

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
REPLACEMENT OF BRIDGE NO. M-0157X01
BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH MARYLAND DOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2023, INCLUDING REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS, BOOK OF STANDARDS FOR HIGHWAYS, INCIDENTAL STRUCTURES AND TRAFFIC CONTROL APPLICATIONS, MONTGOMERY COUNTY DOT DESIGN STANDARDS, AND 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- THE EXISTING UTILITIES AND OBSTRUCTION SHOWN ARE FROM THE AVAILABLE RECORDS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. NECESSARY PRECAUTIONS SHALL BE USED BY THE CONTRACTOR TO PROTECT EXISTING UTILITIES, AND ANY DAMAGE TO THE UTILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR IN COORDINATION WITH THE UTILITY OWNER AT NO COST TO THE COUNTY.
- CLEARING IS TO BE LIMITED TO THE "LOD" AS SHOWN ON THE PLANS.
- ALL GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.
- DISTURBED AREAS ADJACENT TO ESTABLISHED LAWNS SHALL BE SODDED. OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- THE CONTRACTOR SHALL CALL "MISS UTILITY" (1-800-257-7777) A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION AND /OR DIGGING TO DETERMINE THE LOCATION OF UNDERGROUND UTILITIES.
- RIGHT-OF-WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING PLANS ONLY. FOR DETAILED INFORMATION SEE THE APPROPRIATE RIGHT-OF-WAY PLATS.
- FULL ROAD CLOSURE OF BURNT HILL ROAD IS ONLY ALLOWED DURING THE SCHOOL SUMMER BREAK (LAST DAY OF SCHOOL IN MIDDLE JUNE TO FIRST DAY OF SCHOOL END OF AUGUST), EXCLUSIVE, DURING ANY YEAR.
- IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
- ACCESS TO ADJACENT EXISTING HOMES' ENTRANCE SHALL BE MAINTAINED DURING CONSTRUCTION.

OWNER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

DATE _____ TIMOTHY H. CUPPLES
CHIEF, DIVISION OF
TRANSPORTATION ENGINEERING

DESIGN CERTIFICATION

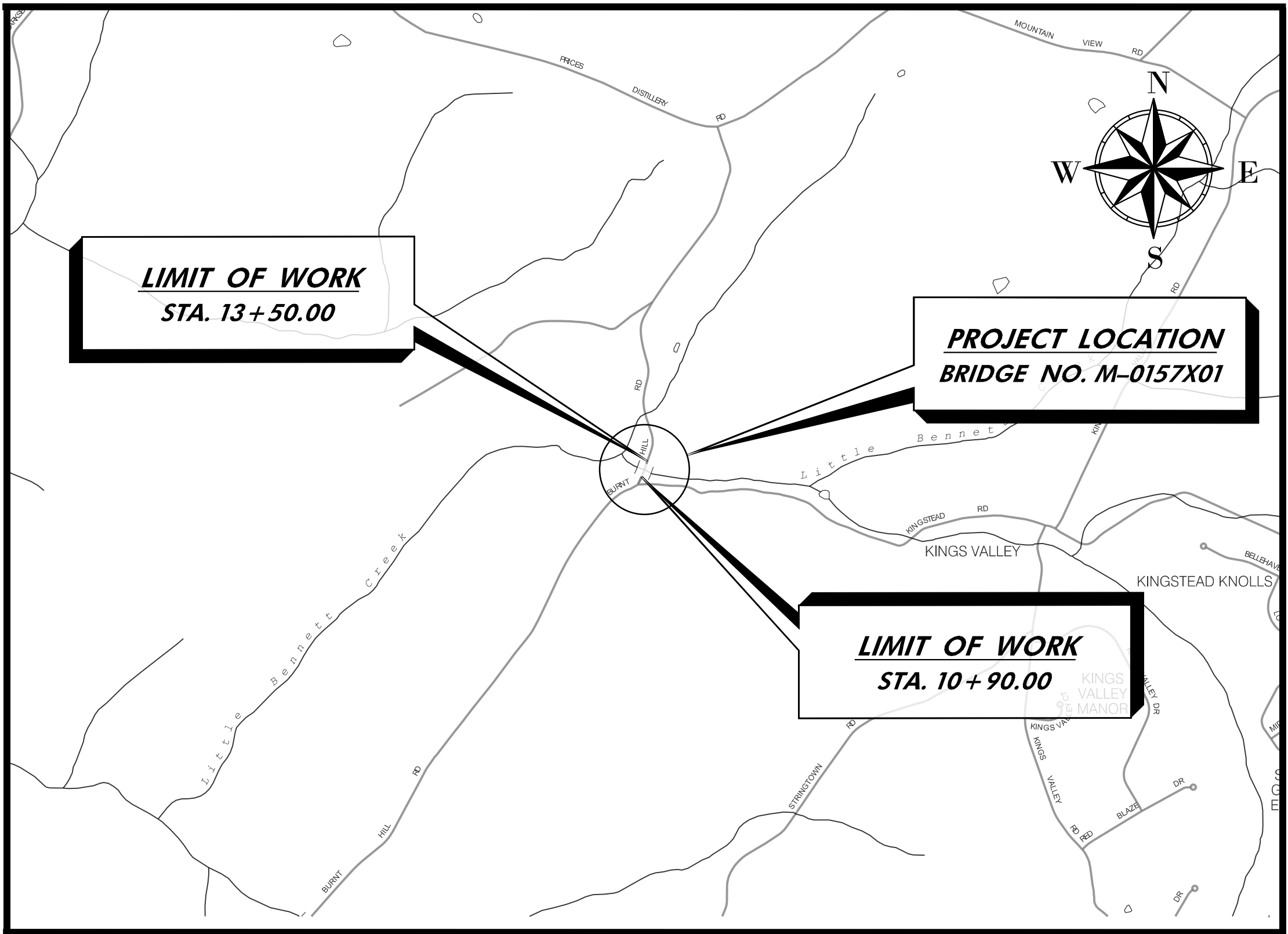
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90, AND MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" DATED AUGUST 1988.

xx/xx/xxxx
DATE _____ PRINTED NAME: GREGOR FAHRENDORF
MD. REGISTRATION NO.: 32006

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 32006 EXPIRATION DATE 7/11/2025

C. I. P. PROJECT NO. 509132



VICINITY MAP

DESIGN TRAFFIC DATA		
ROADWAY	BURNT HILL ROAD	
CONTROLS / YEARS	2022	2043
AVERAGE DAILY TRAFFIC (A.D.T.)	830	920
% TRUCKS - A.D.T.	4%	4%
DESIGN SPEED M.P.H.	35 mph	
FUNCTIONAL CLASSIFICATION	RUSTIC ROAD	
CONTROL OF ACCESS	NONE	
POSTED SPEED	40 mph	
POSTED ADVISORY SPEED	35 mph	

DATUM	
HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88

60% PLAN RESUBMISSION
MAY 17, 2024

THE FOLLOWING STANDARDS (CONSTRUCTION AND TEMPORARY TRAFFIC CONTROL) ARE REQUIRED FOR THIS PROJECT:

- 605.23-01 - TRAFFIC BARRIER W-BEAM METAL POST
- 605.21 - OFFSET BLOCK
- 605.22 - TRAFFIC BARRIER W BEAM SINGLE FACE

FOR ALL STANDARDS REFERRED TO ON THE PLANS THE CONTRACTOR MUST GO TO THE BOOK OF STANDARDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE ACCESSED AT:

<http://apps.roads.maryland.gov/businesswithsha/bizstdsSpecs/desManualStdPub/publicationsonline/ohd/booksstd/index.asp>

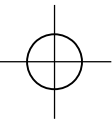
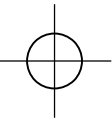
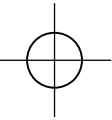
ALL ITEMS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE REFERENCED STANDARD AT THE TIME OF CONSTRUCTION.

RELATED REQUIRED PERMITS				
IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF APPROVED SEDIMENT CONTROL PERMIT.				
TYPE OF PERMIT	REQD	NOT REQD	PERMIT #	EXPIRATION DATE
MDPS Floodplain District	X			
WATERWAYS/WETLAND(S):				
a. Corps of Engineers	X			
b. MDE	X			
c. MDE Water Quality Certification		X		
MDE Dam Safety		X		
N.P.D.E.S. NOTICE OF INTENT		X		
DNR Roadside Tree Permit	X			
MDPS Roadside Tree Plan	X			
MNCPPC FCP Exemption	X			
MDPS Erosion and Sediment Control	X			
OWNER/PERMIT APPLICANT INFORMATION				
NAME:	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION			
ADDRESS:	100 EDISON PARK DRIVE, 4TH FLOOR, GAITHERSBURG, MD 20878			
PHONE NUMBER:	(240) 777-7220			
CONTACT PERSON:	TIMOTHY H. CUPPLES			

TREE CANOPY REQUIREMENTS TABLE	
To be completed by the consultant and placed on the first sheet of the Sediment Control / Stormwater Management plan set for all projects.	
Exempt: Yes No <input checked="" type="checkbox"/> If exempt under Section 55-5 of the Code, please check the applicable exemption category below.	
Total Property Area	Total Disturbed Area
38,259 square feet	38,259 square feet
Shade Trees Required	Shade Trees Proposed to be Planted
15	104
Fee in Lieu (Trees Required - Trees Planted) x \$250	\$ 0
Required Number of Shade Trees	
Area (sq. ft.) of the Limits of Disturbance	Number of Shade Trees Required
FROM	TO
1	6,000
6,001	8,000
8,001	12,000
12,001	14,000
14,001	40,000
3	6
6	9
9	12
12	15
If the square footage of the limits of disturbance is more than 40,000, then the number of shade trees required must be calculated using the following formula:	
(Number of Square Feet in Limits of Disturbance ÷ 40,000) × 15	
EXEMPTION CATEGORIES:	
55-5(a) any activity that is subject to Article II of Chapter 22A; <input type="checkbox"/> 55-5(c) any commercial logging or timber harvesting operation with an approved exemption from Article II of Chapter 22A; <input type="checkbox"/> 55-5(f) any activity conducted by the County Parks Department; <input type="checkbox"/> 55-5(g) routine or emergency maintenance of an existing stormwater management facility, including an existing access road, if the person performing the	maintenance has obtained all required permits; <input type="checkbox"/> 55-5(h) any stream restoration project if the person performing the work has obtained all necessary permits; <input type="checkbox"/> 55-5(i) cutting or clearing any tree to comply with applicable provisions of any federal, state, or local law governing safety of dams. <input type="checkbox"/> OTHER: Specify per Section 55-5 of the Code.

TECHNICAL REVIEW OF SEDIMENT CONTROL	ADMINISTRATIVE REVIEW	DPS approval of a sediment control or stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not create or imply any right to divert or concentrate runoff onto any adjacent property without that property owner's permission. It does not relieve the design engineer or other responsible person of professional liability or ethical responsibility for the adequacy of the drainage design as it affects uphill or downhill properties.
REVIEWED DATE	REVIEWED DATE	
TECHNICAL REVIEW OF STORMWATER MANAGEMENT	SMALL LOT DRAINAGE APPROVAL	
REVIEWED DATE	REVIEWED DATE	
MDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.		NOTE: MDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MDPS ACCESS PERMIT.
		SEDIMENT CONTROL PERMIT NO.
		SM. FILE NO. STORMWATER MANAGEMENT:

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND	OWNER/CONTACT/ADDRESS: MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MD 20878 240-777-7221
RECOMMENDED FOR APPROVAL Chief, Design Section _____ Date _____ Chief, Division of Transportation Engineering _____ Date _____	STANTEC. 6110 FROST PLACE, LAUREL, MARYLAND 20707 (240) 542-3112 www.stantec.com
Designed by : GF Drawn by : GF Checked by : BP	Project No. : 509132 SHEET 1 of 41



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PROFESSIONAL CERTIFICATION

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LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

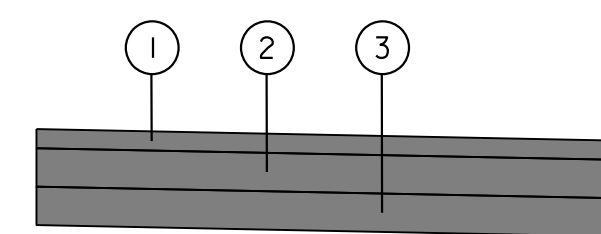
CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY	

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by:	GF	Drawn by:	GF
Checked by:	BP		

REPLACEMENT OF BRIDGE NO. M-0157X01 ON BURNT HILL ROAD OVER LITTLE BENNETT CREEK			
SHEET INDEX			
Project No. :	509132	SHEET	2 of 41

SI - 01



STA. 11+79.00 TO STA. 11+93.00
STA. 12+27.00 TO STA. 12+55.00
(N.T.S.)

- ① 2 INCH SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2
- ② 4 INCH SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2
- ③ 4 INCH GRADED AGGREGATE BASE

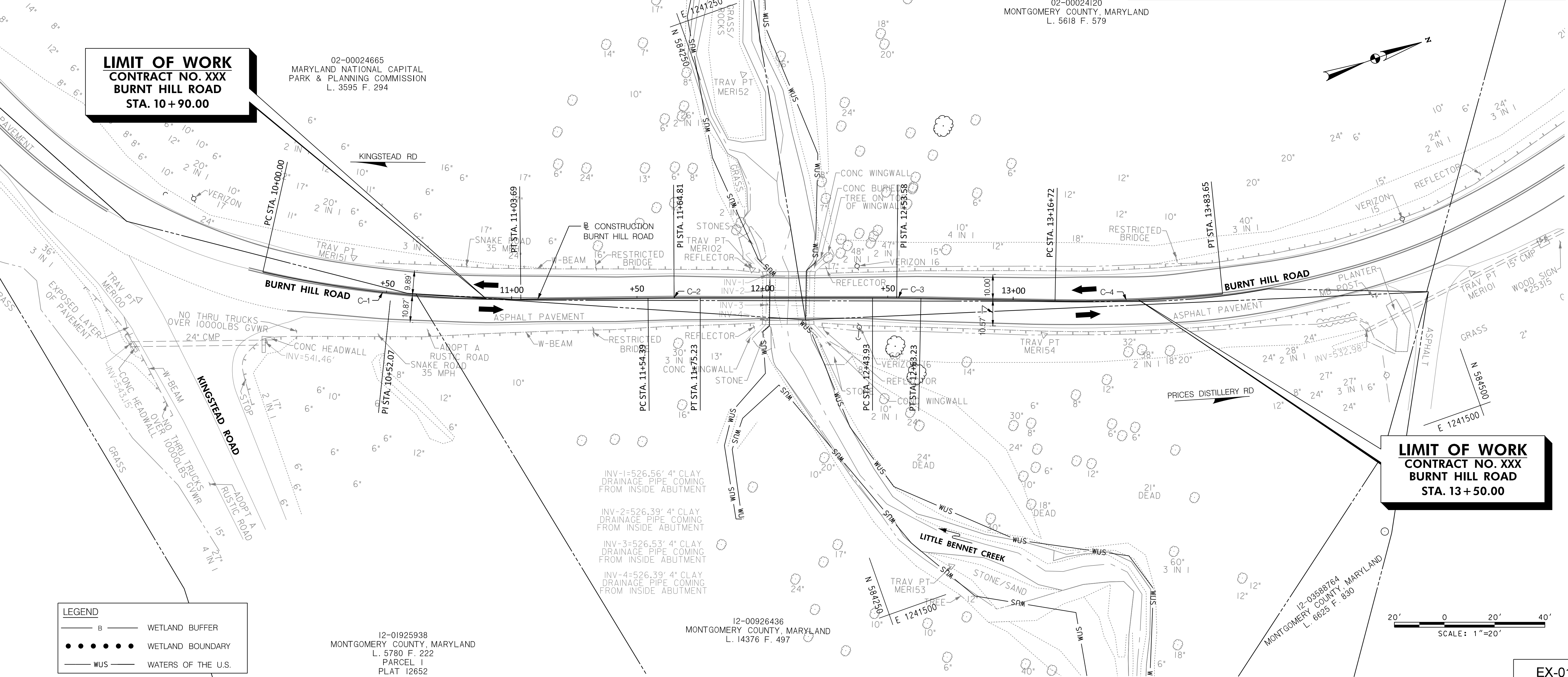
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Designed by:	AA	Drawn by:	AA	Checked by:	LA
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Project No. : 509132 SHEET 3 of 41

SURVEY CONTROL COORDINATES				
POINT NO.	NORTH	EAST	ELEVATION	DESCRIPTION
TRAV PT MER100	584,009.7964	1,241,281.8013	546.81	-
TRAV PT MER101	584,514.4428	1,241,449.1103	537.32	-
TRAV PT MER102	584,244.3123	1,241,352.0214	534.38	-
TRAV PT MER150	583,927.8728	1,241,198.7126	563.19	-
TRAV PT MER151	584,096.1650	1,241,294.5480	539.69	-
TRAV PT MER152	584,266.9389	1,241,277.4730	523.29	-
TRAV PT MER153	584,279.8323	1,241,490.0959	524.40	-
TRAV PT MER154	584,345.3871	1,241,415.4132	534.04	-
TRAV PT MER155	584,640.3369	1,241,384.7178	539.03?	-
TRAV PT MER156	584,677.2962	1,241,397.3782	539.38	-
TRAV PT MER157	584,028.2866	1,241,504.0889	546.64	-
TRAV PT MER158	584,422.6031	1,241,263.3728	527.54	-
TRAV PT MER159	584,305.0627	1,241,557.3531	528.90	-

BL CONSTRUCTION BURNT HILL ROAD					
CURVE	POINT	STATION	NORTH	EAST	BEARING
C-1	PC	10+00.00	584060.0257	1241287.9556	N 32° 05' 11.3464" E
	PI	10+52.07	584104.1450	1241315.6170	
	PT	11+03.69	584153.4156	1241332.4715	N 18° 53' 05.1377" E
C-2	PC	11+54.39	584201.3877	1241348.8817	
	PI	11+64.81	584211.2465	1241352.2542	N 18° 28' 54.3367" E
	PT	11+75.23	584221.0697	1241355.7293	
C-3	PC	12+43.93	584285.8416	1241378.6430	
	PI	12+53.58	584294.9393	1241381.8614	
	PT	12+63.23	584303.9733	1241385.2548	N 20° 35' 15.2232" E
C-4	PC	13+16.72	584354.0477	1241404.0642	
	PI	13+50.23	584385.4113	1241415.8452	
	PT	13+83.65	584417.9620	1241423.7775	N 13° 41' 43.8577" E



LEGEND	
	WETLAND BUFFER
	WETLAND BOUNDARY
	WATERS OF THE U.S.

PROFESSIONAL CERTIFICATION

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OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

Date

Designed by: AA Drawn by: AA Checked by: LA

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

EXISTING CONDITIONS & GEOMETRIC LAYOUT

Project No. : 509132 SHEET 4 of 41

EX-01

LEGEND

B WETLAND BUFFER

WETLAND BOUNDARY

WUS WATERS OF THE U.S.

PROP. MILL & OVERLAY

FULL DEPTH PAVEMENT

REMOVE AND DISPOSE OF EXISTING TRAFFIC BARRIER		
103 LF	STA. 10+90.00 TO STA. 11+93.00, LT	
91 LF	STA. 11+02.00 TO STA. 11+93.00, RT	
63 LF	STA. 12+27.00 TO STA. 12+90.00, LT	
110 LF	STA. 12+27.00 TO STA. 13+37.00, RT	

TRAFFIC BARRIER W BEAM USING 8 FOOT POST		
103 LF	STA. 10+90.00 TO STA. 11+93.00, LT	
91 LF	STA. 11+02.00 TO STA. 11+93.00, RT	
63 LF	STA. 12+27.00 TO STA. 12+90.00, LT	
110 LF	STA. 12+27.00 TO STA. 13+37.00, RT	

FULL-DEPTH ASPHALT MIX PAVEMENT		
30 SF	STA. 11+79.00 TO STA. 11+93.00	
61 SF	STA. 12+27.00 TO STA. 12+55.00	

MILL AND OVERLAY		
170 SF	STA. 11+00.00 TO STA. 11+79.00	
218 SF	STA. 12+55.00 TO STA. 13+50.00	

02-00024665
MARYLAND NATIONAL CAPITAL
PARK & PLANNING COMMISSION
L. 3595 F. 294

LIMIT OF WORK
CONTRACT NO. XXX
BURNT HILL ROAD
STA. 10 + 90.00

LIMIT OF WORK
CONTRACT NO. XXX
BURNT HILL ROAD
STA. 13 + 50.00

OWNER/ADDRESS:
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DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Chief, Division of Transportation Engineering

Designed by: AA Drawn by: AA Checked by: LA

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
ROADWAY PLAN

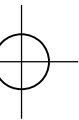
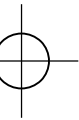
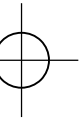
Project No. : 509132 SHEET 5 of 41



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UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X

\$TIME:\$
\$DATES
\$FILES:\$
\$MODELNAME:\$



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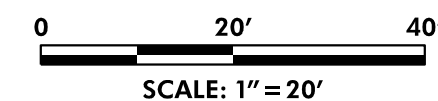
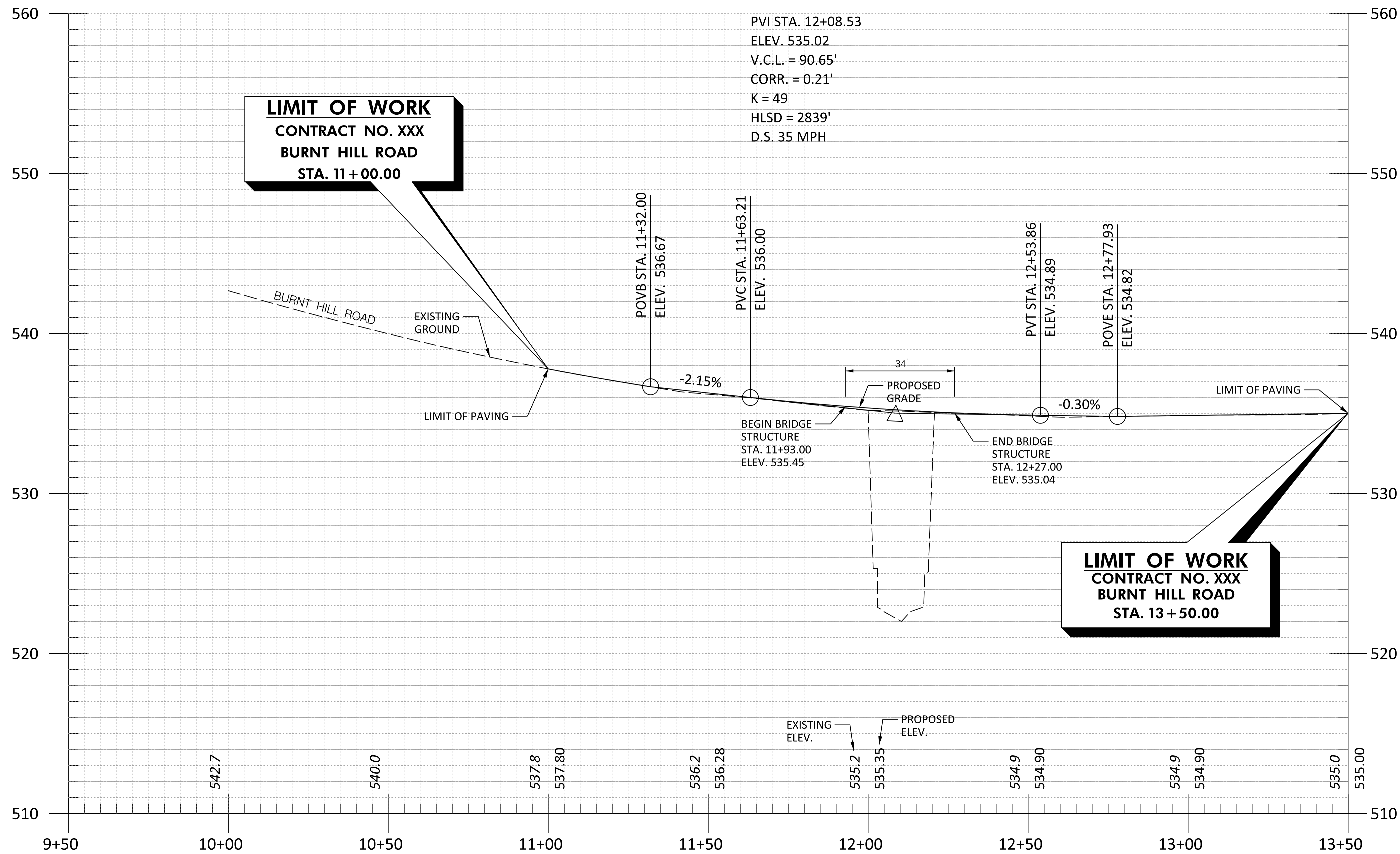
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240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by:	AA	Drawn by:	AA
Checked by:	LA		

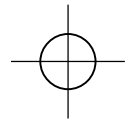
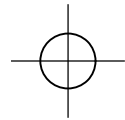
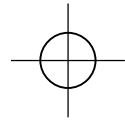
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
ROADWAY PROFILE

Project No. : 509132 SHEET 6 of 41



PR-01

MODELNAME:\$MODELNAME\$



04:58 PM Friday, May 17, 2024 \\16-02023-551 MCDOT 1111495 Burnt Hill Road Bridge.Stantec\Mapping\CADD\p05-POOL_BurntHillRd.dgn

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY TH-T THESE DOCUMENTS WERE PREP-RED OR -PPROVED
BY ME, -ND TH-T I -M - DULY LICENSED PROFESSION-L ENGINEER
UNDER THE L-WS OF THE ST-TE OF M-RYL-ND.
LICENSE NO. XXXXX EXPIR-TION D-TE XX-XX-202X



OWNER / -DDRESS:
DEP-RTMENT OF TR-NSPORT-TION
100 EDISON P-RK DRIVE
G-ITHERSBURG, M-RYL-ND

CONT-CT:
DIVISION OF TR-NSPORT-TION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	D-TE	BY	

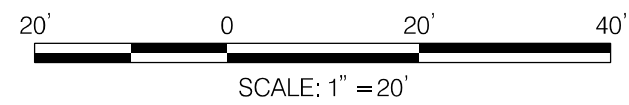
MONTGOMERY COUNTY DEP-RTMENT OF TR-NSPORT-TION G-ITHERSBURG, M-RYL-ND	
RECOMMENDED FOR -PPROV-L	
Chief, Design Section -PPROVED	Date
Chief, Division of Transportation Engineering	Date
Designed by:	Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION PROPOSED GEOMETRY

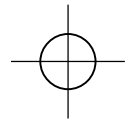
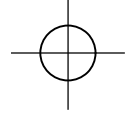
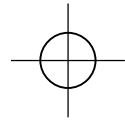
Project No. : 509132 SHEET 7 of 41

MAINSTEM CONSTRUCTION BURNT HILL ROAD						TRIBUTARY 1 CONSTRUCTION BURNT HILL ROAD					
CURVE	POINT	STATION	NORTH	EAST	BEARING	CURVE	POINT	STATION	NORTH	EAST	BEARING
C1	PC	0+51.26	584282.2123	1241479.5656		C4	PC	100+22.65	584210.9001	1241420.3648	
	PI	0+67.52	584269.0140	1241470.0658			PI	100+27.69	584211.7325	1241415.3984	
	PT	0+82.79	584263.5456	1241454.7511	S53° 02' 52.10"W		PT	100+32.49	584214.9320	1241411.5096	N65° 31' 10"W
C2	PC	1+09.36	584254.6106	1241429.7275		C5	PC	100+36.87	584217.7100	1241408.1333	
	PI	1+32.05	584246.9786	1241408.3533			PI	100+41.46	584220.6291	1241404.5853	
	PT	1+53.59	584251.7079	1241386.1556	S86° 11' 19.20"W		PT	100+45.88	584224.8622	1241402.7993	N65° 42' 53"W
C3	PC	2+20.06	584265.5595	1241321.1409							
	PI	2+57.04	584273.2648	1241284.9750							
	PT	2+93.99	584278.4784	1241248.3668	N79° 56' 01.29"W						

SURVEY CONTROL COORDINATES				
POINT NO.	NORTH	EAST	ELEVATION	DESCRIPTION
TRAV PT MER102	584,244.3123	1,241,352.0214	534.38	-
TRAV PT MER152	584,266.9389	1,241,277.4730	523.29	-
TRAV PT MER153	584,279.8323	1,241,490.0959	524.4	-
TRAV PT MER154	584,345.3871	1,241,415.4132	534.04	-
TRAV PT MER159	584,305.0627	1,241,557.3531	528.9	-



GS-01

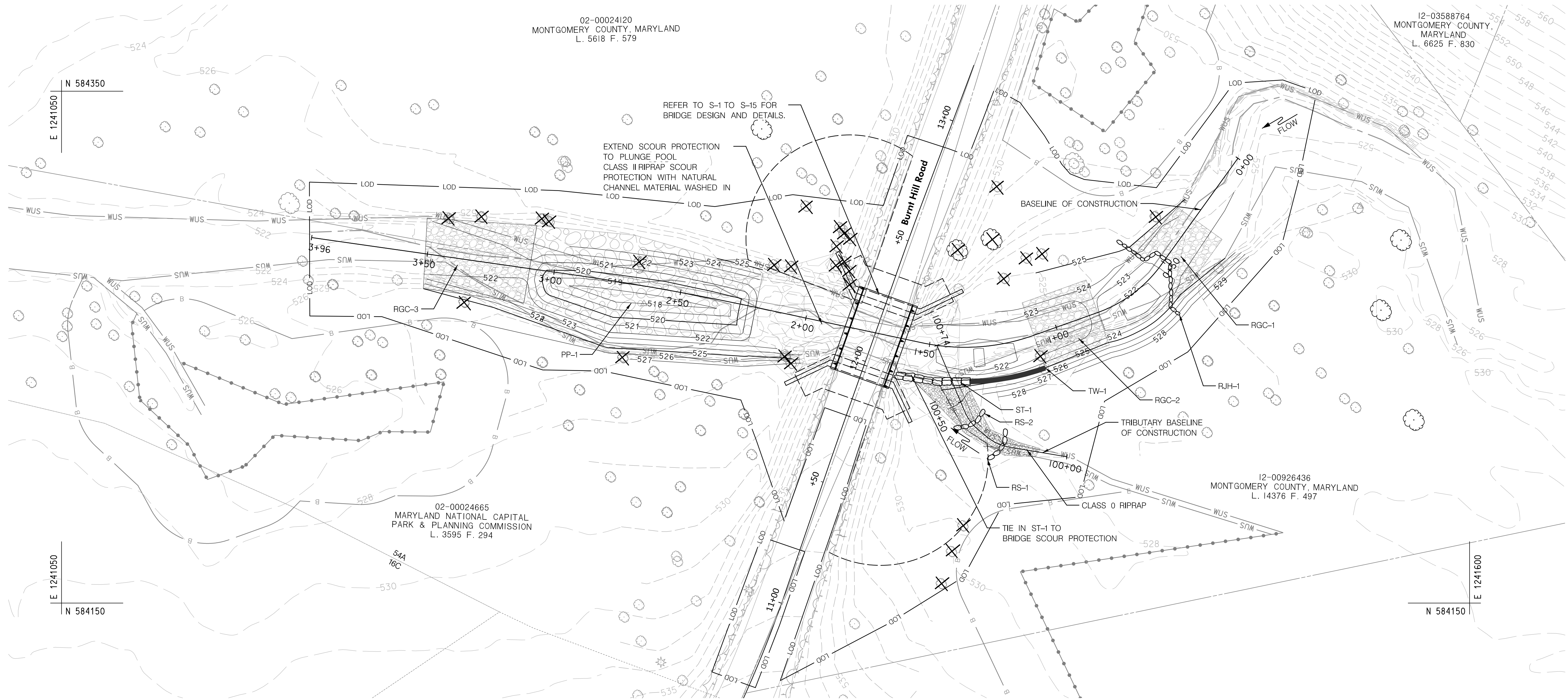


12:32 PM
Monday, May 20, 2024
\\2023\256\MC\DOT 1111495 Burnt Hill Road Bridge.Stantec\Mapping\CADD\PSR-POOL_BurntHillRd.dgn

