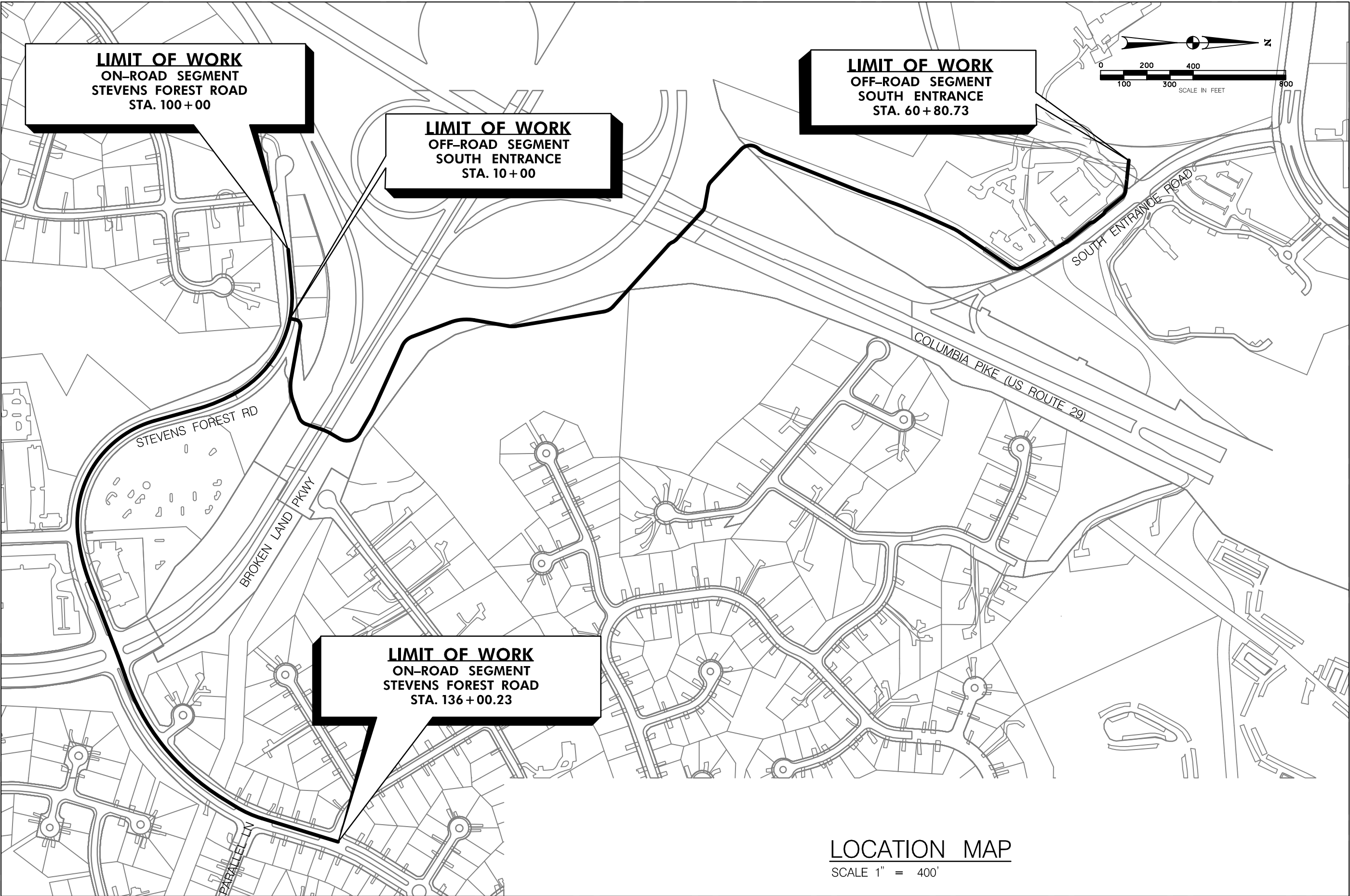


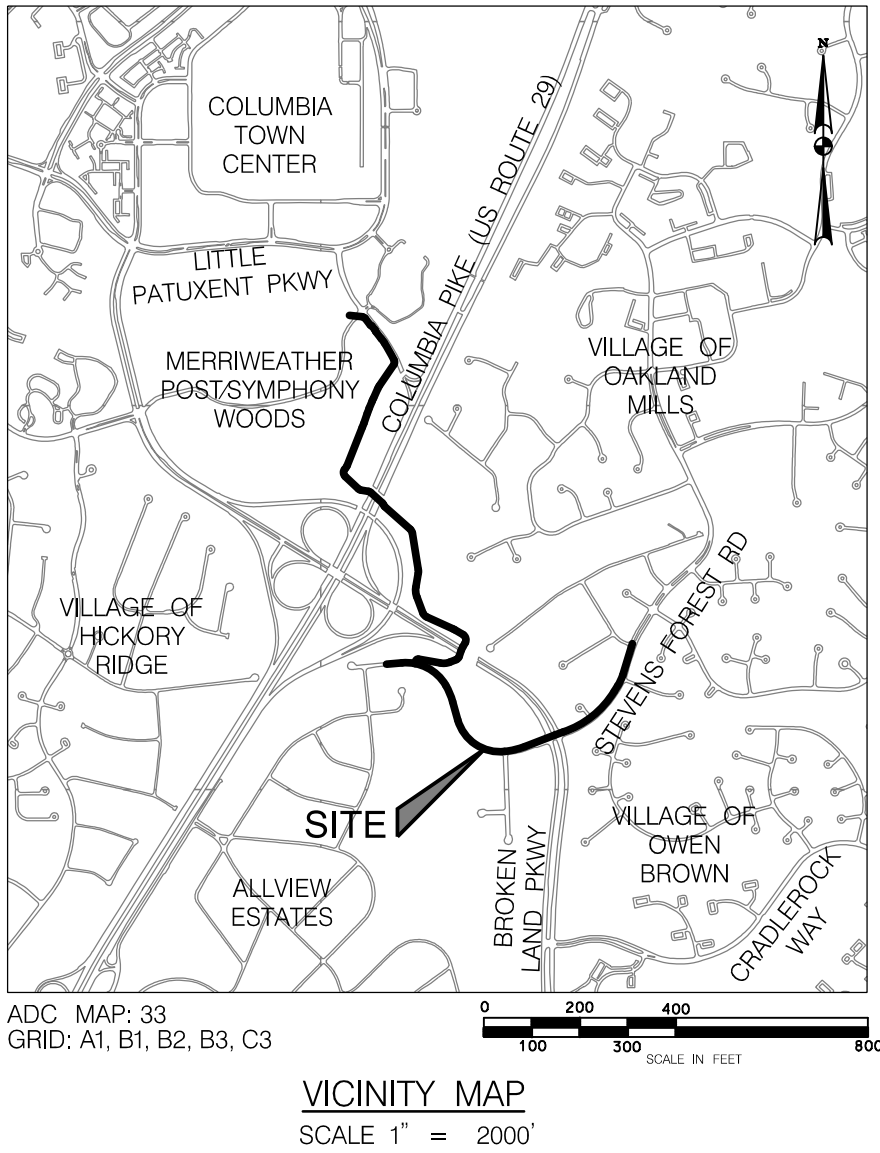
SOUTH ENTRANCE TRAIL

HOWARD COUNTY, MARYLAND



GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MD-SHA STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 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.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD).
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A PARTIAL FIELD SURVEY WITH 1' CONTOUR INTERVALS PREPARED BY HOWARD COUNTY, DATED JUNE 2016 AND AUGMENTED WITH HOWARD COUNTY 2014 GIS DATA. ADDITIONAL TOPOGRAPHIC SURVEYING WILL BE PREPARED DURING THE FINAL DESIGN PHASE OF THE PROJECT.
- NO SUBSURFACE UTILITY SURVEY HAS BEEN COMPLETED FOR THIS PROJECT. A LEVEL B SUBSURFACE UTILITY INVESTIGATION WILL BE PERFORMED DURING THE FINAL DESIGN PHASE.
- COORDINATES ARE BASED ON NAD '83/NAVD 88 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 30 GA AND 36 AA.
- ALL PROPOSED IMPROVEMENTS SHALL MEET ALL APPLICABLE HOWARD COUNTY, AASHTO, MDMUTCD AND THE US ACCESS BOARD SHARED-USE PATH ACCESSIBILITY GUIDELINES PROPOSED RULE MAKING (92010).
- EXISTING UTILITIES ARE BASED ON AVAILABLE PUBLIC RECORDS AND UTILITY COMPANY RECORD DRAWINGS. THE CONTRACTOR SHALL DIG TEST PITS BY HAND AT ALL PROPOSED UTILITY CROSSINGS AND CONNECTION POINTS TO VERIFY EXACT UTILITY LOCATIONS AS IDENTIFIED ON PLANS.
- THIS PROJECT REQUIRES WORK IN WETLANDS AND WETLAND BUFFERS. LIMITS OF WETLANDS SHOWN ON THE PLANS ARE BASED ON A WETLAND DELINEATION STUDY PERFORMED BY KCI TECHNOLOGIES, INC, DATED APRIL 10, 2019.
- NO HISTORIC STRUCTURES OR CEMETERIES ARE IMPACTED BY THIS PROJECT.
- NO TRAFFIC OR NOISE STUDIES ARE REQUIRED FOR THIS PROJECT.
- A LIMITED GEOTECHNICAL INVESTIGATION AND PRELIMINARY GEOTECHNICAL RECOMMENDATIONS WERE PREPARED BY KCI TECHNOLOGIES, INC., DATED OCTOBER 2016.
- THE SUBJECT PROPERTIES ARE ZONED NT AND R-12 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN. THE PROJECT IS SUBJECT TO THE DOWNTOWN COLUMBIA PLAN - A GENERAL PLAN AMENDMENT, EFFECTIVE APRIL 6, 2010.
- THIS PROJECT REQUIRES WORK IN THE 100-YEAR FLOODPLAIN OF THE LITTLE PATUXENT RIVER. A FLOOD STUDY WAS PREPARED BY KCI TECHNOLOGIES, INC., DATED NOVEMBER 2019.
- IN ACCORDANCE WITH SUBSECTION 16.1202(b)(1)(iv) THIS PROJECT IS EXEMPT FROM THE REQUIREMENT OF SECTION 16.1200 OF HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE IT IS A NEW TOWN DEVELOPMENT.
- MUCH OF THE TRAIL ALIGNMENT IS LOCATED WITHIN THE FLOODPLAIN OF THE LITTLE PATUXENT RIVER, WHICH IS SUBJECT TO FREQUENT FLOODING AND PRECLUDES THE USE OF FILTRATION AND INFILTRATION STORMWATER MANAGEMENT BMPs. ADDITIONALLY, SLOPES OUTSIDE THE FLOODPLAIN EXCEED 5% AND PRECLUDE THE USE OF PERMEABLE PAVEMENTS AND NON-ROOFTOP DISCONNECTION OUTSIDE THE FLOODPLAIN. STORMWATER MANAGEMENT REQUIREMENTS WILL BE FULFILLED TO THE MAXIMUM EXTENT PRACTICABLE USING BIORETENTION OUTSIDE THE FLOODPLAIN AND NON-ROOFTOP DISCONNECTION WITHIN THE FLOODPLAIN.
- APPLICABLE DPZ FILES: TBD
- PATH DEVELOPER: HOWARD COUNTY
PATH OWNER: HOWARD COUNTY
PATH MAINTENANCE: HOWARD COUNTY



HOWARD COUNTY CONTROL STATIONS			
30GA	NORTHING: 566,053.5979	36AA	NORTHING: 562,804.8537
	EASTING: 1,352,177.5307		EASTING: 1,349,906.1701
	ELEVATION: 339.878		ELEVATION: 359.151
	(LATEST ADJ. NOV. 2008)		(LATEST ADJ. NOV. 2008)

SITE ANALYSIS DATA CHART

TOTAL PROPERTY AREA: LOT XX - X.XXX AC
LOT XX - X.XXX AC
AREA OF PLAN SUBMISSION: 3.67 ACRES
LIMIT OF DISTURBED AREA: 3.67 ACRES
PARKING SPACES REQUIRED BY ZONING: NA
PARKING PROVIDED: NA
PRESENT ZONING DESIGNATION: NT, R-20
PROPOSED USES: SHARED USE PATH
APPLICABLE DPZ FILE NUMBERS: XXX-XX-XXX-X

INDEX TO DRAWINGS

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
1	G-1	COVER SHEET
2	G-2	LEGENDS AND ABBREVIATIONS
3	G-3	RIGHT-OF-WAY DATA
4	G-4	KEY PLAN
5-20	EP-1 TO EP-16	EASEMENT PLANS
21-22	C-1 TO C-2	GEOMETRIC LAYOUT PLAN
23-32	TP-1 TO TP-10	TRAIL PLANS AND PROFILES
33-37	RW-1 TO RW-5	ROADWAY PLANS
38-52	SM-1 TO SM-15	SIGNING AND MARKING PLANS
53-69	ES-1 TO ES-17	EROSION AND SEDIMENT CONTROL PLANS
70-79	SD-1 TP SD-10	STANDARD DETAILS
80-83	ST-1 TO ST-4	STRUCTURAL DRAWINGS

REVISED 60% SUBMISSION
NOT FOR CONSTRUCTION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS			
DIRECTOR, DEPARTMENT OF PUBLIC WORKS	DATE		
CHIEF, BUREAU OF HIGHWAYS	DATE		
CHIEF, TRAFFIC ENGINEERING DIVISION	DATE		
PROFESSIONAL CERTIFICATION			
I HEREBY CERTIFY THAT THESE PLANS 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: _____.			
DSGN	CO		
DR	RH		
CHK	JC		
APVD	MRAB	NO.	DATE
		REVISION	BY
		APVD	
TOOLE DESIGN		REUSE OF DOCUMENTS	
8484 GEORGIA AVENUE, SUITE 800 SILVER SPRING, MD 20910 PHONE: 301.927.1900 FAX: 301.927.2800 www.tooledesign.com		ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.	
SOUTH ENTRANCE TRAIL		DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
PERMIT INFORMATION CHART			
PROJECT NAME: SOUTH ENTRANCE TRAIL		SECTION/AREA SEE SHEET G-1	
PARCEL SEE SHEET G-1			
L/F N/A	ZONE NT/R-20	TAX MAP 36	BLOCK MULTIPLE
ELEC. DIST. 2, 3, & 4		CENSUS TRACT 6054	
GENERAL		COVER SHEET	
SHEET 1 OF 83		DWG G-1	
DATE APR 2020		PROJECT 5409.06	

DOWNTOWN COLUMBIA TO STEPHENS FOREST ROAD SUP PROPERTY OWNERSHIP																
ROPERTY NUMB	ZONE	ACCOUNT ID	PROPERTY OWNERSHIP	LEGAL DESCRIPTION/ADDRESS	PLAT NO.	DEED LIBER	DEED FOLIO	TAX MAP	TAX MAP GRID	PARCEL	LOT	PERMANENT EASEMENT AREA (SF)	TEMPORARY CONSTRUCTION EASEMENT AREA (SF)	CONSTRUCTION PERMIT AREA (SF)	PERMANENT MAINTENANCE AGREEMENT AREA (SF)	PARCEL AREA
1	R-20	1406400574	STATE OF MARYLAND, DEPT STATE HIGHWAY ADMINISTRATION	LOT 1 .440 A OWEN BROWN RD SIMPSONVILLE S 1 AR 1	5747	1246	197	36	14	359	1			-	634	19,154 SF
2	R-20	1406478808	STATE OF MARYLAND, DEPT STATE HIGHWAY ADMINISTRATION	LOT 2 .327 A OWEN BROWN RD SIMPSONVILLE S 1 AR 1	5747	1493	422	36	14	359	2			-	633	14,245 SF
3	R-20	1406478816	STATE OF MARYLAND, DEPT STATE HIGHWAY ADMINISTRATION	LOT 3 .349 A OWEN BROWN RD OWEN BROWN EAST S 1 AR 1	5747	1493	422	36	14	359	3			-	706	15,217 SF
4	R-20	1406478824	STATE OF MARYLAND	OWEN BROWN RD OWEN BROWN EAST SR AR 1	5747	1493	422	36	14	359	4			-	466	14,906 SF
5	R-20	1406478832	HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS	OWEN BROWN RD OWEN BROWN EAST S 1 AR 1	5747	1232	292	36	14	359	5	957	1180			21,780 SF
6	R-20	N/A (RIGHT-OF-WAY)	STATE OF MARYLAND	BROKEN LAND PWKY INTERCHANGE	34596 34998 34967 34969	3369	682	36	14	N/A	N/A			31963	67687	N/A (RIGHT-OF-WAY)
7	NT	1416200263	COLUMBIA ASSOCIATION INC	OP SP. STEVENS FOREST RD. VIL OF OWEN BROWN S5 A1	9696	3324	191	36	14	402	3	621	888			1.52 AC
8	NT/R-20	1416073601	COLUMBIA ASSOCIATION INC	S 5. BABYLON CREST BACK. VOM STEVENS FORST	9696	3324	191	36	8	315	214	13637	11763			15.07 AC
9	NT	1416073555	COLUMBIA ASSOCIATION INC	S 5 AR 2. ROUTE 29. VOM STEVENS FOREST	9696	3324	191	36	8	315	207	51	166			11.06 AC
10	NT	1415130091	THE HOWARD RESEARCH & DEVELOPMENT CORPORATION	OPENSF. OLD COLUMBIA RD. COLUMBIA TWN CTR S5 A4	14054	4118	16	36	1	519	1	-	165			5.48 AC
11	NT	1415130105	THE HOWARD RESEARCH & DEVELOPMENT CORPORATION	OPENSF. OLD COLUMBIA RD. COLUMBIA TWN CTR S5 A4	19560	4118/5289	16/330	36	1	519	2	30129	17519			4.39 AC
12	NT	1415130113	THE HOWARD RESEARCH & DEVELOPMENT CORPORATION	OPENSF. OLD COLUMBIA RD. COLUMBIA TWN CTR S5 A4	14054	4118	16	36	1	519	3	-	776			1.42 AC
13	NT	1415011254	SYMPHONY WOODS LLC C/O WASHINGTON CAPITOL PARTNER	5950 SYMPHONY WOODS DR. COLUMBIA	6657	11354	641	36	8	338	PAR A2	2771	2719			148,156 SF
14	NT	1415018364	TOBYS GENERAL PARTNERSHIP C/O HAROLD D ORENSTEIN	5900 SYMPHONY WOODS RD.	N/A	1530	379	36	8	307	1	258	1762			2.58 AC
15	R-20	1415126981	STATE HIGHWAY ADMINISTRATION, DEPT OF TRANSPORTATION	2.894 A ROUTE 29 COLUMBIA	N/A	4094	636	36	2	517	N/A			254	-	2.89 AC
16	NT	1415599592	THE HOWARD RESEARCH & DEVELOPMENT CORPORATION	SOUTH ENTRANCE ROAD, CRESCENT NEIGHBORHOOD	23991 - 24012	TBD	TBD	36	1	527	PAR R	1678	1907			0.276 AC
17	NT	1415599583	THE HOWARD RESEARCH & DEVELOPMENT CORPORATION	SOUTH ENTRANCE ROAD, CRESCENT NEIGHBORHOOD	23991 - 24012	TBD	TBD	36	1	527	PAR H	-	296			0.155 AC
18	NT	1416207314	ABRAMS WOODSIDE LLC	P/O PAR G4 2.083 A 6300 WOODSIDE CT VIL OWEN BROWN S 5 AR 1	11582/11583	17170	265	36	14	431	PART OF G4	604	-			9,073 SF
19	NT	1416144576	NEW HOPE KOREAN CHURCH	6301 STEVENS FOREST RD VILL OWEN BROWN S 5 AR 1	6756	16466	180	36	14	433	D2	1877	-			5.91 AC
20	NT	1416144568	SOUTHSIDE OIL LLC	PAR C 1.661AR STEVENS FOREST RD VIL OWEN BROWN		12528	499	36	14	431	PAR C	1136	-			72,353 SF
21	NT	1416091855	COLUMBIA ASSOCIATION INC	CRADLEROCK WAY VIL OWEN BROWN S1 A1	N/A	3324	191	36	21	357	271	4059	-			31.11 AC
22	NT	1416143081	COLUMBIA ASSOCIATION INC	S 5 AR 3 BROKEN LAND PKWY VIL OWEN BROWN	N/A	3324	191	36	15	426	8	1128	-			0.74 AC
23	NT	1416143014	COATES, CURTIS F/ COATES ALICE	6251 SOFTSHADE WAY VIL OWEN BROWN	N/A	N/A	N/A	36	15	426	1	266	-			20,086 SF
24	NT	1416143073	LAUTZ, JOHN	6250 SOFTSHADE WAY VIL OWEN BROWN	N/A	9032	582	36	15	426	7	1260	-			22,094 SF
25	NT	N/A (RIGHT-OF-WAY)	BALTIMORE GAS AND ELECTRIC COMPANY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	676	-			N/A (RIGHT-OF-WAY)
26	NT	1416078735	JONES, SHAHINA T	S 5 AR 2 6224 STEVENS FOREST RD VOM STEVENS FORST	N/A	17596	231	36	8	315	168	38	-			10,836 SF

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN CO

DR RH

CHK JC

APVD

NO.

DATE

REVISION

BY

APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

GENERAL

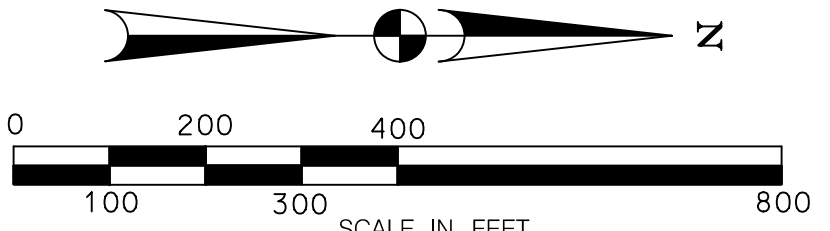
RIGHT-OF-WAY DATA

SHEET 3 OF 83

DWG G-3

DATE APR 2020

PROJECT 5409.06



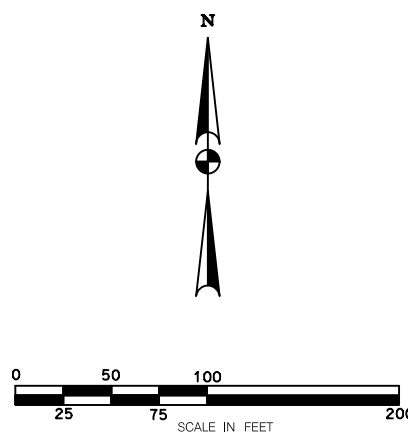
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
DIRECTOR, DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF HIGHWAYS	DATE
CHIEF, TRAFFIC ENGINEERING DIVISION	DATE
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. _____, EXPIRATION DATE: _____.	

DSGN	CO								
DR	RH								
CHK	JC								
APVD	MRAB	NO.	DATE	REVISION	BY	APVD			

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS	SOUTH ENTRANCE TRAIL	GENERAL	SHEET 4 OF 83
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	KEY PLAN	DWG G-4
			DATE APR 2020
			PROJECT 5409.06



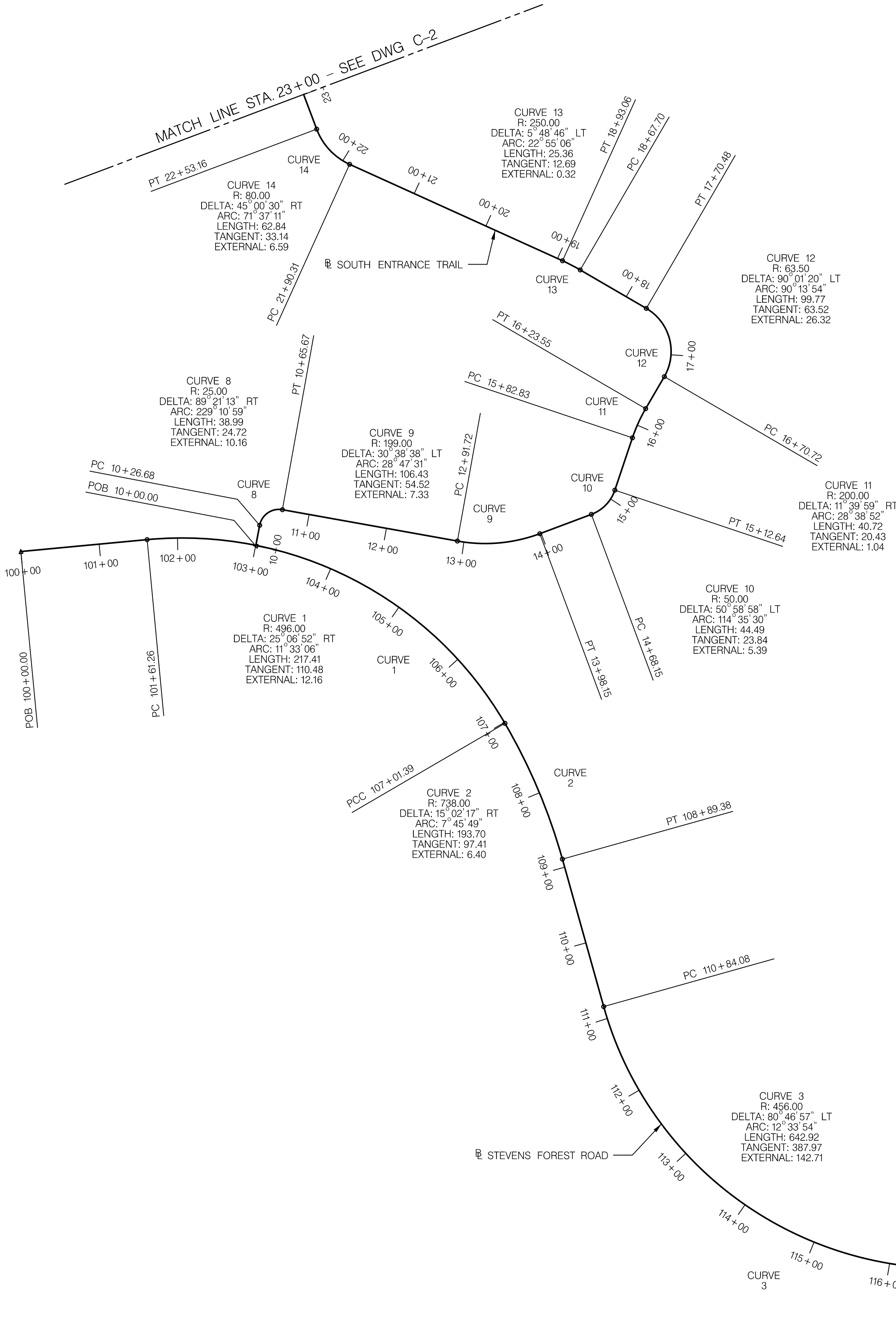
HOWARD COUNTY CONTROL STATIONS

30GA
NORTHING: 566,053.5979
EASTING: 1,352,177.5307
ELEVATION: 339.878
(LATEST ADJ. NOV. 2008)

36AA
NORTHING: 562,804.8537
EASTING: 1,349,906.1701
ELEVATION: 359.151
(LATEST ADJ. NOV. 2008)

BASELINE GEOMETRY INFORMATION			
SOUTH ENTRANCE SEGMENT			
POINT	STATION	NORTHING	EASTING
POB	10 + 00.00	558311.2651	1352985.7601
PC	10 + 26.68	558337.4688	1352990.7705
PI	10 + 51.40	558361.7485	1352995.4130
PT	10 + 65.67	558357.3802	1353019.7435
PC	12 + 91.72	558317.4333	1353242.2399
PI	13 + 46.24	558307.7985	1353295.9040
PT	13 + 98.15	558326.8618	1353346.9849
PC	14 + 68.15	558351.3356	1353412.5635
PI	14 + 91.99	558359.6709	1353434.8983
PT	15 + 12.64	558382.2716	1353442.4831
PC	15 + 82.83	558448.8112	1353464.8140
PI	16 + 03.26	558468.1816	1353471.3148
PT	16 + 23.55	558485.8374	1353481.5982
PC	16 + 70.72	558526.5936	1353505.3362
PI	17 + 34.24	558581.4850	1353537.3071
PT	17 + 70.48	558613.4345	1353482.4033
PC	18 + 67..70	558662.3311	1353398.3768
PI	18 + 80.39	558668.7148	1353387.4067
PT	18 + 93.06	558673.9546	1353375.8466
PC	21 + 90.31	558796.6699	1353105.1116
PI	22 + 23.46	558810.3529	1353074.9240
PT	22 + 53.16	558841.3758	1353063.2580

BASELINE GEOMETRY INFORMATION			
STEVENS FOREST ROAD SEGMENT			
POINT	STATION	NORTHING	EASTING
POB	100 + 00.00	558304.1435	1352687.1522
PC	101 + 61.26	558319.2870	1352847.6953
PI	104 + 64.75	558347.7882	1353149.8493
PCC	107 + 01.39	558085.5823	1353302.6806
PI	107 + 95.90	558003.9308	1353350.2726
PT	108 + 89.38	557912.9216	1353375.7535
PC	110 + 84.08	557725.4367	1353428.2457
PI	114 + 72.04	557351.8364	1353532.8468
PCC	117 + 27.00	557395.2434	1353918.3781
PI	118 + 35.42	557407.3735	1354026.1151
PT	119 + 42.66	557446.2791	1354127.3117
PC	122 + 82.89	557568.3706	1354444.8813
PI	123 + 26.52	557584.0272	1354485.6051
PRC	123 + 70.14	557597.8929	1354526.9730
PI	127 + 32.01	557712.8969	1354870.0838
PT	130 + 64.56	558020.8397	1355060.1422
PC	131 + 33.18	558079.2357	1355096.1835
PI	131 + 94.85	558131.7092	1355128.5695
PT	132 + 55.84	558190.6646	1355146.6408
POE	136 + 00.23	558519.9342	1355247.5702



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN

OG

DR

OG

CHK

JC

APVD

MRAB

NO.

DATE

REVISION

BY

APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

GEOMETRIC LAYOUT PLAN
STA 100+00 TO STA 136+00
STA 10+00 TO STA 23+00

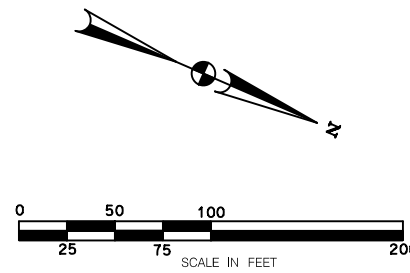
SHEET 5 OF 83

DWG C-1

DATE APR 2020

PROJECT 5409.06

MATCH LINE STA. 23+00 - SEE DWG C-1



HOWARD COUNTY CONTROL STATIONS

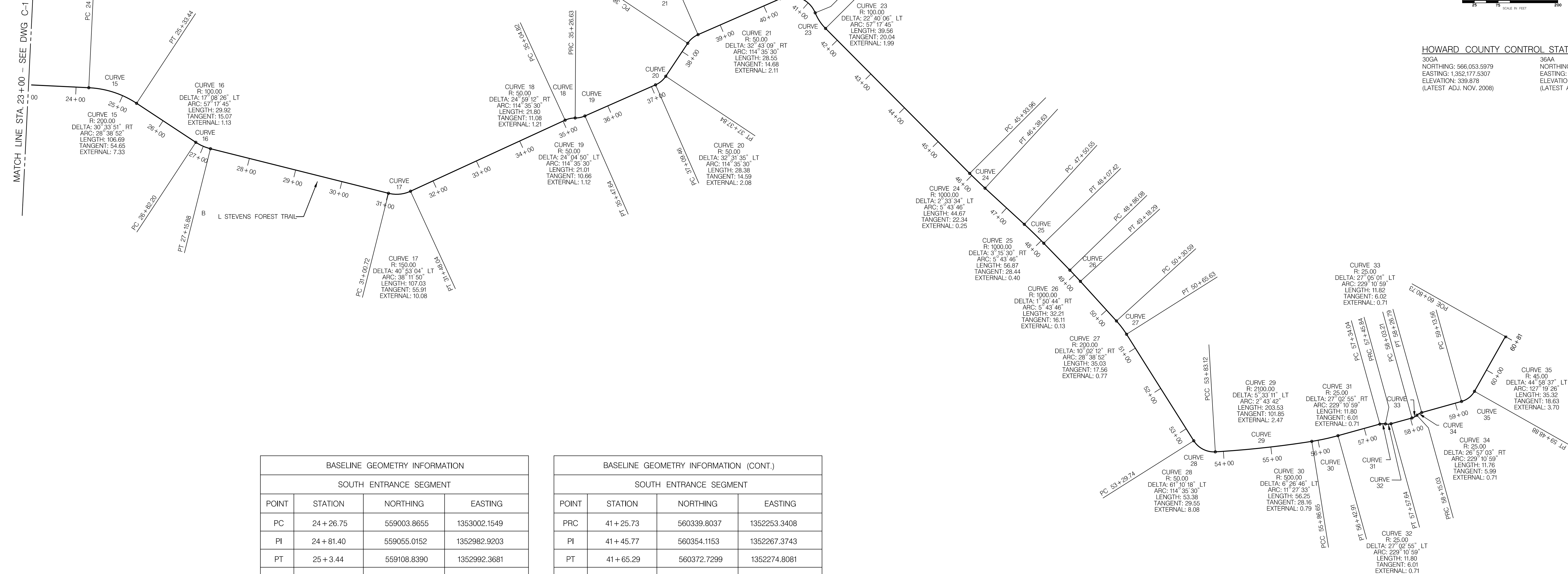
30GA
NORTHING: 566,053.5979
EASTING: 1,352,177.5307
ELEVATION: 339.878
(LATEST ADJ. NOV. 2008)

36AA
NORTHING: 562,804.8537
EASTING: 1,349,906.1701
ELEVATION: 359.151
(LATEST ADJ. NOV. 2008)

BASELINE GEOMETRY INFORMATION				
SOUTH ENTRANCE SEGMENT				
POINT	STATION	NORTHING	EASTING	
PC	24 + 26.75	559003.8655	1353002.1549	
PI	24 + 81.40	559055.0152	1352982.9203	
PT	25 + 3.44	559108.8390	1352992.3681	
PC	26 + 82.20	559255.3579	1353018.0868	
PI	26 + 99.20	559272.1018	1353021.0258	
PT	27 + 15.88	559288.8763	1353018.2668	
PC	31 + 00.72	559668.6170	1352955.8086	
PI	31 + 25.33	559692.8929	1352951.8157	
PT	31 + 48.04	559709.3329	1352933.5130	
PC	35 + 04.82	559947.7458	1352668.0852	
PI	35 + 15.90	559955.1489	1352659.8433	
PRC	35 + 26.63	559965.3406	1352655.4998	
PI	35 + 37.29	559975.1513	1352651.3187	
PT	35 + 47.64	559982.4023	1352643.4984	
PC	37 + 09.46	560092.4259	1352524.8368	
PI	37 + 24.05	560102.3433	1352514.1409	
PT	37 + 37.84	560104.9539	1352499.7902	
PC	38 + 20.94	560119.8260	1352418.0385	
PI	38 + 35.62	560122.4530	1352403.5979	
PT	38 + 49.49	560132.4686	1352392.8686	
PC	40 + 37.98	560261.0913	1352255.0807	
PI	40 + 94.35	560299.5559	1352213.8753	

BASELINE GEOMETRY INFORMATION (CONT.)				
SOUTH ENTRANCE SEGMENT				
POINT	STATION	NORTHING	EASTING	
PRC	41 + 25.73	560339.8037	1352253.3408	
PI	41 + 45.77	560354.1153	1352267.3743	
PT	41 + 65.29	560372.7299	1352274.8081	
PC	45 + 93.96	560770.8298	1352433.7900	
PI	46 + 16.30	560791.5750	1352442.0747	
PT	46 + 38.63	560812.6694	1352449.4247	
PC	47 + 50.55	560918.3576	1352486.2500	
PI	47 + 78.99	560945.2151	1352495.6080	
PT	48 + 07.42	560971.4974	1352506.4774	
PC	48 + 86.08	561044.1914	1352536.5412	
PI	49 + 02.19	561059.0751	1352542.6966	
PT	49 + 18.29	561073.7529	1352549.3281	
PC	50 + 30.59	561176.0914	1352595.5653	
PI	50 + 48.16	561192.0961	1352602.7964	
PT	50 + 65.63	561206.5957	1352612.7060	
PC	53 + 29.74	561424.6456	1352761.7317	
PI	53 + 59.29	561449.0448	1352778.4072	
P	53 + 83.12	561475.4187	1352765.0726	
PI	54 + 84.97	561566.3082	1352719.1188	
P	55 + 86.65	561652.3243	1352664.5853	
PI	56 + 14.81	561676.1039	1352649.5092	
PT	56 + 42.91	561698.0407	1352631.8588	

BASELINE GEOMETRY INFORMATION (CONT.)				
SOUTH ENTRANCE SEGMENT				
POINT	STATION	NORTHING	EASTING	
PC	57 + 34.04	561769.0410	1352574.7314	
PI	57 + 40.05	561773.7260	1352570.9618	
PRC	57 + 45.84	561779.6127	1352569.7351	
PI	57 + 51.85	561785.4993	1352568.5083	
PT	57 + 57.64	561790.1843	1352564.7387	
PC	58 + 03.21	561825.6880	1352536.1722	
PI	58 + 09.23	561830.3793	1352532.3976	
PRC	58 + 15.03	561832.8376	1352526.9010	
PI	58 + 21.02	561835.2833	1352521.4323	
PT	58 + 26.79	561839.9421	1352517.6661	
PC	59 + 13.56	561907.4205	1352463.1147	
PI	59 + 32.19	561921.9076	1352451.4030	
PT	59 + 48.88	561923.8775	1352432.8784	
POE	60 + 80.73	561937.8199	1352301.7659	



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	OG				
DR	OG				
CHKD	JC				
APVD	MRAB	NO.	DATE	REVISION	BY

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

GEOMETRIC LAYOUT PLAN
STA 23+00 TO STA 60+75.09

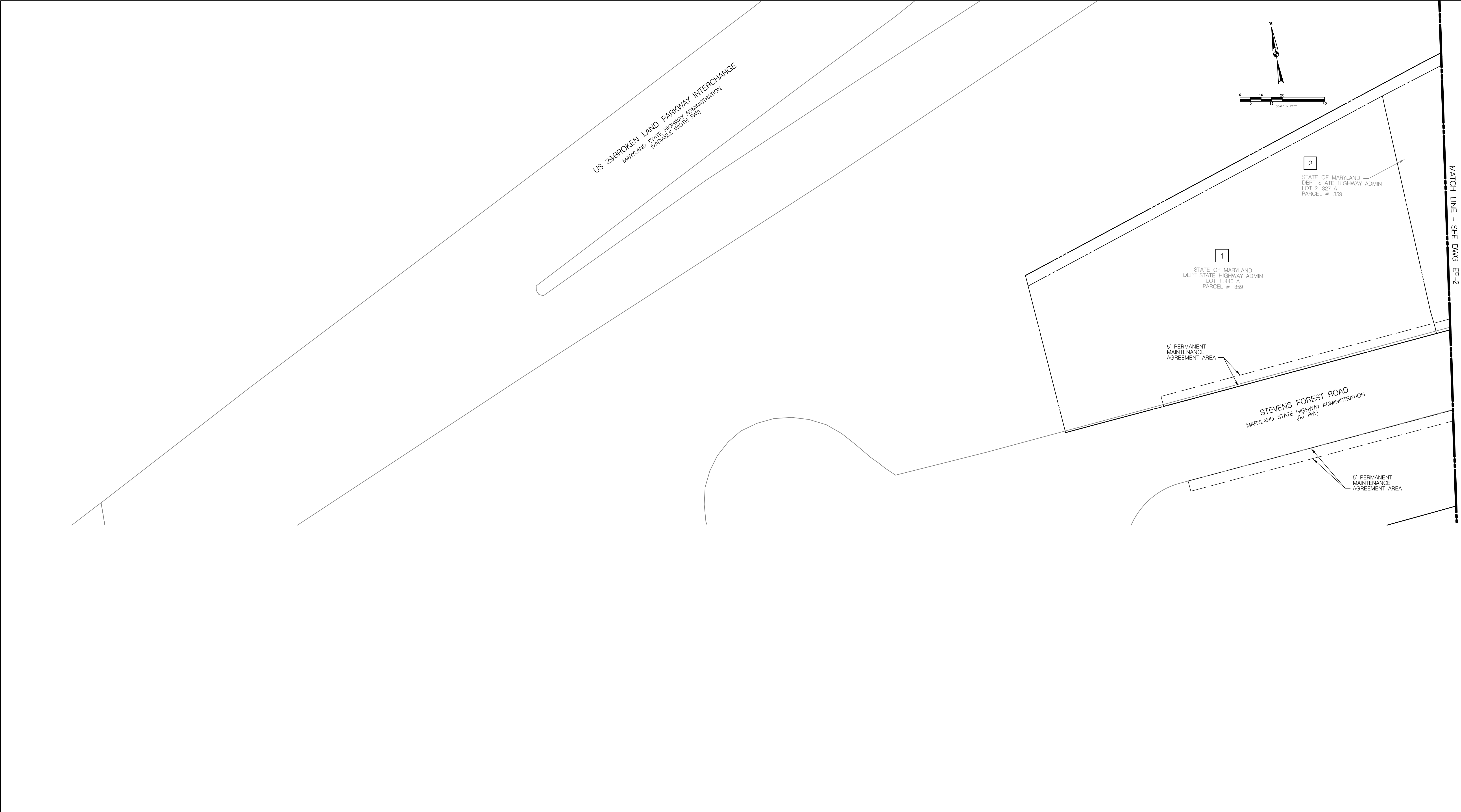
SHEET 6 OF 88

DWG C-2

DATE APR 2020

PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO						
DR	SD						
CHK	MRAB						
APVD		NO.	DATE	REVISION	BY	APVD	

TOOLE DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

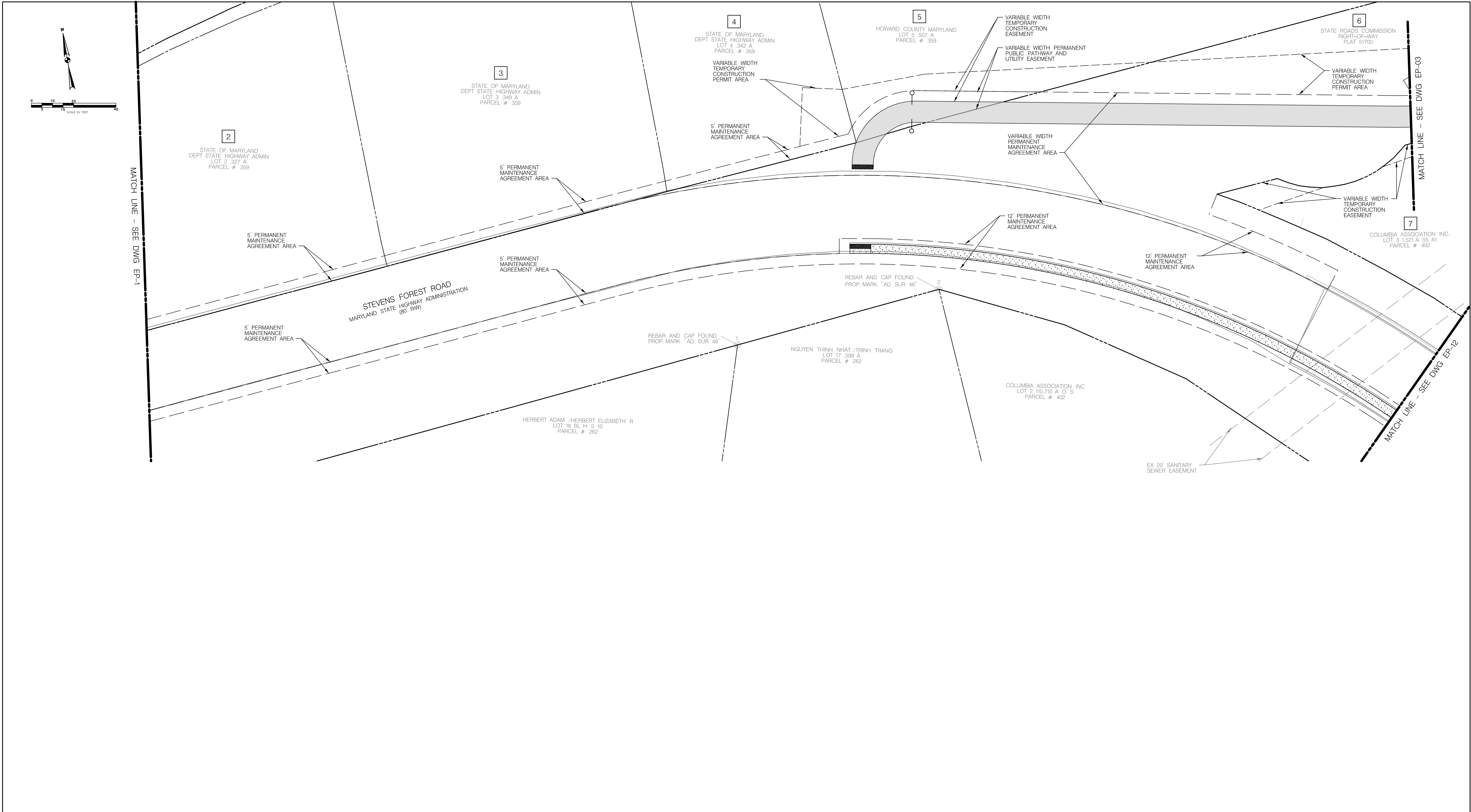
CIVIL

EASEMENT PLAN 1

SHEET	7 OF 83
DWG	EP-1
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO				
DR	SD				
CHK	MRAB				
APVD		NO.	DATE	REVISION	BY APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

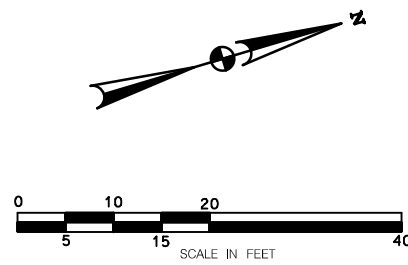
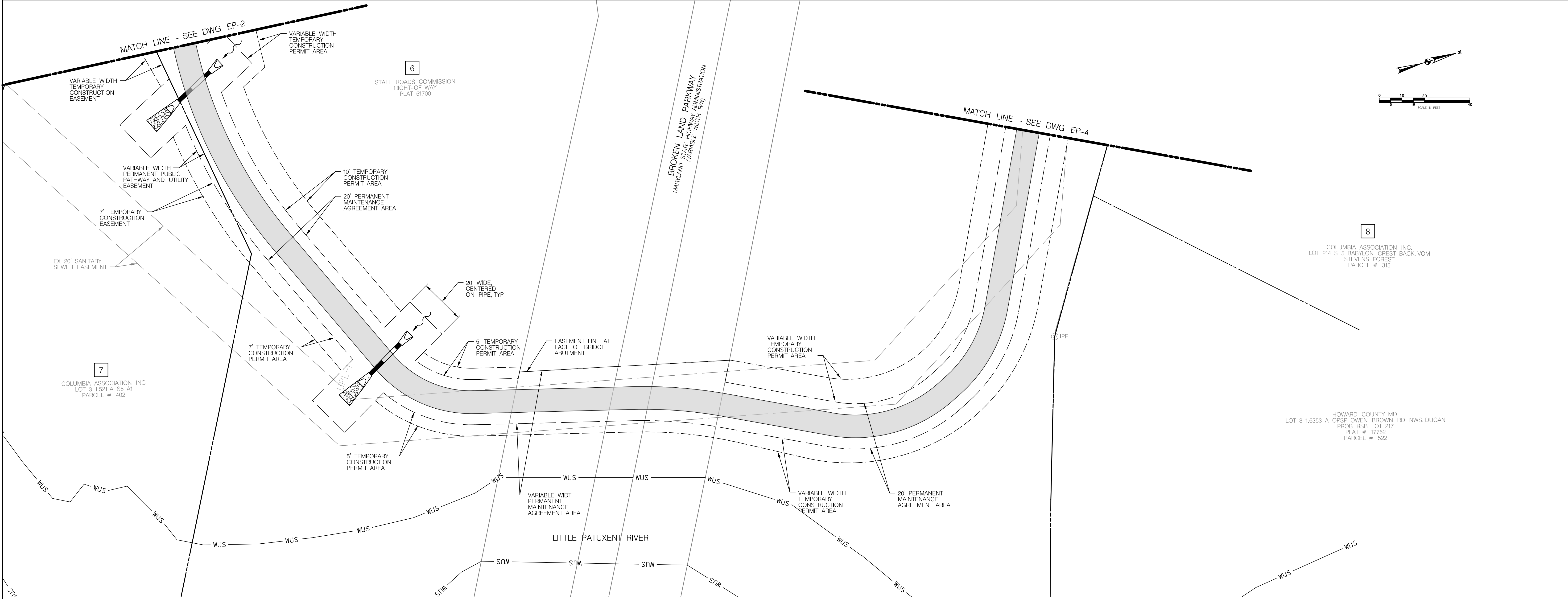
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EASEMENT PLAN 2

SHEET	8 OF 83
DWG	EP-2
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 3

SHEET	9 OF 83
DWG	EP-3
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

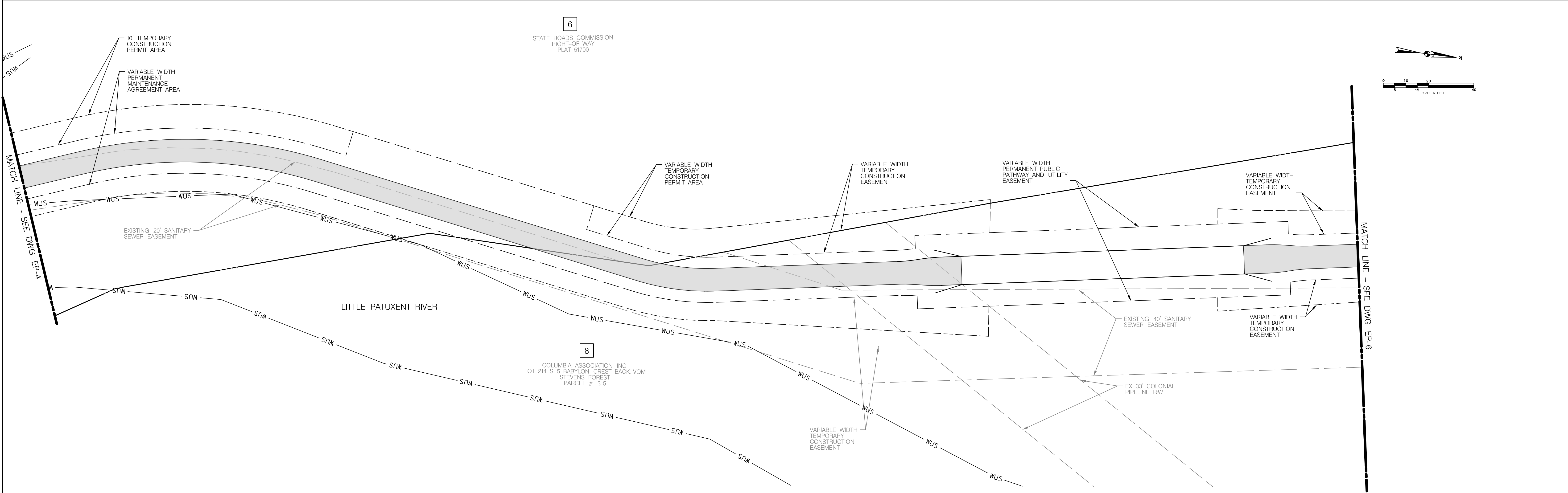
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EASEMENT PLAN 4

