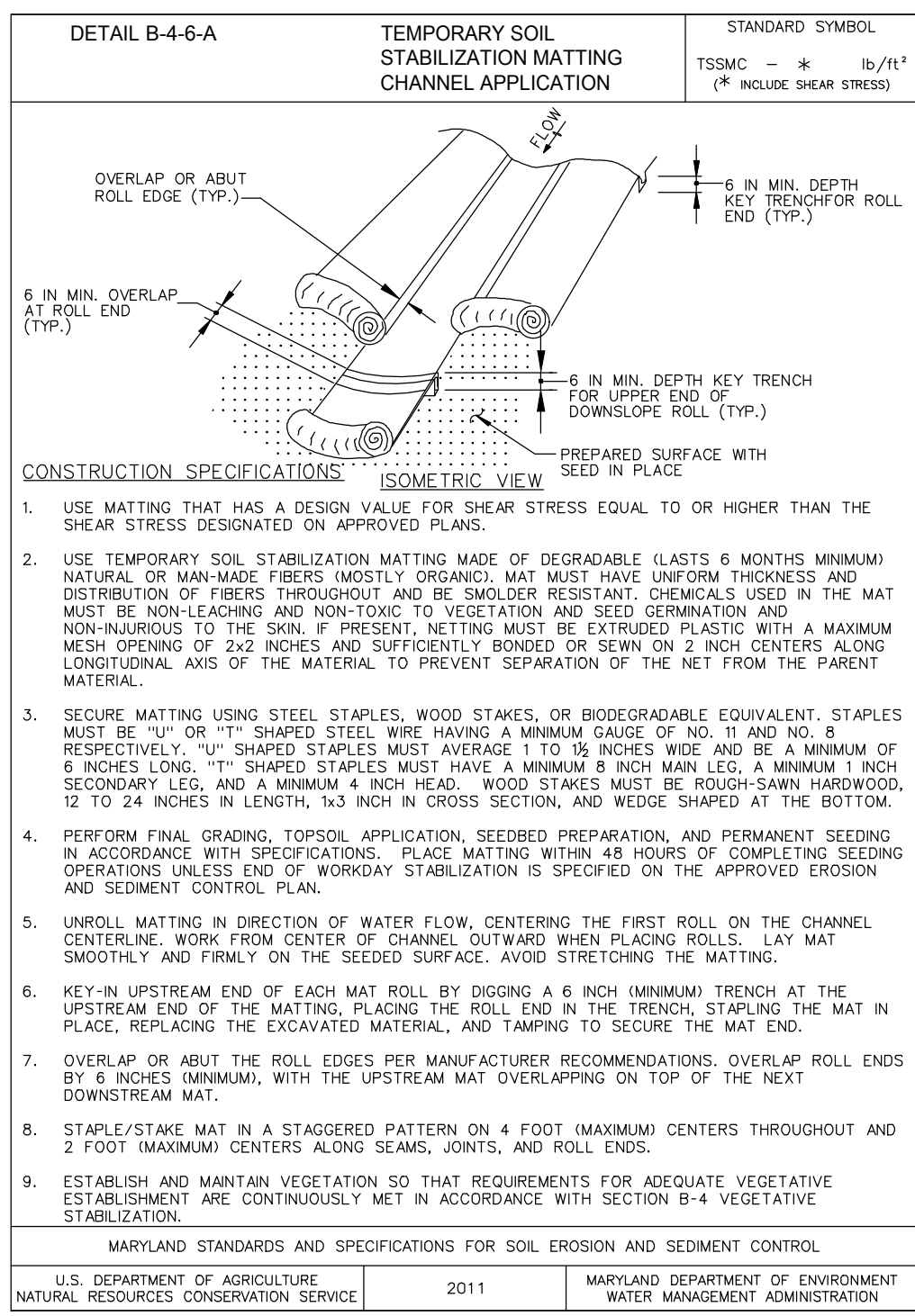
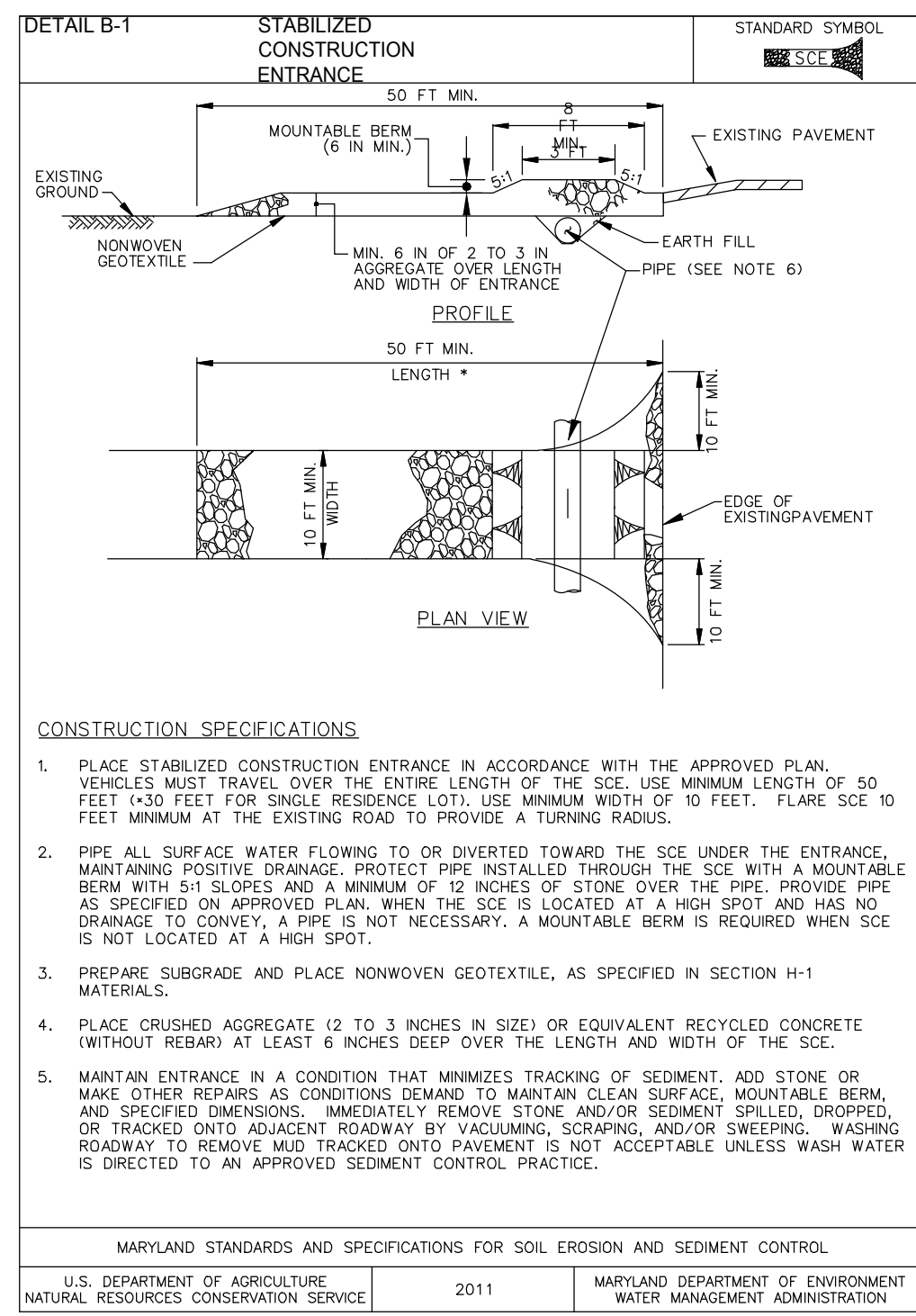
