MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GROSVENOR IMPROVEMENTS

MD 355 (ROCKVILLE PIKE) FROM
POOKS HILL RD TO STRATHMORE AVE
CIP PROJECT NO. 501532
PS&E SUBMITTAL, JUNE 2023

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

TIM CUPPLES, PE, DBIA
CHIEF, DIVISION OF
TRANSPORTATION ENGINEERING

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90, AND MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" DATED AUGUST 1988.

03-28-2023
DATE

DAVID HATHORNE MARIHUGH III, P.E.
MD. REGISTRATION NO. 46328

CERTIFICATION OF THE QUANTITIES

I HEREBY CERTIFY THAT THE ESTIMATED TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO 404 CUBIC YARDS OF EXCAVATION, 1,113 CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE 58,777 SQUARE FEET.

03-28-2023
DATE

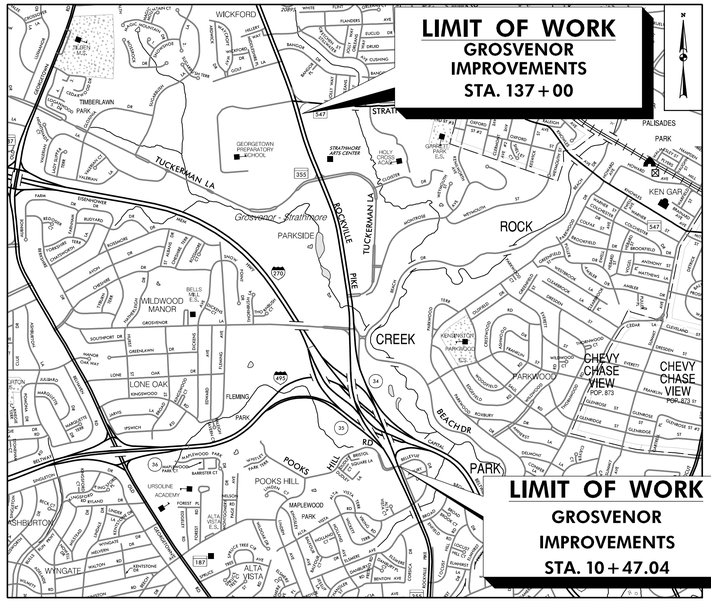
DAVID HATHORNE MARIHUGH III, P.E.
MD. REGISTRATION NO. 46328

The following standards are required for this project:

a. MD 374.61 - PRECAST OR CAST IN PLACE SQUARE AND RECTANGULAR COS INLETS 5', 10', 15' & 20'
b. MD 374.68 - PRECAST OR CAST-IN-PLACE COG / COS OPENING FOR 8" CURB 5' OR 10' ONLY
c. MD 374.71 - PRECAST STANDARD TYPE S COMBINATION INLET DOUBLE GRATE TANDEM
d. MD 381.01 - STANDARD YARD INLET
e. MD 386.11 - STANDARD JUCTION BOX
f. MD 578.01 - REPAIRING PAVEMENT OPENINGS FOR UTILITY TRENCHES
g. MD 605.03 - TYPE C TRAFFIC BARRIER END TREATMENT
h. MD 605.10 - TYPE K TRAFFIC BARRIER END TREATMENT OPTION I ANCHORAGE
i. MD 605.21 - OFFSET BLOCK
j. MD 605.22 - TRAFFIC BARRIER W-BEAM SINGLE FACE
k. MD 605.23 - TRAFFIC BARRIER W-BEAM, W-BEAM SPLICES AND OFFSET BLOCK
l. MD 605.23-01 - TRAFFIC BARRIER W-BEAM METAL POST
m. MD 620.02 - STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER
n. MD 640.02 - STANDARD CURB OPENING DETAILS FOR COMBINATION CURB & GUTTER
o. MD 645.01 - STANDARD MONOLITHIC CONCRETE MEDIAN TYPE 'A'
p. MD 655.11 - SIDEWALK RAMPS PERPENDICULAR
q. MD 655.12 - SIDEWALK RAMPS PARALLEL
r. MD 655.13 - SIDEWALK RAMPS COMBINATION
s. MD 655.22 - RAMPED MEDIAN AND ISLAND OPENINGS
t. MD 655.40 - DETECTABLE WARNING SURFACES
u. MD 661.01 - TRAFFIC BARRIER THRIE BEAM ANCHORAGE AT BRIDGE END POSTS
v. MC 100.01 - COMBINATION CONCRETE CURB AND GUTTER TYPE A
w. MC 101.01 - COMBINATION CONCRETE CURB AND GUTTER TYPE C

For all standards referred to on the plans the contractor must go to the MDOT SHA Book of Standards or Montgomery County design 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
https://www.montgomerycountymd.gov/dot-dte/common/standards.html



VICINITY MAP
SCALE: 1" = 1500'

LENGTH OF PROJECT:
MD 355 = 1.50 miles

MISS UTILITY

THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL UNDERGROUND UTILITIES IN THE AREA OF PROPOSED WORK ARE LOCATED PRIOR TO COMMENCING CONSTRUCTION WORK. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

THE CONTRACTOR IS ALSO RESPONSIBLE FOR LOCATING ALL PRIVATE UTILITIES (NOT LOCATED BY MISS UTILITY) WITHIN HOA PROPERTY AT THEIR EXPENSE. ALL UTILITIES SHOWN ON THE PLANS ARE PROVIDED FOR INFORMATION ONLY AND SHALL BE CONSIDERED APPROXIMATE. HOA SHALL NOT BE RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES. ANY UTILITIES OR OTHER UNDERGROUND FACILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.

RELATED REQUIRED PERMITS

To be completed by the consultant and placed on the first sheet of the Sediment Control/Stormwater Management plan set for all projects.

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 NO.	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS SEDIMENT CONTROL	X		286521		
MCDPS Floodplain District	X		382566		
WATERWAY/WETLAND(S)		X			
a. Corps of Engineers		X	202161206		
b. MDE	X				
c. MDE Water Certification		X			
MDE Dam Safety		X			
DNR Roadside Tree Care Permit		X		Approval Date	
DPS Roadside Tree Protection Plan		X		Approval Date	
N.P.D.E.S. NOTICE OF INTENT	X				DATE FILED
FEMA LOMAR (Required Post Construction)		X			
SHA Access Permit:	X		19APM0013XX		
M-NCPPC Parks Permit:	X				

DESIGN TRAFFIC DATA

ROADWAY	MD 355	
CONTROLS / YEARS	2016	
AVG. ANN. DAILY TRAFFIC (A.A.D.T.)	55,120	
DESIGN HOURLY VOLUME (D.H.V.)		
DIRECTIONAL DISTRIBUTION		
% TRUCKS - A.D.T.		
% TRUCKS - D.H.V.		
DESIGN SPEED M. P. H.	45	
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	
CONTROL OF ACCESS	NONE	
INTENSITY OF DEVELOPMENT	URBAN	
TERRAIN	ROLLING	
ANTICIPATED POSTED SPEED	45	

OWNER
TIM CUPPLES, PE, DBIA
100 Edison Park Drive, 4th Floor
Gaithersburg, MD 20878
240-777-7214
tim.cupples@montgomerycountymd.gov

PROJECT MANAGER
BOB GONZALES
100 Edison Park Drive, 4th Floor
Gaithersburg, MD 20878
240-777-7296
robert.gonzales@montgomerycountymd.gov

SEE SHEET I-01 FOR FULL SHEET INDEX

TI-01

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
TITLE SHEET

SCALE: N.T.S.

SHEET 001 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pGN-T001_Grosvenor.dgn

INDEX OF SHEETS

CONSTRUCTION PLAN SET

Sheet No.	Drawing No.	Sheet Name
001	TI-01	TITLE SHEET
002	IN-01	INDEX OF SHEETS
003	GN-01	GENERAL NOTES
004	AB-01	ABBREVIATIONS AND SYMBOLS
005	GS-01	GEOMETRIC LAYOUT
006	GS-02	GEOMETRIC LAYOUT
007	TS-01	TYPICAL SECTIONS
008	DT-01	DETAIL SHEET
009	DT-02	REINFORCED SOIL SLOPE DETAIL
010	PS-KY	ROADWAY KEY PLAN
011	PS-01	ROADWAY PLAN
012	PS-02	ROADWAY PLAN
013	PS-03	ROADWAY PLAN
014	PS-04	ROADWAY PLAN
015	PS-05	ROADWAY PLAN
016	PS-06	ROADWAY PLAN
017	HP-01	SIDEWALK PROFILES
018	HP-02	SHARED-USE PATH PROFILE
019	DA-KY	DRAINAGE AREA MAP KEY
020	DA-01	EXISTING DRAINAGE AREA MAP
021	DA-02	EXISTING DRAINAGE AREA MAP
022	DA-03	EXISTING DRAINAGE AREA MAP
023	DA-04	PROPOSED DRAINAGE AREA MAP
024	DA-05	PROPOSED DRAINAGE AREA MAP
025	DA-06	PROPOSED DRAINAGE AREA MAP
026	DP-01	PIPE PROFILES
027	DP-02	PIE COMPUTATIONS
028	SW-KY	STORMWATER KEY PLAN
029	SW-01	STORMWATER MANAGEMENT PLAN
030	SW-02	STORMWATER MANAGEMENT NOTES
031	TI-ES	SEDIMENT CONTROL - TITLE SHEET
032	ES-KY	EROSION AND SEDIMENT CONTROL KEY PLAN
033	ES-01	EROSION AND SEDIMENT CONTROL NOTES
034	ES-02	EROSION AND SEDIMENT CONTROL NOTES
035	ES-03	EROSION AND SEDIMENT CONTROL DETAILS
036	ES-04	EROSION AND SEDIMENT CONTROL DETAILS
037	ES-05	EROSION AND SEDIMENT CONTROL PLAN
038	ES-06	EROSION AND SEDIMENT CONTROL PLAN
039	ES-07	EROSION AND SEDIMENT CONTROL PLAN
040	ES-08	EROSION AND SEDIMENT CONTROL PLAN
041	ES-09	EROSION AND SEDIMENT CONTROL PLAN
042	ES-10	EROSION AND SEDIMENT CONTROL PLAN
042A	ES-11	EROSION AND SEDIMENT CONTROL PLAN
043	LP-KY	LANDSCAPE KEY PLAN
044	LP-01	LANDSCAPE & TREE PROTECTION PLAN
045	LP-02	LANDSCAPE & TREE PROTECTION PLAN
046	LP-03	LANDSCAPE & TREE PROTECTION PLAN
047	LP-04	LANDSCAPE & TREE PROTECTION PLAN
047A	LP-04A	LANDSCAPE & TREE PROTECTION PLAN
048	LP-05	LANDSCAPE & TREE PROTECTION PLAN
049	LP-06	LANDSCAPE & TREE PROTECTION PLAN

Sheet No.	Drawing No.	Sheet Name
050	LP-07	LANDSCAPE & TREE PROTECTION PLAN
051	LP-08	LANDSCAPE & TREE PROTECTION PLAN
052	LP-09	LANDSCAPE & TREE PROTECTION PLAN
053	LT-01	LIGHTING PLAN
054	LT-02	LIGHTING PLAN
055	LT-03	LIGHTING SCHEDULES
056	LT-04	LIGHTING NOTES AND DETAILS
057	SN-KY	SIGNING & PAVEMENT MARKING KEY PLAN
058	SNN-01	GENERAL NOTES AND PROPOSALS
059	SN-01	SIGNING & PAVEMENT MARKING PLAN
060	SN-02	SIGNING & PAVEMENT MARKING PLAN
061	SN-03	SIGNING & PAVEMENT MARKING PLAN
062	SN-04	SIGNING & PAVEMENT MARKING PLAN
063	SN-05	SIGNING & PAVEMENT MARKING PLAN
064	SN-06	SIGNING & PAVEMENT MARKING PLAN
065	SN-07	SIGNING & PAVEMENT MARKING PLAN
066	SG-01	SIGNALIZATION PLAN SHEET
067	SG-02	GENERAL INFORMATION SHEET
068	SG-03	SIGNALIZATION PLAN SHEET
069	SG-04	GENERAL INFORMATION SHEET
070	MT-01	MAINTENANCE OF TRAFFIC NOTES
071	MT-02	MAINTENANCE OF TRAFFIC NOTES
072	MT-03	MAINTENANCE OF TRAFFIC PLAN - STAGE 1
073	MT-04	MAINTENANCE OF TRAFFIC PLAN - STAGE 1
074	MT-05	MAINTENANCE OF TRAFFIC PLAN - STAGE 1
075	MT-06	MAINTENANCE OF TRAFFIC PLAN - STAGE 1
076	MT-07	MAINTENANCE OF TRAFFIC PLAN - STAGE 1
077	MT-08	MAINTENANCE OF TRAFFIC PLAN - STAGE 2A
078	MT-09	MAINTENANCE OF TRAFFIC PLAN - STAGE 2A
079	MT-10	MAINTENANCE OF TRAFFIC PLAN - STAGE 2B
080	MT-11	MAINTENANCE OF TRAFFIC PLAN - STAGE 2B
081	MT-12	MAINTENANCE OF TRAFFIC PLAN - STAGE 3A
082	MT-13	MAINTENANCE OF TRAFFIC PLAN - STAGE 3A
083	MT-14	MAINTENANCE OF TRAFFIC PLAN - STAGE 3A
083A	MT-14A	MAINTENANCE OF TRAFFIC PLAN - STAGE 3A
084	MT-15	MAINTENANCE OF TRAFFIC PLAN - STAGE 3A
085	MT-16	MAINTENANCE OF TRAFFIC PLAN - STAGE 3B
086	MT-17	MAINTENANCE OF TRAFFIC PLAN - STAGE 3B
087	MT-18	MAINTENANCE OF TRAFFIC PLAN - STAGE 3B
087A	MT-18A	MAINTENANCE OF TRAFFIC PLAN - STAGE 3B
088	MT-19	MAINTENANCE OF TRAFFIC PLAN - STAGE 3B
089	MT-20	MAINTENANCE OF TRAFFIC PLAN - STAGE 3C
090	MT-21	MAINTENANCE OF TRAFFIC PLAN - STAGE 3C
091	MT-22	MAINTENANCE OF TRAFFIC PLAN - STAGE 3C
092	MT-23	MAINTENANCE OF TRAFFIC PLAN - STAGE 3C
093	MT-24	MAINTENANCE OF TRAFFIC PLAN - STAGE 3D
094	MT-25	MAINTENANCE OF TRAFFIC PLAN - STAGE 3D
095	MT-26	MAINTENANCE OF TRAFFIC PLAN - STAGE 3D
096	MT-27	MAINTENANCE OF TRAFFIC PLAN - STAGE 3D
097	MT-28	MAINTENANCE OF TRAFFIC PLAN - STAGE 3E
098	MT-29	MAINTENANCE OF TRAFFIC PLAN - STAGE 3E

Sheet No.	Drawing No.	Sheet Name
099	MT-30	MAINTENANCE OF TRAFFIC PLAN - STAGE 3E
100	MT-31	MAINTENANCE OF TRAFFIC PLAN - STAGE 3E
101	MT-32	MAINTENANCE OF TRAFFIC PLAN - STAGE 3F
102	MT-33	MAINTENANCE OF TRAFFIC PLAN - STAGE 3F
103	MT-34	MAINTENANCE OF TRAFFIC PLAN - STAGE 3F
104	MT-35	MAINTENANCE OF TRAFFIC PLAN - STAGE 3F
105	MT-36	MAINTENANCE OF TRAFFIC PLAN - STAGE 3F
106	MT-37	MAINTENANCE OF TRAFFIC PLAN - STAGE 3G
107	MT-38	MAINTENANCE OF TRAFFIC PLAN - STAGE 3G
108	MT-39	MAINTENANCE OF TRAFFIC PLAN - STAGE 3G
109	MT-40	MAINTENANCE OF TRAFFIC PLAN - STAGE 3G
110	SB-01	SOIL BORING LOGS
111	TH-01	TEST HOLE LOGS
112	XS-01	ROADWAY CROSS SECTIONS
113	XS-02	ROADWAY CROSS SECTIONS
114	XS-03	ROADWAY CROSS SECTIONS
115	XS-04	ROADWAY CROSS SECTIONS
116	XS-05	ROADWAY CROSS SECTIONS
117	XS-06	ROADWAY CROSS SECTIONS
118	XS-07	ROADWAY CROSS SECTIONS
119	XS-08	ROADWAY CROSS SECTIONS
120	XS-09	ROADWAY CROSS SECTIONS
121	XS-10	ROADWAY CROSS SECTIONS
122	XS-11	ROADWAY CROSS SECTIONS
123	XS-12	ROADWAY CROSS SECTIONS
124	XS-13	ROADWAY CROSS SECTIONS
125	XS-14	ROADWAY CROSS SECTIONS
126	XS-15	ROADWAY CROSS SECTIONS
127	XS-16	ROADWAY CROSS SECTIONS
128	XS-17	ROADWAY CROSS SECTIONS

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

IN-01

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
INDEX OF SHEETS

SCALE: AS SHOWN

SHEET 002 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\26260140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pGN-1000_Grosvenor.dgn

GENERAL NOTES

1. THE SPECIFICATIONS FOR THIS CONTRACT WILL BE THOSE OF THE MARYLAND STATE HIGHWAY ADMINISTRATION DATED JULY 2022, ALL ERATA AND ADDENDA THERETO, THE MARYLAND STATE HIGHWAY ADMINISTRATION BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES, THE 2011 MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND THE MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS.

2. FOR CONSTRUCTION, HORIZONTAL CONTROL SHALL BE BASED ON NAD 83/91 DATUM AND VERTICAL CONTROL SHALL BE BASED ON NAVD 1988 DATUM.

3. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF THE LINES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING. IF CLEARANCES ARE LESS THAN SHOWN OR THREE (3) INCHES, WHICHEVER IS LESS, CONTACT MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S PROJECT INSPECTOR AND THE APPROPRIATE UTILITY OWNER BEFORE PROCEEDING WITH CONSTRUCTION.

4. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.

5. THE CONTRACTOR SHALL NOTIFY MISS UTILITY ONE CALL (811 OR 800-257-7777) 48 HOURS BUT NOT MORE THAN 10 DAYS PRIOR TO ANY EXCAVATION WORK.

6. CLEARING IS TO BE LIMITED TO THE "LIMIT OF DISTURBANCE" AS SHOWN ON THE PLANS.

7. ALL GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.

8. DISTURBED AREAS ADJACENT TO ESTABLISHED LAWNS AND WATER QUALITY SWALES SHALL BE SODDED. OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.

9. THE CONTRACTOR SHALL OBTAIN A ROADSIDE TREE PERMIT FOR ANY MAINTENANCE, TREATMENT, PLANTING, REMOVAL, OR ROOT CUTTING ON TREES WITHIN THE PUBLIC RIGHT OF WAY. PERMIT REQUIREMENTS MAY BE OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES, MARYLAND FOREST, PARK AND WILDLIFE SERVICE, TELEPHONE 301-854-6060.

10. THE LOCATION OF RIGHT-OF-WAY AND EASEMENT LINES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. PLEASE REFER TO THE APPROPRIATE RIGHT-OF-WAY PLATS.

11. THE CONTRACTOR SHALL INSTALL PEDESTRIAN DETECTABLE WARNING SURFACES AT ALL SIDEWALK & PEDESTRIAN CROSSINGS. LOCATIONS AS DIRECTED BY THE ENGINEER. THE WARNING SURFACES SHALL BE IN CONFORMANCE WITH ADA REQUIREMENTS AND THE PROJECT SPECIAL PROVISION.

12. THE DESIGN FOR THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY AND HANDICAPPED IN COMPLIANCE WITH STATE AND FEDERAL LEGISLATION. ALL LANDING AREAS AT THE TOP OF THE SIDEWALK RAMPS SHALL MEET MDOT SHA REQUIREMENTS WITH A MAX 2% SLOPE IN ALL DIRECTIONS.

13. ALL PROPOSED BUS STOPS SHALL BE ADA COMPLIANT.

14. THE CONTRACTOR SHALL ADJUST ALL UTILITY COVERS TO MEET THE PROPOSED SIDEWALK OR SHARED USE PATH.

GEOTECHNICAL INVESTIGATION

1. GEOTECHNICAL INVESTIGATION DATED SEPTEMBER, 27, 2019
   SUPPLEMENTED DATED JUNE, 01, 2021
   PREPARED BY:
   DMY ENGINEERING CONSULTANTS, INC.
   7917 CESSNA AVENUE, UNIT L
   GAITHERSBURG, MD 20879
   PHONE: (301) 768-4168 FAX (301) 768-4169

TRAFFIC CONTROL NOTES

1. CONTRACTOR SHALL USE TYPICAL APPLICATIONS FROM THE MDSHA BOOK OF STANDARDS CATEGORY 1 AND 2011 MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD).
2. DURING ALL PHASES OF CONSTRUCTION AND THE DURATION OF THE CONTRACT TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MDSHA POLICIES AND PROCEDURES.
3. CONTRACTOR SHALL COORDINATE ACTIVITIES THROUGHOUT THE PROJECT IN THE MANNER THAT ALLOWS EMERGENCY ACCESS TO ALL AREAS OF THE JOB THAT ARE OCCUPIED BY HIS EMPLOYEES WITHOUT DELAYS TO EMERGENCY RESPONSE VEHICLES.
4. WORK WILL BE PERMITTED BETWEEN MONDAY THRU SATURDAY 7:00 AM AND 7:00 PM OR AS DIRECTED BY THE ENGINEER.

SURVEY

1. HORIZONTAL DATUM: MARYLAND STATE PLANE COORDINATE SYSTEM NAD 83/91
   VERTICAL DATUM: NAVD 1988
   SURVEY UNIT: SURVEY FEET

2. DATE OF SURVEY: APRIL 2017, SEPTEMBER 2019
   SURVEY PERFORMED BY: MERCADO CONSULTANTS INC.
   17830 NEW HAMPSHIRE AVE. SUITE 200
   ASHTON, MD 20861
   PHONE: 301-260-0090
   FAX: 301-260-0018

   APRIL 2021
   STANTEC CONSULTING SERVICES INC.810 GLEN EAGLES CT.
   SUITE 300
   BALTIMORE, MD 21286
   PHONE: 410-583-6700
   FAX: 410-583-6704

3. ALL DIMENSIONS, STATIONS, AND ELEVATIONS ARE IN SURVEY FEET UNLESS OTHERWISE SHOWN.

   THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING TOPOGRAPHIC FEATURES AND ELEVATIONS, ABOVE AND BELOW GROUND, PRIOR TO BEGINNING CONSTRUCTION IN THE FIELD.

   THE CONTRACTOR SHALL BRING TO THE NOTICE OF THE ENGINEER ANY DISCREPANCY BETWEEN THE PLANS AND ACTUAL FIELD CONDITIONS.

   REFER TO THE EXISTING CONDITIONS PLANS FOR LIMITS OF SURVEY.

4. A BOUNDARY SURVEY WAS NOT PERFORMED RIGHT-OF-WAY LINES, PROPERTY LINES, OWNERS, AND ADDRESSES. ARE BASED ON AVAILABLE GIS DATA

UTILITES

1. DATE OF INVESTIGATION: AUGUST 2017, DECEMBER 2020
   UTILITY INVESIGATION PERFORMED BY: EDWARDS UTILITY MAPPING CORPORATION
   11 MARSH RUN RD
   FREDERICKSBURG, VA 22406
   PHONE: (540) 737-5141 FAX: (540) 737-5145

   UTILITY MAPPING (QUALITY LEVEL C) WAS PREPARED BASED ON RECORDS PROVIDED BY UTILITY OWNERS FOR THIS PROJECT.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES PRIOR TO BEGINNING EXCAVATION.

3. THE FOLLOWING UTILITY COMPANIES SHALL ALSO BE SPECIFICALLY NOTIFIED SIX WEEKS PRIOR TO THE BEGINNING OF CONSTRUCTION:

   PEPCO, ED KOVAR, 301-548-4340
   AT&T, GARY WIGFIELD, 301-865-3877
   FIBERLIGHT, ALEX POLAK, 860-995-4954
   WASHINGTON GAS LIGHT COMPANY, STEPHEN LINCOLN, 703-750-4793
   COMCAST, DWAYNE DOUTY, 301-762-7863
   WASHINGTON SUBURBAN SANITARY COMMISSION, MARA FLORES, 301-206-8322
   VERIZON, JON BOBEL, 301-282-2942
   VERIZON BUSINESS, ADAM RICE, 571-220-8978

4. NO MECHANIZED EQUIPMENT SHALL BE USED FOR EXCAVATION IN CLOSE PROXIMITY TO UTILITIES. CONTRACTOR SHALL HAND DIG ONLY.

5. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING EXISTING UTILITIES AS DIRECTED BY THE ENGINEER AND UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES DUE TO NEGLIGENCE.

STATE OF MARYLAND · DAVID H. MARINUCCI · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

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DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

GN-01

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GENERAL NOTES
GROSVENOR IMPROVEMENTS

SCALE: AS SHOWN

SHEET 003 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\260111401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pGN-N000_Grosvenor.dgn

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 B/L	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 C/L	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
D.O.	Double Opening
D.S.	Design Speed
DWG.	Drawing
E	East
E	Electric
e	External Distance
EA.	Each
E.B.	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
MER ###	Survey Point
MOD.	Modified
MIN.	Minimum
MN.	Managed Roadway
M.S.E.	Mechanically Stabilized 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
RW or R/W	Right of Way
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 or S/B	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
W.B.	Westbound
WB	Wetland Buffer
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	
WETLAND BOUNDARY	
STREAM BUFFER	B
WATERS OF THE US	WUS
100 YEAR FLOOD PLAIN	
EXISTING UNDERGROUND ELECTRIC LINE	E
EXISTING UNDERGROUND TELEPHONE LINE	T
EXISTING UNDERGROUND FIBER OPTIC LINE	FO
EXISTING GAS LINE	G
EXISTING WATER LINE	W
EXISTING UNDERGROUND TV LINE	CATV
EXISTING AERIAL ELECTRIC LINE	E
EXISTING PROPOSED WOOD FENCE	
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
MEDIAN INLET PROTECTION	MIP
STANDARD INLET PROTECTION	SIP
STABILIZED CONSTRUCTION ENTRANCE	SCE
TEMPORARY ORANGE CONSTRUCTION FENCE	TPF
PROPOSED TREE	

STATE OF MARYLAND
DAVID H. MARINUS
No. 46328
PROFESSIONAL ENGINEER
03-28-2025

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

AB-01

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

ABBREVIATIONS AND SYMBOLS GROSVENOR IMPROVEMENTS

SCALE: AS SHOWN

SHEET 004 of 128

6/5/2023
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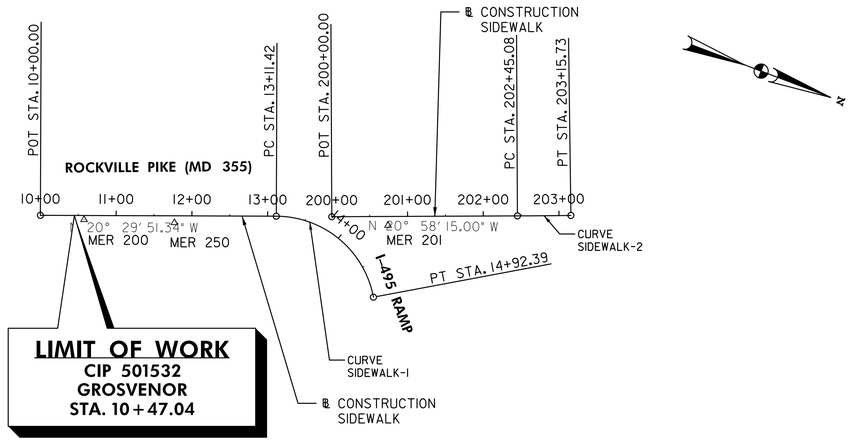
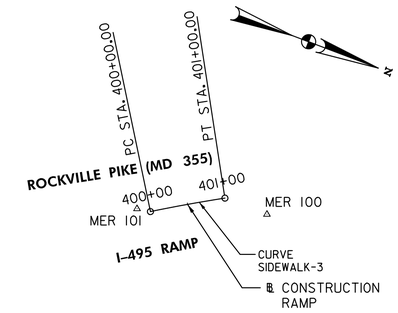
EDGE OF GUTTER PAN, SIDEWALK					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	10+00.0000	490,913.3035	1,284,093.1328	N 20° 29′ 51.3393" W
SIDEWALK-1	PC	13+11.4210	491,205.0075	1,283,984.0831	N 20° 29′ 51.3394" W
	PI	14+19.6971	491,906.4282	1,283,946.1683	
	PT	14+92.3877	491,362.7568	1,284,038.6388	N 58° 39′ 08.0238" E
	CC		491,250.8795	1,284,106.7891	

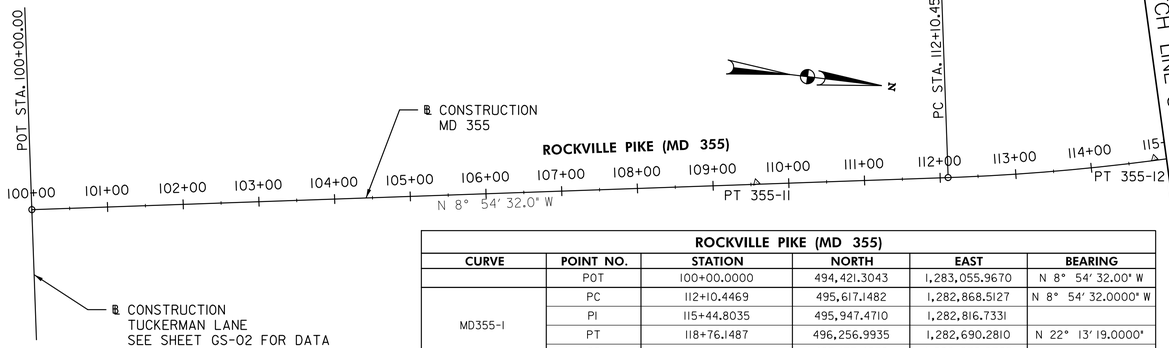
EDGE OF GUTTER PAN, SIDEWALK					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	200+00.0000	491,273.7664	1,283,958.7775	N 20° 58′ 15.0001" W
SIDEWALK-2	PC	202+45.0775	491,502.6106	1,283,871.0661	N 20° 58′ 15.0001" W
	PI	202+80.4021	491,535.5954	1,283,858.4237	
	PT	203+15.7263	491,568.4625	1,283,845.4782	N 21° 29′ 53.4305" W
	CC		488,755.4265	1,276,703.5033	

FACE OF CURB, SIDEWALK					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
SIDEWALK-3	PC	400+00.0000	492,308.8598	1,283,565.6691	N 32° 29′ 46.5251" W
	PI	400+50.0118	492,351.0411	1,283,538.8005	
	PT	401+00.0000	492,394.5948	1,283,514.2187	N 29° 26′ 25.7367" W
	CC		493,316.1933	1,285,147.0938	

TRAVERSE POINTS			
POINT NO.	NORTH	EAST	ELEVATION
MER 200	490,969.1715	1,284,078.1509	236.22′
MER 250	491,082.1445	1,284,039.6929	230.85′
MER 201	491,347.2221	1,283,943.2458	235.07′
MER 101	492,290.9953	1,283,568.4239	239.21′
MER 100	492,454.0486	1,283,514.6192	238.18′
MER 300	493,693.6913	1,283,173.5843	237.17′
MER 351	494,107.3208	1,283,137.7612	232.57′
MER 352	494,203.8165	1,282,921.9237	234.78′
MER 350	494,356.5799	1,283,172.4490	233.46′
MER 301	494,339.5830	1,283,060.5012	231.37′
PT 355-11	495,366.514	1,282,905.323	262.46′
PT 355-12	495,884.3780	1,282,810.2870	283.06′
PT 355-13	496,615.8870	1,282,528.1750	308.65′
MER 302	497,088.3591	1,282,348.0296	324.93′
MER 304	497,172.5592	1,282,367.6189	324.45′
MER 353	497,367.1404	1,282,239.7742	323.64′
MER 303	497,634.968	1,282,145.3151	315.49′

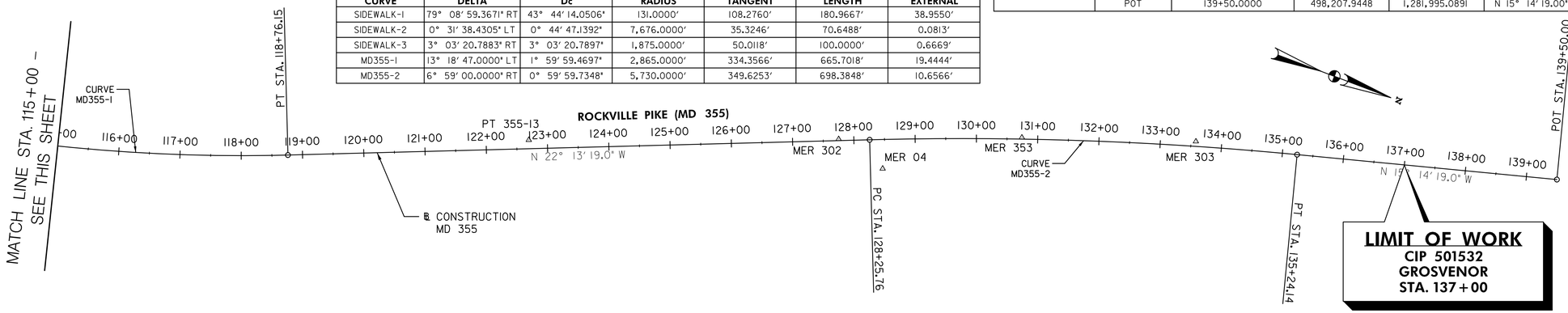






ROCKVILLE PIKE (MD 355)					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	100+00.0000	494,421.3043	1,283,055.9670	N 8° 54′ 32.00" W
MD355-1	PC	112+10.4469	495,617.1482	1,282,868.5127	N 8° 54′ 32.0000" W
	PI	115+44.8035	495,947.4710	1,282,816.7331	
	PT	118+76.1487	496,256.9935	1,282,690.2810	N 22° 13′ 19.0000"
	CC		495,173.4638	1,280,038.0765	
MD355-2	PC	128+25.7576	497,136.0710	1,282,331.1433	N 22° 13′ 19.0000"
	PI	131+75.3829	497,459.7281	1,282,198.9166	
	PT	135+24.1423	497,797.0605	1,282,107.0213	N 15° 14′ 19.0000"
	CC		499,303.1304	1,287,635.5521	
	POT	139+50.0000	498,207.9448	1,281,995.0891	N 15° 14′ 19.00" W

CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
SIDEWALK-1	79° 08′ 59.3671" RT	43° 44′ 14.0506"	131.0000′	108.2760′	180.9667′	38.9550′
SIDEWALK-2	0° 31′ 38.4305" LT	0° 44′ 47.1392"	7,676.0000′	35.3246′	70.6488′	0.0813′
SIDEWALK-3	3° 03′ 20.7883" RT	3° 03′ 20.7897"	1,875.0000′	50.0118′	100.0000′	0.6669′
MD355-1	13° 18′ 47.0000" LT	1° 59′ 59.4697"	2,865.0000′	334.3566′	665.7018′	19.4444′
MD355-2	6° 59′ 00.0000" RT	0° 59′ 59.7348"	5,730.0000′	349.6253′	698.3848′	10.6566′



GS-01

100′ 0 100′ 200′
SCALE: 1" = 100′

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JULY, 2022
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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
GEOMETRIC LAYOUT

SCALE: 1"=100′ SHEET 005 of 128

STATE OF MARYLAND · DAVID H. MARIHUGH III · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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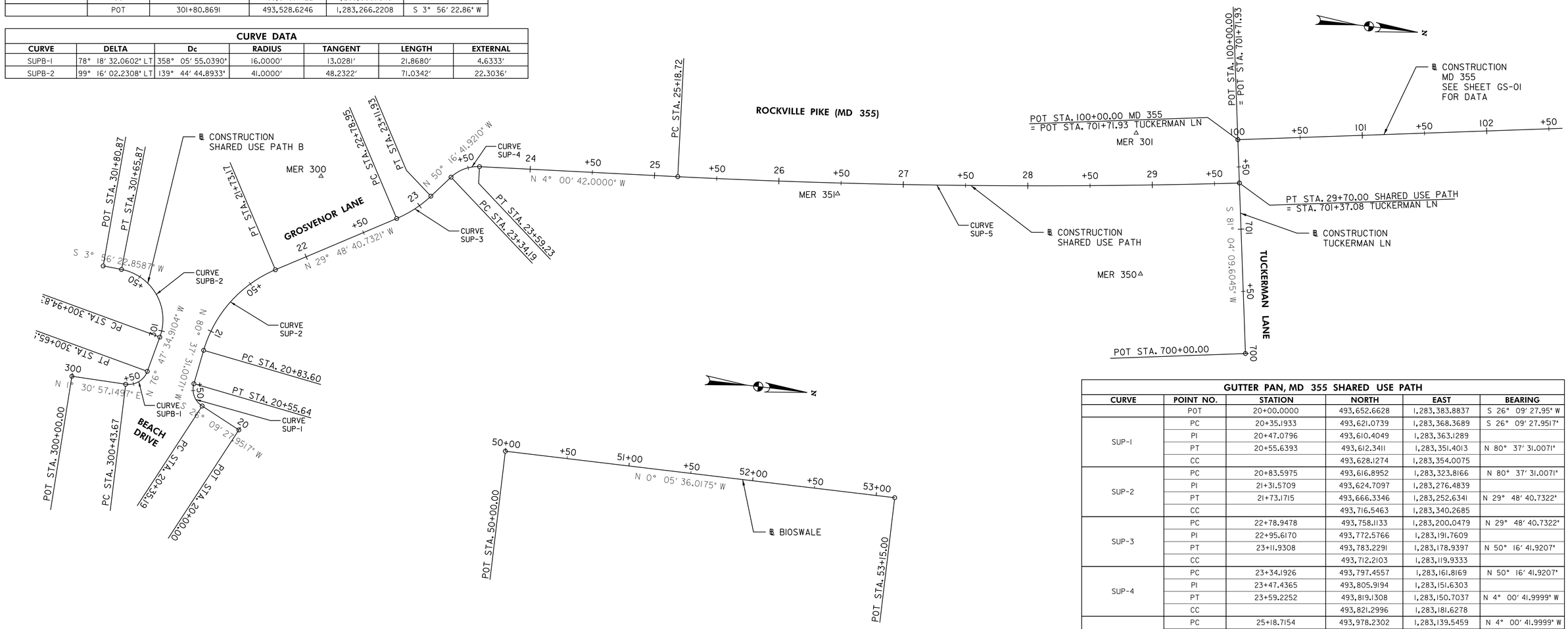
GUTTER PAN, MD 355 SHARED USE PATH					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	300+00.0000	493,514.3386	1,283,357.2262	N 1° 30′ 57.15″ E
SUPB-1	PC	300+43.6712	493,557.9946	1,283,358.3815	N 1° 30′ 57.1498″ E
	PI	300+56.6994	493,571.0182	1,283,358.7262	
	PT	300+65.5392	493,573.9947	1,283,346.0426	N 76° 47′ 34.9104″
	CC		493,558.4179	1,283,342.3871	
SUPB-2	PC	300+94.8349	493,580.6878	1,283,317.5218	N 76° 47′ 34.9104″
	PI	301+43.0671	493,591.7074	1,283,270.5653	
	PT	301+65.8691	493,543.5892	1,283,267.2514	S 3° 56′ 22.8588″ W
	CC		493,540.7722	1,283,308.1545	
	POT	301+80.8691	493,528.6246	1,283,266.2208	S 3° 56′ 22.86″ W

CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
SUPB-1	78° 18′ 32.0602″ LT	358° 05′ 55.0390″	16.0000′	13.0281′	21.8680′	4.6333′
SUPB-2	99° 16′ 02.2308″ LT	139° 44′ 44.8933″	41.0000′	48.2322′	71.0342′	22.3036′

TUCKERMAN LANE					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	700+00.0000	494,447.9941	1,283,225.8099	S 81° 04′ 09.60″ W
	POT	701+71.9272	494,421.3043	1,283,055.9670	S 81° 04′ 09.60″ W

CURVE DATA MD 355 SHARED USE PATH						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
SUP-1	73° 13′ 01.0412″ RT	358° 05′ 55.0390″	16.0000′	11.8863′	20.4460′	3.9320′
SUP-2	50° 48′ 50.2749″ RT	56° 43′ 42.5804″	101.0000′	47.9734′	89.5740′	10.8143′
SUP-3	20° 28′ 01.1885″ LT	62° 03′ 11.4877″	92.3333′	16.6691′	32.9830′	1.4926′
SUP-4	46° 15′ 59.9208″ RT	184° 49′ 30.3427″	31.0000′	13.2439′	25.0327′	2.7106′
SUP-5	4° 29′ 06.4279″ LT	0° 59′ 37.8804″	5,765.0000′	225.7577′	451.2847′	4.4186′



CENTERLINE BIOSWALE					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	50+00.0000	493,249.0479	1,283,216.0684	N 0° 05′ 36.02″ W
	POT	53+15.0000	493,564.0474	1,283,215.5553	N 0° 05′ 36.02″ W

GUTTER PAN, MD 355 SHARED USE PATH					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POT	20+00.0000	493,652.6628	1,283,383.8837	S 26° 09′ 27.95″ W
SUP-1	PC	20+35.1933	493,621.0739	1,283,368.3689	S 26° 09′ 27.9517″
	PI	20+47.0796	493,610.4049	1,283,363.1289	
	PT	20+55.6393	493,612.3411	1,283,351.4013	N 80° 37′ 31.0071″
	CC		493,628.1274	1,283,354.0075	
SUP-2	PC	20+83.5975	493,616.8952	1,283,323.8166	N 80° 37′ 31.0071″
	PI	21+31.5709	493,624.7097	1,283,276.4839	
	PT	21+73.1715	493,666.3346	1,283,252.6341	N 29° 48′ 40.7322″
	CC		493,716.5463	1,283,340.2685	
SUP-3	PC	22+78.9478	493,758.1133	1,283,200.0479	N 29° 48′ 40.7322″
	PI	22+95.6170	493,772.5766	1,283,191.7609	
	PT	23+11.9308	493,783.2291	1,283,178.9397	N 50° 16′ 41.9207″
	CC		493,712.2103	1,283,119.9333	
SUP-4	PC	23+34.1926	493,797.4557	1,283,161.8169	N 50° 16′ 41.9207″
	PI	23+47.4365	493,805.9194	1,283,151.6303	
	PT	23+59.2252	493,819.1308	1,283,150.7037	N 4° 00′ 41.9999″ W
	CC		493,821.2996	1,283,181.6278	
SUP-5	PC	25+18.7154	493,978.2302	1,283,139.5459	N 4° 00′ 41.9999″ W
	PI	27+44.4730	494,203.4347	1,283,123.7519	
	PT	29+70.0001	494,426.7145	1,283,090.3954	N 8° 29′ 48.4279″ W
	CC		493,574.9131	1,277,388.6711	

GS-02

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BPPA Bicycle and Pedestrian Priority Areas

40′ 0 40′ 80′
SCALE: 1″ = 40′

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS GEOMETRIC LAYOUT

SCALE: 1″=40′ SHEET 006 of 128

6/5/2023
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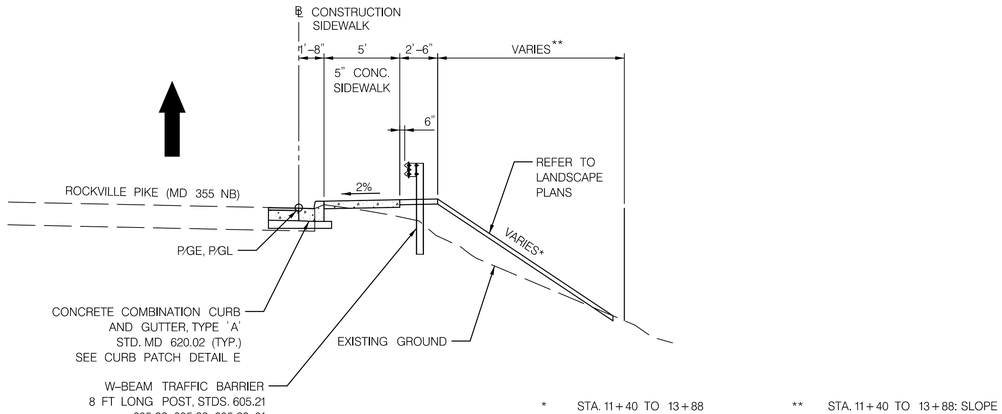
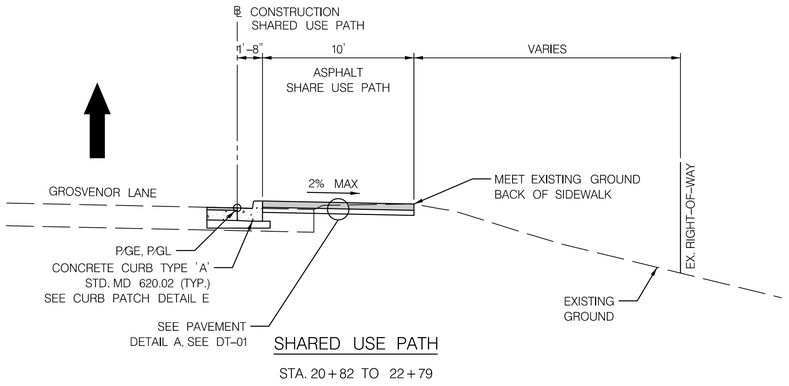


SIDEWALK

STA. 11+40 TO STA. 13+88
STA. 200+47 TO STA. 202+88

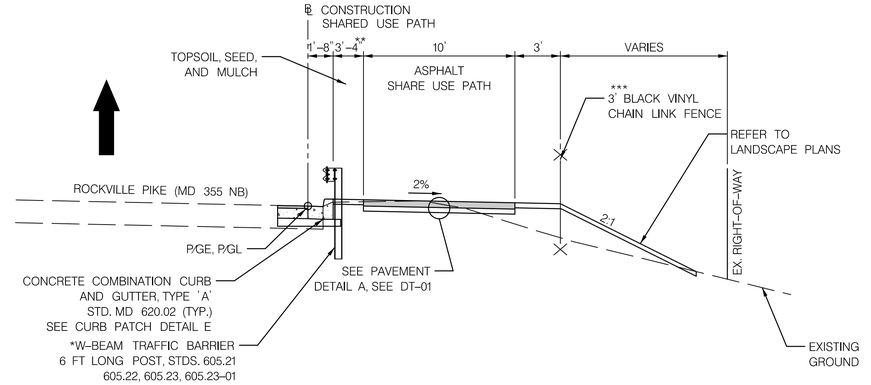
* STA. 11+40 TO 13+88
1.5:1 MAX SLOPE (SEE DT-02 FOR REINFORCED SOIL SLOPE STABILIZATION)
STA. 200+47 TO 201+50: 3:1 SLOPE
STA. 201+50 TO 202+88: 2:1 SLOPE

** STA. 11+40 TO 13+88: SLOPE LIMIT MUST NOT IMPACT EX. WOODEN FENCE



SHARED USE PATH

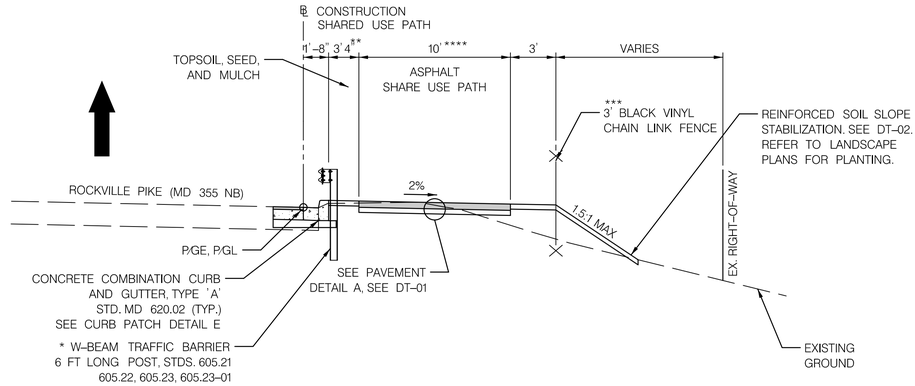
STA. 20+82 TO 22+79



SHARED USE PATH

STA. 22+79 TO 26+00
STA. 28+50 TO 29+21

* STA. 23+76 TO STA. 29+21
** VARIES, SEE PS-05 THRU 06
*** STA. 23+25 TO STA. STA. 28+44



SHARED USE PATH

STA. 26+00 TO 28+50

* STA. 23+76 TO STA. 29+21
** VARIES 3.33' TO 8.45' STA. 28+25 TO STA. 28+44
*** STA. 23+25 TO STA. 28+44
**** VARIES 7'-8" TO 10' STA. 28+25 TO STA. 28+44

TS-01

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
TYPICAL SECTIONS

SCALE: 1" = 5' SHEET 007 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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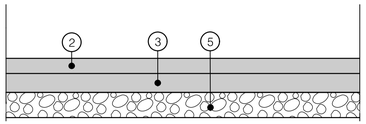
BiPPA Bicycle and Pedestrian Priority Areas

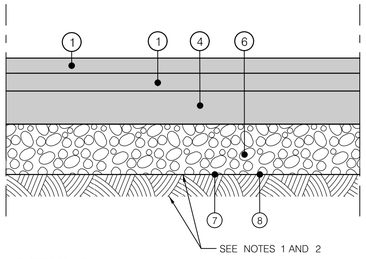
6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHT-X001_Grosvenor.dgn

LEGEND

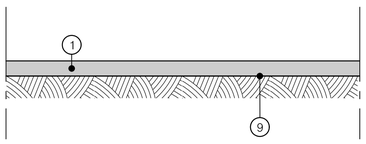
1. 2" SUPERPAVE ASPHALT MIX, 9.5 mm FOR SURFACE, HDFV PG 64S–22 LEVEL 2
2. 2" SUPERPAVE ASPHALT MIX, 9.5 mm FOR SURFACE, PG 64S–22, LEVEL 1
3. 3" SUPERPAVE ASPHALT MIX, 19 mm FOR BASE, PG 64S–22, LEVEL 1
4. 5" SUPERPAVE ASPHALT MIX, 19 mm FOR BASE, PG 64S–22, LEVEL 2
5. GRADED AGGREGATE BASE COURSE, 4 INCH
6. GRADED AGGREGATE BASE COURSE, 12 INCH (2–6 INCH LIFTS)
7. GEOTEXTILE WOVEN CLASS ST
8. LIMIT OF CLASS I EXCAVATION (ITEM NO. 201030)
9. MILL EXISTING SURFACE 0 TO 2" DEPTH
10. 5" PLAIN PORTLAND CEMENT CONCRETE, MIX #9
11. 5" POROUS CONCRETE SIDEWALK
12. 2" BEDDING–COURSE (NO. 7 STONE)
13. 13" OPEN GRADED BASE (NO. 57 STONE)
14. 4" SAND LAYER (ASTM C–33)



DETAIL A
SHARED–USE PATH PAVEMENT



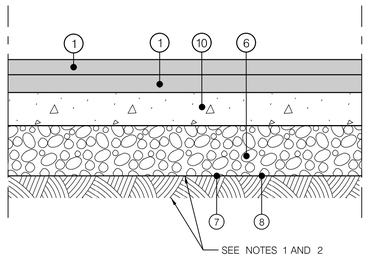
DETAIL B–1
FULL DEPTH ROADWAY PAVEMENT – GREATER THAN 4' WIDTH



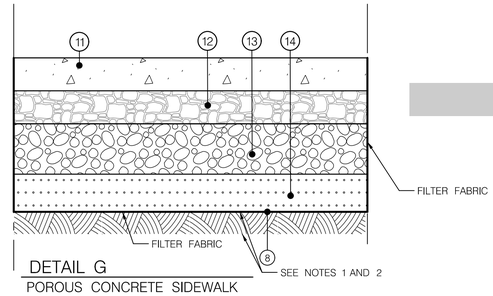
DETAIL C
MILL AND OVERLAY PAVEMENT

NOTES:

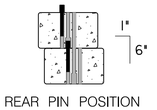
1. SUBGRADE PREPARATION SHALL BE AS PER SPECIFICATIONS; PRIOR TO PLACEMENT OF PROPOSED BASE COURSE, SUBGRADE SHALL BE PROOF–ROLLED.
2. UNDERCUT FOR REMOVAL OF SOFT AND /OR UNSUITABLE MATERIALS SHALL BE AS DIRECTED BY THE ENGINEER.



DETAIL B–2
FULL DEPTH ROADWAY PAVEMENT – LESS THAN 4' WIDTH

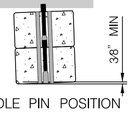


DETAIL G
POROUS CONCRETE SIDEWALK



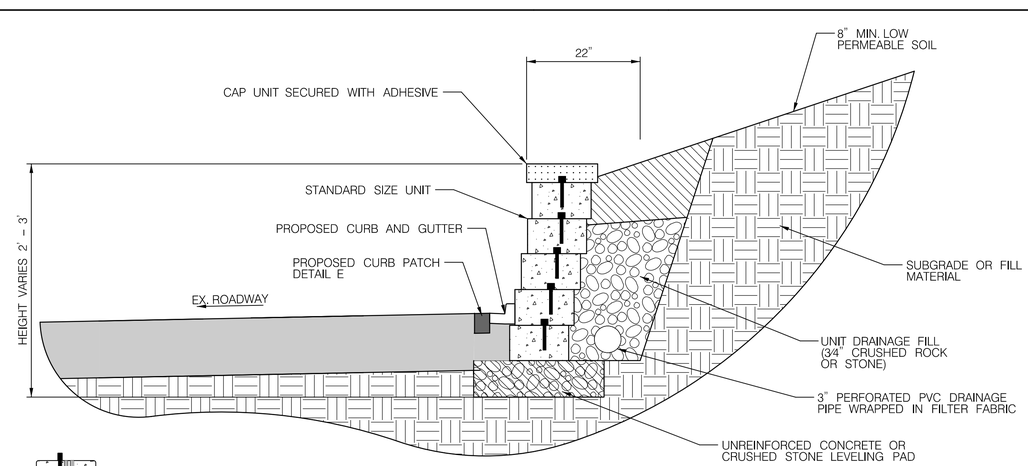
REAR PIN POSITION

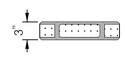
1" SETBACK



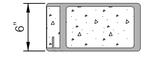
MIDDLE PIN POSITION
FLUSH FACE

PIN ALIGNMENT
AND INTERCONNECTION

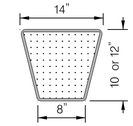




CAP ELEVATION

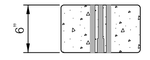


TYPICAL UNIT ELEVATION

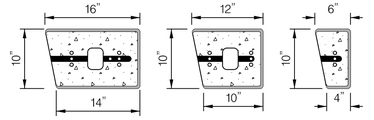


CAP PLAN

CAP UNIT



TYPICAL UNIT X–SECTION



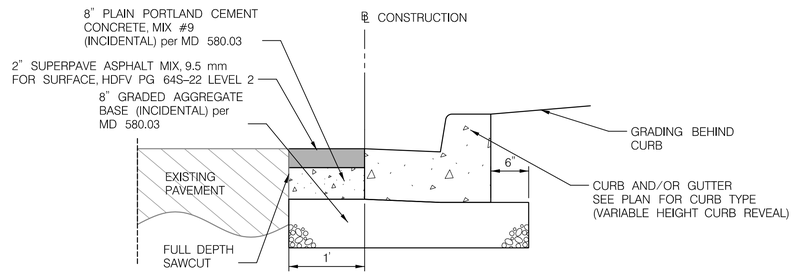
UNIT 14/16 UNIT 10/12 UNIT 4/6

STANDARD UNIT SIZES

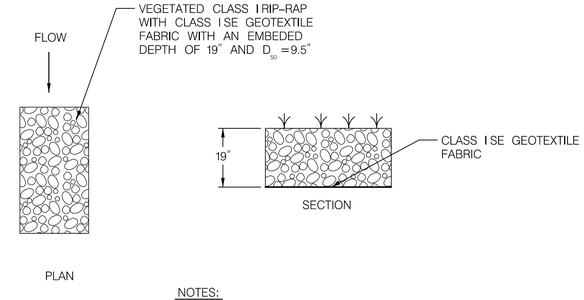
NOTES:

1. CONTRACTOR IS REQUIRED TO FOLLOW THE MANUFACTURES DETAILS FOR THE RETAINING WALL AND MUST BE FROM MDOT SHA'S APPROVED PROPIETARY LIST: ALLAN BLOCK CORPORATION OR ANCHOR WALL SYSTEM.

DETAIL D
BLOCK RETAINING WALL



DETAIL E
CURB PATCH



NOTES:

1. GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF RIP–RAP (TYPICAL).
2. BACKFILL RIP–RAP VOIDS ON WITH TOPSOIL AND/OR MULCH AND SEED TO WITHIN 2" OF ROCK SURFACE TO ENCOURAGE VEGETATIVE GROWTH.

DETAIL F
VEGETATED RIP–RAP

DT-01

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www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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Chief, Design Section — Date

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
DETAIL SHEET

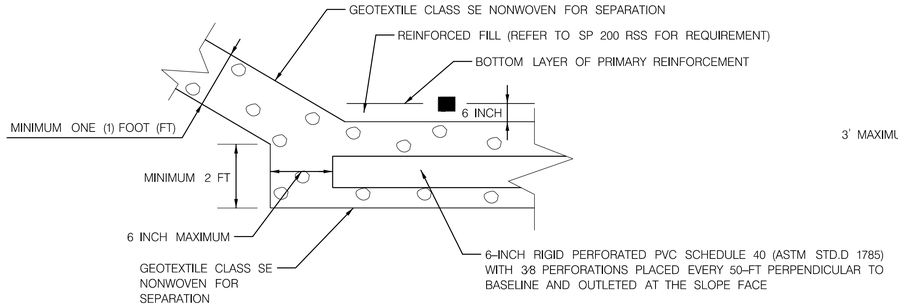
SCALE: NTS

SHEET 008 of 128

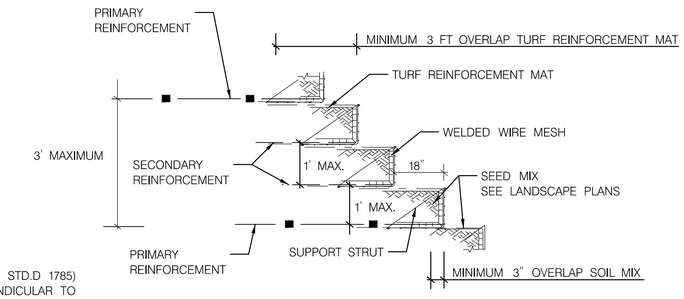
6/5/2023
\\US0525-PFPSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHD-D001_Grosvenor.dgn

REINFORCED SOIL SLOPE (RSS) GENERAL NOTES

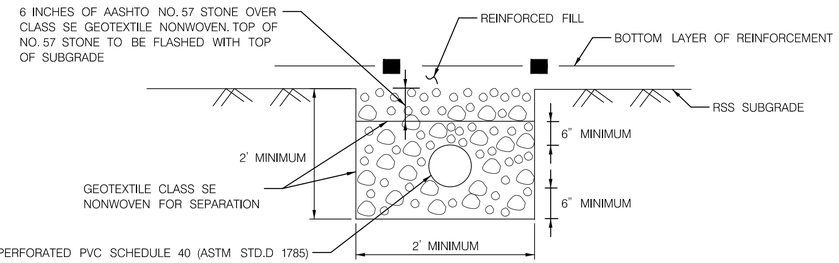
1. THE CONTRACTOR SHALL REFER TO SP 200 REINFORCED SOIL SLOPE AND SP 900 GEOSYNTHETIC REINFORCEMENT FOR REINFORCED SOIL SLOPES FOR CONSTRUCTION PROVISIONS. THE FOLLOWING NOTES SHALL ALSO BE APPLICABLE. ReFER TO THE GEOTECH REPORT FOR SP 200 AND 900.
2. PRIOR TO THE CONSTRUCTION OF THE REINFORCED SOIL SLOPE, THE CONTRACTOR SHALL CLEAR UTILITIES, GRUB THE REINFORCED BACKFILL ZONE, AND REMOVE TOP SOILS, BRUSH, SOD OR OTHER ORGANIC AND DELETERIOUS MATERIAL. ANY UNSUITABLE SOILS SHALL BE EXCAVATED, REPLACED WITH SELECT BORROW AND COMPACTED, OR AS DIRECTED BY THE ENGINEER.
3. REINFORCED FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING EIGHT INCHES IN COMPACTED THICKNESS. FILL MATERIAL SHALL BE PLACED FROM THE FRONT OF THE SLOPE TOWARDS THE ENDS OF THE REINFORCEMENT TO ENSURE FURTHER TENSIONING.
4. REINFORCED FILL SHALL BE COMPACTED AS PER SECTION 204.03.04 OF MDSHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
5. REINFORCEMENT SHALL BE INSTALLED ON SURFACES FREE OF PROTRUSIONS INCLUDING ROCKS, STICKS, ROOTS, SHARP OBJECTS OR DEBRIS OF ANY KIND. THE SURFACE SHALL PROVIDE FOR A FIRM, UNYIELDING FOUNDATION.
6. REINFORCEMENT SHALL BE INSTALLED FROM THE TOE ELEVATION OF THE RSS AS PER THE CONSTRUCTION PLAN UP TO THE TOP OF THE PAVEMENT SUBGRADES.
7. PLACE THE REINFORCED FILL OF 6 INCHES IN COMPACTED THICKNESS BEFORE THE INSTALLATION OF THE FIRST REINFORCEMENT.
8. THE MAXIMUM VERTICAL SPACING OF THE PRIMARY REINFORCEMENT SHALL BE 3 FEET. THE MAXIMUM VERTICAL SPACING OF THE SECONDARY REINFORCEMENT SHALL BE 1 FOOT.
9. THE REINFORCEMENT (BOTH PRIMARY AND SECONDARY) SHALL BE EXTENDED UNTIL THE 1.5H:1V SLOPE TIES INTO 2H:1V SLOPE. THE TRANSITION BETWEEN THE SLOPES SHALL BE SMOOTH.
10. THE NUMBER OF REINFORCEMENT SHOWN ON THE TYPICAL DETAILS IS FOR ILLUSTRATION PURPOSE ONLY. THE ACTUAL NUMBER OF THE REINFORCEMENT SHALL BE DETERMINED BASED ON THE SLOPE HEIGHT AND THE VERTICAL SPACING OF THE REINFORCEMENT.
11. CONTRACTOR IS RESPONSIBLE FOR UTILITY CLEARANCE.
12. CONTRACTOR SHALL NOTE EXISTING AND/OR PROPOSED OBSTRUCTION TO REINFORCEMENT SUCH AS UTILITIES AND SIGN STRUCTURE FOUNDATIONS, ETC. REINFORCEMENT SHALL BE CUT AROUND THE OBSTRUCTION.
13. THE CONTRACTOR SHALL MAINTAIN A STABLE EXCAVATION PER OSHA GUIDELINES DURING CONSTRUCTION.
14. REFER TO TYPICAL SECTIONS ON TS-01 FOR LOACTIONS OF REINFORCED SOIL SLOPE LOCATIONS.



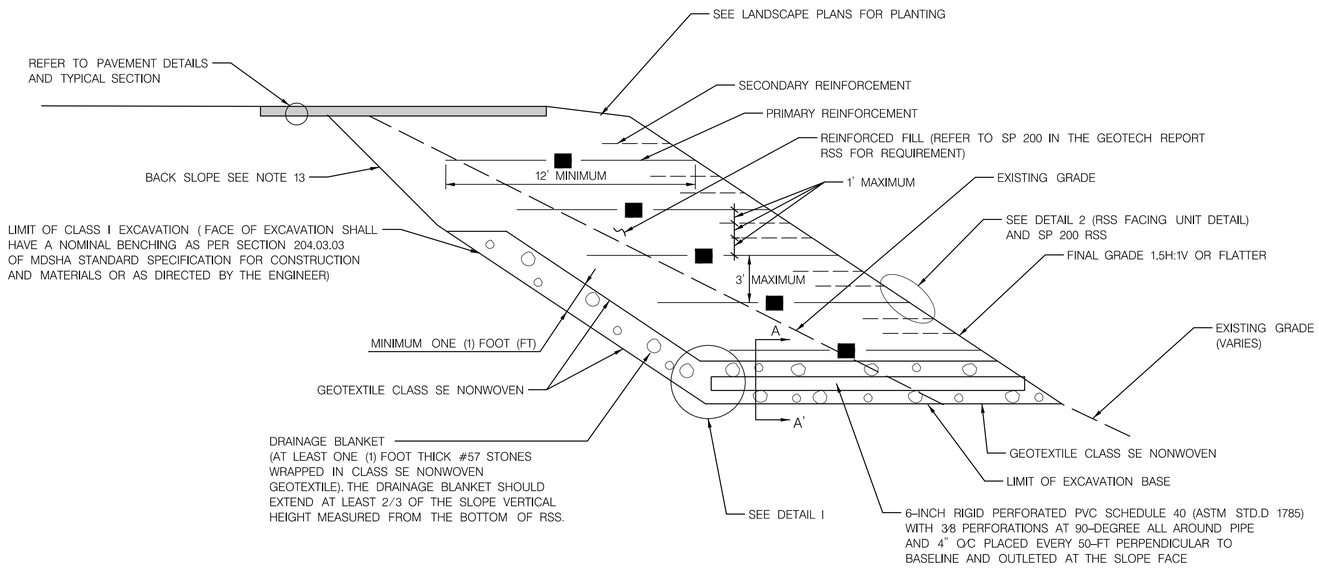
DETAIL I
(NOT TO SCALE)



DETAIL 2 (RSS FACING UNIT DETAIL)
(NOT TO SCALE)



SECTION A – A'
(NOT TO SCALE)



TYPICAL SECTION – REINFORCED SOIL SLOPE
(NOT TO SCALE)

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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Chief, Design Section — Date

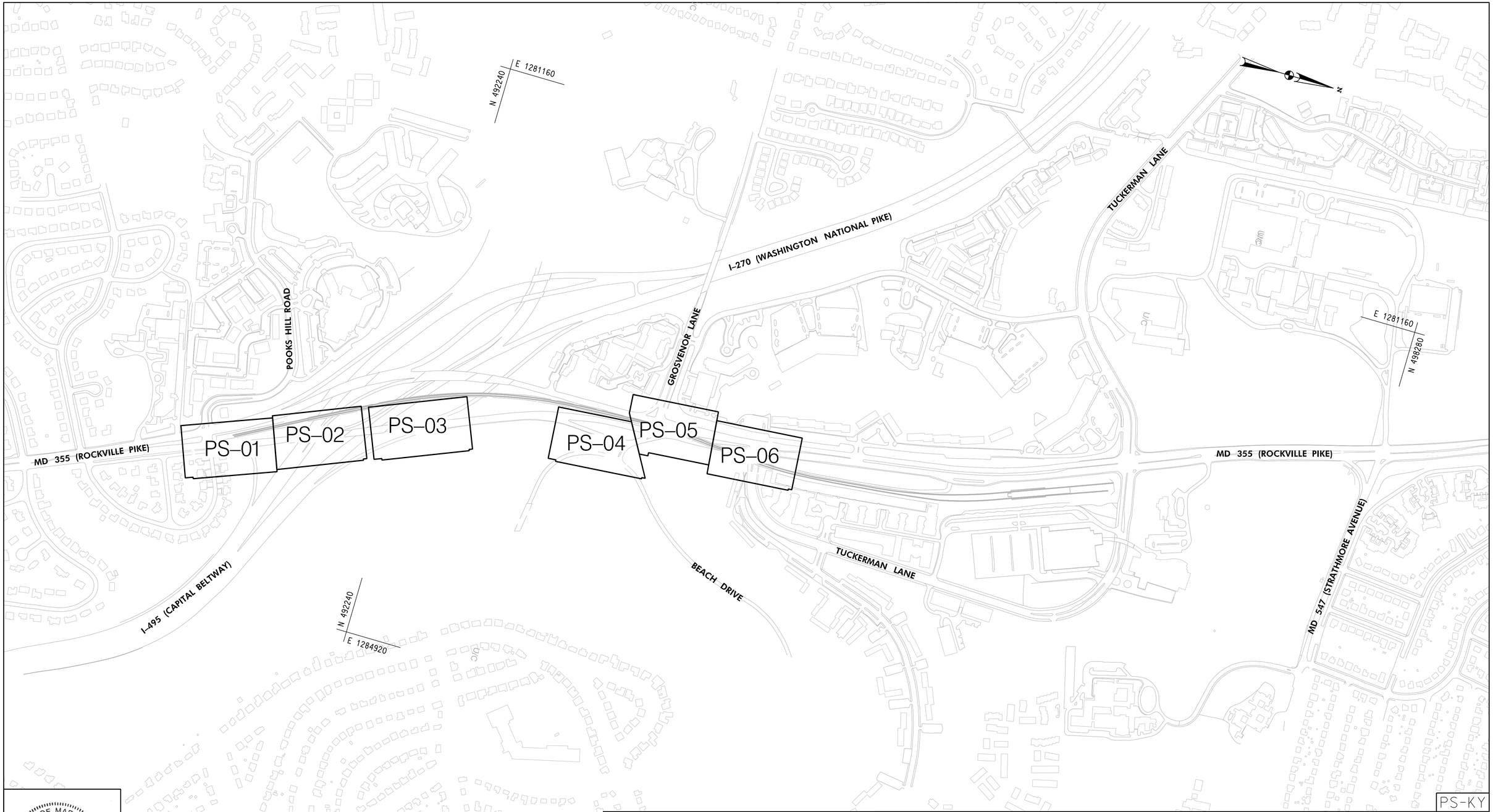
APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
REINFORCED SOIL SLOPE DETAIL SHEET

SCALE: AS SHOWN SHEET 009 of 128



PS-KY

300' 0 300' 600'
SCALE: 1" = 300'

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
ROADWAY KEY PLAN

SCALE: 1"=300'

SHEET 010 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHD-KEY_Grosvenor.dgn

DETECTABLE WARNING SURFACE FOR CURB RAMPS (ITEM NO. 655120)		
QTY	STATION, OFFSET	REMARKS
10 SF	STA. 10+52.70, OFF. 11.01' (RT) TO STA. 10+57.70, OFF. 10.99' (RT)	MD 655.40, YELLOW
10 SF	STA. 13+44.28, OFF. 1.67' (RT) TO STA. 13+60.37, OFF. 1.67' (RT)	MD 655.40, YELLOW
11 SF	STA. 200+20.78, OFF. 5.00' (RT) TO STA. 200+22.97, OFF. 10.00' (RT)	MD 655.40, YELLOW

MONTGOMERY COUNTY CURB AND GUTTER (ITEM NO. 600000-A)		
QTY	STATION, OFFSET	REMARKS
27 LF	STA. 10+47.04, OFF. 11.70' (RT) TO STA. 10+73.70, OFF. 11.59' (RT)	STD. MC 101.01
39 LF	STA. 11+40.16, OFF. 9.33' (RT) TO STA. 11+76.27, OFF. 20.65' (RT)	STD. MC 101.01, R=57.9'

STANDARD TYPE A CURB 8 INCH X 16 INCH MINIMUM (ITEM NO. 634101)		
QTY	STATION, OFFSET	REMARKS
8 LF	STA. 10+52.70, OFF. 11.01' (RT) TO STA. 10+52.67, OFF. 2.66' (RT)	STD. MD 620.02

TRAFFIC BAFFIER W-BEAM ONE-SIDED PARELLEL END TREATMENT (TYPE C) (ITEM NO. 606016)		
QTY	STATION, OFFSET	REMARKS
1 EA	STA. 11+55.72, OFF. 7.17' (RT) TO STA. 12+05.72, OFF. 7.17' (RT)	STD. MD 605.03
1 EA	STA. 200+56.92, OFF. 7.17' (RT) TO STA. 201+06.92, OFF. 7.17' (RT)	STD. MD 605.03

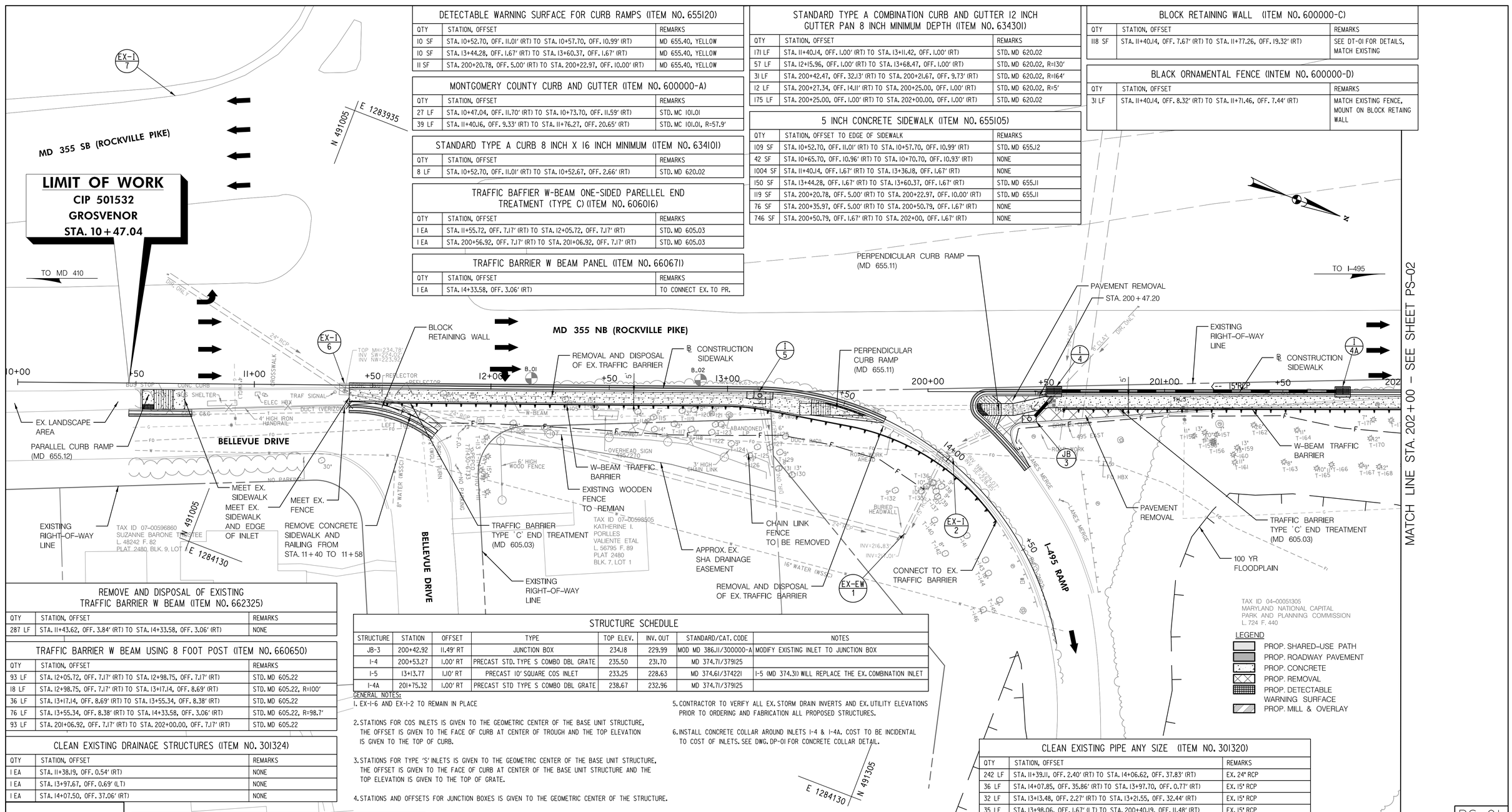
TRAFFIC BARRIER W BEAM PANEL (ITEM NO. 660671)		
QTY	STATION, OFFSET	REMARKS
1 EA	STA. 14+33.58, OFF. 3.06' (RT)	TO CONNECT EX. TO PR.