SHEET	10 OF 83
DWG	EP-4
DATE	APR 2020
PROJECT	5409.06

- NOTE:
- NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO						
DR	SD						
CHK	MRAB						
APVD		NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

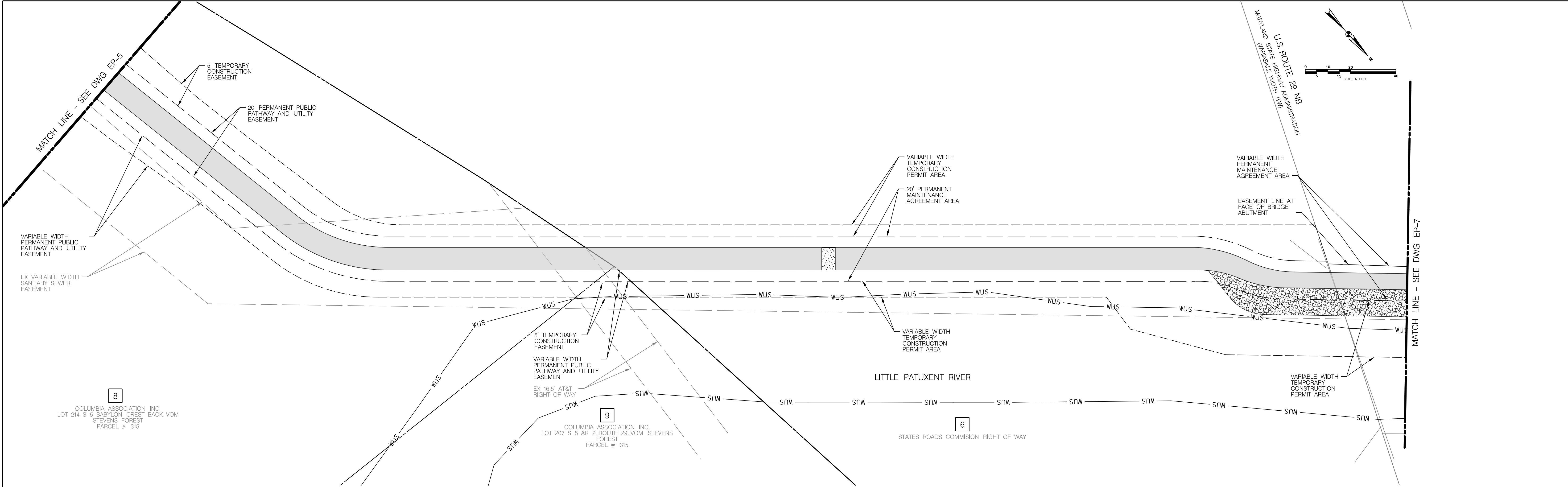
CIVIL

EASEMENT PLAN

SHEET	11 OF 83
DWG	EP-5
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

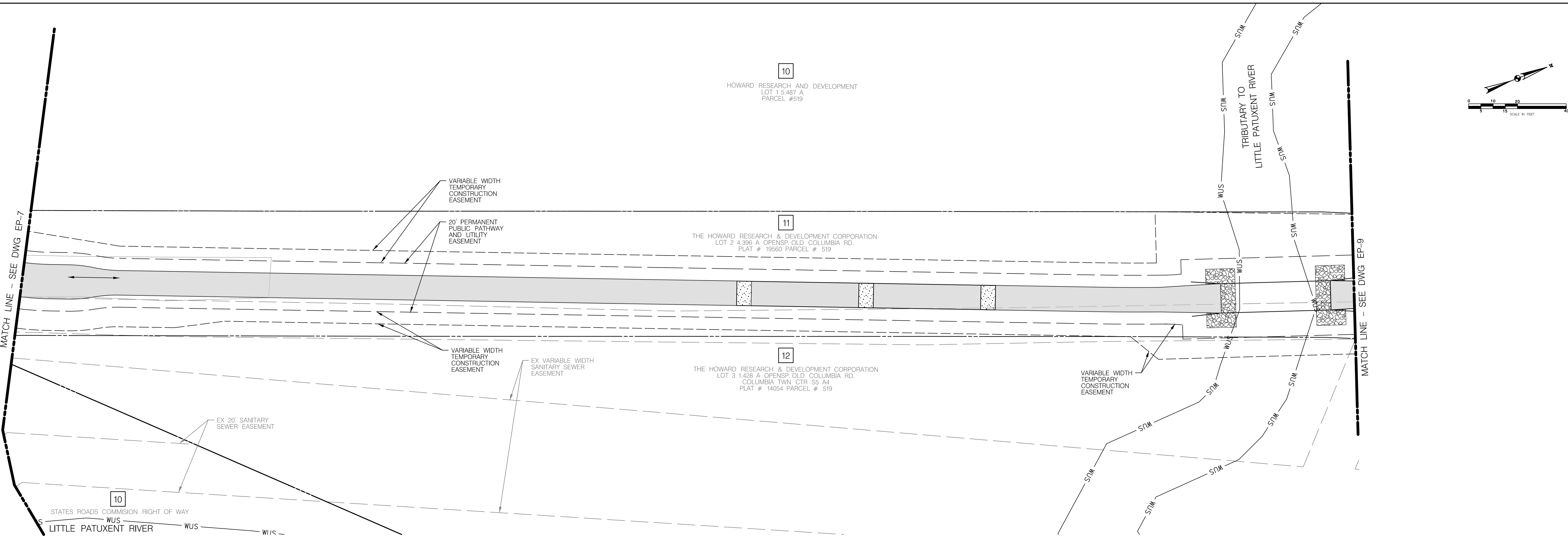
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EASEMENT PLAN 6

SHEET	12 OF 83
DWG	EP-6
DATE	APR 2020
PROJECT	5409.06

- NOTE:
- NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	AO						
DR	SD						
CHK	MRAB						
APVD		NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 8

SHEET 14 OF 83

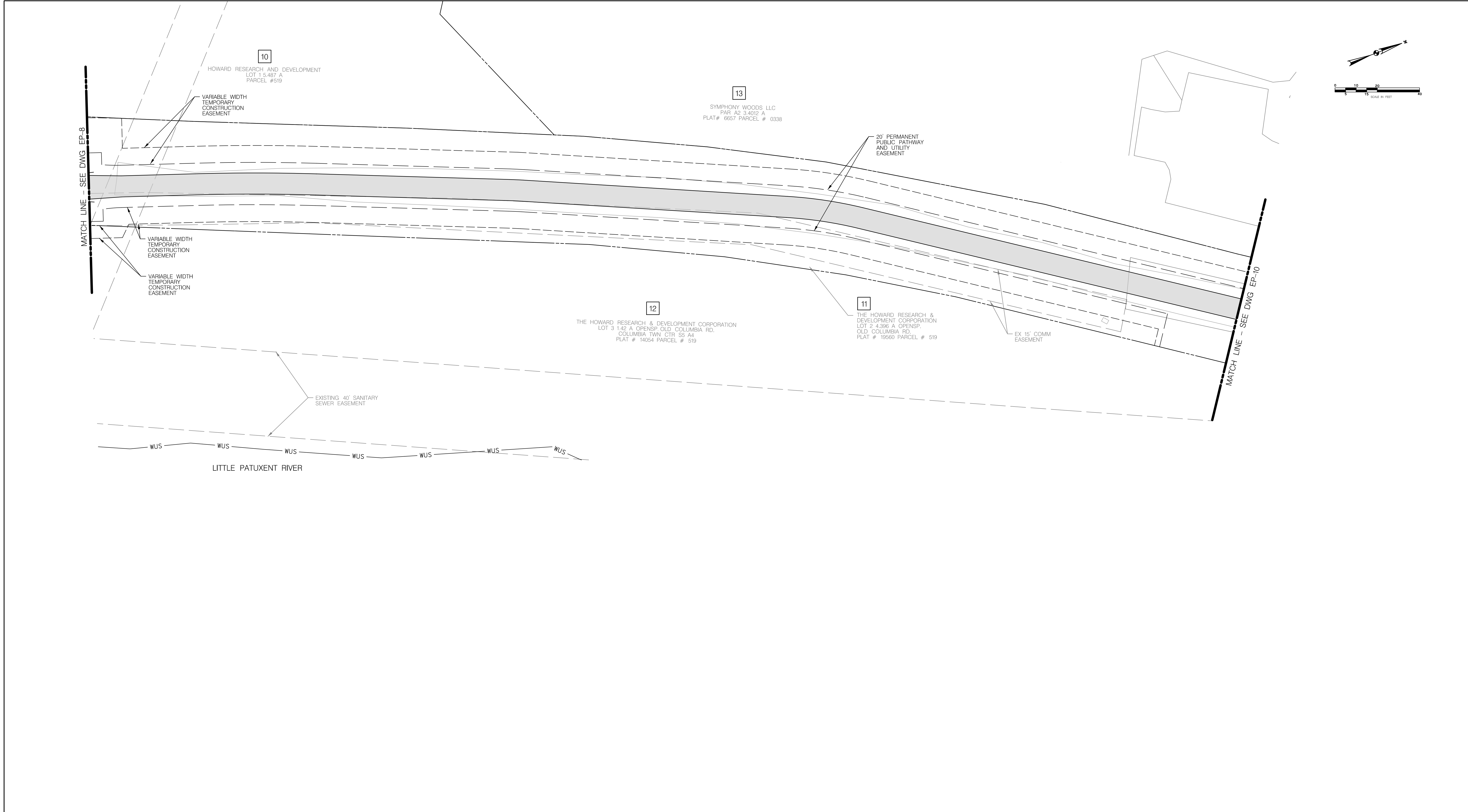
DWG EP-8

DATE APR 2020

PROJECT 5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	AO					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN
8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EASEMENT PLAN 9

SHEET	15 OF 83
DWG	EP-9
DATE	APR 2020
PROJECT	5409.06

NOTE:
1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.

THE HOWARD RESEARCH &
DEVELOPMENT CORPORATION
LOT 3 1.42 A. OPENSP.
OLD COLUMBIA RD.
COLUMBIA TWN. CTR. S5 A4
PLAT # 14054 PARCEL # 519

10

MATCH LINE - SEE DWG EP-9

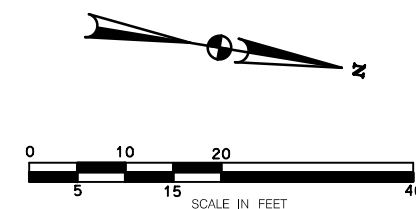
VARIABLE WIDTH
TEMPORARY
CONSTRUCTION
EASEMENT

13

SYMPHONY WOODS, LLC
PAR. A2 3.4012 A
PLAT# 6657 PARCEL # 0338

14

TOBYS GENERAL PARTNERSHIP
CO HAROLD D. ORENSTEIN
LOT 1 AREA 1 S 5
PARCEL # 0307



VARIABLE WIDTH
PUBLIC PATHWAY
AND UTILITY
EASEMENT

VARIABLE WIDTH
TEMPORARY
CONSTRUCTION
EASEMENT

VARIABLE WIDTH
PUBLIC PATHWAY
AND UTILITY
EASEMENT

VARIABLE WIDTH
PUBLIC PATHWAY
AND UTILITY
EASEMENT

5' TEMPORARY
CONSTRUCTION
EASEMENT

VARIABLE WITHH
PERMANENT
MAINTENANCE
AGREEMENT AREA

EX 20' SANITARY
SEWER EASEMENT

15

STATE HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
2.894 A. ROUTE 29, COLUMBIA
PARCEL # 517

STATE HIGHWAY ADMINISTRATION/DEPT OF TRANSPORTATION
P.O. LOT 3 1.513 A. ROUTE 29, TOWN CENTER S1 A3
PARCEL # 389

HOWARD COUNTY MD
2.210 A. ROUTE 29, TOWN CENTER
PARCEL # 389

SOUTH ENTRANCE ROAD
HOWARD COUNTY
(VARIABLE WIDTH RW)

MATCH LINE - SEE DWG EP-11

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	AO				
DR	SD				
CHK	MRAB				
APVD		NO.	DATE	REVISION	BY

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 10

SHEET 16 OF 83

DWG EP-10

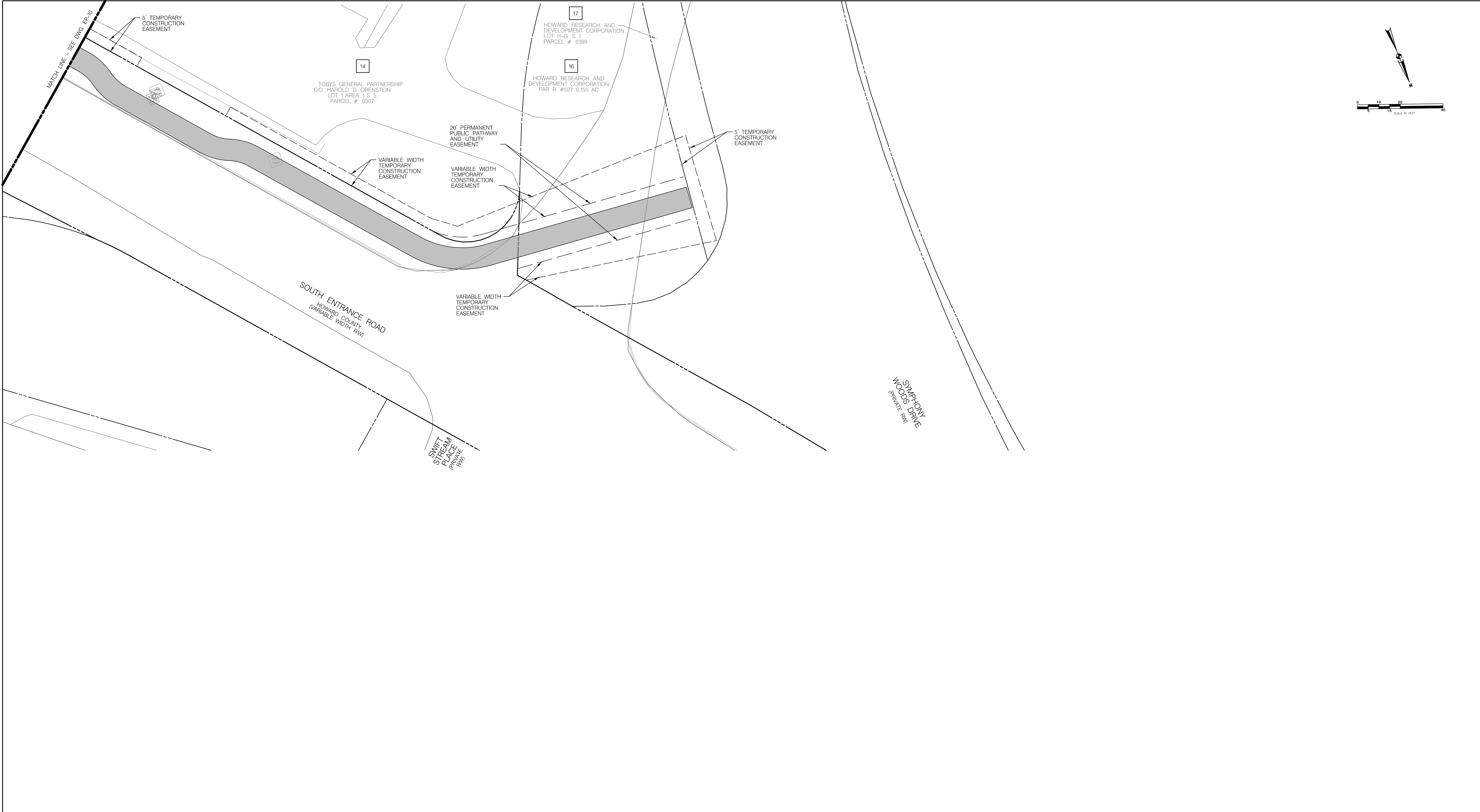
DATE APR 2020

PROJECT 5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	INIT.				
DR	RH				
CHK	JC				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 11

SHEET 17 OF 83

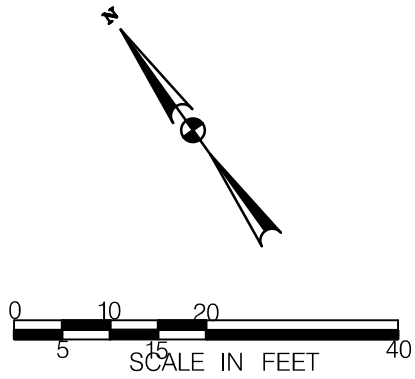
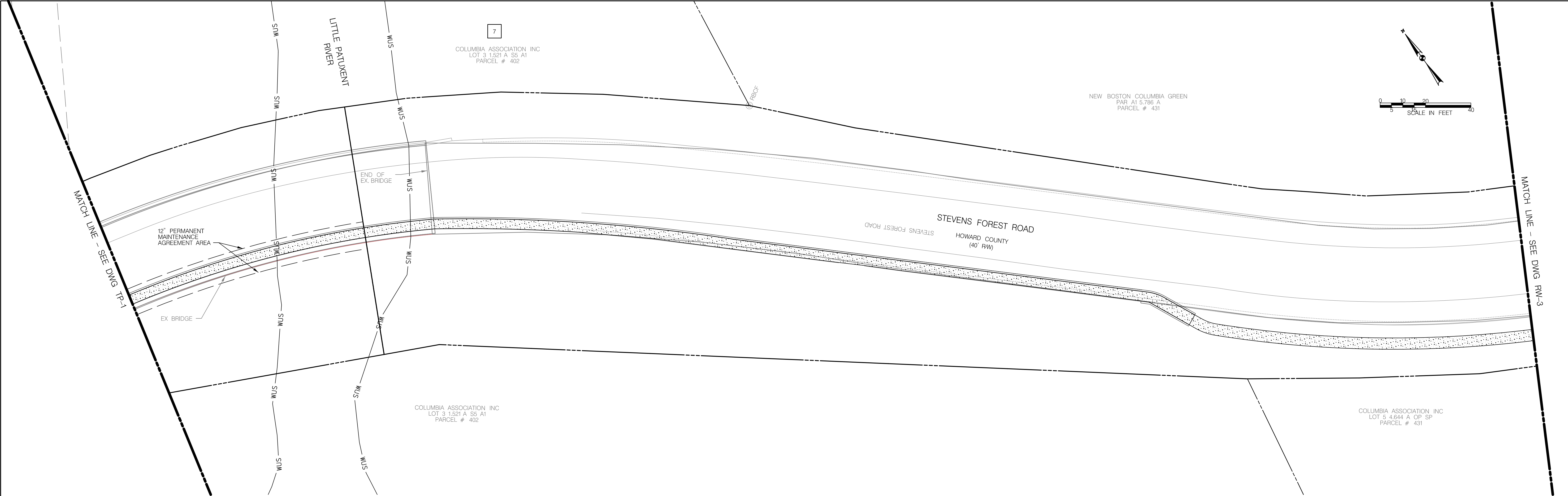
DWG EP-11

DATE APR 2020

PROJECT 5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

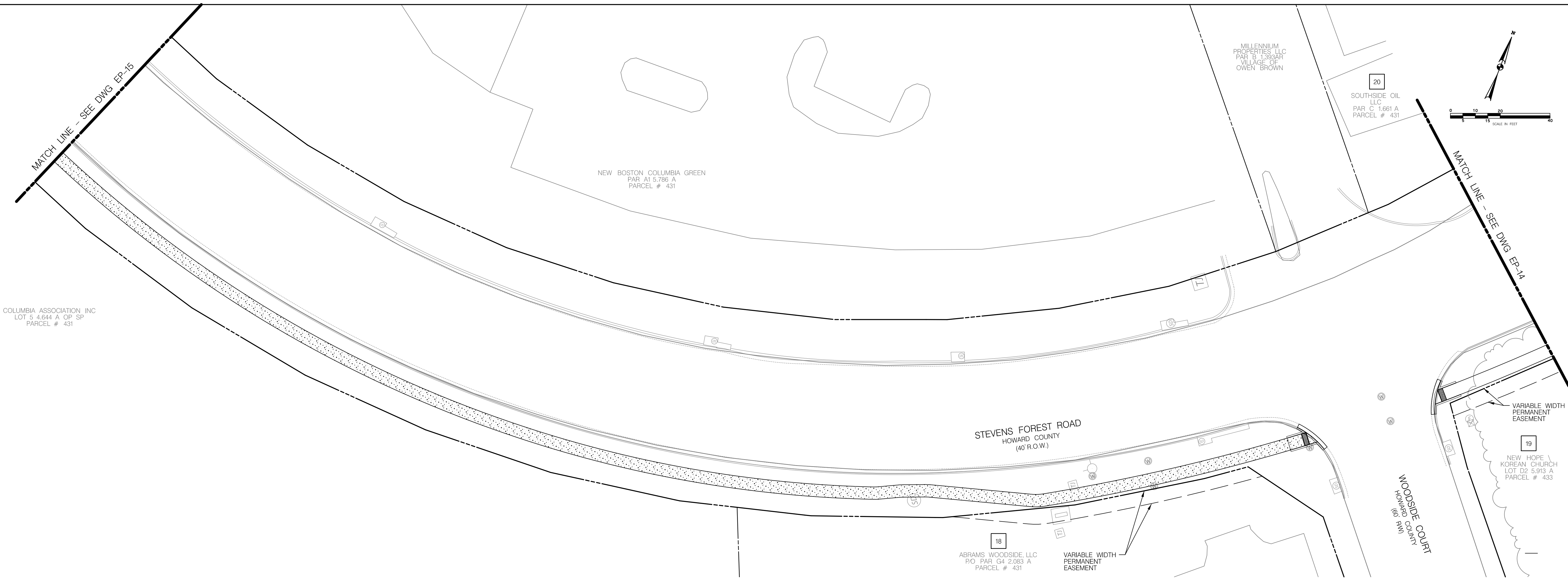
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 12

SHEET	18 OF 83
DWG	EP-12
DATE	APR 2020
PROJECT	5409.06

- NOTE:
- NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

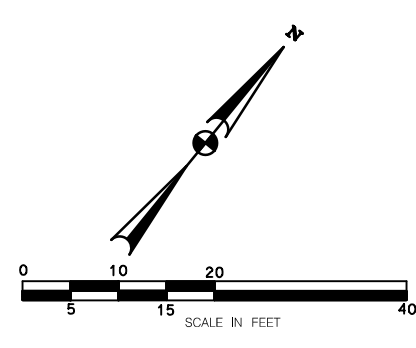
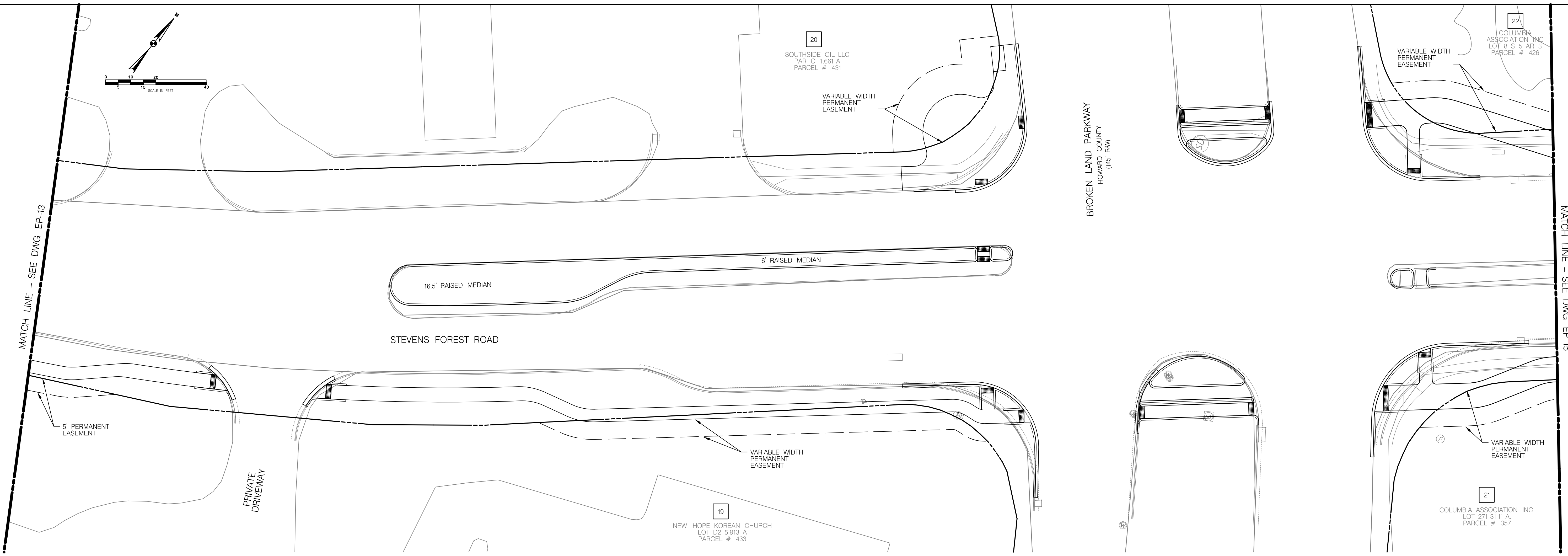
CIVIL

EASEMENT PLAN 13

SHEET	19 OF 83
DWG	EP-13
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

 DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

 CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

 CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

 I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
 SILVER SPRING, MD 20910
 PHONE: 301.927.1900
 FAX: 301.927.2800
 www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

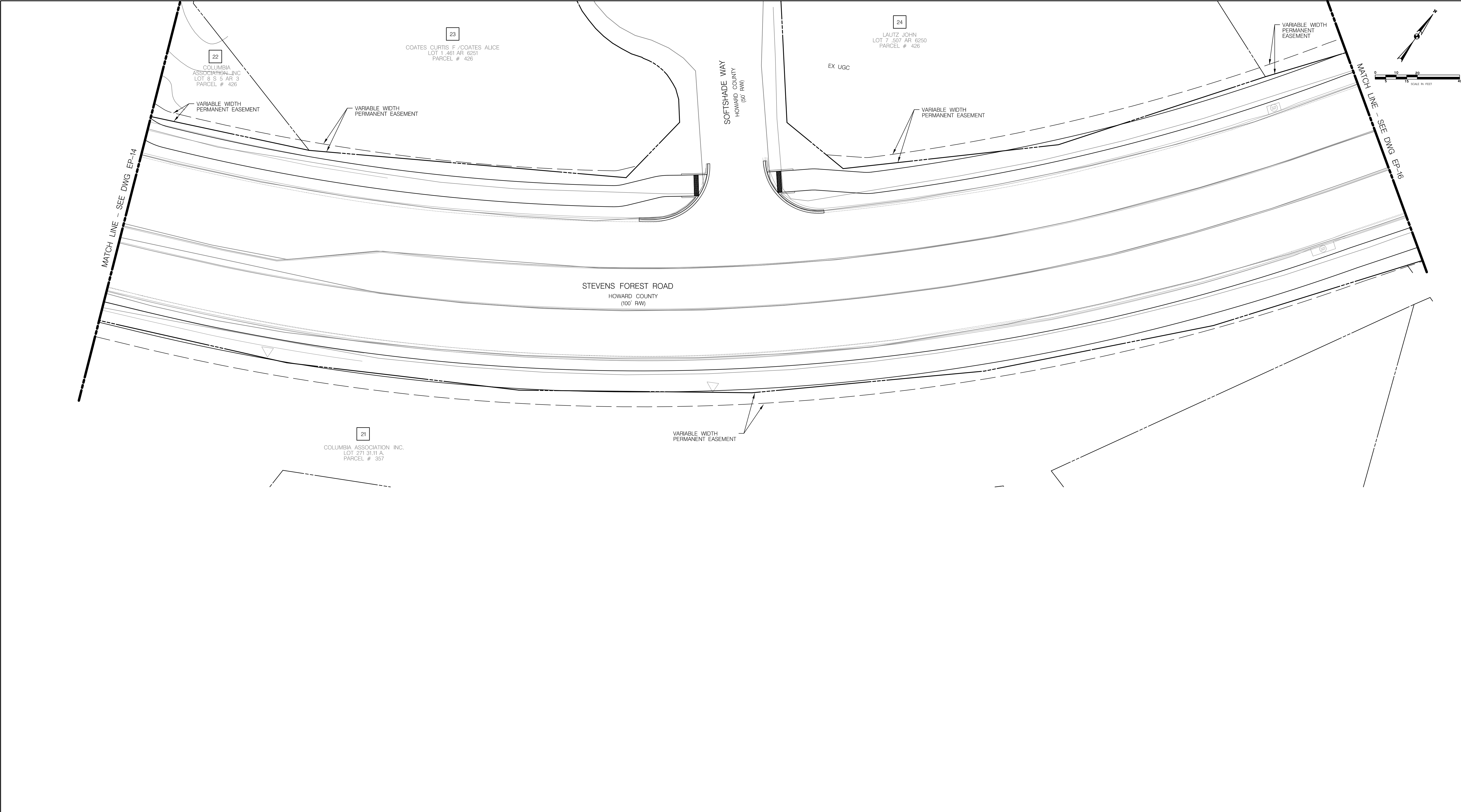
CIVIL

EASEMENT PLAN 14

SHEET	20 OF 83
DWG	EP-14
DATE	APR 2020
PROJECT	5409.06

NOTE:

1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

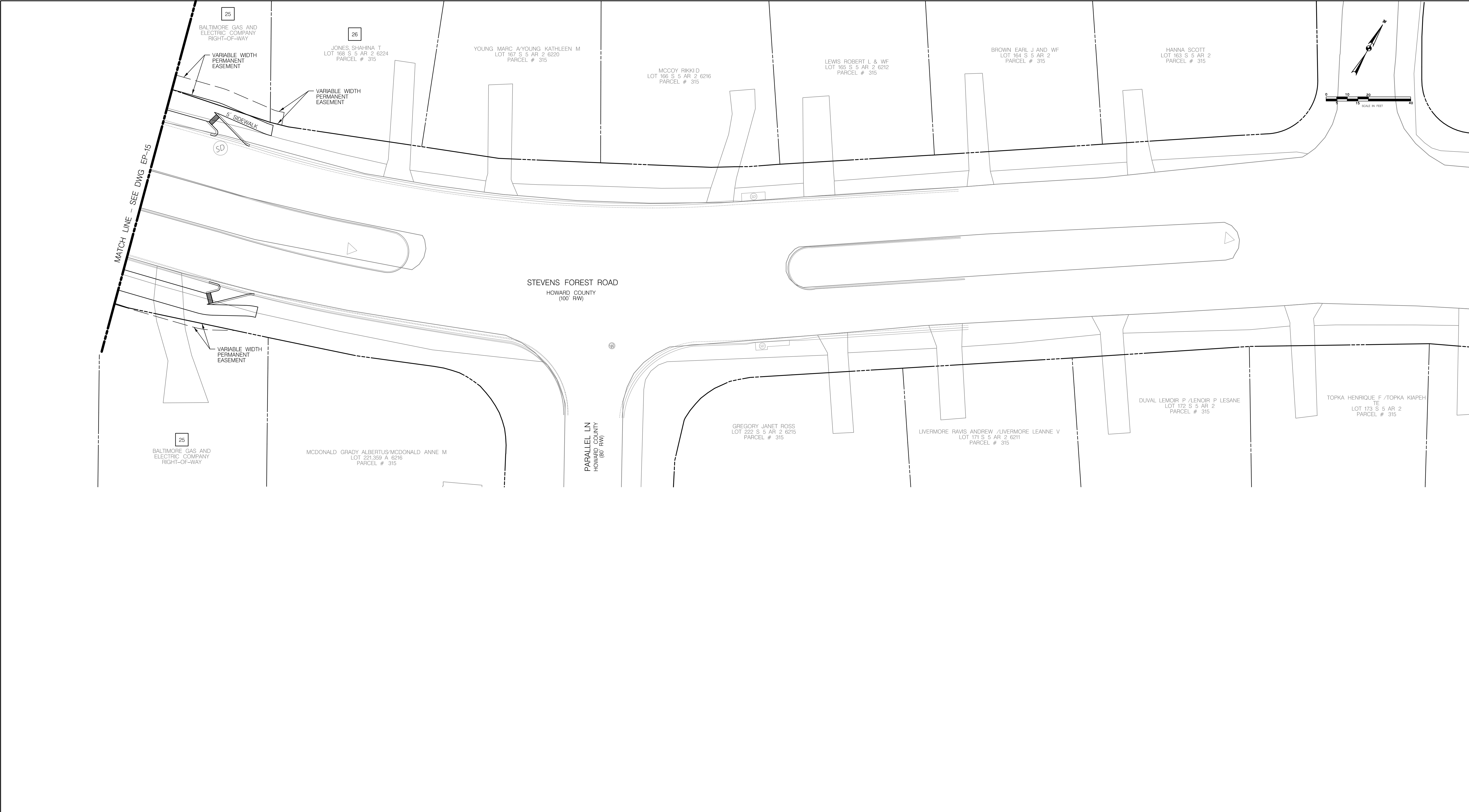
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN

SHEET	21 OF 83
DWG	EP-15
DATE	APR 2020
PROJECT	5409.06

- NOTE:
1. NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

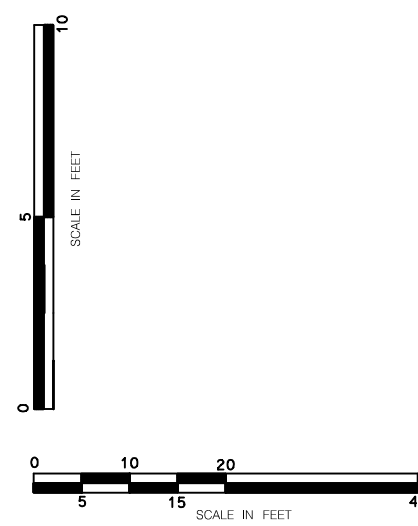
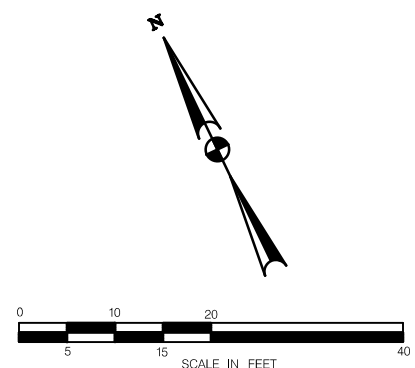
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EASEMENT PLAN 16

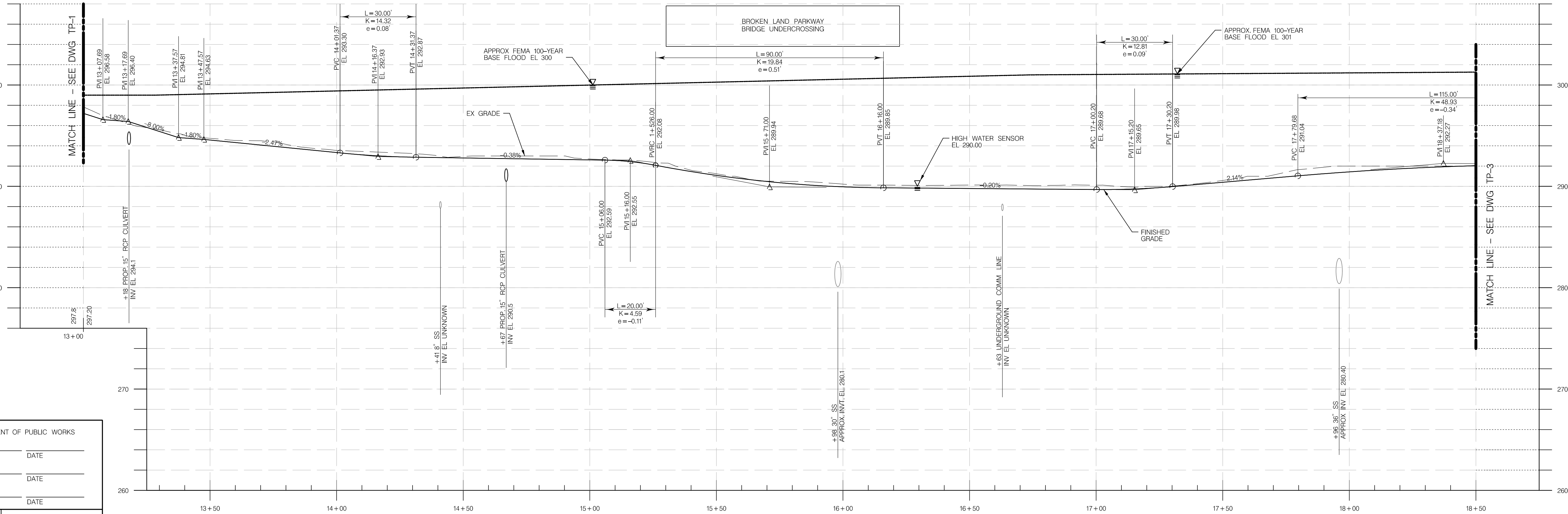
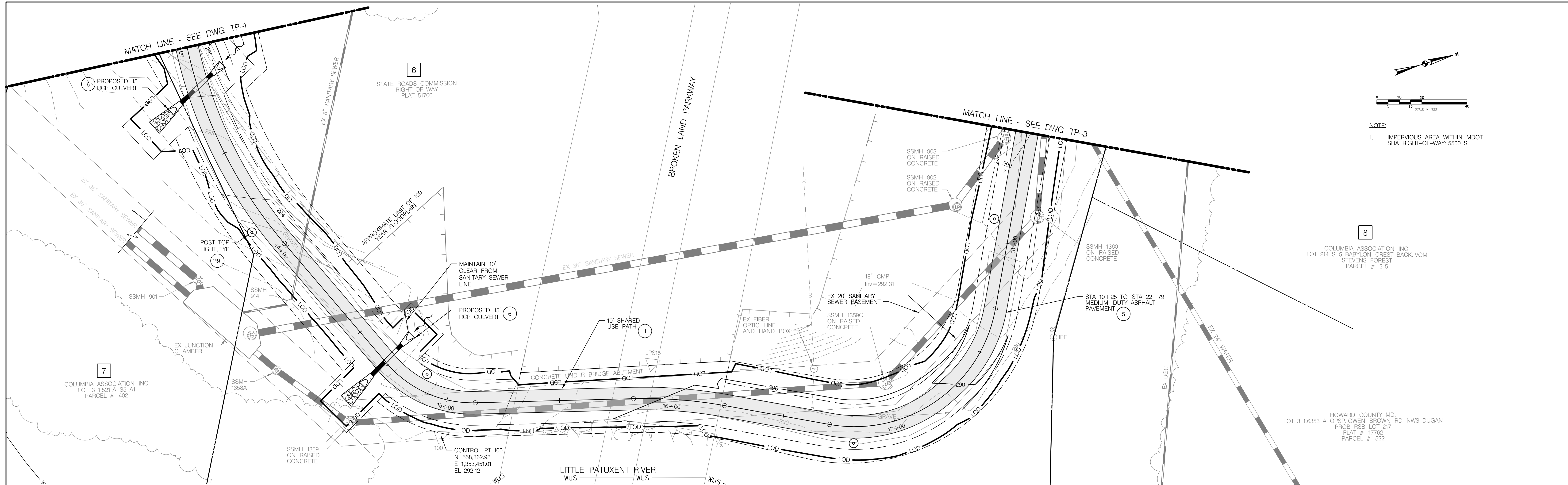
SHEET	22 OF 83
DWG	EP-16
DATE	APR 2020
PROJECT	5409.06

- NOTE:
- NO BOUNDARY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. A BOUNDARY SURVEY IS REQUIRED PRIOR TO EASEMENT ACQUISITION.



DSGN	AO					
DR	SD					
CHK	MRAB					
APVD						
		NO.	DATE	REVISION	BY	APVD

SHEET	23 OF 83
DWG	TP-1
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
DIRECTOR, DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF HIGHWAYS	DATE
CHIEF, TRAFFIC ENGINEERING DIVISION	DATE
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE PLANS 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: _____.	

DSGN	AO								
DR	SD								
CHK	MRAB								
APVD		NO.	DATE	REVISION	BY	APVD			

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

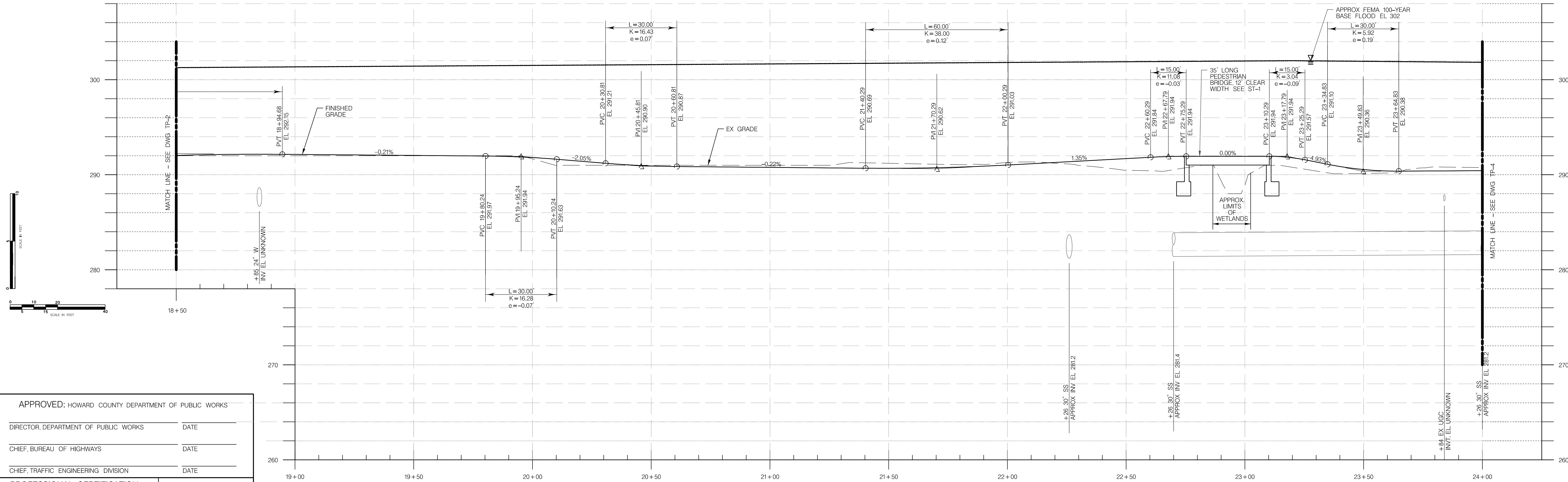
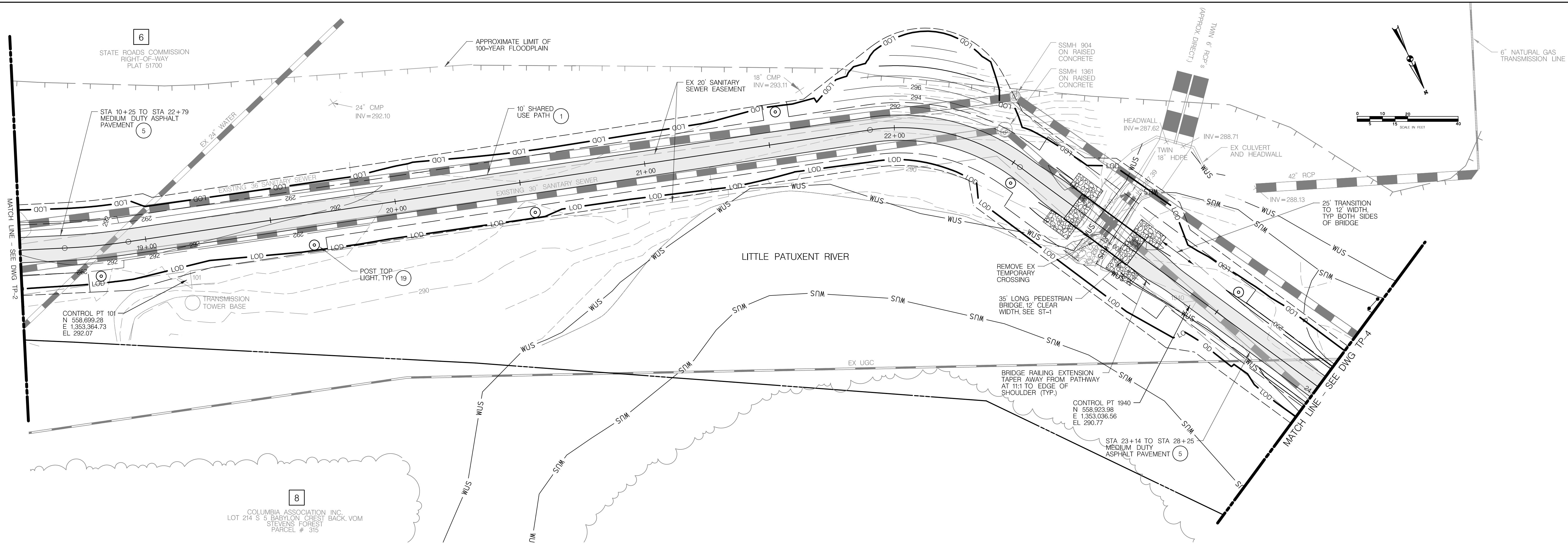
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

TRAIL PLAN AND PROFILE
STA 13+00 TO STA 18+50

SHEET	24 OF 83
DWG	TP-2
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	AO
DR	SD
CHK	MRAB
APVD	

NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

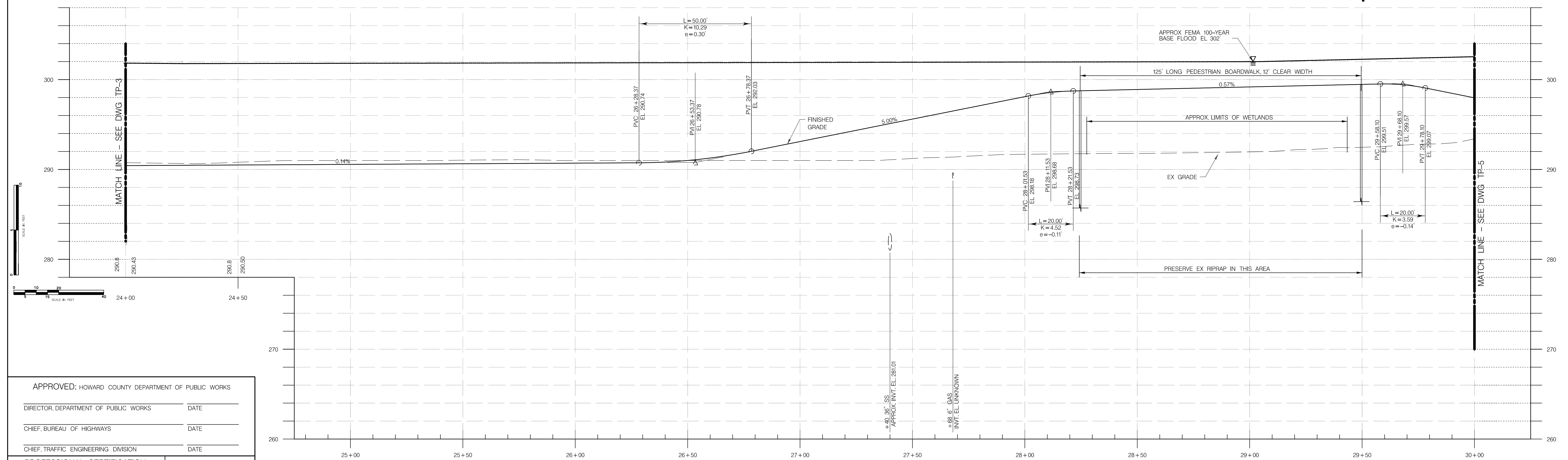
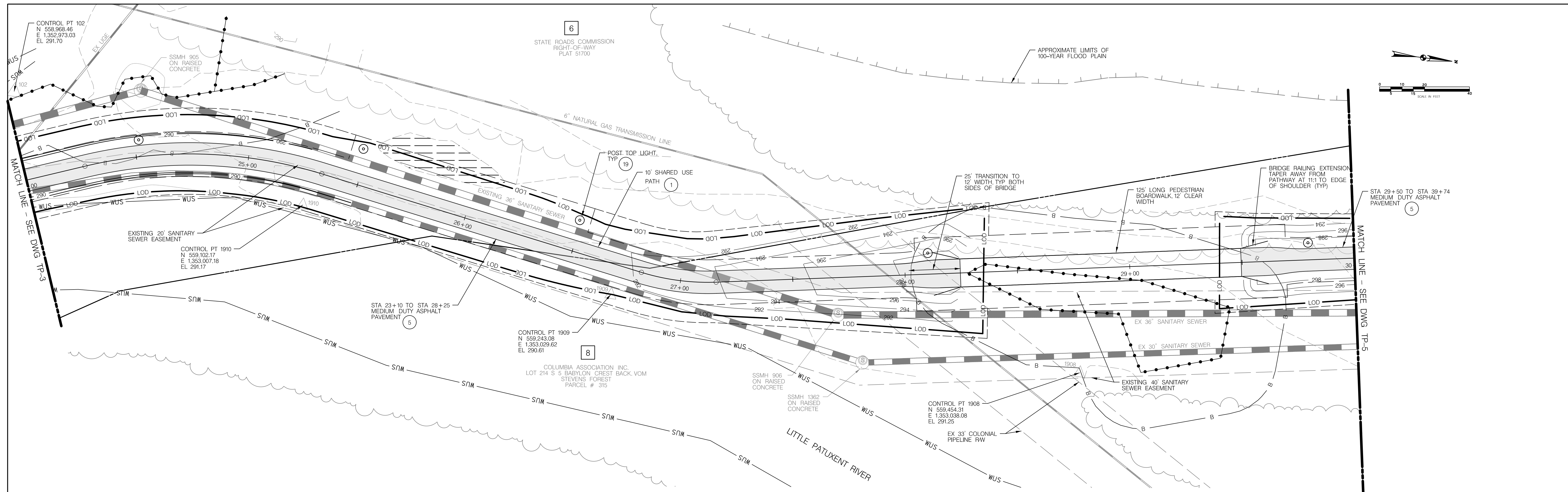
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

TRAIL PLAN AND PROFILE
STA 18+00 TO STA 24+00

SHEET	25 OF 83
DWG	TP-3
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	A0					
DR	SD					
CHK	MRAB					
APVD						
		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

TRAIL PLAN AND PROFILES
STA 24+00 TO STA 30+00

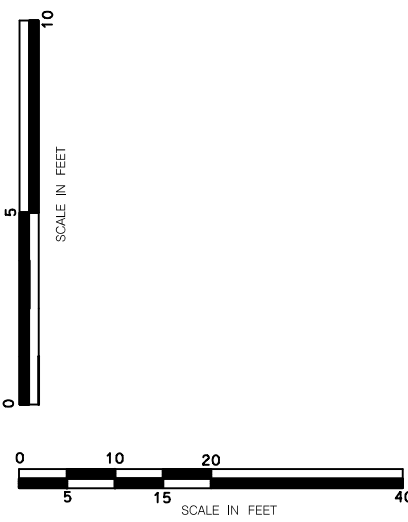
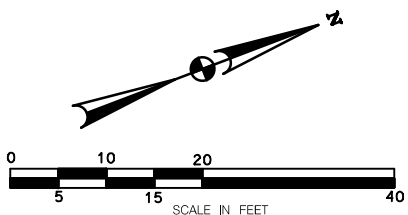
SHEET 26 OF 83