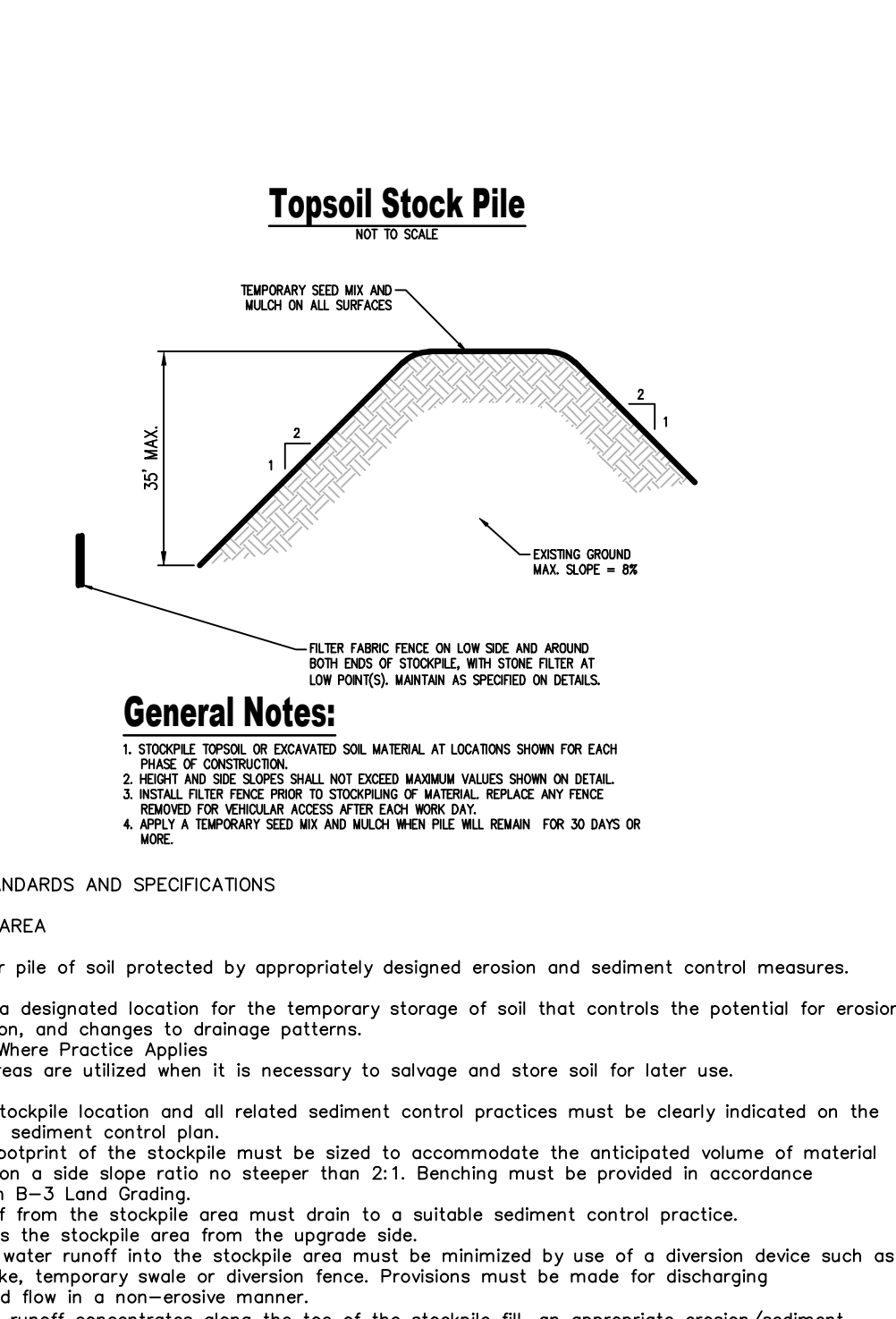