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 634301)		
QTY	STATION, OFFSET	REMARKS
171 LF	STA. 11+40.14, OFF. 1.00' (RT) TO STA. 13+11.42, OFF. 1.00' (RT)	STD. MD 620.02
57 LF	STA. 12+15.96, OFF. 1.00' (RT) TO STA. 13+68.47, OFF. 1.00' (RT)	STD. MD 620.02, R=130'
31 LF	STA. 200+42.47, OFF. 32.13' (RT) TO STA. 200+21.67, OFF. 9.73' (RT)	STD. MD 620.02, R=164'
12 LF	STA. 200+27.34, OFF. 14.11' (RT) TO STA. 200+25.00, OFF. 1.00' (RT)	STD. MD 620.02, R=5'
175 LF	STA. 200+25.00, OFF. 1.00' (RT) TO STA. 202+00.00, OFF. 1.00' (RT)	STD. MD 620.02

5 INCH CONCRETE SIDEWALK (ITEM NO. 655105)		
QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
109 SF	STA. 10+52.70, OFF. 11.01' (RT) TO STA. 10+57.70, OFF. 10.99' (RT)	STD. MD 655.12
42 SF	STA. 10+65.70, OFF. 10.96' (RT) TO STA. 10+70.70, OFF. 10.93' (RT)	NONE
1004 SF	STA. 11+40.14, OFF. 1.67' (RT) TO STA. 13+36.18, OFF. 1.67' (RT)	NONE
150 SF	STA. 13+44.28, OFF. 1.67' (RT) TO STA. 13+60.37, OFF. 1.67' (RT)	STD. MD 655.11
119 SF	STA. 200+20.78, OFF. 5.00' (RT) TO STA. 200+22.97, OFF. 10.00' (RT)	STD. MD 655.11
76 SF	STA. 200+35.97, OFF. 5.00' (RT) TO STA. 200+50.79, OFF. 1.67' (RT)	NONE
746 SF	STA. 200+50.79, OFF. 1.67' (RT) TO STA. 202+00, OFF. 1.67' (RT)	NONE

BLOCK RETAINING WALL (ITEM NO. 600000-C)		
QTY	STATION, OFFSET	REMARKS
118 SF	STA. 11+40.14, OFF. 7.67' (RT) TO STA. 11+77.26, OFF. 19.32' (RT)	SEE DT-01 FOR DETAILS, MATCH EXISTING

BLACK ORNAMENTAL FENCE (INTEM NO. 600000-D)		
QTY	STATION, OFFSET	REMARKS
31 LF	STA. 11+40.14, OFF. 8.32' (RT) TO STA. 11+71.46, OFF. 7.44' (RT)	MATCH EXISTING FENCE, MOUNT ON BLOCK RETAING WALL



REMOVE AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM (ITEM NO. 662325)		
QTY	STATION, OFFSET	REMARKS
287 LF	STA. 11+43.62, OFF. 3.84' (RT) TO STA. 14+33.58, OFF. 3.06' (RT)	NONE

TRAFFIC BARRIER W BEAM USING 8 FOOT POST (ITEM NO. 660650)		
QTY	STATION, OFFSET	REMARKS
93 LF	STA. 12+05.72, OFF. 7.17' (RT) TO STA. 12+98.75, OFF. 7.17' (RT)	STD. MD 605.22
18 LF	STA. 12+98.75, OFF. 7.17' (RT) TO STA. 13+17.14, OFF. 8.69' (RT)	STD. MD 605.22, R=100'
36 LF	STA. 13+17.14, OFF. 8.69' (RT) TO STA. 13+55.34, OFF. 8.38' (RT)	STD. MD 605.22
76 LF	STA. 13+55.34, OFF. 8.38' (RT) TO STA. 14+33.58, OFF. 3.06' (RT)	STD. MD 605.22, R=98.7'
93 LF	STA. 201+06.92, OFF. 7.17' (RT) TO STA. 202+00.00, OFF. 7.17' (RT)	STD. MD 605.22

CLEAN EXISTING DRAINAGE STRUCTURES (ITEM NO. 301324)		
QTY	STATION, OFFSET	REMARKS
1 EA	STA. 11+38.19, OFF. 0.54' (RT)	NONE
1 EA	STA. 13+97.67, OFF. 0.69' (LT)	NONE
1 EA	STA. 14+07.50, OFF. 37.06' (RT)	NONE

STRUCTURE SCHEDULE							
STRUCTURE	STATION	OFFSET	TYPE	TOP ELEV.	INV. OUT	STANDARD/CAT. CODE	NOTES
JB-3	200+42.92	11.49' RT	JUNCTION BOX	234.18	229.99	MOD MD 386.11/300000-A	MODIFY EXISTING INLET TO JUNCTION BOX
I-4	200+53.27	1.00' RT	PRECAST STD. TYPE S COMBO DBL GRATE	235.50	231.70	MD 374.71/379125	
I-5	13+13.77	1.10' RT	PRECAST 10' SQUARE COS INLET	233.25	228.63	MD 374.61/374221	I-5 (MD 374.31) WILL REPLACE THE EX. COMBINATION INLET
I-4A	201+75.32	1.00' RT	PRECAST STD TYPE S COMBO DBL GRATE	238.67	232.96	MD 374.71/379125	

GENERAL NOTES:

1. EX-I-6 AND EX-I-2 TO REMAIN IN PLACE
2. STATIONS FOR COS INLETS IS GIVEN TO THE GEOMETRIC CENTER OF THE BASE UNIT STRUCTURE, THE OFFSET IS GIVEN TO THE FACE OF CURB AT CENTER OF TROUGH AND THE TOP ELEVATION IS GIVEN TO THE TOP OF CURB.
3. STATIONS FOR TYPE 'S' INLETS IS GIVEN TO THE GEOMETRIC CENTER OF THE BASE UNIT STRUCTURE, THE OFFSET IS GIVEN TO THE FACE OF CURB AT CENTER OF THE BASE UNIT STRUCTURE AND THE TOP ELEVATION IS GIVEN TO THE TOP OF GRATE.
4. STATIONS AND OFFSETS FOR JUNCTION BOXES IS GIVEN TO THE GEOMETRIC CENTER OF THE STRUCTURE.
5. CONTRACTOR TO VERIFY ALL EX. STORM DRAIN INVERTS AND EX. UTILITY ELEVATIONS PRIOR TO ORDERING AND FABRICATION ALL PROPOSED STRUCTURES.
6. INSTALL CONCRETE COLLAR AROUND INLETS I-4 & I-4A. COST TO BE INCIDENTAL TO COST OF INLETS. SEE DWG. DP-01 FOR CONCRETE COLLAR DETAIL.

CLEAN EXISTING PIPE ANY SIZE (ITEM NO. 301320)		
QTY	STATION, OFFSET	REMARKS
242 LF	STA. 11+39.11, OFF. 2.40' (RT) TO STA. 14+06.62, OFF. 37.83' (RT)	EX. 24" RCP
36 LF	STA. 14+07.85, OFF. 35.86' (RT) TO STA. 13+97.70, OFF. 0.77' (RT)	EX. 15" RCP
32 LF	STA. 13+13.48, OFF. 2.27' (RT) TO STA. 13+21.55, OFF. 32.44' (RT)	EX. 15" RCP
35 LF	STA. 13+98.06, OFF. 1.67' (LT) TO STA. 200+40.19, OFF. 11.48' (RT)	EX. 15" RCP

PIPE SCHEDULE						
STRUCTURE	TO STRUCTURE	SIZE	TYPE/CAT. CODE	LENGTH	INV. IN	INV. OUT
I-4	JB-3	15"	RCP CL. IV/302415	11'	231.70	231.59
I-4A	I-4	15"	RCP CL. IV/302415	116'	232.96	231.80

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
ROADWAY AND DRAINAGE PLAN

SCALE: 1"=20' SHEET 011 of 128

PS-01

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\phD-P001_Grosvenor.dgn

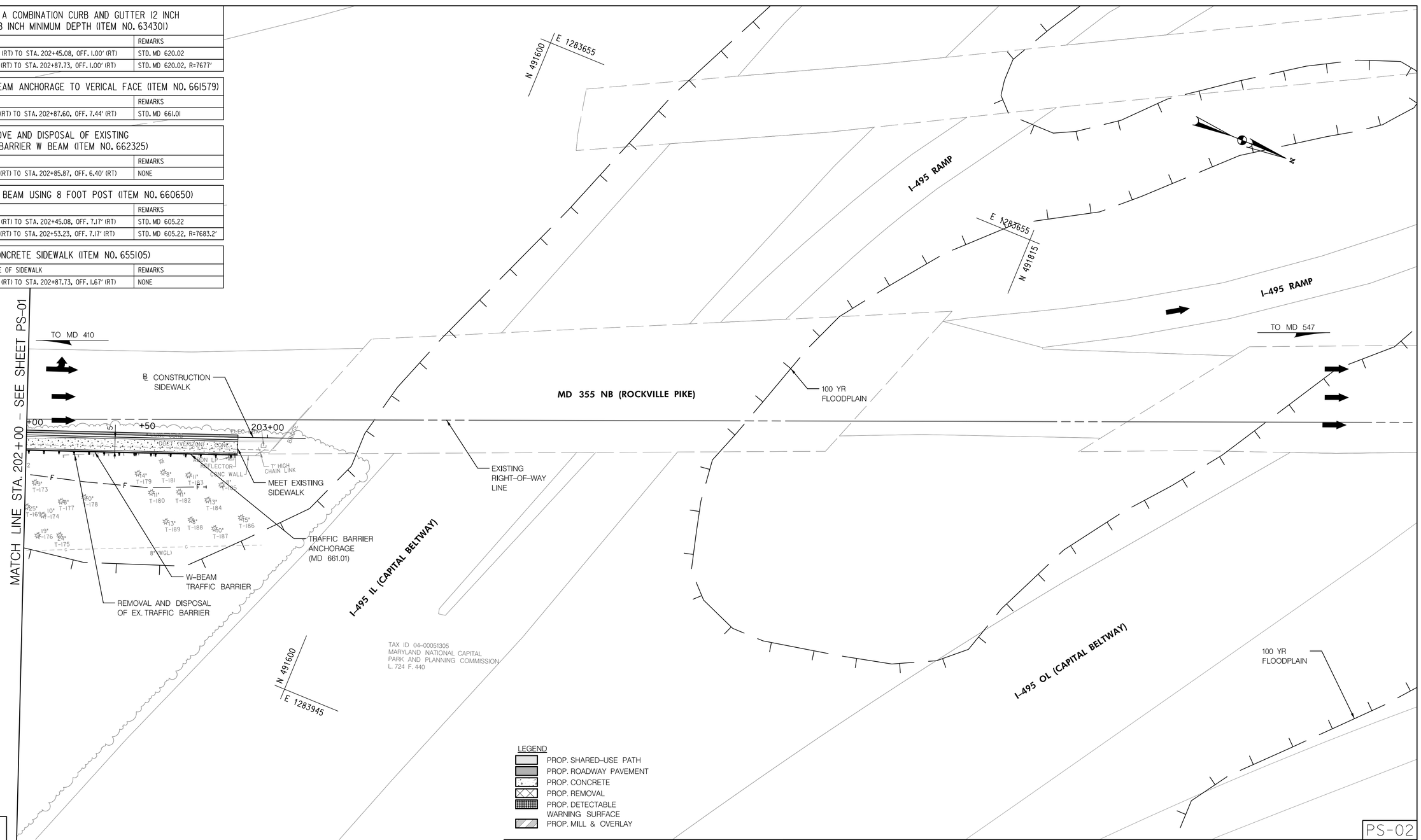
STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 634301)		
QTY	STATION, OFFSET	REMARKS
45 LF	STA. 202+00.00, OFF. 1.00' (RT) TO STA. 202+45.08, OFF. 1.00' (RT)	STD. MD 620.02
43 LF	STA. 202+45.08, OFF. 1.00' (RT) TO STA. 202+87.73, OFF. 1.00' (RT)	STD. MD 620.02, R=767.7'

TRAFFIC BARRIER THRIE BEAM ANCHORAGE TO VERICAL FACE (ITEM NO. 661579)		
QTY	STATION, OFFSET	REMARKS
1 EA	STA. 202+53.23, OFF. 7.17' (RT) TO STA. 202+87.60, OFF. 7.44' (RT)	STD. MD 661.01

REMOVE AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM (ITEM NO. 662325)		
QTY	STATION, OFFSET	REMARKS
71 LF	STA. 202+15.27, OFF. 9.04' (RT) TO STA. 202+85.87, OFF. 6.40' (RT)	NONE

TRAFFIC BARRIER W BEAM USING 8 FOOT POST (ITEM NO. 660650)		
QTY	STATION, OFFSET	REMARKS
45 LF	STA. 202+00.00, OFF. 7.17' (RT) TO STA. 202+45.08, OFF. 7.17' (RT)	STD. MD 605.22
8 LF	STA. 202+45.08, OFF. 7.17' (RT) TO STA. 202+53.23, OFF. 7.17' (RT)	STD. MD 605.22, R=7683.2'

5 INCH CONCRETE SIDEWALK (ITEM NO. 655105)		
QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
438 SF	STA. 202+00.00, OFF. 1.67' (RT) TO STA. 202+87.73, OFF. 1.67' (RT)	NONE



LEGEND

- PROP. SHARED-USE PATH
- PROP. ROADWAY PAVEMENT
- PROP. CONCRETE
- PROP. REMOVAL
- PROP. DETECTABLE WARNING SURFACE
- PROP. MILL & OVERLAY

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

PS-02

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS ROADWAY AND DRAINAGE PLAN

SCALE: 1"=20'

SHEET 012 of 128

STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 634301)

QTY	STATION, OFFSET	REMARKS
21 LF	STA. 400+34.26, OFF. 0.00' TO STA. 400+55.25, OFF. 0.00'	STD. MD 620.02, R=1875'
26 EA	STA. 400+34.11, OFF. 20.00' (RT) TO STA. 400+60.47, OFF. 20.00' (RT)	STD. MD 620.02, R=1855'

5 INCH CONCRETE SIDEWALK (ITEM NO. 655105)

QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
129 SF	STA. 400+42.26, OFF. 0.67' (LT) TO STA. 400+47.26, OFF 0.67' (LT)	STD. MD 655.11
105 SF	STA. 400+42.22, OFF. 20.67' (RT) TO STA. 400+47.29, OFF. 20.67' (RT)	STD. MD 655.12
26 SF	STA. 400+37.50, OFF. 15.26' (LT) TO STA. 400+47.24, OFF. 13.67' (LT)	NONE
25 SF	STA. 400+55.40, OFF. 20.67' (RT) TO STA. 400+60.47, OFF. 20.67' (RT)	NONE

DECTABLE WARNING SURFACE FOR CURB RAMPS (ITEM NO. 655120)

QTY	STATION, OFFSET	REMARKS
10 SF	STA. 400+42.26, OFF. 0.67' (LT) TO STA. 400+47.26, OFF 0.67' (LT)	MD 655.40, YELLOW
10 SF	STA. 400+42.22, OFF. 20.67' (RT) TO STA. 400+47.29, OFF. 20.67' (RT)	MD 655.40, YELLOW

I-495 RAMP

N 492110
E 1283495

I-495 OL (CAPITAL BELTWAY)

100 YR FLOODPLAIN

TO MD 410

E (SHA) DUCT (SHA) E (SHA)

I-270 RAMP

TO MD 547

REFLECTOR

MD 355 NB (ROCKVILLE PIKE)

6" (WGL)

PERPENDICULAR CURB RAMP (MD 655.11)

REMOVE EX. SIDEWALK

DUCT (VERIZON)

CONC. SIDEWALK

YIELD

401+00

WARNING MERGING LANE

400+00

EXISTING RIGHT-OF-WAY LINE

CONSTRUCTION RAMP

I-495 RAMP

YIELD

E (SHA) DUCT (SHA)

30°

REMOVE EX. SIDEWALK

PARALLEL CURB RAMP (MD 655.12)

N 492110
E 1283700

WETLAND BOUNDARY

TAX ID 04-00051305
MARYLAND NATIONAL CAPITAL
PARK AND PLANNING COMMISSION
L. 724 F. 440

100 YR FLOODPLAIN

E 1283700
N 492325

LEGEND

- PROP. SHARED-USE PATH
- PROP. ROADWAY PAVEMENT
- PROP. CONCRETE
- PROP. REMOVAL
- PROP. DETECTABLE WARNING SURFACE
- PROP. MILL & OVERLAY

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

PS-03

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS ROADWAY AND DRAINAGE PLAN

SCALE: 1"=20'

SHEET 013 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\26260II40\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHD-P003_Grosvenor.dgn

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	TOP ELEV.	INV. OUT	STANDARD/CAT. CODE
I-8	52+87.42	0.06' LT	STD. YARD INLET	230.50	225.35	MD 381.01/380120
I-9	50+40.98	12.55' LT	10' COG OPENING INLET 7' LONG TOP SLAB	MATCH EX. CURB	N/A	MD 374.68/374110

PIPE SCHEDULE - THIS SHEET ONLY

STRUCTURE	TO STRUCTURE	SIZE	TYPE/CAT. CODE	LENGTH	INV. IN	INV. OUT
I-8	EX-I-11	15"	RCP CL. IV/302412	53'	225.35	224.90

GENERAL NOTES:

1. STATIONS FOR COG OPENING INLETS IS GIVEN TO THE GEOMETRIC CENTER OF THE STRUCTURE, THE OFFSET IS GIVEN TO THE FACE OF CURB AT CENTER OF THE STRUCTURE AND THE TOP ELEVATION IS GIVEN TO THE TOP OF CURB.
2. STATIONS AND OFFSETS FOR YARD INLETS IS GIVEN TO THE GEOMETRIC CENTER STRUCTURE, TOP ELEVATION IS GIVEN TO THE TOP OF GRATE.
3. CONTRACTOR TO VERIFY ALL EX. STORM DRAIN INVERTS PRIOR TO ORDERING AND FABRICATION ALL PROPOSED STRUCTURES.

CLASS I RIPRAP FOR SLOPE AND CHANNEL PROTECTION (ITEM NO. 390321)

QTY	STATION, OFFSET	REMARKS
12 SY	STA. 20+21.99, OFF. 5.32' (RT) TO STA. 20+16.60, OFF. 21.98' (RT)	SEE DT-01, DETAIL F, VEGETATED
12 SY	STA. 50+40.98, OFF. 5.65' (LT) TO STA. 50+50.00, OFF. 0.00'	SEE DT-01, DETAIL F, VEGETATED

CLEAN EXISTING DRAINAGE STRUCTURES (ITEM NO. 301324)

QTY	STATION, OFFSET	REMARKS
1 EA	STA. 301+44.54, OFF. 44.25' (RT)	NONE
1 EA	STA. 301+70.70, OFF. 0.93' (LT)	NONE

CLEAN EXISTING PIPE ANY SIZE (ITEM NO. 301320)

QTY	STATION, OFFSET	REMARKS
221 LF	STA. 21+35.55, OFF. 61.98' (LT) TO STA. 21+16.76, OFF. 160.56' (RT)	EX. 18" CMP

DECTABLE WARNING SURFACE FOR CURB RAMPS (ITEM NO. 655120)

QTY	STATION, OFFSET	REMARKS
22 SF	STA. 20+29.83, OFF. 1.67' (RT) TO STA. 20+41.37, OFF. 1.67' (RT)	MD 655.40, YELLOW
27 SF	STA. 21+27.42, OFF. 1.67' (RT) TO STA. 21+41.01, OFF. 1.67' (RT)	MD 655.40, YELLOW
24 SF	STA. 21+16.81, OFF. 14.67' (LT) TO STA. 21+27.40, OFF. 14.72' (LT)	MD 655.40, YELLOW
10 SF	STA. 300+26.03, OFF. 1.67' (LT) TO STA. 300+31.03, OFF. 1.67' (LT)	MD 655.40, YELLOW
25 SF	STA. 301+26.35, OFF. 1.67' (LT) TO STA. 301+39.37, OFF. 1.67' (LT)	MD 655.40, YELLOW
22 SF	STA. 301+19.92, OFF. 16.33' (RT) TO STA. 301+27.75, OFF. 16.34' (RT)	MD 655.40, YELLOW
20 SF	STA. 20+55.64, OFF. 1.67' (RT) TO STA. 20+65.64, OFF. 1.67' (RT)	MD 655.40, YELLOW
20 SF	STA. 300+66.39, OFF. 1.67' (LT) TO STA. 300+76.41, OFF. 1.67' (LT)	MD 655.40, YELLOW

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 634301)

QTY	STATION, OFFSET	REMARKS
14 LF	STA. 20+03.88, OFF. 1.00' (RT) TO STA. 20+17.69, OFF. 1.00' (RT)	STD. MD 620.02
8 LF	STA. 20+27.11, OFF. 1.00' (RT) TO STA. 20+35.19, OFF. 1.00' (RT)	STD. MD 620.02
19 LF	STA. 20+35.19, OFF. 1.00' (RT) TO STA. 20+55.64, OFF. 1.00' (RT)	STD. MD 620.02, R=15'
28 LF	STA. 20+55.64, OFF. 1.00' (RT) TO STA. 20+83.60, OFF. 1.00' (RT)	STD. MD 620.02
87 LF	STA. 20+83.60, OFF. 1.00' (RT) TO STA. 21+73.17, OFF. 1.00' (RT)	STD. MD 620.02, R=100'
27 LF	STA. 21+73.17, OFF. 1.00' (RT) TO STA. 22+00.00, OFF. 1.00' (RT)	STD. MD 620.02
29 LF	STA. 300+15.00, OFF. 1.00' (LT) TO STA. 300+43.67, OFF. 1.00' (LT)	STD. MD 620.02
21 LF	STA. 300+43.67, OFF. 1.00' (LT) TO STA. 300+65.54, OFF. 1.00' (LT)	STD. MD 620.02, R=15'
29 LF	STA. 300+65.54, OFF. 1.00' (LT) TO STA. 300+94.83, OFF. 1.00' (LT)	STD. MD 620.02
69 LF	STA. 300+94.83, OFF. 1.00' (LT) TO STA. 301+65.87, OFF. 1.00' (LT)	STD. MD 620.02, R=40'
33 LF	STA. 20+98.40, OFF. 14.00' (LT) TO STA. 21+26.97, OFF. 14.00' (LT)	STD. MD 620.02, R=115'
7 LF	STA. 21+26.97, OFF. 14.00' (LT) TO STA. 21+28.98, OFF. 18.85' (LT)	STD. MD 620.02, R=3'
28 LF	STA. 21+28.98, OFF. 18.85' (LT) TO STA. 21+16.71, OFF. 41.58' (LT)	STD. MD 620.02
6 LF	STA. 21+16.71, OFF. 41.58' (LT) TO STA. 21+13.04, OFF. 41.57' (LT)	STD. MD 620.02, R=3'
28 LF	STA. 21+13.04, OFF. 41.57' (LT) TO STA. 20+96.89, OFF. 23.65' (LT)	STD. MD 620.02, R=56.7'
14 LF	STA. 20+96.89, OFF. 23.65' (LT) TO STA. 20+98.40, OFF. 14.00' (LT)	STD. MD 620.02, R=5'
14 LF	STA. 21+37.09, OFF. 62.35' (LT) TO STA. 21+43.25, OFF. 52.18' (LT)	STD. MD 620.02
48 LF	STA. 21+43.25, OFF. 52.18' (LT) TO STA. 21+75.03, OFF. 34.00' (LT)	STD. MD 620.02, R=100'
25 LF	STA. 21+75.03, OFF. 34.00' (LT) TO STA. 22+00.00, OFF. 34.00' (LT)	STD. MD 620.02, R=100'

5 INCH CONCRETE SIDEWALK (ITEM NO. 655105)

QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
136 SF	STA. 20+29.83, OFF. 1.67' (RT) TO STA. 20+41.37, OFF. 1.67' (RT)	STD. MD 655.11
293 SF	STA. 21+27.42, OFF. 1.67' (RT) TO STA. 21+41.01, OFF. 1.67' (RT)	STD. MD 655.13
135 SF	STA. 300+26.03, OFF. 1.67' (LT) TO STA. 300+31.03, OFF. 1.67' (LT)	STD. MD 655.11
260 SF	STA. 301+26.35, OFF. 1.67' (LT) TO STA. 301+39.37, OFF. 1.67' (LT)	STD. MD 655.11
364 SF	STA. 301+19.92, OFF. 16.33' (RT) TO STA. 21+16.81, OFF. 14.67' (LT)	STD. MD 655.22
233 SF	STA. 20+94.80, OFF. 18.25' (LT) TO STA. 21+10.87, OFF. 22.88' (LT)	CONCRETE ISLAND
41 SF	STA. 21+20.70, OFF. 25.89' (LT) TO STA. 21+21.89, OFF. 29.59' (LT)	CONCRETE ISLAND
210 SF	STA. 20+55.64, OFF. 1.67' (RT) TO STA. 20+65.64, OFF. 1.67' (RT)	STD. MD 655.13
151 SF	STA. 300+66.39, OFF. 1.67' (LT) TO STA. 300+76.41, OFF. 1.67' (LT)	STD. MD 655.11

5 INCH POROUS CONCRETE SIDEWALK (ITEM NO. 600000-E)

QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
439	STA. 300+30.82, OFF. 9.80' (LT) TO STA. 301+33.38, OFF. 12.96' (LT)	SEE DT-01, DETAIL G
103 SF	STA. 301+46.25, OFF. 6.78' (LT) TO STA. 301+65.87, OFF. 1.67' (LT)	SEE DT-01, DETAIL G

STANDARD TYPE A CURB 8 INCH X 16 INCH MINIMUM (ITEM NO. 634101)

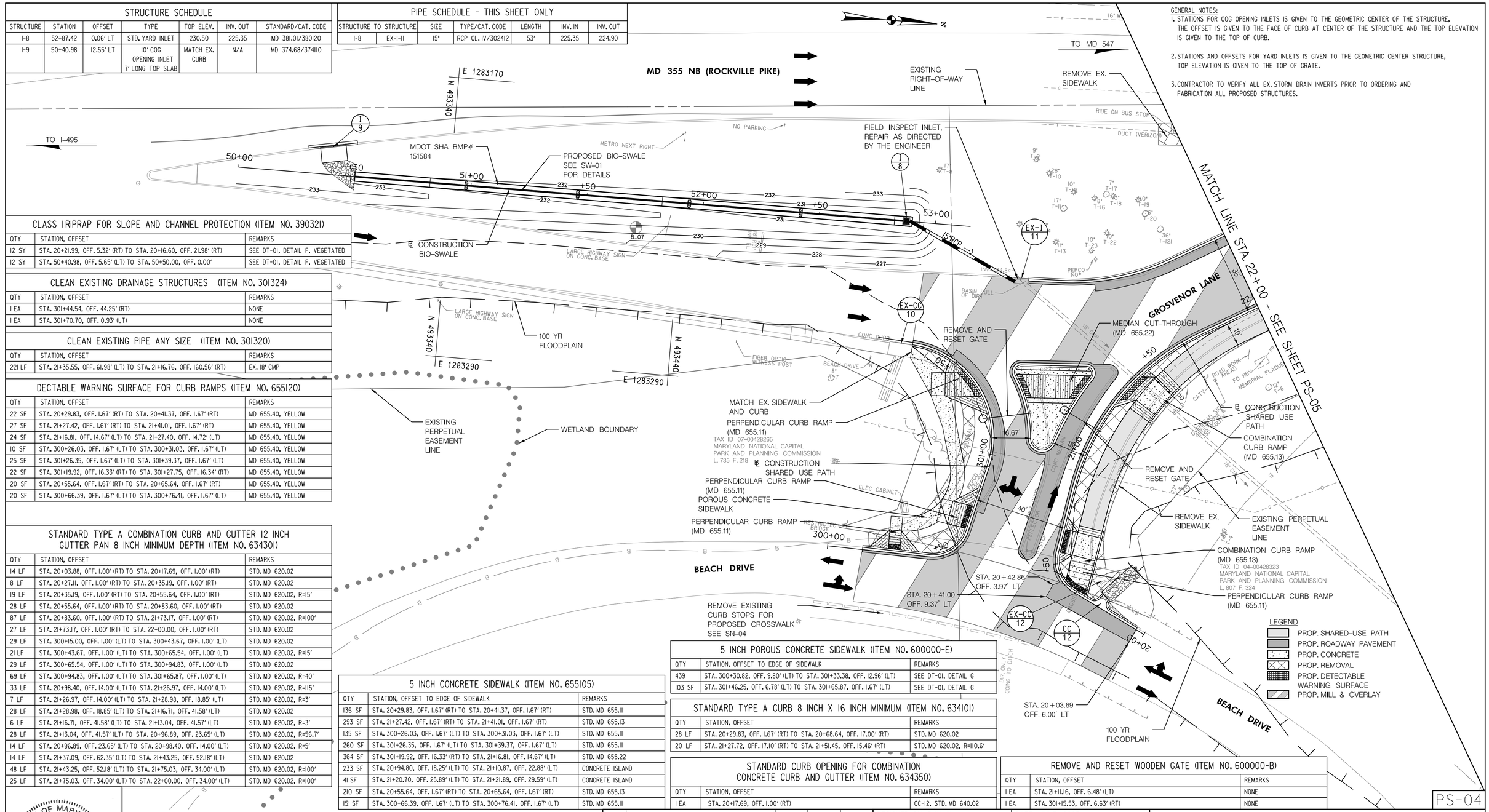
QTY	STATION, OFFSET	REMARKS
28 LF	STA. 20+29.83, OFF. 1.67' (RT) TO STA. 20+68.64, OFF. 17.00' (RT)	STD. MD 620.02
20 LF	STA. 21+27.72, OFF. 17.10' (RT) TO STA. 21+51.45, OFF. 15.46' (RT)	STD. MD 620.02, R=110.6'

STANDARD CURB OPENING FOR COMBINATION CONCRETE CURB AND GUTTER (ITEM NO. 634350)

QTY	STATION, OFFSET	REMARKS
1 EA	STA. 20+17.69, OFF. 1.00' (RT)	CC-12, STD. MD 640.02

REMOVE AND RESET WOODEN GATE (ITEM NO. 600000-B)

QTY	STATION, OFFSET	REMARKS
1 EA	STA. 21+11.16, OFF. 6.48' (LT)	NONE
1 EA	STA. 301+15.53, OFF. 6.63' (RT)	NONE



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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
ROADWAY AND DRAINAGE PLAN

SCALE: 1"=20'

SHEET 014 of 128

STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2003

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
\\US0525-PPFSS01\shared_projects\20260II40I\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHD-P004_Grosvenor.dgn

TRAFFIC BAFFIER W-BEAM ONE-SIDED PARELLEL END TREATMENT (TYPE C) (ITEM NO. 606I6)

QTY	STATION, OFFSET	REMARKS
I EA	STA. 23+76.05, OFF. I.00' (RT) TO STA. 24+26.05, OFF. I.00' (RT)	STD. MD 605.03

REMOVE AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM (ITEM NO. 662325)

QTY	STATION, OFFSET	REMARKS
I83 LF	STA. 25+I7.54, OFF. 3.2I' (RT) TO STA. 27+00.00, OFF. 2.93' (RT)	NONE

3 FOOT GALVANIZED CHAIN LINK FENCE WITH BLACK BONDED VINYL COATING (ITEM NO. 690I30)

QTY	STATION, OFFSET	REMARKS
I0 LF	STA. 23+24.89, OFF. 22.80' (RT) TO STA. 23+34.I9, OFF. I9.67' (RT)	NONE
9 LF	STA. 23+34.I9, OFF. I9.67' (RT) TO STA. 23+59.23, OFF. I9.67' (RT)	NONE, R=II.3'
6 LF	STA. 23+59.23, OFF. I9.67' (RT) TO STA. 23+65.69, OFF. I9.67' (RT)	NONE
45 LF	STA. 23+65.69, OFF. I9.67' (RT) TO STA. 24+I0.43, OFF. I7.00' (RT)	NONE
I08 LF	STA. 24+I0.43, OFF. I7.00' (RT) TO STA. 25+I8.72, OFF. I7.00' (RT)	NONE
II4 LF	STA. 25+I8.72, OFF. I7.00' (RT) TO STA. 26+3I.9I, OFF. I7.00' (RT)	NONE, R=5782'
4 LF	STA. 26+3I.9I, OFF. I7.00' (RT) TO STA. 26+34.99, OFF I4.26' (RT)	NONE
I0 LF	STA. 26+34.99, OFF I4.26' (RT) TO STA. 26+45.40, OFF I4.28' (RT)	NONE, R=5782'
4 LF	STA. 26+45.40, OFF I4.28' (RT) TO STA. 26+47.86, OFF. I7.00' (RT)	NONE
52 LF	STA. 26+47.86, OFF. I7.00' (RT) TO STA. 27+00.00 OFF. I7.00' (RT)	NONE, R=5782'

TRAFFIC BARRIER W BEAM USING 8 FOOT POST (ITEM NO. 660650)

QTY	STATION, OFFSET	REMARKS
93 LF	STA. 24+26.05, OFF. I.00' (RT) TO STA. 25+II.I8, OFF. I.00' (RT)	STD. MD 605.22, W/ PROTECTIVE BACKING
I82 LF	STA. 25+II.I8, OFF. I.00' (RT) TO STA. 27+00.00, OFF. I.00' (RT)	STD. MD 605.22, R=5766' W/ PROTECTIVE BACKING

DECTABLE WARNING SURFACE FOR CURB RAMPS (ITEM NO. 655I20)

QTY	STATION, OFFSET	REMARKS
II SF	STA. 23+57.82, OFF. I.67' (RT) TO STA. 23+62.89, OFF. I.67' (RT)	MD 655.40, YELLOW
I0 SF	STA. 23+42.77, OFF. I54.67' (LT) TO STA. 23+43.59, OFF. I55.50' (LT)	MD 655.40, YELLOW
I0 SF	STA. 23+42.22, OFF. I75.0I' (LT) TO STA. 23+42.98, OFF. I75.78' (LT)	MD 655.40, YELLOW

5 INCH CONCRETE SIDEWALK (ITEM NO. 655I05)

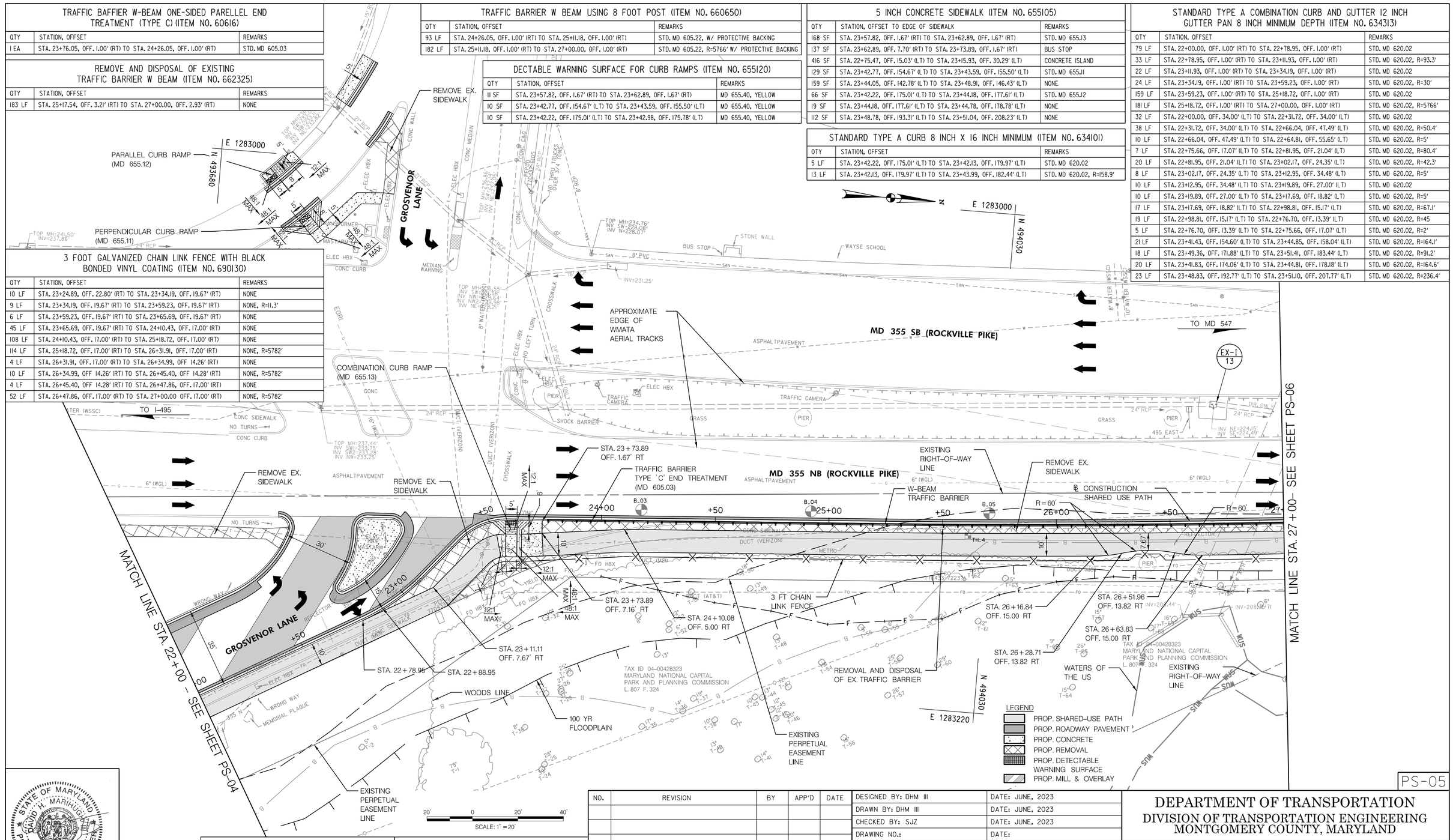
QTY	STATION, OFFSET TO EDGE OF SIDEWALK	REMARKS
I68 SF	STA. 23+57.82, OFF. I.67' (RT) TO STA. 23+62.89, OFF. I.67' (RT)	STD. MD 655.I3
I37 SF	STA. 23+62.89, OFF. 7.70' (RT) TO STA. 23+73.89, OFF. I.67' (RT)	BUS STOP
4I6 SF	STA. 22+75.47, OFF. I5.03' (LT) TO STA. 23+I5.93, OFF. 30.29' (LT)	CONCRETE ISLAND
I29 SF	STA. 23+42.77, OFF. I54.67' (LT) TO STA. 23+43.59, OFF. I55.50' (LT)	STD. MD 655.II
I59 SF	STA. 23+44.05, OFF. I42.78' (LT) TO STA. 23+48.9I, OFF. I46.43' (LT)	NONE
66 SF	STA. 23+42.22, OFF. I75.0I' (LT) TO STA. 23+44.I8, OFF. I77.6I' (LT)	STD. MD 655.I2
I9 SF	STA. 23+44.I8, OFF. I77.6I' (LT) TO STA. 23+44.78, OFF. I78.78' (LT)	NONE
II2 SF	STA. 23+48.78, OFF. I93.3I' (LT) TO STA. 23+5I.04, OFF. 208.23' (LT)	NONE

STANDARD TYPE A CURB 8 INCH X I6 INCH MINIMUM (ITEM NO. 634I0I)

QTY	STATION, OFFSET	REMARKS
5 LF	STA. 23+42.22, OFF. I75.0I' (LT) TO STA. 23+42.I3, OFF. I79.97' (LT)	STD. MD 620.02
I3 LF	STA. 23+42.I3, OFF. I79.97' (LT) TO STA. 23+43.99, OFF. I82.44' (LT)	STD. MD 620.02, R=I58.9'

STANDARD TYPE A COMBINATION CURB AND GUTTER I2 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 6343I3)

QTY	STATION, OFFSET	REMARKS
79 LF	STA. 22+00.00, OFF. I.00' (RT) TO STA. 22+78.95, OFF. I.00' (RT)	STD. MD 620.02
33 LF	STA. 22+78.95, OFF. I.00' (RT) TO STA. 23+II.93, OFF. I.00' (RT)	STD. MD 620.02, R=93.3'
22 LF	STA. 23+II.93, OFF. I.00' (RT) TO STA. 23+34.I9, OFF. I.00' (RT)	STD. MD 620.02
24 LF	STA. 23+34.I9, OFF. I.00' (RT) TO STA. 23+59.23, OFF. I.00' (RT)	STD. MD 620.02, R=30'
I59 LF	STA. 23+59.23, OFF. I.00' (RT) TO STA. 25+I8.72, OFF. I.00' (RT)	STD. MD 620.02
I8I LF	STA. 25+I8.72, OFF. I.00' (RT) TO STA. 27+00.00, OFF. I.00' (RT)	STD. MD 620.02, R=5766'
32 LF	STA. 22+00.00, OFF. 34.00' (LT) TO STA. 22+3I.72, OFF. 34.00' (LT)	STD. MD 620.02
38 LF	STA. 22+3I.72, OFF. 34.00' (LT) TO STA. 22+66.04, OFF. 47.49' (LT)	STD. MD 620.02, R=50.4'
I0 LF	STA. 22+66.04, OFF. 47.49' (LT) TO STA. 22+64.8I, OFF. 55.65' (LT)	STD. MD 620.02, R=5'
7 LF	STA. 22+75.66, OFF. I7.07' (LT) TO STA. 22+8I.95, OFF. 2I.04' (LT)	STD. MD 620.02, R=80.4'
20 LF	STA. 22+8I.95, OFF. 2I.04' (LT) TO STA. 23+02.I7, OFF. 24.35' (LT)	STD. MD 620.02, R=42.3'
8 LF	STA. 23+02.I7, OFF. 24.35' (LT) TO STA. 23+I2.95, OFF. 34.48' (LT)	STD. MD 620.02, R=5'
I0 LF	STA. 23+I2.95, OFF. 34.48' (LT) TO STA. 23+I9.89, OFF. 27.00' (LT)	STD. MD 620.02
I0 LF	STA. 23+I9.89, OFF. 27.00' (LT) TO STA. 23+I7.69, OFF. I8.82' (LT)	STD. MD 620.02, R=5'
I7 LF	STA. 23+I7.69, OFF. I8.82' (LT) TO STA. 22+98.8I, OFF. I5.I7' (LT)	STD. MD 620.02, R=67.I'
I9 LF	STA. 22+98.8I, OFF. I5.I7' (LT) TO STA. 22+76.70, OFF. I3.39' (LT)	STD. MD 620.02, R=45
5 LF	STA. 22+76.70, OFF. I3.39' (LT) TO STA. 22+75.66, OFF. I7.07' (LT)	STD. MD 620.02, R=2'
2I LF	STA. 23+4I.43, OFF. I54.60' (LT) TO STA. 23+44.85, OFF. I58.04' (LT)	STD. MD 620.02, R=I64.I'
I8 LF	STA. 23+49.36, OFF. I7I.88' (LT) TO STA. 23+5I.4I, OFF. I83.44' (LT)	STD. MD 620.02, R=9I.2'
20 LF	STA. 23+4I.83, OFF. I74.06' (LT) TO STA. 23+44.8I, OFF. I78.I8' (LT)	STD. MD 620.02, R=I64.6'
23 LF	STA. 23+48.83, OFF. I92.77' (LT) TO STA. 23+5I.I0, OFF. 207.77' (LT)	STD. MD 620.02, R=236.4'



PS-05

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: 12/31/2024

STATE OF MARYLAND · DAVID H. MARIHUGH III · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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Baltimore, MD 21286
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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
ROADWAY AND DRAINAGE PLAN

SCALE: I"=20' SHEET 0I5 of I28

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\phD-P005_Grosvenor.dgn

MONTGOMERY COUNTY CURB AND GUTTER (ITEM NO. 600000-A)

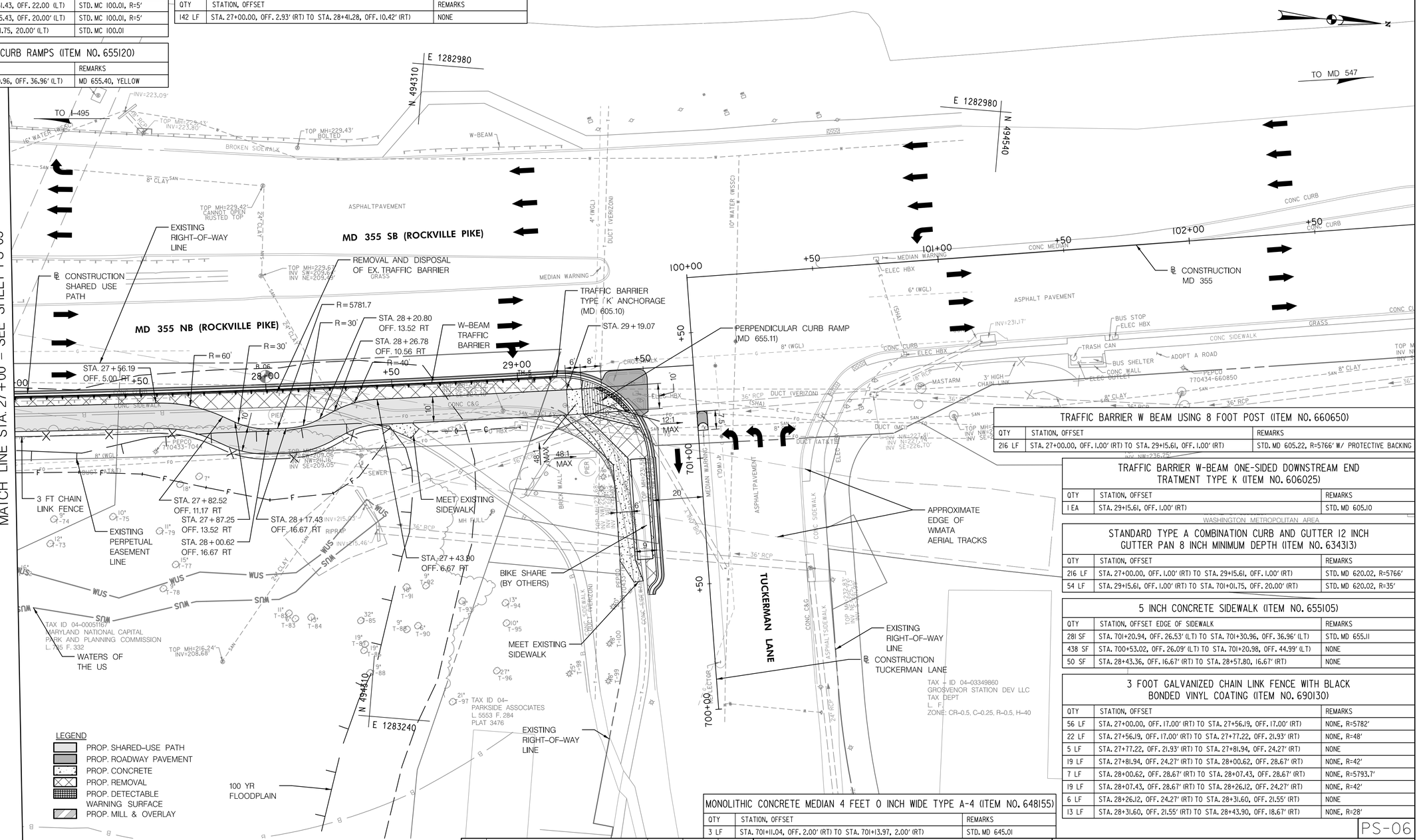
QTY	STATION, OFFSET	REMARKS
5 LF	STA. 700+47.43, OFF. 24.00' (LT) TO STA. 700+51.43, OFF. 22.00 (LT)	STD. MC 100.01, R=5'
5 LF	STA. 700+51.43, OFF. 22.00' (LT) TO STA. 700+55.43, OFF. 20.00' (LT)	STD. MC 100.01, R=5'
46	STA. 700+55.43, OFF. 20.00' (LT) TO STA. 701+01.75, 20.00' (LT)	STD. MC 100.01

DECTABLE WARNING SURFACE FOR CURB RAMPS (ITEM NO. 655120)

QTY	STATION, OFFSET	REMARKS
21 SF	STA. 701+20.94, OFF. 26.53' (LT) TO STA. 701+30.96, OFF. 36.96' (LT)	MD 655.40, YELLOW

REMOVE AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM (ITEM NO. 662325)

QTY	STATION, OFFSET	REMARKS
142 LF	STA. 27+00.00, OFF. 2.93' (RT) TO STA. 28+41.28, OFF. 10.42' (RT)	NONE



TRAFFIC BARRIER W BEAM USING 8 FOOT POST (ITEM NO. 660650)

QTY	STATION, OFFSET	REMARKS
216 LF	STA. 27+00.00, OFF. 1.00' (RT) TO STA. 29+15.61, OFF. 1.00' (RT)	STD. MD 605.22, R=5766' W/ PROTECTIVE BACKING

TRAFFIC BARRIER W-BEAM ONE-SIDED DOWNSTREAM END TRATMENT TYPE K (ITEM NO. 606025)

QTY	STATION, OFFSET	REMARKS
1 EA	STA. 29+15.61, OFF. 1.00' (RT)	STD. MD 605.10

WASHINGTON METROPOLITAN AREA

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (ITEM NO. 634313)

QTY	STATION, OFFSET	REMARKS
216 LF	STA. 27+00.00, OFF. 1.00' (RT) TO STA. 29+15.61, OFF. 1.00' (RT)	STD. MD 620.02, R=5766'
54 LF	STA. 29+15.61, OFF. 1.00' (RT) TO STA. 701+01.75, OFF. 20.00' (RT)	STD. MD 620.02, R=35'

5 INCH CONCRETE SIDEWALK (ITEM NO. 655105)

QTY	STATION, OFFSET EDGE OF SIDEWALK	REMARKS
281 SF	STA. 701+20.94, OFF. 26.53' (LT) TO STA. 701+30.96, OFF. 36.96' (LT)	STD. MD 655.11
438 SF	STA. 700+53.02, OFF. 26.09' (LT) TO STA. 701+20.98, OFF. 44.99' (LT)	NONE
50 SF	STA. 28+43.36, OFF. 16.67' (RT) TO STA. 28+57.80, 16.67' (RT)	NONE

3 FOOT GALVANIZED CHAIN LINK FENCE WITH BLACK BONDED VINYL COATING (ITEM NO. 690130)

QTY	STATION, OFFSET	REMARKS
56 LF	STA. 27+00.00, OFF. 17.00' (RT) TO STA. 27+56.19, OFF. 17.00' (RT)	NONE, R=5782'
22 LF	STA. 27+56.19, OFF. 17.00' (RT) TO STA. 27+77.22, OFF. 21.93' (RT)	NONE, R=48'
5 LF	STA. 27+77.22, OFF. 21.93' (RT) TO STA. 27+81.94, OFF. 24.27' (RT)	NONE
19 LF	STA. 27+81.94, OFF. 24.27' (RT) TO STA. 28+00.62, OFF. 28.67' (RT)	NONE, R=42'
7 LF	STA. 28+00.62, OFF. 28.67' (RT) TO STA. 28+07.43, OFF. 28.67' (RT)	NONE, R=5793.7'
19 LF	STA. 28+07.43, OFF. 28.67' (RT) TO STA. 28+26.12, OFF. 24.27' (RT)	NONE, R=42'
6 LF	STA. 28+26.12, OFF. 24.27' (RT) TO STA. 28+31.60, OFF. 21.55' (RT)	NONE
13 LF	STA. 28+31.60, OFF. 21.55' (RT) TO STA. 28+43.90, OFF. 18.67' (RT)	NONE, R=28'

MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TYPE A-4 (ITEM NO. 648155)

QTY	STATION, OFFSET	REMARKS
3 LF	STA. 701+11.04, OFF. 2.00' (RT) TO STA. 701+13.97, 2.00' (RT)	STD. MD 645.01

PS-06

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
ROADWAY AND DRAINAGE PLAN

SCALE: 1"=20'

SHEET 016 of 128

STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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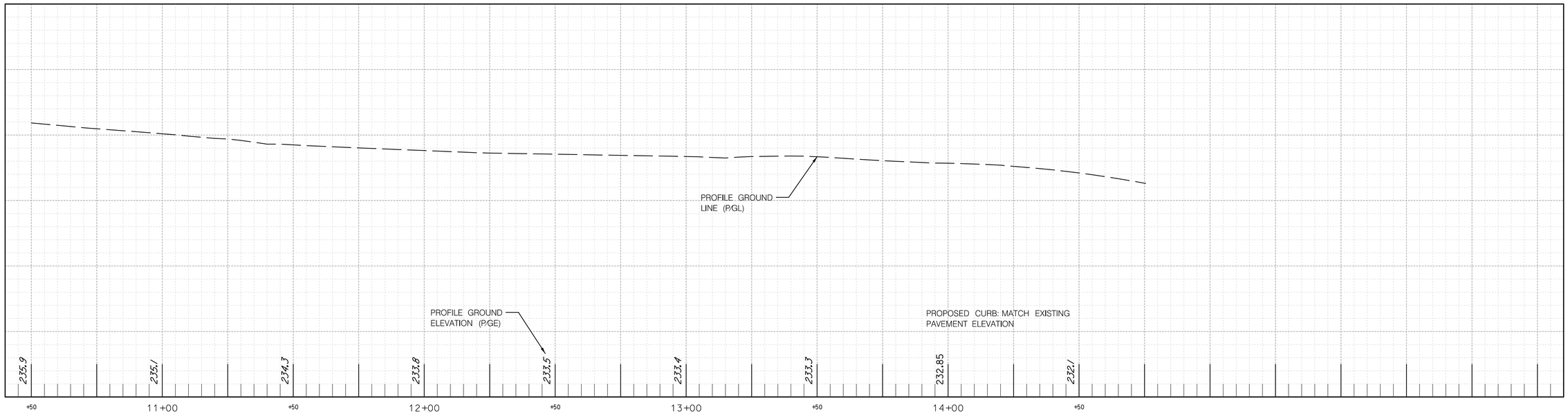

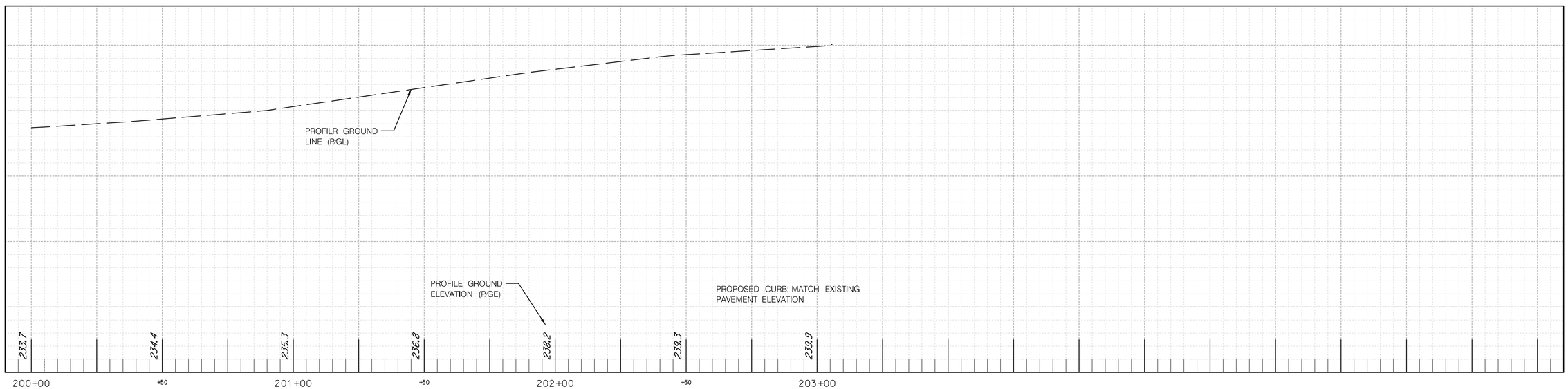

HP-01

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2003

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: 12/31/2024

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

BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JUNE, 2023
DRAWN BY: KL	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS SIDEWALK PROFILES

SCALE: H 1"=20' : V 1"=4'

SHEET 017 of 128

6/5/2023
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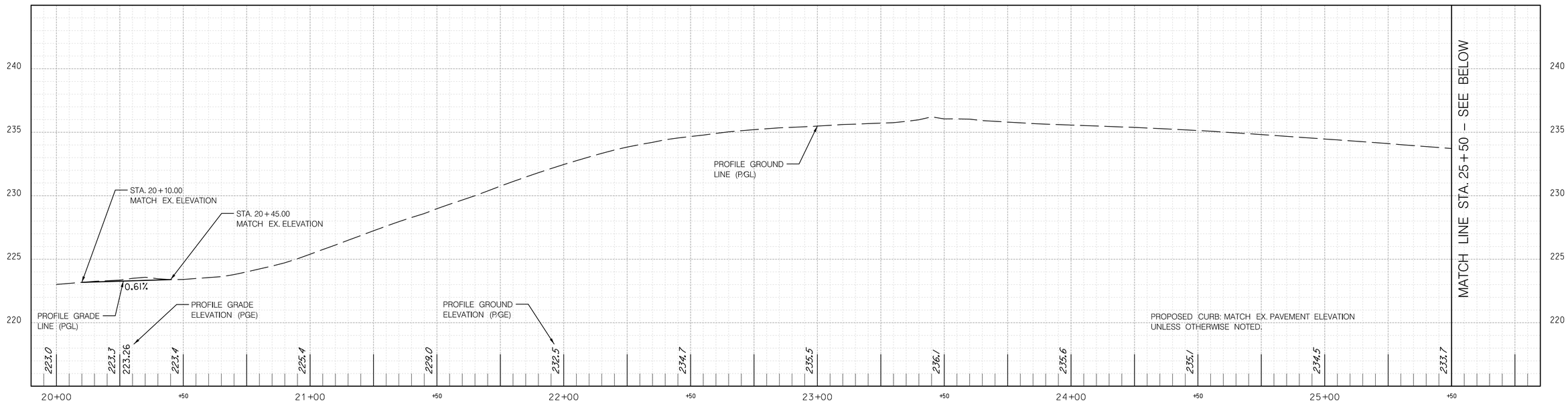

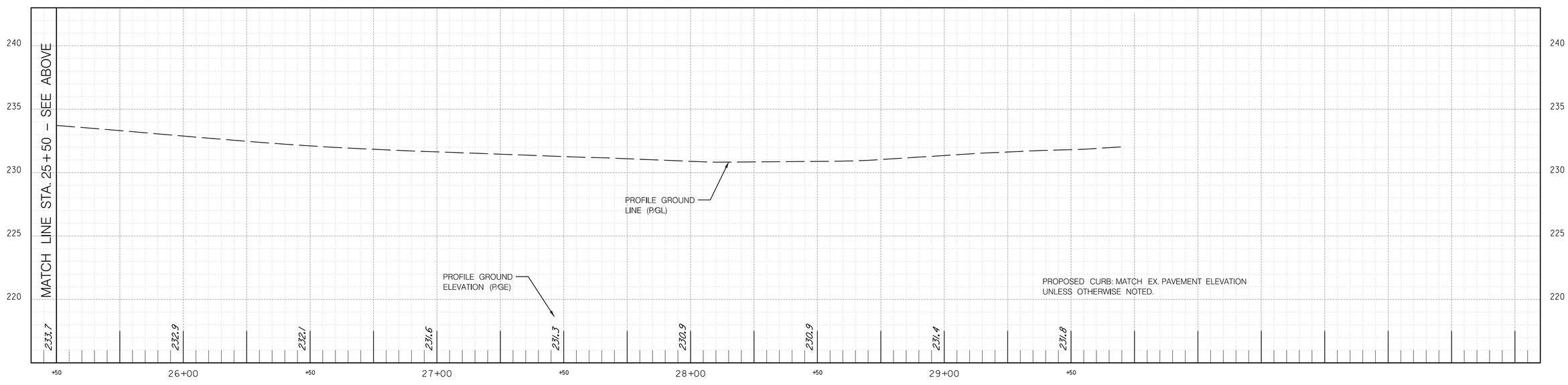

HP-02

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

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JUNE, 2023
DRAWN BY: KL	DATE: JUNE, 2023
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DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
SHARED-USE PATH PROFILE

SCALE: H 1"=20' : V 1"=4'

SHEET $HP02$ of 128

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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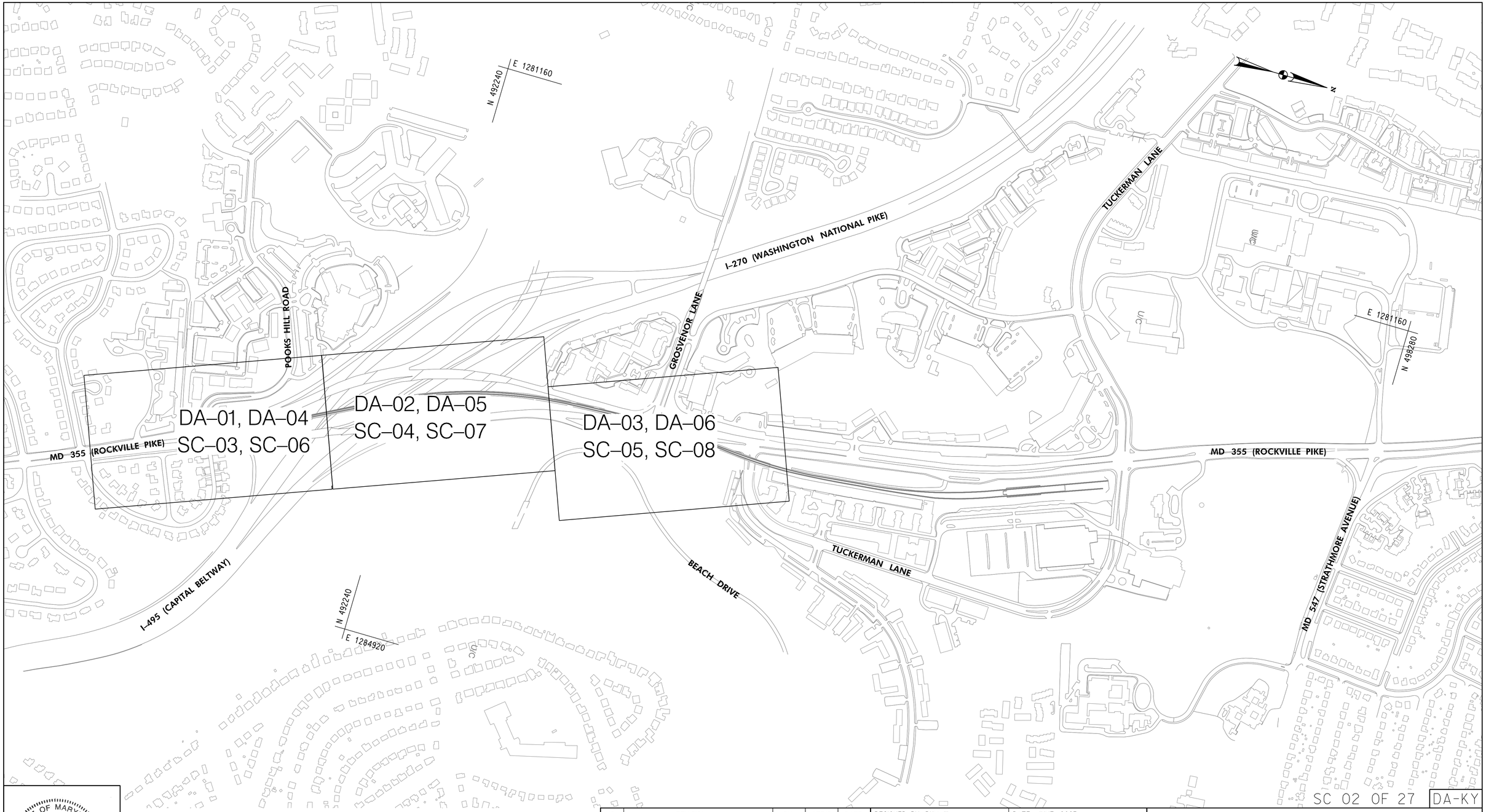

SC 02 OF 27 DA-KY

300' 0 300' 600'
SCALE: 1" = 300'

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
DRAINAGE AREA MAP
KEY PLAN

SCALE: 1"=300' SHEET 019 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
05-26-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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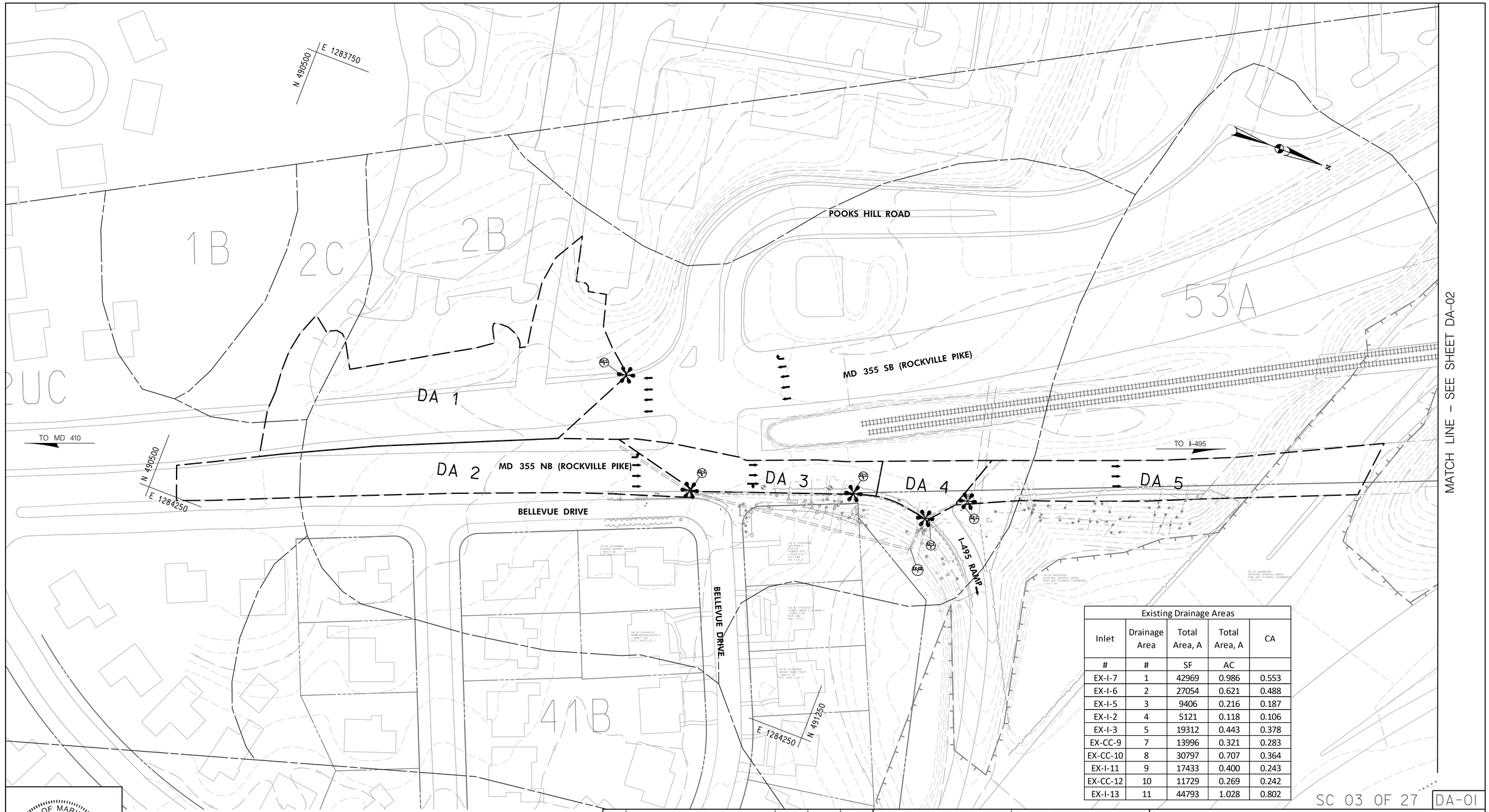

Existing Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
EX-I-5	3	9406	0.216	0.187
EX-I-2	4	5121	0.118	0.106
EX-I-3	5	19312	0.443	0.378
EX-CC-9	7	13996	0.321	0.283
EX-CC-10	8	30797	0.707	0.364
EX-I-11	9	17433	0.400	0.243
EX-CC-12	10	11729	0.269	0.242
EX-I-13	11	44793	1.028	0.802

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
05-25-2023

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: 12/31/2024

50' 0 50' 100'
SCALE: 1" = 50'

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EXISTING DRAINAGE AREA MAP

SCALE: 1"=50' SHEET 020 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-E001_Grosvenor.dgn

Existing Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
EX-I-5	3	9406	0.216	0.187
EX-I-2	4	5121	0.118	0.106
EX-I-3	5	19312	0.443	0.378
EX-CC-9	7	13996	0.321	0.283
EX-CC-10	8	30797	0.707	0.364
EX-I-11	9	17433	0.400	0.243
EX-CC-12	10	11729	0.269	0.242
EX-I-13	11	44793	1.028	0.802

50' 0 50' 100'
SCALE: 1" = 50'

SC 04 OF 27 DA-02

STATE OF MARYLAND · DAVID H. MARIHUGH III · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2003

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

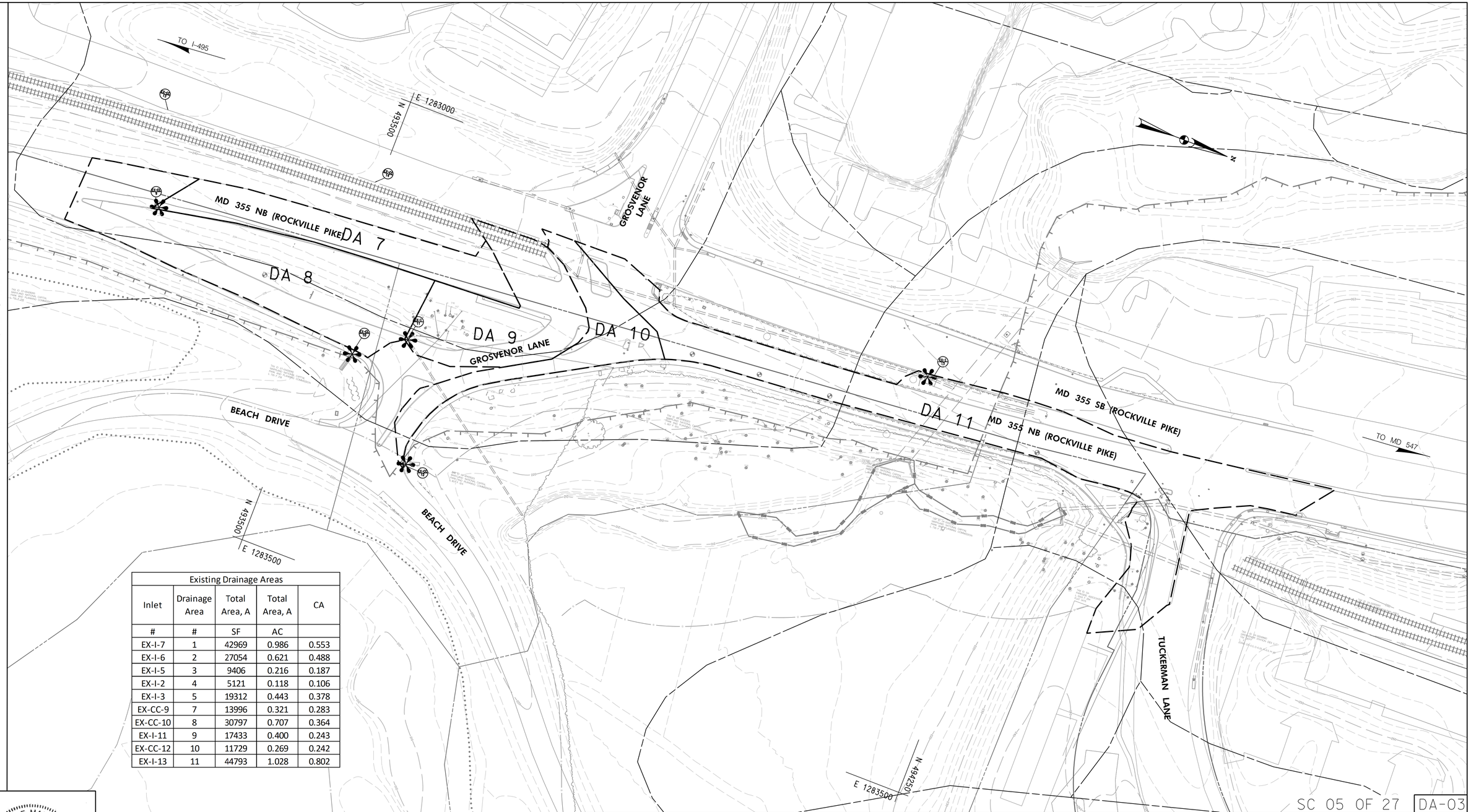
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EXISTING DRAINAGE AREA MAP

SCALE: 1"=50' SHEET 021 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\26260140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-E002_Grosvenor.dgn

MATCH LINE – SEE SHEET DA-02



Existing Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
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EX-I-3	5	19312	0.443	0.378
EX-CC-9	7	13996	0.321	0.283
EX-CC-10	8	30797	0.707	0.364
EX-I-11	9	17433	0.400	0.243
EX-CC-12	10	11729	0.269	0.242
EX-I-13	11	44793	1.028	0.802

SC 05 OF 27 DA-03

50' 0 50' 100'
SCALE: 1" = 50'

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section Date

APPROVED

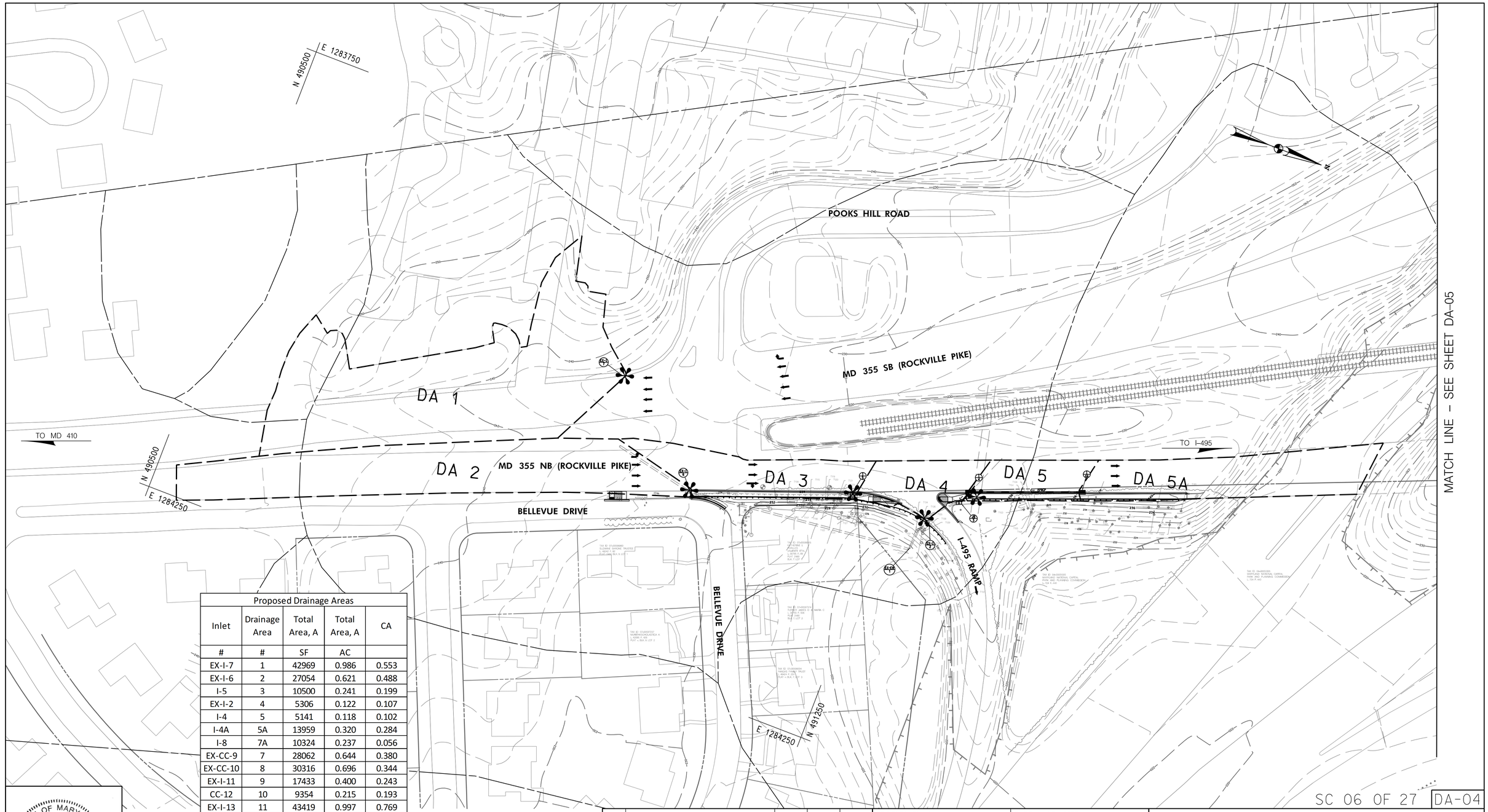
Chief,
Division of Transportation Engineering Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EXISTING DRAINAGE AREA MAP

