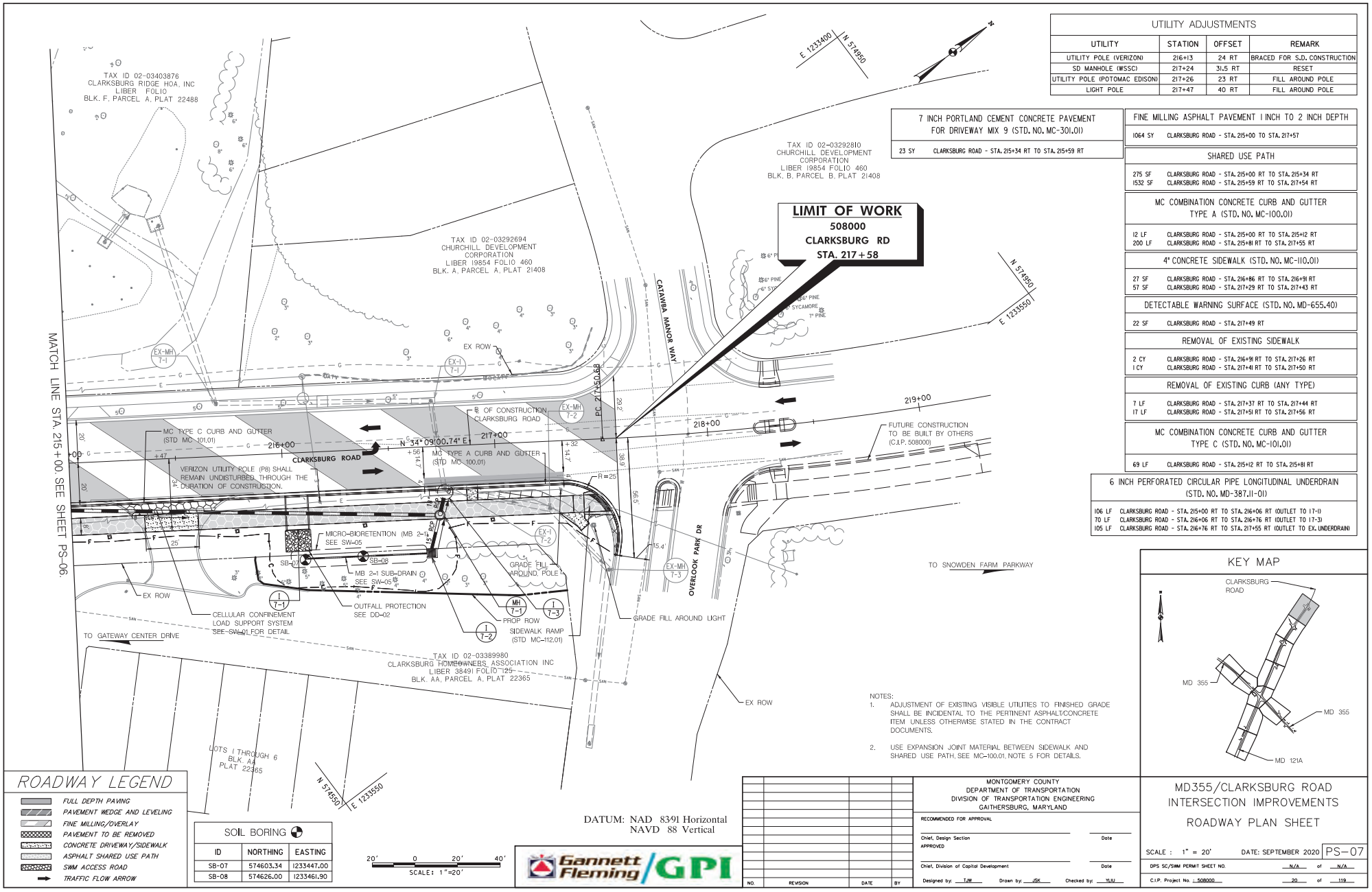


UTILITY ADJUSTMENTS

UTILITY	STATION	OFFSET	REMARK
UTILITY POLE (VERIZON)	216+13	24 RT	BRACED FOR S.D. CONSTRUCTION
SD MANHOLE (WSSC)	217+24	31.5 RT	RESET
UTILITY POLE (POTOMAC EDISON)	217+26	23 RT	FILL AROUND POLE
LIGHT POLE	217+47	40 RT	FILL AROUND POLE

7 INCH PORTLAND CEMENT CONCRETE PAVEMENT FOR DRIVEWAY MIX 9 (STD. NO. MC-301.01)

23 SY	CLARKSBURG ROAD - STA. 215+34 RT TO STA. 215+59 RT

FINE MILLING ASPHALT PAVEMENT 1 INCH TO 2 INCH DEPTH

1064 SY	CLARKSBURG ROAD - STA. 215+00 TO STA. 217+57

SHARED USE PATH

275 SF	CLARKSBURG ROAD - STA. 215+00 RT TO STA. 215+34 RT
1532 SF	CLARKSBURG ROAD - STA. 215+59 RT TO STA. 217+54 RT

MC COMBINATION CONCRETE CURB AND GUTTER TYPE A (STD. NO. MC-100.01)

12 LF	CLARKSBURG ROAD - STA. 215+00 RT TO STA. 215+12 RT
200 LF	CLARKSBURG ROAD - STA. 215+81 RT TO STA. 217+55 RT

4" CONCRETE SIDEWALK (STD. NO. MC-110.01)

27 SF	CLARKSBURG ROAD - STA. 216+86 RT TO STA. 216+91 RT
57 SF	CLARKSBURG ROAD - STA. 217+29 RT TO STA. 217+43 RT

DETECTABLE WARNING SURFACE (STD. NO. MD-655.40)