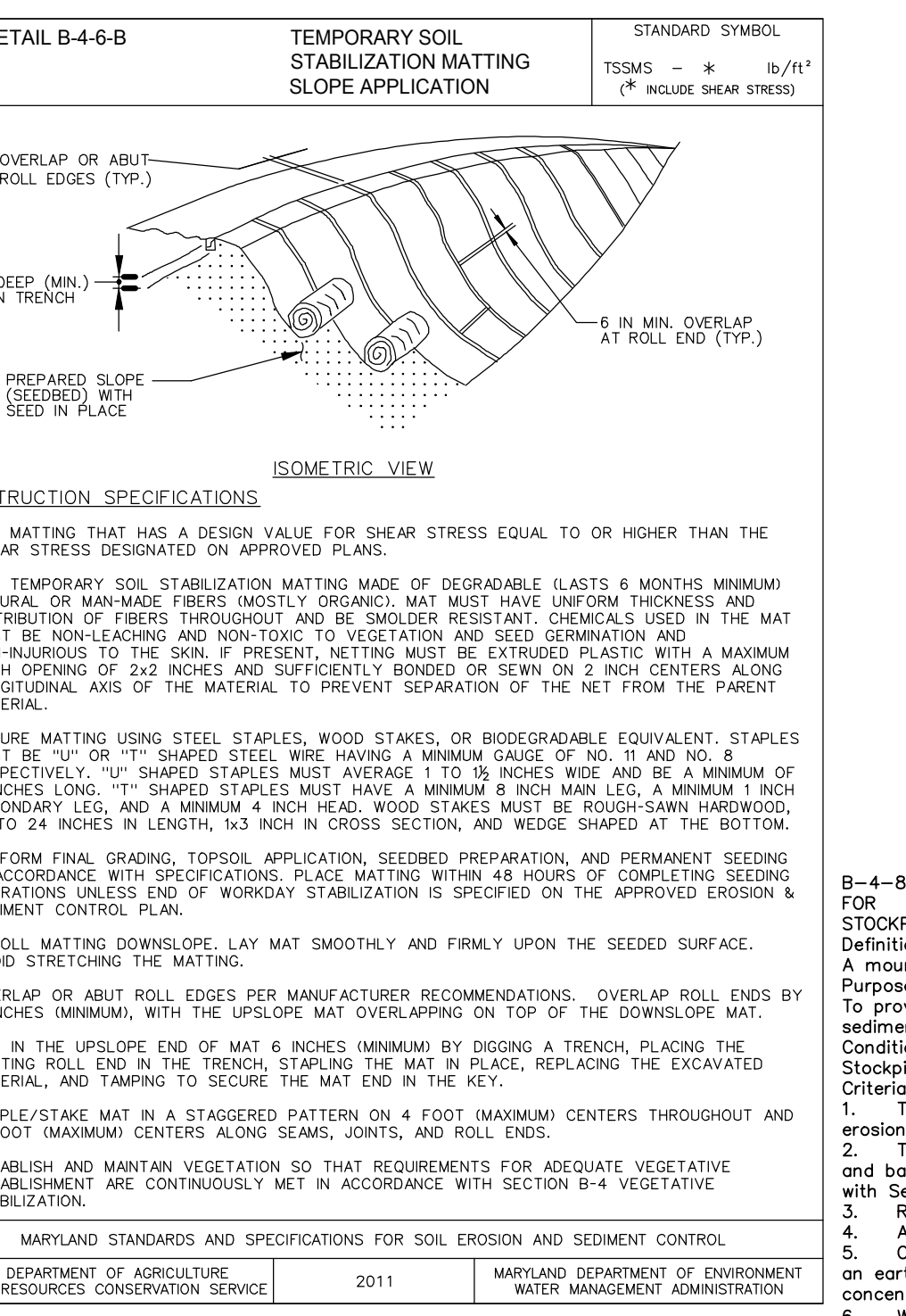
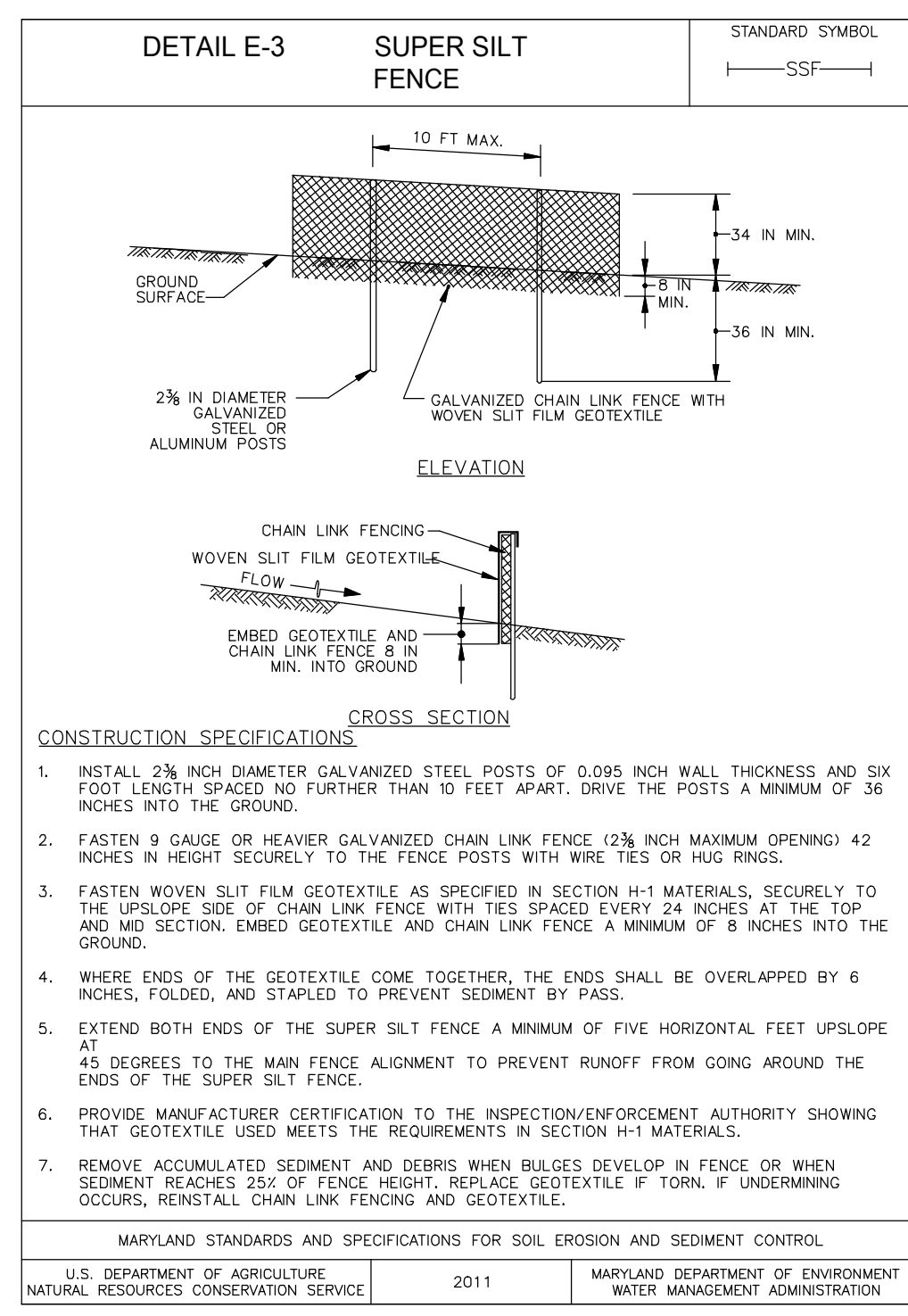