SCALE: 1"=50' SHEET 022 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\260611401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-E003_Grosvenor.dgn



Proposed Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
I-5	3	10500	0.241	0.199
EX-I-2	4	5306	0.122	0.107
I-4	5	5141	0.118	0.102
I-4A	5A	13959	0.320	0.284
I-8	7A	10324	0.237	0.056
EX-CC-9	7	28062	0.644	0.380
EX-CC-10	8	30316	0.696	0.344
EX-I-11	9	17433	0.400	0.243
CC-12	10	9354	0.215	0.193
EX-I-13	11	43419	0.997	0.769

Note: * DA 7A is the direct drainage area to I-8
* All of DA 7 will drain into I-8 as well
*Total DA to I-8 = 0.881 AC (38386 SF)

50' 0 50' 100'
SCALE: 1" = 50'

SC 06 OF 27 DA-04

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
DRAWN BY: KM	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
PROPOSED DRAINAGE AREA MAP

SCALE: 1"=50' SHEET 023 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\26260111401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-P001_Grosvenor.dgn

Proposed Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
I-5	3	10500	0.241	0.199
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I-4	5	5141	0.118	0.102
I-4A	5A	13959	0.320	0.284
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CC-12	10	9354	0.215	0.193
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Note:	* DA 7A is the direct drainage area to I-8			
	* All of DA 7 will drain into I-8 as well			
	*Total DA to I-8 = 0.881 AC (38386 SF)			

MATCH LINE – SEE SHEET DA–04

MATCH LINE – SEE SHEET DA–06

MD 270 RAMP

N 492010

E 1283350

I–495 RAMP

I–495 OL (CAPITAL BELTWAY)

TO MD 410

I–270 RAMP

MD 355 NB (ROCKVILLE PIKE)

TO MD 547

E 1283350

N 493020

N 492010

E 1283660

50' 0 50' 100'

SCALE: 1" = 50'

SC 07 OF 27 DA-05

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2003

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: 12/31/2024

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BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
DRAWN BY: KM	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

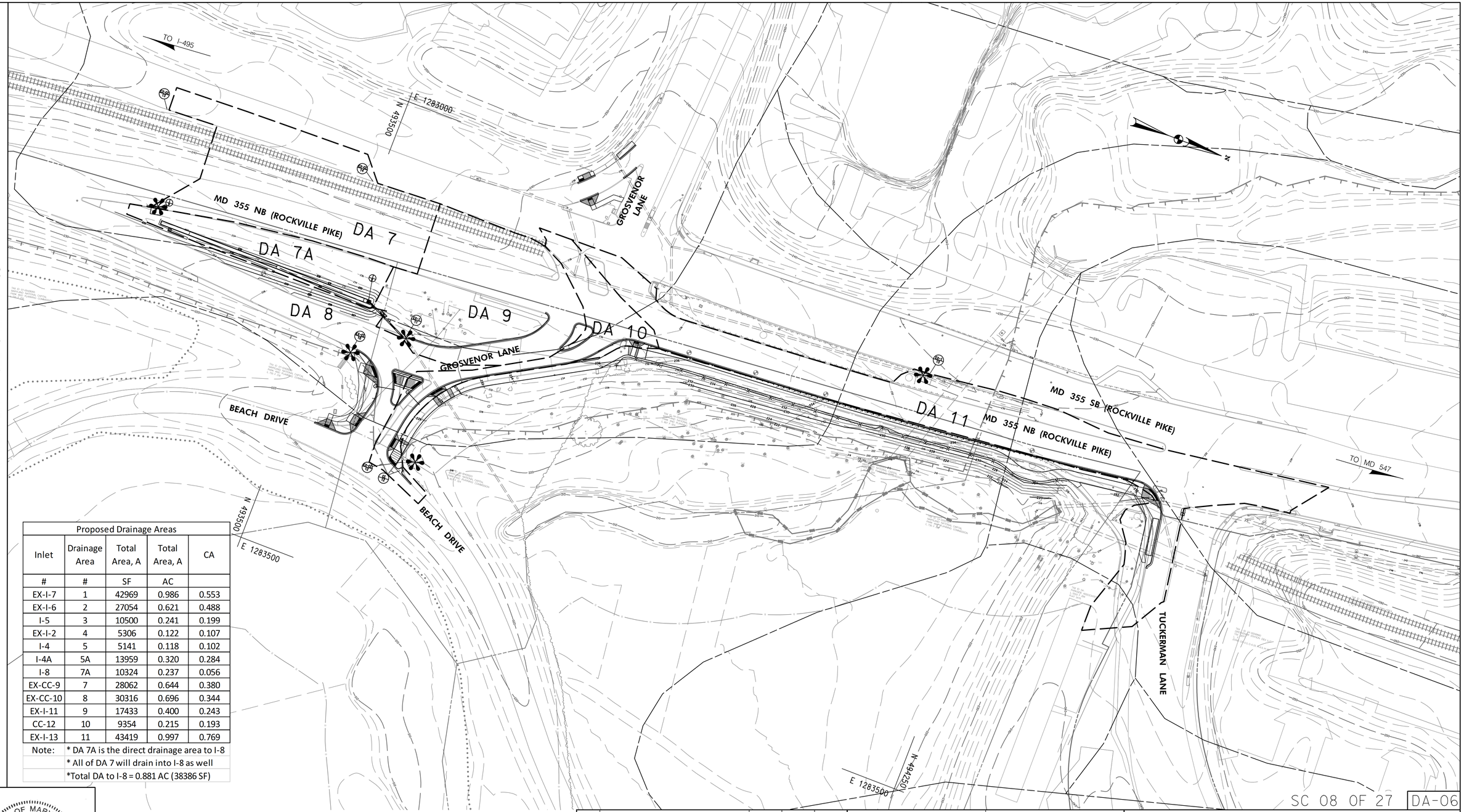
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
PROPOSED DRAINAGE AREA MAP

SCALE: 1"=50' SHEET 024 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\26260114O1\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-P002_Grosvenor.dgn

MATCH LINE – SEE SHEET DA-05



Proposed Drainage Areas				
Inlet	Drainage Area	Total Area, A	Total Area, A	CA
#	#	SF	AC	
EX-I-7	1	42969	0.986	0.553
EX-I-6	2	27054	0.621	0.488
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I-4	5	5141	0.118	0.102
I-4A	5A	13959	0.320	0.284
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Note:	* DA 7A is the direct drainage area to I-8			
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STATE OF MARYLAND
DAVID K. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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DRAWN BY: KM	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section Date

APPROVED

Chief, Division of Transportation Engineering Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

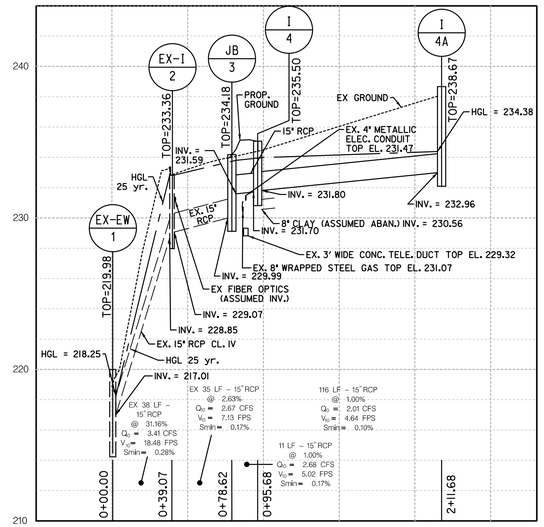
GROSVENOR IMPROVEMENTS
PROPOSED DRAINAGE AREA MAP

SCALE: 1"=50'

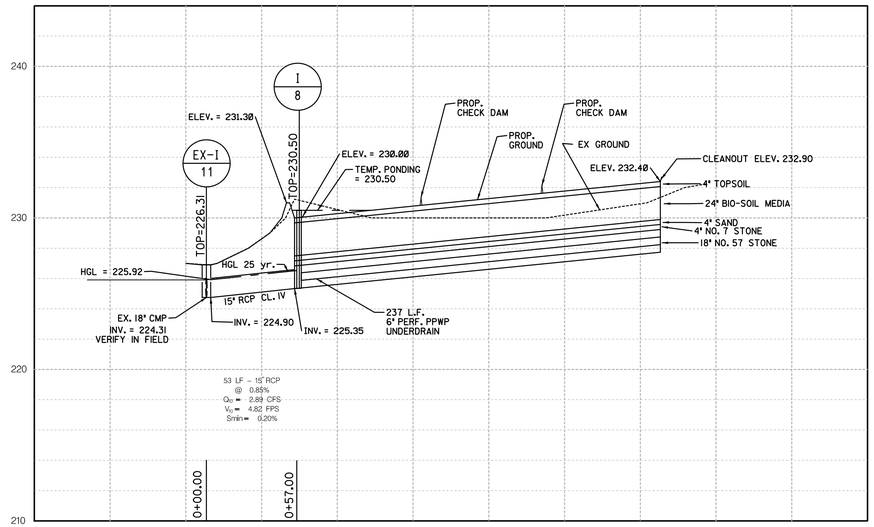
SHEET 025 of 128

SC 08 OF 27 DA-06

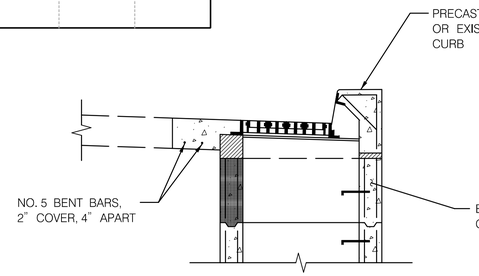
6/5/2023
\\US0525-PPFSS01\shared_projects\20260140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDA-P003_Grosvenor.dgn



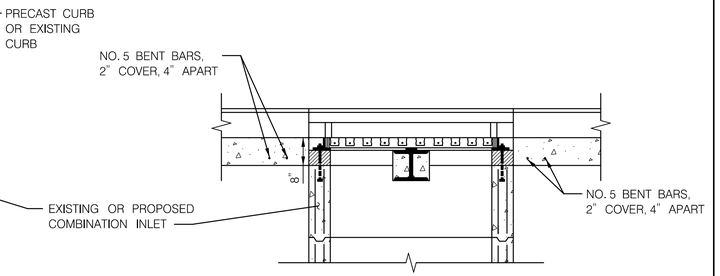
PIPE PROFILE FROM
I–4A TO EX–EW–1



PIPE AND BIO–SWALE PROFILE
FROM I–8 TO EX–I–11



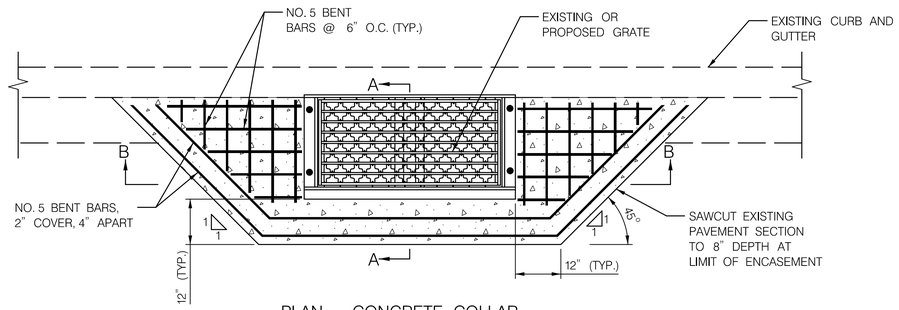
SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

NOTES:

1. ELEVATION OF FRAME AND GRATE TO BE ADJUSTED TO MATCH PROPOSED PAVEMENT ELEVATION, PRIOR TO CONCRETE ENCASEMENT.
2. SURFACE OF CONCRETE TO BE SLOPED TO MATCH PAVEMENT AND GUTTER CROSS SECTION.
3. CONCRETE SHALL BE MODIFIED MIX NO.9 AND SHALL CONFORM TO SECTION 520 OF THE SPECIFICATIONS.
4. INLET CONCRETE COLLAR IS FOR BOTH EXISTING AND PROPOSED INLET AS NOTED IN THE PLANS.



PLAN – CONCRETE COLLAR
NOT TO SCALE

DP-01

10' 0 10' 20'
VERTICAL SCALE: 1" = 10'
20' 0 20' 40'
HORIZONTAL SCALE: 1" = 20'

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
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DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
PIPE PROFILES

SCALE: H: 1"=20' - V: 1"=4'

SHEET 026 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDP-P001_Grosvenor.dgn

SEE DRAINAGE REPORT

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BiPPA Bicycle and Pedestrian Priority Areas

DP-02

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

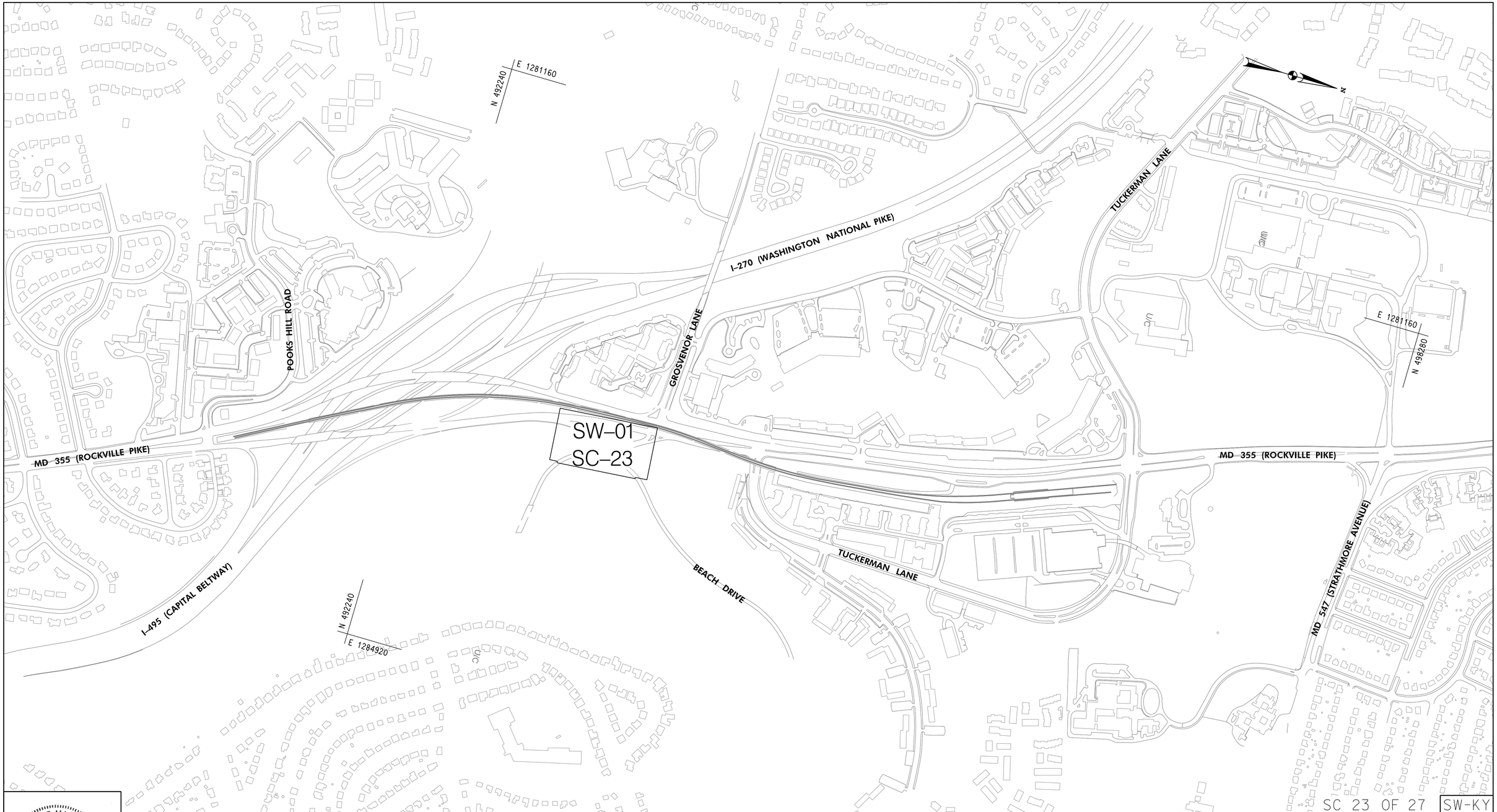
Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
PIPE COMPUTATIONS

SCALE: NONE

SHEET 027 of 128



300' 0 300' 600'
SCALE: 1" = 300'

SC 23 OF 27 SW-KY

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

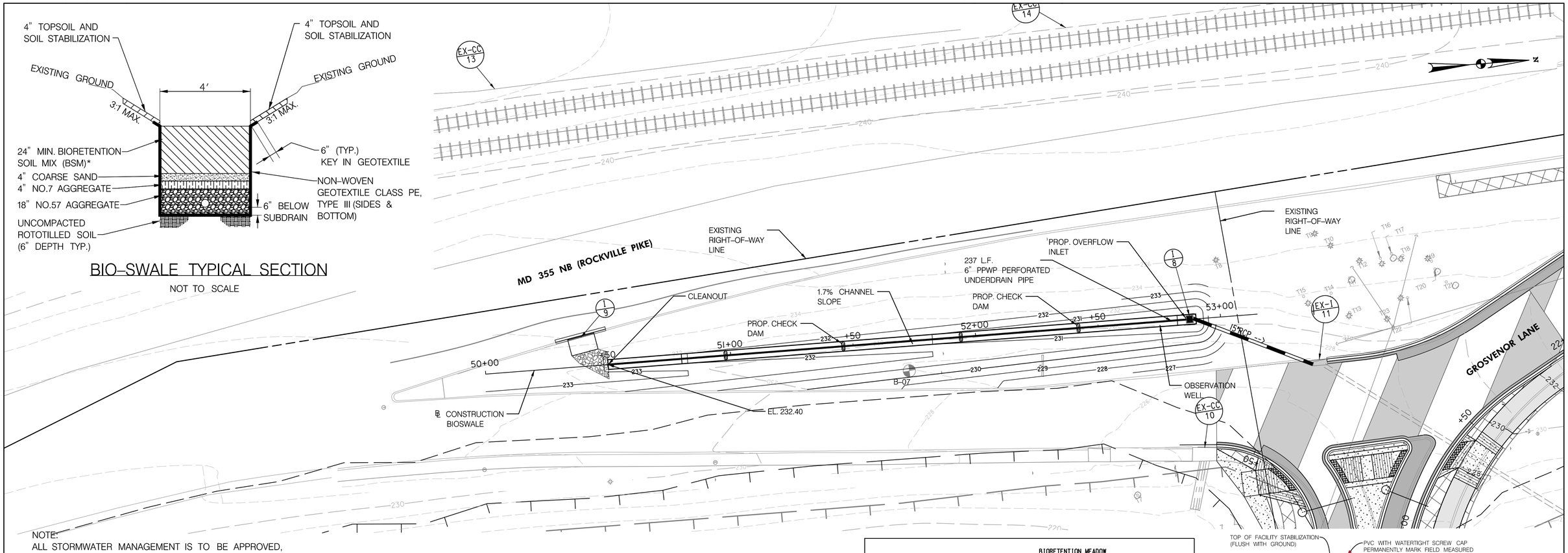
GROSVENOR IMPROVEMENTS
STORMWATER KEY PLAN

SCALE: 1"=300' SHEET 028 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\260601401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSW-KEY_Grosvenor.dgn

BIO-SWALE TYPICAL SECTION

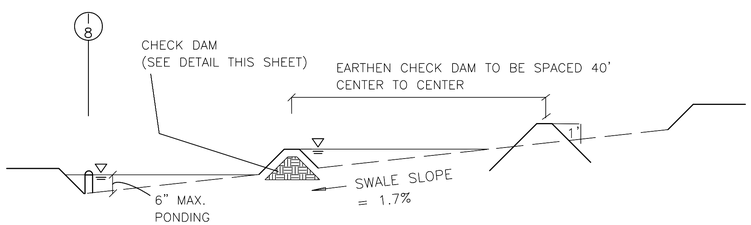
NOT TO SCALE



NOTE:
ALL STORMWATER MANAGEMENT IS TO BE APPROVED, INSPECTED, AND MAINTAINED BY MDOT SHA.
MDOT SHA BMP NUMBER: 151584

BIOSWALE DESIGN SUMMARY

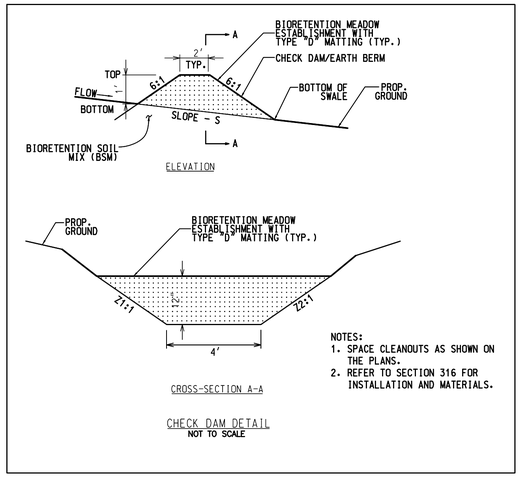
DRAINAGE AREA (AC)	IMPERVIOUS AREA AC (%)	SOIL TYPE	PE REQUIRED (R.O.W.)	PE TREATED	ESDv PROVIDED (CF)	LENGTH (FT)	WIDTH (FT)
0.88	38.7	D	1.60"	1.0"	1,267	240	4



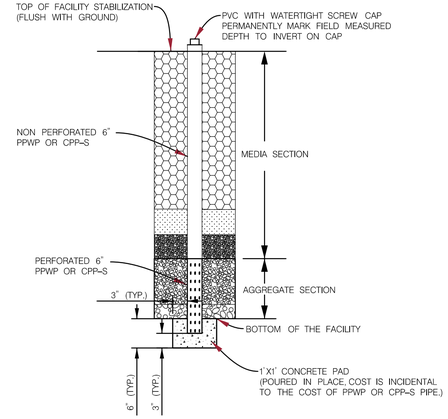
CHECK DAM SPACING DETAIL

NOT TO SCALE

NOTE:
SEE DP-01 FOR PIPE PROFILE.



NOTES:
1. SPACE CLEANOUTS AS SHOWN ON THE PLANS.
2. REFER TO SECTION 316 FOR INSTALLATION AND MATERIALS.



TYPICAL OBSERVATION WELL DETAIL
N.T.S.

SC 24 OF 27 | SW-01

SCALE: 1" = 20'

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MH	DATE: JUNE, 2023
DRAWN BY: MH	DATE: JUNE, 2023
CHECKED BY: KAC	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS STORMWATER MANAGEMENT PLAN

SCALE: 1"=20'

SHEET 029 of 128

STATE OF MARYLAND — JENNIFER ANNE CURRAN — No. 25768 — PROFESSIONAL ENGINEER

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: 25768 EXPIRATION DATE: 06/23/2023

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BPPA Bicycle and Pedestrian Priority Areas

CATEGORY 300
DRAINAGE

SECTION 316 — STORMWATER MANAGEMENT (SWM) FILTRATION FACILITIES

316.01 DESCRIPTION

Construct stormwater management (SWM) filtration facilities as specified.

SWM Filtration Facilities Identification. SWM filtration facilities are identified by unique six-digit inventory numbers and include the following designations.

(a) Bioretention.

(b) Micro-Bioretention.

(c) Organic Filters.

(d) Surface Sand Filters.

(e) Submerged Gravel Wetlands.

(f) Landscape Infiltration.

(g) Rain Gardens.

(h) Infiltration Berms.

(i) Bio-swales.

316.02 MATERIALS

No. 57 Aggregate	901.01
No. 7 Aggregate	901.01
No. 2 Aggregate	M 43, No. 2
Portland Cement Concrete	902.10, Mix No. 2
Topsoil	920.01.01 and 920.01.02
Bioretention Soil Mix (BSM)	920.01.05
Coarse Sand	920.01.05(a)(1)

Fertilizer	920.03.01
Shredded Hardwood Bark (SHB) Mulch	920.04.03
Soil Stabilization Matting (SSM)	920.05
Seed and Turfgrass Sod	920.06
Plant Materials	920.07
Water	920.09.01
Geotextile	Section 919, Class PE, Type III
Securing Pins or Staples	Section 919

Aggregate. Ensure aggregate has been adequately washed and is free of soil and fines.

Subdrain Pipe, Fittings and Geotextile Sock. Perforated and solid-wall polyvinyl chloride profile wall drain pipe (PPWP) meeting M-304 or corrugated polyethylene drainage pipe (CPP) meeting M-252, Type S and Type SP. Perforated pipe shall have two rows of slotted perforations with an opening area of 20 cm²/m to 21 cm²/m. When specified, use the geotextile sock recommended and supplied by the subdrain pipe manufacturer.

316.03 CONSTRUCTION

316.03.01 Site Protection. Prior to constructing SWM filtration facilities, ensure that the SWM facility site areas are protected from vehicular traffic and is not used for erosion and sediment controls, stockpiles or equipment storage.

316.03.02 Site Preparation. Unless facilities are off-line and will receive no runoff, construct facilities only after all surrounding and adjacent areas are permanently stabilized. Divert flow from entering the SWM filtration facility areas unless sediment-pollution is specified for the SWM filtration facility location. Prevent trash, debris and sediment from entering SWM filtration facilities during construction.

316.03.03 Schedule. Perform SWM filtration facility activities during dry weather and when soil moisture conditions are suitable and unless the facility is off-line or flow diversions are in place. Only work with soil that is friable and not in a muddy or frozen condition. Cease operations when soil and overall conditions are otherwise unsuitable.

316.03.04 Excavation. Use methods of excavation that minimize compaction of the underlying soils. Where feasible, operate equipment from locations adjacent to SWM filtration facilities rather than within the facility area. Use only wide-track or marsh-track equipment, or light equipment with turf-type tires to excavate, grade, and place materials. Do not use equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires.

316.03.05 Excavation Area Bottom Preparation. Only work with soil that is friable and not in a muddy or frozen condition. When present, remove any standing water from the excavation area. Prepare the bottom of the excavated area as follows.

(a) Submerged Gravel Wetlands. Rake surface to loosen soil.

(b) All Other SWM Filtration Facilities. Till to a minimum depth of 8 in. to loosen soil.

316.03.06 Geotextile. Place tightly against the vertical sides of the excavation area, pulling tight to eliminate wrinkles and folds and pin securely. Eliminate any voids between the geotextile and the underlying soil and avoid wrinkling and folding the geotextile. Maintain a minimum 12 in. overlap at the geotextile joint ends or breaks. Pin longitudinal joints, overlaps and edges securely with pins spaced no greater than 10 ft on center. Do not place geotextile on the bottom of the excavated area.

316.03.07 Miscellaneous Structures. Furnish and install as specified in Section 305.

316.03.08 Aggregate. Place aggregate in layers as specified. Prevent soil, fines, and other debris from contaminating the aggregate. Remove contaminated aggregate and replace with clean aggregate.

316.03.09 Subdrain Pipe. Cap the ends of all subdrain pipe not terminating in a cleanout, vent, or drainage structure unless otherwise specified. Ensure perforations are placed on the bottom of the horizontal subdrain pipe runs.

(a) Cleanouts. Install solid-wall pipe vertically and connect to horizontal subdrain with approved manufactured connections. Provide a counter-sunk screw cap on the exposed ends.

(b) Vents. Install solid-wall pipe vertically and connect to the horizontal subdrain with approved manufactured connections. Provide a ventilated screw cap on the exposed ends. Ventilation holes or slots shall be no larger than 1/4 in. in diameter or width. The sum total area of the openings shall be no less than 1 in². Ensure that the ventilation openings are above the maximum specified water surface elevation.

(c) Observation Wells. Use perforated and solid-wall pipe. Place the geotextile sock over the perforated pipe portion and secure at both ends. Provide a screw cap on the exposed end extending 2 in. above the surface. When a concrete collar is specified, ensure the top of the well is flush with the surface of the concrete collar.

316.03.10 Coarse Sand. Place coarse sand in horizontal layers not exceeding 12 in. After each lift, spread the coarse sand to provide a uniform surface free from spray or sprinkle water to saturate the lift until water flows from the subdrain outlet. Use an appropriate sediment control device to capture any discharged sediment-laden water from the subdrain outlet. Place, spread, and water coarse sand to uniform surface true to depth, line, cross section and elevation to ensure the completed work is as specified after settlement. Prevent soil, fines and other debris from contaminating the coarse sand. Remove contaminated coarse sand and replace with clean coarse sand.

316.03.11 Bioretention Soil Mix (BSM). Place BSM in horizontal layers not exceeding 12 in. After each lift, spread the BSM to provide a uniform surface and spray or sprinkle water to saturate the entire area of BSM until water flows from the subdrain outlet. Use an approved sediment control device to capture any discharge sediment-laden water. Place, spread, and water BSM to uniform surface true to depth, line, cross section and elevation to ensure the completed work is as specified after settlement. Prevent soil, fines, and other debris from contaminating the BSM. Remove contaminated BSM and replace with uncontaminated BSM.

316.03.12 Topsoil. Place topsoil as specified. Do not blend topsoil into BSM when topsoil is placed on top of BSM.

316.03.13 Check Dams.

(a) Topsoil Check Dams. Construct topsoil check dams to the dimensions, grades, and depths specified.

(b) Concrete Check Dams. Furnish and install concrete check dams as specified and as specified in Section 305.

316.03.14 Soil Stabilization Matting (SSM). As specified in Section 709.

316.03.15 Vegetation Installation and Establishment. Unless facilities are off-line or flow diversions are in place, install seed, sod, trees, shrubs, perennials, and annuals within SWM filtration facility areas immediately after final grading. In the event that vegetation cannot be installed and established due to time-of-year or weather restrictions, keep diversion controls in place until such time that permanent vegetation may be established. Do not use machinery other than hand held within the BSM footprint.

(a) Turfgrass Establishment. As specified in Section 705.

(b) Meadow Establishment and Wildflower Seeding. As specified in Section 707.

(c) Turfgrass Sod Establishment. As specified in Section 708.

(d) Tree, Shrubs and Perennial Installation and Establishment. As specified in Section 710.

(e) Annuals & Bulb Installation and Establishment. As specified in Section 711.

316.03.16 Soil Amendments and Fertilizer. Apply as specified in Sections 705, 706, 707, 708, 710, or as specified. Use the following for plant materials installed in BSM.

(a) Non-Vegetated BSM. Do not apply compost, other soil amendments, or fertilizer to non-vegetated BSM.

(b) Trees, Shrub, and Perennials in BSM. Do not apply compost or other soil amendments to backfill soil or to planting beds.

Apply fertilizer to each planting pit as specified in 710.03.04 when trees, shrubs, perennials, perennial plugs, or other plant materials are installed in BSM as specified in Section 710.

(c) Seeded or Sodded BSM. Do not apply compost or other soil amendments.

Uniformly apply either of the fertilizers in Table 1 at the rate specified over the installed surface of the BSM when BSM will be permanently vegetated with Turfgrass Establishment, Shrub Seeding Establishment, Meadow Establishment, Turfgrass Sod Establishment, or other seeded or sodded vegetation establishment as specified.

BIORETENTION SOIL MIX
TABLE 1 - FERTILIZER APPLICATION RATES

FERTILIZER	LB PER SY	LB PER ACRE
20-16-12 (83% UF with MAP and SOP)	0.052	200
14-14-14 polymer coated or granular	0.062	275

(d) Nutrient Management Reporting. Record the fertilizer analysis, the square yards covered, and the pounds of fertilizer applied on the Nutrient Management Reporting Form. Submit the Form within 24 hours after applying fertilizer.

(e) Fertilizer. Refer to (b). Rake fertilizer that is broadcast over the surface of the BSM for seeding or sodding to a depth of 1/8 in. to 1/2 in. Raking may be performed as part of seeding or sodding operations. Complete raking before soil stabilization matting or sod is installed.

316.03.17 Shredded Hardwood Bark (SHB) Mulch. As specified in 710.03.13.

316.03.18 Inspection and SWM Facility As-Built Certification. Inspect and document each step of construction of SWM filtration facilities and complete the applicable checklists and furnish the SWM facility as-built certification according to the Contract Documents.

316.04 MEASUREMENT AND PAYMENT

Payment will be full compensation for all control of discharge from subdrain pipe, geotextile, watering, sheeting, shoring, dewatering, hauling, storing, re-handling of material, removal and disposal of excess and unsuitable material, tilling, grading and slope adjustments and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Excavation. Excavation will be measured and paid for as specified in Section 201.

Miscellaneous Structures. Miscellaneous Structures will be measured and paid for per cubic yard of the specified mix concrete.

Aggregate. Aggregate will be measured and paid for at the Contract unit price for one or more of the following.

(a) No. 2 Aggregate for Stormwater Management Facilities per cubic yard.

(b) No. 7 Aggregate for Stormwater Management Facilities per cubic yard.

(c) No. 57 Aggregate for Stormwater Management Facilities per cubic yard.

Removal of contaminated aggregate and replacement with clean aggregate will be at no additional cost to the Administration.

Geotextile. Geotextile will not be measured but the cost will be incidental to the excavation.

Subdrain Pipe. Perforated and solid-wall subdrain pipe will be measured and paid for at the Contract unit price per linear foot for the specified size of subdrain pipe. Fittings, caps, geotextile sock, cleanouts, vents, observation wells, and other incidentals will not be measured but the cost will be incidental to the subdrain pipe.

Coarse Sand. Coarse Sand will be measured and paid for at the Contract unit price per cubic yard for Coarse Sand for Stormwater Management Facilities.

Removal of contaminated coarse sand and replacement with uncontaminated coarse sand will be at no additional cost to the Administration.

Check Dams. Check dams will be measured and paid for at the Contract unit price for one or more of the following.

(a) Topsoil Check Dams per each.

(b) Concrete Check Dams per each.

Bioretention Soil Mixture (BSM). BSM will be measured and paid for at the Contract unit price per cubic yard.

Removal of contaminated BSM and replacement with clean BSM will be at no additional cost to the Administration.

Water. Water used for saturation of coarse sand and BSM will not be measured but the cost will be incidental to the pertinent items.

Shredded Hardwood Bark (SHB) Mulch. SHB Mulch will be measured and paid for at the Contract unit price per square yard for Shredded Hardwood Bark Mulching. 3 in. depth.

SWM FACILITY AS-BUILT CERTIFICATION DATA TABLE FOR M-8 BIO-SWALES

MAY ONLY BE CERTIFIED BY THE AS-BUILT ENGINEER (ABE) PER COMAR 26.17.02.10.

SWM FACILITY NUMBER	MDE/PRD NUMBER	SHA CONTRACT NUMBER
151584	00-PR-0000	19APMO013XX

ACTIVITY	SUPPORTING DOCUMENTATION AND INFORMATION (SUBMIT ALL OF THE FOLLOWING WITH SWM FACILITY AS-BUILT CERTIFICATION PACKAGE.)	DATE(S) OF INSPECTION
PRIOR TO SWM FACILITY EXCAVATION, OBSERVED ESC MEASURES ARE INSTALLED AROUND THE FACILITY OR CONFIRMED SURROUNDING AREA IS STABILIZED	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED EXCAVATION OF SWM FACILITY	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF GEOTEXTILE AND VERIFIED INSTALLATION PERFORMED AS SPECIFIED	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE BEDDING FOR SUB-DRAIN	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ NOT APPLICABLE	
OBSERVED INSTALLATION OF SUB-DRAIN, VERIFIED MATERIAL, AND HAS SLOTTED PERFORATIONS	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ NOT APPLICABLE PIPE MATERIAL: ☐ PPWP ☐ CPP-S	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE AROUND AND ABOVE SUB-DRAIN	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ NOT APPLICABLE	
OBSERVED INSTALLATION OF NO. 7 AGGREGATE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ NOT APPLICABLE	
OBSERVED INSTALLATION OF COARSE SAND	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ NOT APPLICABLE	
OBSERVED INSTALLATION OF BIORETENTION SOIL MIX (BSM) AND VERIFIED MATERIAL IS APPROVED	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ SHA OMT SOIL TEST REPORT FOR BSM	
OBSERVED INSTALLATION OF CHECK DAMS	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF RELEASE STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS RELEASE STRUCTURE: ☐ INLET ☐ WEIR ☐ CHECK DAM ☐ OUTFALL ☐ OTHER (WRITE IN):	
OBSERVED FINAL GRADING OF SWM FACILITY	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF MEADOW AND OTHER VEGETATIVE SEED WITH SOIL STABILIZATION MATTING, INCLUDING PLUGS, IN THE SWM FACILITY	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ AS-BUILT LANDSCAPE PLANS	
OBSERVED ESTABLISHED VEGETATION ONE YEAR FOLLOWING INITIAL INSTALLATION IN SWM FACILITY AND OBSERVED REPLACEMENT OF FAILED VEGETATION	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ SHA LPD LANDSCAPE ACCEPTANCE LETTER	

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
BOTTOM WIDTH (FT) – MAY NOT BE LESS THAN 2 FT OR EXCEED 8 FT	4		
TOTAL LENGTH (FT)	240		
MAXIMUM CHANNEL SLOPE (FT/FT) – MAY NOT EXCEED 4%	1.7		
LEFT SIDE SLOPE (H:V) – MAY NOT BE STEEPER THAN 3:1	3:1		
RIGHT SIDE SLOPE (H:V) – MAY NOT BE STEEPER THAN 3:1	3:1		
TOTAL THICKNESS OF NO. 57 AGGREGATE (IN.) – MAY NOT BE LESS THAN 18 IN.	18		
THICKNESS OF NO. 7 AGGREGATE (IN.) – MAY NOT BE LESS THAN 4 IN.	4		
THICKNESS OF COARSE SAND (IN.) – MAY NOT BE LESS THAN 4 IN.	4		
THICKNESS OF BSM (IN.) – MAY NOT BE LESS THAN 24 IN.	24		
SUB-DRAIN PIPE DIAMETER (IN.) – MAY NOT DIFFER FROM VALUE SPECIFIED	6		
SUB-DRAIN OUTLET INVERT ELEVATION (FT)	225.88		
NUMBER OF CHECK DAMS	3		
DISTANCE BETWEEN CHECK DAMS (FT)	30		
CHECK DAM HEIGHT (FT)	1.0		
TOP OF SWALE ELEVATION (FT)	231.00		

ONLY COMPLETE THE PORTION BELOW WHEN TOLERANCES ARE NOT MET. ALSO PROVIDE COMPUTATIONS AND SWM REPORT REVISIONS.

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
ESDv WATER SURFACE ELEVATION (FT)	230.46		
ESDv FLOW DEPTH (IN.)	5.5		
1-YR FLOW VELOCITY (FT/S) – MUST BE NON-EROSIVE.	0.66		
10-YR WATER SURFACE ELEVATION (FT)	230.33		
10-YR FLOW DEPTH (IN.)	4.0		
10-YR FLOW VELOCITY (FT/S) – MUST BE NON-EROSIVE	2.33		
10-YR FREEBOARD (IN.) – MAY NOT BE LESS THAN 9 IN. – MEASURED VERTICALLY FROM 10-YR WATER SURFACE ELEVATION TO PAVEMENT EDGE/SHOULDER	39.96		

REVISED 10/25/2021

SWM FACILITY AS-BUILT CERTIFICATION DATA TABLE FOR RELEASE STRUCTURES - INLETS

MAY ONLY BE CERTIFIED BY THE AS-BUILT ENGINEER (ABE) AS REQUIRED BY COMAR 26.17.02.10.

SWM FACILITY NUMBER	PRD NUMBER	SHA CONTRACT NUMBER
151584	00-PR-0000	19APMO013XX

ACTIVITY	SUPPORTING DOCUMENTATION AND INFORMATION (SUBMIT ALL OF THE FOLLOWING WITH SWM FACILITY AS-BUILT CERTIFICATION PACKAGE.)	DATE(S) OF INSPECTION
OBSERVED EXCAVATION FOR INLET, OUTFALL PIPE, AND OUTFALL STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS OUTFALL STRUCTURE (CHECK WHAT APPLIES) ☐ HEADWALL ☐ END SECTION ☐ OTHER (SPECIFY)_____	
OBSERVED PLACEMENT AND COMPACTION OF BEDDING FOR INLET, OUTFALL PIPE, AND OUTFALL STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF INLET, OUTFALL PIPE, AND OUTFALL STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED PLACEMENT AND COMPACTION OF BACKFILL FOR INLET, OUTFALL PIPE, AND OUTFALL STRUCTURE INCLUDING AGGREGATE APRON AND PERMANENT STABILIZATION	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	

FEATURES FOR INLETS	DESIGN	AS-BUILT	DIFFERENCE
TOP ELEVATION (FT)	230.50		
INVERT IN ELEVATION (FT)	225.88		
INVERT OUT ELEVATION (FT)	225.35		
SUB-DRAIN INVERT IN ELEVATION (FT)	225.88		
OUTFALL PIPE DIAMETER (IN.)	15		
OUTFALL PIPE SLOPE (FT/FT)	0.85/100		
OUTFALL STRUCTURE INVERT (FT)	224.90		
OUTFALL STRUCTURE CUT OFF WALL DEPTH (FT)	n/a		
OUTFALL STRUCTURE CUT OFF WALL LENGTH (FT)	n/a		
OUTFALL APRON LENGTH (FT)	n/a		
OUTFALL APRON WIDTH (FT)	n/a		

ONLY COMPLETE THE PORTION BELOW WHEN TOLERANCES ARE NOT MET. ALSO PROVIDE COMPUTATIONS AND SWM REPORT REVISIONS.

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
ESDv WATER SURFACE ELEVATION (FT)	230.46		
2-YR WATER SURFACE ELEVATION (FT)	230.23		
10-YR WATER SURFACE ELEVATION (FT)	230.33		
10-YR FREEBOARD (IN.) – MAY NOT BE LESS THAN 9 IN. WHEN APPLICABLE FOR ROADSIDE DITCHES AND SWALES – MEASURED VERTICALLY FROM 10-YR WATER SURFACE ELEVATION TO PAVEMENT EDGE/SHOULDER	39.96		
100-YR WATER SURFACE ELEVATION (FT)	230.48		
OUTFALL VELOCITY (FT/S)	n/a		
OUTFALL FLOW RATE (CFS)	n/a		
OUTFALL 2-YR VELOCITY (FT/S)	n/a		
OUTFALL 2-YR FLOW RATE (CFS)	n/a		
OUTFALL 10-YR VELOCITY (FT/S)	n/a		
OUTFALL 10-YR FLOW RATE (CFS)	n/a		
OUTFALL 100-YR VELOCITY (FT/S)	n/a		
OUTFALL 100-YR FLOW RATE (CFS)	n/a		

REVISED 06/16/2021

AS– BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY SHOWN ON THE PLANS AND INDIVIDUALLY IDENTIFIED BELOW HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS INCLUDED UNDER THE STATE HIGHWAY ADMINISTRATIONS PLAN REVIEW DIVISION APPROVAL, NUMBER XX–PR–XXXX EXCEPT AS NOTED IN GREEN "AS–BUILT" DRAWINGS. FURTHERMORE, THE GREEN–NOTED EXCEPTION DO NOT ADVERSELY AFFECT THE DESIGN AND/OR THE INTENDED PERFORMANCE OF THE FACILITY.

BIO–SWALE (BMP NO.: 151584)

NAME (PRINTED) _____ SIGNITURE _____

MARYLAND RESIGNATION NUMBER _____ DATE _____

Sediment Control for Discharge from Subdrain Pipe Outlets. Control for any sediment-laden discharge from subdrain pipe outlets will not be measured but will be incidental to the pertinent Erosion and Sediment Control items.

Topsoil. As specified in 701.04.

Vegetation Installation and Establishment. Vegetation installation and establishment will be measured and paid for at the Contact unit price for the pertinent landscaping items as specified in 705.04, 707.04, 708.04, 710.04 and 711.04.

Soil Stabilization Matting. As specified in 709.04.

Stormwater Management (SWM) Facility As-Built Certification. As specified.

STATE OF MARYLAND · TIMBERLAKE MINE CURRAN · No. 25768 · PROFESSIONAL ENGINEER

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: 25768 EXPIRATION DATE: 06 /23 /2023

NOTE:
ALL STORWATER MANAGEMENT IS TO BE APPROVED, INSPECTED, AND MAINTAINED BY MDOT SHA.

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MH	DATE: JUNE, 2023
DRAWN BY: MH	DATE: JUNE, 2023
CHECKED BY: KAC	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

_____ _____
Chief, Design Section Date

APPROVED

_____ _____
Chief, Division of Transportation Engineering Date

SC 25 OF 27 SW-02

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
STORMWATER MANAGEMENT NOTES

SCALE: 1"=20' SHEET 030 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pDE-N001_Grosvenor.dgn

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GROSVENOR IMPROVEMENTS
MD 355 (ROCKVILLE PIKE) FROM
POOKS HILL RD TO STRATHMORE AVE
CIP PROJECT NO. 501532
EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT PLAN

INDEX OF SHEETS

Sheet No.	Drawing No.	Sheet Name	
SC-01	TI-ES	TITLE SHEET	SC001.pdf
SC-02	DA-KY	DRAINAGE AREA MAP KEY	SC005.pdf
SC-03	DA-01	EXISTING DRAINAGE AREA MAP	SC006.pdf
SC-04	DA-02	EXISTING DRAINAGE AREA MAP	SC007.pdf
SC-05	DA-03	EXISTING DRAINAGE AREA MAP	SC008.pdf
SC-06	DA-04	PROPOSED DRAINAGE AREA MAP	SC009.pdf
SC-07	DA-05	PROPOSED DRAINAGE AREA MAP	SC010.pdf
SC-08	DA-06	PROPOSED DRAINAGE AREA MAP	SC011.pdf
SC-09	DT-02	REINFORCED SOIL SLOPE DETAIL	SC016.pdf
SC-10	ES-01	EROSION AND SEDIMENT CONTROL NOTES	SC018.pdf
SC-11	ES-02	EROSION AND SEDIMENT CONTROL NOTES	SC019.pdf
SC-12	ES-03	EROSION AND SEDIMENT CONTROL DETAILS	SC020.pdf
SC-13	ES-04	EROSION AND SEDIMENT CONTROL DETAILS	SC021.pdf
SC-14	ES-KY	EROSION AND SEDIMENT CONTROL KEY PLAN	SC017.pdf
SC-15	ES-05	EROSION AND SEDIMENT CONTROL PLAN	SC022.pdf
SC-16	ES-06	EROSION AND SEDIMENT CONTROL PLAN	SC023.pdf
SC-17	ES-07	EROSION AND SEDIMENT CONTROL PLAN	SC024.pdf
SC-18	ES-08	EROSION AND SEDIMENT CONTROL PLAN	SC025.pdf
SC-19	ES-09	EROSION AND SEDIMENT CONTROL PLAN	SC026.pdf
SC-20	ES-10	EROSION AND SEDIMENT CONTROL PLAN	SC027.pdf
SC-21	ES-11	EROSION AND SEDIMENT CONTROL PLAN	SC027A.pdf
SC-22	SB-01	SOIL BORING LOGS	SC028.pdf
SC-23	SW-KY	STORMWATER KEY PLAN	SC031.pdf
SC-24	SW-01	STORMWATER MANAGEMENT PLAN	SC032.pdf
SC-25	SW-02	STORMWATER MANAGEMENT NOTES	SC033.pdf
SC-26	LP-03	LANDSCAPE & TREE PROTECTION PLAN	SC029.pdf
SC-27	LP-04	LANDSCAPE & TREE PROTECTION PLAN	SC030.pdf

CERTIFICATION OF THE QUANTITIES

I HEREBY CERTIFY THAT THE ESTIMATED TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO 404 CUBIC YARDS OF EXCAVATION, 1,113 CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE 58,777 SQUARE FEET.

03 / 28 / 2023
DATE

DAVID HATHORNE MARIHUGH III, P.E.
MD. REGISTRATION NO. 46328

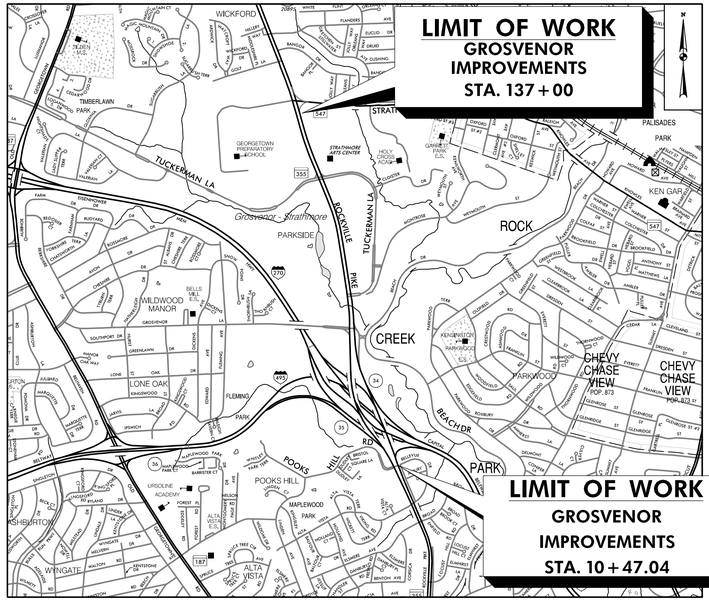
DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90, AND MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" DATED AUGUST 1988.

03 / 28 / 2023
DATE

DAVID HATHORNE MARIHUGH III, P.E.
MD. REGISTRATION NO. 46328

MDOT SHA BMP No. 151584



VICINITY MAP
SCALE: 1" = 1500'

LENGTH OF PROJECT: MD 355 = 1.50 miles

MISS UTILITY

THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL UNDERGROUND UTILITIES IN THE AREA OF PROPOSED WORK ARE LOCATED PRIOR TO COMMENCING CONSTRUCTION WORK. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

THE CONTRACTOR IS ALSO RESPONSIBLE FOR LOCATING ALL PRIVATE UTILITIES (NOT LOCATED BY MISS UTILITY) WITHIN HOA PROPERTY AT THEIR EXPENSE. ALL UTILITIES SHOWN ON THE PLANS ARE PROVIDED FOR INFORMATION ONLY AND SHALL BE CONSIDERED APPROXIMATE. HOA SHALL NOT BE RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES. ANY UTILITIES OR OTHER UNDERGROUND FACILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.

RELATED REQUIRED PERMITS
To be completed by the consultant and placed on the first sheet of the Sediment Control/Stormwater Management plan set for all projects.

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 NO.	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS SEDIMENT CONTROL	X		286521		
MCDPS Floodplain District	X		382566		
WATERWAY/WETLAND(S)		X			
a. Corps of Engineers		X			
b. MDE	X		202161206		
c. MDE Water Certification		X			
MDE Dam Safety		X			
DNR Roadside Tree Care Permit		X		Approval Date	
DPS Roadside Tree Protection Plan	X			Approval Date	
N.P.D.E.S. NOTICE OF INTENT	X				DATE FILED
FEMA LOMAR (Required Post Construction)	X				
SHA Access Permit:	X		19APM0013XX		
M-NCPPC Parks Permit:	X		2021-041		

TREE CANOPY REQUIREMENTS TABLE
To be completed by the consultant and placed on the first sheet of the Sediment Control / Stormwater Management plan set for all projects.

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

Total Property Area	Total Disturbed Area
N/A square feet	58777 square feet

Shade Trees Required	Shade Trees Proposed to be Planted
22	34

Fee in Lieu (Trees Required – Trees Planted) x $250	$ 0

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:

X 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.

OWNER
TIM CUPPLES, PE, DBIA
100 Edison Park Drive, 4th Floor
Gaithersburg, MD 20878
240-777-7214
tim.cupples@montgomerycountymd.gov

PROJECT MANAGER
BOB GONZALES
100 Edison Park Drive, 4th Floor
Gaithersburg, MD 20878
240-777-7296
robert.gonzales@montgomerycountymd.gov

STATE OF MARYLAND · DAVID H. MARIHUGH III · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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 /31/2023

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
SEDIMENT CONTROL
TITLE SHEET

SCALE: N.T.S.

SHEET 031 of 128

SC 01 OF 27 TI-ES

TECHNICAL REVIEW OF SEDIMENT CONTROL	ADMINISTRATIVE REVIEW	
Reviewed Date	Reviewed Date	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.
TECHNICAL REVIEW OF STORMWATER MANAGEMENT	**SMALL LOT DRAINAGE APPROVAL**	**SEDIMENT CONTROL PERMIT NO.** 286521
	N/A: ☐ OR	**SM. FILE NO.** STORMWATER MANAGEMENT: 285833
Reviewed Date	Reviewed Date	ESD to MEP: 1 - SWM Bio-Swale / MDSHA: No Waivers
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.	

6/5/2023
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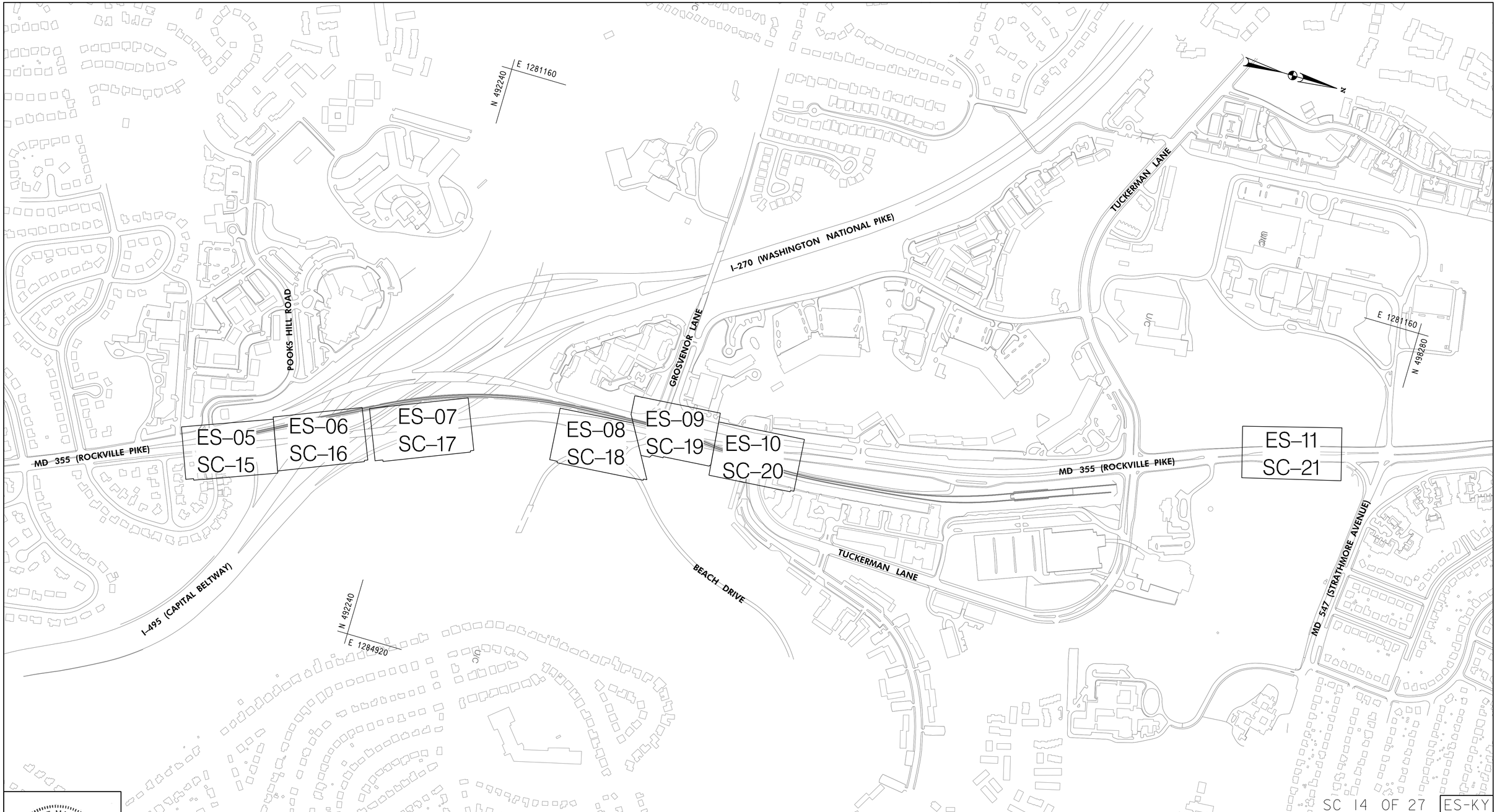

SC 14 OF 27 ES-KY

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STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

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Baltimore, MD 21286
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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EROSION AND SEDIMENT CONTROL
KEY PLAN

SCALE: 1"=300' SHEET 032 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-KEY_Grosvenor.dgn

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 plan and construction sequence, shall have them inspected and approved by the department prior to beginning any other land disturbances, shall ensure 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 permittee shall protect all points of construction ingress and egress to prevent the deposition of materials 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 may be 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 areas with required soil amendments and topsoil, using sod or an approved permanent seed mixture and an approved anchored mulch. Wood fiber mulch may only be used in seeding season when the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within seven (7) calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15.

9. The site permit, work, materials, approved sc/sm 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 from traversing the slopes or by installing mechanical devices to lower the water down slope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.

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 within 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 areas 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 splash block 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 within 20 feet of a sediment trap or basin.

17. All inlets in non-sump areas shall have asphalt berms installed at the time of base paving establishment.

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 with 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 the 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 of 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 may be floated and discharge into a dirt bag (12 oz. Non-woven fabric), or approved 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."

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

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-I	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	

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
DRAWN BY: KN	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS SHOWN
SHEET 033 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-N001_Grosvenor.dgn

SEQUENCE OF CONSTRUCTION

1. Prior to clearing of 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), the Owners representative, and the site Engineer. In order for the meeting to occur, the applicant must provide one paper set of approved sediment control plans to the MCDPS sediment control inspector at the preconstruction meeting. If no plans are provided, the meeting shall not occur and will need to be rescheduled prior to commencing any work.
2. The limits of disturbance must be field marked prior to clearing of trees, installation of sediment control measure, construction or other land disturbing activities.
3. Remove water that pools within any area of excavation with sump pit, pump, and filter bag.
4. Weather should be monitored to ensure construction of proposed drainage facilities are done in a day with no expected rainfall. Proposed drainage facilities should be constructed within one working day.
5. Place Tree Protection Fence. Tree Protection Fencing is shown offset from the Limit of Disturbance (LOD) line for graphic reasons only. Tree protection fence placement is to be executed at the LOD line.
6. Construction can occur coincidentally or any order the contractor chooses as long as approvals are in place.

SITE SPECIFIC SEQUENCE OF CONSTRUCTION

MD 355 Sta. 10+00 to 14+50 and Sta. 200+00 to 203+00:

1. Clear and Grade for Installation of sediment control devices, only disturbing the area needed for installation of the sediment control devices.
2. Install Inlet Protection and Super Silt Fence.
3. Once installed, the permittee must obtain written approval from the MCDPS inspector before proceeding with any additional clearing, grubbing, or grading.
4. Construct roadway, storm drain improvements, curb, sidewalk, and grading.
5. Permanently stabilize disturbed roadside area with topsoil, seed and mulch as indicated on the Typical Sections and Landscape plans.
6. Upon final stabilization and written approval from MCDPS inspector, the permittee shall remove the sediment control devices.

Pedestrian Curb Ramp at I 495 Exit Ramp to NB MD 355, MD 355 Sta. 300+00 to 302+00 and 20+00 to 29+50:

1. Clear and Grade for Installation of sediment control devices, only disturbing the area needed for installation of the sediment control devices.
2. Install Inlet Protection and Super Silt Fence.
3. Once installed, the permittee must obtain written approval from the MCDPS inspector before proceeding with any additional clearing, grubbing, or grading.
4. Construct Bioswale, storm drain improvements, trail, sidewalk, curb, and grading.
5. Permanently stabilize disturbed roadside area with topsoil, seed and mulch as indicated on the Typical Sections and Landscape plans.
6. Upon final stabilization and written approval from MCDPS inspector, the permittee shall remove the sediment control devices.

M-NCPPC CONSTRUCTION NOTES

Removal of Existing Pavement within a Tree's Critical Root Zone:

1. The contractor shall meet with the M-NCPPC Urban Forester and Construction Inspector prior to removal of the pavement to discuss methods to be used to remove pavement. Removal of pavement may be required to be done by hand depending on site conditions.
2. The existing top layer of pavement shall be peeled away without disturbing the ground or material beneath. If a base course of rock is beneath the pavement the rock shall be left in place.
3. During the removal of the pavement layer great care shall be taken to not disturb existing tree roots along or under existing pavement. Existing tree roots greater than 1.5" in diameter encountered during the removal process shall not be cut unless approved by the M-NCPPC Urban Forester.
4. Equipment should remain on existing pavement during the removal process. Equipment shall not traverse over areas where pavement was removed in order to protect exposed tree roots.
5. Ground protection such as a 12" mulch layer will be required if equipment is needed to be operated within the critical root zone.
6. Removal of the existing pavement shall be done under supervision of the M-NCPPC Urban Forester and the Construction Inspector.
7. Stabilize area per approved plan or as directed by Construction Inspector.

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

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RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

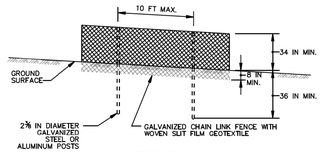
GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS SHOWN SHEET 034 of 128

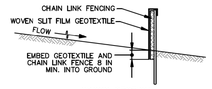
6/5/2023 \\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-N002_Grosvenor.dgn

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

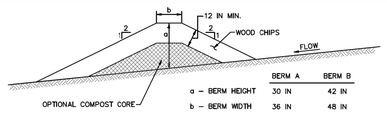
CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

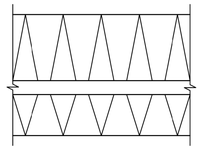
DETAIL E-5 FILTER BERM

STANDARD SYMBOL: FB-A-, FB-B-



	BERM A	BERM B
a – BERM HEIGHT	30 IN	42 IN
b – BERM WIDTH	36 IN	48 IN

CROSS SECTION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

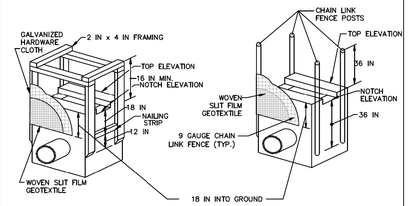
1. PLACE BERM ON THE CONTOUR WITH ENDS TURNED UPGRADE TO PREVENT BYPASS. DO NOT EXCEED GRADES OF 5 PERCENT ALONG THE BERM FOR A DISTANCE GREATER THAN 50 FEET.
2. CONSTRUCT BERM OF CLEAN WOOD CHIPS A MINIMUM SIZE OF 1X2 INCH AND A MAXIMUM OF 3X3 INCH.
3. COMPACT AND SHAPE MATERIAL TO CONFORM TO DIMENSIONS SPECIFIED ON THE APPROVED PLAN.
4. DO NOT PLACE UN-CHIPPED TREE PIECES, BRUSH, OR STUMPS IN THE BERM. BERM MUST BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES.
5. THE BERM MAY CONTAIN UP TO 50% COMPOST MATERIAL IN ACCORDANCE WITH SECTION H-1 MATERIALS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD WOOD CHIPS OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN THEY REACH 25% OF BERM HEIGHT.

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

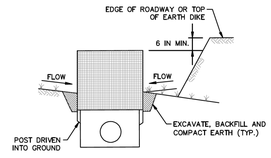
STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



TYPE A TYPE B

ISOMETRIC VIEW



SECTION FOR TYPE A AND B

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

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 ¼ 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 26 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.

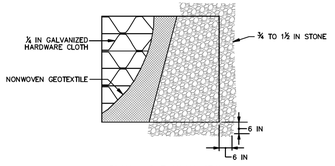
2 OF 2

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

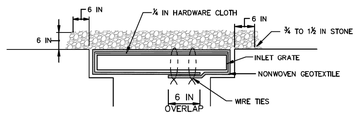
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. 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

DEPARTMENT OF PERMITTING SERVICES

Marc Elrich
County Executive

Mitra Pedoeem
Director

June 22, 2020

Ms. Kathy Walsh, P.E.
Stantec Consulting Ltd.
6110 Frost Place
Laurel, MD 20707-2927

Re: **COMBINED STORMWATER MANAGEMENT CONCEPT/*SITE DEVELOPMENT STORMWATER MANAGEMENT PLAN*** for
Grosvenor Improvements
SM File #: 285833
Tract Size/Zone: 1.1 Ac. / MDSHA ROW
Total Concept Area: 1.1 Ac.
Watershed: Lower Rock Creek

Dear Ms. Walsh:

Based on a review by the Department of Permitting Services Review Staff, the stormwater management concept for the above-mentioned site is **acceptable**. The stormwater management concept proposes to meet required stormwater management goals via ESD to the MEP.

The following items will need to be addressed during the detailed sediment control/stormwater management plan stage:

1. The stormwater management review approval will be done by MDSHA. MDSHA will inspect and maintain the stormwater management facilities. Since MCDPS is the permitting authority for this project, the approves MDSHA plans must be made a part of the DPS sediment control permit set and must be clearly labeled as approved by MDSHA.
2. An engineered sediment control plan must be submitted for this development.
3. You must provide safe non-erosive outfalls from the facilities. This may require the extension of the outfalls to the bottom of the slopes.

This list may not be all-inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 **is not required**.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

255 Rockville Pike, 2nd Floor, Rockville, Maryland 20850 | 240-777-0311
www.montgomerycountymd.gov/permittingservices

Kathy Walsh
June 22, 2020
Page 2 of 2

If you have any questions regarding these actions, please feel free to contact David Kuykendall at 240-777-6332 or david.kuykendall@montgomerycountymd.gov.

Sincerely,

Mark Etheridge

Mark C. Etheridge, Manager
Water Resources Section
Division of Land Development Services

MCE: CN285833 Grosvenor Improvements.DWK

cc: N. Braunstein
SM File # 285833

ESD: Required/Provided 2,849 cf / 2,972 cf
PE: Target/Achieved: 1.8"/1.88"
STRUCTURAL: 0.0 cf
WAIVED: 0.0 ac.

STATE OF MARYLAND
DAVID K. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: NK	DATE: JUNE, 2023
DRAWN BY: NK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EROSION AND SEDIMENT
CONTROL DETAILS

SCALE: N.T.S.

SHEET 035 of 128

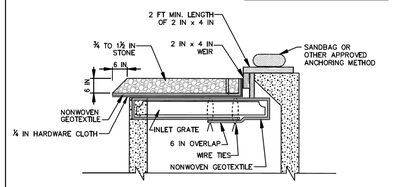
SC 12 OF 27 ES-03

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-D001-Grosvenor.dgn

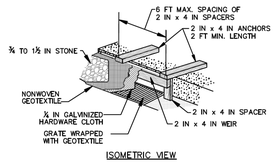
DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

MAXIMUM DRAINAGE AREA = ¾ ACRE



SECTION



ISOMETRIC VIEW

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

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.
6. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
7. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
9. FORM THE ¼ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
11. 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

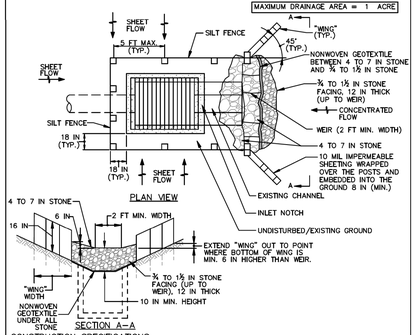
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-4 MEDIAN INLET PROTECTION

STANDARD SYMBOL: MIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

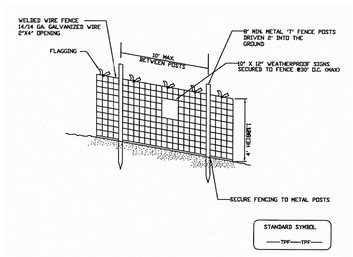
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. INSTALL SILT FENCE ON ALL SIDES OF INLET RECEIVING SHEET FLOW. FENCE IS TO BE INSTALLED IN ACCORDANCE WITH SILT FENCE DETAIL E-1, EXCEPT POSTS ARE TO BE SPACED A MAXIMUM OF 5 FEET APART.
3. INSTALL STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
4. CONSTRUCT "WINGS" IN ACCORDANCE WITH DIVERSION FENCE DETAIL C-9.
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

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.

STATE OF MARYLAND · DAVID H. MARIHUGH · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: NK	DATE: JUNE, 2023
DRAWN BY: NK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
EROSION AND SEDIMENT CONTROL DETAILS

SCALE: N.T.S.

SHEET 036 of 128

6/5/2023
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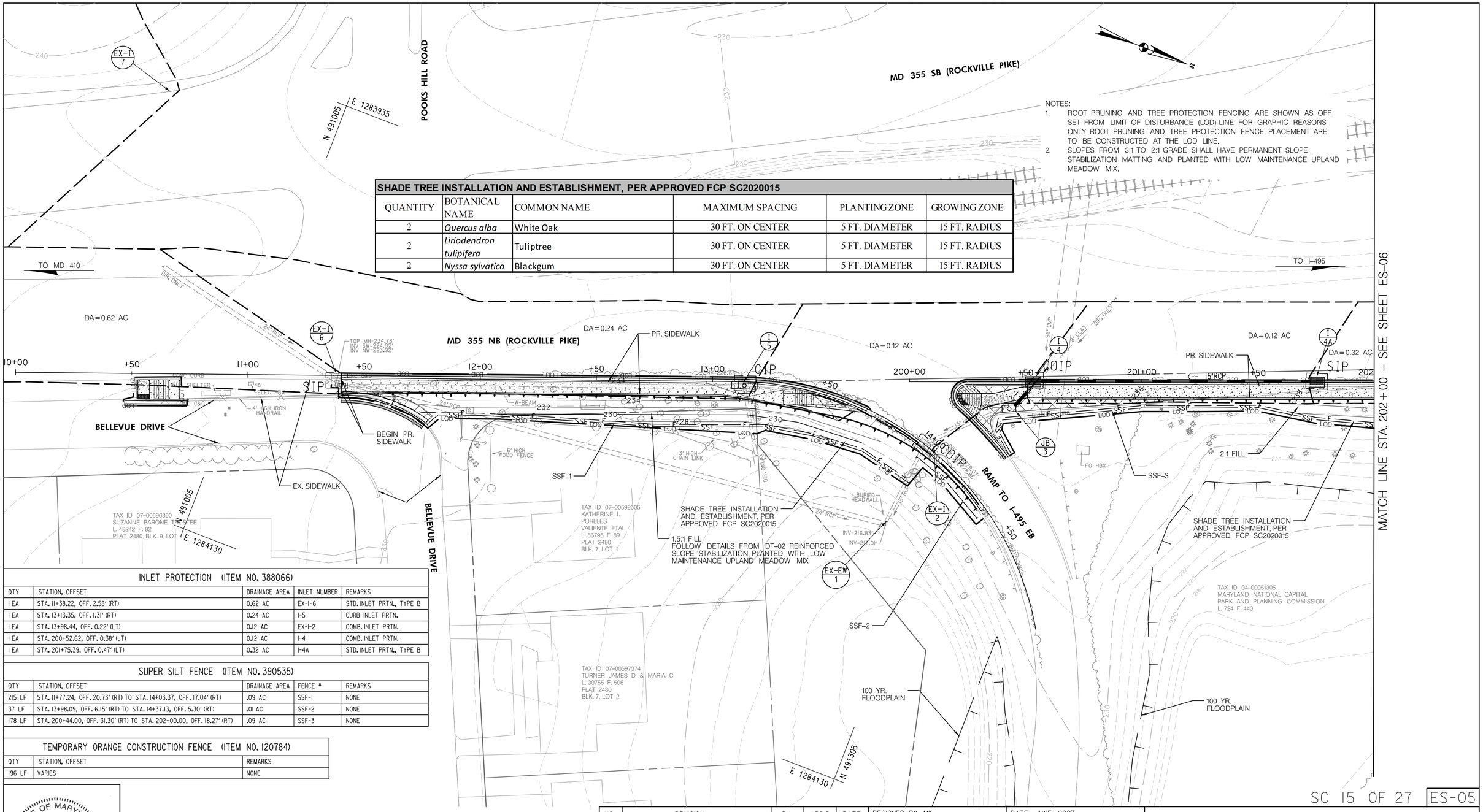

NOTES:
1. ROOT PRUNING AND TREE PROTECTION FENCING ARE SHOWN AS OFF SET FROM LIMIT OF DISTURBANCE (LOD) LINE FOR GRAPHIC REASONS ONLY. ROOT PRUNING AND TREE PROTECTION FENCE PLACEMENT ARE TO BE CONSTRUCTED AT THE LOD LINE.
2. SLOPES FROM 3:1 TO 2:1 GRADE SHALL HAVE PERMANENT SLOPE STABILIZATION MATTING AND PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX.

SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015

QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
2	*Quercus alba*	White Oak	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
2	*Liriodendron tulipifera*	Tuliptree	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
2	*Nyssa sylvatica*	Blackgum	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS

INLET PROTECTION (ITEM NO. 388066)

QTY	STATION, OFFSET	DRAINAGE AREA	INLET NUMBER	REMARKS
1 EA	STA. 11+38.22, OFF. 2.58' (RT)	0.62 AC	EX-I-6	STD. INLET PRTN., TYPE B
1 EA	STA. 13+13.35, OFF. 1.31' (RT)	0.24 AC	I-5	CURB INLET PRTN.
1 EA	STA. 13+98.44, OFF. 0.22' (LT)	0.12 AC	EX-I-2	COMB. INLET PRTN.
1 EA	STA. 200+52.62, OFF. 0.38' (LT)	0.12 AC	I-4	COMB. INLET PRTN.
1 EA	STA. 201+75.39, OFF. 0.47' (LT)	0.32 AC	I-4A	STD. INLET PRTN., TYPE B

SUPER SILT FENCE (ITEM NO. 390535)

QTY	STATION, OFFSET	DRAINAGE AREA	FENCE #	REMARKS
215 LF	STA. 11+77.24, OFF. 20.73' (RT) TO STA. 14+03.37, OFF. 17.04' (RT)	.09 AC	SSF-1	NONE
37 LF	STA. 13+98.09, OFF. 6.15' (RT) TO STA. 14+37.13, OFF. 5.30' (RT)	.01 AC	SSF-2	NONE
178 LF	STA. 200+44.00, OFF. 31.30' (RT) TO STA. 202+00.00, OFF. 18.27' (RT)	.09 AC	SSF-3	NONE

TEMPORARY ORANGE CONSTRUCTION FENCE (ITEM NO. 120784)

QTY	STATION, OFFSET	REMARKS
196 LF	VARIES	NONE

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date

APPROVED
Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20' SHEET 037 of 128

SC 15 OF 27 ES-05

6/5/2023
\\US0525-PPFSS01\shared_projects\202601401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-P001_Grosvenor.dgn

NOTES:

1. ROOT PRUNING AND TREE PROTECTION FENCING ARE SHOWN AS OFF SET FROM LIMIT OF DISTURBANCE (LOD) LINE FOR GRAPHIC REASONS ONLY. ROOT PRUNING AND TREE PROTECTION FENCE PLACEMENT ARE TO BE CONSTRUCTED AT THE LOD LINE.
2. SLOPES FROM 3:1 TO 2:1 GRADE SHALL HAVE PERMANENT SLOPE STABILIZATION MATTING AND PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX.

SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015

QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
1	*Liriodendron tulipifera*	Tuliptree	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
1	*Nyssa sylvatica*	Blackgum	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS

MATCH LINE STA. 202+00 – SEE SHEET ES-05

TO MD 410

DA=0.44 AC

MD 355 NB (ROCKVILLE PIKE)

RAMP FROM MD 355 SB

RAMP TO I-495 OL

TO MD 547

202+00 +50 203+00

END PR. SIDEWALK

SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015

2:1 FILL

SSF-3

N 491540 E 1283940

N 491540 E 1283690

N 491950 E 1283690

I-495 INNER LOOP (CAPITAL BELTWAY)

I-495 OUTER LOOP (CAPITAL BELTWAY)

TAX ID 04-00051305
MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
L. 724 F. 440

100 YR. FLOODPLAIN

SUPER SILT FENCE (ITEM NO. 390535)

QTY	STATION, OFFSET	DRAINAGE AREA	FENCE #	REMARKS
93 LF	STA. 202+00.00, OFF. 18.27' (RT) TO STA. 202+91.16, OFF. 13.91' (RT)	.09 AC	SSF-3	NONE

TEMPORARY ORANGE CONSTRUCTION FENCE (ITEM NO. 120784)

QTY	STATION, OFFSET	REMARKS
100 LF	VARIES	NONE

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20' SHEET 038 of 128

SC 16 OF 27 ES-06

6/5/2023
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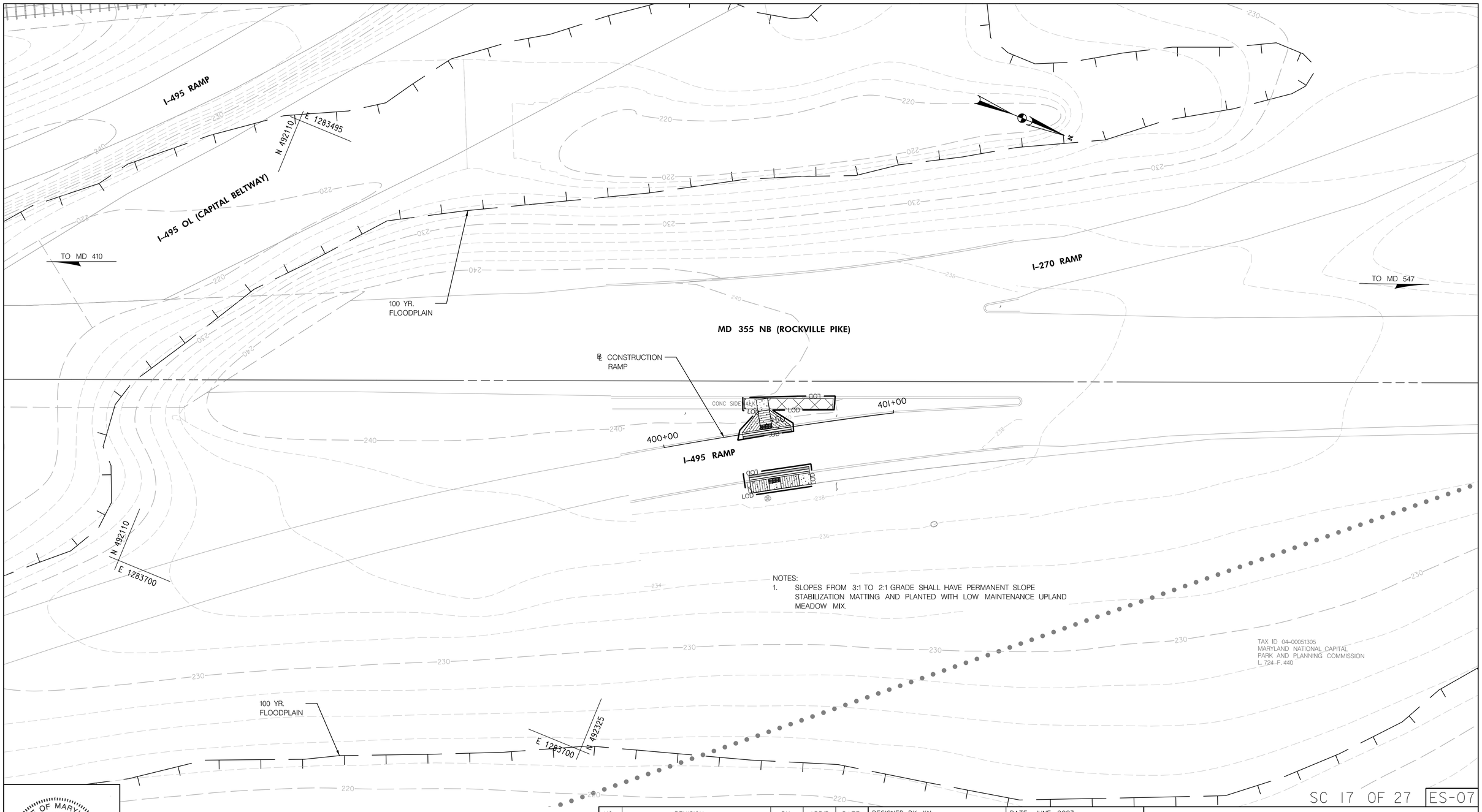

SC 17 OF 27 ES-07

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
DRAWN BY: KN	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

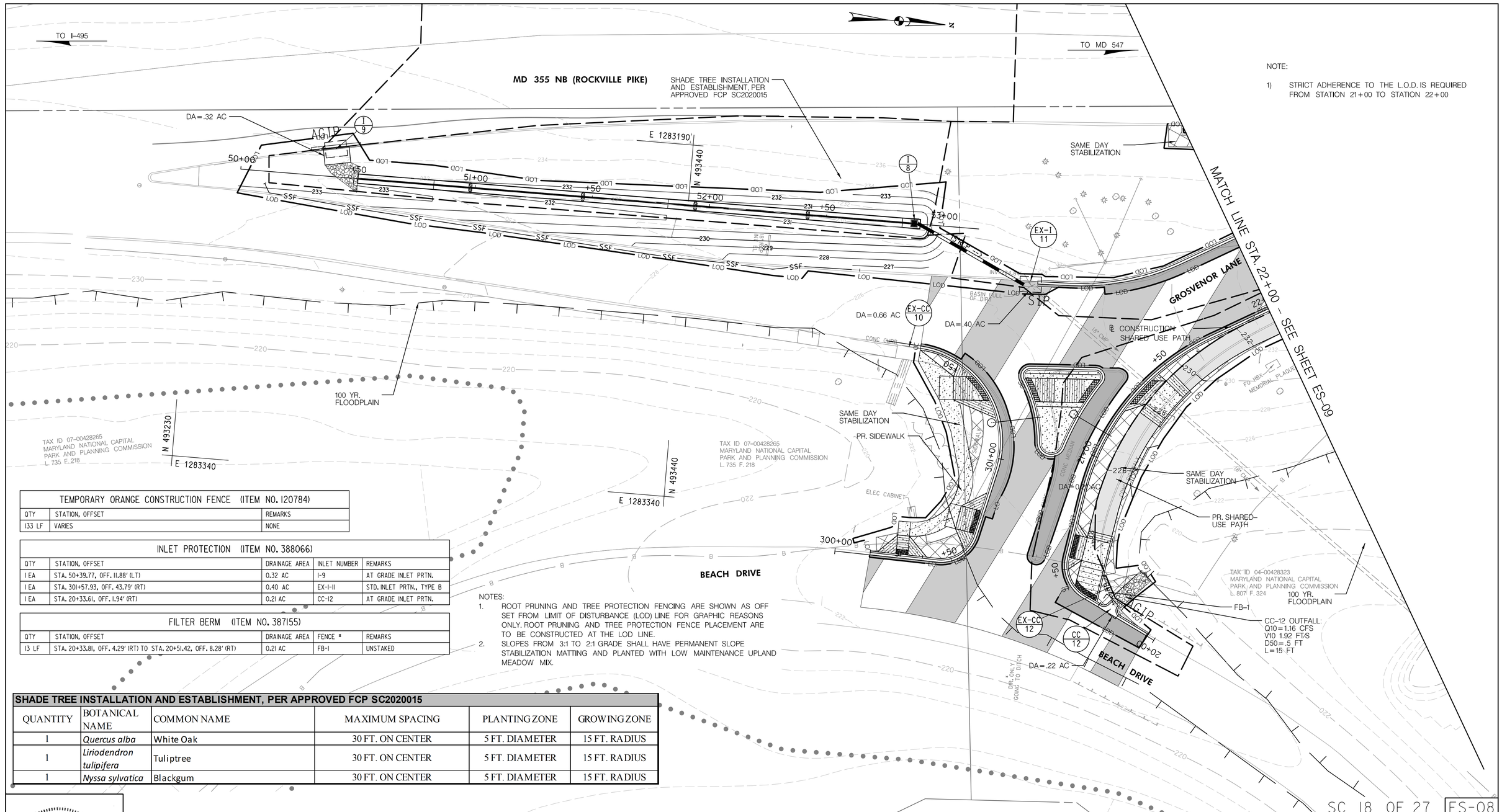
Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20' SHEET 039 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pES-P003_Grosvenor.dgn



NOTE:

1) STRICT ADHERENCE TO THE L.O.D. IS REQUIRED FROM STATION 21+00 TO STATION 22+00

TEMPORARY ORANGE CONSTRUCTION FENCE (ITEM NO. 120784)		
QTY	STATION, OFFSET	REMARKS
133 LF	VARIES	NONE

INLET PROTECTION (ITEM NO. 388066)				
QTY	STATION, OFFSET	DRAINAGE AREA	INLET NUMBER	REMARKS
1 EA	STA. 50+39.77, OFF. 11.88' (LT)	0.32 AC	I-9	AT GRADE INLET PRTN.
1 EA	STA. 301+57.93, OFF. 43.79' (RT)	0.40 AC	EX-I-11	STD. INLET PRTN., TYPE B
1 EA	STA. 20+33.61, OFF. 1.94' (RT)	0.21 AC	CC-12	AT GRADE INLET PRTN.

FILTER BERM (ITEM NO. 387155)				
QTY	STATION, OFFSET	DRAINAGE AREA	FENCE #	REMARKS
13 LF	STA. 20+33.81, OFF. 4.29' (RT) TO STA. 20+51.42, OFF. 8.28' (RT)	0.21 AC	FB-1	UNSTAKED

NOTES:
1. ROOT PRUNING AND TREE PROTECTION FENCING ARE SHOWN AS OFF SET FROM LIMIT OF DISTURBANCE (LOD) LINE FOR GRAPHIC REASONS ONLY. ROOT PRUNING AND TREE PROTECTION FENCE PLACEMENT ARE TO BE CONSTRUCTED AT THE LOD LINE.
2. SLOPES FROM 3:1 TO 2:1 GRADE SHALL HAVE PERMANENT SLOPE STABILIZATION MATTING AND PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX.

SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015

QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
1	*Quercus alba*	White Oak	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
1	*Liriodendron tulipifera*	Tuliptree	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
1	*Nyssa sylvatica*	Blackgum	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20' SHEET 040 of 128

6/5/2023
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SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015					
QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
1	*Quercus alba*	White Oak	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
1	*Liriodendron tulipifera*	Tuliptree	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
1	*Nyssa sylvatica*	Blackgum	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS

TEMPORARY ORANGE CONSTRUCTION FENCE (ITEM NO. 120784)		
QTY	STATION, OFFSET	REMARKS
123 LF	VARIES	NONE

INLET PROTECTION (ITEM NO. 388066)				
QTY	STATION, OFFSET	DRAINAGE AREA	INLET NUMBER	REMARKS
1 EA	STA. 26+69.85, OFF. 50.61' (LT)	1.0 AC	EX-I-13	MEDIAN INLET PRTN.

FILTER BERM (ITEM NO. 387155)				
QTY	STATION, OFFSET	DRAINAGE AREA	FENCE *	REMARKS
55 LF	STA. 23+82.71, OFF. 25.07' (RT) TO STA. 24+36.42 OFF. 36.28' (RT)	0.04 AC	FB-2	NONE

SUPER SILT FENCE (ITEM NO. 390535)				
QTY	STATION, OFFSET	DRAINAGE AREA	FENCE *	REMARKS
271 LF	STA. 24+34.79, OFF. 37.62' (RT) TO STA. 27+00.00 OFF. 33.35' (RT)	0.36 AC	SSF-4	NONE

MD 355 SB (ROCKVILLE PIKE)

MD 355 NB (ROCKVILLE PIKE)

GROSVENOR LANE

MATCH LINE STA. 22+00 – SEE SHEET ES-08

MATCH LINE STA. 27+00 – SEE SHEET ES-10

NOTES:
1. ROOT PRUNING AND TREE PROTECTION FENCING ARE SHOWN AS OFF SET FROM LIMIT OF DISTURBANCE (LOD) LINE FOR GRAPHIC REASONS ONLY. ROOT PRUNING AND TREE PROTECTION FENCE PLACEMENT ARE TO BE CONSTRUCTED AT THE LOD LINE.
2. SLOPES FROM 3:1 TO 2:1 GRADE SHALL HAVE PERMANENT SLOPE STABILIZATION MATTING AND PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX.
3. STRICT ADHERENCE TO THE L.O.D. IS REQUIRED FROM STATION 22+00 TO STATION 24+00.

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: 12/31/2024

STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20'

SHEET 041 of 128

SC 19 OF 27 ES-09

6/5/2023
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SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015					
QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
4	*Quercus alba*	White Oak	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
4	*Liriodendron tulipifera*	Tuliptree	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS
3	*Nyssa sylvatica*	Blackgum	30 FT. ON CENTER	5 FT. DIAMETER	15 FT. RADIUS

NOTES:
1. SLOPES FROM 3:1 TO 2:1 GRADE SHALL HAVE PERMANENT SLOPE STABILIZATION MATTING AND PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX.

MATCH LINE STA. 27+00 - SEE SHEET ES-10

TO I-495

TO MD 547

MD 355 SB (ROCKVILLE PIKE)

MD 355 NB (ROCKVILLE PIKE)

℄ CONSTRUCTION MD 355

℄ CONSTRUCTION SHARED USE PATH

PR. SHARED-USE PATH

℄ CONSTRUCTION TUCKERMAN LANE

TUCKERMAN LANE

PR. SIDEWALK

1.5:1 FILL FOLLOW DETAILS FROM DT-02 REINFORCED SLOPE STABILIZATION, PLANTED WITH LOW MAINTENANCE UPLAND MEADOW MIX

SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015

EX. 2.5:1 FILL

100 YR. FLOODPLAIN

TAX ID 04-00051167
MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
L. 735 F. 332

TAX ID 04-
PARKSIDE ASSOCIATES
L. 5553 F. 284
PLAT 3476

TAX ID 04-03309261
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
L. F.

TAX ID 04-03349860
GROSVENOR STATION DEV LLC
TAX DEPT
L. F.
ZONE: CR-0.5, C-0.25, R-0.25, H-40

SUPER SILT FENCE (ITEM NO. 390535)				
QTY	STATION, OFFSET	DRAINAGE AREA	FENCE *	REMARKS
163 LF	STA. 27+00.00 OFF. 33.35' (RT) TO STA. 28+53.91 OFF. 24.59' (RT)	0.36 AC	SSF-4	NONE

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20' SHEET 042 of 128

SC 20 OF 27 ES-10

6/5/2023
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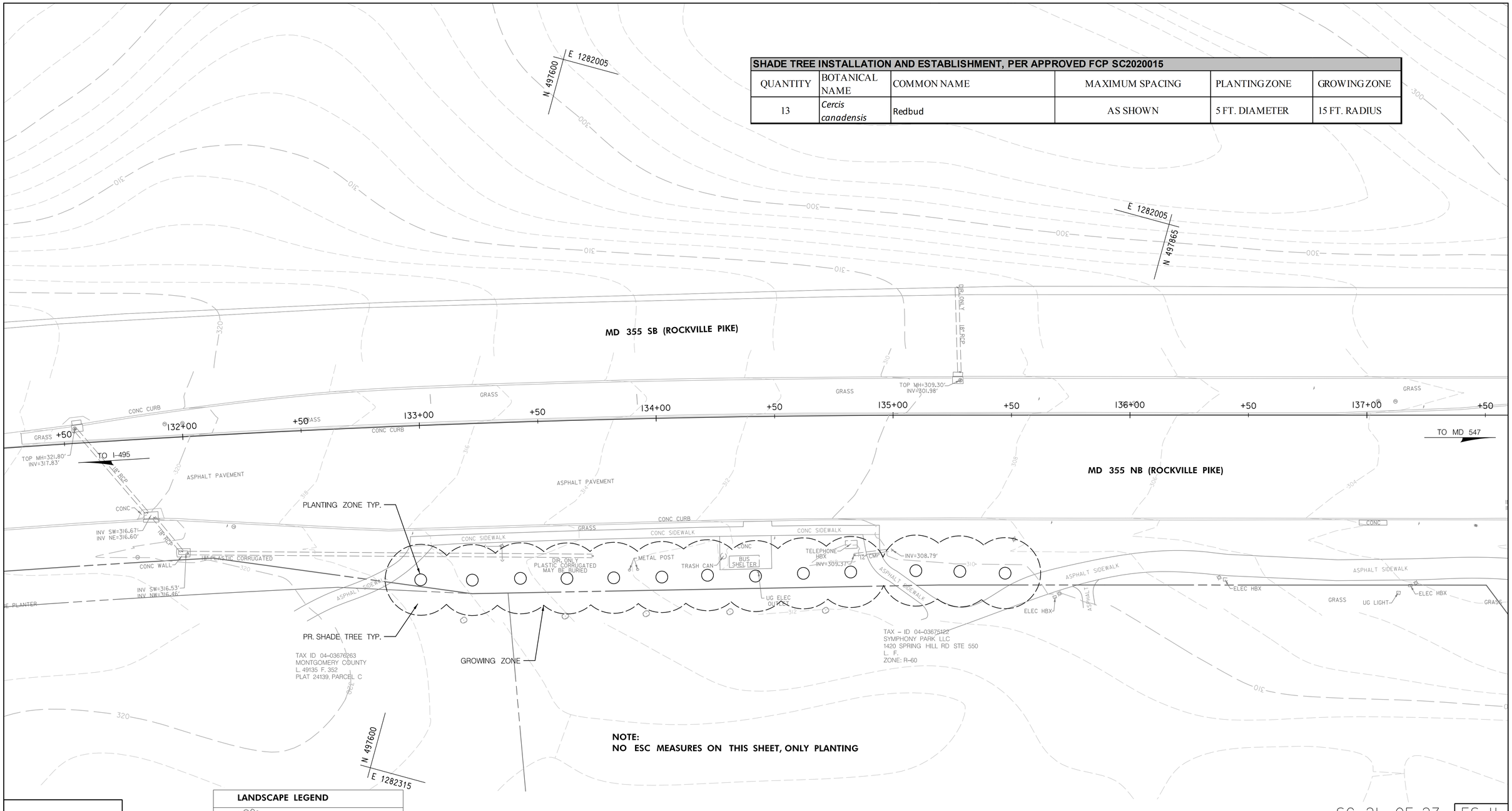
SHADE TREE INSTALLATION AND ESTABLISHMENT, PER APPROVED FCP SC2020015					
QUANTITY	BOTANICAL NAME	COMMON NAME	MAXIMUM SPACING	PLANTING ZONE	GROWING ZONE
13	*Cercis canadensis*	Redbud	AS SHOWN	5 FT. DIAMETER	15 FT. RADIUS



NOTE:
NO ESC MEASURES ON THIS SHEET, ONLY PLANTING

LANDSCAPE LEGEND

ORNAMENTAL TREES

SCALE: 1" = 20'

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2003

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KN	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20'

SHEET 042A of 128

6/5/2023
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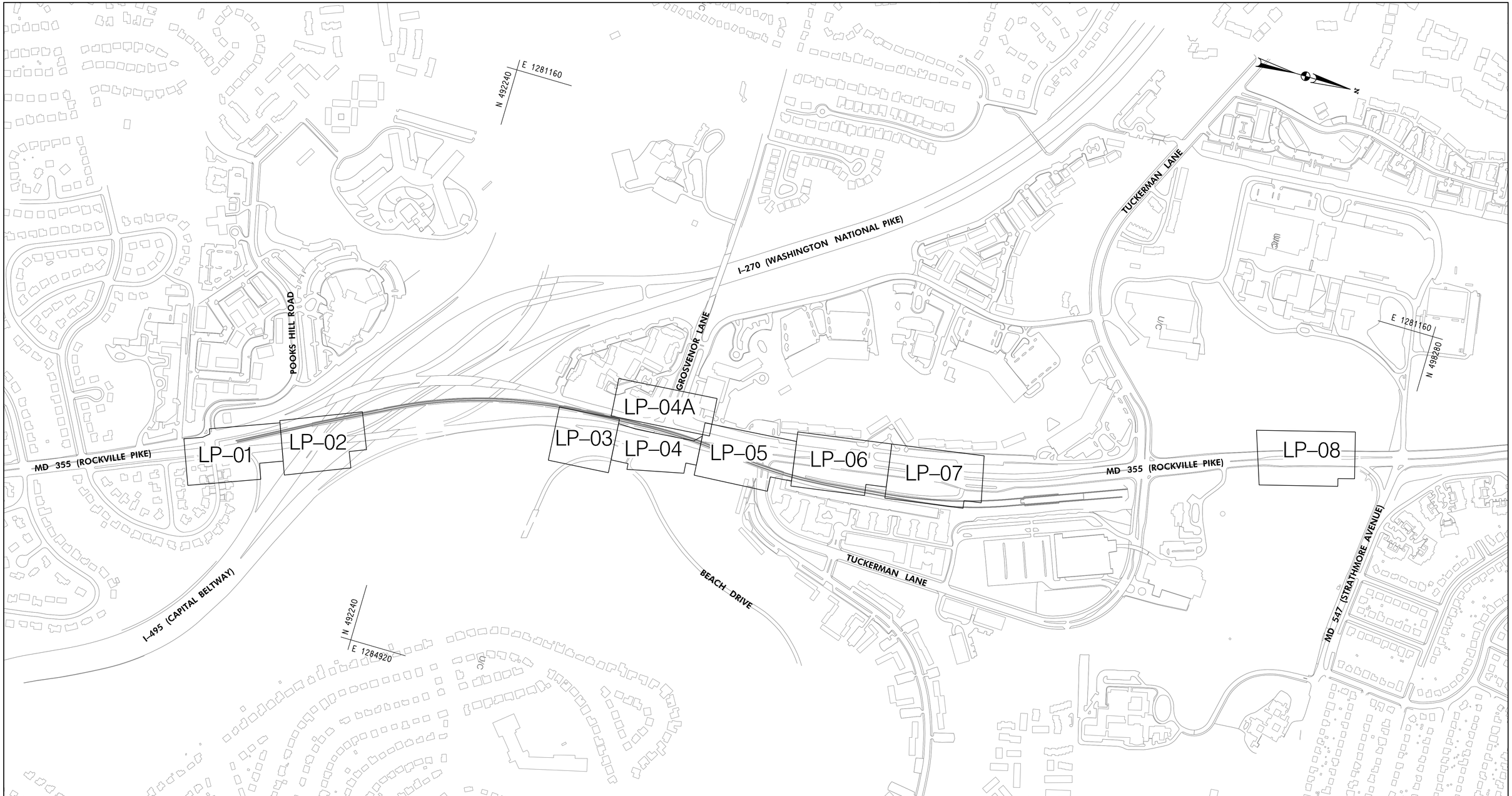

LP-KY

300' 0 300' 600'
SCALE: 1" = 300'

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
STATE OF MARYLAND

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO: 3190 EXPIRATION DATE: 05072021

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION
KEY PLAN

SCALE: 1"=300'

SHEET 043 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\260611401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pLP-KEY_Grosvenor.dgn

NOTES:

1. REFER TO EROSION AND SEDIMENT CONTROL /SWM PLAN FOR TREE PROTECTION FENCE (TPF) & BIORETENTION SOIL MIX ITEMS AND QUANTITIES.
2. LOCATION OF WELDED WIRE TREE PROTECTION FENCE AND ROOT PRUING ARE SHOWN ON THE PLAN AS AN OFFSET FROM THE LIMIT OF DISTRUBANCE (LOD) FOR GRAPHIC PURPOSES ONLY, FENCE AND ROOT PRUING OPERATIONS SHALL BE LOCATED AT LOD LINE.
3. THIS IS A LINEAR PROJECT LOCATED ON MD 355 AND M-NCPPC PROPERTIES. THE LIMIT OF DISTURBANCE (LOD) IS 1.15 ACRES. REFER TO FOREST CONSERVATION PLAN GROVESNOR IMPROVEMENTS #PFCP-SC2020015 FOR FOREST REMOVED AND UPLAND REFORESTATION.
4. SUBSOIL AND TOPSOIL QUANTITIES ARE INCREASED BY 10% TO PROVIDE FOR SHRINKAGE.

LANDSCAPE 700 ITEMS - THIS SHEET ONLY

QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
*337	SY	STA. 11+60 TO STA. 14+00 R	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
306	SY	STA. 11+60 TO STA. 14+00 R	705405	TEMPORARY SEED	704
306	SY	STA. 11+60 TO STA. 14+00 R	705412	TEMPORARY MULCH	704
306	SY	STA. 11+60 TO STA. 14+00 R	707400	UPLAND MEADOW ESTABLISHMENT	707
306	SY	STA. 11+60 TO STA. 14+00 R	709100	TYPE A SOIL STABILIZATION MATTING	709
103	LF	STA. 13+00 TO STA. 14+20 R	715050	TREE ROOT PRUNING	715

QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
191	SY	STA. 200+27 R TO STA. 202+00 R	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
173	SY	STA. 200+27 R TO STA. 202+00 R	705405	TEMPORARY SEED	704
173	SY	STA. 200+27 R TO STA. 202+00 R	705412	TEMPORARY MULCH	704
5	SY	STA. 200+27 R TO STA. 202+00 R	705500	TURFGRASS ESTABLISHMENT	705
168	SY	STA. 200+27 R TO STA. 202+00 R	707400	UPLAND MEADOW ESTABLISHMENT	707
173	SY	STA. 200+27 R TO STA. 202+00 R	709100	TYPE A SOIL STABILIZATION MATTING	709
129	LF	STA. 200+27 R TO STA. 202+00 R	715050	TREE ROOT PRUNING	715

*SOIL QUANTITIES ADD 10%

POOKS HILL ROAD

N 491105 E 1283935

TO MD 410

TO I-495

CRITICAL ROOT ZONE (TYP.)

MD 355 NB (ROCKVILLE PIKE)

FOREST REMOVAL

UPLAND MEADOW ESTABLISHMENT

TURFGRASS ESTABLISHMENT

BELLEVUE DRIVE

RAMP TO I-495 EB

TREE ROOT PRUNING

MATCH LINE STA. 202+00 - SEE SHEET LP-02

TAX ID 07-00596860
SUZANNE BARONE TRUSTEE
L. 48242 F. 82
PLAT 2480, BLK. 9, LOT 1

N 491005 E 1284130

TAX ID 07-00598505
KATHERINE L PORLLES VALIENTE ETAL
L. 56795 F. 89
PLAT 2480
BLK. 7, LOT 1

TAX ID 07-00597374
TURNER JAMES D & MARIA C
L. 30755 F. 506
PLAT 2480
BLK. 7, LOT 2

TAX ID 07-00597237
MURIITHI SCHOLASTICA K
L. 42095 F. 426
PLAT -, BLK. 9, LOT 2

N 491305 E 1284130

TAX ID 04-00051305
MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION
L. 724 F. 440

LANDSCAPE LEGEND

- UPLAND MEADOW ESTABLISHMENT
- TURFGRASS ESTABLISHMENT
- FOREST REMOVAL
- TREE ROOT PRUNING

LP-01

SCALE: 1" = 20'

LANDSCAPE ARCHITECT 3199 KATHLEEN RENDEL DAHILL STATE OF MARYLAND

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

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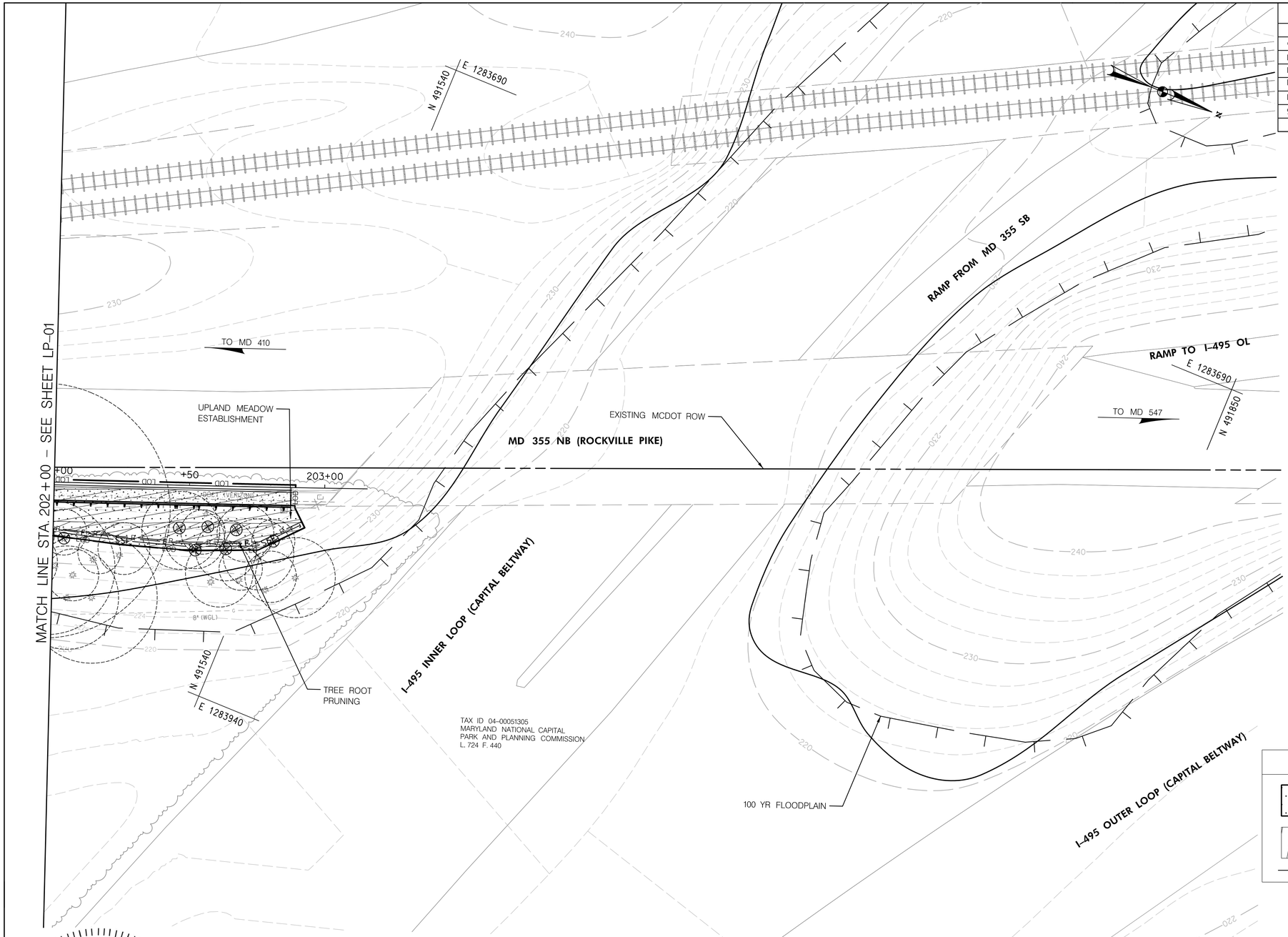
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 044 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pLP-P001_Grosvenor.dgn



LANDSCAPE 700 ITEMS - THIS SHEET ONLY

QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
*130	SY	STA. 202+00 TO STA. 202+80 R	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
118	SY	STA. 202+00 TO STA. 202+80 R	705405	TEMPORARY SEED	704
118	SY	STA. 202+00 TO STA. 202+80 R	705412	TEMPORARY MULCH	704
118	SY	STA. 202+00 TO STA. 202+80 R	707400	UPLAND MEADOW ESTABLISHMENT	707
118	SY	STA. 202+00 TO STA. 202+80 R	709100	TYPE A SOIL STABILIZATION MATTING	709
93	LF	STA. 202+00 TO STA. 202+80 R	715050	TREE ROOT PRUNING	715

*SOIL QUANTITIES ADD 10%

NOTES:

1. **REFER TO EROSION AND SEDIMENT CONTROL /SWM PLAN FOR TREE PROTECTION FENCE (TPF) & BIORETENTION SOIL MIX ITEMS AND QUANTITIES.**
2. **LOCATION OF WELDED WIRE TREE PROTECTION FENCE AND ROOT PRUING ARE SHOWN ON THE PLAN AS AN OFFSET FROM THE LIMIT OF DISTRUBANCE (LOD) FOR GRAPHIC PURPOSES ONLY, FENCE AND ROOT PRUING OPERATIONS SHALL BE LOCATED AT LOD LINE.**
3. **THIS IS A LINEAR PROJECT LOCATED ON MD 355 AND M-NCPPC PROPERTIES. THE LIMIT OF DISTURBANCE (LOD) IS 1.15 ACRES. REFER TO FOREST CONSERVATION PLAN GROVESNOR IMPROVEMENTS #PFCP-SC2020015 FOR FOREST REMOVED AND UPLAND REFORESTATION.**
4. **SUBSOIL AND TOPSOIL QUANTITIES ARE INCREASED BY 10% TO PROVIDE FOR SHRINKAGE.**

LANDSCAPE LEGEND

- **UPLAND MEADOW ESTABLISHMENT**
- **FOREST REMOVAL**
- **TREE ROOT PRUNING**

LP-02

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
STATE OF MARYLAND

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

Stantec
810 Gleneagles Court, Suite 300
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www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 045 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\1\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pLP-P002_Grosvenor.dgn

LANDSCAPE 700 ITEMS - THIS SHEET ONLY					
QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
*516	SY	SWM SWALE LOD AS SHOWN	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
174	SY	SWM SWALE LOD AS SHOWN	705405	TEMPORARY SEED	704
174	SY	SWM SWALE LOD AS SHOWN	705412	TEMPORARY MULCH	704
469	SY	SWM SWALE LOD AS SHOWN	708220	TURFGRASS SOD ESTABLISHMENT	708
469	SY	SWM SWALE LOD AS SHOWN	705565	REFERTILIZING	705
174	SY	SWM SWALE LOD AS SHOWN	709110	TYPE B SOIL STABILIZATION MATTING	709
174	SY	SWM SWALE LOD AS SHOWN	707415	BIORETENTION MEADOW ESTABLISHMENT	700.02

*SOIL QUANTITIES ADD 10%

NOTES:

1. **LANDSCAPE LIMIT OF DISTURBANCE (LLOD) DELINEATED FOR LANDSCAPE ACTIVITIES BEYOND THE LIMIT OF DISTURBANCE (LOD). THE LLOD IS 2,366 SQUARE FEET AS SHOWN. THE LLOD WORK TO INCLUDE INSTALLATION OF TREES AND SHRUBS IN INDIVIDUAL PLANTING PITS. GRADING, CLEARING AND GRUBBING, PLACEMENT OF SOIL LAYERS OR STORAGE OF EQUIPMENT OR MATERIALS ARE PROHIBITED IN THE LLOD.**

2. **ALL STORMWATER MANAGEMENT IS TO BE APPROVED, INSPECTED, AND MAINTAINED BY MDOT SHA.**

3. **REFER TO EROSION AND SEDIMENT CONTROL /SWM PLAN FOR TREE PROTECTION FENCE (TPF) & BIORETENTION SOIL MIX ITEMS AND QUANTITIES.**

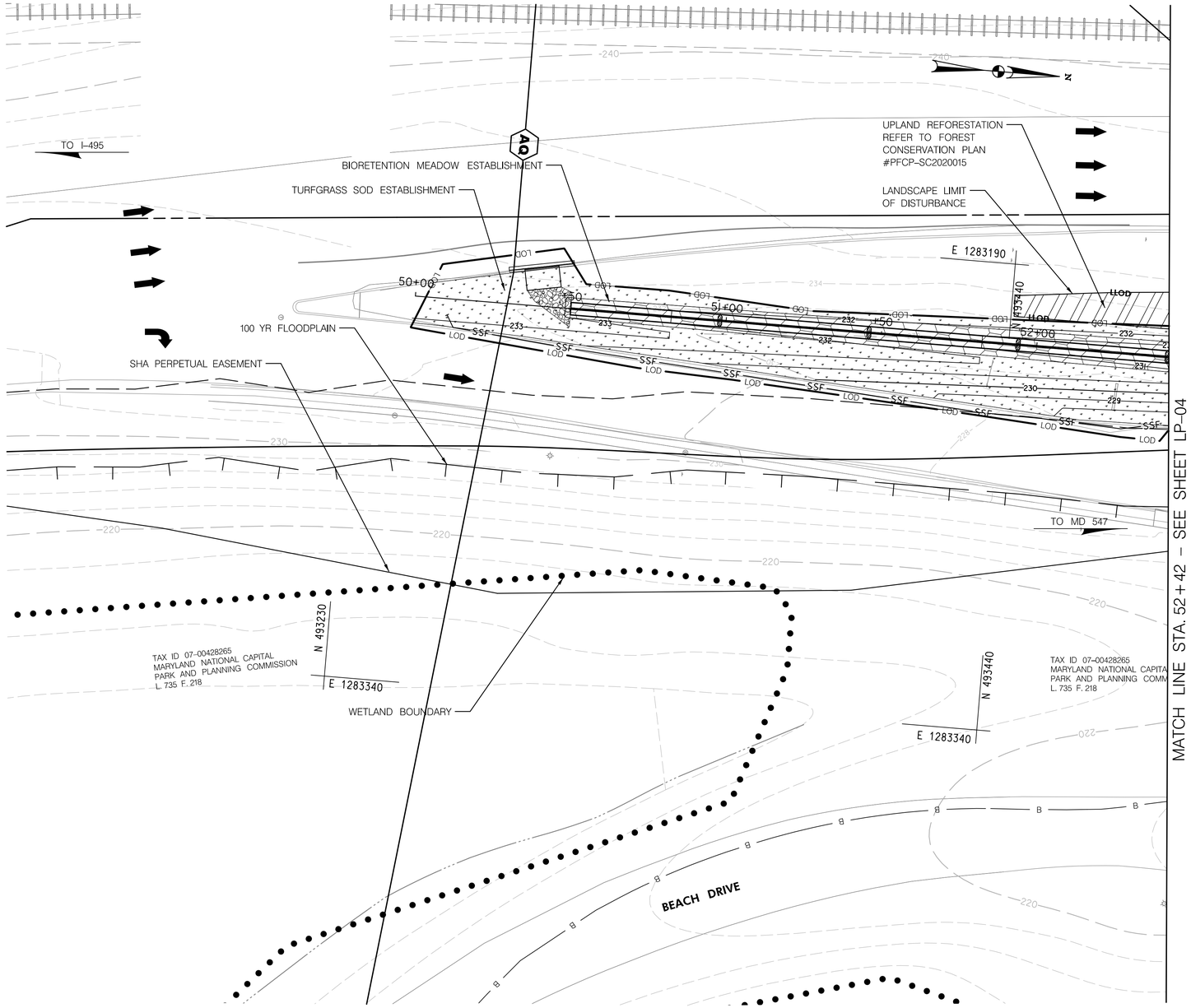
4. **LOCATION OF WELDED WIRE TREE PROTECTION FENCE AND ROOT PRUING ARE SHOWN ON THE PLAN AS AN OFFSET FROM THE LIMIT OF DISTRUBANCE (LOD) FOR GRAPHIC PURPOSES ONLY, FENCE AND ROOT PRUING OPERATIONS SHALL BE LOCATED AT LOD LINE.**

5. **THIS IS A LINEAR PROJECT LOCATED ON MD 355 AND M-NCPPC PROPERTIES. THE LIMIT OF DISTURBANCE (LOD) IS 1.15 ACRES. REFER TO FOREST CONSERVATION PLAN GROVESNOR IMPROVEMENTS #PFCP-SC2020015 FOR FOREST REMOVED AND UPLAND REFORESTATION.**

6. **SUBSOIL AND TOPSOIL QUANTITIES ARE INCREASED BY 10% TO PROVIDE FOR SHRINKAGE.**

LANDSCAPE LEGEND

- LLOD — LLOD — **LANDSCAPE LIMIT OF DISTURBANCE**
- **UPLAND MEADOW ESTABLISHMENT**
- **FURNISHED SUBSOIL 6" DEPTH**
- **TURFGRASS SOD ESTABLISHMENT**
- **FOREST REMOVAL**
- **BIORETENTION MEADOW ESTABLISHMENT REFER TO MDOT SHA SPECIAL PROVISION**
- **UPLAND REFORESTATION PER FCP**
- R — R — **TREE ROOT PRUNING**



SC 26 OF 27 | LP-03

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

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
STATE OF MARYLAND

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: KRD	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 046 of 128

6/5/2023
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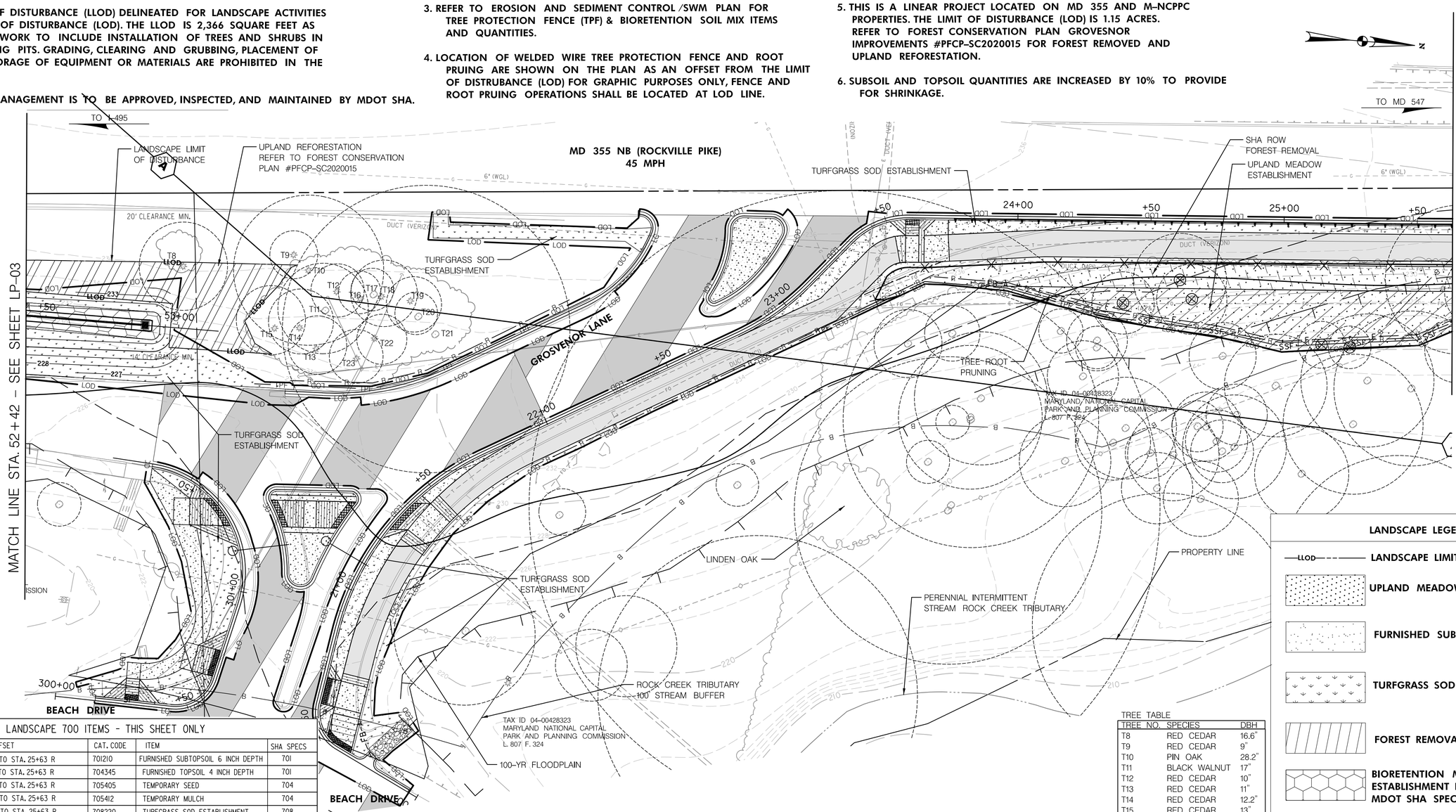
NOTES:

1. LANDSCAPE LIMIT OF DISTURBANCE (LLOD) DELINEATED FOR LANDSCAPE ACTIVITIES BEYOND THE LIMIT OF DISTURBANCE (LOD). THE LLOD IS 2,366 SQUARE FEET AS SHOWN. THE LLOD WORK TO INCLUDE INSTALLATION OF TREES AND SHRUBS IN INDIVIDUAL PLANTING PITS. GRADING, CLEARING AND GRUBBING, PLACEMENT OF SOIL LAYERS OR STORAGE OF EQUIPMENT OR MATERIALS ARE PROHIBITED IN THE LLOD.
2. ALL STORMWATER MANAGEMENT IS TO BE APPROVED, INSPECTED, AND MAINTAINED BY MDOT SHA.
3. REFER TO EROSION AND SEDIMENT CONTROL /SWM PLAN FOR TREE PROTECTION FENCE (TPF) & BIORETENTION SOIL MIX ITEMS AND QUANTITIES.
4. LOCATION OF WELDED WIRE TREE PROTECTION FENCE AND ROOT PRUING ARE SHOWN ON THE PLAN AS AN OFFSET FROM THE LIMIT OF DISTRUBANCE (LOD) FOR GRAPHIC PURPOSES ONLY, FENCE AND ROOT PRUING OPERATIONS SHALL BE LOCATED AT LOD LINE.
5. THIS IS A LINEAR PROJECT LOCATED ON MD 355 AND M–NCPPC PROPERTIES. THE LIMIT OF DISTURBANCE (LOD) IS 1.15 ACRES. REFER TO FOREST CONSERVATION PLAN GROVESNOR IMPROVEMENTS #PFCP–SC2020015 FOR FOREST REMOVED AND UPLAND REFORESTATION.
6. SUBSOIL AND TOPSOIL QUANTITIES ARE INCREASED BY 10% TO PROVIDE FOR SHRINKAGE.



LANDSCAPE 700 ITEMS - THIS SHEET ONLY

QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
•169	SY	STA. 20+42 TO STA. 25+63 R	701210	FURNISHED SUBTOPSOIL 6 INCH DEPTH	701
•750	SY	STA. 20+42 TO STA. 25+63 R	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
534	SY	STA. 20+42 TO STA. 25+63 R	705405	TEMPORARY SEED	704
534	SY	STA. 20+42 TO STA. 25+63 R	705412	TEMPORARY MULCH	704
632	SY	STA. 20+42 TO STA. 25+63 R	708220	TURFGRASS SOD ESTABLISHMENT	708
632	SY	STA. 20+42 TO STA. 25+63 R	705565	REFERTILIZING	705
534	SY	STA. 23+26 TO STA. 25+63 R	709130	TYPE D SOIL STABILIZATION MATTING	709
534	SY	STA. 23+26 TO STA. 25+63 R	707400	UPLAND MEADOW ESTABLISHMENT	707
447	LF	STA. 23+80 TO STA. 25+63 R	715050	TREE ROOT PRUNING	715
56	LF	SWM SWALE LOD AS SHOWN	707415	BIORETENTION MEADOW ESTABLISHMENT	700.02
56	SY	SWM SWALE LOD AS SHOWN	709110	TYPE B SOIL STABILIZATION MATTING	709
49	SY	STA. 21+95 TO STA. 22+67 L	708220	TURFGRASS SOD ESTABLISHMENT	708
49	SY	STA. 21+95 TO STA. 22+67 L	705405	TEMPORARY SEED	704
49	SY	STA. 21+95 TO STA. 22+67 L	705412	TEMPORARY MULCH	704

•SOIL QUANTITIES ADD 10%

TREE TABLE

TREE NO.	SPECIES	DBH
T8	RED CEDAR	16.6"
T9	RED CEDAR	9"
T10	PIN OAK	28.2"
T11	BLACK WALNUT	17"
T12	RED CEDAR	10"
T13	RED CEDAR	11"
T14	RED CEDAR	12.2"
T15	RED CEDAR	13"
T16	RED CEDAR	8"
T17	CHERRY	7.2"
T18	RED CEDAR	12.5"
T19	RED CEDAR	10.4"
T20	AMERICAN ELM	6.2"
T21	WHITE OAK	36"
T22	RED CEDAR	9.4"
T23	RED CEDAR	10.1"

LANDSCAPE LEGEND

- LLOD — LANDSCAPE LIMIT OF DISTURBANCE
- UPLAND MEADOW ESTABLISHMENT
- FURNISHED SUBSOIL 6" DEPTH
- TURFGRASS SOD ESTABLISHMENT
- FOREST REMOVAL
- BIORETENTION MEADOW ESTABLISHMENT REFER TO MDOT SHA SPECIAL PROVISION
- UPLAND REFORESTATION PER FCP
- R — R — TREE ROOT PRUNING

SCALE: 1" = 20'

LANDSCAPE ARCHITECT 3199 KATHLEEN RENDEL DAHILL STATE OF MARYLAND

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810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

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APPROVED

Chief, Division of Transportation Engineering — Date

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 047 of 128

SC 27 OF 27 | LP-04

6/5/2023
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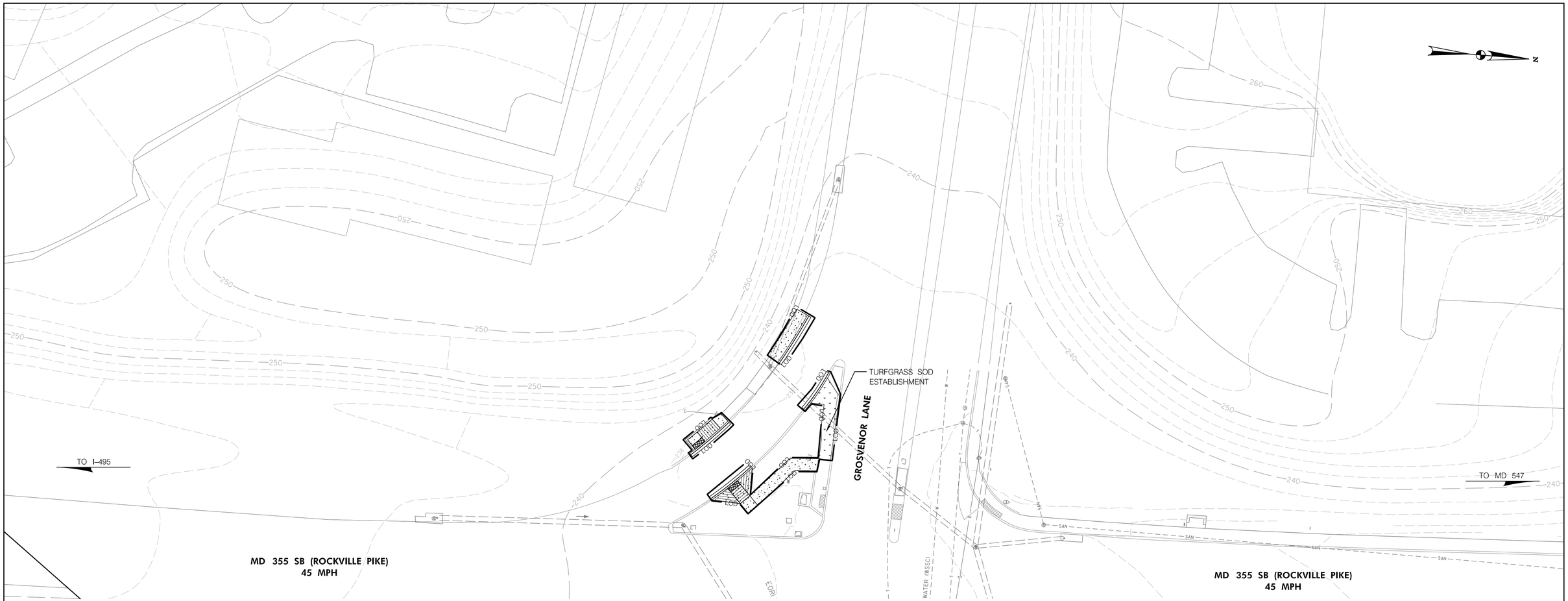

LANDSCAPE 700 ITEMS - THIS SHEET ONLY					
QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
21	SY	GROSVENOR LANE	705405	TEMPORARY SEED	704
21	SY	GROSVENOR LANE	705412	TEMPORARY MULCH	704
21	SY	GROSVENOR LANE	708220	TURFGRASS SOD ESTABLISHMENT	708
•23	SY	GROSVENOR LANE	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701

•SOIL QUANTITIES ADD 10%

LANDSCAPE LEGEND

- LLOD – – – – LLOD — **LANDSCAPE LIMIT OF DISTURBANCE**
- **UPLAND MEADOW ESTABLISHMENT**
- **FURNISHED SUBSOIL 6" DEPTH**
- **TURFGRASS SOD ESTABLISHMENT**
- **FOREST REMOVAL**
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- **UPLAND REFORESTATION PER FCP**
- R — R — **TREE ROOT PRUNING**

LP-04A

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

LANDSCAPE ARCHITECT 3199 KATHLEEN RENDEL DAHILL STATE OF MARYLAND

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 047A of 128

6/5/2023
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NOTES:

1. REFER TO EROSION AND SEDIMENT CONTROL /SWM PLAN FOR TREE PROTECTION FENCE (TPF) & BIORETENTION SOIL MIX ITEMS AND QUANTITIES.
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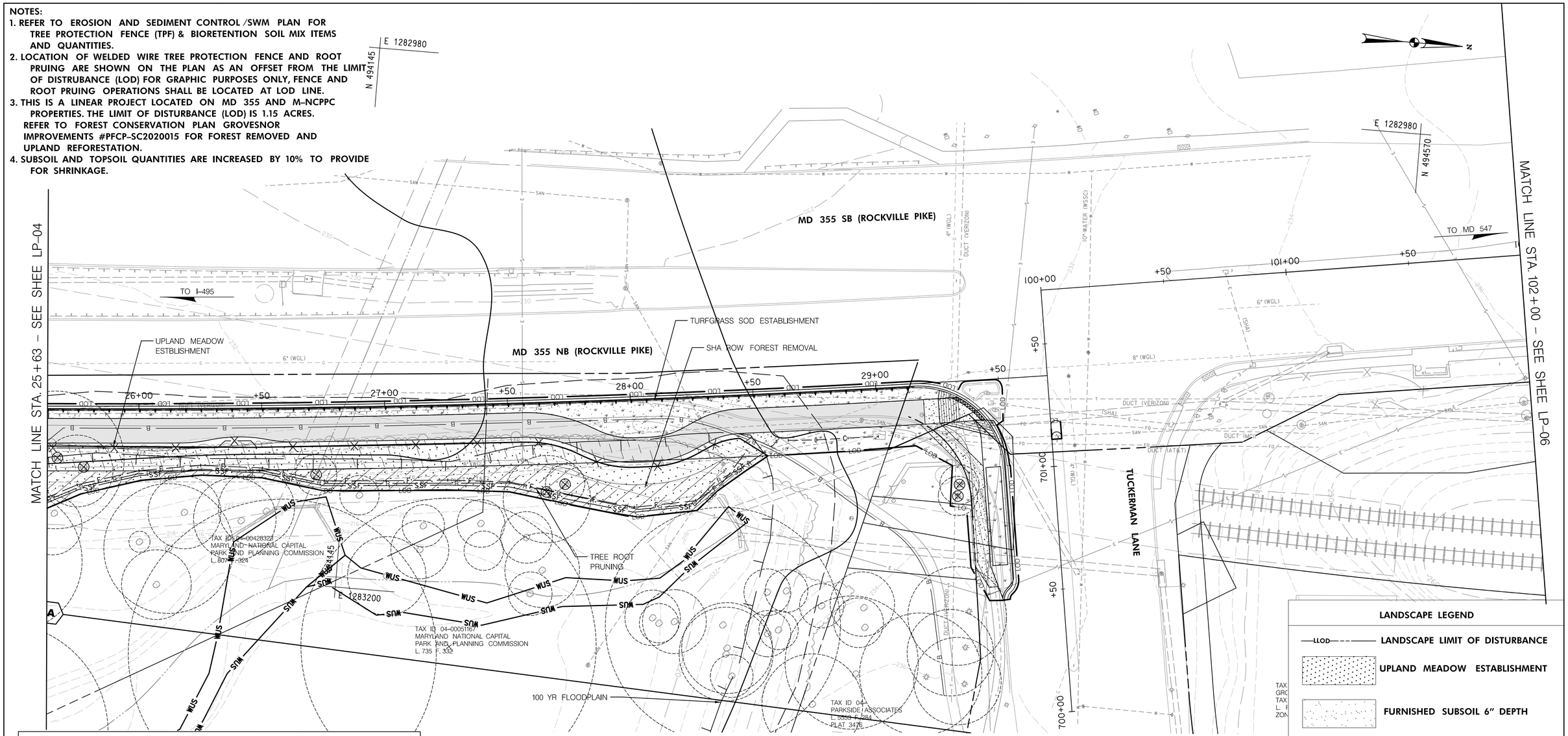
4. SUBSOIL AND TOPSOIL QUANTITIES ARE INCREASED BY 10% TO PROVIDE FOR SHRINKAGE.



LANDSCAPE 700 ITEMS - THIS SHEET ONLY					
QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
•259	SY	STA. 25+63 TO STA. 29+50 R	70I2I0	FURNISHED SUBTOPSOIL 6 INCH DEPTH	70I
•945	SY	STA. 25+63 TO STA. 29+50 R	704345	FURNISHED TOPSOIL 4 INCH DEPTH	70I
590	SY	STA. 25+63 TO STA. 29+50 R	705405	TEMPORARY SEED	704
590	SY	STA. 25+63 TO STA. 29+50 R	705412	TEMPORARY MULCH	704
269	SY	STA. 25+63 TO STA. 29+50 R	708220	TURFGRASS SOD ESTABLISHMENT	708
269	SY	STA. 25+63 TO STA. 29+50 R	705565	REFERTILIZING	705
590	SY	STA. 25+63 TO STA. 28+50 R	709I30	TYPE D SOIL STABILIZATION MATTING	709
590	SY	STA. 25+63 TO STA. 28+50 R	707400	UPLAND MEADOW ESTABLISHMENT	707
205	LF	STA. 25+63 TO STA. 28+50 R	715050	TREE ROOT PRUNING	715

•SOIL QUANTITIES ADD I0%

LANDSCAPE LEGEND

- LLOD — LANDSCAPE LIMIT OF DISTURBANCE
- UPLAND MEADOW ESTABLISHMENT
- FURNISHED SUBSOIL 6" DEPTH
- TURFGRASS SOD ESTABLISHMENT
- FOREST REMOVAL
- R — R — TREE ROOT PRUNING

LP-05

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

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
STATE OF MARYLAND

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: I"=20'

SHEET 048 of I28

6/5/2023
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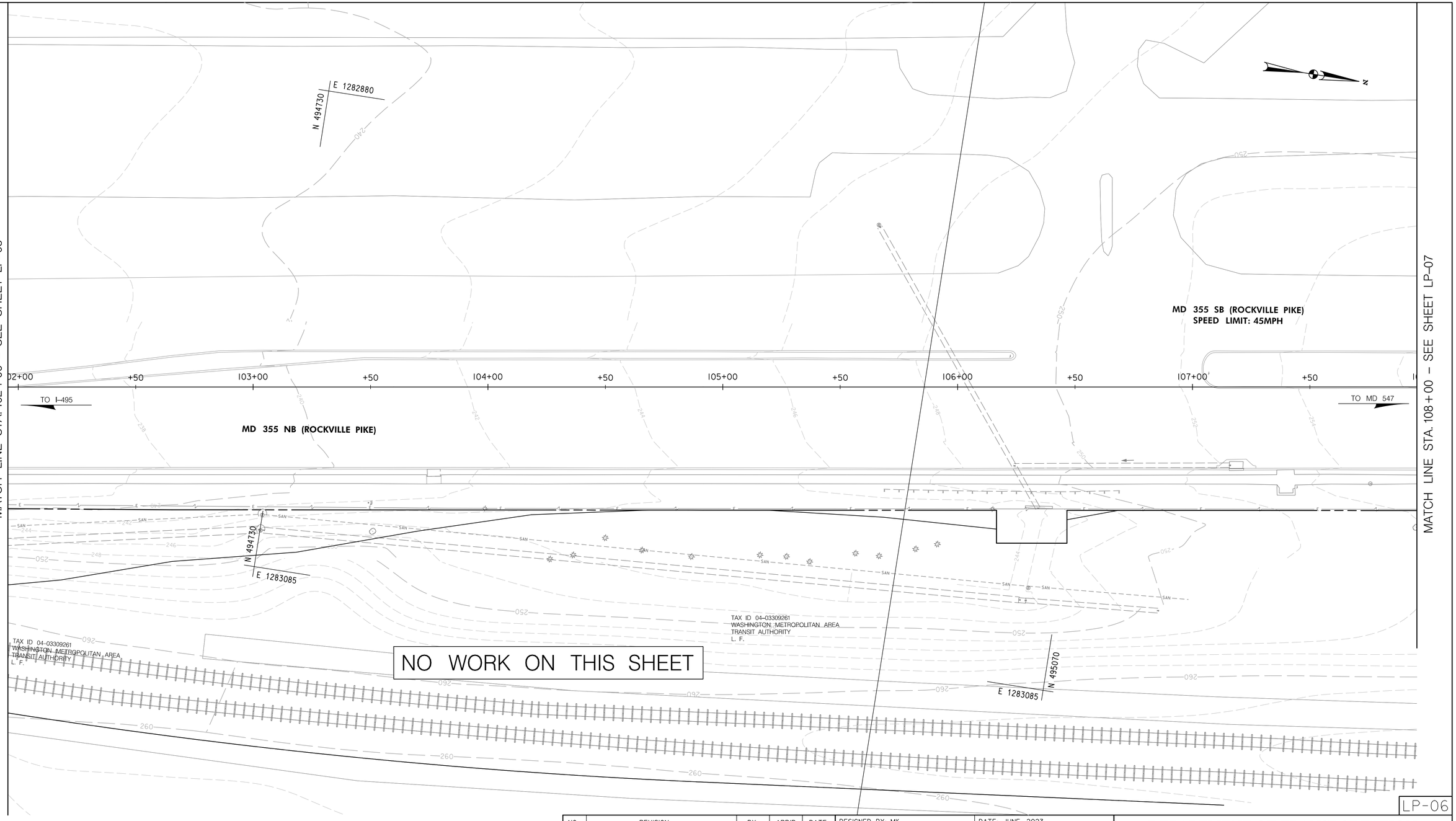
MATCH LINE STA. 102+00 – SEE SHEET LP–05

MATCH LINE STA. 108+00 – SEE SHEET LP–07



LP-06

NO LANDSCAPE ITEMS THIS SHEET

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

LANDSCAPE ARCHITECT
3199
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BiPPA Bicycle and Pedestrian Priority Areas

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 049 of 128

6/5/2023
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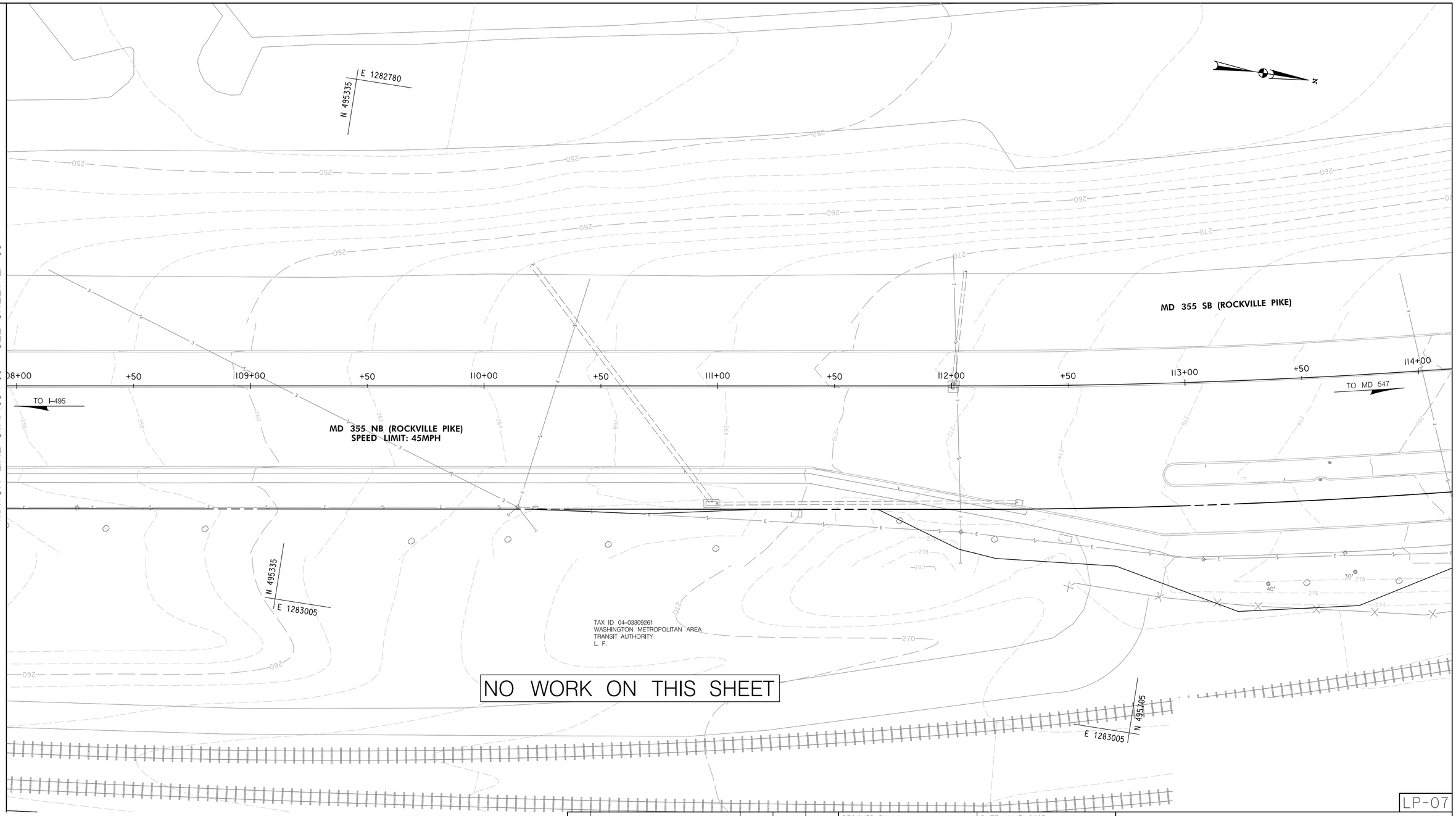
MATCH LINE STA. 108+00 – SEE SHEET LP-06



LP-07

NO LANDSCAPE ITEMS THIS SHEET

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

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 051 of 128

6/5/2023
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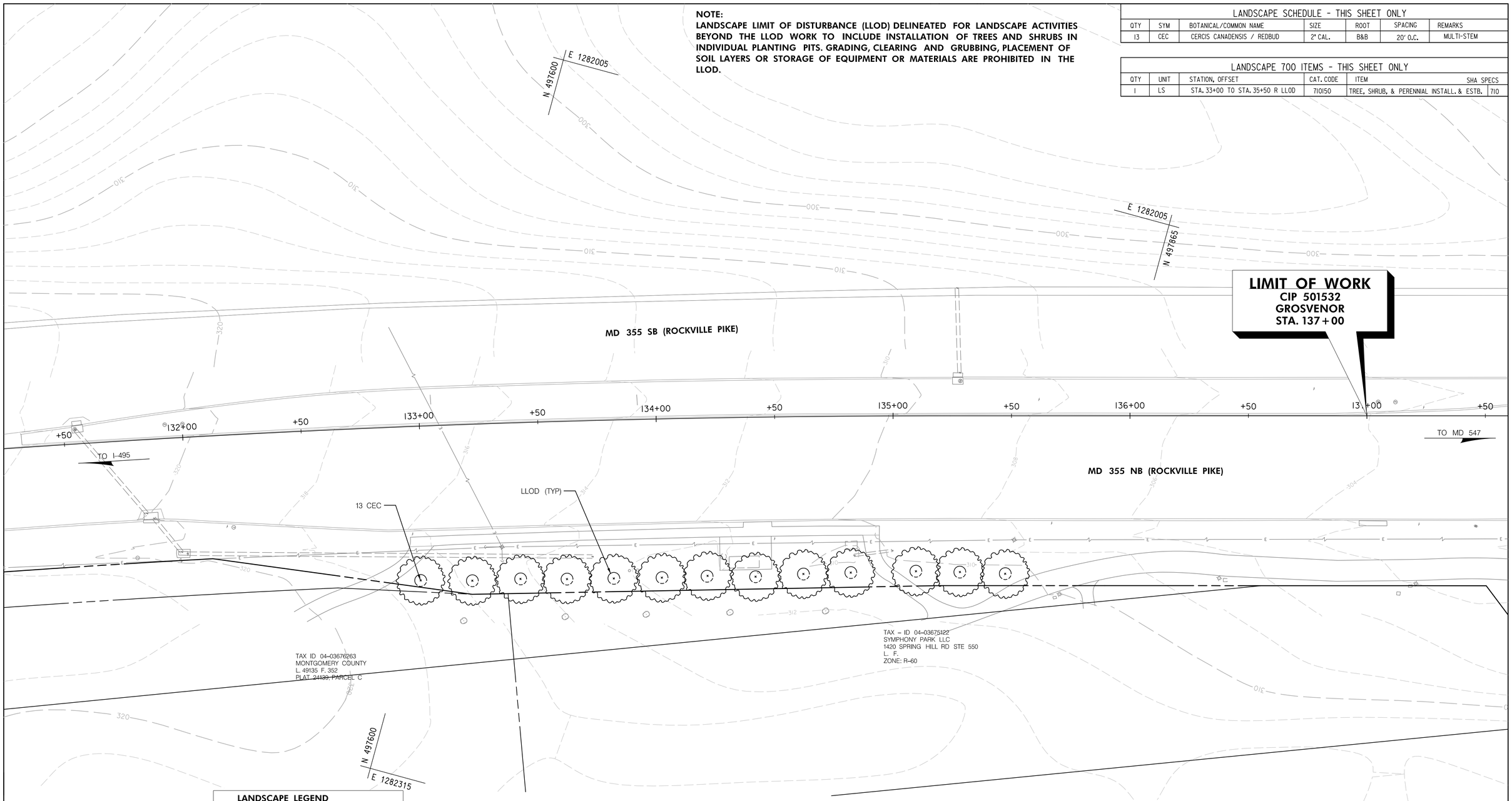
NOTE:
LANDSCAPE LIMIT OF DISTURBANCE (LLOD) DELINEATED FOR LANDSCAPE ACTIVITIES BEYOND THE LLOD WORK TO INCLUDE INSTALLATION OF TREES AND SHRUBS IN INDIVIDUAL PLANTING PITS. GRADING, CLEARING AND GRUBBING, PLACEMENT OF SOIL LAYERS OR STORAGE OF EQUIPMENT OR MATERIALS ARE PROHIBITED IN THE LLOD.

LANDSCAPE SCHEDULE - THIS SHEET ONLY						
QTY	SYM	BOTANICAL/COMMON NAME	SIZE	ROOT	SPACING	REMARKS
13	CEC	CERCIS CANADENSIS / REDBUD	2" CAL.	B&B	20' O.C.	MULTI-STEM

LANDSCAPE 700 ITEMS - THIS SHEET ONLY					
QTY	UNIT	STATION, OFFSET	CAT. CODE	ITEM	SHA SPECS
1	LS	STA. 33+00 TO STA. 35+50 R LLOD	710150	TREE, SHRUB, & PERENNIAL INSTALL. & ESTB.	710



LANDSCAPE LEGEND

ORNAMENTAL TREES

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

LANDSCAPE ARCHITECT
3199
KATHLEEN RENDEL DAHILL
STATE OF MARYLAND

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BPPA Bicycle and Pedestrian Priority Areas

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Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 051 of 128

LP-08

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pLP-P008_Grosvenor.dgn

7.1 LANDSCAPE NOTES. LANDSCAPE CONSTRUCTION WITHIN THE RIGHT OF WAY OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) AND WITHIN SHA PROPERTY, EASEMENT AREAS AND LANDS TO BE CONVEYED TO SHA/MTA SHALL CONFORM TO THESE NOTES. FOR GUIDANCE REGARDING DESIGN MODIFICATIONS DURING CONSTRUCTION, REFER TO SHA LANDSCAPE DESIGN GUIDE, SHA LANDSCAPE ESTIMATING MANUAL, AND SHA ENVIRONMENTAL GUIDE FOR ACCESS AND DISTRICT PERMIT APPLICANTS AT HTTP://WWW.ROADS.MARYLAND.GOV/INDEX.ASPX?PAGEID=25

7.2 SHA STANDARD SPECIFICATIONS. LANDSCAPE CONSTRUCTION SHALL CONFORM TO SECTIONS 701 THROUGH 716, AND LANDSCAPE MATERIALS SHALL CONFORM TO SECTION 920 OF THE MOST RECENT REVISION OF SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, INCLUDING ALL REVISIONS AND SUPPLEMENTS, AND AS SPECIFIED IN THESE NOTES. THESE REQUIREMENTS SHALL SUPERSEDE ALL OTHER SPECIFICATIONS FOR WORK ON SHA PROPERTY. ALL SHA SPECIFICATIONS FOR LANDSCAPING AND LANDSCAPE MATERIALS PUBLISHED IN 2008 HAVE BEEN REPLACED. CURRENT SPECIFICATIONS ARE A HTTP://WWW.ROADS.MARYLAND.GOV/INDEX.ASPX?PAGEID=44

7.3 EROSION AND SEDIMENT CONTROL MANAGER (ESCM). SOIL DISTURBANCE SUCH AS GRADING, EXCAVATION, SOIL PLACEMENT OR OTHER ACTIVITIES THAT INVOLVE SOIL DISTURBANCE SHALL BE SUPERVISED BY AN ESCM MANAGER WITH A VALID "SHA YELLOW CARD" IN CONFORMANCE WITH SHA STANDARD SPECIFICATIONS AND ANY APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT.

