# MONTGOMERY COUNTY
# DEPARTMENT OF TRANSPORTATION

# REPLACEMENT OF BRIDGE NO. M-0148X01
# GLEN ROAD
# OVER SANDY BRANCH

## C. I. P. PROJECT NO. 502102

## GENERAL NOTES

1. 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.
2. 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.
3. CLEARING IS TO BE LIMITED TO THE "LOD" AS SHOWN ON THE PLANS.
4. ALL GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.
5. DISTURBED AREAS ADJACENT TO ESTABLISHED LAWNS SHALL BE SODDED. OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
6. 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.
7. 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.
8. 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.
9. GLEN ROAD CLOSURE IS ONLY ALLOWED DURING SCHOOL SUMMER BREAK (MIDDLE JUNE TO LABOR DAY). THE ROAD HAS TO BE OPEN TO TRAFFIC BEFORE LABOR DAY.
10. ACCESS TO ADJACENT EXISTING HOMES' ENTRANCES SHALL BE MAINTAINED DURING CONSTRUCTION.

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

a. 369.00 - STANDARD CONCRETE END SECTION HORIZONTAL ELLIPTICAL PIPE
b. 378.03 - STANDARD SINGLE OR DOUBLE OPENING TYPE K INLET OPEN-END GRATE NON-TRAFFIC AREAS
c. 605.10 - TYPE K TRAFFIC BARRIER END TREATMENT
d. 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/bookstd/index.asp

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

## DESIGN CERTIFICATION

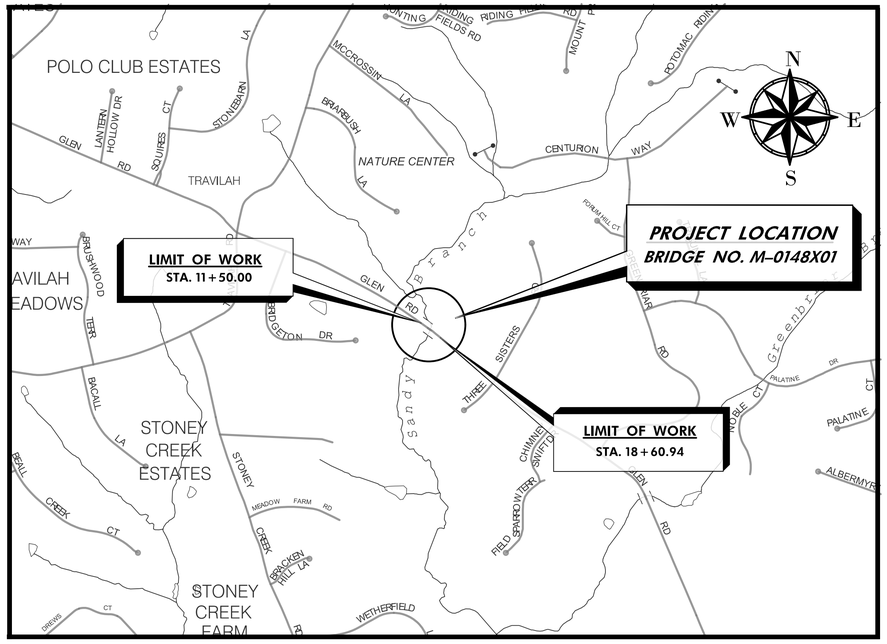
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90, AND MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" DATED JUNE 2014.

DATE

PRINTED NAME: DEGANG LI.
MD. REGISTRATION NO.: 28888

## 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. 28888 EXPIRATION DATE 06-20-2027




1' 0 1' 2'
SCALE: 1"=1000'

## VICINITY MAP

## 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

JOSEPH MOGES
CHIEF, DIVISION OF TRANSPORTATION ENGINEERING

*DATUM*

| | |
|---|---|
| HORIZONTAL DATUM | NAD 83 /91 |
| VERTICAL DATUM | NAVD 88 |

**PS&E SUBMISSION**
**January 30, 2026**

Stantec

| *DESIGN TRAFFIC DATA* | | |
|---|---|---|
| ROADWAY | GLEN ROAD | |
| CONTROLS / YEARS | 2019 | 2041 |
| AVERAGE DAILY TRAFFIC (A.D.T.) | 3846 | 8427 |
| % TRUCKS - A.D.T. | 5% | 5% |
| DESIGN SPEED M. P. H. | 40 mph | |
| FUNCTIONAL CLASSIFICATION | RUSTIC ROAD | |
| CONTROL OF ACCESS | NONE | |
| POSTED SPEED | 30 mph | |


OWNER/ADDRESS:
DEPARTMENT OF TRANSPORATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MD 20878
240-777-7220

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: Drawn by: Checked by:

## 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 | NOTES |
|---|---|---|---|---|---|
| MCDPS Floodplain Delineation | X | | 288890 | | |
| MCDPS Floodplain District | X | | 376697 | 01/09/2028 | |
| WATERWAYS/WETLAND(S): | | | | | |
| a. Corps of Engineers | X | | NAB-2019-61979 | 03/14/2026 | IN-STREAM RESTRICTION: MARCH 01 TO JUNE 15 INCLUSIVE |
| b. MDE | X | | 201961979/19-NT-3310 | 04/23/2026 | |
| c. MDE Water Quality Certification | | X | | | |
| MDOT SHA Traffic Permit for Detour | X | | | | |
| N.P.D.E.S. NOTICE OF INTENT | X | | | | |
| DNR Roadside Tree Permit | X | | 361405 | | MCDOT BLANKET PERMIT |
| MCDPS Roadside Tree Plan | X | | | | |
| MNCPPC FCP Exemption | X | | 42024149E | | |
| MCDPS Erosion and Sediment Control | X | | 285538 | 01/09/2028 | |
| FEMA LOMR | X | | | | REQUIRED POST CONSTRUCTION |
| FEMA CLOMR | 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: JOSEPH MOGES

## 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. A fee in lieu of planting will be charged for any required canopy trees that are not planted.

**Exempt: Yes ☐ No ☒ If exempt under Section 55-5 of the Code, please check the applicable exemption category below.**

| Total Property Area | Total Disturbed Area |
|---|---|
| 48,778 square feet | 48,778 square feet |
| **Shade Trees Required** | **Shade Trees Proposed to be Planted** |
| 19 | 0 |

**Number of Trees Requiring Payment of a Fee in Lieu**
(Trees Required – Trees Planted)

19 Trees

**Required Number of Shade Trees**

| Area (sq. ft.) of the Limits of Disturbance FROM | TO | Number of Shade Trees Required |
|---|---|---|
| 1 | 6,000 | 3 |
| 6,001 | 8,000 | 6 |
| 8,001 | 12,000 | 9 |
| 12,001 | 14,000 | 12 |
| 14,001 | 40,000 | 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
CHECK AS APPLICABLE

☐ 55-5(a) any activity that is subject to Article II of Chapter 22A;
☐ 55-5(b) any commercial logging or timber harvesting operation with an approved exemption from Article II of Chapter 22A;
☐ 55-5(f) any activity conducted by the County Parks Department;
☐ 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;
☐ 55-5(h) any stream restoration project if the person performing the work has obtained all necessary permits;
☐ 55-5(i) cutting or clearing any tree to comply with applicable provisions of any federal, state, or local law governing safety of dams;
☐ OTHER: Specify per Section 55-5 of the Code.

T-01

| TECHNICAL REVIEW OF SEDIMENT CONTROL | ADMINISTRATIVE REVIEW |
|---|---|
| Bill Musico PE 01/09/26, ON FILE | Bill Musico PE 01/09/26, ON FILE |
| REVIEWED DATE | REVIEWED DATE |
| **TECHNICAL REVIEW OF STORMWATER MANAGEMENT** | **SMALL LOT DRAINAGE APPROVAL** |
| Bill Musico PE 01/09/26, ON FILE | N/A: ☒ OR Bill Musico PE 01/09/26, ON FILE |
| REVIEWED DATE | REVIEWED DATE |
| MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED. | NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT. |

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.

285538
**SEDIMENT CONTROL PERMIT NO.**

285536
**SM. FILE NO.**
STORMWATER MANAGEMENT:

No ESD SWM or structural practices

# REPLACEMENT OF BRIDGE NO. M-0148x01
# ON GLEN ROAD
# OVER SANDY BRANCH

Project No. : 502102 SHEET 1 of 48

11:26 AM
1/27/2026

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| 5 | GS-01 | ROADWAY GEOMETRY SHEET |
| 6 | PS-01 | ROADWAY PLAN (1 OF 2) |
| 7 | PS-02 | ROADWAY PLAN (2 OF 2) |
| 8 | HP-01 | ROADWAY PROFILES |
| 9 | DP-01 | DRAINAGE PROFILE |
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SI-01

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LICENSE NO. 28888 EXPIRATION DATE 06-20-2027

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## SHEET OF INDEX

Project No. : 502102 SHEET 2 of 48


U:\2026\3115\700 CADD\706 Struct\T-1 Glen Road-Title.dgn
11:26 AM
1/27/2026
MODELNAME:Sheet SI-01

## ABBREVIATIONS

| | |
|---|---|
| A.A.S.H.T.O. | American Association of State Highway Transportation Officials |
| ABUT. | Abutment |
| ADT | Average Daily Traffic |
| AHD | Ahead |
| APPROX. | Approximate |
| ℄ or BL | Baseline |
| BK | Back /Book |
| BIT. | Bituminous |
| B.C. | Bituminous Concrete |
| B.M. | Bench Mark |
| B.O.F. | Bottom of Footing |
| BOT. | Bottom |
| BRG. | Bearing |
| C.C. | Center of Curve |
| CATV | Cable Television |
| C.B.R. | California Bearing Ratio |
| C.J. | Contraction Joint |
| ℄ or CL | Centerline |
| CL. | Class or Clear |
| CLF | Chainlink Fence |
| CMP | Corrugated Metal Pipe |
| C.O. | Cleanout |
| COMB. | Combination |
| CONC. | Concrete |
| CONSTR. | Construction |
| COR. | Corner |
| CORR. | Correction |
| C.Y. | Cubic Yard |
| DC | Degree of Curve |
| D.H.V. | Design Hourly Volume |
| D.I. | Drop Inlet |
| DIA. | Diameter |
| | Double Opening |
| D.S. | Design Speed |
| DWG. | Drawing |
| E | East |
| E | Electric |
| e | External Distance |
| EA. | Each |
| EB | Eastbound |
| E.J. | Expansion Joint |
| EL. or ELEV. | Elevation |
| E.R.C.C.P. | Elliptical Reinforced Cement Concrete Pipe |
| ES | End Section |
| EX. or EXIST. | Existing |
| FT. | Feet |
| F or FL | Flowline |
| F.B.D. | Flat Bottom Ditch |
| F.H. | Fire Hydrant |
| F.O. | Fiber Optic |
| F.O.C. | Face of Curb |
| F.S. | Full Super Elevation |
| FWD. | Forward |
| G | Gas |
| GL | Gutterline |
| GP | General Purpose Roadway |
| G.V. | Gas Valve |
| H.B. | Handbox |
| H.D.P. | High Density Polyetheylene |
| HDWL. | Headwall |
| H.E.R.C.P. | Horizontal Elliptical Reinforced Concrete Pipe |
| H.P. | High Point |
| H.S.D. | Headlight Sight Distance |
| IN | Inch |
| I.S.T | Inlet Sediment Trap |
| INV. | Invert |
| J.B. | Junction Box |
| K | K Inlet |
| L | Length |
| L.F. | Linear Feet |
| L.L. | Liquid Limit |
| LOD | Limit of Disturbance |
| LONG. | Longitudinal |
| L.P. | Light Pole |
| LT. | Left |
| MAC. | Macadam |
| MC | Moisture Content |
| MAX. | Maximum |
| MDD | Maximum Dry Content |
| MOD. | Modified |
| MIN. | Minimum |
| MN. | Managed Roadway |
| M.S.E. | Mechanically Stablilized Earth |
| N | North |
| NB | Northbound |
| NE | Northeast |
| NO. | Number |
| NP | Non–Plastic |
| N.T.S. | Not To Scale |
| O.C. | On Center |
| OH | Overhead |
| OMC | Optimum Moisture |
| PAV'T. | Pavement |
| PC | Point of Curvature |
| PCC | Point of Compound Curvature |
| P/C | Point of Crown |
| P/GE | Profile Grade Elevation |
| P.G.L. | Profile Grade Line |
| P/GL | Profile Ground Line |
| PL | Plate |
| P/R | Point of Rotation |
| P.I. | Plasticity Index |
| P.I | Point of Intersection |
| POC | Point On Curve |
| POT | Point On Tangent |
| PR. | Proposed |
| PR. ROW | Proposed Right of Way |
| PROP. | Proposed |
| PRC | Point of Reverse Curve |
| PT. | Point |
| PT | Point of Tangency |
| PVC | Point of Vertical Curve |
| P.V.C. | Polyvinyl Chloride |
| PVI | Point of Vertical Intersection |
| PVRC | Point of Vertical Reverse Curve |
| PVT | Point of Vertical Tangency |
| R | Radius |
| REINF. | Reinforcement |
| REQ'D | Required |
| R.F. | Rock Fragments |
| RT. | Right |
| ROW or R/W | Right of Way |
| RW | RETAINING WALL |
| R.C.P. | Reinforced Cement Pipe |
| R.C.C.P. | Reinforced Cement Concrete Pipe |
| R.Q.D. | Rock Quality Desgnation |
| R.M. | Rootmat |
| S | South |
| SAN. | Sanitary Sewer |
| SB | Southbound |
| S.D. | Storm Drain |
| S.D.D. | Surface Drain Ditch |
| SE | Super Elevation |
| SF | Silt Fence |
| S.F. | Square Feet |
| SHLDR. | Shoulder |
| SHA | State Highway Administration |
| SHT. | Sheet |
| S.P.P. | Structural Plate Pipe |
| S.P.T. | Standard Penetration Testing |
| S.S. | Stainless Steel |
| SSD | Stopping Sight Distance |
| SSF | Super Silt Fence |
| STD. | Standard |
| STA. | Station |
| STIFF. | Stiffener |
| SO. | Single Opening |
| S.Y. | Square Yards |
| SWM | Stormwater Management |
| T | Tangent |
| T | Telephone |
| TBR | To Be Removed |
| T.C. | Top of Cover |
| TEMP. | Temporary |
| T.G. | Top of Grate |
| T or TL | Traverse Line |
| T.M. | Top of Manhole |
| T.O.F. | Top of Footing |
| TRAV. | Traverse |
| TS | Temporary Swale |
| T.S. | Top of Slab |
| T.S. | Topsoil |
| TYP. | Typical |
| U.D. | Under Drain |
| U.G. | Underground |
| U.O.N. | Unless Otherwise Noted |
| U.P. | Utility Pole |
| USC | Unified Soil Classification |
| USDA | United States Department of Agriculture |
| VCL | Vertical Clearance |
| V.C.L. | Vertical Curve Length |
| W | Water |
| W | West |
| WB | Westbound |
| W.M. | Water Meter |
| W.S. | Wrapped Steel |

## SYMBOLS

| | |
|---|---|
| EXISTING RIGHT OF WAY LINE | |
| PROPOSED RIGHT OF WAY LINE | |
| PROPOSED TRAFFIC BARRIER | |
| EXISTING TRAFFIC BARRIER | |
| EXISTING WOOD FENCE LINE | |
| EXISTING CHAIN LINK FENCE LINE | |
| BASE OR SURVEY LINE | 31 +50 32 |
| EXISTING FIRE HYDRANT | |
| PROPOSED STORM DRAIN | |
| EXISTING STORM DRAIN | |
| EXISTING INLET | |
| EXISTING UTILITY POLE | |
| EXISTING TREE | |
| EXISTING TREE LINE | |
| EXISTING TREE TO BE REMOVED | |
| CUT SLOPE | C |
| FILL SLOPE | F |
| LIMIT OF DISTURBANCE | LOD |
| SILT FENCE | SF |
| SUPER SILT FENCE | SSF |
| DIVERSION FENCE | DF |
| STONE CHECK DAM | CD |
| TEMPORARY STONE OUTLET STRUCTURE | TSOS |
| TEMPORARY GABION OUTLET STRUCTURE | TGOS |
| AT–GRADE INLET PROTECTION | AGIP |
| CURB INLET PROTECTION | CIP |
| COMBINATION INLET PROTECTION | COIP |
| MEDIAN INLET PROTECTION | MIP |
| STANDARD INLET PROTECTION | SIP |
| TEST HOLE LOCATION | |
| STABILIZED CONSTRUCTION ENTRANCE | SCE |
| TEMPORARY ORANGE CONSTRUCTION FENCE | TPF |
| PROPOSED TREE | |
| CRITICAL ROOT ZONE | |
| TREE REMOVAL | |

## 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. 46328 EXPIRATION DATE 12–31–2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

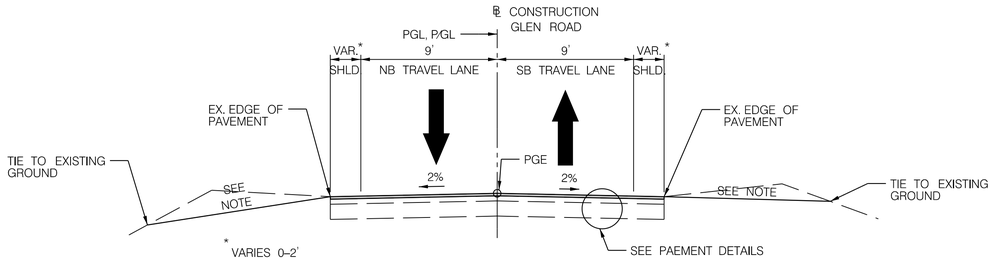
AB-01

REPLACEMENT OF BRIDGE NO. M–0148x01
ON GLEN ROAD
OVER SANDY BRANCH
**SYMBOLS AND ABBREVIATIONS**

Project No. : 502102 SHEET 3 of 48

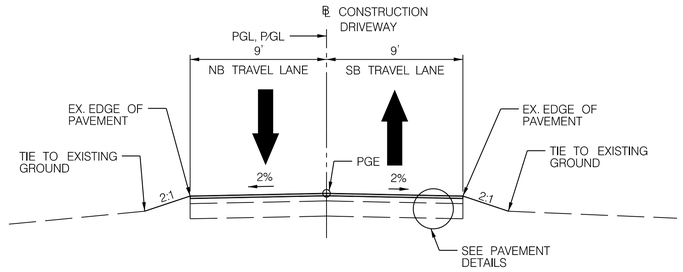
\\US0525-PPFSS01\shared_projects\2026213\15\700 CADD\702 Civil\pGN-AB01_GlenRoadBridge.dgn
11:30:41 AM
1/7/2026

MODELNAME:$MODELNAME$



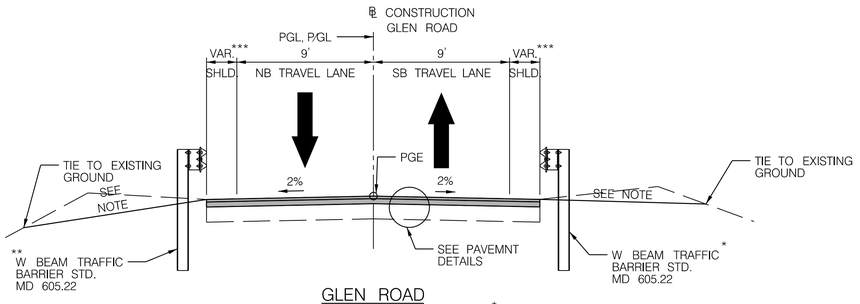

## GLEN ROAD

STA. 11+50.00 TO 12+00.00
STA. 17+76.80 TO 18+60.94




## DRIVEWAY

STA. 49+64.55 TO 50+17.86



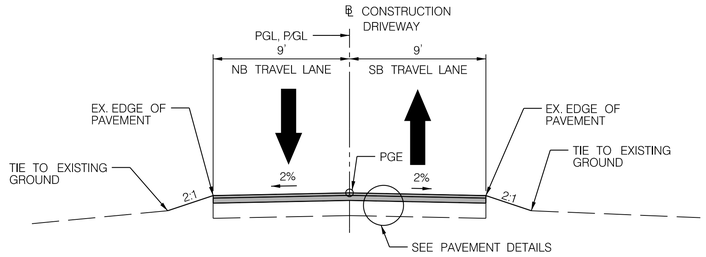

## GLEN ROAD

STA. 12+00.00 TO 14+00.00
STA. 14+85.15 TO 17+76.80

** STA. 13+72.28 TO 14+00.00

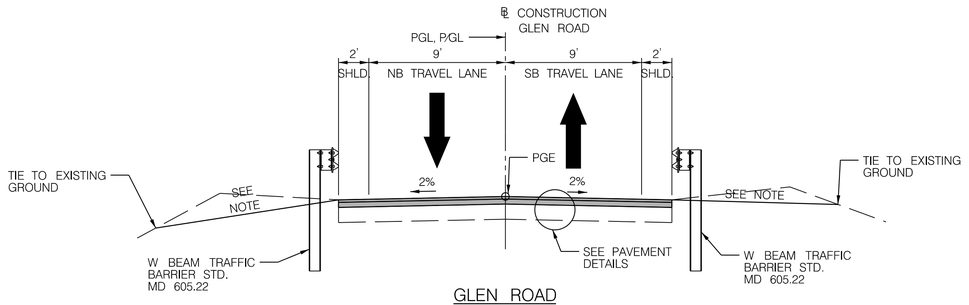
*** VARIES 0–2', SEE HD–01 AND HD–02

* STA. 13+11.45 TO 14+00.00
STA. 14+85.15 TO 15+71.06



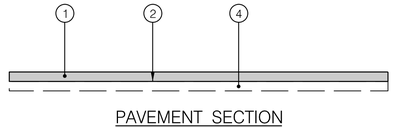

## DRIVEWAY

STA. 50+17.86 TO 50+36.34



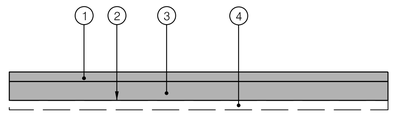

## GLEN ROAD

STA. 14+00.00 TO 14+60.18




## PAVEMENT SECTION

MILL & OVERLAY
(NOT TO SCALE)
STA. 11+50.00 TO 12+00.00
STA. 17+76.80 TO 18+60.94
STA. 49+64.55 TO 50+17.86




## PAVEMENT SECTION

VARIBLE DEPTH PAVEMENT
(NOT TO SCALE)
STA. 12+00.00 TO 14+60.18
STA. 14+85.15 TO 17+76.80
STA. 15+17.86 TO 50+36.34

## LEGEND

1. 2" SUPERPAVE ASPHALT MIX 12.5MM FOR SURFACE, PG 64E–22, LEVEL 2
2. MILL 2" SURFACE
3. VAR. DEPTH SUPERPAVE ASPHALT MIX 25.0MM FOR BASE, PG 64S–22, LEVEL 2 (MAX. 2" LIFTS)
4. EXISTING PAVEMENT

NOTE:
CUT SLOPES SHALL BE 2:1.
FILL SLOPE SHALL BE A MINIMUM OF 100:1 AND A MAXIMUM OF 6:1 TO PROVIDE POSITIVE DRAINAGE.

TS-01

5' 0 5' 10'
SCALE: 1" = 5'

## 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. 46328 EXPIRATION DATE 12–31–2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M–0148x01 ON GLEN ROAD OVER SANDY BRANCH

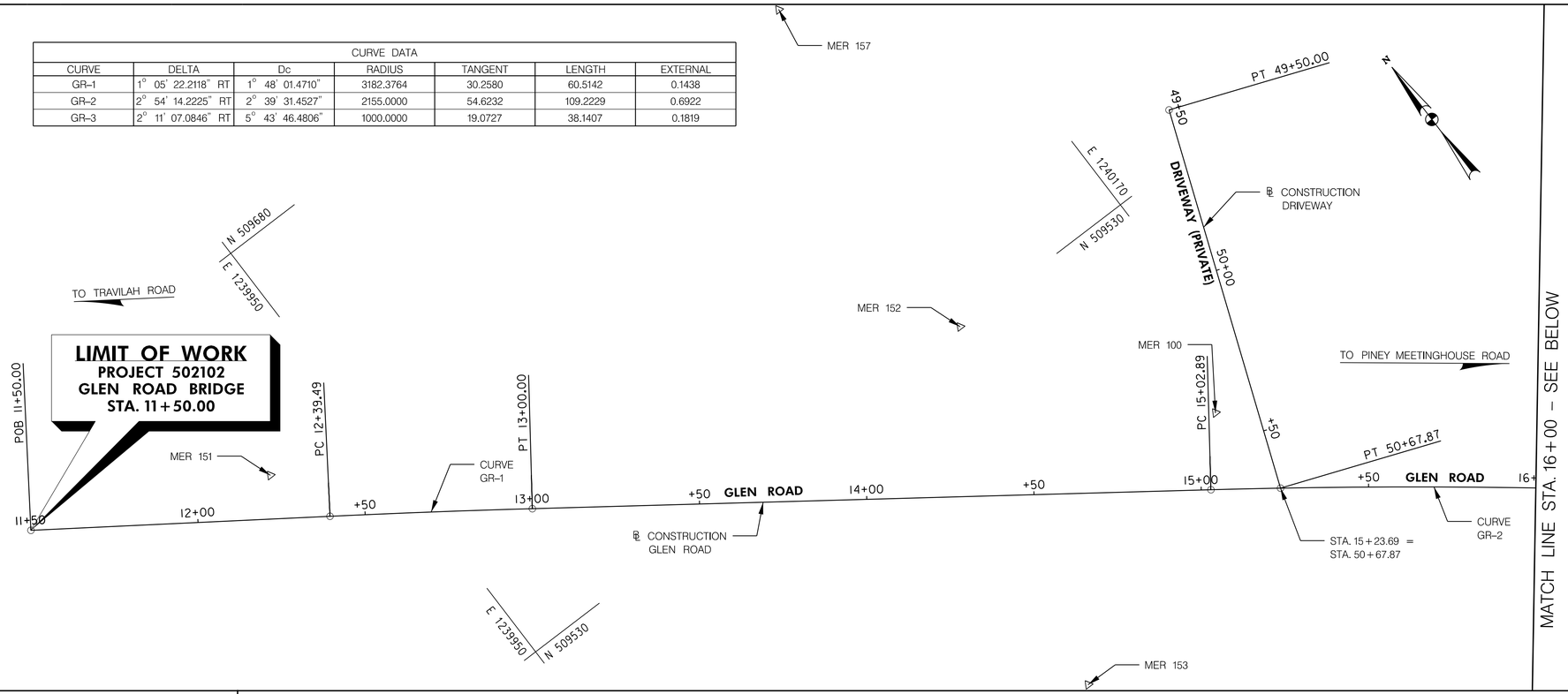
## ROADWAY TYPICAL SECTIONS

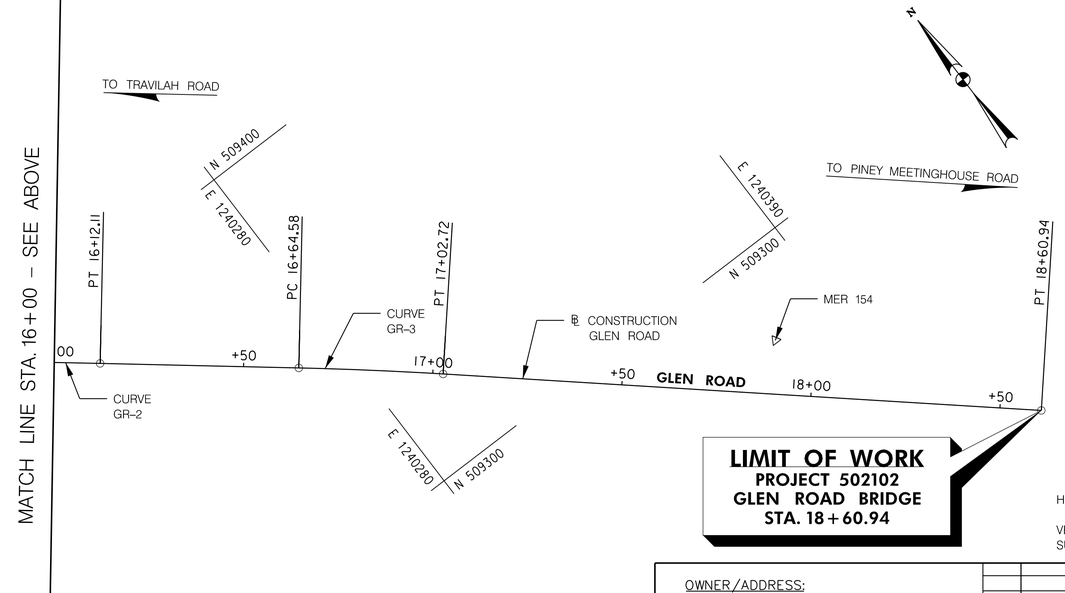
Project No. : 502102 SHEET 4 of 48

\\US0525-PPFSS01\shared_projects\202621315\700 CADD\702 Civil\pHT-X001_GlenRoadBridge.dgn
11:37:10 AM
1/7/2026
MODELNAME:$MODELNAME$

| CURVE DATA | | | | | | |
|---|---|---|---|---|---|---|
| CURVE | DELTA | Dc | RADIUS | TANGENT | LENGTH | EXTERNAL |
| GR–1 | 1° 05' 22.2118" RT | 1° 48' 01.4710" | 3182.3764 | 30.2580 | 60.5142 | 0.1438 |
| GR–2 | 2° 54' 14.2225" RT | 2° 39' 31.4527" | 2155.0000 | 54.6232 | 109.2229 | 0.6922 |
| GR–3 | 2° 11' 07.0846" RT | 5° 43' 46.4806" | 1000.0000 | 19.0727 | 38.1407 | 0.1819 |

| SURVEY CONTROL POINTS | | | |
|---|---|---|---|
| POINT NO. | NORTH | EAST | ELEVATION |
| MER 150 | 509726.3883 | 1239719.6510 | 277.27 |
| MER 151 | 509620.1286 | 1239919.0838 | 262.56 |
| MER 152 | 509530.1726 | 1240109.8070 | 253.74 |
| MER 153 | 509421.9025 | 1240075.2255 | 253.61 |
| MER 154 | 509276.3359 | 1240372.0290 | 265.22 |
| MER 155 | 509143.9914 | 1240523.0823 | 276.79 |
| MER 156 | 509702.5059 | 1240222.7225 | 265.35 |
| MER 157 | 509638.4008 | 1240124.3523 | 253.06 |
| MER 158 | 509734.4428 | 1240108.5606 | 254.69 |
| MER 100 | 509463.3737 | 1240154.8259 | 255.21 |
| MER 101 | 508768.6587 | 1240912.2861 | 298.02 |




| BASELINE DATA | | | | | |
|---|---|---|---|---|---|
| CURVE | POINT NO. | STATION | NORTH | EAST | BEARING |
| | PT | 11+50.00 | 509650.5010 | 1239852.2519 | S 55° 16' 55.3498" E |
| GR–1 | PC | 12+39.49 | 509599.5355 | 1239925.8062 | S 55° 16' 55.3498" E |
| | PI | 12+69.74 | 509582.3025 | 1239950.6772 | |
| | CC | | 506983.7317 | 1238113.3245 | |
| | PT | 13+00.00 | 509564.5996 | 1239975.2161 | S 54° 11' 33.1380" E |
| GR–2 | PC | 15+02.89 | 509445.8953 | 1240139.7585 | S 54° 11' 33.1380" E |
| | PI | 15+57.51 | 509413.9373 | 1240184.0572 | |
| | CC | | 507698.2170 | 1238878.9471 | |
| | PT | 16+12.11 | 509379.7761 | 1240226.6800 | S 51° 17' 18.9155" E |
| GR–3 | PC | 16+64.58 | 509346.9616 | 1240267.6224 | S 51° 17' 18.9155" E |
| | PI | 16+83.66 | 509335.0336 | 1240282.5050 | |
| | CC | | 508566.6557 | 1239642.2244 | |
| | PT | 17+02.72 | 509322.5468 | 1240296.9218 | S 49° 06' 11.8309" E |
| | PT | 18+60.94 | 509218.96005 | 1240416.5189 | S 49° 06' 11.8309" E |
| | PT | 49+50.00 | 509543.6946 | 1240198.7966 | S 20° 59' 37.2905" W |
| | PT | 50+67.87 | 509433.6458 | 1240156.5667 | S 20° 59' 37.2905" W |

HORIZONTAL DATUM: MARYLAND STATE PLANE COORDINATE SYSTEM NAD 831
VERTICAL DATUM: NAVD 1988
SURVEY UNIT: SURVEY FEET

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

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec


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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## ROADWAY GEOMETRY SHEET

Project No. : 502102 SHEET 5 of 48

GS-01


\\US0525-PFPSS01\shared_projects\202621315\700 CADD\702 Civil\pGS-P001_GlenRoadBridge.dgn
11:31:15 AM
1/7/2026
MODELNAME:$MODELNAME$

| BROWN POLYESTER COATED TRAFFIC BARRIER W-BEAM ONE-SIDED END TREATMENT (TYPE C) | | |
|---|---|---|
| QTY | STATION, OFFSET | REMARKS |
| 1 EA | STA. 13+11.45, 11.36' RT – STA. 13+61.45, 11.03' RT | STD. MD 605.03 |
| 1 EA | STA. 13+77.28, 10.53' LT – STA. 14+27.28, 11.00' LT | STD. MD 605.03 |
| 1 EA | STA. 15+20.79, 11.25' RT – STA. 15+71.06, 12.17' RT | STD. MD 605.03 |

| BROWN POLYESTER COATED TRAFFIC BARRIER W-BEAM ONE-SIDED DOWNSTREAM END TREATMENT TYPE K | | |
|---|---|---|
| QTY | STATION, OFFSET | REMARKS |
| 1 EA | STA. 50+18.78, 12.23' RT | STD. MD 605.10 |

| BROWN POLYESTER COATED TRAFFIC BARRIER W BEAM USING 8 FOOT POST | | |
|---|---|---|
| QTY | STATION, OFFSET | REMARKS |
| 159 LF | STA. 13+61.45, 11.03' RT – STA. 15+20.79, 11.25' RT | STD. MD 605.22 |
| 101 LF | STA. 14+27.28, 11.00' LT – STA. 50+18.78, 12.23' LT | STD. MD 605.22 |

TAX ID 06-02971361
PROMOD SHARMA ET AL
L. 19879 F. 792
LOT 28, PLAT 18578

**LIMIT OF WORK**
**PROJECT NO 502102**
**GLEN ROAD BRIDGE**
**STA. 11+50.00**

TO TRAVILAH ROAD

EX. RIGHT OF WAY

TEMPORARY CONSTRUCTION EASEMENT

TAX ID 06-02971417
BELSIDE PROPERTIES LLC
L. 21171 F. 158
LOT 33, PLAT 18578

EX. U/G UTILITY (RELOCATED BY WGAS)

REMOVE EX TRAFFIC BARRIER AND END TREATMENT

TYPE K END TREATMENT

N 509560
E 1240080

W BEAM TRAFFIC BARRIER

TYPE C END TREATMENT

POB 11+50.00
PC 12+39.49
PT 13+00.00

PR. CUT-FILL LINE

℄ CONSTRUCTION GLEN ROAD

TEMPORARY CONSTRUCTION EASEMENT

EX. RIGHT OF WAY

TAX ID 06-02572227
GLENSTONE FOUNDATION
L. 53422 F. 014
LOT 11, PLAT 15581

TEMPORARY CONSTRUCTION EASEMENT

N 509560
E 1239820

TAX ID 06-00394967
TRUSTEES OF THE MICHAEL HANDRIGAN LIVING TRUST ET AL
L. 48514 F. 373
PARCEL 9, PLAT 8685

℄ CONSTRUCTION DRIVEWAY
TO PINEY MEETINGHOUSE ROAD

PT 49+50.00

DRIVEWAY (PRIVATE)

EX. U/G UTILITIY (RELOCATED BY PEPCO)

EX. U/G UTILITIY (ADJUSTED BY COMCAST)

EX. U/G UTILITIES (ADJUSTED BY VERIZON)

KEEP 5' SPACING CL TO CL

PR. CUT-FILL LINE

TYPE C END TREATMENT

5' HIGH SPLIT RAIL

RESTRICTED BRIDGE

REFLECTOR/SPEED BUMP

NOTE: ALL 1" TREES ARE NEWLY PLANTED

E 1240090
N 509360

SANDY BRANCH

PT 50+67.87

MATCH LINE STA. 16+00 – SEE SHEET PS-02

**STRUCTURE SCHEDULE**

| STRUCTURE | STATION | OFFSET | TYPE | TOP ELEV. | INV. OUT | STANDARD | MAINTENANCE |
|---|---|---|---|---|---|---|---|
| I-2 | 15+32.00 | 41.54' LT | K INLET | 254.50 | 250.87 | MD 378.03 | MCDOT |
| I-4 | 15+32.00 | 36.51' LT | K INLET | 254.50 | 250.87 | MD 378.03 | MCDOT |

**PIPE SCHEDULE**

| STRUCT. TO STRUCT. | | SIZE | TYPE | LENGTH | INV. IN | INV. OUT | MAINTENANCE |
|---|---|---|---|---|---|---|---|
| I-2 | IMB. WALL | 14"X23" | HERCP CL IV | 43' | 250.87 | 250.45 | MCDOT |
| I-4 | IMB. WALL | 14"X23" | HERCP CL IV | 42' | 250.87 | 250.45 | MCDOT |

NOTES:
1. SEE STREAM RESTORATION PLANS FOR DETAILS ON CLASS II RIP RAP DESIGN UPSTREAM AND DOWNSTREAM OF THE CULVERT.