TABLE 15
Plant Tolerances of Soil Limitation Factors

Species	Growth Habit	Wet Soil	Dry Soil	Low Fertility	Add Soil (pH 5.5-6.5)	Parity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000ths)
Warm-Season Grasses										
Deertongue	bunch	yes	yes	yes	yes	95	75	-	75	250
Wheating bluestem	bunch	yes	yes	yes	yes	97	75	-	75	1,500
Swamp sparrowgrass	bunch	yes	yes	yes	yes	95	75	-	75	500
Big bluestem	bunch	no	yes	yes	yes	-	-	(80 PLs)	-	-
Cool-Season Grasses										
Tall fescue	bunch	yes	yes	yes	no	95	80	-	80	227
Redtop	sod	yes	yes	yes	yes	92	80	-	80	5,000
Fine fescue	sod	no	no	yes	no	95	80	-	80	400
Perennial ryegrass	bunch	yes	no	no	no	95	80	-	80	227
Annual ryegrass	bunch	yes	no	yes	no	95	85	-	85	227
Kentucky bluegrass	sod	no	no	no	no	85	75	-	75	2,000
Need canarygrass	sod	yes	yes	yes	no	95	70	-	70	520
Ochragrass	bunch	yes	yes	yes	yes	95	80	-	80	654
Timothy	sod	yes	yes	yes	yes	95	80	-	80	1,287
Smooth bromegrass	sod	yes	yes	yes	no	95	80	-	80	134
Legumes										
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120
Birdfoot trefoil	sod	yes	no	yes	no	98	60	20	80	400
Floratop	sod	no	no	yes	yes	98	50	20	78	10
Kentucky spicetop	bunch	no	yes	yes	yes	98	80	20	80	335
Cereals										
Winter wheat	bunch	no	no	no	no	98	85	-	85	15
Winter rye	bunch	no	no	no	yes	98	85	-	85	18
Spring oats	bunch	no	no	no	no	98	85	-	85	13
Sudan grass	bunch	no	yes	no	no	88	85	-	85	65
Japanese millet	bunch	yes	no	yes	yes	98	80	-	80	155

TABLE 16
Mulch Application Rates

Mulch Type	Application Rate (Min.)			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Straw	3 tons	140 lb.	1,240 lb.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lb.	1,240 lb.	Timothy, mixed clover and timothy or other native forage grasses
Wood Cellulose	1,500 lb.	35 lb.	310 lb.	Do not use alone in winter, during hot and dry weather or on steep slopes (≥ 3:1)
Wood	1,000 lb. Cellulose	25 lb.	210 lb.	When used over straw or hay
Wood Chips	4 - 6 tons	185 - 275 lb.	1,650 - 2,500 lb.	May prevent germination of grasses and legumes



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.

Condition Where Practice Applies

Disturbed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed 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 mixtures, 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 shadelines, 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 3-42 - Critical Area Planting.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas requiring low maintenance, apply urea from fertilizer (46-0-0) at 3 1/2 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.
- 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 in Table B.3 for the site condition or purpose. Enter selected mixtures, 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 Kentucky Bluegrass Cultivar 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 25 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 where soil will receive medium to intensive management. Certified Perennial Ryegrass Cultivar/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 25 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 3-42 - Critical Area Planting. Recommended mixture includes Certified Tall Fescue Cultivar 90 to 100 percent, Certified Kentucky Bluegrass Cultivar 10 to 5 percent. Seeding Rate: 2 to 3 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 lawns. Mixture includes: Certified Kentucky Bluegrass Cultivar 30 to 40 percent and Certified Fine Fescue seed 60 to 70 percent. Seeding Rate: 15 to 20 pounds per 1000 square feet. Note: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Station #77, "Turfgrass Cultivar Recommendations for Maryland".
- Choose certified materials. Certified material is the least guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable source of numerous products and assures a pure genetic line.