MODELNAME:\$MODELNAME\$

02-00024120
MONTGOMERY COUNTY, MARYLAND
L. 5618 F. 579

12-03588764
MONTGOMERY COUNTY,
MARYLAND
L. 6625 F. 830

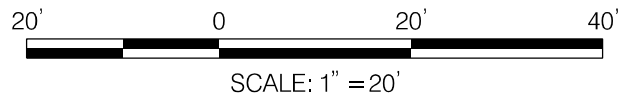


LEGEND

- | | | | |
|--|--------------------------|--|----------------------------|
| | EX. STREAM CENTERLINE | | PROPOSED MAJOR CONTOURS |
| | EX. WETLAND | | PROPOSED MINOR CONTOURS |
| | EX. WETLAND BUFFER | | LIMIT OF DISTURBANCE (LOD) |
| | REMOVE TREE | | PROPOSED STREAM CENTERLINE |
| | WATERS OF THE U.S. (WUS) | | |
| | CRITICAL ROOT ZONE (CRZ) | | |
| | EXISTING CONTOURS | | |

- | | |
|--|-------------------|
| | ROCK SILL (RS) |
| | TOE WOOD (TW) |
| | ROCK J-HOOK (RJH) |
| | STONE TOE (ST) |

- | | |
|--|--|
| | RIFFLE GRADE CONTROL (RGC) |
| | BRIDGE SCOUR PROTECTION (SEE S-1 TO S-15 FOR DESIGN) |
| | PLUNGE POOL (PP) - CLASS I RIPRAP |
| | CLASS 0 RIPRAP |



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

Date

Designed by: Drawn by: Checked by:

SR-01

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION PLAN

Project No. : 509132 SHEET 8 of 41

04:57 PM Friday, May 17, 2024 11:46 AM MCDOT 1111495 Burnt Hill Road Bridge.Stantec.Mapping\CADD\pdp-v001_BurntHillRd.dgn

PROFESSIONAL CERTIFICATION

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CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

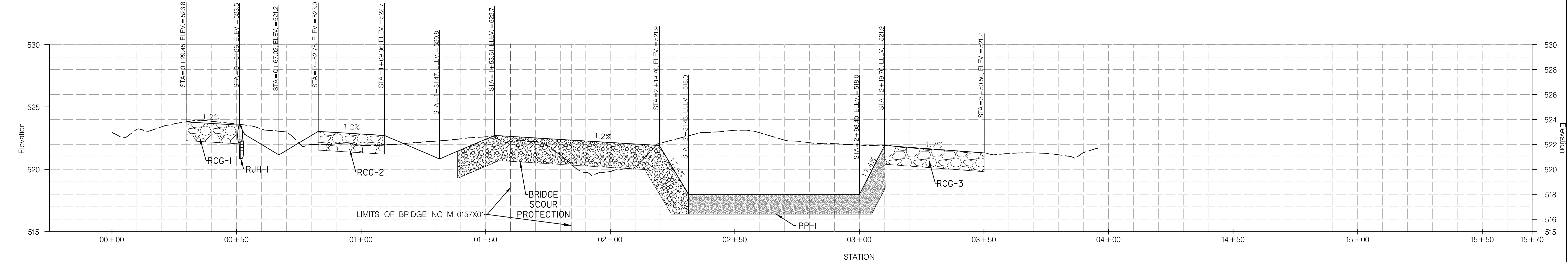
Chief, Division of Transportation Engineering

Date

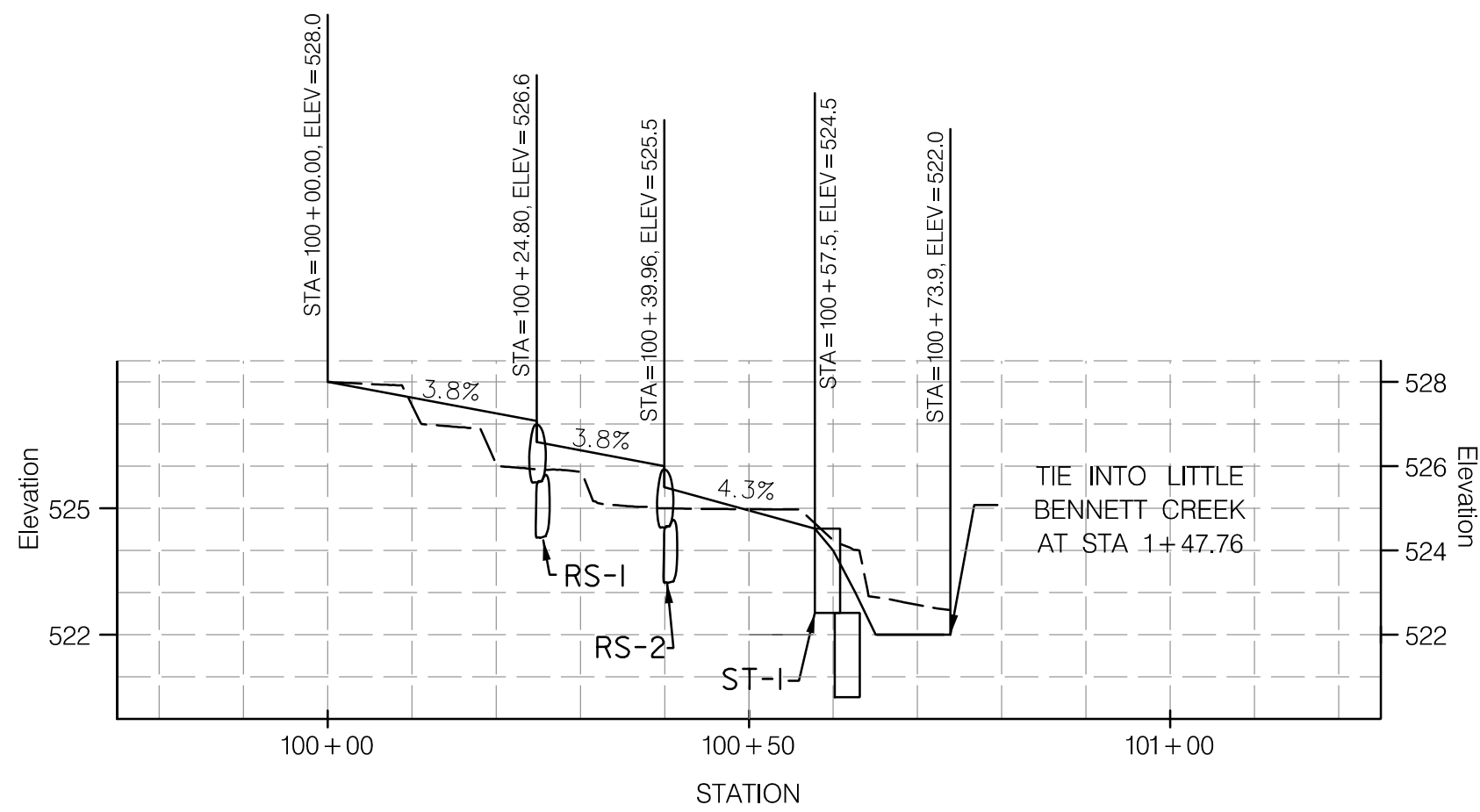
Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION PROFILES

Project No. : 509132 SHEET 9 of 41



LITTLE BENNETT CREEK PROFILE



TRIBUTARY PROFILE

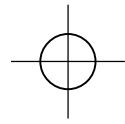
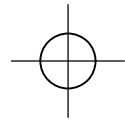
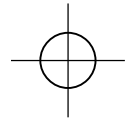
- PROPOSED GROUND
- EXISTING GROUND
- BRIDGE SCOUR PROTECTION
- PLUNGE POOL (PP)
- RIFFLE GRADE CONTROL (RCG)
- ROCK J-HOOK (RJH)
- ROCK SILL (RS)
- STONE TOE (ST)

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

DATUM: NAD 83 (2001) HORIZONTAL
NAVD 88 VERTICAL

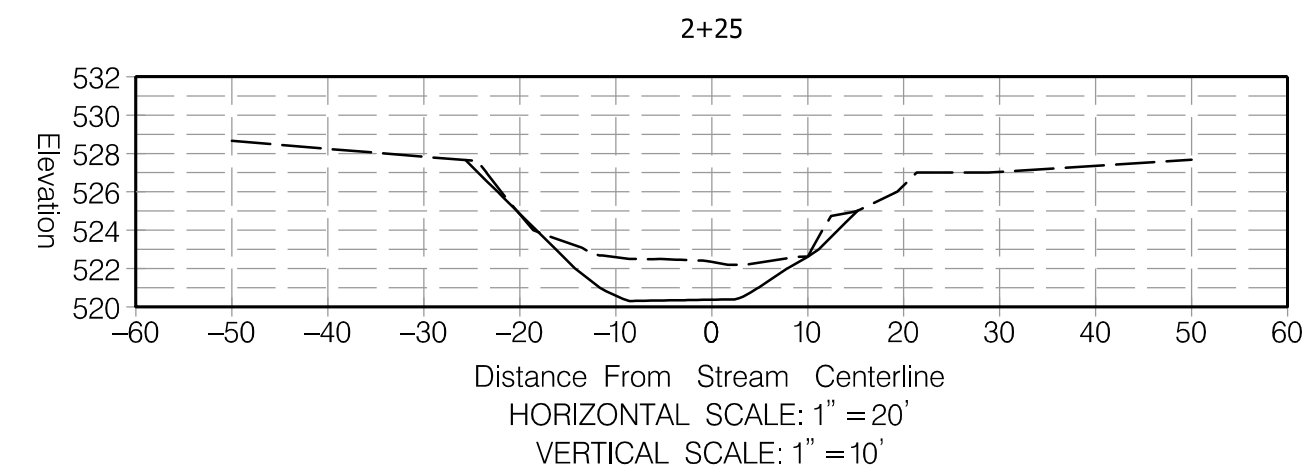
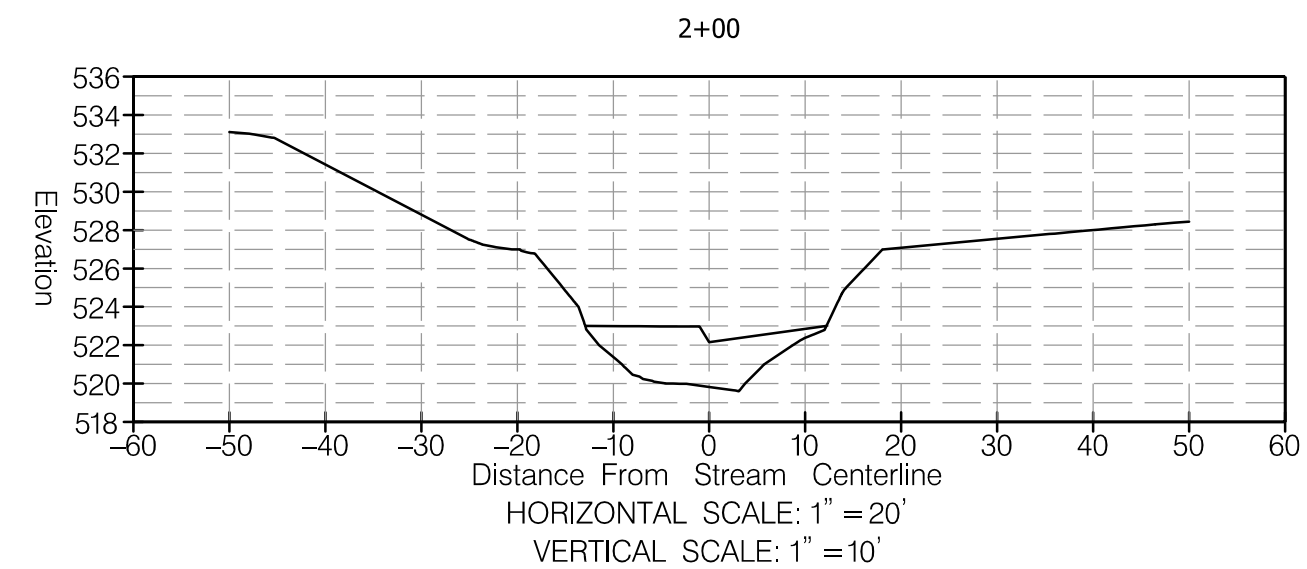
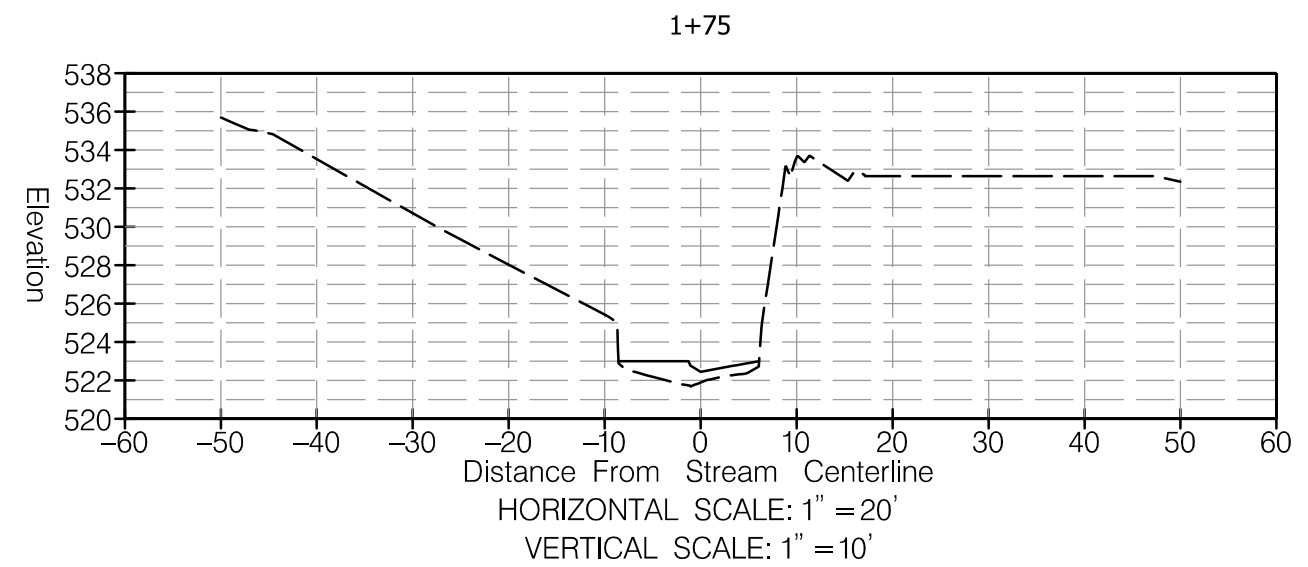
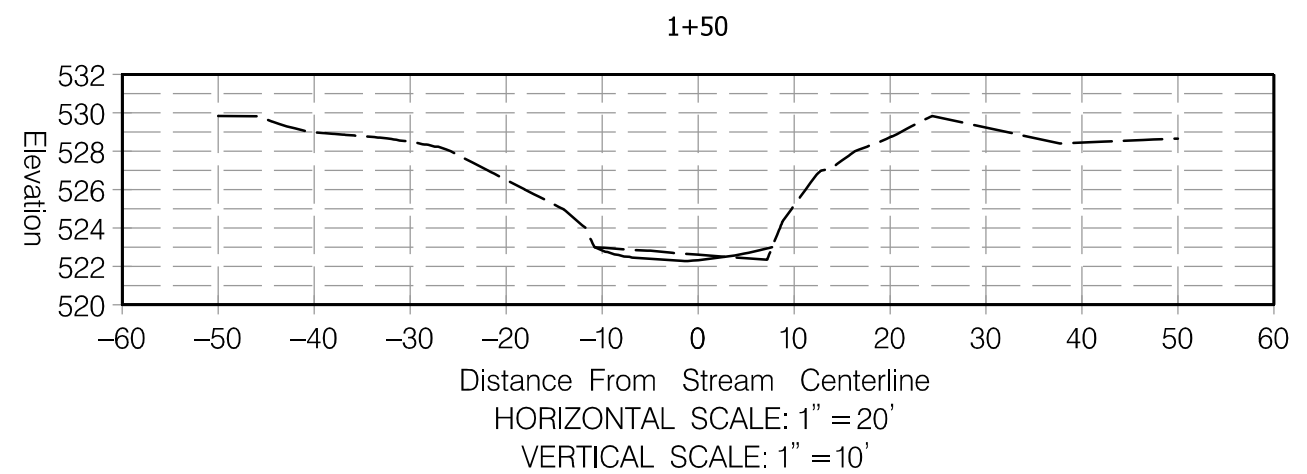
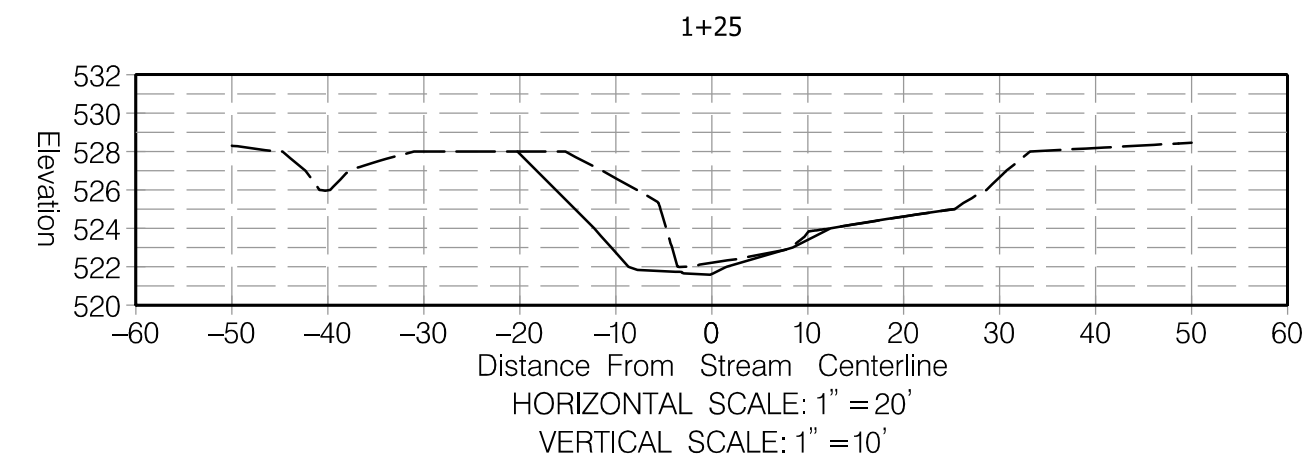
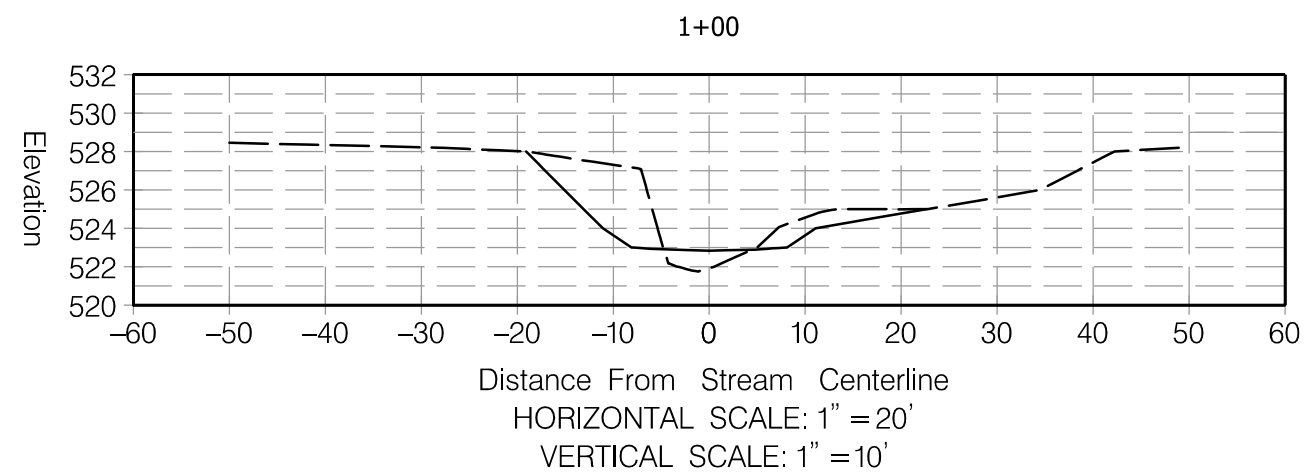
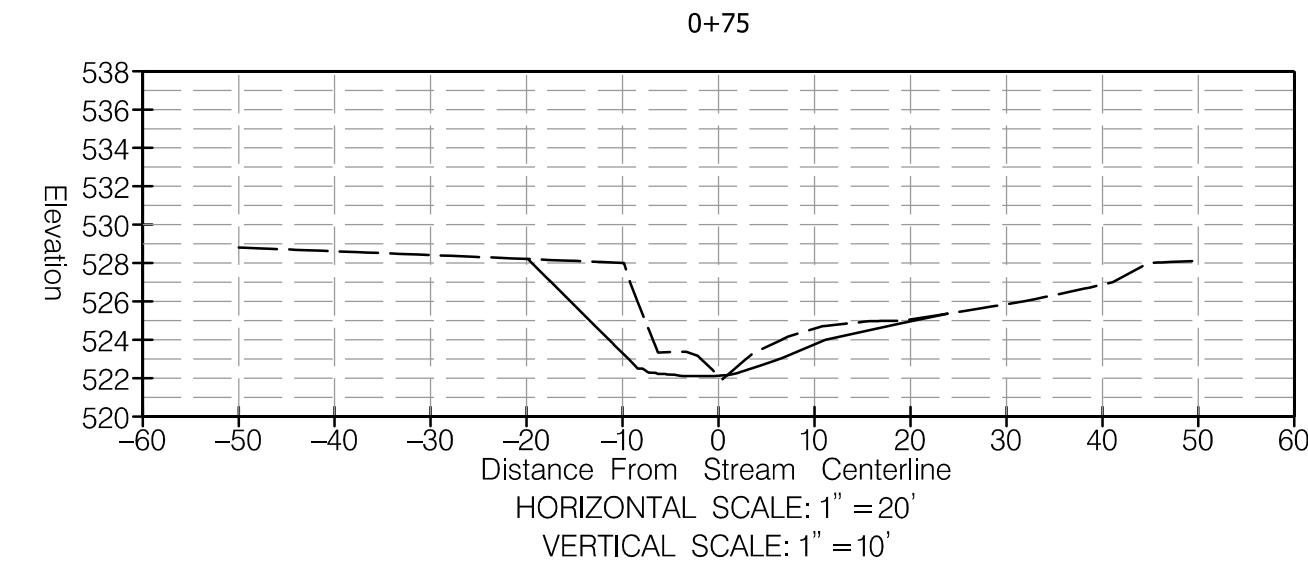
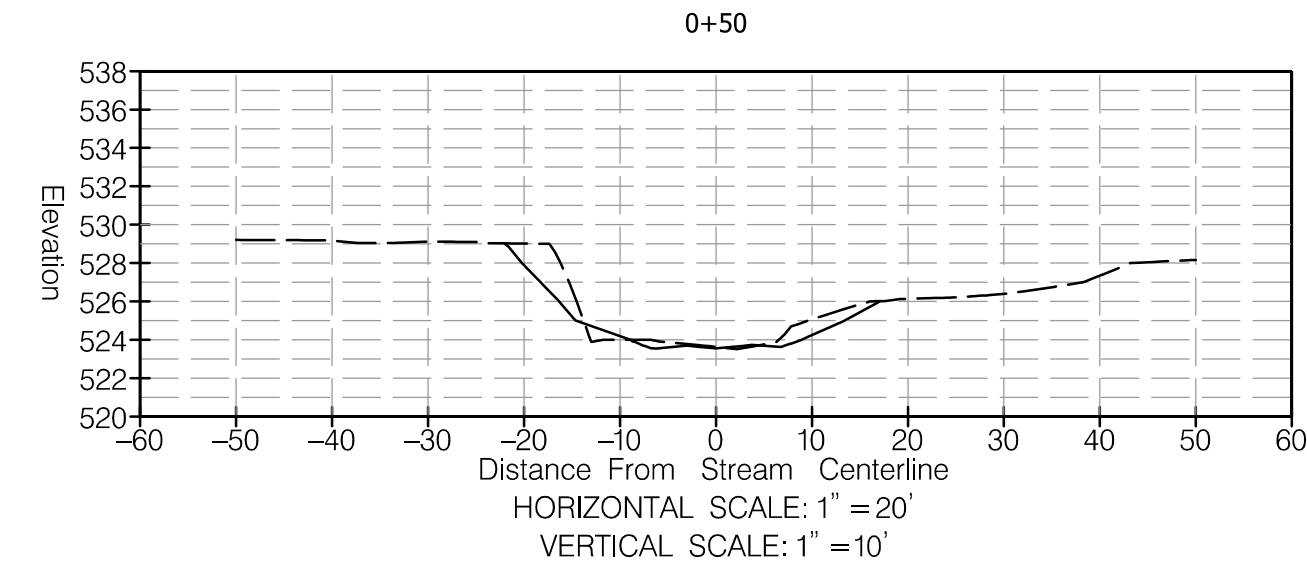
8'
4'
0
SCALE: 1"=4'

SRP - 01



04:57 PM
Friday, May 17, 2024
\\F0000014\6\2023\500\MCDDOT\1111495_Burnt_Hill_Road_Bridge_Shortec\Mapping\CADD\PHC-X001_Burnt_Hill_Road.dgn

LITTLE BENNETT CREEK



————— PROPOSED GROUND
----- EXISTING GROUND

HC - 01

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED
BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

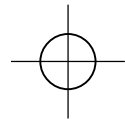
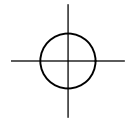
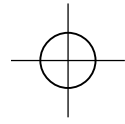
Date

Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION CROSS SECTIONS

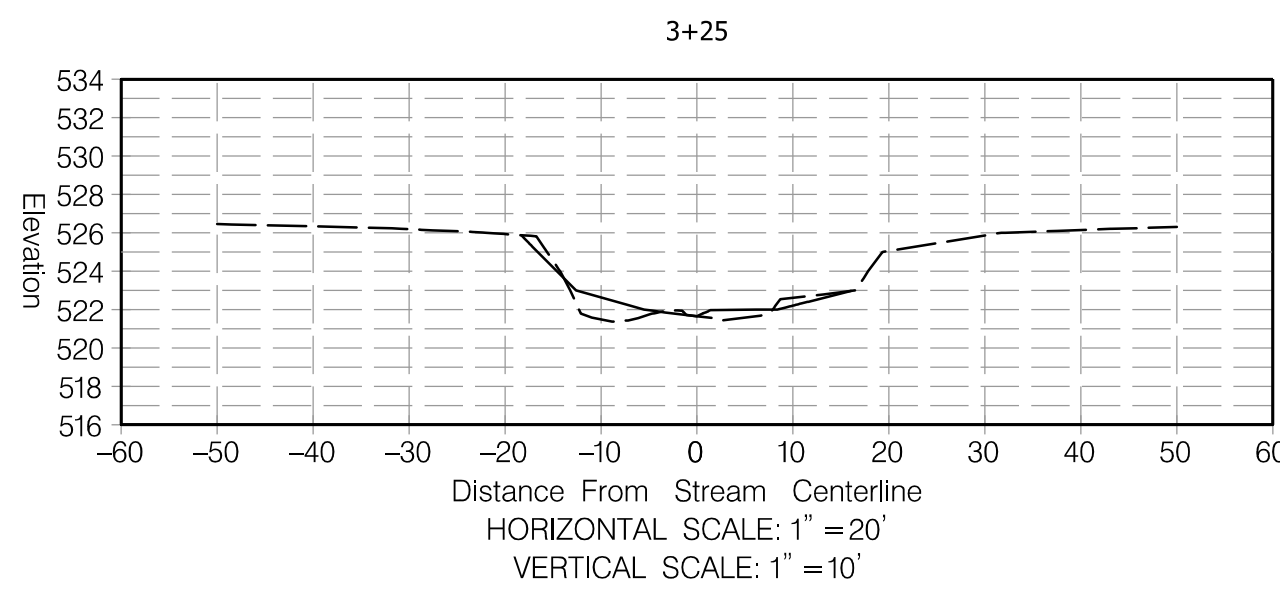
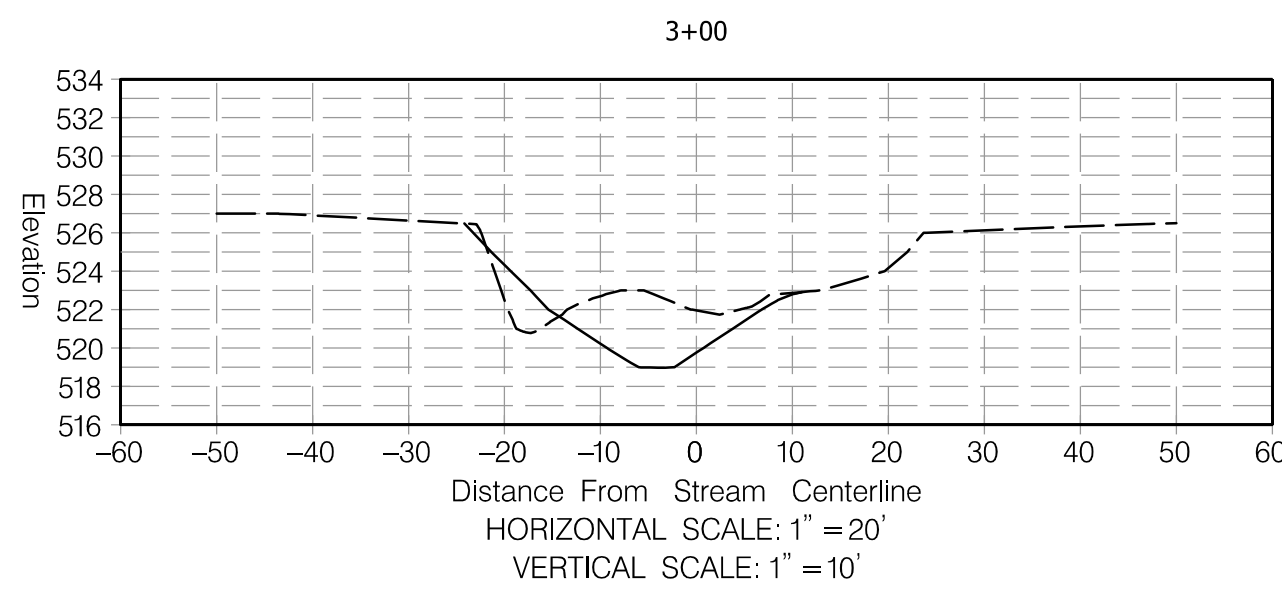
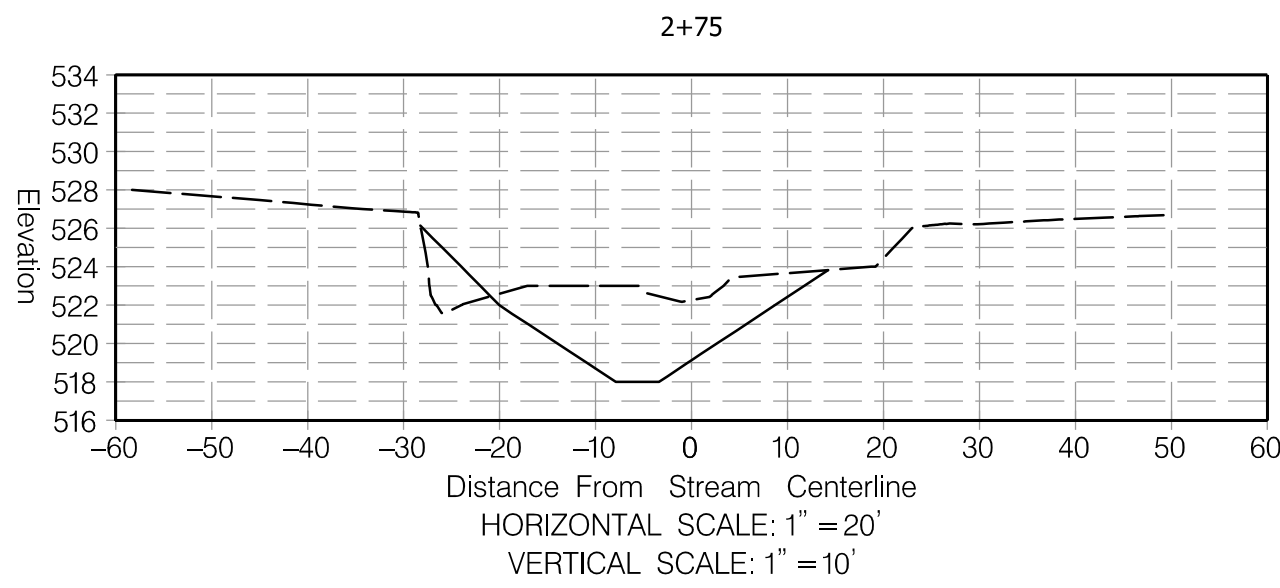
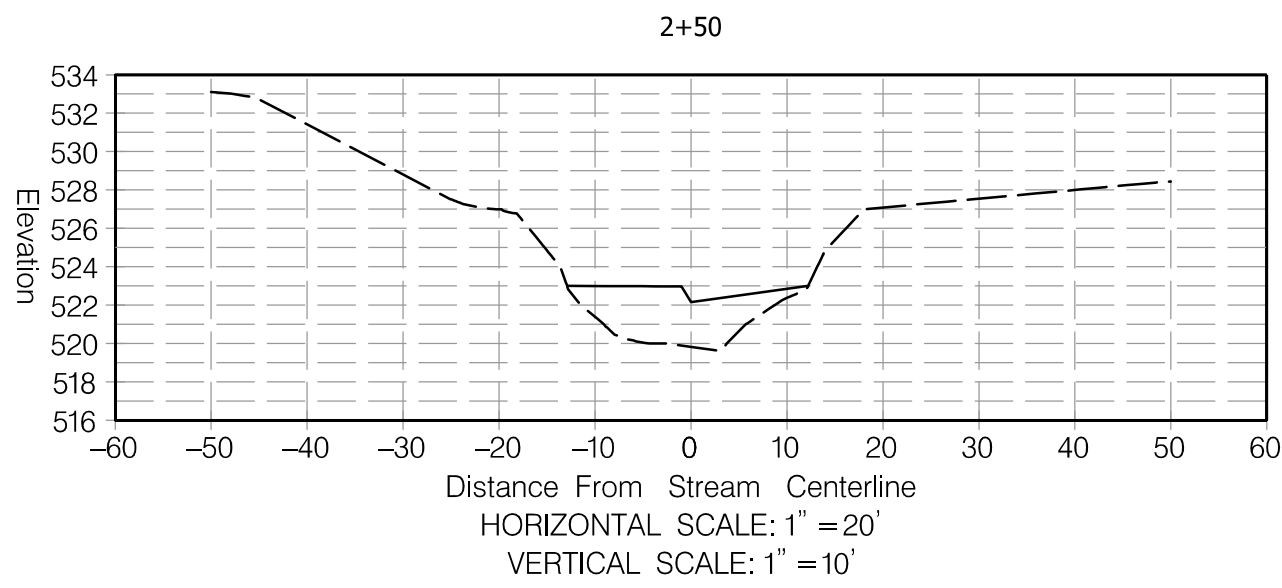
Project No. : 509132 SHEET 10 of 41

MODELNAME:\$MODELNAME\$

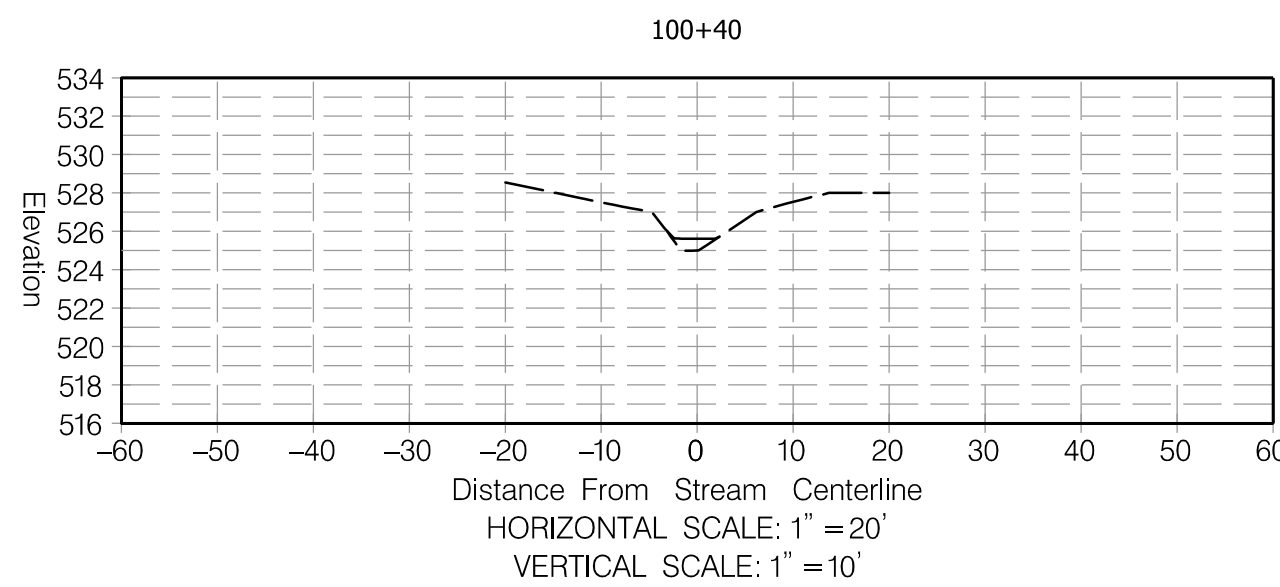


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MCDOT

LITTLE BENNETT CREEK



TRIBUTARY



PROPOSED GROUND
EXISTING GROUND

HC - 02

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED
BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

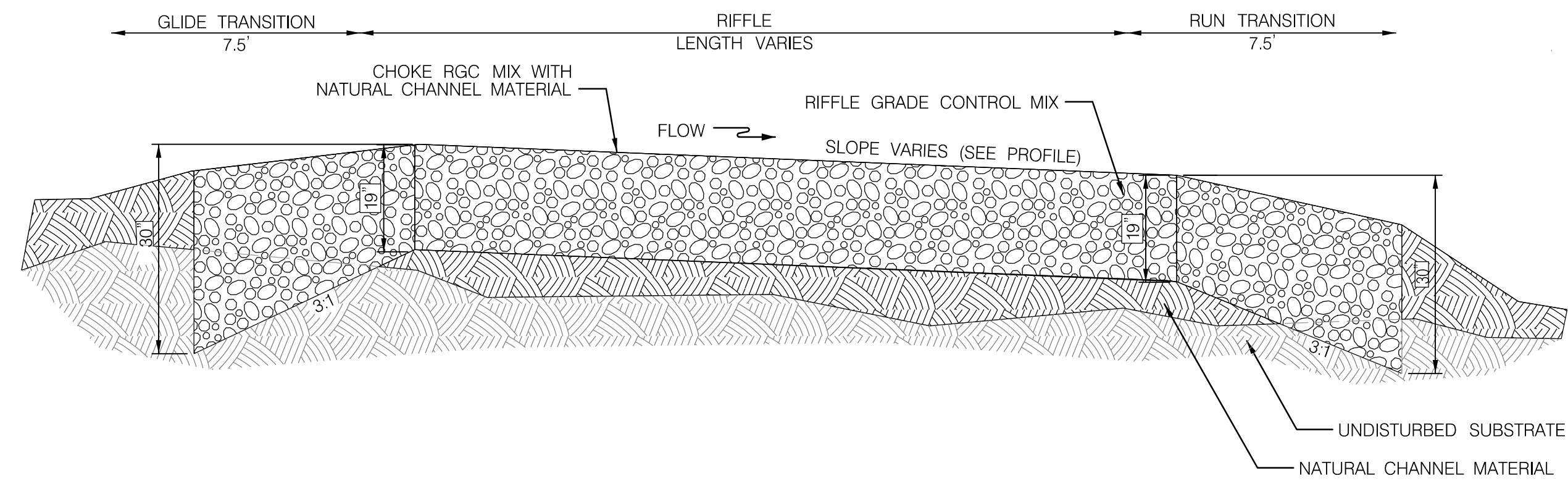
Chief, Division of Transportation Engineering

Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION CROSS SECTIONS

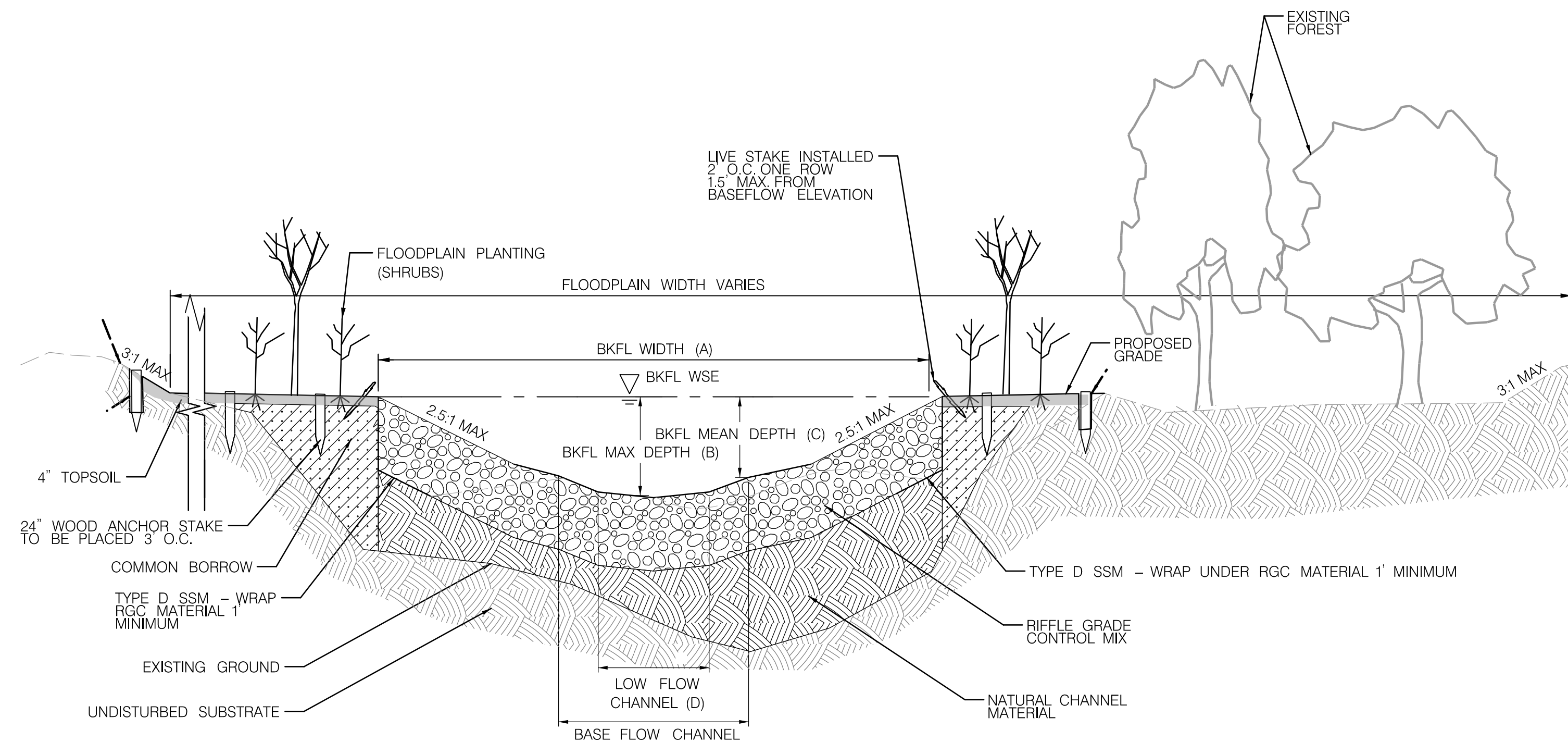
Project No. : 509132 SHEET 11 of 41

MODELNAME:\$MODELNAME\$



NOTES:

1. CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF FEATURES VARY. SEE CROSS-SECTIONS AND PROFILES FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE.
2. SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACES. RIPRAP MUST BE PLACED IN A MANNER TO PROMOTE INTERLOCKING AND PROVIDE SURFACE FLOW.
3. PLACE LARGEST OF RIFFLE GRADE CONTROL MIX MATERIAL AT TOP AND BOTTOM OF RIFFLE GRADE CONTROL TO HOLD PROFILE ELEVATIONS AND LOCK IN MATERIAL.
4. THALWEG MAY BE MODIFIED IN FIELD PER THE ENGINEER OR QAD.
5. SALVAGED NATURAL CHANNEL MATERIAL SHALL BE USED TO CHOKE INTERSTITIAL SPACES IN RIFFLE GRADE CONTROL MIX TO ENSURE SURFACE FLOW. IF SALVAGED NATURAL CHANNEL MATERIAL IS NOT AVAILABLE, USE FURNISHED NATURAL CHANNEL MATERIAL. FURNISHED NATURAL CHANNEL MATERIAL TO BE APPROVED BY THE ENGINEER OR QAD.
6. COMMON BORROW PER SHA SPECIFICATION 916.01 MAY BE USED AS FILL MATERIAL OUTSIDE THE BANKFULL WIDTH AND/OR ABOVE THE BANKFULL ELEVATION.
7. SEE CROSS SECTIONS AND PROFILES FOR PROPOSED GRADES.
8. THE CROSS SECTIONAL ELEVATIONS OF THE RIFFLE GRADE CONTROL FEATURES ARE MEASURED FROM THE TOP OF THE RIFFLE GRADE CONTROL MIX AND DO NOT INCLUDE ANY NATURAL CHANNEL MATERIAL THAT IS PLACED OVER THE STRUCTURE.



PROFESSIONAL CERTIFICATION

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BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

[illegible]

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section _____ Date _____
APPROVED

Chief, Division of Transportation Engineering

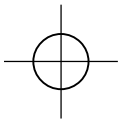
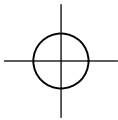
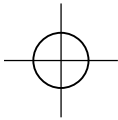
Designed by: _____ Drawn by: _____ Checked by: _____

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION DETAILS

Project No. : 509132 SHEET 12 of 41

SD-01

04:57 PM
Friday, May 17, 2024
111495 Burnt Hill Road Bridge.Stantec\Mapping\CADD\pSD-0001_BurntHillIR4.dgn



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Friday, May 17, 2024
\\02037-574 MCDOT 1111495 Burnt Hill Road Bridge.Stantec\Mapping\CADD\p5D-D003_BurntHillRd.dgn

PROFESSIONAL CERTIFICATION

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LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
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100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

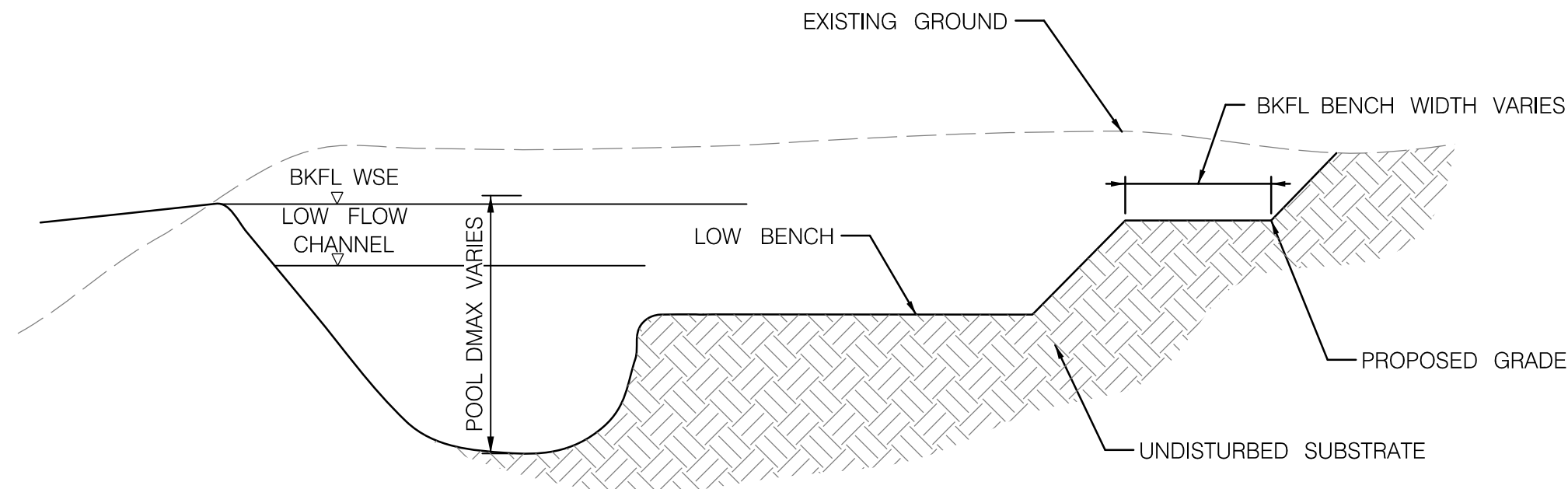
NO.	REVISION	DATE	BY

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		
RECOMMENDED FOR APPROVAL		
Chief, Design Section APPROVED		Date
Chief, Division of Transportation Engineering		Date
Designed by:	Drawn by:	Checked by:

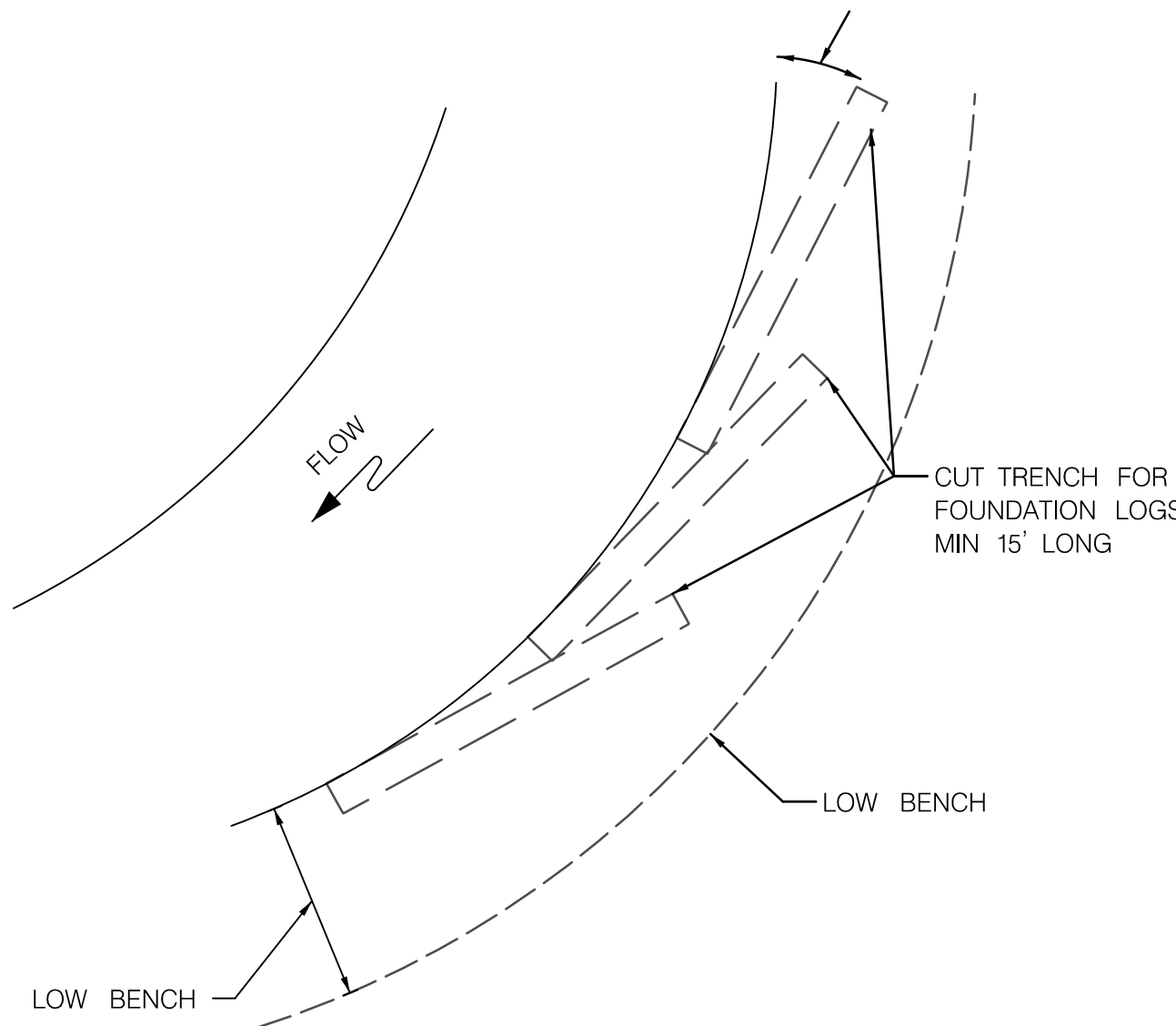
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION DETAILS

Project No. : 509132 SHEET 14 of 41

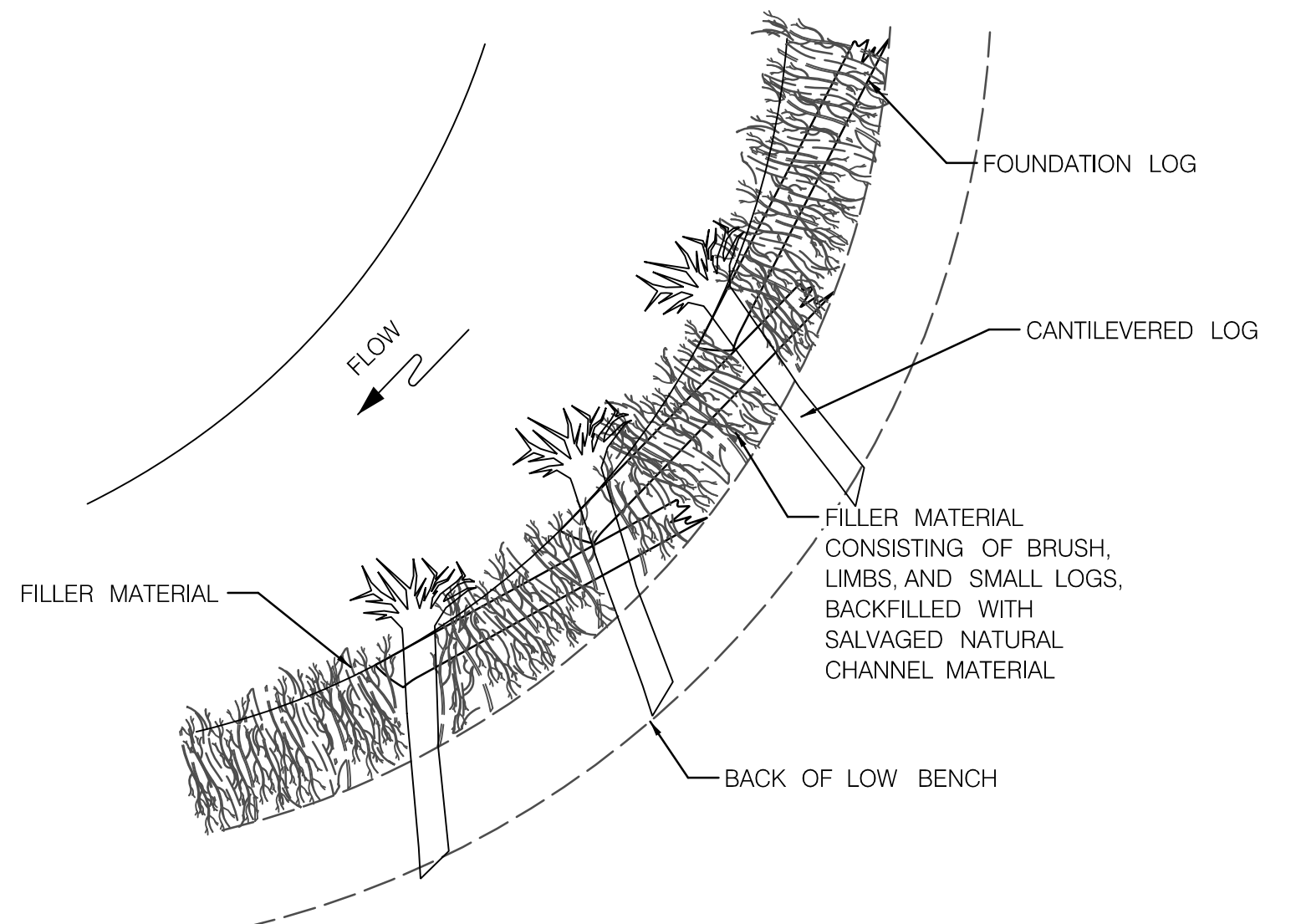
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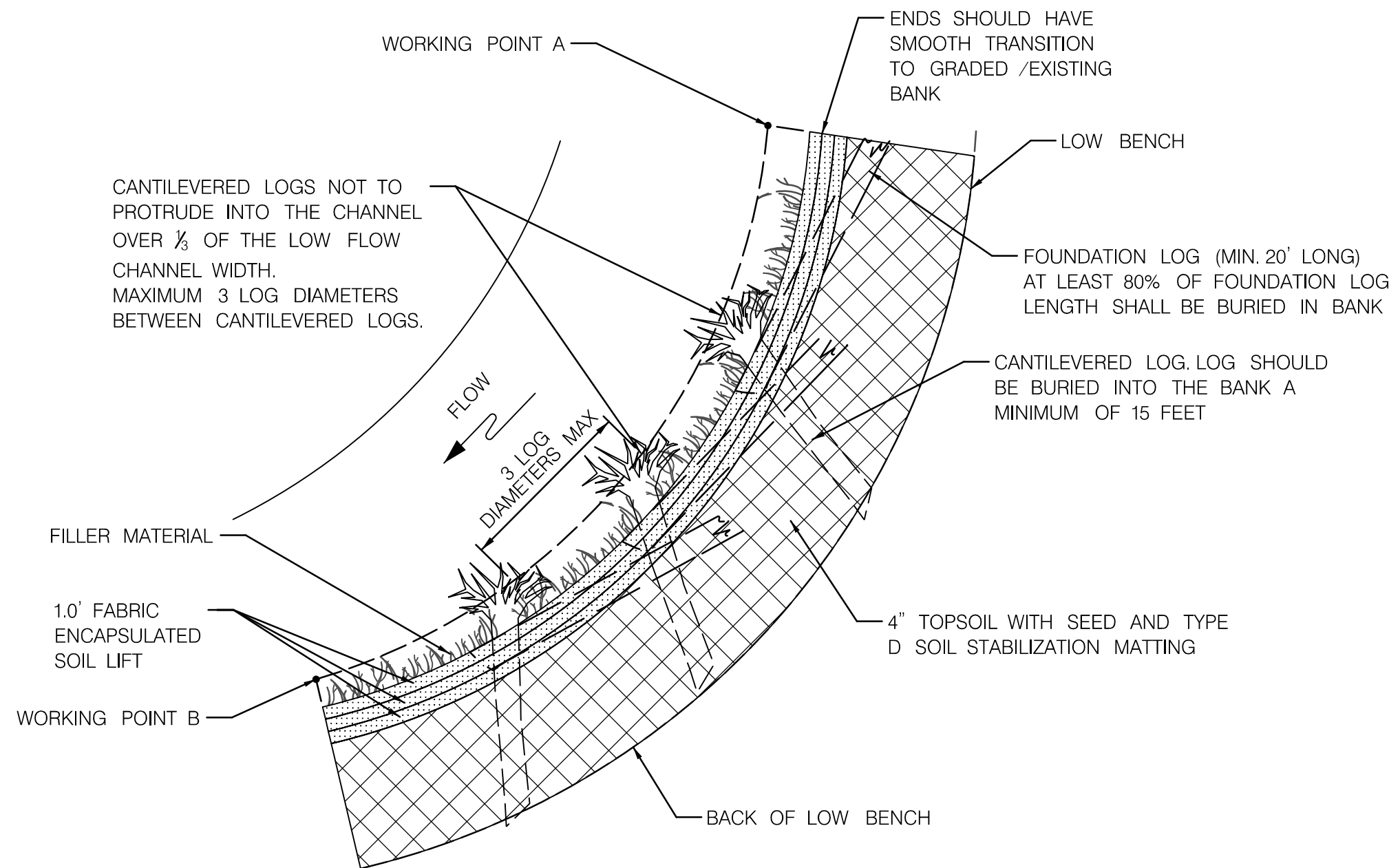
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NOT TO SCALE