LEGEND

PROP. MILL & OVERLAY AND PROP. VARIABLE DEPTH PAVEMENT

IMBRICATED RIPRAP WALL

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

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

**ROADWAY PLAN (1 OF 2)**

PS-01

Project No. : 502102 SHEET 6 of 48

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1/7/2026
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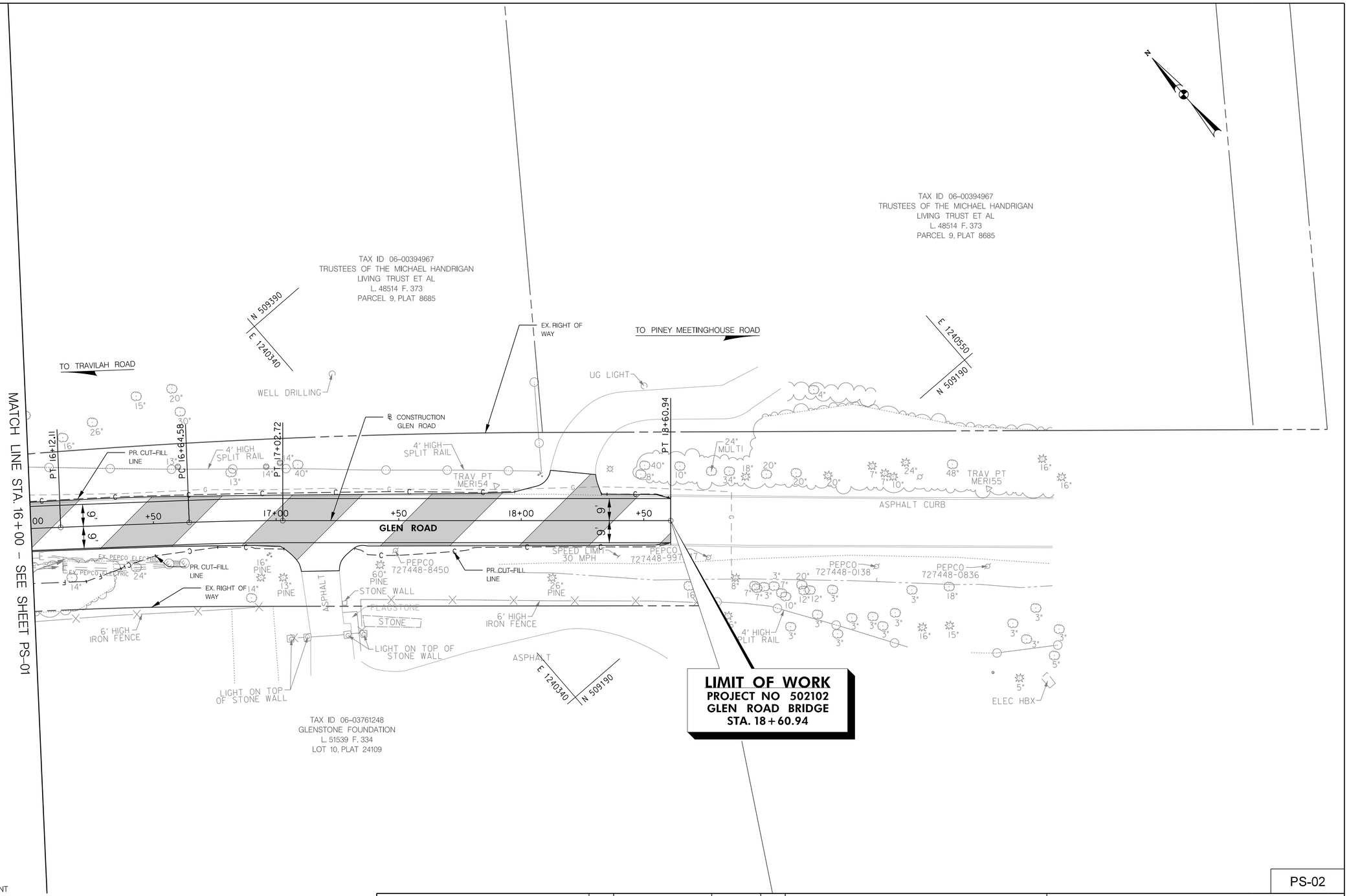


LEGEND

PROP. MILL & OVERLAY AND PROP. VARIABLE DEPTH PAVEMENT

20' 0 20' 40'

SCALE: 1" = 20'

## PROFESSIONAL CERTIFICATION

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LICENSE NO. 46328 EXPIRATION DATE 12-31-2026

Stantec

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 — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: DHM III Drawn by: DHM III Checked by: DL

PS-02

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## ROADWAY PLAN (2 OF 2)

Project No. : 502102 SHEET 7 of 48

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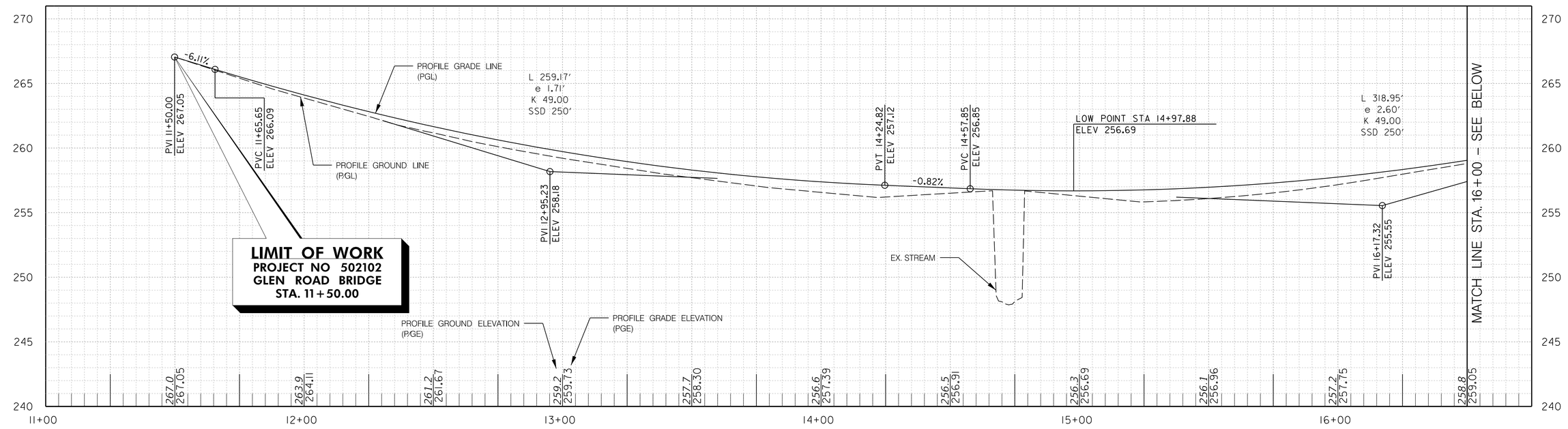


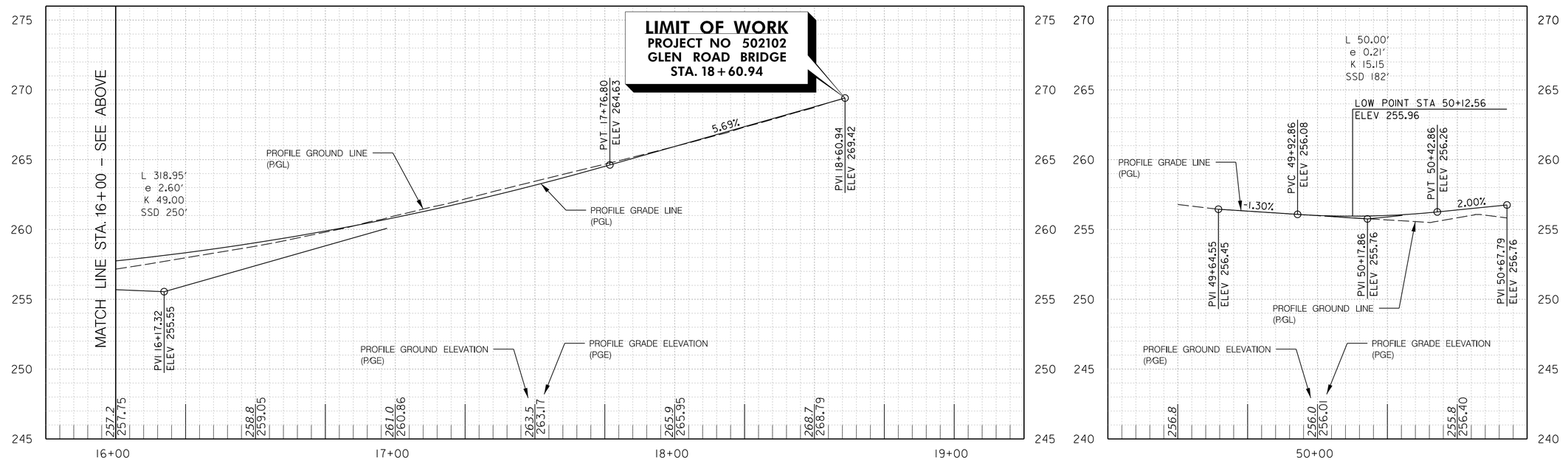


HP-01

4' 0 4' 8'
VERTICAL SCALE: 1" = 4'
20' 0 20' 40'
HORIZONTAL SCALE: 1" = 20'

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## ROADWAY PROFILES

Project No. : 502102 SHEET 8 of 48

## 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. 46328 EXPIRATION DATE 12-31-2026

\\US0525-PPFSS01\shared_projects\2026213\15\700 CADD\702 Civil\pHP-P001_GlenRoadBridge.dgn
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1/7/2026
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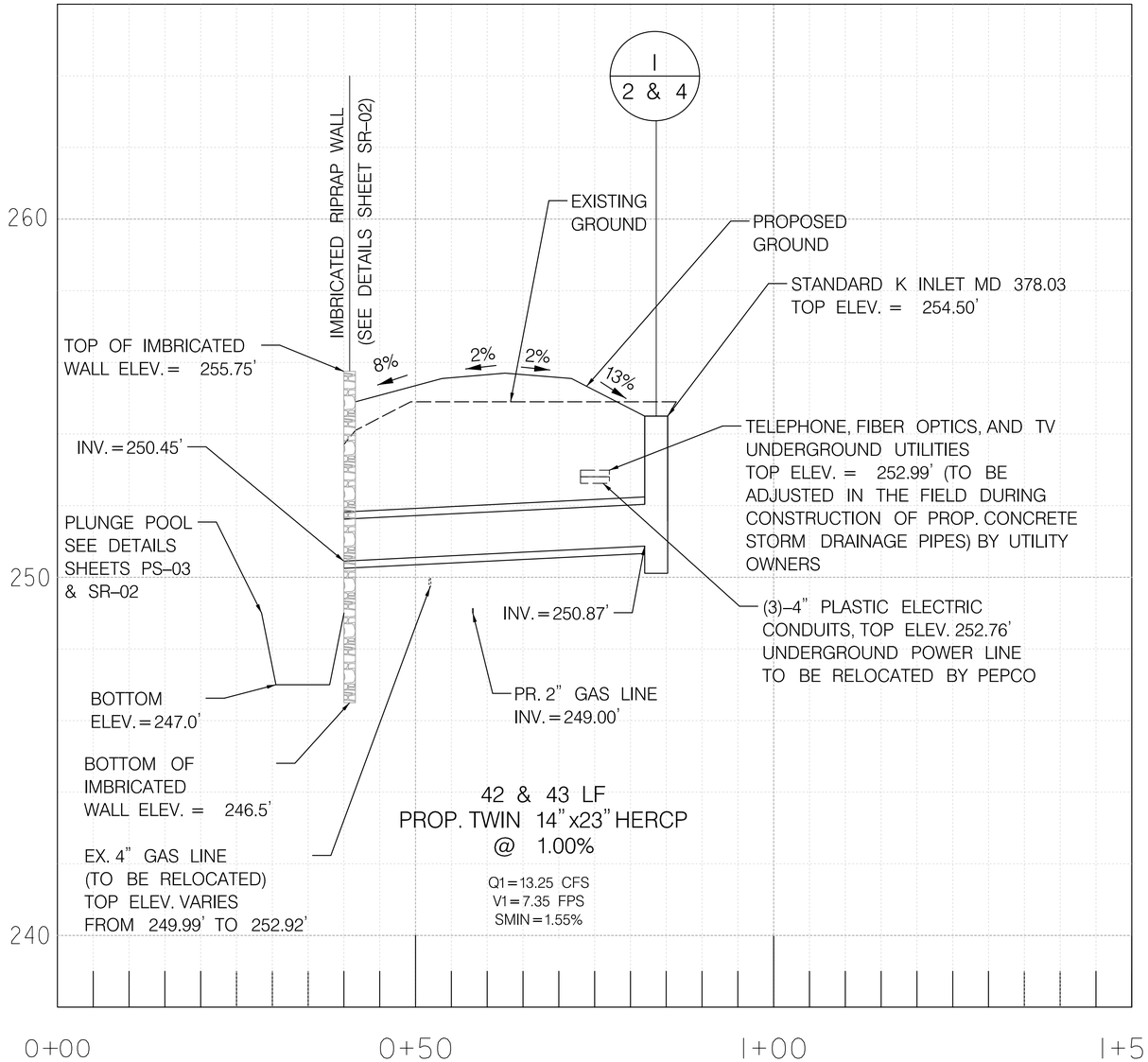


## PR. 14X23 HERCP STORM DRAIN PROFILE

V: 1" = 2'
H: 1" = 10'

4' 0 2' 4'
VERTICAL SCALE: 1" = 2'

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

## 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. 63330 EXPIRATION DATE 08-21-2027

Stantec

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: RLP Drawn by: RLP Checked by: DL

DP-01

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH
**DRAINAGE PROFILE**

Project No. : 502102 SHEET 9 of 48

02:06 PM
Tuesday, January 27, 2026
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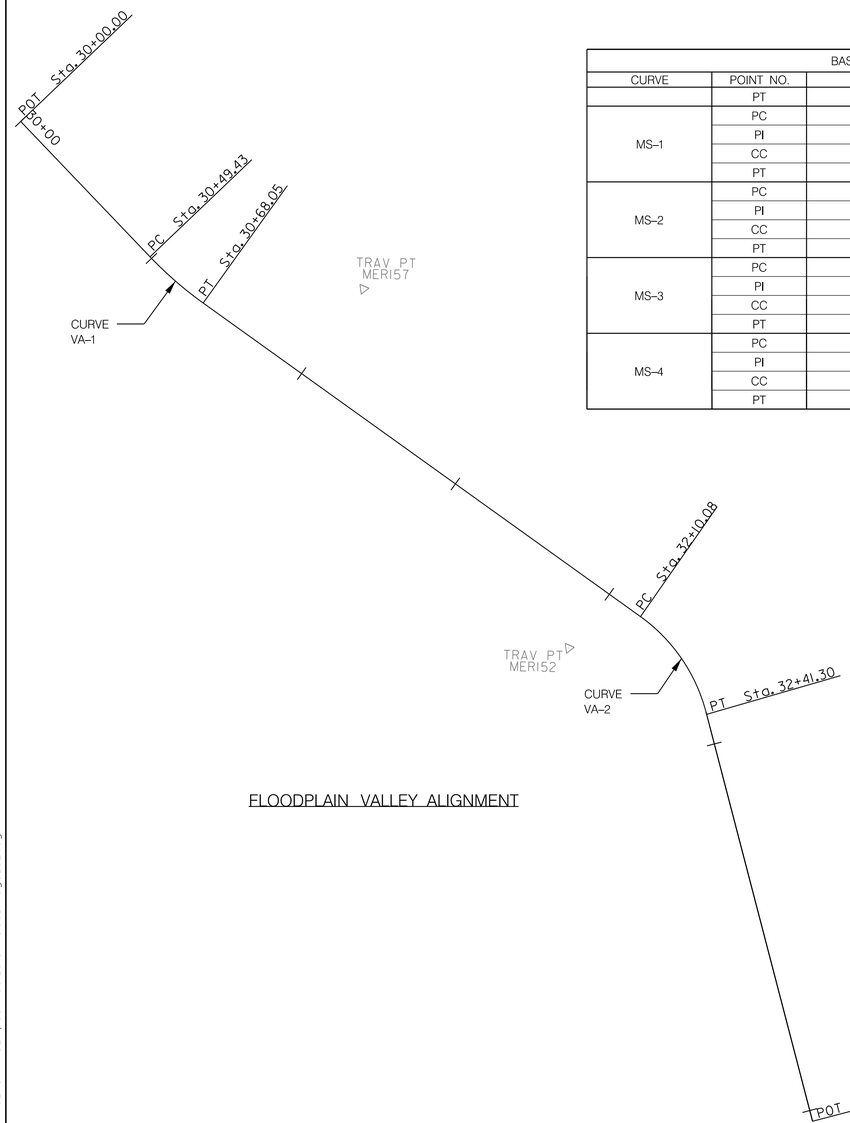
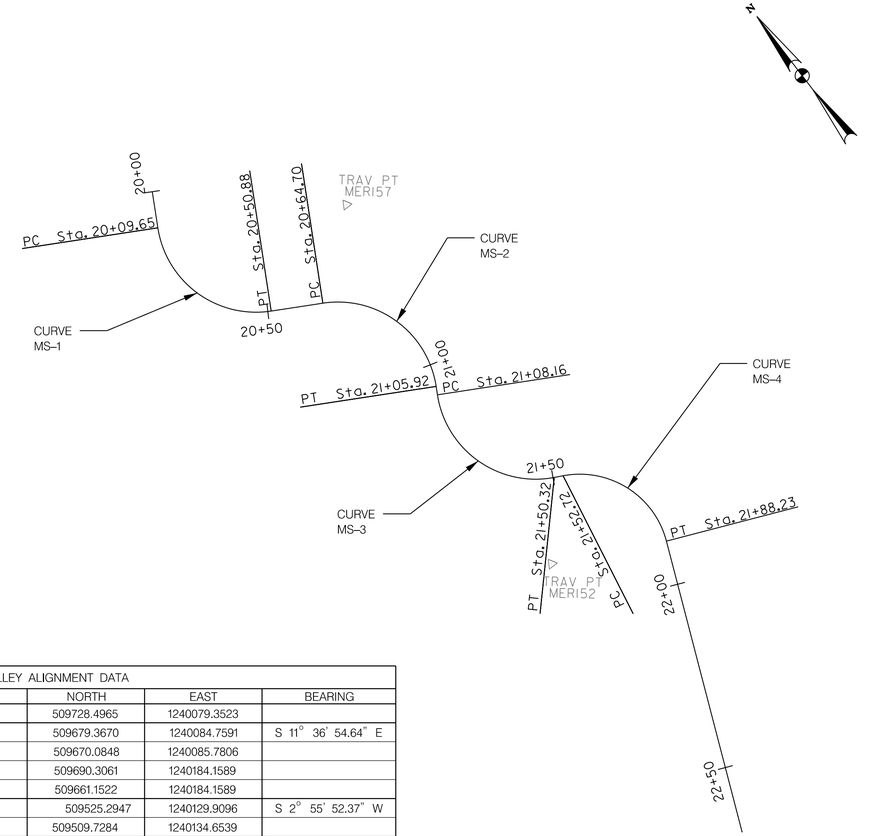



FLOODPLAIN VALLEY ALIGNMENT

| BASEFLOW CHANNEL ALIGNMENT DATA | | | | | |
|---|---|---|---|---|---|
| CURVE | POINT NO. | STATION | NORTH | EAST | BEARING |
| | PT | 20+00.00 | 509672.2466 | 1240085.7416 | |
| MS–1 | PC | 20+09.65 | 509663.7799 | 1240081.1028 | S 16° 16' 57.12" E |
| | PI | 20+35.90 | 509640.7615 | 1240068.4915 | |
| | CC | | 509651.1686 | 1240104.1211 | |
| | PT | 20+50.88 | 509628.1503 | 1240091.5099 | |
| MS–2 | PC | 20+64.70 | 509621.5128 | 1240103.6246 | S 16° 16' 57.12" E |
| | PI | 20+90.95 | 509608.9016 | 1240126.6429 | |
| | CC | | 509598.4945 | 1240091.0133 | |
| | PT | 21+05.92 | 509585.8832 | 1240114.0316 | |
| MS–3 | PC | 21+08.16 | 509583.9232 | 1240112.9577 | S 17° 18' 17.70" E |
| | PI | 21+35.36 | 509560.0684 | 1240099.8881 | |
| | CC | | 509571.3119 | 1240135.9760 | |
| | PT | 21+50.32 | 509547.8582 | 1240124.1941 | |
| MS–4 | PC | 21+52.72 | 509546.7824 | 1240126.3356 | S 20° 15' 35.71" E |
| | PI | 21+74.80 | 509536.8709 | 1240146.0659 | |
| | CC | | 509525.6742 | 1240142.7319 | |
| | PT | 21+88.23 | 509516.5174 | 1240137.5069 | |




BASEFLOW CHANNEL ALIGNMENT

| FLOODPLAIN VALLEY ALIGNMENT DATA | | | | | |
|---|---|---|---|---|---|
| CURVE | POINT NO. | STATION | NORTH | EAST | BEARING |
| | PT | 30+00.00 | 509728.4965 | 1240079.3523 | |
| VA–1 | PC | 30+49.43 | 509679.3670 | 1240084.7591 | S 11° 36' 54.64" E |
| | PI | 30+58.77 | 509670.0848 | 1240085.7806 | |
| | CC | | 509690.3061 | 1240184.1589 | |
| | PT | 30+68.05 | 509661.1522 | 1240184.1589 | |
| VA–2 | PC | 31+10.08 | 509525.2947 | 1240129.9096 | S 2° 55' 52.37" W |
| | PI | 31+26.35 | 509509.7284 | 1240134.6539 | |
| | CC | | 509512.1754 | 1240086.8645 | |
| | PT | 31+41.31 | 509494.7281 | 1240128.3445 | |

| FLOODPLAIN VALLEY ALIGNMENT CURVE DATA | | | | | | |
|---|---|---|---|---|---|---|
| CURVE | DELTA | Dc | RADIUS | TANGENT | LENGTH | EXTERNAL |
| VA–1 | 10° 40' 11.76" LT | 57° 17' 44.81" | 100 | 9.3383 | 18.6225 | 0.4351 |
| VA–2 | 39° 45' 45.76" RT | 127° 19' 26.24" | 45 | 16.2732 | 31.2296 | 2.8520 |

| BASEFLOW CHANNEL ALIGNMENT CURVE DATA | | | | | | |
|---|---|---|---|---|---|---|
| CURVE | DELTA | Dc | RADIUS | TANGENT | LENGTH | EXTERNAL |
| MS–1 | 90° 00' 00.00" LT | 218° 17' 50.47" | 26.2467 | 26.2467 | 41.2282 | 10.8717 |
| MS–2 | 90° 00' 00.00" RT | 218° 17' 50.47" | 26.2467 | 26.2467 | 41.2282 | 10.8717 |
| MS–3 | 92° 02' 41.16" LT | 218° 17' 50.47" | 26.2467 | 27.2005 | 42.1649 | 11.5522 |
| MS–4 | 86° 08' 05.14" RT | 242° 33' 09.43" | 23.6220 | 22.0799 | 35.5118 | 8.7125 |

| SURVEY CONTROL POINTS | | | |
|---|---|---|---|
| POINT NO. | NORTH | EAST | ELEVATION |
| MER 152 | 509530.1726 | 1240109.8070 | 253.74 |
| MER 157 | 509638.4008 | 1240124.3523 | 253.06 |

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

## 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. 23106 EXPIRATION DATE 05-19-2027

STRAUGHAN ENVIRONMENTAL

Stantec

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: JDB Drawn by: JDB Checked by: LT

GS–02

REPLACEMENT OF BRIDGE NO. M–0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**STREAM RESTORATION PROPOSED GEOMETRY SHEET**

Project No. : 502102 SHEET 10 of 48

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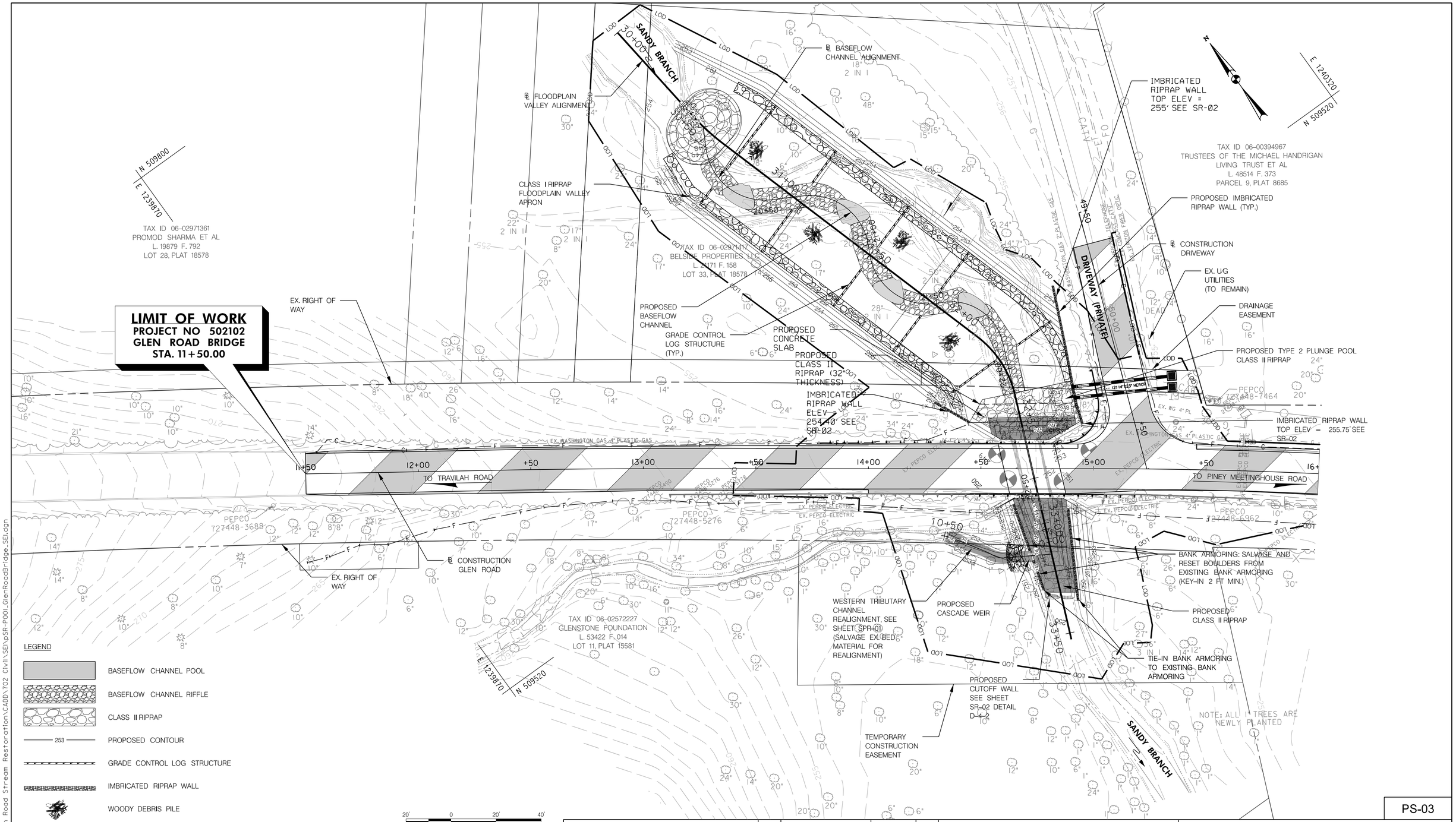


LEGEND

- BASEFLOW CHANNEL POOL
- BASEFLOW CHANNEL RIFFLE
- CLASS II RIPRAP
- 253 — PROPOSED CONTOUR
- GRADE CONTROL LOG STRUCTURE
- IMBRICATED RIPRAP WALL
- WOODY DEBRIS PILE
- CONCRETE SLAB
- CUTOFF WALL

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

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: JDB Drawn by: JDB Checked by: LT

PS-03

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STREAM RESTORATION PLAN

Project No. : 502102 SHEET 11 of 48

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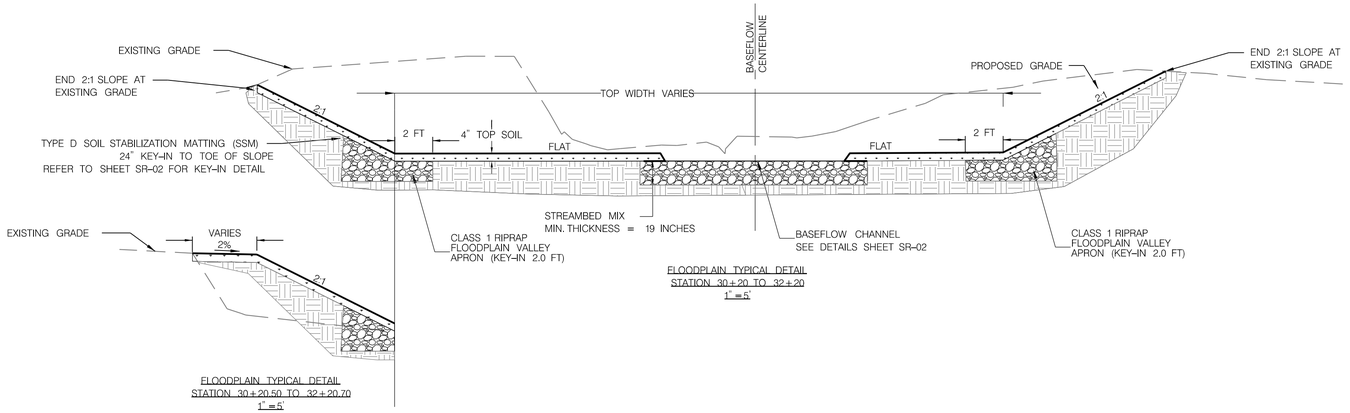
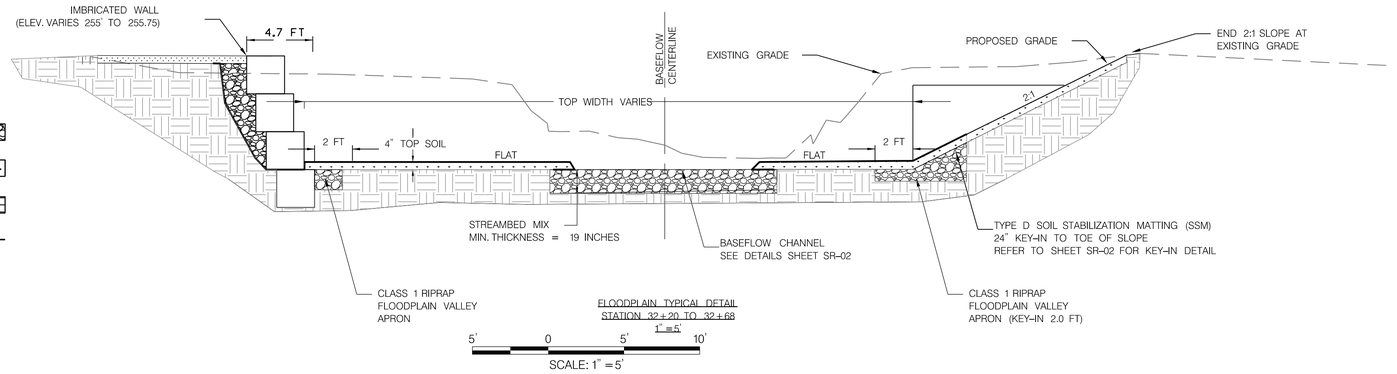
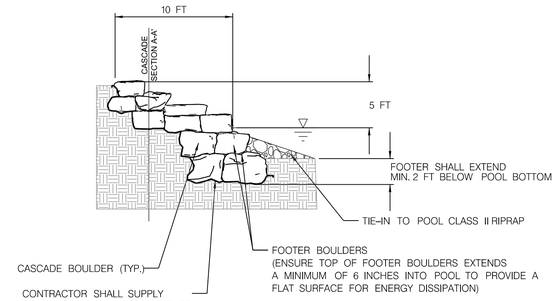


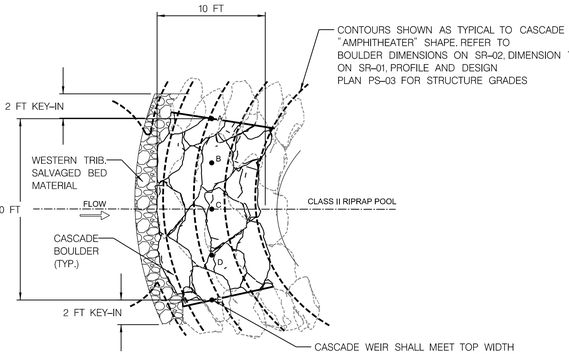

LEGEND

- STREAMBED MIX
- TOPSOIL
- EXISTING GROUND
- SOIL STAB. MATTING

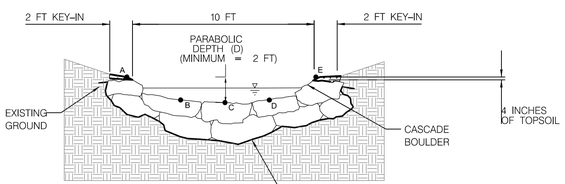
| CASCADE WEIR DIMENSION TABLE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| US STA. | DS STA. | US INV. | DS INV. | L (FT) | W (FT) | H (FT) | D (FT) | $D_{crest}$ (FT) |
| 10+20 | 10+10 | 253 | 248 | 10 | 10 | 5 | 2 | 2 |



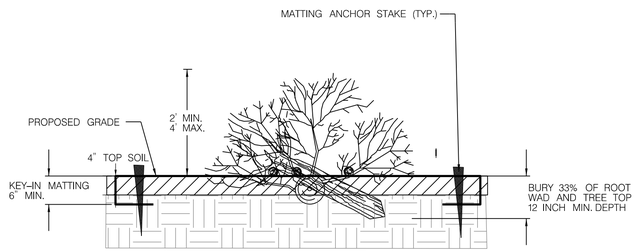

CASCADE WEIR CENTERLINE PROFILE
NOT TO SCALE



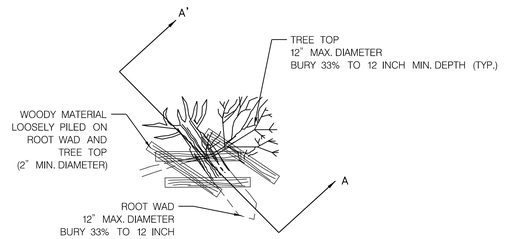

CASCADE WEIR
PLANVIEW
NOT TO SCALE




CASCADE WEIR
TYPICAL SECTION A-A'
NOT TO SCALE




WOODY DEBRIS PILE
CROSS-SECTION A-A' VIEW
NOT TO SCALE




WOODY DEBRIS PILE
PLAN VIEW
NOT TO SCALE

SR-01

## PROFESSIONAL CERTIFICATION

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LICENSE NO. 23106 EXPIRATION DATE 05-19-2027

STRAUGHAN ENVIRONMENTAL

Stantec

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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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STREAM RESTORATION DETAILS (1 OF 2)

Project No. : 502102 SHEET 12 of 48

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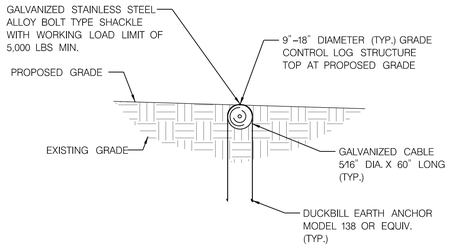
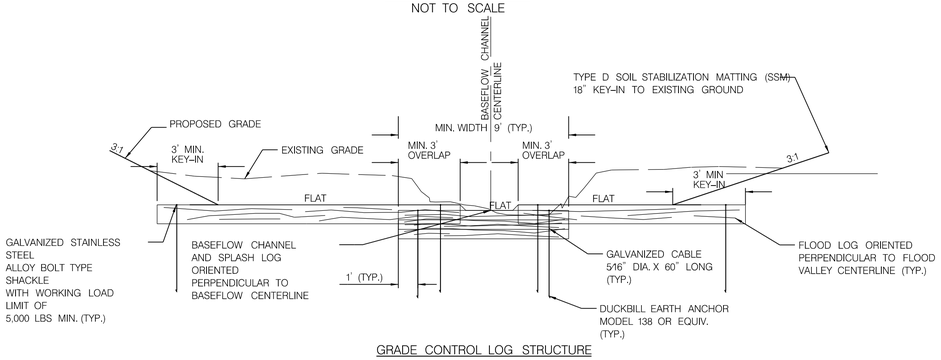
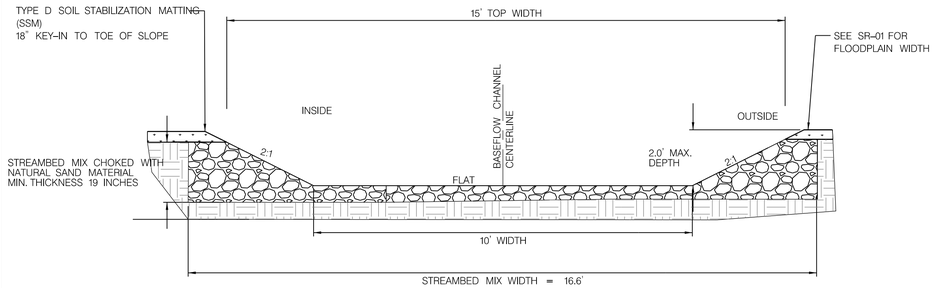



GRADE CONTROL LOG STRUCTURE
FLOOD VALLEY PROFILE
NOT TO SCALE



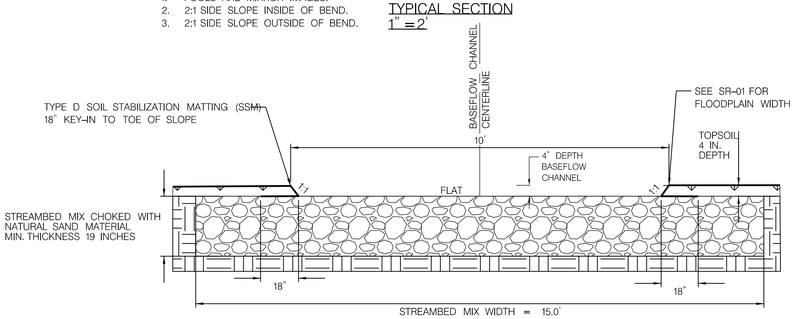

GRADE CONTROL LOG STRUCTURE
TYPICAL SECTION
NOT TO SCALE

NOTE :
1. GRADE CONTROL LOGS ARE TO BE BURIED AND INSTALLED SO THAT THE CROWN IS FLUSH WITH THE PROPOSED GRADE.

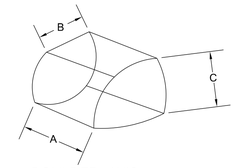



NOTE :
1. POOLS ARE MIRROR IMAGES.
2. 2:1 SIDE SLOPE INSIDE OF BEND.
3. 2:1 SIDE SLOPE OUTSIDE OF BEND.

BASEFLOW CHANNEL POOL
TYPICAL SECTION
1" = 2'



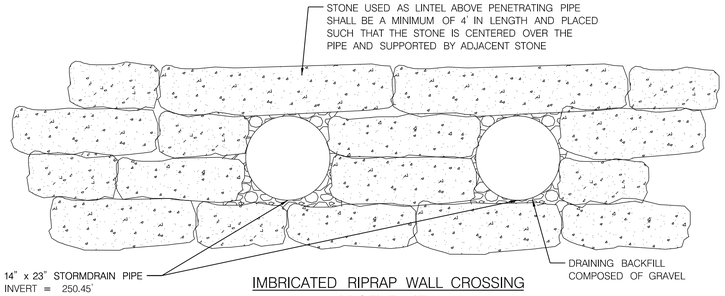

BASEFLOW CHANNEL RIFFLE
TYPICAL SECTION
1" = 2'



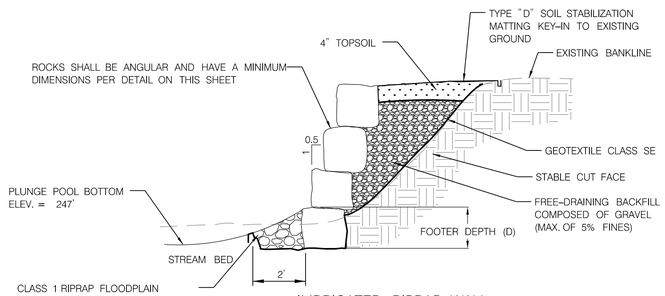

BOULDER AXIS
NOT TO SCALE

| BOULDER DIMENSIONS (IN) | | | |
|---|---|---|---|
| | A–AXIS | B–AXIS | C–AXIS |
| IMBR. WALL AND CASCADE WEIR | 30" MIN. | 30" MIN. | 12–24" |
| IRR WALL/WEIR FOOTER | 30" MIN. | 30" MIN. | 24" MIN. |

NOTE:
BOULDERS SHALL HAVE MINIMUM UNIT WEIGHT OF 165 LBS/CF.



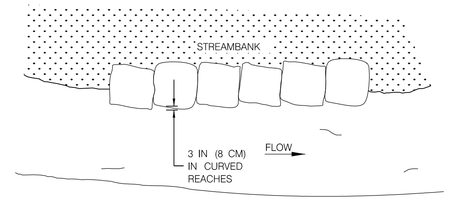

IMBRICATED RIPRAP WALL CROSSING
PROFILE VIEW
NOT TO SCALE




IMBRICATED RIPRAP WALL
CROSS-SECTION VIEW
NOT TO SCALE

NOTE:
1. STONE BLOCKS SHALL BE ROTATED INTO THE BANK DURING PLACEMENT SUCH THAT THE UPSTREAM BLOCKS OVERLAP THE DOWNSTREAM BLOCKS BY A MINIMUM OF 3 INCHES (8 CM)
2. PLACE INDIVIDUAL BLOCKS AS NEEDED TO ALLOW FOR TWIN 14" x 23" STORMDRAIN PIPE TO DAYLIGHT

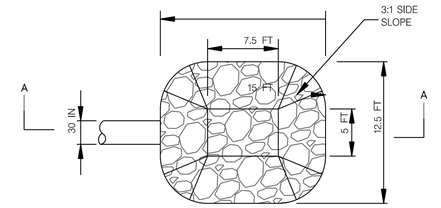
| IMBRICATED RIPRAP WALL | | | | | |
|---|---|---|---|---|---|
| START | END | SIDE | TOP ELEV. | FOOTER DEPTH (D) | LENGTH |
| 32+12 | 32+70 | L | 255.75' | 30 IN | 63 LF |
| 32+60 | 32+61 | R | 254.40' | 30 IN | 19 LF |



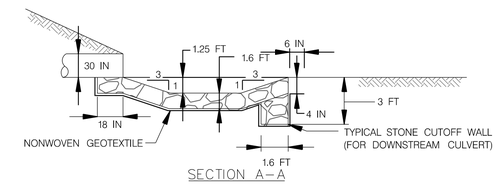

IMBRICATED RIPRAP WALL
PLAN VIEW
NOT TO SCALE

## DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP




PLAN VIEW




SECTION A–A

### CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
3. PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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 |
|---|---|---|

SR–02

## PROFESSIONAL CERTIFICATION

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LICENSE NO. 23106 EXPIRATION DATE 05-19-2027

STRAUGHAN ENVIRONMENTAL

Stantec

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GAITHERSBURG, MARYLAND

CONTACT:
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240–777–7210
DESIGN SECTION
240–777–7221

| NO. | REVISION | DATE | BY |
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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M–0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STREAM RESTORATION DETAILS (2 OF 2)

Project No. : 502102 SHEET 13 of 48

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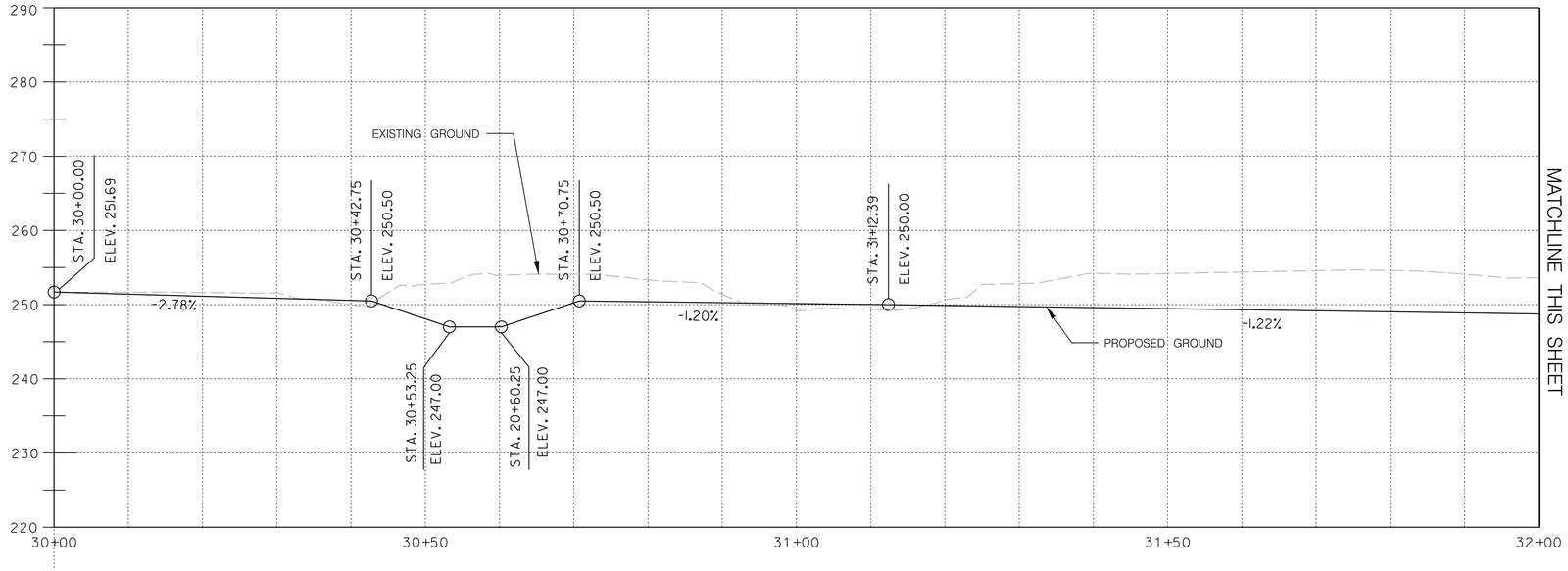
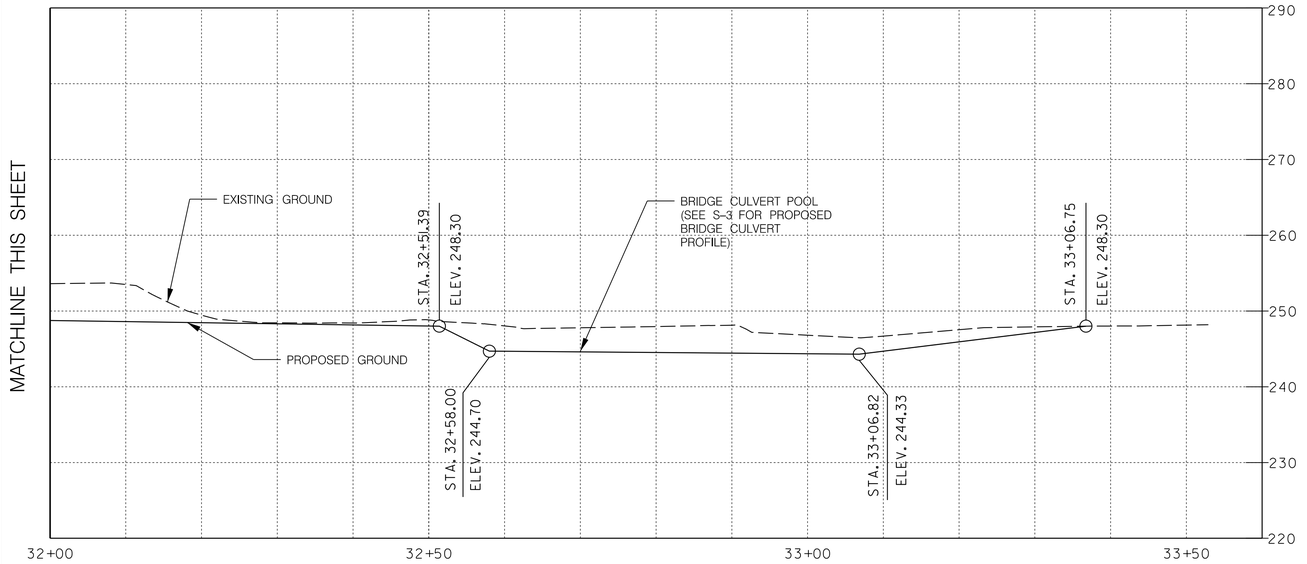
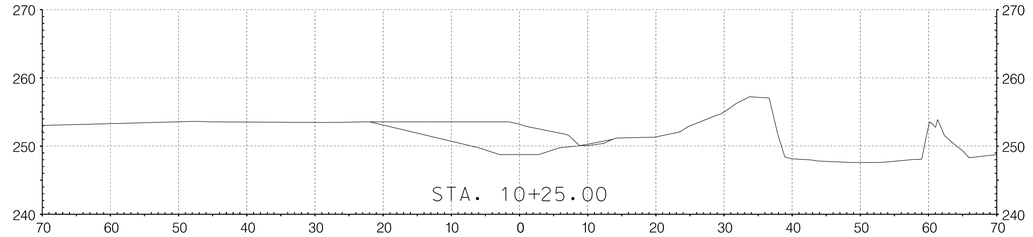
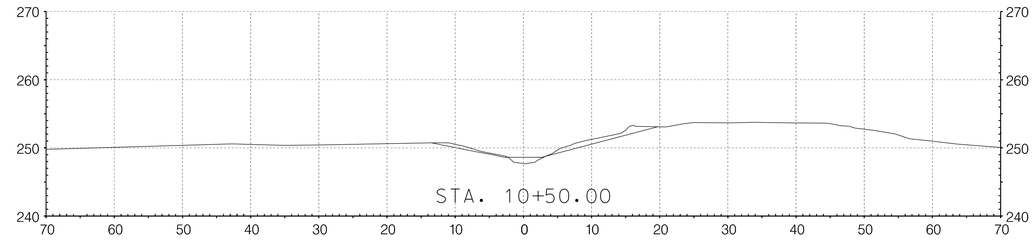