B. Soil Maintenance

- In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water well during the heat of the day to prevent wilting.
- After the first week, soil watering is required as necessary to maintain adequate moisture content.
- Do not mow until the seed is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

North American Green ECMSD Version 4.3 - Slope Protection Design, Output Form

File Input Mode Specifications Run Options Help

ENGLISH USER TEMPORARY 1/28/2019 06:26 PM

Country: United States

State/Region: Maryland

City: Maryland

Annual R Factor: 175

Total Slope Length (ft): 20

Protection Type: Temporary

Protection Period (months): 12

Beginning Month: April

Adjusted R Value: 175

Slope Gradient (H:1): 3

Soil Type: Sil Loam

K Factor: 0.33

Soil Loss Tolerance (in): 0.25

Slope Gradient = 3:1

C = 0.029

Reach	Cum Dist (ft)	Material	Density (pcf)	ASL (ft)	ASL (ft)	MSL (ft)	SLT (ft)	SF	Remarks	Staple
1	0	20	575	0.565	0.016	0.976	0.028	0.25	8.832	STABLE B
2	0	20	575	0.565	0.016	0.976	0.028	0.25	8.832	STABLE B
3	0	20	575	0.565	0.016	0.976	0.028	0.25	8.832	STABLE B

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

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate #/1000 sq. ft.	Seeding Depth (inches)	Recommended Seeding Dates by Plant Hardiness Zone #			
			Zone 4a	4b	5a and 5b	7a and 7b
Annual Ryegrass (Cultivar perenn 1 to 10 Oct 1)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 10	Mar 1 to May 15; Aug 15 to Sep 30	Feb 15 to Apr 30; Aug 15 to Nov 30
Bentley (Cultivar ryegrass)	96	2.0	1.0	Mar 15 to May 31; Aug 1 to Sep 10	Mar 1 to May 15; Aug 15 to Sep 30	Feb 15 to Apr 30; Aug 15 to Nov 30
Chen (Cultivar ryegrass)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 10	Mar 1 to May 15; Aug 15 to Sep 30	Feb 15 to Apr 30; Aug 15 to Nov 30
Winter (Cultivar ryegrass)	130	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 10	Mar 1 to May 15; Aug 15 to Sep 30	Feb 15 to Apr 30; Aug 15 to Nov 30
Cornel Rye (Cultivar ryegrass)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 10	Mar 1 to May 15; Aug 15 to Sep 30	Feb 15 to Apr 30; Aug 15 to Nov 30
Perennial Ryegrass (Cultivar perenn 1 to 10 Oct 1)	30	0.7	0.5	Jan 1 to Mar 31	May 1 to Jul 31	May 1 to Aug 14
Perennial Ryegrass (Cultivar perenn 1 to 10 Oct 1)	30	0.8	0.5	Jan 1 to Mar 31	May 1 to Jul 31	May 1 to Aug 14

NOTES:

- Seeding rates for warm-season grasses are to provide for Full Sun (FS). Annual planting rates should be reduced to reflect poorer germination and purity, as noted. Adjustments are usually needed for wet and shade grasses.
- Seeding rates listed above are for temporary seedings. When planted alone, when planted in a warm mix with permanent seed, or when, as a 1/3 of the seeding mix listed above for multiple uses, seed rates should be reduced. For permanent seedings, use the rates listed above. For permanent seedings, use the rates listed above. For permanent seedings, use the rates listed above.
- Seeding rates for cool-season grasses are to provide for Full Sun (FS). Annual planting rates should be reduced to reflect poorer germination and purity, as noted. Adjustments are usually needed for wet and shade grasses.
- Seeding rates listed above are for temporary seedings. When planted alone, when planted in a warm mix with permanent seed, or when, as a 1/3 of the seeding mix listed above for multiple uses, seed rates should be reduced. For permanent seedings, use the rates listed above. For permanent seedings, use the rates listed above.
- Seeding rates for cool-season grasses are to provide for Full Sun (FS). Annual planting rates should be reduced to reflect poorer germination and purity, as noted. Adjustments are usually needed for wet and shade grasses.
- Seeding rates listed above are for temporary seedings. When planted alone, when planted in a warm mix with permanent seed, or when, as a 1/3 of the seeding mix listed above for multiple uses, seed rates should be reduced. For permanent seedings, use the rates listed above. For permanent seedings, use the rates listed above.
- Use the recommended care map for warm-season grasses.
- For sandy soils, plant seeds at twice the depth listed above.
- The planting dates listed are averages for each State and may require adjustment to reflect local conditions, especially near the boundaries of the zones.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

OWNER/DEVELOPER CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THE PREPARED PROJECT, I CERTIFY THAT I AM THE OWNER OF THE HOWARD SOIL CONSERVATION DISTRICT.

DESIGNER'S SIGNATURE: ROBERT H. VOGEL, PE, R.L.S., OR R.L.A. (circle one)

DATE: MD REGISTRATION NO. 16193

PRINTED NAME & TITLE: ROBERT H. VOGEL, PE, NO.16193

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. DATE

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NO. IS 16193. EXPIRATION DATE: 09-27-2020