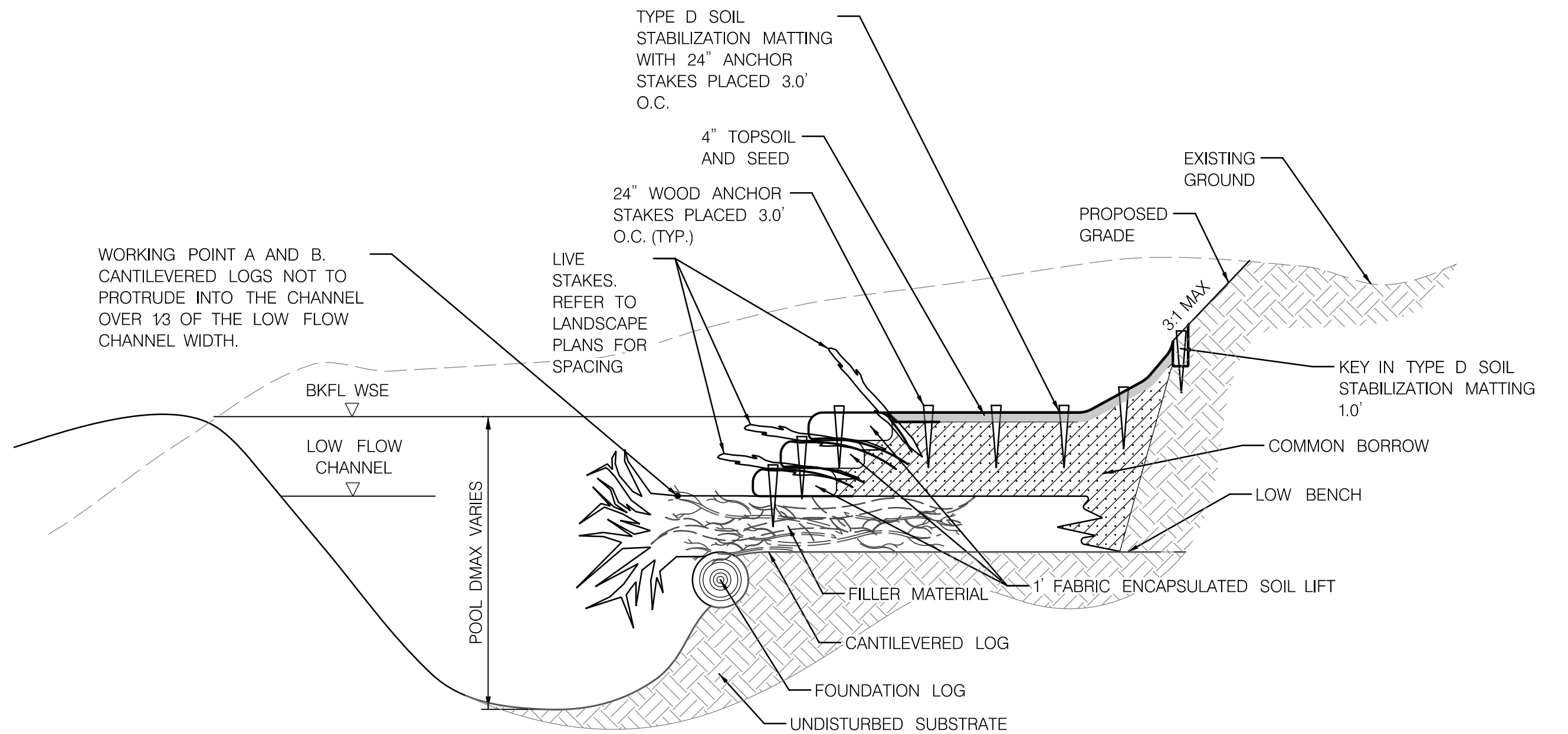
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NOT TO SCALE



TOE LOG (TL) – CONSTRUCTION PHASE 3 – PLAN VIEW
NOT TO SCALE



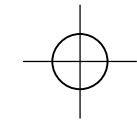
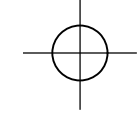
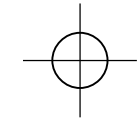
TOE LOG (TL) – CONSTRUCTION PHASE 4 – PLAN VIEW
NOT TO SCALE



TOE LOG (TL) – CONSTRUCTION PHASE 4 – SECTION VIEW
NOT TO SCALE

- NOTES:
1. THE TOE LOG STRUCTURE IS TO BE CONSTRUCTED UNDER THE DIRECT SUPERVISION OF AND/OR SUBJECT TO THE APPROVAL OF THE ENGINEER OR QAD.
 2. HARVEST WOODY MATERIAL FROM TREES THAT WILL BE REMOVED ON-SITE, WHERE POSSIBLE. THE LENGTH OF CANTILEVERED LOG AND FOUNDATION LOG WILL VARY DEPENDING ON THE DISTANCE COVERED BY THE PROPOSED FILL SLOPE.
 3. FILLER MATERIAL SUCH AS BRUSH, TREE TOPS, AND BRANCHES MAY HAVE DIAMETERS RANGING FROM 2"-8".
 4. FOUNDATION LOGS WILL HAVE A DIAMETER OF 12"-18" AND BE A MINIMUM OF 15' IN LENGTH WITH NO ROOT MASS. FOUNDATION LOGS WILL BE ORIENTED IN THE DOWNSTREAM DIRECTION WITH AN ANGLE FROM THE LOG TO THE BANK BETWEEN 20 AND 30 DEGREES.
 5. CANTILEVERED LOGS WILL HAVE A DIAMETER OF 15"-24" AND BE A MINIMUM OF 15' IN LENGTH WITH AN ATTACHED ROOT MASS. CANTILEVERED LOGS SHOULD BE INSTALLED WITH A MAJORITY OF THE LOG BELOW THE NORMAL BASE FLOW OR LOW FLOW WATER ELEVATION.
 6. BACKFILL THE GAPS BETWEEN THE FILLER MATERIAL UP TO THE ELEVATION OF THE TOP OF THE CANTILEVERED LOGS WITH SALVAGED NATURAL CHANNEL MATERIAL.
 7. USE SALVAGED NATURAL CHANNEL MATERIAL HARVESTED FROM ABANDONED CHANNEL. IF SALVAGED NATURAL CHANNEL MATERIAL IS NOT AVAILABLE, USE FURNISHED NATURAL CHANNEL MATERIAL. FURNISHED NATURAL CHANNEL MATERIAL TO BE APPROVED BY THE ENGINEER OR QAD.
 8. COMMON BORROW PER SHA SPECIFICATION 916.01 MAY BE USED AS FILL MATERIAL OUTSIDE THE BANKFULL WIDTH AND/OR ABOVE THE BANKFULL ELEVATION.

SD-03



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04:57 PM Friday, May 17, 2024 \\16-02037-501 MCDOT 1111495 Burnt Hill Road Bridge.Stantec\Mapping\CADD\PLD-POOL\BurntHillRoad.dgn

MODELNAME:\$MODELNAME\$

02-00024120
MONTGOMERY COUNTY, MARYLAND
L. 5618 F. 579

12-03588764
MONTGOMERY COUNTY,
MARYLAND
L. 6625 F. 830

12-00926436
MONTGOMERY COUNTY, MARYLAND
L. 14376 F. 497

02-00024665
MARYLAND NATIONAL CAPITAL
PARK & PLANNING COMMISSION
L. 3595 F. 294

3,500 SF REFORESTATION AREA		
AR	4	
QP	3	
QA	3	
AN	3	
PO	3	
CC	2	
CCe	2	

150 LF LIVE STAKES STA 2+00 TO 3+50		
SN	30	
CA	30	

4,177 SF REFORESTATION AREA		
AR	4	
QP	4	
QA	4	
AN	4	
PO	3	
CC	3	
CCe	2	

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SN	20	
CA	20	

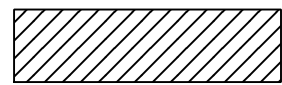
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SN	20	
CA	20	

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QP	3	
QA	3	
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PO	4	
CC	2	
CCe	2	

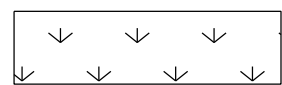
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CA	30	

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CCe	4	

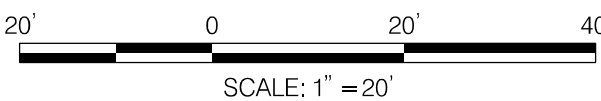
LEGEND



REFORESTATION AREA PLANTINGS



TURFGRASS ESTABLISHMENT



LS-01

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



**COASTAL
RESOURCES INC.**
Ecological Consultants

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

Date

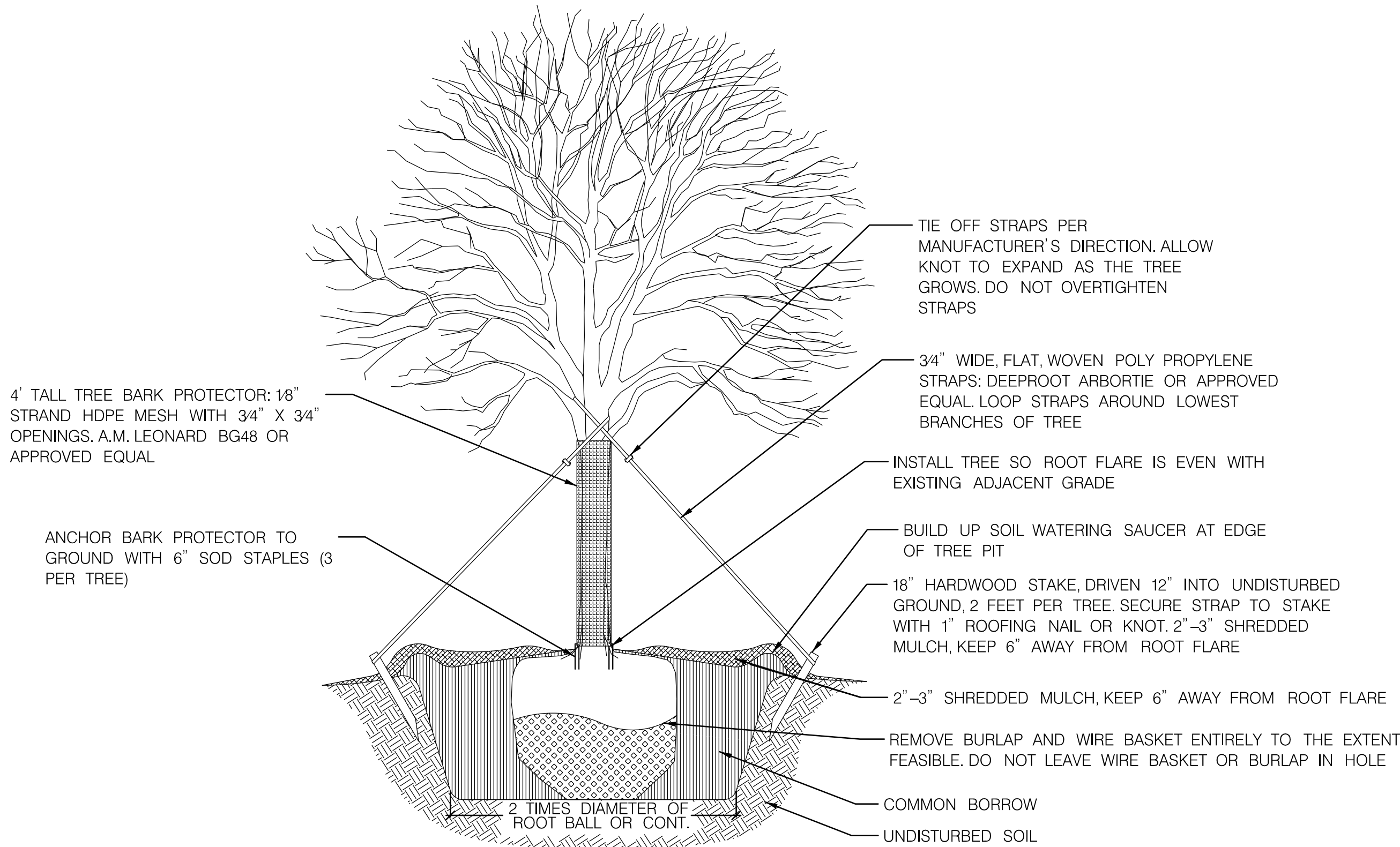
Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION LANDSCAPING PLAN

Project No. : 509132 SHEET 16 of 41

04:57 PM Friday, May 17, 2024 11:46 AM MCDOT 1111495 Burnt Hill Road Bridge, Stantec\Mapping\CADD\PLD-D001_Burnt Hill Rd.dgn

PLANT SCHEDULE						
TOTAL QUANTITY (EA)	OVERALL QTY TREES PER ACRE		250	SF	AC	
	80% CANOPY TREES, 20% UNDERSTORY TREES				18,214	0.42
	DESCRIPTION		ROOT	MINIMUM CONTAINER SIZE	SIZE	APPROXIMATE SPACING
	BOTANICAL NAME	COMMON NAME				
CANOPY TREES						
18	(AR) ACER RUBRUM	RED MAPLE	CONT	#7	7 FT. HT.	14 FT ON CENTER
16	(QP) QUERCUS PALUSTRIS	PIN OAK	CONT	#7	7 FT. HT.	14 FT ON CENTER
16	(QA) QUERCUS ALBA	WHITE OAK	CONT	#7	7 FT. HT.	14 FT ON CENTER
17	(AN) ACER NEGUNDO	BOX ELDER	CONT	#7	7 FT. HT.	14 FT ON CENTER
16	(PO) PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	CONT	#7	7 FT. HT.	14 FT ON CENTER
UNDERSTORY TREES						
11	(CC) CARPINUS CAROLINIANA	AMERICAN HORNBEAM	CONT	#5	5 FT. HT.	14 FT ON CENTER
10	(CCe) CERCIS CANADENSIS	EASTERN REDBUD	CONT	#5	5 FT. HT.	14 FT ON CENTER
LIVE STAKES						
100	(SN) SALIX NIGRA	BLACK WILLOW	LIVE STAKE	N/A	MIN 2' FT LONG	2 FT ON CENTER
100	(CA) CORNUS AMOMUM	SILKY DOGWOOD	LIVE STAKE	N/A	MIN 2' FT LONG	2 FT ON CENTER
QTY (SY)			SF	AC		
230	TURFGRASS ESTABLISHMENT		2070	0.05		



DECIDUOUS TREE PLANTING WITH DEER PROTECTION (M-NCPPC DETAIL No. 701)
NOTES:
NOT TO SCALE

1. STAKES AND WIRES MUST BE REMOVED 12 MONTHS AFTER PLANTING.
2. PLANTING HOLE SHALL BE DUG BY BACKHOE OR OTHER MACHINE AND FINISHED BY HAND.
3. IF SURROUNDING SOIL IS COMPACTED AS DETERMINED BY THE ENGINEER OR QAD, AN AREA UP TO 5 TIMES THE DIAMETER OF THE ROOT MASS SHALL BE EXCAVATED OR ROTOTILLED TO A 1' DEPTH AND SOIL SHALL BE AMENDED.
4. PRUNE ONLY DEAD, DECAYING, BROKEN, CROSSING OR INWARD GROWING BRANCHES. NEVER DAMAGE OR CUT LEADER.

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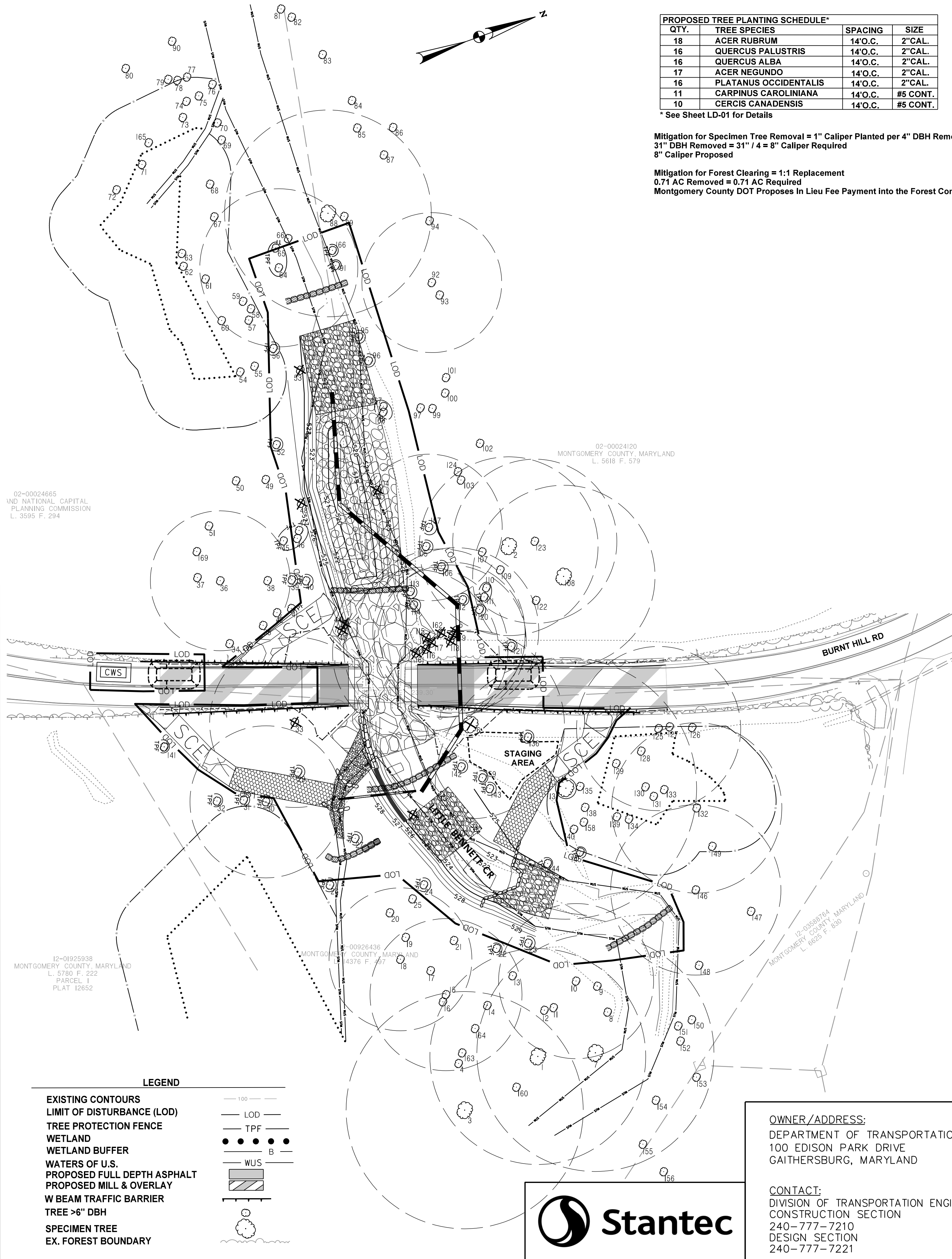
NO.	REVISION	DATE	BY		

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		
RECOMMENDED FOR APPROVAL		
Chief, Design Section APPROVED		Date
Chief, Division of Transportation Engineering		Date
Designed by:	Drawn by:	Checked by:

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
STREAM RESTORATION LANDSCAPING DETAILS

Project No. : 509132 SHEET 17 of 41

LD-01



PROPOSED TREE PLANTING SCHEDULE*			
QTY.	TREE SPECIES	SPACING	SIZE
18	ACER RUBRUM	14'O.C.	2" CAL.
16	QUERCUS PALUSTRIS	14'O.C.	2" CAL.
16	QUERCUS ALBA	14'O.C.	2" CAL.
17	ACER NEGUNDO	14'O.C.	2" CAL.
16	PLATANUS OCCIDENTALIS	14'O.C.	2" CAL.
11	CARPINUS CAROLINIANA	14'O.C.	#5 CONT.
10	CERCIS CANADENSIS	14'O.C.	#5 CONT.

* See Sheet LD-01 for Details

Mitigation for Specimen Tree Removal = 1" Caliper Planted per 4" DBH Removed
31" DBH Removed = 31" / 4 = 8" Caliper Required
8" Caliper Proposed

Mitigation for Forest Clearing = 1:1 Replacement
0.71 AC Removed = 0.71 AC Required
Montgomery County DOT Proposes In Lieu Fee Payment into the Forest Conservation Fund

TREE PROTECTION PLAN			
Replacement of Bridge M-0157X01 on Burnt Hill Road		CP 509132 6/25/2024	
*All not pruning shall be done to a maximum depth of 4"		Note: Refer to Tree Protection Requirements for the Department of Transportation for Standard Tree Protection Measures	
DBH = diameter (in.) at breast height (4.5 ft above ground)			
TREE NUMBER	SPECIES	DBH	RECOMMENDATIONS
1	Juglans nigra	25.5	
2	Liriodendron tulipifera	29.4	
3	Liriodendron tulipifera	39	
4	Liriodendron tulipifera	38	
5	Platanus occidentalis	27.3	Remove: Tree within area of grading and wingwall construction.
6	Platanus occidentalis	31	Remove: Tree within area of grading.
7	Platanus occidentalis	39	
8	Acer negundo	6	
9	Acer negundo	7.8	
10	Juglans nigra	25.5	
11	Juglans nigra	8	
12	Acer negundo	6	
13	Liriodendron tulipifera	45.5	Tree Protection Fence
14	Acer negundo	7.2	
15	Liriodendron tulipifera	25	
16	Liriodendron tulipifera	30	
17	Acer negundo	9	
18	Juglans nigra	23.5	
19	Acer negundo	7	
20	Juglans nigra	20.2	
21	Alnus incana	8.5	
22	Liriodendron tulipifera	33	Tree Protection Fence
23	Liriodendron tulipifera	35	Tree Protection Fence
24	Juglans nigra	15.5	Tree Protection Fence
25	Juglans nigra	6	Tree Protection Fence
26	Juglans nigra	18.7	Tree Protection Fence
27	Acer negundo	6.4	Tree Protection Fence
28	Juglans nigra	16	Remove: Tree within stream restoration grading.
29	Juglans nigra	15	Tree Protection Fence
30	Juglans nigra	25	Tree Protection Fence
31	Juglans nigra	15	Tree Protection Fence
32	Acer negundo	9	Tree Protection Fence
33	Platanus occidentalis	26.28.27	Remove: Tree within area of grading and wingwall construction.
34	Juglans nigra	33	Tree Protection Fence along edge of LOD.
35	Juglans nigra	7	Tree Protection Fence along edge of LOD.
36	Juglans nigra	23	Tree Protection Fence
37	Liriodendron tulipifera	6	
38	Juglans nigra	14.8	
39	Juglans nigra	7	Tree Protection Fence
40	Juglans nigra	10	Tree Protection Fence
41	Juglans nigra	7	Tree Protection Fence along edge of LOD.
42	Juglans nigra	7	Tree Protection Fence along edge of LOD.
43	Juglans nigra	10	Remove: Tree within area of grading.
44	Juglans nigra	7	Remove: Tree within area of grading.
45	Juglans nigra	6	Tree Protection Fence
46	Juglans nigra	14	Tree Protection Fence
47	Juglans nigra	14	Tree Protection Fence
48	Juglans nigra	10.4	Remove: Tree within area of grading.
49	Juglans nigra	8	
50	Juglans nigra	14	
51	Liriodendron tulipifera	15.7	
52	Juglans nigra	17	Tree Protection Fence
53	Juglans nigra	9.8	Remove: Tree within area of stream grading.
54	Juglans nigra	16	
55	Juglans nigra	10.7	
56	Juglans nigra	10.5	Tree Protection Fence
57	Juglans nigra	8	
58	Juglans nigra	8	
59	Juglans nigra	7	
60	Juglans nigra	32	
61	Juglans nigra	9.5	
62	Juglans nigra	10	
63	Acer negundo	32	
64	Liriodendron tulipifera	26	Tree Protection Fence
65	Prunus serotina	8	Tree Protection Fence
66	Prunus serotina	9	
67	Juglans nigra	17	
68	Juglans nigra	9	
69	Juglans nigra	32	
70	Juglans nigra	7	
71	Juglans nigra	8.5	
72	Acer negundo	9	
73	Juglans nigra	13	
74	Acer negundo	13	
75	Juglans nigra	32	
76	Juglans nigra	15	
77	Juglans nigra	6.5	
78	Juglans nigra	7	
79	Juglans nigra	6.5	
80	Acer rubrum	18	
81	Juglans nigra	32	
82	Juglans nigra	32	
83	Juglans nigra	32	
84	Juglans nigra	23	
85	Acer negundo	18	
86	Juglans nigra	20	
87	Juglans nigra	8	
88	Liriodendron tulipifera	34	
89	Alnus incana	12	
90	Juglans nigra	7	
91	Juglans nigra	12	Tree Protection Fence
92	Juglans nigra	23	
93	Acer negundo	12	
94	Juglans nigra	13	
95	Juglans nigra	8	
96	Juglans nigra	13.5	Tree Protection Fence
97	Juglans nigra	17	Tree Protection Fence
98	Juglans nigra	12	
99	Juglans nigra	14	
100	Juglans nigra	15.5	
101	Juglans nigra	15.5	
102	Juglans nigra	13	
103	Juglans nigra	17	
104	Platanus occidentalis	17	Remove: Tree within stream restoration grading.
105	Juglans nigra	22	Tree Protection Fence
106	Juglans nigra	6.1	Tree Protection Fence
107	Juglans nigra	11	
108	Liriodendron tulipifera	30	
109	Acer negundo	10	Tree Protection Fence
110	Acer negundo	7.5	Tree Protection Fence
111	Prunus serotina	6.5	Tree Protection Fence
112	Prunus serotina	6.7.5	Tree Protection Fence
113	Juglans nigra	13	Tree Protection Fence
114	Prunus serotina	10	Tree Protection Fence
115	Acer rubrum	17	Remove: Tree within area of wingwall construction.
116	Platanus occidentalis	27	Remove: Tree within area of wingwall construction.
117	Platanus occidentalis	20	Remove: Tree within area of wingwall construction.
118	Platanus occidentalis	25	Remove: Tree within area of grading and wingwall construction.
119	Platanus occidentalis	24	Remove: Tree within area of grading and wingwall construction.
120	Prunus serotina	6	Tree Protection Fence
121	Liriodendron tulipifera	16	Tree Protection Fence
122	Acer negundo	8	
123	Liriodendron tulipifera	27	
124	Juglans nigra	15.5	
125	Liriodendron tulipifera	27	
126	Liriodendron tulipifera	12	
127	Carpinus caroliniana	10	
128	Juglans nigra	15	
129	Acer negundo	13	
130	Acer negundo	10	
131	Acer negundo	10	
132	Liriodendron tulipifera	28	
133	Acer negundo	11	
134	Juglans nigra	12	
135	Acer negundo	11	Tree Protection Fence
136	Juglans nigra	16	
137	Juglans nigra	43	Tree Protection Fence
138	Juglans nigra	8	
139	Juglans nigra	13	
140	Carpinus caroliniana	8	
141	Acer negundo	10	
142	Acer negundo	6	Tree Protection Fence
143	Acer negundo	8	Tree Protection Fence
144	Platanus occidentalis	20	Tree Protection Fence
145	Juglans nigra	18	
146	Liriodendron tulipifera	13.28.27	Tree Protection Fence
147	Carya tomentosa	11.5	
148	Juglans nigra	12.5	
149	Prunus serotina	9	
150	Acer rubrum	9.5	
151	Acer rubrum	10.9.5	
152	Nyssa sylvatica	16.5	
153	Carya tomentosa	14.8	
154	Acer rubrum	17.5	
155	Acer rubrum	11	
156	Fagus grandifolia	14	
157	Liriodendron tulipifera	24.1	Tree Protection Fence
158	Carpinus caroliniana	7	
159	Liriodendron tulipifera	20.5	Tree Protection Fence
160	Prunus serotina	12.5	
161	Platanus occidentalis	27.4	Remove: Tree within area of wingwall construction.
162	Platanus occidentalis	27.7	Remove: Tree within area of wingwall construction.
163	Liriodendron tulipifera	18.5	
164	Prunus serotina	12	
165	Juglans nigra	13	
166	Juglans nigra	12.2	Tree Protection Fence
167	Liriodendron tulipifera	8	Tree Protection Fence
168	Liriodendron tulipifera	11	Tree Protection Fence
169	Liriodendron tulipifera	15	

Biodegradable Tree Shelter

AVAILABLE FROM:
EcoSpool LLC
2601 Emory Road
Building #5
Finksburg, MD 21048
Phone: 410-451-4400
www.ecospool.com
info@ecospool.com

TIE-OFF LOCATIONS

SOIL

INSTALLATION INSTRUCTIONS:

1. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS.
2. PLACE THE SHELTER AROUND THE TREE.
3. DRIVE LONGER STAKES INTO THE GROUND.
4. TIE-OFF ROPE ENDS AROUND TREE.

PRODUCT NOTES:

1. TREE SHELTER MUST BE MADE OF 100% BIODEGRADABLE MATERIALS.
2. TREE SHELTER SHOULD BE MADE OF HARDWOOD PLATE WOVEN TOGETHER WITH NATURAL ROPING.
3. TREE SHELTER MUST HAVE LONGER, HARDY STAKES FOR INSERTION INTO GROUND TO PROVIDE SUPPORT.

NOTES:

1. THE 1/4" OR LARGER ROPE (FIBER OR NYLON) PROVIDE SUFFICIENT PLANKS AROUND TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. WHERE SIGNIFICANT TREE BRANCHES EXIST WHICH PROHIBIT PLANK INSTALLATION, PLANKING SHALL EXTEND TO THE ELEVATION OF THE LOWEST BRANCH. REMOVING LOWER LIMBS MAY BE REQUIRED AS APPROVED BY THE MNCPPC CM AND URBAN FORESTER.

Tree Protection Zone DO NOT ENTER

The following activities are not allowed:

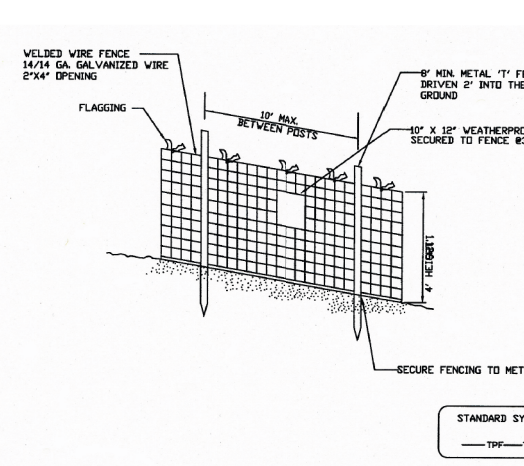
- ✗ Parking vehicles or equipment
- ✗ Storing construction materials
- ✗ Trenching, grading, tunneling or landscaping
- ✗ Removing or lowering tree protection fence

For more information call:



Tree Protection Fence Detail

Not to scale



- NOTES
1. Practice may be combined with sediment control fencing.
 2. Location and limits of fencing should be coordinated in field with arborist.
 3. Boundaries of protection area should be staked prior to installing protective device.
 4. Root damage should be avoided.
 5. Protection signage is required.
 6. Fencing shall be maintained throughout construction.