WESTERN TRIBUTARY REALIGNMENT




WESTERN TRIBUTARY REALIGNMENT




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

SPR-01

## PROFESSIONAL CERTIFICATION

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: JDB Drawn by: JDB Checked by: LT

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## FLOODPLAIN VALLEY PROFILE

Project No. : 502102 SHEET 14 of 48

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1/23/2026
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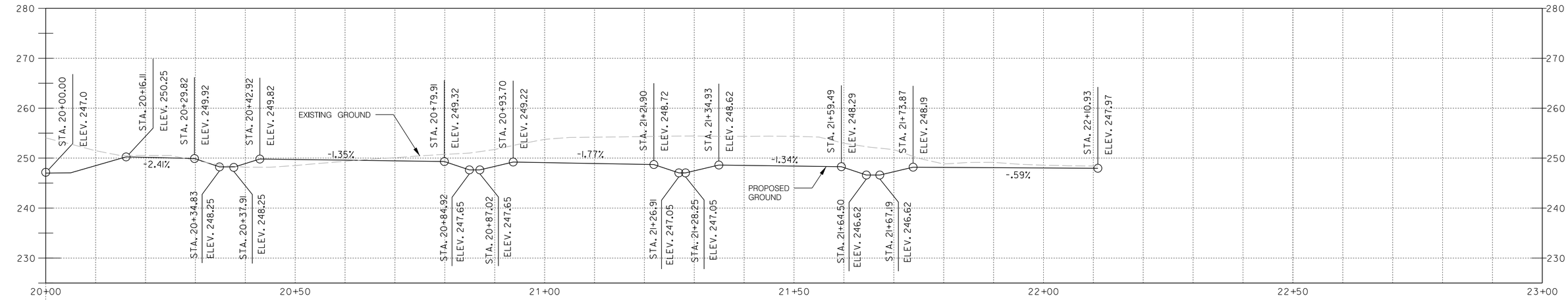


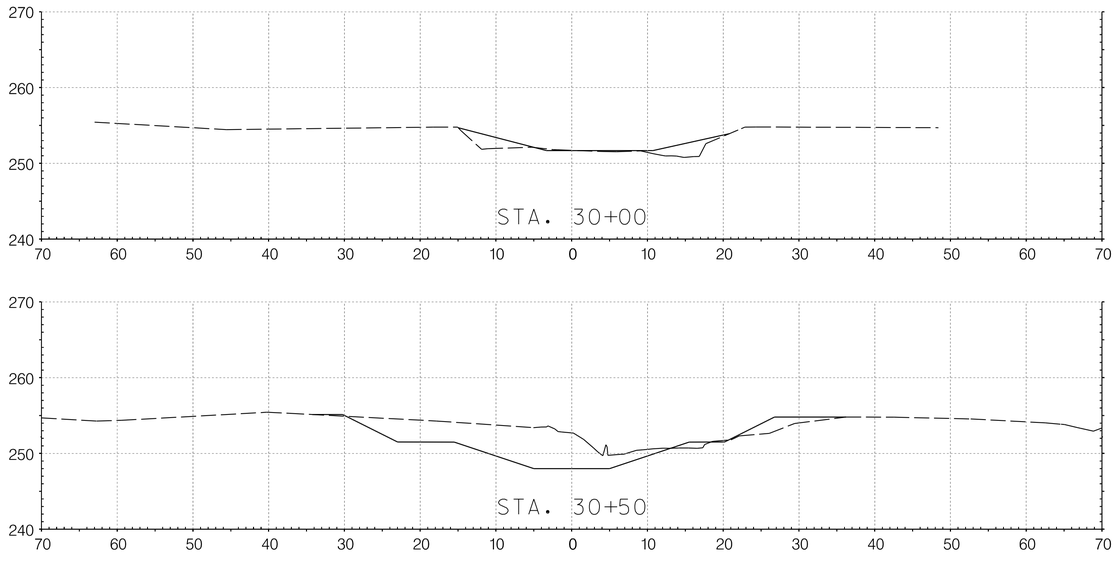


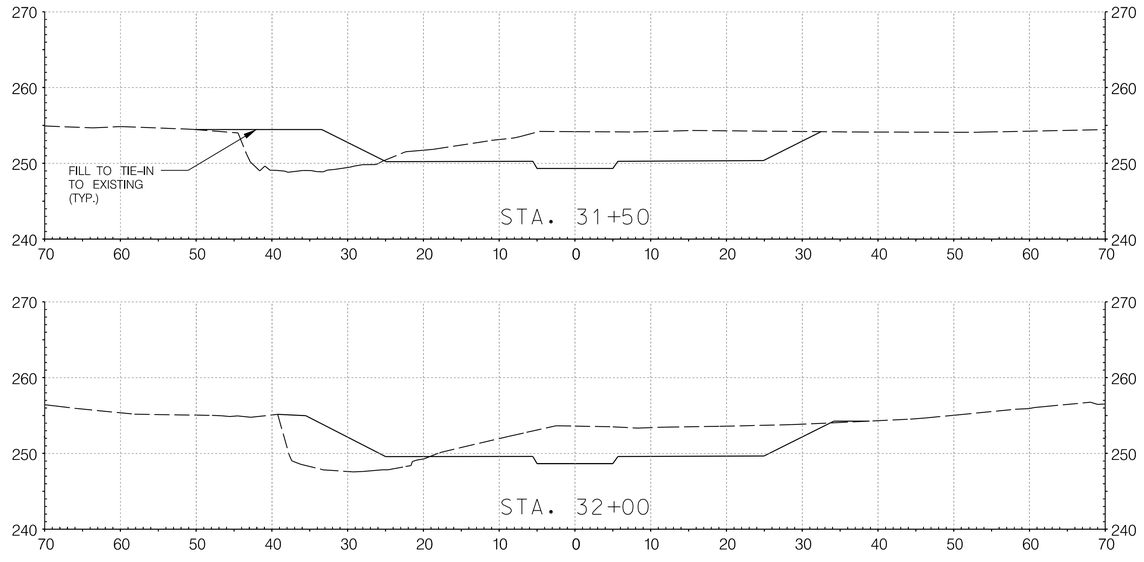


SPR-02

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

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|---|---|---|---|

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: JDB Drawn by: JDB Checked by: LT

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## BASEFLOW CHANNEL PROFILE AND STREAM RESTORATION CROSS SECTIONS

Project No. : 502102 SHEET 15 of 48


Y:\4063-002 Glen Road Stream Restoration\CADD\702 Civil\SEN\pHP-P001_GlenRoadBridge_sel.dgn
5:14:39 PM
1/23/2026
MODELNAME: $MODELNAME$

**LIMIT OF WORK**
**PROJECT NO 502102**
**GLEN ROAD BRIDGE**
**STA. 11+50.00**

SANDY BRANCH

℄ FLOODPLAIN VALLEY ALIGNMENT

℄ BASEFLOW CHANNEL ALIGNMENT

PROPOSED BASEFLOW CHANNEL

GRADE CONTROL LOG STRUCTURE (TYP.)

EX. RIGHT OF WAY

℄ CONSTRUCTION DRIVEWAY

PROPOSED IMBRICATED RIPRAP WALL (TYP.)

EX. U/G UTILITIES (TO REMAIN)

DRAINAGE EASEMENT

DRIVEWAY (PRIVATE)

℄ CONSTRUCTION GLEN ROAD

EX. RIGHT OF WAY

WESTERN TRIBUTARY CHANNEL REALIGNMENT

TEMPORARY CONSTRUCTION EASEMENT

TO TRAVILAH ROAD

TO PINEY MEETINGHOUSE ROAD

N 509800
E 1239870

TAX ID 06-02971361
PROMOD SHARMA ET AL
L. 19879 F. 792
LOT 28, PLAT 18578

BELSIZE PROPERTIES LLC
L. 49564 F. 154
LOT 33, PLAT 18578

TAX ID 06-02572227
GLENSTONE FOUNDATION
L. 53422 F. 014
LOT 11, PLAT 15581

N 509520
E 1240320

TAX ID 06-00394967
TRUSTEES OF THE MICHAEL HANDRIGAN LIVING TRUST ET AL
L. 48514 F. 373
PARCEL 9, PLAT 8685

NOTE: ALL 11 TREES ARE NEWLY PLANTED

LEGEND

- BASEFLOW CHANNEL POOL
- BASEFLOW CHANNEL RIFFLE
- CLASS II RIPRAP
- 253 PROPOSED CONTOUR
- GRADE CONTROL LOG STRUCTURE
- IMBRICATED RIPRAP WALL
- WOODY DEBRIS PILE
- CONCRETE SLAB
- CUTOFF WALL
- WETLAND/FLOODPLAIN MEADOW
- UPLAND/RIPARIAN MEADOW
- RIPARIAN FOREST WITH MEADOW
- TURFGRASS
- TREE REMOVAL

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

## 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. 23106 EXPIRATION DATE 05-19-2027

STRAUGHAN ENVIRONMENTAL

Stantec

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: JDB Drawn by: JDB Checked by: LT

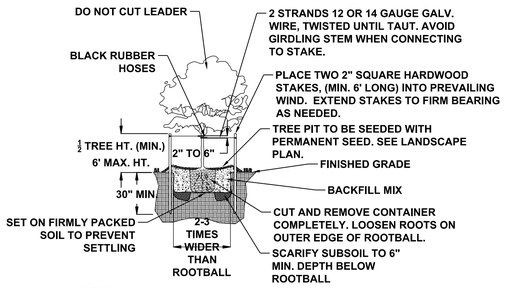
LD-01

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

**STREAM RESTORATION LANDSCAPING PLAN**

Project No. : 502102 SHEET 16 of 48

Y:\4063-002 Glen Road Stream Restoration\CADD\702 Civil\SE\pLD-P001_GlenRoadBridge_SE.dgn
2:30:45 PM
1/26/2026
MODELNAME: $MODELNAME$




**NOTES:**
1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING STAKES.
2. WATER THOROUGHLY AFTER INSTALLATION.
3. REMOVE ALL HOSE, WIRE, AND STAKES AT THE END OF PERIOD.

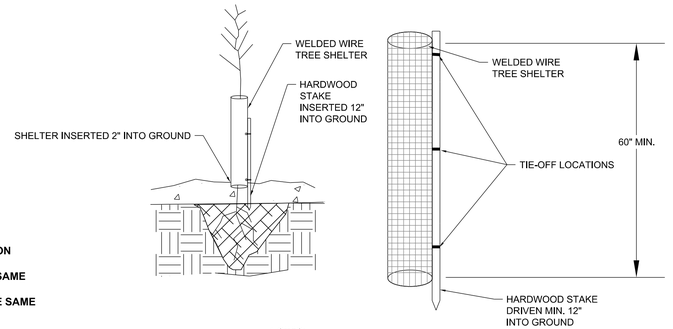
**DECIDUOUS TREE PLANTING**
**NOT TO SCALE**

- CANOPY/UNDERSTORY SPECIES

**A' - TREE SPACING PER PLANT SCHEDULE**

**NOTES:**
1. THIS PLANTING IS TO MIMIC NATURAL SEED DISPERSAL
2. EACH SPECIES IS TO BE PLANTED IN A GROUP OF COMMON VEGETATION SPECIES.
3. THE MINIMUM CLUSTER IS A GROUP OF 3 TREES OF THE SAME SPECIES.
4. THE MAXIMUM CLUSTER IS A GROUP OF 15 TREES OF THE SAME SPECIES.

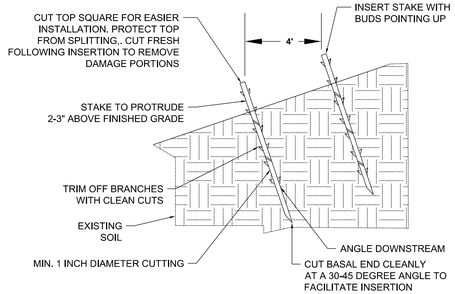
**CLUSTER PLANTING DETAIL**
**NOT TO SCALE**




NOTES:
1. INSTALL 4' HEIGHT, 12 GAUGE WELDER WIRE FENCE WITH 2"x4" OPENINGS.
2. INSTALL 5' HARDWOOD STAKE A MINIMUM OF 12" INTO GROUND.
3. THREE 8" - 11" UVB CABLE TIES ARE TO BE USED TO FASTEN SHELTER TO STAKES.
4. DEER PROTECTION SHALL BE USED FOR VULNERABLE SPECIES, INCLUDING BETULA NIGRA, CARPINUS CAROLINIANA, CERCIS CANADENIS, AND QUERCUS SPECIES.

INSTALLATION SEQUENCE:
1. PLANT TREE ACCORDING TO STAND SPECIFICATIONS.
2. PLACE SHELTER AROUND THE TREE.
3. DRIVE LONGER STAKES INTO THE GROUND.
4. TIE OFF ROPE AROUND THE TREE.

**TREE SHELTER DETAIL**
**NOT TO SCALE**




**LIVE STAKING DETAIL**
**NOT TO SCALE**

## GENERAL NOTES

1. ALL TREE PROTECTION, TREE INSTALLATION AND TREE MAINTENANCE WORK SHALL BE DONE IN ACCORDANCE WITH ANSI A300 STANDARDS, ANSI Z60 STANDARDS, AND ASSOCIATED PROJECT SPECIFICATIONS.
2. PLANTS MAY BE SUBSTITUTED FOR OTHER NATIVE SPECIES IF A CERTAIN SPECIES IS NOT AVAILABLE. THE CONTRACTOR SHALL NOTIFY THE COUNTY OR COUNTY REPRESENTATIVE OF WHICH PLANTS ARE NOT AVAILABLE AND WHICH PLANTS ARE SELECTED FOR SUBSTITUTION BEFORE PLANTING. PRIOR APPROVAL FOR SUBSTITUTIONS FROM THE COUNTY OR COUNTY REPRESENTATIVE IS REQUIRED.
3. ALL PLANT MATERIAL SHALL BE SOURCED WITHIN 100 MILES OF THE PROJECT SITE.
4. TREES SHALL BE INSTALLED USING DETAILS ON THIS SHEET.
5. PLANTS SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
6. THE CONTRACTOR SHALL PROPERLY WATER ALL PLANTS THE DAY THEY ARE INSTALLED.
7. DO NOT HANDLE, MOVE, BIND, TIE, OR OTHERWISE TREAT PLANTS SO AS TO DAMAGE THE ROOT BALL, ROOTS, TRUNK, OR BRANCHES IN ANY WAY.
8. EROSION AND SEDIMENT CONTROL: ALL TREE PLANTING PITS SHALL BE PLANTED, BACKFILLED WITH AMENDED SOIL, STAKED, AND MULCHED ON THE SAME DAY THAT EXCAVATION FOR THE TREE PLANTING PIT OCCURS. ANY OTHER GROUND DISTURBANCES CREATED BY THE CONTRACTOR OUTSIDE THE TREE PLANTING PITS SHALL BE TOPSOILED, RAKED TO AN EVEN SURFACE, AND SEEDED AND STRAWED.
9. PLANTS WHICH ARE NOT PLANTED WITHIN A DAY AFTER DELIVERY SHALL BE PROTECTED FROM DESICCATION THROUGH SHADING, WATERING, SHIELDING FROM WIND OR OTHER METHODS. TRANSPLANTED OR DELIVERED MATERIALS MAY BE STORED IN TREE BANKS IF NECESSARY IN UNDISTURBED AREAS.
10. THE DESIGNATED REGULATORY AGENCY SHALL INSPECT THE SITE.
11. ALL TREES MUST BE SET SO THAT THE ROOT COLLAR SITS JUST ABOVE THE FINISH GRADE. PLANTS SHALL REST ON UNDISTURBED EXISTING SOIL OR WELL-COMPACTED BACKFILL. CARE SHALL BE EXERCISED IN SETTING ALL PLANTS VERTICAL.
12. THE COUNTY OR COUNTY REPRESENTATIVE SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATION, TO REJECT ANY AND ALL WORK AND MATERIALS WHICH, IN HIS OR HER OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL MATERIALS SHALL BE INSPECTED TO BE FREE FROM DISEASE, DAMAGES, AND INSECT INFESTATION UPON DELIVERY TO THE SITE. ALL PLANTS SHOULD BE HEALTHY AND WELL STRUCTURED. PLANTS IN POOR CONDITION SHALL BE REJECTED, REMOVED FROM THE SITE, AND REPLACED WITH ACCEPTABLE MATERIALS.

PLANT INSTALLATION DATES

13. TEMPORARY/PERMANENT SEED MIXES INCLUDING COVER CROP SHALL BE APPLIED WITHIN 3 DAYS FOLLOWING FINAL GRADING AND BEFORE INSTALLATION OF MATTING, WHERE APPLICABLE. SEE PERMANENT SEEDING SCHEDULE, THIS SHEET.

PERMANENT SEEDING

14. SEEDING IS REQUIRED IN ALL LANDSCAPED AREAS FOR STABILIZATION AND HABITAT CREATION. FLEXIBLE GROWTH MEDIUM SHALL BE USED IN PLACE OF PERMANENT STRAW DURING TURFGRASS, SHRUB SEEDING, AND MEADOW ESTABLISHMENT.
15. THREE SEED MIXES WILL BE USED THROUGHOUT THE PLANTING AREAS. ALL MIXES WILL CONSIST OF NATIVE PLANT SPECIES THAT CURRENTLY COLONIZE ON-SITE, IN ADDITION TO HIGH VALUE SPECIES FOR ENHANCEMENT OF OVERALL RIPARIAN HABITAT VALUE.
16. UPLAND/RIPARIAN MEADOW SEED SHALL BE APPLIED TO ALL RIPARIAN MEADOW ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE GRASS AND FORBS.
17. WET MEADOW SEED MIX SHALL BE APPLIED TO ALL WETLAND/FLOODPLAIN MEADOW ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE GRASSES, SEDGES, FERNS, AND FLOWERING SPECIES.
18. TURFGRASS SEED MIX SHALL BE APPLIED TO ALL TURFGRASS ZONES. THIS MIX SHALL CONTAIN COVER CROP SPECIES (NATIVE AND/OR NON-PERSISTENT ANNUALS) AND NATIVE TURFGRASSES AND SEDGES.

RIPARIAN FOREST WITH MEADOW

19. RIPARIAN FOREST SHALL BE PLANTED IN ALL RIPARIAN FOREST ZONES ALONG WITH UPLAND RIPARIAN MEADOW SEED MIX. SEE PLANTING SCHEDULE AND DETAILS, THIS SHEET.
20. CANOPY TREES (100% COVERAGE) AND UNDERSTORY TREES (30% COVERAGE) SHALL BE STAKED AND SPACED AT 15 FT O.C.

## SEQUENCE

1. TEMPORARY/PERMANENT SEEDING SHALL BE APPLIED IMMEDIATELY FOLLOWING COMPLETION OF GRADING AND PRIOR TO INSTALLMENT OF MATTING, WHERE APPLICABLE.
2. PLANT TREES ACCORDING TO SPACING AS PRESENTED IN THE PLANTING SCHEDULE, THIS SHEET, AND NO CLOSER THAN 10' FROM EXISTING TREES.
3. STAKE ALL CONTAINER GROWN TREES ON THE DAY OF PLANTING.
4. PLANTS SHALL BE WATERED TO THE POINT OF OVERFLOW OR SATURATION TWICE WITHIN 48 HOURS OF PLANTING.

**TREE/SHRUB PLANTING SCHEDULE**

**RIPARIAN FOREST (5,911 s.f. / 0.14 ac.)**

| | SPECIES | | CONDITION | DIAMETER | HEIGHT RANGE | SPACING | Quantity |
|---|---|---|---|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | | | | | |
| *Canopy (70%)* | *Acer rubrum* | Red Maple | B & B | 1.5" | 8' - 10' | 15' o.c | 5 |
| | *Quercus palustris* | Pin Oak | B & B or CG | 1" | 6' - 8' | 15' o.c | 5 |
| | *Platanus occidentalis* | American Sycamore | B & B | 1.5" | 8' - 12' | 15' o.c | 5 |
| | *Nyssa sylvatica* | Black Gum | B & B or CG | 1" | 7' - 10' | 15' o.c | 5 |
| | *Betula nigra* | River Birch | B & B | 1.5" | 10' | 15' o.c | 5 |
| | *Carpinus caroliniana* | American Hornbeam | B & B or CG | 1" | 4' - 6' | 15' o.c | 5 |
| *Understory (30%)* | *Viburnum dentatum* | Southern Arrowwood | CG | N/A | 4' - 6' | 15' o.c | 5 |
| | *Ilex glabra* | Inkeberry | CG | N/A | 18" - 24" | 15' o.c | 5 |
| | *Vaccinium corymbosum* | Highbush blueberry | CG | N/A | 3' - 4' | 15' o.c | 5 |
| | *Itea virginica* | Virginia sweetspire | CG | N/A | 18" - 24" | 15' o.c | 4 |

**KEY**
**B&B** Balled and Burlap
**CG** Container Grown
**o.c.** On Center

**Table 1. WETLAND/FLOODPLAIN MEADOW SEED MIX**

| PLANTING AREA, AC | 0.23 | | | |
|---|---|---|---|---|
| TYPE | BOTANICAL NAME | COMMON NAME | % of mix | 25 Lb/AC |
| Native mix | *Carex vulpinoidea* | Fox Sedge | 20% | 5.0 |
| | *Elymus virginicus* | Virginia Wild Rye | 30% | 7.5 |
| | *Elymus riparius* | Riverbank Wild Rye | 25% | 6.25 |
| | *Dichanthelium clandestinum* | Deer Tongue | 15% | 3.75 |
| | *Juncus effusus* | Softrush | 10% | 2.5 |
| | | | % of mix | 10 Lb/AC |
| Forbs | *Impatiens capensis* | Jewelweed | 30% | 3.0 |
| | *Verbena hastata* | Blue vervain | 30% | 3.0 |
| | *Onoclea sensibilis* | Sensitive Fern | 20% | 2.0 |
| | *Thelypteris novaboracensis* | New York Fern | 20% | 2.0 |
| | | | % of mix | 10 Lb/AC |
| Temporary Seeding | *Avena sativa* | Cereal grain | 100% | 10 |
| | | | RATE, LB/AC | 45 |
| QUANTITY, LBS | 10.3 | | | |

**TABLE 2. UPLAND/RIPARIAN MEADOW SEED MIX**

| PLANTING AREA, AC | 0.31 | | | |
|---|---|---|---|---|
| TYPE | BOTANICAL NAME | COMMON NAME | % of mix | 35 Lb/AC |
| Native mix | *Elymus hystrix* | Bottlebrush Grass | 25% | 8.75 |
| | *Elymus virginicus* | Virginia Wild Rye | 25% | 8.75 |
| | *Schizachyrium scoparium* | Little bluestem | 20% | 7.0 |
| | *Dichanthelium clandestinum* | Deer Tongue | 15% | 5.3 |
| | *Tridens flavus* | Purpletop | 10% | 3.5 |
| | *Rudbeckia hirta* | Black-eyed Susan | 5% | 1.8 |
| | | | % of mix | 10 Lb/AC |
| Temporary Seeding | *Avena sativa* | Cereal grain | 100% | 10 |
| | | | RATE, LB/AC | 45 |
| QUANTITY, LBS | 14.2 | | | |

**TABLE 3. TURFGRASS SEED MIX**

| PLANTING AREA, AC | 0.13 | | | |
|---|---|---|---|---|
| TYPE | BOTANICAL NAME | COMMON NAME | % of mix | 150 Lb/AC |
| Turfgrass mix | *Festuca rubra* | Creeping Red Fescue | 35% | 52.5 |
| | *Festuca brevipila* | Hard Fescue | 25% | 37.5 |
| | *Poa pratensis* | Kentucky Bluegrass | 25% | 37.5 |
| | *Festuca ovina* | Sheep Fescue | 15% | 22.5 |
| | | | % of mix | 10 Lb/AC |
| Temporary Seeding | *Avena sativa* | Cereal Grain | 100% | 10 |
| | | | RATE, LB/AC | 160 |
| QUANTITY, LBS | 21.6 | | | |

**MITIGATION TREE PLANTING SCHEDULE**

| SPECIES | | CONDITION | DIAMETER | SPACING | Quantity |
|---|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | | | | |
| *Platanus occidentalis* | American Sycamore | B & B | 3" | 20' o.c | 7 |
| *Quercus palustris* | Pin Oak | B & B | 3" | 20' o.c | 7 |

NOTE: FINAL TREE LOCATIONS FOR 3" TREES SHALL BE APPROVED IN THE FIELD BY THE COUNTY PROJECT MANAGE

**LIVE STAKES PLANTING SCHEDULE**

**WETLAND/FLOODPLAIN MEADOW (7486 s.f. / 0.17 ac.)**

| SPECIES | | LENGTH | SPACING | Quantity |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | | | |
| *Cornus amomum* | Silky Dogwood | 4' | 6' o.c | 45 |
| *Cornus sericea* | Red Osier Dogwood | 4' | 6' o.c | 45 |
| *Salix exigua esp. interior* | Sandbar Willow | 4' | 6' o.c | 44 |
| *Salix sericea* | Silky Willow | 4' | 6' o.c | 44 |
| *Sambucus canadensis* | Elderberry | 4' | 6' o.c | 44 |

## 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. 23106 EXPIRATION DATE 05-19-2027

STRAUGHAN ENVIRONMENTAL
Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
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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: JDB Drawn by: JDB Checked by: LT

LD-02

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STREAM RESTORATION LANDSCAPING NOTES AND DETAILS

Project No. : 502102 SHEET 17 of 48

5:20:14 PM
1/23/2026
Y:\4063-002 Glen Road Stream Restoration\CADD\702 Civil\SEN\pLD-D00_GlenRoadBridge.dgn
MODELNAME:$MODELNAME$

**TREE PROTECTION PLAN - Glen Road Bridge Replacement**
11/17/2023
CIP 509132

Note: Refer to ***Tree Protection Requirements For The Department Of Transportation*** for Standard Tree Protection Measures

*All root pruning shall be done to a maximum depth of 6"
DBH = diameter (in.) at breast height (4.5 ft above ground)

| TREE NUMBER | SPECIES | DBH | RECOMMENDATIONS |
|---|---|---|---|
| 1 | Juniperus virginiana | 9 | **Remove** |
| 2 | Juglans nigra | 6 | No action required |
| 3 | Liriodendron tulipifera | 16 | No action required |
| 4 | Acer rubrum | 15 | No action required |
| 5 | Platanus occidentalis | 31 | **Remove:** Proposed construction would compromise structural stability of tree |
| 6 | Acer negundo | 14 | **Remove:** Tree within area of grading. Note: Poor condition |
| 7 | Acer rubrum | 13 | **Remove:** Tree within area of grading. |
| 8 | Acer negundo | 7 | **Remove:** Tree within area of forest clearing. Note: Poor condition |
| 9 | Acer negundo | 6 | Fence |
| 10 | Acer negundo | 8 | **Remove:** Tree within area of forest clearing. Note: Poor condition |
| 11 | Juglans nigra | 26 | Fence |
| 12 | Acer negundo | 6 | Fence |
| 13 | Acer negundo | 6 | Fence |
| 14 | Platanus occidentalis | 20 | **Remove:** Tree within area of grading. |
| 15 | Platanus occidentalis | 16 | **Remove:** Tree within area of grading. |
| 16 | Acer rubrum | 12 | Fence |
| 17 | Acer negundo | 10 | **Remove:** Proposed construction would compromise structural stability of tree |
| 18 | Juglans nigra | 7 | **Remove:** Proposed construction would compromise structural stability of tree |
| 19 | Juglans nigra | 14 | **Remove:** Proposed construction would compromise structural stability of tree |
| 20 | Platanus occidentalis | 33 | **Remove:** Proposed construction would compromise structural stability of tree |
| 21 | Acer negundo | 16 | **Remove:** Tree within area of grading. |
| 22 | Acer rubrum | 18 | **Remove:** Proposed construction would compromise structural stability of tree |
| 23 | Acer rubrum | 14 | **Remove:** Tree within area of forest clearing. Note: Poor condition |
| 24 | Acer negundo | 12 | **Remove:** Proposed construction would compromise structural stability of tree |
| 25 | Acer negundo | 20 | **Remove:** Proposed construction would compromise structural stability of tree |
| 26 | Platanus occidentalis | 24 | **Remove:** Proposed construction would compromise structural stability of tree |
| 27 | Liriodendron tulipifera | 33 | **Remove:** Proposed construction would compromise structural stability of tree |
| 28 | Acer negundo | 6 | **Remove:** Proposed construction would compromise structural stability of tree |
| 29 | Acer negundo | 24 | **Remove:** Proposed construction would compromise structural stability of tree |
| 30 | Juglans nigra | 6 | Fence |
| 31 | Ulmus rubra | 24 | Fence |
| 32 | Liriodendron tulipifera | 31 | No action required |
| 33 | Liriodendron tulipifera | 31 | No action required |
| 34 | Platanus occidentalis | 37 | No action required |
| 35 | Acer rubrum | 24 | **Remove:** Tree within stream restoration grading. |
| 36 | Platanus occidentalis | 26 | **Remove:** Tree within stream restoration grading. |
| 37 | Platanus occidentalis | 23 | **Remove:** Tree within stream restoration grading. |
| 38 | Acer rubrum | 24 | **Remove:** Tree within stream restoration grading. |
| 39 | Acer rubrum | 20 | **Remove:** Tree within stream restoration grading. |
| 40 | Acer rubrum | 19 | **Remove:** Tree within stream restoration grading. |
| 41 | Ulmus rubra | 23 | Fence, root prune along LOD |
| 42 | Acer rubrum | 11 | Fence, root prune along LOD |
| 43 | Juglans nigra | 8 | No action required |
| 44 | Acer negundo | 8 | **Remove:** Tree within stream restoration grading. |
| 45 | Acer negundo | 11 | **Remove:** Tree within stream restoration grading. |
| 46 | Acer negundo | 13 | **Remove:** Tree within stream restoration grading. |
| 47 | Acer negundo | 10 | **Remove:** Tree within stream restoration grading. |
| 48 | Acer negundo | 18 | Fence, root prune along LOD |
| 49 | Acer negundo | 19 | Fence, root prune along LOD |
| 50 | Acer negundo | 17 | Fence |
| 51 | Acer negundo | 18 | Fence |
| 52 | Juglans nigra | 22 | Fence |
| 53 | Acer negundo | 27 | **Remove:** Proposed construction would compromise structural stability of tree |
| 54 | Juglans nigra | 21 | **Remove:** Proposed construction would compromise structural stability of tree |
| 55 | Acer negundo | 8 | **Remove:** Proposed construction would compromise structural stability of tree |
| 56 | Acer rubrum | 25 | No action required |
| 57 | Acer rubrum | 18 | No action required |
| 58 | Acer rubrum | 22 | No action required |
| 59 | Acer rubrum | 11 | No action required |
| 60 | Acer rubrum | 22 | No action required |
| 61 | Acer rubrum | 16 | No action required |
| 62 | Acer rubrum | 12 | No action required |
| 63 | Acer rubrum | 17 | No action required |
| 64 | Acer rubrum | 15 | No action required |
| 65 | Acer rubrum | 34 | **Remove:** Proposed construction would compromise structural stability of tree |
| 66 | Platanus occidentalis | 44 | Fence |
| 67 | Acer negundo | 13 | No action required |

**Note:** Arborist to be notified by project manager to inspect any/all tree roots 2"+ diameter that are damaged or severed on trees recommended for root pruning.

**No. of Trees, DBH between 1" and < 6": 25/AC.**
**0.79 AC. Forest Removed = 20 Trees Removed between 1" and < 6" DBH**
**Mitigation for Tree Removal, DBH between 1" and < 6" @ 1:1 = 20 Trees Proposed**

**No. of Trees Removed, DBH between 6" and <30" = 31**
**Mitigation for Tree Removal, DBH between 6" and < 30" @ 1:1 = 31 Trees Proposed**

**Mitigation for Specimen Tree Removal = 1" Caliper Planted per 4" DBH Removed.**
**131" DBH Removed = 131 / 4 = 33" Caliper Req'd.**
**12 3" Caliper trees = 36" Caliper planting is proposed.**

**PROPOSED MITIGATION TREE PLANTING SCHEDULE**

| QTY. | TREE SPECIES | SIZE | TYPE | SPACING |
|---|---|---|---|---|
| 7 | PLATANUS OCCIDENTALIS | 3" CAL. | B&B | 20'O.C. |
| 7 | QUERCUS PALUSTRIS | 3" CAL. | B&B | 20'O.C. |

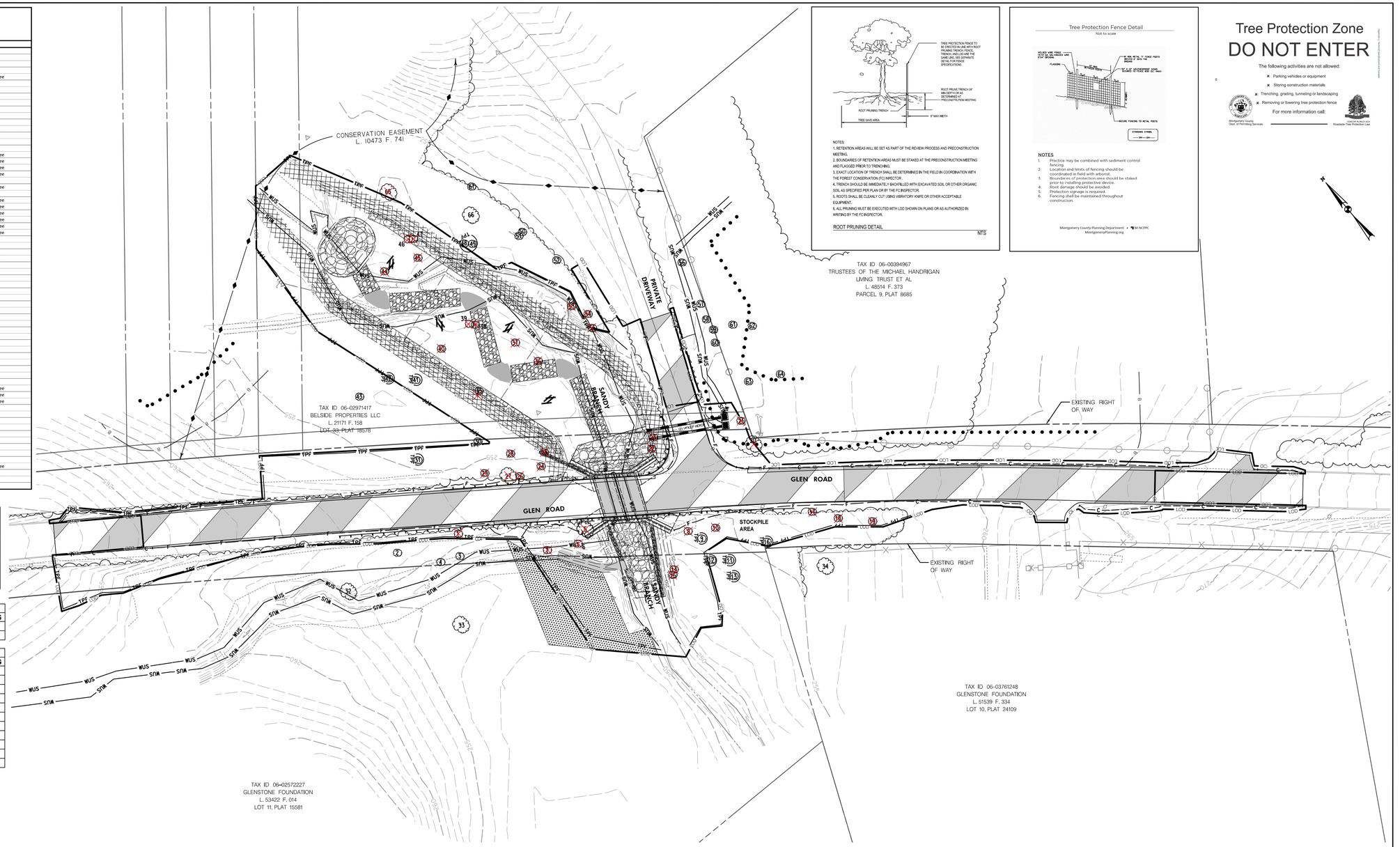
**PROPOSED TREE/SHRUB PLANTING SCHEDULE**

| QTY. | TREE SPECIES | SIZE | TYPE | SPACING |
|---|---|---|---|---|
| 5 | ACER RUBRUM | 1.5" CAL. | B&B | 15'O.C. |
| 5 | QUERCUS PALUSTRIS | 1" CAL. | B&B or CG | 15'O.C. |
| 5 | PLATANUS OCCIDENTALIS | 1.5" CAL. | B&B | 15'O.C. |
| 5 | NYSSA SYLVATICA | 1" CAL. | B&B or CG | 15'O.C. |
| 5 | BETULA NIGRA | 1.5" CAL. | B&B | 15'O.C. |
| 5 | CARPINUS CAROLINIANA | 1" CAL. | B&B or CG | 15'O.C. |
| | SHRUB SPECIES | | | |
| 5 | VIBURNUM DENTATUM | 4-6' HT. | CG | 15'O.C. |
| 5 | ILEX GLABRA | 18-24" HT. | CG | 15'O.C. |
| 5 | VACCINIUM CORYMBOSUM | 3-4' HT. | CG | 15'O.C. |
| 4 | ITEA VIRGINICA | 18-24" HT. | CG | 15'O.C. |

**KEY:**
**CAL. - Caliper** **HT. - Height**
**B&B - Balled and Burlap** **CG - Container Grown**
**O.C. - On Center**

**LEGEND**

- EXISTING CONTOURS
- LIMIT OF DISTURBANCE (LOD)
- LIMIT OF FILL
- TREE PROTECTION FENCE
- WETLAND
- WETLAND BUFFER
- WATERS OF U.S.
- PROPOSED FULL DEPTH ASPHALT
- PROPOSED MILL & OVERLAY
- PROPOSED CONCRETE SURFACE
- W BEAM TRAFFIC BARRIER
- TREE >6" DBH
- SPECIMEN TREE
- PROPOSED TREE PLANTING ZONE
- TREE TO BE REMOVED
- EX. FOREST CONSERV. EASEMENT







NOTES:
1. RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS AND PRECONSTRUCTION MEETING.
2. BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRECONSTRUCTION MEETING AND FLAGGED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FOREST CONSERVATION (FC) INSPECTOR.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE FC INSPECTOR.
5. ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
6. ALL PRUNING MUST BE EXECUTED WITH LOD SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE FC INSPECTOR.

ROOT PRUNING DETAIL
NTS




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 • 8787 Georgia Ave. • Silver Spring, MD 20910
MontgomeryPlanning.org

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:

Montgomery County Dept. of Permitting Services

Adapted from Local Roadside Tree Protection Law

NOTES:
1. NOT FOR CONSTRUCTION. PROJECT SUBJECT TO MANDATORY REFERRAL. PROPERTY OWNER APPROVALS TO BE DOCUMENTED BEFORE START OF CLEARING OR GRADING.
2. ADDITIONAL REPLACEMENT TREES MAY BE REQUIRED BY FOREST CONSERVATION INSPECTOR, TO BE DETERMINED DURING PRE-CONSTRUCTION MEETING. PLANTING SCHEDULE TO BE CONFIRMED AT THE PRE-CONSTRUCTION MEETING.

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

TSP-01

Stantec

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: HC Drawn by: HC Checked by: DL

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH
**TREE SAVE PLAN**

Project No. : 502102 SHEET 18 of 48

10:40 AM Tuesday, December 12, 2023 C:\Users\hcarter\Documents\ENVIRON\TSP-01_GlenRoadBridge_new.dgn

MODELNAME:$MODELNAME$

MONTGOMERY COUNTY GOVERNMENT

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. 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.
2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
   A. AT THE REQUIRED PRE–CONSTRUCTION MEETING.
   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
   C. 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.
   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
   E. PRIOR TO FINAL ACCEPTANCE.
3. 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.
4. THE PERMITTE 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.
5. 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.
6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
   A) 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
   B) 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.
7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (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.
8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED ARE AS 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.
9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SCSM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.
10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FORM 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY–EIGHT (48) HOURS AFTER THE END OF A RAINFALL.
16. 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.
17. ALL INLETS IN NO–SUP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.

MONTGOMERY COUNTY GOVERNMENT

STANDARD EROSION AND SEDIMENT CONTROL NOTES

18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.
19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND
20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT 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.
22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN
23. 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.
24. 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.
25. 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:
   A. 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
   B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON–EROSIVE OUTLET; OR
   C. 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.
27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.
28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS 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

A. SOIL PREPARATION
   (1) TEMPORARY STABILIZATION
      (a) SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
      (b) APPLY FERTILIZER AND LIME AS PRESCRIBED ON THESE PLANS.
      (c) INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
   (2) PERMANENT STABILIZATION
      (a) A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
         (i) SOIL pH BETWEEN 6.0 AND 7.0
         (ii) SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (ppm).
         (iii) SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
         (iv) SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
         (v) SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
      (b) APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON–SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
      (c) GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
      (d) APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
      (e) MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED 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
   (1) TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS AND/OR UNACCEPTABLE SOIL GRADATION.
   (2) TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA–NRCS.
   (3) TOPSOILING IS LIMITED TO AREAS HAVING 2:1 FOR FLATTER SLOPES WHERE:
      (a) THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
      (b) THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
      (c) THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANTS GROWTH.
      (d) THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
   (4) AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN
   (5) TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
      (a) TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM OR LOAMY SAND OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE 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.
      (b) 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
      (c) 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.
   (6) TOPSOIL APPLICATION
      (a) EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
      (b) UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY 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.
      (c) 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)
   (1) 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.
   (2) 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.
   (3) LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH #100 MESH SIEVE AND 98 TO 100 PERCENT WILL MASS THROUGH A #20 MESH SIEVE.
   (4) LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
   (5) WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONE/ACRE (200–400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

BEFORE BEGINNING CONSTRUCTION CONTACT
"MISS UTILITY"
AT
1–800–257–7777
AT LEAST 48 HOURS PRIOR TO EXCAVATION

LIMIT OF DISTURBANCE
48,778 SF

## 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. 46328 EXPIRATION DATE 12–31–2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

REPLACEMENT OF BRIDGE NO. M–0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**EROSION AND SEDIMENT CONTROL NOTES (1 OF 2)**

Project No. : 502102 SHEET 19 of 48

SC-02 OF 08

ES-01

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EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION (APPROX. 10 WEEKS)

1. PRIOR TO CLEARING TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE 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)495-4550 (48 HOURS NOTICE), THE OWNER'S 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.

4. ALL SEQUENCES SHOULD CALL FOR THE PERMITTEE TO OBTAIN WRITTEN APPROVAL FROM MCDPS INSPECTOR, PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL DEVICE.

CONSTRUCTION STEPS

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.

STAGE 1

5. PORTABLE VARIABLE MESSAGE SIGN (PVMS) SHALL BE INSTALLED TWO WEEKS PRIOR TO ROADWAY CLOSURE. (SEE MT-02 FOR LOCATION OF SIGN). MESSAGE: TO BE CLOSED <DATE/TIME> TO <DATE/TIME>)

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. EXCAVATE AND INSTALL CLEARWATER STREAM DIVERSIONS PUMP, AND FILTER BAGS AS SHOWN. REMOVE THE EXISTING BRIDGE AS INDICATED ON THE STRUCTURE PLAN.

   NOTE: CLEARWATER DIVERSION PIPES ARE ONLY CAPABLE OF CONVEYING BASE FLOW, AND FLOW FROM SMALL STORMS.