DWG	TP-4
-----	------

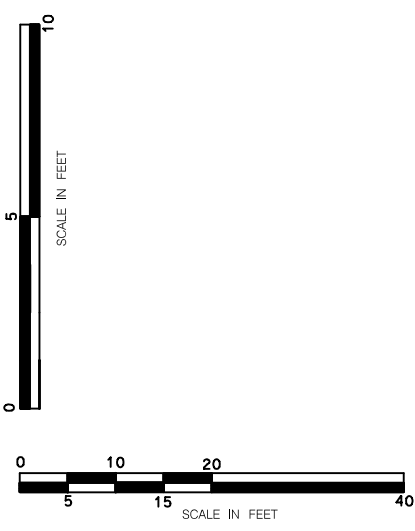
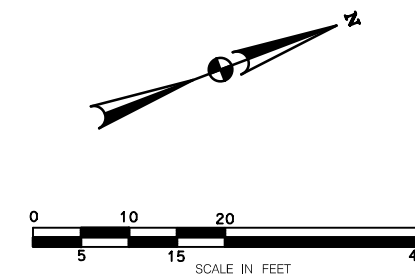
DATE	APR 2020
------	----------

PROJECT	5409.06
---------	---------

PRELIMINARY – NOT FOR CONSTRUCTION



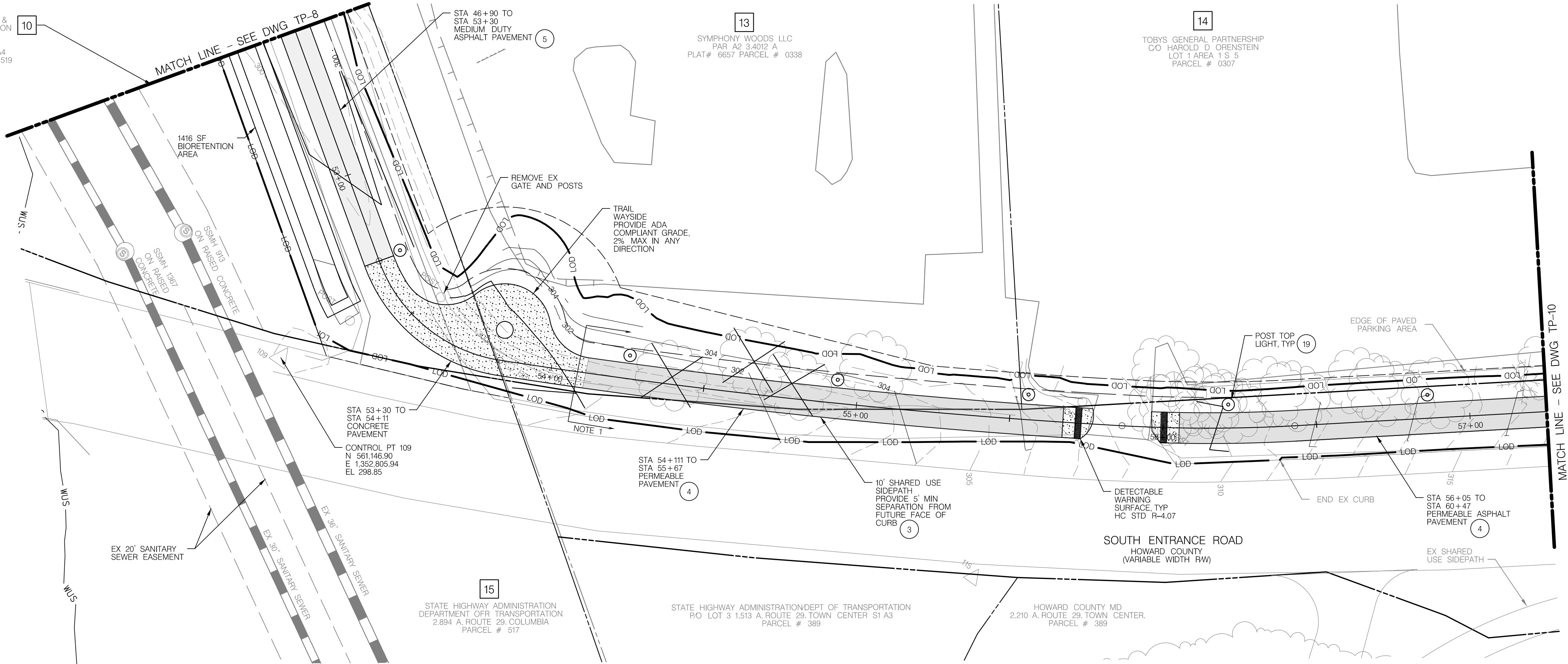
PRELIMINARY – NOT FOR CONSTRUCTION



D'SGN	A0					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

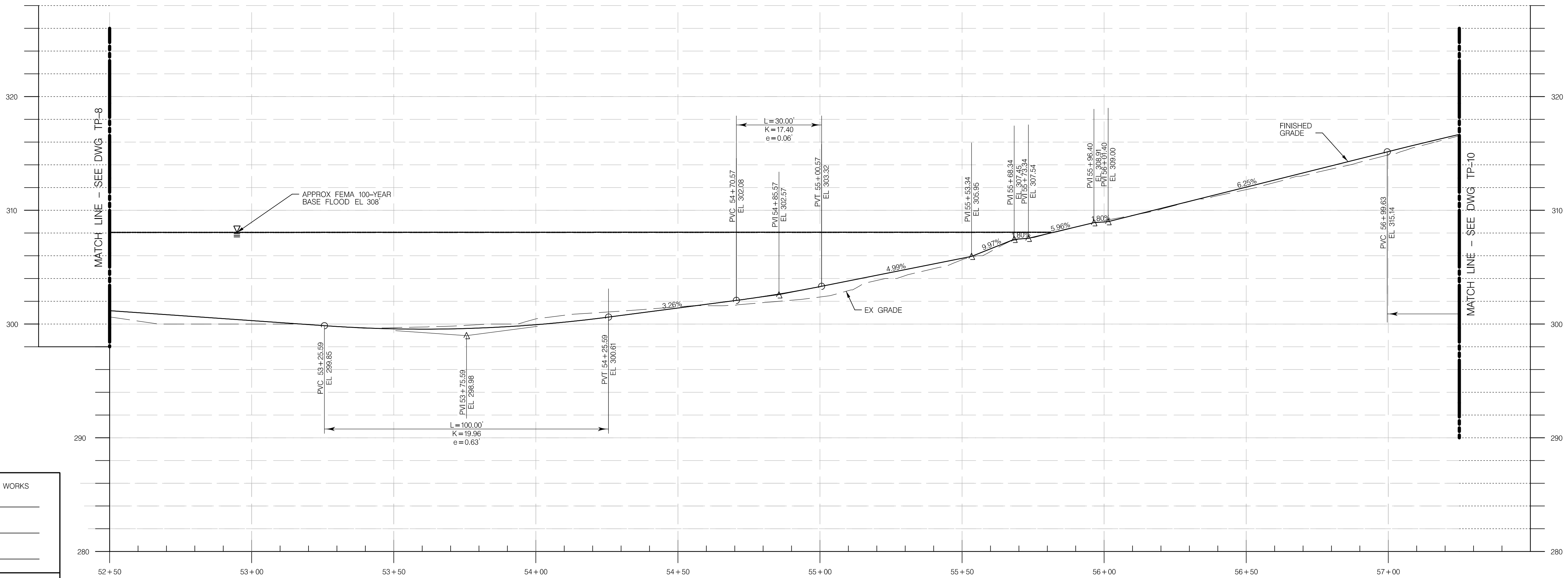
SHEET	30 OF 83
DWG	TP-8
DATE	APR 2020
PROJECT	5409.06

THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
LOT 3 1.42 A. OPENSP.
OLD COLUMBIA RD.
COLUMBIA TOWN CENTER S5 A4
PLAT # 14054 PARCEL # 519



NOTES:

1. PARCELS IN THIS AREA ARE CURRENTLY BEING REDEVELOPED. TRAIL ALIGNMENT IS SUBJECT TO CHANGE.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	AO					
DR	SD					
CHK	MRAB					
APVD		NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

TRAIL POLAN AND PROFILE
STA 52+50 TO STA 57+75

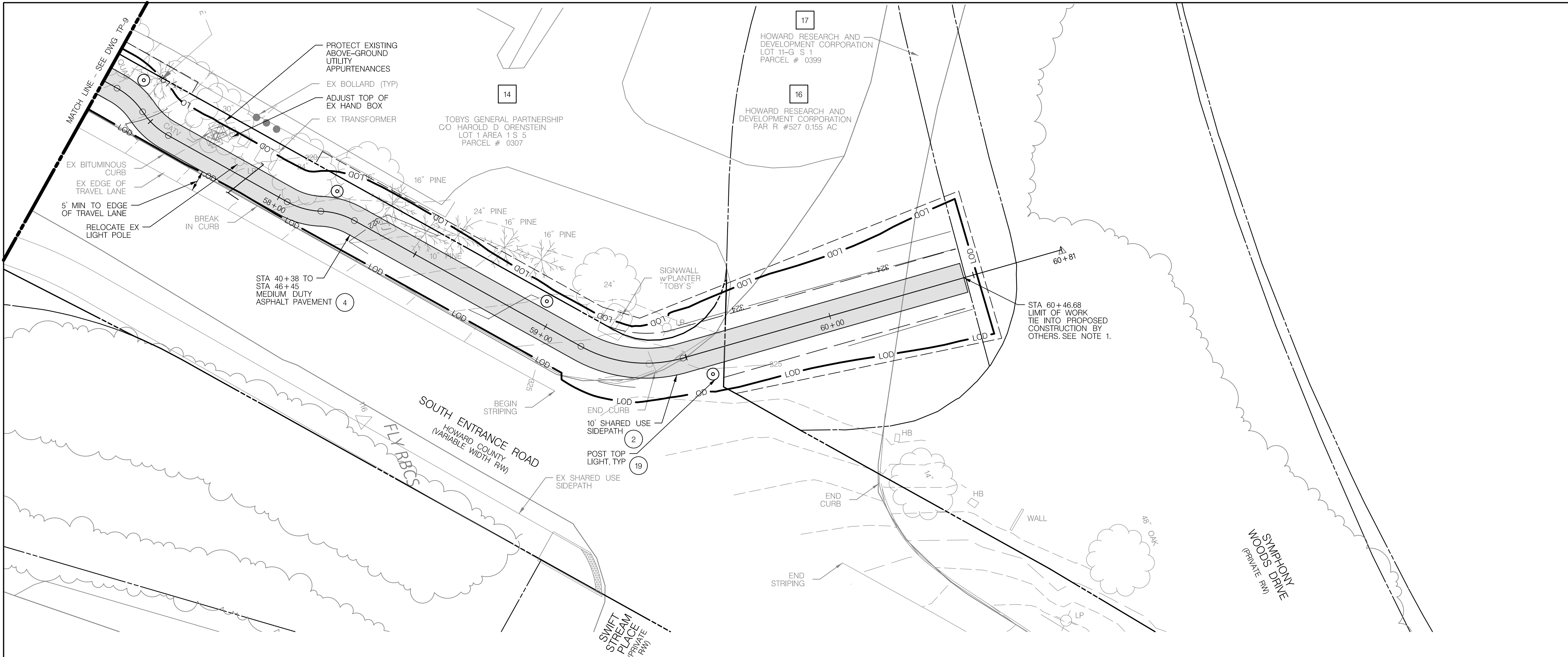
SHEET 31 OF 83

DWG TP-9

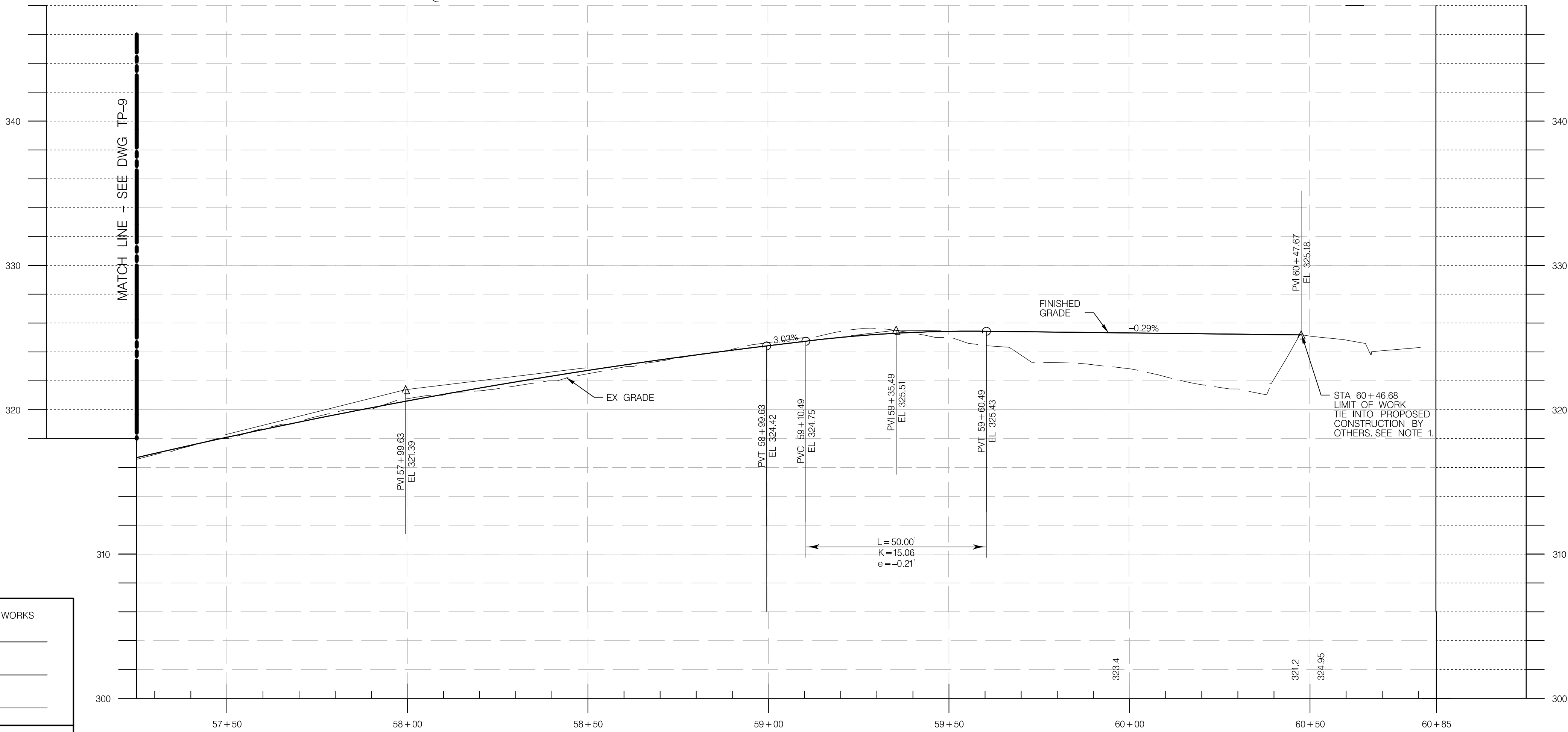
DATE APR 2020

PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



- NOTES:
1. PARCELS IN THIS AREA ARE CURRENTLY BEING REDEVELOPED, TRAIL ALIGNMENT IS SUBJECT TO CHANGE.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	INIT.						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

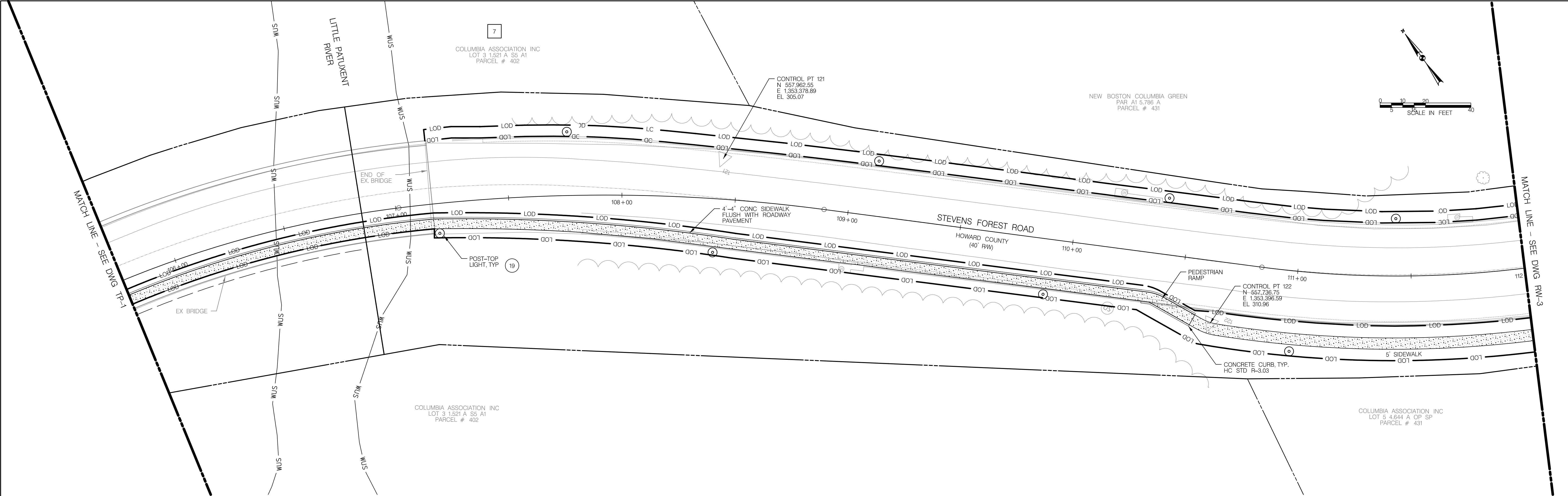
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
TRAIL PLAN AND PROFILE
STA 57+75 TO STA 60+51

SHEET	32 OF 83
DWG	TP-10
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE

DESIGN

8484 GEORGIA AVENUE, SUITE 800

SILVER SPRING, MD 20910

PHONE: 301.927.1900

FAX: 301.927.2800

www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

CIVIL

ROADWAY PLAN

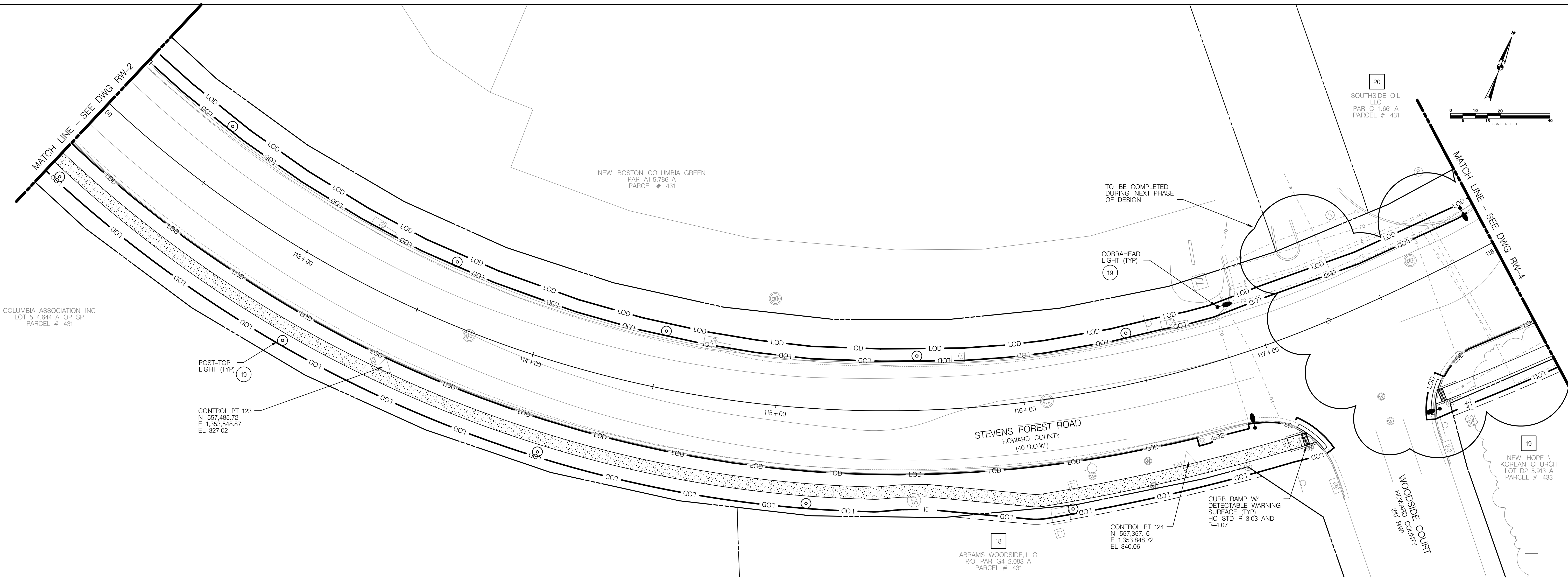
STA 105+75 TO STA 112+00

SHEET 33 OF 83

DWG RW-1

DATE APR 2020

PROJECT 5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

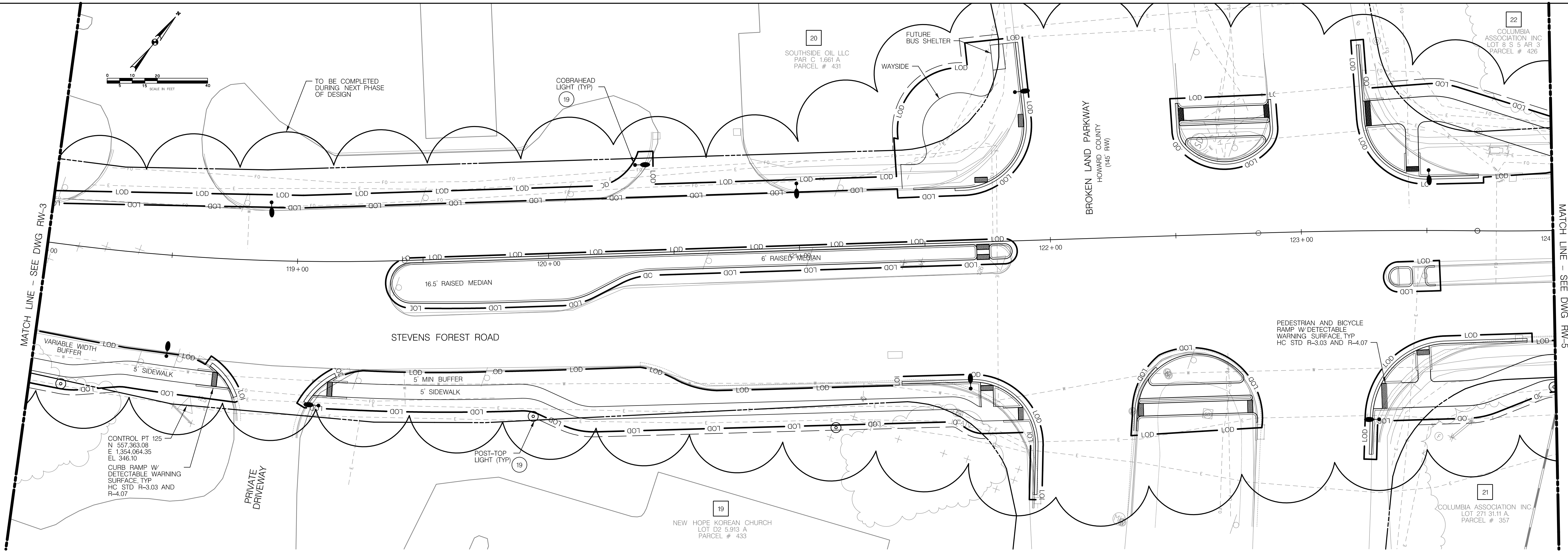
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
ROADWAY PLAN
STA 112+00 TO STA 118+00

SHEET	34 OF 83
DWG	RW-2
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN
8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

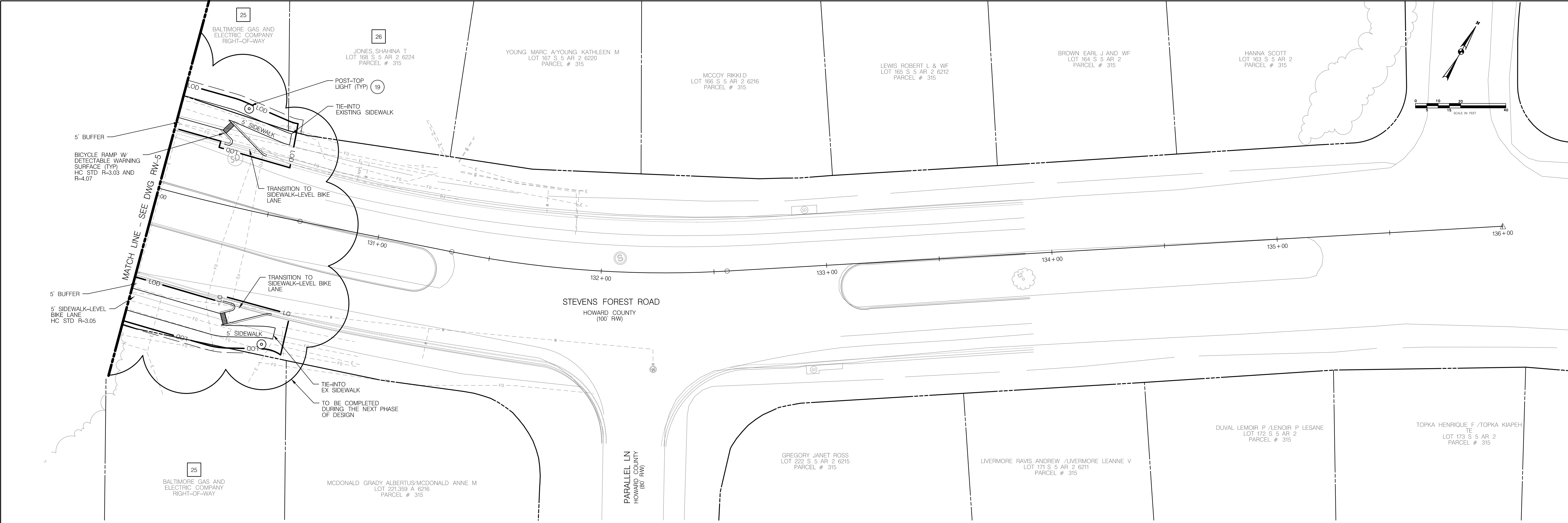
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

ROADWAY PLAN
STA 118+00 TO STA 124+00

SHEET	35 OF 83
DWG	RW-3
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

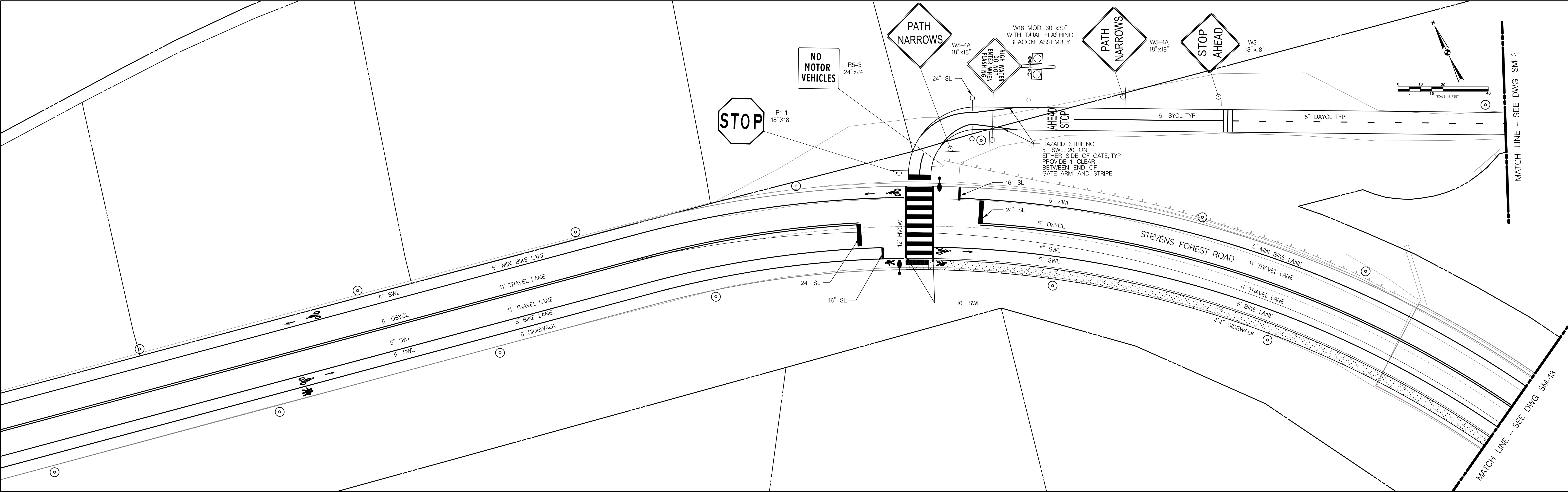
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

ROADWAY PLAN
STA 130+00 TO STA 136+00

SHEET	37 OF 83
DWG	RW-5
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO								
DR	RH								
CHK	JC								
APVD	MRAB	NO.	DATE	REVISION	BY	APVD			

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

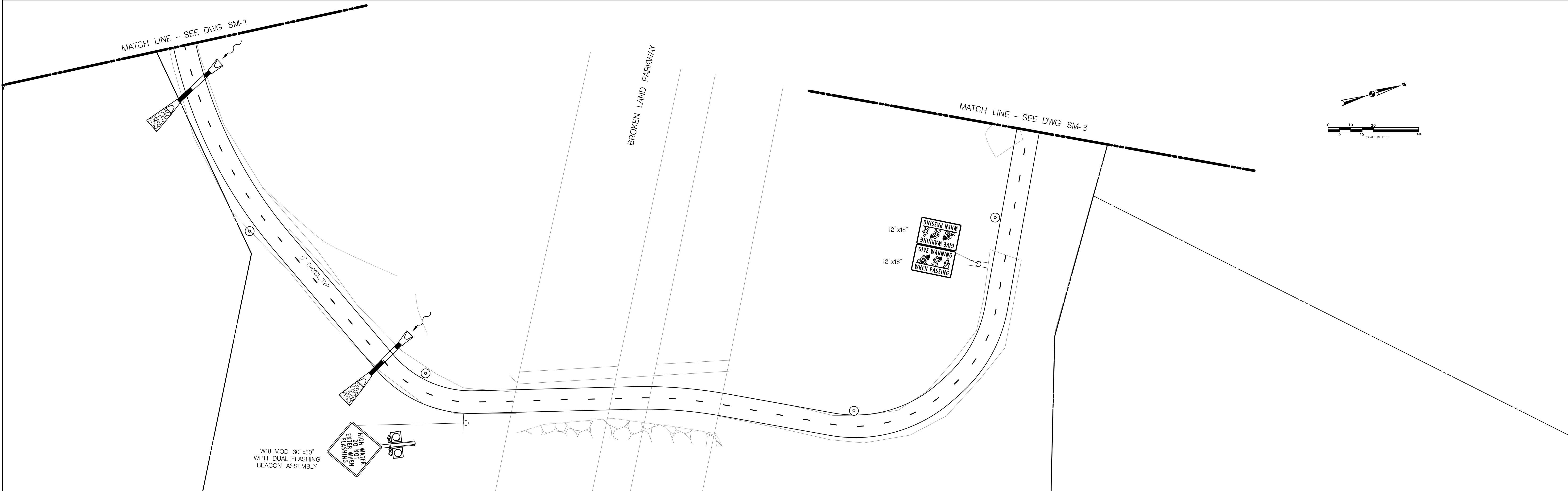
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 10+00 TO 13+00
STA 100+00 TO STA 105+75

SHEET	38 OF 83
DWG	SM-1
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 13+00 TO STA 18+50

SHEET	39 OF 83
DWG	SM-2
DATE	APR 2020
PROJECT	5409.06

MATCH LINE - SEE DWG. SM-2

5" DAYCL. TYP.

LITTLE PATUXENT RIVER

W5-4A MOD
18" x18"

BRIDGE
AHEAD

SLIPPERY
WHEN WET

W8-10P
12" x9"

W8-10
18" x18"

W8-10
18" x18"

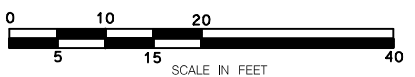
SLIPPERY
WHEN WET

W8-10P
12" x9"

BRIDGE
AHEAD

W5-4A MOD
18" x18"

MATCH LINE - SEE DWG. SM-4



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

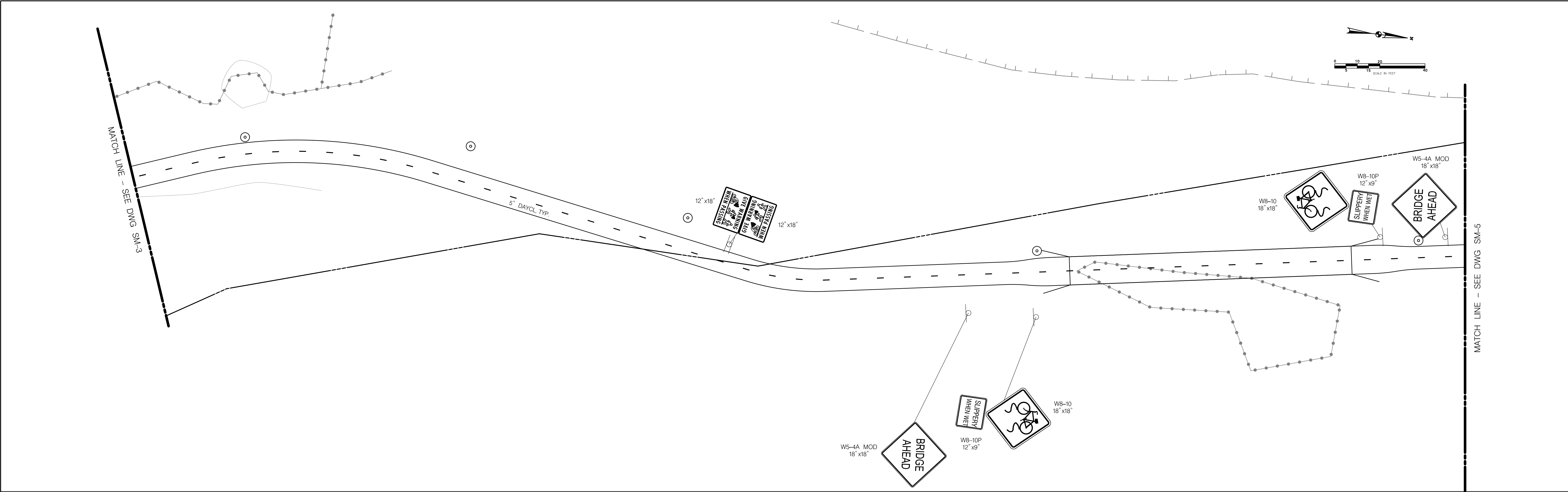
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 18+50 TO STA 24+00

SHEET	40 OF 83
DWG	SM-3
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

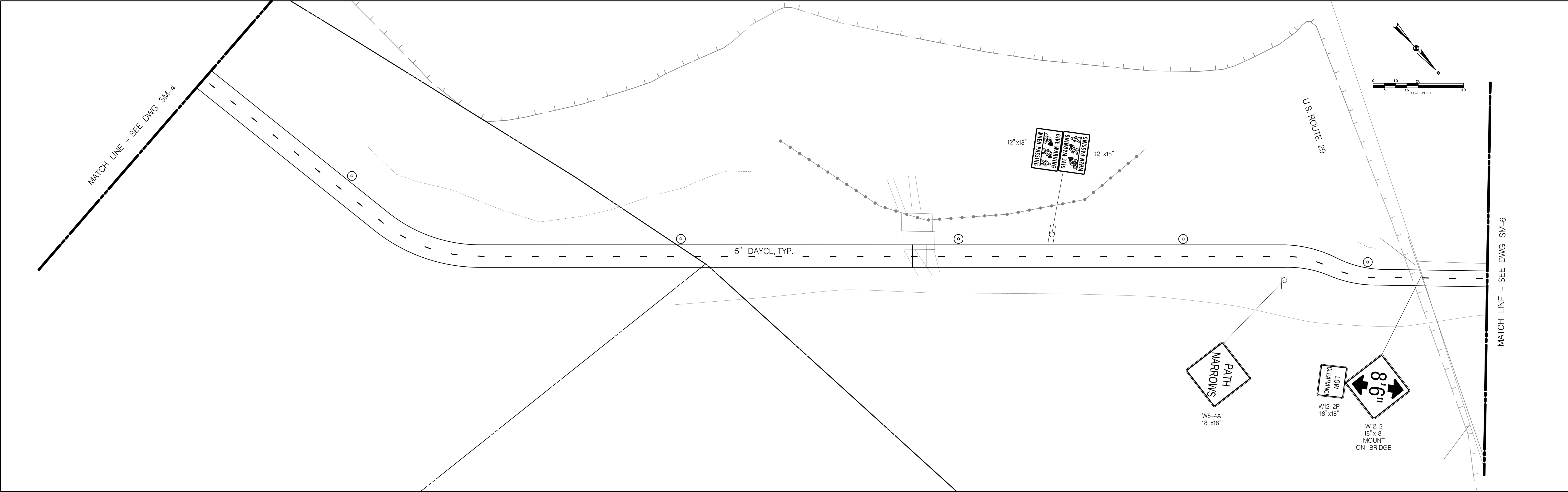
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 24+00 TO STA 30+00

SHEET	41 OF 83
DWG	SM-4
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE

DESIGN

8484 GEORGIA AVENUE, SUITE 800

SILVER SPRING, MD 20910

PHONE: 301.927.1900

FAX: 301.927.2800

www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

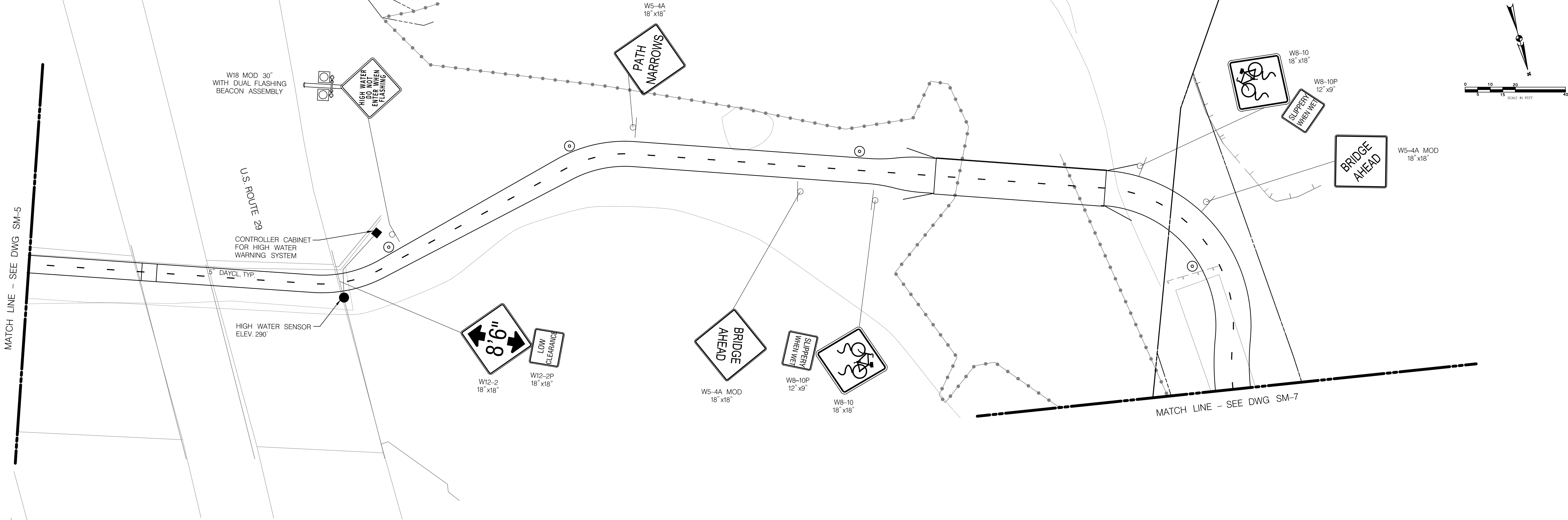
SIGNING AND MARKING PLAN
STA 30+00 TO STA 36+00

SHEET 42 OF 83

DWG SM-5

DATE APR 2020

PROJECT 5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

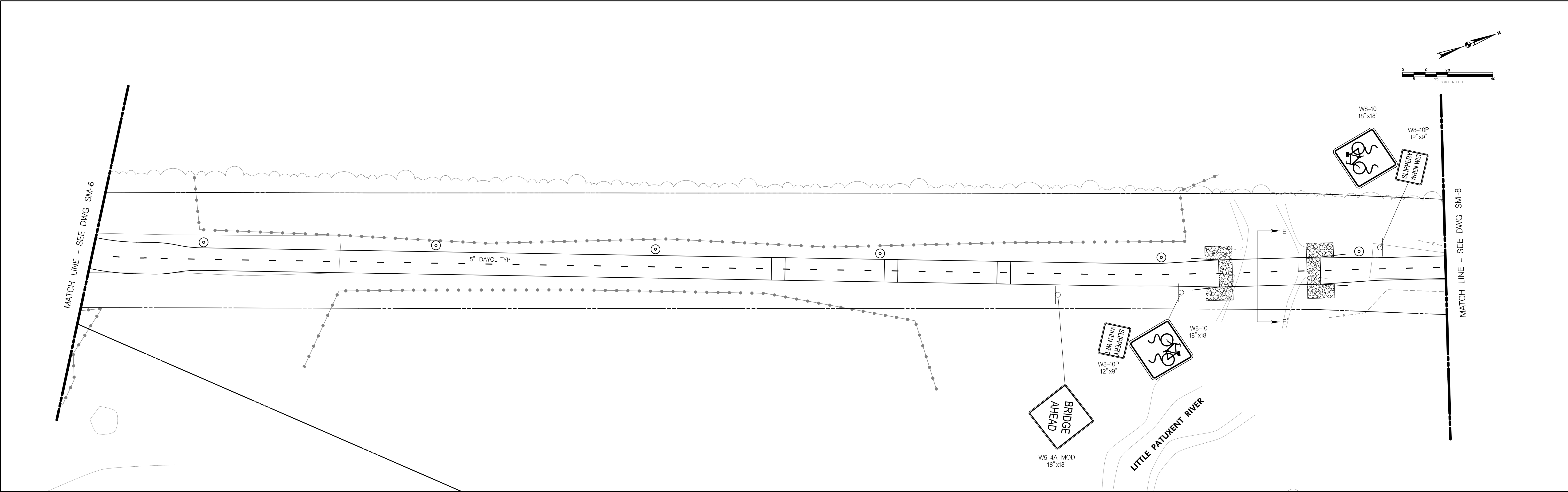
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 36+00 TO STA 41+50

SHEET	43 OF 83
DWG	SM-6
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
DIRECTOR, DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF HIGHWAYS	DATE
CHIEF, TRAFFIC ENGINEERING DIVISION	DATE
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE PLANS 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: _____.	

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

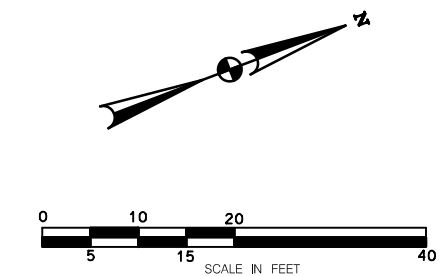
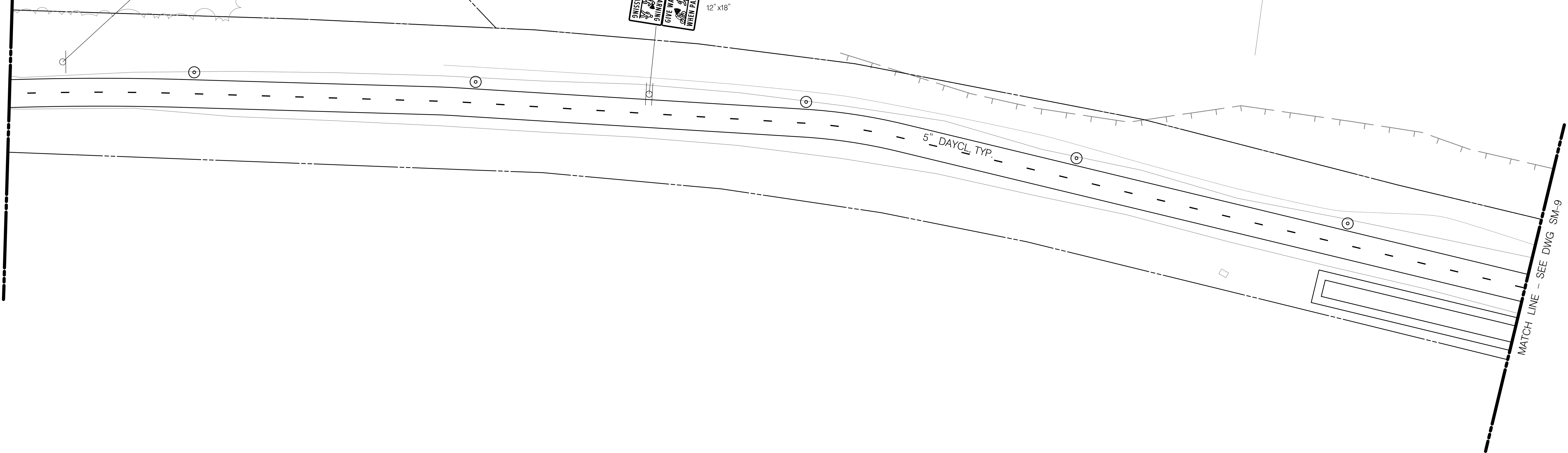
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 41+50 TO STA 47+50

SHEET	44 OF 83
DWG	SM-7
DATE	APR 2020
PROJECT	5409.06

MATCH LINE - SEE DWG SM-7



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

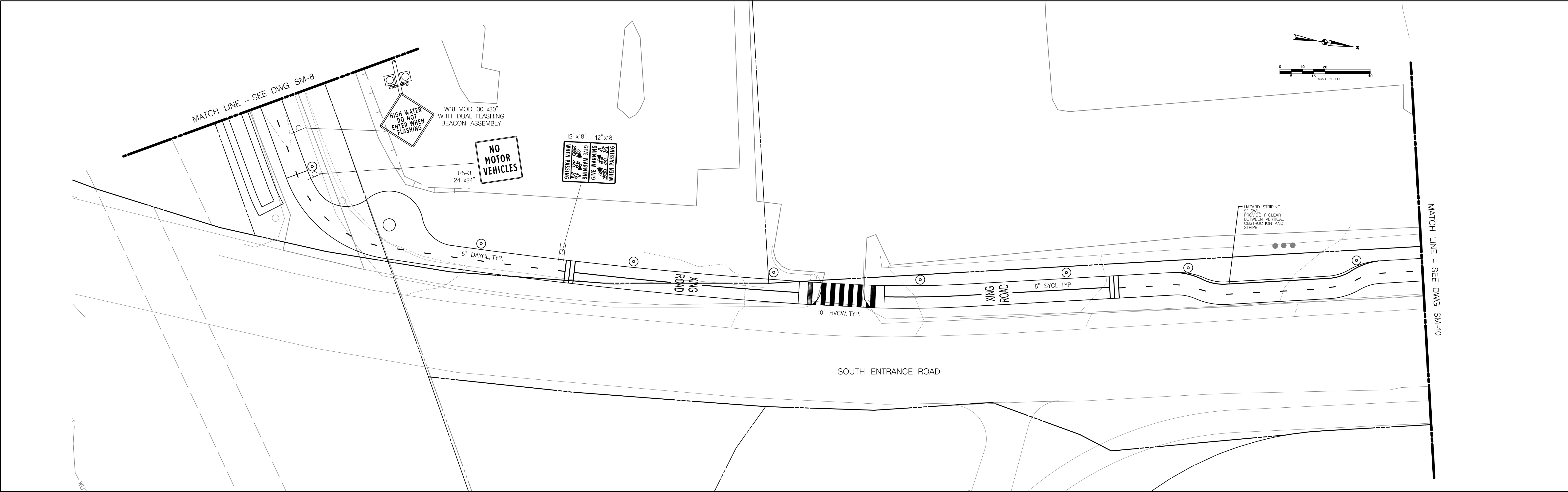
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 47+50 TO STA 53+00

SHEET	45 OF 83
DWG	SM-8
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

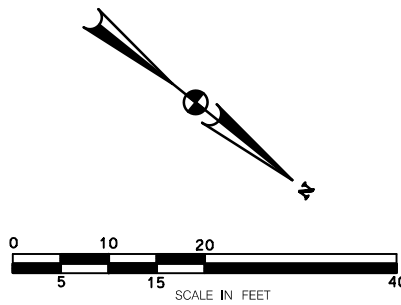
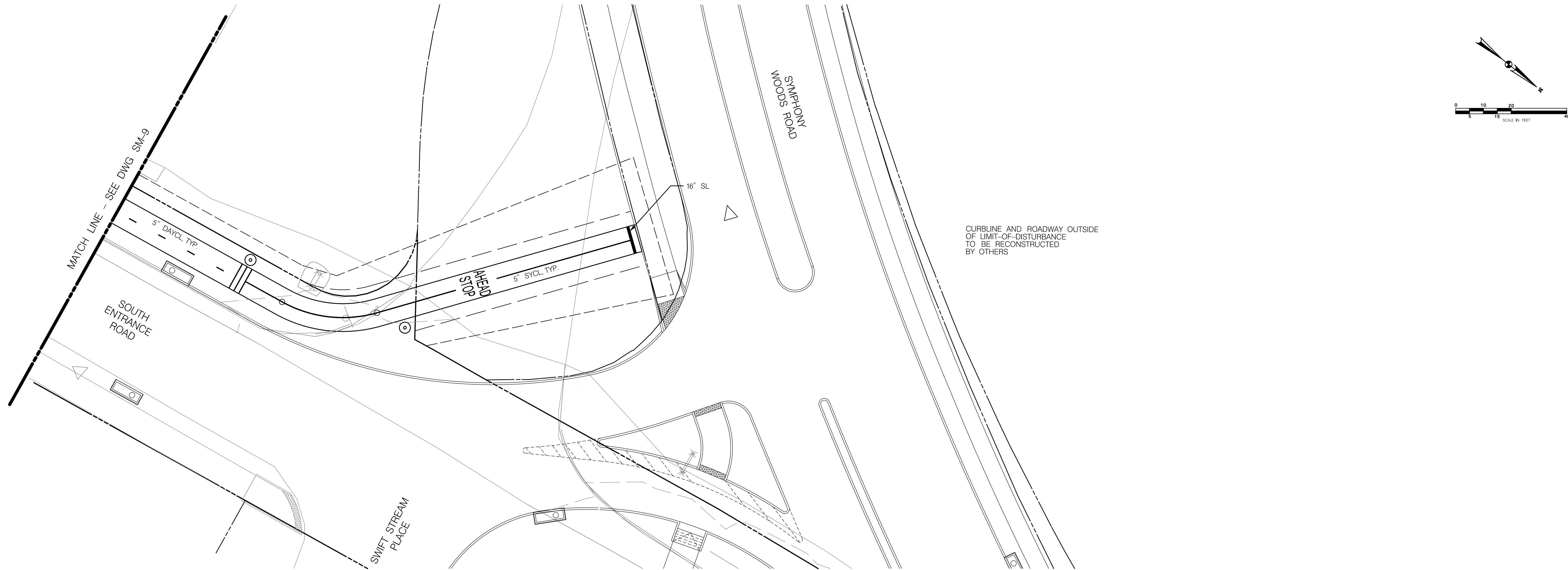
8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
SIGNING AND MARKING PLAN
STA 53+00 TO STA 58+50