22 SF	CLARKSBURG ROAD - STA. 217+49 RT

REMOVAL OF EXISTING SIDEWALK

2 CY	CLARKSBURG ROAD - STA. 216+91 RT TO STA. 217+26 RT
1 CY	CLARKSBURG ROAD - STA. 217+41 RT TO STA. 217+50 RT

REMOVAL OF EXISTING CURB (ANY TYPE)

7 LF	CLARKSBURG ROAD - STA. 217+37 RT TO STA. 217+44 RT
17 LF	CLARKSBURG ROAD - STA. 217+51 RT TO STA. 217+56 RT

MC COMBINATION CONCRETE CURB AND GUTTER TYPE C (STD. NO. MC-101.01)

69 LF	CLARKSBURG ROAD - STA. 215+12 RT TO STA. 215+81 RT

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (STD. NO. MD-387.11-01)

106 LF	CLARKSBURG ROAD - STA. 215+00 RT TO STA. 216+06 RT (OUTLET TO 17-1)
70 LF	CLARKSBURG ROAD - STA. 216+06 RT TO STA. 216+76 RT (OUTLET TO 17-3)
105 LF	CLARKSBURG ROAD - STA. 216+76 RT TO STA. 217+55 RT (OUTLET TO EX. UNDERDRAIN)

KEY MAP

ROADWAY LEGEND

- FULL DEPTH PAVING
- PAVEMENT WEDGE AND LEVELING
- FINE MILLING/OVERLAY
- PAVEMENT TO BE REMOVED
- CONCRETE DRIVEWAY/SIDEWALK
- ASPHALT SHARED USE PATH
- SWM ACCESS ROAD
- TRAFFIC FLOW ARROW

SOIL BORING

ID	NORTHING	EASTING
SB-07	574603.34	1233447.00
SB-08	574626.00	1233461.90

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

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

NOTES:
1. ADJUSTMENT OF EXISTING VISIBLE UTILITIES TO FINISHED GRADE SHALL BE INCIDENTAL TO THE PERTINENT ASPHALT/CONCRETE ITEM UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
2. USE EXPANSION JOINT MATERIAL BETWEEN SIDEWALK AND SHARED USE PATH, SEE MC-100.01, NOTE 5 FOR DETAILS.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: YLU

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 PS-07

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 20 of 119

TEMPORARY SIDEWALK	
32 SY	MD 355 - STA. 503+10 RT TO STA. 503+66 RT

CONCRETE STAIR REMOVAL	
1 EA	MD 355 - STA. 504+84 RT
1 EA	MD 355 - STA. 505+52 RT

LIMIT OF WORK
508000
MD 355
STA. 503+20

MD 355 STA. 503+51.41 = SPIRE POB 700+00.00

TAX ID 02-00027071
ALBERT B. RANDALL ET AL
LIBER 7817 FOLIO 230
TM EW31 PARCEL P206

TAX ID 02-00022371
WALLACE T. ASHLEY ET AL
LIBER 7073 FOLIO 875
TM EW31 PARCEL P153

TAX ID 02-00026722
CLARISSA ZEPEDA-BARRERA ET AL
LIBER 48842 FOLIO 190
TM EW31 PARCEL P152

TAX ID 02-00030677
JULIO C. AMAYA ET AL
LIBER 16278 FOLIO 008
TM EW31 PARCEL P117

TAX ID 02-00042255
JOSEPH NJIAJO
LIBER 46928 FOLIO 392
TM EW31 PARCEL P150

TAX ID 02-00027008
ISEL ESPINOZA
LIBER 51874 FOLIO 029
TM EW31 PARCEL P121

TAX ID 02-00027670
MONTGOMERY COUNTY, MD
LIBER 34912 FOLIO 616
TM EW31 PARCEL P098

TAX ID 02-00027668
MONTGOMERY COUNTY, MD
LIBER 34912 FOLIO 616
TM EW31 PARCEL P065

SEWER LINE CONSTRUCTION BY OTHERS (SOLTESZ, DA6570A18).

FUTURE CONSTRUCTION TO BE BUILT BY OTHERS (C.I.P. 501744)

EX ROW

TEMPORARY SIDEWALK SEE PD-01 FOR DETAILS

℄ OF CONSTRUCTION – MD 355

℄ OF CONSTRUCTION SPIRE STREET

TEMP. CONSTRUCTION EASEMENT

EXISTING CONCRETE STAIRS TO BE REMOVED

PROP ROW

UTILITY POLE RELOCATION BY OTHERS

SHA TYPE A CURB AND GUTTER (STD MD 620.02)

STA. 701+10.6, 9.9' RT

STA. 701+10.6, 10.1' LT

PC 701+18.73

MD 355 (FREDERICK RD)

N 43°13'02.93" W

MATCH LINE STA. 507+00. SEE SHEET PS-03.

TO HYATTSTOWN

TO MD 27

UTILITY POLES 1232579-PE19 AND F5535-PE19 WILL BE RELOCATED WITHIN THE ROAD RIGHTS OF WAY AND THE EXISTING POLES REMOVED FROM THE PARK INTERIOR UNDER CIP NO. 501744 MD 355 CLARKSBURG SHARED USE PATH. NO OTHER ON-SITE UTILITY WORK IS INCLUDED.