7. CONDUCT EXCAVATION OPERATIONS FOR WINGWALLS, PROPOSED RIPRAP AND UNDERCUTTING REQUIRED FOR INSTALLATION OF PROPOSED CULVERT. INSTALL AGGREGATE TO REPLACE MATERIAL REMOVED DURING EXCAVATION.

8. INSTALL BOX CULVERTS AND RIP RAP WITHIN STREAM CHANNEL. INSTALL CAST IN PLACE OVERLAY, WING WALLS AND ADJACENT RIP RAP.

9. CONSTRUCT RIPRAP/GABION STILLING BASIN AND RELOCATED STEP POOL FROM NORTHWEST.

10. CONSTRUCT GABION WALL AND INSTALL (2) 14"X 23" HERCP DRAINAGE PIPES AND INLET. MAINTAIN AT LEAST ONE LANE TRAFFIC AT THE ENTRANCE ROAD DURING THIS DRAINAGE PIPE INSTALLATION BY FLAGGING.

11. REMOVE SANDBAGS, CLEARWATER STREAM DIVERSIONS, PUMPS, AND FILTER BAGS ONCE ALL IN STREAM WORK IS COMPLETE.

12. COMMENCE GRADING OPERATION FOR THE PROPOSED ROADWAY CONSTRUCTION. UPON COMPLETION OF GRADING, TEMPORARY STABILIZE ROADWAY BY INSTALLING AGGREGATE BASE. AND INSTALL TRAFFIC BARRIER W-BEAM AS SHOWN ON THE PLANS, LEAVE A SECTION OPEN TO COMPLETE STREAM WORK DURING STAGE 2. PERMANENTLY STABILIZE GLEN ROAD BY PAVING THE ROADWAY. STABILIZE ALL DISTURBED SIDE SLOPE AREAS BY APPLYING SEEDS AND SOIL STABILIZATION MATTING.

13. ON A CLEAR DAY WHEN NO RAIN IS FORECAST, CONSTRUCT THE STILLING BASIN AND REMAINING RIPRAP AT THE TWIN 14"X 23" CULVERT OUTFALL

STAGE 2

14. INSTALL SANDBAG DIVERSION AND PUMP AROUND FOR STREAM RESTORATION.

15. CONSTRUCT THE STREAM RESTORATION NORTH OF GLEN ROAD.

16. INSTALL THE REMAINING W-BEAM BARRIER NOT INSTALLED PER THE PLANS DURING STAGE 1.

17. REMOVE SEDIMENT CONTROL DEVICES UPON FINAL APPROVAL BY THE MCDPS SEDIMENT CONTROL INSPECTOR.

# STANDARD SYMBOLS

| | | | |
|---|---|---|---|
| AT-GRADE INLET PROTECTION | AGIP | ROCK OUTLET PROTECTION II | ROPII |
| BAFFLE BOARDS | BB | ROCK OUTLET PROTECTION III | ROPIII |
| CATCH BASIN INSERT | CBI | SILT FENCE | SF |
| CLEAR WATER DIVERSION PIPE | CWD - 12 (NOTE: DESIGNATION CWD-12 REFERS TO CLEAR WATER DIVERSION WITH 12 INCH PIPE.) | SILT FENCE ON PAVEMENT | SFOP |
| COMBINATION INLET PROTECTION | COIP | SOD | |
| CURB INLET PROTECTION | CIP | STABILIZED CONSTRUCTION ENTRANCE | SCE |
| DIVERSION FENCE | DF | STANDARD INLET PROTECTION | SIP |
| EARTH DIKE | A-1 (PLACE DESIGNATION (A-1, B-2, ETC.) ON FLOW CHANNEL SIDE OF DIKE.) | STOCKPILE AREA | |
| EMERGENCY SPILLWAY | ES | STONE CHECK DAM | CD |
| FILTER BAG | FB | STONE/RIPRAP OUTLET SEDIMENT TRAP ST II | ST-II |
| FILTER BERM | FB-A, FB-B | SUBSURFACE DRAINS | SSD |
| FILTER LOG | FL-18 (NOTE: DESIGNATION FL-18 REFERS TO FILTER LOG WITH 18 INCH DIAMETER.) | SUMP PIT | SP |
| GABION INFLOW PROTECTION | GP | SUPER SILT FENCE | SSF |
| GABION INLET PROTECTION | GIP | TEMPORARY ACCESS CULVERT | |
| LIMIT OF DISTURBANCE | LOD | TEMPORARY ASPHALT BERM | TAB |
| MEDIAN INLET PROTECTION | MIP | TEMPORARY BARRIER DIVERSION | TBD |
| MEDIAN SUMP INLET PROTECTION | MSIP | TEMPORARY GABION OUTLET STRUCTURE | TGOS |
| MOUNTABLE BERM | MB | TEMPORARY SOIL STABILIZATION MATTING-TYPE A | |
| PERIMETER DIKE/SWALE | PDS-1 | TEMPORARY SOIL STABILIZATION MATTING-TYPE E | |
| PERMANENT SOIL STABILIZATION MATTING-TYPE B | | TEMPORARY SOIL STABILIZATION MATTING-TYPE D | |
| PERMANENT SOIL STABILIZATION MATTING-TYPE C | | TEMPORARY STONE OUTLET STRUCTURE | TSOS |
| PIPE OUTLET SEDIMENT TRAP ST I | ST-I | TEMPORARY SWALE | A-1 (PLACE DESIGNATION (A-1, B-2, ETC.) ON FLOW CHANNEL SIDE OF SWALE.) |
| PIPE SLOPE DRAIN | PSD - 12 (NOTE: DESIGNATION PSD-12 REFERS TO PIPE SLOPE DRAIN WITH 12 IN PIPE.) | WASH RACK OPTION | WR |
| PLUNGE POOL | PP | CHESAPEAKE BAY CRITICAL AREA | CBCA |
| PORTABLE SEDIMENT TANK | PST | DRAINAGE BOUNDARY | DA |
| REMOVABLE PUMPING STATION | RPS | EXISTING CONTOURS | 100 |
| RIPRAP INFLOW PROTECTION | RRP | PROPOSED CONTOURS | 100 |
| RIPRAP OUTLET SEDIMENT TRAP ST III | ST-III | TREE PROTECTION FENCE | TPF |
| ROCK OUTLET PROTECTION I | ROPI | WETLAND | |
| LIMIT OF CUT SLOPE | C | WETLAND BUFFER | B |
| LIMIT OF FILL SLOPE | F | 100-YEAR FLOODPLAIN | |

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

SC-03 OF 08 | ES-02

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**EROSION AND SEDIMENT CONTROL NOTES (2 OF 2)**

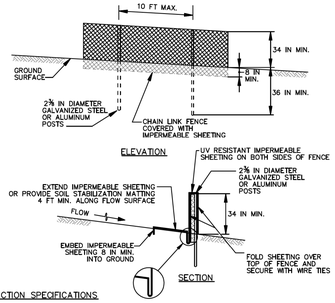
Project No. : 502102 SHEET 20 of 48

\\US0525-PPFSS01\shared_projects\202621\15\700 CADD\702 Civil\pES-N002_GlenRoadBridge.dgn
11:26:14 AM
1/7/2026
MODELNAME:$MODELNAME$

## DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES




CONSTRUCTION SPECIFICATIONS

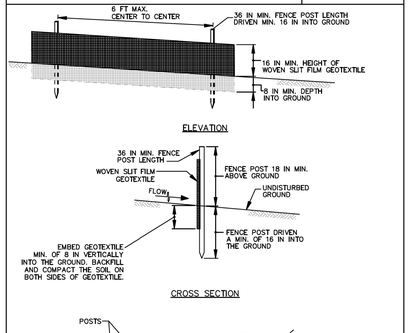
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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 |
|---|---|---|

## DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF




1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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## DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH 9 INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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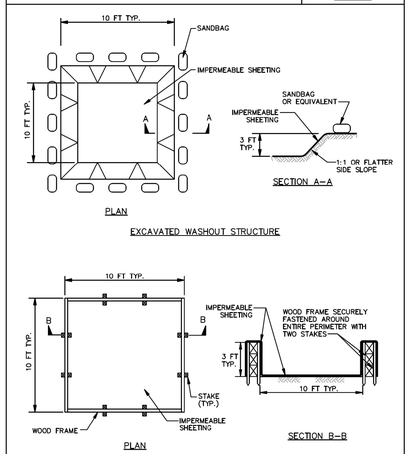
## DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS




1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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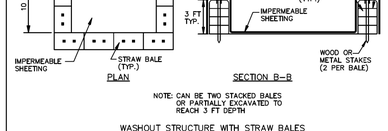
## DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS




NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER PRIOR TO FORECASTED RAINSTORMS. REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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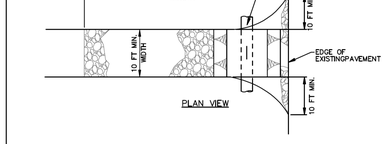
## DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE




CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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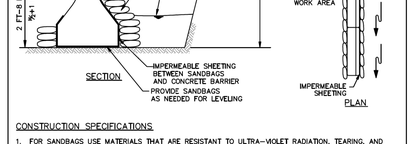
## DETAIL C-7 TEMPORARY BARRIER DIVERSION

STANDARD SYMBOL: TBD




CONSTRUCTION SPECIFICATIONS

1. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
2. USE BARRIER MADE OF CONCRETE OR OTHER APPROVED MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNCTURING AND TEARING.
4. ESTABLISH TOP ELEVATION AT H/2 + 1 FOOT FOR PROJECTS OF DURATION LESS THAN 2 WEEKS OR AS SPECIFIED ON APPROVED PLAN.
5. INSTALL DIVERSION STRUCTURE FROM UPGRADE TO DOWNGRADE.
6. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
7. USE SANDBAG BASE FOR LEVELING AND TO ESTABLISH MINIMUM TOP ELEVATION OF THE BARRIER AS REQUIRED.
8. DISPOSE OF ALL EXCAVATED MATERIALS IN AN APPROVED DISPOSAL AREA OUTSIDE OF THE 100-YEAR FLOODPLAIN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP ABUTMENTS BETWEEN CONCRETE BARRIERS WATER TIGHT. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

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 |
|---|---|---|

C:22

SC-04 OF 08 | ES-03

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**EROSION AND SEDIMENT CONTROL DETAILS (1 OF 2)**

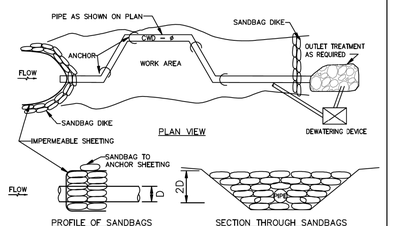
Project No. : 502102 SHEET 21 of 48

\\US0525-PPFSS01\shared_projects\2026131\5\700 CADD\702 Civil\pES-D001_GlenRoadBridge.dgn
11:21:59 AM
1/7/2026
MODELNAME: $MODELNAME$

## DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL: CWD – 12

DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION




CONSTRUCTION SPECIFICATIONS

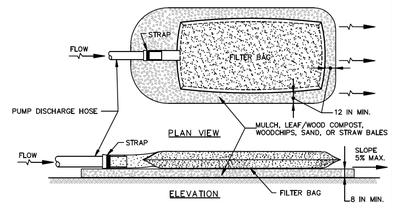
1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLENT RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

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 |
|---|---|---|

## DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB




CONSTRUCTION SPECIFICATIONS

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

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

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

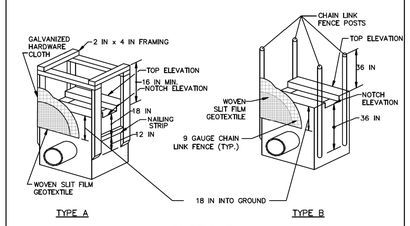
| U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
|---|---|---|

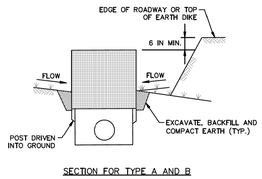


## DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ½ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE






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 |
|---|---|---|

## DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2¾ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.



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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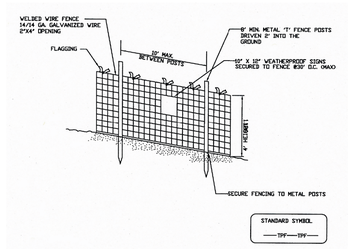
## Tree Protection Fence Detail

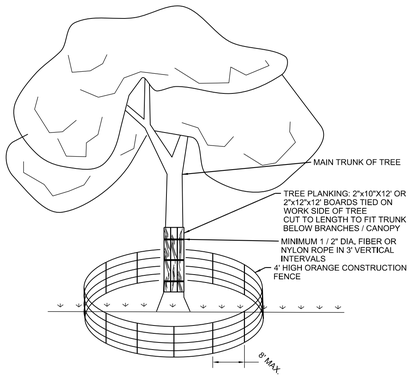
Not to scale




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 • M-NCPPC
MontgomeryPlanning.org

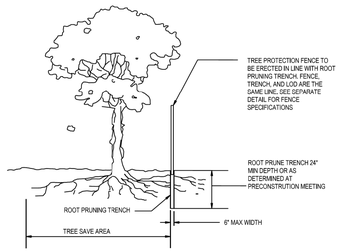



NOTES:

1. FOR TREE PROTECTION PLANKING, AS DIRECTED BY THE ENGINEER, TIE WITH 1/2" DIAMETER ROPE (FIBER OR NYLON), SUFFICIENT 2"X10"X12' OR 2"X12"X12' BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. FENCE POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE POST HEIGHT.
3. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER.
4. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
5. ROOT DAMAGE SHOULD BE AVOIDED.
6. PROTECTIVE SIGNAGE IS REQUIRED.
7. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

SPECIAL TREE PROTECTION DETAIL

NOT TO SCALE

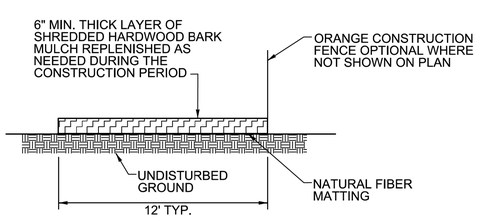



NOTES:

1. RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS AND PRECONSTRUCTION MEETING.
2. BOUNDARIES OF RETENTION AREAS MUST BE STAKED AT THE PRECONSTRUCTION MEETING AND FLAGGED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FOREST CONSERVATION (FC) INPECTOR .
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH EXCAVATED SOIL OR OTHER ORGANIC SOIL AS SPECIFIED PER PLAN OR BY THE FC INSPECTOR.
5. ROOTS SHALL BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
6. ALL PRUNING MUST BE EXECUTED WITH LOD SHOWN ON PLANS OR AS AUTHORIZED IN WRITING BY THE FC INSPECTOR.

ROOT PRUNING DETAIL

NTS




NOTES:

1. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE-CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED, AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
2. NATURAL FIBER MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC, OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
3. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. UPON COMPLETION OF THE PROJECT. MULCH SHALL BE REMOVED TO A MAX. DEPTH OF 3' UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
4. TEMPORARY OCF SHALL BE INSTALLED ALONG THE EDGES OF THE ACCESS PATH. FENCING SHALL BE SUPPORTED BY 6' MINIMUM "T" STEEL POSTS DRIVEN 2' INTO THE GROUND AND SPACED A MAXIMUM OF 8' APART.

MULCH ACCESS PATH DETAIL

NOT TO SCALE

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11:23:00 AM
1/7/2026
MODELNAME:$MODELNAME$

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## EROSION AND SEDIMENT CONTROL DETAILS (2 OF 2)

Project No. : 502102 SHEET 22 of 48

SC-05 OF 08

ES-04

CONSTRUCTION NOTES:

1. DEMO EXISTING PAVEMENT TO THE EXTENT NECESSARY TO CONSTRUCT THE SCE.
2. CONSTRUCT THE SCE AT THE EDGE OF THE EXISTING PAVEMENT.
3. CONSTRUCT CONCRETE WASHOUT STRUCTURES.
4. UPON COMPLETION OF CULVERT, REMOVE SCES AND CONCRETE WASHOUT STRUCTURES.
5. MILL AND OVERLAY.

TAX ID 06-02971361
PROMOD SHARMA ET AL
L. 19879 F. 792
LOT 28, PLAT 18578

N 509770
E 1239820

TO TRAVILAH ROAD

TEMPORARY CONSTRUCTION EASEMENT

TAX ID 06-02971417
BELSIDE PROPERTIES LLC
L. 21171 F. 158
LOT 33, PLAT 18578

WATERS OF THE US

SANDY BRANCH

SANDBAG DIVERSION

INV. = 248.7'
FILTER BAG

CLEAR WATER DIVERSION
PIPE 36" HDPE
NOTE: ONLY CONVEYS BASE FLOW AND FLOW FROM VERY SMALL STORMS
DA-1196 AC
Q1 = 149.3 CFS
Q2 = 269.2 CFS

EX. RIGHT OF WAY

TOP OF SAND BAGS
EL. = 253.0'

PUMP

GLEN ROAD

11+50 12+00 +50 13+00 +50 14+00 +50 15+00 +50 16+00

STOCKPILE AREA
25'x11', SIDE SLOPES 2:1, MAX.
HEIGHT 2.75'

CONCRETE WASHOUT STRUCTURE

℄ CONSTRUCTION GLEN ROAD

EX. RIGHT OF WAY

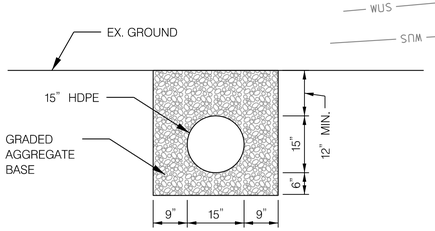
TEMPORARY CONSTRUCTION EASEMENT

TAX ID 06-02572227
GLENSTONE FOUNDATION
L. 53422 F. 014
LOT 11, PLAT 15581

E 1239820
N 509530

NOTES:

1. THE COST OF WATER DIVERSION AND SANDBAGS IS INCIDENTAL TO PAY ITEM MAINTENANCE OF STREAM FLOW.
2. DIVERSION PIPE AND/OR SANDBAGS ARE TO BY FIELD ADJUSTED IN ORDER TO MINIMIZE IMPACTS TO PREVIOUSLY CONSTRUCTED STREAM IMPROVEMENTS.
3. ANY TEMPORARY IMPACTS TO THE STREAM SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION UPON THE COMPLETION OF WORK.
4. UTILIZE SAME DAY STABILIZATION FOR THE RECONSTRUCTION FOR THE GLEN ROAD ROADWAY.




SECTION A-A
NTS - TRAFFIC LANE ONLY

TAX ID 06-00394967
TRUSTEES OF THE MICHAEL HANDRIGAN LIVING TRUST ET AL
L. 48514 F. 373
PARCEL 9, PLAT 8685

E 1240280
N 509530

WETLAND BOUNDARY

℄ CONSTRUCTION DRIVEWAY

49+50 DRIVEWAY [PRIVATE] 50+00

TO PINEY MEETINGHOUSE ROAD

INV. = 253.25'
TOP OF SAND BAGS
EL. = 255.5'

WETLAND BUFFER

TEMPORARY SHEETING

MATCH LINE STA. 16+00 - SEE SHEET ES-06

SANDBAG DIVERSION
TEMPORARY SHEETING
INV. = 250.4'

PUMP

SANDBAG DIVERSION FILTER BAG

CLEAR WATER DIVERSION
PIPE 36" HDPE
NOTE: ONLY CONVEYS BASE FLOW AND FLOW FROM VERY SMALL STORMS
DA = 83.7 AC

INV. = 246.5'

TEMPORARY CONSTRUCTION EASEMENT

WATERS OF THE US

SANDY BRANCH

STOCKPILE AREA
25'x11', SIDE SLOPES 2:1, MAX.
HEIGHT 2.75'

CLEAR WATER DIVERSION
PIPE, 15" HDPE
NOTE: ONLY CONVEYS BASE FLOW AND FLOW FROM VERY SMALL STORMS
DA = 62.3 AC
Q1 = 26.5 CFS
Q2 = 47.4 CFS

SC-06 OF 08

ES-05

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

## 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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## EROSION AND SEDIMENT CONTROL PLAN STAGE 1 (1 OF 2)

Project No. : 502102 SHEET 23 of 48

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1/7/2026
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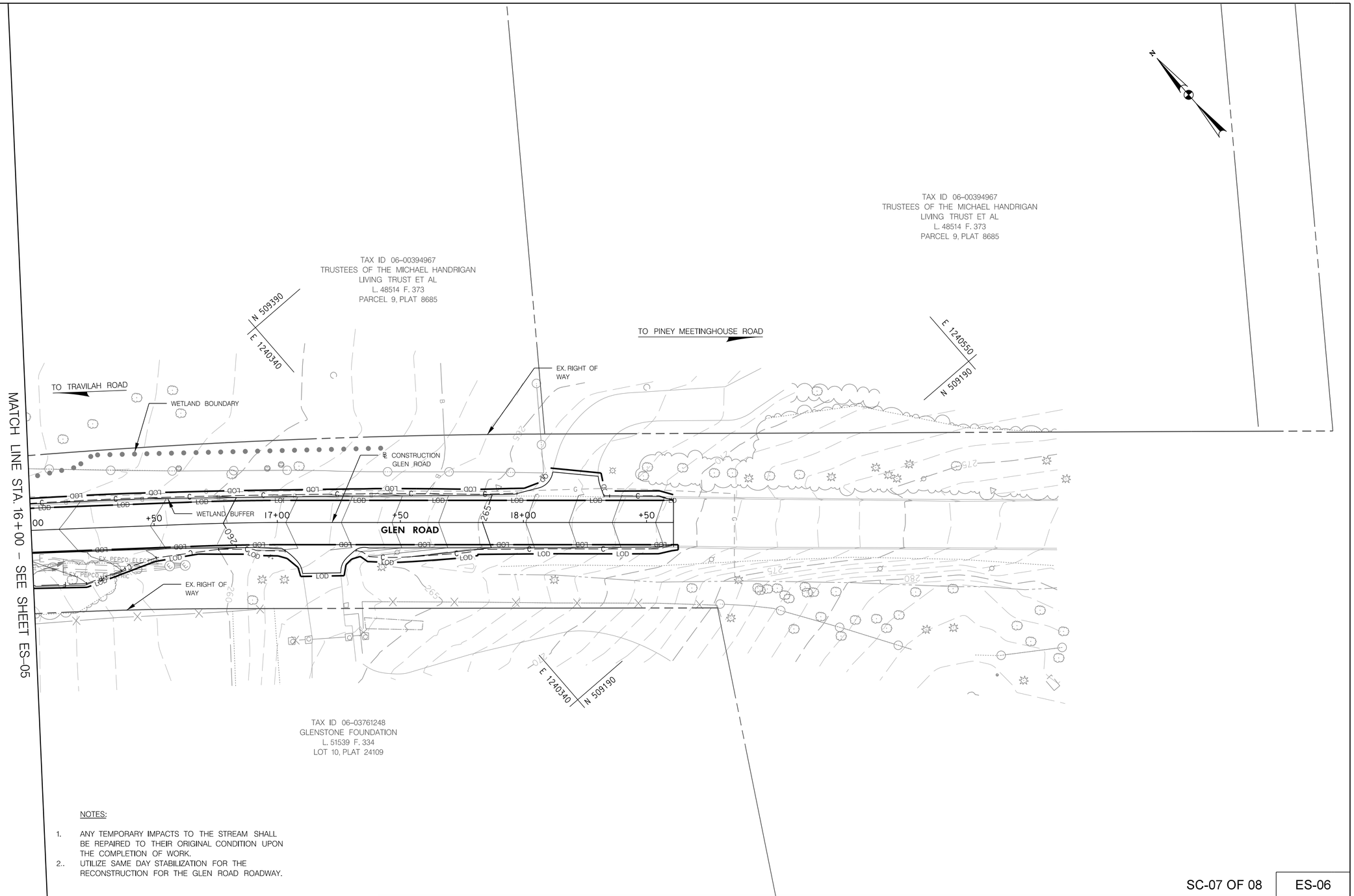


NOTES:

1. ANY TEMPORARY IMPACTS TO THE STREAM SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION UPON THE COMPLETION OF WORK.
2.. UTILIZE SAME DAY STABILIZATION FOR THE RECONSTRUCTION FOR THE GLEN ROAD ROADWAY.

SC-07 OF 08 | ES-06

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

## PROFESSIONAL CERTIFICATION

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MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

Designed by: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## EROSION AND SEDIMENT CONTROL PLAN STAGE 1 (2 OF 2)

Project No. : 502102 SHEET 24 of 48

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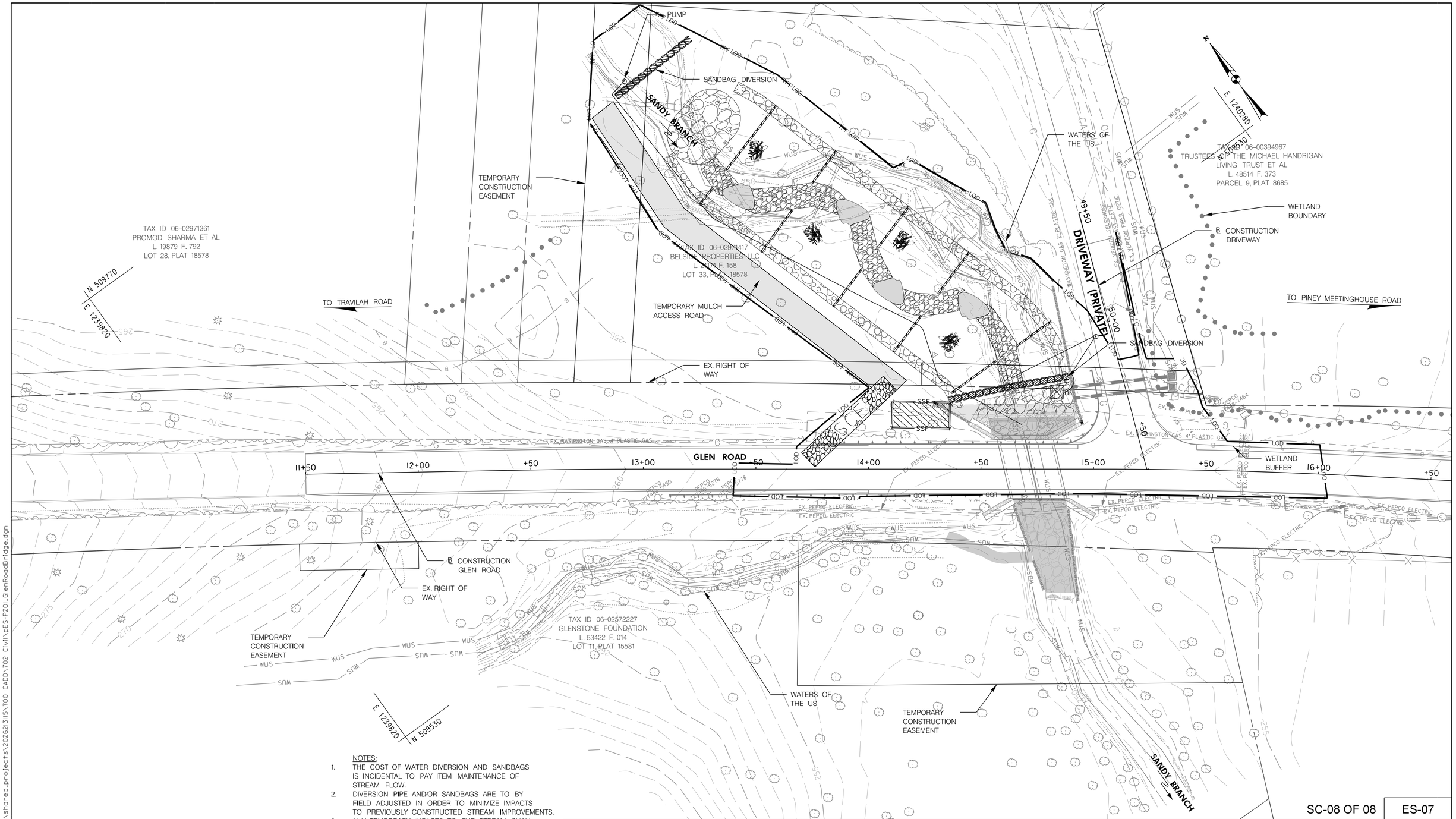


NOTES:

1. THE COST OF WATER DIVERSION AND SANDBAGS IS INCIDENTAL TO PAY ITEM MAINTENANCE OF STREAM FLOW.
2. DIVERSION PIPE AND/OR SANDBAGS ARE TO BY FIELD ADJUSTED IN ORDER TO MINIMIZE IMPACTS TO PREVIOUSLY CONSTRUCTED STREAM IMPROVEMENTS.
3. ANY TEMPORARY IMPACTS TO THE STREAM SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION UPON THE COMPLETION OF WORK.

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

## PROFESSIONAL CERTIFICATION

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LICENSE NO. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## EROSION AND SEDIMENT CONTROL PLAN STAGE 2

Project No. : 502102 SHEET 25 of 48

SC-08 OF 08 | ES-07

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1/7/2026
MODELNAME: $MODELNAME$

## TEMPORARY TRAFFIC CONTROL REQUIREMENTS

1. THE PERMITTEE SHALL REFER TO THE ATTACHED TEMPORARY TRAFFIC CONTROL PLAN (TTCP) DRAWINGS. WORK ZONE SITUATIONS WHICH ARE NOT ADDRESSED IN THE ATTACHED 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 PERMITTEE 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 WITHIN THE TRAVELED PORTION OF ROADWAYS 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 PERMITTEE 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. IF ANY TEMPORARY TRAFFIC CONTROL SIGNS ARE TO BE PLACED ALONG A MDOT SHA ROADWAY OR WITHIN THE LIMITS OF AN INCORPORATED AREA, THE PERMITTEE SHALL NOTIFY THE APPROPRIATE AGENCY OF SIGNAGE TO BE INSTALLED.

11. DURING NIGHTTIME OPERATIONS REFLECTORIZED TRAFFIC DRUMS SHALL BE USED. HOWEVER, FOR EMERGENCY WORK ACTIVITIES WHERE TRAFFIC DRUMS ARE NOT AVAILABLE, REFLECTORIZED TRAFFIC CONES THAT ARE A MINIMUM OF TWENTY EIGHT (28) INCHES IN HEIGHT AND HAVING SIX (6) INCH AND FOUR (4) INCH REFLECTIVE COLLARS WITHIN THE TOP SIXTEEN (16) INCHES OF THE CONE MAY BE USED. ALL WORK AREAS LEFT UNATTENDED AT NIGHT SHALL BE DELINEATED WITH REFLECTORIZED TRAFFIC DRUMS.

12. THE PERMITTEE SHALL OBTAIN A TEMPORARY NOISE WAIVER FROM THE MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR ALL NIGHTTIME CONSTRUCTION ACTIVITIES.

## SEQUENCE OF CONSTRUCTION FOR MAINTENANCE OF TRAFFIC

1. INSTALL PVMS 2 WEEKS BEFORE ROAD CLOSURE.
2. INSTALL MAINTENANCE OF TRAFFIC CONTROL DEVICES AND CLOSE GLEN ROAD.
3. AFTER COMPLETETING THE CONSTRUCTION OF THE ROADWAY AND BOX CULVERTS. REMOVE MAINTENANCE OF TRAFFIC CONTROL DEVICES AND OPEN GLEN ROAD.

## 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 PERMITTEE 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. THE PERMITTEE WILL BE SOLELY RESPONSIBLE FOR ALL ACCIDENTS AND/OR DAMAGE TO PERSONS AND/OR PROPERTY DAMAGE RESULTING FROM HIS OPERATIONS.

2. 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.

3. ALL TEMPORARY TRAFFIC CONTROL (TTC) DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT PERIODS OF TIME, TTC DEVICES THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED OR COVERED.

4. 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 ENGINEEERING TEAM AT 240-777-2100
- MONTGOMERY COUNTY TRANSIT AT 240-777-5800
- MONTGOMERY COUNTY PUBLIC SCHOOLS, LOCAL DEPOT MANAGER
- 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

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 COUNTY 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.

MONTGOMERY COUNTY, MARYLAND
TRAFFIC ENGINEERING AND OPERATIONS SECTION
APPROVED

FOR _____

BY _____

MT-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. 17172 EXPIRATION DATE 12-12-2026

STATE OF MARYLAND · ROBERT JAMES MILLER · No. 17172 · PROFESSIONAL ENGINEER · 1/27/26

Stantec

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: RM Drawn by: RM Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-148x01 ON GLEN ROAD OVER SANDY BRANCH

## MAINTENANCE OF TRAFFIC GENERAL NOTES

Project No.: 502102 SHEET 26 of 48

3:29:47 PM 1/27/2026 U:\2026213\I5\700 CADD\703 Traffic\01-GENERAL MOT NOTES.dgn

MODELNAME: $MODELNAME$

NOTE:
1. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS UNLESS PERMISSION FOR CLOSURE IS GRANTED BY THE PROPERTY OWNER(S)/MANAGER. HOWEVER, ACCESSIBILITY FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

GLEN RD TO BE CLOSED — ON XXXXXX

PVMS – TO BE INSTALLED 2 WEEKS PRIOR TO CLOSURE

1000' 0 1000' 2000'
SCALE: 1" = 1000'

MONTGOMERY COUNTY, MARYLAND
TRAFFIC ENGINEERING AND OPERATIONS SECTION
APPROVED

FOR ______

BY ______

Legend
- EXISTING BRIDGE
- SIGN POST
- TYPE III BARRICADE
- PVMS

MT–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. 17172 EXPIRATION DATE 12-12-2026

STATE OF MARYLAND ROBERT JAMES MILSTEAD No. 17172 PROFESSIONAL ENGINEER
1/27/26

Stantec

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: RM Drawn by: RM Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-148x01 ON GLEN ROAD OVER SANDY BRANCH

**DETOUR PLAN**

Project No.: 502102 SHEET 27 of 48

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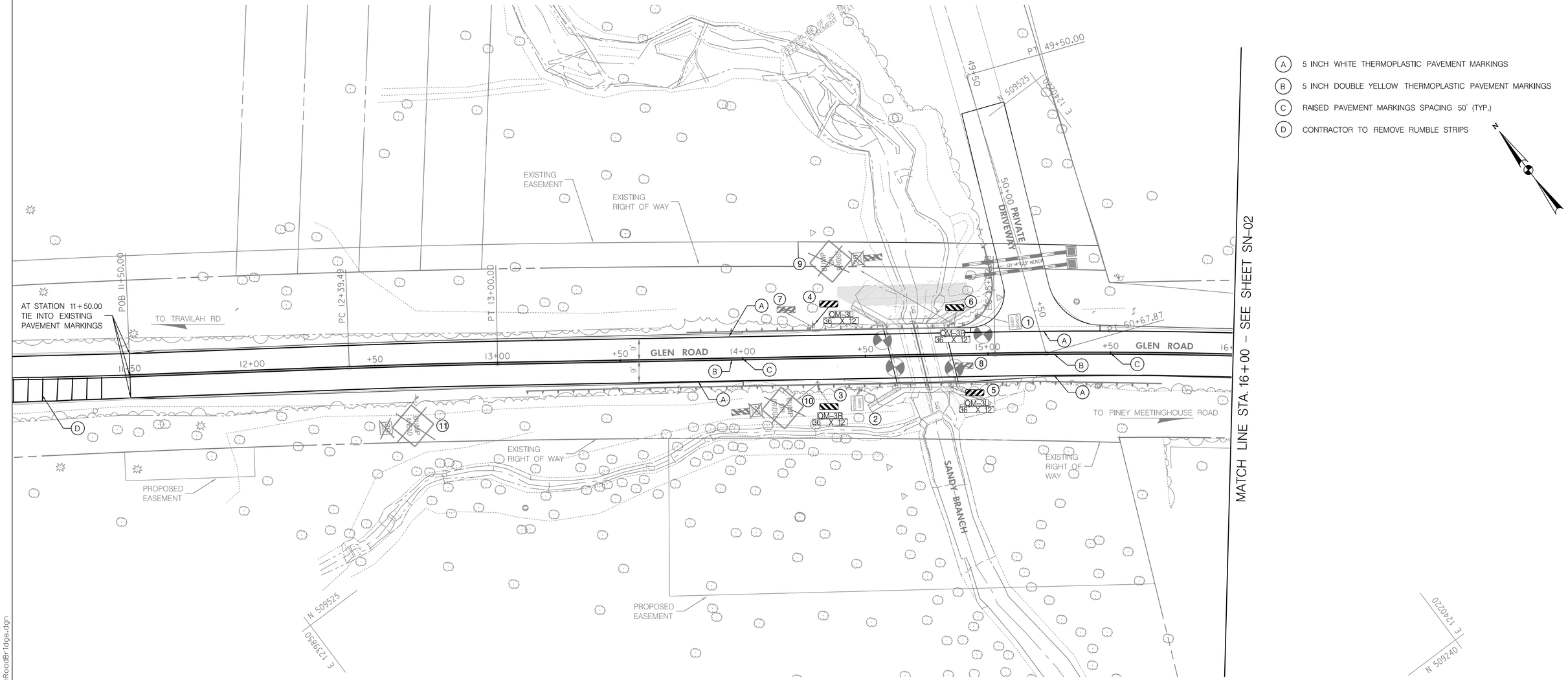


MONTGOMERY COUNTY, MARYLAND
TRAFFIC ENGINEERING AND OPERATIONS SECTION
APPROVED

FOR _____

BY _____

SN-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. 17172 EXPIRATION DATE 12-12-2026

STATE OF MARYLAND · ROBERT JAMES MILLER · No. 17172 · PROFESSIONAL ENGINEER · 1/27/26

20′ 0 20′ 40′
SCALE: 1"=20′

Stantec


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: RM Drawn by: RM Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-148x01 ON GLEN ROAD OVER SANDY BRANCH

## SIGNING AND PAVEMENT MARKING PLANS (1 OF 2)

Project No. : 502102 SHEET 28 of 48

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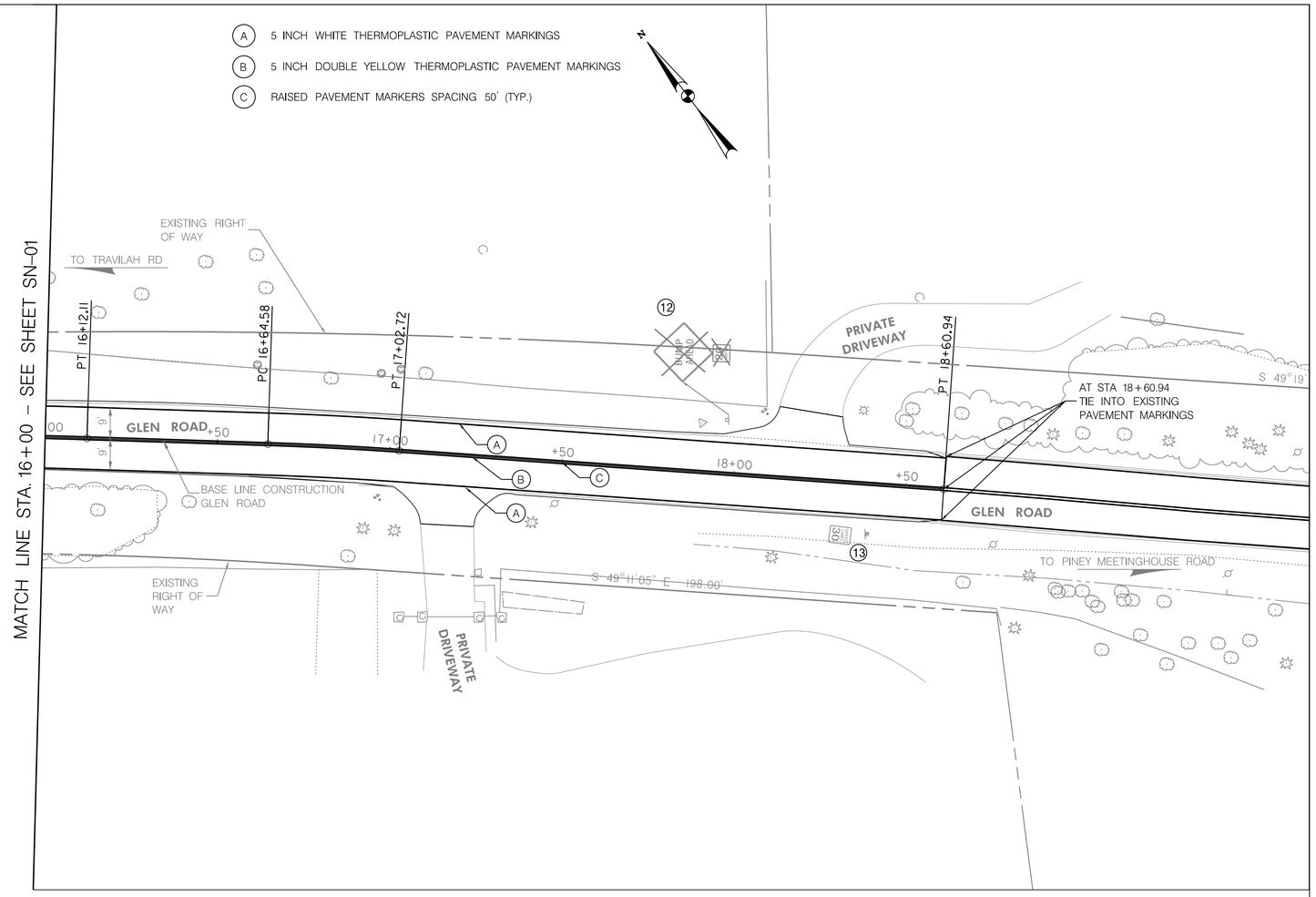
1/27/2026 3:43:23 PM
MODELNAME: $MODELNAME$

20′ 0 20′ 40′

| SHEET NO. | SIGN NO. | REMARKS | | CODE NUMBER | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| SN-01 | 1 | I-3(I)( 30"X24" ) | EXISTING TO REMAIN | | | | | | | | |
| SN-01 | 2 | I-3(I)( 30"X24" ) | EXISTING TO REMAIN | | | | | | | | |
| SN-01 | 3 | OM-3 R ( I2"X36" ) | I- PERFORATED TUBULAR STEEL POST | 3 | I | I | | | | | |
| SN-01 | 4 | OM-3 L ( I2"X36" ) | I- PERFORATED TUBULAR STEEL POST | 3 | I | I | | | | | |
| SN-01 | 5 | OM-3 L ( I2"X36" ) | I- PERFORATED TUBULAR STEEL POST | 3 | I | I | | | | | |
| SN-01 | 6 | OM-3 R ( I2"X36" ) | I- PERFORATED TUBULAR STEEL POST | 3 | I | I | | | | | |
| SN-01 | 7 | OM-3 L ( I2"X36" ) | EXISTING TO BE REMOVED | | | | 3 | | | | |
| SN-01 | 8 | OM-3 L ( I2"X36" ) | EXISTING TO BE REMOVED | | | | 3 | | | | |
| SN-01 | 9 | OM-3 R ( I2"X36" ), WI3-I I8"xI8", WI7-I(MOD) 36"X36" | EXISTING TO BE REMOVED | | | | I4.25 | | | | |
| SN-01 | I0 | OM-3 R ( I2"X36" ), WI3-I I8"xI8", WI7-I(MOD) 36"X36" | EXISTING TO BE REMOVED | | | | I4.25 | | | | |
| SN-01 | II | WI3-I I8"xI8", WI7-I(MOD) 36"X36" | EXISTING TO BE REMOVED | | | | II.25 | | | | |
| SN-02 | I2 | WI3-I I8"xI8", WI7-I(MOD) 36"X36" | EXISTING TO BE REMOVED | | | | II.25 | | | | |
| SN-02 | I3 | R2-I 30"x24" | EXISTING TO REMAIN | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | PAVEMENT MARKINGS QUANTITIES | | | | | | I420 | I420 | I5 | 65 |
| | | | TOTAL | I2 | 4 | 4 | 57 | I420 | I420 | I5 | 65 |

| CODE NUMBER DESCRIPTION AND UNIT | | | |
|---|---|---|---|
| CODE NUMBER | DESCRIPTION | UNIT | CAT. CODE |
| I | SHEET ALUMINUM SIGNS | SF | 80I605 |
| 2 | SQUARE PERFORATED TUBULAR STEEL POSTS | EA | 80II30 |
| 3 | SQUARE TUBULAR STEEL ANCHOR BASES | EA | 80II35 |
| 4 | REMOVE EXISTING SIGN | SF | 80I7II |
| 5 | 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS | LF | 54940I |
| 6 | 5 INCH DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKINGS | LF | 549403 |
| 7 | RECESSED SNOWPLOWABLE RAISED PAVEMENT MARKER WITH SINGLE PLASTIC HOLDER AND SINGLE TWO WAY LENS SPACING 50' (TYP.) | EA | 549722 |
| 8 | REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH | LF | 549800 |