7.4 SHA STANDARD DETAILS FOR TREES, SHRUBS AND PLANTING BEDS. THE INSTALLATION OF TREES, SHRUBS, PLANTING BEDS AND OTHER LANDSCAPE CONSTRUCTION RELATED TO SECTION 710 OF THE SHA STANDARD SPECIFICATIONS SHALL CONFORM TO THE "SHA BOOK OF STANDARDS FOR HIGHWAY & INCIDENTAL STRUCTURES - CATEGORY 7" AT HTTP://APPS.ROADS.MARYLAND.GOV/BUSINESSWITHSHA/BIZSTDSSPECS/DESMANUALSTDPUB /PUBLICATIONSONLINE/OHD/BOOKSTD/TOCCAT7.ASP

7.5 TEMPORARY STABILIZATION SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 704 TO ENSURE THAT AREAS OF SOIL DISTURBANCE ARE PROTECTED FROM WIND, RAINFALL AND FLOWING WATER UNTIL PERMANENT STABILIZATION IS INSTALLED.

7.6 ROADWAY PAVEMENT REMOVAL. AREAS OF ROADWAY REMOVAL SHALL BE EXCAVATED TO REMOVED PAVEMENTS, AGGREGATE BASE, AND COMPACTED SOIL TO A MINIMUM DEPTH OF 10 INCHES BELOW THE PAVEMENT SURFACE OR AS NECESSARY TO REMOVE ALL MATERIAL UNSUITABLE FOR LANDSCAPING. THE EXCAVATION AREAS SHALL BE RESTORED WITH SUBSOIL AND TOPSOIL AS PART OF SOIL RESTORATION.

1. TEMPORARY MULCH, EITHER AS TEMPORARY STRAW MULCH OR TEMPORARY MATTING MULCH, SHALL BE INSTALLED AT THE END OF EACH WORKING DAY TO PROVIDE "SAME DAY STABILIZATION" UNLESS OTHER APPROVED STABILIZATION IS INSTALLED.
2. TEMPORARY STRAW MULCH SHALL BE INSTALLED ON AREAS AND SLOPES FLATTER THAN 4:1 TEMPORARY MATTING MULCH SHALL BE APPLIED ON SLOPES 4:1 AND STEEPER, AND TO AREAS WITIN CHANNELS.
3. TEMPORARY SEED SHALL BE INSTALLED IN LIEU OF TEMPORARY MULCH WHEN SOIL REDISTURBANCE IS EXPECTED MORE THAN 30 DAYS AFTER SOIL DISTURBANCE. THE REQUIRED APPLICATION RATE SHALL BE 100 LBS PER ACRE OF 37-0-0 (SCU) FERTILIZER.

7.7 EXCAVATION AND DEBRIS REMOVAL. DEBRIS RELATED TO THE DEMOLITION OF SIDEWALKS, DRIVEWAYS, CURBS, TREES, STUMPS, ROOTS, FENCING, PIPES, AND OTHER MATERIALS THAT MAY INTERFERE WITH LANDSCAPE INSTALLATION OR FUTURE MAINTENANCE SHALL BE EXCAVATED AS NECESSARY FOR THEIR COMPLETE REMOVAL AND DISPOSAL.

7.8 SOIL RESTORATION. AREAS OF PAVEMENT REMOVAL, EXCAVATION OR DRILLING IN LANDSCAPED AREAS SHALL REMOVE EXCAVATED DEBRIS AND RESTORE THE SUBGRADE WITH APPROVED SUBSOIL AND TOPSOIL PLACED IN CONFORMANCE WITH SECTION 701 OF THE SHA STANDARD SPECIFICATIONS.

1. A LAYER OF APPROVED TOPSOIL AT LEAST 4 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS FLATTER THAN 2:1 AND IN ALL CHANNELS PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
2. A LAYER OF APPROVED TOPSOIL AT LEAST 2 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS 2:1 AND STEEPER PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
3. BIORETENTION SOIL MIX (BSM) AND OTHER MATERIALS INSTALLED IN CONJUNCTION WITH SPI 316 - STORMWATER FILTRATION FACILITIES AND SHA STORMWATER DETAILS SHALL BE INSTALLED IN CONFORMANCE WITH THE SHA LANDSCAPE NOTES AND LANDSCAPE PLANS. PLANT MATERIALS AND MULCH SHALL BE INSTALLED IN BSM IN CONFORMANCE WITH STORMWATER DETAILS, SECTION 710 OR OTHER SHA SPECIFICATIONS.

7.9 TURFGRASS SOD ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURBED AREAS, OR WITHIN THE AREAS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTION 708 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE 200 LBS PER ACRE, AND NO FERTILIZER SHALL BE APPLIED FROM NOVEMBER 15 TO MARCH 1.

7.10 TURFGRASS ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURED AREAS, OR WITHIN THE AREAS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTION 705 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE 200 LBS PER ACRE, AND NO FERTILIZER SHALL BE APPLIED FROM NOVEMBER 15 TO MARCH 1.

7.11 SOIL STABILIZATION MATTING SHALL BE INSTALLED IN CONFORMATCE WITH SECTION 709 OF THE SAHA STANDARD SPECIFICATIONS, IN CONJUCTION WITH TRUFGRASS ESTABLISHMENT PER SECTION 705 OR MEADOW ESTABLISHMENT PER SECTION 707 AS FOLLOWS:

1. AREAS FLATTER THAN 6:1. TYPE A OR TYPE E MATTING MAY BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER IN CONJUCTION WITH TURFGRASS ESTABLISHMENT.
2. AREAS STEEEPER THAN 6:1 AND FLATTER THAN 4:1. TYPE A OR TYPE E MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDORMULCH BINDER IN CONJUCTION WITH TURFGRASS ESTABLISHMENT, UNLESS DELINEATED AND NOTED OTHERWISE.
3. CHANNELS, STORMWATER MANAGEMENT FACILITIES, AND SLOPES 4:1 AND STEEPER TYPE A SOIL STABILIZATION MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDR IN CONJUCTION WITH TURFGRASS ESTABLISHMENT, UNLESS DELINEATED AND NOTED OTHERWISE.
4. IN AREA OF MEADOW ESTABLISHMENT WITH TYPE D SOIL STABILLIZATION MATTING, THE MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER WITHIN THE DELINEATED AREAS.
5. IN HIGH VELOCITY CHANNELS WITH TURFGRASS ESTABLISHMENT, TYPE B SOIL STABILIZTION MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER WITHIN THE DELINEATED AREAS.

7.12 MEADOW ESTABLISHMENT OF SHRUB SEDDING ESTABLISHMENT SHALL BE PERFORMED IN AREAS AS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTIONS 706 AND 707 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE 200 LBS PER ACRES.

7.13 TREE PRESERVATION AREAS. TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) SHALL BE INSTALLED IN LOCATIONS DELINEATED ON THE PLANS IN CONFORMANCE WITH SECTION 120 OF THE SHA STANDARD SPECIFICATION TO PROTECT EXISTING TREES AND OTHER VEGETATION DURING CONSTRUCTION. AREAS WITHIN TOCF SHALL BE PROTECTED FROM ALL PROHIBITED AND RESTRICTED ACTIVITIES, AS SPECIFIED IN SECTION 120.

7.14 ROADSIDE TREE PERMIT. TREE REMOVAL, TREE INSTALLATION, TREE ROOT AND BRANCH PRUNING, AND OTHER REGULATED IMPACTS TO TREES IN THE SHA RIGHT OF WAY SHALL CONFORM TO THE REQUIREMENTS OF THE ROADSIDE TREE PERMIT (RTP) OF THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, OR THE APPROVED FOREST CONSERVATION ACT PLAN OF THE LOCAL AUTHORITY.

1. A COPY OF THE RTP OR FCP SHALL BE SUBMITTED TO THE SHA OFFICE OF ENVIRONMENTAL DESIGN BEFORE WORK IS PERFORMED, AND A COPY OF THE RTP OR FCP
SHALL BE REPRODUCED IN THE PLANS OR BE IN POSSESSION OF THE APPLICANT AT THE PROJECT SITE WHEN THE PERMITTED WORK IS PERFORMED.
2. A MARYLAND LICENSED TREE EXPERT SHALL PERFORM THE SPECIFIED TREE OPERATIONS IN CONFORMANCE WITH THE SHA STANDARD SPECIFICATIONS AND ANSI A300 STANDARDS FOR TREE CARE OPERATIONS.

7.15 TREES AND OTHER PLANT MATERIAL INSTALLATION. TREES, SHRUBS, PERENNIALS, ANNUALS, BULBS, LANDSCAPE BEDS, BARK MULCH AND SIMILAR MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 710 AND 711 OF THE SHA STANDARD SPECIFICATIONS. TREE AND SHRUBS SHALL BE PRUNED AT THE TIME OF INSTALLATION TO ENSURE SIDEWALK CLEARANCE FOR PEDESTRIANS IS MAINTAINED TO A HEIGHT OF 8 FEET. NO TREE OR SHRUB SHALL BE INSTALLED WITHIN 3 FEET OF CURBS, SIDEWALKS, OR PAVEMENT EDGES.

7.22 TREE ROOT PRUNING SHALL BE PERFORMED ALONG THE LINE SHOWN ON THE PLANS IN CONFORMANCE WITH SECTION 715. TREE ROOT PRUNING SHALL BE COMPLETED BEFORE BEGINNING EXCAVATION OR OTHER CONSTRUCTION ADJACENT TO TREES TO BE PRESERVED.

MASTER LANDSCAPE SCHEDULE

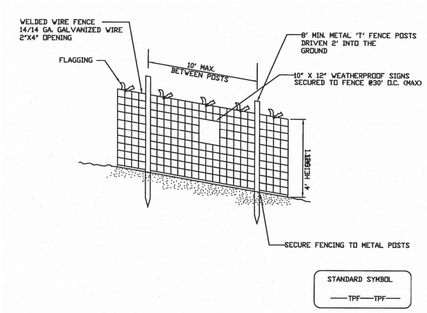
QTY	SYM	BOTANICAL/COMMON NAME	SIZE	ROOT	SPACING	REMARKS
13	CEC	CERCIS CANADENSIS / REDBUD	2" CAL.	B&B	20' O.C.	MULTI-STEM

MASTER LANDSCAPE 700 ITEMS

QTY	UNIT	CAT. CODE	ITEM	SHA SPECS
428	SY	701210	FURNISHED SUBTOPSOIL 6 INCH DEPTH	701
2892	SY	704345	FURNISHED TOPSOIL 4 INCH DEPTH	701
1965	SY	705405	TEMPORARY SEED	704
1965	SY	705412	TEMPORARY MULCH	704
1440	SY	708220	TURFGRASS SOD ESTABLISHMENT	708
1370	SY	705565	REFERTILIZING	705
5	SY	705500	TURFGRASS ESTABLISHMENT	705
597	SY	709100	TYPE A SOIL STABILIZATION MATTING	709
203	SY	709110	TYPE B SOIL STABILIZATION MATTING	709
1180	SY	709130	TYPE D SOIL STABILIZATION MATTING	709
1716	SY	707400	UPLAND MEADOW ESTABLISHMENT	707
230	SY	707415	BIORETENTION MEADOW ESTABLISHMENT	700.02
977	LF	715050	TREE ROOT PRUNING	715
1	LS	710150	TREE, SHRUB, & PERENNIAL INSTALL.& ESTB.	710

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.

LP-09

LANDSCAPE ARCHITECT 3199 KATHLEEN RENDEL DAHILL STATE OF MARYLAND

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: MK	DATE: JUNE, 2023
DRAWN BY: MK	DATE: JUNE, 2023
CHECKED BY: KRD	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LANDSCAPE & TREE PROTECTION PLAN

SCALE: 1"=20'

SHEET 052 of 128

6/5/2023
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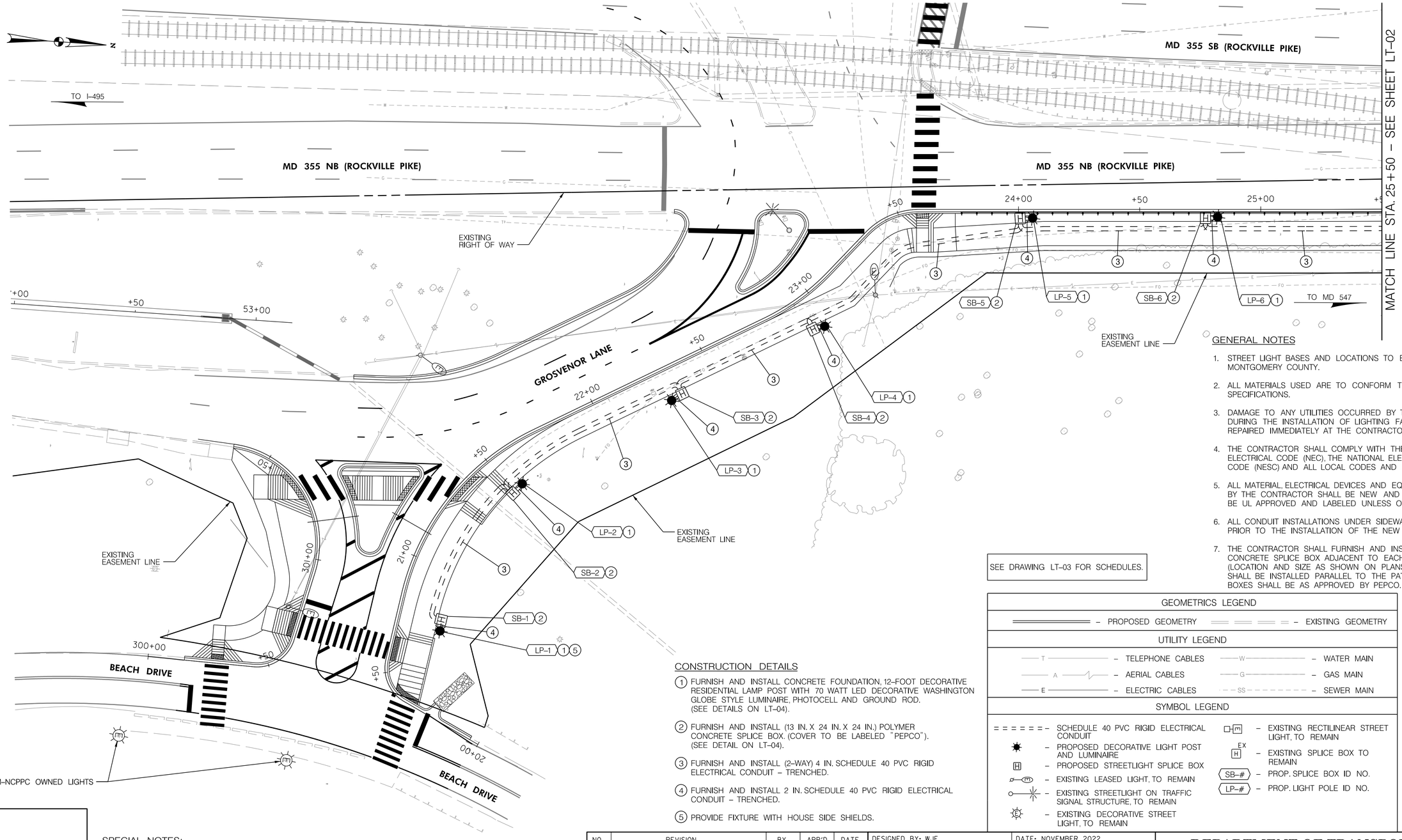


GENERAL NOTES

1. STREET LIGHT BASES AND LOCATIONS TO BE APPROVED BY MONTGOMERY COUNTY.
2. ALL MATERIALS USED ARE TO CONFORM TO PEPCO SPECIFICATIONS.
3. DAMAGE TO ANY UTILITIES OCCURRED BY THE CONTRACTOR DURING THE INSTALLATION OF LIGHTING FACILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL ELECTRICAL SAFETY CODE (NESC) AND ALL LOCAL CODES AND REGULATIONS.
5. ALL MATERIAL, ELECTRICAL DEVICES AND EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AND SHALL BE UL APPROVED AND LABELED UNLESS OTHERWISE SPECIFIED.
6. ALL CONDUIT INSTALLATIONS UNDER SIDEWALKS SHALL BE DONE PRIOR TO THE INSTALLATION OF THE NEW SIDEWALKS.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL A POLYMER CONCRETE SPLICE BOX ADJACENT TO EACH STREETLIGHT (LOCATION AND SIZE AS SHOWN ON PLANS). SPLICE BOXES SHALL BE INSTALLED PARALLEL TO THE PATHWAY. THE SPLICE BOXES SHALL BE AS APPROVED BY PEPCO.

SEE DRAWING LT-03 FOR SCHEDULES.

CONSTRUCTION DETAILS

1. FURNISH AND INSTALL CONCRETE FOUNDATION, 12-FOOT DECORATIVE RESIDENTIAL LAMP POST WITH 70 WATT LED DECORATIVE WASHINGTON GLOBE STYLE LUMINAIRE, PHOTOCELL AND GROUND ROD. (SEE DETAILS ON LT-04).
2. FURNISH AND INSTALL (13 IN. X 24 IN. X 24 IN.) POLYMER CONCRETE SPLICE BOX. (COVER TO BE LABELED "PEPCO"). (SEE DETAIL ON LT-04).
3. FURNISH AND INSTALL (2-WAY) 4 IN. SCHEDULE 40 PVC RIGID ELECTRICAL CONDUIT – TRENCHED.
4. FURNISH AND INSTALL 2 IN. SCHEDULE 40 PVC RIGID ELECTRICAL CONDUIT – TRENCHED.
5. PROVIDE FIXTURE WITH HOUSE SIDE SHIELDS.

GEOMETRICS LEGEND

– PROPOSED GEOMETRY – EXISTING GEOMETRY

UTILITY LEGEND

- T – TELEPHONE CABLES
- A – AERIAL CABLES
- E – ELECTRIC CABLES
- W – WATER MAIN
- G – GAS MAIN
- SS – SEWER MAIN

SYMBOL LEGEND

- SCHEDULE 40 PVC RIGID ELECTRICAL CONDUIT
- PROPOSED DECORATIVE LIGHT POST AND LUMINAIRE
- PROPOSED STREETLIGHT SPLICE BOX
- EXISTING LEASED LIGHT, TO REMAIN
- EXISTING STREETLIGHT ON TRAFFIC SIGNAL STRUCTURE, TO REMAIN
- EXISTING DECORATIVE STREET LIGHT, TO REMAIN
- EXISTING RECTILINEAR STREET LIGHT, TO REMAIN
- EXISTING SPLICE BOX TO REMAIN
- SB-# – PROP. SPLICE BOX ID NO.
- LP-# – PROP. LIGHT POLE ID NO.

LT-01

SPECIAL NOTES:

1. REINFORCE GUARDRAIL ALONG MD 355 NB (ROCKVILLE PIKE) FROM STA. 24+00 TO STA. 29+15.
2. LIGHT POLES LOCATED UNDER THE WMATA AERIAL STRUCTURE WILL ALLOW ADEQUATE CLEARANCE (LIGHT POLES 15, 16, AND 18).
3. LIGHTS SHALL BE PLACED 2'-0" MINIMUM BEHIND THE BACK OF THE SHARED-USE PATH IN AREAS WHERE THEY ARE SHOWN TO BE INSTALLED BEHIND THE PATH.

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: WJF	DATE: NOVEMBER 2022
DRAWN BY: WJF	DATE: NOVEMBER 2022
CHECKED BY: JNW	DATE: NOVEMBER 2022
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

SEE TITLE SHEET FOR SIGNATURES _____ Date
Chief, Design Section

APPROVED

SEE TITLE SHEET FOR SIGNATURES _____ Date
Chief,
Division of Transportation Engineering

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LIGHTING PLAN

SCALE: 1"=20'

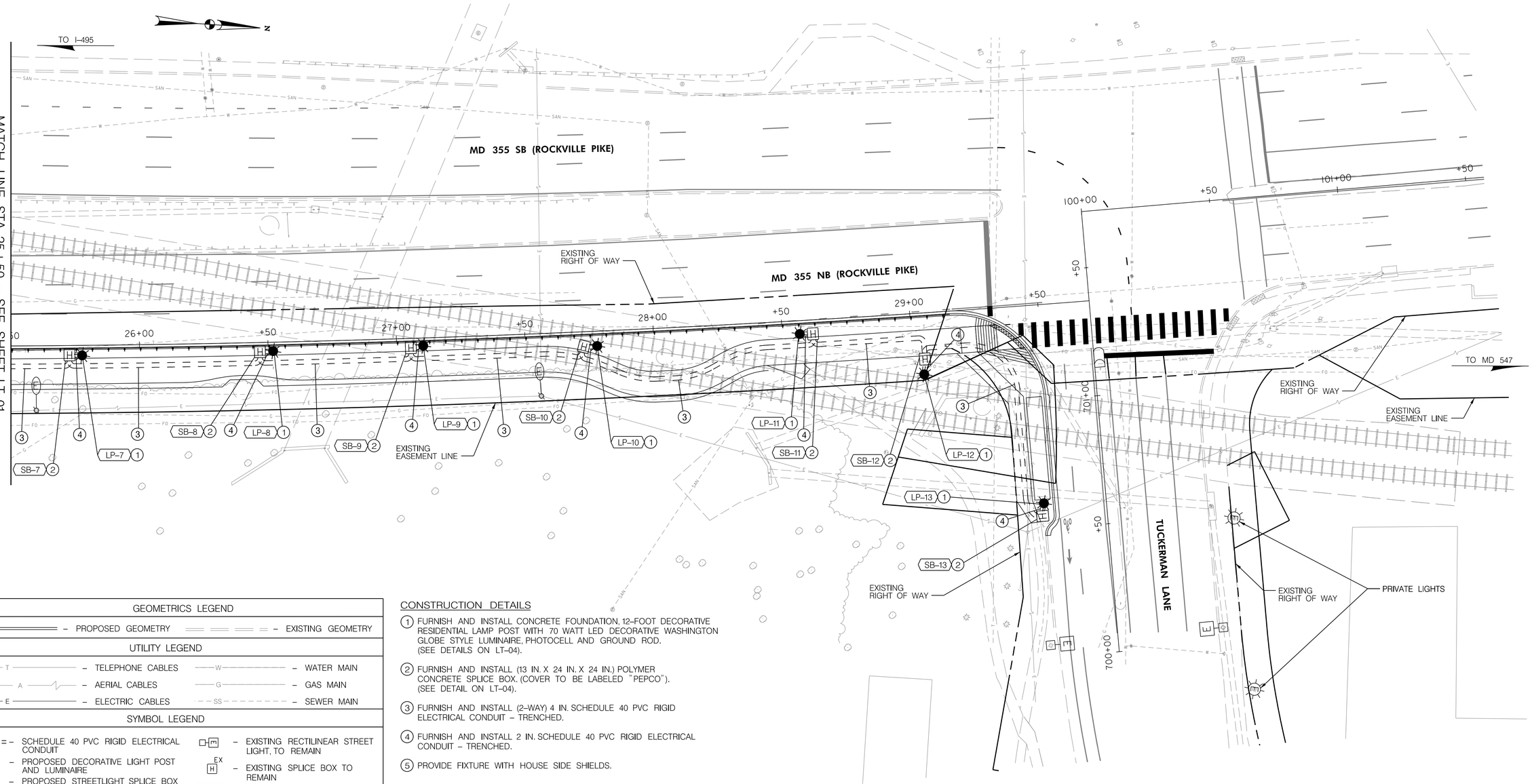
SHEET 53 of 128

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

MEAD & HUNT, INC.
7055 SAMUEL MORSE DRIVE
SUITE 100
COLUMBIA, MD 21046
(443) 741-3500
WWW.MEADHUNT.COM

Bicycle and Pedestrian Priority Areas

1/5/2023
R:\2008\80 MCDPW 8504520010-BF-ENG_SVC_Gn0\Task 27 Grosvenor Lane Ped Lighting\Dgn\pLT-P001_Grosvenor.dgn



GEOMETRICS LEGEND

- PROPOSED GEOMETRY
- EXISTING GEOMETRY

UTILITY LEGEND

- T – TELEPHONE CABLES
- A – AERIAL CABLES
- E – ELECTRIC CABLES
- W – WATER MAIN
- G – GAS MAIN
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SYMBOL LEGEND

- SCHEDULE 40 PVC RIGID ELECTRICAL CONDUIT
- PROPOSED DECORATIVE LIGHT POST AND LUMINAIRE
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- EXISTING LEASED LIGHT, TO REMAIN
- EXISTING STREETLIGHT ON TRAFFIC SIGNAL STRUCTURE, TO REMAIN
- E – EXISTING DECORATIVE STREET LIGHT, TO REMAIN
- EXISTING RECTILINEAR STREET LIGHT, TO REMAIN
- EX H – EXISTING SPLICE BOX TO REMAIN
- SB-# – PROP. SPLICE BOX ID NO.
- LP-# – PROP. LIGHT POLE ID NO.

CONSTRUCTION DETAILS

1. FURNISH AND INSTALL CONCRETE FOUNDATION, 12-FOOT DECORATIVE RESIDENTIAL LAMP POST WITH 70 WATT LED DECORATIVE WASHINGTON GLOBE STYLE LUMINAIRE, PHOTOCELL AND GROUND ROD. (SEE DETAILS ON LT-04).
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SEE DRAWING LT-03 FOR SCHEDULES.

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

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CHECKED BY: JNW	DATE: NOVEMBER 2022
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

SEE TITLE SHEET FOR SIGNATURES
Chief, Design Section — Date

APPROVED

SEE TITLE SHEET FOR SIGNATURES
Chief,
Division of Transportation Engineering — Date

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WWW.MEADHUNT.COM

Bicycle and Pedestrian Priority Areas

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LIGHTING PLAN

SCALE: 1"=20'

SHEET 54 of 128

LT-02

1/5/2023
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PROPOSED PEDESTRIAN LIGHT POLE SCHEDULE

POLE NO.	MAPGRID	MCPOLEID	STREET NAME	WATTAGE	LAMP TYPE	LUMINARE STYLE	POLE STYLE	ARM	FEED TYPE	ADDRESS	STATION AND OFFSET	NORTHING	EASTING
LP-1			GROSVENOR LANE	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	WB GROSVENOR LANE, 4TH LIGHT SOUTH OF ROCKVILLE PIKE	STA. 20+72, 19' RT.	493633	1283338
LP-2			GROSVENOR LANE	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	WB GROSVENOR LANE, 3RD LIGHT SOUTH OF ROCKVILLE PIKE	STA. 21+57, 17' RT.	493663	1283275
LP-3			GROSVENOR LANE	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	WB GROSVENOR LANE, 2ND LIGHT SOUTH OF ROCKVILLE PIKE	STA. 22+30, 14' RT.	493722	1283236
LP-4			GROSVENOR LANE	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	WB GROSVENOR LANE, 1ST LIGHT SOUTH OF ROCKVILLE PIKE	STA. 22+97, 16' RT.	493783	1283201
LP-5			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 1ST LIGHT NORTH OF GROSVENOR LANE	STA. 24+06, 3.5' RT.	493866	1283151
LP-6			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 2ND LIGHT NORTH OF GROSVENOR LANE	STA. 24+82, 3.5' RT.	493942	1283145
LP-7			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 3RD LIGHT NORTH OF GROSVENOR LANE	STA. 25+78, 3.5' RT.	494037	1283139
LP-8			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 4TH LIGHT NORTH OF GROSVENOR LANE	STA. 26+52, 3.5' RT.	494111	1283132
LP-9			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 5TH LIGHT NORTH OF GROSVENOR LANE	STA. 27+10, 3.5' RT.	494169	1283126
LP-10			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 6TH LIGHT NORTH OF GROSVENOR LANE	STA. 27+78, 6' RT.	494237	1283121
LP-11			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 7TH LIGHT NORTH OF GROSVENOR LANE	STA. 28+57, 5' RT.	494315	1283111
LP-12			MD 355 (ROCKVILLE PIKE)	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	NB ROCKVILLE PIKE, 8TH LIGHT NORTH OF GROSVENOR LANE	STA. 29+04, 24' RT.	494365	1283123
LP-13			TUCKERMAN LANE	70	LED	WASHINGTON GLOBE	12' DECORATIVE ALUMINUM	N/A	UG	EB TUCKERMAN LANE, 1ST LIGHT EAST OF ROCKVILLE PIKE	STA. 700+60, 24' LT.	494415	1283170

PROPOSED SPLICE BOX SCHEDULE

SB NO.	STATION AND OFFSET
SB-1	STA. 20+77, 18' RT.
SB-2	STA. 21+50, 18' RT.
SB-3	STA. 22+35, 13' RT.
SB-4	STA. 22+93, 14' RT.
SB-5	STA. 24+01, 4' RT.
SB-6	STA. 24+77, 3.5' RT.
SB-7	STA. 25+73, 3.5' RT.
SB-8	STA. 26+47, 3.5' RT.
SB-9	STA. 27+05, 3.5' RT.
SB-10	STA. 27+73, 6' RT.
SB-11	STA. 28+62, 5' RT.
SB-12	STA. 29+05, 18' RT.
SB-13	STA. 700+55, 25' LT.

Mead & Hunt
MEAD & HUNT, INC.
7055 SAMUEL MORSE DRIVE
SUITE 100
COLUMBIA, MD 21046
(443) 741-3500
WWW.MEADHUNT.COM

BiPPA Bicycle and Pedestrian Priority Areas

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DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

SEE TITLE SHEET FOR SIGNATURES _____ _____
Chief, Design Section Date

APPROVED

SEE TITLE SHEET FOR SIGNATURES _____ _____
Chief,
Division of Transportation Engineering Date

LT-03

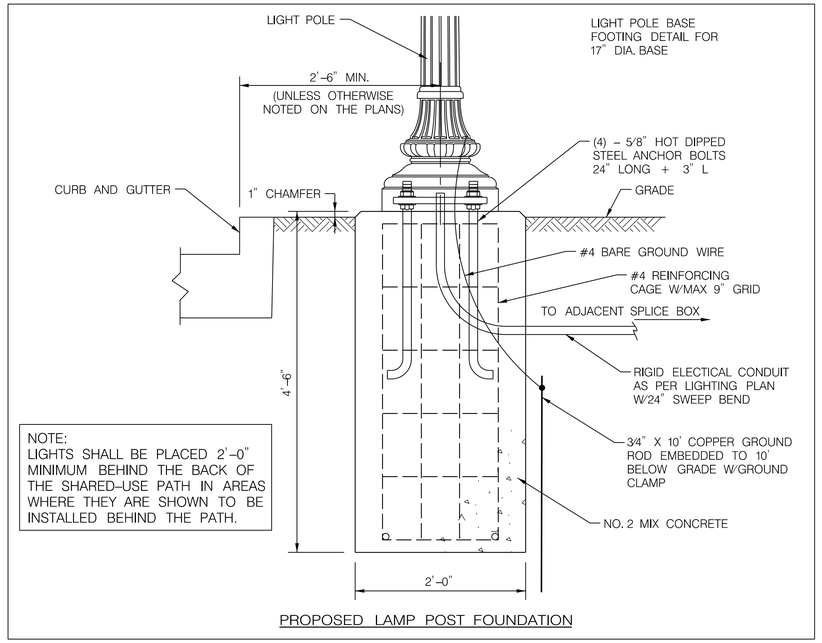
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LIGHTING SCHEDULES

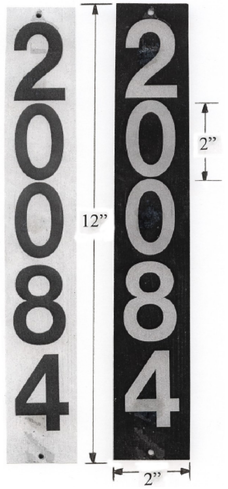
SCALE: NONE SHEET 55 of 128

STREETLIGHT CONDUIT INSTALLATION CHECKLIST

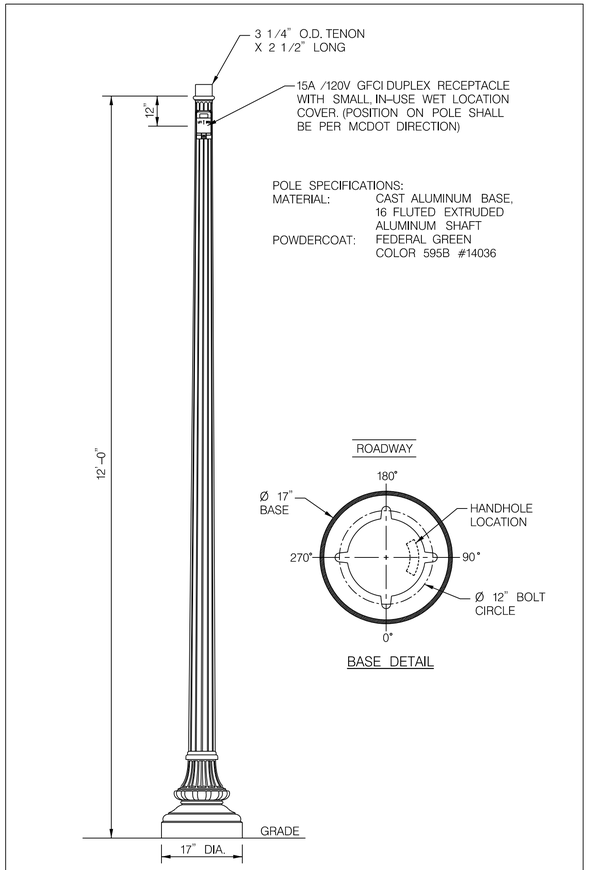
1. 2-WAY FOUR INCH (4"), SCHEDULE 40, PVC CONDUIT TO BE INSTALLED BY THE CONTRACTOR CONNECTING EACH SPLICEBOX IN A CONTINUOUS RUN.
2. TWO INCH (2"), SCHEDULE 40, PVC CONDUIT TO BE INSTALLED BY THE CONTRACTOR CONNECTING THE SPLICEBOX TO THE STREET LIGHT FOOTING.
3. CONTRACTOR TO PROVIDE AND INSTALL PHOTOCELLS FOR EACH STREET LIGHT LUMINAIRE.
4. STREETLIGHT AND POST ERECTED BY THE CONTRACTOR ARE TO BE WIRED WITH #10 AWG (MIN.) COPPER WITH A THREE FOOT MINIMUM LOOP OF SLACK IN THE SPLICEBOX FOR ATTACHMENT BY PEPCO.
5. STREETLIGHT POSTS ARE TO HAVE A GROUNDING LUG ATTACHED TO THE BASE OF THE POST WITH A MINIMUM THREE FOOT LOOP OF SLACK IN THE SPLICEBOX OF #6 AWG BARE COPPER WIRE ATTACHED.
6. ALL SWEEPBENDS TO BE MINIMUM OF 24 INCHES RADIUS.
7. 1/4" NYLON PULL-LINES IS TO BE INSTALLED IN EACH CONDUIT DUCT.
8. CONTRACTOR TO INSTALL MARKING TAPE ONE FOOT (1") ABOVE EACH CONDUIT RUN.
9. NO MORE THAN 180 DEGREES OF BENDS IN A CONDUIT RUN.
10. CONDUIT IS TO HAVE THREE (3) FEET (MINIMUM) OF COVER OVER IT.
11. INSTALLATION OF ALL UNDERGROUND LIGHTING FACILITIES ARE ALSO SUBJECT TO PEPCO INSPECTION AND WRITTEN APPROVAL BEFORE CONCEALMENT. FAILURE TO OBTAIN SUCH INSPECTION WILL RESULT IN THE UNCOVERING OF FACILITIES AT THE CONTRACTOR'S EXPENSE. CALL (202) 388-2137 7:00 TO 9:00 AM OR 3:00 TO 4:00 PM TWO WORKING DAYS IN ADVANCE TO ARRANGE INSPECTION.
12. ALL STREETLIGHT EQUIPMENT AND MATERIALS SHALL BE SUBMITTED TO MONTGOMERY COUNTY FOR APPROVAL PRIOR TO BEING INSTALLED ON THE PROJECT. SEE SPECIAL PROVISIONS FOR STREETLIGHT SPECIFICATIONS.
13. ALL STREETLIGHTS SHALL BE INSTALLED 2'-6" BEHIND THE FACE OF THE CURB (EXCEPT AS NOTED ON PLANS).
14. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS / CATALOG CUTS FOR ALL LIGHTING EQUIPMENT TO MONTGOMERY COUNTY TRAFFIC OPERATIONS DIVISION FOR APPROVAL PRIOR TO INSTALLATION.



PROPOSED LAMP POST FOUNDATION

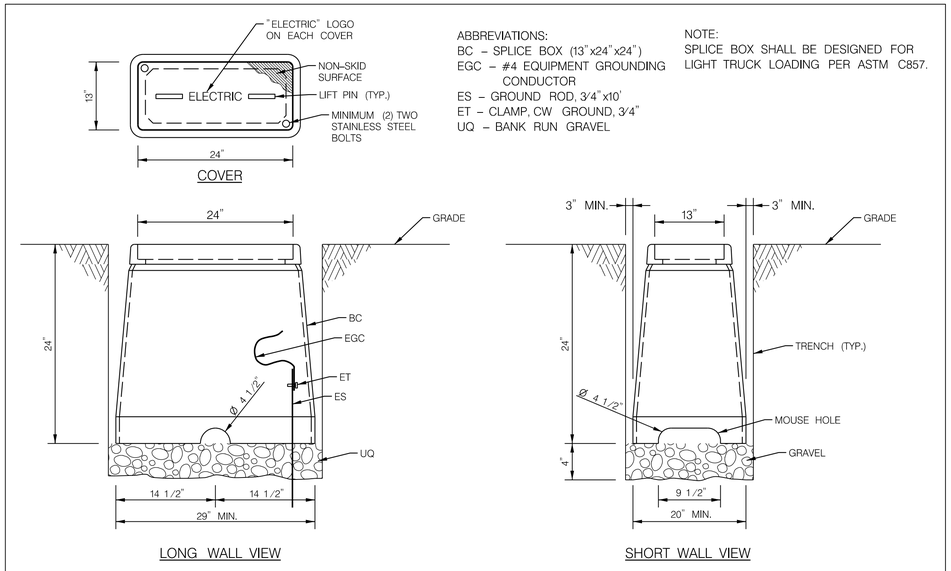


PROPOSED LIGHT POLE NUMBERING TAG

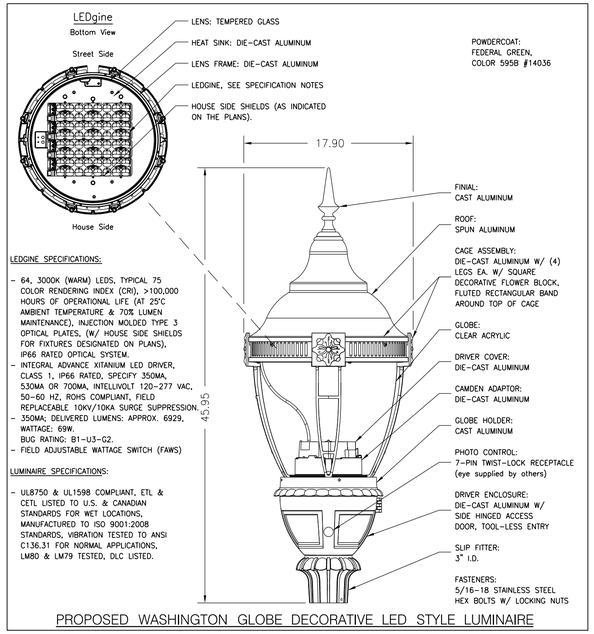


BASE DETAIL

PROPOSED DECORATIVE (RESIDENTIAL) LAMP POST



STREETLIGHT SPLICE BOX (13"x24"x24") DETAIL



PROPOSED WASHINGTON GLOBE DECORATIVE LED STYLE LUMINAIRE

LT-04

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: WJF	DATE: NOVEMBER 2022
DRAWN BY: WJF	DATE: NOVEMBER 2022
CHECKED BY: JNW	DATE: NOVEMBER 2022
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

SEE TITLE SHEET FOR SIGNATURES

Chief, Design Section — Date

APPROVED

SEE TITLE SHEET FOR SIGNATURES

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
LIGHTING NOTES & DETAILS

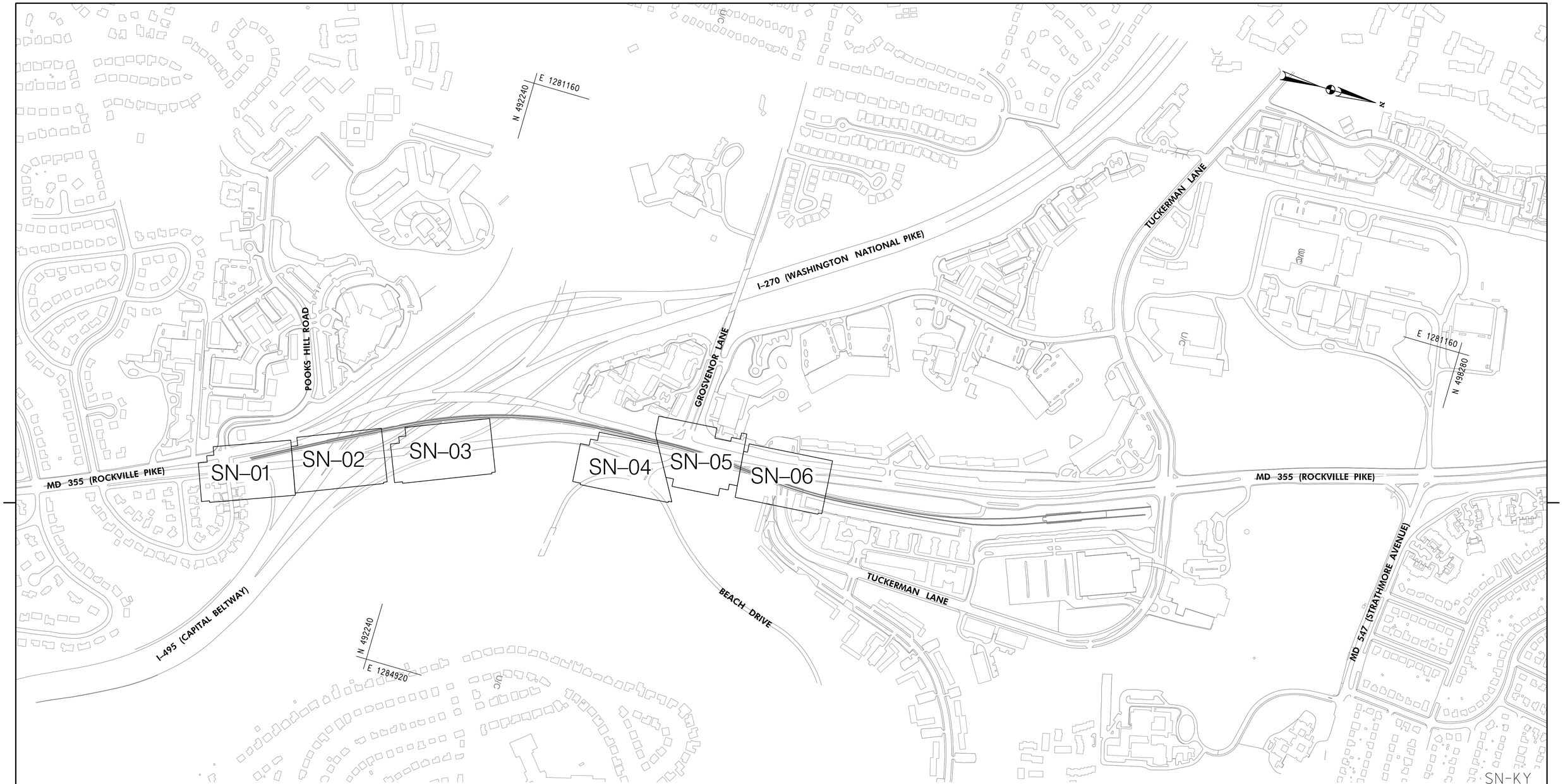
SCALE: NONE

SHEET 56 of 128

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

MEAD & HUNT, INC.
7055 SAMUEL MORSE DRIVE
SUITE 100
COLUMBIA, MD 21046
(443) 741-3500
WWW.MEADHUNT.COM

Bicycle and Pedestrian Priority Areas



SHA #19-AP-MO-013-XX

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM
POOKS HILL ROAD TO
STRATHMORE AVENUE
NORTH BETHESDA, MD

SIGNING & PAVEMENT MARKING KEY PLAN

SCALE 1" = 300' ADVERTISED DATE _____ CONTRACT NO. _____

DESIGNED BY DM
DRAWN BY DM
CHECKED BY RJM
MDE/PRD _____

COUNTY MONTGOMERY
LOGMILE 15035503.83 - 15035504.50
TIMS NO. P341
TOD NO. _____

DRAWING NO. SN- KY OF KY
SHEET NO. 057 OF 128

REVISIONS

Stantec
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Baltimore, MD 21286
www.stantec.com

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17172
MD LICENSE NUMBER
12-12-2024
EXPIRATION DATE

STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

BY: dmarihugh -

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-KEY_Grosvenor.dgn

CRITERIA

THE CONTRACTOR SHALL BE GOVERNED BY THE STANDARDS AND REQUIREMENTS OF THE FOLLOWING PUBLICATIONS, EXCEPT AS MODIFIED BY THE SPECIAL PROVISIONS OF THIS CONTRACT:

DESIGN

MDOT SHA - "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2011 EDITION AND SUBSEQUENT REVISIONS. (MDMUTCD)

A A S H T O - "HIGHWAY SAFETY DESIGN AND OPERATIONS GUIDE" -1997

A A S H T O - "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS LUMINAIRES AND TRAFFIC SIGNALS", 2001 EDITION (CATEGORY II FOR ALL OVERHEAD AND CANTILEVER SIGN STRUCTURES).

MATERIALS AND CONSTRUCTION

MDOT SHA - "STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS", MOST CURRENT EDITION AND SUBSEQUENT REVISIONS AND SUPPLEMENTS.

MDOT SHA - "BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES", MOST CURRENT EDITION AND SUBSEQUENT REVISIONS AND SUPPLEMENTS.

DESIGN WIND

100 MPH - WOOD SUPPORTS
10 YEAR RECURRENCE INTERVAL

100 MPH - GROUND MOUNT SIGN STEEL SUPPORTS
10 YEAR RECURRENCE INTERVAL

100 MPH - OVERHEAD AND CANTILEVER STRUCTURES
50 YEAR RECURRENCE INTERVAL

} ALL DISTRICTS

DESIGN STRESS

SOIL BEARING PRESSURE - S = 3,000 P.S.F. (ASSUMED)
SEE MATERIAL & CONSTRUCTION ABOVE AND SPECIAL PROVISIONS FOR DESIGN STRESSES FOR STRUCTURAL STEEL, ALUMINUM, REINFORCING STEEL AND CONCRETE.

CHAMFER

ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" X 3/4" CHAMFER.

CLASSIFICATION OF SIGNS

SIGNS ARE DIVIDED INTO TWO (2) GENERAL CATEGORIES.

1. GUIDE SIGNS
   - A) STRUCTURAL TYPES
     - OH - OVERHEAD
     - C - CANTILEVER
     - GM - GROUND MOUNT, BREAKAWAY OR NON-BREAKWAY
     - BM - BRIDGE MOUNTED
   - B) PANELS
     - MATERIAL - EXTRUDED ALUMINUM
     - COPY - DIRECT APPLIED
       - I) HIGH INTENSITY (NEW SIGNS AND REVISIONS TO EXISTING SIGNS)
2. STANDARD SIGNS (REGULATORY, WARNING, ETC.)
   - A) STRUCTURAL TYPES
     - WOOD SUPPORTS
     - SQUARE TUBE
   - B) PANELS
     - MATERIAL - SHEET ALUMINUM
     - COPY - DIRECT APPLIED

IDENTIFICATION OF SIGNS AND PANELS

GUIDE SIGNS

EACH GUIDE SIGN IS IDENTIFIED BY A SIGN NUMBER ON THE PLANS AND IN THE TABULATIONS. (GM-1, GM-2, GM-3, etc)
SIGNS ON STRUCTURES ARE IDENTIFIED WITH A NUMBER AND WHERE VARIATIONS OCCUR, A LOWER CASE LETTER. (OH-1a, OH-1b, OH-1c)

STANDARD SIGNS

STANDARD SIGNS ARE IDENTIFIED BY PANEL NUMBERS AND ARE CLASSIFIED AS FOLLOWS

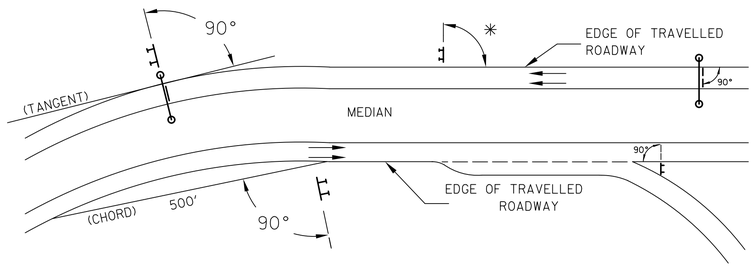
- R - REGULATORY
- W - WARNING
- M - ROUTE MARKERS AND ACCESSORIES
- D - DESTINATION AND MILEAGE PANELS
- S - SCHOOL

PANELS SHALL BE DESIGNATED TO AGREE WITH MARYLAND STANDARD SIGN BOOK. EACH STANDARD SIGN IS IDENTIFIED FIRST BY THE SHEET NUMBER, THEN BY THE NUMERICAL ORDER OF THE SIGN AS IT APPEARS ON THE PLAN.
FOR EXAMPLE SHEET SN 2.1-101,102,103, ETC. SHEET SN 2.2-201,202,203,ETC.

PANEL LAYOUT AND ALPHABETS

1. GUIDE SIGN PANEL LAYOUTS ARE BASED ON THE A.A.S.H.T.O. MANUALS NOTED ABOVE.
2. STANDARD SIGN PANEL LAYOUTS ARE BASED ON THE MDMUTCD WITH SPECIFICATIONS DETAILED IN THE MARYLAND STATE HIGHWAY ADMINISTRATION PUBLICATION, "STANDARD SIGN BOOK", AVAILABLE ONLINE AT http://apps.roads.maryland.gov/businesswithsha/bizstdsspecs/desmanualstdpub/publicationsonline/oots/internet_signbook.asp

ORIENTATION OF SIGN FACES



* UNDER 30 FEET FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - 93° AWAY FROM THE ROAD TO AVOID SPECULAR REFLECTION AS INDICATED IN 813.03 OF THE MARYLAND STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

OVER 30 FEET FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - 90°

REFLECTORIZATION

BACKGROUNDS, BORDERS, TEXTS AND ALL OTHER ELEMENTS OF SIGN PANELS SHALL BE REFLECTORIZED EXCEPT WHERE NOTED. REFER TO PROJECT REQUIREMENTS FOR MORE DETAIL.

SIGN LOCATIONS

1. GUIDE SIGNS ARE LOCATED ON THE PLANS BY DIMENSION TO SURVEY STATIONS, OR WHEN NECESSARY, TO IDENTIFIABLE PHYSICAL FEATURES.
2. ALL CHANGES IN THE LOCATIONS OF SIGNS AS SHOWN ON THE PLAN SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

EXISTING UTILITIES

THE ENGINEER DOES NOT WARRANT OR GUARANTEE THE ACCURACY OR COMPLETENESS OF UTILITY INFORMATION SHOWN ON THE PLAN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PROTECT ALL EXISTING FACILITIES WHICH MIGHT BE AFFECTED BY THIS WORK OR HIS OPERATION.

ROADSIDE SIGNS

1. VERTICAL ALIGNMENT
   POSITION PANEL SO FACE IS PLUMB.
2. HORIZONTAL ALIGNMENT (SEE DIAGRAM ABOVE)
   - A) ON STRAIGHT ROADWAY SECTIONS, ANGLE OF SIGN FACE TO ROADWAY VARIES WITH DISTANCE FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - SEE DIAGRAM.
   - B) ON THE INSIDE OF HORIZONTAL CURVES, POSITION SIGN SO FACE OF PANEL MAKES AN ANGLE OF 90° WITH A CHORD BETWEEN A POINT ON NEAR EDGE OF PAVEMENT AT SIGN LOCATION AND A POINT ON EDGE OF PAVEMENT 500' IN ADVANCE OF SIGN.
   - C) ON THE OUTSIDE OF HORIZONTAL CURVES, POSITION SIGN SO FACE OF PANEL IS AT RIGHT ANGLES TO THE TANGENT OF THE CURVE AT THE SIGN LOCATION.
   - D) POSITIONING OF SIGNS AT GORES AND RAMP SEPARATIONS IS REFERRED TO THE NORMAL EDGE OF THE MAINLINE ROADWAY.

OVERHEAD SIGNS

1. VERTICAL ALIGNMENT
   POSITION PANELS FOR ALL OVERHEAD STRUCTURES SO THAT PANEL FACE IS PLUMB.
2. OVERHEAD SIGN STRUCTURES SHALL NOT BE ERECTED WITHOUT ATTACHING LUMINAIRES, SUPPORTS, AND/OR SIGNS.
3. HORIZONTAL ALIGNMENT
   - A) POSITION ALL OVERHEAD SIGNS SO THAT THE FACE OF THE PANEL IS AT RIGHT ANGLES TO THE NORMAL EDGE OF ROADWAY, IF ON A STRAIGHT ROADWAY SECTION.
   - B) POSITION ALL OVERHEAD SIGNS SO THAT THE FACE OF THE PANEL IS AT RIGHT ANGLES TO THE TANGENT OF THE CURVE AT SIGN LOCATION, IF ON A HORIZONTAL CURVE.
   - C) POSITIONING OF SIGNS AT GORES AND RAMP SEPARATIONS IS REFERRED TO THE NORMAL EDGE OF THE MAINLINE ROADWAY.
4. VERTICAL CLEARANCE
   - A) OVERHEAD SIGNS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 17'-9" FROM ROADWAY TO THE BOTTOM OF LIGHT FIXTURES. ALL LIGHT FIXTURES ARE TO BE AT THE SAME ELEVATION.
   - B) IF THE CONTRACTOR CANNOT OBTAIN 17'-9" (SEE 3A) CLEARANCE, HE IS TO CEASE WORK AND CONTACT THE PROJECT ENGINEER FOR FURTHER INSTRUCTIONS. THE PROJECT ENGINEER MAY CONTACT THE TRAFFIC ENGINEERING DESIGN DIVISION FOR ASSISTANCE.
   - C) ON ALL OVERHEAD SIGNS, THE MINIMUM CLEARANCE TO BOTTOM OF DESIGN SIGN: 20'-9".

PROJECT REQUIREMENTS

ALL NEW SIGNS ON THIS PROJECT SHALL BE FABRICATED FROM SHEETING WHICH MEETS ALL OF THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER:

1. SHEETING SHALL MEET THE REQUIREMENTS OF SECTIONS 813 AND 950.03 OF MDOT SHA'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS 2017 EDITION AND SUBSEQUENT REVISIONS AND SUPPLEMENTS.

2. LISTED ON MDOT SHA OFFICE OF TRAFFIC AND SAFETY'S QUALIFIED PRODUCTS LIST (QPL).

PROJECT REQUIREMENTS CONT'D

3. THE FOLLOWING TYPES OF SHEETING SHALL BE USED FOR THE SPECIFIED SIGN CLASSIFICATIONS:

GENERAL NOTE: ALL COLORS SHALL BE RETROREFLECTIVE EXCEPT BLACK. BLACK TEXT, BORDERS, SYMBOLS OR ANY BLACK ELEMENTS OF ANY SIGN SHALL BE NON-REFLECTIVE. THIS APPLIES TO ALL MDOT SHA SIGNS AS SHOWN BELOW.

A) GUIDE, EXIT GORE, GENERAL INFORMATION, AND SERVICE SIGNS - FALL INTO TWO SUB CATEGORIES:

(I). GROUND MOUNTED:
ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9).

(II). OVERHEAD STRUCTURE SIGNS AND OVERHEAD CANTILEVER SIGNS:
ALL RETROREFLECTIVE SHEETING ELEMENTS OF ALL OVERHEAD SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE XI (II). (THIS SECTION DOES NOT APPLY TO OVERHEAD SIGNALIZED INTERSECTION SIGNING; MAST ARM OR SPAN WIRE. FOLLOW THE REQUIREMENTS FOR THE RESPECTIVE SIGN CLASSIFICATION FOR SIGNAL SIGNING.)

B) WARNING SIGNS - RETROREFLECTIVE SHEETING FOR WARNING SIGNS (FLUORESCENT YELLOW AND FLUORESCENT ORANGE) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). REGULATORY MESSAGES WITHIN WARNING SIGNS SHALL FOLLOW THE REQUIREMENTS FOR REGULATORY SIGNS.

C) SCHOOL SIGNS - RETROREFLECTIVE SHEETING FOR SCHOOL SIGNS (FLUORESCENT YELLOW AND FLUORESCENT YELLOW-GREEN) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). REGULATORY MESSAGES WITHIN SCHOOL SIGNS SHALL FOLLOW THE REQUIREMENTS FOR REGULATORY SIGNS.

D) REGULATORY SIGNS - FALL INTO THREE SUBCATEGORIES:

(I). "RED" REGULATORY SIGNS; (SPECIFICALLY - STOP, YIELD, DO NOT ENTER AND WRONG WAY). ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9).

(II). ALL R7 AND R8 SERIES PARKING RELATED SIGNS AND THEIR SUPPLEMENTAL PANELS, NO TRESPASSING SIGNS, AND SIGNS DIRECTED AT PEDESTRIANS AND BICYCLISTS ONLY. ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET THE REQUIREMENTS FOR ASTM TYPE IV (4).

(III). ALL OTHER REGULATORY SIGNS - ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET ASTM TYPE IV (4) INCLUDING RED ELEMENTS. WARNING MESSAGES WITHIN REGULATORY SIGNS SHALL FOLLOW THE REQUIREMENTS FOR WARNING SIGNS.

E) ROUTE MARKERS (INDEPENDENT USE AND GUIDE SIGN USE)

INDEPENDENT USE: ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET BUT NOT TO EXCEED THE REQUIREMENTS FOR ASTM TYPE IV (4).

GUIDE SIGN USE: WHEN INCORPORATED IN THE BODY OF A GUIDE SIGN, ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET THE SHEETING REQUIREMENTS OF THE GUIDE SIGNS FOR WHICH THEY ARE TO BE APPLIED; GROUND MOUNT ASTM TYPE IX (9) OR OVERHEAD ASTM TYPE XI (II).

F) LOGOS AND / OR GRAPHICS - WITHIN SIGNS SHALL FOLLOW THE REQUIREMENTS FOR THE RESPECTIVE SIGN CLASSIFICATION UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER.

G) SPECIFIC SERVICE (LOGO) SIGNING - ALL COPY, DIVIDER BORDERS, LOGOS AND ARROWS SHALL BE DEMOUNTABLE ALUMINUM OVERLAYS, .032 MINIMUM TO .063 MAXIMUM. ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). DISTANCES ON DIRECTIONAL ARROWS WHEN SPECIFIED SHALL BE BLACK. THE OVERLAYS ARE TO BE APPLIED WITH .125 ALUMINUM POP RIVETS TO THE BODY OF THE MAIN SIGN.

H) CIVIL DEFENSE SIGNS AND OTHER SIGNS - NOT SPECIFICALLY FALLING INTO ONE OF THE CATEGORIES ABOVE, SHALL FOLLOW THE GUIDELINES FOR THE SIGN CLASSIFICATION THAT MOST CLOSELY MATCHES THE COLOR(S) OF THE PROPOSED SIGN.

4. THE FOLLOWING MINIMUM THICKNESS SHALL BE USED FOR THE APPROPRIATE WIDTH OF SHEET ALUMINUM BLANKS:

LONGEST DIMENSION	MINIMUM THICKNESS
UP TO 12"	0.040"
GREATER THAN 12" TO 24"	0.063"
GREATER THAN 24" TO 36"	0.080"
GREATER THAN 36" TO 48"	0.100"
OVER 48"	0.125"

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Baltimore, MD 21286
www.stantec.com

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17172
MD LICENSE NUMBER

12-12-2024
EXPIRATION DATE

STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

SHA #19-AP-MO-013-XX

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE NORTH BETHESDA, MD

REVISIONS

GENERAL NOTES AND PROPOSALS

SCALE NTS ADVERTISED DATE ' CONTRACT NO.

DESIGNED BY DM '
DRAWN BY DM '
CHECKED BY RJM '
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15035503.83 - 15035504.50
TIMS NO. P341
TOD NO.

DRAWING NO. SNN- 1 OF 1 SHEET NO. 058 OF 128

BY: dmarihugh -

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-1001_Grosvenor.dgn

PAVEMENT MARKING LEGEND

- (A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
- (B) INSTALL 5 INCH WHITE PAVEMENT MARKING
- (C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10–30–10 SKIP
- (D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3–9–3
- (E) INSTALL 10 INCH WHITE PAVEMENT MARKING
- (F) INSTALL 16 INCH WHITE PAVEMENT MARKING
- (G) INSTALL 24 INCH WHITE PAVEMENT MARKING
- (H) REMOVE EXISTING PAVEMENT MARKING
- (J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
- (K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

- EX. SIGN POST
- PR. SIGN POST
- EX. SIGN TO BE REMOVED
- PR. SIGN

POOKS HILL ROAD

N 491005 E 1283935

MD 355 SB (ROCKVILLE PIKE)

TO MD 410

TO I–495

MD 355 NB (ROCKVILLE PIKE)

CONSTRUCTION SIDEWALK

CONSTRUCTION SIDEWALK

10+00 +50 11+00 +50 12+00 +50 13+00 +50 14+00 200+00 +50 201+00 +50 202

BELLEVUE DRIVE

1 6.8 SF

2 OM1–3 18"x 18" 2.3 SF

3 OM1–3 18"x 18" 2.3 SF

RELOCATE SIGN BY OTHERS

N 491005 E 1284130

BELLEVUE DRIVE

4 W13–4(1) 36"x 24" 6.0 SF

W11–2 36"x 36" 9.0 SF

SECOND LEFT 270 NORTH NEXT LEFT 495 WEST

5 W16–7pL 24"x 12" 2.0 SF

W11–2 36"x 36" 9.0 SF

6 W16–7pR 24"x 12" 2.0 SF

W11–2 36"x 36" 9.0 SF

RAMP TO I-495 EB

+50

M1–1 30"x 24" 5.0 SF

7 M3–2 (INTERSTATE) 24"x 12" 2.0 SF

M6–2R (INTERSTATE) 21"x 15" 2.2 SF

495 Beltway EAST Baltimore Silver Spring

E 1284130 N 491305

MATCH LINE STA. 202+00 – SEE SHEET SN–02

SN–01

SHA #19–AP–MO–013–XX

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE NORTH BETHESDA, MD

SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

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

SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20' ADVERTISED DATE ____ CONTRACT NO. ____

DESIGNED BY DM
DRAWN BY DM
CHECKED BY RJM
MDE/PRD ____

COUNTY MONTGOMERY
LOGMILE 15035503.83 – 15035504.50
TIMS NO. P341
TOD NO. ____

DRAWING NO. SN – 2.1 OF 2.6 SHEET NO. 059 OF 128

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EXPIRATION DATE

STATE OF MARYLAND ROBERT JAMES MILSTEAD No. 17172 PROFESSIONAL ENGINEER
04/04/23

BY: dmarihugh –

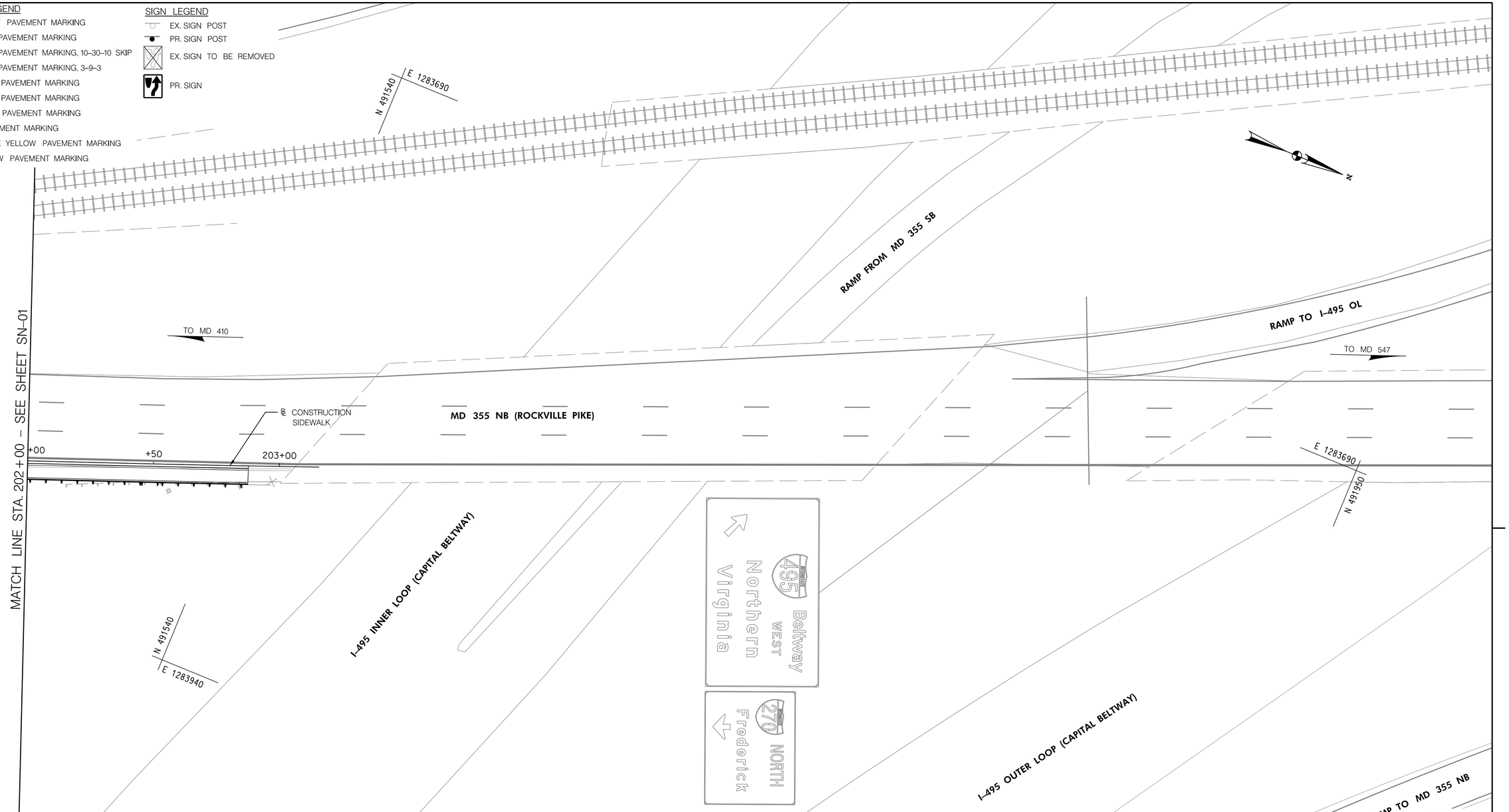
PLOTTED: 6/5/2023
FILE: \\JS0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P001_Grosvenor.dgn

PAVEMENT MARKING LEGEND

- (A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
- (B) INSTALL 5 INCH WHITE PAVEMENT MARKING
- (C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10–30–10 SKIP
- (D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3–9–3
- (E) INSTALL 10 INCH WHITE PAVEMENT MARKING
- (F) INSTALL 16 INCH WHITE PAVEMENT MARKING
- (G) INSTALL 24 INCH WHITE PAVEMENT MARKING
- (H) REMOVE EXISTING PAVEMENT MARKING
- (J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
- (K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

- EX. SIGN POST
- PR. SIGN POST
- EX. SIGN TO BE REMOVED
- PR. SIGN



SCALE: 1" = 20'

SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
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MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE
NORTH BETHESDA, MD

SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20' ADVERTISED DATE · CONTRACT NO.

DESIGNED BY DM · COUNTY MONTGOMERY
DRAWN BY DM · LOGMILE 15035503.83 – 15035504.50
CHECKED BY RJM · TIMS NO. P341
MDE/PRD · TOD NO.

DRAWING NO. SN – 2.2 OF 2.6 SHEET NO. 060 OF 128

SN-02

BY: dmarihugh –

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P002_Grosvenor.dgn

PAVEMENT MARKING LEGEND

- (A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
- (B) INSTALL 5 INCH WHITE PAVEMENT MARKING
- (C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10–30–10 SKIP
- (D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3–9–3
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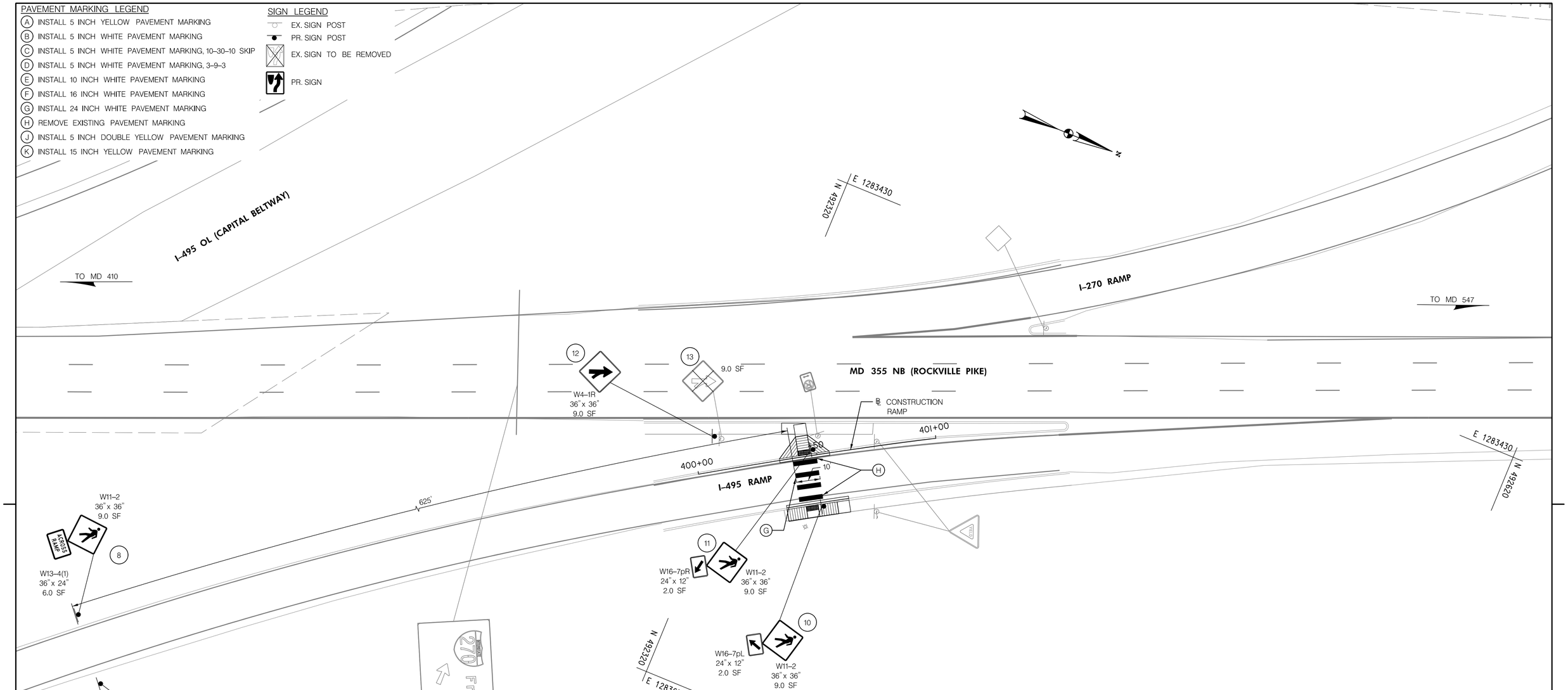
- (G) INSTALL 24 INCH WHITE PAVEMENT MARKING
- (H) REMOVE EXISTING PAVEMENT MARKING
- (J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
- (K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

- EX. SIGN POST
- PR. SIGN POST
- EX. SIGN TO BE REMOVED
- PR. SIGN



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17172
MD LICENSE NUMBER

12–12–2024
EXPIRATION DATE

STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SHA #19–AP–MO–013–XX

SN–03

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM
POOKS HILL ROAD TO
STRATHMORE AVENUE
NORTH BETHESDA, MD

SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20' ADVERTISED DATE _____ CONTRACT NO. _____

DESIGNED BY DM
DRAWN BY DM
CHECKED BY RJM
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15035503.83 – 15035504.50
TIMS NO. P341
TOD NO.