N 572900 E 1232750

N 573050 E 1232750

N 572900 E 1233150

UTILITY ADJUSTMENTS

UTILITY	STATION	OFFSET	REMARK
UTILITY POLE (VERIZON)	504+10	32 RT	GRADE AROUND POLE
UTILITY POLE (POTOMAC EDISON)	505+27	28 RT	RELOCATED BY POTOMAC EDISON
MAILBOX	505+73	27 RT	RESET
UTILITY POLE (VERIZON)	506+50	35 RT	RELOCATED BY VERIZON
UTILITY POLE (POTOMAC EDISON)	506+95	86 RT	RELOCATED BY POTOMAC EDISON

FINE MILLING ASPHALT PAVEMENT 1 INCH TO 2 INCH DEPTH	
1458 SY	MD 355 - STA. 503+20 TO STA. 507+00
29 SY	SPIRE STREET - STA. 700+95 TO STA. 701+10

SHARED USE PATH	
3053 SF	MD 355 - STA. 504+00 RT TO STA. 507+00 RT

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (STD. NO. MD-620.02)	
132 LF	MD 355 - STA. 503+20 LT TO SPIRE ST - STA. 701+11 RT
368 LF	SPIRE STREET - STA. 701+11 LT TO MD 355 - STA. 507+00 RT

DETECTABLE WARNING SURFACE (STD. NO. MD-655.40)	
14 SF	MD 355 - STA. 503+56 RT
22 SF	MD 355 - STA. 504+03 RT

REMOVAL OF EXISTING PAVEMENT	
6 CY	MD 355 - STA. 503+20 RT TO STA. 503+60 RT
1 CY	MD 355 - STA. 504+10 RT TO STA. 504+29 RT
7 CY	MD 355 - STA. 505+08 RT TO STA. 507+00 RT

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (STD. NO. MD-387.11-01)	
116 LF	SPIRE STREET - STA. 701+11 RT TO MD 355 - STA. 503+35 RT (OUTLET TO 18-1)
100 LF	SPIRE STREET - STA. 701+11 LT TO MD 355 - STA. 504+33 RT (OUTLET TO 18-2)
136 LF	MD 355 - STA. 504+33 RT TO STA. 505+68 RT (OUTLET TO 18-3)
81 LF	MD 355 - STA. 505+68 RT TO STA. 506+49 RT (OUTLET TO 18-4)
35 LF	MD 355 - STA. 506+49 RT TO STA. 506+84 RT (OUTLET TO 18-5)
16 LF	MD 355 - STA. 506+84 RT TO STA. 507+00 RT (OUTLET TO 13-7)

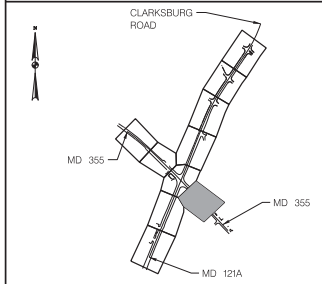
PAVEMENT CORE		
ID	NORTHING	EASTING
PB-03	573047.81	1232866.40
PB-04	573040.96	1232859.11

SOIL BORING		
ID	NORTHING	EASTING
SB-10	572973.57	1232933.42

TEST PIT LOCATIONS

TEST HOLE	UTILITY TYPE	STATION	OFFSET	SURFACE EL.	TOP EL.	NORTHING	EASTING
TP-01	WATER	503+27.12	14.86' RT	657.26	651.87	572843.371	1233047.330
TP-02	WATER	503+44.99	14.31' RT	656.60	650.92	572856.016	1233034.689
TP-03	WATER	504+25.38	21.53' RT	653.69	648.21	572919.551	1232984.899
TP-04	WATER	504+35.90	16.16' RT	652.92	648.14	572923.539	1232973.781

KEY MAP



ROADWAY LEGEND

- FULL DEPTH PAVING
- PAVEMENT WEDGE AND LEVELING
- FINE MILLING/OVERLAY
- PAVEMENT TO BE REMOVED
- CONCRETE DRIVEWAY/SIDEWALK
- ASPHALT SHARED USE PATH
- SWM ACCESS ROAD
- TRAFFIC FLOW ARROW

NOTE:

ADJUSTMENT OF EXISTING VISIBLE UTILITIES TO FINISHED GRADE SHALL BE INCIDENTAL TO THE PERTINENT ASPHALT/CONCRETE ITEM UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.