MONTGOMERY COUNTY, MARYLAND
TRAFFIC ENGINEERING AND OPERATIONS SECTION
APPROVED

FOR _____

BY _____

SN-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. 17172 EXPIRATION DATE 12-12-2026

STATE OF MARYLAND · ROBERT JAMES MILLER · No. 17172 · PROFESSIONAL ENGINEER · 1/27/26

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

Stantec


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: RM Drawn by: RM Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-148x01 ON GLEN ROAD OVER SANDY BRANCH

## SIGNING AND PAVEMENT MARKING PLANS (2 OF 2)

Project No. : 502102 SHEET 29 of 48

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1/27/2026
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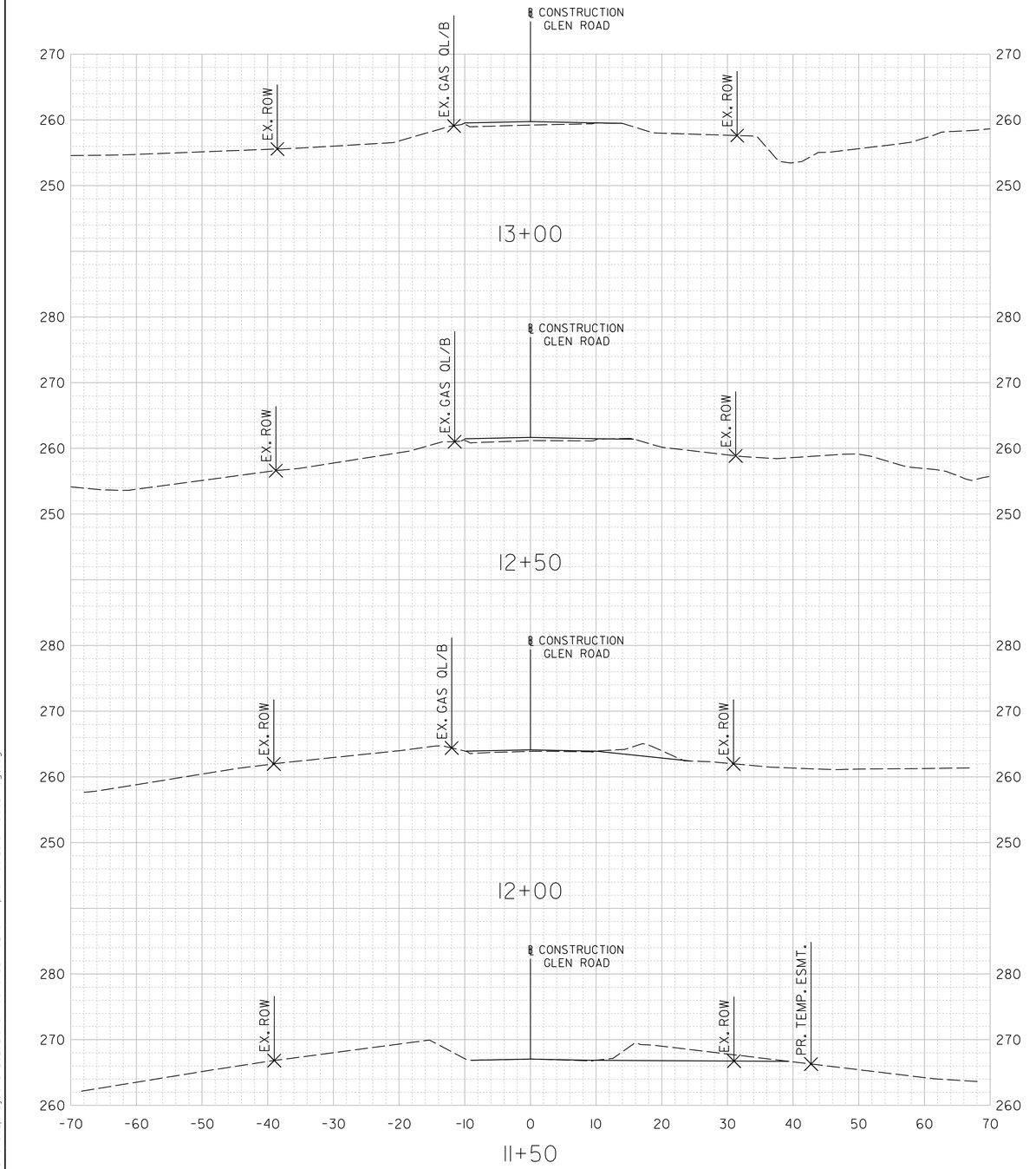
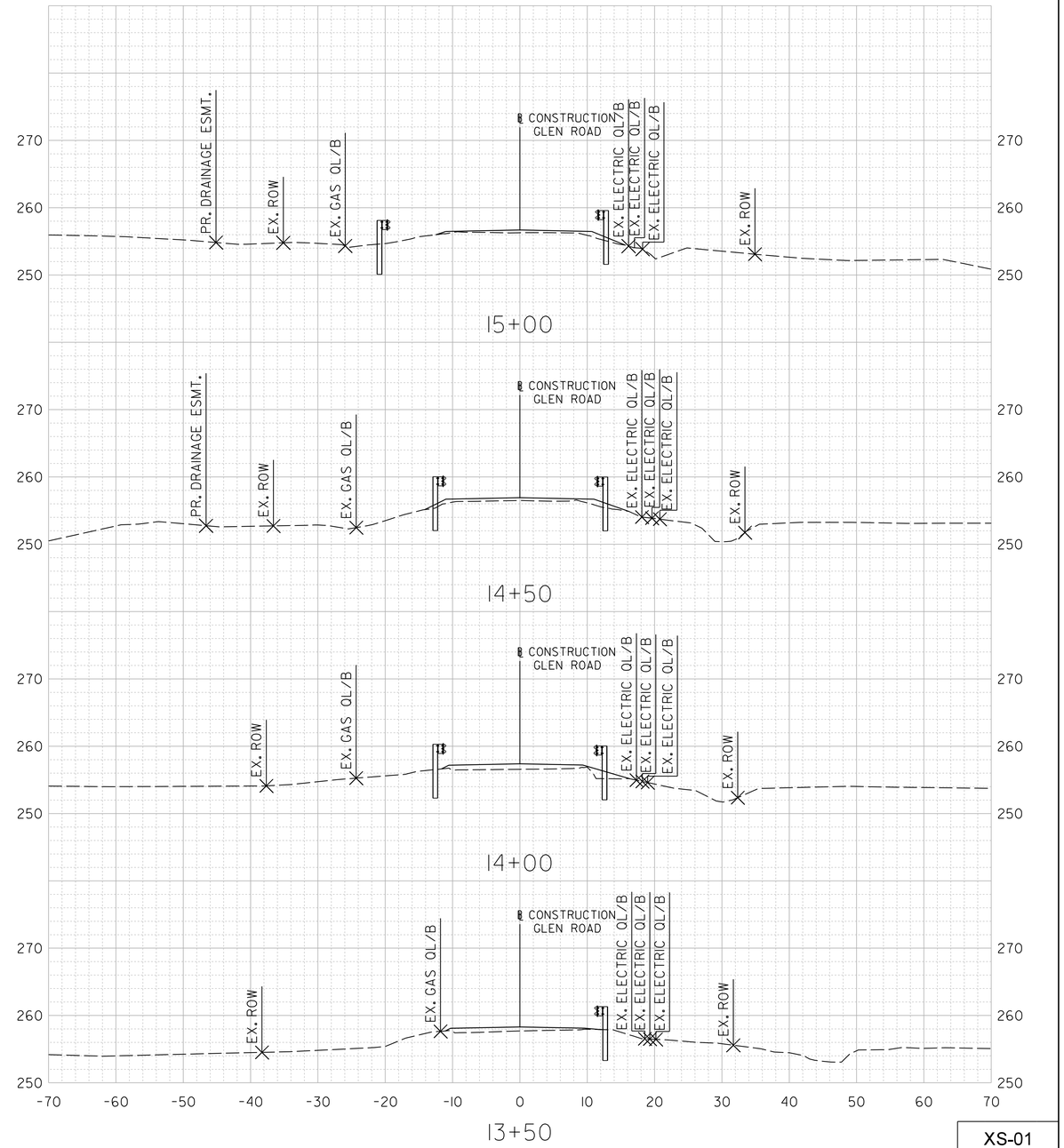
MODELNAME: $MODELNAME$




XS-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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## ROADWAY CROSS SECTIONS (1 OF 2)

Project No. : 502102 SHEET 30 of 48

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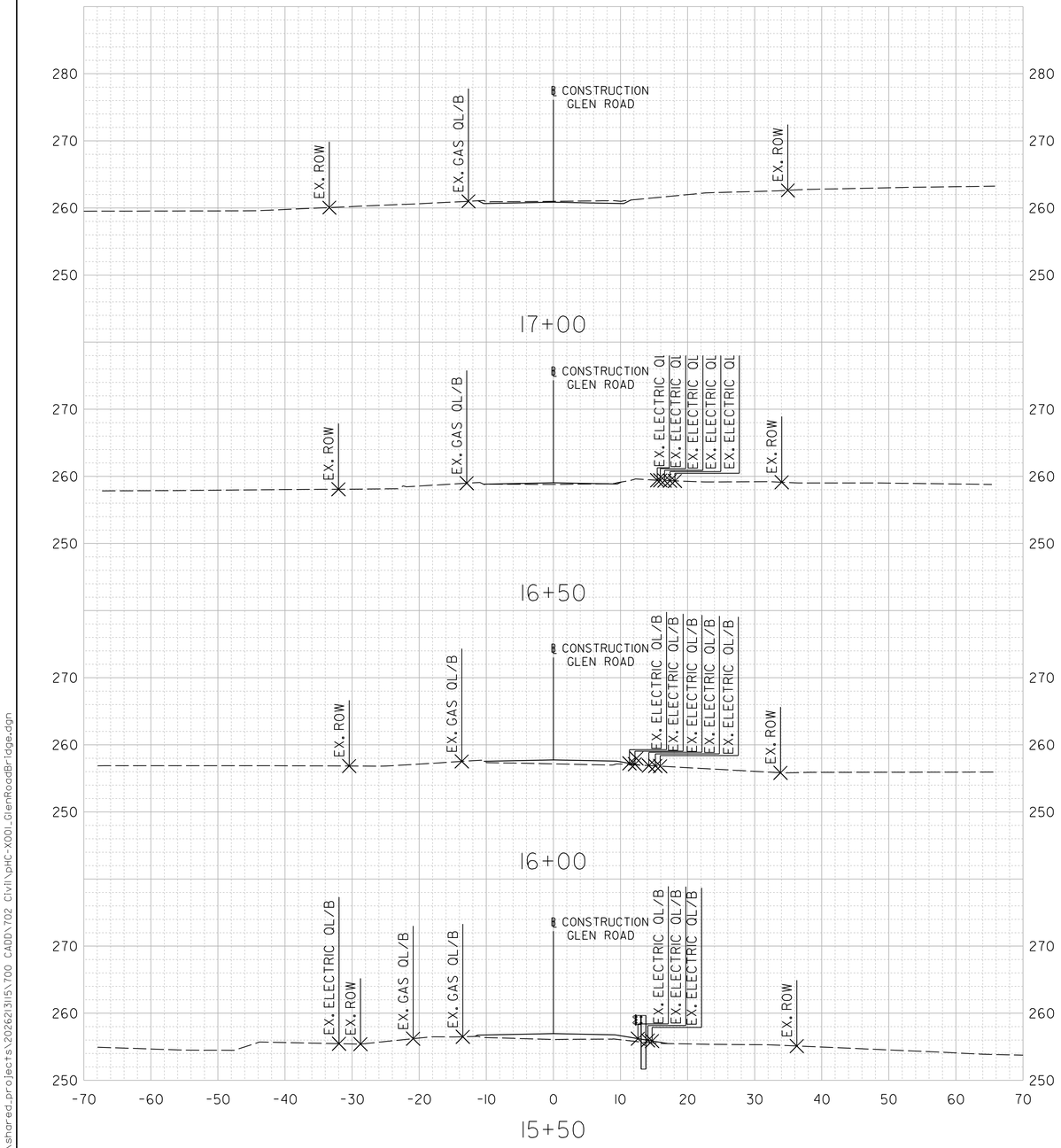
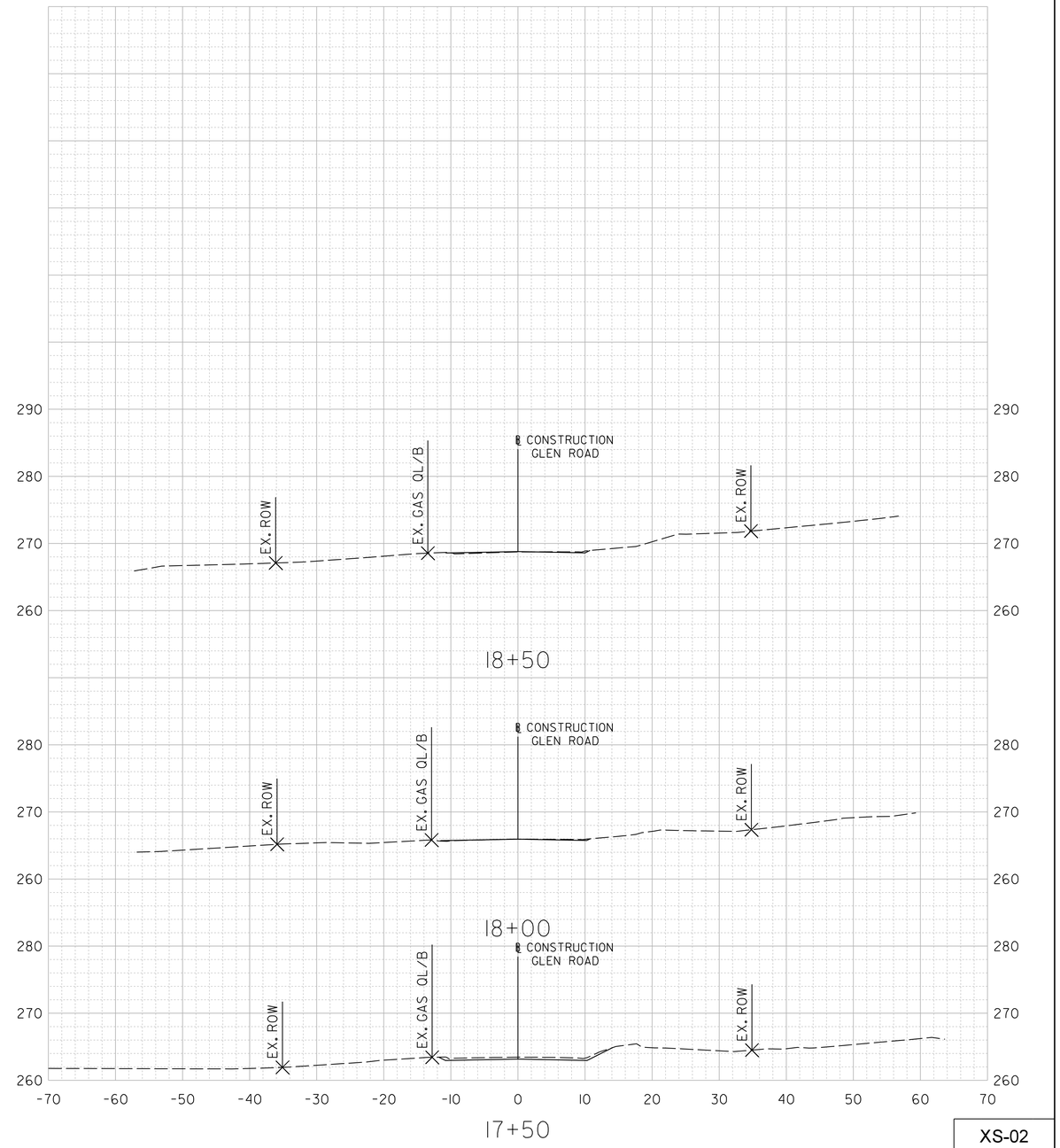
1/7/2026
MODELNAME:$MODELNAME$




XS-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. 46328 EXPIRATION DATE 12-31-2026

Stantec

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: DHM III Drawn by: DHM III Checked by: DL

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**ROADWAY CROSS SECTIONS (2 OF 2)**

Project No. : 502102 SHEET 31 of 48

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11:32:22 AM
1/7/2026
MODELNAME: $MODELNAME$

GENERAL NOTES:

SPECIFICATIONS: MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2025, INCLUDING REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS.

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 10TH EDITION 2024, WITH ALL INTERIMS.

RATING: RATINGS ARE BASED ON LOAD AND RESISTANCE FACTOR RATING METHOD. RATINGS PROVIDED ARE IN ACCORDANCE WITH MDOT SHA PPM D-97-47(4).

| HL-93 | |
|---|---|
| LRFR INVENTORY | LRFR OPERATING |
| 1.09 | 1.73 |

| LEGAL TRUCK | OPERATING (TONS) |
|---|---|
| H-15 | 27.5 |
| TYPE 4 | 42.5 |
| HS-20 | 50.0 |
| 3S2 | 68.0 |

| PERMIT TRUCK | OPERATING (TONS) |
|---|---|
| 150K | 99.9 |
| 90K COMB. | 49.5 |
| 90K CRANE | 55.5 |
| 90K CARGO | 60.5 |
| 80K CARGO | 70.0 |
| 120K SPEC. | 73.5 |
| 108K CRANE | 69.0 |
| 120K CRANE | 92.5 |

LOADING: HL-93 WITH PROVISIONS FOR 2" FUTURE WEARING SURFACE.

CONCRETE: ALL PRECAST CONCRETE FOR CULVERT SHALL BE SELF CONSOLIDATING CONCRETE (SCC) WITH Fc'=5,000 PSI (MINIMUM).

ALL CAST-IN-PLACE CONCRETE EXCEPT CONCRETE DECK SHALL BE MIX NO. 6 (f'c=4,500 PSI), CONTAINING SYNTHETIC FIBERS (SEE SECTION 902.15). ALL FINISHED CONCRETE SURFACES SHALL HAVE A ¾"X¾" CHAMFER ON ALL CORNERS UNLESS NOTED OTHERWISE.
CONCRETE DECK SHALL BE MIX NO. 8 (f'c=4,000 PSI), CONTAINING SYNTHETIC FIBERS (SEE SECTION 902.15).

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ONLY GRADE 60 STEEL MAY BE USED ON THIS PROJECT.

ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF WINGWALL FOOTINGS AND TOEWALLS WHICH SHALL HAVE 3" MINIMUM COVER.

PRECAST CONCRETE CULVERT: SHOP DRAWINGS FOR THE CULVERT UNITS SHALL BE SIGNED/SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND. ALL PRECAST STRUCTURE UNITS SHALL BE PLANT-PRECAST AND INSTALLED IN-PLACE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL SUPPLY SHOP DRAWINGS OF CULVERT TO THE ENGINEER FOR REVIEW AND APPROVAL. NO MATERIAL SHALL BE ORDERED OR FABRICATED UNTIL WRITTEN APPROVAL IS RECEIVED FOR THE PROPOSED STRUCTURE.

POST-TENSIONING TO USE ½" DIA. 7 WIRE GRADE 270 STRAND. CONTRACTOR SHALL SUBMIT POST-TENSIONING DETAILS WITH SHOP DRAWINGS SHOWING THE STRAND PATTERN AND REQUIRED POST-TENSIONING FORCE.

THE EXTERIOR SIDES OF ALL BOX CULVERTS SHALL BE COVERED WITH ROLL OR SHEET WATERPROOFING MEMBRANE IN ACCORDANCE WITH SHA SPECIFICATION 422.03.07. APPLY TWO LAYERS AT JOINT AND ONE LAYER EVERYWHERE ELSE.

THE CONTRACTOR HAS THE OPTION TO CAST IN PLACE THE BOX CULVERT WITHOUT ADDITIONAL COST TO THE COUNTY, AND NO ADDITIONAL CONSTRUCTION TIME WILL BE ALLOWED. THE CONTRACT COMPLETION DATE MUST BE MET. THE ROAD HAS TO BE OPEN TO TRAFFIC BEFORE LABOR DAY. IF CAST-IN-PLACE BOX CULVERT OPTION IS CHOSEN, THE REBAR CLEARANCE AT THE BOTTOM OF BOTTOM SLAB SHALL BE INCREASED FROM 2" TO 3". THEREFORE, THE BOTTOM SLAB THICKNESS SHALL BE INCREASED BY 1".

CONCRETE PROTECTIVE COATING: APPLY LINSEED OIL PROTECTIVE COATING TO THE CONCRETE DECK WEARING SURFACE PER SHA SPECS. SECTION 420.03.12. APPLY EPOXY PROTECTIVE COATING TO ALL OTHER EXPOSED CONCRETE SURFACE, INCLUDING BOX CULVERT INSIDE SURFACE, END SURFACES OF CULVERT END SEGMENTS, EXPOSED CONCRETE SURFACES OF WINGWALL AND APRON PER SHA SPECS. SECTION 464.

YEAR BUILT MARKING: YEAR BUILT MARKING AND STRUCTURE INVENTORY NUMBER SHALL BE IN ACCORDANCE WITH MD SHA DETAIL NO. SI-103 AND SI-201. STRUCTURE INVENTORY NUMBER: M-0148.

EXISTING BRIDGE: EXISTING SUPERSTRUCTURE TO BE REMOVED IN ITS ENTIRETY. EXISTING SUBSTRUCTURE TO BE REMOVED TO 1'-0" MINIMUM BELOW THE PROPOSED GROUND.

KEYS: ALL CONCRETE CONSTRUCTION KEYS ARE NOMINAL SIZE.

HYDROLOGICAL AND HYDRAULIC DATA: FOR HYDROLOGICAL AND HYDRAULIC DATA, SEE SHEET S-4.

RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON EXISTING OR NEW STRUCTURE/OR STORING MATERIALS ON/OR AGAINST STRUCTURES: THERE ARE RESTRICTIONS ON PLACING EQUIPMENT ON EXISTING AND NEW STRUCTURE(S) AND STORING MATERIALS ON/OR AGAINST EXISTING AND NEW STRUCTURE(S) ELEMENTS. THE LIMITATIONS BASICALLY RELATE TO LOADS THAT ARE BEYOND MARYLAND'S LEGAL VEHICLES AND/OR POSTED LOAD LIMITS (WHERE APPLICABLE) AND MATERIALS STOCKPILED ON/OR AGAINST STRUCTURE'S OR STRUCTURES' ELEMENTS. FOR DETAILS OF SUCH RESTRICTIONS SEE SECTION TC 6.14 TITLED "RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON STRUCTURES, OR STORING MATERIALS ON/OR AGAINST STRUCTURES" IN THE CONTRACT DOCUMENTS. IN ORDER TO COMPLY WITH THIS ARTICLE, THE CONTRACTOR SHALL READ SECTION TC 6.14 PRIOR TO COMMENCING ANY WORK ON STRUCTURE(S) IN THIS CONTRACT.

FOUNDATION REQUIREMENTS: THE MINIMUM REQUIRED FACTORED BEARING RESISTANCE FOR THE BOX CULVERT UNDER STRENGTH LIMIT AND SERVICE LIMIT IS 5,000 PSF AND 3,500 PSF RESPECTIVELY.

THE MINIMUM REQUIRED FACTORED BEARING RESISTANCE FOR THE WINGWALL UNDER STRENGTH LIMIT AND SERVICE LIMIT IS 3,000 PSF AND 2,000 PSF RESPECTIVELY.

UNDERCUTTING AND BACKFILLING (UP TO 9") WITH GRADED AGGREGATE BASE (GAB) WILL BE NECESSARY IN ORDER TO ACHIEVE THESE BEARING RESISTANCE. THE GEOTECHNICAL ENGINEER SHALL VERIFY THAT THE BEARING CAPACITY MEETS OR EXCEEDS THE DESIGN REQUIREMENTS PRIOR TO INSTALLATION OF THE CONCRETE CULVERT AND WINGWALL FOOTINGS.

CONSTRUCTION: STRUCTURAL EXCAVATION AND BACKFILL SHALL BE PERFORMED PER SECTION 402 "STRUCTURE EXCAVATION". WINGWALL SHALL BE CONSTRUCTED PER SECTION 450 "RETAINING WALL". ALL BACKFILL MATERIALS BEHIND THE WINGWALL SHALL MEET SELECT BORROW REQUIREMENT PER SECTION 916. ALL EXCAVATIONS SHOULD BE SLOPED OR STEPPED BACK IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS FOR EXCAVATIONS. EXPOSURE TO THE ENVIRONMENT MAY WEAKEN THE SOILS AT THE FOOTING BEARING LEVEL IF THE FOUNDATION EXCAVATIONS REMAIN OPEN FOR TOO LONG A TIME. THEREFORE, FOUNDATION SHOULD BE PLACED THE SAME DAY THAT EXCAVATIONS ARE MADE. IF THE BEARING SOILS ARE SOFTENED BY SURFACE WATER INTRUSION OR EXPOSURE, THE SOFTENED SOILS MUST BE REMOVED FROM THE FOUNDATION EXCAVATION BOTTOM IMMEDIATELY PRIOR TO PLACEMENT OF FOUNDATION.

IT IS ANTICIPATED THAT THE GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND WILL REQUIRE DEWATERING. DURING THE CONSTRUCTION, THE SURFACE OF THE SUBGRADE SHOULD BE SUFFICIENTLY DEWATERED TO PROVIDE AN ADEQUATE SURFACE ON WHICH TO CONSTRUCT THE FOOTINGS.

TEMPORARY SHEETING/SHORING WILL BE NEEDED FOR THE FOOTING EXCAVATION. THE DESIGN OF TEMPORARY SHEETING/SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR. THE DESIGN SHALL BE PROVIDED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND AND BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL. TEMPORARY SHEETING / SHORING WILL NOT BE MEASURED BUT THE COST WILL BE INCIDENTAL TO PAY ITEM "STRUCTURE EXCAVATION (CLASS 3)".

S - 1

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

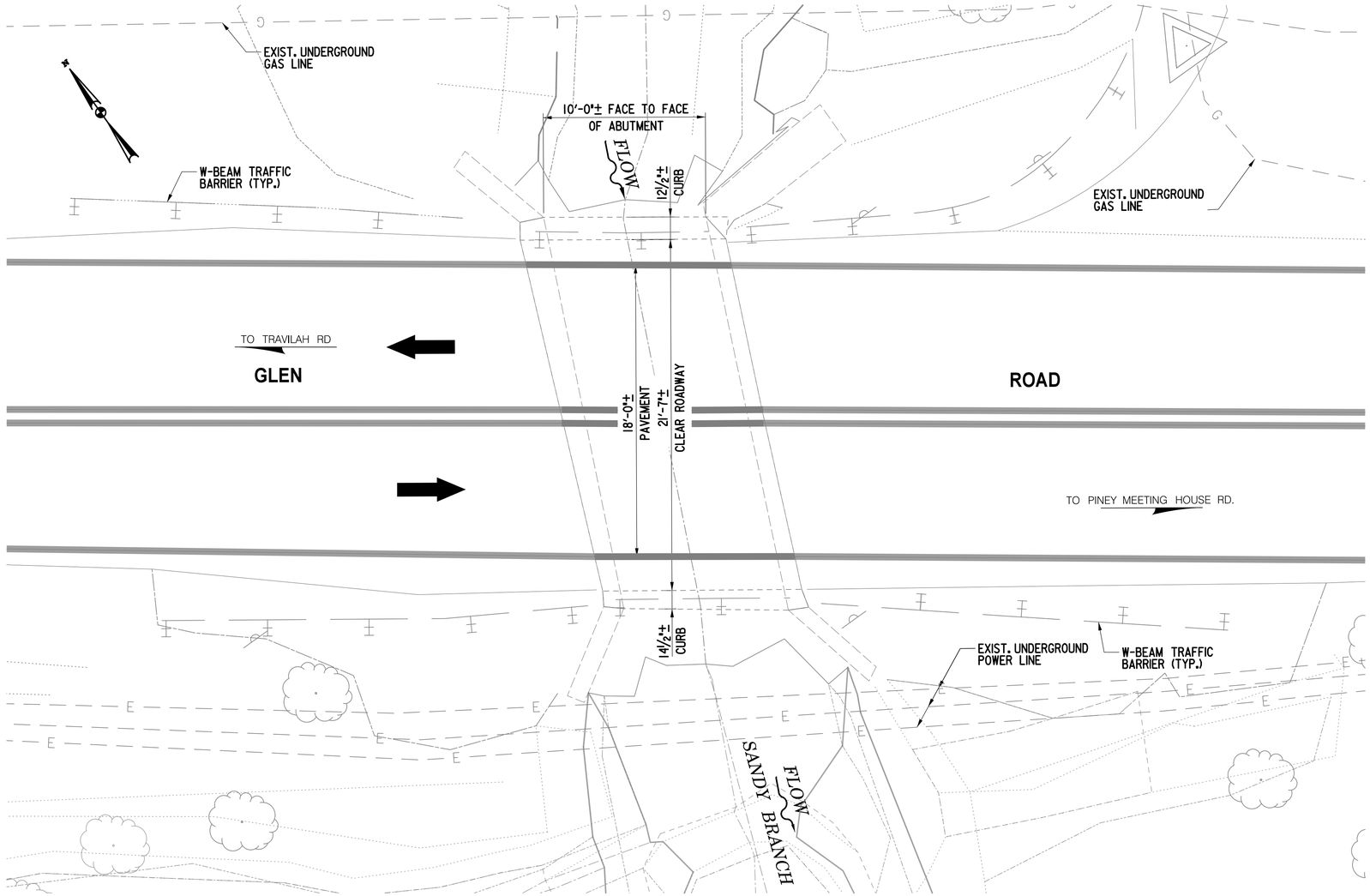
RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date
Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

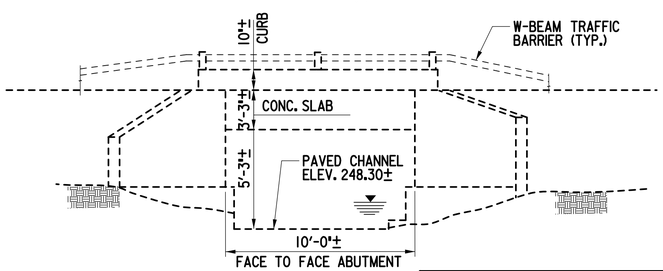
BRIDGE GENERAL NOTES

Project No. : 502102 SHEET 32 of 48

U:\2026\13115\700 CADD\706 Struct\S-1 GENERAL NOTES.dgn
11:26 AM
1/5/2026
MODELNAME:Design S-1

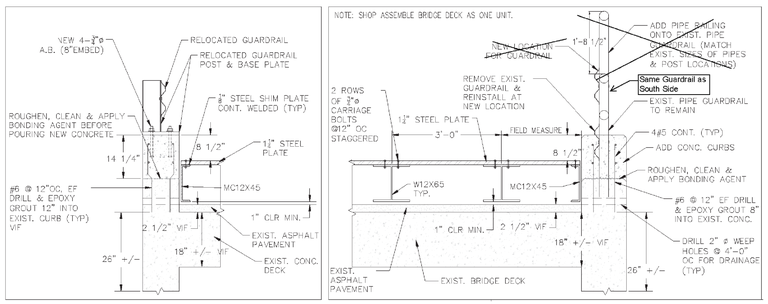



## PLAN
SCALE: 1/4"=1'-0"




## ELEVATION
SCALE: 1/4"=1'-0"

## SOUTH ELEVATION




## STEEL PLATE DECK DETAILS
(LOOKING WEST)

NOTE:
THE (±) MARKS SHOWN WITH DIMENSIONS DO NOT INDICATE ANY DEGREE OF PRECISION. THESE MARKS (±) INDICATE EXISTING DIMENSIONS THAT MAY VARY AND DO REQUIRE FIELD VERIFICATION BY THE CONTRACTOR.

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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

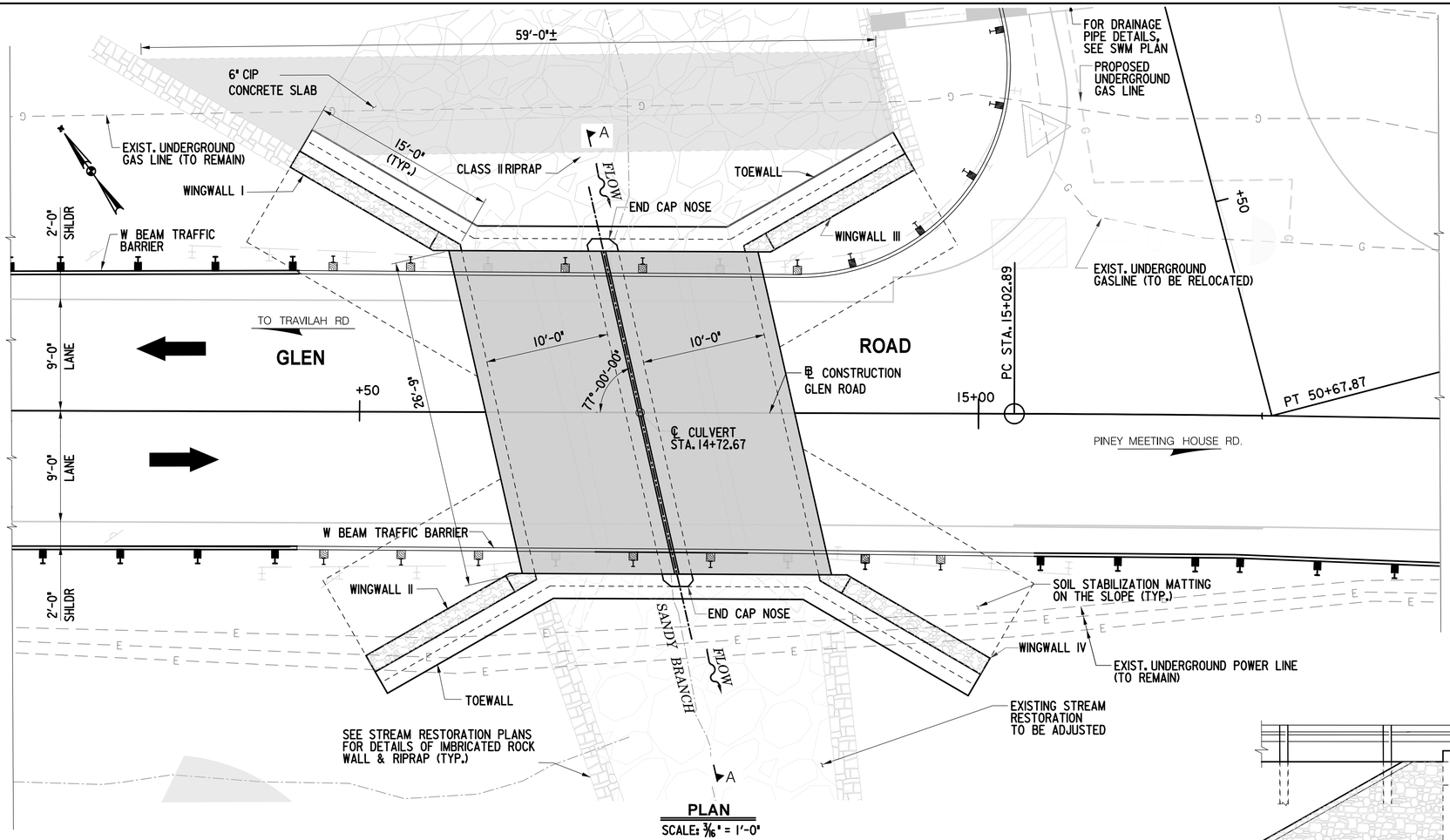
RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date
Designed by: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

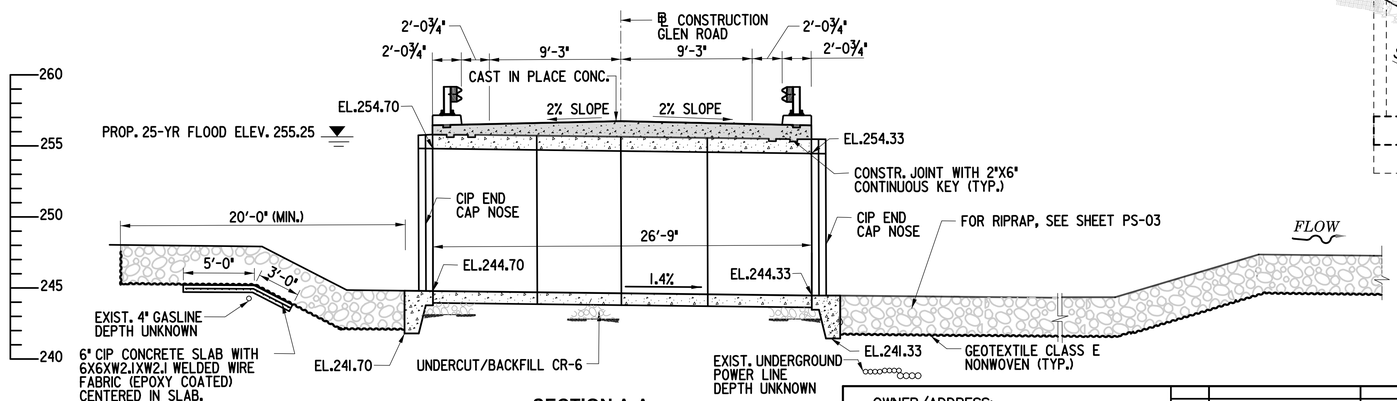
## PLAN AND ELEVATION (EXISTING BRIDGE)

Project No. : 502102 SHEET 33 of 48

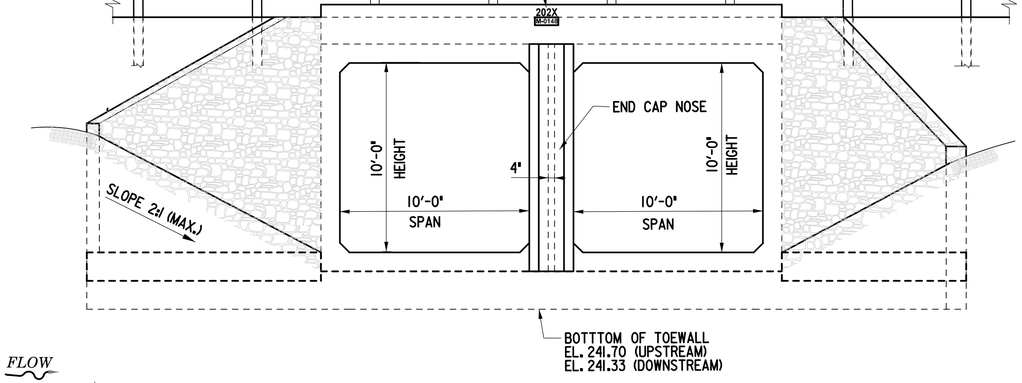
U:\2026\3115\700 CADD\706 Struct\S-2 GP AND ELEV-EXIST.dgn
1/5/2026 11:27 AM
MODELNAME: SHEET-S2




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




## SECTION A-A
SCALE: 3/16" = 1'-0"




## ELEVATION
SCALE: 1/4" = 1'-0"

**NOTES:**
1. FOR GENERAL NOTES SEE SHEET S-1.
2. FOR GEOMETRIC AND FOUNDATION LAYOUT, SEE SHEET S-5.
3. FOR CULVERT CROSS SECTION SEE SHEET S-6.
4. FOR WINGWALL SECTIONS SEE SHEET S-7.
5. ALL RAILING POSTS AND W BEAM TRAFFIC BARRIER SHALL HAVE BROWN POLYESTER COATING PER SECTION 605.02.
6. FOR ROADWAY PROFILE, SEE SHEET HP-01.
7. FOR MAINTENANCE OF STREAM FLOW DURIING CONSTRUCTION, SEE EROSION AND SEDIMENT CONTROL PLANS. THE STREAM DIVERSION SHALL ALLOW CONSTRUCTION WITHIN THE DIVERSION AREA TO BE COMPLETED IN THE DRY. THE DIVERSION IS NOT INTENDED TO BLOCK HIGHWATER EVENTS FROM FLOODING THE DEWATERED AREAS. THE PUMPS FOR THE DEWATERING OPERATION SHALL RUN CONTINUOUSLY 24 HOURS PER DAY UNTIL DEWATERING IS NO LONGER REQUIRED TO CONSTRUCT THE SUBSTRUCTURE. THE CONTRACTOR SHALL EMPLOY ADDITIONAL WORK SHIFTS AS NECESSARY TO MAINTIAN A CONTINUOUS PUMPING OPERATION. THE CONTINUOUS PUMPING OPERATION SHALL BE INCIDENTAL TO THE LUMP SUM MAINTENANCE OF STREAM FLOW ITEM.

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## PLAN, ELEVATION AND CROSS SECTION (PROPOSED)

Project No. : 502102 SHEET 34 of 48

S - 3

U:\2026\213\5\700 CADD\706 Struct\S-3 GP AND ELEV- Proposed.dgn
1/27/2026 11:28 AM
MODELNAME: SHEET-S3

# HYDROLOGIC DATA

I. SOURCE: GLEN ROAD FLOODPLAIN STUDY REPORT
PREPARED BY: ☐ SHA ☒ CONSULTANT: STANTEC DATE: 11/17/2023
FILE LOCATION: U:/2026213115

II. DRAINAGE AREA: ACRES _____ SQUARE MILES 1.87

III. METHOD(S) OF ANALYSIS:

_____ USGS GAGE DATA ANALYSIS
- GAGING STATION NO. _____
- LOCATION _____
- DRAINAGE AREA _____
- YEARS OF CONTINUOUS RECORD _____

_____ USGS REGRESSION EQUATIONS
REFERENCE _____
_____ SCS TR - 20 METHOD - VERSION USED (DATE) _____
- RCN (EXISTING-HOMOGENEOUS WATERSHED)[1] _____
- RCN (ULTIMATE HOMOGENEOUS WATERSHED)[1] _____
- $T_C$ (HOMOGENEOUS WATERSHED)[1] _____

_____ FEMA BASE FLOOD (100-YEAR) DISCHARGE _____ (CFS) METHOD USED BY FEMA _____
X OTHER (DESCRIBE) OBTAINED FROM GLENSTONE STREAM RESTORATION PHASE III - HYDROLOGIC AND HYDRAULIC FLOODPLAIN STUDY DATED: SEPTEMBER 2018, BY BAYLAND CONSULTANT & DESIGNERS, INC.