DRAWING NO.	SN– 2.3 OF 2.6	SHEET NO. 061 OF 128

BY: dmarihugh –

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P003_Grosvenor.dgn

PAVEMENT MARKING LEGEND

- (A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
- (B) INSTALL 5 INCH WHITE PAVEMENT MARKING
- (C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10–30–10 SKIP
- (D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3–9–3
- (E) INSTALL 10 INCH WHITE PAVEMENT MARKING
- (F) INSTALL 16 INCH WHITE PAVEMENT MARKING
- (G) INSTALL 24 INCH WHITE PAVEMENT MARKING
- (H) REMOVE EXISTING PAVEMENT MARKING
- (J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
- (K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

○	EX. SIGN POST
●	PR. SIGN POST
☒	EX. SIGN TO BE REMOVED
⬆	PR. SIGN

SHA #19–AP–MO–013–XX

SN–04

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17172
MD LICENSE NUMBER

12–12–2024
EXPIRATION DATE

ROBERT JAMES MILSTEAD
No. 17172
04/04/23

BY: dmarihugh –

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P004_Grosvenor.dgn

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM
POOKS HILL ROAD TO
STRATHMORE AVENUE
NORTH BETHESDA, MD

APPROVALS

TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

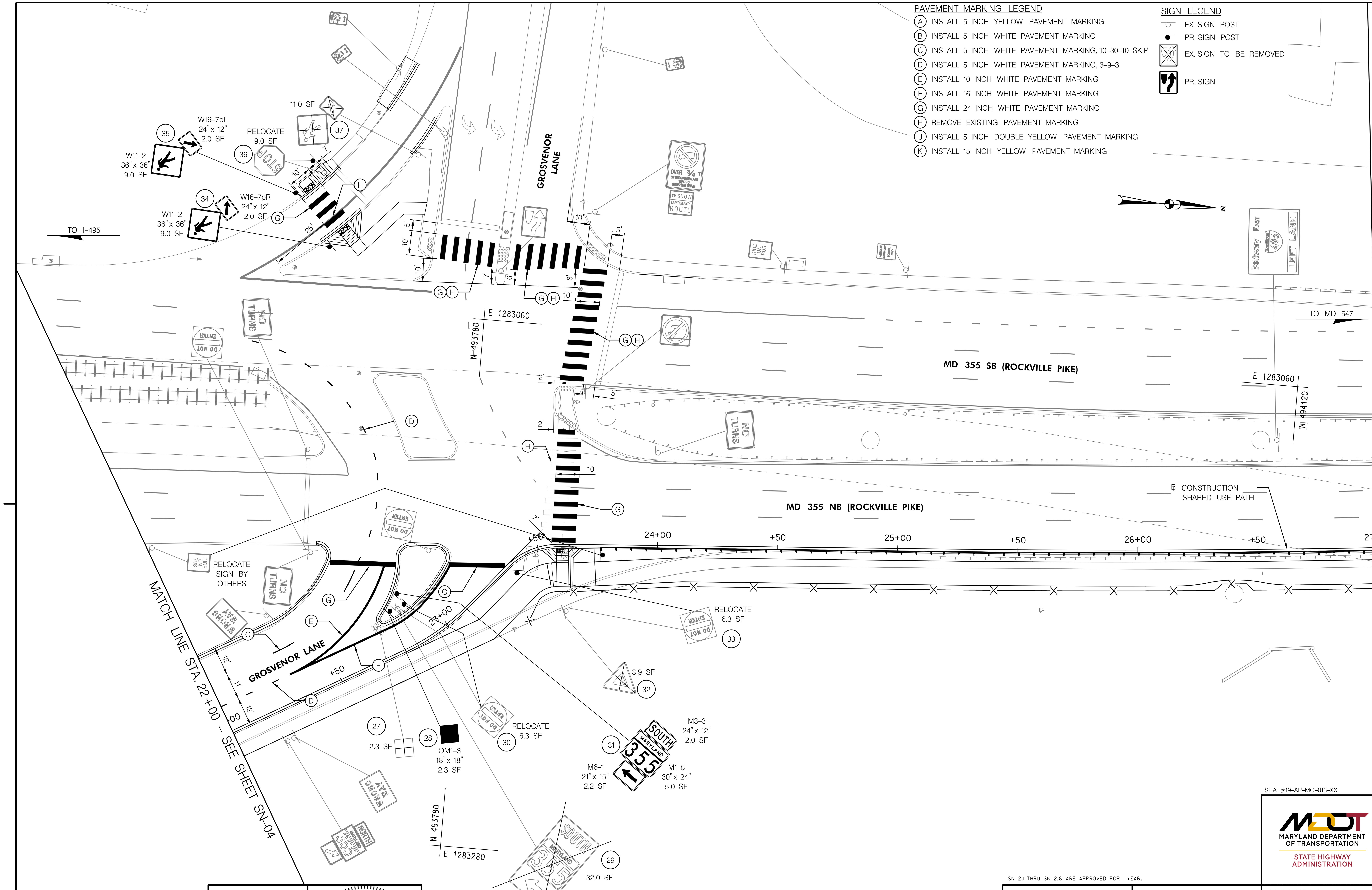
SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20'   ADVERTISED DATE ______   CONTRACT NO. ______

DESIGNED BY DM
DRAWN BY DM
CHECKED BY RJM
MDE/PRD ______

COUNTY MONTGOMERY
LOGMILE 15035503.83 – 15035504.50
TIMS NO. P341
TOD NO. ______

DRAWING NO. SN–2.4 OF 2.6   SHEET NO. 062 OF 128



PAVEMENT MARKING LEGEND

- (A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
- (B) INSTALL 5 INCH WHITE PAVEMENT MARKING
- (C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10-30-10 SKIP
- (D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3-9-3
- (E) INSTALL 10 INCH WHITE PAVEMENT MARKING
- (F) INSTALL 16 INCH WHITE PAVEMENT MARKING
- (G) INSTALL 24 INCH WHITE PAVEMENT MARKING
- (H) REMOVE EXISTING PAVEMENT MARKING
- (J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
- (K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

- EX. SIGN POST
- PR. SIGN POST
- EX. SIGN TO BE REMOVED
- PR. SIGN

SN-05

SHA #19-AP-MO-013-XX

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE NORTH BETHESDA, MD

SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20' ADVERTISED DATE ______ CONTRACT NO. ______

DESIGNED BY DM — COUNTY MONTGOMERY
DRAWN BY DM — LOGMILE 15035503.83 - 15035504.50
CHECKED BY RJM — TIMS NO. P341
MDE/PRD ______ — TOD NO. ______

DRAWING NO. SN-2.5 OF 2.6 — SHEET NO. 063 OF 128

SCALE: 1" = 20'

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17172
MD LICENSE NUMBER

12-12-2024
EXPIRATION DATE

STATE OF MARYLAND — ROBERT JAMES MILSTEAD — No. 17172 — PROFESSIONAL ENGINEER — 04/04/23

BY: dmarihugh -

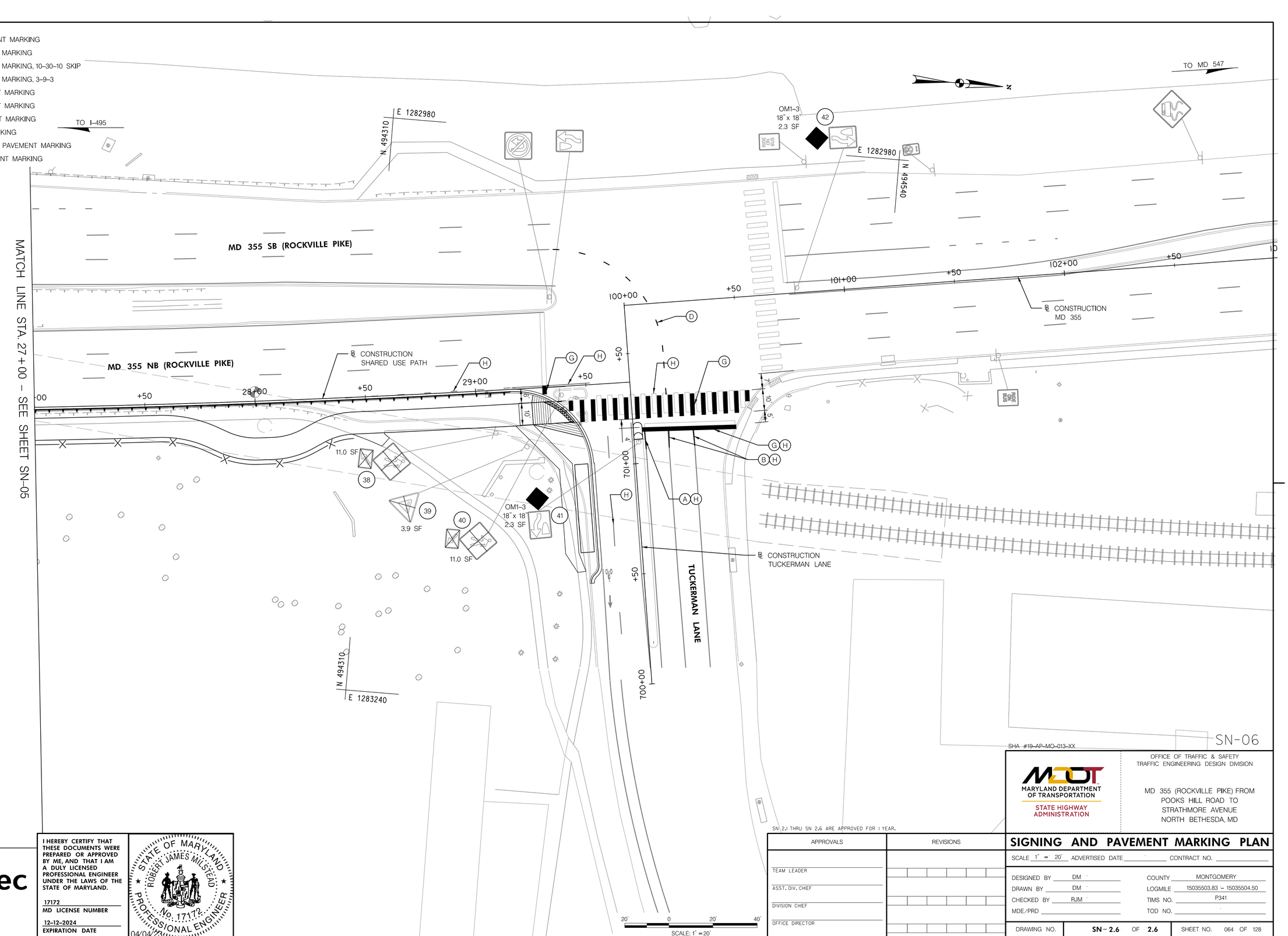
PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140\127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P005_Grosvenor.dgn

PAVEMENT MARKING LEGEND

(A) INSTALL 5 INCH YELLOW PAVEMENT MARKING
(B) INSTALL 5 INCH WHITE PAVEMENT MARKING
(C) INSTALL 5 INCH WHITE PAVEMENT MARKING, 10–30–10 SKIP
(D) INSTALL 5 INCH WHITE PAVEMENT MARKING, 3–9–3
(E) INSTALL 10 INCH WHITE PAVEMENT MARKING
(F) INSTALL 16 INCH WHITE PAVEMENT MARKING
(G) INSTALL 24 INCH WHITE PAVEMENT MARKING
(H) REMOVE EXISTING PAVEMENT MARKING
(J) INSTALL 5 INCH DOUBLE YELLOW PAVEMENT MARKING
(K) INSTALL 15 INCH YELLOW PAVEMENT MARKING

SIGN LEGEND

EX. SIGN POST
PR. SIGN POST
EX. SIGN TO BE REMOVED
PR. SIGN



SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SIGNING AND PAVEMENT MARKING PLAN

SCALE 1" = 20' ADVERTISED DATE _____ CONTRACT NO. _____

DESIGNED BY DM
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CHECKED BY RJM
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COUNTY MONTGOMERY
LOGMILE 15035503.83 – 15035504.50
TIMS NO. P341
TOD NO.

DRAWING NO. SN–2.6 OF 2.6 SHEET NO. 064 OF 128

SHA #19–AP–MO–013–XX

SN–06

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE NORTH BETHESDA, MD

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17172
MD LICENSE NUMBER

12–12–2024
EXPIRATION DATE

STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

BY: dmarihugh –

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P006_Grosvenor.dgn

SHEET NO.	REMARKS	CODE NUMBERS •											
		1	2	3	4	5	6	7	8	9	10	11	12
SN-01											98	20	
1	(3) OMI-3 - 18"x18" 3 EXISTING SIGNS REMOVED				6.8								
2	(1) OMI-3 - 18"x18" PROPOSED	2.3	1	1									
3	(1) OMI-3 - 18"x18" PROPOSED	2.3	1	1									
4	(1) WI3-4(1) - 36"x24", (1) WII-2 - 36"x36" PROPOSED	15.0	1	1									
5	(1) WI6-7pL - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
6	(1) WI6-7pR - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
7	(1) M6-2R - 21"x15", (1) MI-1 - 30"x24", (1) M3-2 - 24"x12" PROPOSED	9.2	1	1									
SN-02	NONE												
SN-03											44	25	
8	(1) WI3-4(1) - 36"x24", (1) WII-2 - 36"x36" PROPOSED	15.0	1	1									
9	(1) WI3-4(1) - 36"x24", (1) WII-2 - 36"x36" PROPOSED	15.0	1	1									
10	(1) WI6-7pL - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
11	(1) WI6-7pR - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
12	(1) W4-1R - 36"x36" PROPOSED	9.0	1	1									
13	(1) W4-1R - 36"x36" 1 EXISTING SIGN REMOVED				9.0								
SN-04							238	232		350	116		186
14	(1) WI6-7pR - 24"x12", (2) WII-2 - 30"x30", (1) WI6-7pL - 24"x12" PROPOSED	16.6	1	1									
15	(1) WI6-7pR - 24"x12", (2) WII-2 - 30"x30", (1) WI6-7pL - 24"x12" PROPOSED	16.6	1	1									
16	(1) WI6-7pR - 24"x12", (2) WII-15 - 30"x30", (1) WI6-7pL - 24"x12" PROPOSED	16.6	1	1									
17	(1) RI-1 - 36"x36", (1) R4-7 - 24"x30" 2 EXISTING SIGNS REMOVED				14.0								
18	(1) WI6-7pR - 24"x12", (2) WII-15 - 30"x30", (1) WI6-7pL - 24"x12" PROPOSED	16.6	1	1									
19	(1) WI6-7pR - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
20	(1) R4-7 - 24"x30" PROPOSED	5.0	1	1									
21	(1) WI6-7pL - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
22	(1) RI-1 - 36"x36" 1 EXISTING SIGN RELOCATED					9.0							
23	(1) WI6-7pL - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
24	(1) WI6-7pL - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
25	(1) WI6-7pR - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
26	(1) WI6-7pR - 24"x12", (1) WII-2 - 30"x30" PROPOSED	8.3	1	1									
SN-05							65		160		431	330	
27	(1) OMI-3 - 18"x18" 1 EXISTING SIGN REMOVED				2.3								
28	(1) OMI-3 - 18"x18" PROPOSED	2.3	1	1									
29	N/A 1 EXISTING SIGN REMOVED				32.0								
30	(1) R5-1 - 30"x30" 1 EXISTING SIGN RELOCATED					6.3							
31	(1) M6-1 - 21"x15", (1) MI-5 - 30"x24", (1) M3-3 - 24"x12" PROPOSED	9.2	1	1									
32	(1) RI-2 - 36"x36"x36" 1 EXISTING SIGN REMOVED				3.9								
33	(1) R5-1 - 30"x30" 1 EXISTING SIGN RELOCATED					6.3							
34	(1) WI6-7pR - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
35	(1) WI6-7pL - 24"x12", (1) WII-2 - 36"x36" PROPOSED	11.0	1	1									
36	(1) RI-1 - 36"x36" 1 EXISTING SIGN RELOCATED					9.0							
37	(1) WI6-7pR - 24"x12", (1) WII-2 - 36"x36" 2 EXISTING SIGNS REMOVED					11.0							
SN-06							43	9			228	330	
38	(1) WI6-7pL - 24"x12", (1) WII-2 - 36"x36" 2 EXISTING SIGNS REMOVED					11.0							
39	(1) RI-2 - 36"x36"x36" 1 EXISTING SIGN REMOVED				3.9								
40	(1) WI6-7pL - 24"x12", (1) WII-2 - 36"x36" 2 EXISTING SIGNS REMOVED					11.0							
41	(1) OMI-3 - 18"x18" PROPOSED	2.3											
42	(1) OMI-3 - 18"x18" PROPOSED	2.3											
	TOTAL	271.1	30	30	104.9	30.6	346	241	160	350	917	705	186

• CODE NUMBER DESCRIPTION & UNIT

CODE NUMBERS	DESCRIPTION	UNIT
1	SHEET ALUMINUM SIGNS	S.F.
2	FURNISH AND INSTALL PERFORATED TUBULAR STEEL SIGN SUPPORTS	EACH
3	FURNISH AND INSTALL ANCHOR BASES FOR SQUARE TUBULAR STEEL POST	EACH
4	REMOVE EXISTING SIGNS	S.F.
5	RELOCATE EXISTING SIGNS	S.F.
6	5" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
7	5" YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
8	10" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
9	16" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
10	24" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
11	REMOVAL OF EXISTING PAVEMENT MARKING LINE, ANY WITH, BY GRINDING	L.F.
12	15" YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.

SN 2.1 THRU SN 2.6 ARE APPROVED FOR 1 YEAR.

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17172
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TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SHA #19-AP-MO-013-XX

SN-07

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) FROM POOKS HILL ROAD TO STRATHMORE AVENUE NORTH BETHESDA, MD

INDEX OF QUANTITIES

SCALE NTS ADVERTISED DATE · CONTRACT NO.

DESIGNED BY DM · COUNTY MONTGOMERY
DRAWN BY DM · LOGMILE 15035503.83 – 15035504.50
CHECKED BY RJM · TIMS NO. P341
MDE/PRD · TOD NO. ·

DRAWING NO. SN – 11.1 OF 11.1 SHEET NO. 065 OF 128

BY: dmarihugh –

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSN-P007_Grosvenor.dgn

DRILL HOLES

BORDER REV: DATE: June 1, 2004

DRILL HOLES

DRILL HOLES

BY: dmarihugh –

MD 355 (ROCKVILLE PIKE) IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION

EXISTING SIGNS TO REMAIN

20,21,22, 27 — NO TURNS — R3-3 24" x 24"

23 — TRAVELERS ADVISORY 590 AM

28,29,31, 39 — R3-2 (30"x30")

30 — Grosvenor Ln — D-3(1) (VAR.x16")

32 — YIELD

33 — SOUTH 355 Grosvenor Lane

34 — NORTH MARYLAND 355

35 — SOUTH 355 — R3-5(L) (30"x36")

37,38, 44,45 — ONLY

40 — R4-7 (24"x30")

47,48,49,51 — DO NOT ENTER — R5-1 36" x 36"

50,52 — WRONG WAY — R5-1a 42" x 30"

PROPOSED SIGNS

24, 25, 26, 42, 43 — PUSH BUTTON TO CROSS ROCKVILLE PK / GROSVENOR LN — START CROSSING Watch For Turning Vehicles — CONT. START Finish Crossing If Started — TIME REMAINING To Finish Crossing — PEDESTRIANS SHOULD NOT BE IN CROSSWALK — STREET NAME IN BRAILLE TYPE 2

R10-3(1) 9" x 15" R10-3(1) 9" x 15" R10-3(1) 9" x 15" R10-3(1) 9" x 15" R10-3(1) 9" x 15"

EXISTING CAMERAS TO REMAIN

e,f

TO I-495

ROCKVILLE PIKE (MD 355)

METRORAIL BRIDGE

16" WATER (WSSC)

6" (WGL)

DUCT (VERIZON)

DUCT (MCI)

DUCT (AT&T)

8" WATER (WSSC)

10" WATER (WSSC)

EOR

GROSVENOR LN

UTILITY HEIGHTS: MISC. COM-25'-1" PRIMARY-ABOVE 40'

UTILITY HEIGHTS: MISC. COM-21'-7" PRIMARY-ABOVE 40'

EXISTING SIGNALS TO BE REMOVED

12a,13a,14a, 15a,16a,17a — 12"

EXISTING OPTICOM TO REMAIN

d

EXISTING SIGNALS TO REMAIN

5 — 12"

6,7, 10,11 — 12"

1,2,3, 4,8,9 — R Y G — 12"

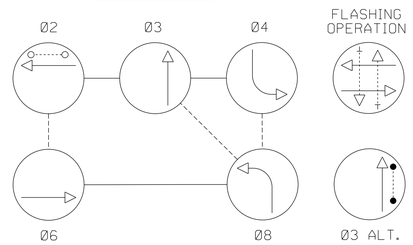
PROPOSED SIGNALS

12,13,14,15, 16,17 — 16" LED COUNTDOWN PEDESTRIAN SIGNAL

PROPOSED CAMERAS

a,b,c

NEMA PHASING



NOTE:
PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY.
PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

EXISTING SIGNS TO BE REMOVED

36 — YIELD

41,46 — PUSH BUTTON TO CROSS — START CROSSING WATCH FOR TURNING CARS — CONT.START FINISH CROSSING IF STARTED — PEDESTRIANS SHOULD NOT BE IN CROSSWALK

R10-3d MOD. 9" x 15"

15"RCP

GROSVENOR LN

TO MD 586

TAX ID 04-004 MARYLAND NA PARK AND PL L. 807 F. 324

CONSTRUCTION DETAILS:

(A) INSTALL 10' PEDESTAL POLE (MD 818.16-01), WITH BREAKAWAY COUPLINGS MODIFIED BASE (MD 801.01-01), COUNTDOWN PEDESTRIAN SIGNALS, AUDIBLE TACTILE PUSHBUTTON AND SIGN. (NOTE: ONE 2 IN. PVC SCHEDULE 80 CONDUIT BEND).
(B) INSTALL HANDHOLE.
(C) INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT – SLOTTED.
(D) INSTALL 2 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT – TRENCHED.
(E) REMOVE EXISTING PEDESTRIAN SIGNALS, PUSHBUTTON(S) AND SIGN(S). INSTALL COUNTDOWN PEDESTRIAN SIGNAL(S), AUDIBLE TACTILE PUSHBUTTON AND SIGN.
(F) USE EXISTING HANDHOLE.
(G) INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT – TRENCHED AND CONNECT TO UNUSED EXISTING 4 IN PVC CONDUIT BEND.
(H) REMOVE EXISTING PEDESTRIAN POLE AND ASSOCIATED EQUIPMENT. REMOVE FOUNDATION 12 IN. BELOW GRADE.
(J) CAP AND ABANDON EXISTING CONDUIT, REMOVE ALL SIGNAL WIRES.
(K) REMOVE EXISTING PEDESTRIAN SIGNAL AND INSTALL VIDEO DETECTION CAMERA.
(L) REMOVE EXISTING HANDHOLE.
(M) USE EXISTING HANDHOLE AND INSTALL NEW FRAME AND COVER.
(N) 2 IN. CONDUIT BEND IN EXISTING FOUNDATION.
(O) DISCONNECT AND ABANDON EXISTING LOOP DETECTOR. REMOVE AND DISPOSE ALL ASSOCIATED LEAD IN CABLES.
(P) USED EXISTING SPLICE CABINET.
(R) INSTALL 20' PEDESTAL POLE (MD 818.17-01), WITH TRANSORMER BASE (MD 821.01), VIDEO DETECTION CAMERAS, COUNTDOWN PEDESTRIAN SIGNALS, AUDIBLE TACTILE PUSHBUTTON AND SIGN. (NOTE: ONE 2 IN. PVC SCHEDULE 80 CONDUIT BEND).
(S) PROPOSED VIDEO DETECTION ZONES.

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
3. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
4. THE CONTRACTOR SHALL CONTACT MONTGOMERY COUNTY SIGNAL SHOP AT 301-279-1291 TO DELIVER APS EQUIPMENT FOR TESTING THREE WEEKS PRIOR TO BEGINNING WORK.
5. THE CONTRACTOR SHALL WORK ONE QUADRANT AT A TIME AND MAINTAIN PEDESTRIAN ACCESSIBILITY TO ALL OTHER QUADRANTS.
6. CONTACT TIM SULLIVAN BEFORE CONSTRUCTION BEGINS. (540) 760-8467, TSULLIVAN@UDR.COM
7. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS, OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MSHA STANDARDS.
8. VIDEO CAMERA LOCATION /ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.

GEOMETRIC LEGEND

EXISTING
PROPOSED
PROPOSED VIDEO DETECTOR ZONE
EXISTING DETECTOR

UTILITY LEGEND

SD STORM DRAIN
G GAS MAIN
W WATER MAIN
S SEWER MAIN
E ELECTRIC CABLES
A AERIAL CABLES
T TELEPHONE CABLES
F FIBER-OPTIC

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.

17172
MD LICENSE NUMBER

12-12-2024
EXPIRATION DATE

STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

APPROVALS

TEAM LEADER — ORIGINAL ON FILE
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

F MODIFY SIGNAL DUE TO NEW GEOMETRICS FEB. 2022 TIMS# P341
RJM
E RED LIGHT CAMERA INSTALLATION TIMS L447 JUN. 6, 2012
C REPLACE EXISTING SIGNALS WITH BLACK FACE SIGNALS TIMS F36B NOV. 16, 2004

SHA #19-AP-MO-013-XX

SG-01

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) AT GROSVENOR LANE
TRAFFIC SIGNAL DESIGN
NORTH BETHESDA, MD

SIGNALIZATION PLAN SHEET

SCALE 1" = 20' ADVERTISED DATE 03-21-1977 CONTRACT NO.

DESIGNED BY
DRAWN BY MVR
CHECKED BY WSW
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15035504.42
TIMS NO.
TOD NO.

TS NO. 2365F | DRAWING SG-01 OF 4 | SHEET NO. 066 OF 128

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSG-P001_Grosvenor.dgn

BORDER REV: DATE: June 1, 2004

DRILL HOLES

DRILL HOLES

DRILL HOLES

PROJECT DESCRIPTION

I. GENERAL
THIS PROJECT INVOLVES CONSTRUCTING A SHARED-USE PATH TO THE EAST OF MD 355 TO INBETWEEN GROSVENOR LANE AND TUCKERMAN LANE. THE MODIFICATION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 355 (ROCKVILLE PIKE) AT GROSVENOR LANE IN MONTGOMERY COUNTY WILL REQUIRE NEW APS/CPS ON THE EAST, WEST AND SOUTH APPROACHES.
MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION
THIS INTERSECTION OPERATES IN A NEMA FOUR-PHASE SEMI-TRAFFIC-ACTUATED MODE. THE MD 355 APPROACHES OPERATE CONCURRENTLY. THE GROSVENOR LANE APPROACHES OPERATE AS SPLIT PHASES WITH OVERLAP PHASING PROVIDED FOR THE EAST APPROACH LEFT TURN PHASE (SPECIAL GEOMETRICS CHANNELIZE AN "ENGLISH" MOVEMENT). CONCURRENT PEDESTRIAN PHASING IS PROVIDED ACROSS THE WEST LEG OF THE INTERSECTION. ALTERNATE PEDESTRIAN PHASING IS PROVIDED ACCROS THE SOUTHBOUND SIDE OF THE MD 355 (NORTH LEG) UNDER PHASE 3. A SEPARATE ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACCROSS THE NORTHBOUND SIDE OF MD 355 (NORTH LEG) PHASE. AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS THE NORTH LEG OF THE INTERSECTION.

III. PEDESTRIAN OPERATION
NAVIGATOR AUDIBLE PEDESTRIAN PUSHBUTTONS TO CROSS THE NORTH, AND WEST LEGS OF THE INTERSECTION ARE TO BE PROVIDED. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:

NORTH: "WAIT TO CROSS ROCKVILLE AT GROSVENOR, WAIT."
WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

WEST: "WAIT TO CROSS GROSVENOR AT ROCKVILLE, WAIT."
WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACT PERSONS

THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

DISTRICT 3

MR. JOSEPH MOGES
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7462

MR. MARK LOEFFLER
DISTRICT ENGINEER - UTILITIES
301-513-7350

MR. JOHN GOVER
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
301-513-7336

MR. GREGORY EDWARDS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
301-513-7304

MONTGOMERY COUNTY

MR. KAMAL HAMUD
MONTGOMERY COUNTY-TRAFFIC ENGINEERING
PHONE NUMBER 301-777-8761

OOTS CONTACTS:

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MR. MICHAEL BOYLE
SUPPLY OFFICER
PHONE: (410)-787-7673

PEPCO

MS. GINJI PERRY
PHONE 202-833-7500

MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES FOR TRAFFIC CONTROL: MD 104.03-11, MD 104.04-13 THROUGH MD 104.04-16.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
NONE			

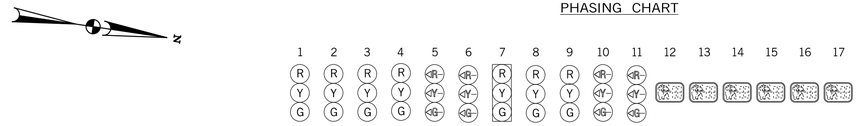
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

CATEGORY CODE NO.	QUANTITY	UNIT	DESCRIPTION
801004	1.7	CY	CONCRETE FOR SIGNAL FOUNDATION
801605	5	SF	SHEET ALUMINUM SIGNS (5 - R10-3(1) SIGNS)
802146	1	EA	ADJUST HANDHOLE TO GRADE WITH NEW FRAME AND COVER
802501	392	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805125	60	LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805155	280	LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
811001	4	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
816003	3	EA	HD IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE
818101	4	EA	6 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLING, FOUNDATION AND GROUND ROD
818006	1	EA	20 FOOT BREAKAWAY PEDESTAL POLE
837001	1	EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
860285	6	EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
861105	785	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1025	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
865210	5	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
865300	1	EA	2-WIRE APS CENTRAL CONTROL UNIT
873003	1	EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)

C. EQUIPMENT TO BE RETURNED TO SHA.

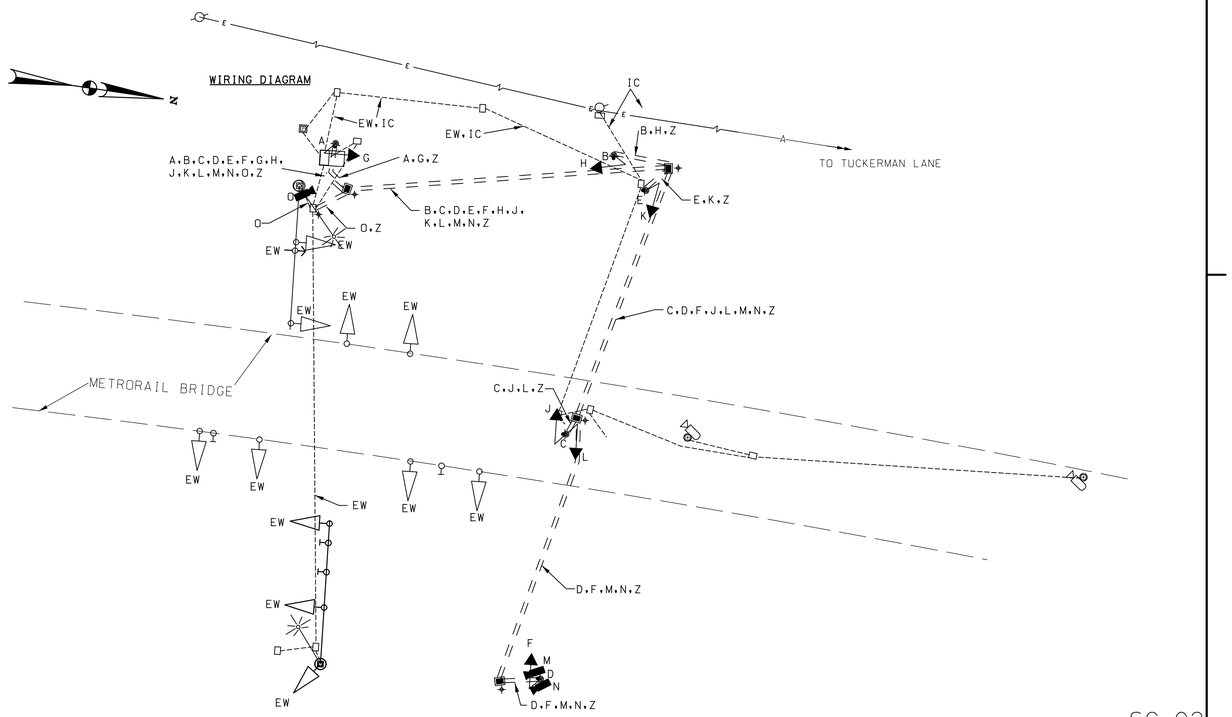
NONE

PHASING CHART



PHASE 2 & 6	G	G	G	G	⊲R⊳	⊲R⊳	R	R	R	⊲R⊳	⊲R⊳	WK	WK	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	⊲R⊳	⊲R⊳	R	R	R	⊲R⊳	⊲R⊳	FL/DW	FL/DW	DW	DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	⊲R⊳	⊲R⊳	R	R	R	⊲R⊳	⊲R⊳	DW	DW	DW	DW	DW	DW
PHASE 3 & 8	R	R	R	R	⊲G⊳	⊲G⊳	G	G	G	⊲R⊳	⊲R⊳	DW	DW	DW	DW	DW	DW
3 CHANGE	R	R	R	R	⊲G⊳	⊲G⊳	G	Y	Y	⊲R⊳	⊲R⊳	DW	DW	DW	DW	DW	DW
PHASE ALT 3 & 8	R	R	R	R	⊲G⊳	⊲G⊳	G	G	G	⊲R⊳	⊲R⊳	DW	WK	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	⊲G⊳	⊲G⊳	G	G	G	⊲R⊳	⊲R⊳	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
ALT 3 CHANGE	R	R	R	R	⊲G⊳	⊲G⊳	G	Y	Y	⊲R⊳	⊲R⊳	DW	DW	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	⊲G⊳	⊲G⊳	G	R	R	⊲G⊳	⊲G⊳	DW	DW	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	⊲Y⊳	⊲Y⊳	Y	R	R	⊲Y⊳	⊲Y⊳	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/⊲R⊳	FL/⊲R⊳	FL/R	FL/R	FL/R	FL/⊲R⊳	FL/⊲R⊳	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A,B,C,D,E -	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
F,G,H,J,K,L -	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
M,N,O -	VIDEO DETECTION CONTROL CABLE
Z -	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
EW -	EXISTING WIRE
IC -	EXISTING INTERCONNECT CABLE
+ -	GROUND ROD

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STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

SHA #19-AP-MO-013-XX

SG-02

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) AT
GROSVENOR LANE
TRAFFIC SIGNAL DESIGN
NORTH BETHESDA, MD

GENERAL INFORMATION SHEET

SCALE NTS ADVERTISED DATE · CONTRACT NO. <CONTRACT NO>

DESIGNED BY RJM
DRAWN BY RJM
CHECKED BY DM
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15035504.50
TIMS NO. P341
TOD NO.

TS NO. 2365F | DRAWING SG-02 OF 04 | SHEET NO. 067 OF 128

BY: dmarihugh

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSG-N002_Grosvenor.dgn

DRILL HOLES

DRILL HOLES

DRILL HOLES

BORDER REV: DATE: June 1, 2004

BY: dmarihugh –

EXISTING VIDEO DETECTION TO REMAIN

a,b

MD 355 (ROCKVILLE PIKE) IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION

EXISTING SIGNALS TO REMAIN

1,2, 5,6,7 — 12" LED

3,4 — 12" LED

8,9,11 — 16" LED COUNTDOWN PEDESTRIAN SIGNAL

EXISTING SIGNS TO REMAIN

12, 13, 15 — R10-3(1) 9" x 15"

16,18 — SHIELD ASSEMBLY (30"x51")

17b — D-3(1) DUAL-FACED (VAR.x16")

17a — D-3(1) DUAL-FACED (VAR.x16")

20,21 — R3-5(L) (30"x36")

22 — R3-5(R) (30"x36")

EXISTING SIGN TO BE RELOCATED

14 — R10-3(1) 9" x 15"

EXISTING SIGNAL TO BE RELOCATED

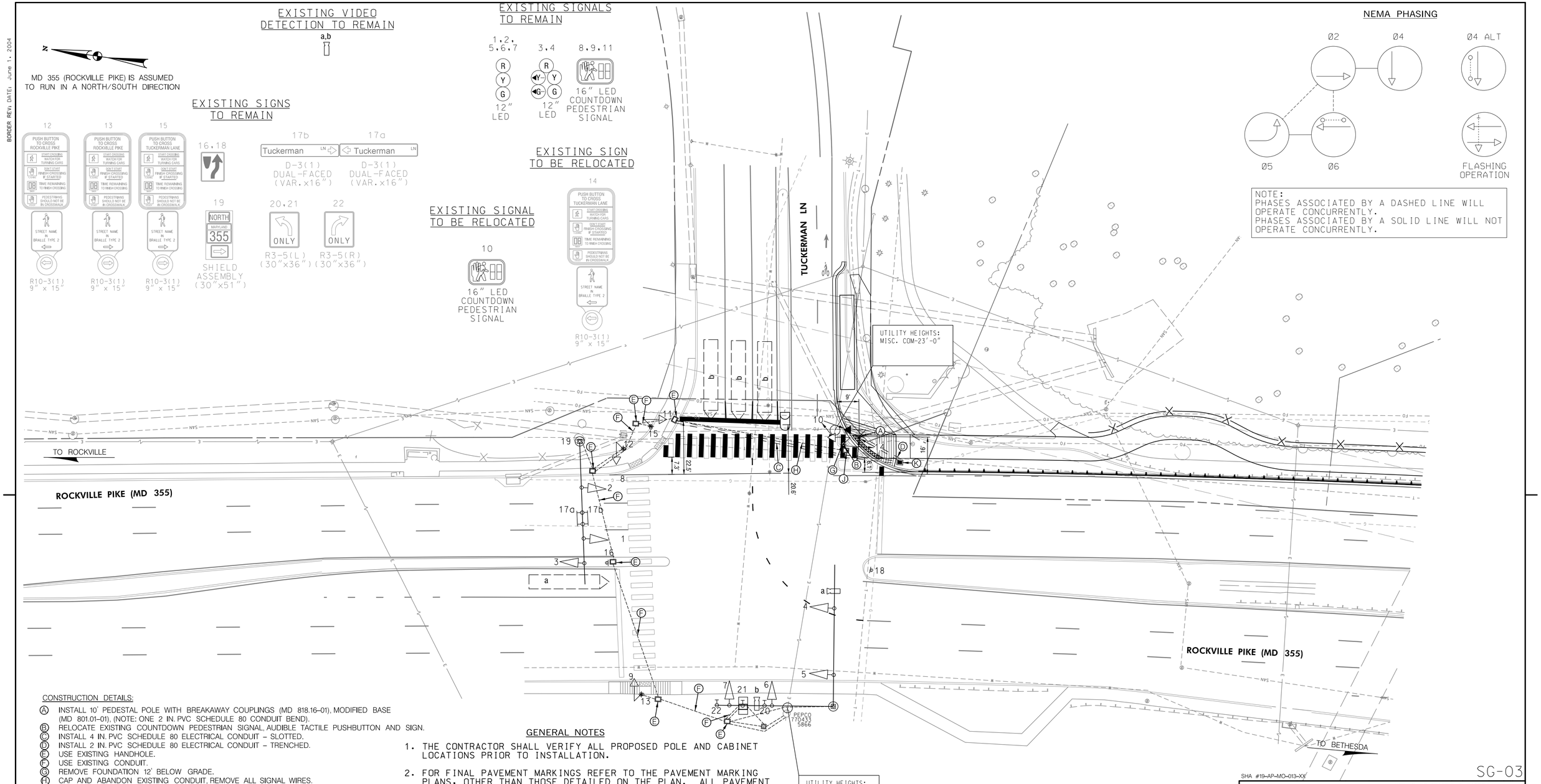
10 — 16" LED COUNTDOWN PEDESTRIAN SIGNAL

NEMA PHASING

Ø2, Ø4, Ø4 ALT, Ø5, Ø6

FLASHING OPERATION

NOTE:
PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY.
PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.



CONSTRUCTION DETAILS:

- (A) INSTALL 10' PEDESTAL POLE WITH BREAKAWAY COUPLINGS (MD 818.16-01), MODIFIED BASE (MD 801.01-01), (NOTE: ONE 2 IN. PVC SCHEDULE 80 CONDUIT BEND).
- (B) RELOCATE EXISTING COUNTDOWN PEDESTRIAN SIGNAL, AUDIBLE TACTILE PUSHBUTTON AND SIGN.
- (C) INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT – SLOTTED.
- (D) INSTALL 2 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT – TRENCHED.
- (E) USE EXISTING HANDHOLE.
- (F) USE EXISTING CONDUIT.
- (G) REMOVE FOUNDATION 12' BELOW GRADE.
- (H) CAP AND ABANDON EXISTING CONDUIT, REMOVE ALL SIGNAL WIRES.
- (J) REMOVE EXISTING HANDHOLE.
- (K) INSTALL HANDHOLE.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
2. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS, OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MSHA STANDARDS.
3. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
5. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITIY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
6. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.

GEOMETRIC LEGEND

- EXISTING
- PROPOSED
- EXISTING VIDEO DETECTOR ZONE

UTILITY LEGEND

- SD SD — STORM DRAIN
- G G — GAS MAIN
- W W — WATER MAIN
- S S — SEWER MAIN
- E E — ELECTRIC CABLES
- A A — AERIAL CABLES
- T T — TELEPHONE CABLES
- F F — FIBER-OPTIC

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.

17172
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STATE OF MARYLAND · ROBERT JAMES MILSTEAD · No. 17172 · PROFESSIONAL ENGINEER
04/04/23

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www.stantec.com

APPROVALS	
TEAM LEADER	ORIGINAL ON FILE
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

REVISIONS					
(C) MODIFY SIGNAL DUE TO NEW ADA RAMP FEB, 2023 TIMS# P341					
DH/MJM					
B SIGNAL RECONSTRUCTION, APS/CPS UPGRADES SHA NO. XY1325185				04/2014 TIMS NO. L734	
KCI					
A. REPLACE LOOP DETECTION WITH VIDEO CAMERAS SHA NO. AT7245185				6/2005 TIMS NO. G589	
JWA	JAH	KHR	DAZ		

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 355 (ROCKVILLE PIKE) AT TUCKERMAN LANE (SOUTH)
TRAFFIC SIGNAL DESIGN
NORTH BETHESDA, MD

SIGNALIZATION PLAN SHEET

SCALE 1" = 20' ADVERTISED DATE 08/09/02 CONTRACT NO. BW996M82

DESIGNED BY
DRAWN BY WT
CHECKED BY CA
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15035504.50
TIMS NO.
TOD NO.

TS NO. 4388C | DRAWING SG-03 OF 4 | SHEET NO. 068 OF 128

SG-03

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSG-P003_Grosvenor.dgn

PROJECT DESCRIPTION

I. GENERAL
THIS PROJECT INVOLVES THE MODIFICATION OF THE TRAFFIC SIGNAL ON THE EAST LEG OF THE INTERSECTION OF MD 355 (ROCKVILLE PIKE) AT TUCKERMAN LANE (SOUTH) IN MONTGOMERY COUNTY. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION
THIS INTERSECTION OPERATES IN A NEMA FOUR-PHASE SEMI-TRAFFIC-ACTUATED MODE. THERE IS AN EXCLUSIVE/ PERMISSIVE LEFT-TURN PHASE FOR SOUTHBOUND MD 355. A CONCURRENT PEDESTRIAN PHASE IS PROVIDED ACROSS THE EAST LEG OF THE INTERSECTION. AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS THE NORTH LEG OF THE INTERSECTION.

III. PEDESTRIAN OPERATION
NAVIGATOR AUDIBLE PEDESTRIAN PUSHBUTTONS TO CROSS THE NORTH AND EAST LEGS OF THE INTERSECTION ARE TO BE PROVIDED. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:

NORTH: "WAIT TO CROSS ROCKVILLE AT TUCKERMAN, WAIT."
EAST: "WAIT TO CROSS TUCKERMAN AT ROCKVILLE, WAIT."

WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACT PERSONS

THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

DISTRICT 3

MR. JOSEPH MOGES
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7498

MR. MARK LOEFFLER
DISTRICT ENGINEER - UTILITIES
301-513-7350

MR. JOHN GOVER
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
301-513-7336

MR. GREGORY EDWARDS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
301-513-7304

MONTGOMERY COUNTY

MR. KAMAL HAMUD
MONTGOMERY COUNTY-TRAFFIC ENGINEERING
PHONE NUMBER 301-777-8761

OOTS CONTACTS:

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SUPPLY OFFICER
PHONE: (410)-787-7673

PEPCO

MS. GINJI PERRY
PHONE 202-833-7500

MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES FOR TRAFFIC CONTROL: MD 104.03-11, MD 104.04-13 THROUGH MD 104.04-16.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY	UNIT	DESCRIPTION

NONE

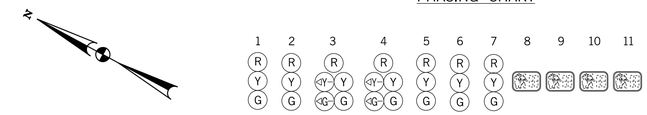
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

CATEGORY CODE NO.	QUANTITY	UNIT	DESCRIPTION
800000	1	EA	RELOCATE EXISTING PEDESTRIAN SIGNAL HEAD
800000	1	EA	RELOCATE EXISTING AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGN
802501	135	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805125	21	LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
805155	100	LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
811001	1	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
818101	1	EA	6 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLING, FOUNDATION AND GROUND ROD
861105	350	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	360	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
873003	1	EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)

C. EQUIPMENT TO BE RETURNED TO SHA.

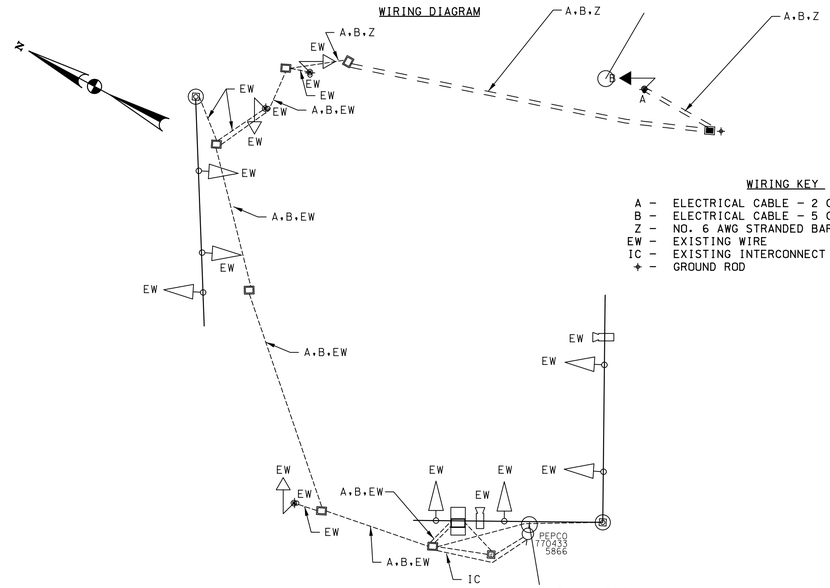
NONE

PHASING CHART



	1	2	3	4	5	6	7	8	9	10	11	
PHASE 2 & 5	R	R	←G⌐/G	←G⌐/G	G	R	R	DW	DW	DW	DW	
2 & 5 CHANGE	R	R	←Y⌐/G	←Y⌐/G	G	R	R	DW	DW	DW	DW	
PHASE 2 & 6	G	G	G	G	G	R	R	DW	DW	WK	WK	
PED CLEARANCE	G	G	G	G	G	R	R	DW	DW	FL/DW	FL/DW	
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	DW	DW	DW	DW	
PHASE 4	R	R	R	R	R	G	G	DW	DW	DW	DW	
4 CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW	
PHASE ALT 4	R	R	R	R	R	G	G	WK	WK	DW	DW	
PED CLEARANCE	R	R	R	R	R	G	G	FL/DW	FL/DW	DW	DW	
ALT 4 CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK	

WIRING DIAGRAM



WIRING KEY

A - ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
B - ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
Z - NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
EW - EXISTING WIRE
IC - EXISTING INTERCONNECT CABLE
✦ - GROUND ROD

SG-04

SHA #19-AP-MO-013-XX

Stantec
810 Gleneagles Court, Suite 300
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www.stantec.com

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04/04/23

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (ROCKVILLE PIKE) AT TUCKERMAN LANE (SOUTH)
TRAFFIC SIGNAL DESIGN
NORTH BETHESDA, MD

GENERAL INFORMATION SHEET

SCALE NTS ADVERTISED DATE · · CONTRACT NO.

DESIGNED BY RJM · COUNTY MONTGOMERY
DRAWN BY RJM · LOGMILE 15035504.50
CHECKED BY DM · TIMS NO. P341
MDE/PRD TOD NO.

TS NO. 4388C | DRAWING SG-04 OF 04 | SHEET NO. 069 OF 128

PLOTTED: 6/5/2023
FILE: \\US0525-PPFSS01\shared_projects\202601140127 BPPA - Grosvenor Project\700 CADD\700 Sheet\pSG-P004_Grosvenor.dgn

MAINTENANCE OF TRAFFIC GENERAL NOTES:

1. STANDARDS

All work shall be conducted in accordance with the latest versions of the Maryland State Highway Administrations (MDOT SHA) Standard Specifications and Book of Standards for Highway and Incidental Structures. All signs, channelizing devices, and other traffic control devices shall conform with the latest version of the Maryland Manual on Uniform Traffic Control Devices (MUTCD).

2. PRECONSTRUCTION

The contractor shall arrange and host a preconstruction meeting at least two weeks prior to starting construction and establishing the work zone. The following offices shall be notified of this preconstruction meeting:

* Montgomery County Division of Transportation Engineering at 240-777-7220
* Montgomery County Division of Traffic Engineering and Operations at 240-777-6000
* 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 at 240-777-6300

Maryland State Highway Administration (MDOT SHA) Offices:

* Derek Gunn
  Acting Assistant District Engineer - Traffic (Montgomery County)
  (301) 513-7498

* Gregory Edwards
  Assistant District Engineer - Maintenance
  (301) 513-7304

* John Gover
  Assistant District Engineer - Construction
  (301) 513-7336

* Mark Loeffler
  Assistant District Engineer - Utilities
  (301) 513-7350

Contact the MCDOT Transportation Management Center at 240-777-2100 between 5:00 AM and 11:00 PM to inform them of temporary lane closures in the vicinity of any traffic signals.

The permittee shall contact the Transportation Systems Engineering Team at 240-777-2100 at least two weeks in advance to coordinate any minor traffic signal work. Major traffic signal work shall be coordinated a minimum of thirty (30) days in advance of the project. The permittee shall contact the Montgomery County Transportation Management Center at 240-777-2100 a minimum of 72 hours prior to beginning work to have existing traffic signal equipment marked.

The permittee shall contact the Traffic Engineering Design & Operations Section (TEDD) at 240-777-6000 at least ten (10) working days in advance of the final paving operation to schedule the installation of permanent pavement markings and signs.

The permittee shall contact the Director at 301-565-7300 of the Silver Spring Regional Services Center and the Silver Spring Traffic Sergeant at 301-565-7740 of the Montgomery County Police Department, a minimum of one week prior to the beginning of any work activities within the Silver Spring Business District.

The Contractor shall provide an on site Maryland cerified traffic control manager at all times during construction activities.

3. SIGNS

a) ROAD WORK AHEAD signs shall be installed on all side streets that intersect roads within the work zone. The signing shall be placed along the intersection approach to the right of the travel lane. Refer to Standard Detail 104.01-02 for guidance on sign placement.

b) Warning signs mounted on wood posts, and those mounted on approved portable supports, shall be mounted in conformance with Standard No. MD 104.01-17.

c) The contractor shall cover temporary signs that are not applicable during non-working hours.

d) The contractor shall cover existing traffic signs in conflict with the work zone traffic control.

4. PORTABLE VARIABLE MESSAGE SIGNS

a) No more than two displays shall be used within any message cycle unless approved by the Engineer.

b) For a list of standard messages/abbreviations, contact the Engineer. All customized messages shall be approved by the Engineer.

c) Refer to Standard Detail MD 104.00-08 and -09 for more info.

d) Refer to Standard Detail MD 104.01-22 for traffic control devices associated with PVMS.

5. CHANNELIZING DEVICES

a) Taper formulas:

L = WS for speeds greater than (>) 40 mph.
L = WS^2/60 for speeds equal to or less than (<) 40 mph.
Where L = minimum length of taper;
S = prevailing travel speed or speed limit (MPH), whichever is higher, prior to work starting.
W = width of offset (ft)

b) Maximum spacing between channelizing devices

Taper channelization - Shall be equal in feet to the posted speed limit for posted speeds eq/less than 40 mph and 40 feet for posted speeds greater than 40 mph.

Tangent channelization - Shall be equal in feet to twice the posted speed limit in the buffer and equal in feet to the posted speed adjacent to the work area for posted speeds eq/less than 40 mph. Spacing shall be 80 feet in the buffer and 40 feet adjacent to the work area for posted speeds greater than 40 mph.

6. PAVEMENT MARKINGS

a) Temporary pavement markings should be installed according to Section 104.02-03(f).

b) Pavement markings that are no longer necessary shall be completely removed or obliterated using grinding method.

7. FLAGGING OPERATIONS

a) Radio communication shall be required between flaggers at the discretion of the County Inspector or under the following conditions
-If the flaggers cannot see each other
-If the lane closure exceeds 200 feet.

b) Flaggers shall be Maryland State Highway Administration or AATSA approved flaggers and shall be used at the discretion of the County Inspector. Flaggers shall use STOP/SLOW paddles to direct traffic.

8. VEHICLES

a) Non-essential work vehicles are to be pulled as far off the road as possible or be otherwise parked in a manner that does not inhibit the movement of traffic.

b) All work zone vehicles entering/exiting or operating within the work zone shall display flashing safety lights (amber in color) as specified in Standard MD 104.01-18A & B.

c) Coordinate deliveries of materials with proposed lane/shoulder closures, preferably when traffic volumes are low.

9. WORK HOUR RESTRICTIONS

a) Unless permitted by the Engineer, work within a lane, or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 am - 9 am and 3 pm - 7 pm, Monday - Friday. Also, such work is not permitted on weekends, National/State holidays, or days preceding and following holidays.

b) Nighttime work will be not be permitted, unless approved by the Engineer.

10. RESIDENTIAL/COMMERCIAL ACCESS

a) Contractor shall maintain access to residences including mail delivery and trash/pick up at all times during construction. For driveways requiring temporary closure to vehicular access due to proposed improvements, the contractor shall notify impacted property owner at least 2 weeks in advance of planned construction dates/times,confirm 24 hours in advance, and coordinate closely for the duration of construction activities. The contractor shall take all reasonable measures to provide access during construction activities.

11. POSTED SPEED LIMITS

MD 355 (Rockville Pike) is classified as an arterial,

Posted speed limit - 45 mph

The posted speed limits will be maintained during the construction.

12. TEMPORARY IMPACTS TO TRANSIT SERVICE

The contractor shall coordinate temporary bus stop relocations with Montgomery County Transit Service. Contact Phil McLaughlin (240-777-5800) at least 2 weeks in advance of construction.

Existing bus stop locations:

MD 355 (Rockville Pike) @ Pooks Hill Road
MD 355 (Rockville Pike) @ Grosvenor Lane

STATE OF MARYLAND
DAVID H. MARHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

MT-01

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
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DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC NOTES

SCALE: NTS

SHEET 070 of 128

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

SEQUENCE OF CONSTRUCTION:

Pre-Construction:

1. Install all erosion and sediment control devices.

Stage 1 - 3 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 1.
2. Construct the sidewalk from Sta. 10+47 to Sta. 202+87
3. Remove Maintenance of Traffic control devices associated with Stage 1.

Stage 2A - 1 week

1. Install all Maintenance of Traffic control devices associated with Stage 2A.
2. Reconstruct the sidewalks curb ramp on the I-495 Ramp to MD 355 NB from Sta. 400+34, LT to Sta. 400+60, LT.
3. Remove Maintenance of Traffic control devices associated with Stage 2A.

Stage 2B - 1 week

1. Install all Maintenance of Traffic control devices associated with Stage 2B.
2. Reconstruct the sidewalks curb ramps on the I-495 Ramp to MD 355 NB from Sta. 400+34, RT to Sta. 400+60, RT.
3. Remove Maintenance of Traffic control devices associated with Stage 2B.

Stage 3a - 2 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3a.
2. Construct the concrete curb and gutter on the south side of Grosvenor Lane from Sta. 21+41 to 22+57.
3. Remove the concrete island and construct temporary pavement.
4. Construct the ramp improvements in the island for eastbound Grosvenor Lane to southbound Rockville Pike.
5. Remove Maintenance of Traffic control devices associated with Stage 3a.

Stage 3b - 3 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3b.
2. Construct the sidewalk from Sta. 300+25 to 301+80.
3. Partially reconstruct the concrete island at the intersection of Grosvenor
4. Construct the ramp improvements on eastbound Grosvenor Lane.
5. Remove Maintenance of Traffic control devices associated with Stage 3b.

Stage 3c. - 3weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3c.
2. Construct the shared-use path from Sta. 20+23 to 23+28.
3. Remove Maintenance of Traffic control devices associated with Stage 3c.

Stage 3d - 3 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3d.
3. Construct the concrete island on Grosvenor Lane between Beach Drive and the MD 355 ramp.
4. Remove Maintenance of Traffic control devices associated with Stage 3d.

Stage 3e - 3 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3e.
2. Complete construction the concrete island at the intersection on Grosvenor Lane and MD 355.
3. Complete construction of the curb and gutter on the South side of Grosvenor Lane.
4. Construct the shared-use path from Sta. 23+28 to 23+71.
5. Remove Maintenance of Traffic control devices associated with Stage 3d

Stage 3f - 5 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3f.
2. Construct the shared-use path from Sta. 23+71 to Sta. 29+35.
3. Construct the sidewalk from Sta. 700+21 to 700+53.
4. Reconstruct the median nose on Tuckerman Lane.
5. Remove Maintenance of Traffic control devices associated with Stage 3f.

SEQUENCE OF CONSTRUCTION cont:

Stage 3g - 5 weeks

1. Install all Maintenance of Traffic control devices associated with Stage 3g.
2. Construct the bio-swale.
3. Remove the sidewalk at the existing bus stop of South of Grosvenor Lane along MD 355 and relocate the bus stop North of Grosvenor Lane along MD 355.
4. Remove Maintenance of Traffic control devices associated with Stage 3g.

Stage 4 - 1 week (not shown)

1. Install landscape trees in median of MD 355.

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BPPA Bicycle and Pedestrian Priority Areas

STATE OF MARYLAND · DAVID H. MARHUGHER · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

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RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

MT-02

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC NOTES

SCALE: NTS

SHEET 071 of 128

LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 410

N 489760 E 1284350

ELSMERE AVENUE

N 489930 E 1284350

TO I-495

W20-1(1) (48" x 48")
ROAD WORK AHEAD

MD 355 SB (ROCKVILLE PIKE)

MATCH LINE – SEE SHEET MT-04

MD 355 NB (ROCKVILLE PIKE)

40' (TYP.)

12'

12'

ARROW PANEL

30' FOR ARROW PANEL TAPER

ARROW PANEL TAPER = 220'

TAPER = 660'

11'

12'

12'

1100'

700'

800'

W20-5(1) (48" x 48")
RIGHT LANE CLOSED 1/2 MILE

W20-5(1) (48" x 48")
RIGHT LANE CLOSED 1500 FT

W4-2R (48" x 48")

N 489930 E 1284550

BROAD BROOK DRIVE

W20-1(1) (48" x 48")
ROAD WORK AHEAD

STD. MD 104.05-07
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

NOTE:

A MINIMUM OF 7 CHANNELIZING DEVICES SHALL PROCEED AN ARROW PANEL.

MT-03

20' 0 20' 40'

SCALE: 1" = 20'

STATE OF MARYLAND
DAVID H. MARIHUGH III
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PROFESSIONAL ENGINEER
03-28-2023

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS MAINTENANCE OF TRAFFIC PLAN STAGE I

SCALE: 1"=20'

SHEET 072 of 128

6/5/2023
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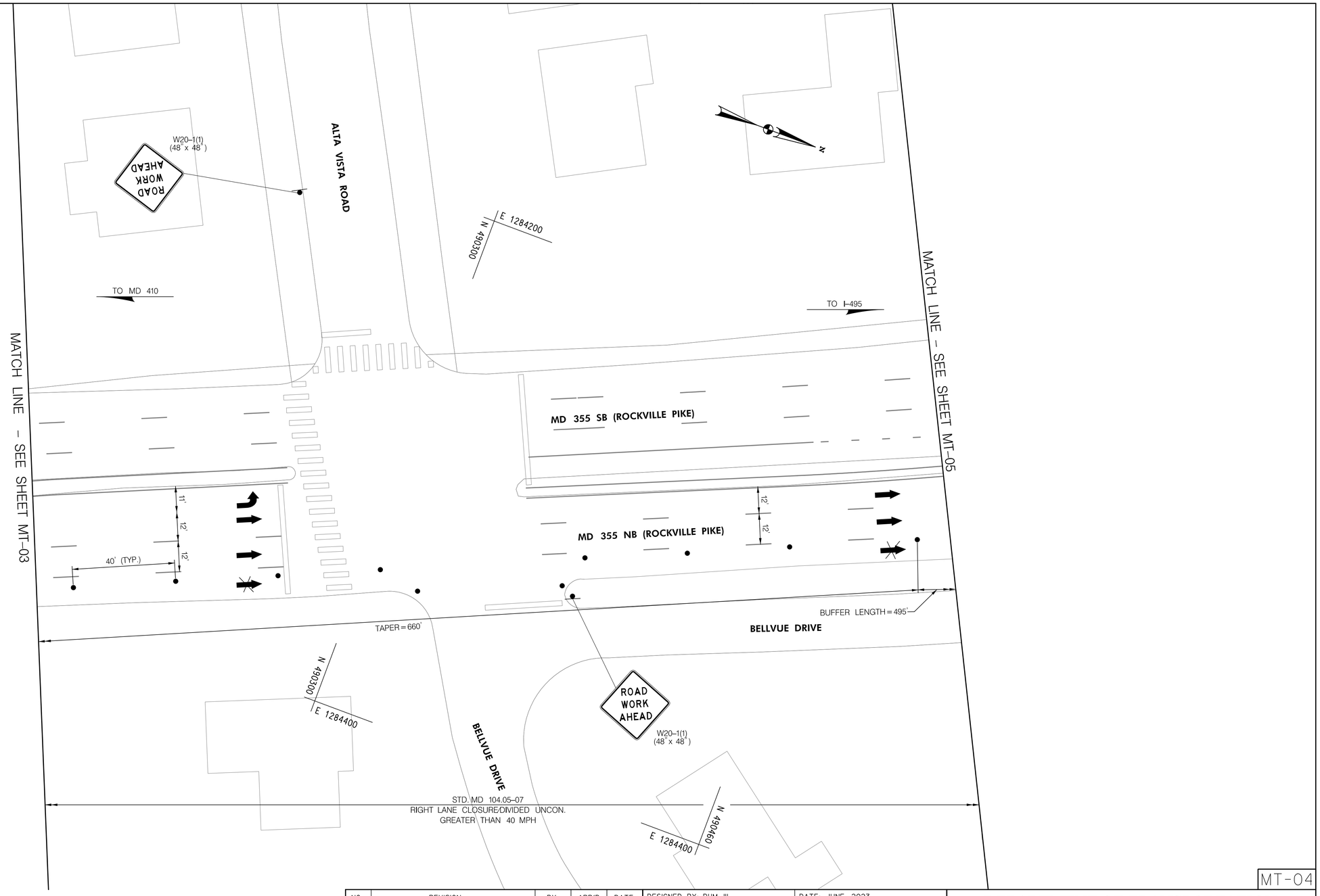
LEGEND

- TOCF - ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION



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

MT-04

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE I

071
SCALE: 1"=20'

SHEET 073 of 128

STATE OF MARYLAND
DAVID H. MARINUCCI
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BPPA Bicycle and Pedestrian Priority Areas

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LEGEND
- TOCF - ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

N 490600
E 1284010
E 1284010
N 490770
N
TO I-495
TO MD 410
MATCH LINE – SEE SHEET MT-04
MD 355 SB (ROCKVILLE PIKE)
MD 355 NB (ROCKVILLE PIKE)
80' (TYP.)
11'
12'
12'
CONSTRUCTION SIDEWALK
10+00
MATCH LINE STA. 10+50 – SEE SHEET MT-06
BUFFER LENGTH = 495'
BELLVUE DRIVE
E 1284210
N 490770
ASBURY LANE
STD. MD 104.05-07
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH
20' 0 20' 40'
SCALE: 1" = 20'

MT-05

STATE OF MARYLAND
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03-28-2023

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DEPARTMENT OF TRANSPORTATION
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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE I

SCALE: 1"=20' SHEET 074 of 128

6/5/2023
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LEGEND
TOCF – ORANGE CONSTRUCTION FENCE
ARROW PANEL
TRAFFIC DRUM
TYPE III BARRICADE
PREVIOUS STAGE WORK AREA
CURRENT STAGE WORK AREA
TEMPORARY TURF DECK SIDEWALK
TEMPORARY SIGN LOCATION

ROAD WORK AHEAD
W20-1(1)
(48" x 48")

POOKS HILL ROAD

TO MD 410

MD 355 SB (ROCKVILLE PIKE)

TO I-495

N 491010
E 1283930

E 1283930
N 491180

MATCH LINE STA. 10+50 – SEE SHEET MT-05

MD 355 NB (ROCKVILLE PIKE)

CONSTRUCTION SIDEWALK

40' (TYP.)

11' 12' 12'

12' 12'

11+00 +50 12+00 +50 13+00 +50 200+00 +50 201+00

TOCF

BELLVUE DRIVE

SIDEWALK CLOSED
R9-9
(30" x 18")

SIDEWALK CLOSED
R9-9
(30" x 18")

BELLVUE DRIVE

N 491010
E 1284160

12' MIN.
20' (TYP.)
14+00
I-495 RAMP
+50

MATCH LINE STA. 201+50 – SEE SHEET MT-07

STD. MD 104.05-07
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

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

MT-06

STATE OF MARYLAND
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Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE I

SCALE: 1"=20'

SHEET 075 of 128

6/5/2023
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LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

MATCH LINE STA. 201+50 – SEE SHEET MT-06

MD 355 SB (ROCKVILLE PIKE)

N

TO MD 547

N 491550 / E 1283750

TO MD 410

I-495 RAMP

℄ CONSTRUCTION SIDEWALK

12'

12'

40' (TYP.)

20' (TYP.)

MD 355 NB (ROCKVILLE PIKE)

12'

12'

12'

202+00

+50

203+00

TAPER = 100'

500'

E 1283750 / N 491870

END ROAD WORK

G20-2(1)
(48"x 24")

N 491550 / E 1283930

I-495 INNER LOOP (CAPITAL BELTWAY)

I-495 OUTER LOOP (CAPITAL BELTWAY)

STD. MD 104.05-07
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

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

MT-07

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE I

SCALE: 1"=20'

SHEET 076 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

N 491810
E 1283820

N

TO MD 185

I–495 OUTER LOOP (CAPITAL BELTWAY)

E 1283820
N 491940

TO MD 355

TAPPER = 266'

80' (TYP.)

40' (TYP.)

12' MIN.

I–495 RAMP

N 491810
E 1284070

BUFFER LENGTH = 495'

MATCH LINE – SEE SHEET MT-09

1000'

1000'

500'

W13–4
(36" x 36")

ON RAMP

ROAD WORK 1500 FT

W20–5(1)
(48" x 48")

45 MPH

W13–1
(24" x 24")

RAMP NARROWS

W5–4
(48" x 48")

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

ON RAMP

ROAD WORK 1/2 MILE

W20–5(1)
(48" x 48")

W13–4
(36" x 36")

MT-08

20' 0 20' 40'

SCALE: 1" = 20'

STATE OF MARYLAND
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PROFESSIONAL ENGINEER
03-28-2023

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DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: RJM	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 2A

SCALE: 1"=20'

SHEET 077 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I–495 OUTER LOOP (CAPITAL BELTWAY)

E 1283410

N 423770

N

I–270 RAMP

TO MD 547

TO MD 410

MD 355 NB (ROCKVILLE PIKE)

CONSTRUCTION RAMP

401+00

TOCF

60'

N 421720

E 1283630

400+00

500'

10' (TYP.)

80' (TYP.)

I–495 RAMP

G20–2(1)
(48" x 24")

END ROAD WORK

N 423770

E 1283630

BUFFER LENGTH = 495'

12' MIN.

MATCH LINE – SEE SHEET MT-08

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

MT-09

20' 0 20' 40'

SCALE: 1" = 20'

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 2A

SCALE: 1"=20'

SHEET 078 of 128

STATE OF MARYLAND
DAVID H. MARINUCCI
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
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BiPPA Bicycle and Pedestrian Priority Areas

LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

N 491810
E 1283820

N

TO MD 185

I–495 OUTER LOOP (CAPITAL BELTWAY)

TAPER = 264'

E 1283820
N 491940

TO MD 355

12' MIN.

40' (TYP.)

I–495 RAMP

80' (TYP.)

N 491810
E 1284070

BUFFER LENGTH = 495'

MATCH LINE – SEE SHEET MT–11

ROAD WORK 1500 FT
ON RAMP

FROM STAGE 2A

45 MPH
RAMP NARROWS

FROM STAGE 2A

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

ROAD WORK 1/2 MILE
ON RAMP

FROM STAGE 2A

MT-10

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 2B

SCALE: 1"=20' SHEET 079 of 128

6/5/2023
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LEGEND
TOCF – ORANGE CONSTRUCTION FENCE
ARROW PANEL
TRAFFIC DRUM
TYPE III BARRICADE
PREVIOUS STAGE WORK AREA
CURRENT STAGE WORK AREA
TEMPORARY TURF DECK SIDEWALK
TEMPORARY SIGN LOCATION

I–495 OUTER LOOP (CAPITAL BELTWAY)

E 1283410
N 423770

I–270 RAMP

TO MD 547

TO MD 410

MD 355 NB (ROCKVILLE PIKE)

CONSTRUCTION RAMP

401+00

+50

N 421720
E 1283630

400+00

10' (TYP.)

TOCF

TOCF

80' (TYP.)

I–495 RAMP

12' MIN

BUFFER LENGTH = 495'

MATCH LINE – SEE SHEET MT–10

END ROAD WORK

FROM STAGE 2A

N 423730
E 1283630

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

MT-11

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

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 2B

SCALE: 1"=20'

SHEET 080 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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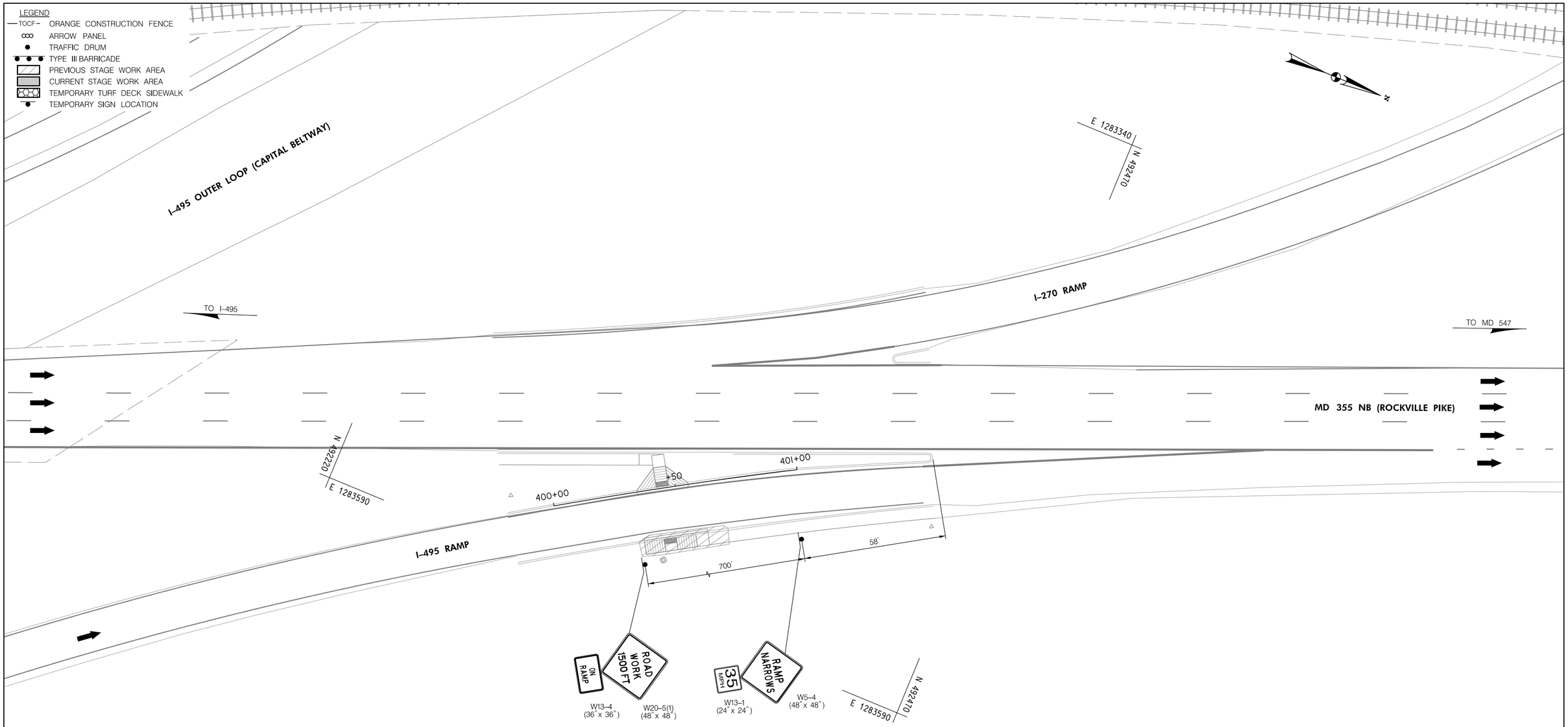
LEGEND
- TOCF - ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION



NOTE:
ADVANCED WARNING SIGNS TO BE PLACED ALONG I-495 RAMP.

MT-12

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

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3A

SCALE: 1"=20'

SHEET 081 of 128

STATE OF MARYLAND — DAVID H. MARIHUGH — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

℄ CONSTRUCTION BIO–SWALE

40' (TYP.)

50+00

+50

TAPER = 200'

MD 355 NB (ROCKVILLE PIKE)

MD 355 RAMP

12' MIN.

TO I-495

800'

700'

1100'

W20–5(1) (48" x 48")

ROAD WORK 1/2 MILE

ON RAMP

W13–4 (36" x 36")

ROAD WORK 1500 FT

ON RAMP

W13–4 (36" x 36")

W20–5(1) (48" x 48")

35 MPH

RAMP NARROWS

W13–1 (24" x 24")

W5–4 (48" x 48")

N 492840

E 1283410

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

N 493150

E 1283410

NOTE:
ADVANCED WARNING SIGNS ARE TO BE PLACED ALONG MD 355 NB.