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

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: YLU

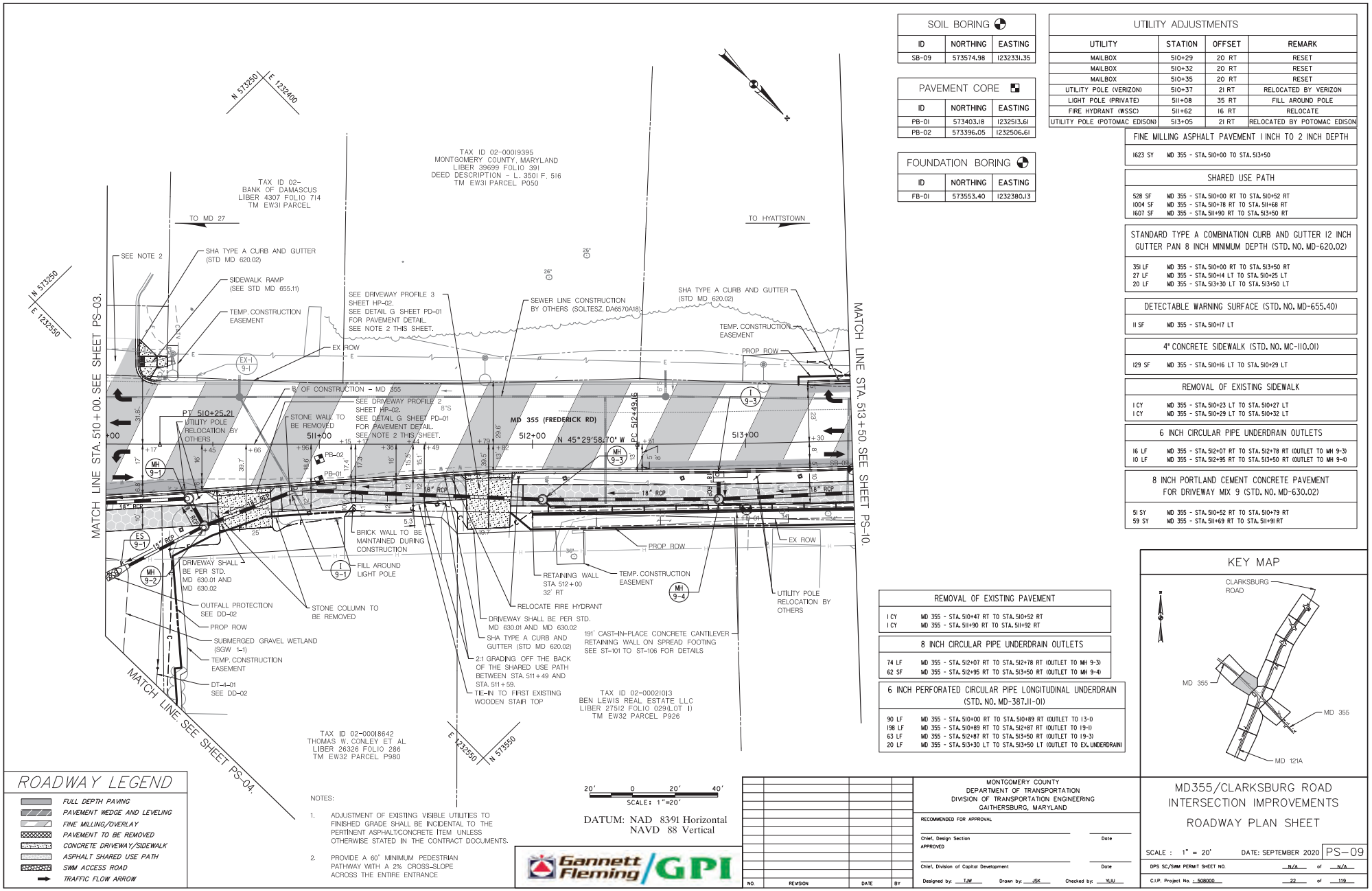
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

ROADWAY PLAN SHEET

SCALE: 1" = 20' DATE: SEPTEMBER 2020 PS-08

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No.: 508000 21 of 119



SOIL BORING

ID	NORTHING	EASTING
SB-09	573574.98	1232331.35

PAVEMENT CORE

ID	NORTHING	EASTING
PB-01	573403.18	1232513.61
PB-02	573396.05	1232506.61

FOUNDATION BORING

ID	NORTHING	EASTING
FB-01	573553.40	1232380.13

UTILITY ADJUSTMENTS

UTILITY	STATION	OFFSET	REMARK
MAILBOX	510+29	20 RT	RESET
MAILBOX	510+32	20 RT	RESET
MAILBOX	510+35	20 RT	RESET
UTILITY POLE (VERIZON)	510+37	21 RT	RELOCATED BY VERIZON
LIGHT POLE (PRIVATE)	511+08	35 RT	FILL AROUND POLE
FIRE HYDRANT (WSSC)	511+62	16 RT	RELOCATE
UTILITY POLE (POTOMAC EDISON)	513+05	21 RT	RELOCATED BY POTOMAC EDISON

FINE MILLING ASPHALT PAVEMENT 1 INCH TO 2 INCH DEPTH

1623 SY	MD 355 - STA. 510+00 TO STA. 513+50

SHARED USE PATH

528 SF	MD 355 - STA. 510+00 RT TO STA. 510+52 RT
1004 SF	MD 355 - STA. 510+78 RT TO STA. 511+68 RT
1607 SF	MD 355 - STA. 511+90 RT TO STA. 513+50 RT

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (STD. NO. MD-620.02)

351 LF	MD 355 - STA. 510+00 RT TO STA. 513+50 RT
27 LF	MD 355 - STA. 510+14 LT TO STA. 510+25 LT
20 LF	MD 355 - STA. 513+30 LT TO STA. 513+50 LT

DETECTABLE WARNING SURFACE (STD. NO. MD-655.40)

11 SF	MD 355 - STA. 510+17 LT

4" CONCRETE SIDEWALK (STD. NO. MC-110.01)

129 SF	MD 355 - STA. 510+16 LT TO STA. 510+29 LT

REMOVAL OF EXISTING SIDEWALK

1 CY	MD 355 - STA. 510+23 LT TO STA. 510+27 LT
1 CY	MD 355 - STA. 510+29 LT TO STA. 510+32 LT

6 INCH CIRCULAR PIPE UNDERDRAIN OUTLETS

16 LF	MD 355 - STA. 512+07 RT TO STA. 512+78 RT (OUTLET TO MH 9-3)
10 LF	MD 355 - STA. 512+95 RT TO STA. 513+50 RT (OUTLET TO MH 9-4)

8 INCH PORTLAND CEMENT CONCRETE PAVEMENT FOR DRIVEWAY MIX 9 (STD. NO. MD-630.02)

51 SY	MD 355 - STA. 510+52 RT TO STA. 510+79 RT
59 SY	MD 355 - STA. 511+69 RT TO STA. 511+91 RT

REMOVAL OF EXISTING PAVEMENT

1 CY	MD 355 - STA. 510+47 RT TO STA. 510+52 RT
1 CY	MD 355 - STA. 511+90 RT TO STA. 511+92 RT

8 INCH CIRCULAR PIPE UNDERDRAIN OUTLETS

74 LF	MD 355 - STA. 512+07 RT TO STA. 512+78 RT (OUTLET TO MH 9-3)
62 SF	MD 355 - STA. 512+95 RT TO STA. 513+50 RT (OUTLET TO MH 9-4)