DESIGN BY: BFE, CE, PT, TT & VE-TG

DRAWN BY: VE-TG

CHECKED BY: RHV

DATE: JUNE 2020

SCALE: AS SHOWN

W.O. NO.: 15-55

12 SHEET OF 28

VOGEL ENGINEERING

TIMMONS GROUP

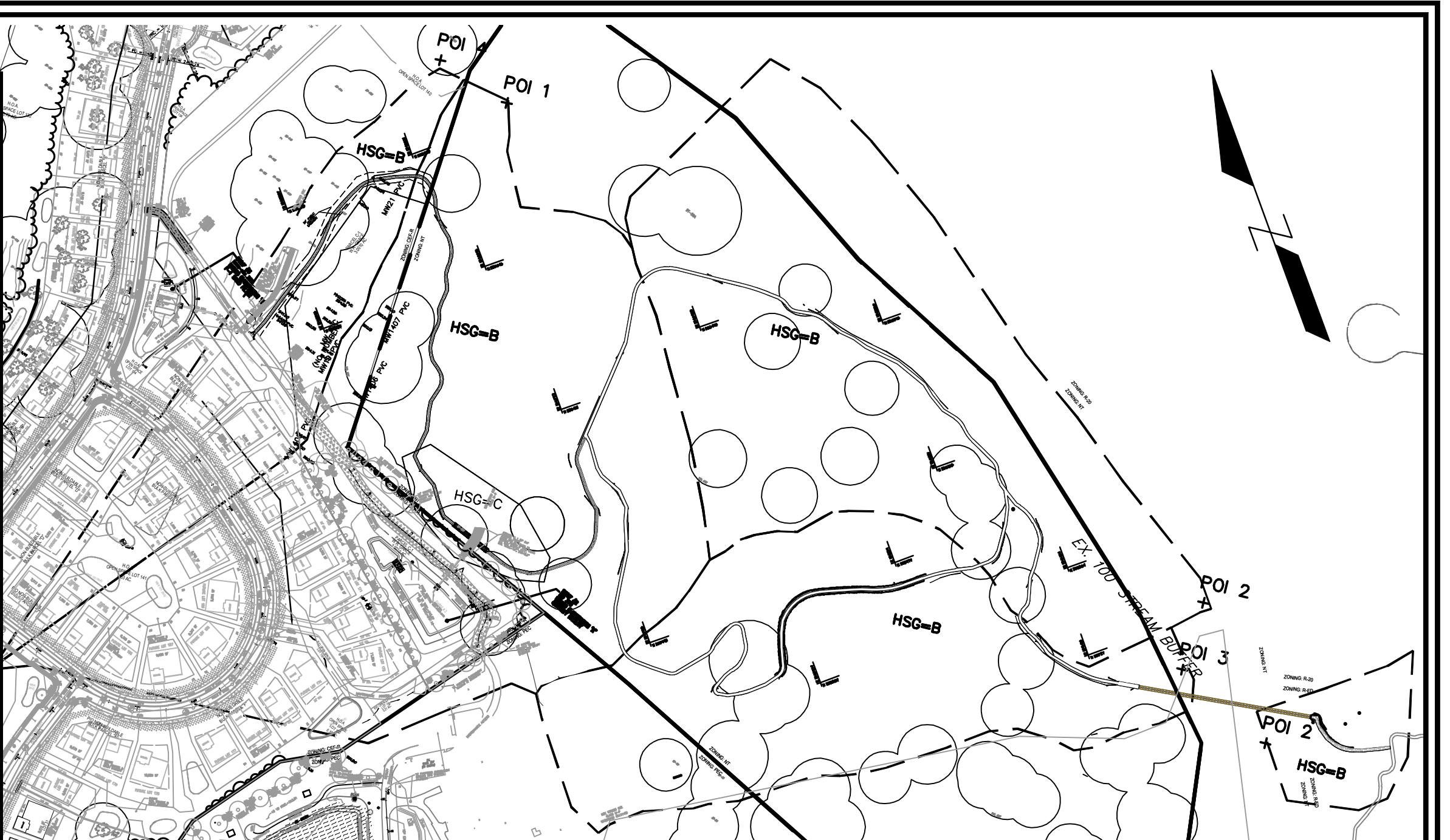
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21143

P: 410-461.7666 F: 410-461.8961 www.timmons.com

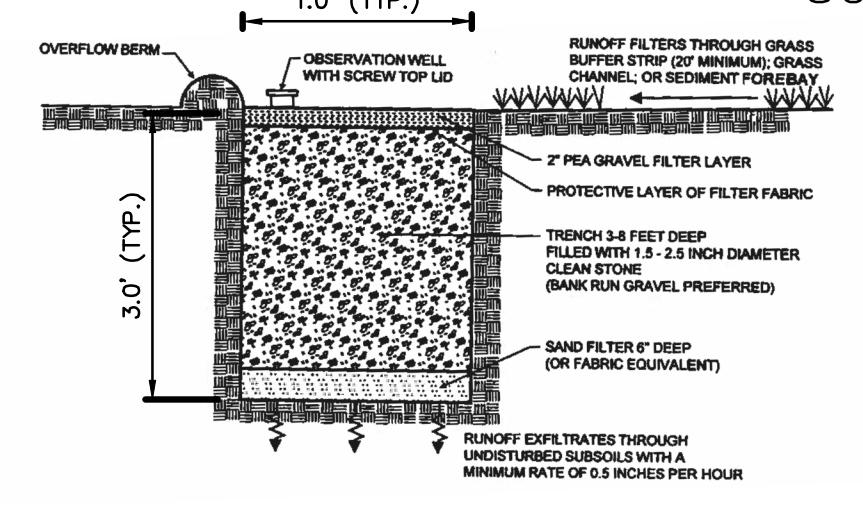
CEDAR CREEK

SUSPENSION BRIDGE AND TRAIL

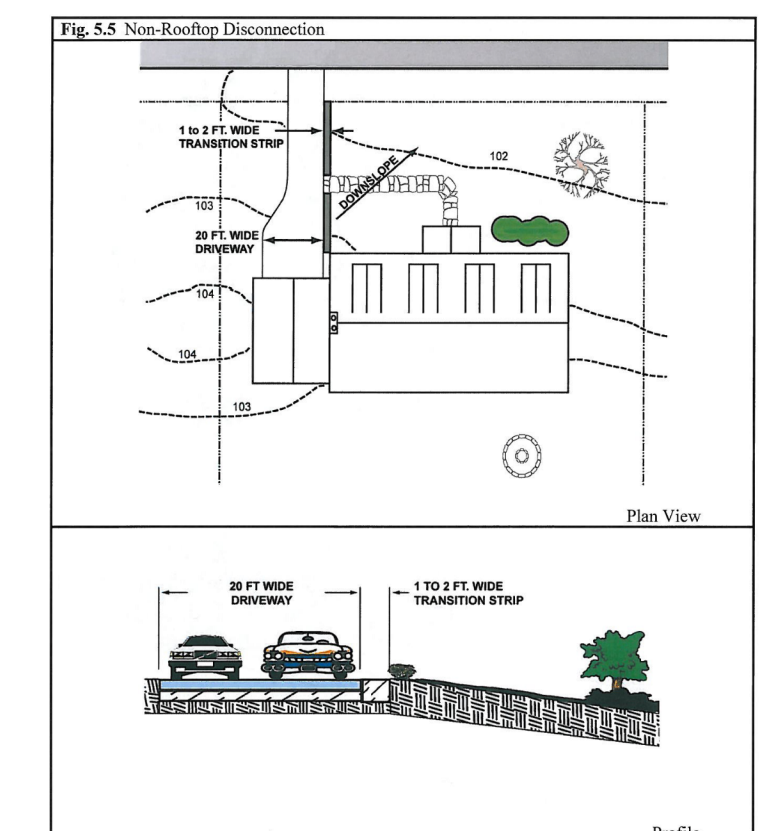
TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT



POINT OF INTEREST DRAINAGE MAP
SCALE: 1"=200' HORZ.