MATCH LINE – SEE SHEET MT-14

MT-13

20' 0 20' 40'

SCALE: 1" = 20'

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3A

SCALE: 1"=20'

SHEET 082 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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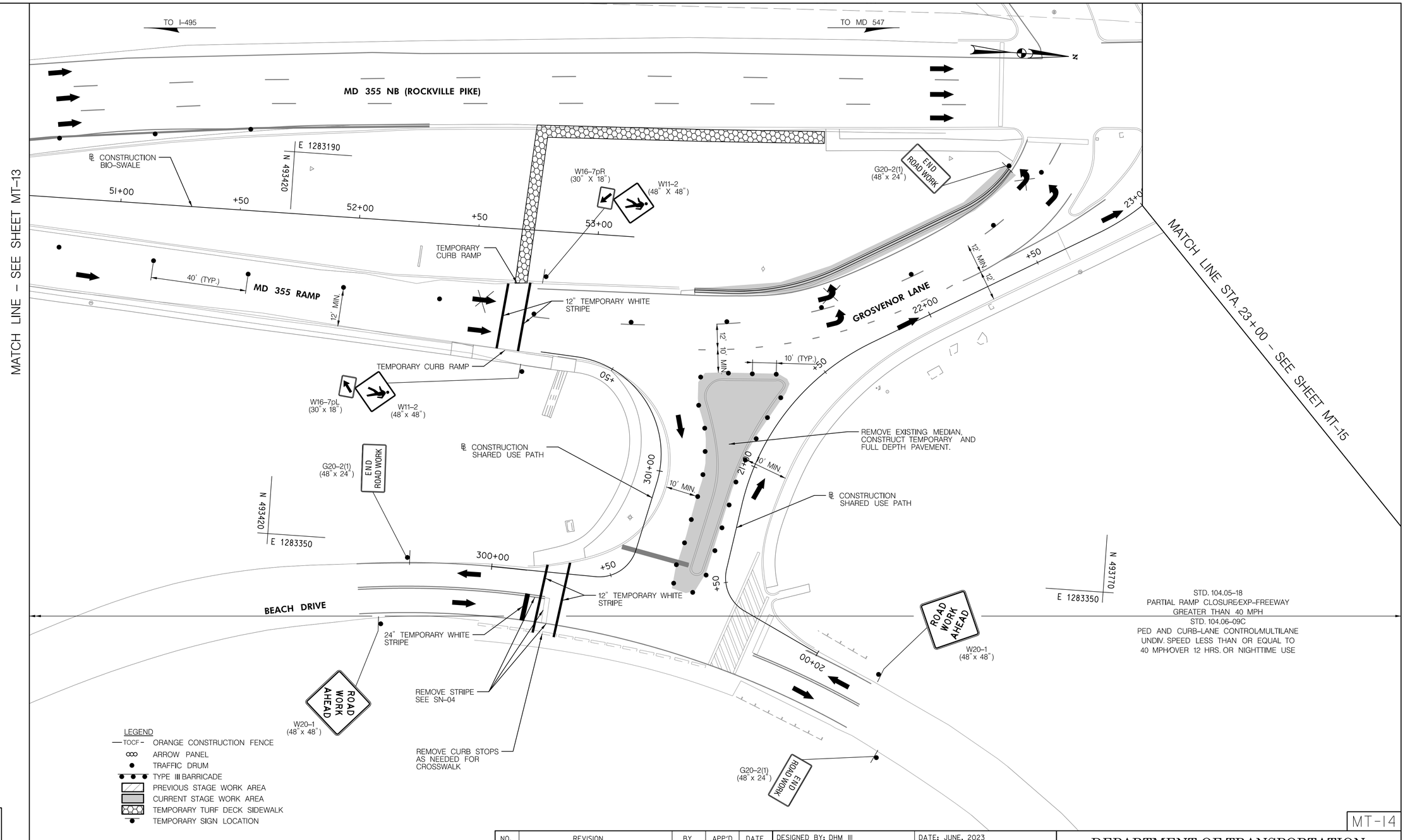
BiPPA Bicycle and Pedestrian Priority Areas



MT-14

NO.	REVISION	BY	APP'D	DATE

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3A

SCALE: 1"=20'

SHEET 083 of 128

STATE OF MARYLAND
DAVID H. MARIMUTHU
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

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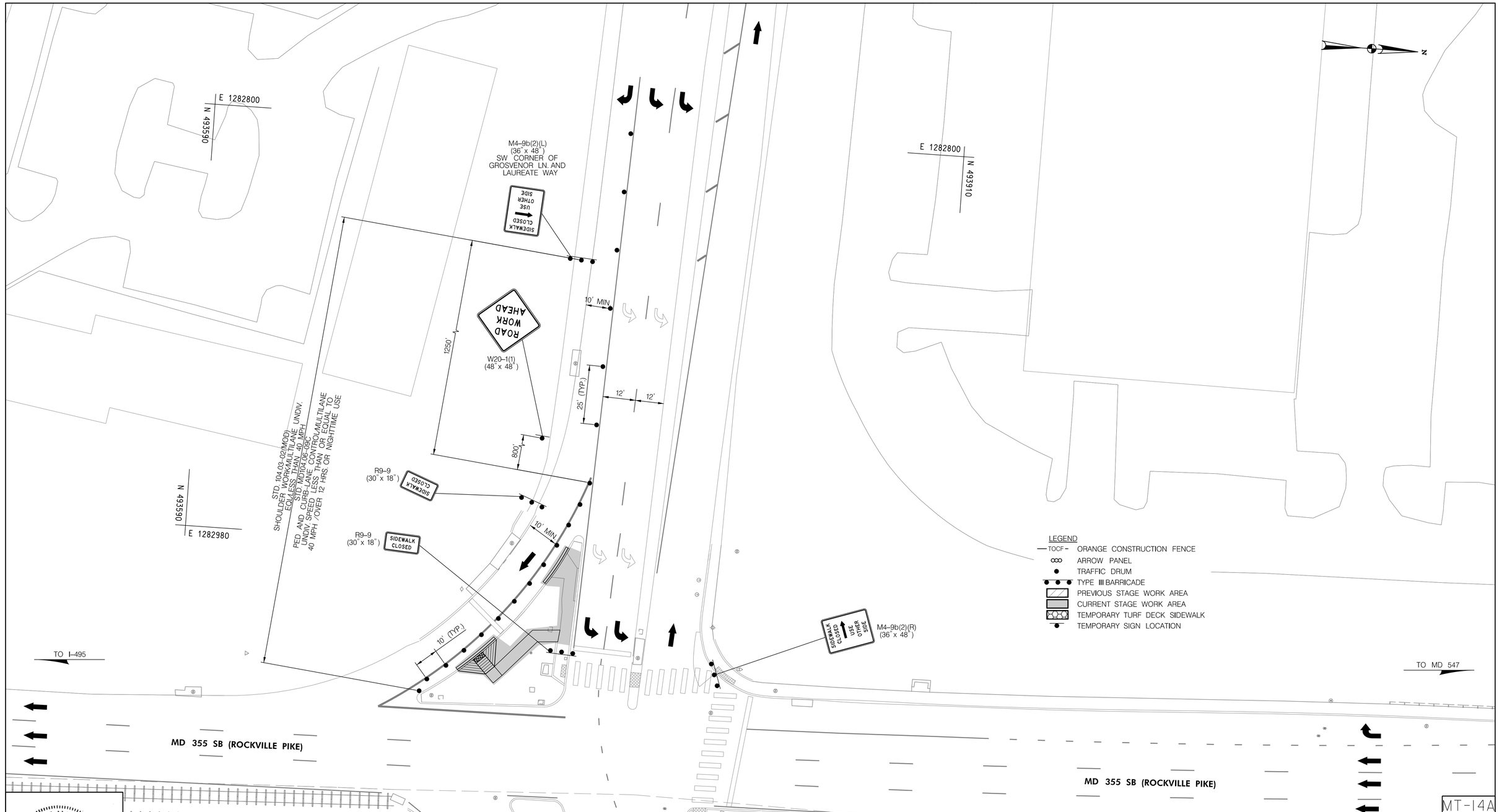

MT-14A

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3A

SCALE: 1"=20'

SHEET 083A of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BiPPA Bicycle and Pedestrian Priority Areas

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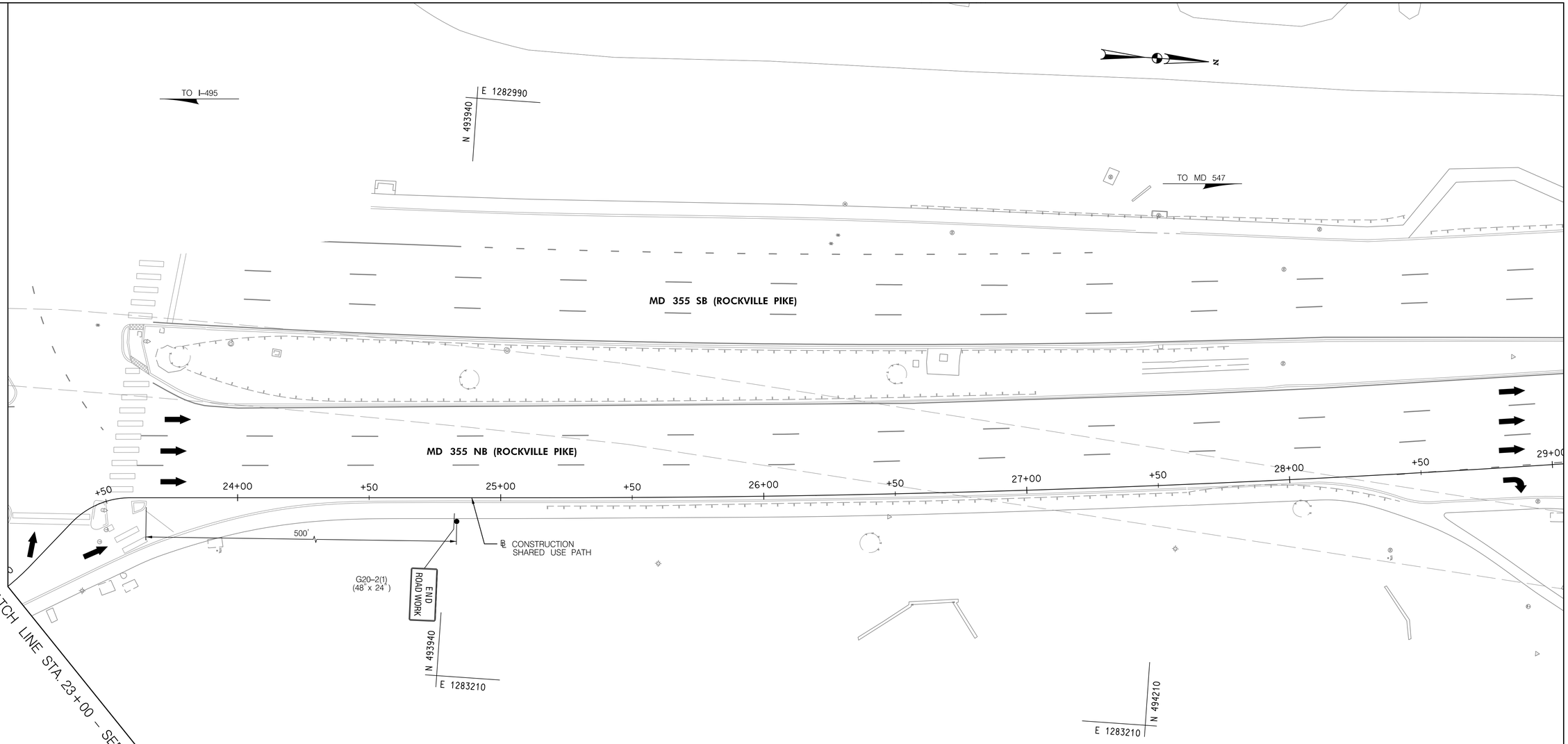

LEGEND

- —TOCF— ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

MT-15

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BPPA Bicycle and Pedestrian Priority Areas

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APPROVED

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3A

SCALE: 1"=20' SHEET 084 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

E 1283340

N 492470

I-270 RAMP

TO I-495

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492220

E 1283590

401+00

+50

400+00

I-495 RAMP

ON RAMP

ROAD WORK 1500 FT

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492470

E 1283590

20' 0 20' 40'

SCALE: 1" = 20'

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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BPPA Bicycle and Pedestrian Priority Areas

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3B

SCALE: 1"=20'

MT-16

SHEET 085 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

℄ CONSTRUCTION BIO–SWALE

40' (TYP.)

50+00

+50

TAPER = 200'

MD 355 NB (ROCKVILLE PIKE)

MD 355 RAMP

12' MIN.

TO I-495

MATCH LINE – SEE SHEET MT-18

ON RAMP

ROAD WORK 1/2 MILE

FROM STAGE 3A

ON RAMP

ROAD WORK 1500 FT

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492840

E 1283410

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

N 493150

E 1283410

20' 0 20' 40'

SCALE: 1" = 20'

MT-17

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3B

SCALE: 1"=20'

SHEET 086 of 128

6/5/2023
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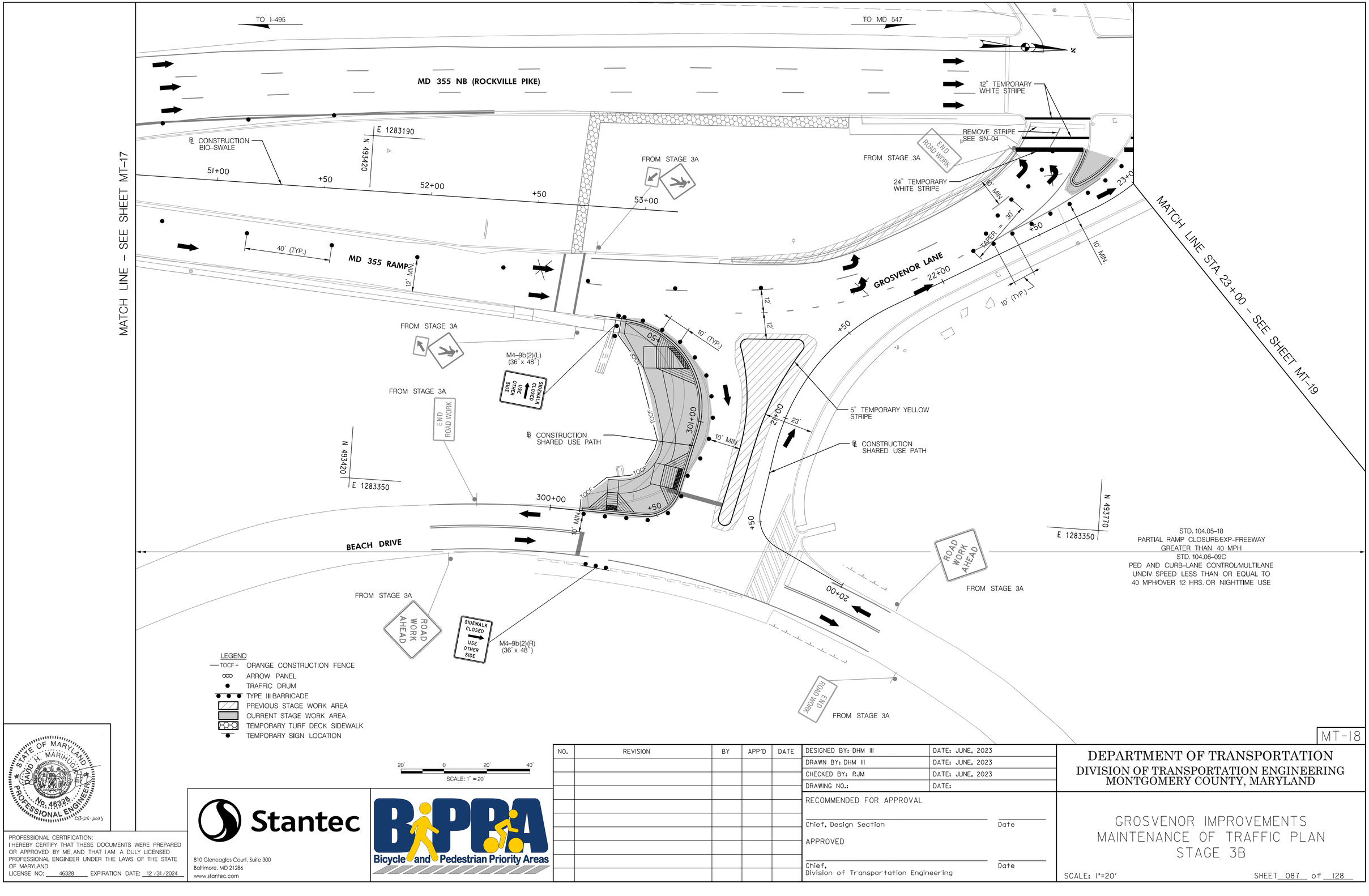

MT-18

NO.	REVISION	BY	APP'D	DATE

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3B

SCALE: 1"=20'

SHEET 087 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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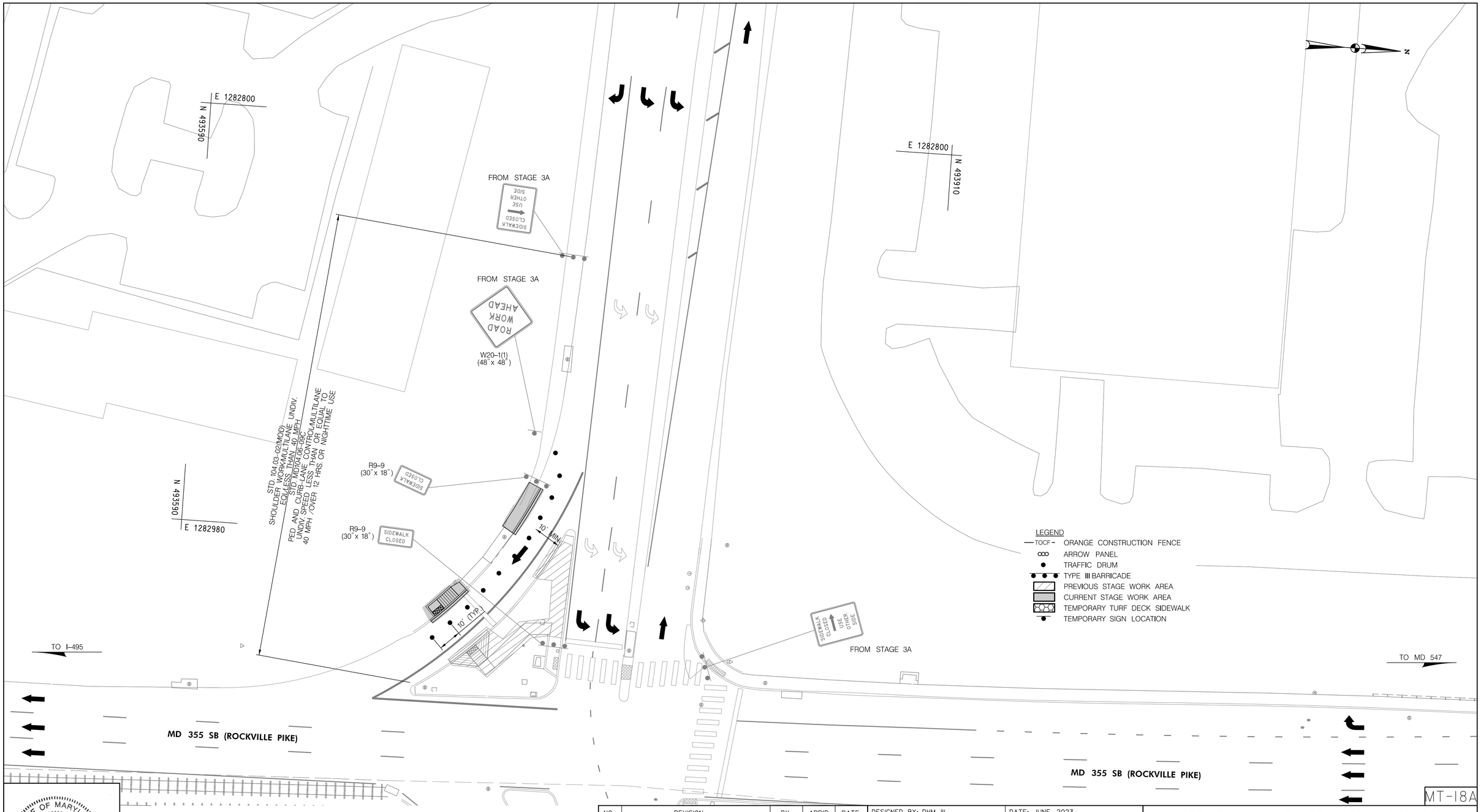
BPPA Bicycle and Pedestrian Priority Areas



MT-18A

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

STATE OF MARYLAND
DAVID H. MARINUCCI
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

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RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

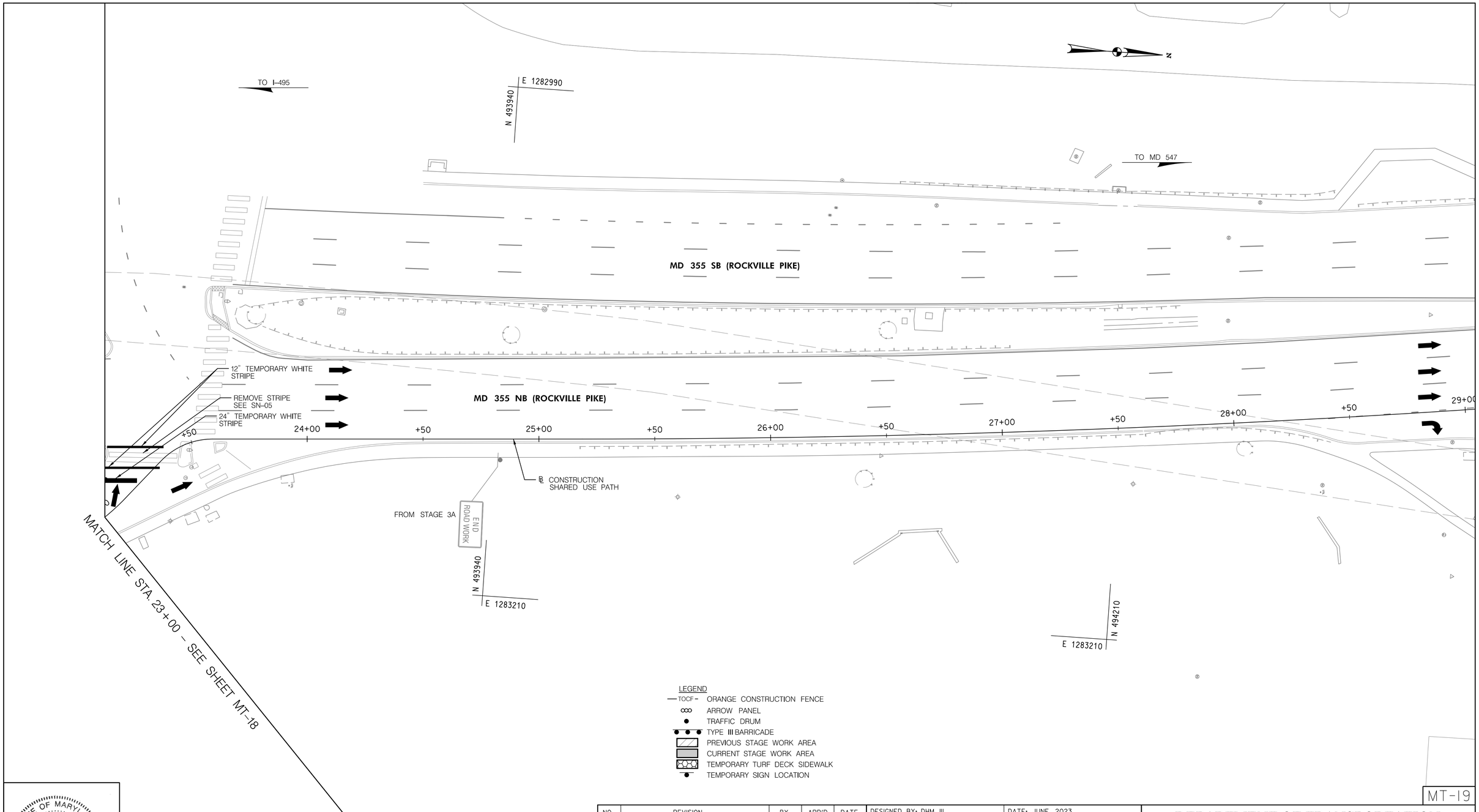
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3B

SCALE: 1"=20'

SHEET 087A of 128

6/5/2023
\\US0525-PFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pMT-P3b03a_Grosvenor.dgn



MT-19

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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Baltimore, MD 21286
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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: RJM	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3B

SCALE: 1"=20'

SHEET 088 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

E 1283340

N 492470

I-270 RAMP

TO I-495

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492220

E 1283590

401+00

+50

400+00

I-495 RAMP

ON RAMP

ROAD WORK 1500 FT

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492470

E 1283590

N

20' 0 20' 40'

SCALE: 1" = 20'

MT-20

STATE OF MARYLAND
DAVID H. MARINUS
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3C

SCALE: 1"=20'

SHEET 089 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

℄ CONSTRUCTION BIO–SWALE

40' (TYP.)

50+00

+50

TAPER = 200'

MD 355 NB (ROCKVILLE PIKE)

MD 355 RAMP

12' MIN.

TO I-495

ON RAMP

ROAD WORK 1/2 MILE

FROM STAGE 3A

ON RAMP

ROAD WORK 1500 FT

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492840

E 1283410

STD. MD 104.05–18
PARTIAL RAMP CLOSURE/EXP–FREEWAY
GREATER THAN 40 MPH

N 493150

E 1283410

MATCH LINE – SEE SHEET MT-22

20' 0 20' 40'

SCALE: 1" = 20'

MT-21

STATE OF MARYLAND
DAVID H. MARIUCCI
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BPPA Bicycle and Pedestrian Priority Areas

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3C

SCALE: 1"=20'

SHEET 090 of 128

6/5/2023
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MATCH LINE – SEE SHEET MT-21

TO I-495

TO MD 547

N

MD 355 NB (ROCKVILLE PIKE)

℄ CONSTRUCTION BIO-SWALE

E 1283190
N 493420

51+00 +50 52+00 +50 53+00

FROM STAGE 3A

FROM STAGE 3A

END ROAD WORK

FROM STAGE 3A

10' MIN.

23+00

MATCH LINE STA. 23+00 – SEE SHEET MT-23

40' (TYP.)

MD 355 RAMP

12' MIN.

12'

12'

+50

GROSVENOR LANE

22+00

TOCF

TOCF

TOCF

TOCF

FROM STAGE 3A

+50

FROM STAGE 3A

℄ CONSTRUCTION SHARED USE PATH

END ROAD WORK

M4-9b(2)(L) (36" x 48")

SIDEWALK CLOSED USE OTHER SIDE

301+00

10' (TYP.)

21+00

TOCF

24" TEMPORARY WHITE STRIPE

℄ CONSTRUCTION SHARED USE PATH

10' MIN.

5" TEMPORARY YELLOW STRIPE

N 493420
E 1283350

300+00

+50

TOCF

+50

N 493770
E 1283350

STD. 104.05-18
PARTIAL RAMP CLOSURE-EXP-FREEWAY
GREATER THAN 40 MPH
STD. 104.06-09C
PED AND CURB-LANE CONTROL/MULTILANE
UNDIV. SPEED LESS THAN OR EQUAL TO
40 MPH-OVER 12 HRS. OR NIGHTTIME USE
STD. 104.02-10
FLAGGING OPERATION-2-LANE, 2-WAY
EQU.LESS THAN 40 MPH

BEACH DRIVE

FROM STAGE 3A

ROAD WORK AHEAD

12" TEMPORARY WHITE STRIPE

SIDEWALK CLOSED USE OTHER SIDE

M4-9b(2)(L) (36" x 48")

ROAD WORK AHEAD

FROM STAGE 3A

20+00

UTILIZE FLAGGING OPERATION AS NEEDED FOR PAVEMENT RECONSTRUCTION

END ROAD WORK

FROM STAGE 3A

LEGEND

TOCF	ORANGE CONSTRUCTION FENCE
	ARROW PANEL
	TRAFFIC DRUM
	TYPE III BARRICADE
	PREVIOUS STAGE WORK AREA
	CURRENT STAGE WORK AREA
	TEMPORARY TURF DECK SIDEWALK
	TEMPORARY SIGN LOCATION

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

MT-22

NO.	REVISION	BY	APP'D	DATE

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3C

SCALE: 1"=20'

SHEET 087 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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GROSVENOR LANE

TO I-495

E 1282990

N 493940

TO MD 547

MD 355 SB (ROCKVILLE PIKE)

MD 355 NB (ROCKVILLE PIKE)

24+00 +50 25+00 +50 26+00 +50 27+00 +50 28+00 +50 29+00

℄ CONSTRUCTION SHARED USE PATH

FROM STAGE 3A

END ROAD WORK

N 493940

E 1283210

M4-9b(2)(L) (36" x 48")

SIDEWALK CLOSED USE OTHER SIDE

TOCF

TOCF

MATCH LINE STA. 23+00 - SEE SHEET MT-22

N 494210

E 1283210

N

LEGEND

- TOCF - ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

20' 0 20' 40'

SCALE: 1" = 20'

MT-23

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3C

SCALE: 1"=20'

SHEET 092 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

E 1283340

N 492470

I-270 RAMP

TO I-495

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492220

E 1283590

401+00

+50

400+00

I-495 RAMP

ON RAMP

ROAD WORK 1500 FT

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492470

E 1283590

N

20' 0 20' 40'

SCALE: 1" = 20'

MT-24

NO.	REVISION	BY	APP'D	DATE

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DRAWING NO.:	DATE:

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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3D

SCALE: 1"=20'

SHEET 093 of 128

STATE OF MARYLAND
DAVID H. MARINUS
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

Stantec
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Baltimore, MD 21286
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BiPPA Bicycle and Pedestrian Priority Areas

LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

CONSTRUCTION BIO-SWALE

50+00

+50

MD 355 NB (ROCKVILLE PIKE)

MD 355 RAMP

40' (TYP.)

12' MIN.

TAPER = 120'

TO I-495

ROAD WORK 1/2 MILE

ON RAMP

FROM STAGE 3A

ROAD WORK 1500 FT

ON RAMP

FROM STAGE 3A

35 MPH

RAMP NARROWS

FROM STAGE 3A

N 492840

E 1283410

STD. MD 104.05-18
PARTIAL RAMP CLOSURE/EXP-FREEWAY
GREATER THAN 40 MPH

N 493150

E 1283410

MATCH LINE – SEE SHEET MT-26

MT-25

20' 0 20' 40'

SCALE: 1" = 20'

NO.	REVISION	BY	APP'D	DATE

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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3D

SCALE: 1"=20'

SHEET 094 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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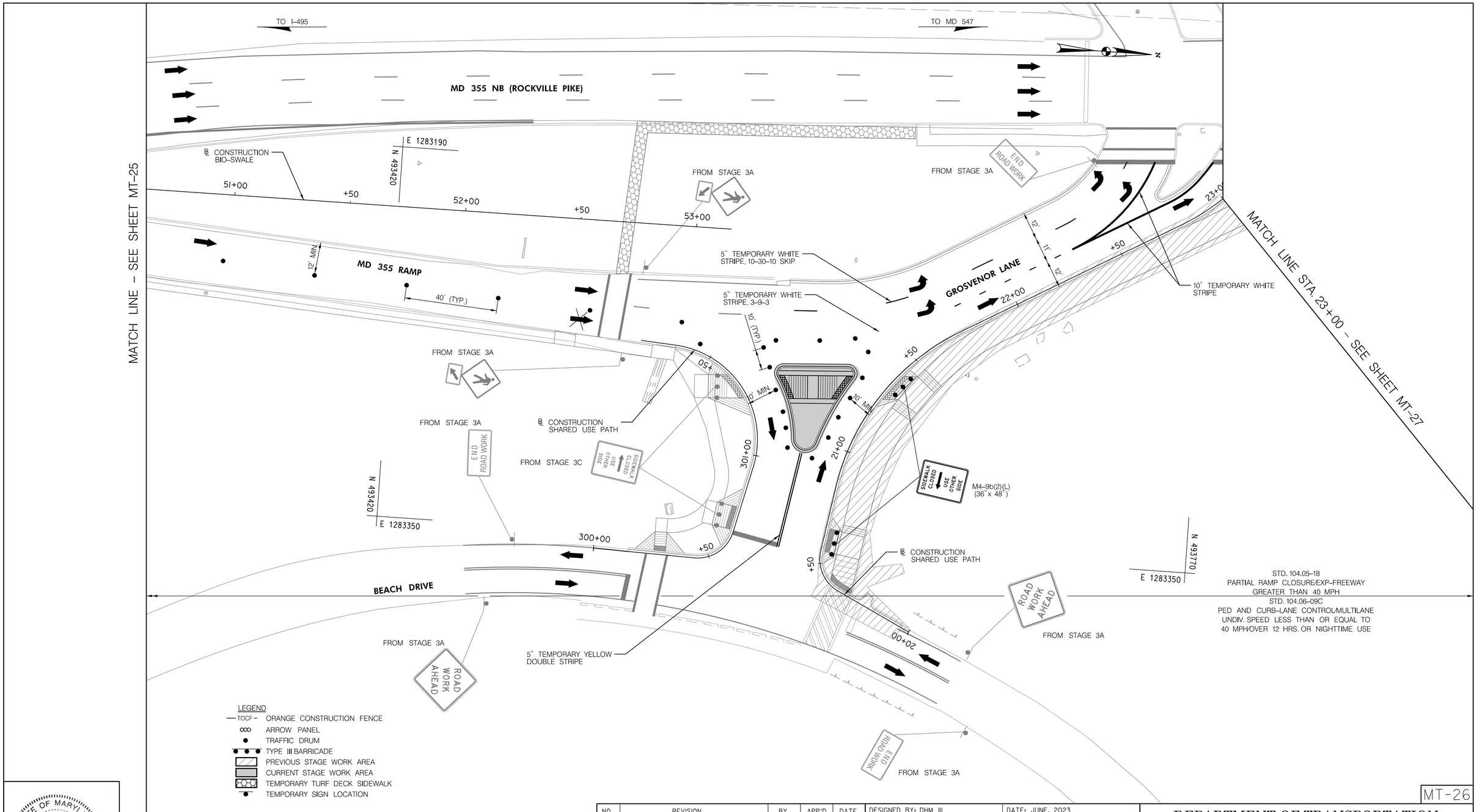

LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

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

MT-26

NO.	REVISION	BY	APP'D	DATE

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3D

SCALE: 1"=20'

SHEET 095 of 128

STATE OF MARYLAND
DAVID H. MARHUGHAT
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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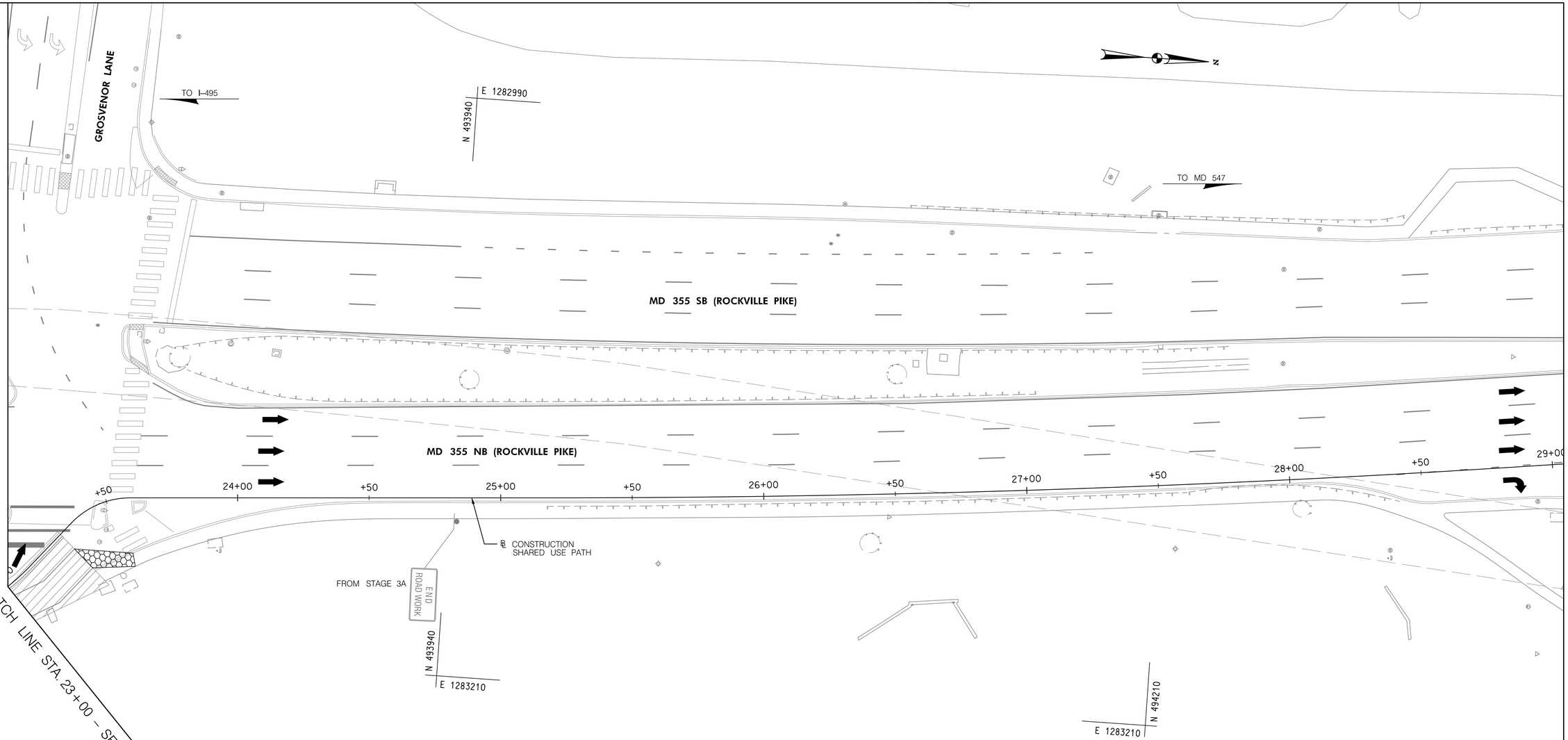

MT-27

STATE OF MARYLAND
DAVID H. MARIHUGH III
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PROFESSIONAL ENGINEER
03-28-2023

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BPPA Bicycle and Pedestrian Priority Areas

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Chief, Design Section Date

APPROVED

Chief,
Division of Transportation Engineering Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3D

SCALE: 1"=20' SHEET 096 of 128

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

E 1283340
N 492470

N

TO I-495

I-270 RAMP

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492220
E 1283590

401+00

+50

400+00

I-495 RAMP

700'

W4-2R
(48" x 48")

RIGHT LANE CLOSED 1500 FT

W20-5(1)
(48" x 48")

N 492470
E 1283590

NOTE:
ADVANCED WARNING SIGNS TO BE PLACED ALONG I-495 RAMP.

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

MT-28

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3E

SCALE: 1"=20'

SHEET 097 of 128

STATE OF MARYLAND
DAVID H. MARINUS
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

LEGEND
TOCF – ORANGE CONSTRUCTION FENCE
ARROW PANEL
TRAFFIC DRUM
TYPE III BARRICADE
PREVIOUS STAGE WORK AREA
CURRENT STAGE WORK AREA
TEMPORARY TURF DECK SIDEWALK
TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200
N 492840

MD 355 NB (ROCKVILLE PIKE)

TO I-495

TAPER = 660'
12'
12'
40'
30' FOR ARROW PANEL TAPER
ARROW PANEL TAPER = 220'
40' (TYP.)
50+00
+50
MD 355 RAMP
ARROW PANEL
℄ CONSTRUCTION BIO-SWALE

800'
700'
1100'
W4-2R (48" x 48")
LANE RIGHT 1500 FT CLOSED
W20-5(1) (48" x 48")
LANE RIGHT 1/2 MILE CLOSED
W20-5(1) (48" x 48")

MATCH LINE – SEE SHEET MT-30

N 492840
E 1283410

STD. MD 104.04-05
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

N 493150
E 1283410

NOTES:
1. ADVANCED WARNING SIGNS ARE TO BE PLACED ALONG MD 355 NB.
2. A MINIMUM OF 7 CHANNELIZING DEVICES SHALL PROCEED AN ARROW PANEL.

MT-29

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

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3E

SCALE: 1"=20'

SHEET 098 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
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PROFESSIONAL ENGINEER
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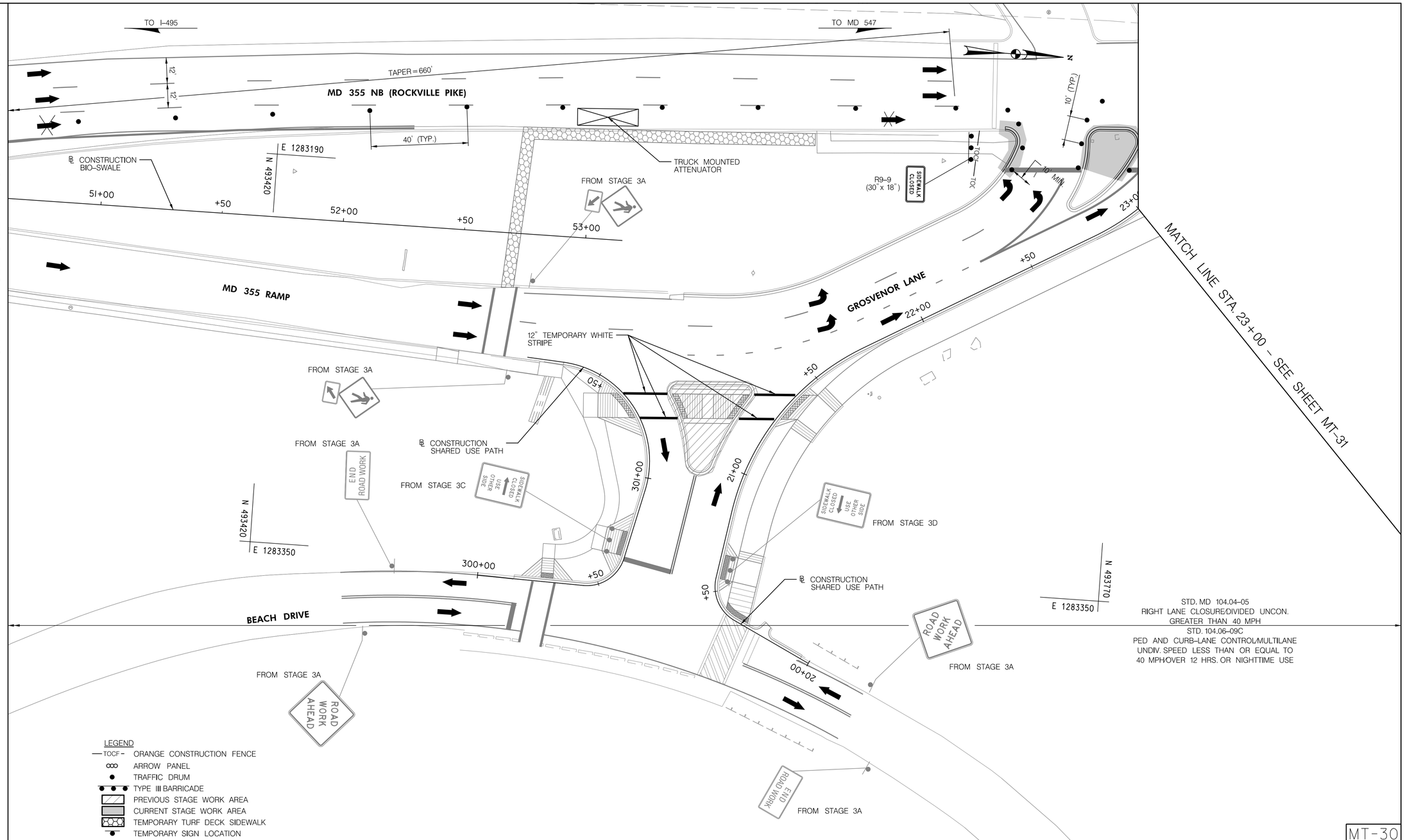
BiPPA Bicycle and Pedestrian Priority Areas



LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

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

MT-30

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: RJM	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3E

SCALE: 1"=20' SHEET 099 of 128

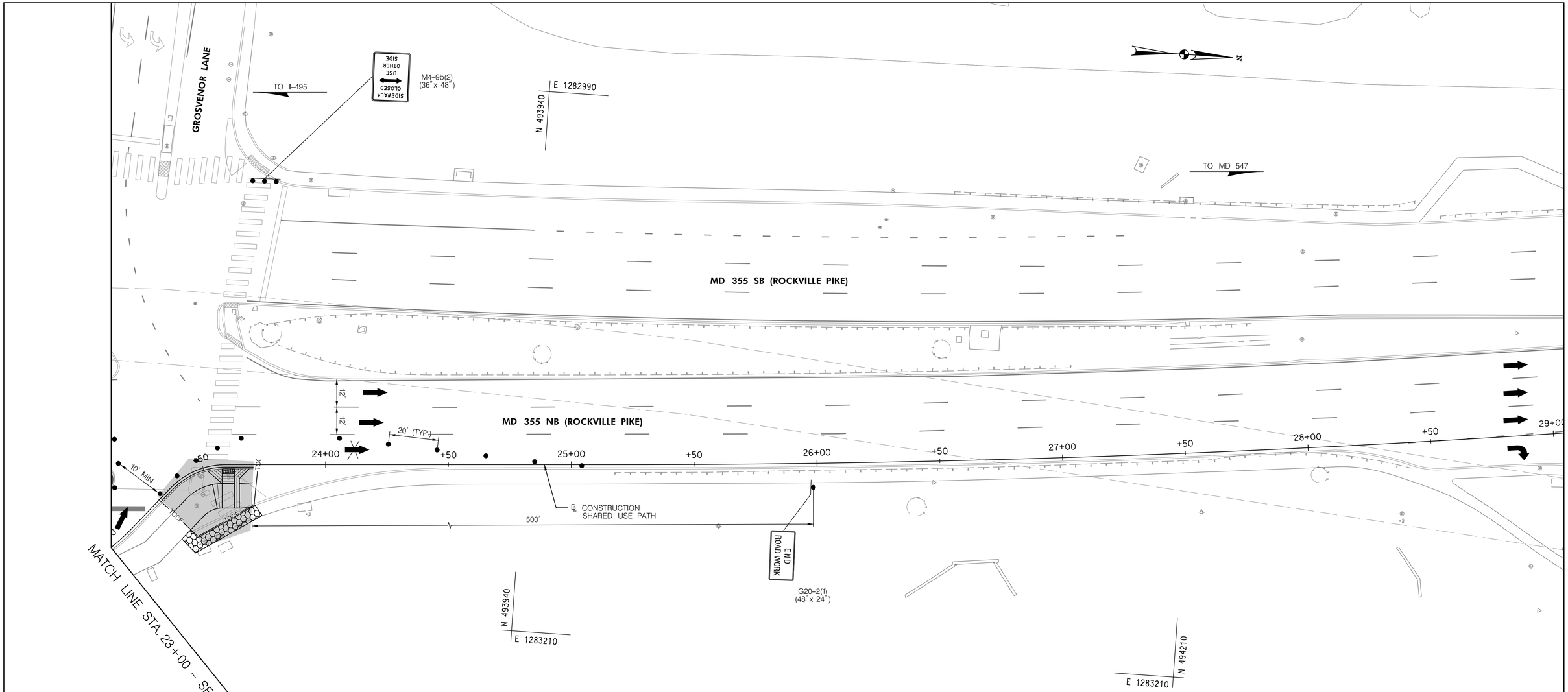
STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
\\US0525-PPFSS01\shared_projects\20260114O1\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pMT-P3e03_Grosvenor.dgn



LEGEND

- TOCF - ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

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

MT-31

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: RJM	DATE: JUNE, 2023
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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3E

SCALE: 1"=20' SHEET 100 of 128

STATE OF MARYLAND — DAVID H. MARIHUGH III — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

PROFESSIONAL CERTIFICATION:
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BiPPA Bicycle and Pedestrian Priority Areas

LEGEND

- TOCF – ORANGE CONSTRUCTION FENCE
- ARROW PANEL
- TRAFFIC DRUM
- TYPE III BARRICADE
- PREVIOUS STAGE WORK AREA
- CURRENT STAGE WORK AREA
- TEMPORARY TURF DECK SIDEWALK
- TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

TO I-495

I-270 RAMP

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492470
E 1283340

N 492220
E 1283590

400+00

401+00

+50

I-495 RAMP

RIGHT LANE CLOSED 1500 FT

FROM STAGE 3E

FROM STAGE 3E

N 492470
E 1283590

N

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

MT-32

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: RJM	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3F

SCALE: 1"=20'

SHEET 101 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

MD 355 NB (ROCKVILLE PIKE)

TO I-495

TAPER = 660'

12'

12'

40'

ARROW PANEL TAPER = 220'

30' FOR ARROW PANEL TAPER

40' (TYP.)

50+00

+50

MD 355 RAMP

ARROW PANEL

℄ CONSTRUCTION BIO-SWALE

MATCH LINE – SEE SHEET MT-34

RIGHT LANE CLOSED 1/2 MILE

FROM STAGE 3E

RIGHT LANE CLOSED 1500 FT

FROM STAGE 3E

FROM STAGE 3E

N 492840

E 1283410

STD. MD 104.04-05
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

N 493150

E 1283410

NOTES:

1. A MINIMUM OF 7 CHANNELIZING DEVICES SHALL PROCEED AN ARROW PANEL.

MT-33

20' 0 20' 40'

SCALE: 1" = 20'

NO.	REVISION	BY	APP'D	DATE

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3F

SCALE: 1"=20'

SHEET 102 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
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03-28-2023

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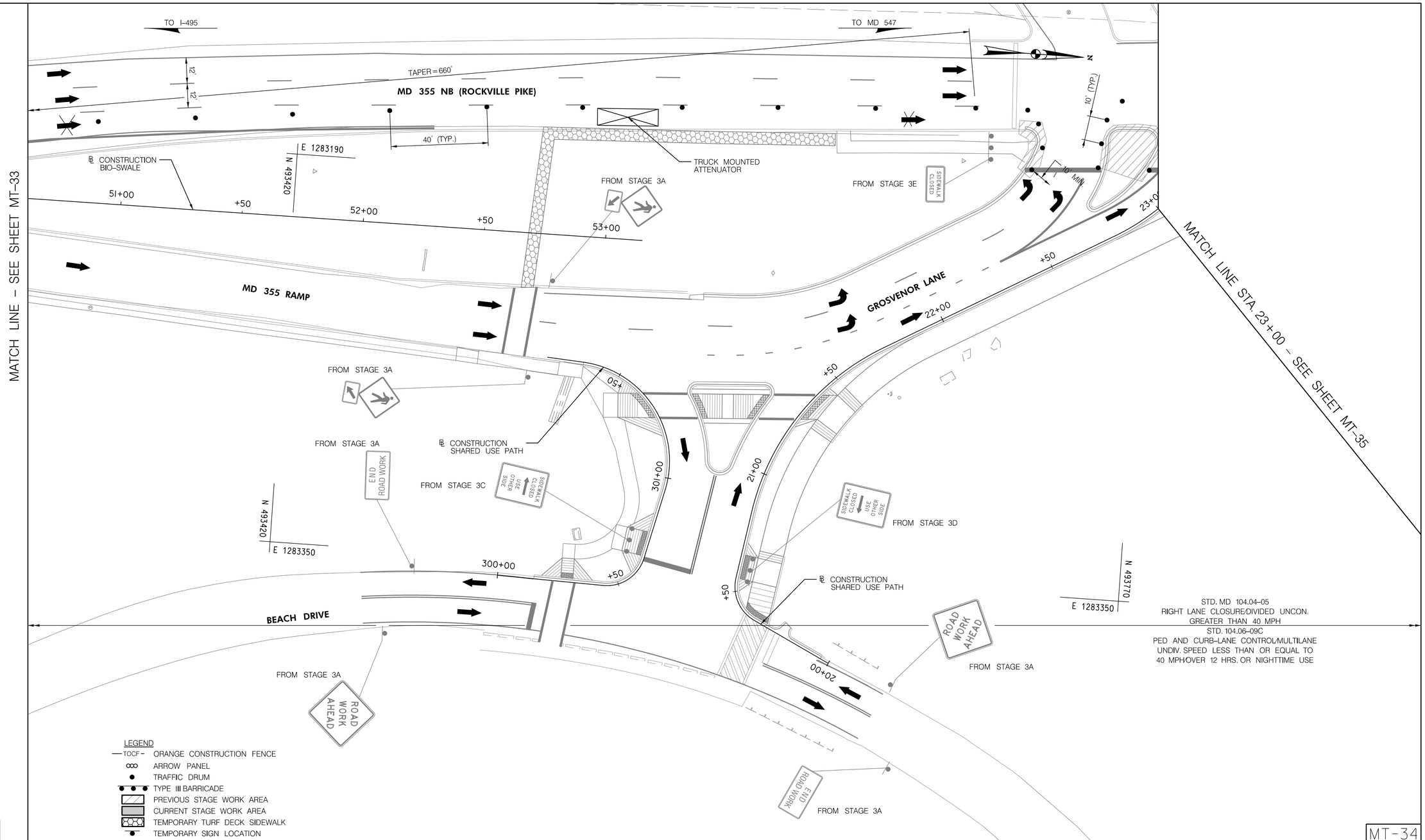
BiPPA Bicycle and Pedestrian Priority Areas



MT-34

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3F

SCALE: 1"=20'

SHEET 103 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

6/5/2023
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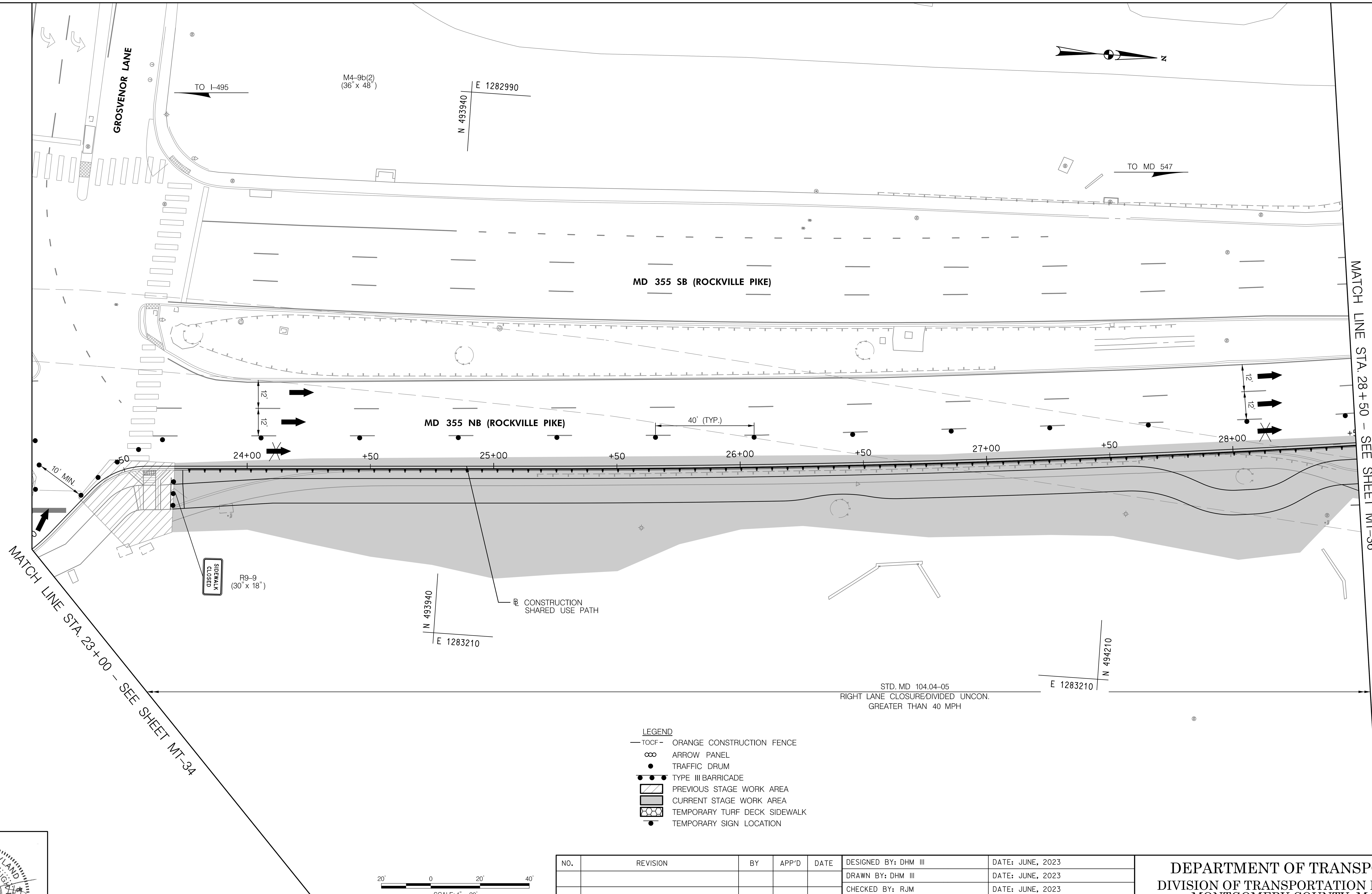

MT-35

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

STATE OF MARYLAND
DAVID H. MARIHUGH
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03-28-2023

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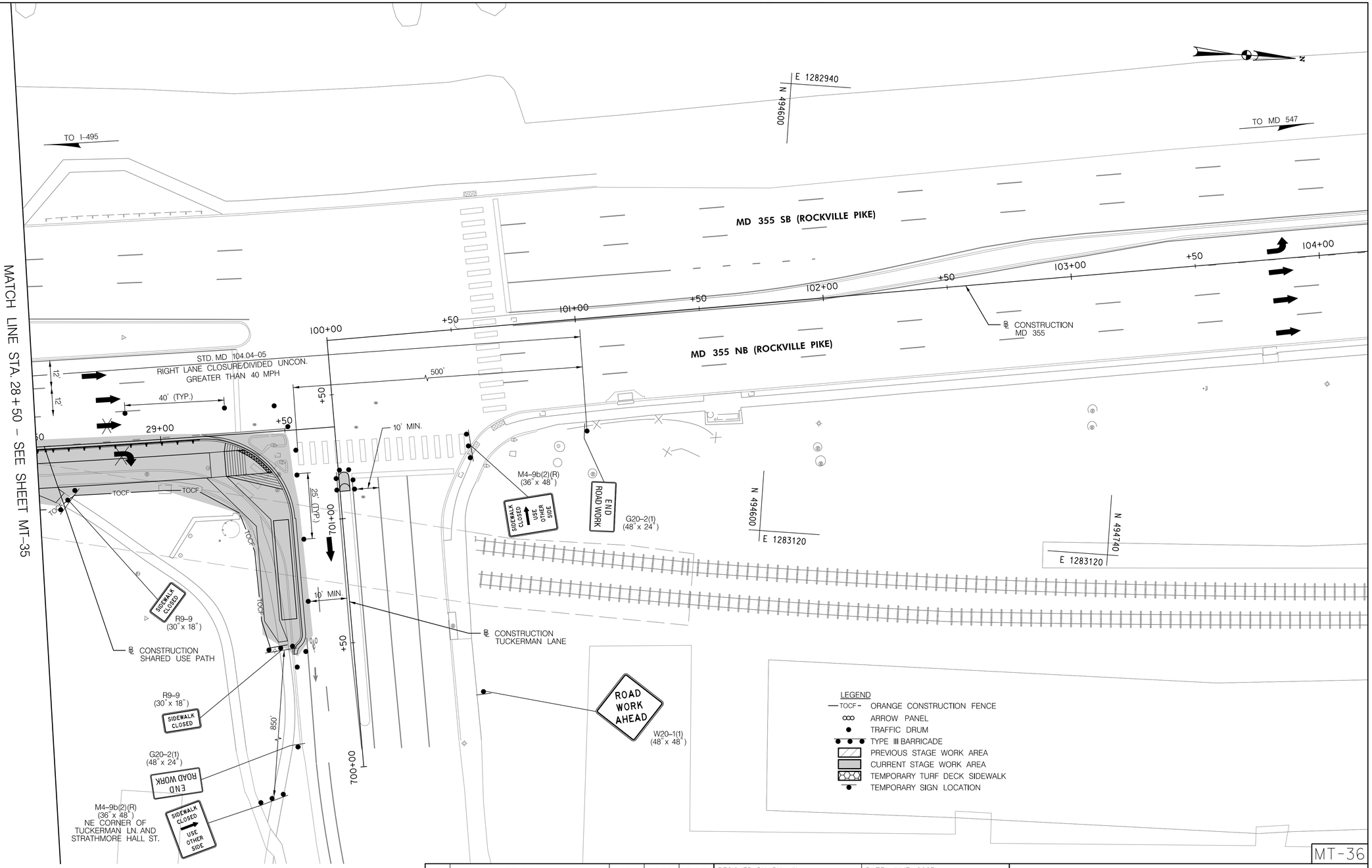
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3F

SCALE: 1"=20'
SHEET 104 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\202601140\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pMT-P3F04_Grosvenor.dgn



MT-36

6/5/2023
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STATE OF MARYLAND
DAVID H. MARIHUGH III
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03-28-2023

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3F

SCALE: 1"=20' SHEET 105 of 128

LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

I-495 OUTER LOOP (CAPITAL BELTWAY)

E 1283340

N 492470

I-270 RAMP

TO I-495

TO MD 547

MD 355 NB (ROCKVILLE PIKE)

N 492220

E 1283590

401+00

400+00

+50

I-495 RAMP

RIGHT LANE CLOSED 1500 FT

FROM STAGE 3E

FROM STAGE 3E

N 492470

E 1283590

20' 0 20' 40'

SCALE: 1" = 20'

MT-37

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
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CHECKED BY: RJM	DATE: JUNE, 2023
DRAWING NO.:	DATE:

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3G

SCALE: 1"=20'

SHEET 106 of 128

STATE OF MARYLAND
DAVID H. MARINUS
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BPPA Bicycle and Pedestrian Priority Areas

LEGEND

TOCF – ORANGE CONSTRUCTION FENCE

ARROW PANEL

TRAFFIC DRUM

TYPE III BARRICADE

PREVIOUS STAGE WORK AREA

CURRENT STAGE WORK AREA

TEMPORARY TURF DECK SIDEWALK

TEMPORARY SIGN LOCATION

N

TO MD 547

E 1283200

N 492840

MD 355 NB (ROCKVILLE PIKE)

TO I-495

TAPER = 660'

12'

12'

40'

ARROW PANEL TAPER = 220'

30' FOR ARROW PANEL TAPER

40' (TYP.)

50+00

50

MD 355 RAMP

ARROW PANEL

℄ CONSTRUCTION BIO-SWALE

MATCH LINE – SEE SHEET MT-39

RIGHT LANE CLOSED 1/2 MILE

FROM STAGE 3E

RIGHT LANE CLOSED 1500 FT

FROM STAGE 3E

FROM STAGE 3E

N 492840

E 1283410

STD. MD 104.04-05
RIGHT LANE CLOSURE/DIVIDED UNCON.
GREATER THAN 40 MPH

N 493150

E 1283410

NOTES:

1. A MINIMUM OF 7 CHANNELIZING DEVICES SHALL PROCEED AN ARROW PANEL.

MT-38

20' 0 20' 40'

SCALE: 1" = 20'

NO.	REVISION	BY	APP'D	DATE

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3G

SCALE: 1"=20'

SHEET 107 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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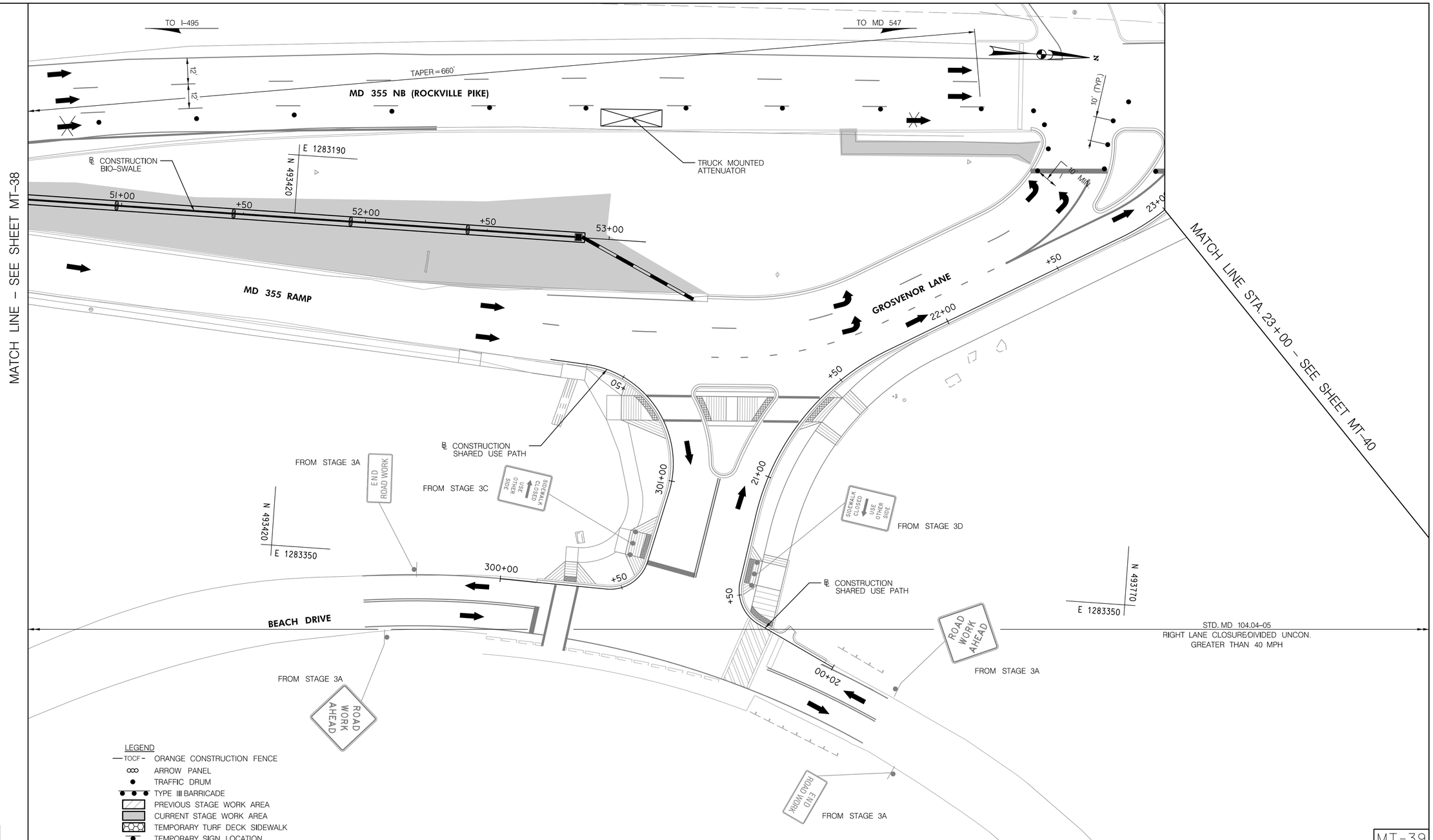

MT-39

STATE OF MARYLAND
DAVID H. MARIHUGH III
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03-28-2023

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BiPPA Bicycle and Pedestrian Priority Areas

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3G

SCALE: 1"=20' SHEET 108 of 128

6/5/2023
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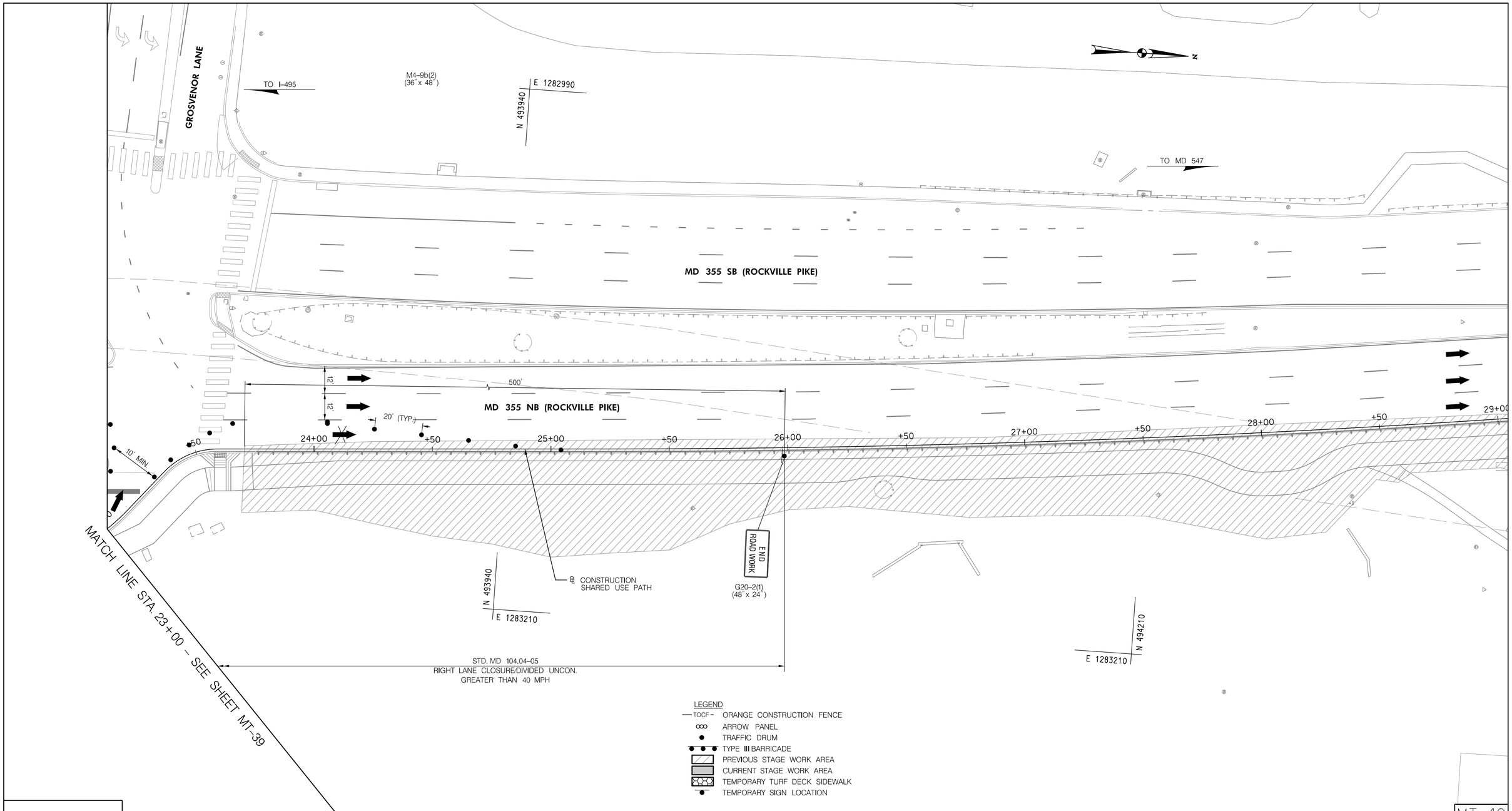

MT-40

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

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DRAWING NO.:	DATE:

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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3G

SCALE: 1"=20'

SHEET 109 of 128

6/5/2023
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B-1 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/22/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: M.B. Zamorano LOGGER: J. Yao
SURFACE ELEVATION: 233.8 ft
NORTH: 491115.3386
EAST: 1284013.693

GROUND WATER WAS NOT ENCOUNTERED DURING DRILLING
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 233.8 ASPHALT **Asph** -4 in				
0.3 / 233.5 CONCRETE **Conc** -8 in				
1.0 / 232.8 Brown, fine silty sand with gravel FILL, contains mica, loose to medium dense, moist **FL-SM**; SAME, trace gravel				
6.0 / 227.8 Brown, sandy LEAN CLAY, contains mica, firm, moist **CL**	34	15	20.0	54.4
8.5 / 225.3 Brown, fine SILTY SAND, contains mica, loose to dense, moist **SM**				
23.5 / 210.3 Brown, fine SILTY SAND, contains mica, very dense, moist **SM**				
28.8 / 205.0 Auger Refusal				

REMARKS: Cave-in depth = 23.5ft.

B-2 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/22/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: M.B. Zamorano LOGGER: J. Yao
SURFACE ELEVATION: 233.6 ft
NORTH: 491182.3299
EAST: 1283988.6807

GROUND WATER FIRST ENCOUNTERED AT: 33.5 ft
AT END OF DRILLING: 27.0 ft
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 233.6 ASPHALT **Asph** -4 in				
0.3 / 233.3 CONCRETE **Conc** -8 in				
1.0 / 232.6 Brown, fine silty sand FILL, contains mica, loose to medium dense, moist **FL-SM**; SAME, contains trace roots				
13.5 / 220.1 Brown, sandy SILT, contains mica, stiff, moist **ML**	NP	NP	19.0	52.2
28.5 / 205.1 Brown, fine SILTY SAND, contains mica and rock fragments, dense to very dense, moist **SM**				
35.0 / 198.6 Boring Terminated				

REMARKS: Cave-in depth = 31ft.

B-3 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/26/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: M.B. Zamorano LOGGER: J. Yao
SURFACE ELEVATION: 235.5 ft
NORTH: 493876.9578
EAST: 1283142.8899

GROUND WATER WAS NOT ENCOUNTERED DURING DRILLING
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 235.5 ASPHALT **Asph** -4 in				
0.3 / 235.2 CONCRETE **Conc** -8 in				
1.0 / 234.5 Brown, fine silty sand with gravel FILL, contains mica, loose, moist **FL-SM**				
3.5 / 232.0 Brown, fine silty sand FILL, contains mica, loose to medium dense, moist **FL-SM**	39	9	17.9	49.7
13.5 / 222.0 Brown, fine SILTY SAND, contains mica, dense to very dense, moist **SM**	NP	NP	11.9	45.3
23.8 / 211.7 Boring Terminated				

REMARKS: Cave-in depth = 19ft.

B-4 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/27/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: D. Pao LOGGER: J. Yao
SURFACE ELEVATION: 234.6 ft
NORTH: 493951.416
EAST: 1283137.462

GROUND WATER WAS NOT ENCOUNTERED DURING DRILLING
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 234.6 ASPHALT **Asph** -5 in				
0.4 / 234.3 CONCRETE **Conc** -8 in				
1.0 / 233.6 Brown, sandy silt FILL, contains mica, stiff to very stiff, moist **FL-ML**; SAME, trace gravel				
13.5 / 221.1 Gray, fine SILTY SAND, contains mica, very dense, moist **SM**	NP	NP	4.0	16.9
17.1 / 217.5 Auger Refusal				

REMARKS: Cave-in depth = 14ft.

B-5 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/27/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: D. Pao LOGGER: J. Yao
SURFACE ELEVATION: 233.4 ft
NORTH: 494029.6346
EAST: 1283131.8882

GROUND WATER WAS NOT ENCOUNTERED DURING DRILLING
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 233.4 ASPHALT **Asph** -4 in				
0.3 / 233.1 CONCRETE **Conc** -8 in				
1.0 / 232.4 Brown, fine silty sand FILL, trace gravel, contains mica, medium dense, moist **FL-SM**	37	4	15.8	38.9
13.5 / 219.9 Red and brown, sandy lean clay FILL, trace gravel, very stiff, moist **FL-CL**	39	14	22.9	67.7
18.5 / 214.9 Brown, fine SILTY SAND, contains mica, medium dense, moist **SM**				
23.6 / 209.8 Boring Terminated				

REMARKS: Cave-in depth = 21ft.

B-6 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:8/27/2019
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: D. Pao LOGGER: J. Yao
SURFACE ELEVATION: 230.9 ft
NORTH: 494257.7657
EAST: 1283108.9099

GROUND WATER FIRST ENCOUNTERED AT: 19.0 ft
AT END OF DRILLING: 16.0 ft
NO LONG TERM MEASUREMENTS TAKEN

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 230.9 ASPHALT **Asph** -4 in				
0.3 / 230.6 CONCRETE **Conc** -10 in				
1.2 / 229.7 Brown and gray, fine silty sand FILL, trace gravel, contains mica, loose to medium dense, moist **FL-SM**	33	3	18.9	50.7
SAME, contains wood	NP	NP	25.0	39.4
20.5 / 210.4 White, medium to coarse SILTY SAND WITH GRAVEL, contains quartz gravel, loose to very dense, moist **SM**				
20.6 / 210.3 Auger Refusal				

REMARKS: Cave-in depth = 20ft.

B-7 (PAGE 1 OF 1)

PROJECT NAME: Grosvenor Improvements
PROJECT NO.: 03.04273.01
LOCATION: Montgomery County, Maryland
CLIENT: Stantec

DATE(S) DRILLED:5/7/2021
DRILLING METHOD(S): 3.25 in HSA
DRILLING EQUIPMENT: CME 45
DRILLER: H. Guzman LOGGER: J. Hu
SURFACE ELEVATION: 229.0 ft
NORTH: 493421.1
EAST: 1283227.8

GROUND WATER WAS NOT ENCOUNTERED DURING DRILLING

MATERIAL DESCRIPTION OF STRATA	LL	PI	MOISTURE CONTENT (%)	% Finer than #200
0.0 / 229.0 TOPSOIL **Tops** -3 in				
0.3 / 228.8 Brown, sandy silt with gravel FILL, contains rock fragments, firm to stiff, moist **FL-ML**				
4.0 / 225.0 Brown, sandy elastic silt FILL, trace gravel, firm, moist **FL-MH**				
6.0 / 223.0 Brown, sandy silt FILL, firm to stiff, moist **FL-ML**	NP	NP	19.0	50.7
10.0 / 219.0 Boring Terminated				

REMARKS: Boring coordinates were provided by Stantec; Surface elevation was estimated from the plan provided by Stantec; Cave-in depth = 8 ft

DMY ENGINEERING CONSULTANTS INC.

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: 12/31/2024

STATE OF MARYLAND — DAVID H. MARIHUGH — No. 46328 — PROFESSIONAL ENGINEER — 03-28-2023

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS SOIL BORING LOGS

SCALE: N.T.S.