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (STD. NO. MD-387.11-01)

90 LF	MD 355 - STA. 510+00 RT TO STA. 510+89 RT (OUTLET TO 13-1)
198 LF	MD 355 - STA. 510+89 RT TO STA. 512+87 RT (OUTLET TO 19-1)
63 LF	MD 355 - STA. 512+87 RT TO STA. 513+50 RT (OUTLET TO 19-3)
20 LF	MD 355 - STA. 513+30 LT TO STA. 513+50 LT (OUTLET TO EX. UNDERDRAIN)

KEY MAP

ROADWAY LEGEND

- FULL DEPTH PAVING
- PAVEMENT WEDGE AND LEVELING
- FINE MILLING/OVERLAY
- PAVEMENT TO BE REMOVED
- CONCRETE DRIVEWAY/SIDEWALK
- ASPHALT SHARED USE PATH
- SWM ACCESS ROAD
- TRAFFIC FLOW ARROW

NOTES:

1. ADJUSTMENT OF EXISTING VISIBLE UTILITIES TO FINISHED GRADE SHALL BE INCIDENTAL TO THE PERTINENT ASPHALT/CONCRETE ITEM UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
2. PROVIDE A 60" MINIMUM PEDESTRIAN PATHWAY WITH A 2% CROSS-SLOPE ACROSS THE ENTIRE ENTRANCE

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

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: YLU

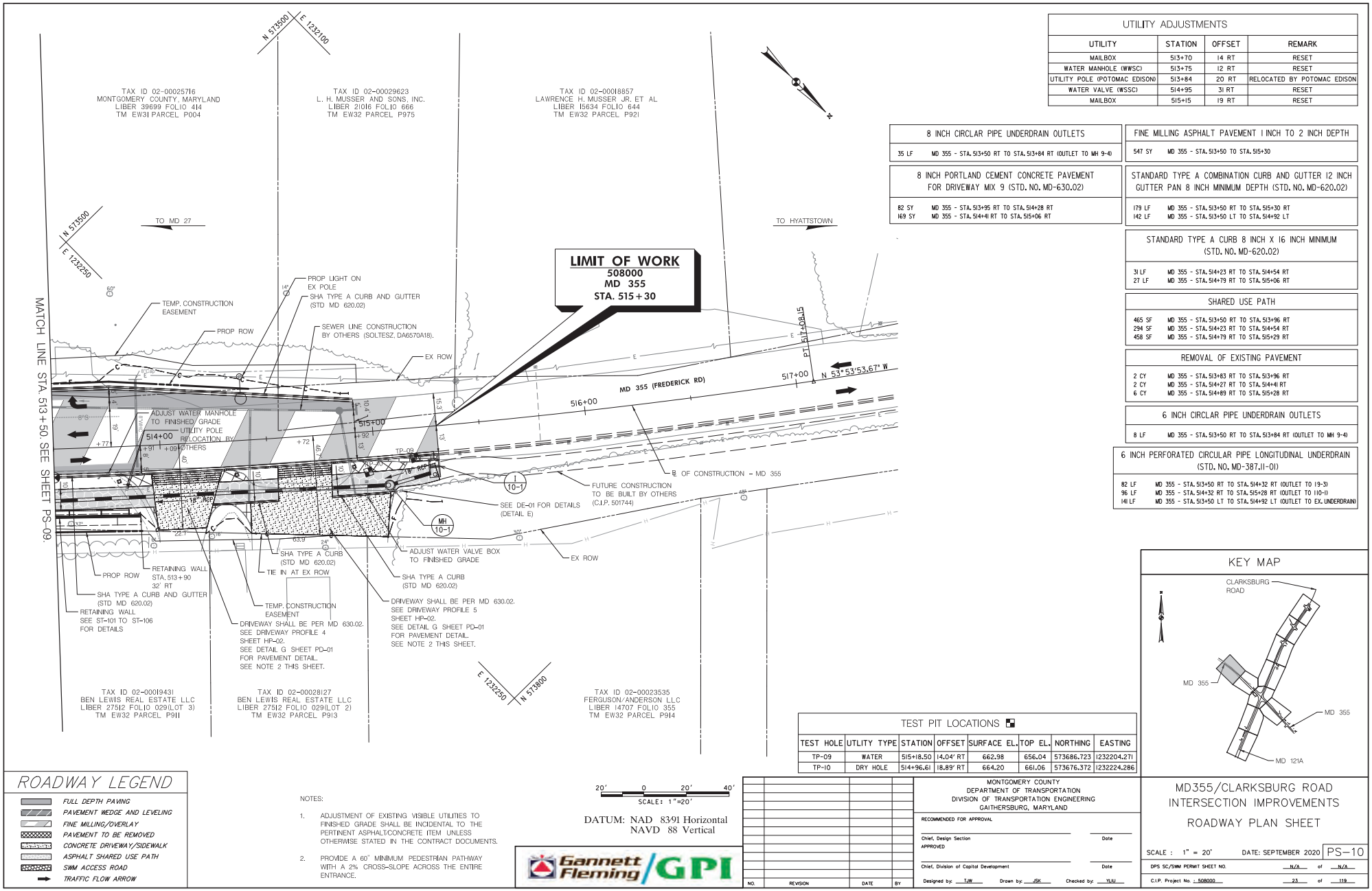
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 PS-09