SHEET	46 OF 83
DWG	SM-9
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

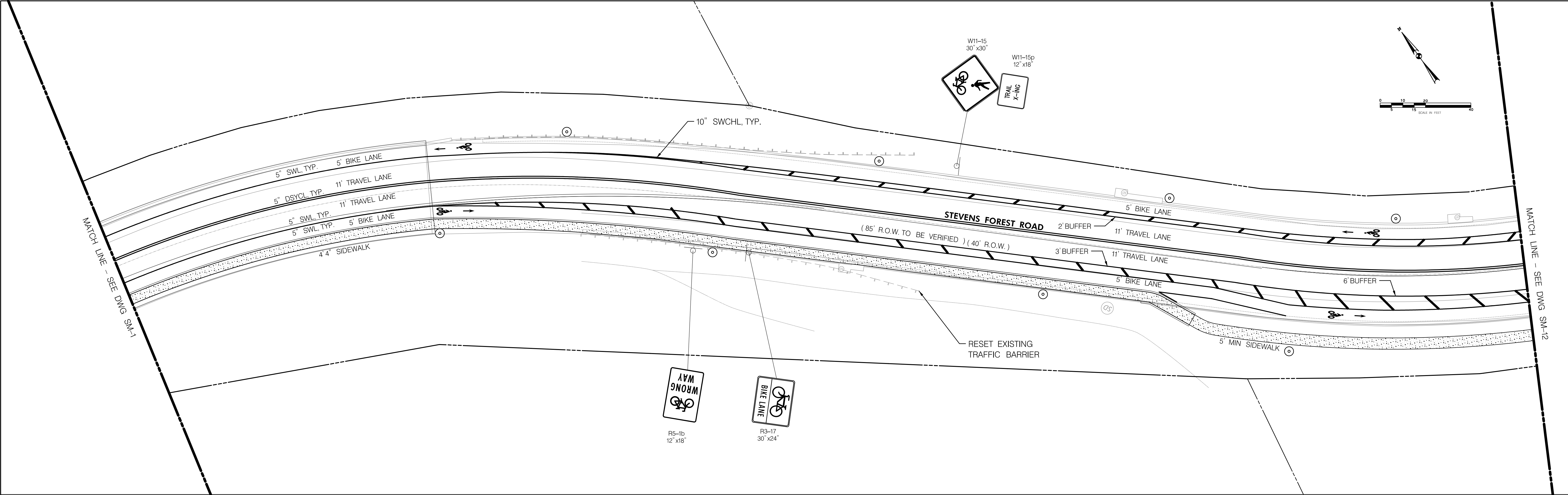
8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
SIGNING AND MARKING PLAN
STA 58+50 TO STA 60+70.59

SHEET	47 OF 83
DWG	SM-10
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE

DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

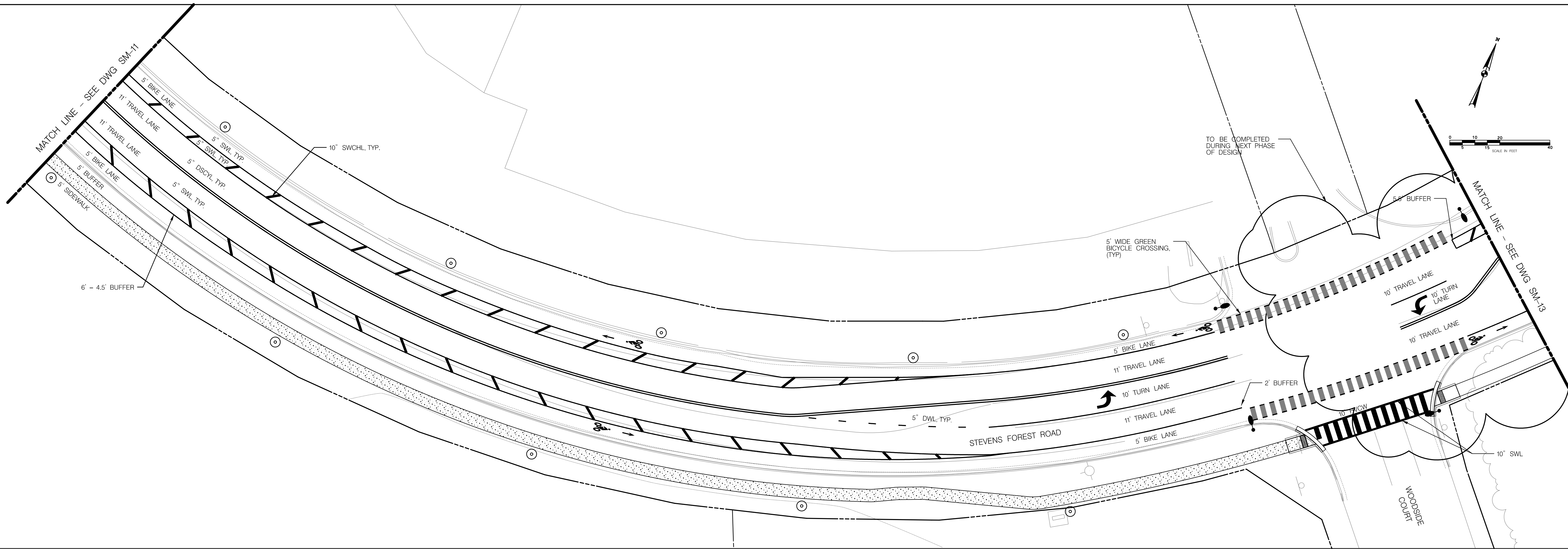
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 105+75 TO STA 112+00

SHEET	48 OF 83
DWG	SM-11
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

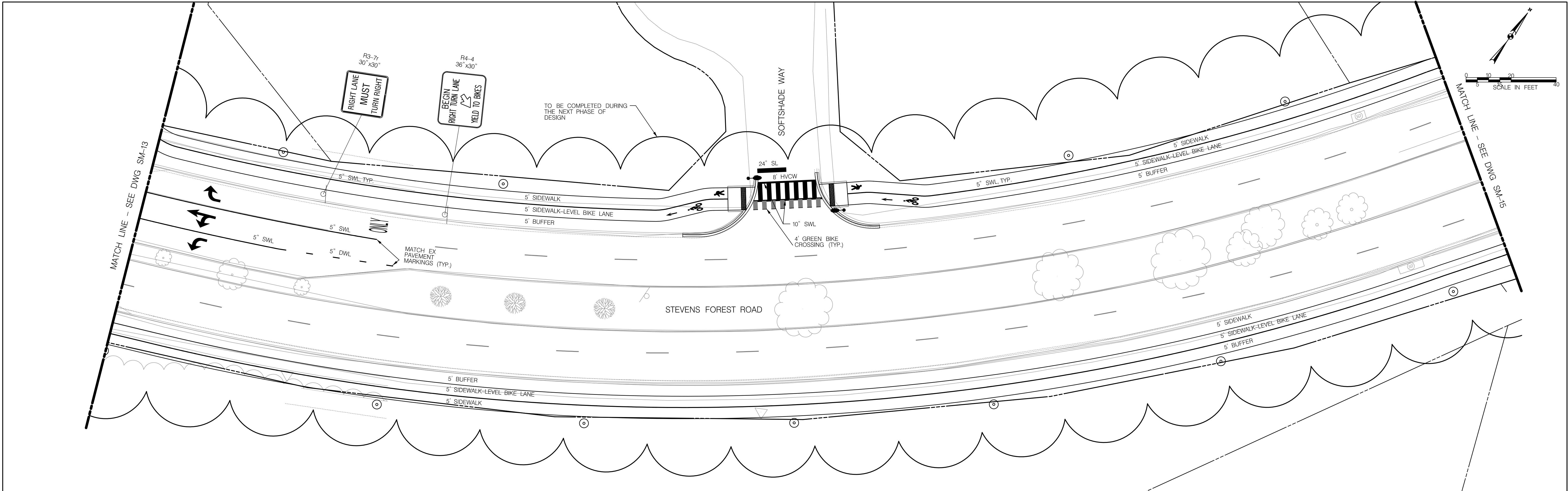
8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL	SHEET	49 OF 83
SIGNING AND MARKING PLAN STA 112+00 TO STA 118+00	DWG	SM-12
	DATE	APR 2020
	PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
DIRECTOR, DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF HIGHWAYS	DATE
CHIEF, TRAFFIC ENGINEERING DIVISION	DATE
PROFESSIONAL CERTIFICATION	
I HEREBY CERTIFY THAT THESE PLANS 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: _____.	

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

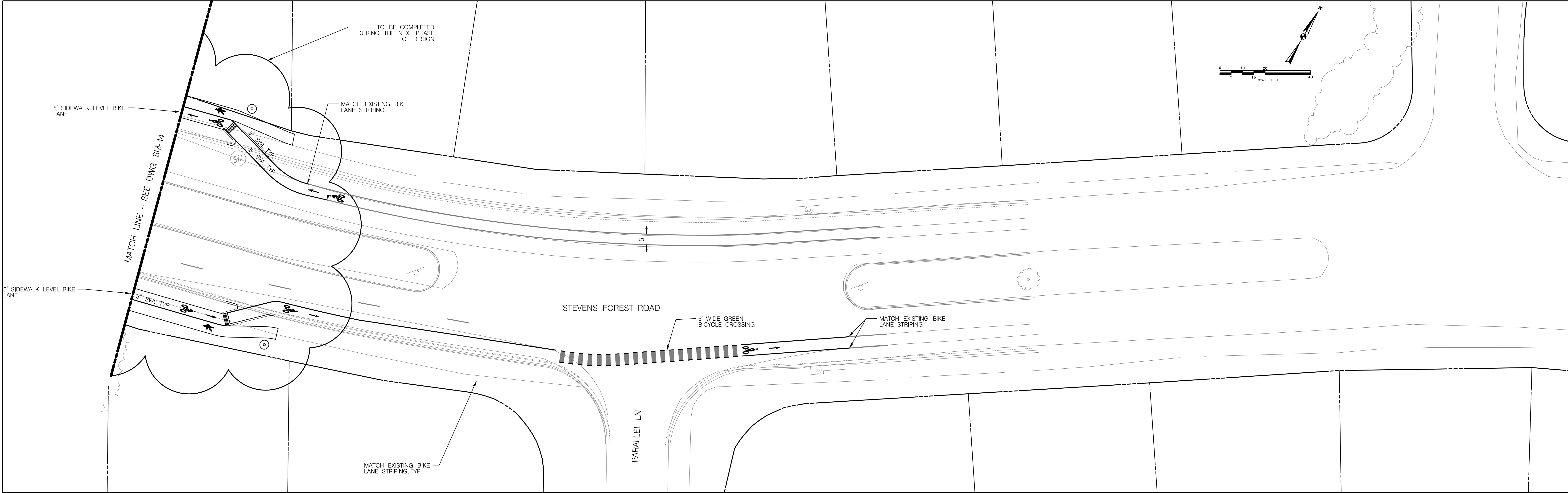
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 124+00 TO STA 130+00

SHEET	51 OF 83
DWG	SM-14
DATE	APR 2020
PROJECT	5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE

DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

SIGNING AND MARKING PLAN
STA 130+00 TO STA 136+00

SHEET	52 OF 83
DWG	SM-15
DATE	APR 2020
PROJECT	5409.06

EROSION AND SEDIMENT CONTROL

1. TEMPORARY SILT FENCE SHALL BE CONSTRUCTED FOR SHEET RUN OFF, AND SHALL BE LOCATED AS DIRECTED BY HOWARD COUNTY REPRESENTATIVE OR EROSION AND SEDIMENT INSPECTOR. SUPER SILT FENCE MAY BE INSTALLED AT THE SITE UNDER THE DIRECTION OF THE HOWARD SOIL AND CONSERVATION DISTRICT INSPECTOR.
2. WHEN WIRE SUPPORT IS USED, STANDARD STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF INSTALLATION SHALL BE PLACED A MAXIMUM OF 10 FEET APART. THE WIRE MESH FENCE MUST BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE INCH LONG, TIE WIRES , OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF TWO INCHES AND SHALL NOT EXTEND MORE THAN 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
3. WHEN WIRE SUPPORT IS NOT USED, EXTRA STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6 FEET APART. THE FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING ONE INCH LONG (MINIMUM) HEAVY DUTY WIRE STAPLES OR TIE WIRES AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH.
4. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES. POSTS SHALL BE EITHER STEEL POSTS OR WOODEN STAKES AND HAVE A MINIMUM LENGTH OF 5 FEET.
5. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS NOTED IN THE LATEST VERSION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION AND SEDIMENT CONTROL HANDBOOK. THE SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F.
6. SILT FENCES SHALL BE INSPECTED AND CLEANED ON A WEEKLY BASIS AND ON A DAILY BASIS IMMEDIATELY FOLLOWING EACH RAIN STORM. ALL NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY.
7. REFERENCE THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR MOST RECENT VERSION.
8. THE TEMPORARY EROSION AND SILTATION (E&S) CONTROL ITEMS SHOWN ON THE E&S CONTROL PLAN ARE INTENDED TO PROVIDE A GENERAL PLAN FOR CONTROLLING EROSION AND SILTATION WITHIN THE PROJECT LIMITS. THE E&S CONTROL PLAN IS BASED ON FIELD CONDITIONS AT THE TIME OF PLAN DEVELOPMENT AND AN ASSUMED SEQUENCE OF CONSTRUCTION. THE CONTRACTOR, IN CONJUNCTION WITH THE PROJECT DESIGNER AND/OR ENVIRONMENTAL MONITOR, SHALL ADJUST THE LOCATION, QUANTITY AND TYPE OF EROSION AND SILTATION CONTROL ITEMS REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION AND THE SELECTED SEQUENCE OF CONSTRUCTION.
9. THE AREAS BEYOND THE PROJECTS CONSTRUCTION AREA ARE TO BE PROTECTED FROM SILTATION. PERIMETER CONTROLS SUCH AS FILTER BARRIER, SILT FENCE, DIVERSION DIKES, TURBIDITY CURTAINS, ETC. SHALL BE INSTALLED PRIOR TO ANY GRUBBING OPERATIONS OR OTHER EARTH MOVING ACTIVITIES.
10. ROCK FOR CHECK DAMS, DROP INLET SILT TRAPS, EROSION CONTROL STONE AND RIPRAP IN CHANNELS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION AND SEDIMENT CONTROL HANDBOOK..
11. SILT REMOVAL AND SEDIMENT CLEAN-OUT FROM EROSION AND SILTATION CONTROL ITEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING:

A. TEMPORARY SEDIMENT BASINS AND SEDIMENT TRAPS - WHEN THE "WET" STORAGE VOLUME (PERMANENT POOL) HAS BEEN REDUCED BY 50%.

B. DEWATERING BASINS - WHEN THE EXCAVATED VOLUME HAS BEEN REDUCED BY 50%.

C. ALL OTHER EROSION AND SILTATION CONTROL ITEMS - WHEN THE CAPACITY, HEIGHT, OR DEPTH HAS BEEN REDUCED BY 50%.
12. EXCEPT WHERE NOTED HEREON, TO THE BEST OF THE DESIGNER'S KNOWLEDGE, THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS.
13. LAND CONSERVATION NOTES - MEASURES TO CONTROL EROSION AND SILTATION SHALL BE PROVIDED PURSUANT TO AND IN COMPLIANCE WITH CURRENT STATE AND LOCAL REGULATIONS. HOWEVER, THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE CONTRACTOR OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF MARYLAND OR ANY ORDINANCE ENACTED BY MARYLAND, SHA, OR HOWARD COUNTY.
14. EROSION AND SILTATION CONTROL SHALL BE PROVIDED WHERE NECESSARY PRIOR TO CLEARING, GRADING AND CONSTRUCTION.
15. ADDITIONAL SILTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS DIRECTED BY HOWARD COUNTY INSPECTOR DURING FIELD REVIEW; COSTS ASSOCIATED WITH ADDITIONAL MEASURES SHALL BE ASSUMED BY THE CONTRACTOR.

SEDIMENT CONTROL NOTES

1. 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:

A. PRIOR TO THE START OF EARTH DISTURBANCE,

B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,

C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,

D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING 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.

2. 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.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. 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), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY 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 >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. 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.
6. SITE ANALYSIS (SOUTH ENTRANCE SEGMENT ONLY):

TOTAL AREA OF SITE: 5.58 ACRES

AREA DISTURBED: 5.58 ACRES

AREA TO BE ROOFED OR PAVED: 0.73 ACRES

AREA TO BE VEGETATIVELY STABILIZED: 1.90 ACRES

TOTAL CUT: 1756 CU. YDS.

TOTAL FILL: 3022 CU. YDS.

SURPLUS CUT TO BE DISPOSED OF ON A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN.
7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. 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).

9. 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.
10. 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 ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. 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 AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

• USE I AND IP MARCH 1 - JUNE 15

• USE III AND IIIP OCTOBER 1 - APRIL 30

• USE IV MARCH 1 - MAY 31
16. 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKSDATE

CHIEF, BUREAU OF HIGHWAYSDATE

CHIEF, TRAFFIC ENGINEERING DIVISIONDATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD



REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL NOTES

SHEET	53 OF 83
DWG	ES-1
DATE	APR 2020
PROJECT	5409.06

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.

PRACTICE APPLIED: WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

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.
- c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

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 AMENDMENT 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 SPEED 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 NECESSARY 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 ANTERAIL 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 LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY NOT 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 SUB-SOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ 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 QUALIFIED AGRONOMIST OR SOIL SCIENTISTS BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- 6. TOPSOIL APPLICATION
 - a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PREFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

- 1. SOIL TESTS MUST BE PREFORMED TO DETERMINE THE EXACT RATIIONS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTRIBUTED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH A FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A # 20 MESH SIEVE.
- 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,00 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

SEEDING AND MULCHING

DEFINITION: THE APPLICATION OF THE SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

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

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

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 MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SNOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE 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 NOT 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. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURE ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULENT LESS EFFECTIVE.
- d. 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.

2. APPLICATION

- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDBED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY THE COVER SEED WITH SOIL.
 - i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST ¼ INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER)
 - i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.
 - ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

- 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR, STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - i. WCFM IS TO BE DYED GREEN OF CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER. ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OF COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, pH RAND OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
- 2. APPLICATION
 - a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- 3. ANCHORING
 - a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY WITH FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (ARGO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

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.

- 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE.
- 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- 3. 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. OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.
- 4. CONTRACTOR SHALL PROVIDE TEMPORARY SOIL STABILIZATION MATTING ON ALL SLOPES GREATER THAN 3:1 AS PER 2011 MD STANDARDS AND SPECIFICATIONS FOR SOIL EROSION SEDIMENT CONTROL..

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.

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

A. SEED MIXTURES

1. GENERAL USE

- a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN THE PERMANENT SEEDING SUMMARY TABLE FOR THE APPROPRIATE PLANT HARDINESS ZONE AND BASED ON THE SITE CONDITION OR PURPOSE.
 - b. 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.
 - c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE A SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZER (46-0-0) AT 3½ POUNDS PER 100 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES
- a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE.
 - i. 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 100 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - ii. 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 MIXTURE BY WEIGHT.
 - iii. 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.
 - iv. 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: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:

- SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN TEH 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 ADN SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- IDEAL TIMES FOR SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5b, 6a)
 - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 6b)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7a, 7b)
- 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 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASS WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ 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 PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

SEQUENCE OF CONSTRUCTION

- 1. ARRANGE PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR AND OBTAIN THE GRADING PERMIT. 1 DAY
- 2. INSTALL TREE PROTECTION. 2 DAYS
- 3. CLEARING AND GRUBBING AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS, INSTALL STABILIZE CONSTRUCTION ENTRANCE AND SILT FENCE. 1 WEEK
- 4. REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS, GRADE SITE. 1 MONTH
- 5. CONSTRUCT PERVIOUS ASPHALT BASE STONE, UNDER DRAINS. 2 MONTHS
- 6. STABILIZE THE AREA WITH ASPHALT PATH AND FINE GRADE REMAINING AREAS. 1 MONTH
- 7. PERMANENTLY STABILIZE REMAINING AREAS WITH GRASS SEED AND MULCH. 1 WEEK
- 8. WHEN ALL AREAS DRAIN TO THE SEDIMENT CONTROLS HAVE BEEN STABILIZED AND PERMISSION HAS BEEN GRANTED BY THE SEDIMENT CONTROL INSPECTOR, REMOVE THE SEDIMENT CONTROLS. PERMANENTLY STABILIZE THE REMAINING AREAS LANDSCAPING, SEED AND MULCH. 1 WEEK.

EROSION AND SEDIMENT CONTROL MANAGER (ESCM)

- 1. SOIL DISTURBANCE SUCH AS GRADING, EXCAVATION, SOIL PLACEMENT OR OTHER ACTIVITIES THAT INVOLVE SOIL DISTURBANCE WITHIN SHA RIGHT OF WAY SHALL BE SUPERVISED BY AN ESCM WITH A VALID SHA "YELLOW CARD"IN CONFORMANCE WITH SHA 2008 SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND ANY APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

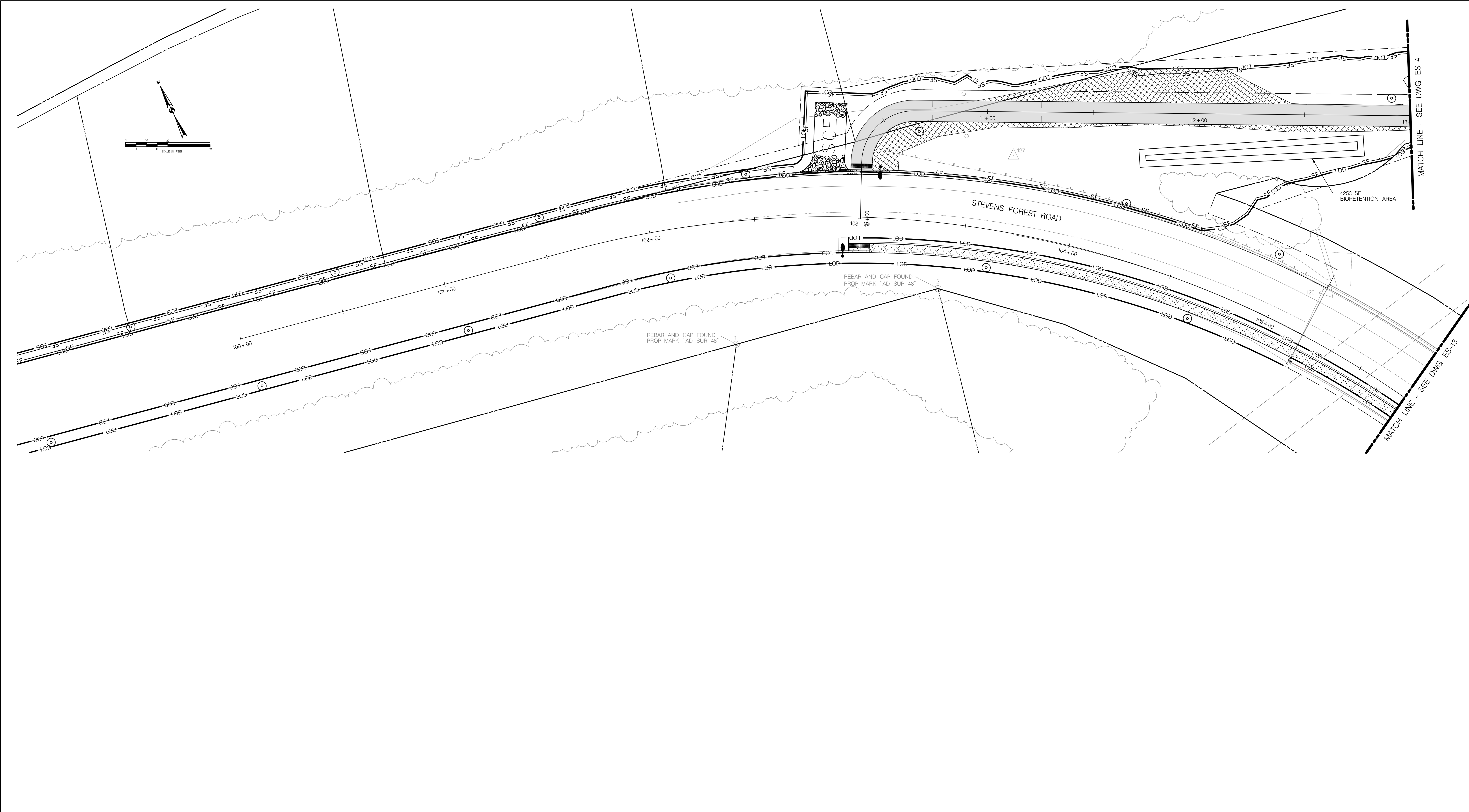
EROSION AND SEDIMENT CONTROL NOTES

SHEET 54 OF 83

DWG ES-2

DATE APR 2020

PROJECT 5409.06



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

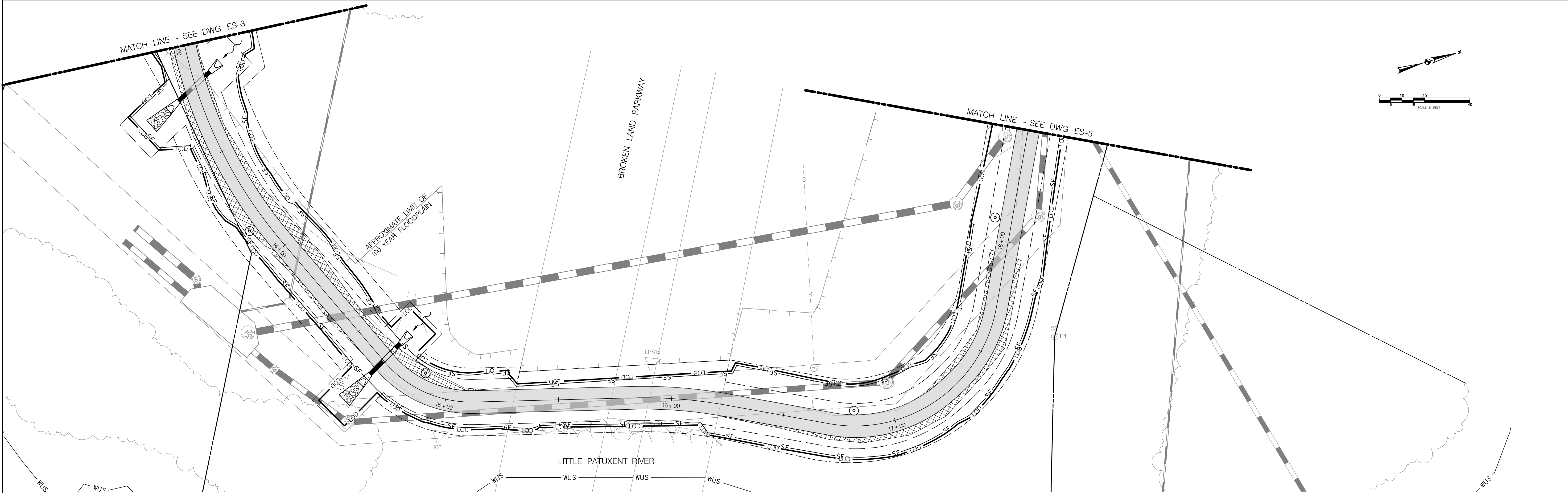
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 10+00 TP STA 13+00

SHEET	55 OF 83
DWG	ES-3
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

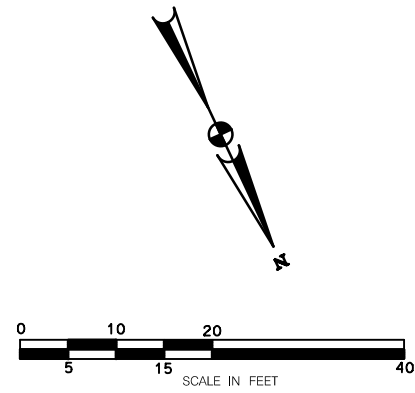
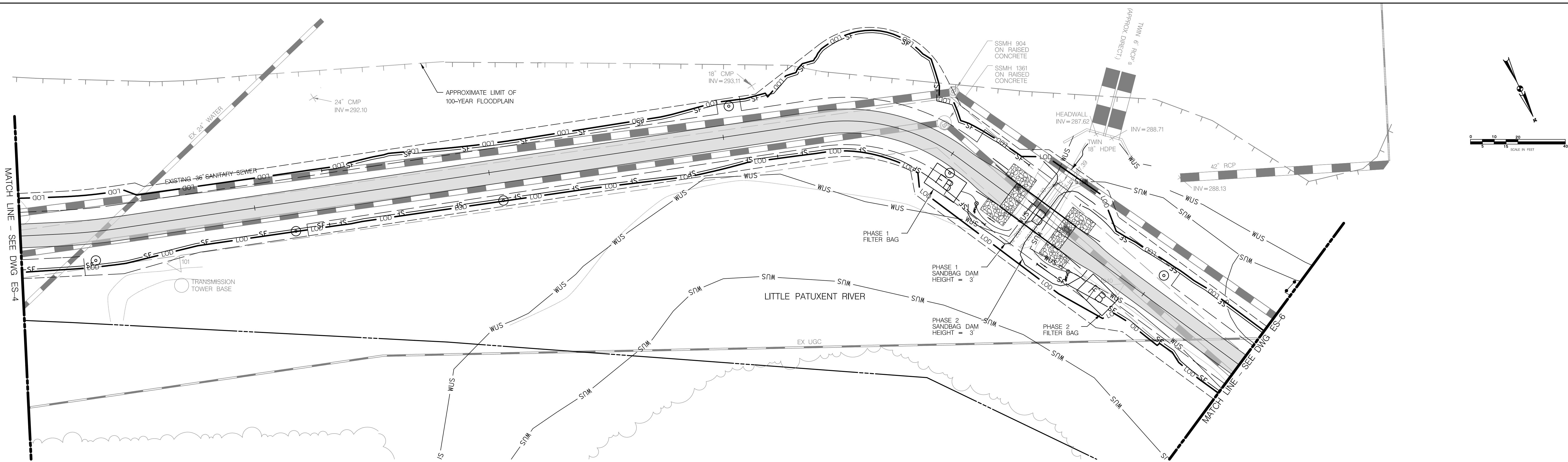
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 13+00 TO STA 18+75

SHEET	56 OF 83
DWG	ES-4
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

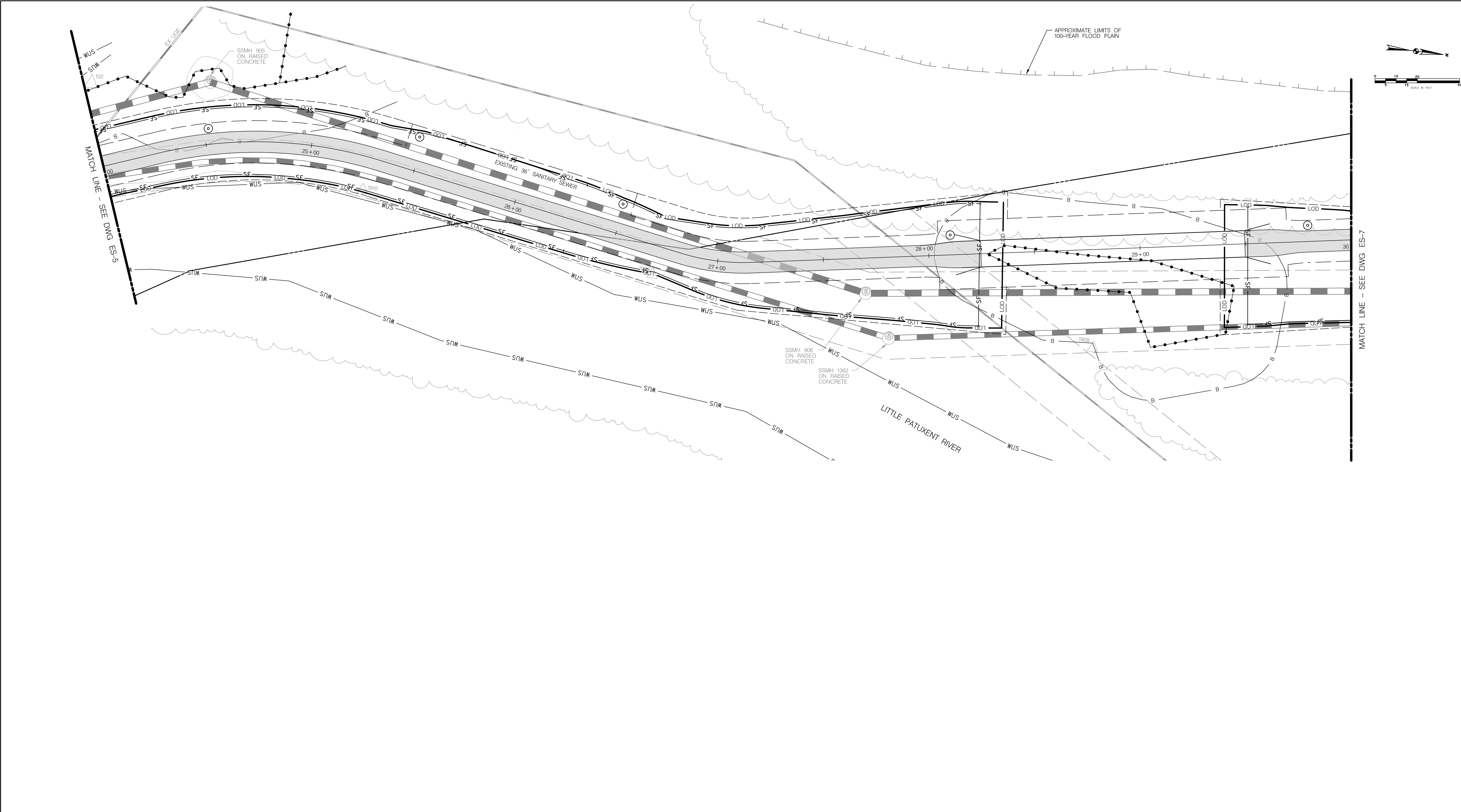
CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 18+75 TO STA 24+00

SHEET	57 OF 83
DWG	ES-5
DATE	APR 2020
PROJECT	5409.06

NOTES:

- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
- SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

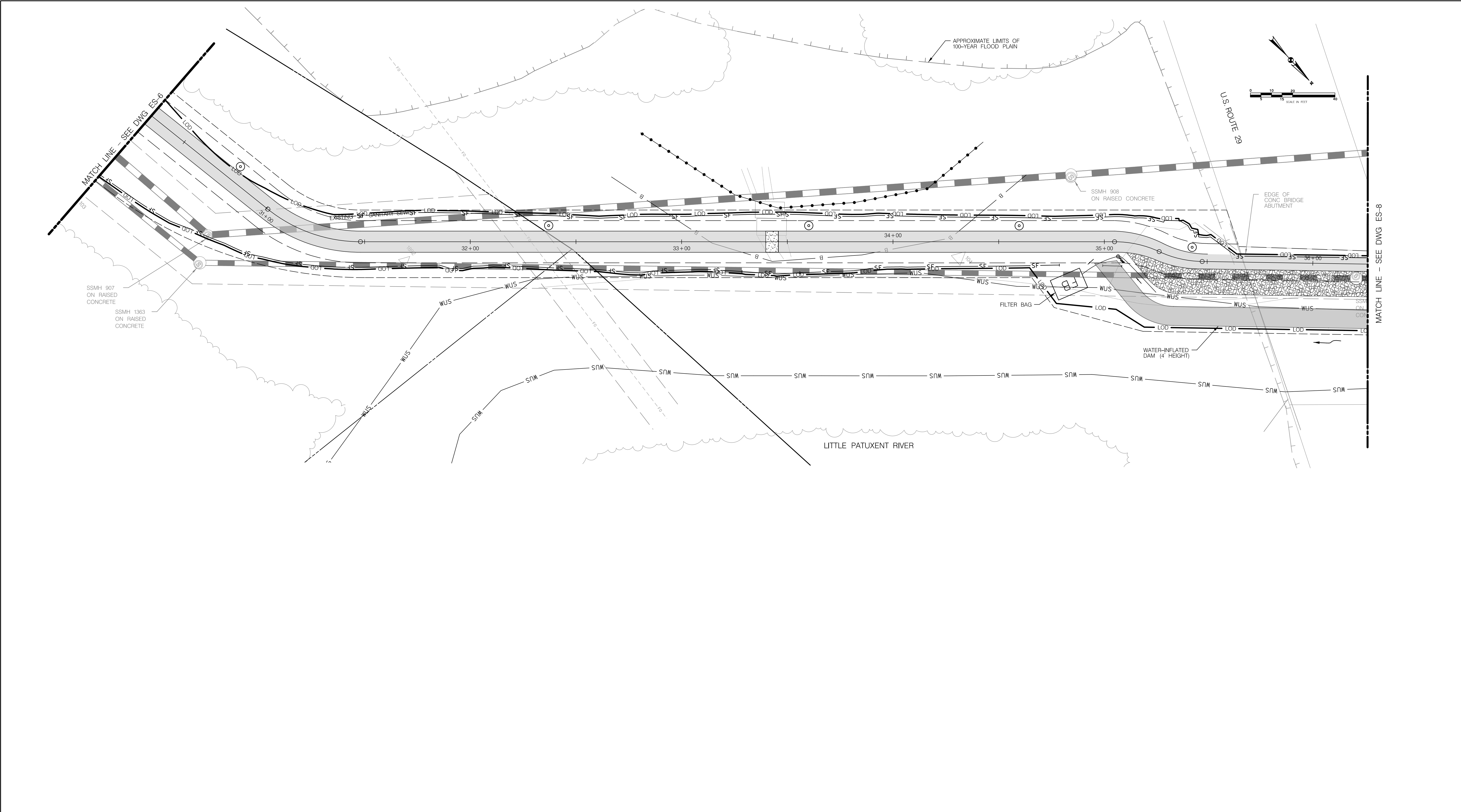
CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 24+00 TO STA 30+00

SHEET	58 OF 83
DWG	ES-6
DATE	APR 2020
PROJECT	5409.06

- NOTES:
1. SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.

2. SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

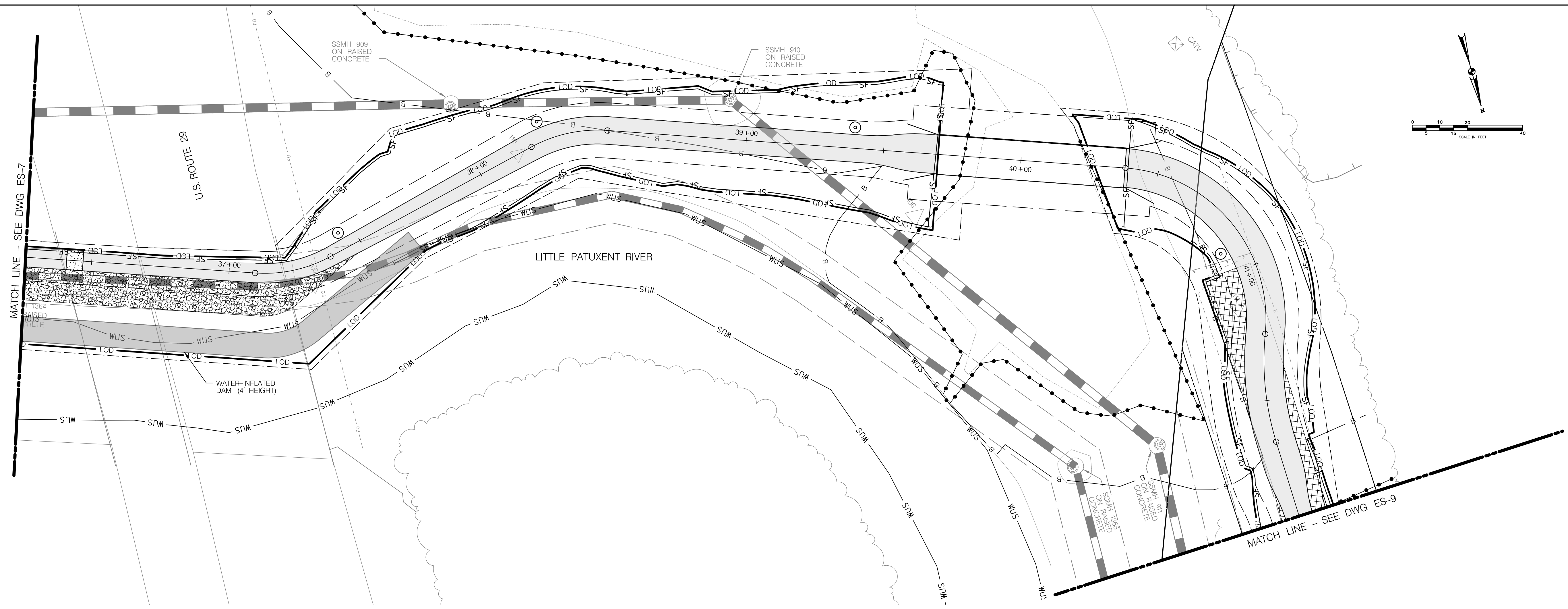
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 30+25 TO STA 36+25

SHEET	59 OF 83
DWG	ES-7
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

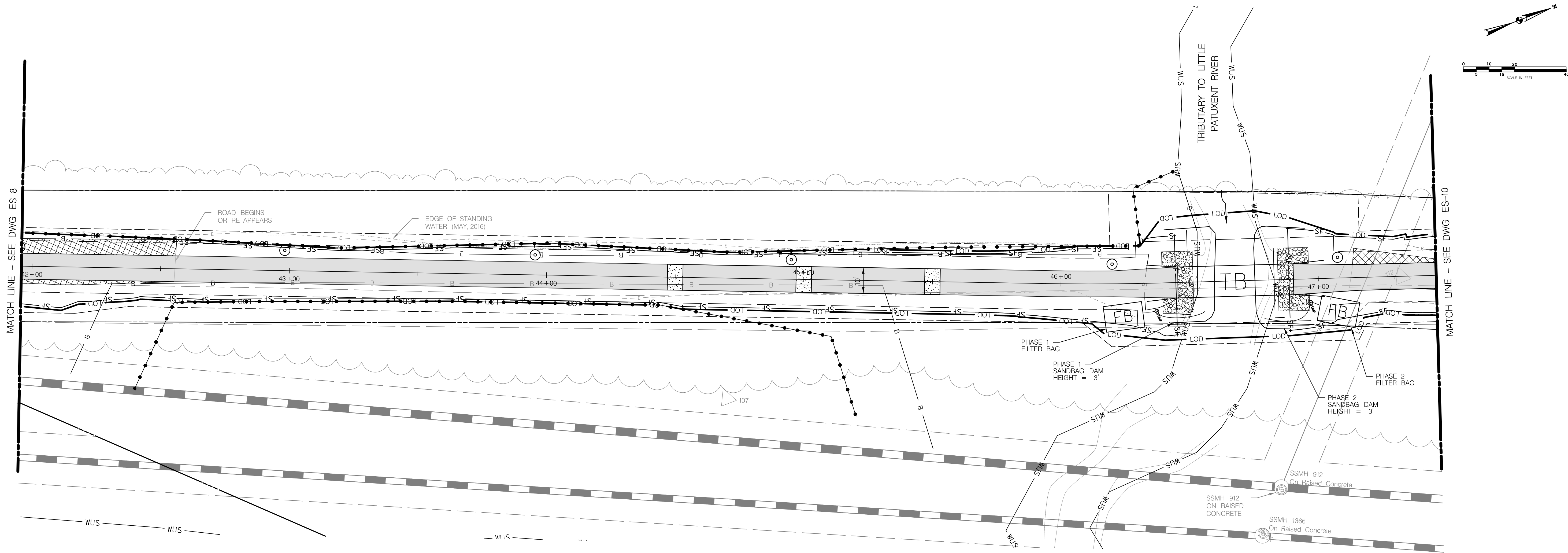
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 36+25 TO 42+00

SHEET	60 OF 83
DWG	ES-8
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

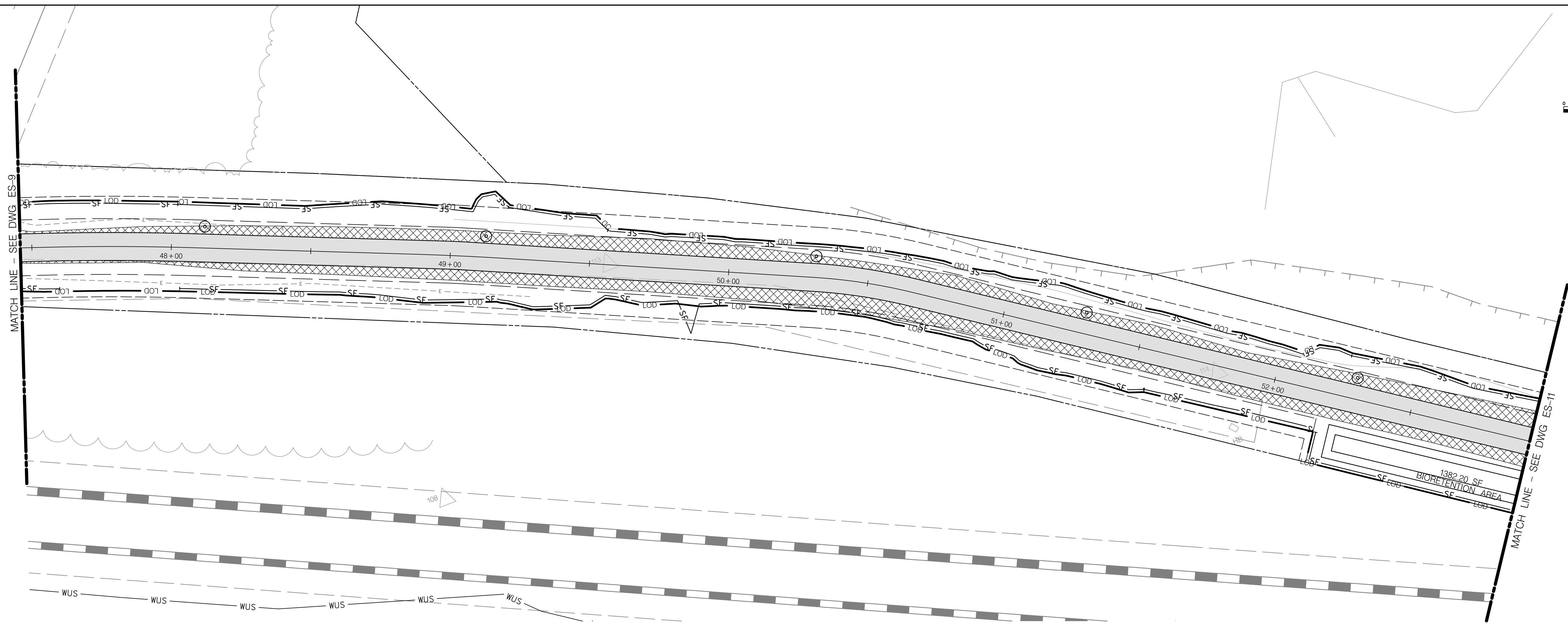
CIVIL

EROSION AND SEDIMENT CONTROL / DEMO PLAN
STATION 42+00 TO STA 47+50

SHEET	61 OF 83
DWG	ES-9
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.