Montgomery County Planning Department • MNCPPC
MontgomeryPlanning.org

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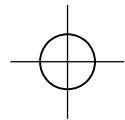
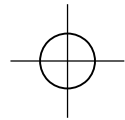
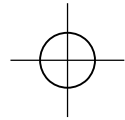
TREE SAVE PLAN

Project No. : 509132 SHEET 18 of 41



SCALE: 1"=30'

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- MONTGOMERY COUNTY GOVERNMENT
STANDARD EROSION AND SEDIMENT CONTROL NOTES
- THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY-EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.
 - THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
 - AT THE REQUIRED PRE-CONSTRUCTION MEETING.
 - FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
 - DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
 - PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
 - PRIOR TO FINAL ACCEPTANCE.
 - THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLANS AND CONSTRUCTION SEQUENCE. SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCE. SHALL INSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.
 - THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIAL ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.
 - THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.
 - FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER 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 OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

- ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
- THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVE (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAYBE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.
 - PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.
 - THE SITE PERMIT, WORK, MATERIALS, APPROVED SC&M PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.
 - SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
 - PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.
 - SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITH THIS TIME PERIOD AS WELL.
 - NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREA OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
 - THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.
 - FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXPECT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.
 - SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITH 20 FEET OF A SEDIMENT OR TRAP BASIN.
 - ALL INLETS IN NO-SUP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 28255 EXPIRATION DATE 06-30-2024



MONTGOMERY COUNTY GOVERNMENT
STANDARD EROSION AND SEDIMENT CONTROL NOTES

- THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.
 - ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND
 - VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIEMNT HAS ACCUMULATED TO THE POINT OF ONE-HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST-III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.
 - SEDIMENT REMOVED FROM TRAPSBASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN
 - ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITHIN A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
 - NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.
 - OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS. 26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:
 - PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON-SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR
 - THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR
 - THE PUMP INTAKE MAYBE FLOATED AND DISCHARGE INTO A DIRTY BAG (12 OZ. NON-WOVEN FABRIC), OR APPROVE EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.
- REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.
- THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.
 - TOPSOIL MUST BE APPLIED TO ALL PREVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE "STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS"

STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS
DEFINITION

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

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

- SOIL PREPARATION
 - TEMPORARY STABILIZATION
 - 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.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THESE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL pH BETWEEN 6.0 AND 7.0
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (ppm).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - 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.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATIONS. 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 LOOSEN AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- 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.
- 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.
- TOPSOILING IS LIMITED TO AREAS HAVING 2:1 FOR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANTS GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDER, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PART SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SLEDGE, POISON IVY, THISTLE OR OTHER AS SPECIFIED
 - TOPSOIL SUBSTITUTE OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST 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)

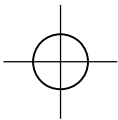
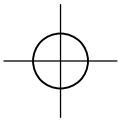
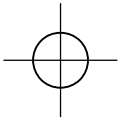
- SOIL TEST MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
- FERTILIZERS MUST BE UNIFORM IN COMPOSITIONS, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROVAL AUTHORITY. FERTILIZER MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICATION LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- 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 FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
- 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.
- WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONE/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

ESC-01

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
EROSION AND SEDIMENT CONTROL NOTES

Project No. : 509132 SHEET 19 of 41

MODELNAME: \$MODELNAME\$



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SEQUENCE OF CONSTRUCTION NOTES:

1. PRIOR TO CLEARING OF TREES,INSTALLING SEDIMENT CONTROL MEASURES,OR GRADING,A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON SITE WITH MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240)777-0311 (48 HOURS NOTICE) AND THE MNCPPC PLANNING DEPARTMENT, PLANS ENFORCEMENT INSPECTOR (301)495-1550 (48 HOURS NOTICE),THE OWNERS REPRESENTATIVE, AND THE SITE ENGINEER.IN ORDER FOR THE MEETING TO OCCUR,THE APPLICANT MUST PROVIDE ONE PAPER SET OF APPROVED SEDIMENT CONTROL PLANS TO THE MCDPS SEDIMENT CONTROL INSPECTOR AT THE PRECONSTRUCTION MEETING. IF NO PLANS ARE PROVIDED,THE MEETING SHALL NOT OCCUR AND WILL NEED TO BE RESCHEDULED PRIOR TO COMMENCING ANY WORK.
2. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES,INSTALLATION OF SEDIMENT CONTROL MEASURES,CONSTRUCTION OR OTHER LAND DISTURBING ACTIVITIES.
3. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR CERTIFYING THAT THE LIMITS OF DISTURBANCE AND TREE PROTECTION MEASURES ARE CORRECTLY MARKED AND INSTALLED PRIOR TO COMMENCING ANY CLEARING.

EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION (APPROX. XX WEEKS)

1. CLEAR AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.
2. INSTALL SEDIMENT CONTROL DEVICES.
3. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED,THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING,GRUBBING,OR GRADING.
4. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM MCDPS INSPECTOR,PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL DEVICE.
5. INSTALL PORTABLE VARIABLE MESSAGE SIGNS (PVMS). REFER TO MOT PLANS.
6. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND CLEAR AND GRUB FOR PERIMETER SEDIMENT CONTROL DEVICES. CONDUCT CLEARING OPERATION IN SUCH A MANNER THAT ALL DISTURBED AREAS DRAIN TO THE EROSION AND SEDIMENT CONTROL MEASURES.
7. EXCAVATE AND INSTALL CLEARWATER STREAM DIVERSION,PUMPS,AND FILTER BAGS AS SHOWN ON THE ESC PLAN. REMOVE THE EXISTING BRIDGE AS INDICATED ON THE STRUCTURE PLAN.
8. CONDUCT EXCAVATION OPERATIONS FOR WINGWALLS,PROPOSED RIPRAP AND UNDERCUTTING REQUIRED FOR INSTALLATION OF PROPOSED BRIDGE.
9. CONSTRUCT BRIDGE ABUTMENTS.
10. CONSTRUCT BRIDGE SUPERSTRUCTURE.
11. REMOVE CLEARWATER STREAM DIVERSION PIPE ONCE IN-STREAM STRUCTURAL WORK IS COMPLETE.
12. INSTALL PUMP-AROUND AND PERFORM STREAM RESTORATION WORK AS SHOWN ON THE STREAM RESTORATION PLANS.
13. REMOVE PUMP-AROUND ONCE ALL IN-STREAM WORK IS COMPLETE.INSTALL TREES AND PLANTINGS FOR REFORESTATION AS SHOWN ON THE LANDSCAPE PLAN.STABILIZE ALL DISTURBED SIDE SLOPE AREAS WITH TOPSOIL,SEED AND MULCH.
14. PERFORM ROADWAY APPROACH WORK INCLUDING MILL & OVERLAY,STRIPING,AND TRAFFIC BARRIER INSTALLATIONS.
15. REMOVE SEDIMENT CONTROL DEVICES UPON FINAL APPROVAL BY THE MCDPS SEDIMENT CONTROL INSPECTOR AND STABILIZE AREAS DISTURBED BY THE ESC CONTROLS.REMOVE TEMPORARY TRAFFIC SIGNS AND REOPEN BURNT HILL ROAD.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY	

E-3 STANDARDS AND SPECIFICATIONS

FOR

SUPER SILT FENCE

Definition

A temporary barrier of woven geotextile over chain link fence used to intercept, retain, and filter sediment-laden runoff from disturbed areas.

Purpose

To intercept sediment-laden sheet flow runoff allowing the deposition of sediment transported from upslope. Super silt fence must not be used as a velocity check in swales or placed where it will intercept concentrated flow.

Conditions Where Practice Applies

Where the slope steepness or slope length criterion for silt fence cannot be met or where additional protection is warranted such as adjacent to wetlands, streams, or other sensitive areas. The use of super silt fence is based on the slope length and steepness of the contributing drainage area.

Design Criteria

Table E.3: Super Silt Fence Design Constraints

Average Slope Steepness	Maximum Slope Length	Maximum Super Silt Fence Length
Flatter than 10:1 (0 - <10%)	Unlimited	Unlimited
10:1 to 5:1 (10 - 20%)	200 feet	1,500 feet
<5:1 to 3:1 (>20 - 33%)	150 feet	1,000 feet
<3:1 to 2:1 (>33 - 50%)	100 feet	500 feet
Steeper than 2:1 (>50%)	50 feet	250 feet

1. Super silt fence should be placed on the contour. No section of super silt fence is to exceed a grade of 5% for a distance of more than 50 feet.
2. Super silt fence should be used with caution in areas where rocky soils may prevent trenching.
3. The use of super silt fence must conform to the design constraints listed in Table E.3 above.
4. Extend both ends of the silt fence a minimum five (5) feet horizontally upslope at 45 degrees to the main fence alignment to prevent runoff from going around the ends of the silt fence.

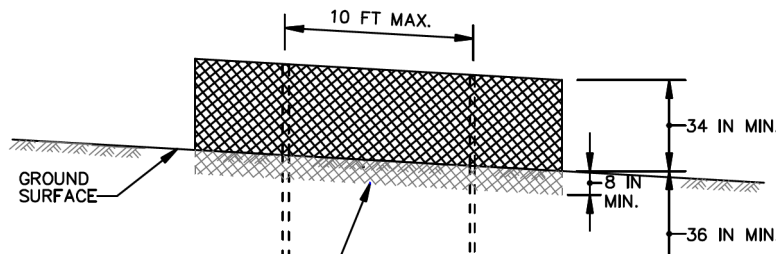
Maintenance

Accumulated sediment and debris must be removed when bulges develop in the fence or when sediment reaches 25 percent of the fence height. The geotextile must be replaced if torn. If undermining occurs, reinstall chain link fencing and geotextile.

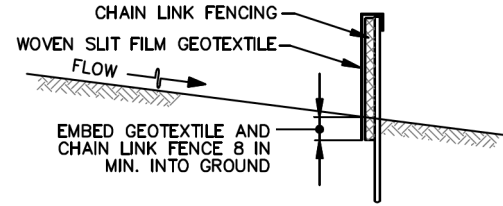
E.6

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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E.7

ESC-02

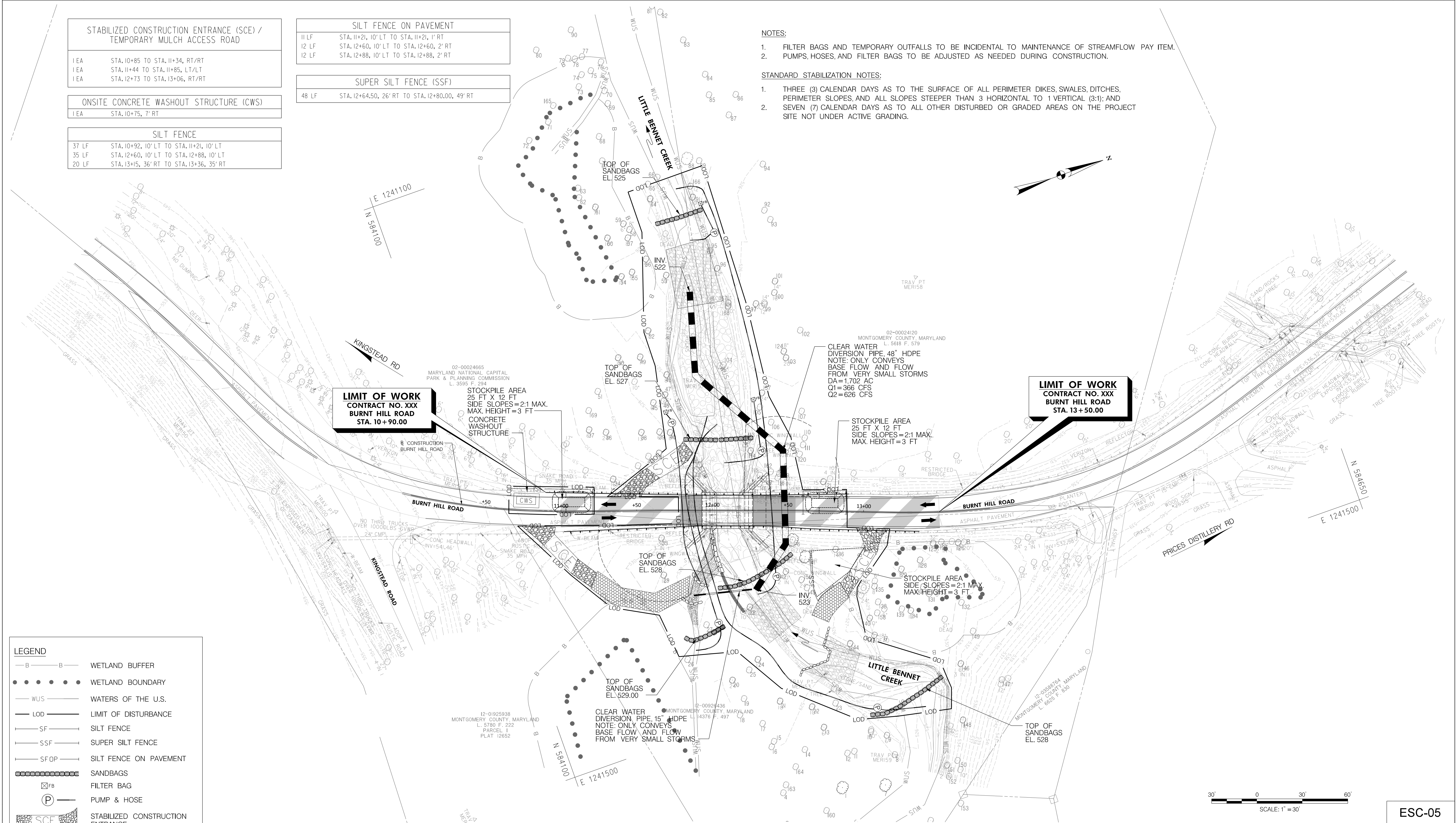
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
EROSION AND SEDIMENT CONTROL
NOTES & DETAILS

Project No. : 509132 SHEET 20 of 41

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LEGEND

—B—B—

WETLAND BUFFER

•••••

WETLAND BOUNDARY

—WUS—

WATERS OF THE U.S.

—LOD—

LIMIT OF DISTURBANCE

—SF—

SILT FENCE

—SSF—

SUPER SILT FENCE

—SFOP—

SILT FENCE ON PAVEMENT

SANDBAGS

FILTER BAG

PUMP & HOSE

STABILIZED CONSTRUCTION ENTRANCE

MULCH ACCESS ROAD

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 28255 EXPIRATION DATE 06-30-2024



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

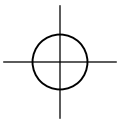
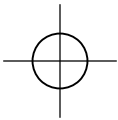
CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by: LA		Checked by: LA	
Drawn by: LA			

REPLACEMENT OF BRIDGE NO. M-0157x01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
EROSION AND SEDIMENT CONTROL
PLAN

ESC-05



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MAINTENANCE OF TRAFFIC REQUIREMENTS

1. THE CONTRACTOR SHALL REFER TO THE MONTGOMERY COUNTY TEMPORARY TRAFFIC CONTROL PLAN (TTCP) DRAWINGS. WORK ZONE SITUATIONS WHICH ARE NOT ADDRESSED IN MONTGOMERY COUNTY TTCP SHALL CONFORM TO THE GUIDELINES SET FORTH IN SECTION 6 OF THE 2011 "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MDMUTCD), MOST RECENT EDITION.
2. THE CONTRACTOR MUST HAVE A CERTIFIED TRAFFIC CONTROL MANAGER ON SITE DURING ALL PHASES OF INSPECTION AND CONSTRUCTION AT ALL TIMES.
3. EACH PHASE OF INSPECTION AND CONSTRUCTION, INCLUDING THE FOLLOW UP RESTORATION OPERATIONS, SHALL BE PROVIDED WITH APPROPRIATE WORK ZONE TRAFFIC CONTROLS.
4. ANY WORK SHALL BE RESTRICTED TO THE HOURS LISTED IN THE SPECIFICATIONS, MONDAY THROUGH FRIDAY. WORK ON HOLIDAYS AND WEEKENDS SHALL NOT OCCUR UNLESS AN EXEMPTION IS GRANTED IN WRITING BY THE COUNTY'S INSPECTOR.
5. CONSTRUCTION ACTIVITY, LOADING OR UNLOADING OF EQUIPMENT SHALL NOT BLOCK ANY TRAFFIC LANE OTHER THAN THOSE DELINEATED WITHIN THE WORK ZONE.
6. EXCLUSIVE OF EMERGENCY WORK, THE CONTRACTOR SHALL CONTACT OCCUPANTS OF ALL ADJOINING PROPERTIES AND INFORM THEM OF THE SCOPE AND THE TIMING OF CONSTRUCTION. A MINIMUM OF 24 HOURS NOTIFICATION SHALL BE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY ACTIVITY ON THE SITE.
7. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS UNLESS PERMISSION FOR CLOSURE IS GRANTED BY THE PROPERTY OWNER/MANAGER. HOWEVER, ACCESSIBILITY FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
8. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE 2011 MDMUTCD. ALL SIGNS, TRAFFIC DRUMS AND CONES SHALL BE FULLY REFLECTORIZED WITH HIGH INTENSITY, REFLECTIVE SHEETING AS PER THE MUTCD. TEMPORARY SIGNS SHALL BE FLUORESCENT ORANGE.
9. ALL WARNING SIGNS, UNLESS OTHERWISE SPECIFIED, SHALL BE A MINIMUM OF 48" X 48", BLACK SYMBOL OR LEGEND ON FLUORESCENT ORANGE BACKGROUND AND DIAMOND SHAPED. ALL WARNING SIGNS NOT APPLICABLE TO THE ACTUAL SITUATION SHALL BE REMOVED OR COVERED DURING NON-APPLICABLE PERIODS. ALL PORTABLE SIGNS SHALL BE MOUNTED A MINIMUM OF ONE (1) FOOT ABOVE THE LEVEL OF THE ROADWAY, WITH HIGHER MOUNTING HEIGHTS DESIRABLE.
10. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SIGNS IN GOOD CONDITION FOR THE DURATION OF THE PROJECT. ANY SIGNS THAT ARE DAMAGED BY THE CONTRACTOR'S CONSTRUCTION ACTIVITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL COVER ANY ADVANCE WARNING SIGNS THAT ARE NOT APPLICABLE DURING NON-WORKING HOURS AND UNCOVER WHEN APPLICABLE.
12. THE CONTRACTOR WILL NOT BE ALLOWED TO REMOVE OR DAMAGE ANY EXISTING LANDSCAPING UNLESS NOTED IN THE PLANS. ANY DAMAGED LANDSCAPING NOT AUTHORIZED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
13. IF ANY TEMPORARY TRAFFIC CONTROL SIGNS ARE TO BE PLACED ALONG A MDOT SHA ROADWAY OR WITHIN THE LIMITS OF AN INCORPORATED AREA, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AGENCY OF SIGNAGE TO BE INSTALLED.
14. DURING NON-WORK HOURS, THE CONTRACTOR SHALL ENSURE THAT THE BRIDGE IS INACCESSIBLE TO VEHICULAR, PEDESTRIAN AND CYCLIST TRAFFIC.
15. THE CONTRACTOR SHALL OBTAIN A TEMPORARY NOISE WAIVER FROM THE MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR ALL NIGHTTIME CONSTRUCTION ACTIVITIES.
16. NO CONSTRUCTION VEHICLES SHALL BE ALLOWED IN RESIDENTIAL STREETS.
17. ALL STAKEHOLDERS SHALL BE NOTIFIED PRIOR TO ROAD CLOSURE/CONSTRUCTION. ACCESS TO THE DRIVEWAY WEST OF THE BRIDGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. TEMPORARY CLOSURE OF DRIVEWAY SHALL BE COORDINATED WITH THE PROJECT ENGINEER.
18. FINAL VARIABLE MESS GE SIGN(S) MESSAGES ARE TO BE DETERMINED BY THE PROJECT ENGINEER.
19. PVMS SHALL REMAIN IN STRATEGIC LOCATIONS DURING ROAD CLOSURE/CONSTRUCTION WITH ADVANCE WARNING MESSAGE TO MOTORISTS.
20. FIXED BARRICADES SHALL EXTEND THE FULL WIDTH OF THE ROADWAY CLOSURE POINTS AND SHALL HAVE FLASHING WARNING LIGHTS.
21. TRAFFIC CONTROL DEVICES MUST BE IN COMPLIANCE WITH THE LATEST EDITION OF THE MD MUTCD AND THE MD SHA BOOK OF STANDARDS.
22. ALL WARNING SIGNS NOT IN USE SHALL BE FULLY COVERED WITH OPAQUE MATERIAL.

INSPECTOR AUTHORITY

1. THE COUNTY'S DEPARTMENT OF PERMITTING SERVICES (DPS) INSPECTOR HAS THE AUTHORITY TO MODIFY THE TTCP AS DEEMED NECESSARY. THE INSPECTOR HAS THE AUTHORITY TO ORDER THE CONTRACTOR TO STOP WORK AND VACATE THE PUBLIC RIGHT-OF-WAY IF THE TTCP IS NOT COMPLIED WITH.
2. THE IMPLEMENTATION DATE AND CONTINUANCE OF WORK ACTIVITIES MAY BE ALTERED AT THE DISCRETION OF THE COUNTY'S INSPECTOR IN THE EVENT OF CONFLICTS WITH PREVIOUSLY APPROVED OR EMERGENCY ACTIVITIES.

MISCELLANEOUS

1. HAZARDOUS MATERIALS SHALL NOT BE STORED WITHIN PUBLIC RIGHT-OF-WAY. NO MATERIALS OR EQUIPMENT SHALL BE STORED ON THE ROADWAY SURFACE OR SIDEWALK DURING NON-WORK PERIODS. ALL STORED MATERIALS AND EQUIPMENT SHALL BE SET BACK AT LEAST SIX (6) FEET BEHIND THE CURB ALONG A CLOSED SECTION ROADWAY AND AT LEAST TWELVE (12) FEET FROM THE EDGE OF AN OPEN SECTION ROADWAY.
2. AT THE COMPLETION OF WORK ACTIVITIES, CONDITIONS WITHIN THE PUBLIC SPACE SHALL BE FULLY RESTORED TO THOSE THAT EXISTED PRIOR TO THE WORK ACTIVITY.

CONTACT INFORMATION

1. THE CONTRACTOR SHALL ARRANGE AND HOST A PRE-PHASE TRAFFIC SWITCH MEETING AT LEAST TWO WEEKS PRIOR TO SWITCHING TRAFFIC. THE FOLLOWING OFFICES SHALL BE NOTIFIED OF THIS MEETING AND OF THE IMPENDING TRAFFIC SWITCH:
 - * MONTGOMERY COUNTY DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS AT 240-777-6000
 - * MONTGOMERY COUNTY TRANSPORTATION SYSTEMS ENGINEERING TEAM AT 240-777-2100
 - * MONTGOMERY COUNTY FIRE AND RESCUE, LOCAL FIRE DEPARTMENT CAPTAIN
 - * MONTGOMERY COUNTY POLICE, LOCAL TRAFFIC SERGEANT
 - * MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES, PERMIT INSPECTION SECTION AT 240-777-6300
 - * MONTGOMERY PUBLIC SCHOOLS, LOCAL DEPOT MANAGER
2. PRIOR TO ROAD CLOSURES, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING OFFICES A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE:
 - * MONTGOMERY COUNTY DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS AT 240-777-6000
 - * MONTGOMERY COUNTY EMERGENCY OPERATIONS CENTER AT 240-777-0751
 - * MONTGOMERY COUNTY POLICE, LOCAL TRAFFIC SERGEANT
 - * MONTGOMERY COUNTY TRANSPORTATION MANAGEMENT CENTER AT 240-777-2100
 - * MONTGOMERY COUNTY FIRE AND RESCUE, LOCAL FIRE DEPARTMENT CAPTAIN
 - * MONTGOMERY PUBLIC SCHOOLS, LOCAL DEPOT MANAGER
3. FIELD ASSISTANCE BY THE MCDOT, DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS IS AVAILABLE UPON REQUEST. CONTACT TRAFFIC ENGINEERING & OPERATIONS SECTION AT 240-777-6000.

SEQUENCE OF CONSTRUCTION FOR MAINTENANCE OF TRAFFIC

1. FOR LANE CLOSURES DURING PRE-BRIDGE RECONSTRUCTION WORK, USE MD STD 104.02-10 FOR FLAGGING OPERATIONS, MD STD 104.06-08 FOR ONE LANE ROAD (SIGNAL CONTROLLED) AND MD STD 104.00-11 (SECTION 9).
2. INSTALL PORTABLE VARIABLE MESSAGE SIGN (PVMS) 2 WEEKS BEFORE ROAD CLOSURE IN ACCORDANCE WITH MD STD 104.01-22.
3. INSTALL MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR DETOUR AND CLOSE BURNT HILL ROAD. ADJUST ALL PVMS TO LOCATION AS DETERMINED BY THE ENGINEER.
4. CONSTRUCT IMPROVEMENTS FOR ROADWAY AND BRIDGE.
5. AFTER COMPLETING THE CONSTRUCTION OF THE BRIDGE, REMOVE MAINTENANCE OF TRAFFIC CONTROL DEVICES ASSOCIATED WITH THE DETOUR AND OPEN BURNT HILL ROAD.
6. FOR LANE CLOSURES DURING POST-BRIDGE RECONSTRUCTION WORK, USE MD STD 104.02-10 FOR FLAGGING OPERATIONS, MD STD 104.06-08 FOR ONE LANE ROAD (SIGNAL CONTROLLED) AND MD STD 104.00-11 (SECTION 9).

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY	

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section APPROVED		Date	
Chief, Division of Transportation Engineering		Date	
Designed by:	JRGB	Drawn by:	JRGB
Checked by:	RJM		

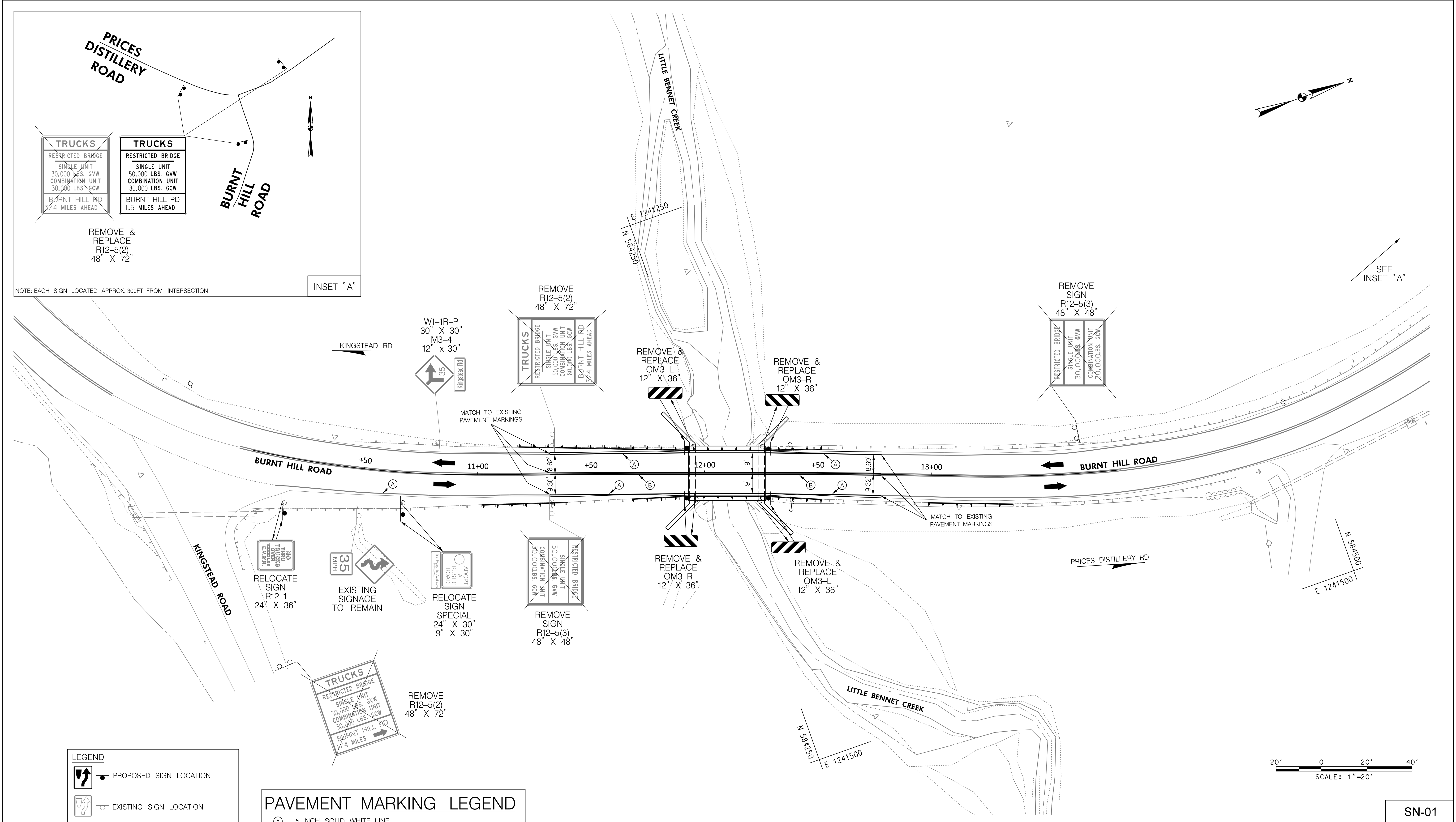
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