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 |
| 1 | N/A | 149.3 |
| 2 | N/A | 876.5 |
| 10 | N/A | 269.2 |
| 25 | N/A | 1215.0 |
| 50 | N/A | 1778.5 |
| 100 | N/A | 2143.1 |

## 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:
Q _____ 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:

_____

## 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. 63330 EXPIRATION DATE 08-21-2027

Stantec

# HYDRAULIC DATA

I. SOURCE: HEC-RAS - REPLACEMENT OF BRIDGE M-0148 GLEN ROAD OVER SANDY BRANCH- PROPOSED
PREPARED BY: ☐ SHA ☒ CONSULTANT: STANTEC DATE: 11/17/2023
FILE LOCATION: U:/2026213115 ITEM 71 RATING _____
METHOD(S) OF ANALYSIS: HEC-RAS: STEADY FLOW

## II. HYDRAULIC DATA

| [3] FLOW CONDITIONS | CHANNEL CROSS-SECTION | [4] STRUCTURE WATERWAY AREA | [4] ENERGY SLOPE | [4] WATER SURFACE ELEVATION | [5] CHANNEL Q | W | V | D | [5] LEFT OVERBANK LOOKING DOWNSTREAM Q | W | V | D | [5] RIGHT OVERBANK LOOKING DOWNSTREAM Q | W | V | D | DISCHARGE OVER ROAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $Q_{DESIGN}$ DESCRIBE $Q_{100}$ | [8] APPROACH (XS 108.2) | -- | 0.000596 | 257.74 | 1672.83 | 54.00 | 4.02 | 7.71 | 197.92 | 76.44 | 0.98 | 2.64 | 272.34 | 148.36 | 0.86 | 2.14 | -- |
| | UPSTREAM AT STRUCTURE | 200.00 | 0.000417 | 257.65 | 1909.41 | 39.39 | 4.09 | 11.86 | 86.59 | 128.12 | 0.51 | 1.32 | 147.10 | 152.02 | 0.59 | 1.63 | 304.22 |
| | DOWNSTREAM AT STRUCTURE | 200.00 | 0.001062 | 256.26 | 1762.80 | 33.52 | 5.73 | 9.18 | 91.85 | 83.98 | 0.83 | 1.32 | 288.45 | 112.76 | 1.17 | 2.19 | 304.22 |
| $Q_{25}$ DESCRIBE $Q_{25}$ | [8] APPROACH (XS 108.2) | -- | 0.000914 | 255.70 | 1155.93 | 54.00 | 3.94 | 5.43 | 36.65 | 49.93 | 0.67 | 1.09 | 22.10 | 79.65 | 0.46 | 0.61 | -- |
| | UPSTREAM AT STRUCTURE | 200.00 | 0.000331 | 255.46 | 1210.61 | 39.39 | 3.18 | 9.66 | 1.23 | 11.29 | 0.34 | 1.87 | 3.16 | 39.65 | 0.48 | 2.44 | 0.00 |
| | DOWNSTREAM AT STRUCTURE | 200.00 | 0.000842 | 254.91 | 1202.96 | 33.52 | 4.59 | 7.82 | 5.74 | 37.98 | 1.35 | 3.61 | 6.30 | 85.53 | 1.35 | 3.60 | 0.00 |
| $Q_{OVERTOPPING}$ OR OTHER DISCHARGE DESCRIBE $Q_{50}$ | [8] APPROACH (XS 108.2) | -- | 0.000604 | 257.13 | 1468.01 | 54.00 | 3.83 | 7.10 | 138.52 | 70.33 | 0.88 | 2.23 | 171.98 | 134.93 | 0.74 | 1.71 | -- |
| | UPSTREAM AT STRUCTURE | 200.00 | 0.000375 | 257.07 | 1663.94 | 39.39 | 3.75 | 11.27 | 39.40 | 104.98 | 0.39 | 0.96 | 75.16 | 135.68 | 0.46 | 1.20 | 50.86 |
| | DOWNSTREAM AT STRUCTURE | 200.00 | 0.000921 | 255.86 | 1517.23 | 33.52 | 5.17 | 8.75 | 55.77 | 67.99 | 0.71 | 1.16 | 205.50 | 101.80 | 1.02 | 1.99 | 50.86 |

## III. BRIDGE SCOUR DATA

N/A - STUDY OMITED BECAUSETHE CULVERT BENEATH THE PROPOSED BRIDGE IS NOT BOTTOMLESS AND MADE OF CONCRETE

A. SCOUR EVALUATION STUDY TITLE: _____
PREPARED BY: ☐ SHA ☐ CONSULTANT: _____ DATE: _____
FILE LOCATION: _____ ITEM 113 RATING[2] _____

B. SCOUR ESTIMATES:

| | DESIGN CONDITIONS (DESCRIBE SPECIAL CONDITIONS SUCH AS OVERTOPPING, LOW TAILWATER, INFLUENCE OF CONFLUENCES, ETC.) | FLOOD DISCHARGE RETURN PERIOD (YEARS) | FLOOD DISCHARGE MAGNITUDE (CFS) | LONG TERM DEGRADATION / AGGRADATION (FT) | [9] CONTRACTION SCOUR DEPTH (LOOKING DOWNSTREAM) (FT) LT OVERBANK | MAIN CHANNEL | RT OVERBANK | CHANNEL BED LOAD (DESCRIBE) | TYPE OF SCOUR (LIVE BED/CLEAR WATER) |
|---|---|---|---|---|---|---|---|---|---|
| DESIGN FLOOD FOR SCOUR | | | | | | | | | |
| 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] DESIGN FLOOD (100-YR) | CHECK FLOOD (500-YR) | SCOUR COUNTER MEASURES ☐ EXISTING ☐ NEW |
|---|---|---|---|
| CHANNEL THALWEG | | | |
| ABUTMENT1 | | | |
| ABUTMENT2 | | | |
| PIER NO. | | | |
| PIER NO. | | | |
| PIER NO. | | | |
| PIER NO. | | | |
| PIER NO. | | | |
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| PIER NO. | | | |
| PIER NO. | | | |

## 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:
   - DEPTH OF FLOW AT CULVERT INLET AND OUTLET
   - WATER-SURFACE ELEVATION AT CULVERT INLET AND OUTLET
   - 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 ABSCOUR USERS MANUAL
9. ENTER CONTRACTION SCOUR DEPTHS ONLY (APPROXIMATE LINE 121 IN ABSCOUR 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 | SANDY BRANCH | |
| DATE BUILT | 1930 | -- |
| OVERTOPPING ELEVATION | 257.16 | 256.86 |
| OVERTOPPING LOCATION (DESCRIBE) | AT BRIDGE LOWPOINT | AT BRIDGE LOWPOINT |
| INCIPIENT OVERTOPPING FLOW CONDITION ((OVERTOPPING Q < 100 YR FLOOD)[11] | 243.56 | 50.86 |
| FREEBOARD[12] | -- | -- |
| TOTAL STRUCTURE WATERWAY AREA[13] | 52.5 | 200.0 |
| STRUCTURE DESCRIPTION[14] | 10'-0" CLEAR SPAN, (SINGLE SPAN SLAB BRIDGE) | 20'-0" CLEAR SPAN, (TWIN 10' BOX CULVERTS) |
| 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 9/29/16 COMMUNITY PANEL NO. 24031C0310D

PROJECT LOCATION (CHECK BELOW):

_____ BEYOND FEMA PROGRAM LIMITS (NOT IN "A" HAZARD ZONE)
_____ FEMA HAZARD ZONE "A"; NO BASE FLOOD ELEVATIONS ESTABLISHED
X 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) _____ 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: NO STREAM WORK BETWEEN MARCH 01 TO JUNE 15, INCLUSIVE

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 - 4


OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

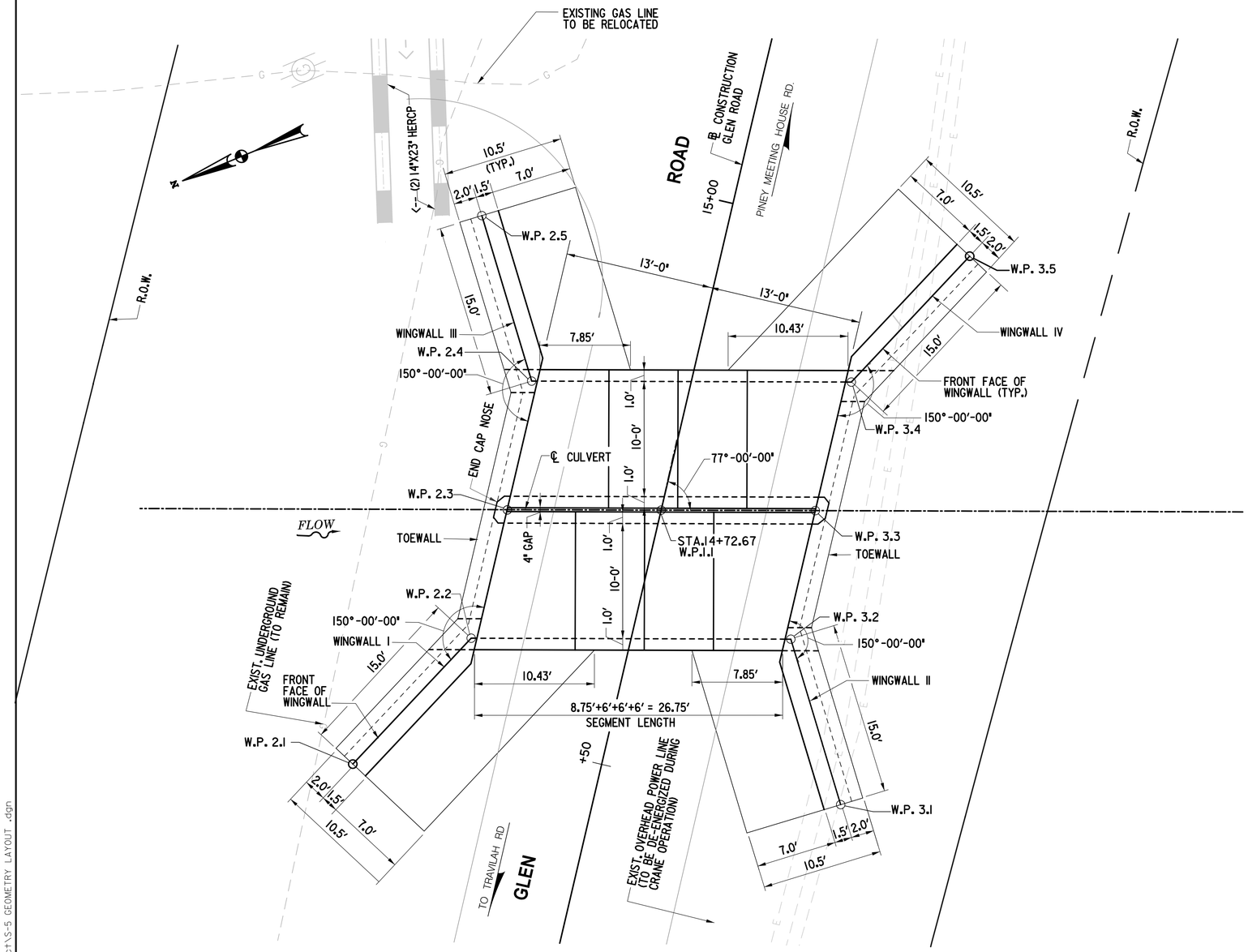
RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date
Designed by: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

**HYDROLOGIC & HYDRAULIC DATA**

Project No. : 502102 SHEET 35 of 48


02:06 PM Tuesday, January 02, 2024 C:\Users\jvisser\Documents\Projects\2026213115\700 CADD\706 Struct\S4- H AND H SHEET.dgn
MODELNAME: $MODELNAME$




## WORKING POINT DATA

| WORKING POINT | STATION FROM ℄ | OFFSET FROM FROM ℄ | NORTHING | EASTING |
|---|---|---|---|---|
| W.P. 1.1 | 14+72.67 | 0.00' | 509,463.5794 | 1,240,115.2457 |
| W.P. 2.1 | 14+45.10 | 21.04' LT. | 509,496.7690 | 1,240,105.1996 |
| W.P. 2.2 | 14+58.08 | 13.52' LT. | 509,483.0799 | 1,240,111.3321 |
| W.P. 2.3 | 14+69.66 | 13.03' LT. | 509,475.9024 | 1,240,120.4277 |
| W.P. 2.4 | 14+81.01 | 13.50' LT. | 509,469.6467 | 1,240,129.9109 |
| W.P. 2.5 | 14+94.01 | 20.99' LT. | 509,468.1131 | 1,240,144.8323 |
| W.P. 3.1 | 14+51.33 | 21.00' RT. | 509,459.0332 | 1,240,085.6538 |
| W.P. 3.2 | 14+64.33 | 13.51' RT. | 509,457.4996 | 1,240,100.5752 |
| W.P. 3.3 | 14+75.68 | 13.04' RT. | 509,451.2439 | 1,240,110.0585 |
| W.P. 3.4 | 14+87.25 | 13.54' RT. | 509,444.0664 | 1,240,119.1540 |
| W.P. 3.5 | 15+00.23 | 21.05' RT. | 509,430.3773 | 1,240,125.2866 |

NOTES

1. FOR BENCHMARK INFORMATION, SEE ROADWAY GEOMETRY SHEET.
2. FOR GENERAL NOTES SEE SHEET S-1.
3. FOR CULVERT CROSS SECTION SEE SHEET S-6.
4. FOR WINGWALL SECTIONS SEE SHEET S-7.

**GEOMETRIC LAYOUT**

(RIPRAP & STREAM RESTORATION ARE NOT SHOWN FOR CLARITY)
SCALE: 3/16" = 1'-0"

S - 5

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## BRIDGE GEOMETRIC FOUNDATION LAYOUT

Project No. : 502102 SHEET 36 of 48

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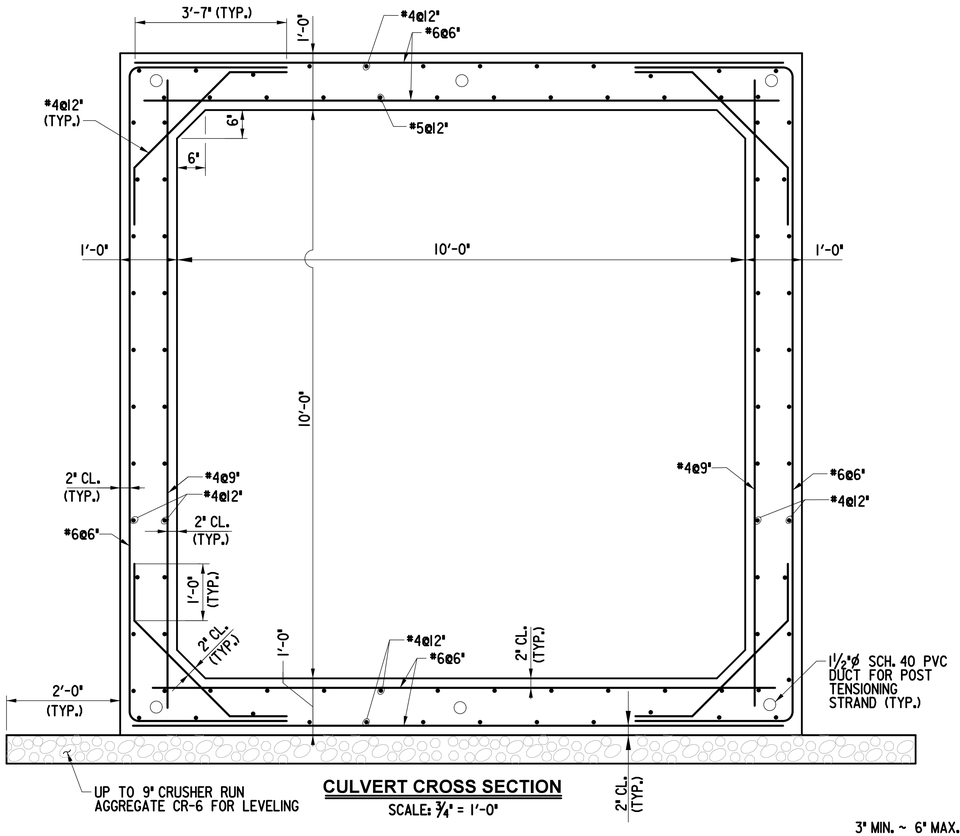
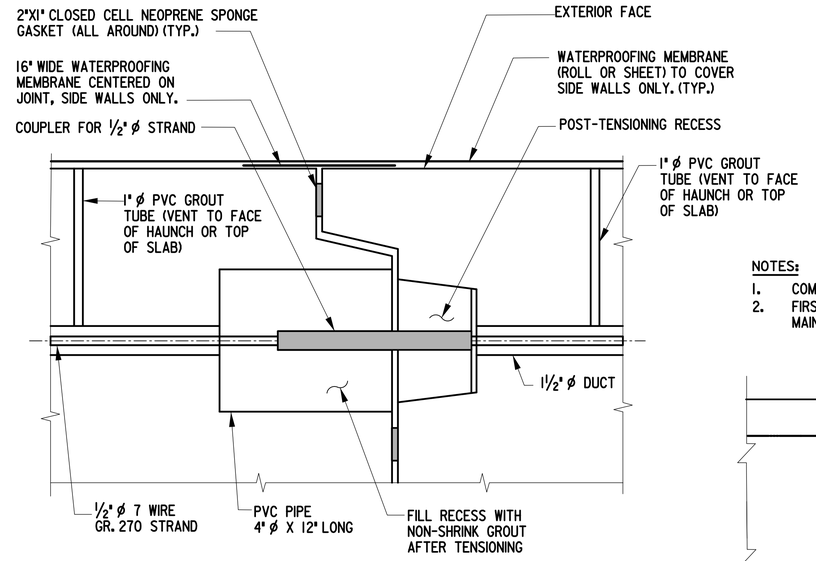
1/2/2026
MODELNAME: SHEET-S5



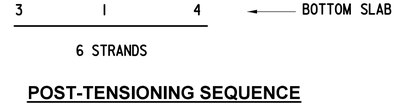

## CULVERT CROSS SECTION

SCALE: ¾" = 1'-0"




## POST-TENSIONING SPLICE JOINT DETAIL

SCALE: 3" = 1'-0"

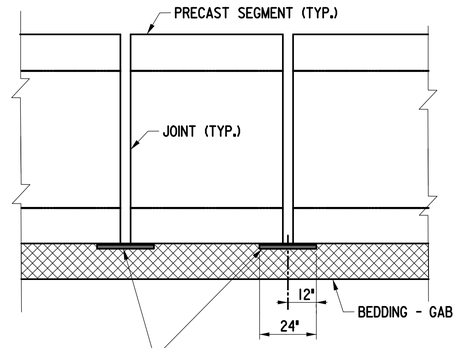



## POST-TENSIONING SEQUENCE

SCALE: N.T.S

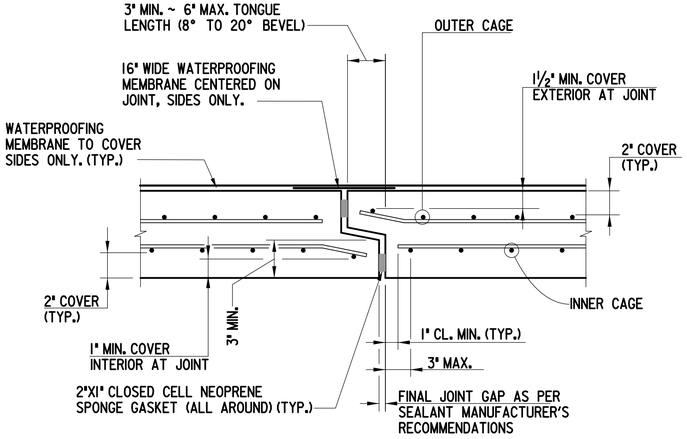
NOTES:

1. COMPLETE TENSIONING IN THREE PASSES. ⅛, ½ AND FULL POST TENSIONING FORCE.
2. FIRST AND SECOND TENSIONING ORDER OF STRANDS MAY BE ALTERED AS REQUIRED TO MAINTAIN PROPER ALIGNMENT OF THE CULVERT.




## NOTES FOR PRECAST CONCRETE BOX CULVERT:

1. FABRICATOR SHALL PROVIDE ALL DETAILS FOR POST-TENSION CONNECTIONS.
2. PRESTRESSING STRANDS SHALL BE ½" DIA. AASHTO M 203 GRADE 270, LOW RELAXATION 7-WIRE (UNCOATED). EACH STRAND SHALL BE STRESSED TO 28,900 LBS.
3. FABRICATOR SHALL SHOW ALL POST-TENSIONING PROCEDURES INCLUDING STRESSING SEQUENCE STEPS.
4. SNUG FIT ALL JOINTS BEFORE POST-TENSIONING.
5. POST-TENSIONING DUCTS SHALL BE SEALED AT JOINTS WITH SEALS OR GASKETS AND GROUTED BY CONTRACTOR.
6. STRAND ANCHOR RECESSES SHALL BE GROUTED IN FIELD BY CONTRACTOR USING NON-SHRINK GROUT AFTER POST-TENSIONING OPERATIONS ARE COMPLETE.
7. ALL POST-TENSIONING DETAILS AND PROCEDURES MUST BE APPROVED BY THE COUNTY ENGINEER.
8. AFTER POST-TENSIONING IS APPROVED, STRANDS SHALL BE CUT TO PROVIDE A MINIMUM OF 2¼" CLEAR FROM THE OUTSIDE FACE OF CONCRETE. ANCHORAGE AND STRANDS SHALL BE COATED WITH COAL TAR EPOXY. RECESS SHALL BE COATED WITH AN APPROVED EPOXY BONDING COMPOUND BEFORE FILLING WITH NON-SHRINK GROUT.
9. POST-TENSIONING AND GROUTING SHALL BE COMPLETED BEFORE BACKFILLING, DECK CONSTRUCTION, AND ALLOWING TRAFFIC OVER THE STRUCTURE. GROUT SHALL REACH MINIMUM STRENGTH BEFORE BACKFILLING. THE GROUT SHALL HAVE CORROSION INHIBITOR.
10. THE CONTRACTOR HAS THE OPTION TO USE DIFFERENT STRAND, POST-TENSIONING, SPLICE/ANCHOR DETAILS UPON THE COUNTY ENGINEER'S REVIEW/APPROVAL.
11. PRECAST CONCRETE BOX CULVERT WILL NOT BE MEASURED FOR PAYMENT BUT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE. THE PAYMENT WILL BE FULL COMPENSATION FOR FURNISHING, STORING, TRANSPORTING, ERECTING AND PLACING ALL PRECAST CONCRETE BOX CULVERT SEGMENTS, JOINT CONNECTION AND EMBEDDED ITEMS, ALL PRESTRESSING STRANDS, REINFORCING STEEL, DOWELS, WATER PROOFING MEMBRANE, GALVANIZED THREADED INSERTS AND HOOKS, JACKS, AND FOR ALL MATERIAL, SUPERVISION, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PROVIDE IN PLACE FINISHED MEMBERS AS SHOWN IN THE CONTRACT DRAWINGS, DETAILS AND DOCUMENTS OR AS DIRECTED BY THE ENGINEER.

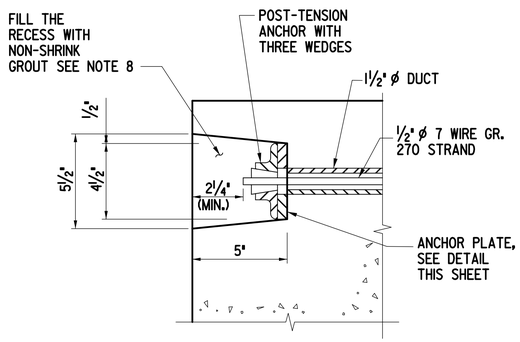



## TYPICAL SECTION THRU JOINT

SCALE: 1" = 1'-0"

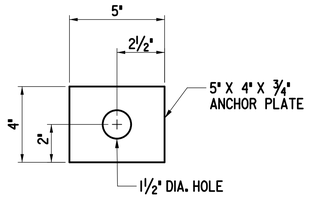
## ELEVATION VIEW AT PRECAST SEGMENT JOINTS

SCALE: N.T.S




## POST-TENSIONING RECESS DETAIL

SCALE: 3" = 1'-0"




## POST-TENSIONING ANCHOR PLATE DETAIL

SCALE: 3" = 1'-0"



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Stantec

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GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## PRECAST CONCRETE BOX CULVERT

Project No. : 502102 SHEET 37 of 48

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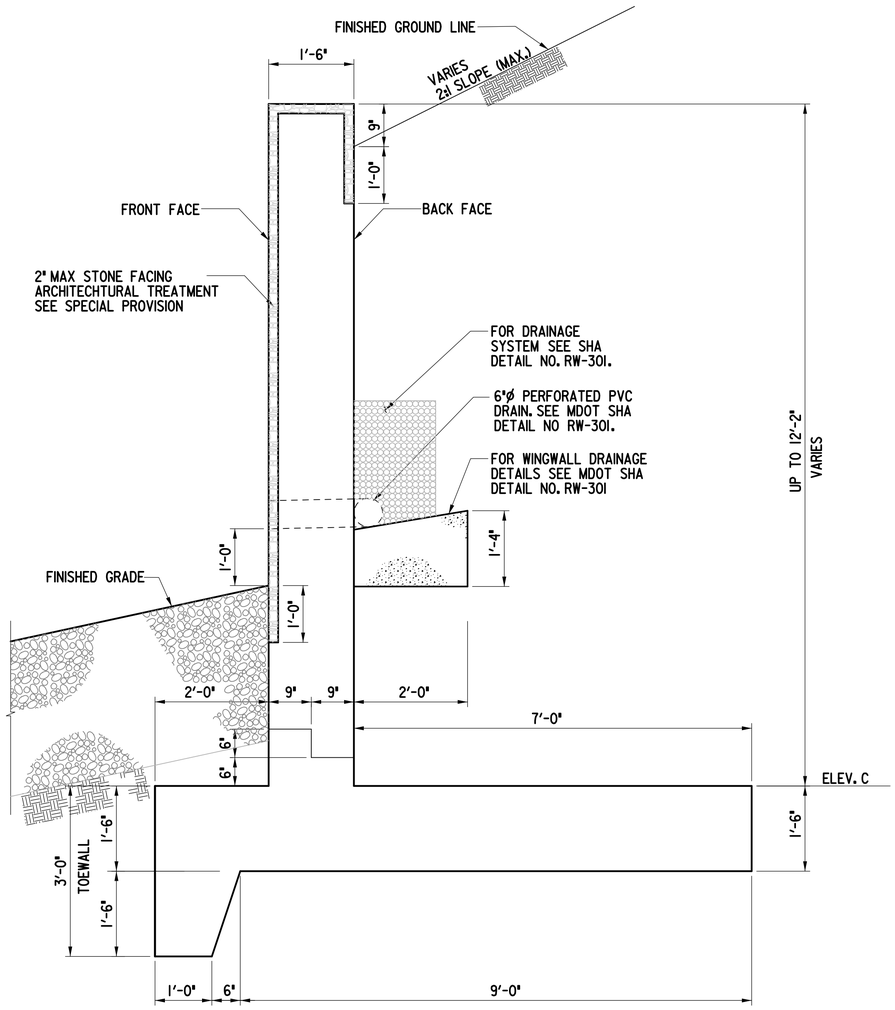
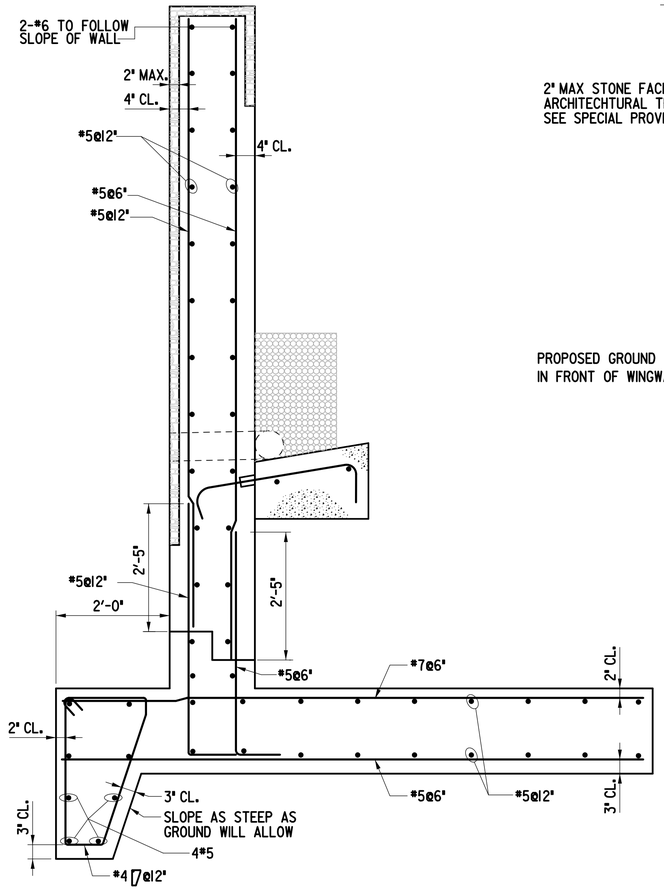
MODELNAME: Sheet -S6



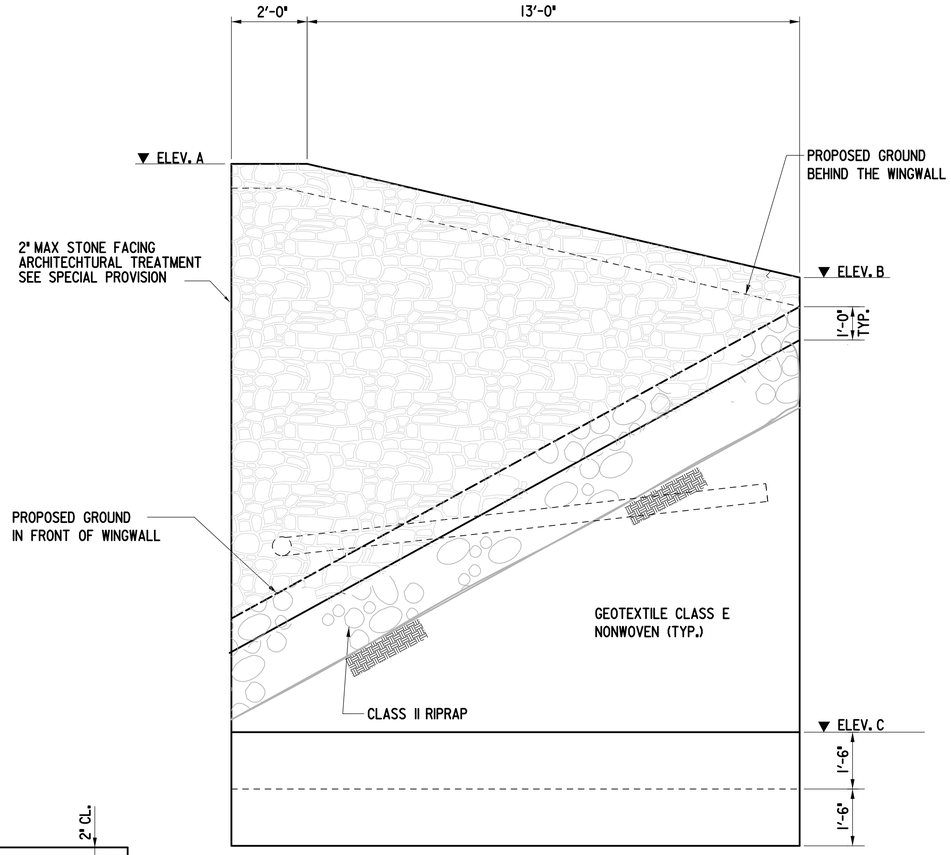

## WINGWALL TYPICAL SECTION

SCALE: 3/4" = 1'-0"




## WINGWALL REINFORCEMENT

SCALE: 3/4" = 1'-0"




## WINGWALL ELEVATION

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

| ELEVATION TABLE | | | |
|---|---|---|---|
| WINGWALL | A | B | C |
| I | 256.60 | 254.40 | 244.70 |
| II | 256.55 | 254.35 | 244.33 |
| III | 256.45 | 255.75 | 244.70 |
| IV | 256.44 | 254.24 | 244.33 |

NOTES:

1. FOR FOUNDATION SOIL BEARING REQUIREMENTS OF THE WINGWALL FOOTINGS, SEE SHEET S-1.
2. FOR FOUNDATION GEOMETRIC LAYOUT, SEE SHEET S-5.
3. TEMPORARY SHEETING, BRACING, AND SHORING EITHER REMOVED OR LEFT IN PLACE, WILL NOT BE MEASURED BUT THE COST WILL BE INCIDENTAL TO EXCAVATION.
4. THE WINGWALL, APRON AND TOEWALL WILL NOT BE MEASURED BUT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE. THE PAYMENT WILL BE FULL COMPENSATION FOR ALL FORMS AND FORM REMOVAL, CONCRETE, REINFORCING STEEL, CURING AND MISTING, WINGWALL DRAINAGE SYSTEM, AND ALL MATERIAL, SUPERVISION, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

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240-777-7220

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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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## WINGWALL TYPICAL SECTION

Project No. : 502102 SHEET 38 of 48

S- 7


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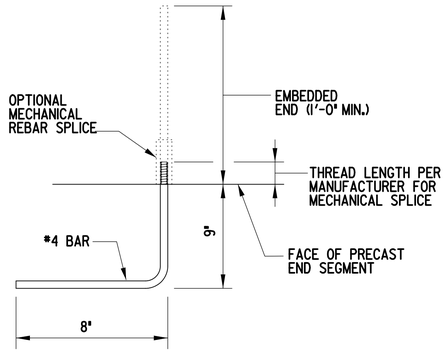
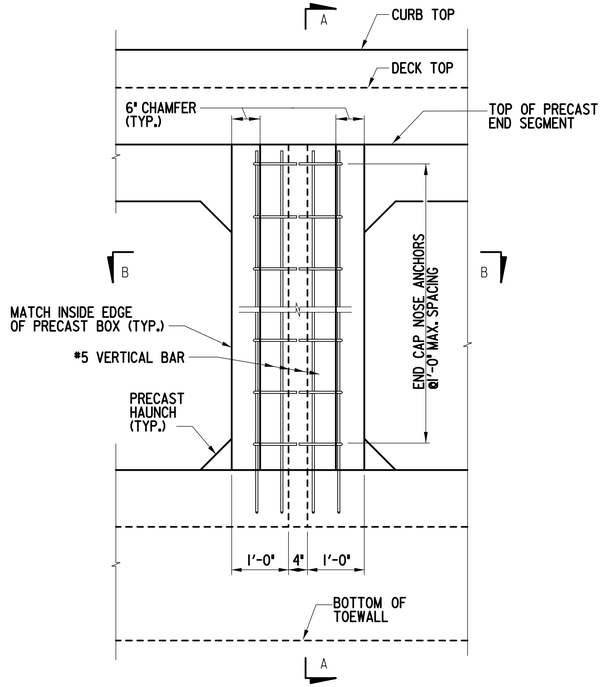



**#4 BAR END CAP NOSE ANCHOR BAR BEND DIAGRAM**

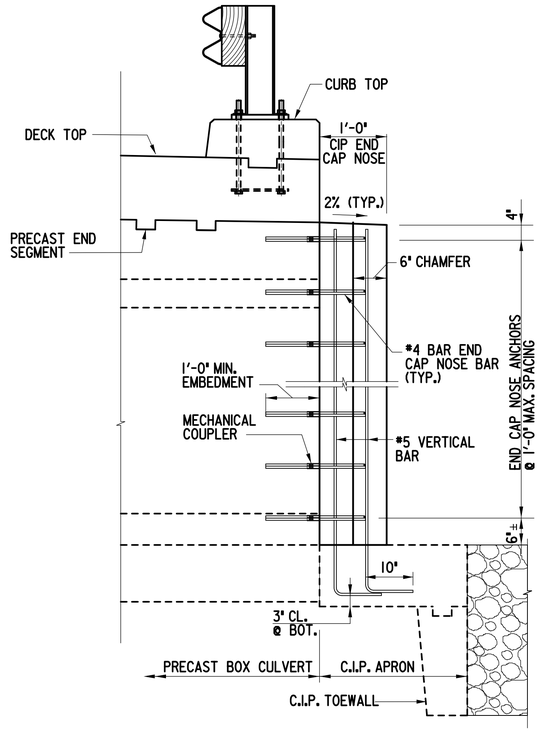
SCALE: N.T.S.




**END CAP NOSE ELEVATION**

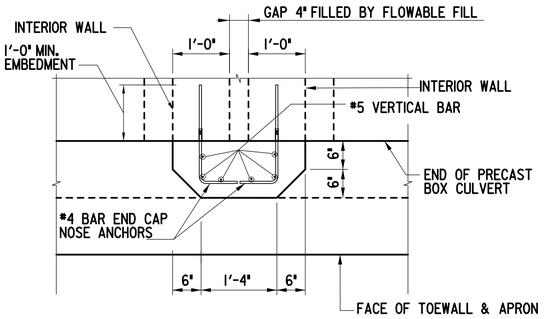
(CURB, DECK, APRON AND TOEWALL REINFORCING NOT SHOWN FOR CLARITY)

SCALE: N.T.S.



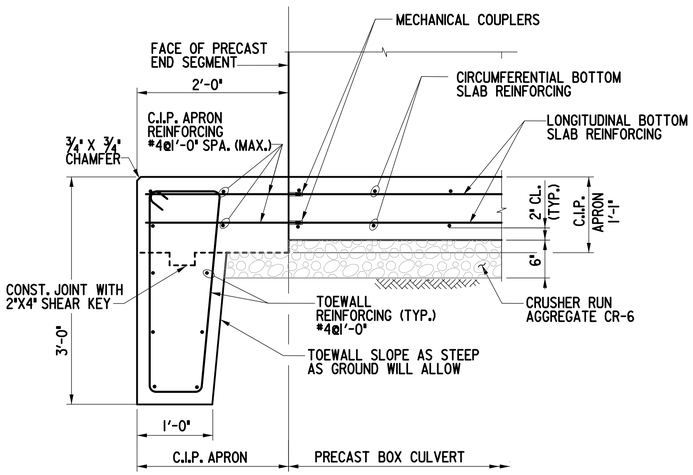

**SECTION A-A**

SCALE: N.T.S.



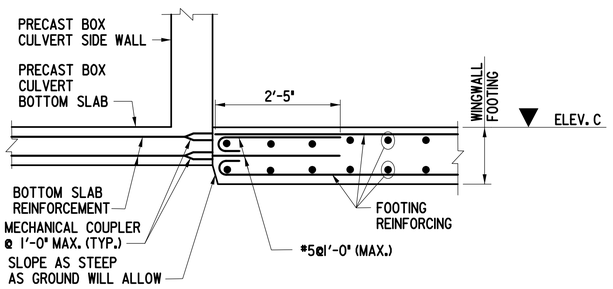

**SECTION B-B**

SCALE: N.T.S.



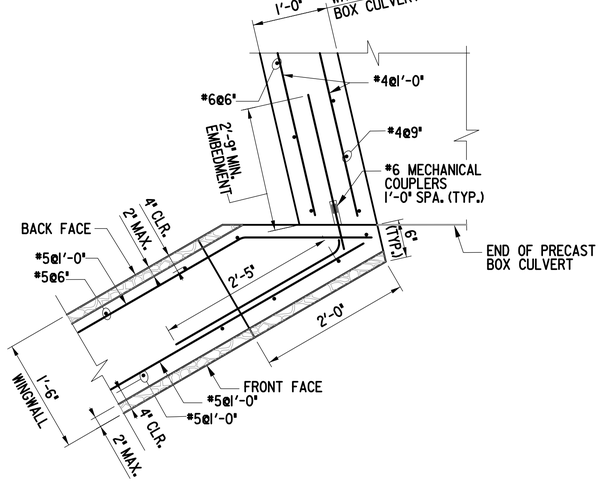

**CIP APRON & TOEWALL**

SCALE: N.T.S.




**TIE-IN DETAIL FOR PRECAST BOX CULVERT BOTTOM SLAB AND WINGWALL FOOTING**

SCALE: N.T.S.




**CONNECTION DETAILS CIP WINGWALL & PRECAST BOX CULVERT**

SCALE: N.T.S.

NOTES:

1. FOR GENERAL NOTES SEE SHEET S-1.
2. FOR BRIDGE GENERAL PLAN AND ELEVATION, SEE SHEET S-3.
3. FOR CULVERT CROSS SECTION SEE SHEET S-6.
4. FOR WINGWALL SECTIONS SEE SHEET S-7.
5. FOR ELEV. C SEE SHEET S-7.

S - 8

## PROFESSIONAL CERTIFICATION

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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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STRUCTURAL DETAILS (1 OF 2)

Project No. : 502102 SHEET 39 of 48

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1/27/2026
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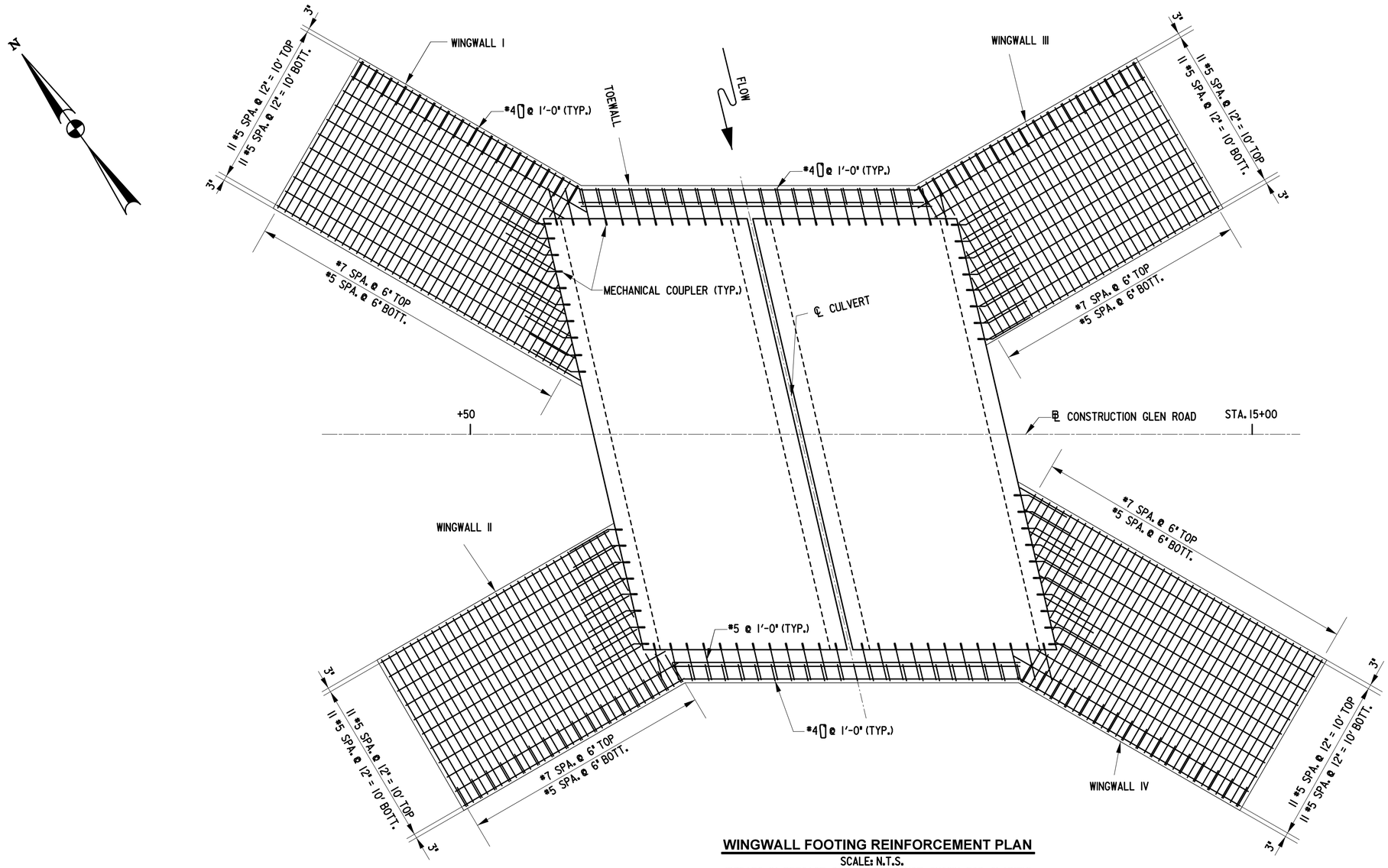


**WINGWALL FOOTING REINFORCEMENT PLAN**

SCALE: N.T.S.