MATCH LINE - SEE DWG ES-9



MATCH LINE - SEE DWG ES-11

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

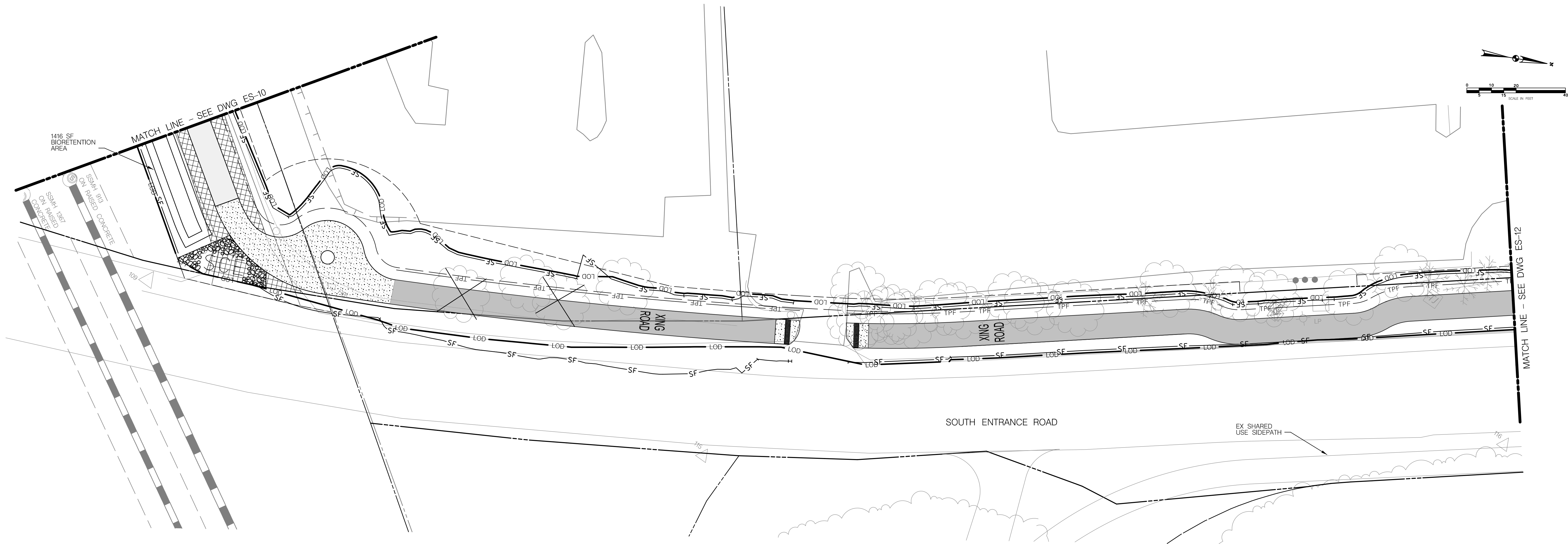
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 47+50 TO STA 53+00

SHEET	62 OF 83
DWG	ES-10
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



63

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

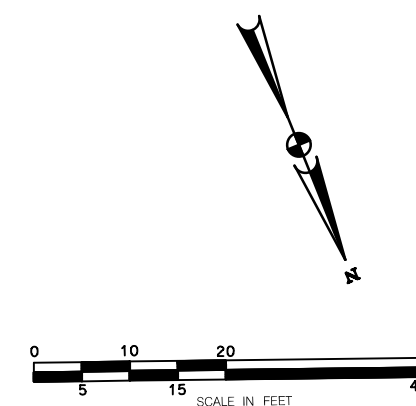
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 53+00 TO STA 58+75

SHEET	OF 83
DWG	ES-11
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	INIT.						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

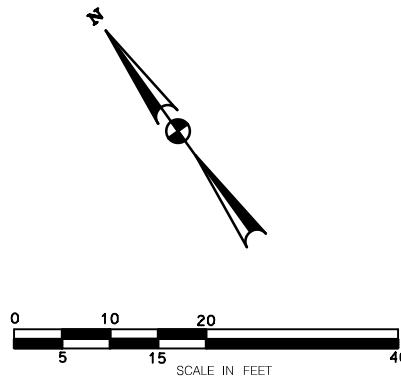
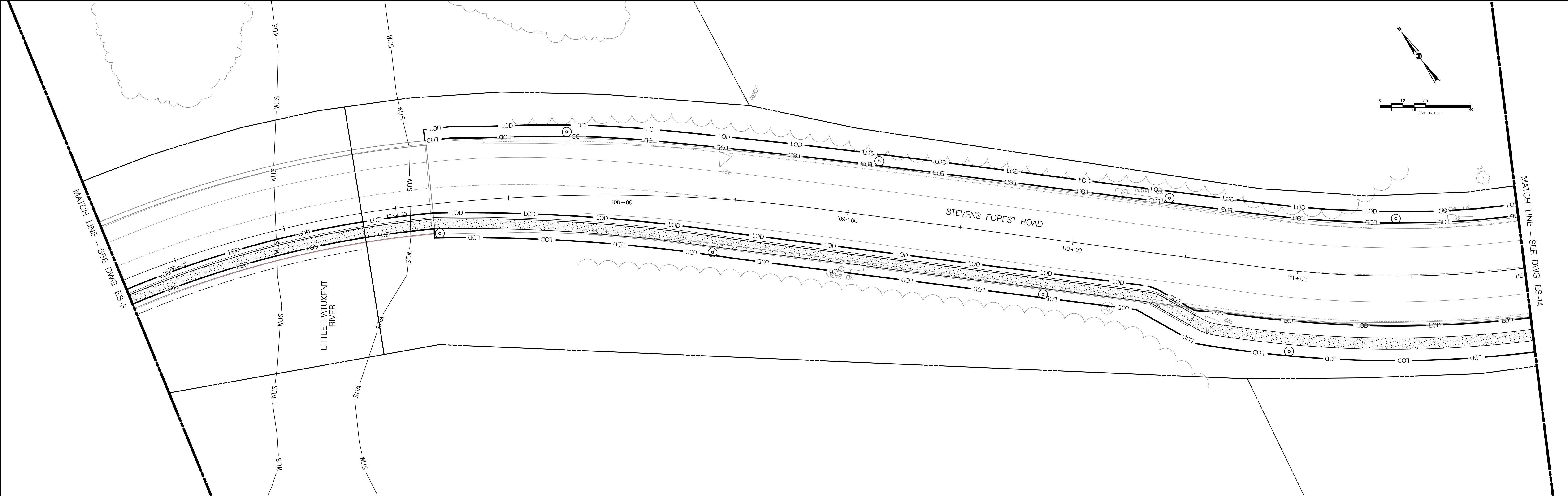
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 58+75 TO STA 60+85

SHEET	64 OF 83
DWG	ES-12
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

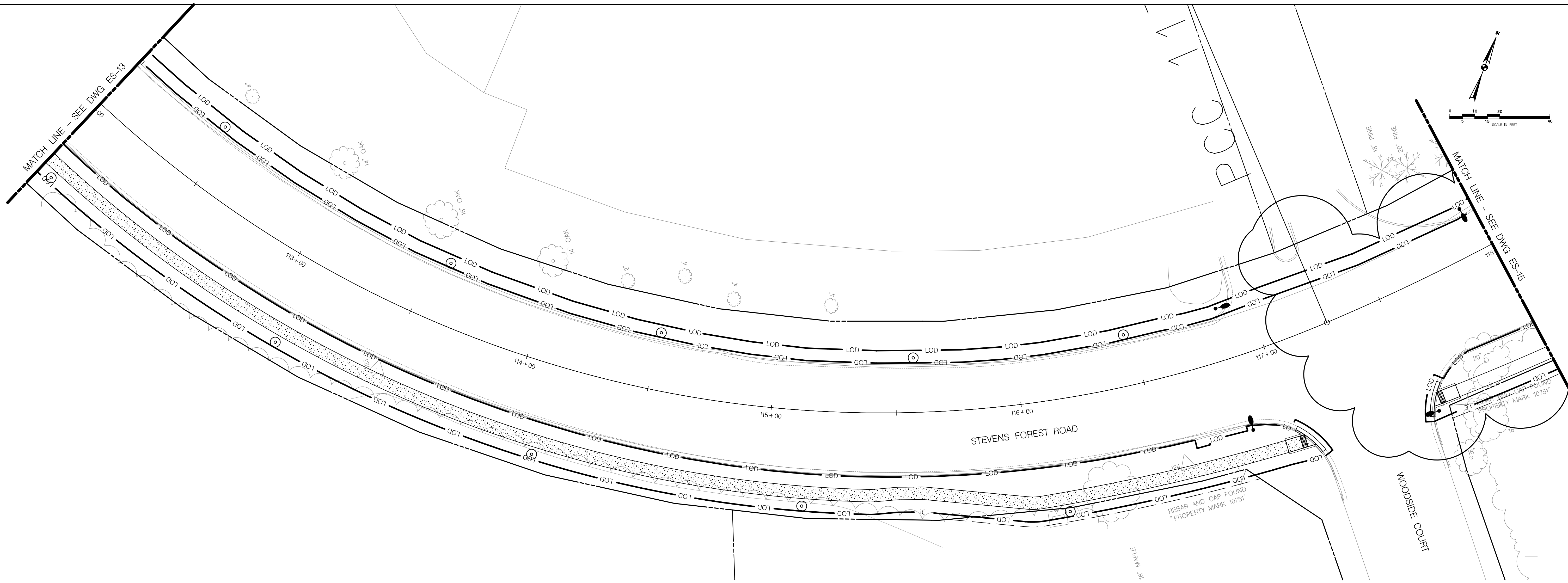
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 105+75 TO STA 112+00

SHEET	65 OF 83
DWG	ES-13
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

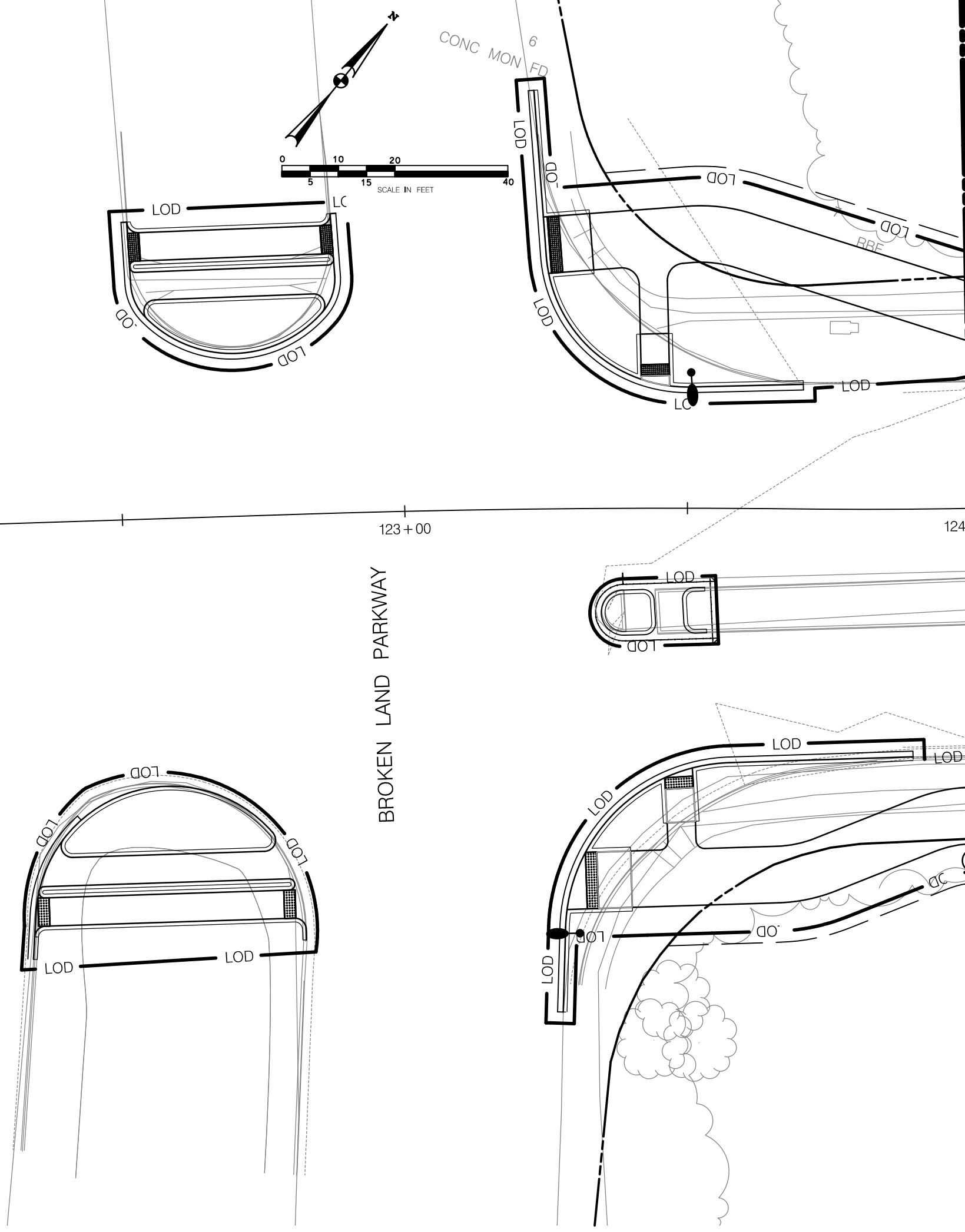
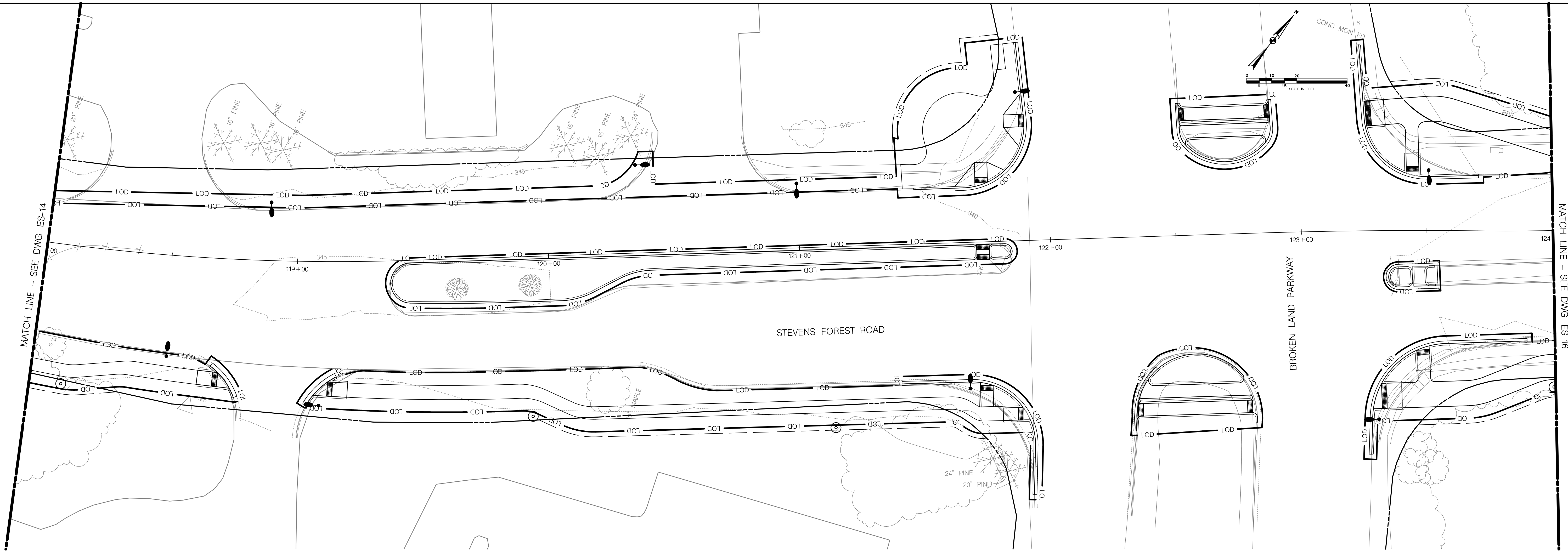
REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 112+00 TO STA 118+00

SHEET 66 OF 83
DWG ES-14
DATE APR 2020
PROJECT 5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

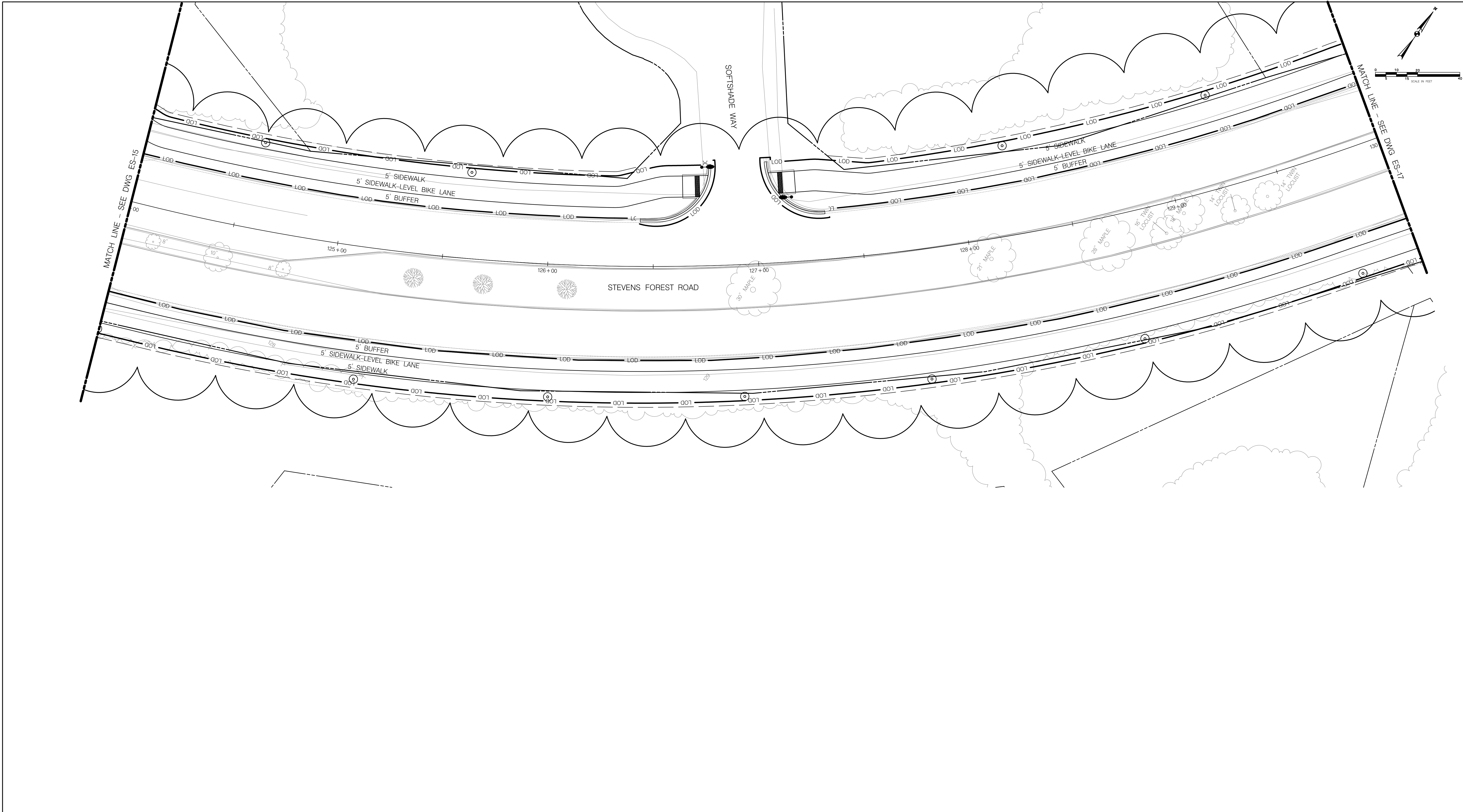
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 118+00 TO STA 124+00

SHEET	67 OF 83
DWG	ES-15
DATE	APR 2020
PROJECT	5409.06

- NOTES:
- SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
 - SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO					
DR	RH					
CHK	JC					
APVD	MRAB	NO.	DATE	REVISION	BY	APVD

TOOLE
DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

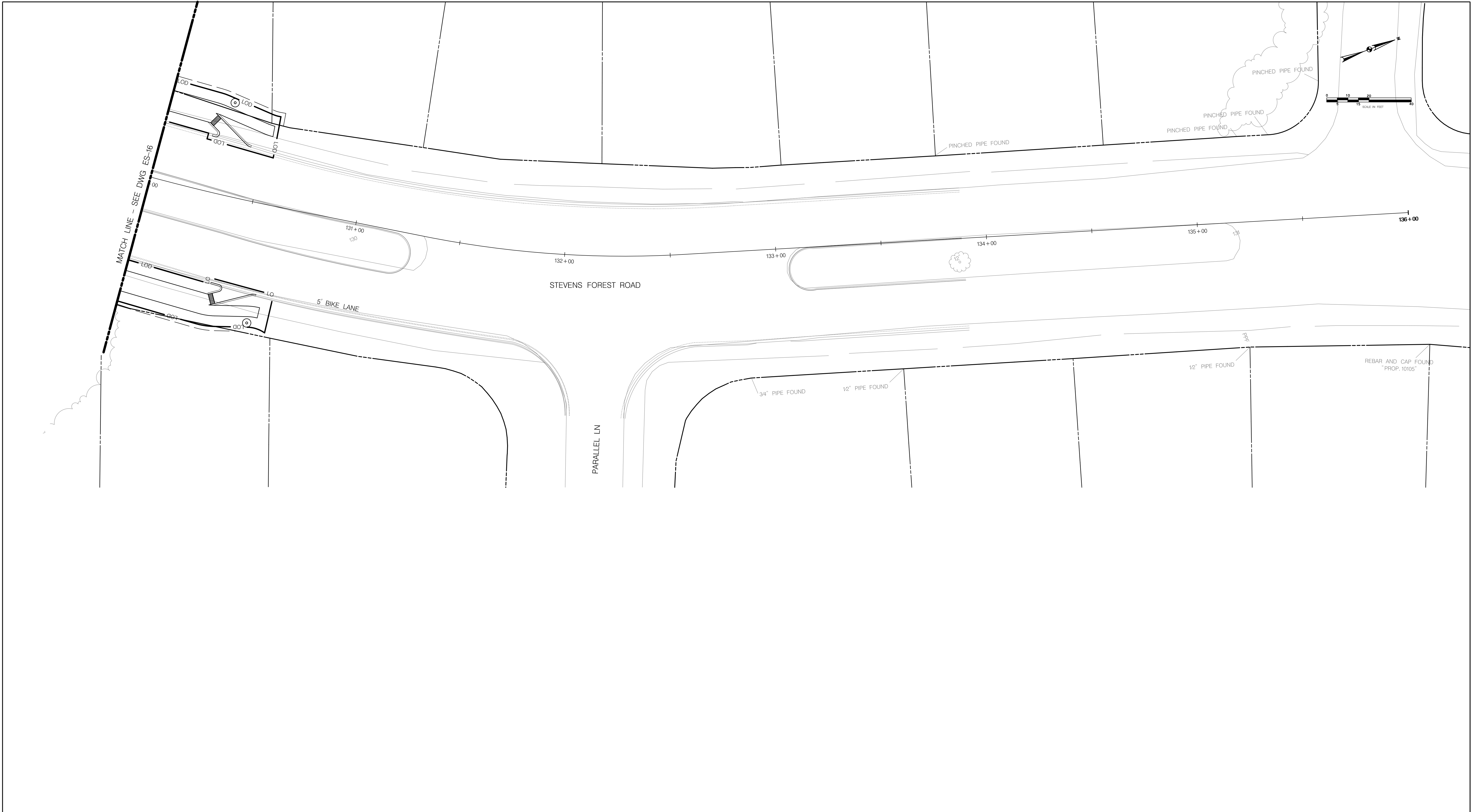
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 124+00 TO STA 130+00

SHEET	68 OF 83
DWG	ES-16
DATE	APR 2020
PROJECT	5409.06

- NOTES:
1. SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	CO						
DR	RH						
CHK	JC						
APVD	MRAB	NO.	DATE	REVISION	BY	APVD	

TOOLE

DESIGN

8484 GEORGIA AVENUE, SUITE 800
SILVER SPRING, MD 20910
PHONE: 301.927.1900
FAX: 301.927.2800
www.tooledesign.com

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL /DEMO PLAN
STA 130+00 TO STA 136+00

SHEET 69 OF 83

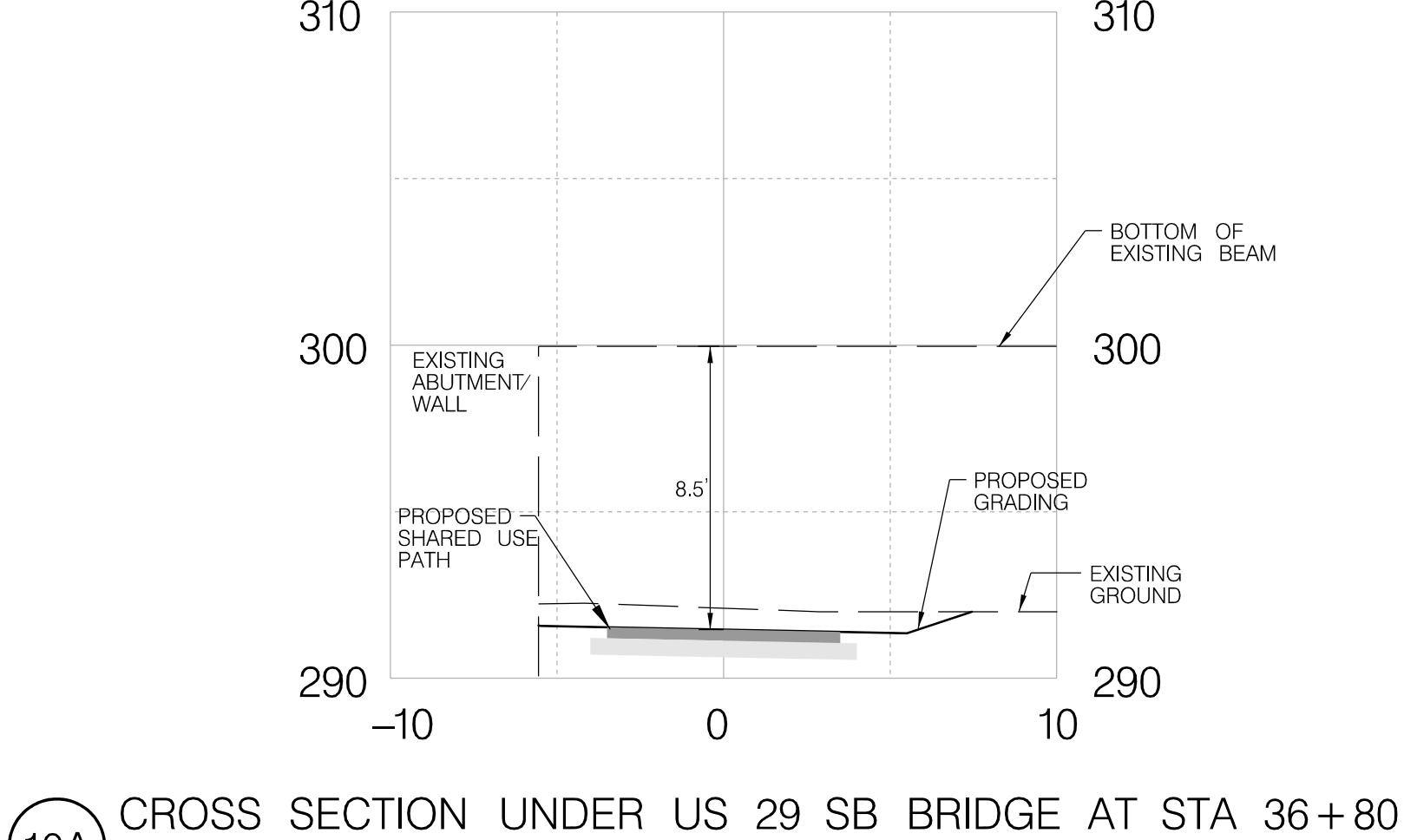
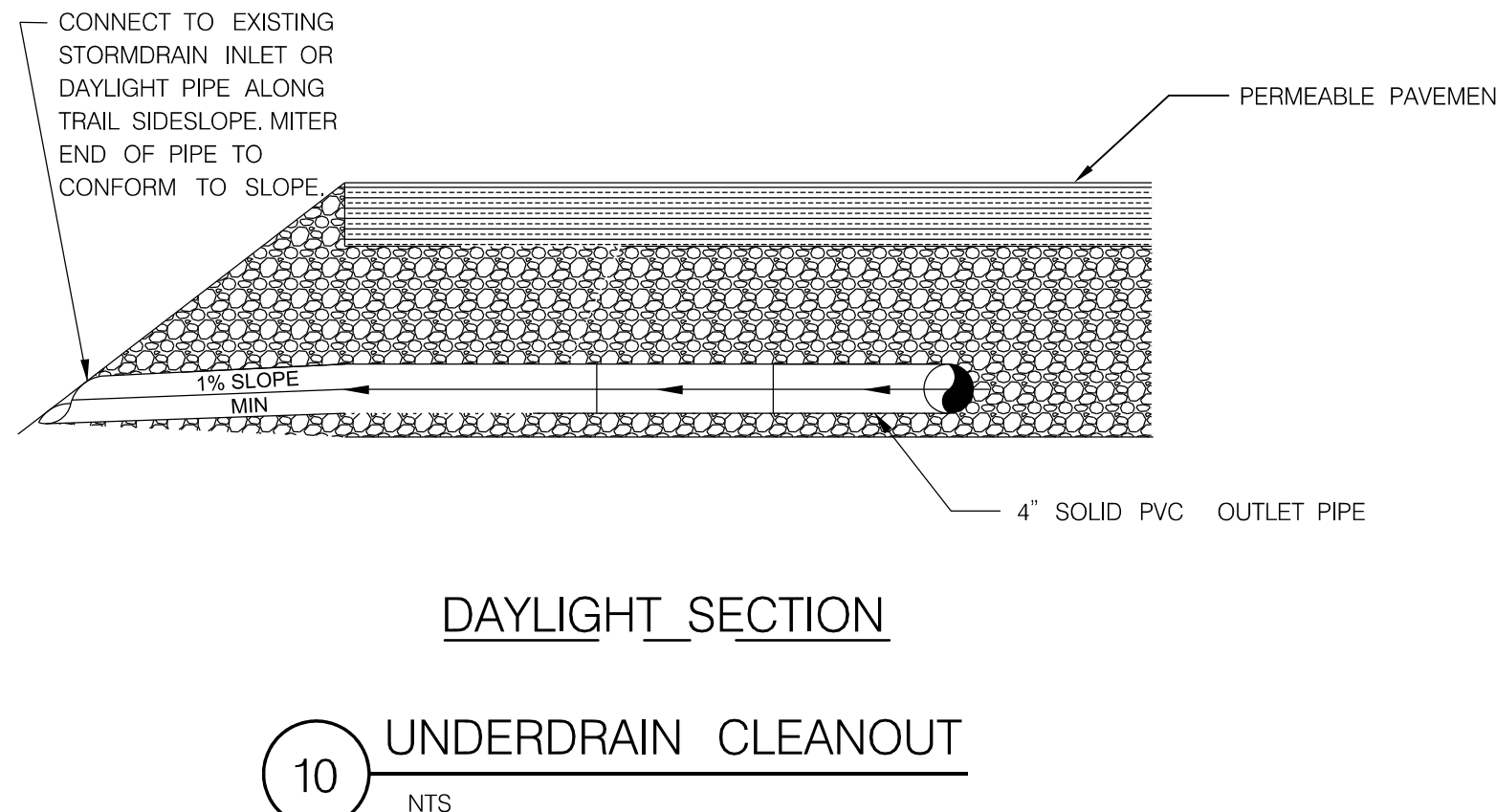
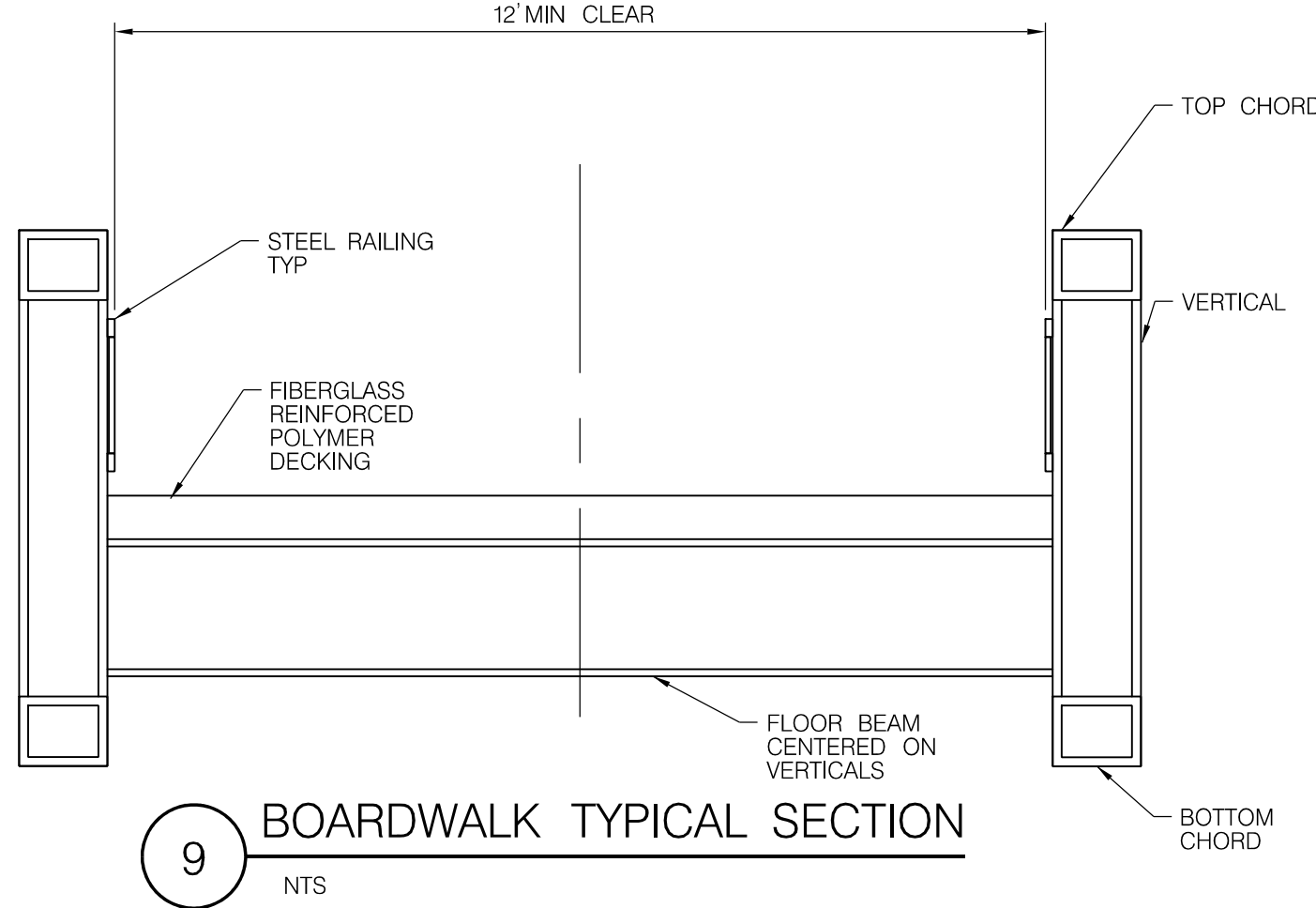
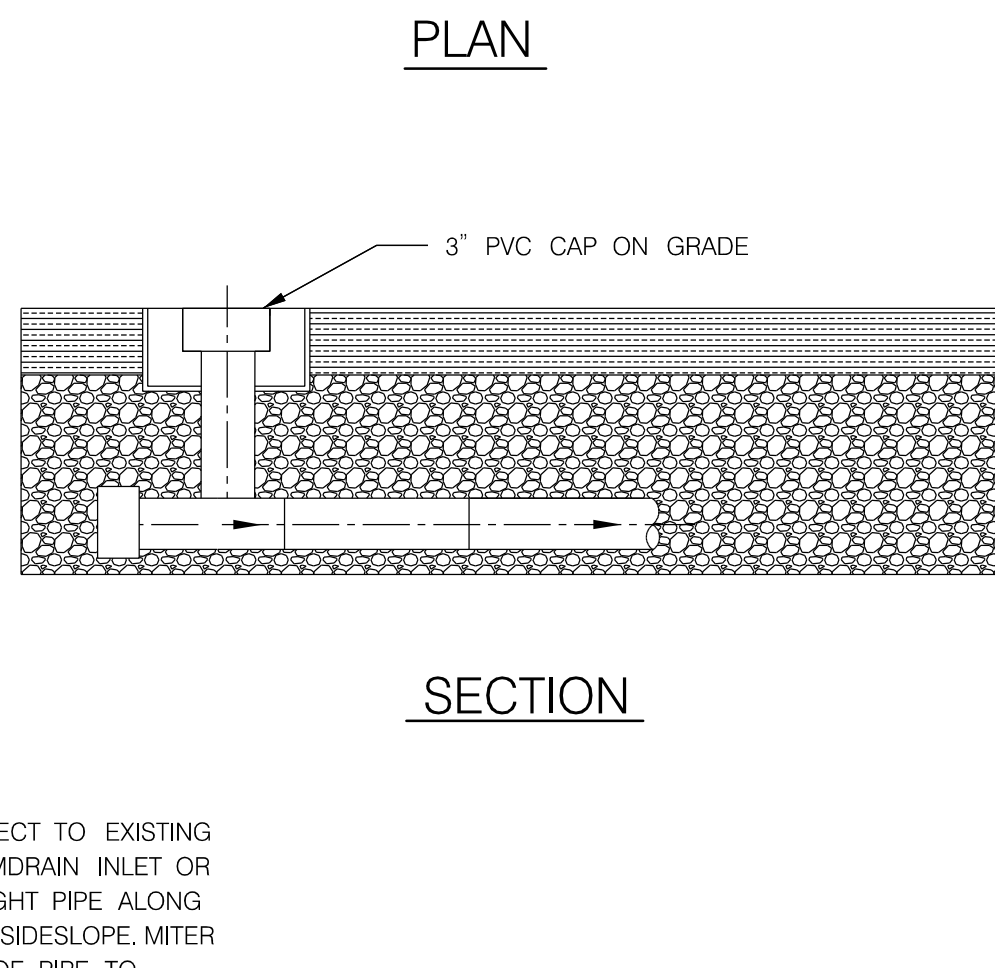
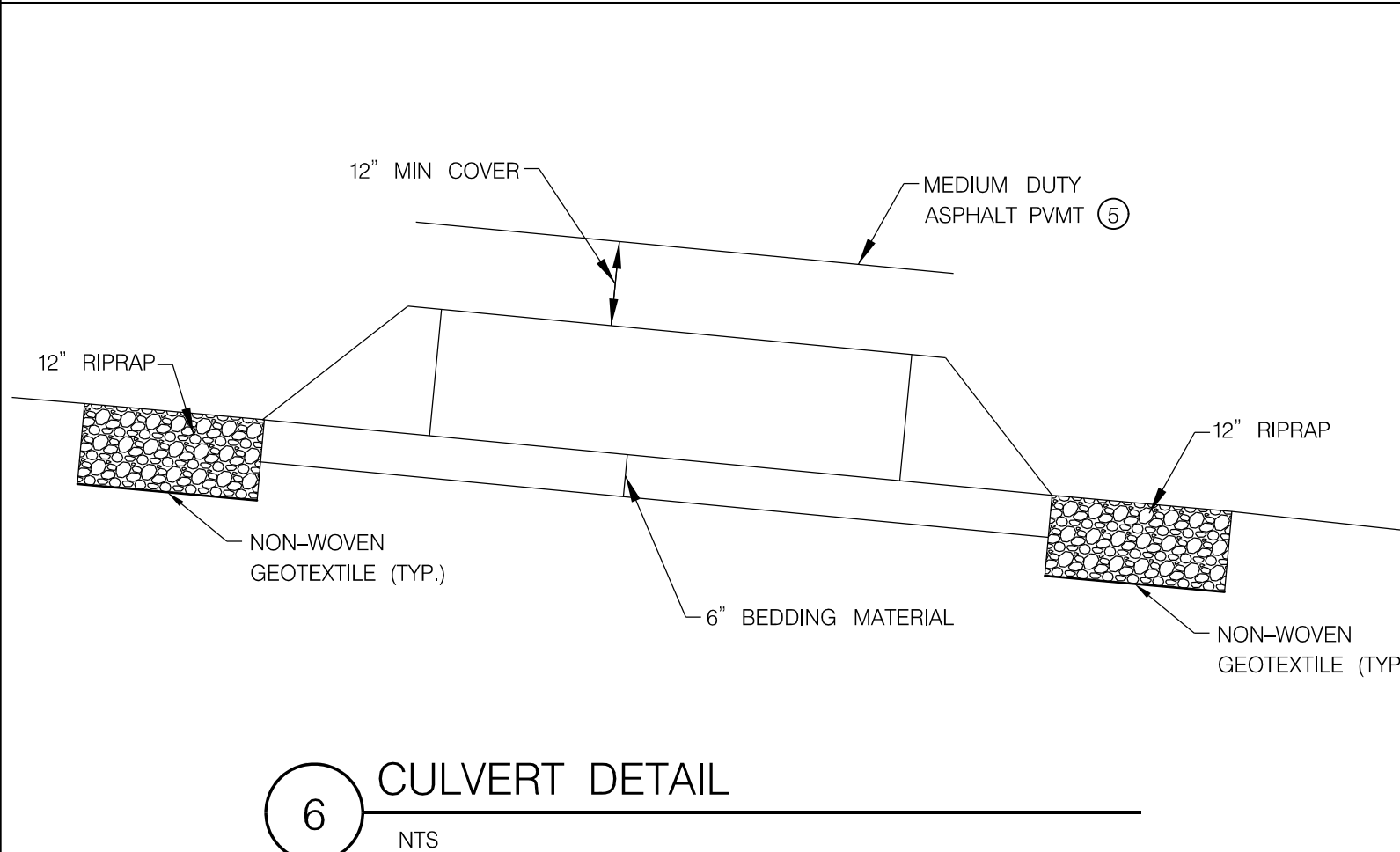
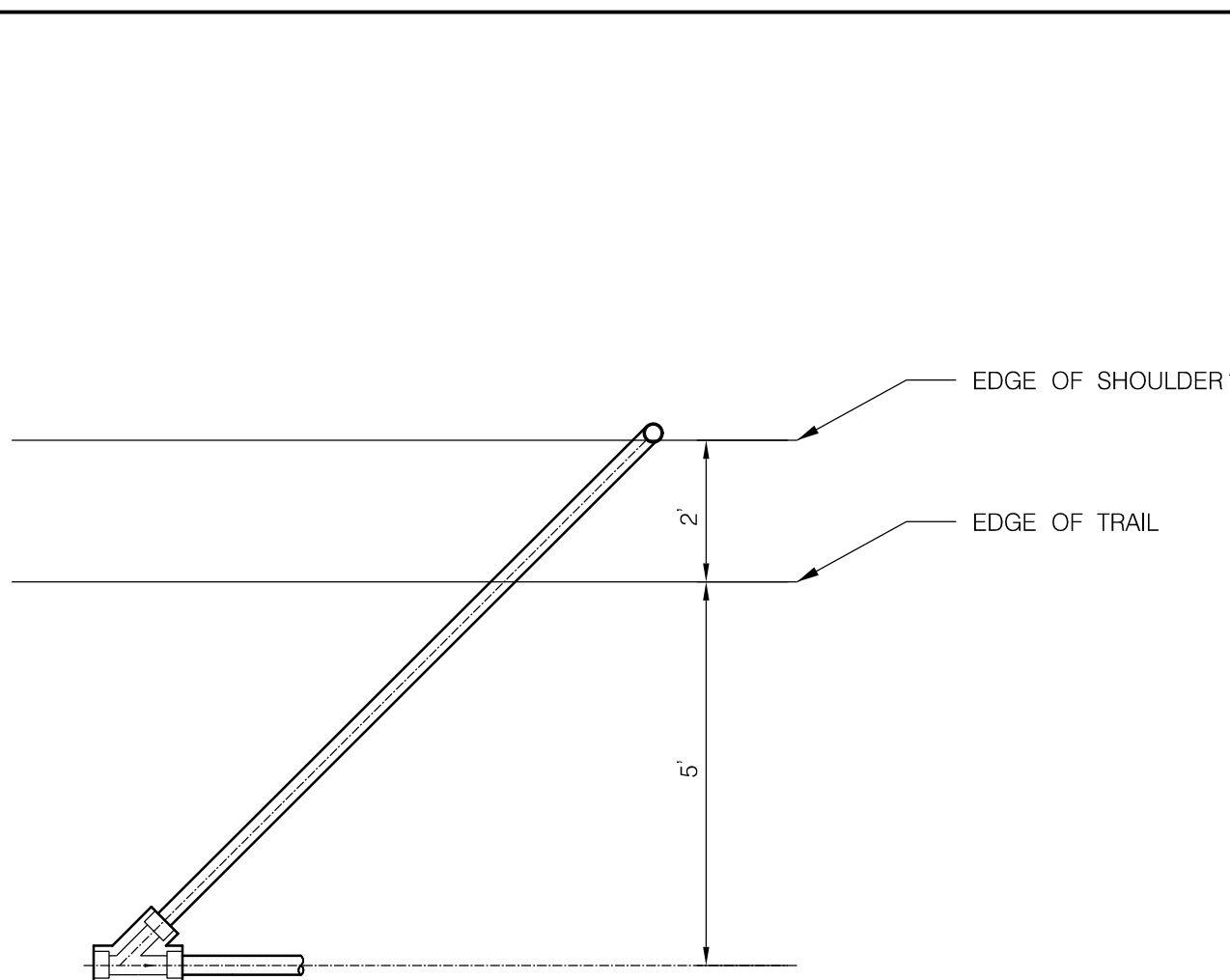
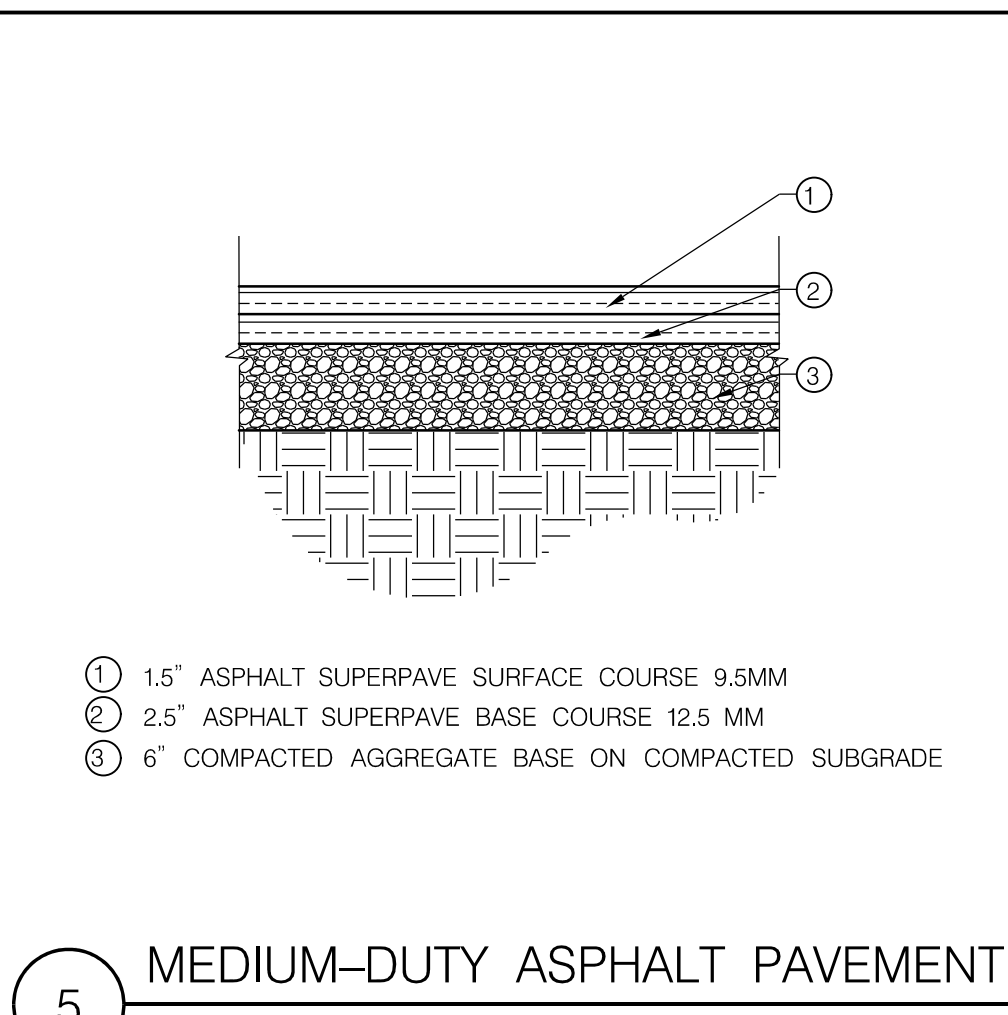
DWG ES-17

DATE APR 2020

PROJECT 5409.06

NOTES:
1. SEE SHEET ES-1 AND ES-2 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. SEE SHEET SD-9 AND SD-10 FOR EROSION AND SEDIMENT CONTROL DETAILS.