MAINTENANCE OF TRAFFIC
NOTES

Project No. : 509132 SHEET 24 of 41

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GAITHERSBURG, MARYLAND

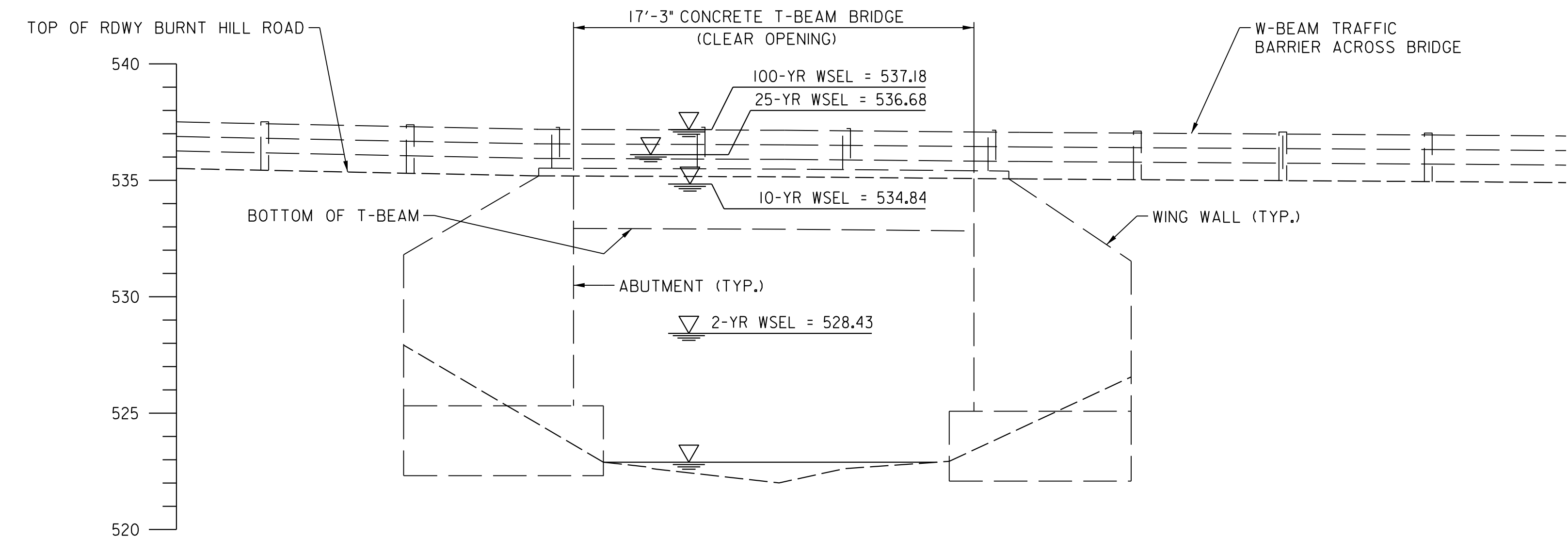
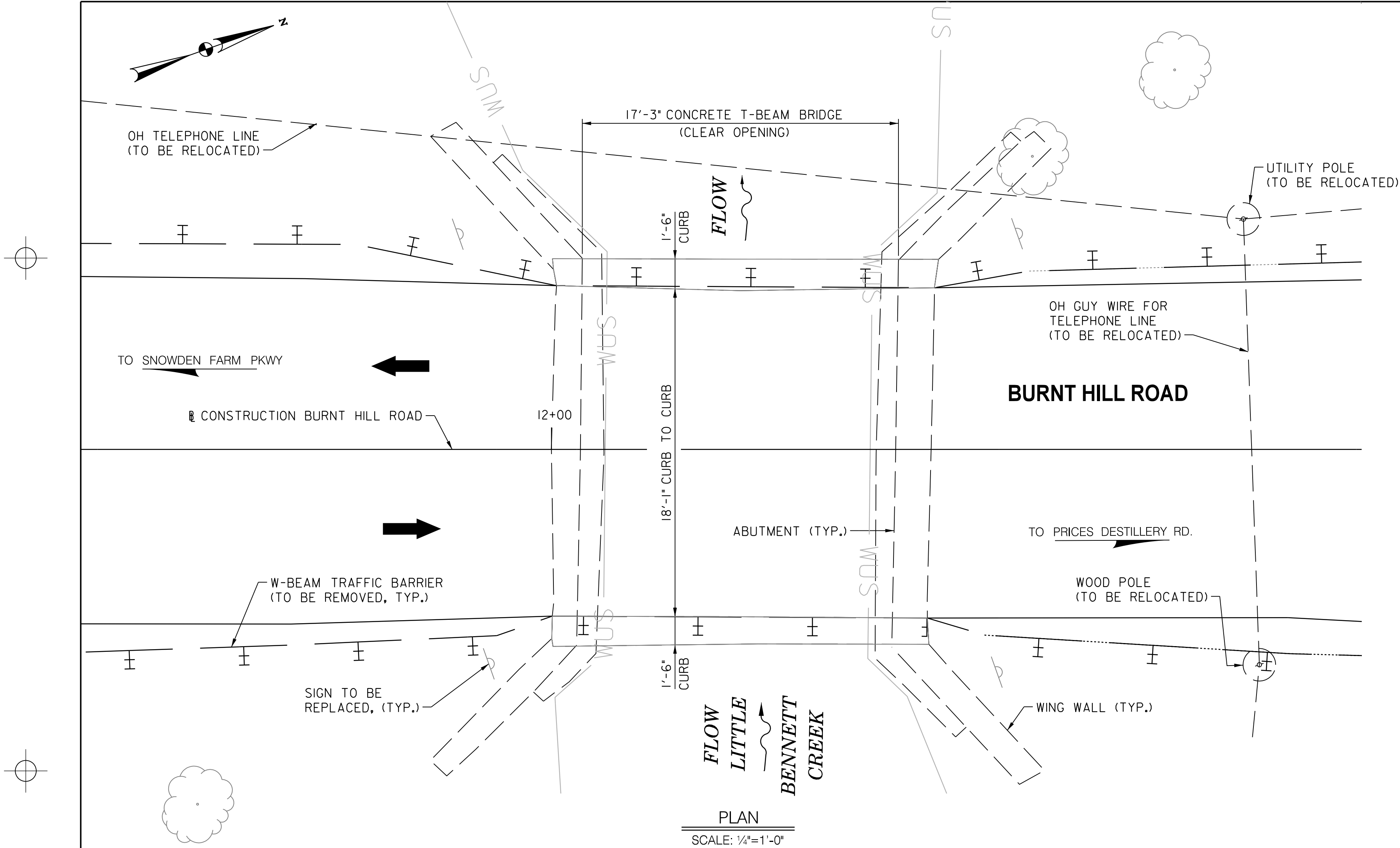
CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by: JRGB		Drawn by: JRGB	
Checked by: RJM			

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK
SIGNING AND PAVEMENT MARKING PLAN

Project No. : 509132 SHEET 26 of 41



SUPERSTRUCTURE
(LOOKING WEST)

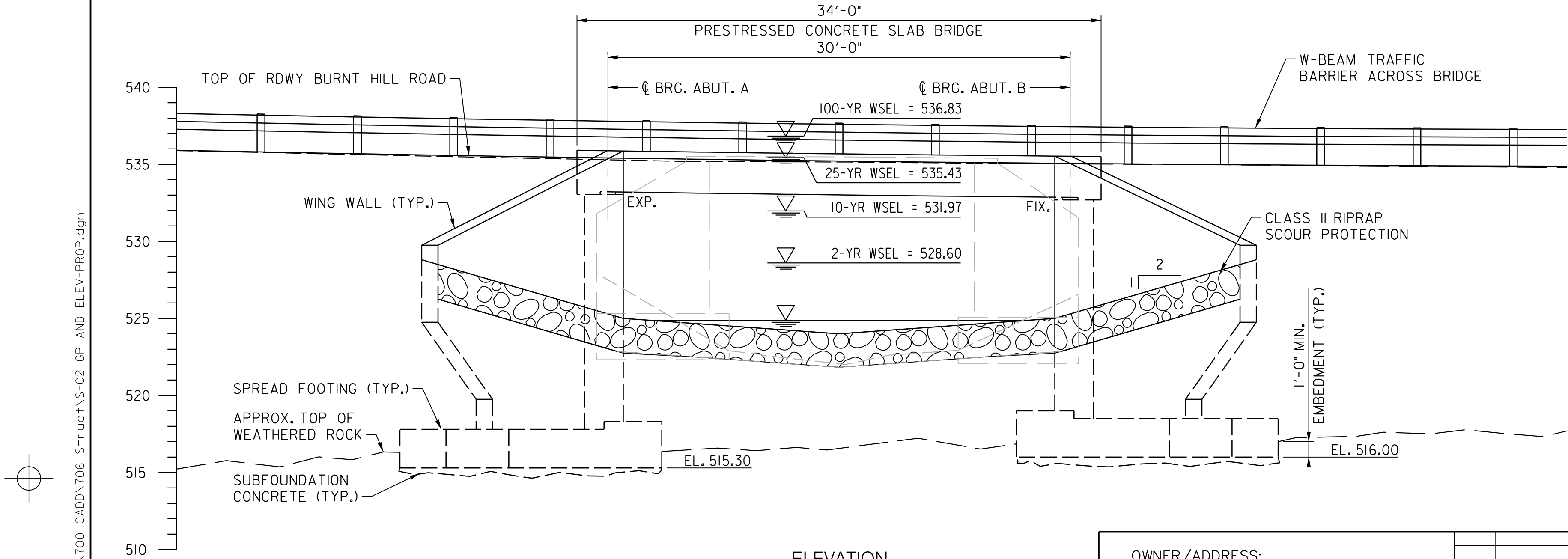
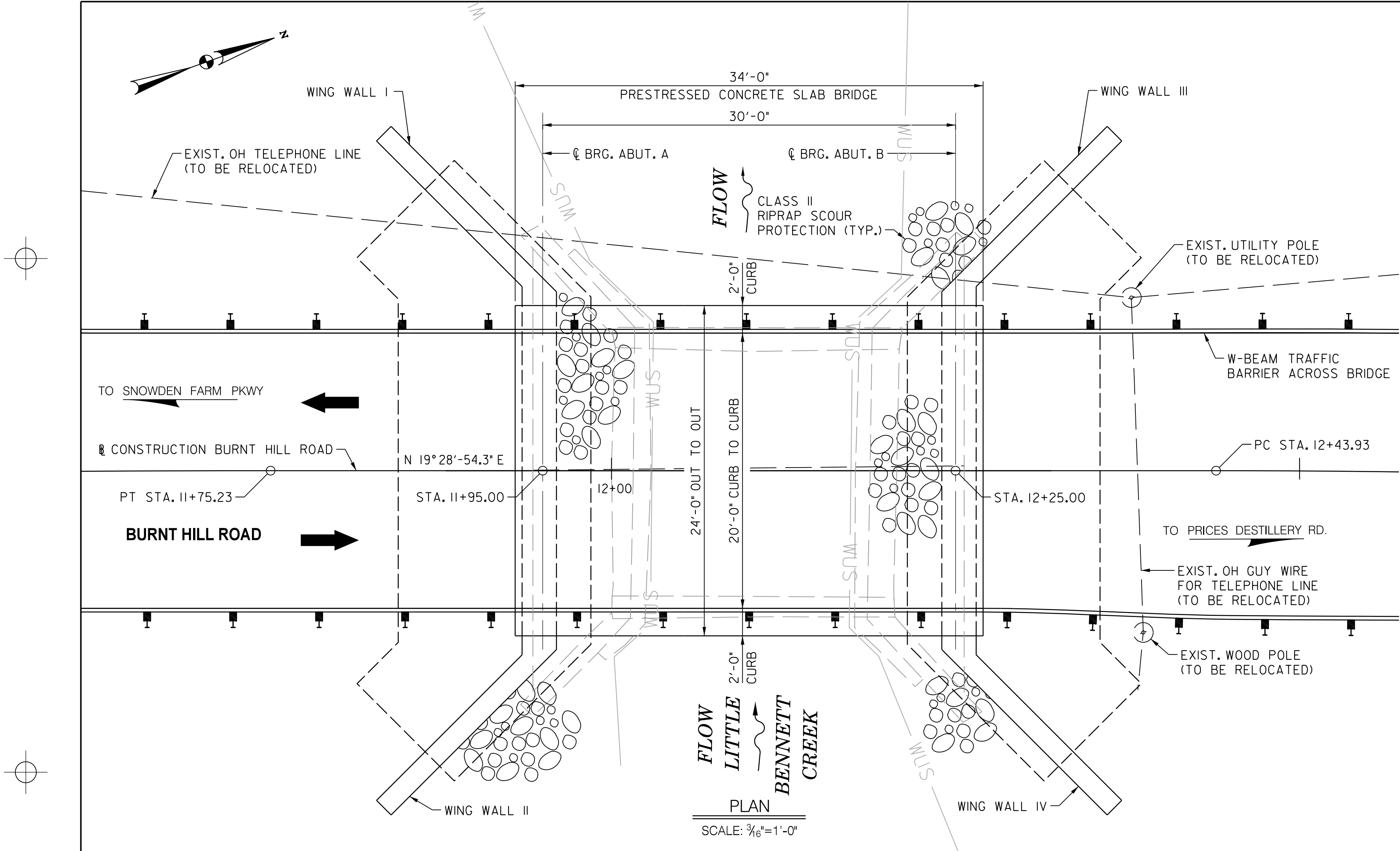


SOUTH ABUTMENT
(LOOKING SOUTHWEST)

EXISTING BRIDGE TO BE
REMOVED IN ITS ENTIRETY

S - 1

OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND				MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND				REPLACEMENT OF BRIDGE NO. M-0157X01 ON BURNT HILL ROAD OVER LITTLE BENNETT CREEK			
CONTACT: DIVISION OF TRANSPORTATION ENGINEERING CONSTRUCTION SECTION 240-777-7210 DESIGN SECTION 240-777-7221				RECOMMENDED FOR APPROVAL				PLAN AND ELEVATION (EXISTING BRIDGE)			
				Chief, Design Section APPROVED				Date			
				Chief, Division of Transportation Engineering				Date			
				Designed by: GF				Drawn by: GF			
								Checked by: BP			
NO.				REVISION				DATE			



GENERAL NOTES

SPECIFICATIONS: MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JULY 2023.

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2020.

LOADING: HL-93

LOAD RESTRICTIONS: THERE ARE RESTRICTIONS FOR PLACING EQUIPMENT AND MATERIALS ON EXISTING AND NEW STRUCTURE(S). REFER TO SECTION TC 6.14.

CONCRETE: CONCRETE COMPRESSIVE STRENGTH FOR DESIGN SHALL BE:
 $f'_c = 3,000$ psi FOR ELEMENTS USING MIX NO. 3
 $f'_c = 4,000$ psi FOR ELEMENTS USING MIX NO. 6

ALL CONCRETE FOR CURBS SHALL BE MIX NO. 6 (4500 PSI) CONTAINING SYNTHETIC FIBERS (SEE SECTION 902.15.01).

ALL CONCRETE FOR SUPERSTRUCTURE OVERLAY SHALL BE MIX NO. 8 CONCRETE (4000 PSI) CONTAINING SYNTHETIC FIBERS (SEE SECTION 902.15.02).

ALL CONCRETE FOR SUBFOUNDATION SHALL BE MIX NO. 1 CONCRETE (2500 PSI).

ALL OTHER STRUCTURE SHALL BE MIX NO. 3 (3500 PSI).

PRESTRESSED CONCRETE: CONCRETE COMPRESSIVE STRENGTH FOR DESIGN SHALL BE $f'_c = 7000$ psi. WHILE THE MINIMUM COMPRESSIVE STRENGTH AT TRANSFER SHALL BE $f'_{ci} = 5950$ PSI.

ALL PRESTRESSED CONCRETE SHALL BE SELF-CONSOLIDATING WITH A 28-DAY COMPRESSIVE STRENGTH OF $f'_c = 8000$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60, WITH A YIELD STRENGTH FOR DESIGN OF $f_y = 60000$ PSI.

ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS.

REINFORCING STEEL SHALL BE EPOXY COATED WHEN NOTED WITH AN EP IN THE PLANS.

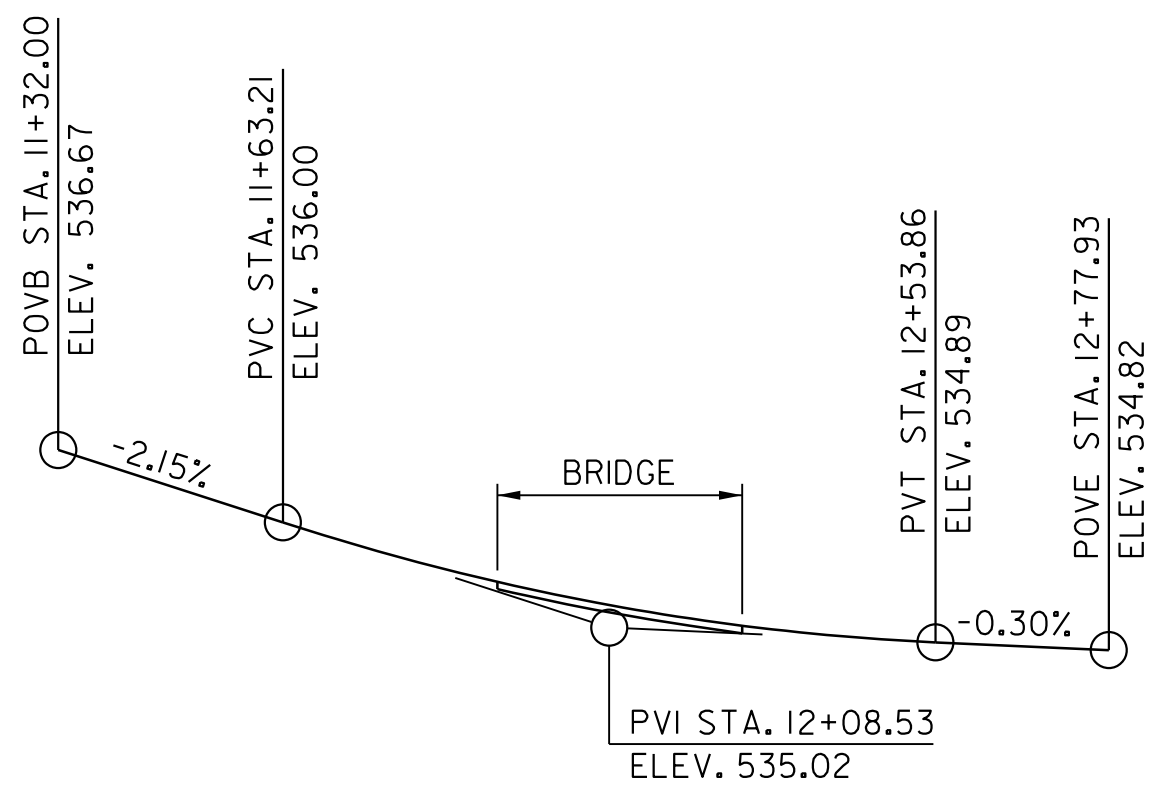
MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 2" EXCEPT FOR THE FOLLOWING LOCATIONS:

TOP OF SUPERSTRUCTURE OVERLAY	2 1/2"
BOTTOM AND SIDES OF ALL FOOTINGS	3"
BOTTOM OF PRESTRESSED CONCRETE SLABS	3"

FOR TIES AND STIRRUPS, STANDARD AC BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL AC BENDING TOLERANCES.

PRETENSIONING STEEL: PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE BRIGHT LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M 203 GRADE 270. EACH STRAND SHALL BE PRESTRESSED TO 31,000 lb (0.75 fpu), HAVE AN ULTIMATE STRENGTH OF 41,300 lb (fpu) AND A YIELD STRENGTH OF 37,200 lb (0.90 fpu).

EXISTING STRUCTURES: ALL DIMENSIONS AFFECTED BY THE GEOMETRY AND/OR LOCATION OF THE STRUCTURE(S): EXISTING STRUCTURE(S) SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE ANY MATERIAL IS ORDERED OR FABRICATED OR CONSTRUCTION BEGINS.



VERTICAL PROFILE

SCALE: NONE

S - 2

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

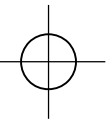
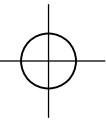
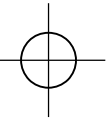
Date

Designed by: GF Drawn by: GF Checked by: BP

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

PLAN, ELEVATION AND GENERAL NOTES

Project No. : 509132 SHEET 28 of 41



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HYDROLOGIC DATA

I. SOURCE: REPLACEMENT OF BRIDGE NO. M-0157 BURNT HILL ROAD OVER LITTLE BENNETT CREEK H&H REPORT
PREPARED BY: ☐ SHA ☒ CONSULTANT: STANTEC DATE: 11/03/2023
FILE LOCATION: U:\2026213118

II. DRAINAGE AREA: ACRES 1,702 SQUARE MILES 2.66

III. METHOD(S) OF ANALYSIS:

USGS GAGE DATA ANALYSIS
o GAGING STATION NO.
o LOCATION
o DRAINAGE AREA
o YEARS OF CONTINUOUS RECORD
USGS REGRESSION EQUATIONS
REFERENCE
X SCS TR - 20 METHOD - VERSION USED (DATE) TR-20 VERSION 3.20
o RCN (EXISTING-HOMOGENEOUS WATERSHED)¹ 65
o RCN (ULTIMATE HOMOGENEOUS WATERSHED)¹ 71
o TC (HOMOGENEOUS WATERSHED)¹ 0.923 HR
FEMA BASE FLOOD (100-YEAR) DISCHARGE (CFS) METHOD USED BY FEMA
OTHER (DESCRIBE)

HAS FLOOD ROUTING BEEN USED IN DETERMINING FLOOD DISCHARGES? YES NO X
METHOD SELECTED

IV. COMPUTED FLOOD DISCHARGES

RETURN PERIOD (YEARS)	FLOOD DISCHARGE (CFS)	
	BASED ON EXISTING WATERSHED DEVELOPMENT	BASED ON ULTIMATE WATERSHED DEVELOPMENT
2	350.3	626.1
10	1148.4	1621.2
25	1855.7	2441.5
50	2535.7	3204.2
100	3336.1	4095.3
500	5820.3	6766.8

V. HISTORIC FLOODS

YEAR	MAGNITUDE (CFS)	HIGH WATER ELEVATION	WHERE MEASURED	SOURCE OF DATA

VI. STREAM MORPHOLOGY

STREAM TYPE VALLEY TYPE
STREAM BED MATERIAL:
DESCRIPTION D16 D50 D84
BANK FULL CHARACTERISTICS:
O AREA WIDTH DEPTH
SLOPE MANNINGS "n" VALUE SINUOSITY

VII. TIDAL FLOWS

100-YEAR STORM TIDE ELEVATION (FT) MAXIMUM DISCHARGE (CFS)
500-YEAR STORM TIDE ELEVATION (FT) MAXIMUM DISCHARGE (CFS)
SOURCE OF INFORMATION

DESIGN DISCHARGE (CFS) RETURN PERIOD YEARS TIDAL PERIOD (HRS)
HOW DETERMINED? (EXPLAIN)
WATER SURFACE-ELEVATION FOR DESIGN CONDITION (FT)
(IF TIDAL FLOW GOVERNS HYDRAULIC DESIGN)

VII. COMMENTS:

HYDRAULIC DATA

I. SOURCE: HEC-RAS - REPLACEMENT OF BRIDGE NO. M-0157 BURNT HILL ROAD OVER LITTLE BENNETT CREEK- PROPOSED

PREPARED BY: ☐ SHA ☒ CONSULTANT: STANTEC DATE: 11/03/2023

FILE LOCATION: U:\2026213118 ITEM 71 RATING

METHOD(S) OF ANALYSIS: HEC-RAS: STEADY FLOW

II. HYDRAULIC DATA

FLOW CONDITIONS ³	CHANNEL CROSS-SECTION	STRUCTURE WATERWAY AREA ⁴	ENERGY SLOPE ⁴	WATER SURFACE ELEVATION ⁴	CHANNEL ⁵				LEFT OVERTOPPING LOOKING DOWNSTREAM ⁵				RIGHT OVERTOPPING LOOKING DOWNSTREAM ⁵				DISCHARGE OVER ROAD
					O	W	V	D	O	W	V	D	O	W	V	D	
DESIGN ⁶ O 100	APPROACH (XS 584) ⁸	--	0.000364	536.94	1220.23	37.15	3.06	10.75	1940.09	232.18	1.09	7.64	934.98	144.01	0.99	6.56	--
	UPSTREAM AT STRUCTURE	238.04	0.000501	536.83	1816.63	41.45	3.78	11.60	692.53	140.20	0.98	4.96	1586.15	207.92	1.16	6.56	1419.82
	DOWNSTREAM AT STRUCTURE	238.04	0.008904	531.09	2086.46	21.44	12.28	7.93	417.82	87.78	2.27	2.09	1591.03	220.18	2.70	2.68	1419.82
DESIGN ⁶ O 10	APPROACH (XS 584) ⁸	--	0.000636	532.55	671.71	37.15	2.85	6.35	667.78	222.23	0.86	3.49	281.70	118.31	0.78	3.04	--
	UPSTREAM AT STRUCTURE	238.04	0.002247	531.97	1554.06	41.45	5.57	6.74	13.68	76.00	2.27	5.87	53.47	165.06	2.30	5.90	0.00
	DOWNSTREAM AT STRUCTURE	238.04	0.014868	528.72	1491.81	21.44	12.52	5.56	74.44	31.23	3.78	3.45	54.95	150.22	4.60	4.26	0.00
OVERTOPPING OR OTHER DISCHARGE ⁶ O 25 (OVERTOPPING)	APPROACH (XS 584) ⁸	--	0.000242	535.50	783.08	37.15	2.27	9.30	1132.04	228.78	0.79	6.30	526.39	137.36	0.71	5.40	--
	UPSTREAM AT STRUCTURE	238.04	0.000327	535.43	1184.65	41.45	2.80	10.20	374.23	120.44	0.71	4.35	882.62	201.71	0.82	5.34	109.10
	DOWNSTREAM AT STRUCTURE	238.04	0.007850	530.03	1541.72	21.44	10.47	6.87	181.52	64.71	1.77	1.59	718.27	198.52	1.97	1.84	109.10

III. BRIDGE SCOUR DATA ABSOUR

A. SCOUR EVALUATION STUDY TITLE: REPLACEMENT OF BRIDGE NO. M-0157 BURNT HILL ROAD OVER LITTLE BENNETT CREEK- PROPOSED

PREPARED BY: ☐ SHA ☒ CONSULTANT: STANTEC DATE: 10/06/2023

FILE LOCATION: U:\2026213118 ITEM 113 RATING²

B. SCOUR ESTIMATES:

	DESIGN CONDITIONS (DESCRIBE SPECIAL CONDITIONS SUCH AS OVERTOPPING, LOW TAILWATER, INFLUENCE OF CONFLUENCES, ETC.)	FLOOD DISCHARGE		LONG TERM DEGRADATION / AGGRADATION (FT)	CONTRACTION ⁹ SCOUR DEPTH (LOOKING DOWNSTREAM (FT))			CHANNEL BED LOAD (DESCRIBE)	TYPE OF SCOUR (LIVE BED/CLEAR WATER)
		RETURN PERIOD (YEARS)	MAGNITUDE (CFS)		LT OVERBANK	MAIN CHANNEL	RT OVERBANK		
DESIGN FLOOD FOR SCOUR	OVERTOPPING	100	4095	0	4.4	3.7	3.7	WEATHERED ROCK	N/A
CHECK FLOOD FOR SCOUR									
OTHER									
TOTAL SCOUR: ESTIMATED TOTAL SCOUR AT SUBSTRUCTURE/ CHANNEL ELEMENTS (INCLUDES LONG TERM DEGRADATION/AGGRADATION PLUS CONTRACTION SCOUR, PLUS LOCAL SCOUR)									
LOCATION OF CHANNEL OR SUBSTRUCTURE ELEMENT		ELEVATION OF BOTTOM OF STREAM CHANNEL BED OR SCOUR HOLE (FT) ¹⁰			SCOUR COUNTER MEASURES <input type="checkbox"/> EXISTING <input type="checkbox"/> NEW				
		DESIGN FLOOD (100-YR)	CHECK FLOOD (500-YR)						
CHANNEL THALWEG		517.0							
ABUTMENT: LEFT		516.3							
ABUTMENT: RIGHT		517.0							
PIER NO.									
PIER NO.									
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NOTES:

BLANK SPACES INDICATE THAT DATA IS NOT AVAILABLE OR IS NOT APPLICABLE

1. PARAMETERS COMPUTED ASSUMING THE WATERSHED IS HOMOGENEOUS WITHOUT SUBDIVISIONS

2. ITEM 71 RATING AND ITEM 113 RATING REFER TO FEDERAL BRIDGE INVENTORY ITEMS

3. RECORD FLOW CONDITIONS USED IN ANALYSIS: DISCHARGE (Q), TAILWATER CONDITION AND HOW SELECTED, ETC. (FOR DEPRESSED CULVERTS, INDICATE UNDER COMMENTS THE ASSUMPTIONS MADE AS TO WHETHER SEDIMENT WILL REMAIN DURING FLOODS)

4. FOR CULVERTS, USE THESE THREE COLUMNS TO RECORD:
o DEPTH OF FLOW AT CULVERT INLET AND OUTLET
o WATER-SURFACE ELEVATION AT CULVERT INLET AND OUTLET
o ENERGY SLOPE FOR CULVERT BARREL

5. SYMBOLS USED:
Q = FLOW OR DISCHARGE (CFS)
W = CHANNEL WIDTH OR FLOODPLAIN WIDTH (FT)
V = FLOW VELOCITY (FPS)
D = DEPTH OF FLOW (FT)

6. FOR CULVERTS, RECORD OUTLET VELOCITY HERE

7. FOR CULVERTS , RECORD TAILWATER DEPTH HERE

8. APPROACH SECTION SHOULD BE SELECTED AS PER GUIDANCE IN ABSOUR USERS MANUAL

9. ENTER CONTRACTION SCOUR DEPTHS ONLY (APPROXIMATE LINE 12) IN ABSOUR OUTPUT) - NOT ABUTMENT SCOUR

10. IF SCOUR RESISTENT BEDROCK CONTROLS SCOUR, ENTER BEDROCK ELEVATION AND NOTE THIS CONDITION UNDER COMMENTS

IV. ROADWAY AND STRUCTURE DATA

ITEM	EXISTING STRUCTURE	PROPOSED STRUCTURE
NAME OF WATERWAY	LITTLE BENNETT CREEK	
DATE BUILT	1955	--
OVERTOPPING ELEVATION	537.00	537.50
OVERTOPPING LOCATION (DESCRIBE)	AT BRIDGE LOWPOINT	AT BRIDGE LOWPOINT
OVERTOPPING INCIPIENT (OVERTOPPING Q < 100 YR FLOOD) ¹¹ FREEBOARD ¹²	1616	3031
TOTAL STRUCTURE WATERWAY AREA ¹³	173.33	238.04
STRUCTURE DESCRIPTION ¹⁴	17'-3" (SINGLE SPAN BRIDGE)	28'-0" (SINGLE SPAN BRIDGE)
INLET TREATMENT ¹⁵	--	--
OUTLET TREATMENT ¹⁵	--	--
MANNINGS "N" VALUE ¹⁶	--	--

V. SURVEY BOOK NUMBERS

REFERENCE DATUM FOR ELEVATIONS

VI. FLOOD PLAIN MANAGEMENT DATA

DATE OF FLOOD INSURANCE STUDY 9/29/06 COMMUNITY PANEL NO. 24031C0045D

PROJECT LOCATION (CHECK BELOW):

X BEYOND FEMA PROGRAM LIMITS (NOT IN "A" HAZARD ZONE)

FEMA HAZARD ZONE "A": NO BASE FLOOD ELEVATIONS ESTABLISHED

FEMA HAZARD ZONE "A-2": BASE FLOOD ELEVATIONS ESTABLISHED

REGULATORY FLOODWAY YES X NO
MAXIMUM CHANGE IN WATER SURFACE ELEVATION UPSTREAM OF
BRIDGE DUE TO HIGHWAY PROJECT (MAX. BACKWATER) N/A FT.