(REBARS IN PRECAST BOX CULVERT NOT SHOWN FOR CLARITY)

S - 9

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|---|---|---|---|

MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

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Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date
Designed by: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## STRUCTURAL DETAILS (2 OF 2)

Project No. : 502102 SHEET 40 of 48

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1/27/2026
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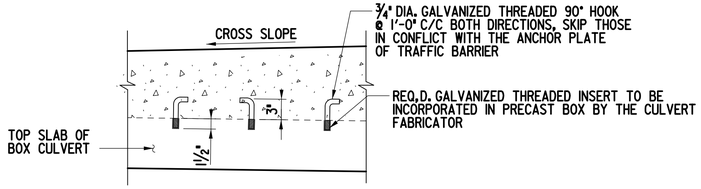
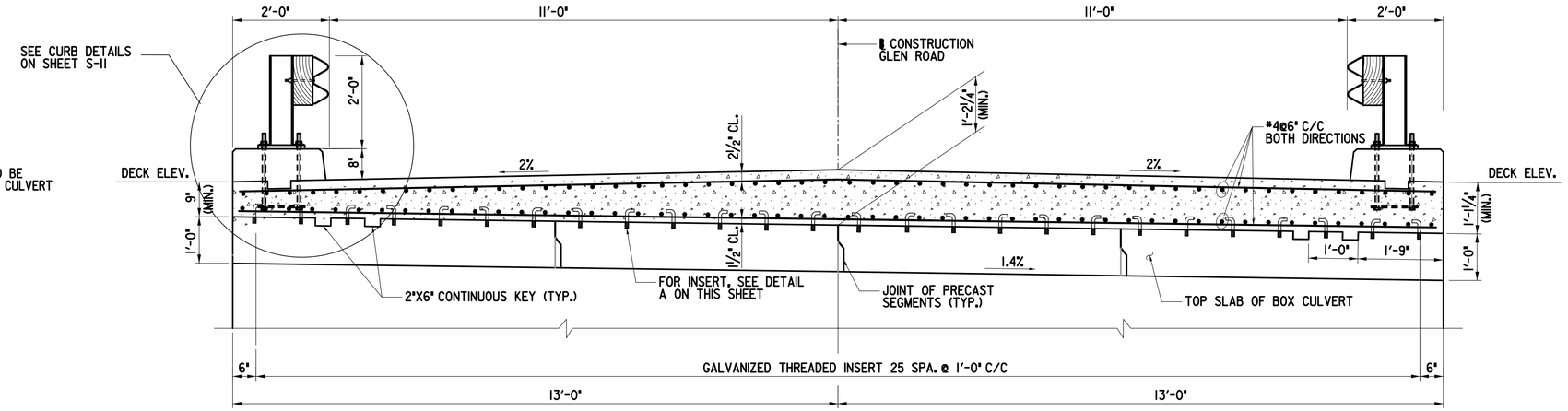


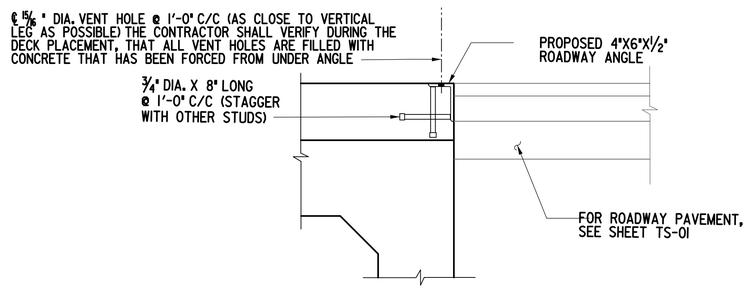

**DETAIL A**

(DECK REBAR NOT SHOWN)
SCALE: 1"= 1'-0"



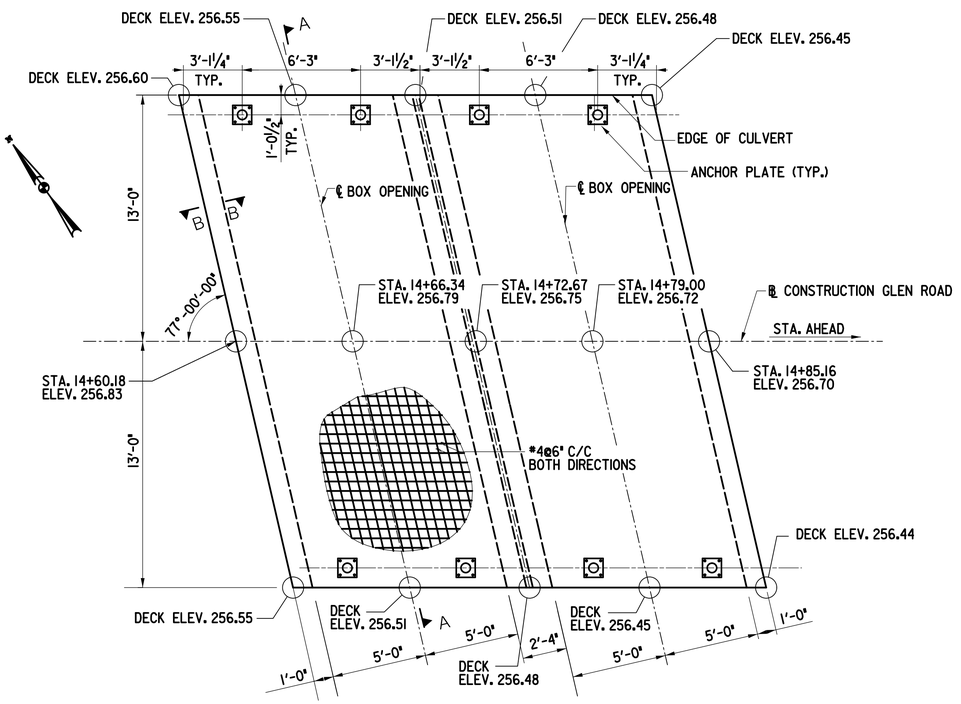

**SECTION A-A**

SCALE: N.T.S.




**SECTION B-B**

SCALE: 1"= 1'-0"




**DECK PLAN (CURB NOT SHOWN)**

SCALE: 1/4"= 1'-0"

NOTES:

1. CONSTRUCT CONCRETE DECK IN ACCORDANCE WITH SPEC. SECTION 420.
2. APPLY LINSEED OIL PROTECTIVE COATING OVER CONCRETE DECK IN ACCORDANCE WITH SPEC. SECTION 420.03.12.
3. CAST IN PLACE CONCRETE DECK WILL NOT BE MEASURED BUT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE. THE PAYMENT WILL BE FULL COMPENSATION FOR ALL FORMS AND FORM REMOVAL, DECK CONCRETE, CURB CONCRETE, EPOXY COATED REINFORCING STEEL, ROADWAY ANGLES, CURING AND MISTING, AND FOR ALL MATERIAL, SUPERVISION, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

NOTES FOR ROADWAY ANGLES:

1. WELD SPLICE ROADWAY JOINT ANGLES ACCORDING TO DETAIL SUP-JT(JC)-102.
2. ROADWAY JOINT ANGLES SHALL RECEIVE FUSION BONDED EPOXY POWDER COATING PRIOR TO INSTALLATION, SEE MSHA SPECIFICATION SECTION 460 AND 917. COLOR SHALL BE PARK SERVICE BROWN.
3. ANY DAMAGE TO EPOXY COATING DURING CONSTRUCTION SHALL BE REPAIRED USING FIELD TOUCH UP KIT.

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OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

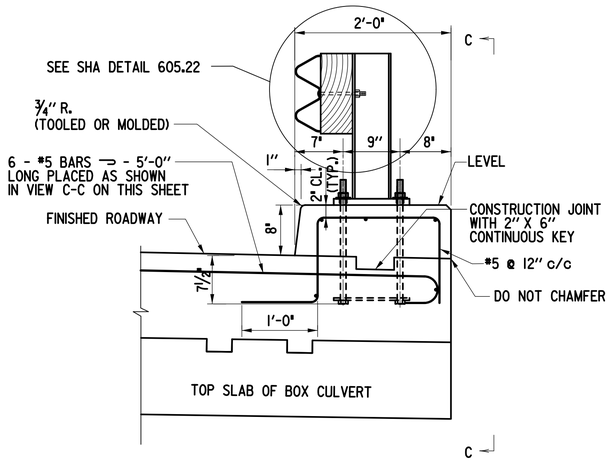
# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## DECK DETAILS

Project No. : 502102 SHEET 41 of 48

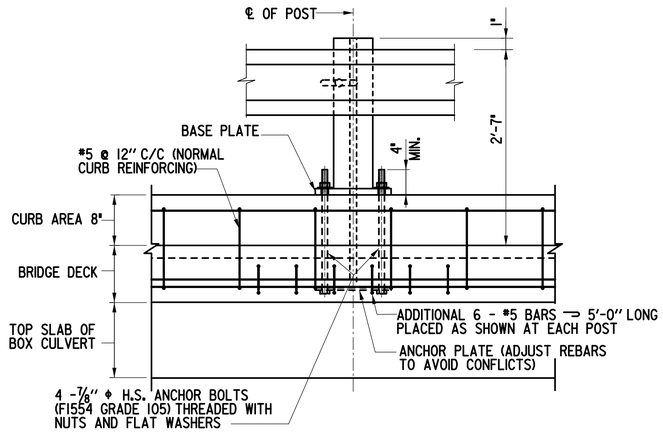
S - 10

\\Us0525-pfss01\shared_projects\202621315\700 CADD\706 Struct\S8A- DETAILS.dgn
11:30 AM
7/9/2025
MODELNAME:NEW Sheet -10



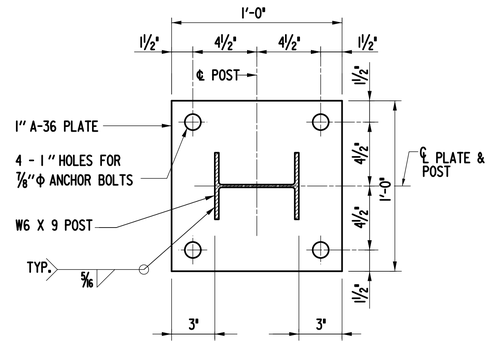

**CURB DETAILS**

(DECK REBAR NOT SHOWN)
SCALE: 1"= 1'-0"



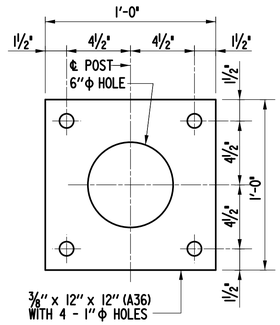

**VIEW C-C**

SCALE: 1"= 1'-0"




**BASE PLATE - PLAN**

SCALE: N.T.S.




**ANCHOR PLATE - PLAN**

SCALE: N.T.S.

TRAFFIC BARRIER NOTES:

1. ALL TRAFFIC BARRIER SHALL BE FABRICATED AND ERECTED AS INDICATED ON THE PLANS.
2. W BEAM TRAFFIC BARRIER SHALL BE PARALLEL TO THE GRADE OF THE ROADWAY.
3. STEEL POSTS AND PLATES SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
4. POSTS SHALL BE SET PERPENDICULAR TO TOP OF CURB.
5. IN SETTING ANCHOR BOLTS BE SURE ENOUGH THREADS ARE EXPOSED SO THAT NUTS CAN BE COMPLETELY ATTACHED (4" MIN.).
6. ALL STRUCTURAL STEEL INCLUDING FASTENERS SHALL BE HOT-DIP GALVANIZED AS PER ASTM A-123 AFTER FABRICATION, EXCEPT AS NOTED. ALL ANCHOR PLATES SHALL BE ATTACHED BEFORE GALVANIZING. ALL STRUCTURAL STEEL SHALL HAVE BROWN POLYESTER COATING PER SECTION 465.03.02(b).
7. THE TRAFFIC BARRIER OVER THE CULVERT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT WILL BE FULL COMPENSATION FOR W BEAM, OFFSET BLOCK, POSTS, ANCHOR BOLTS, NUTS, WASHERS, ANCHOR PLATES, BASE PLATES, SHOP WELDING, AND ALL MATERIAL, SUPERVISION, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

S - 11

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

REPLACEMENT OF BRIDGE NO. M-0148x01
ON GLEN ROAD
OVER SANDY BRANCH

BRIDGE TRAFFIC BARRIER

Project No. : 502102 SHEET 42 of 48

\\Us0525-ppfss01\shared_projects\202621\15\700 CADD\706 Struct\S8A- DETAILS.dgn
11:30 AM
7/9/2025
MODELNAME:NEW Sheet -II

DMY

PROJECT NAME: Replacement of Bridge on Glen Road
PROJECT NO.: 03.04203.01
LOCATION: Travilah, MD
CLIENT: Stantec

**SB-1**
PAGE 1 OF 2

DATE(S) DRILLED:1/10/2018
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45c
DRILLER: David LOGGER: J.Yao
SURFACE ELEVATION: 256.1 ft

GROUND WATER FIRST ENCOUNTERED AT: 20.0 ft
NO LONG TERM MEASUREMENTS TAKEN

| FIELD DATA: DEPTH (FT) | ELEVATION (FT) | SPT BLOW COUNTS | SAMPLE LEGEND | SAMPLE INTERVAL | % RECOVERY / ROCK QUALITY DESIGNATION % | RMR | GEOLOGIC STRATA | GRAPHIC LOG | LAB DATA: LIQUID LIMIT (LL) | PLASTICITY INDEX (PI) | MOISTURE CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 256.1 | 4 5 4 | | 1.0 | 67 | | R2 | | | | |
| 5 | 251 | 11 8 7 4 | | 2.5 | 4 | | | | | | |
| | | 1 1 1 2 | | 5.0 | 67 | | R2 | | | | 38.9 |
| 10 | 245 | 1 4 3 3 | | 7.5 | 33 | | | | 26 | 5 | 12.5 |
| | | 45 50/3 | | 13.0 | 89 | | R3 | | | | |
| 15 | 240 | 50/5 | | 18.0 | 100 | | WR2 | | | | |
| | | 16 8 10 19 | | 23.0 | 50 | | R3 | | 32 | 7 | 7.2 |
| 20 | 235 | 50/3 | | 28.0 | 100 | | | | | | |
| 25 | 230 | 50/2 | | 33.0 | 100 | | WR2 | | | | |
| 30 | 225 | 50/3 | | 38.0 | 100 | | | | | | |
| 35 | 220 | | | | | | | | | | |
| 40 | | | | | | | | | | | |

0.0 / 256.1
ASPHALT **Asph** -7 in

0.6 / 255.5
AGGREGATE BASE **GB** -5 in

1.0 / 255.1
Brown and gray, sandy SILT, trace gravel, stiff, moist **ML**

5.0 / 251.1
Gray, LEAN CLAY, soft, moist **CL**

7.5 / 248.6
Gray, fine SILTY CLAYEY SAND, loose, moist **SC-SM**

13.0 / 243.1
Gray and brown, HIGHLY WEATHERED ROCK sampled as SILT, very hard, moist **ML**

23.0 / 233.1
Gray and brown, SILTY SAND WITH GRAVEL, medium dense, moist **SM**

28.0 / 228.1
Gray and brown, HIGHLY WEATHERED ROCK sampled as SILT, contains rock fragments, very hard, moist **ML**

**REMARKS:** Auger refusal was encountered at 53.5ft

PAGE 1 OF 2
**SB-1**

DMY ENGINEERING CONSULTANTS INC.
45662 Terminal Drive, Suite 110
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169

DMY

PROJECT NAME: Replacement of Bridge on Glen Road
PROJECT NO.: 03.04203.01
LOCATION: Travilah, MD
CLIENT: Stantec

**SB-1**
PAGE 2 OF 2

DATE(S) DRILLED:1/10/2018
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45c
DRILLER: David LOGGER: J.Yao
SURFACE ELEVATION: 256.1 ft

GROUND WATER FIRST ENCOUNTERED AT: 20.0 ft
NO LONG TERM MEASUREMENTS TAKEN

| FIELD DATA: DEPTH (FT) | ELEVATION (FT) | SPT BLOW COUNTS | SAMPLE LEGEND | SAMPLE INTERVAL | % RECOVERY / ROCK QUALITY DESIGNATION % | RMR | GEOLOGIC STRATA | GRAPHIC LOG | LAB DATA: LIQUID LIMIT (LL) | PLASTICITY INDEX (PI) | MOISTURE CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 210 | 33 50/2 | | 43.0 | 100 | | | | | | |
| 50 | 205 | 50/5 | | 48.0 | 100 | | | | | | |
| 55 | 200 | 50/1 | | 53.0 53.5 | 100 | | | | | | |
| 60 | 195 | | | 58.5 | 47 | 32 | | | | | |
| | | | | | 77 | 48 | WR2 | | | | |

53.5 / 202.6
Highly Weathered, Moderately Hard, Highly Fractured, Grayish Green, Muscovite Chlorite Schist; foliated, slickensided, continuous fractures.

63.5 / 192.6 Boring Terminated

**REMARKS:** Auger refusal was encountered at 53.5ft

PAGE 2 OF 2
**SB-1**

DMY ENGINEERING CONSULTANTS INC.
45662 Terminal Drive, Suite 110
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169

DMY

PROJECT NAME: Replacement of Bridge on Glen Road
PROJECT NO.: 03.04203.01
LOCATION: Travilah, MD
CLIENT: Stantec

**SB-2**
PAGE 1 OF 2

DATE(S) DRILLED:1/11/2018
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45c
DRILLER: David LOGGER: J.Yao
SURFACE ELEVATION: 256.4 ft

GROUND WATER FIRST ENCOUNTERED AT: 25.0 ft
NO LONG TERM MEASUREMENTS TAKEN

| FIELD DATA: DEPTH (FT) | ELEVATION (FT) | SPT BLOW COUNTS | SAMPLE LEGEND | SAMPLE INTERVAL | % RECOVERY / ROCK QUALITY DESIGNATION % | RMR | GEOLOGIC STRATA | GRAPHIC LOG | LAB DATA: LIQUID LIMIT (LL) | PLASTICITY INDEX (PI) | MOISTURE CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 256.4 | 4 3 2 | | 1.0 | 56 | | R2 | | | | |
| 5 | 251 | 4 4 3 4 | | 2.5 | 13 | | | | | | |
| | | 2 3 3 4 | | 5.0 | 58 | | R3 | | 29 | 2 | 18.9 |
| 10 | 245 | 2 2 3 4 | | 7.5 | 42 | | | | | | |
| | | 19 50/5 | | 13.0 | 91 | | | | | | |
| 15 | 240 | | | 18.0 | 100 | | | | | | 8.6 |
| | | 19 32 34 43 | | | | | WR2 | | | | |
| 20 | 235 | | | 23.0 | 63 | | | | | | |
| | | 12 41 50/4 | | | | | | | | | |
| 25 | 230 | 25 50/1 | | 28.0 | 171 | | | | | | |
| 30 | 225 | 50/2 | | 33.0 | 100 | | | | | | |
| 35 | 220 | 50/3 | | 38.0 | 100 | | | | | | |
| 40 | | | | | | | | | | | |

0.0 / 256.4
ASPHALT **Asph** -8 in

0.7 / 255.7
AGGREGATE BASE **GB** -4 in

1.0 / 255.4
Brown and gray, sandy SILT, trace gravel, firm, moist **ML**
SAME, gray, WITH GRAVEL

5.0 / 251.4
Brown, fine SILTY SAND, loose, moist **SM**

13.0 / 243.4
Gray, HIGHLY WEATHERED ROCK sampled as SILT, very hard, moist **ML**

SAME, contains rock fragments

SAME, contains rock fragments

SAME, contains rock fragments

**REMARKS:** Auger refusal was encountered at 43ft

PAGE 1 OF 2
**SB-2**

DMY ENGINEERING CONSULTANTS INC.
45662 Terminal Drive, Suite 110
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169

DMY

PROJECT NAME: Replacement of Bridge on Glen Road
PROJECT NO.: 03.04203.01
LOCATION: Travilah, MD
CLIENT: Stantec

**SB-2**
PAGE 2 OF 2

DATE(S) DRILLED:1/11/2018
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45c
DRILLER: David LOGGER: J.Yao
SURFACE ELEVATION: 256.4 ft

GROUND WATER FIRST ENCOUNTERED AT: 25.0 ft
NO LONG TERM MEASUREMENTS TAKEN

| FIELD DATA: DEPTH (FT) | ELEVATION (FT) | SPT BLOW COUNTS | SAMPLE LEGEND | SAMPLE INTERVAL | % RECOVERY / ROCK QUALITY DESIGNATION % | RMR | GEOLOGIC STRATA | GRAPHIC LOG | LAB DATA: LIQUID LIMIT (LL) | PLASTICITY INDEX (PI) | MOISTURE CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 210 | | | 43.0 | 100 | 92 | | | | | |
| 50 | 205 | | | 48.0 | 90 | 89 | | | | | |
| | | | | | | | WR2 | | | | |

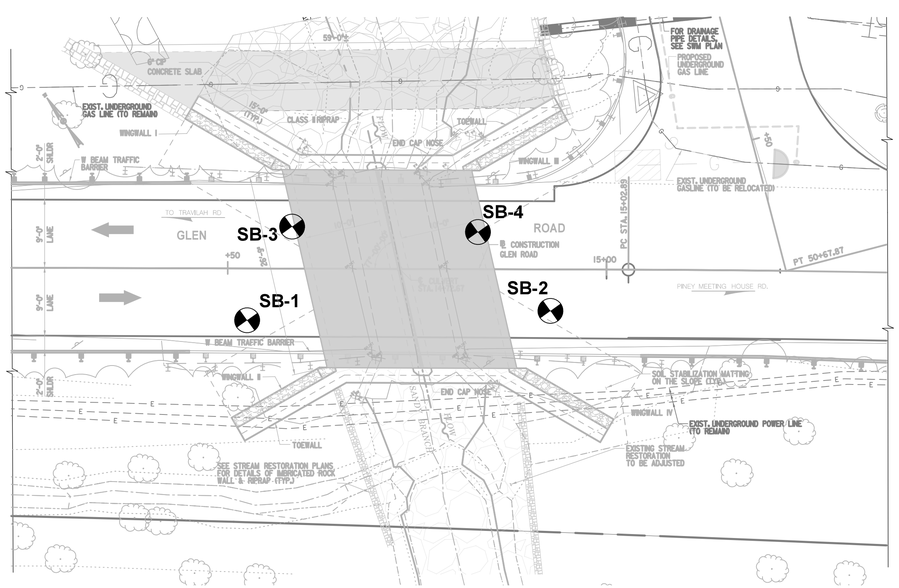
43.0 / 213.4
Moderately Weathered, Moderately Hard, Moderately Fractured, Grayish Green, Muscovite Chlorite Schist; foliated, slickensided, continuous fractures.

53.0 / 203.4 Boring Terminated

**REMARKS:** Auger refusal was encountered at 43ft

PAGE 2 OF 2
**SB-2**

DMY ENGINEERING CONSULTANTS INC.
45662 Terminal Drive, Suite 110
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169




**BORING LOCATION PLAN**
SCALE: N.T.S.

NOTES:

1. THE BORINGS AND DRIVE TESTS WERE TAKEN IN 2019 BY DMY ENGINEERING CONSULTANTS INC.
2. THE BORING LOG SOIL SYMBOLS REFLECT ONLY MAJOR SOIL CONSTITUENTS, FOR MORE COMPLETE SOIL CHARACTERISTICS REFER TO SOIL DESCRIPTIVE TEXT.
3. N= BLOWS ON A 2 INCH OD SPLIT BARREL SAMPLING SPOON BY 140 LB. DRIVE-WEIGHT FALLING 30 INCHES INDICATING SUCCESSIVE 6 INCH INCREMENTS OF PENETRATION.
4. WL. = WATER LEVEL READING
5. BORING AND SAMPLING CONFORM TO ASTM D 1586.

LEGEND

BORING LOCATION

S - 12

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

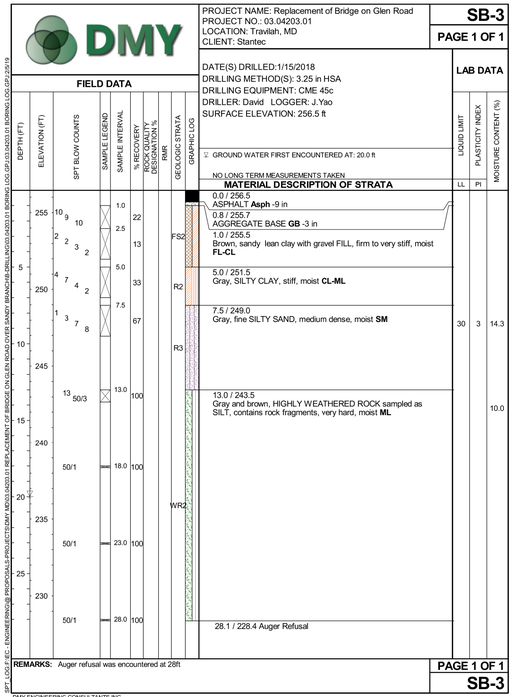
Designed by: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## BORING LOGS (1 of 2)

Project No. : 502102 SHEET 43 of 48

U:\2026\13\15\700 CADD\706 Struct\S-10-11 Boring-1.dgn
11:31 AM
1/5/2026
MODELNAME:Log 1 of S-10




DMY ENGINEERING CONSULTANTS INC.
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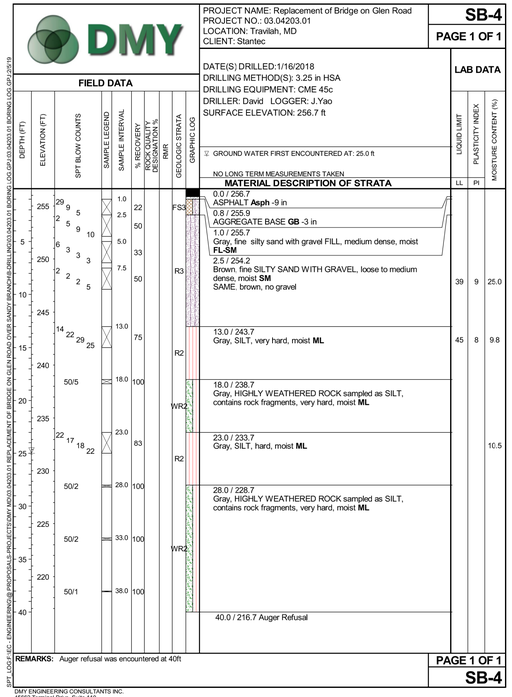
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169




DMY ENGINEERING CONSULTANTS INC.
45662 Terminal Drive, Suite 110
Dulles, Virginia 20166
tel: (703) 665-0586 fax: (301) 768-4169

SPT_LOGS_EC - ENGINEERING\0_PROPOSALS_PROJECTS\DMY MD\03.04203.01 REPLACEMENT OF BRIDGE ON GLEN ROAD OVER SANDY BRANCH\RI_MD\03.04203.101 BORING LOG.GPJ 2/5/19
SPT_LOGS_EC - ENGINEERING\0_PROPOSALS_PROJECTS\DMY MD\03.04203.01 REPLACEMENT OF BRIDGE ON GLEN ROAD OVER SANDY BRANCH\RI_MD\03.04203.101 BORING LOG.GPJ 2/5/19

S - 13

## PROFESSIONAL CERTIFICATION

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LICENSE NO. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## BORING LOGS (2 of 2)

Project No. : 502102 SHEET 44 of 48

U:\2026\3115\700 CADD\706 Struct\S-10-11 Boring-1.dgn
11:32 AM
1/5/2026
MODELNAME:Log 2 of S-11

"Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

| | |
|---|---|
| Proposed: | GRADE CHANGE |
| Test Hole | 17'± NORTHEAST FROM BRIDGE DECK NORTHERN |
| Location: | CORNER |
| Jurisdiction: | MONTGOMERY COUNTY |
| Horizontal/Vertical Control Provided by: | STANTEC |
| Requested Utility (Size/ Material/Type): | UNKNOWN SIZE AND TYPE GAS LINE |
| Utility Located (Size/Material/Type/Owner): | *UTILITY NOT FOUND |

| | |
|---|---|
| EUMC Job #: | 19001 |
| T.H. #: | 2 |
| Plan Sheet #: | N/A |
| Date of Excavation: | 5/17/2019 |
| Plan Scale: | 1" = 30 |

Form By: A. J. Assisted by: R.A.C./ W.B. III/ T.S. Survey by: EUMC

**B.M. 1:** Elevation:
Description:

**B.M 2:** Elevation:
Description:

Paving Thickness:
Color of Ribbon(s) Installed:
Existing Grade of:

Paving Condition:
Survey Marker Set:
Soil Type:

**Survey Datum:**
Survey Marker Location:

SURVEY MARKER

Elevation: | Surface Depth/Material:

4.00' = Depth Of Excavation

*UTILITY NOT FOUND
Not To Scale

Not To Scale

REMARKS: CREW EXCAVATED TO A DEEP OF 4.0'±. CREW WAS UNABLE TO LOCATE THE UTILITY DUE TO COPIOUS AMOUNTS OF WATER AND LARGE ROCKS

"Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

| | |
|---|---|
| Proposed: | GRADE CHANGE |
| Test Hole | NORTHWEST CORNER OF GLEN RD AND NO NAME RD |
| Location: | |
| Jurisdiction: | MONTGOMERY COUNTY |
| Horizontal/Vertical Control Provided by: | STANTEC |
| Requested Utility (Size/ Material/ Type): | 4" PLASTIC GAS LINE |
| Utility Located (Size/Material/Type/Owner): | * UTILITY NOT FOUND |

| | |
|---|---|
| EUMC Job #: | 19001 |
| T.H. #: | 3 |
| Plan Sheet #: | N/A |
| Date of Excavation: | 5/16/2019 |
| Plan Scale: | 1" = 30 |

Form By: A. J. Assisted by: R.A.C. Survey by: EUMC

**B.M. 1:** Elevation:
Description:

**B.M 2:** Elevation:
Description:

Paving Thickness:
Color of Ribbon(s) Installed:
Existing Grade of:

Paving Condition:
Survey Marker Set:
Soil Type:

**Survey Datum:**
Survey Marker Location: (N) (E)

SURVEY MARKER

Elevation: | Surface Depth/Material:

2.5' = Depth Of Excavation

* UTILITY NOT FOUND
Not To Scale

Not To Scale

REMARKS: CREW WAS UNABLE TO LOCATE THE UTILITY DUE TO LARGE ROCKS

"Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

| | |
|---|---|
| Proposed: | GRADE CHANGE |
| Test Hole | NORTH SIDE OF GLEN RD, 75'± SOUTHEAST FROM BRIDGE |
| Location: | DECK |
| Jurisdiction: | MONTGOMERY COUNTY |
| Horizontal/Vertical Control Provided by: | STANTEC |
| Requested Utility (Size/ Material/Type): | 4" PLASTIC GAS LINE |
| Utility Located (Size/Material/Type/Owner): | *4" PLASTIC GAS LINE (WGL) |

| | |
|---|---|
| EUMC Job #: | 19001 |
| T.H. #: | 3A |
| Plan Sheet #: | N/A |
| Date of Excavation: | 2/3/2020 |
| Plan Scale: | 1" = 30 |

Form By: D. E. Assisted by: A. J. / W. B. Survey by: EUMC

**B.M. 1:** Elevation: 255.21
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

**B.M 2:** Elevation: 0.00
Description:

Paving Thickness: 11" ASPHALT
Color of Ribbon(s) Installed: YELLOW
Existing Grade of: ASPH RDWY

Paving Condition: ASPH RDWY IN POOR CONDITON
Survey Marker Set: MAG NAIL
Soil Type: WET ROCKY BROWN

**Survey Datum:** **NAD 83/91**
Survey Marker Location: (N) 509469.90 (E) 1240159.29

SURVEY MARKER
C/L
Elevation: **255.37** | Surface Depth/Material:

249.99 = Top Elev.

Not To Scale

*4" PLASTIC GAS LINE (WGL)
Not To Scale
FACING NORTH

REMARKS: * CREW COULD NOT INSPECT THE PIPE AT THIS LOCATION DUE TO LARGE ROCKS ANS WATER IN THE TEST HOLE

"Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

| | |
|---|---|
| Proposed: | GRADE CHANGE |
| Test Hole | NORTH SIDE OF GLEN RD, 75'± SOUTHEAST FROM BRIDGE |
| Location: | DECK |
| Jurisdiction: | MONTGOMERY COUNTY |
| Horizontal/Vertical Control Provided by: | STANTEC |
| Requested Utility (Size/ Material/Type): | UNKNOWN SIZE AND TYPE GAS LINE |
| Utility Located (Size/Material/Type/Owner): | 4" PLASTIC GAS LINE (WGL) |

| | |
|---|---|
| EUMC Job #: | 19001 |
| T.H. #: | 4 |
| Plan Sheet #: | N/A |
| Date of Excavation: | 5/16/2019 |
| Plan Scale: | 1" = 30 |

Form By: A. J. Assisted by: R.A.C. Survey by: EUMC

**B.M. 1:** Elevation: 255.21
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

**B.M 2:** Elevation: 0.00
Description:

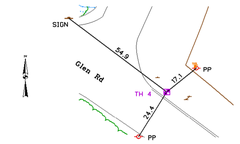
Paving Thickness: N/A
Color of Ribbon(s) Installed: YELLOW
Existing Grade of: GRASS R/W

Paving Condition: N/A
Survey Marker Set: STEEL PIN
Soil Type: BROWN WET

**Survey Datum:** **NAD 83/91**
Survey Marker Location: (N) 509428.70 (E) 1240186.26

SURVEY MARKER
C/L
Elevation: **256.72** | Surface Depth/Material:

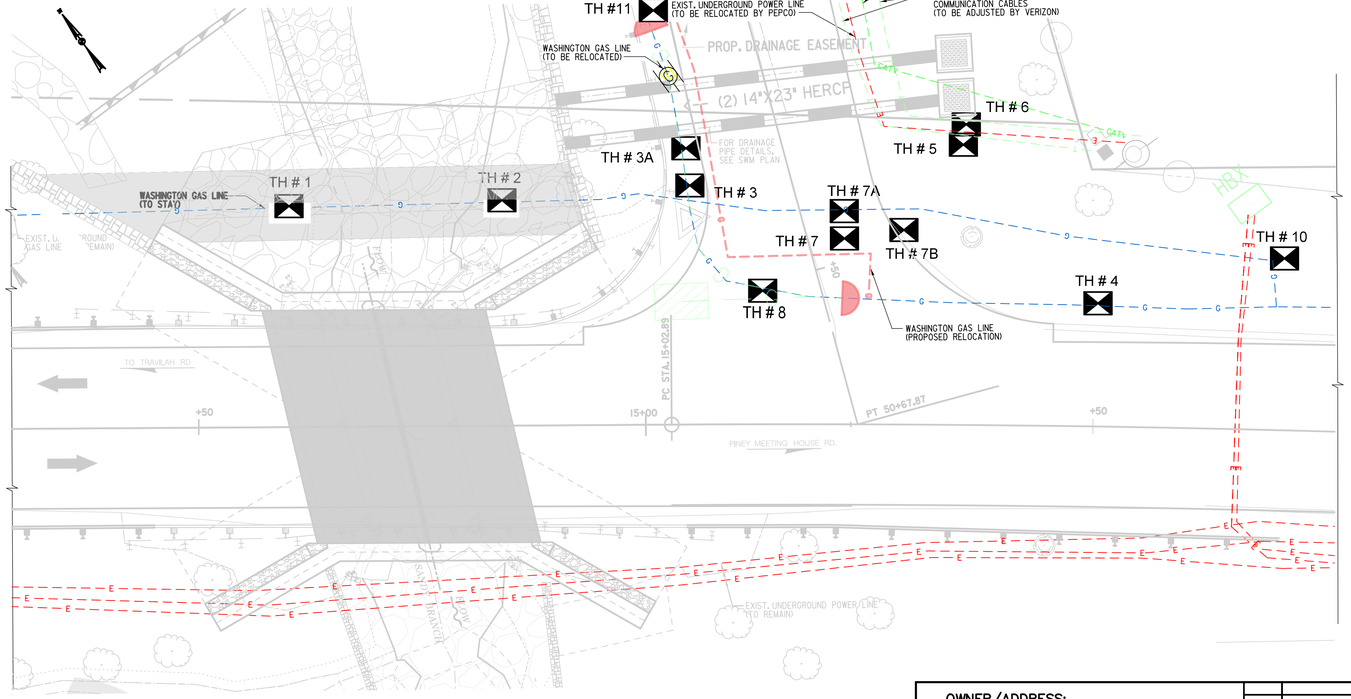
254.32 = Top Elev.




Not To Scale

4" PLASTIC GAS LINE (WGL)
Not To Scale
FACING NORTHWEST

REMARKS:




**TEST PIT LOCATION PLAN**
SCALE: N.T.S.

LEGEND

TEST PIT LOCATION

"Excellence In Utility Mapping"

**Test Hole Summary Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

*Client: STANTEC*
*City, County, State: Montgomery Co., MD*
*Project: GLEN RD*
*Job No.: 19001*
*Datum Provided By: STANTEC*

| Test Hole # | Utility | Northing | Easting | Grade | Top Elev. | Date Dug | Comments |
|---|---|---|---|---|---|---|---|
| 1 | 4" Plastic Gas Line (WGL) | | | | | | Canceled, UNSAFE TO EXCAVATE |
| 2 | Unknown Size Gas | 509476.98 | 1240141.01 | | | 5/16/2019 | Utility Not Found |
| 3 | 4" Plastic Gas Line (WGL) | 509466.08 | 1240157.28 | | | 5/16/2019 | Utility Not Found |
| 3A | 4" Plastic Gas Line (WGL) | 509469.90 | 1240159.29 | 255.37 | 249.99 | 2/3/2020 | |
| 4 | 4" Plastic Gas Line (WGL) | 509428.70 | 1240186.26 | 256.72 | 254.32 | 5/16/2019 | |
| 5 | 1" Telephone Cable | 509451.12 | 1240184.40 | 255.04 | 252.99 | 5/16/2019 | |
| 6 | (3) 4" Plastic Electric Conduits | 509452.91 | 1240185.69 | 255.22 | 252.76 | 5/16/2019 | |
| 7 | 4" Plastic Gas Line (WGL) | 509451.29 | 1240167.64 | | | 12/26/2019 | Utility Not Found |
| 7A | 4" Plastic Gas Line (WGL) | 509453.77 | 1240169.43 | | | 12/26/2019 | Utility Not Found |
| 7B | 4" Plastic Gas Line (WGL) | 509448.13 | 1240173.57 | | | 1/2/2020 | Utility Not Found |
| 8 | 4" Plastic Gas Line (WGL) | 509451.97 | 1240156.81 | 255.63 | 251.69 | 12/26/2019 | |
| 9 | Unknown Size Communication Cable | | | | | | Proposed Test Hole Site is under water |
| 10 | 4" Plastic Gas Line (WGL) | 509420.43 | 1240206.05 | 256.66 | 254.27 | 1/2/2020 | |
| **11** | **2" Plastic Gas Line (WGL)** | **509484.4905** | **1240165.4463** | **255.55** | **252.92** | **8/18/2022** | **BY AB CONSULTANTS** |



## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## TEST PIT DETAILS (1 OF 2)

Project No. : 502102 SHEET 45 of 48



U:\2026\3115\700 CADD\706 Struct\S-12 -13 Test Hole-1.dgn
11:32 AM
1/27/2026
MODELNAME: TEST PIT S-12

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: SOUTHEAST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): UNKNOWN SIZE AND TYPE TELEPHONE LINE
Utility Located (Size/Material/Type/Owner): 1" TELEPHONE CABLE

EUMC Job #: 19001
T.H. #: 5
Plan Sheet #: N/A
Date of Excavation: 5/16/2019
Plan Scale: 1" = 30

Form By: A. J. Assisted by: R.A.C. Survey by: EUMC

**B.M. 1:** Elevation: 255.21
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

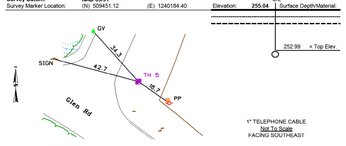
**B.M 2:** Elevation: 0.00
Description:

Paving Thickness: N/A
Color of Ribbon(s) Installed: ORANGE
Existing Grade of: GRASS R/W

Paving Condition: N/A
Survey Marker Set: STEEL PIN
Soil Type: MUDDY WATER

**Survey Datum: NAD 83/91**
Survey Marker Location: (N) 509451.12 (E) 1240184.40

SURVEY MARKER
Elevation: 255.04 | Surface Depth/Material:
C/L
252.99 = Top Elev.




1" TELEPHONE CABLE
Not To Scale
FACING SOUTHEAST

Not To Scale

REMARKS:

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: SOUTHEAST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): UNKNOWN SIZE AND TYPE ELECTRIC LINE
Utility Located (Size/Material/Type/Owner): (3) 4" PLASTIC ELECTRIC CONDUITS

EUMC Job #: 19001
T.H. #: 6
Plan Sheet #: N/A
Date of Excavation: 5/16/2019
Plan Scale: 1" = 30

Form By: A. J. Assisted by: R.A.C. Survey by: EUMC

**B.M. 1:** Elevation: 255.21
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

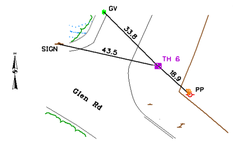
**B.M 2:** Elevation:
Description:

Paving Thickness: N/A
Color of Ribbon(s) Installed: RED
Existing Grade of: GRASS R/W

Paving Condition: N/A
Survey Marker Set: STEEL PIN
Soil Type: MUDDY WATER

**Survey Datum: NAD 83/91**
Survey Marker Location: (N) 509452.91 (E) 1240185.69

SURVEY MARKER
Elevation: 255.22 | Surface Depth/Material:
C/L
252.76 = Top Elev.
1.17'




(3) 4" PLASTIC ELECTRIC CONDUITS
Not To Scale
FACING SOUTHEAST

Not To Scale

REMARKS:

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: SOUTHEAST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): 6" PLASTIC GAS LINE
Utility Located (Size/Material/Type/Owner): * UTILITY NOT FOUND

EUMC Job #: 19001
T.H. #: 7
Plan Sheet #: N/A
Date of Excavation: 12/26/2019
Plan Scale: 1" = 30

Form By: A. J. Assisted by: D.E. / W.B. Survey by: EUMC

**B.M. 1:** Elevation:
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

**B.M 2:** Elevation:
Description:

Paving Thickness:
Color of Ribbon(s) Installed:
Existing Grade of:

Paving Condition:
Survey Marker Set:
Soil Type:

**Survey Datum:**
Survey Marker Location: (N) (E)

SURVEY MARKER
Elevation: | Surface Depth/Material:
4.0' = Depth Of Excavation



* UTILITY NOT FOUND
Not To Scale

Not To Scale

REMARKS: CREW WAS UNABLE TO LOCATE THE UTILITY DUE TO LARGE ROCKS AND CONSTRUCTION DEBRIS

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: SOUTHEAST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): 6" PLASTIC GAS LINE
Utility Located (Size/Material/Type/Owner): * UTILITY NOT FOUND

EUMC Job #: 19001
T.H. #: 7A
Plan Sheet #: N/A
Date of Excavation: 12/26/2019
Plan Scale: 1" = 30

Form By: A. J. Assisted by: D.E. / W.B. Survey by: EUMC

**B.M. 1:** Elevation:
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

**B.M 2:** Elevation:
Description:

Paving Thickness:
Color of Ribbon(s) Installed:
Existing Grade of:

Paving Condition:
Survey Marker Set:
Soil Type:

**Survey Datum:**
Survey Marker Location: (N) (E)

SURVEY MARKER
Elevation: | Surface Depth/Material:
3.6' = Depth Of Excavation



* UTILITY NOT FOUND
Not To Scale

Not To Scale

REMARKS: CREW WAS UNABLE TO LOCATE THE UTILITY DUE TO LARGE ROCKS AND CONSTRUCTION DEBRIS

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: SOUTHEAST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): 4" PLASTIC GAS LINE
Utility Located (Size/Material/Type/Owner): * UTILITY NOT FOUND

EUMC Job #: 19001
T.H. #: 78
Plan Sheet #: N/A
Date of Excavation: 1/2/2020
Plan Scale: 1" = 30

Form By: A. J. Assisted by: D.E. / W.B. Survey by: EUMC

**B.M. 1:** Elevation:
Description:

**B.M 2:** Elevation:
Description:

Paving Thickness:
Color of Ribbon(s) Installed
Existing Grade of:

Paving Condition:
Survey Marker Set:
Soil Type:

**Survey Datum:**
Survey Marker Location: (N) (E)

SURVEY MARKER
Elevation: | Surface Depth/Material:
5.0' = Depth Of Excavation

* UTILITY NOT FOUND
Not To Scale

Not To Scale

REMARKS:

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: NORTHWEST CORNER OF GLEN RD AND NO NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): 4" PLASTIC GAS LINE
Utility Located (Size/Material/Type/Owner): 4" PLASTIC GAS LINE **(WGL)**

EUMC Job #: 19001
T.H. #: 8
Plan Sheet #: N/A
Date of Excavation: 12/26/2019
Plan Scale: 1" = 30

Form By: A. J. Assisted by: D.E. / W.B. Survey by: EUMC

**B.M. 1:** Elevation: 255.21
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

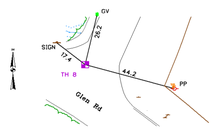
**B.M 2:** Elevation: 0.00
Description:

Paving Thickness: 6" ASPHALT
Color of Ribbon(s) Installed: YELLOW
Existing Grade of: ASPHALT ROADWAY

Paving Condition: ASPHALT ROADWAY IN POOR CONDITION
Survey Marker Set: MAG NAIL
Soil Type: MOIST BROWN

**Survey Datum: NAD 83/91**
Survey Marker Location: (N) 509451.97 (E) 1240156.81

SURVEY MARKER
Elevation: **255.63** | Surface Depth/Material:
C/L
251.69 = Top Elev.