PRELIMINARY – NOT FOR CONSTRUCTION



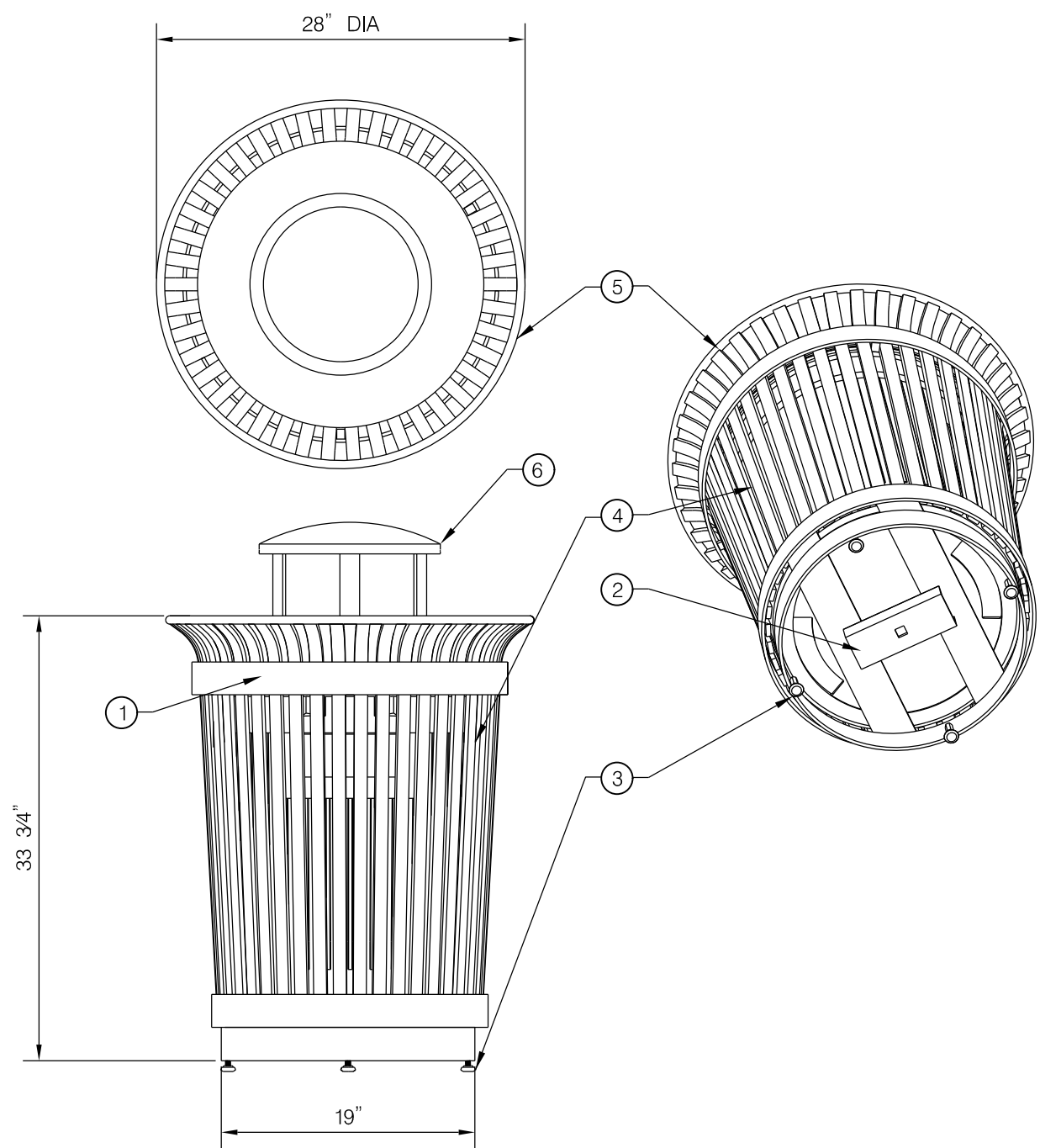
DSGN	SD					
DR	SD					
CHK	OA					
APVD	MAB	NO.	DATE	REVISION	BY	APVD

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

CIVIL

STANDARD DETAILS

SHEET	70 OF 83
DWG	SD-1
DATE	APR 2020
PROJECT	5409.06

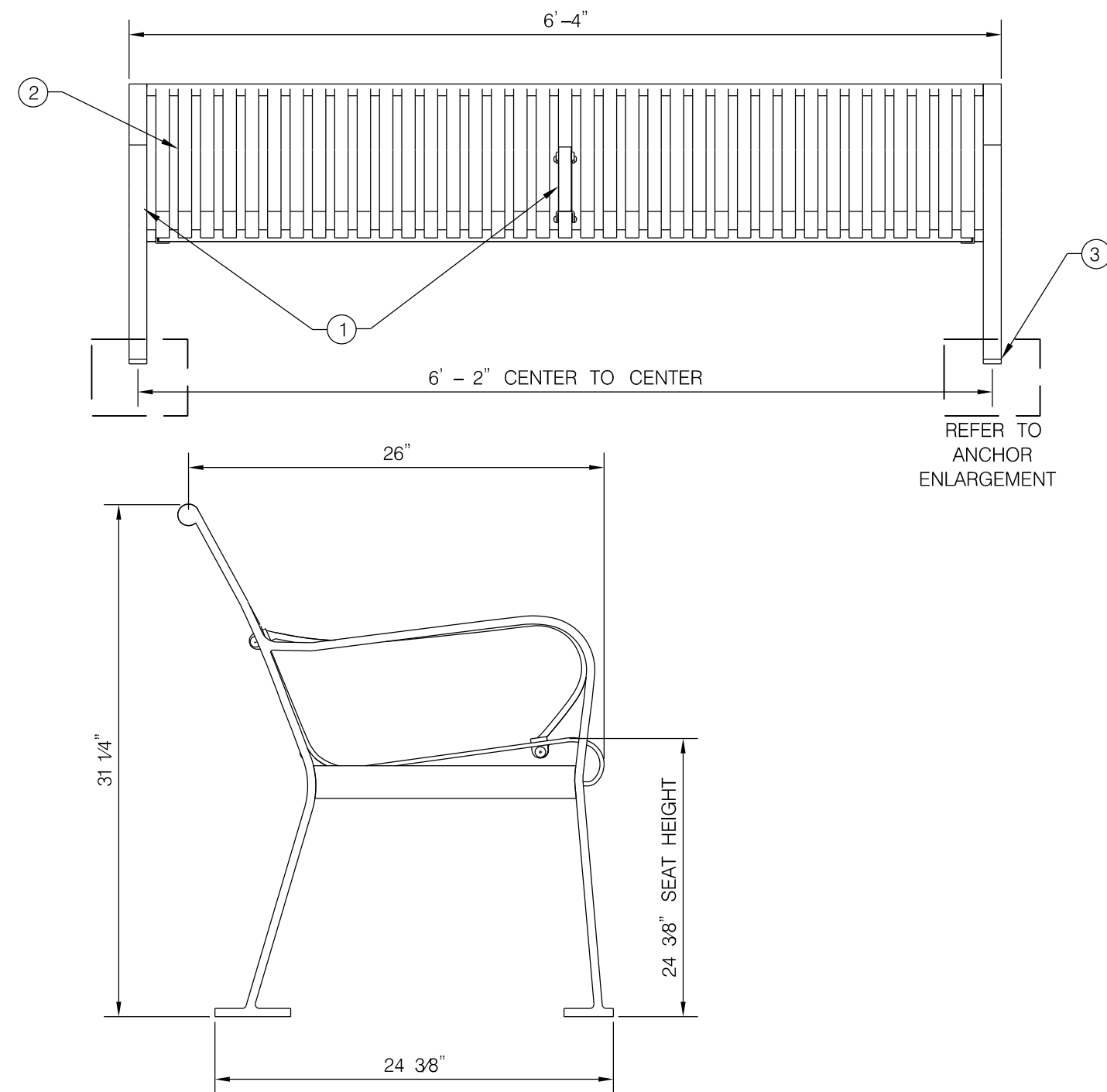


- 1 (2) 1/4" x 2-1/2" HORIZONTAL SOLID STEEL BANDS
2 3/4" SQUARE CENTER ANCHOR BOLT HOLE
3 (4) LEVELING FEET WITH A 3/8" DIAMETER THREADED STEEL SHAFT
4 (42) 3/8" X 1" VERTICAL SOLID STEEL BARS
5 5/8" SOLID STEEL TOP RING
6 RAIN BONNET LID

NOTES:

- MATERIALS
A. TYPE: STEELSITES RB SERIES RB-36, 36-GALLON, OR APPROVED EQUAL
B. COLOR: BLACK
C. FINISH: STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS
- TOP LOAD LIDS ARE SECURED WITH VINYL COATED GALVANIZED STEEL AIRCRAFT CABLE. CABLE IS LOOPED AROUND WELDED IN PLACE ATTACHMENT BRACKETS AND CRIMPED IN PLACE.
- SIDE DOOR LID IS RIVETED IN PLACE.
- PRODUCT MUST BE PERMANENTLY AFFIXED TO GROUND WITH ANCHOR BOLTS.
- PLASTIC INNER LINERS ARE MOLDED ON TOOLING
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

11 TRASH RECEPTACLE
NTS

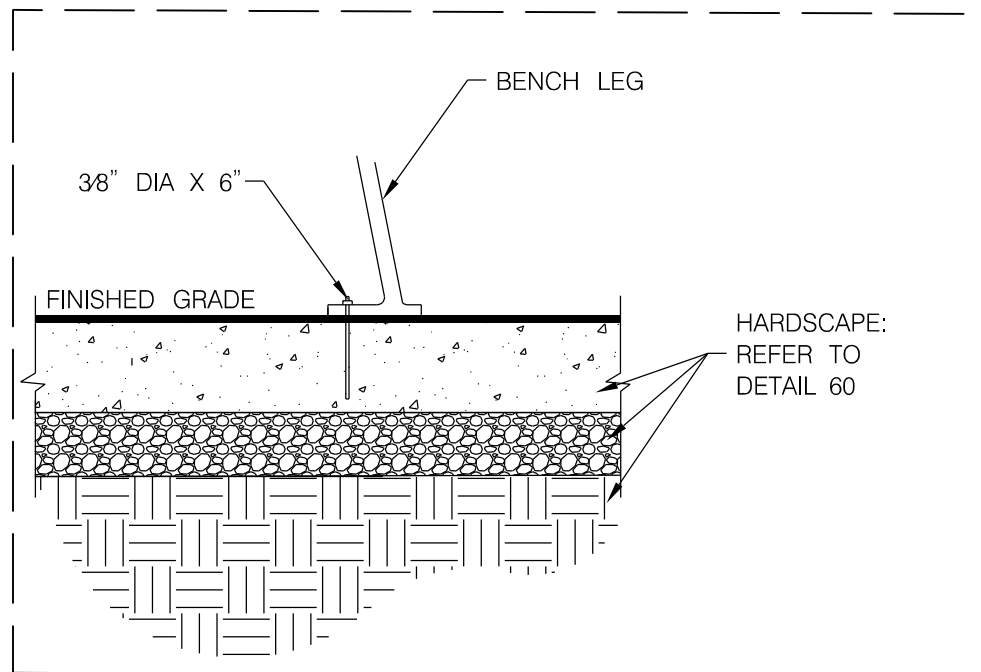


- 1 12" to 2" SOLID STEEL END AND CENTER ARMRESTS
2 (37) STEEL SLATS ARE FORMED FROM 1/4" X 1-1/2" SOLID STEEL BARS
3 BENCH ANCHOR: 3/8" DIA. X 6" NONCORROSIVE SLEEVE ANCHOR WITH ROUND HEAD AT EACH LEG [REFER TO ENLARGEMENT]

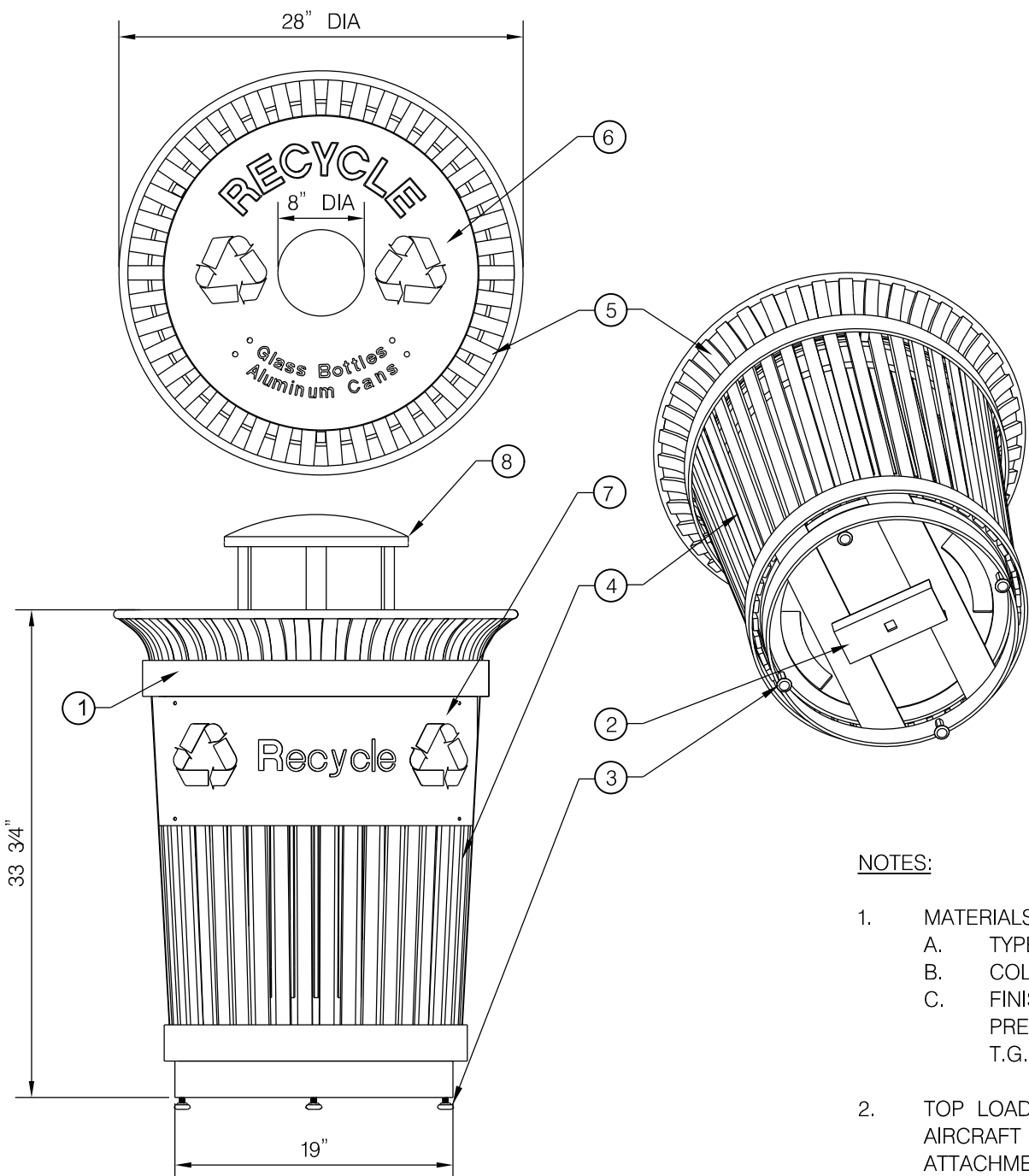
13 BENCH
NTS

NOTES:

- MATERIALS
A. TYPE: STEELSITES RB SERIES RB-28, 6' LENGTH BENCH, OR APPROVED EQUAL
B. COLOR: BLACK
C. FINISH: STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER COATED WITH T.G.I.C. POLYESTER POWDER COAT.
- IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL BENCH IS IN PLACE. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT THE LOCAL CODES FOR REGULATIONS.
- ANCHOR BOLTS NOT PROVIDED BY MANUFACTURER, PLACE ANCHOR BOLTS THROUGH 3/8" DIA. HOLE DRILL INTO PAVING USING A CARBIDE BIT. FASTEN ANCHOR SNUG AGAINST SITE FURNITURE.
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.



ANCHOR ENLARGEMENT

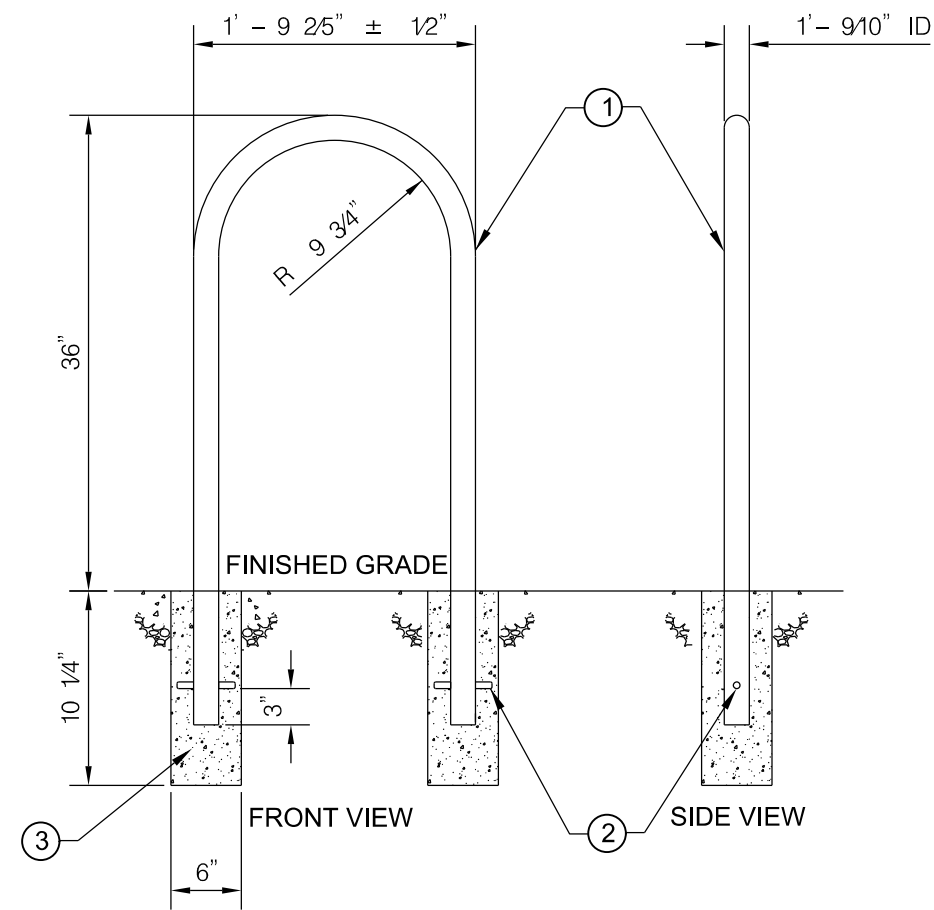


- 1 (2) 1/4" x 2-1/2" HORIZONTAL SOLID STEEL BANDS
2 3/4" SQUARE CENTER ANCHOR BOLT HOLE
3 (4) LEVELING FEET WITH A 3/8" DIAMETER THREADED STEEL SHAFT
4 (42) 3/8" X 1" VERTICAL SOLID STEEL BARS
5 5/8" SOLID STEEL TOP RING
6 RECYCLING LID WITH 18" STENCIL GAUGE
7 RECYCLING PLAQUE AFFIXED TO OUTSIDE OF SOLID STEEL BANDS
8 RAIN BONNET LID

NOTES:

- MATERIALS
A. TYPE: STEELSITES RB SERIES RB-36, 36-GALLON, OR APPROVED EQUAL
B. COLOR: BLUE
C. FINISH: STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATING
- TOP LOAD LIDS ARE SECURED WITH VINYL COATED GALVANIZED STEEL AIRCRAFT CABLE. CABLE IS LOOPED AROUND WELDED IN PLACE ATTACHMENT BRACKETS AND CRIMPED IN PLACE.
- SIDE DOOR LID IS RIVETED IN PLACE
- PRODUCT MUST BE PERMANENTLY AFFIXED TO GROUND WITH ANCHOR BOLTS
- PLASTIC INNER LINERS ARE MOLDED ON TOOLING
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

12 RECYCLING RECEPTACLE
NTS

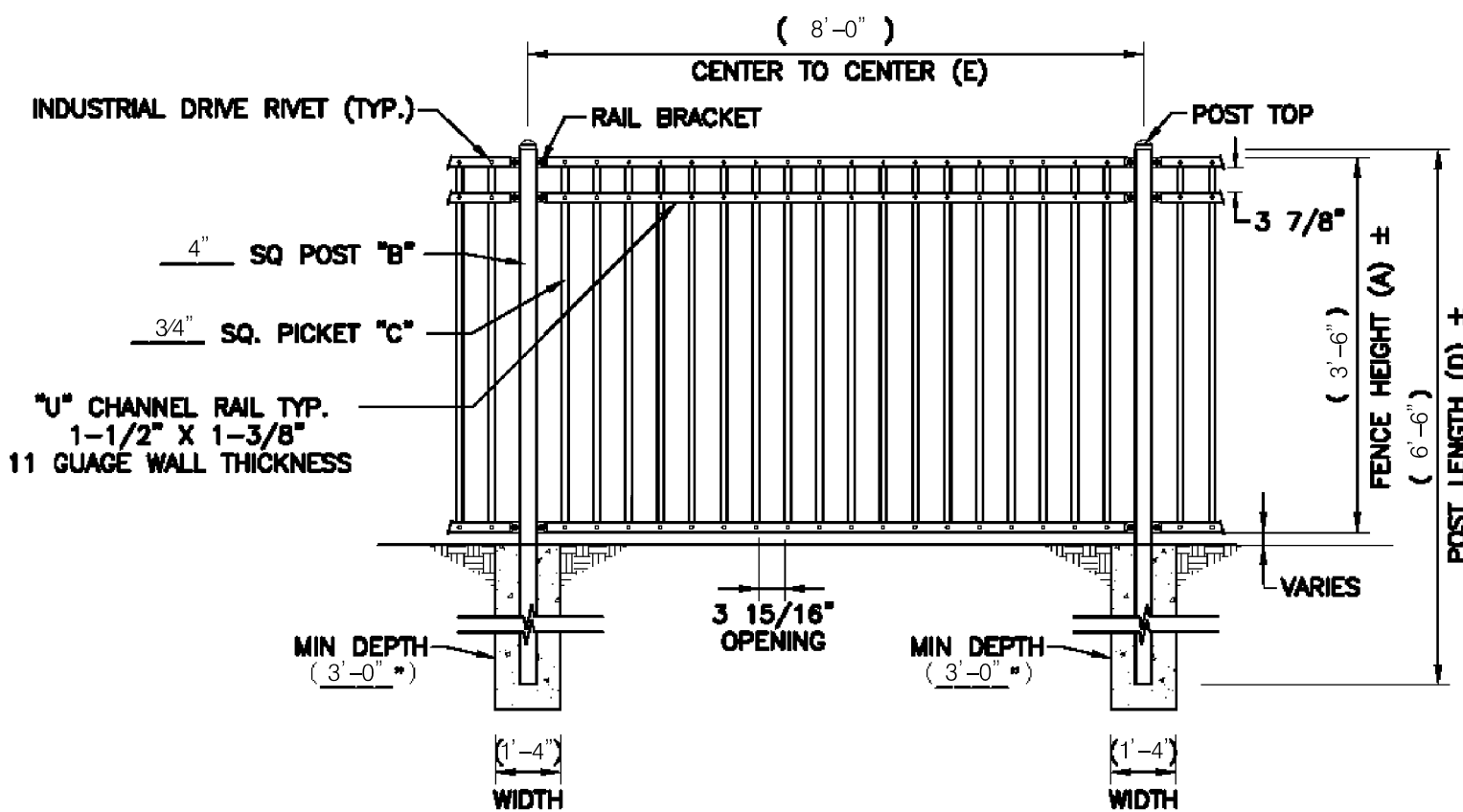


NOTES:

- MATERIALS
A. TYPE: INVERTED U SERIES SU-15E; 1.5" DIA. STEEL PIPE, EMBEDDED MOUNT REF # 474-022, OR APPROVED EQUAL
B. COLOR: BLACK
C. FINISH: THERMOPLASTIC POWDER COAT - T
- PLASTIC INNER LINERS ARE MOLDED ON TOOLING
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

- 1 1 1/2" SCH. 40 PIPE (1 3/16" O.D. X 145W)
2 1/2" Ø REBAR @ 1 1/4" LG. (4) PLC'S TYP.
3 CONCRETE FOOTING 24" MIN. DEPTH

14 BICYCLE RACK
NTS



NOTES:

- FOOTING WIDTH TO BE FOUR (4) TIMES THE POST WIDTH.
- PICKETS SHALL BE SECURED TO RAILS WITH 1/4" ALUMINUM INDUSTRIAL DRIVE RIVETS.
- MAXIMUM RAKE APPROXIMATELY SIX (6) INCHES.
- LONG FENCE MODEL LF-R03 OR APPROVED EQUAL.

15 DECORATIVE IRON FENCE
NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS DATE

CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRAFFIC ENGINEERING DIVISION DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	SD						
DR	SD						
CHK	OA						
APVD	MAB	NO.	DATE	REVISION	BY	APVD	

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

STANDARD DETAILS

SHEET 71 OF 83

DWG SD-2

DATE APR 2020

PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:

- THE CONTRACTOR SHALL LOCATE AND MARK UNDERGROUND FACILITIES AND MAINTAIN MARKING DURING CONSTRUCTION.
- CALL MISS UTILITY PRIOR TO DIGGING. CERTAIN UTILITIES WITHIN THE VICINITY OF HIS PROJECT AREA ARE SHOWN ON THE PLANS. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATELY LOCATED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND LIGHTING SYSTEMS BEFORE PROCEEDING WITH WORK. THE CONTRACTOR IS RESPONSIBLE FOR TEST PITTING UNMARKED UTILITIES OUTSIDE OF ROAD RIGHT-OF-WAY.
- CONTRACTOR TO PROVIDE SURVEY AND STAKE OUT HAND BOXES & CONDUIT LOCATIONS. COORDINATE WITH BG&E AND HOWARD COUNTY.
- CONTRACTOR SHALL COORDINATE WITH HOWARD COUNTY AND UTILITIES PLAN ALL BORINGS UNDER EXISTING ROADWAYS.
- ALL ELECTRICAL WORK SHALL CONFORM TO BG&E LIGHTING GUIDELINES AND HOWARD COUNTY STREET LIGHT POLICIES AND GUIDELINES.
- FINAL LIGHT POLE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY HOWARD COUNTY TRAFFIC OR BG&E FOR ALL PUBLIC LIGHT FIXTURES.
- ALL ILLUMINANCE VALUES PROVIDED ARE PROPOSED CONDITION.
- CONTRACTOR SHALL MAINTAIN AS-BUILT RED LINED AND MARKED UP RECORD DRAWINGS AT CONSTRUCTION SITE, AND MAKE RECORD DRAWINGS AVAILABLE FOR OBSERVATION AT TIME OF PAYMENT.
- GENERAL CONTRACTOR TO PROVIDE ALL NECESSARY BACKFILL AND GRADING FOR PROPER INSTALLATION OF HAND BOXES AND CONDUITS. GENERAL CONTRACTOR TO PROVIDE EXCAVATION FOR HAND BOX INSTALLATION. SEE HAND BOX DETAIL ON THIS SHEET.
- AT LOCATIONS WHERE PROPOSED CONDUIT WILL CROSS NEW OR EXISTING CONDUIT, PIPING OF ANOTHER TRADE, OR STRUCTURE THE CONTRACTOR SHALL HAND-DIG THE TRENCH AND SHALL TAKE ADEQUATE CARE NOT TO DAMAGE THE OTHER CONDUIT, PIPES AND STRUCTURES.
- THE CONDUITS SHALL BE MINIMUM 24" DEEP AND NO MORE THAN 36-INCHES BEHIND THE CURB OR WITHIN 48" OF ASPHALT TRAIL. SLOPE UNDERGROUND CONDUITS TO DRAIN TO HAND BOXES OR MAN-HOLES.
- BG&E WILL FURNISH THROUGH THE COUNTY ALL HAND BOXES REQUIRED AND THE CONTRACTOR WILL INSTALL AT CORRECT ELEVATION AND AT EACH LOCATION IDENTIFIED.
- CONTRACTOR TO FURNISH AND INSTALL 3" SCHEDULE 40 PVC OR HDPE SCHEDULE 40 CONDUIT SLEEVE 400# PULL STRING CROSSING UNDER BIKE/PEDESTRIAN PATH PER BG&E STANDARDS AND INSTALLATION DETAIL ON SHEET C8.4.
- ALL PEDESTRIAN LIGHT FIXTURES ARE TO BE FURNISHED AND INSTALLED BY BG&E.
- PROVIDE MINIMUM OF 6" OF SEPARATION OF LIGHTING CONDUIT FROM TRAFFIC AND COMMUNICATION CONDUITS WHEN IN CLOSE PROXIMITY.
- CONDUITS SHALL BE INSTALLED WITH LARGE RADIUS OFFSETS (5'-0" MINIMUM RADIUS) TO BYPASS DRAINAGE INLETS, MANHOLES, AND OTHER OBSTRUCTIONS.

- CONTRACTOR TO COORDINATE WITH BG&E WHEN PATHWAYS ARE READY FOR INSTALLATION OF DIRECT BURIAL CABLE. (BY BG&E)
- CONTRACTOR TO COORDINATE WITH BG&E WORK CREWS FOR TRENCHING AND CABLE INSTALLATION BETWEEN HAND BOXES AT MOST OPPORTUNE TIMES DURING COURSE OF WORK.
- ALL LIGHTING CIRCUITRY ARE TO BE DESIGNED, FURNISHED AND INSTALLED BY BG&E.
- THE SUITABILITY, COLOR AND TEXTURE OF LIGHTING POLES TO BE INSTALLED IN THE SHA RIGHT OF WAY SHALL BE APPROVED BEFORE INSTALLATION. THE CONTRACTOR SHALL FURNISH SAMPLES OR MAKE ARRANGEMENTS FOR INSPECTION AND APPROVAL AT THE PROJECT SITE.

SPECIFICATION FEATURES

Construction
HOUSING + TOP: Die-cast aluminum housing with spun and stamped aluminum top. Overcenter latch for relamping and ballast power module access. Top is completely removable without the use of tools. Standard color is grey. Other finish colors available; consult your Streetworks representative. ANSI wattage/ source label.

Optical
Injection molded acrylic refractor available in symmetric or

asymmetric distributions. 4000K (+/- 275K) CCT. Minimum 70 CRI standard.

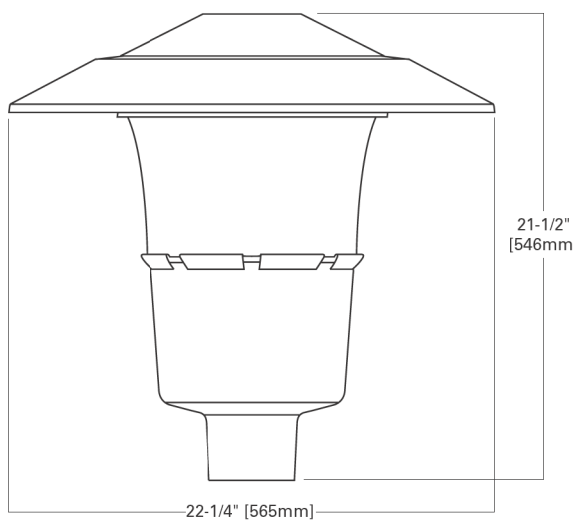
Electrical
120-277V 50/60Hz operation. 10kV/10kA common- and differential mode surge protection standard. Thermal management transfers heat rapidly away from the LED source for optimal efficiency and light output. Ambient operating temperature from -40°C to 40°C. Standard three-position tunnel type compression terminal block. 90% lumen maintenance expected at

60,000 hours. Light square is IP66 enclosure rated.

Mounting
Post top mount fits 3" O.D. tenons. Secured by square head 3/8" stainless steel mounting bolts.

Warranty
Five-year warranty.

DIMENSIONS



LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (90,000 Hours)	Theoretical L70 (Hours)
40°C	>90%	>250,000

POWER AND LUMENS

	Luminaire Wattage (Nominal)	SW
SYM	Lumens	3,323
	BUG Rating	1-3-2
ASYM	Lumens	3,129
	BUG Rating	1-3-2



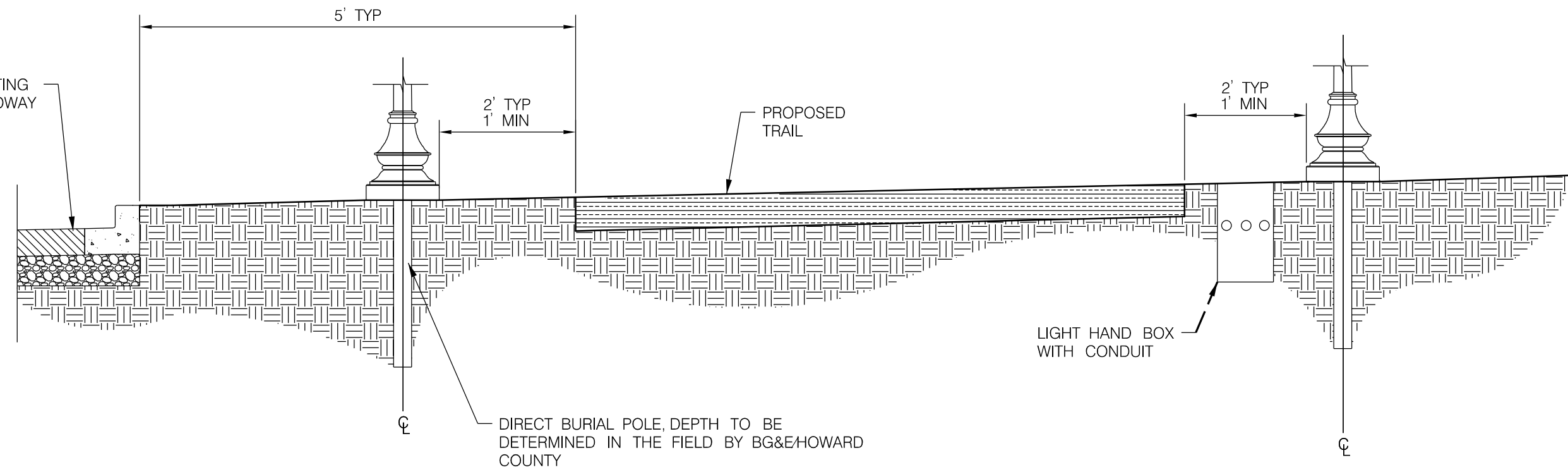
MPW WOODBRIDGE LED

LED
DECORATIVE POST TOP LUMINAIRE

16

STREET LIGHTING – SOUTH ENTRANCE ROAD

NTS



NOTES:

- CAREFULLY SELECT LIGHT POLE LOCATIONS TO ENSURE THAT SIGHT LINES AT INTERSECTIONS AND DRIVEWAYS REMAIN FREE OF OBSTRUCTIONS.

LUMINAIRE SCHEDULE

TYPE	LUMINAIRE DESCRIPTION
CH COBRA HEAD (EXISTING FIXTURE)	COBRAHEAD LUMINAIRE DISTRIBUTION TYPE: III FULL CUTOFF LAMP: 250W OR 400W, HPS MOUNTING HEIGHT: 30-FT FIBERGLASS POLES
PT POST TOP (PROPOSED FIXTURE)	MPW WOODBRIDGE DISTRIBUTION TYPE: SYMMETRICAL FULL TOP REFLECTOR, 53W LED POST TOP LUMINAIRE, MOUNTING HEIGHT: 12-FT BLACK FIBERGLASS POLE

17

LIGHT POLE PLACEMENT DETAIL

NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	SD						
DR	SD						
CHK	OA						
APVD	MAB	NO.	DATE	REVISION	BY	APVD	

LIGHTING SPECIFICATIONS AND ILLUSTRATIONS

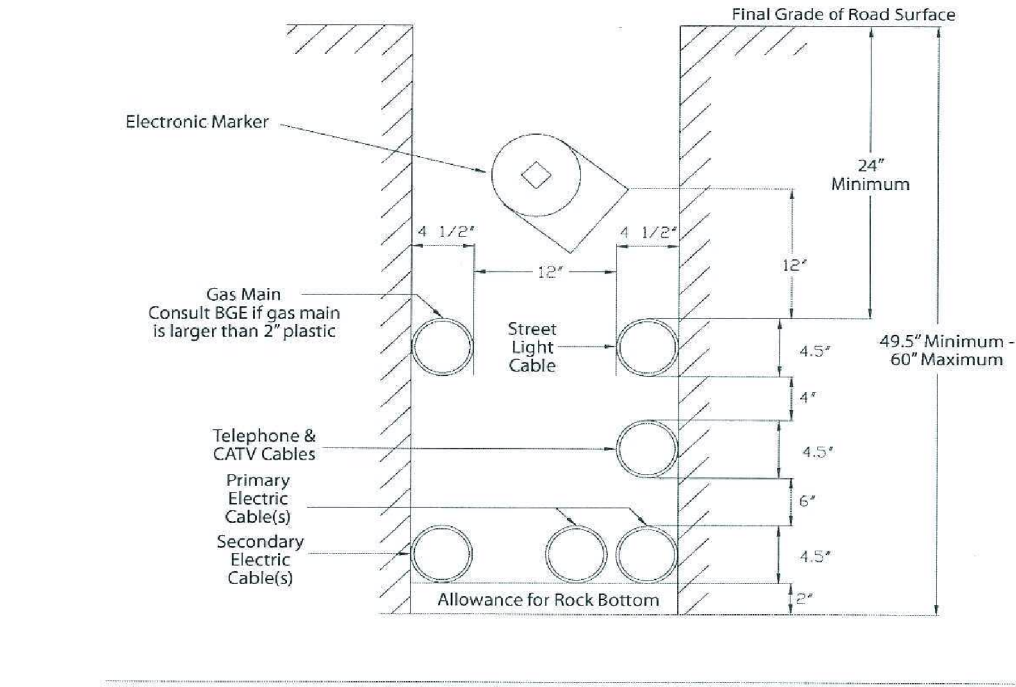
3

CUSTOMER INSTALLATION OF CONDUITS (CONT'D)

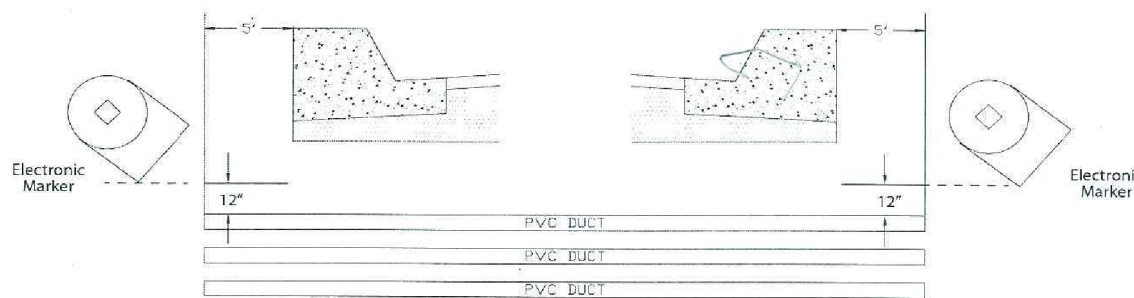
Road Crossing Specifications

NOTE: For street lights, 3" conduit may be used in place of 4 1/2" conduit

- NOTES:
- A minimum 12" radial separation must be maintained between gas and any other utility.
 - Allow a minimum 6" separation between primary ducts or between primary and secondary ducts.
 - Place an electronic marker 12" above the end of the PVC duct crossing(s).



- NOTES:
- All ducts to be 4" PVC SCH 40 unless otherwise noted. Ducts must extend a minimum 5' beyond proposed paving.
 - Place an electronic marker 12" above the end of each PVC duct crossing(s).
 - Install a PVC duct plug on the end of each duct crossing(s).



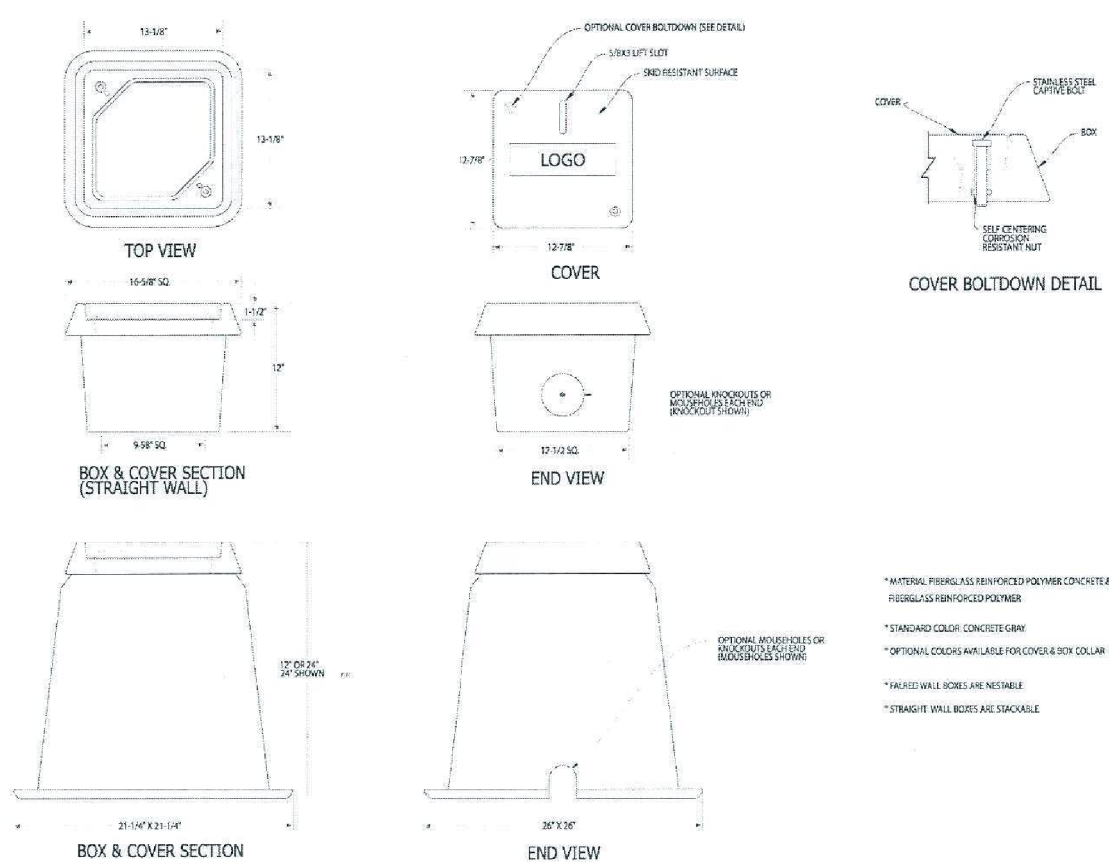
30

LIGHTING SPECIFICATIONS AND ILLUSTRATIONS

3

CUSTOMER INSTALLATION OF CONDUITS (CONT'D)

Hand Box - Sidewalk Application



Installation Guidelines

- Prepare the excavation.
 - Excavate approximately 10 inches greater around the actual outside dimension of the enclosure to be installed and 6 inches deeper than to depth will be required for installation.
 - Add 6 inches of gravel or crushed rock for drainage.
- Place enclosure in hole – top of enclosure should be at grade level.
- Fill and compact soil – fill to grade level with cover in enclosure.

Preferred Method for Cutting Holes in CDR Enclosures

- Drill a 7/8" pilot hole with a carbide tipped drill.
- Drill hole using a hole saw. A diamond tipped hole saw will be able to cut more holes than a regular hole saw.
- Holes cut in the enclosure should not exceed more than 25% of the area of each sidewalk and should not be cut into a structural reinforcing rib, corner, or box lip.

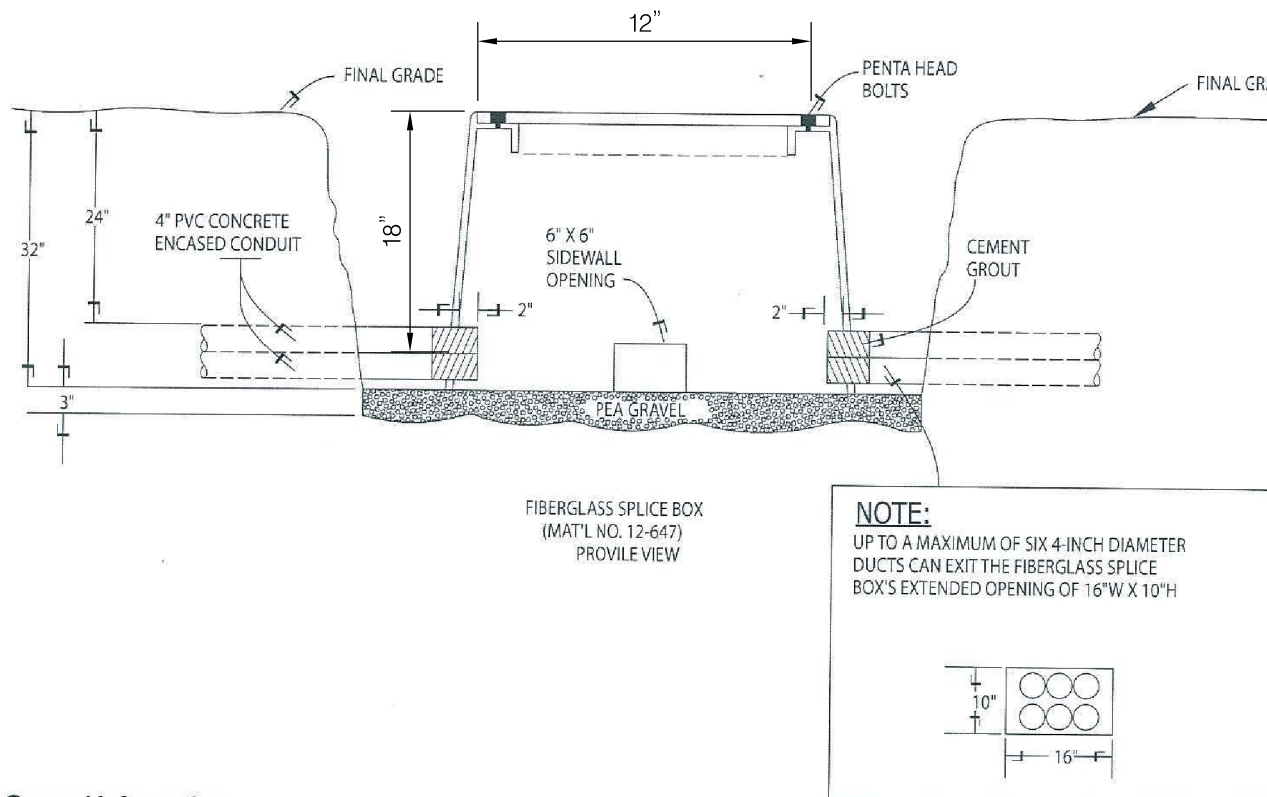
27

LIGHTING SPECIFICATIONS AND ILLUSTRATIONS

3

CUSTOMER INSTALLATION OF CONDUITS (CONT'D)

Hand Box - Grass/Dirt Application



General Information

- This fiberglass splice box must be installed only in pedestrian (grassy) areas on level ground. It must not be installed on a hill or slope.
- Excavate an area 5'W x 6'L x 35" deep (minimum) for the splice box.
- Stabilize the bottom of the excavation with 3" of pea gravel. The bottom flange of the splice box must be on a firm level foundation.
- Position the enclosure in the excavation so that the cover will be flush with final grade.
- Ducts can only enter and exit the splice box at opposite ends from each other. When necessary, the existing 6" x 6" openings in the end walls can be enlarged to accommodate multiple ducts (maximum opening 16"W x 10"H). This enlarged opening will allow up to six 4" diameter ducts (3W x 2H configuration) to enter or exit this box. However, only a maximum of eight ducts can be joined to this splice box at any time, one for the secondary main and up to seven for the service cables.
- Install the ducts no more than 2" into the splice box. Place cement grout around the ducts on the outside of the splice box to seal openings.
- Place a block of wood over side wall openings without ducts, on the outside, to prevent backfill from entering the confines of the splice box.
- Backfill evenly around the splice box with clean, dry earth. Mechanically tamp in 12" layers.
- Install fiberglass cover and secure its position with pentahead bolts.

28

18

CONDUIT AND HAND BOX INSTALLATION

NTS

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

STANDARD DETAILS

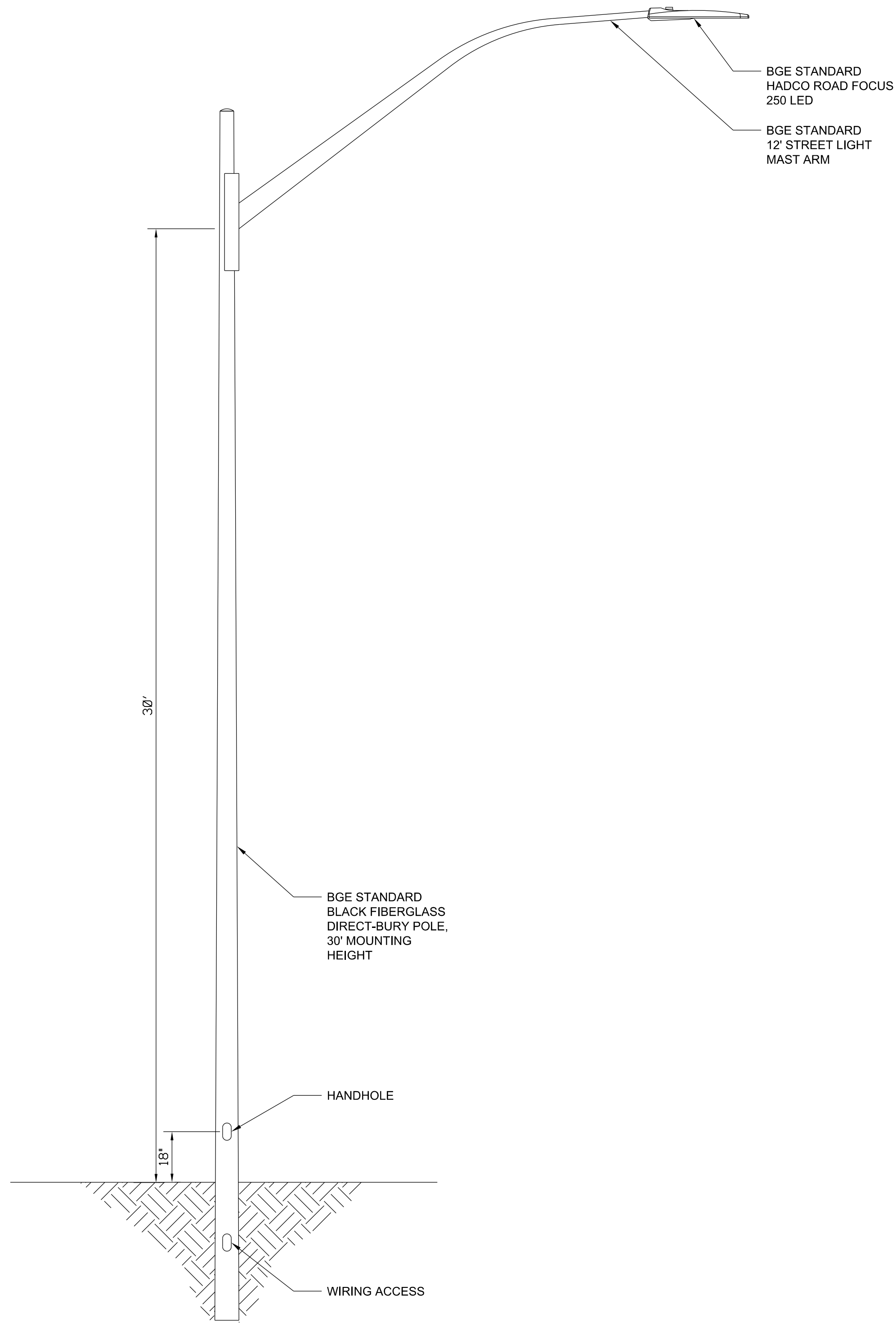
SHEET 72 OF 83

DWG SD-3

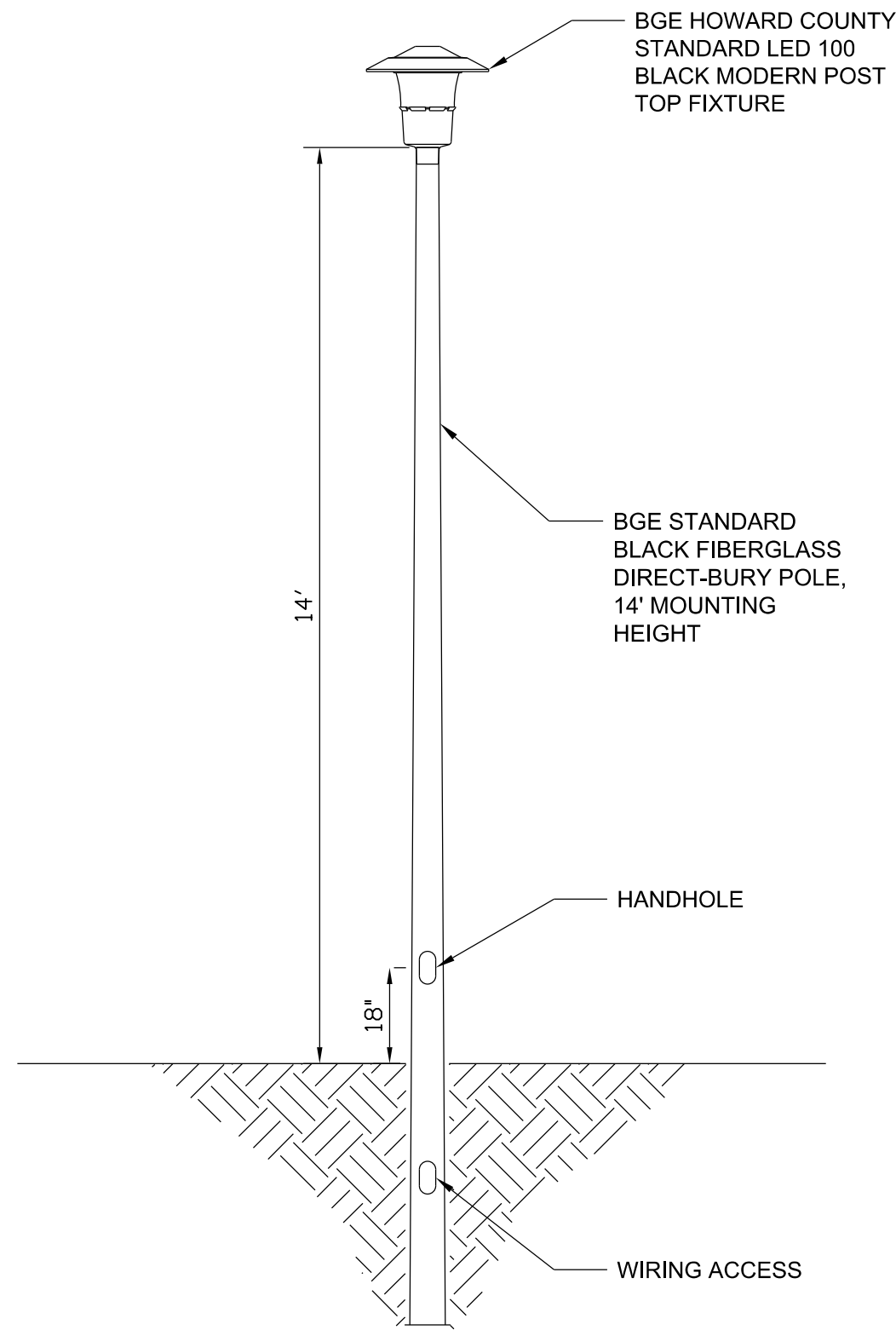
DATE APR 2020

PROJECT 5409.06

PRELIMINARY – NOT FOR CONSTRUCTION



COBRAHEAD ROADWAY LIGHTING



POST TOP PATHWAY LIGHTING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, TRAFFIC ENGINEERING DIVISION

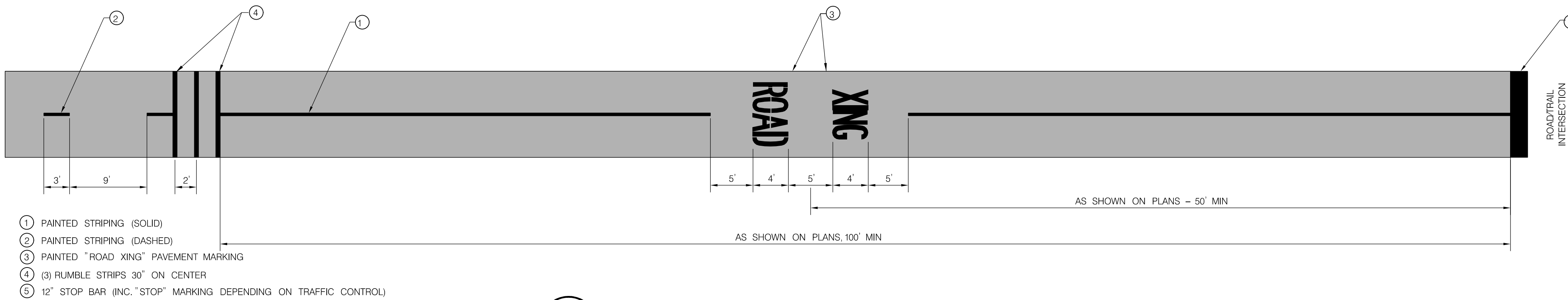
DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

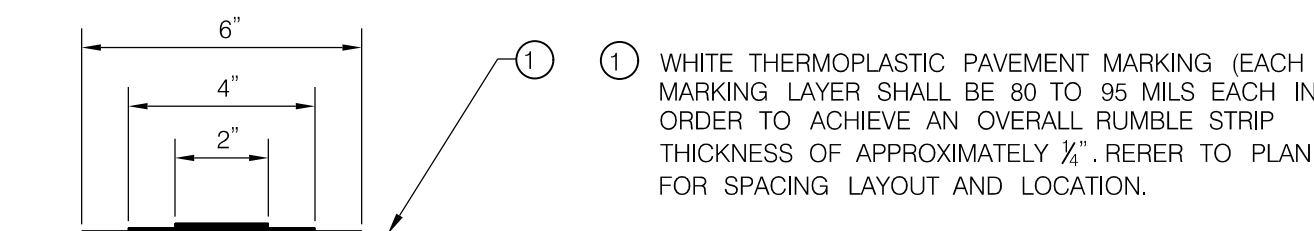
DSGN	SD							REUSE OF DOCUMENTS				
DR	SD							ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.				
CHK	OA											
APVD	MAB	NO.	DATE	REVISION	BY	APVD						

SOUTH ENTRANCE TRAIL	CIVIL	SHEET 73 OF 83
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	PATHWAY AND STREET LIGHTING DETAILS	DWG SD-4
		DATE APR 2020
		PROJECT 5409.06



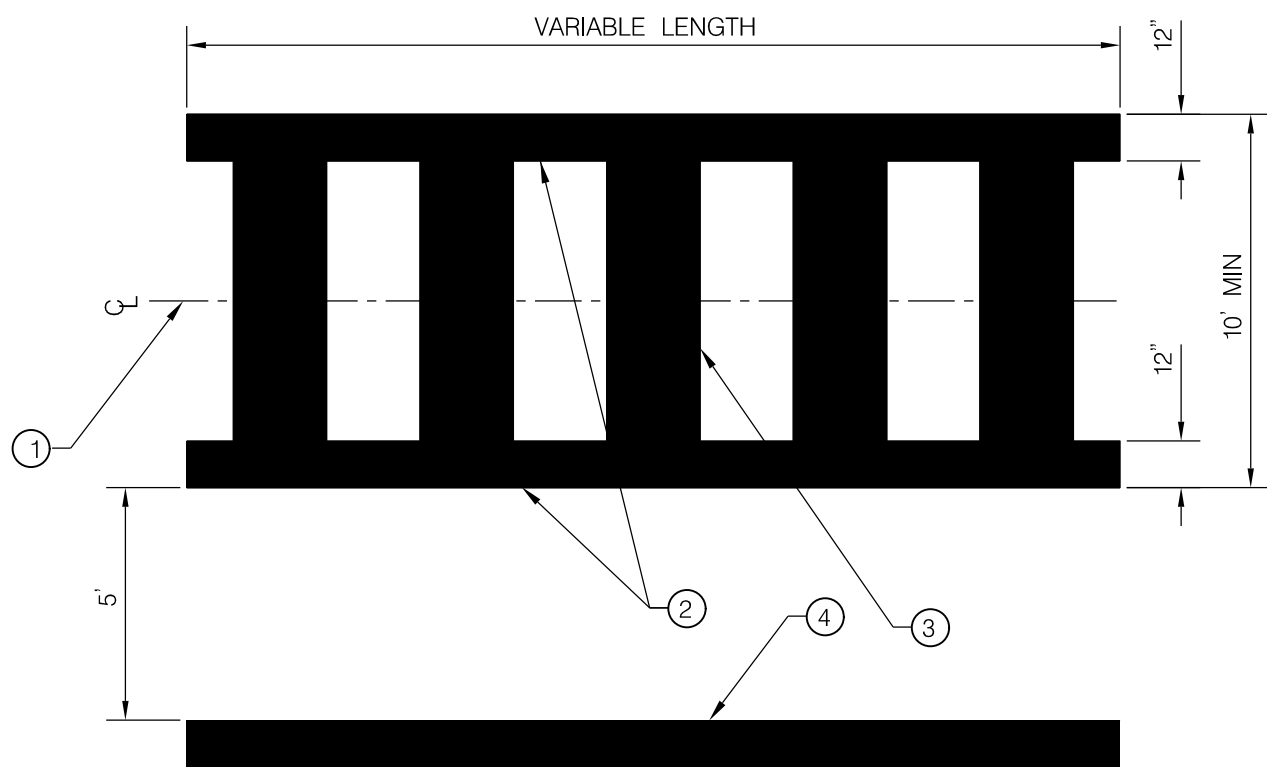
20 TRAIL PAVEMENT MARKING SYMBOL PLACEMENT

NTS



21 BICYCLE RUMBLE STRIP

NTS



1. CENTERLINE OF CROSSWALK TO BE AT CENTERLINE OF PEDESTRIAN RAMPS UNLESS OTHERWISE NOTED
2. 12" SOLID WHITE THERMOPLASTIC MARKING
3. 24" SOLID WHITE THERMOPLASTIC MARKING
4. 24" SOLID WHITE THERMOPLASTIC STOP BAR [MOTOR VEHICLE]

NOTES:

1. PEDESTRIAN CROSSWALK - TEN FEET WIDE, UNLESS OTHERWISE NOTED.
A. MAKE STRIPES PARALLEL TO CURB LINE OF STREET.
B. ALL HANDICAP RAMPS MUST BE LOCATED WITHIN A CROSSWALK, INCLUDING SIDE FLARES OF RAMPS. ONE SIDE FLARE MUST ALIGN WITH BACK EDGE OF CROSSWALK IF CROSSWALK WIDTH IS GREATER THAN FIFTEEN FEET.
C. CROSSWALK MARKINGS SHALL BE INSTALLED WITH PREFORMED HEAT APPLIED THERMOPLASTIC OR LIQUID THERMOPLASTIC.