LOCATION OF MAX. BACKWATER FROM
UPSTREAM FACE OF BRIDGE N/A FT.

DESCRIBE TYPE OF STUDY DONE TO DETERMINE CONSISTENCY
WITH NFIP STANDARDS N/A
DATE COMMUNITY ACKNOWLEDGEMENT FORM ISSUED: N/A

IS THE PROJECT CONSISTENT WITH THE CODE OF FEDERAL REGULATIONS,
PART 650 A, LOCATION AND HYDRAULIC DESIGN OF ENCROACHMENTS ON
FLOOD PLAINS (23 CFR 650 A). Y/N Y

IS THE PROJECT CONSISTENT WITH THE ANNOTATED
CODE OF MARYLAND (COMAR 08.05.03)? Y/N Y

VII. COMMENTS:

11. RECORD INCIPIENT OVERTOPPING DISCHARGE (Q) AND RECURRENCE
INTERVAL

12. RECORD CLEARANCE BETWEEN WATER SURFACE ELEVATION AND
LOW CHORD FOR DESIGN DISCHARGE

13. RECORD TOTAL FLOW AREA UNDER STRUCTURE (DOWNSTREAM
END) FOR 100 & 500 YEAR FLOODS

14. FOR BRIDGES:
ENTER TYPE, SPAN LENGTH AND MAXIMUM VERTICAL CLEARANCE
FOR CULVERTS:
ENTER SIZE, NUMBER OF CELLS, AND LENGTH;
DESCRIBE ANY SPECIAL FEATURES UNDER COMMENTS

15. FOR CULVERTS, DESCRIBE TYPE OF INLET/OUTLET AND EROSION
PROTECTION

16. COMPOSITE "N" VALUE OF STRUCTURE

S - 3

PROFESSIONAL CERTIFICATION

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LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



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CONSTRUCTION SECTION
240-777-7210
DESIGN SECTION
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

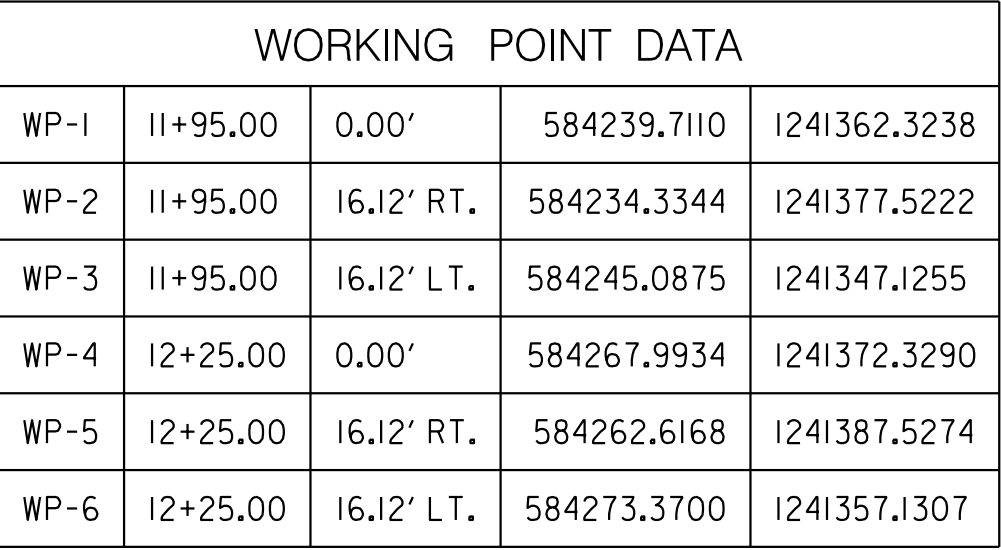
Chief, Division of Transportation Engineering

Designed by: MV Drawn by: MV Checked by: RP

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

HYDROLOGIC & HYDRAULIC DATA

Project No. : 509132 SHEET 29 of 37



1. FOR GENERAL NOTES SEE S-2
2. FOR TYPICAL ABUTMENT SECTION SEE S-5.
3. FOR TYPICAL WING WALL SECTION SEE S-6.
4. FOR BENCHMARK INFORMATION SEE EX-01.

S - 4

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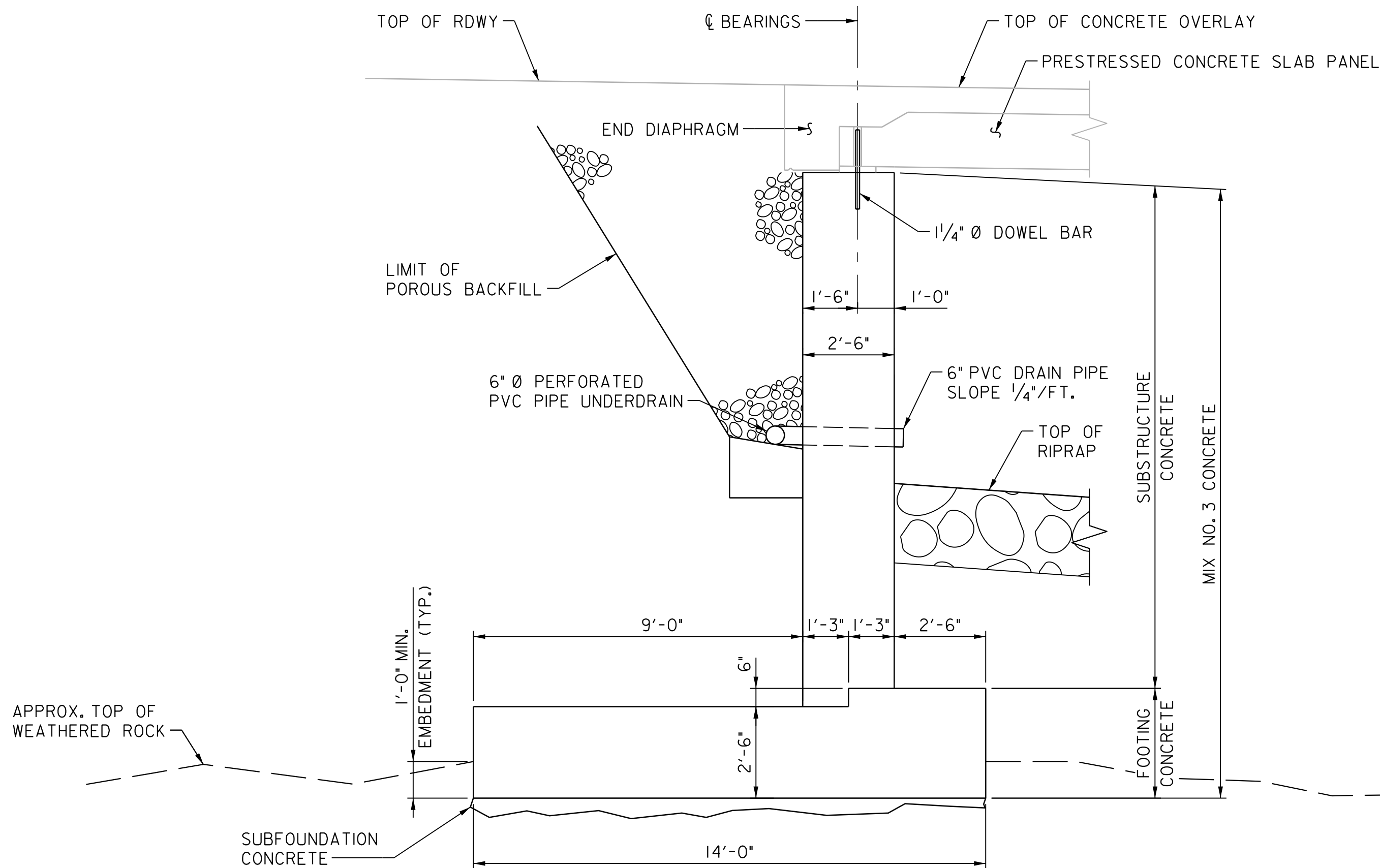
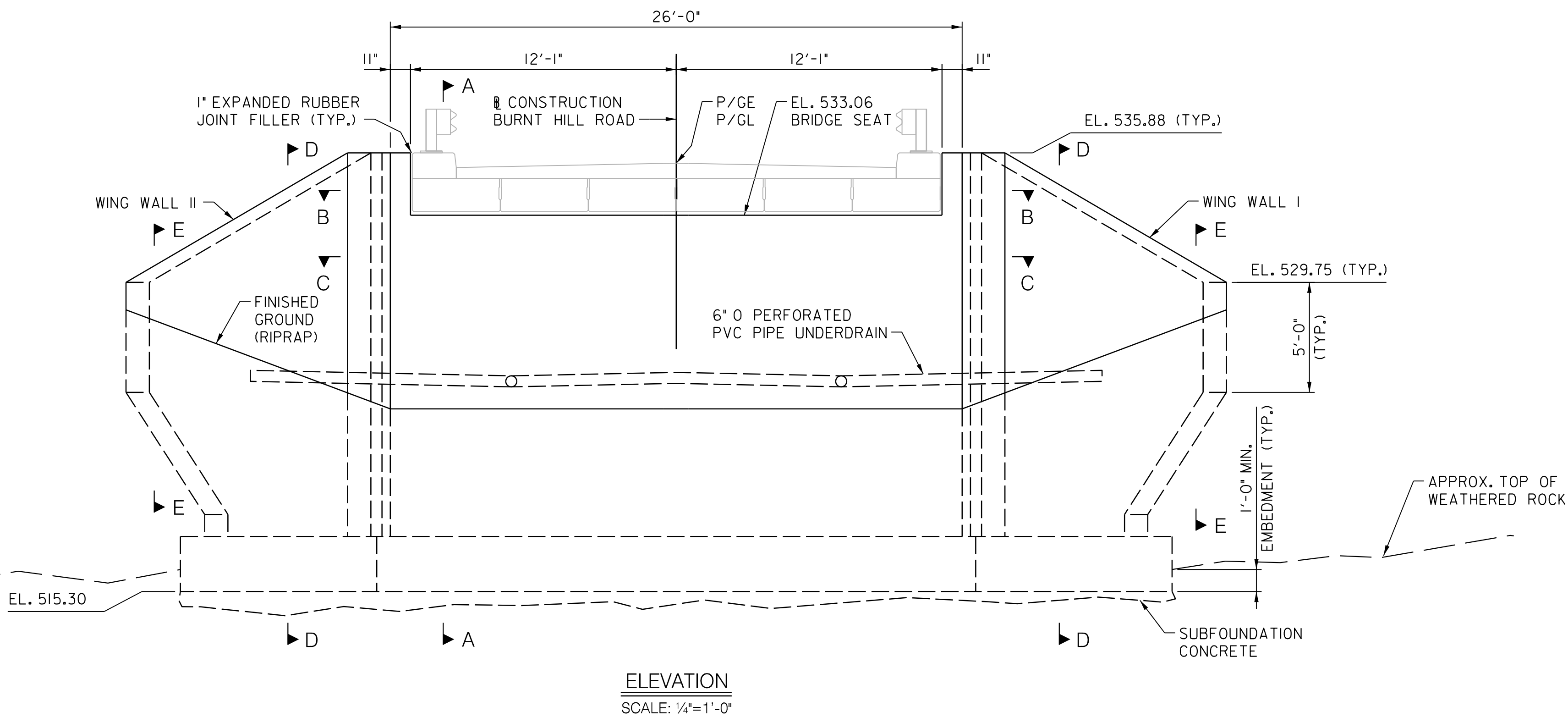
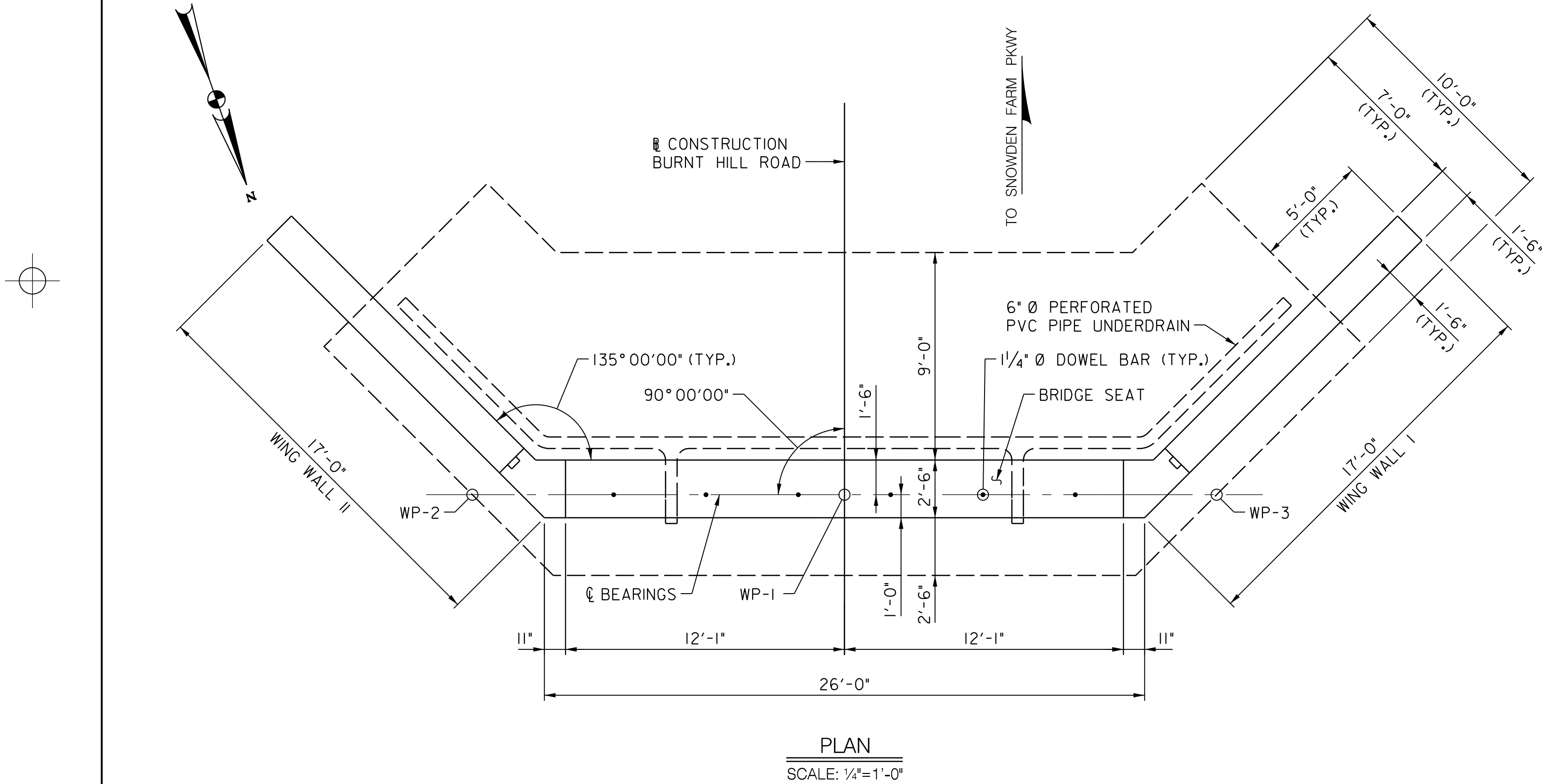
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DESIGN SECTION
240-777-7221

[illegible]

Chief, Division of Transportation Engineering Date

GEOMETRIC AND FOOTING PLAN

Project No. : 509132 SHEET 30 of 41



- NOTES:
- ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH 432.03.04. ADHESIVE SHALL BE APPLIED ON THE BOTTOM AND TOP OF PAD.
 - FOR TYPICAL WING WALL SECTION SEE S-6
 - FOR SECTIONS A-A, B-B AND C-C SEE S-8.
 - FOR SECTIONS D-D AND F-F SEE S-9.
 - FOR BEARING DETAILS SEE S-XX.
 - FOR ABUTMENT DRAINAGE SEE DETAIL NO. SUB-DR-201.

S - 5

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DESIGN SECTION
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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering

Date

Designed by: GF Drawn by: GF Checked by: BP

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

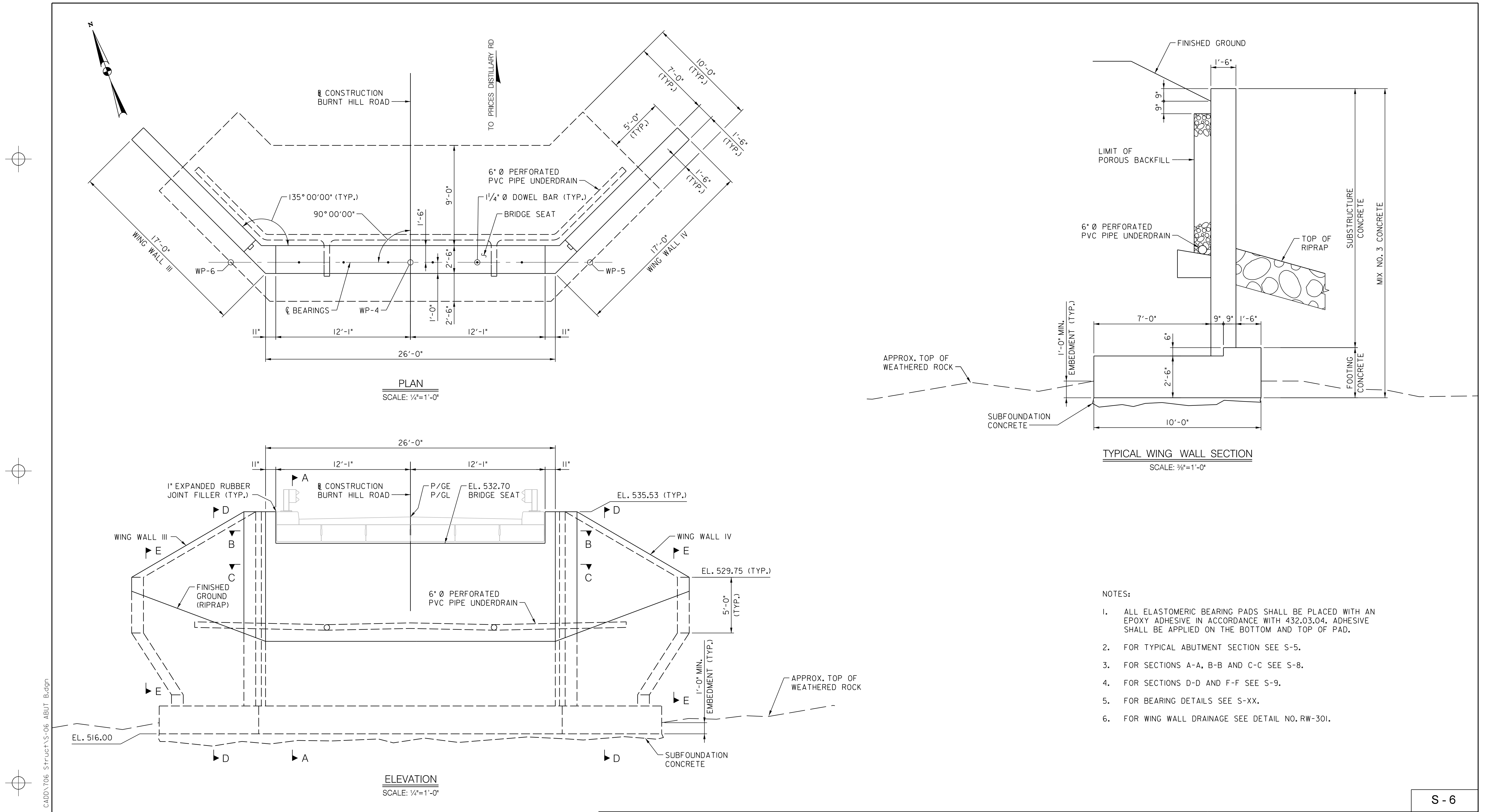
ABUTMENT A - PLAN, ELEVATION
AND TYPICAL ABUTMENT SECTION

Project No. : 509132 SHEET 31 of 41

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S - 6

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Chief, Design Section
APPROVED

Date

Chief, Division of Transportation Engineering


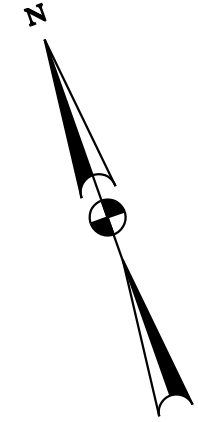

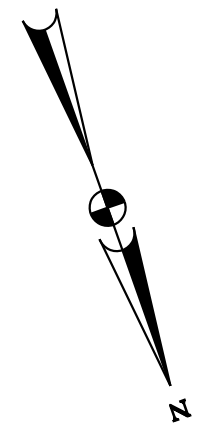
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Designed by: GF Drawn by: GF Checked by: BP

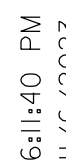
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

**ABUTMENT B - PLAN, ELEVATION
AND TYPICAL WING WALL SECTION**

Project No. : 509132 SHEET 32 of 41



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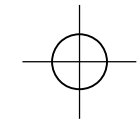
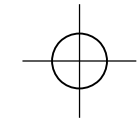
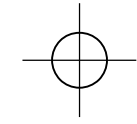
Chief, Division of Transportation Engineering

Designed by: GF Drawn by: GF Checked by: E

1. FOR GEOMETRIC AND FOOTING PLAN SEE S-4.
2. FOR ABUTMENT DETAILS SEE S-5, S-6, S-7 AND S-8.
3. FOR WING WALL DETAILS SEE S-9.

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

Project No. :	509132	SHEET	33	of	41
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11/6/2023
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PROFESSIONAL CERTIFICATION

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BY ME, -ND TH-T I -M - DULY LICENSED PROFESSION-L ENGINEER
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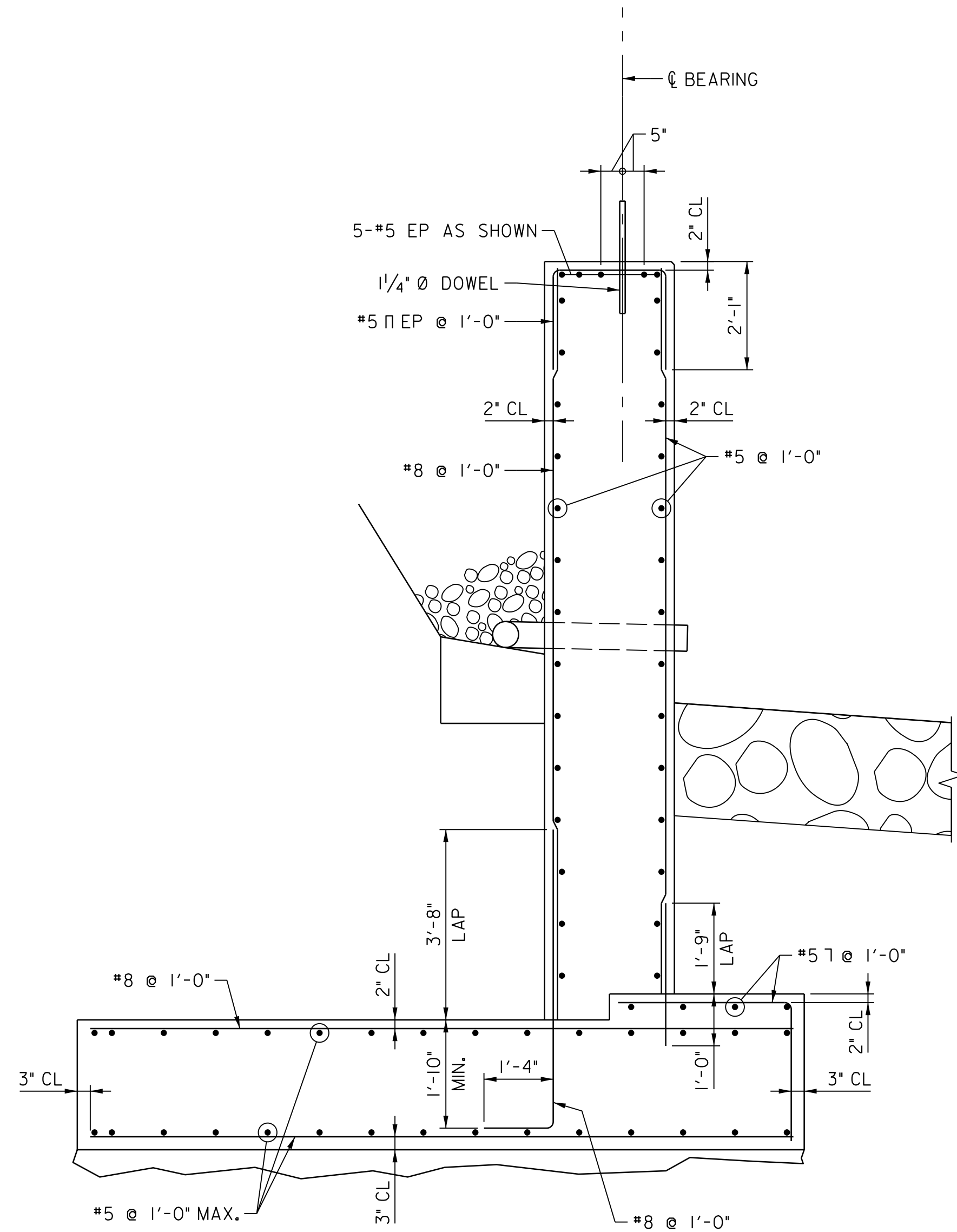
NO.	REVISION	DATE	BY	

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
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Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by: GF	Drawn by: GF	Checked by: BP	

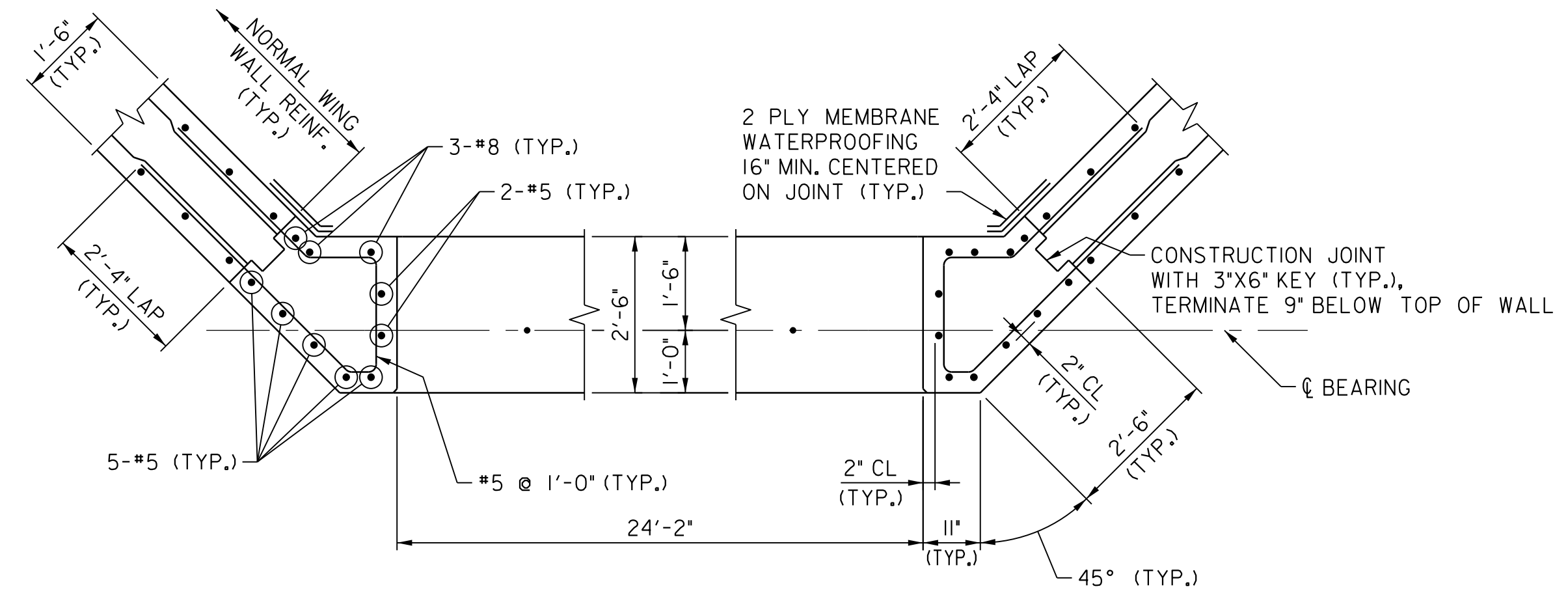
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

ABUTMENT DETAILS

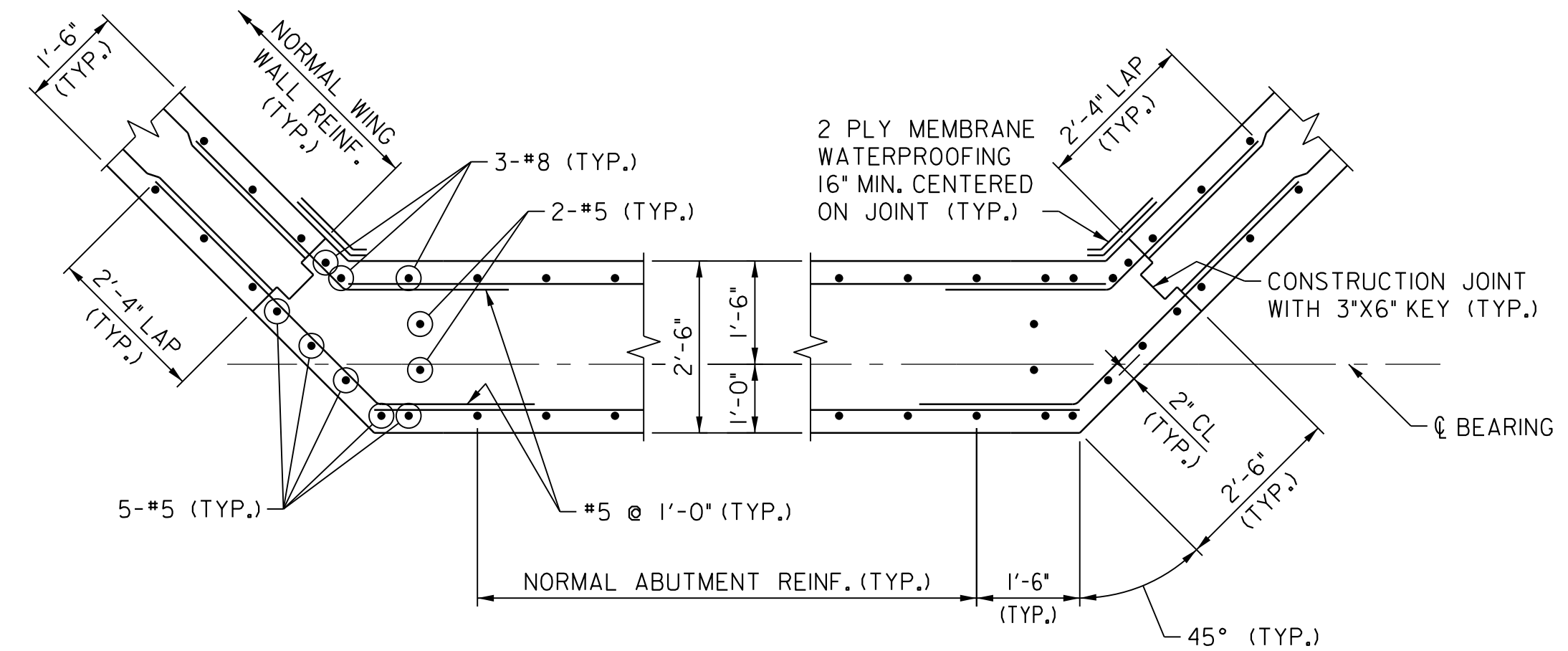
Project No. : 509132 SHEET 34 of 41



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



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

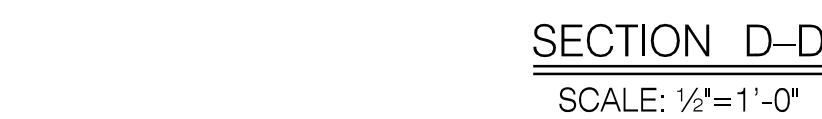


SECTION C-C
SCALE: 1/2"=1'-0"

NOTES:

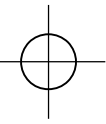
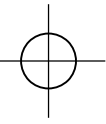
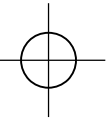
- FOR ABUTMENT PLAN AND ELEVATION SEE S-5 AND S-6.
- FOR TYPICAL ABUTMENT SECTION SEE S-5.
- FOR TYPICAL WING WALL SECTION SEE S-6.
- FOR FOOTING REINFORCEMENT PLAN SEE S-7.
- FOR WING WALL DETAILS SEE S-9.
- FOR BEARING DETAILS SECTION SEE S-XX.