4" PLASTIC GAS LINE (WGL)
Not To Scale
FACING SOUTHEAST

Not To Scale

REMARKS:

---

emc "Excellence In Utility Mapping"

**Test hole Field Report**
**Utility Quality Level A Data**
*ASCE C/I 38-02*

**Edwards Utility Mapping Corp.**
11 Marsh Run Rd.
Fredericksburg, VA 22406
(540) 737-5141

Proposed: GRADE CHANGE
Test Hole Location: NORTH SIDE OF OF GLEN RD 55'± SOUTH OF NAME RD
Jurisdiction: MONTGOMERY COUNTY
Horizontal/Vertical Control Provided by: STANTEC
Requested Utility (Size/ Material/Type): 4" PLASTIC GAS LINE
Utility Located (Size/Material/Type/Owner): * 4" PLASTIC GAS LINE **(WGL)**

EUMC Job #: 19001
T.H. #: 10
Plan Sheet #: N/A
Date of Excavation: 1/2/2020
Plan Scale: 1" = 30

Form By: A. J. Assisted by: D.E. / W.B. Survey by: EUMC

**B.M. 1:** Elevation:
Description: (TRAV MER100) NAIL FOUND, NORTHWEST CORNER OF GLEN RD AND NO NAME RD

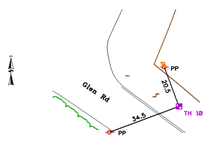
**B.M 2:** Elevation:
Description:

Paving Thickness: N/A
Color of Ribbon(s) Installed: YELLOW
Existing Grade of: GRASS R/W

Paving Condition: N/A
Survey Marker Set: STEEL PIN
Soil Type: MOIST BROWN DIRT

**Survey Datum:**
Survey Marker Location: (N) 509420.43 (E) 1240206.05

SURVEY MARKER
Elevation: **256.66** | Surface Depth/Material:
254.27 = Top Elev.




* 4" PLASTIC GAS LINE (WGL)
Not To Scale
FACING NORTHWEST

Not To Scale

REMARKS: SURVEY MARKER SET OVER 90 DEGREE BEND

---

## AB CONSULTANTS INC. UTILITY TEST HOLE REPORT

REPORT PREPARED BY: JACOB P DEANER
FOREMAN: WES WITTBECKER
JURISDICTION: MONTGOMERY COUNTY
LOCATION: GLEN ROAD
1110 FEET NORTHWEST OF THREE SISTERS ROAD
POTOMAC, MARYLAND 20854

CLIENT PROJECT # 502102
AB PROJECT # 2021474-15
SHEET # 1 of 1 PLAN SCALE: 1"=20'
TEST HOLE NO: TH-11 DATE DUG: 8-18-22
ANTICIPATED UTILITY: GAS
FOUND UTILITY: OWNER/SIZE/MATERIAL/TYPE
WASHINGTON GAS 2" PLASTIC GAS

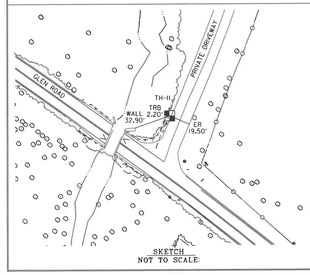
ELEV. SURVEY MARKER
255.55'
EXISTING GRADE
COVER (TOP)
2.63'
252.92'
ELEV. (TOP)
COVER (BOTTOM)
ELEV. (BOTTOM)
2 "
SURFACE DEPTH/TYPE
GRASS

TYPE OF MARKER SET: HUB
AT EXISTING GRADE OF: GRASS

SURVEY PARTY CHIEF: JAKE AYDELOTT

TEST HOLE SURVEY INFORMATION
NORTHING: 509484.4905
EASTING: 1240165.4463
HORIZONTAL/VERTICAL CONTROL PROVIDED BY: STANTEC, INC.
BENCH MARK: MER100 ELEV.= 255.21'

NOTES: HUB SET OVER CENTER OF UTILITY.
SIZE NOTED IS THE OUTER DIAMETER OF THE UTILITY.




AB CONSULTANTS, INC.
7029 TUDSBURY ROAD
BALTIMORE, MARYLAND 21244
Tel: (443)-729-2650

JACOB P. DEANER
No. 22500
PROFESSIONAL ENGINEER
STATE OF MARYLAND
EXPIRATION 2023

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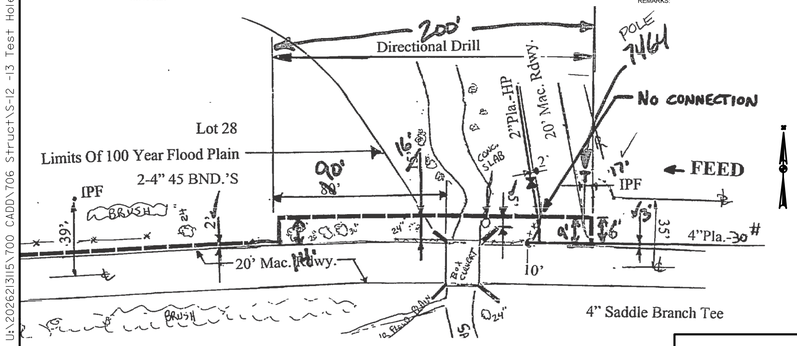



**WASHINGTON GAS LINE PLAN**
**(AS BUILT)**

Stantec

## 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. 28888 EXPIRATION DATE 6-20-2025

S - 15

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

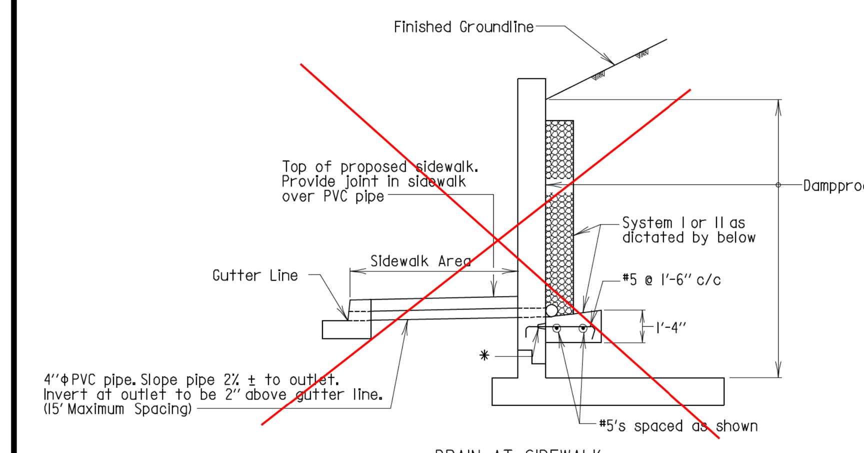
RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date
Designed by: Drawn by: Checked by:

# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## TEST PIT DETAILS (2 OF 2)

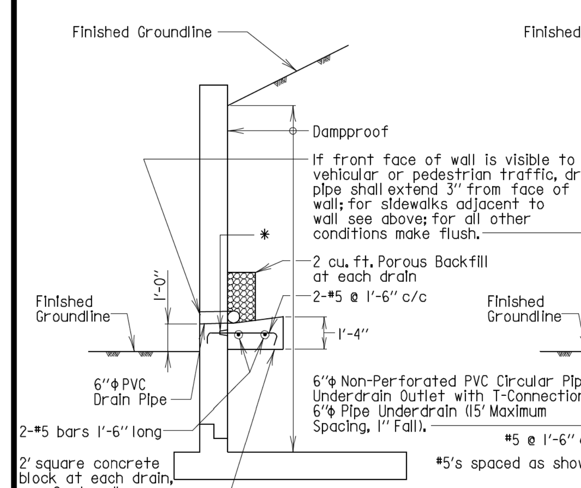
Project No. : 502102 SHEET 46 of 48


U:\2026\2\115\700 CADD\706 Struct\S-12 -13 Test Hole-1.dgn
11:33 AM
1/27/2026
MODELNAME: TEST PIT S-13



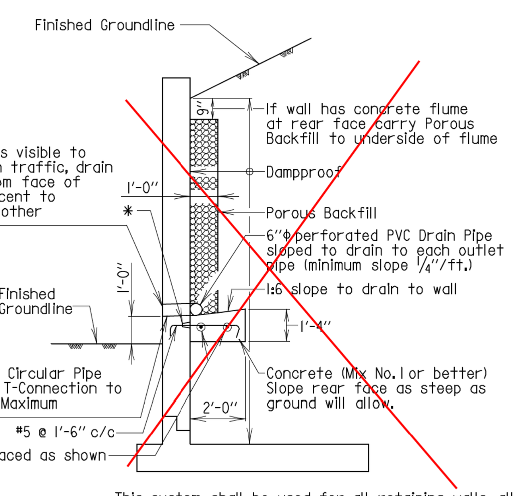

DRAIN AT SIDEWALK
Scale : None

✱ #5 Threaded Rebar Dowel Coupler at 1'-6" c/c.




This system shall be used for all box culvert wing walls and other wing walls that are both less than 30' long and less than 16' high (height of wall from bottom of footing to top of highest section). One drain shall be placed at ℄ of wall for all walls less than 15' long. For walls between 15' and 30' long, two drains shall be placed, one at each third point.

SYSTEM I
Scale : None



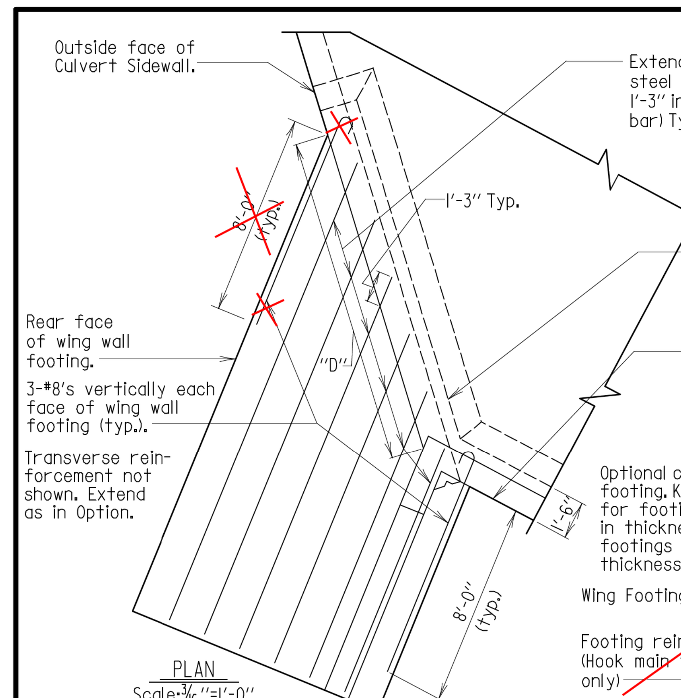

This system shall be used for all retaining walls, all wing walls (not in System I).

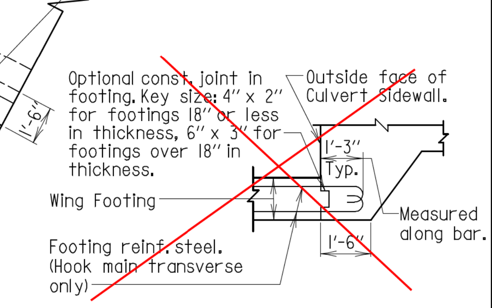
SYSTEM II
Scale : None

Note:
1. Exact elevation of drain to be determined by Engineer in field.
2. Porous backfill (refer to Section 469).
3. Use this standard for bridges with wing walls that are not parallel to the highway. For bridges with wing walls parallel to the highway see Std. No. SUB-DR-203 sheet 5 of 5 for details.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCUTRES DATE: 01/22/2001 | RETAINING WALL AND WING WALL DRAINAGE SYSTEMS |
| VERSION 1.0 | DETAIL NO. RW-301 SHEET 1 OF 1 |

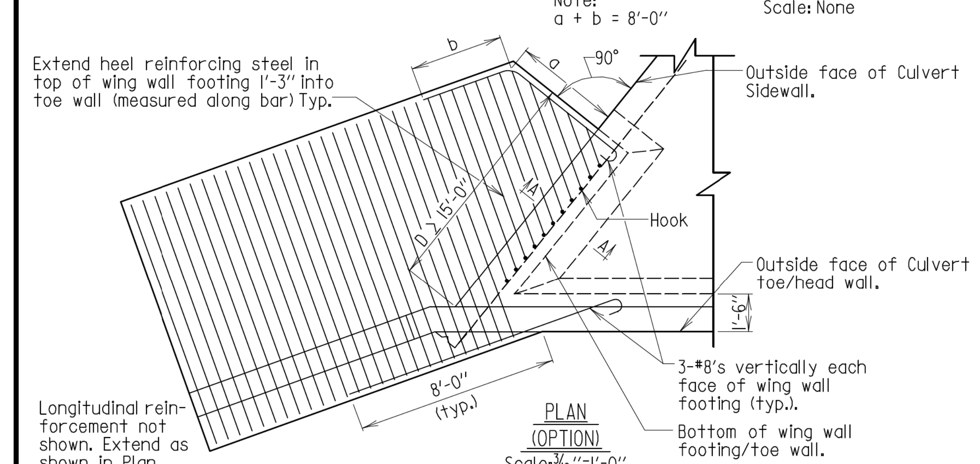
RETAINING WALLS




SECTION A-A
Scale: None

Note:
a + b = 8'-0"




PLAN
(OPTION)
Scale: 3/16"=1'-0"

Note:
1. When the distance measured along the outside face of culvert, between the back of headwall/wing wall and the rear face of wing wall footing, (shown as D), exceeds 15 ft. the Contractor has the option of installing the footing as shown in Option.
2. Culvert and toe wall reinforcing steel not shown.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 10/09/2007 | TIE-IN DETAIL FOR BOX CULVERT BOTTOM SLAB AND WING WALL FOOTING |
| VERSION 1.0 | DETAIL NO. BC-501 SHEET 1 OF 1 |

BOX CULVERT

| LOCATION CATEGORY A | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BAR SIZE | CENTER TO CENTER SPACING | | | | | | | |
| | 3" | | 4" | | 5" | | ≥ 6" | |
| #4 | 2'-1" | 2'-8" | 2'-1" | 2'-6" | 2'-1" | 2'-6" | 2'-1" | 2'-6" |
| #5 | 2'-8" | 3'-6" | 2'-7" | 3'-4" | 2'-7" | 3'-1" | 2'-7" | 3'-1" |
| #6 | 3'-10" | 5'-0" | 3'-1" | 4'-0" | 3'-1" | 4'-0" | 3'-1" | 4'-0" |
| #7 | 5'-3" | 6'-10" | 3'-11" | 5'-1" | 3'-7" | 4'-8" | 3'-7" | 4'-8" |
| #8 | 6'-10" | 8'-11" | 5'-1" | 6'-8" | 4'-1" | 5'-4" | 4'-1" | 5'-4" |
| #9 | 8'-8" | 11'-3" | 6'-6" | 8'-6" | 5'-2" | 6'-9" | 5'-1" | 6'-7" |
| #10 | - | - | 8'-3" | 10'-9" | 6'-7" | 8'-7" | 6'-3" | 8'-2" |
| #11 | - | - | 10'-1" | 13'-3" | 8'-1" | 10'-7" | 7'-6" | 9'-9" |

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in: footings, pier caps, etc.

| LOCATION CATEGORY B | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BAR SIZE | CENTER TO CENTER SPACING | | | | | | | |
| | 3" | | 4" | | 5" | | ≥ 6" | |
| #4 | 1'-7" | 2'-5" | 1'-7" | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 1'-11" |
| #5 | 2'-1" | 3'-1" | 2'-0" | 3'-0" | 2'-0" | 2'-5" | 2'-0" | 2'-5" |
| #6 | 3'-0" | 4'-5" | 2'-5" | 3'-7" | 2'-5" | 3'-7" | 2'-5" | 3'-7" |
| #7 | 4'-0" | 6'-0" | 3'-0" | 4'-6" | 2'-9" | 4'-2" | 2'-9" | 4'-2" |
| #8 | 5'-3" | 7'-10" | 3'-11" | 5'-11" | 3'-2" | 4'-9" | 3'-2" | 4'-9" |
| #9 | 6'-8" | 10'-0" | 5'-0" | 7'-6" | 4'-0" | 6'-0" | 3'-11" | 5'-10" |
| #10 | - | - | 6'-4" | 9'-6" | 5'-1" | 7'-7" | 4'-10" | 7'-2" |
| #11 | - | - | 7'-10" | 11'-8" | 6'-3" | 9'-4" | 5'-9" | 8'-8" |

Location Category B - All bars not in Location Category A.

▭ = Non-epoxy coated ▨ = Epoxy coated (shaded columns)

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 4000 psi.
4. These bar laps assume cover of 2". Greater lap lengths will be required for cover less than 2".
5. These bar laps are Class B splices based on the development lengths in Std. No. REBAR-DL-103. Class B splices are 1.3 times the development length.
6. Class A splices may be used when (a) the area of reinforcement provided is at least twice that required by analysis over the entire length of the lap splice and (b) one-half or less of the total reinforcement is spliced within the required lap splice length. Class A splices are 1.0 times the development length.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 03/21/2017 | BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.6 (4500 P.S.I.) CONCRETE |
| VERSION 1.0 | DETAIL NO. REBAR-BL-103 SHEET 1 OF 1 |

REBAR - BAR LAP

| LOCATION CATEGORY A | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BAR SIZE | CENTER TO CENTER SPACING | | | | | | | |
| | 3" | | 4" | | 5" | | ≥ 6" | |
| #4 | 1'-7" | 2'-1" | 1'-7" | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 1'-11" |
| #5 | 2'-1" | 2'-8" | 2'-0" | 2'-7" | 2'-0" | 2'-5" | 2'-0" | 2'-5" |
| #6 | 3'-0" | 3'-10" | 2'-5" | 3'-1" | 2'-5" | 3'-1" | 2'-5" | 3'-1" |
| #7 | 4'-0" | 5'-3" | 3'-0" | 3'-11" | 2'-9" | 3'-7" | 2'-9" | 3'-7" |
| #8 | 5'-3" | 6'-10" | 3'-11" | 5'-2" | 3'-2" | 4'-1" | 3'-2" | 4'-1" |
| #9 | 6'-8" | 8'-8" | 5'-0" | 6'-6" | 4'-0" | 5'-3" | 3'-11" | 5'-1" |
| #10 | - | - | 6'-4" | 8'-3" | 5'-1" | 6'-7" | 4'-10" | 6'-3" |
| #11 | - | - | 7'-10" | 10'-2" | 6'-3" | 8'-2" | 5'-9" | 7'-6" |

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in: footings, pier caps, etc.

| LOCATION CATEGORY B | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BAR SIZE | CENTER TO CENTER SPACING | | | | | | | |
| | 3" | | 4" | | 5" | | ≥ 6" | |
| #4 | 1'-3" | 1'-10" | 1'-3" | 1'-6" | 1'-3" | 1'-6" | 1'-3" | 1'-6" |
| #5 | 1'-7" | 2'-5" | 1'-6" | 2'-3" | 1'-6" | 1'-10" | 1'-6" | 1'-10" |
| #6 | 2'-3" | 3'-5" | 1'-10" | 2'-9" | 1'-10" | 2'-9" | 1'-10" | 2'-9" |
| #7 | 3'-1" | 4'-8" | 2'-4" | 3'-6" | 2'-2" | 3'-2" | 2'-2" | 3'-2" |
| #8 | 4'-0" | 6'-0" | 3'-0" | 4'-6" | 2'-5" | 3'-8" | 2'-5" | 3'-8" |
| #9 | 5'-2" | 7'-8" | 3'-10" | 5'-9" | 3'-1" | 4'-7" | 3'-0" | 4'-6" |
| #10 | - | - | 4'-11" | 7'-4" | 3'-11" | 5'-10" | 3'-9" | 5'-7" |
| #11 | - | - | 6'-0" | 9'-0" | 4'-10" | 7'-2" | 4'-5" | 6'-8" |

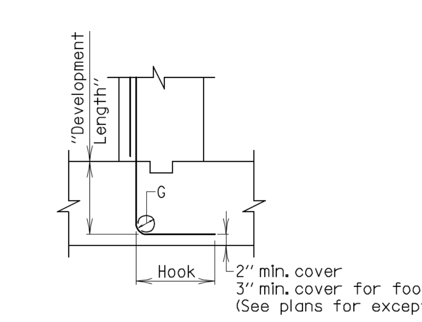
Location Category B - All bars not in Location Category A.

▭ = Non-epoxy coated ▨ = Epoxy coated (shaded columns)

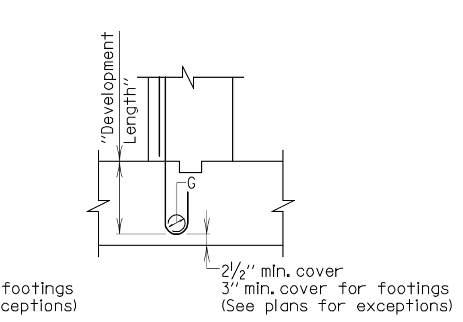
Note:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These development lengths only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 4000 psi.
4. These development lengths assume cover of 2". Greater development lengths will be required for cover less than 2".
5. The Excess Reinforcement Factor was assumed to be 1.0 when calculating these dimensions.
6. Atr was assumed to be 0 when calculating the Reinforcement Confinement Factor.
7. If depth of member does not allow bar development length indicated in Location Categories A and B; then hooks shall be added to all bars not conforming, as per D, E, and F per Std. No. REBAR-DL-203.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 03/21/2017 | DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.6 (4500 P.S.I.) CONCRETE |
| VERSION 1.0 | DETAIL NO. REBAR-DL-103 SHEET 1 OF 1 |

REBAR - DEVELOPMENT LENGTH




STANDARD 90° HOOK




STANDARD 180° HOOK

| BAR SIZE | ✱ LOCATION CATEGORY | | |
|---|---|---|---|
| | D | E | F |
| #4 | 7" | 10" | 8" |
| #5 | 9" | 1'-0" | 10" |
| #6 | 10" | 1'-3" | 1'-0" |
| #7 | 1'-0" | 1'-5" | 1'-2" |
| #8 | 1'-2" | 1'-7" | 1'-4" |
| #9 | 1'-4" | 1'-10" | 1'-6" |
| #10 | 1'-5" | 2'-1" | 1'-8" |
| #11 | 1'-7" | 2'-3" | 1'-10" |

Note:
For Hook Dimensions and Bends, see Std. No. REBAR-BB-102.

✱ LOCATION CATEGORY:

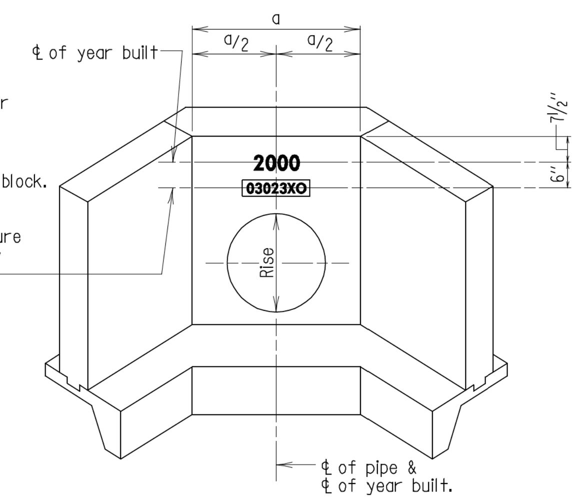
D- All bars terminating with a standard 180° hook with side cover (normal to plane of hook) not less than 2 1/2", and for 90° deg. hook, cover on bar extension beyond hook not less than 2".
E- All bars not in Category D.
F- All bars with hook enclosed vertically or horizontally within ties or stirrup-ties spaced along the full development length not greater than 3d where d is the diameter of the hooked bar.

Note:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These development lengths only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 4000 psi.
4. If depth of member does not allow bar development length indicated in Categories A, B, and C: Std. No. REBAR-DL-103; then hook shall be added to all bars not conforming, as per D, E & F.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 05/10/2011 | DEVELOPMENT LENGTH DIMENSIONS OF HOOKED BARS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 6 (4500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING |
| VERSION 1.0 | DETAIL NO. REBAR-DL-203 SHEET 1 OF 1 |

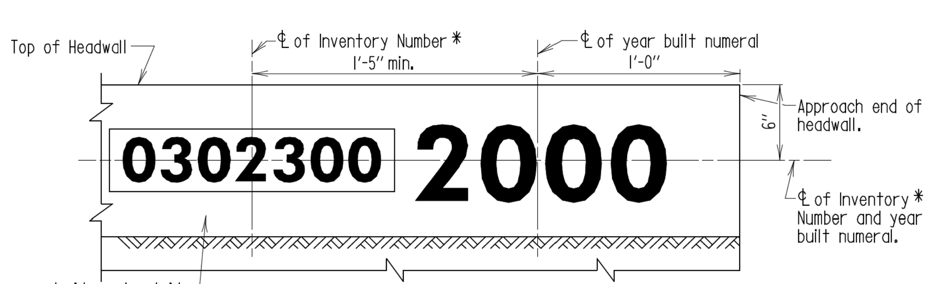
REBAR - DEVELOPMENT LENGTH

Note:
If headwall has a form liner finish, a 14" x 18" smooth block shall be formed for placement of the numbers. See Plans for location of block.




UPSTREAM END

HEADWALLS FOR PIPES AND/OR PIPE ARCHES WITH RISE 3'-0" OR GREATER




UPSTREAM END

Inventory Number to be placed on both sides of headwall at same corner.

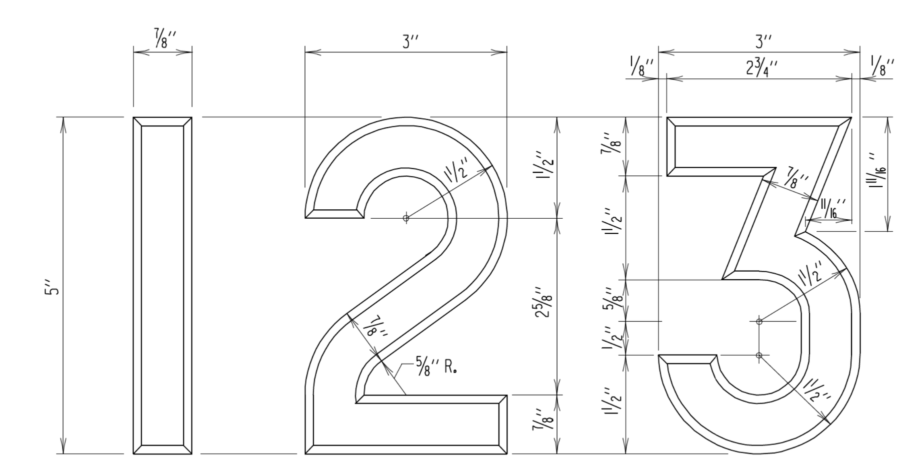
BOX CULVERTS

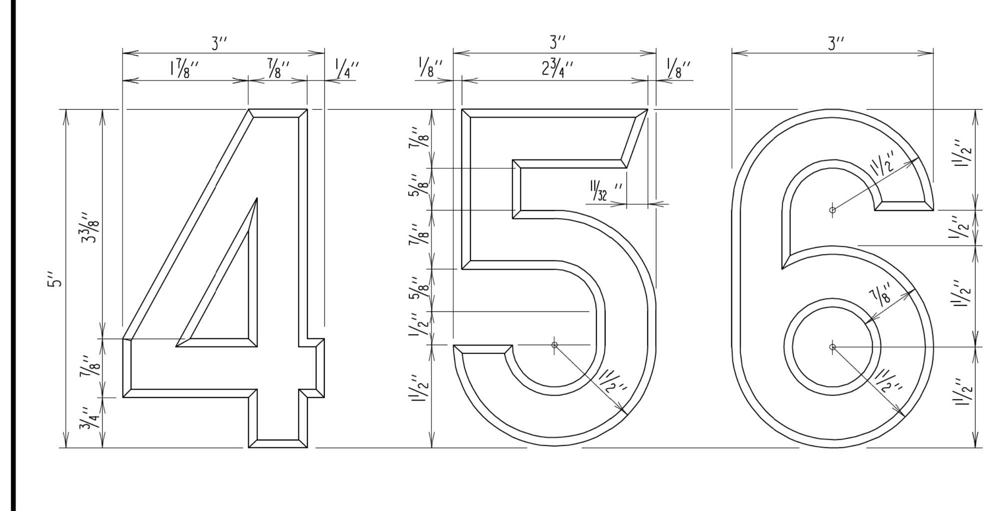
✱ Black numbers 3" high on a painted white background, (5" x 17").

Notes:
1. For existing structures, where a year built is shown on the structure and structure is to be rehabilitated, the marking should read 1942-2000 (old year first - new year).
2. For existing structures with no year built contact Office of Structures for old year.
3. For Year Built Numerals refer to Standard No. SI-201.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 10-17-2013 | LOCATION OF YEAR BUILT MARKING AND STRUCTURE INVENTORY NUMBER ON HEADWALLS FOR PIPES AND BOX CULVERTS |
| VERSION 1.0 | DETAIL NO. SI-103 SHEET 1 OF 1 |

STRUCTURE INVENTORY

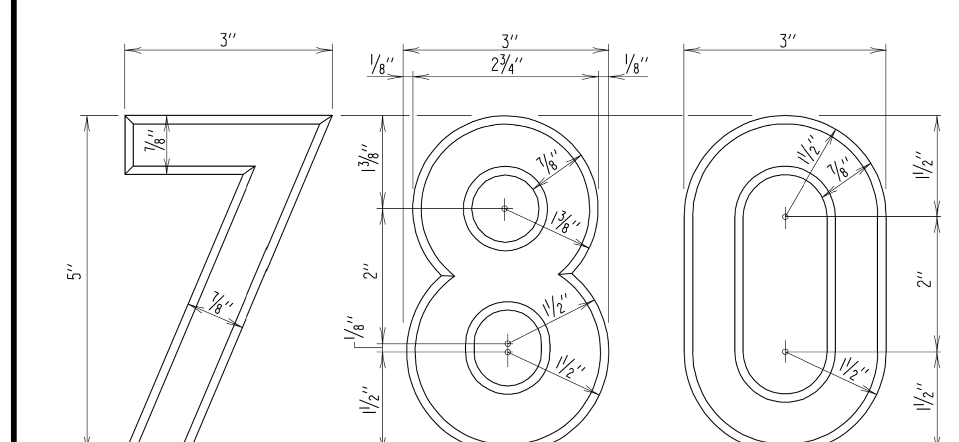


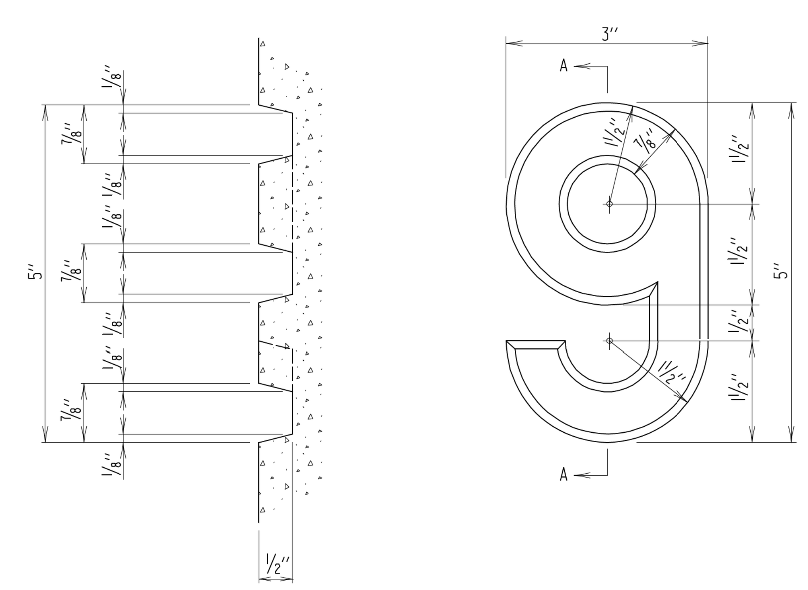




Note:
Year built numerals to be indented into concrete (unpainted) - as indicated on Standard Nos. SI-101, SI-103 and SI-104.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 9/14/99 | NUMERALS FOR YEAR BUILT MARKING ON STRUCTURES |
| VERSION 1.0 | DETAIL NO. SI-201 SHEET 1 OF 2 |

STRUCTURE INVENTORY




SECTION A-A

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| DIRECTOR OFFICE OF STRUCTURES DATE: 9/14/99 | NUMERALS FOR YEAR BUILT MARKING ON STRUCTURES |
| VERSION 1.0 | DETAIL NO. SI-201 SHEET 2 OF 2 |

STRUCTURE INVENTORY

S - 16

# 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. 28888 EXPIRATION DATE 06-20-2027

Stantec

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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

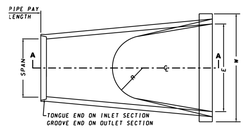
Chief, Division of Transportation Engineering — Date

Designed by: Drawn by: Checked by:

## REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## MDOT SHA DETAILS (1 OF 2)

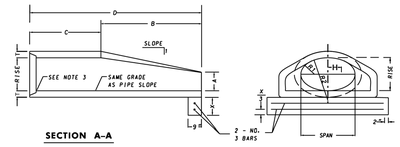
Project No. : 502102 SHEET 47 of 48




PLANS

**NOTES:**

1. END SECTIONS SHALL BE REINFORCED TO CONFORM TO ASTM - CLASS IV REINFORCED CONCRETE PIPE.
2. CONCRETE FOOTER SHALL BE USED WHEN SPECIFIED ON THE PLANS. COST OF THE FOOTER TO BE INCLUDED IN PRICE OF THE END SECTION. THE CONCRETE SHALL BE MIX #2 AND THE REINFORCEMENT IS TO BE #3 BARS.
3. INVERT ELEVATION TO BE AT THE PIPE END OF THE STANDARD END SECTION. ELEVATIONS TO BE NOTED ON THE CONSTRUCTION PLANS.




SECTION A-A




END VIEW

QUANTITIES FOR ESTIMATING PURPOSES ONLY

| HERCP | | | CONCRETE END SECTION | | | | | | | | | | | CONCRETE FOOTER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RISE | SPAN | EQUIV. DIA. | APPR. SLOPE | WALL T | A | B | C | D | E | H | R | R1 | R2 | W | X | CONC. (CY) | REINF. (LBS.) |
| 14" | 23" | 18" | 3:1 | 2 3/4" | 8" | 2'-3" | 3'-9" | 6'-0" | 3'-5" | 5 3/8" | 6" | 6" | 1'-8" | 4'-5" | 12" | 0.12 | 3.07 |
| 15" | 30" | 24" | 2.811 | 3 1/4" | 8 1/2" | 3'-3" | 5'-9" | 6'-0" | 4'-6" | 6 7/8" | 7" | 8 1/4" | 2'-2 1/4" | 5'-6" | 15" | 0.19 | 3.86 |
| 22" | 34" | 27" | 2.911 | 3 1/2" | 8" | 4'-0" | 7'-0" | 6'-0" | 5'-1" | 7 3/4" | 8" | 9 1/4" | 2'-5 1/4" | 6'-1" | 15" | 0.23 | 4.32 |
| 24" | 38" | 30" | 2.911 | 3 3/4" | 9 1/2" | 4'-6" | 1'-6" | 6'-0" | 5'-8" | 8 5/8" | 9" | 10 1/4" | 2'-8 3/4" | 6'-8" | 15" | 0.23 | 4.76 |
| 29" | 45" | 36" | 2.711 | 4 1/2" | 11 1/4" | 5'-0" | 3'-0" | 8'-0" | 6'-9" | 10 1/2" | 12" | 12 1/4" | 3'-3 1/4" | 8'-0" | 15" | 0.28 | 5.76 |

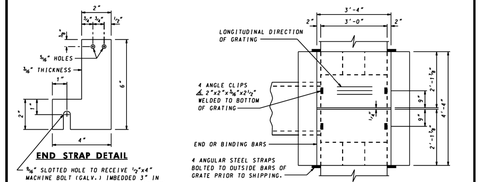
| SPECIFICATION 305 | CATEGORY CODE ITEMS |
|---|---|
| APPROVED | DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT |

| APPROVAL + SHA REVISIONS | | APPROVAL + FEDERAL HIGHWAY ADMINISTRATION |
|---|---|---|
| APPROVAL | 7-14-08 | APPROVAL 01-09-08 |
| REVISED | 7-1-09 | REVISED 7-27-09 |
| REVISED | | REVISED |
| REVISED | | REVISED |

**Maryland Department of Transportation**
**STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

***STANDARD CONCRETE END SECTION***
***HORIZONTAL ELLIPTICAL PIPE***

**STANDARD NO. *MD 369.00***

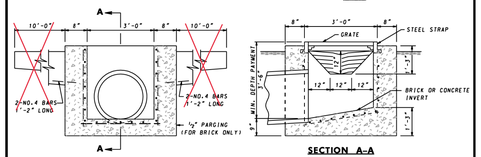



END STRAP DETAIL

¾" SLOTTED HOLE TO RECEIVE ½"x4" MACHINE BOLT (GALV.) IMBEDDED 3" IN CONC. WALL. NUT TO BE PLACED ON END OF BOLT AFTER GRATE IS INSTALLED.




PLAN




ELEVATION

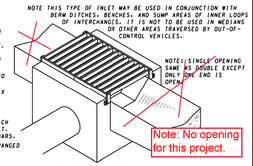



SECTION A-A

**NOTES**

1. THE CONCRETE VALLEY GUTTER TO BE USED IN CONNECTION WITH THIS INLET, WILL BE WARPED FROM THE STANDARD SECTION TO MEET THE SECTION AT THE END OF THE INLET. THIS TRANSITION WILL TAKE PLACE WITH A DISTANCE OF TEN (10) FEET FROM THE INLET. GUTTER TO BE PAID FOR SEPARATELY.
2. PIPE OUTLETS AND OUTFITTER APPROACHES CAN BE REVISED TO MEET EXISTING CONDITIONS.
3. INLET MAY BE CONSTRUCTED OF REINFORCED CONCRETE (MIX NO.7) OR BRICK. CHAMFER INSIDE CORNER ¾"x¾". REINFORCEMENT NO.4 BARS @ 6" C/C. 2" COVER.
4. GRATINGS ARE SUBJECT TO APPROVAL FOR EACH JOB. ANY TYPE OF SUBSTANTIAL TRANSVERSE BARS MAY BE USED WHICH WILL SUPPORT A MINIMUM UNIFORM LOAD OF 50 LBS./SQ.FT. THE TRANSVERSE BARS SHALL BE HELD RIGID BY SPACER BARS.
5. AREA TO BE MADE UP OF TWO EQUAL PANELED WIDTHS. ARRANGED FOR BOLTING TOGETHER IN THE FIELD.
6. ALL MATERIAL TO BE HOT DIPPED GALVANIZED.

NOTE THIS TYPE OF INLET MAY BE USED IN CONJUNCTION WITH BERM DITCHES, BENCHES, AND SUMP AREAS OF INNER LOOPS OF INTERCHANGES. IT IS NOT TO BE USED IN MEDIANS OR OTHER AREAS TRAVERSED BY OUT-OF-CONTROL VEHICLES.




ISOMETRIC VIEW
(DOUBLE OPENING SHOWN)

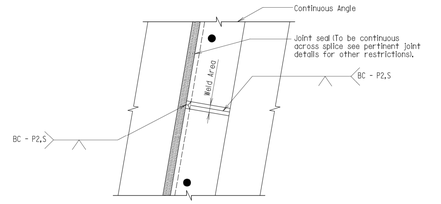
| SPECIFICATION 305 | CATEGORY CODE ITEMS |
|---|---|
| APPROVED | DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT |

| APPROVAL + SHA REVISIONS | | APPROVAL + FEDERAL HIGHWAY ADMINISTRATION |
|---|---|---|
| APPROVAL | 1-23-69 | APPROVAL 3-6-69 |
| REVISED | 10-1-01 | REVISED 6-23-87 |
| REVISED | | REVISED |
| REVISED | | REVISED |

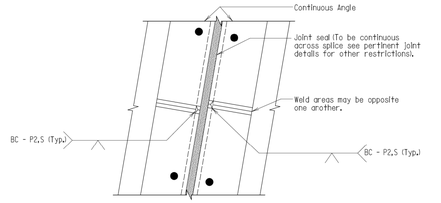
**Maryland Department of Transportation**
**STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

**STANDARD SINGLE OR DOUBLE OPENING**
**TYPE K INLET OPEN-END GRATE**
**NON-TRAFFIC AREAS**

**STANDARD NO. MD 378.03**




PLAN
JOINT AT ABUTMENTS - WHERE ONE SIDE OF JOINT IS ARMORED
Scale: None




PLAN
JOINT AT PIERS AND ABUTMENTS - WHERE BOTH SIDES OF JOINTS ARE ARMORED
Scale: None

Note:
Whenever possible the need for this splice should be limited. Preferably, the minimum spacing between joints shall be 40', if there are breaks in the crown or if the joint is skewed, splices may be made at all breaks in slope and may follow the direction of centerline of bridge instead of being perpendicular to center line of bearing.

| APPROVAL | STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES |
|---|---|
| Director, Office of Structures Date: 09/06/2001 | ROADWAY JOINT ANGLE SHOP SPLICES FOR NON-SEQUENTIAL CONSTRUCTION |
| VERSION 1.0 | DETAIL NO. SUP-JTJCI-102 SHEET ___ OF ___ |

SUP-JTJCI-102

## 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. 28888 EXPIRATION DATE 06-20-2027

Stantec


OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDSON PARK DRIVE 4TH FLOOR
GAITHERSBURG, MARYLAND, 20878
240-777-7220

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: Drawn by: Checked by:



# REPLACEMENT OF BRIDGE NO. M-0148x01 ON GLEN ROAD OVER SANDY BRANCH

## MDOT SHA DETAILS (2 OF 2)

Project No. : 502102 SHEET 48 of 48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