22 CROSSWALK MARKING

NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS DATE

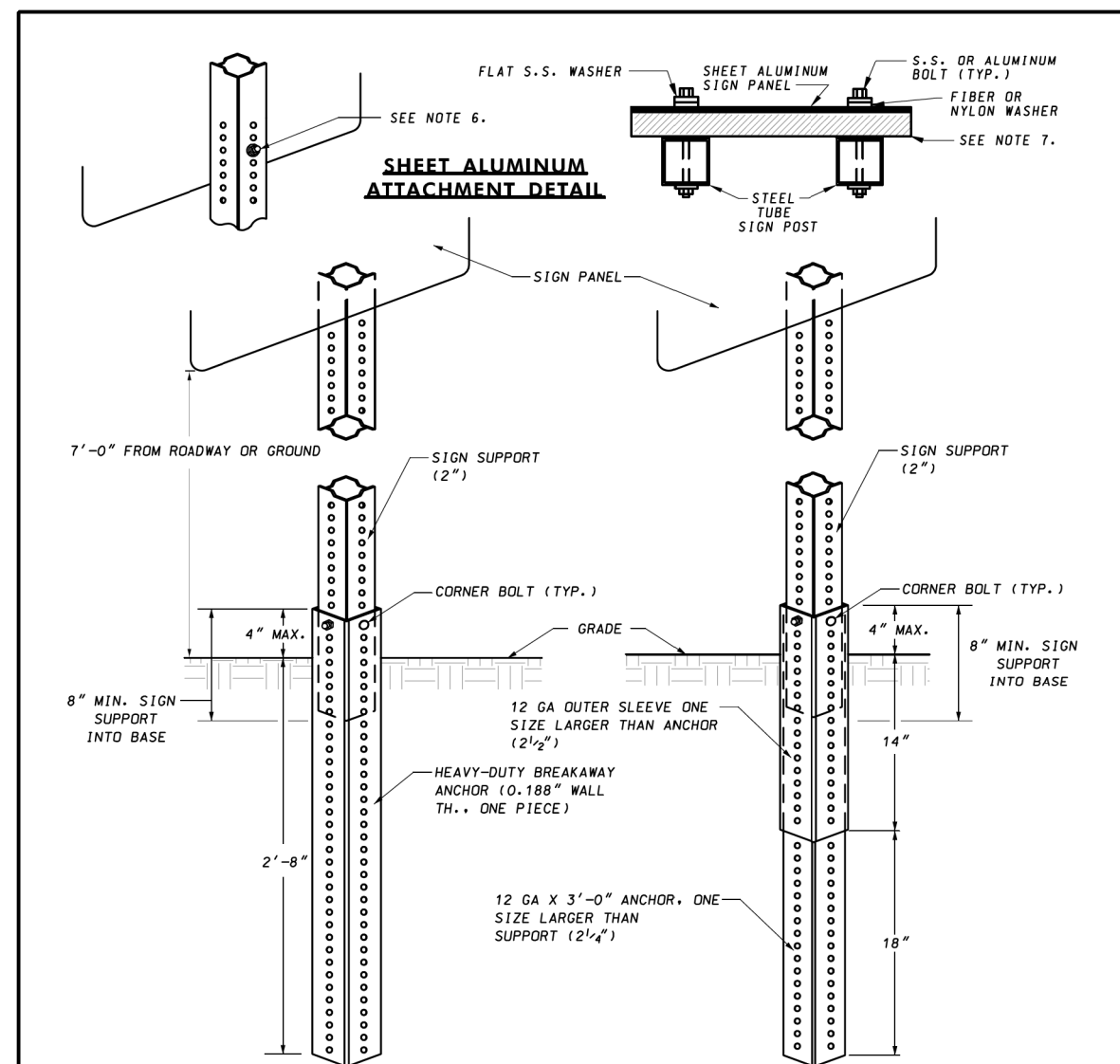
CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRAFFIC ENGINEERING DIVISION DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____.

DSGN	SD								
DR	SD								
CHK	OA								
APVD	MAB	NO.	DATE	REVISION	BY	APVD			



NOTES:

1. INSTALLATION SHALL BE PERFORMED PER MANUFACTURER'S RECOMMENDATIONS.
2. CORNER BOLTS AND HARDWARE SHALL BE AS APPROVED BY AASHTO AND PER MANUFACTURER'S RECOMMENDATIONS.
3. THE INSTALLATION SHALL MEET THE LATEST AASHTO BREAKAWAY REQUIREMENTS.
4. SPLICES SHALL NOT BE USED TO EXTEND THE HEIGHT OF A SIGN POST.
5. ONLY 2" SIGN SUPPORTS SHALL BE USED. SIGN POSTS GREATER THAN OR LESS THAN 2" ARE NOT PERMITTED.
6. FOR SHEET ALUMINUM ATTACHMENT, ALL BOLTS SHALL BE 3/4" DIA. (10-8 TYPE 303-304) STAINLESS STEEL OR ANODIZED ALUMINUM HEX HEAD BOLT WITH WASHERS AND NUTS SPACED AT 12" MAXIMUM.
7. ALL SHEET ALUMINUM SIGNS 5" WIDE AND LARGER SHALL BE BRACED WITH TWO HORIZONTAL 2"x4" TREATED WOOD OR EQUAL, ATTACHED TO THE SUPPORTS. THE BOLT TIGHTENING SHALL BE COORDINATED.

SPECIFICATION 802	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES BREAKAWAY TUBULAR STEEL SIGN SUPPORTS STANDARD NO. MD 802.04
APPROVED	DIRECTOR • OFFICE OF ENGINEERING AND SAFETY	
SHA State Highway Administration	APPROVAL • CIVIL ENGINEER APPROVAL 1-17-27	APPROVAL • FEDERAL ENGINEER/ARCHITECT APPROVAL 1-2-27
	DESIGNED	CHECKED
	REVISED	REVISED

24 BREAKAWAY SIGN POST

NTS

CIVIL

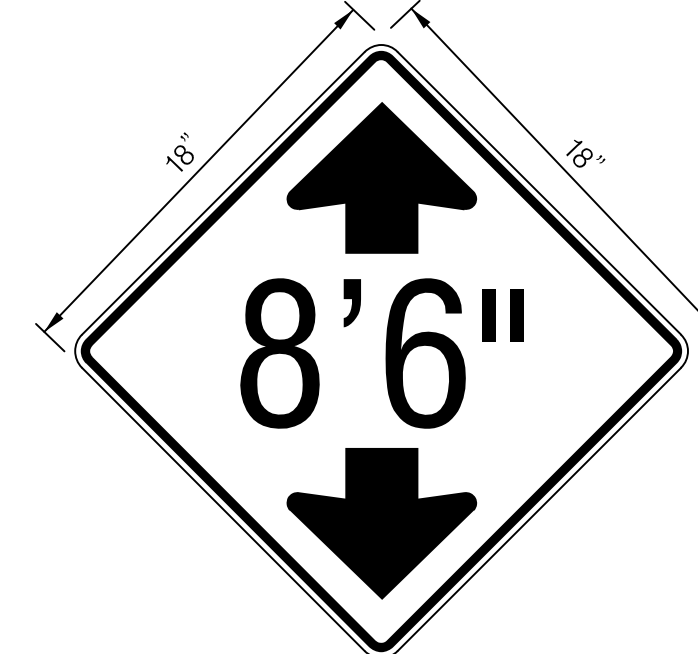
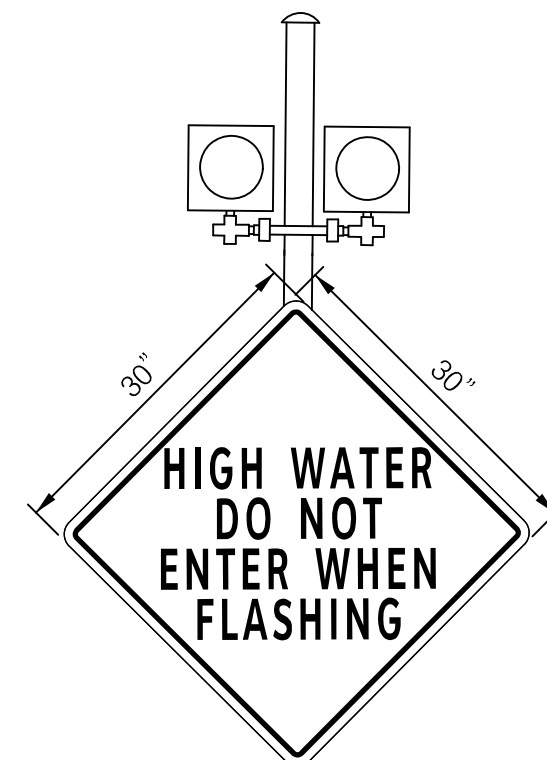
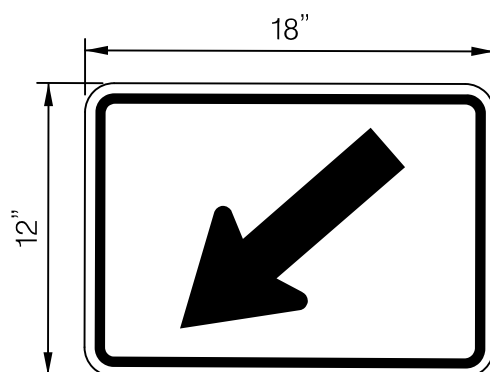
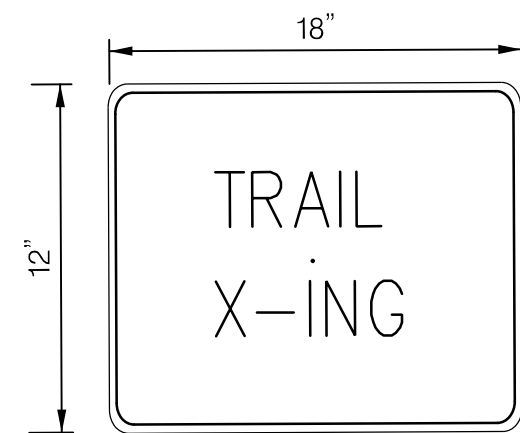
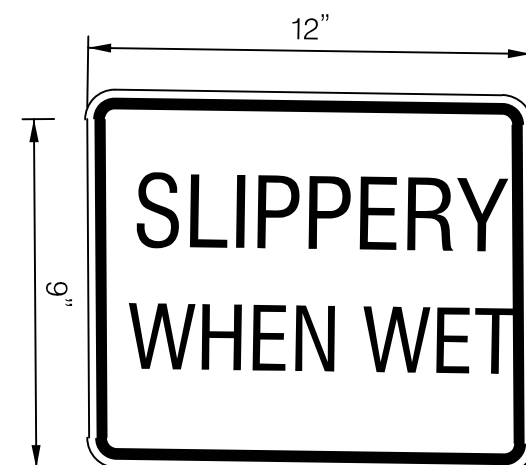
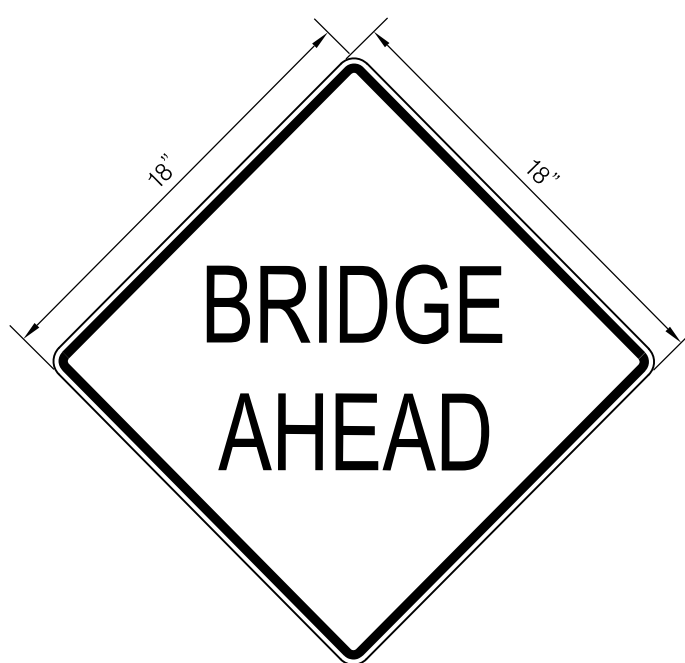
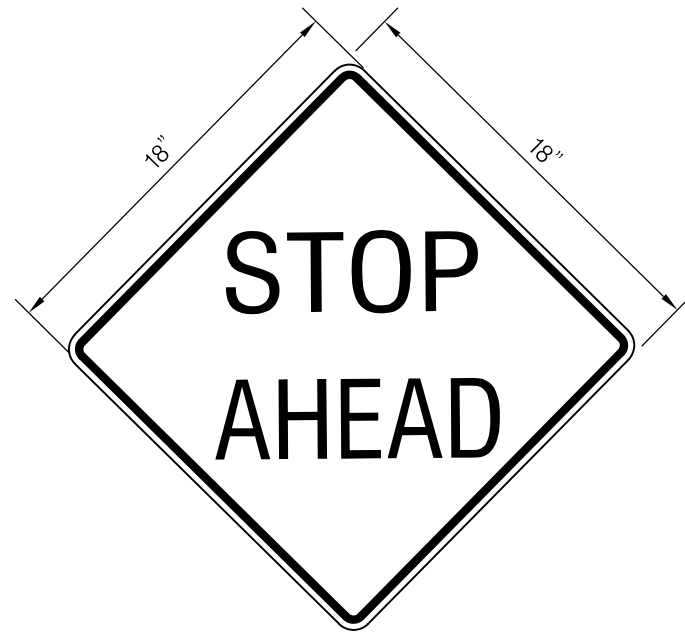
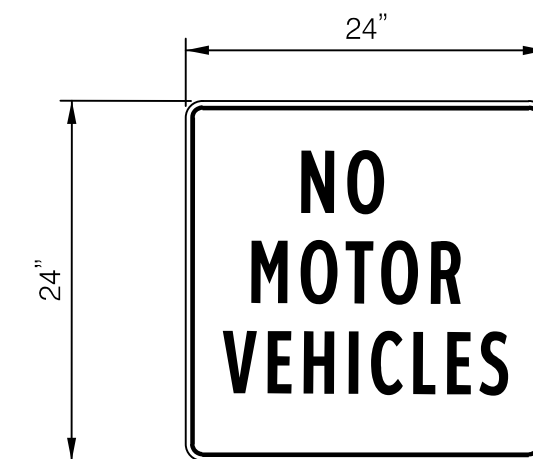
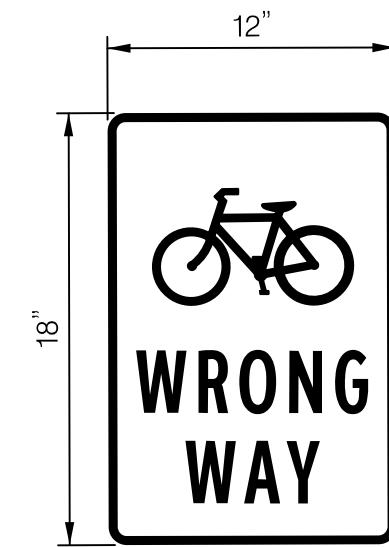
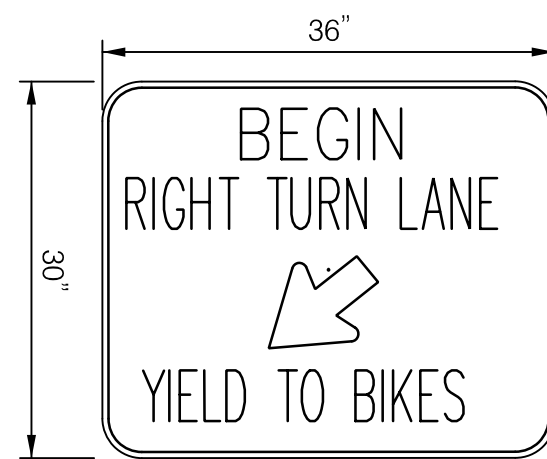
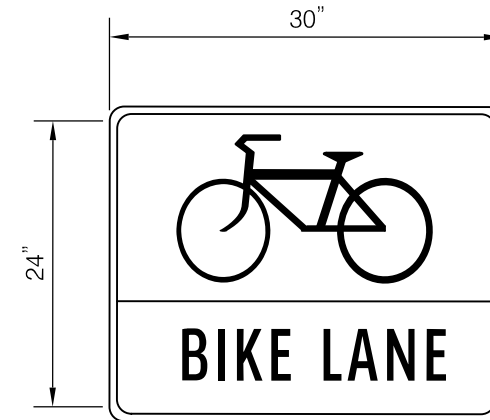
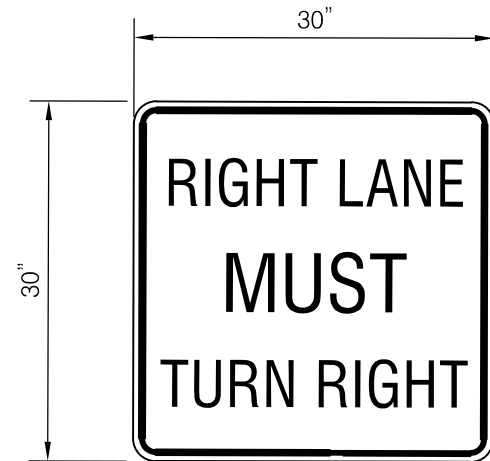
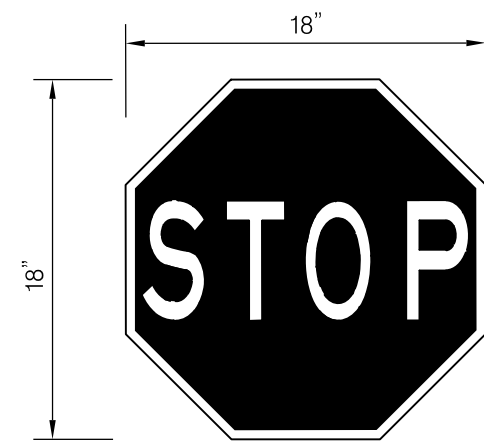
SHEET 74 OF 83

DWG SD-5

DATE APR 2020

PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



SIGN NOTES

1. APPLICABLE SPECIFICATIONS AND STANDARDS: MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL, (MDMUTC), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
2. PREPARATION:
 - A. IF SITE CONDITIONS VARY FROM PLAN, CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION
 - B. DIMENSIONS FOR LEGEND SIZE AND ALL RELATED DIMENSIONS FOR SIGN LAYOUT, PANEL SIZES, POST SIZES, MOUNTING DIMENSIONS ARE AS SPECIFIED IN THE PLANS.
 - C. ALL GRAPHIC FORMATS, USE OF TYPOGRAPHY, COLOR, DIRECTIONAL ARROW GRAPHICS, AND PICTOGRAMS ARE AS SPECIFIED IN THE PLANS. SHOP DRAWINGS OF PROPOSED SIGN LAYOUTS SHALL BE SUBMITTED AND APPROVED PRIOR TO SIGN PANEL FABRICATION.
 - D. ALL STRUCTURES SHALL BE ENGINEERED TO MEET A VARIETY OF SITE CONDITIONS. SIGNS SHALL BE ENGINEERED FOR WIND LOADS, SOIL CONDITIONS, FROST DEPTH, AND STRUCTURAL INTEGRITY. SPECIAL CONDITIONS THAT ARE OUTSIDE THESE PARAMETERS ARE TO BE ENGINEERED ON A SITE-SPECIFIC BASIS. THE DESIGN OF THE STRUCTURAL REQUIREMENTS OF SPECIAL ONE-OF-A-KIND SIGNS SHALL CONFORM TO THE BASIC ASSEMBLY SPECIFICATIONS FOR SIMILAR SIGN TYPES. THE MODIFIED ASSEMBLY SHALL FULFILL THE REQUIREMENTS OF LOCAL CRITERIA FOR WIND PRESSURE, SOIL, AND FROST DEPTH. ALL SIGN ENGINEERING AND STRUCTURAL INTEGRITY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
 - E. ALL FINISHED SIGN PANELS SHALL BE PROVIDED WITH A 1-1/4" X 2-1/2" WEATHER RESISTANT IDENTIFICATION PLACED ON THE BACK OF THE SIGN INDICATING SIGN PLAN ID NUMBER, MANUFACTURER, DATE OF FABRICATION, AND INSTALLATION DATE.
3. FABRICATION:
 - A. PROVIDE SHOP AND FABRICATION DRAWINGS FOR REVIEW AND APPROVAL DETAILING THE PROPOSED FABRICATION OF ALL SIGNS AND STRUCTURES INDICATED IN PLAN DOCUMENTS.
 - B. THE CONTRACTOR SHALL PREPARE, FOR REVIEW BY THE OWNER'S REPRESENTATION'S FABRICATION SHOP DRAWINGS. UPON REVIEW OF THE SHOP DRAWINGS THE CONTRACTOR SHALL MAKE ALL CORRECTIONS AND ADJUSTMENTS, AS INDICATED AND RESUBMIT FOR REVIEW AND APPROVAL. REVISIONS TO SHOP DRAWINGS SHALL INCLUDE A REVISION DATE. FABRICATION SHOP DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - C. ALUMINUM PANEL, TUBULAR STEEL POSTS, MOUNTING HARDWARE AND MATERIAL FINISHES SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS HEREIN OR BY REFERENCE. ALL MATERIALS SHALL COMPLY WITH THIS SPECIFICATION OR APPROVED EQUAL.
 - D. ALL SIGN USED FOR TRAFFIC CONTROL SIGNS SHALL BE MOUNTED ON 2" GALVANIZED STEEL PERFORATED ("QUICK PUNCH"), SQUARE TUBE POSTS (1/4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL SQUARE TUBE SLEEVE (3' LONG). THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL.
4. INSTALLATION:
 - A. ALL TRAFFIC CONTROL SIGNS LOCATED WITHIN COUNTY RIGHTS-OF-WAY ARE TO BE ARE TO BE STAKED AND BE FIELD APPROVED PRIOR TO INSTALLATION BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430).
 - B. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MDMUTC)
 - C. SIGN LOCATIONS SHALL BE MARKED WITH A STAKE AND SHALL HAVE THE SIGN TYPE CODE, AND LOCATION CODE, AND CORRESPOND TO THE SIGN LOCATION IN THE PLAN DRAWINGS.
 - D. UNFORESEEN OBSTRUCTIONS MAY LIMIT THE DEPTH OF A STANDARD FOOTING OR REQUIRE SPECIAL MITIGATION TO PREVENT DAMAGE TO EXISTING TREE ROOTS. WHERE POSSIBLE, MOVE THE SIGN AS NEEDED TO ALLOW UNCONSTRAINED SUBSURFACE INSTALLATION. ADJUST SIGN INSTALLATION LOCATIONS TO KEEP THEM BEYOND THE DRIP LINE OF TREES WHEREVER POSSIBLE. NOTIFY THE PROJECT DESIGNER OF ANY PROPOSED SIGN LOCATIONS WITHIN THE DRIP LINE OF THE TREES. THE DRIP LINE SHALL BE DEFINED AS THE AREA BELOW THE FARTHEST-SPREADING BRANCHES OF A TREE. IF A SIGN PLACEMENT LOCATION MUST BE MOVED, THE CONTRACTOR SHALL GET APPROVAL OF THE PROJECT DESIGNER AND/OR COUNTY REPRESENTATIVE. IF THE SIGN CAN BE LOGICALLY MOVED, VERIFY SIGHT-LINES OF ADJUSTED LOCATIONS TO AFFIRM THAT SIGN IS STILL VISIBLE FROM THE DESIGNATED APPROACH.
 - E. TRAFFIC CONTROL SIGNS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 7 FEET WHEN ADJACENT TO SHARED USE PATH.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN	SD						
DR	SD						
CHK	OA						
APVD	MAB						
		NO.	DATE	REVISION		BY	APVD

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

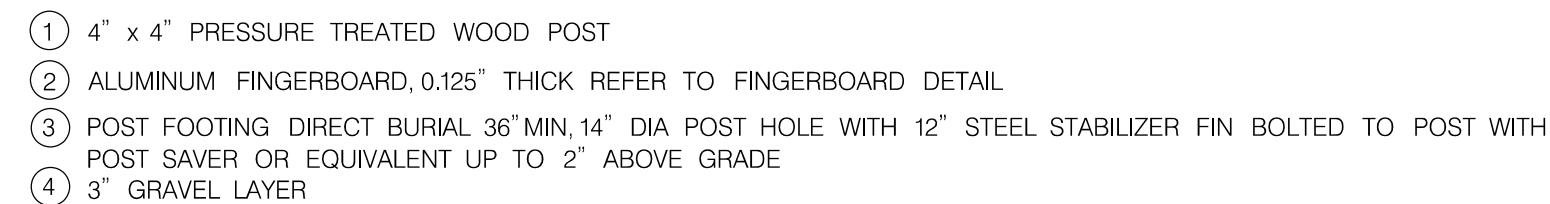
STANDARD DETAILS

SHEET	75 OF 83
-------	----------

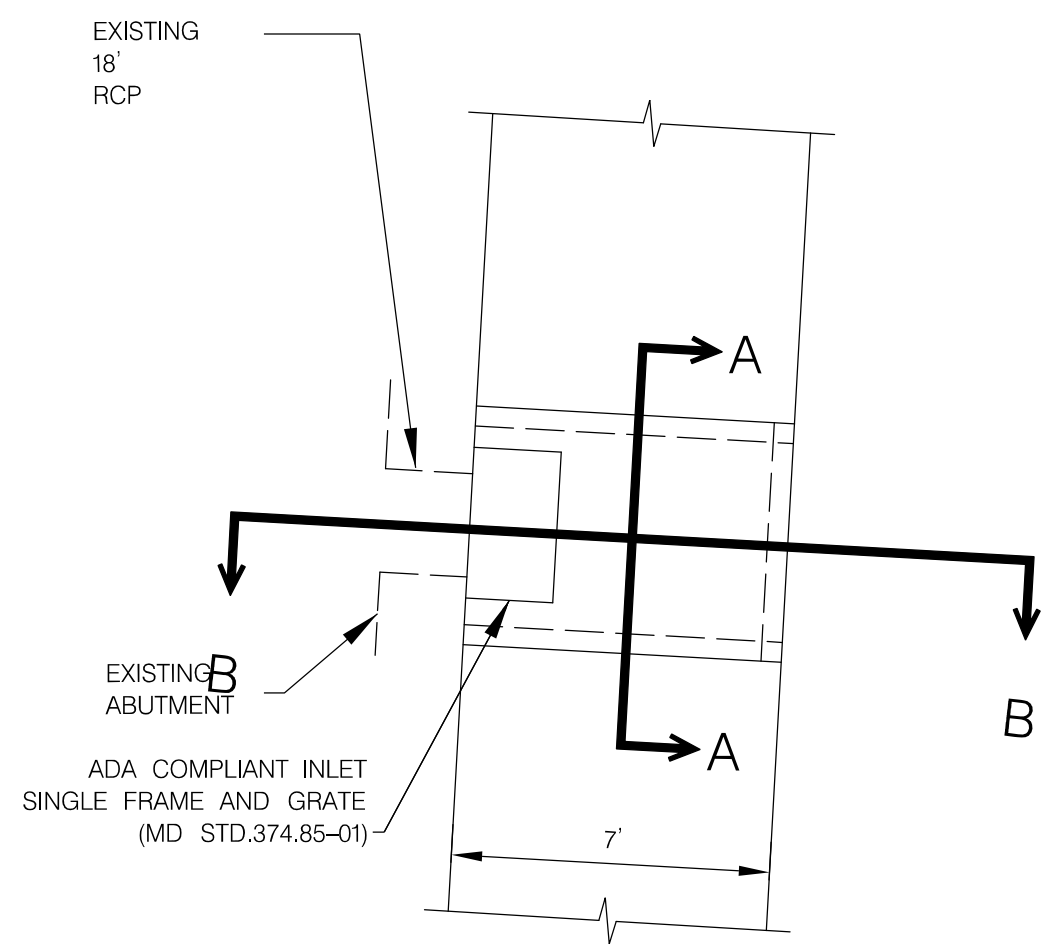
DWG	SD-6
-----	------

DATE	APR 2020
------	----------

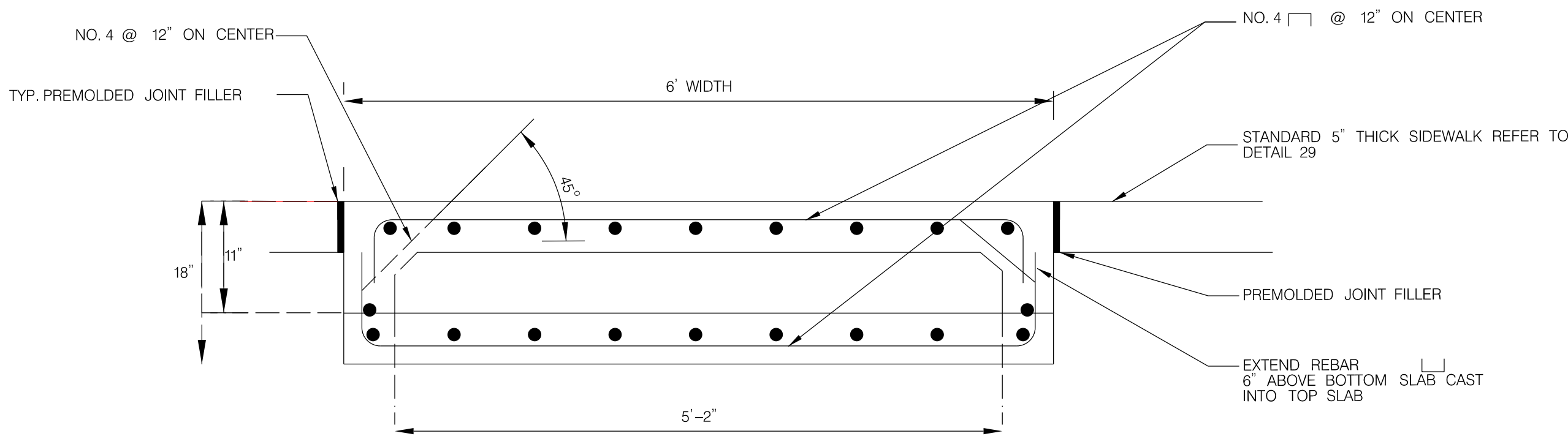
PROJECT	5409.06
---------	---------



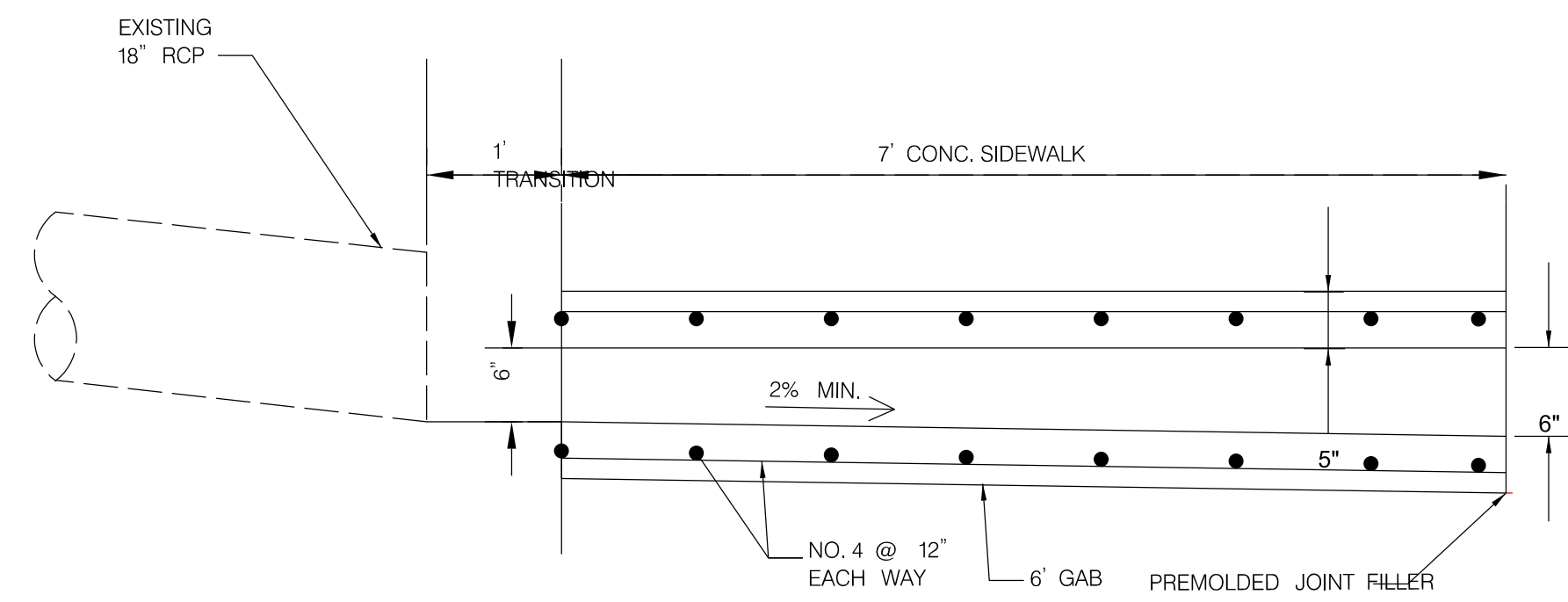
- | | | |
|---|---|-------------------------------|
| ① | TEXT: HELVETICA FONT (1.5" HEIGHT) | -TEXT STYLE: UPPER/LOWER CASE |
| ② | FINGERBOARD SIGN PANEL COLOR: NPS-BROWN (PMS1615) | -LETTER TRACKING: 1.00 |
| ③ | FINGERBOARD SIGN PANEL TEXT COLOR: WHITE | -LETTER WIDTH FACTOR: 1.00 |



CONCRETE CHANNEL & SIDEWALK PLAN VIEW

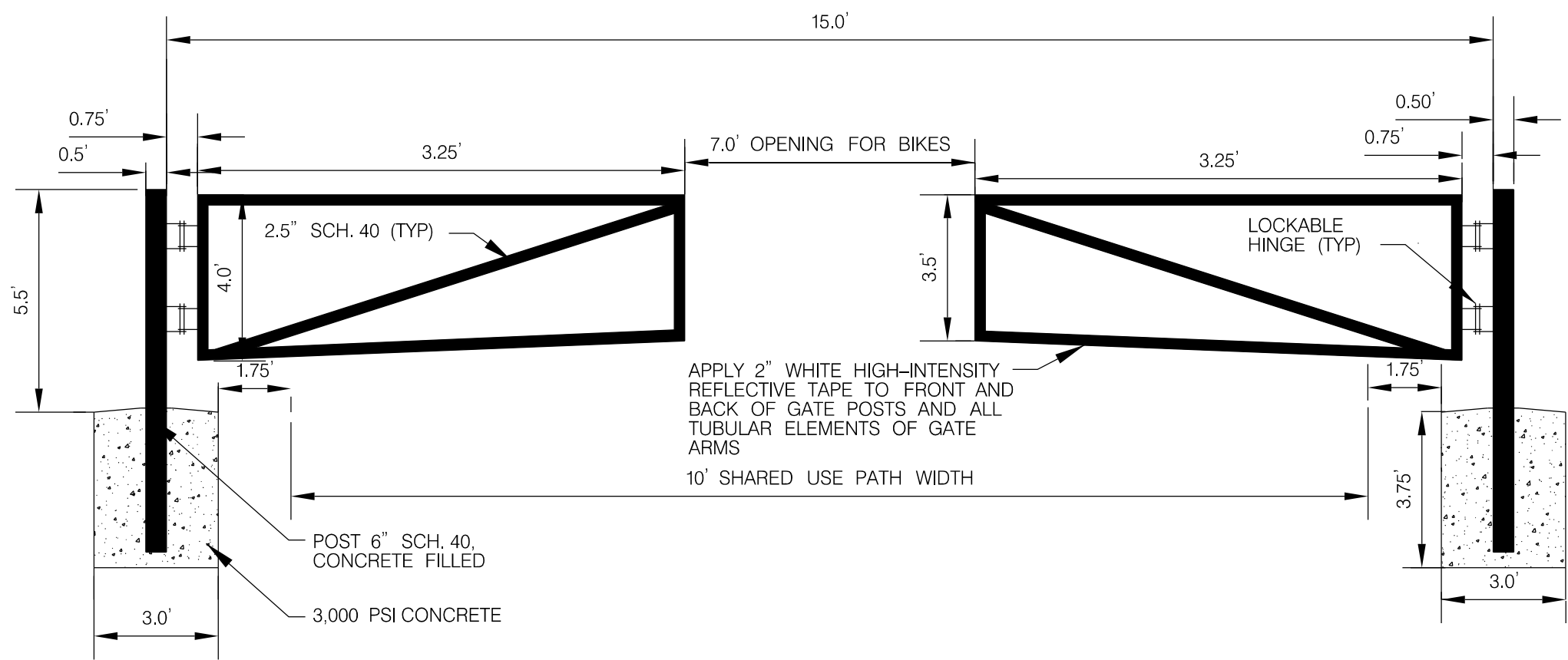


CONCRETE CHANNEL CROSS SECTION A-A



CONCRETE CHANNEL CROSS SECTION B-B

47 CONCRETE CHANNEL AND SIDEWALK DETAIL
NTS



48 GATE DETAIL
NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF HIGHWAYS _____ DATE _____
CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