INFILTRATION TRENCH DETAIL
N.T.S.



NOTES:
1. TYPICAL DETAIL SHOWN FROM "2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II. CONSERVATION AREA WILL BE UTILIZED TO MANAGE RUNOFF FROM PROPOSED CRUSHED STONE WALKING PATH.
2. DRAINAGE LENSE WILL BE USED IN SUBSTITUTION OF PEA GRAVEL.
TOTAL PROPOSED IMPERVIOUS COVER = 23,367 S.F.
PROJECT AREA = 4,312,140 S.F.
LIMIT OF DISTURBANCE = 102,366 S.F.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED INFILTRATION TRENCH (I-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)
1. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The areas receiving runoff should be protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

PLANS PREPARED BY
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570.239.4499

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PENNTAILS

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TAHAWUS TRAILS, LLC

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OWNER / DEVELOPER
SIMPSON OWENS CRP3, LLC
4750 OWINGS MILLS BOULEVARD
OWINGS MILLS, MARYLAND 21117
410-356-9900

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
DIRECTOR DATE

EXISTING FEATURES LEGEND

	STREAM / RIVER
	100 YEAR FEMA FLOOD PLAN
	25' WETLAND BUFFER
	100' STREAM BUFFER
	WETLANDS
	CENTERLINE ROAD
	EASEMENT FENCE
	EX. FOREST CONSERVATION EASEMENT
	GRID MARK
	GUIDE RAIL
	STORM SEWER
	CONTOURS
	15-24.99% SLOPES
	>25% SLOPES
	EX. SPECIMEN TREES
	ORDINARY HIGH WATER MARK (FIELD DELINEATED)

PROPOSED FEATURES LEGEND

	BOARDWALK w/ HANDRAIL
	BRIDGE w/ HANDRAIL
	BOARDWALK w/ TOERAIL
	CRUSHED STONE PATH
	SUSPENSION BRIDGE
	ROCK CRIBBING WALL
	CONTOURS
	PROP. FENCE

MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRO	PERC	PERC	K FACTOR	PERC	PERC	PERC	PERC	PERC	PERC
BsA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	NO	NO	0.37	NO	YES	NO	NO	NO	NO
Cp	COCORUS & HATBORO SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY	NO	0.37	NO	NO	NO	NO	NO	NO
CpR	CLEVELAND LOW, 3 TO 8 PERCENT SLOPES	C	NO	NO	NO	0.28	NO	NO	NO	NO	NO	NO
GpB	GLENVIEW-URBAN LAND COMPLEX, 0-8% SLOPES	B	NO	NO	NO	0.43	NO	NO	NO	NO	NO	NO
GmB	GLENVIEW SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	NO	0.43	YES	YES	YES	YES	YES	YES
GmC	GLENVIEW SILT LOAM, 8-15% SLOPES	C	NO	NO	NO	0.43	YES	YES	YES	YES	YES	YES
GmR	GLENVIEW-URBAN LAND-SOILMENTS COMPLEX, 0-8% SLOPES	C	NO	NO	NO	0.43	NO	YES	YES	YES	YES	YES
MbB	MANOR LOAM, 3-8% SLOPES	B	NO	NO	NO	0.28	YES	NO	NO	NO	NO	NO
MbC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	NO	0.28	YES	NO	NO	NO	NO	NO
MbR	MANOR LOAM, 15-25% SLOPES	B	NO	NO	NO	0.28	NO	YES	YES	YES	YES	YES
MfB	MANOR-BRINLOW COMPLEX, 25-65% SLOPES, VERY ROCKY	B	NO	NO	NO	0.32	NO	YES	NO	NO	NO	NO

TAKEN FROM: USDA, SCS-WEBB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 1% PERCENT OR THOSE SOILS WITH A SLOPE GREATER THAN 0.5% AND WITH A SLOPE GREATER THAN 5% PERCENT.
1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE'S WEBB SOIL SURVEY, COMPLETED ON DECEMBER 26, 2014. AVAILABLE ONLINE AT: <http://webbsoilsurvey.nrcs.usda.gov/wps/wcMAIN.pl>
2. HYDRO SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRO SOILS LIST. AT: <http://soils.usda.gov/survey/hydro/>, COMPLETED ON DECEMBER 26, 2014.

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT PLAN AND DETAILS
CEDAR CREEK
SUSPENSION BRIDGE AND TRAIL

TAX MAP 35 GRID 21 ZONED: NT, R-ED & CEF-R P. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT

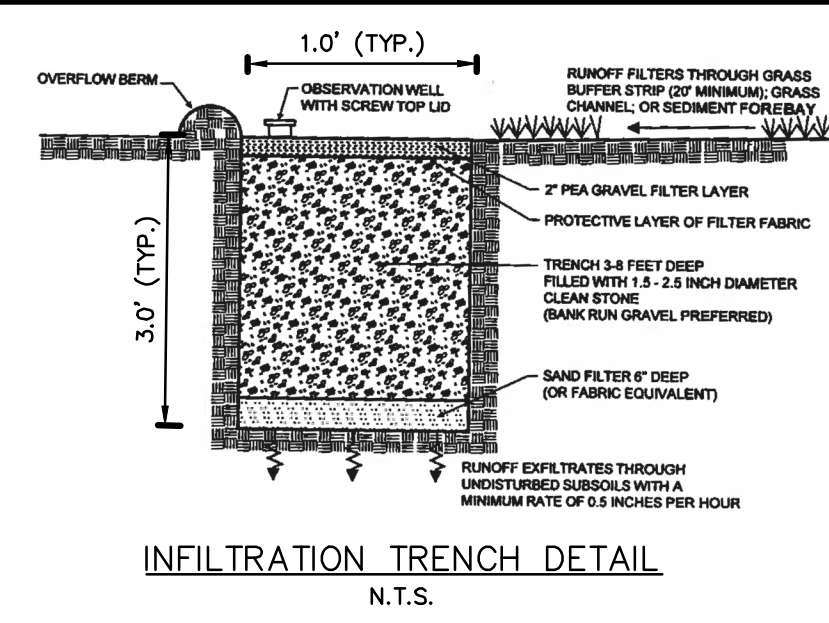
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PROFESSIONAL CERTIFICATE
DESIGN BY: BFE, CE, PT, TT & VE-TG
DRAWN BY: VE-TG
CHECKED BY: RHV
DATE: JUNE 2020
SCALE: AS SHOWN
W.O. NO.: 15-55