S - 8



1. FOR ABUTMENT PLAN AND ELEVATION SEE S-5 AND S-6.
2. FOR TYPICAL ABUTMENT SECTION SEE S-5.
3. FOR TYPICAL WING WALL SECTION SEE S-6.
4. FOR FOOTING REINFORCEMENT PLAN SEE S-7.
5. FOR WING WALL DETAILS SEE S-9.
6. FOR BEARING DETAILS SECTION SEE S-XX.

MODELN-ME:SHEET-S9



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11/6/2023 6:11:41 PM
MODEL-N-ME+SHEET-S10

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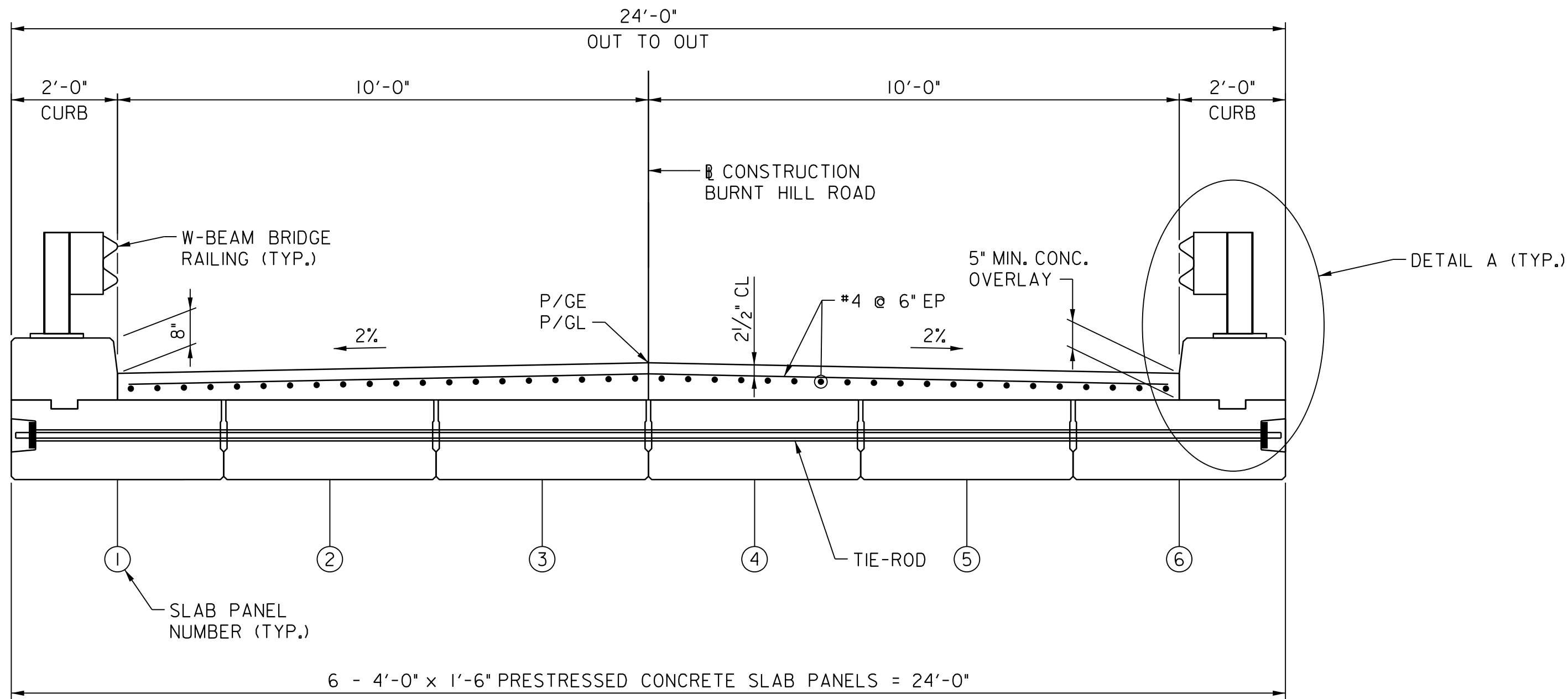
NO.	REVISION	DATE	BY	

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND			
RECOMMENDED FOR APPROVAL			
Chief, Design Section		Date	
APPROVED			
Chief, Division of Transportation Engineering		Date	
Designed by: GF	Drawn by: GF	Checked by: BP	

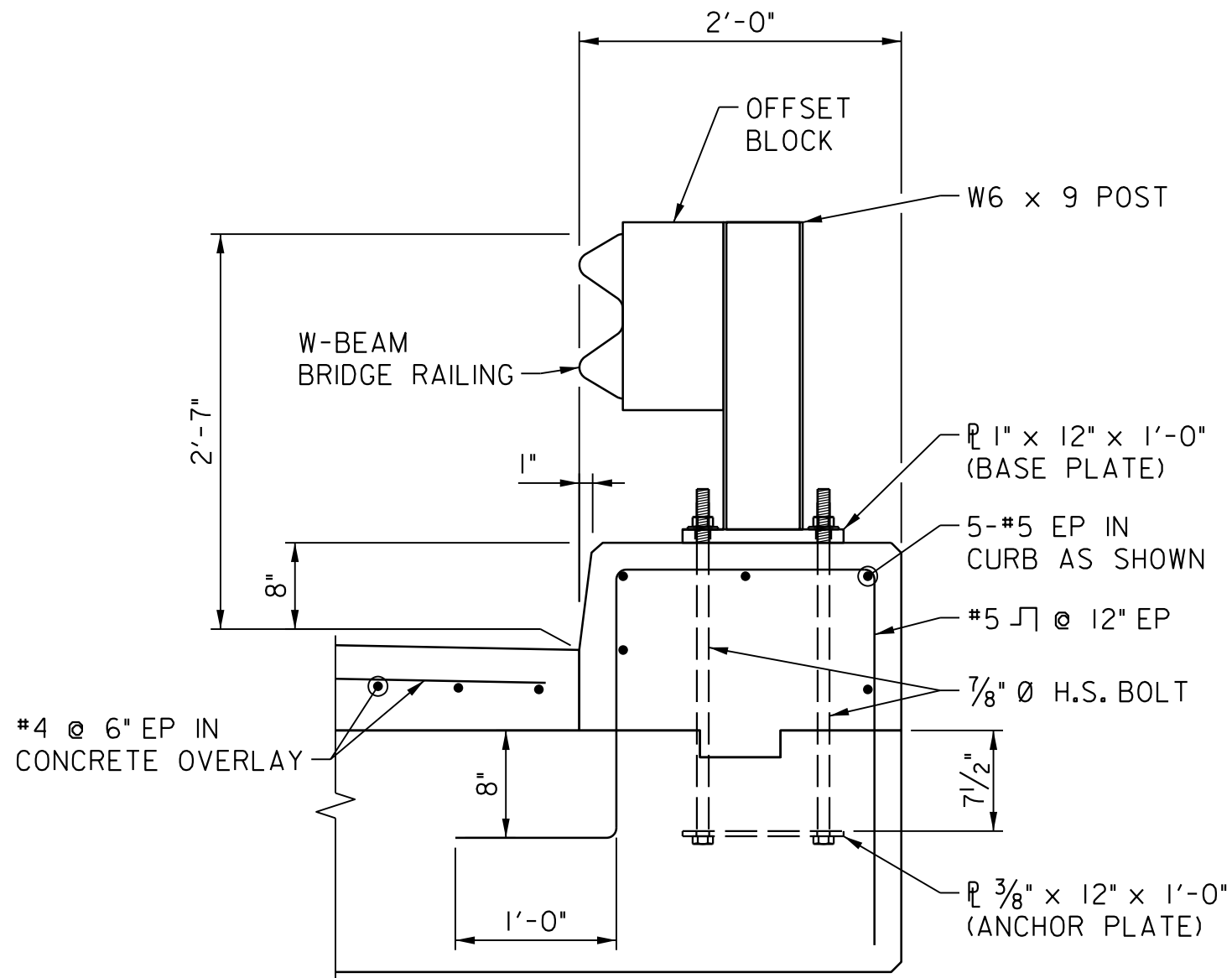
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

SUPERSTRUCTURE TYPICAL SECTION

Project No. : 509132 SHEET 36 of 41



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

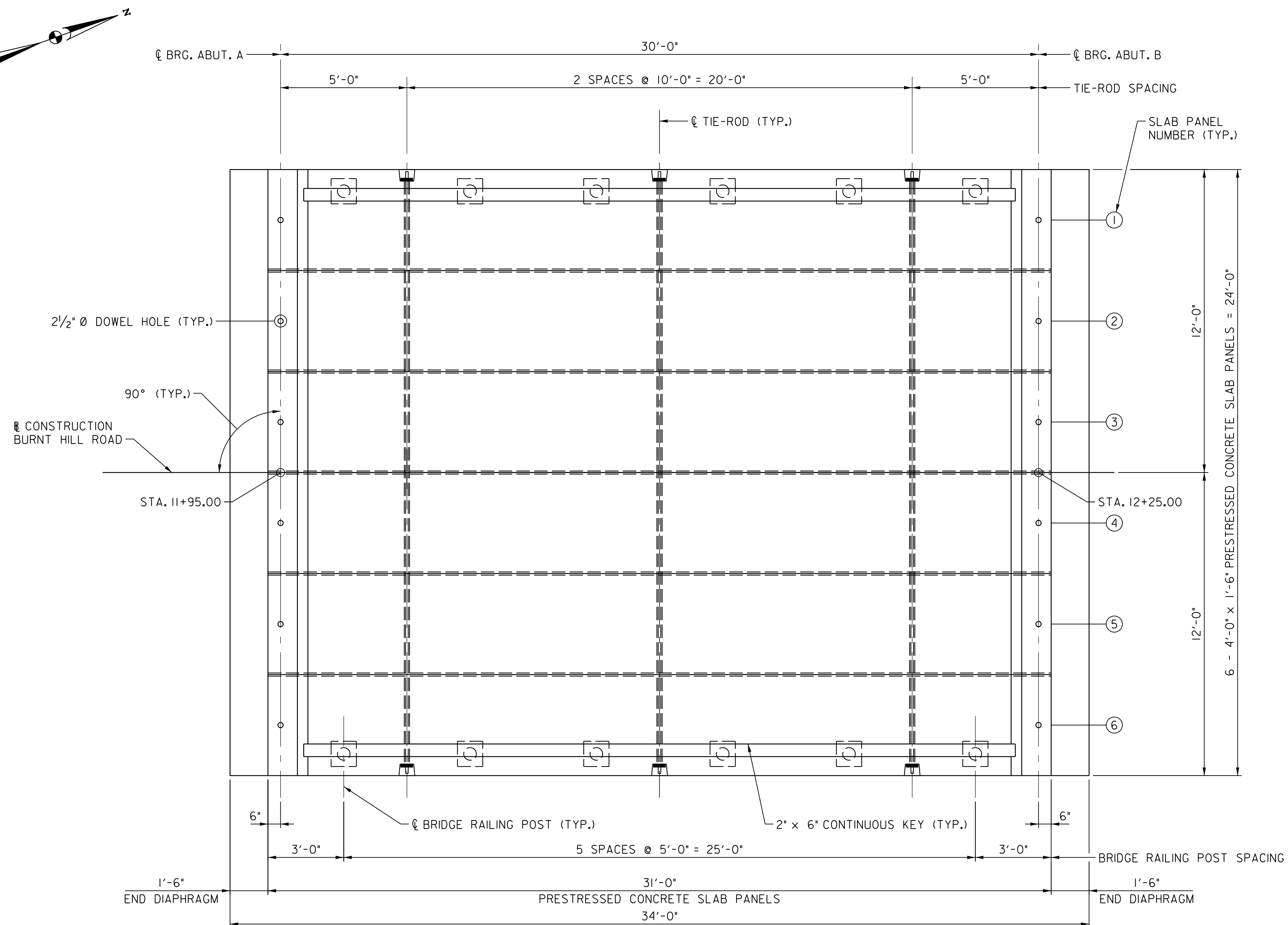


DETAIL A
SCALE: 1"=1'-0"

NOTES:

- FOR GENERAL NOTES SEE S-2
- FOR FINISHED DECK ELEVATIONS SEE S-XX.
- FOR TIE-ROD DETAILS SEE DETAIL NO. SUP-SLAB-401.
- FOR SHEAR KEY DETAILS SEE DETAIL NO. SUP-SLAB-501.
- FOR TIE ROD TENSIONING PROCEDURES SEE SECTION 440.03.20.
- FOR OFFSET BLOCK SEE STANDARD NO. MD 605.21.
- FOR W-BEAM RAILING SEE STANDARD NO. MD 605.22.

S - 10



- NOTES:
1. FOR GENERAL NOTES SEE S-2
 2. FOR SLAB DETAILS SEE S-12 AND S-13.
 3. FOR BEARING DETAILS SEE S-XX.
 4. FOR FINISHED DECK ELEVATIONS SEE S-XX.
 5. FOR TIE-ROD DETAILS SEE DETAIL NO. SUP-SLAB-401.
 6. FOR SHEAR KEY DETAILS SEE DETAIL NO. SUP-SLAB-501.
 7. FOR TIE-ROD TENSIONING PROCEDURES SEE SECTION 440.03.20.

S - 11

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LICENSE NO. XXXXX EXPIRATION DATE XX-XX-202X



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DESIGN SECTION
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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section _____ Date _____

APPROVED _____

Date _____

Chief, Division of Transportation Engineering

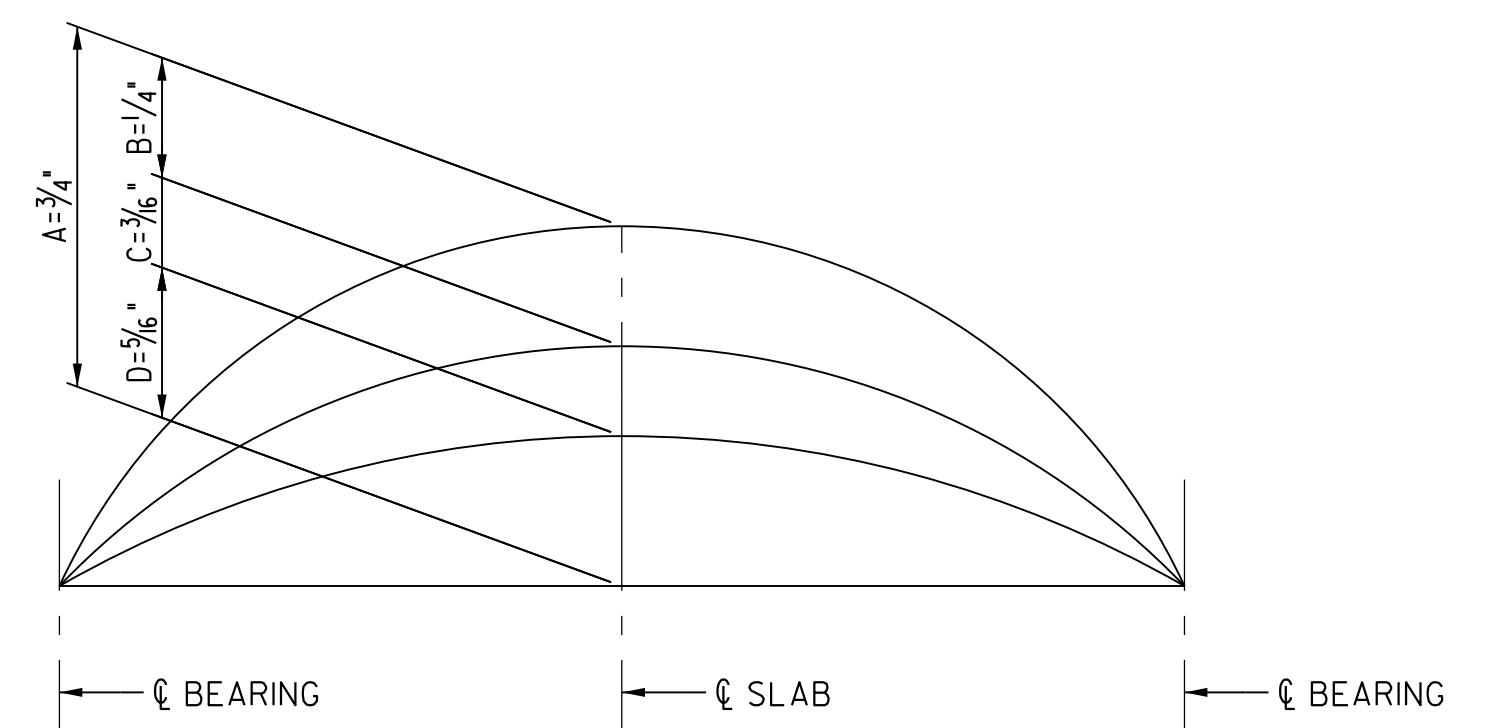
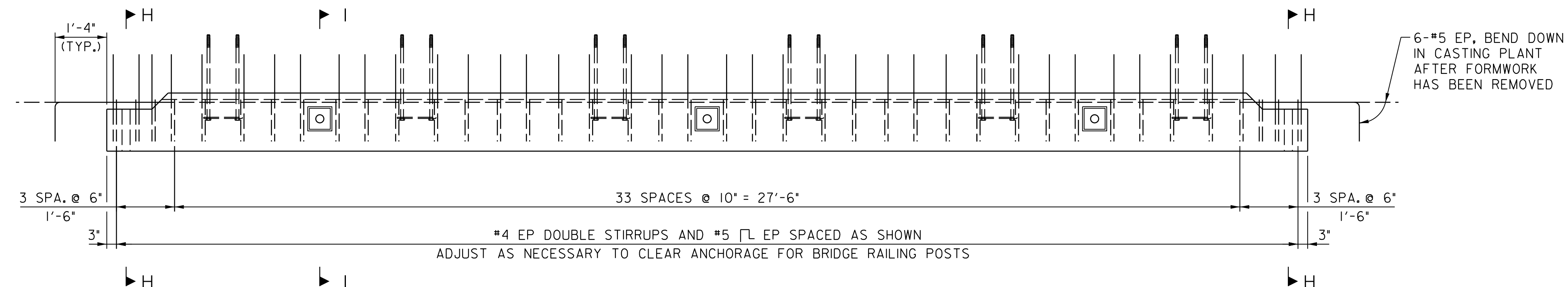
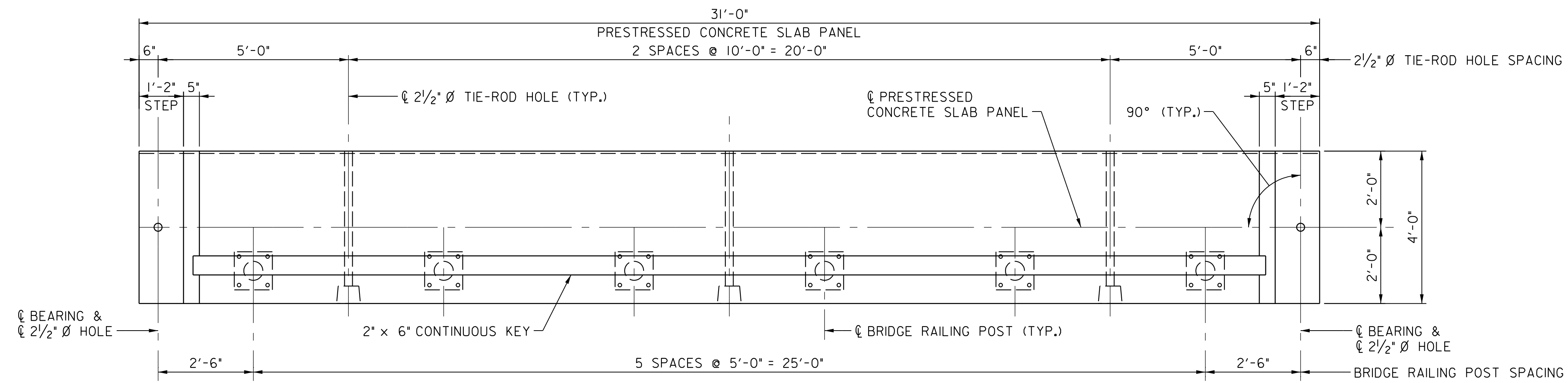
Date _____

Designed by: GF Drawn by: GF Checked by: F

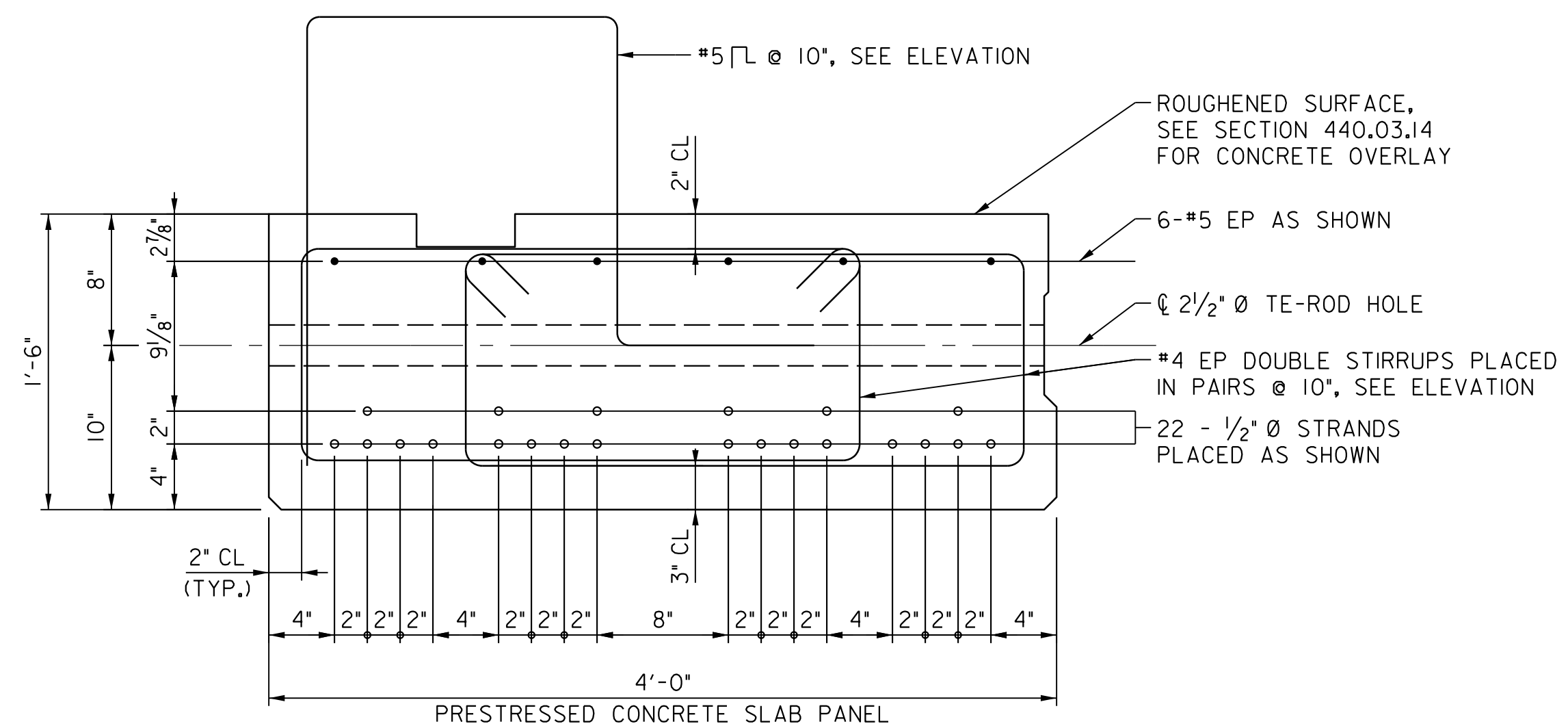
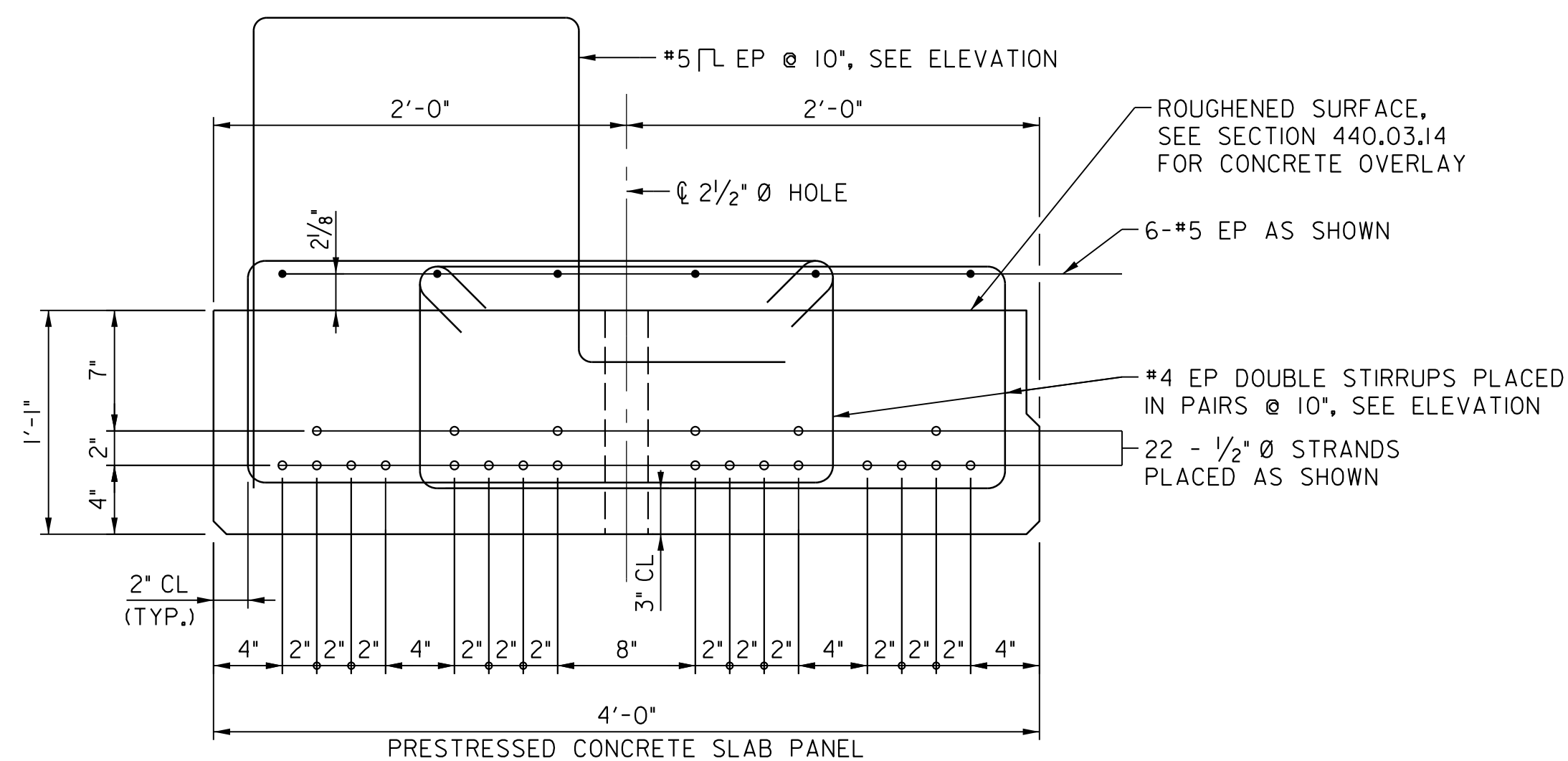
REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

FRAMING PLAN

Project No. :	509132	SHEET	37	of	41
---------------	--------	-------	----	----	----



1. FOR GENERAL NOTES SEE S-2.
2. FOR SUPERSTRUCTURE TYPICAL SECTION SEE S-10.
3. FOR FRAMING PLAN SEE S-II.
4. FOR INTERIOR SLAB DETAILS SEE S-12.
5. FOR FINISHED DECK ELEVATIONS SEE S-XX.
6. FOR BEARING DETAILS SEE S-XX.
7. FOR LIFTING DEVICE DETAIL SEE S-XX.



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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section
APPROVED

Date _____

Chief, Division of Transportation Engineering

Date _____

Designed by:	G
--------------	---

Drawn by: GF

Checked by: BP

REPLACEMENT OF BRIDGE NO. M-0157X01
ON BURNT HILL ROAD
OVER LITTLE BENNETT CREEK

EXTERIOR SLAB DETAILS

Project No. : 509132 SHEET 39 of 41