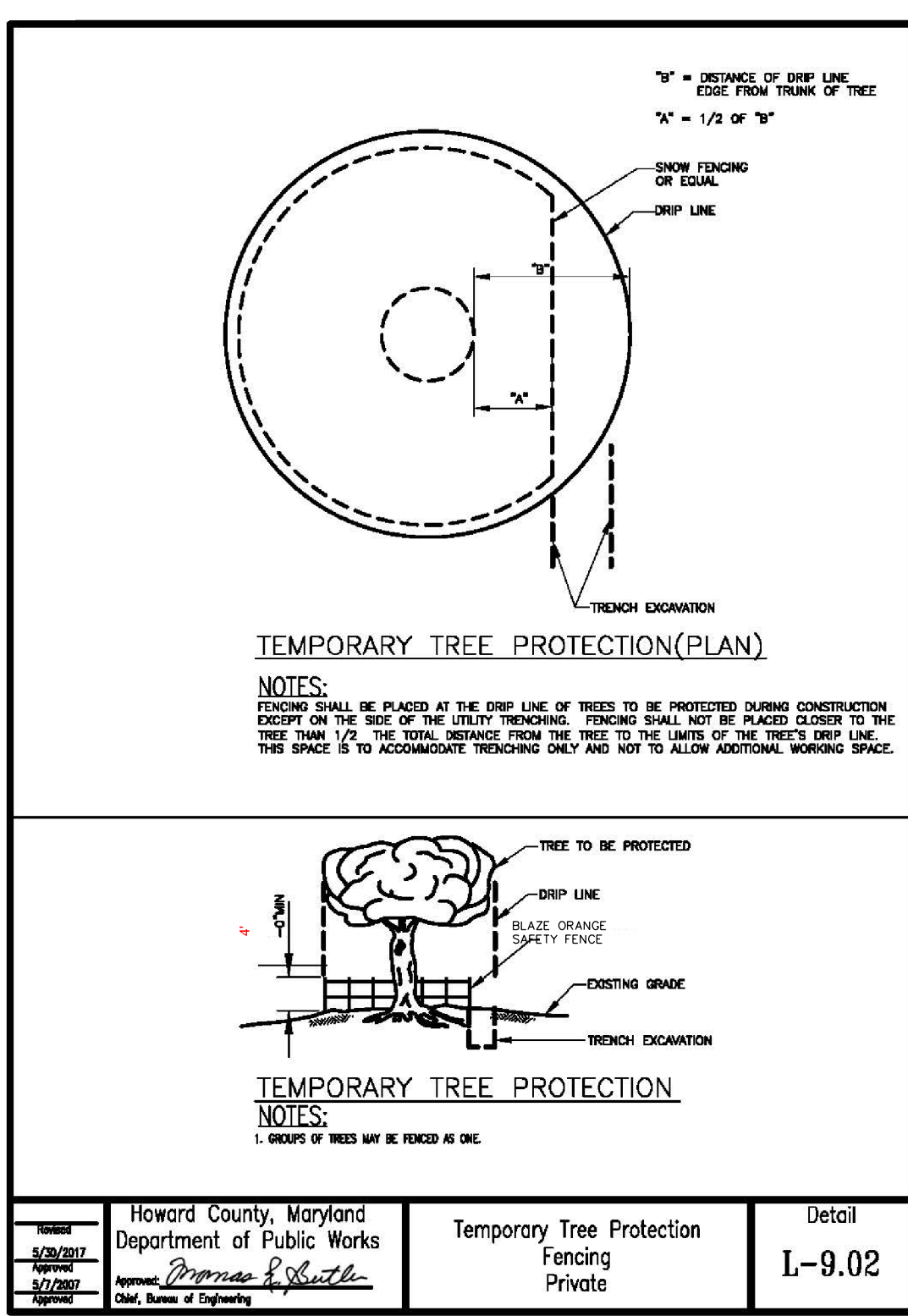
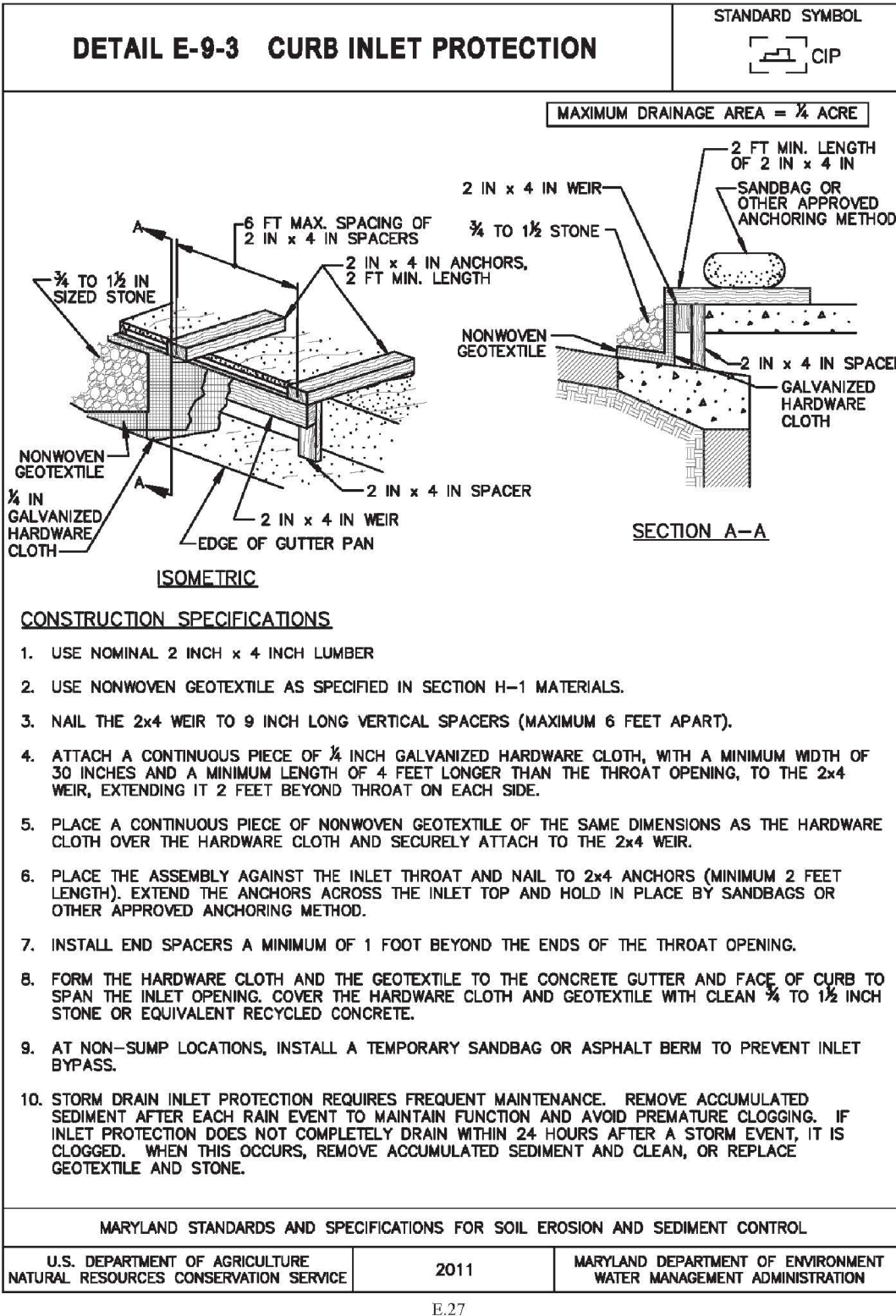
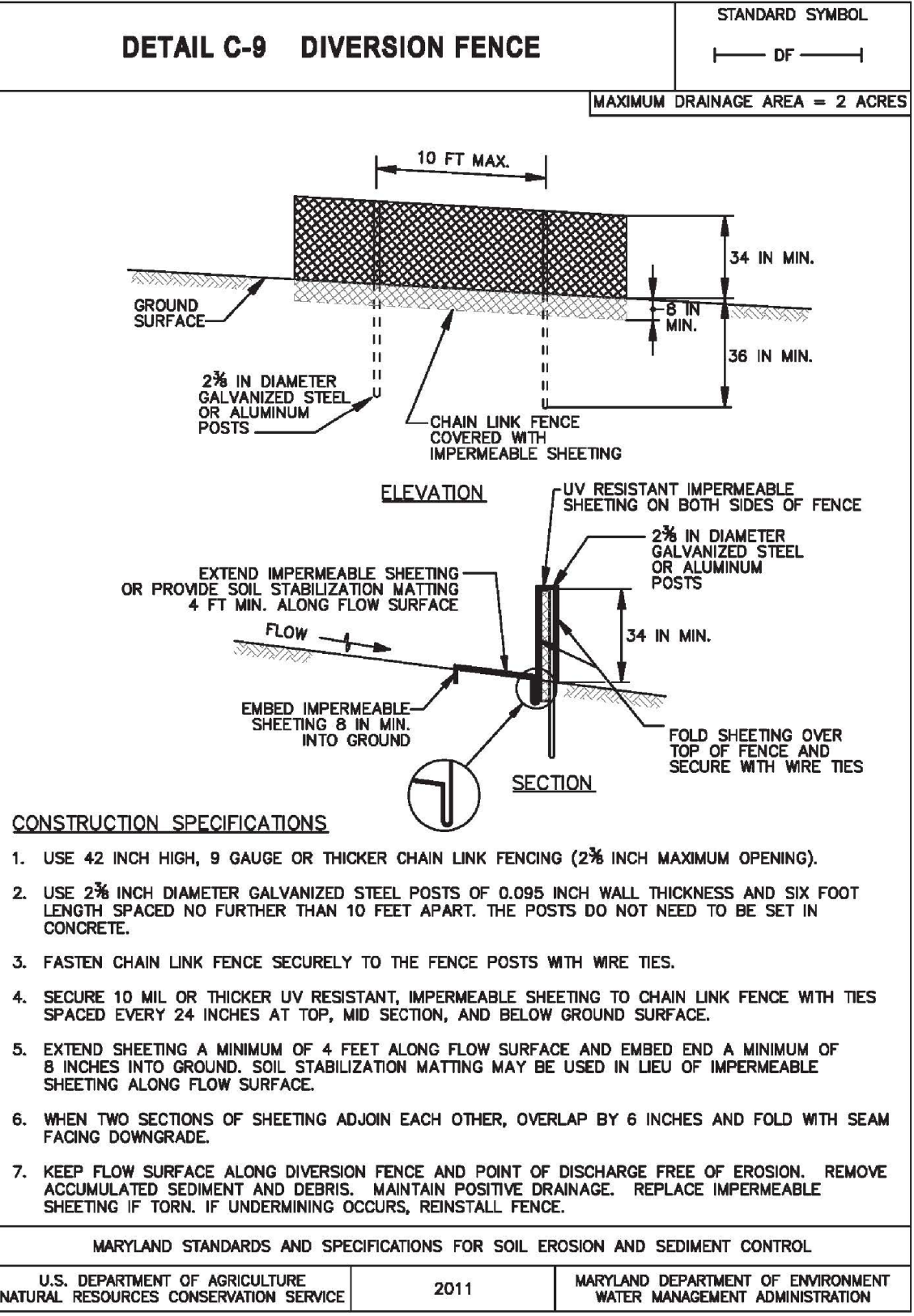
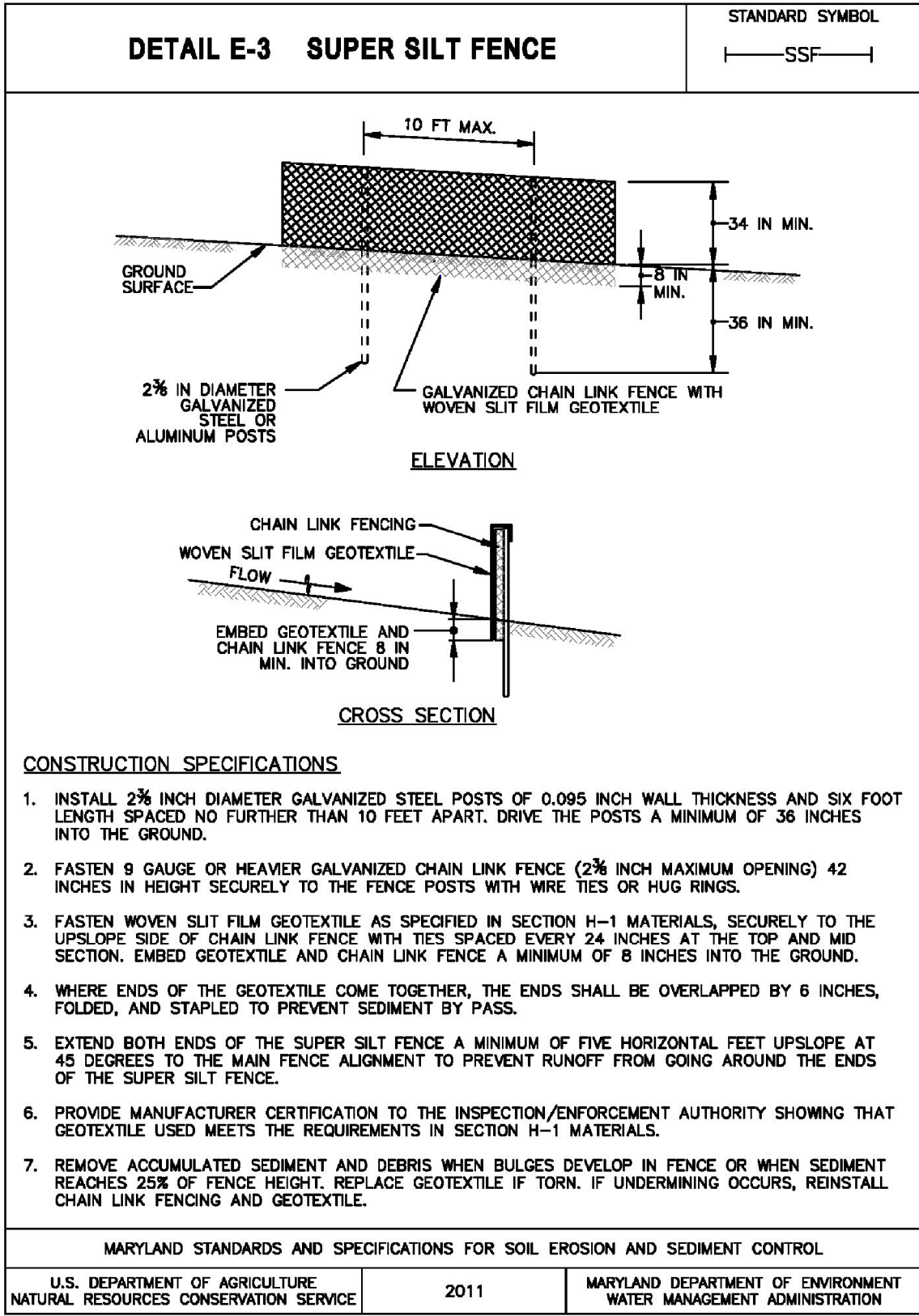
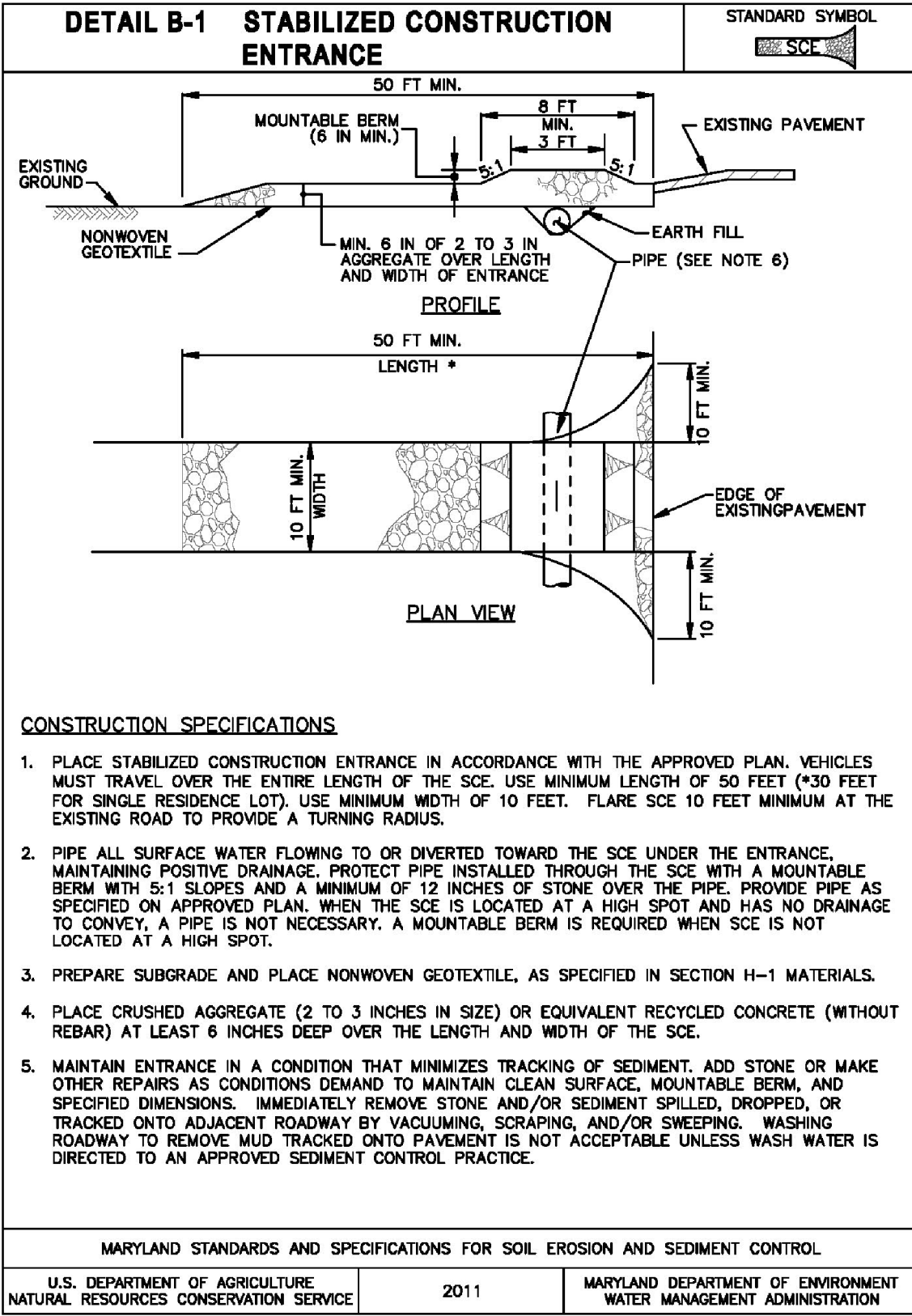
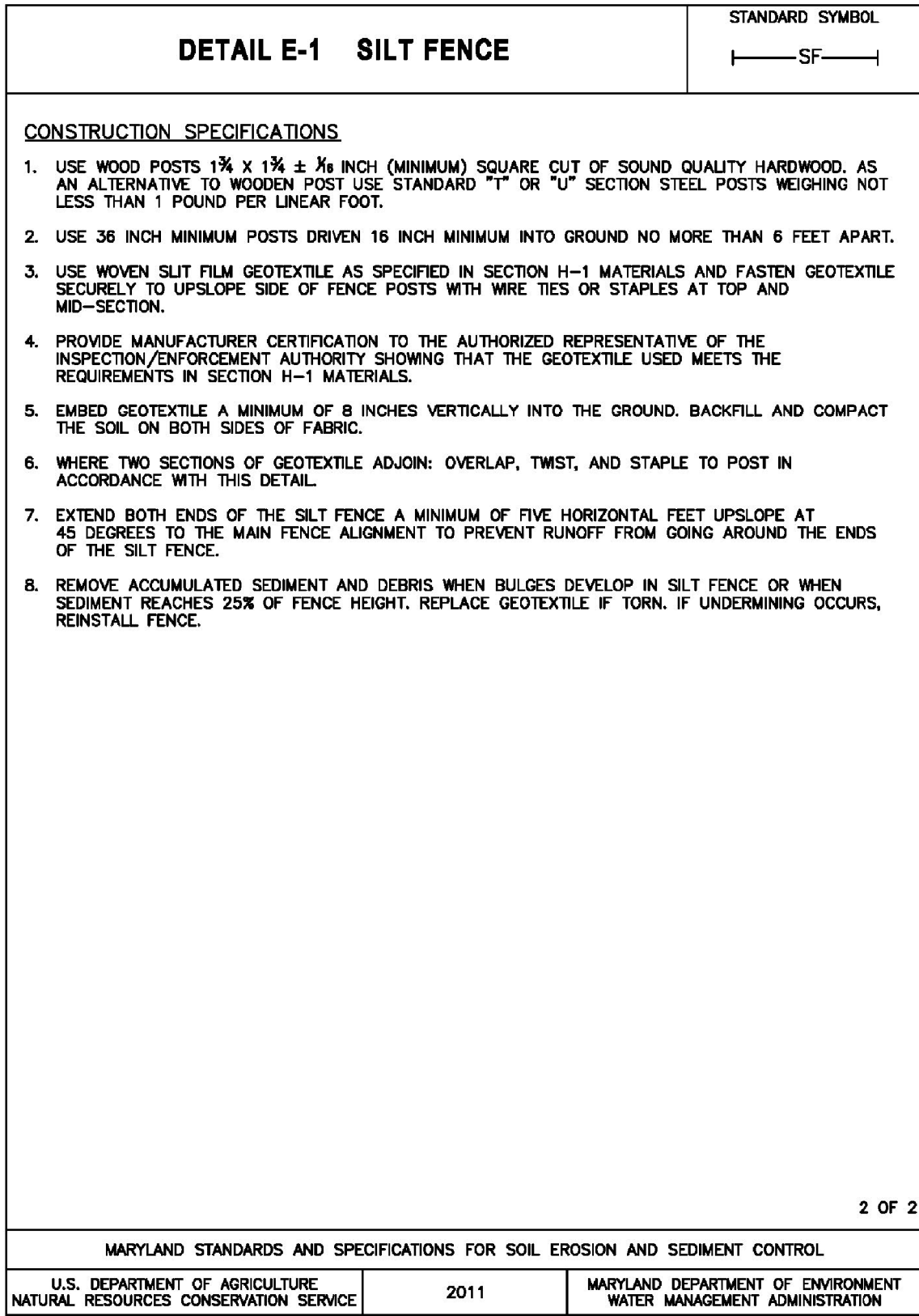
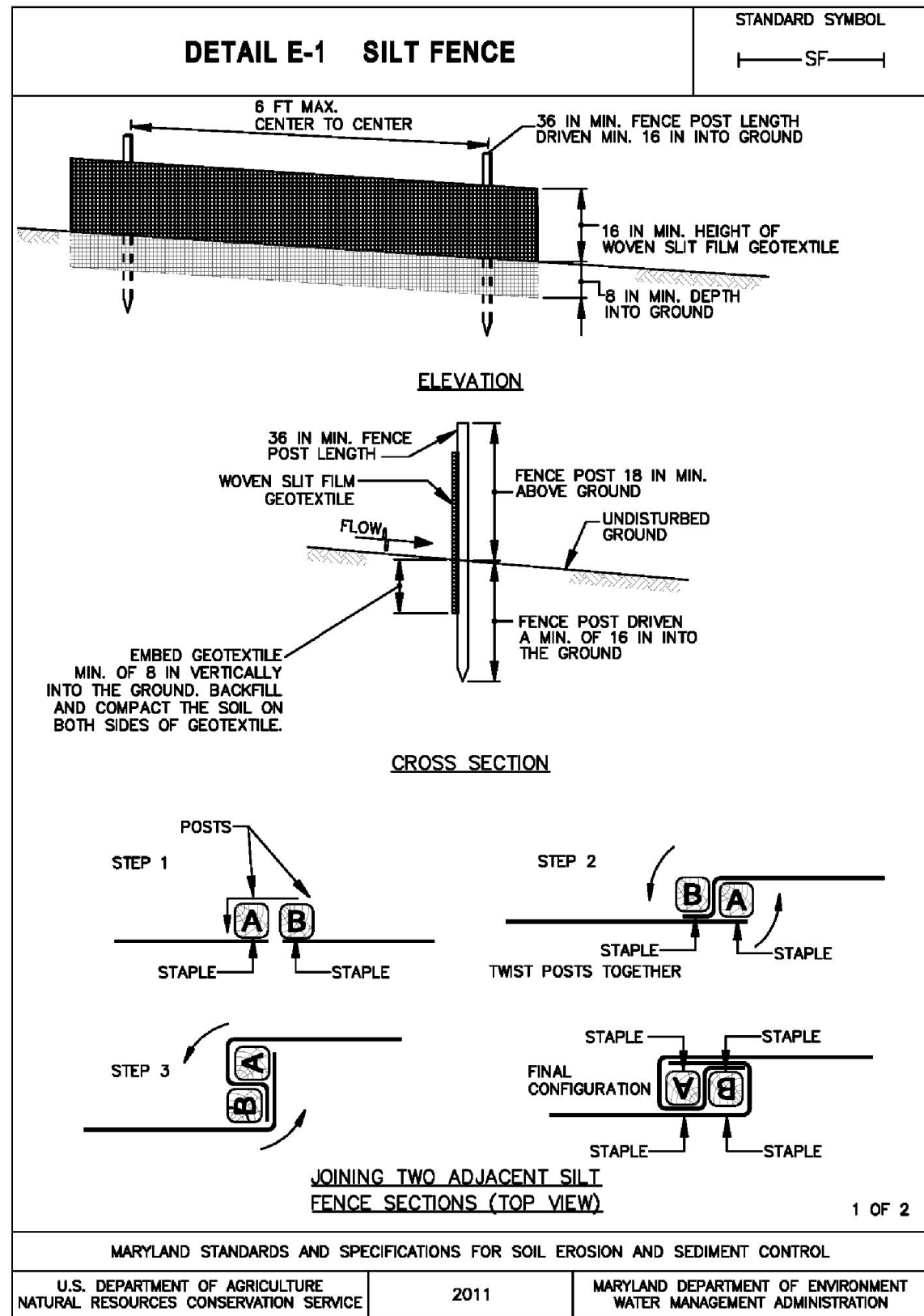
DSGN	SD					
DR	SD					
CHK	OA					
APVD	MAB	NO.	DATE	REVISION	BY	APVD

REUSE OF DOCUMENTS
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL
CHANNEL DETAILS

SHEET	77 OF 83
DWG	SD-8
DATE	APR 2020
PROJECT	5409.06



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 CHANGED TO DRAINAGE PATTERNS.

PRACTICE APPLIED: STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

- 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 DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGE CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AS 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 STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE: THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR A 2:1 SLOPE, 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.

DIVERSION FENCE

DEFINITION: A TEMPORARY BARRIER OF IMPERMEABLE SHEETING OVER CHAIN LINK FENCE LOCATED IN SUCH A MANNER TO DIRECT WATER TO A DESIRED LOCATION.

PURPOSE: TO DIRECT SEDIMENT-LADEN RUNOFF TO A SEDIMENT TRAPPING PRACTICE, OR TO INTERCEPT AND DIVERT CLEAR WATER AWAY FROM DISTURBED AREAS.

PRACTICE APPLIED: CONSTRUCTED ALONG THE LIMIT OF DISTURBANCE (LOD) OR ACROSS DISTURBED AREAS, A DIVERSION FENCE IS USED WHEN THERE IS INSUFFICIENT SPACE TO CONSTRUCT AN EARTH DIKE, TEMPORARY SWALE, OR PERIMETER DIKE SWALE.

- TO DIVERT SEDIMENT-LADEN RUNOFF FROM A DISTURBED AREA TO A SEDIMENT TRAPPING PRACTICE.
- TO SEGMENT DRAINAGE AREAS FOR REDUCING ACREAGE TO SEDIMENT CONTROL PRACTICES.
- TO DIVERT CLEAR WATER FROM AN UNDISTURBED AREA TO A STABLE OUTLET AT NON-EROSIVE VELOCITIES.

DESIGN CRITERIA:

- THE MAXIMUM SLOPE ALONG FENCE IS 10 PERCENT.
- THE MAXIMUM DRAINAGE AREA IS 2 ACRES.
- FOR DRAINAGE AREAS LARGER THAN 2 ACRES, AN ENGINEERING DESIGN MAY BE USED BASED ON THE 2-YEAR FREQUENCY STORM WITH NRCS METHODOLOGIES (I.E., TR-55, TR-20), ASSUMING THE WORST SOIL COVER CONDITIONS TO PREVAIL IN THE CONTRIBUTING DRAINAGE AREA OVER THE LIFE OF THE DIVERSION FENCE.
- MAINTAIN POSITIVE DRAINAGE ALONG THE ENTIRE LENGTH OF THE DIVERSION FENCE. SPOT ELEVATIONS MUST BE PROVIDED FOR DIVERSION FENCE HAVING LONGITUDINAL SLOPES FLATTER THAN 1%.
- DISCHARGE VELOCITIES FROM DIVERSION FENCE MUST BE NON-EROSIVE.
- WHERE DIVERSION FENCE IS USED TO CONVEY RUNOFF FROM DISTURBED AREAS, THE DISCHARGE MUST BE TO A SEDIMENT CONTROL PRACTICE SUITABLE FOR CONCENTRATED FLOW. SILT FENCE AND SUPER SILT FENCE ARE UNACCEPTABLE FOR RECEIVING DISCHARGES FROM DIVERSION FENCE.
- WHERE DIVERSION FENCE IS USED TO CONVEY CLEAR WATER RUNOFF, THE DISCHARGE MUST BE TO AN UNDISTURBED, STABLE AREA AT A NON-EROSIVE VELOCITY (4 FPS); OTHERWISE, PROVIDE OUTLET PROTECTION.
- WHEN DIVERSION FENCE IS USED IN CONJUNCTION WITH A SEDIMENT TRAPPING DEVICE, SEQUENCE CONSTRUCTION SO THAT THE DIVERSION FENCE INSTALLATIONS FOLLOWS COMPLETION OF THE SEDIMENT TRAPPING DEVICE(S).

MAINTENANCE: THE FLOW SURFACE ALONG THE DIVERSION FENCE AND AT THE POINT OF DISCHARGE MUST BE KEPT FREE OF EROSION. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED AND POSITIVE DRAINAGE MAINTAINED. IMPERMEABLE SHEETING MUST BE REPLACED IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): _____ Seed Mixture (from Table B.3): _____					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ O	
6	Tall Fescue (<i>Lolium arundinaceum</i>)	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4- 1/2 in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
	Perennial Ryegrass (<i>Lolium perenne</i>)	25	Mar 1 to May 15 Aug 1 to Oct 15	1/4- 1/2 in				
	White Clover (<i>Trifolium repens</i>)	5	Mar 1 to May 15 Aug 1 to Oct 15	1/4- 1/2 in				

TABLE TO BE REVISED

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate ^{1/}		Seeding Depth ^{2/} (inches)	Recommended Seeding Dates by Plant Hardiness Zone ^{3/}		
	lb/ac	lb/1000 ft ²		5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (<i>Lolium perenne ssp. multiflorum</i>)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (<i>Hordeum vulgare</i>)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (<i>Avena sativa</i>)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (<i>Triticum aestivum</i>)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (<i>Secale cereale</i>)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (<i>Setaria italica</i>)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (<i>Pennisetum glaucum</i>)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

B.20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS DATE

CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRAFFIC ENGINEERING DIVISION DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	SD								
DR	SD								
CHK	OA								
APVD	MAB	NO.	DATE		REVISION		BY	APVD	

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CIVIL

EROSION AND SEDIMENT CONTROL DETAILS

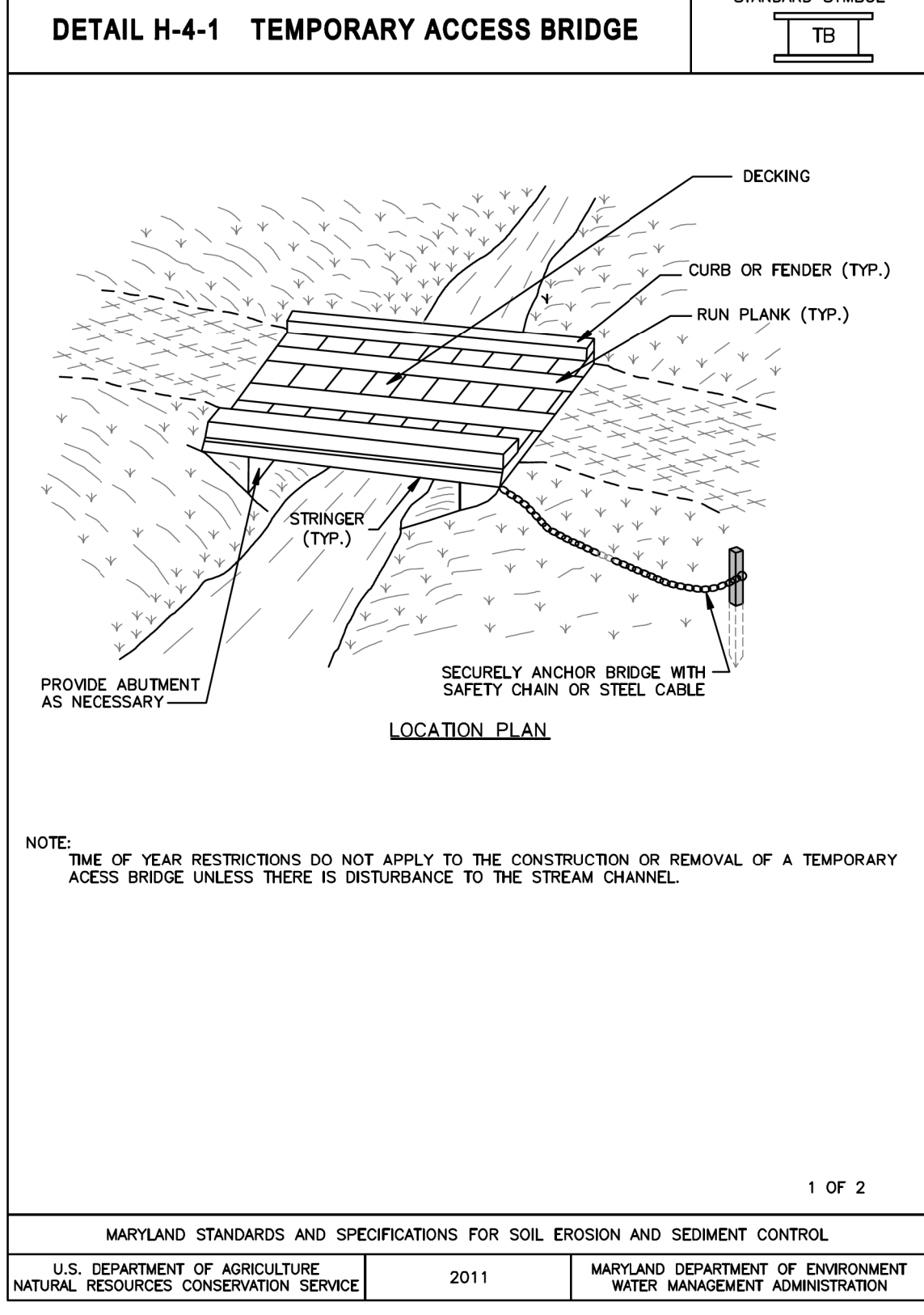
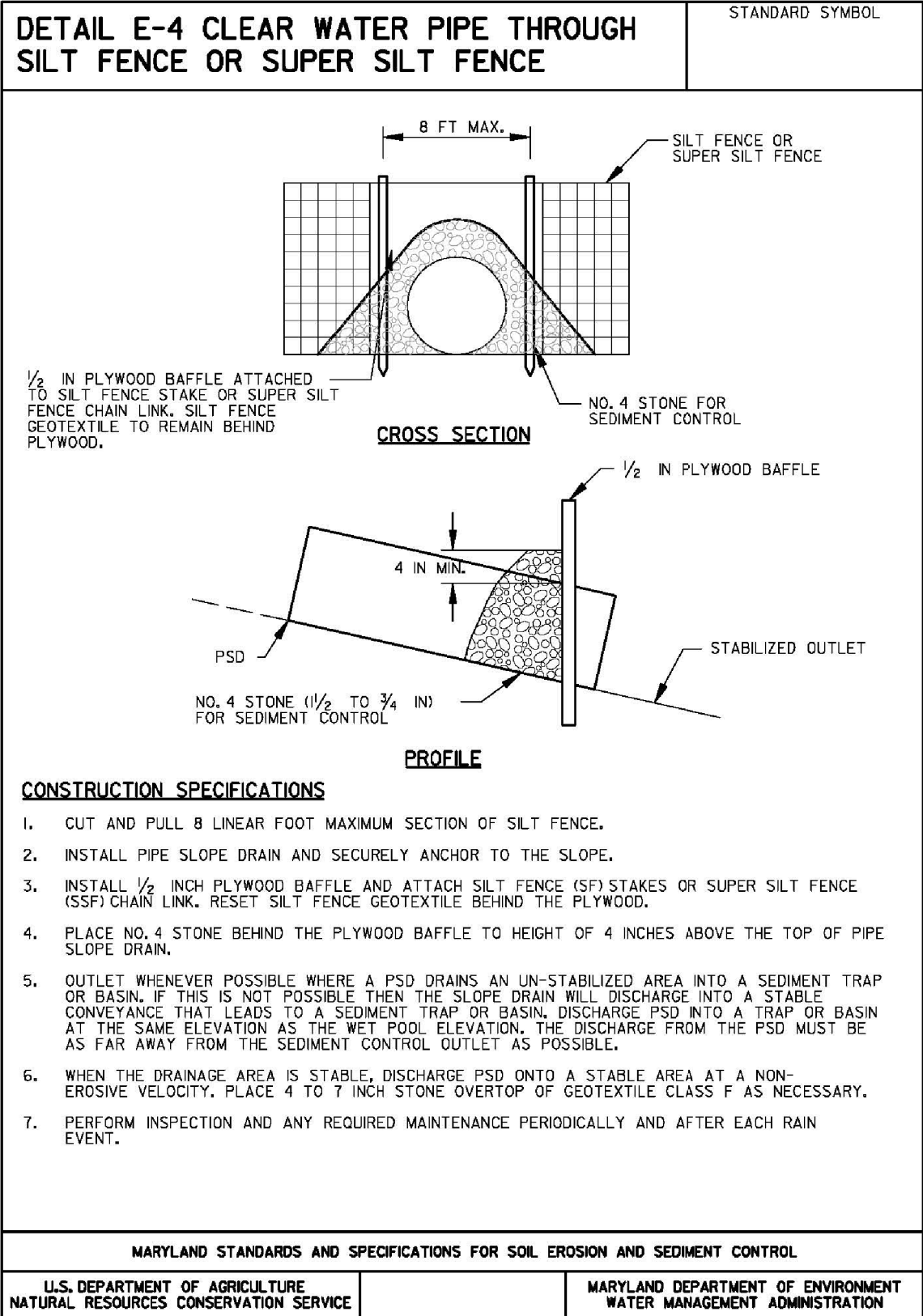
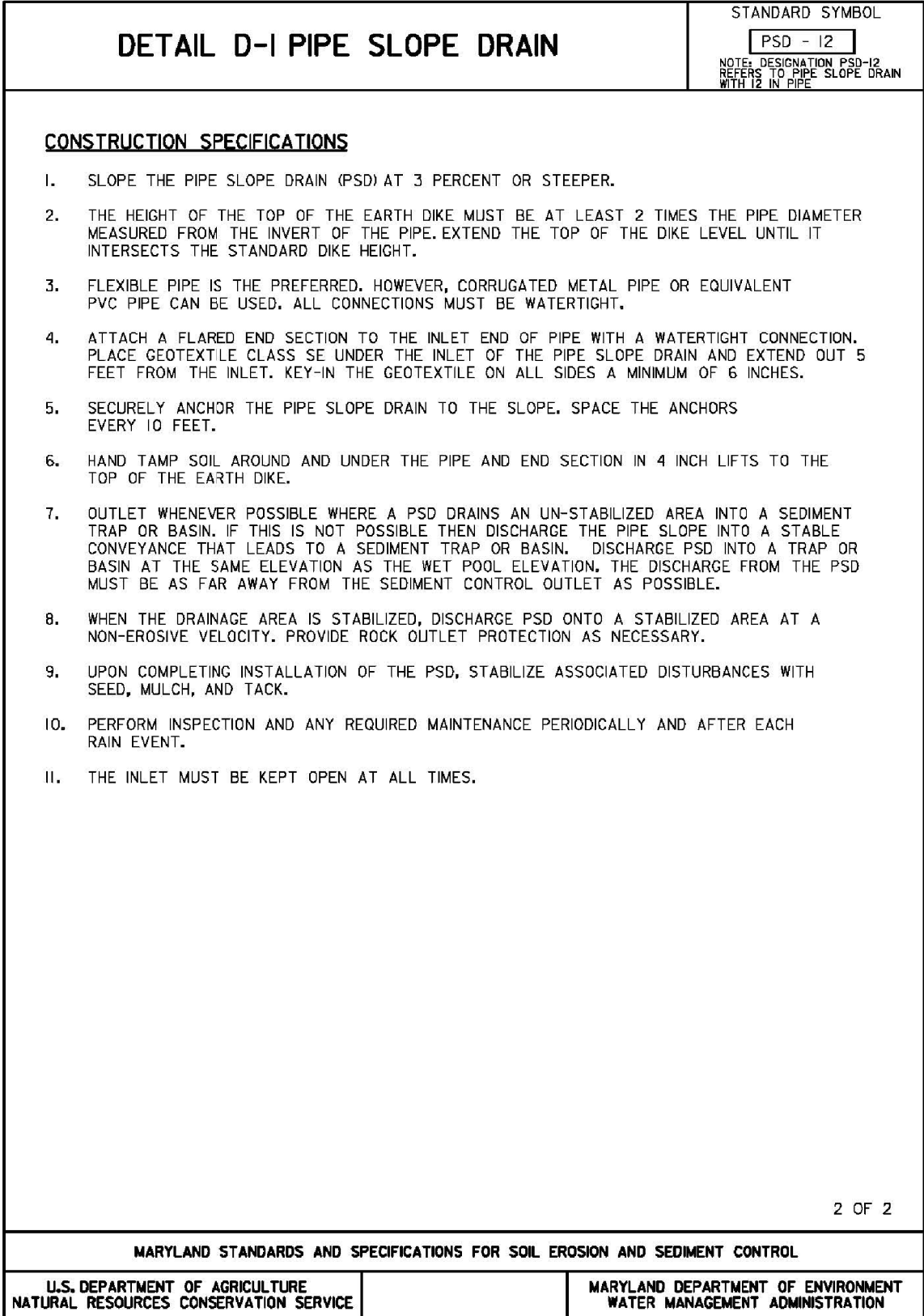
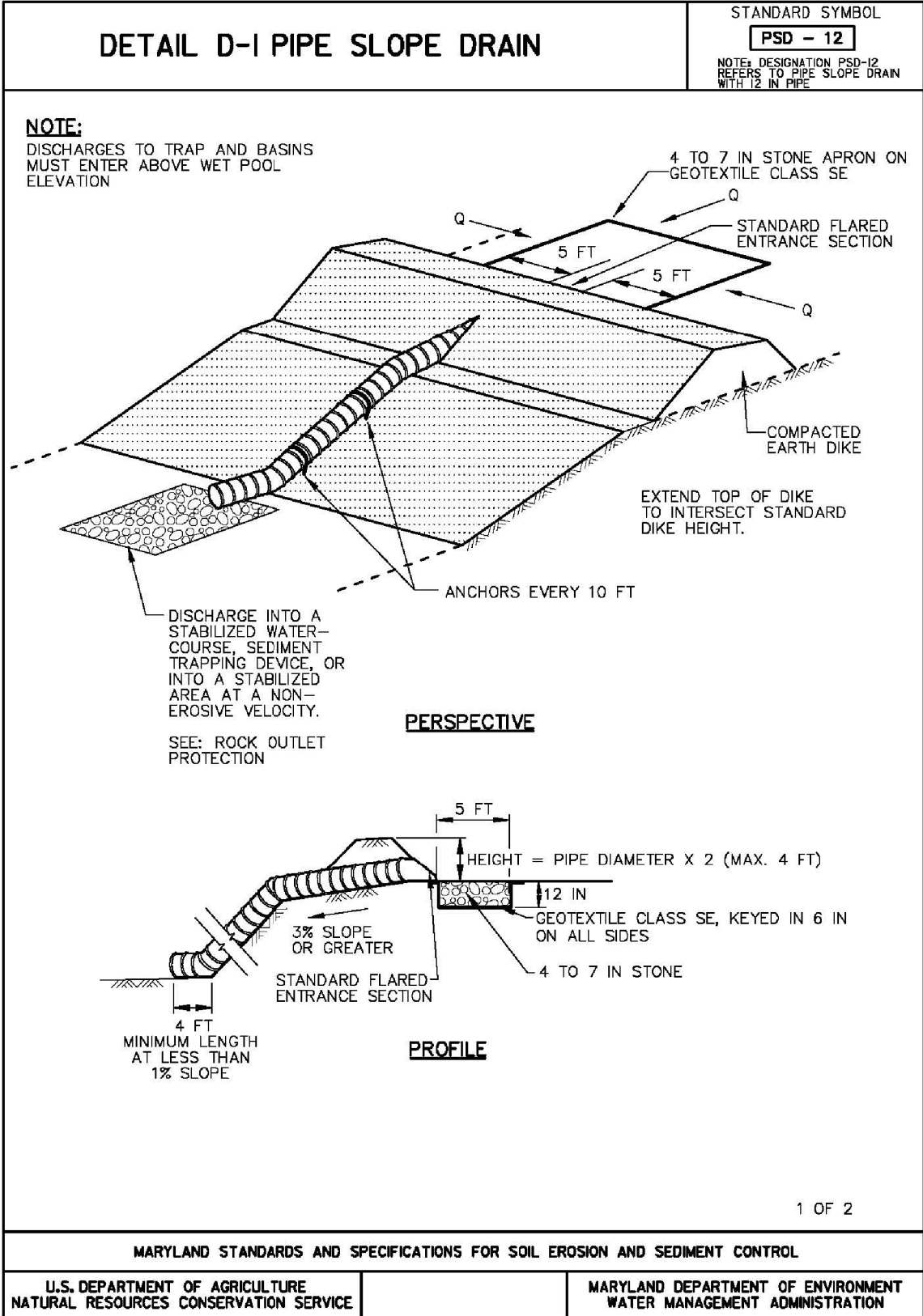
SHEET 78 OF 83

DWG SD-9

DATE APR 2020

PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS
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: _____.

DSGN SD

DR SD

CHK OA

APVD MAB

NO.

DATE

REVISION

BY

APVD

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS
OF PROFESSIONAL SERVICE FOR THIS
PROJECT. REUSE OR ALTERATION
WITHOUT TDG'S WRITTEN PERMISSION
IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

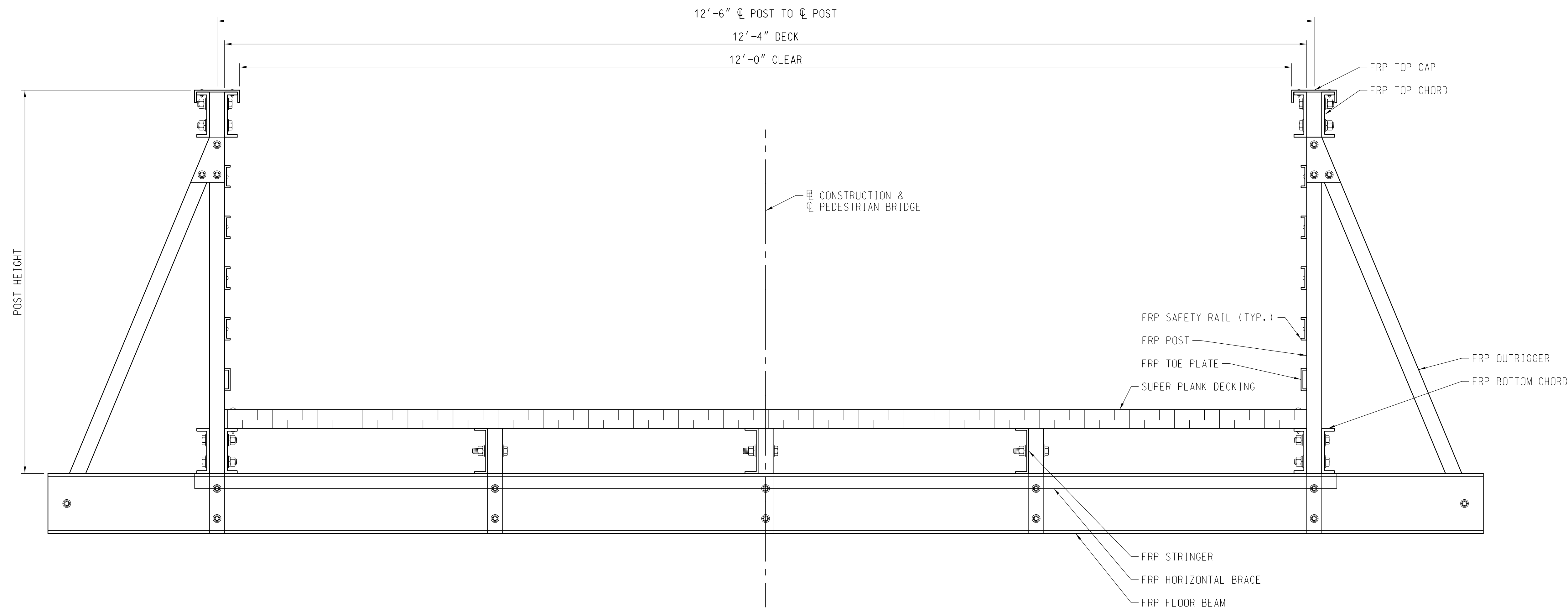
CIVIL
EROSION AND SEDIMENT
CONTROL DETAILS

SHEET 79 OF 83

DWG SD-10

DATE APR 2020

PROJECT 5409.06



TYPICAL SECTION
SCALE: 1 1/2" = 1'-0"

NOTE: PROPOSED PEDESTRIAN BRIDGE BY E.T. TECHTONICS OR APPROVED EQUAL.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	HMK						
DR	DRC						
CHK	RDL						
APVD	JMH	NO.	DATE	REVISION	BY	APVD	



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION
MANAGERS

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

STRUCTURAL

35' PEDESTRIAN BRIDGE
TYPICAL SECTION

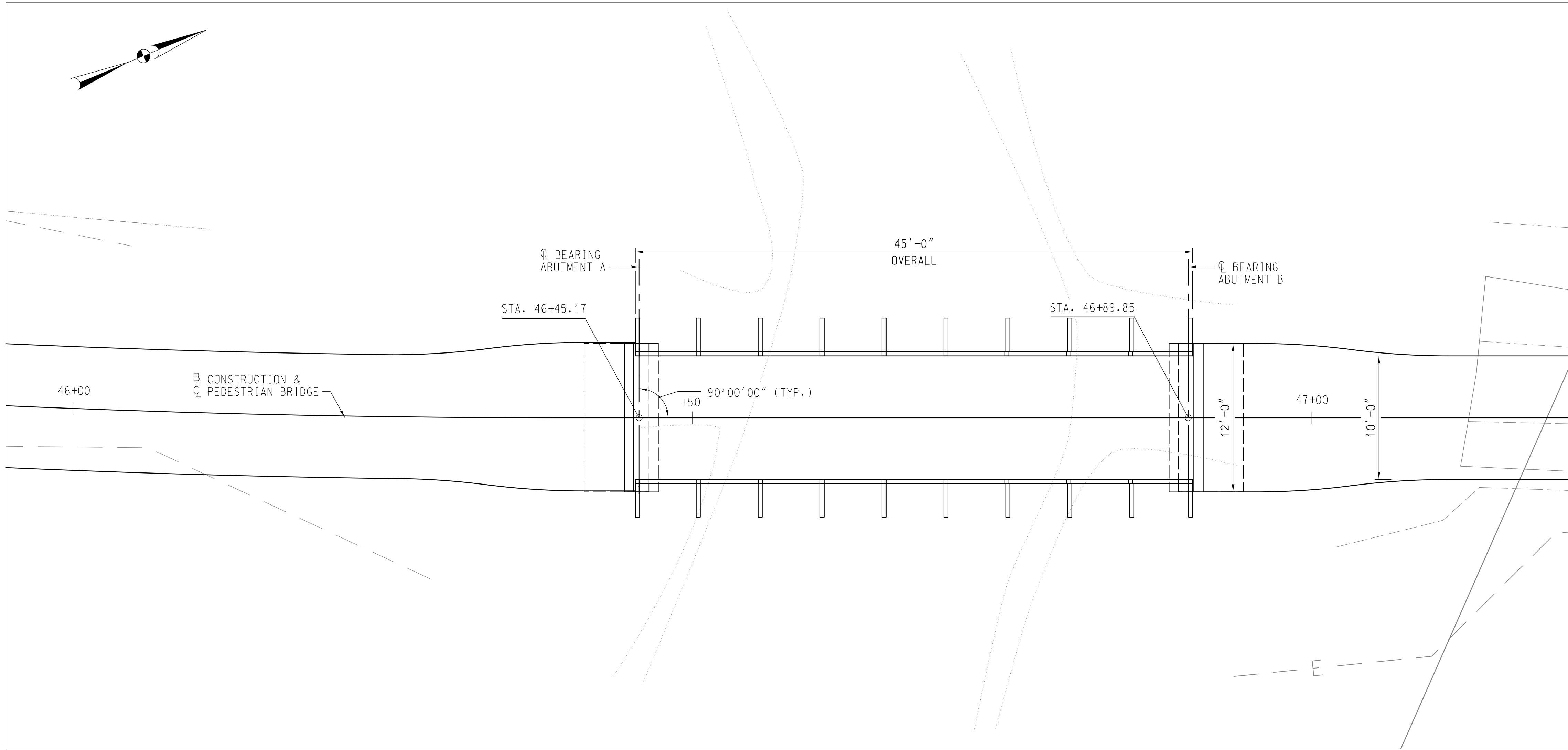
SHEET 81 OF 83

DWG ST-2

DATE APR 2020

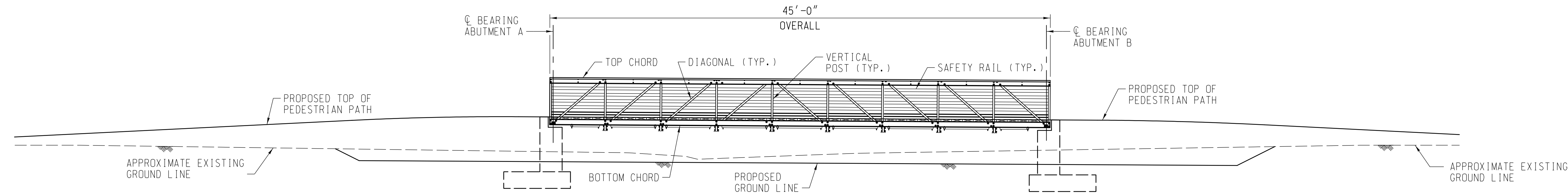
PROJECT 5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



PLAN
SCALE: 3/16" = 1'-0"

- GENERAL NOTES
- SPECIFICATIONS: HOWARD COUNTY VOLUME IV DESIGN MANUAL STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION
- SHA SPECIFICATIONS DATED JULY 2019
REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2017 FOR DESIGN INCLUDING 2018 INTERIMS
- AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES DATED DECEMBER 2009 INCLUDING 2015 INTERIMS
- LOADING: PEDESTRIAN LIVE LOAD OF 90 POUNDS / SQUARE FOOT OF DECK
VEHICULAR LOAD HS (10,000 POUND VEHICLE)
- CONCRETE DESIGN: LOAD AND RESISTANCE FACTOR DESIGN METHOD
f'c = 3000 PSI
- REINFORCING STEEL DESIGN: fy = 60,000 PSI
- CONCRETE: ALL CONCRETE SHALL BE MIX NO.3 (3500 PSI)
- REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60
ONLY GRADE 60 CAN BE USED FOR THIS PROJECT
- ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.
- KEYS: ALL CONCRETE CONSTRUCTION KEYS ARE NOMINAL SIZE.
- FRP BRIDGE: AS MANUFACTURED BY E.T. TECHTONICS OR APPROVED EQUAL.



DATUM ELEV. 280.00

ELEVATION
SCALE: 3/16" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS DATE

CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRAFFIC ENGINEERING DIVISION DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	HMK						
DR	DRC						
CHK	RDL						
APVD	JMH	NO.	DATE	REVISION	BY	APVD	



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION
MANAGERS

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

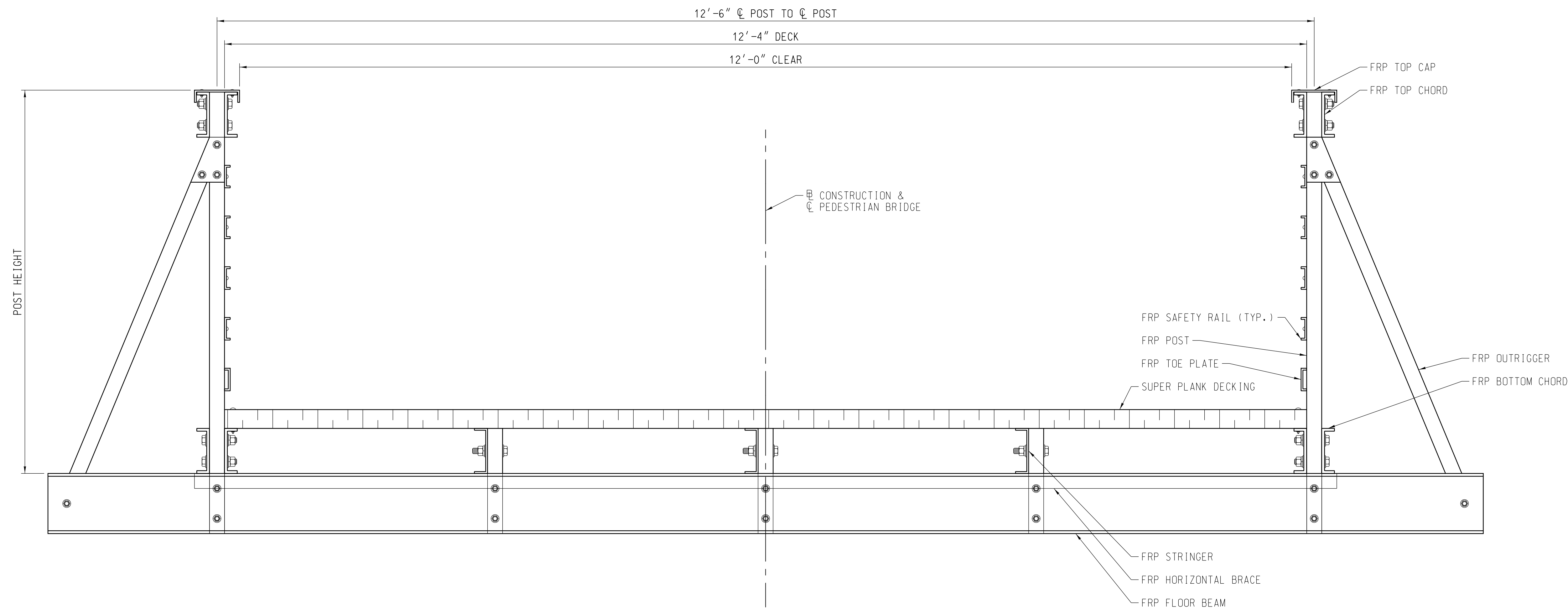
SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

STRUCTURAL
45' PEDESTRIAN BRIDGE
GENERAL PLAN AND ELEVATION

SHEET	82 OF 83
DWG	ST-3
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION



TYPICAL SECTION
SCALE: 1 1/2" = 1'-0"

NOTE: PROPOSED PEDESTRIAN BRIDGE BY E.T. TECHTONICS OR APPROVED EQUAL.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR, DEPARTMENT OF PUBLIC WORKS _____ DATE _____

CHIEF, BUREAU OF HIGHWAYS _____ DATE _____

CHIEF, TRAFFIC ENGINEERING DIVISION _____ DATE _____

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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: _____

DSGN	HMK						
DR	DRC						
CHK	RDL						
APVD	JMH	NO.	DATE	REVISION	BY	APVD	



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION
MANAGERS

REUSE OF DOCUMENTS

ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION WITHOUT TDG'S WRITTEN PERMISSION IS AT THE USER'S SOLE RISK.

SOUTH ENTRANCE TRAIL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

STRUCTURAL
45' PEDESTRIAN BRIDGE
TYPICAL SECTION

SHEET	83 OF 83
DWG	ST-4
DATE	APR 2020
PROJECT	5409.06

PRELIMINARY - NOT FOR CONSTRUCTION