ROBERT H. VOGEL, PE No.16193

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. 16193 EXPIRATION DATE: 09-27-2020

13 SHEET OF 28



MAPPED SOILS TYPES - CLARKSVILLE NE MAP #17

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRO INCLUSIONS	PERCENT SAND	PERCENT SILT	PERCENT CLAY	K FACTOR	PRIME	WATER	POTENTIAL
B5A	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	YES	0.37	NO	YES	NO	YES	NO
Co	COORUS & HARBOR SILT LOAM, 0-3% SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	YES	NO	YES	NO
G5B	GLENVILLE LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.28	NO	YES	NO	YES	NO
G5B	GLENVILLE-URBAN LOAM COMPLEX, 0-8% SLOPES	B	NO	NO	0.28	NO	NO	NO	NO	NO
G5B	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.43	YES	YES	NO	YES	NO
G5C	GLENVILLE SILT LOAM, 8-15% SLOPES	C	NO	NO	0.43	YES	YES	NO	YES	NO
G5B	GLENVILLE-URBAN LOAM-UDOROVENS COMPLEX, 0-8% SLOPES	C	NO	NO	0.43	NO	YES	NO	YES	NO
M5B	MANOR LOAM, 3-8% SLOPES	B	NO	NO	0.28	YES	NO	NO	YES	NO
M5C	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	YES	NO	NO	YES	NO
M5D	MANOR LOAM, 15-25% SLOPES	B	NO	NO	0.28	NO	NO	NO	YES	NO
M5F	MANOR-BRINKLOW COMPLEX, 25-35% SLOPES, VERY ROCKY	B	NO	NO	0.32	NO	NO	NO	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 0 PERCENT OR WHOSE SOILS WITH A SOIL PROTECTIVE FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

1. SOURCE: THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL RESOURCE CONSERVATION SERVICES, WEB SOIL SURVEY, CONSULTED ON DECEMBER 22, 2014. PAGES 17-18. URL: AT: HTTP://WWW.NRCS.USDA.GOV/WWW/PAGES/17-18

2. HYDRO SOILS INFORMATION ADAPTED FROM THE NATIONAL HYDRO SOILS LIST. AT: HTTP://SOILS.USDA.GOV/HYDRO/, CONSULTED ON DECEMBER 22, 2014.



POINT OF INTEREST DRAINAGE MAP
SCALE: 1"=200' HORIZ.

PLANS PREPARED BY

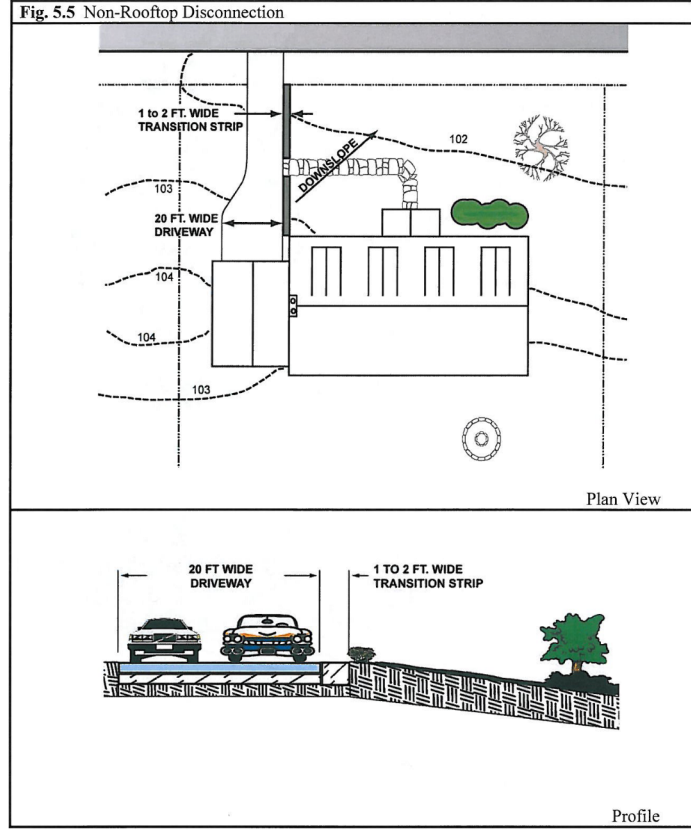
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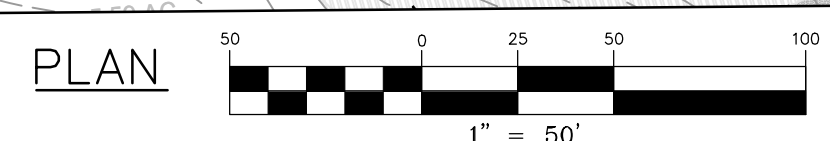
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CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE _____

DIRECTOR _____ DATE _____

EXISTING FEATURES LEGEND		PROPOSED FEATURES LEGEND	
	STREAM / RIVER		BOARDWALK w/ HANDRAIL
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	25' WETLAND BUFFER		BOARDWALK w/ TOERAIL
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TAX MAP 35 GRID 21 ZONED: NT, R-ED & CE-R P.O. 412, P/O PARCEL 145 & P. 87 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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