"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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	BALTIMORE	T.H. #:	1
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/7/2020
Requested Utility (Size/ Material/Type):	UNKNOWN SIZE AND TYPE TELEPHONE LINE	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	4" METALLIC ELECTRIC CONDUIT AND 36" CONCRETE TELEPHONE DUCT **(VZN)**		
Form By:	W.B.III	Assisted by:	J.E./M.J./M.J./A.R.
Survey by:	EUMC		

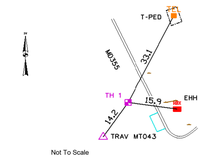
B.M. 1: Elevation: 235.07
Description: (TRAV MER 201) ROD AND CAP FOUND EAST OF MD355, 67'± NORTH OF I-495 RAMP TO BALTIMORE

B.M 2: Elevation: 230.85
Description: (TRAV MER 250) NAIL FOUND EAST SIDE OF ND 355, 212'± SOUTH OF I-495 RAMP TO BALTIMORE

Paving Thickness:	5" ASPHALT OVER 7" CONCRETE	Paving Condition:	ASPH SHLDR IN POOR CONDITION
Color of Ribbon(s) Installed:	YELLOW	Survey Marker Set:	MAG NAIL
Existing Grade of	ASPHALT SHOULDER	Soil Type:	BROWN DIRT

Survey Datum:
Survey Marker Location: (N) 491324.61 (E) 1283944.62 Elevation: **234.45**

SURVEY MARKER C/L | Surface Depth/Material: 5" ASPH 7" CONC



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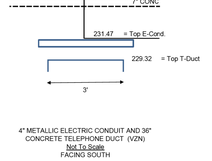


4" METALLIC ELECTRIC CONDUIT AND 36" CONCRETE TELEPHONE DUCT (VZN)
Not To Scale
FACING SOUTH

REMARKS: CREW COULD NOT GET THE BOTTOM OF THE DUCT DUE TO CONCRETE ELECTRIC CONDUIT IS 0.83' NORTH OF MAG NAIL

"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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	EAST SIDE OF MD 355, 71'± NORTH OF I-495 RAMP TO BALTIMORE	T.H. #:	2
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/7/2020
Requested Utility (Size/ Material/Type):	8" WRAPPED STEEL GAS LINE	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	8" WRAPPED STEEL GAS LINE **(WGL)**		
Form By:	W.B.III	Assisted by:	J.E./M.J./M.J./A.R.
Survey by:	EUMC		

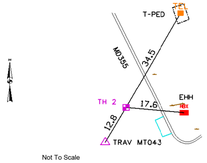
B.M. 1: Elevation: 235.07
Description: (TRAV 201) ROD AND CAP FOUND EAST OF MD355, 67'± NORTH OF I-495 RAMP TO BALTIMORE

B.M 2: Elevation: 230.85
Description: (TRAV MER 250) NAIL FOUND EAST SIDE OF ND 355, 212'± SOUTH OF I-495 RAMP TO BALTIMORE

Paving Thickness:	2" ASPHALT OVER 10" CONCRETE	Paving Condition:	ASPH SHLDR IN POOR CONDITION
Color of Ribbon(s) Installed:	YELLOW	Survey Marker Set:	MAG NAIL
Existing Grade of	ASPHALT SHOULDER	Soil Type:	BROWN DIRT

Survey Datum:
Survey Marker Location: (N) 491324.04 (E) 1283942.90 Elevation: **234.46**

SURVEY MARKER C/L | Surface Depth/Material: 2" ASPH 10" CONC



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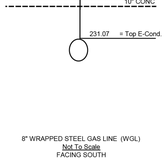


8" WRAPPED STEEL GAS LINE (WGL)
Not To Scale
FACING SOUTH

REMARKS:

"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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	EAST SIDE OF MD 355, XX'± NORTH OF I-495 RAMP TO BALTIMORE	T.H. #:	3
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/7/2020
Requested Utility (Size/ Material/Type):	8" WRAPPED STEEL GAS LINE	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	8" WRAPPED STEEL GAS LINE		
Form By:	W.B.III	Assisted by:	J.E./M.J./M.J./A.R.
Survey by:	EUMC		

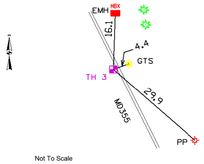
B.M. 1: Elevation: 235.07
Description: (TRAV 201) ROD AND CAP FOUND EAST OF MD355, 67'± NORTH OF I-495 RAMP TO BALTIMORE

B.M 2: Elevation: 230.85
Description: (TRAV MER 250) NAIL FOUND EAST SIDE OF ND 355, 212'± SOUTH OF I-495 RAMP TO BALTIMORE

Paving Thickness:	2" ASPHALT OVER 11" CONCRETE	Paving Condition:	ASPH SHLDR IN POOR CONDITION
Color of Ribbon(s) Installed:	YELLOW	Survey Marker Set:	MAG NAIL
Existing Grade of	ASPHALT SHOULDER	Soil Type:	BROWN DIRT

Survey Datum:
Survey Marker Location: (N) 491377.71 (E) 1283926.69 Elevation: **235.67**

SURVEY MARKER C/L | Surface Depth/Material: 2" ASPH 11" CONC



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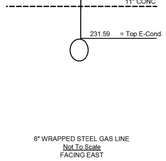


8" WRAPPED STEEL GAS LINE
Not To Scale
FACING EAST

REMARKS:

"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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	EAST SIDE OF MD 35 IN THE SIDEWALK, 401'± SOUTH OF TUCKERMAN LN	T.H. #:	4
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/8/2020
Requested Utility (Size/ Material/Type):	UNKNOWN SIZE AND TYPE TELEPHONE LINE	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	24" CONCRETE TELE DUCT **(VZN)**		
Form By:	W.B.III	Assisted by:	J.E./M.J./M.J./A.R.
Survey by:	EUMC		

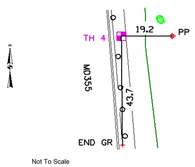
B.M. 1: Elevation: 233.46
Description: (TRAV MER350) ROD AND CAP FOUND, 112'± EAST OF MEDIAN OF MD 355 ,86'± SOUTH OF TUCKERMAN LN

B.M 2: Elevation: 232.57
Description: (TRAV MER 351) ROD AND CAP FOUND EAST SIDE OF MD355, 325'± SOUTH OF TUCKERMAN LN

Paving Thickness:	5" CONCRETE	Paving Condition:	CONC S/W IN GOOD CONDITION
Color of Ribbon(s) Installed:	ORANGE	Survey Marker Set:	CHIS "X"
Existing Grade of	CONCRETE SIDEWALK	Soil Type:	BROWN DIRT

Survey Datum:
Survey Marker Location: (N) 494021.01 (E) 1283142.43 Elevation: **233.99**

SURVEY MARKER C/L | Surface Depth/Material: 5" CONC



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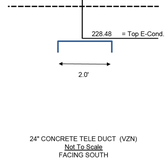


24" CONCRETE TELE DUCT (VZN)
Not To Scale
FACING SOUTH

REMARKS: CREW WAS NOT ABLE TO GET BOTTOM OF DUCT DUE TO LARGE ROCKS 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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	EAST SIDE CF MD 355, 65'± SOUTH OF TUCKERMAN LN	T.H. #:	5
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/8/2020
Requested Utility (Size/ Material/Type):	8" GAS LINE	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	8" WRAPPED STEEL GAS LINE **(WGL)**		
Form By:	W.B.III	Assisted by:	A.J./J.E./M.J./M.J./A.R.
Survey by:	EUMC		

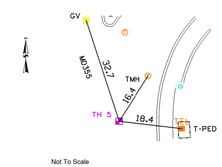
B.M. 1: Elevation: 233.46
Description: (TRAV MER350) ROD AND CAP FOUND, 112'± EAST OF MEDIAN OF MD 355 ,86'± SOUTH OF TUCKERMAN LN

B.M 2: Elevation: 232.57
Description: (TRAV MER 351) ROD AND CAP FOUND EAST SIDE OF MD355, 325'± SOUTH OF TUCKERMAN LN

Paving Thickness:	10" ASPHALT	Paving Condition:	ASPH RDWY IN POOR CONDITION
Color of Ribbon(s) Installed:	YELLOW	Survey Marker Set:	MAG NAIL
Existing Grade of	ASPHALT RDWY	Soil Type:	BROWN DIRT

Survey Datum:
Survey Marker Location: (N) 494398.15 (E) 1283105.39 Elevation: **231.48**

SURVEY MARKER C/L | Surface Depth/Material: 10" ASPH



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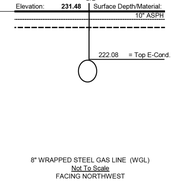


8" WRAPPED STEEL GAS LINE (WGL)
Not To Scale
FACING NORTHWEST

REMARKS:

"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:	GROSVENOR IMPROVEMENTS	EUMC Job #:	17030
Test Hole Location:	EAST SIDE OF MD 355, TURNING LANE TO TUCKERMAN LN	T.H. #:	6
Jurisdiction:	MDSHA	Plan Sheet #:	N/A
Horizontal/Vertical Control Provided by:	STANTEC	Date of Excavation:	12/9/2020
Requested Utility (Size/ Material/Type):	UNKNOWN SIZE AND TYPE TELEPHONE DUCT	Plan Scale:	1"= 20'
Utility Located (Size/Material/Type/Owner):	(6) 4" PLASTIC CONDUITS **(VZN)**		
Form By:	W.B.III	Assisted by:	A.J./M.J./A.R.
Survey by:	EUMC		

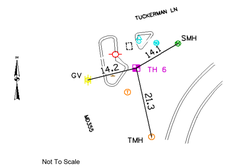
B.M. 1: Elevation: 233.46
Description: (TRAV MER350) ROD AND CAP FOUND, 112'± EAST OF MEDIAN OF MD 355 ,86'± SOUTH OF TUCKERMAN LN

B.M 2: Elevation: 232.57
Description: (TRAV MER 351) ROD AND CAP FOUND EAST SIDE OF MD355, 325'± SOUTH OF TUCKERMAN LN

Paving Thickness:	10" ASPHALT	Paving Condition:	ASPH RDWY IN POOR CONDITION
Color of Ribbon(s) Installed:	ORANGE	Survey Marker Set:	MAG NAIL
Existing Grade of	ASPHALT RDWY	Soil Type:	GREY DIRT

Survey Datum:
Survey Marker Location: (N) 494398.15 (E) 1283105.39 Elevation: **231.71**

SURVEY MARKER C/L | Surface Depth/Material: 10" ASPH



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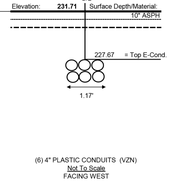


(6) 4" PLASTIC CONDUITS (VZN)
Not To Scale
FACING WEST

REMARKS:

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
www.stantec.com

BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: DHM III	DATE: JUNE, 2023
DRAWN BY: DHM III	DATE: JUNE, 2023
CHECKED BY: SJZ	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section Date

APPROVED

Chief,
Division of Transportation Engineering Date

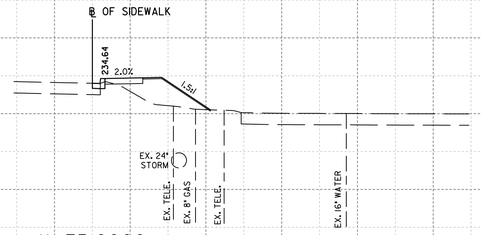
TH-01

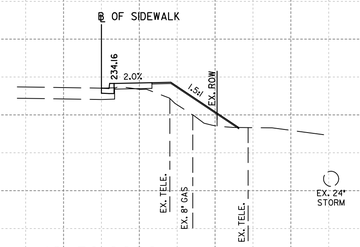
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

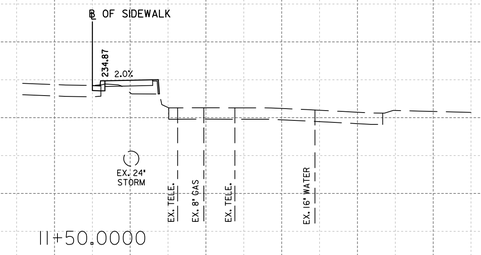
GROSVENOR IMPROVEMENTS
TEST HOLE LOGS

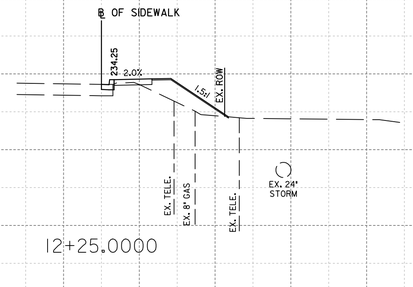
SCALE: N.T.S. SHEET III of 128

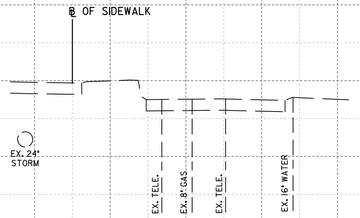
6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pTH-P001_Grosvenor.dgn

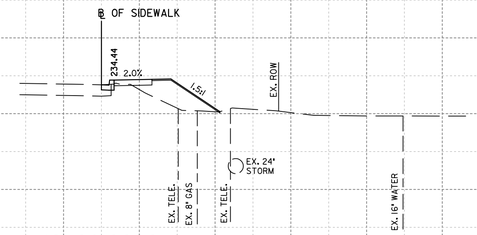












XS-01

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JUNE, 2023
DRAWN BY: KL	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 112 of 128

STATE OF MARYLAND
DAVID H. MARHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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: 12/31/2024

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BiPPA Bicycle and Pedestrian Priority Areas

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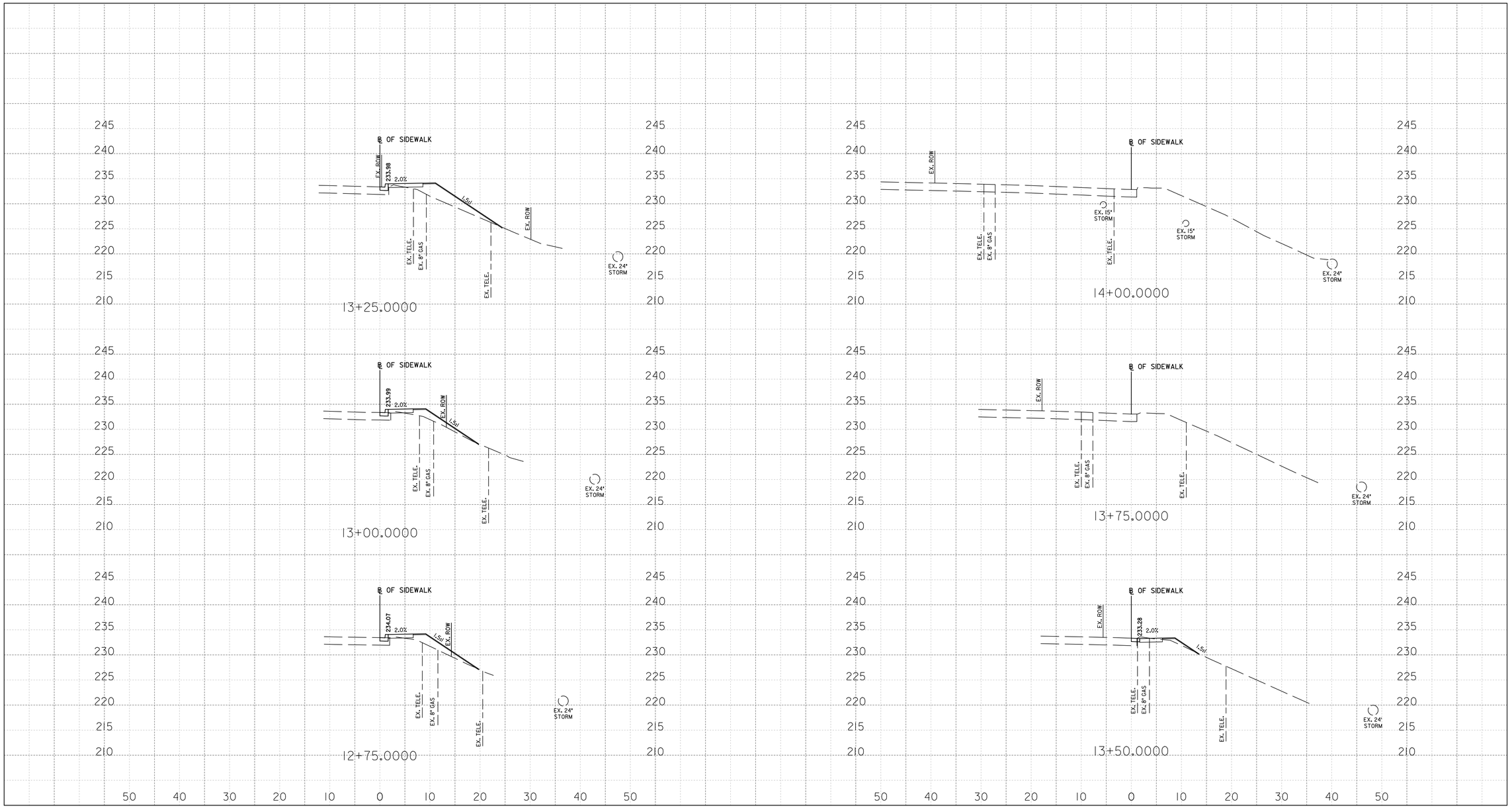

XS-02

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

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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NO.	REVISION	BY	APP'D	DATE

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Chief, Design Section — Date

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Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 113 of 128

6/5/2023
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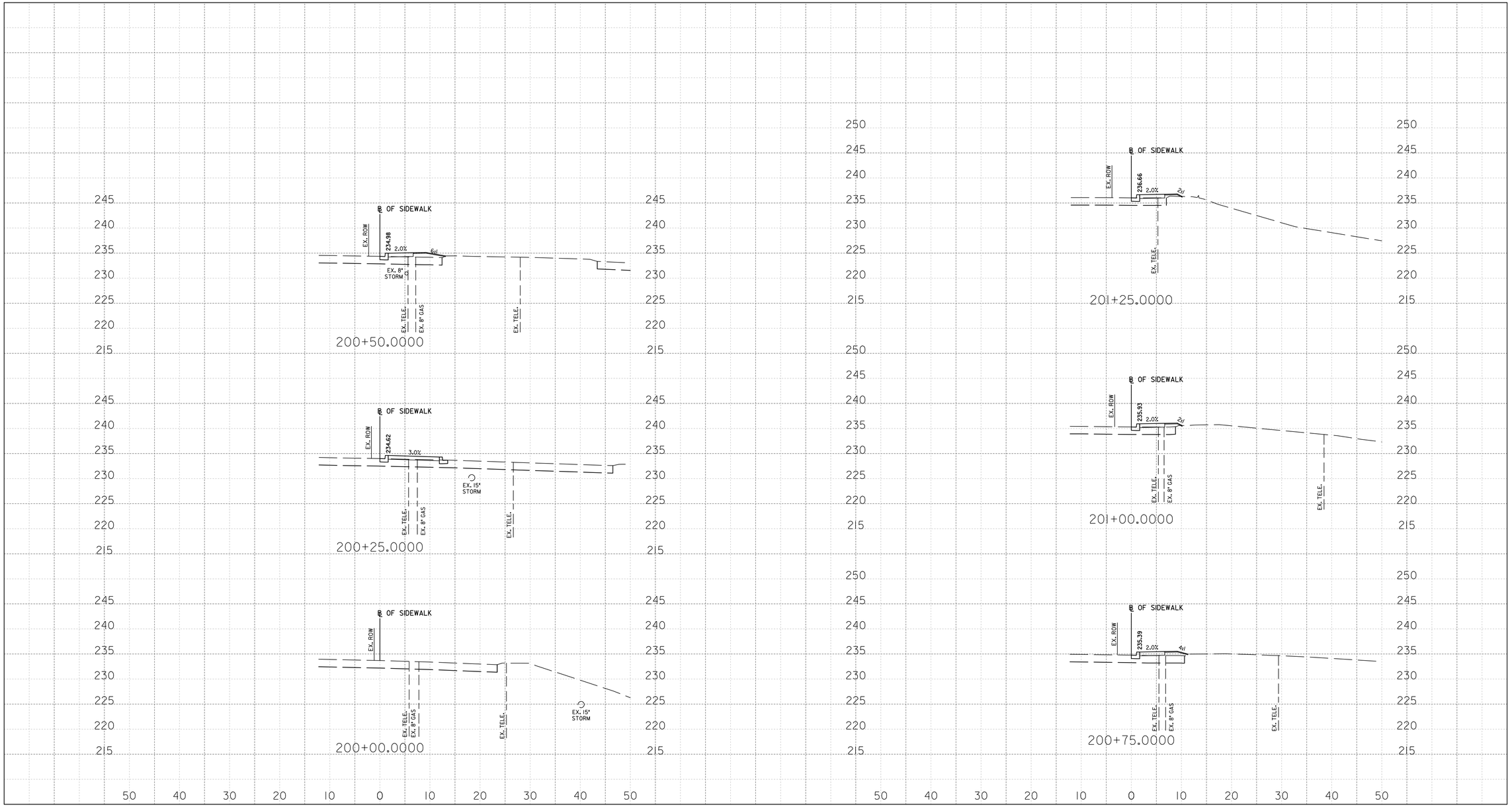

XS-03

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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LICENSE NO: 46328 EXPIRATION DATE: 12/31/2024

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

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BiPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

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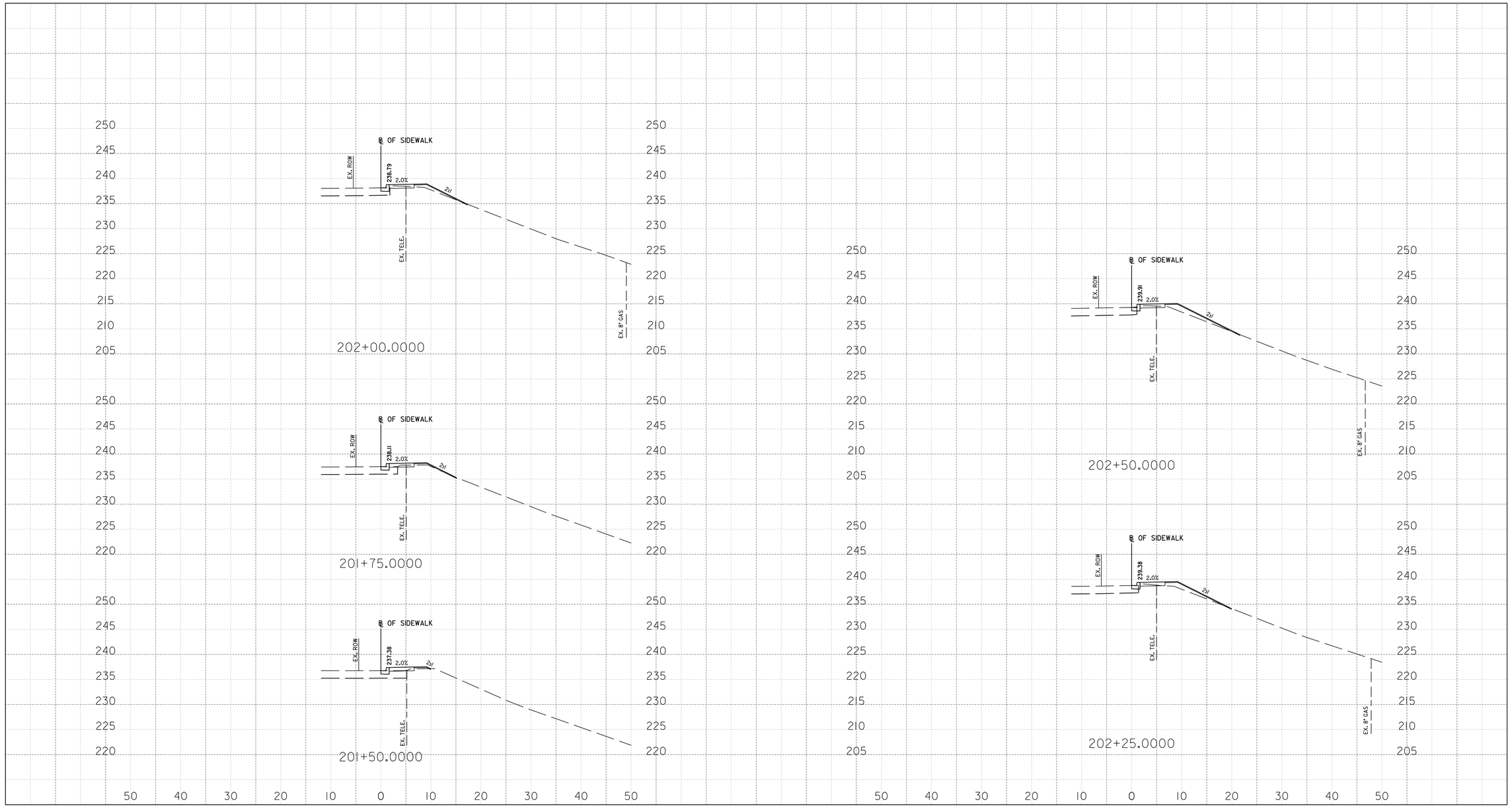
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10' SHEET 114 of 128

6/5/2023
\\US0525-PPFSS01\shared_projects\2026011401\27 BPPA - Grosvenor Project\700 CADD\700 Sheet\pHC-X002_Grosvenor.dgn



XS-04

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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

PROFESSIONAL CERTIFICATION:
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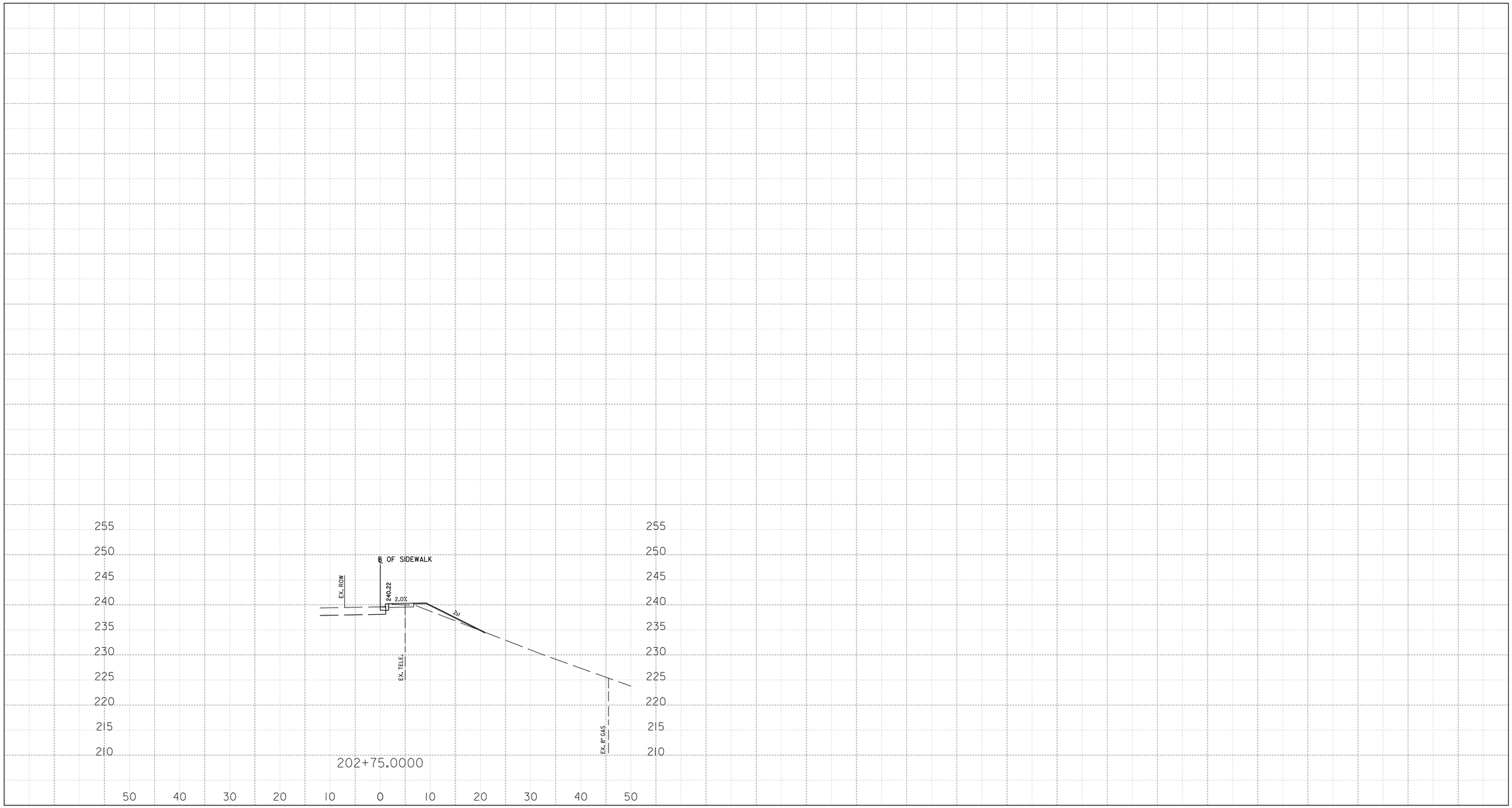
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 115 of 128



XS-05

10' 0 10' 20'
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: 46328 EXPIRATION DATE: 12/31/2024

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APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 116 of 128

6/5/2023
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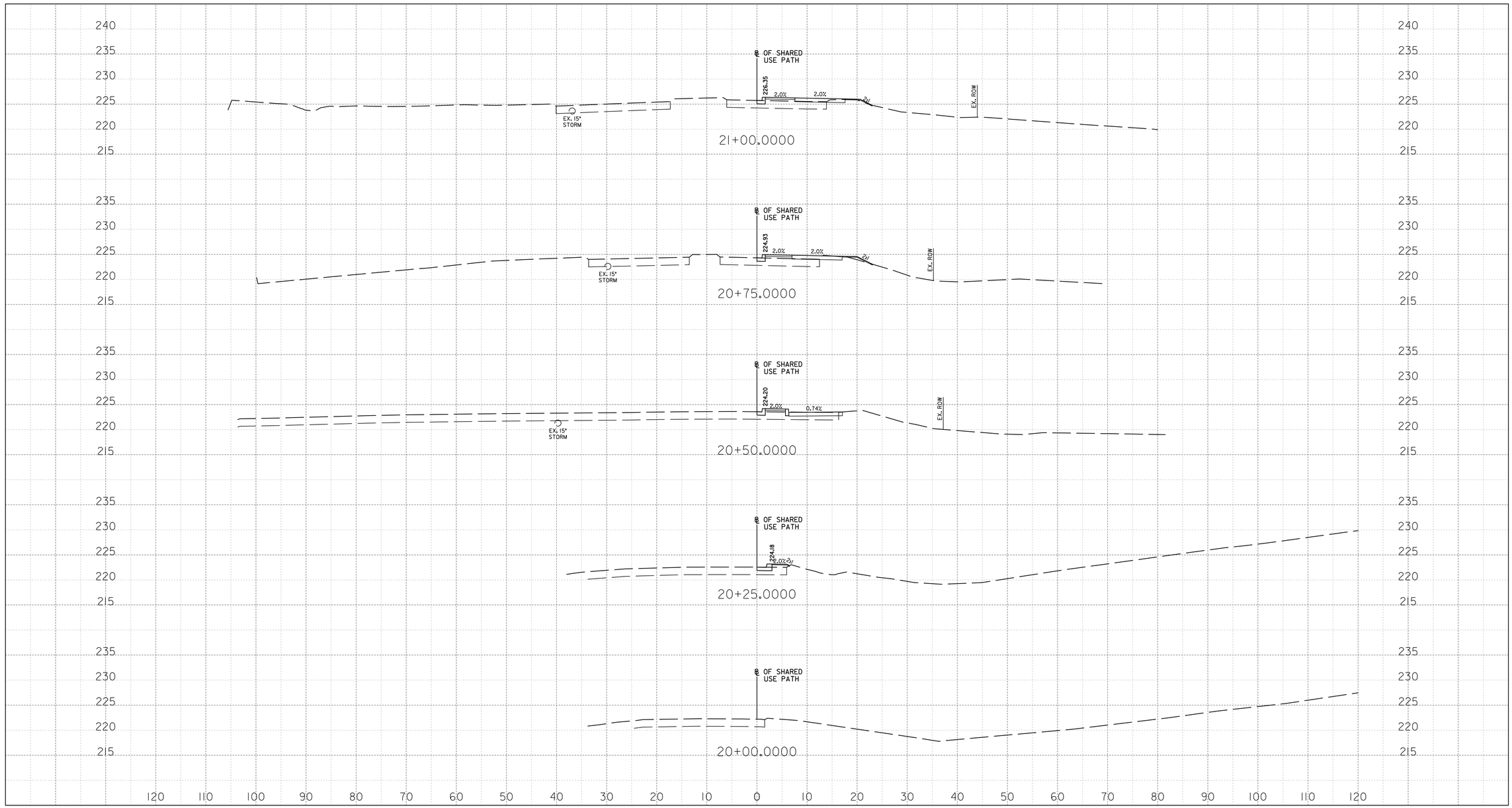

XS-06

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

NO.	REVISION	BY	APP'D	DATE

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 117 of 128

STATE OF MARYLAND
DAVID H. MARINUCCI
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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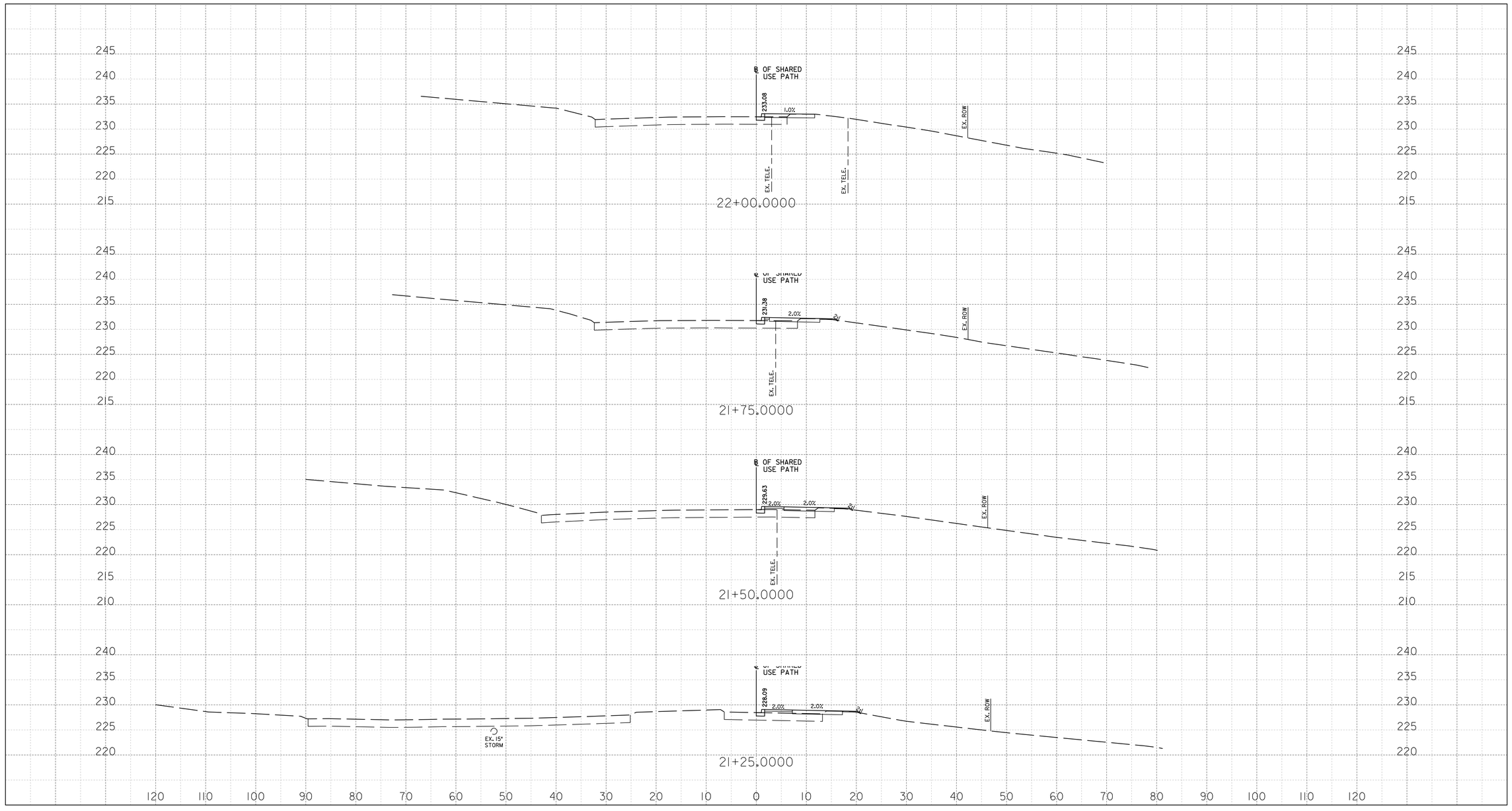

XS-07

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

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 118 of 128

STATE OF MARYLAND · DAVID H. MARIHUGH III · No. 46328 · PROFESSIONAL ENGINEER · 03-28-2023

PROFESSIONAL CERTIFICATION:
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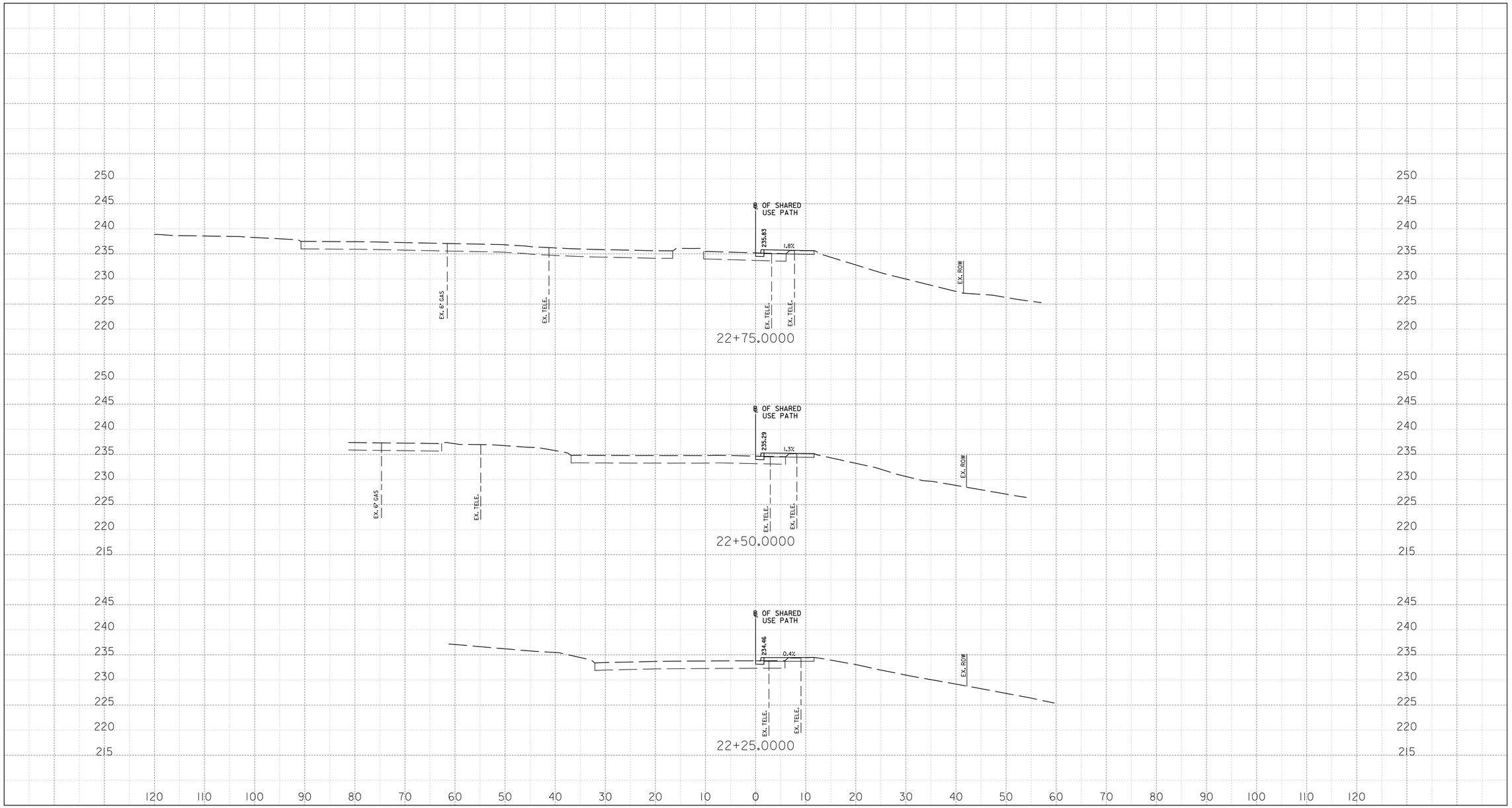

XS-08

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

NO.	REVISION	BY	APP'D	DATE

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Chief, Division of Transportation Engineering — Date

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 119 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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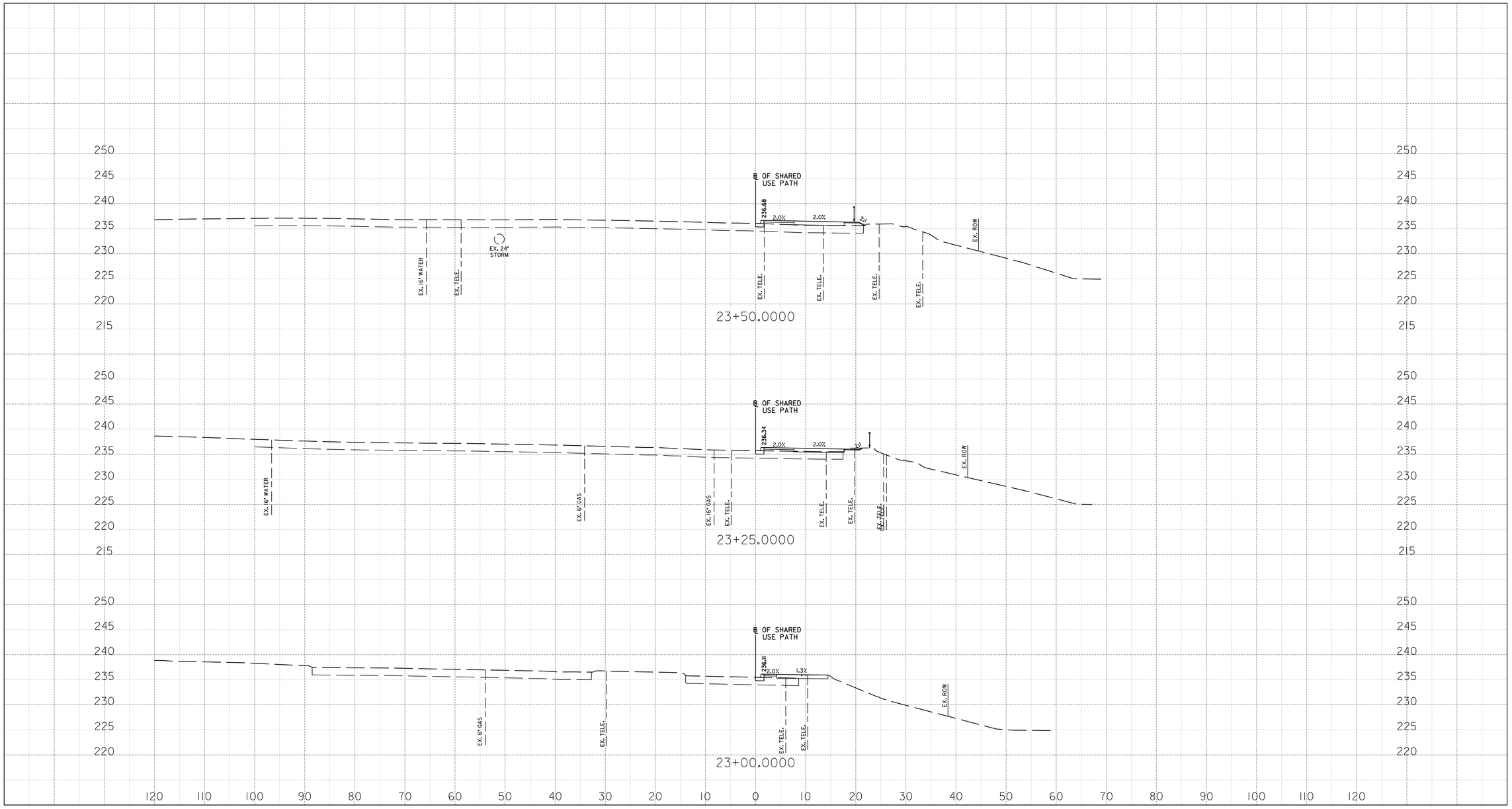

XS-09

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

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DESIGNED BY: KL	DATE: JUNE, 2023
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Chief, Design Section — Date

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Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 120 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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.
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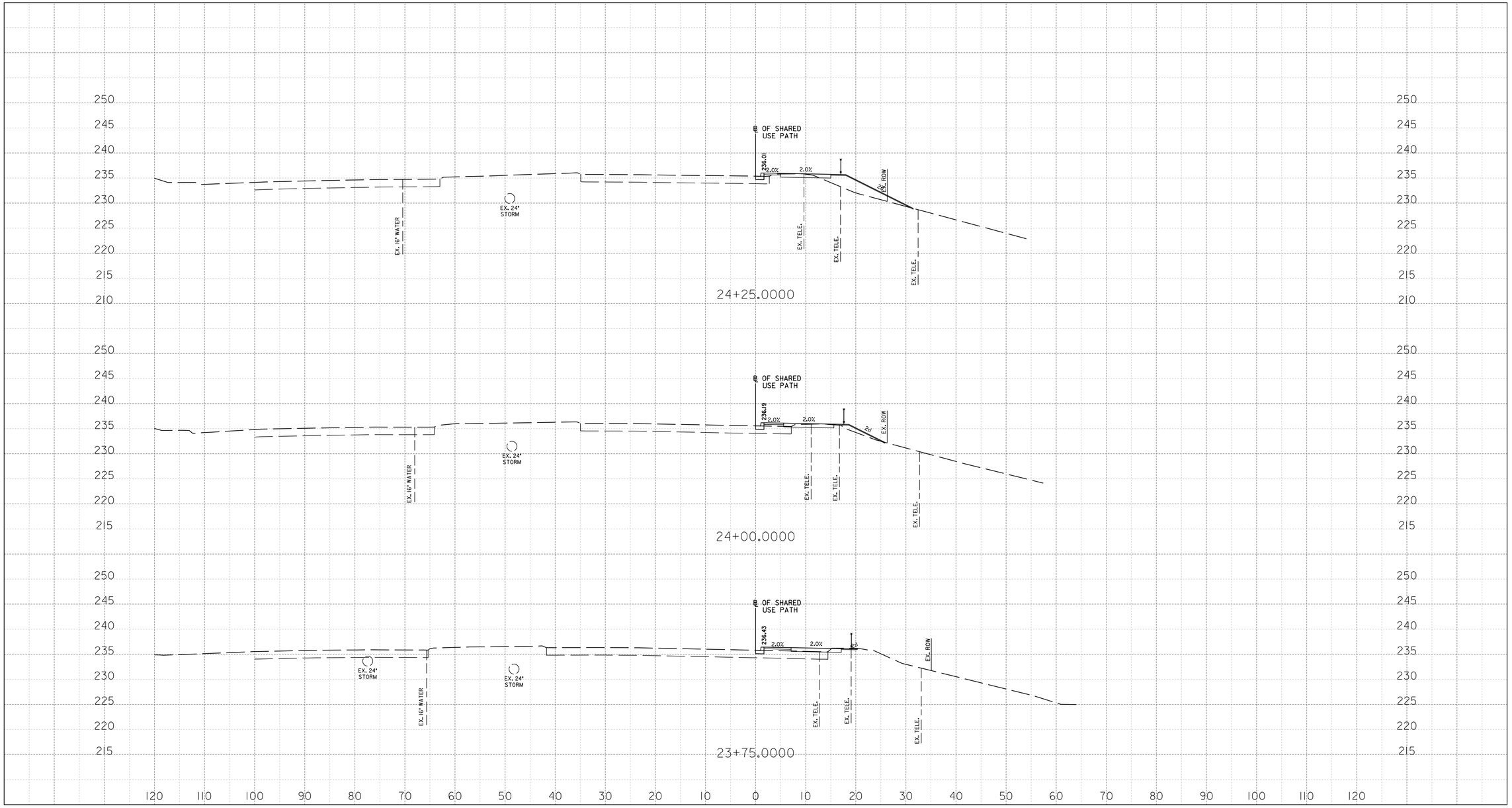

XS-10

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2003

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: 12/31/2024

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

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 121 of 128

6/5/2023
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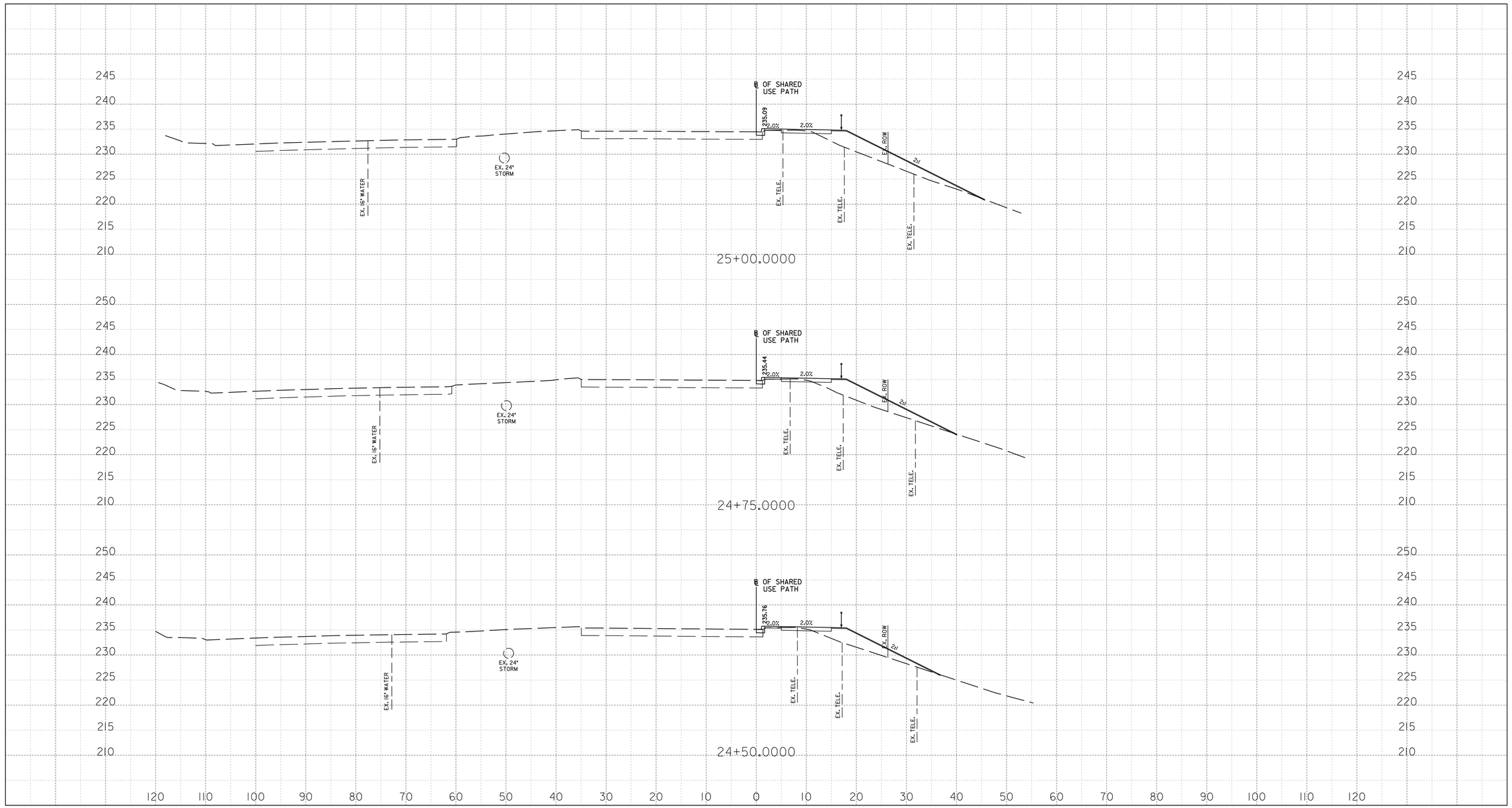

XS-11

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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

PROFESSIONAL CERTIFICATION:
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Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 122 of 128

6/5/2023
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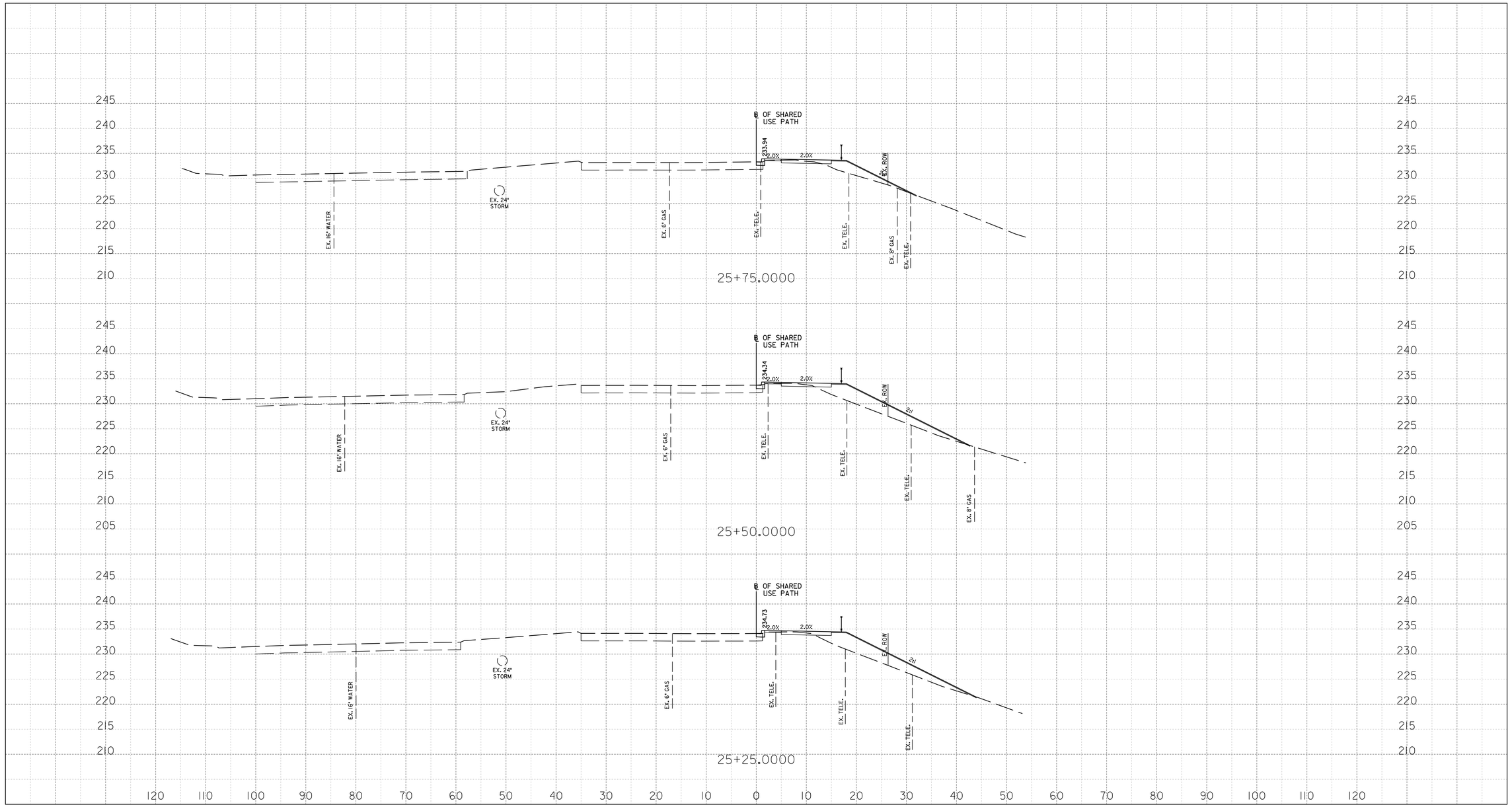

XS-12

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

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JUNE, 2023
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Chief, Design Section — Date

APPROVED

Chief, Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 123 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH II
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

PROFESSIONAL CERTIFICATION:
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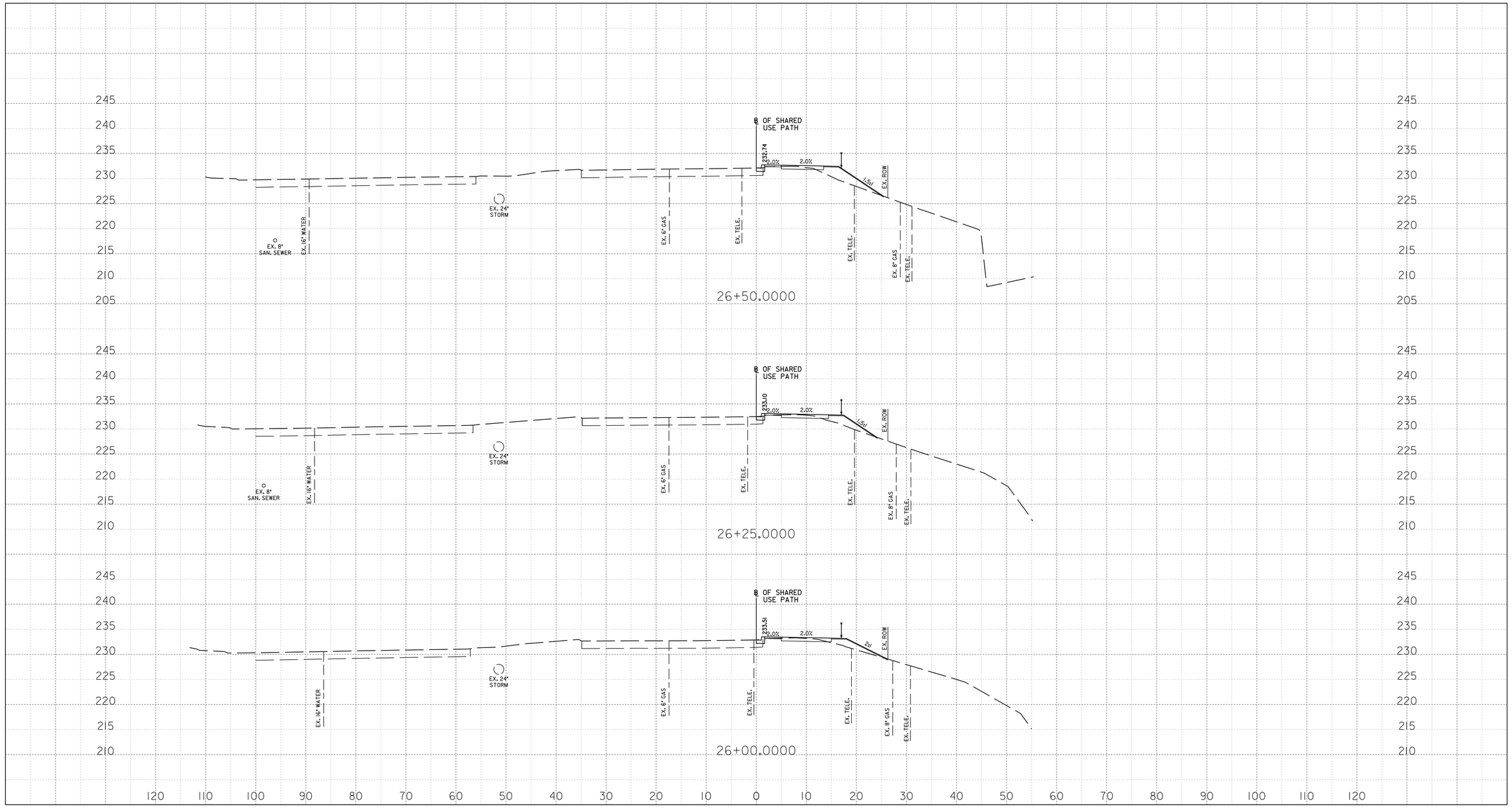

XS-13

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

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 124 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
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PROFESSIONAL ENGINEER
03-28-2023

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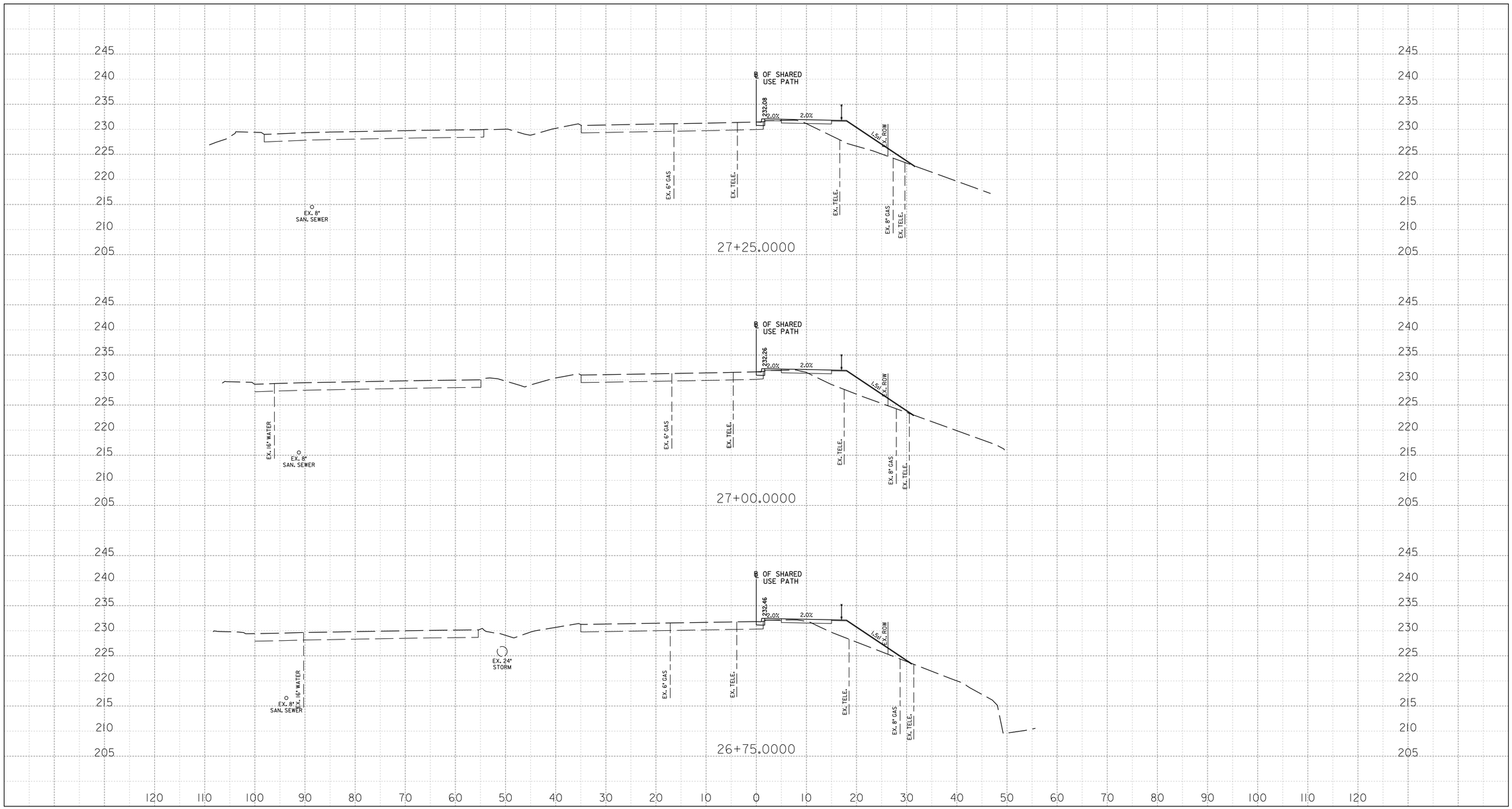

XS-14

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

NO.	REVISION	BY	APP'D	DATE

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DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 125 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH III
No. 46328
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03-28-2023

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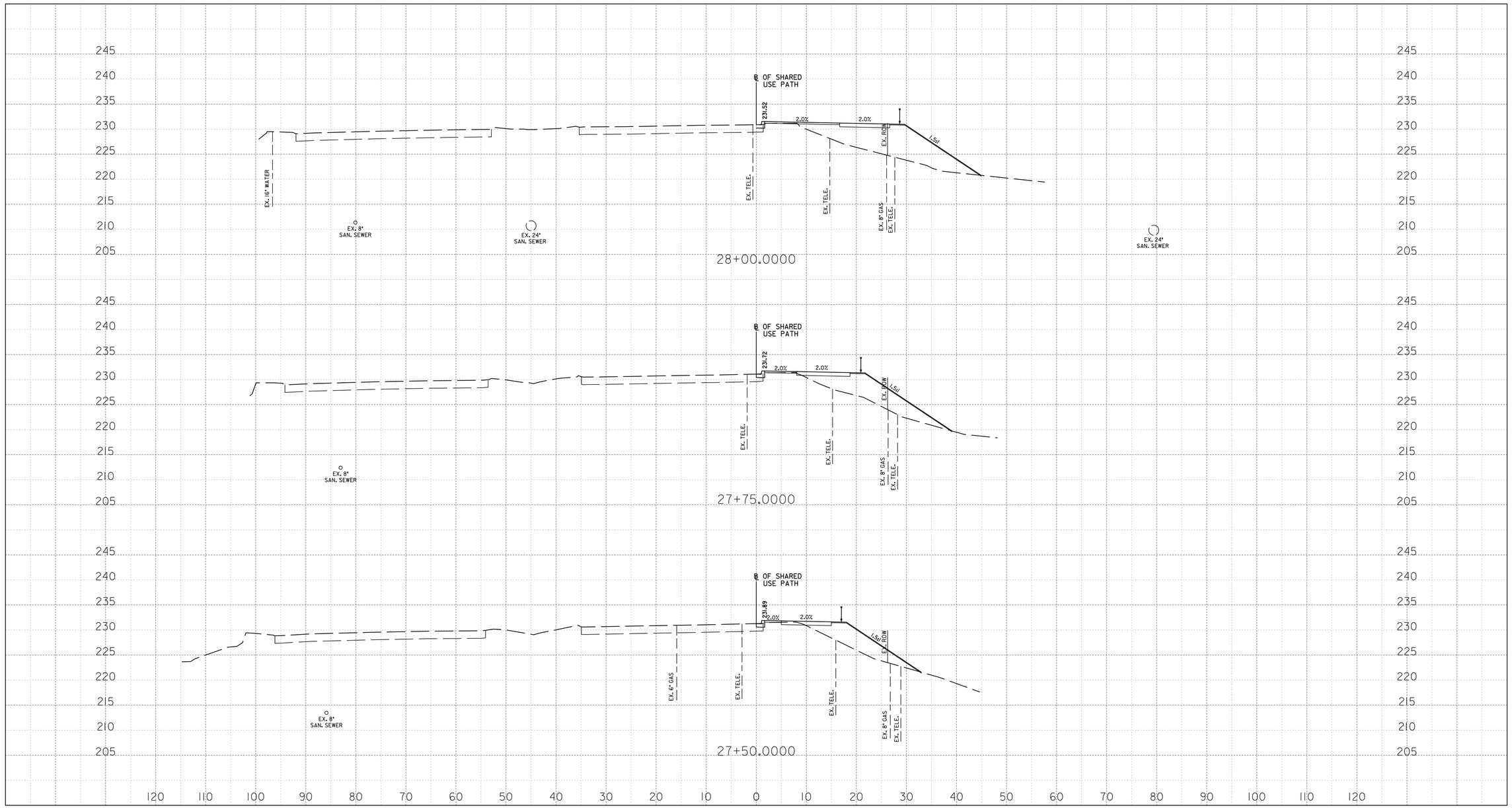

XS-15

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

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MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS MD 355 ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 126 of 128

STATE OF MARYLAND
DAVID H. MARIHUGH
No. 46328
PROFESSIONAL ENGINEER
03-28-2023

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6/5/2023
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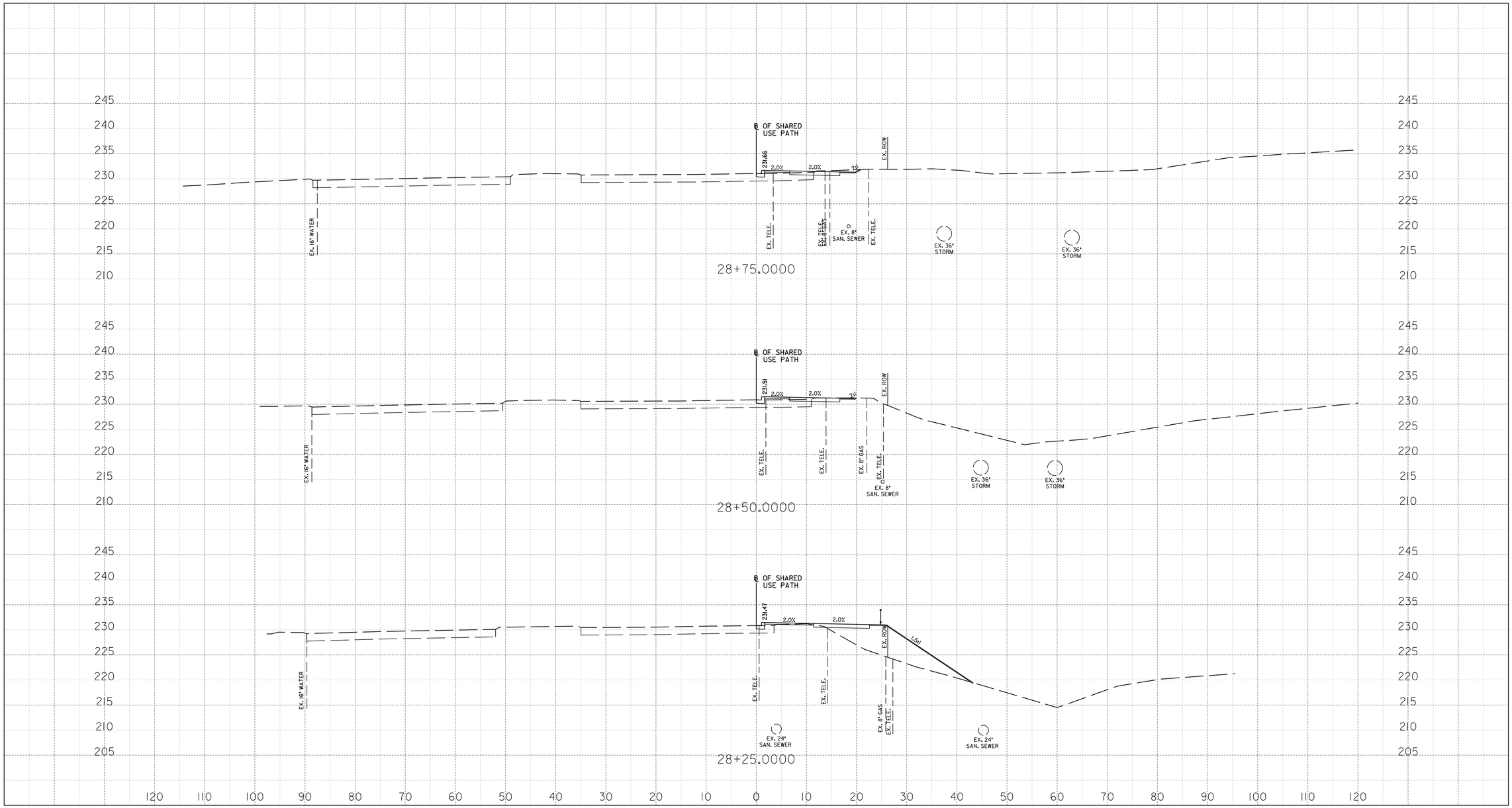

XS-16

STATE OF MARYLAND
DAVID H. MARIHUGH II
PROFESSIONAL ENGINEER
No. 46328
03-28-2023

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: 12/31/2024

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

Stantec
810 Gleneagles Court, Suite 300
Baltimore, MD 21286
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BPPA Bicycle and Pedestrian Priority Areas

NO.	REVISION	BY	APP'D	DATE

DESIGNED BY: KL	DATE: JUNE, 2023
DRAWN BY: KL	DATE: JUNE, 2023
CHECKED BY: DHM III	DATE: JUNE, 2023
DRAWING NO.:	DATE:

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief,
Division of Transportation Engineering — Date

DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

SCALE: 1"=10'

SHEET 127 of 128

6/5/2023
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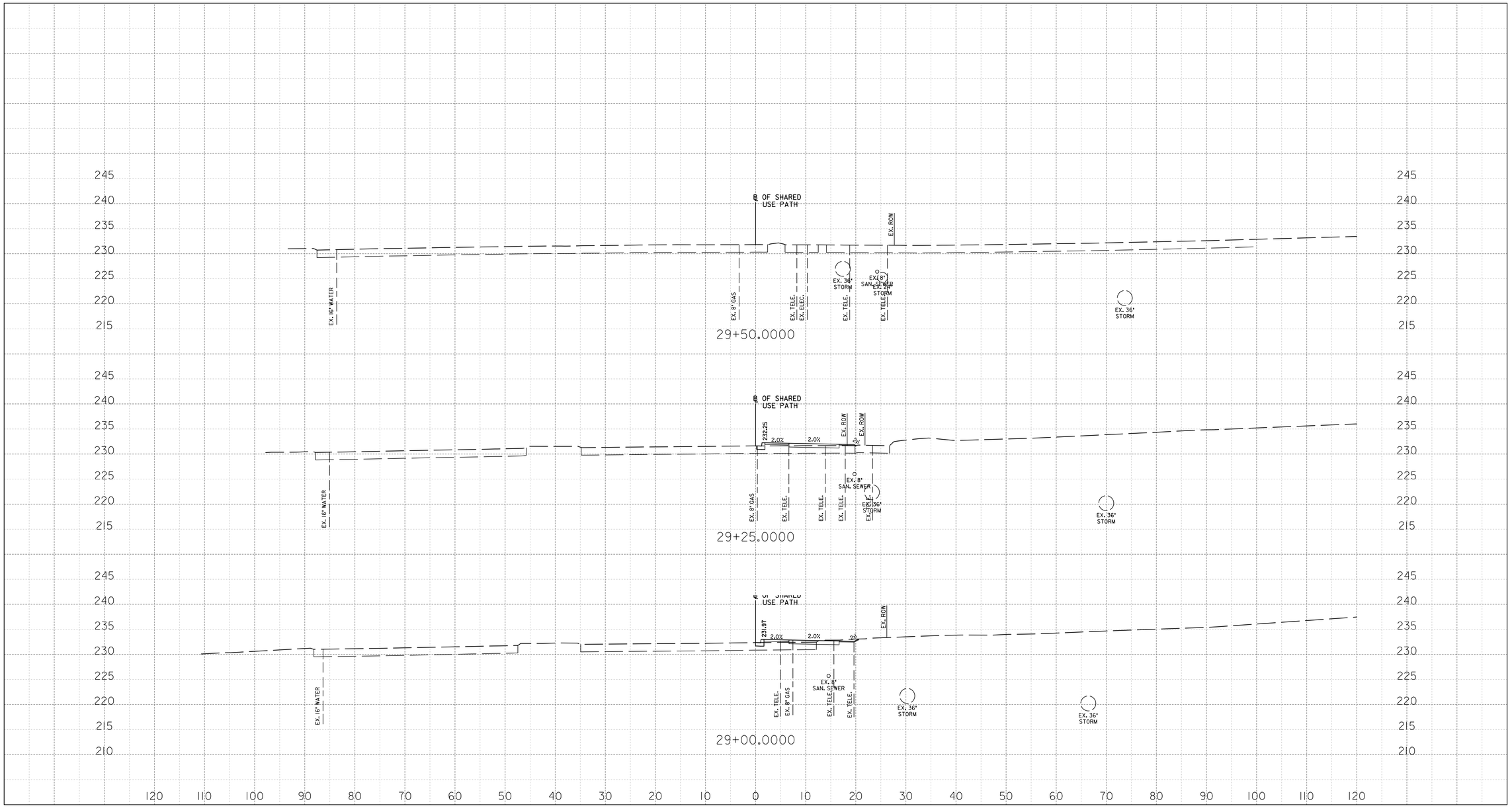

10' 0 10' 20'
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XS-17

NO.	REVISION	BY	APP'D	DATE

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
MONTGOMERY COUNTY, MARYLAND

GROSVENOR IMPROVEMENTS
MD 355
ROADWAY CROSS SECTIONS

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SHEET 128 of 128

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