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 22 of 119



UTILITY ADJUSTMENTS

UTILITY	STATION	OFFSET	REMARK
MAILBOX	513+70	14 RT	RESET
WATER MANHOLE (WWSC)	513+75	12 RT	RESET
UTILITY POLE (POTOMAC EDISON)	513+84	20 RT	RELOCATED BY POTOMAC EDISON
WATER VALVE (WSSC)	514+95	31 RT	RESET
MAILBOX	515+15	19 RT	RESET

8 INCH CIRCLAR PIPE UNDERDRAIN OUTLETS

35 LF	MD 355 - STA. 513+50 RT TO STA. 513+84 RT (OUTLET TO MH 9-4)

8 INCH PORTLAND CEMENT CONCRETE PAVEMENT FOR DRIVEWAY MIX 9 (STD. NO. MD-630.02)

82 SY	MD 355 - STA. 513+95 RT TO STA. 514+28 RT
169 SY	MD 355 - STA. 514+41 RT TO STA. 515+06 RT

FINE MILLING ASPHALT PAVEMENT 1 INCH TO 2 INCH DEPTH

547 SY	MD 355 - STA. 513+50 TO STA. 515+30

STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH MINIMUM DEPTH (STD. NO. MD-620.02)

179 LF	MD 355 - STA. 513+50 RT TO STA. 515+30 RT
142 LF	MD 355 - STA. 513+50 LT TO STA. 514+92 LT

STANDARD TYPE A CURB 8 INCH X 16 INCH MINIMUM (STD. NO. MD-620.02)

31 LF	MD 355 - STA. 514+23 RT TO STA. 514+54 RT
27 LF	MD 355 - STA. 514+79 RT TO STA. 515+06 RT

SHARED USE PATH

465 SF	MD 355 - STA. 513+50 RT TO STA. 513+96 RT
294 SF	MD 355 - STA. 514+23 RT TO STA. 514+54 RT
458 SF	MD 355 - STA. 514+79 RT TO STA. 515+29 RT

REMOVAL OF EXISTING PAVEMENT

2 CY	MD 355 - STA. 513+83 RT TO STA. 513+96 RT
2 CY	MD 355 - STA. 514+27 RT TO STA. 514+41 RT
6 CY	MD 355 - STA. 514+89 RT TO STA. 515+28 RT

6 INCH CIRCLAR PIPE UNDERDRAIN OUTLETS

8 LF	MD 355 - STA. 513+50 RT TO STA. 513+84 RT (OUTLET TO MH 9-4)

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (STD. NO. MD-387.11-01)

82 LF	MD 355 - STA. 513+50 RT TO STA. 514+32 RT (OUTLET TO 19-3)
96 LF	MD 355 - STA. 514+32 RT TO STA. 515+28 RT (OUTLET TO 110-1)
141 LF	MD 355 - STA. 513+50 LT TO STA. 514+92 LT (OUTLET TO EX. UNDERDRAIN)

TEST PIT LOCATIONS

TEST HOLE	UTLITY TYPE	STATION	OFFSET	SURFACE EL.	TOP EL.	NORTHING	EASTING
TP-09	WATER	515+18.50	14.04' RT	662.98	656.04	573686.723	1232204.271
TP-10	DRY HOLE	514+96.61	18.89' RT	664.20	661.06	573676.372	1232224.286

KEY MAP

ROADWAY LEGEND

- FULL DEPTH PAVING
- PAVEMENT WEDGE AND LEVELING
- FINE MILLING/OVERLAY
- PAVEMENT TO BE REMOVED
- CONCRETE DRIVEWAY/SIDEWALK
- ASPHALT SHARED USE PATH
- SWM ACCESS ROAD
- TRAFFIC FLOW ARROW

NOTES:

1. ADJUSTMENT OF EXISTING VISIBLE UTILITIES TO FINISHED GRADE SHALL BE INCIDENTAL TO THE PERTINENT ASPHALT/CONCRETE ITEM UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
2. PROVIDE A 60' MINIMUM PEDESTRIAN PATHWAY WITH A 2% CROSS-SLOPE ACROSS THE ENTIRE ENTRANCE.

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

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: YLU

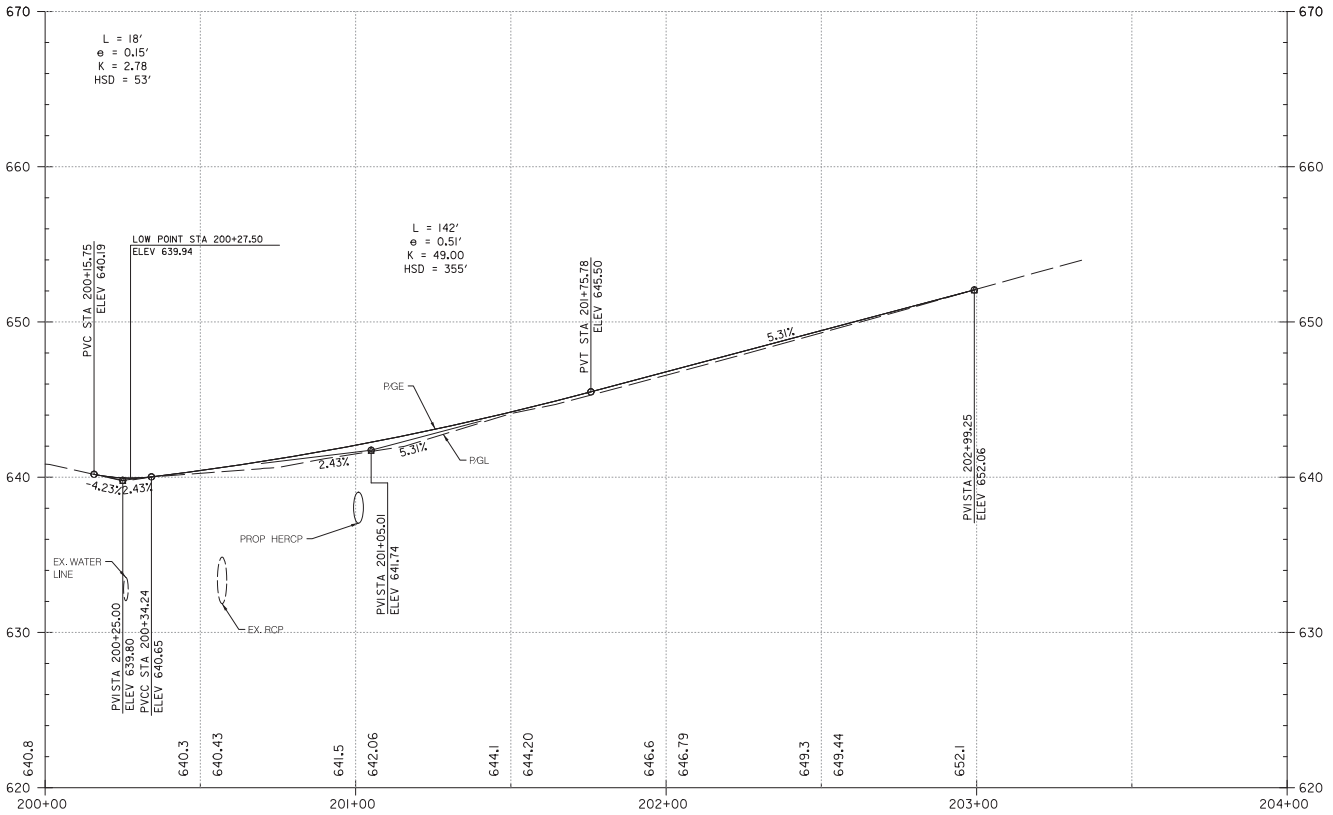
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 PS-10

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 23 of 119



CLARKSBURG ROAD

NOTE:
PROFILE SHOWN IS THE P.G.L. OF CLARKSBURG ROAD. PROFILE FOLLOWS CLARKSBURG BASELINE STATIONING BUT IS OFFSET 5 FEET TO THE RIGHT FROM THE BASELINE, ALONG THE ROAD CENTERLINE (SEE HT-01).

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

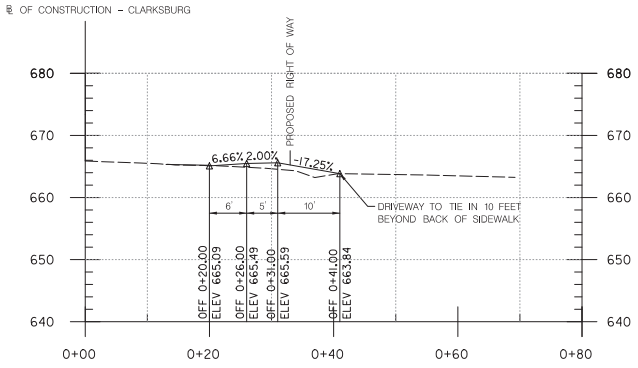
Designed by: TJW Drawn by: JSK Checked by: YLU

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
CLARKSBURG ROAD
PROFILE ADJUSTMENT

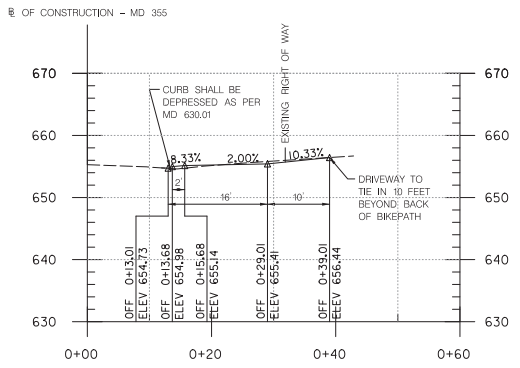
HOR. SCALE : 1" = 20'
VERT. SCALE : 1" = 4'
DATE: SEPTEMBER 2020
HP-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

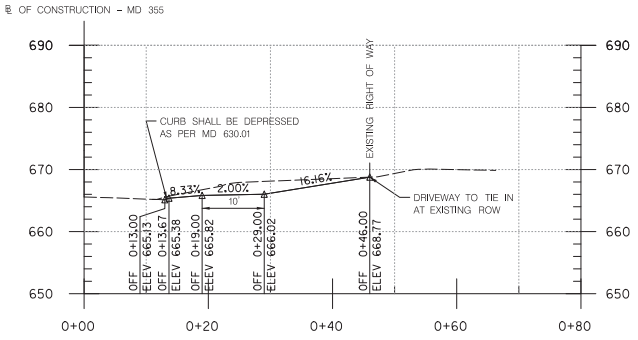
C.I.P. Project No. : 508000 24 of 119



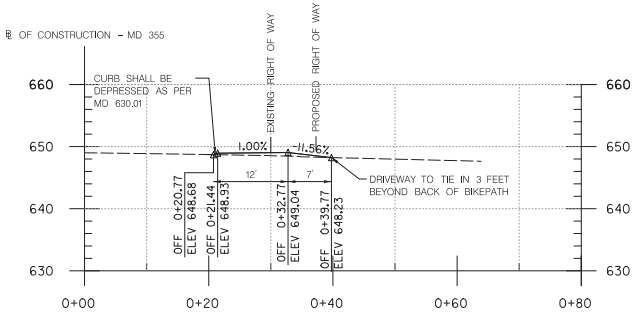
DRIVEWAY PROFILE 1
CLARKSBURG RD: STA. 205+41



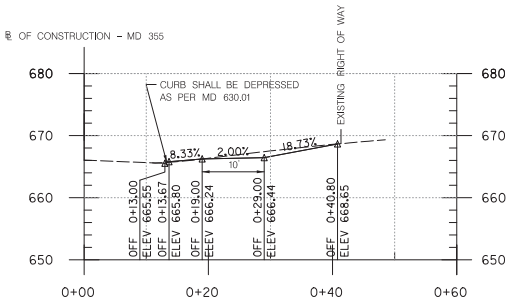
DRIVEWAY PROFILE 3
MD 355: STA. 511+79



DRIVEWAY PROFILE 5
MD 355: STA. 514+72



DRIVEWAY PROFILE 2
MD 355: STA. 510+66



DRIVEWAY PROFILE 4
MD 355: STA. 514+09

NOTE:
PROFILE IS TAKEN FROM THE ROADWAY BASELINE ALONG THE CENTER OF THE DRIVEWAY

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

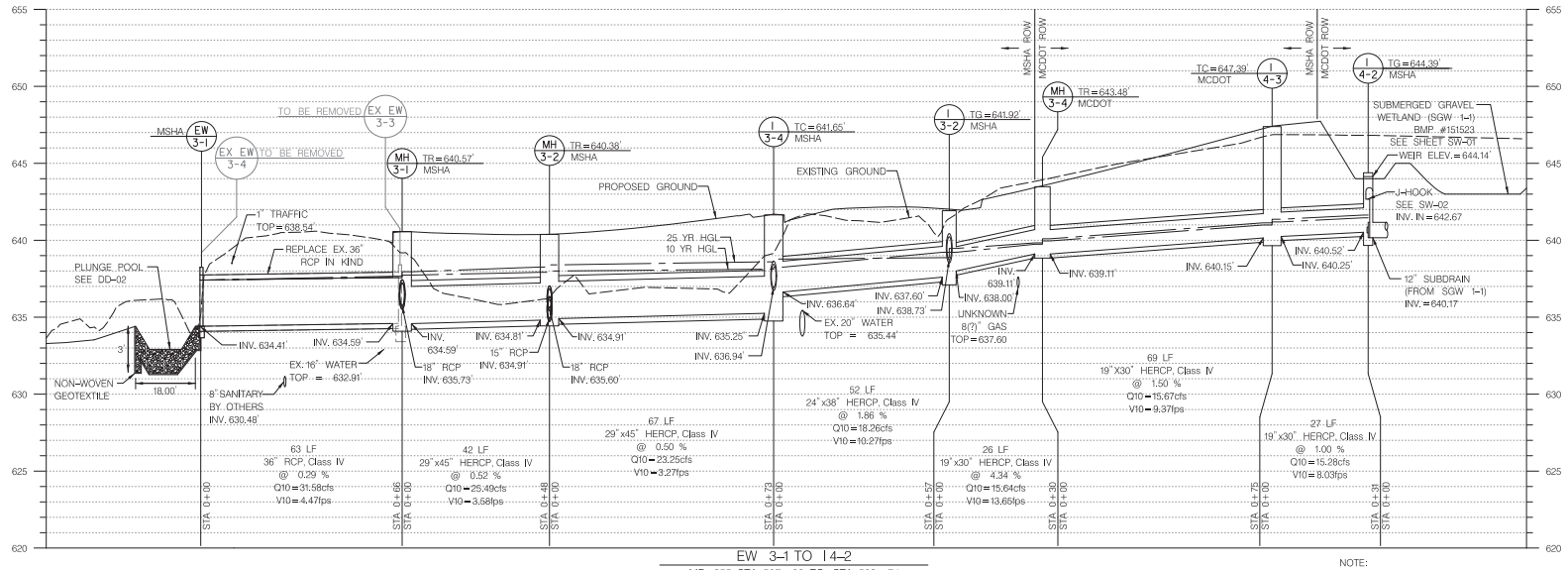
Designed by: TJW Drawn by: JSK Checked by: YLU

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS DRIVEWAY PROFILES

SCALE : 1" = 10' DATE: SEPTEMBER 2020 HP-02

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 25 of 119



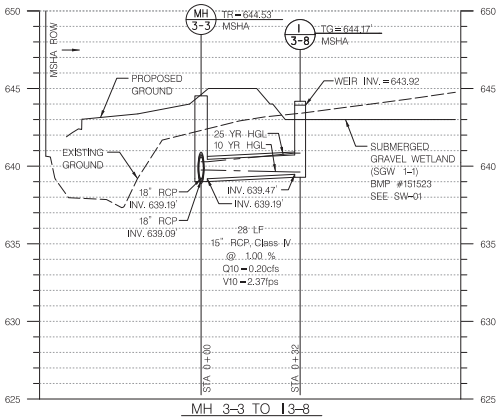
EW 3-1 TO I 4-2

MD 355 STA. 507+33 TO STA. 509+74

HORIZ: 1" = 20'

VERT: 1" = 4'

NOTE:
REMOVAL OF EXISTING 36" RCP CULVERT FROM EX EW 3-4 TO EX EW 3-3 AND EX EW 3-4 WILL NOT BE MEASURED BUT WILL BE INCIDENTAL TO THE PLACEMENT OF THE PROPOSED STORM DRAIN PIPE AND STRUCTURES PER SPEC. SECTION 305.04.07.

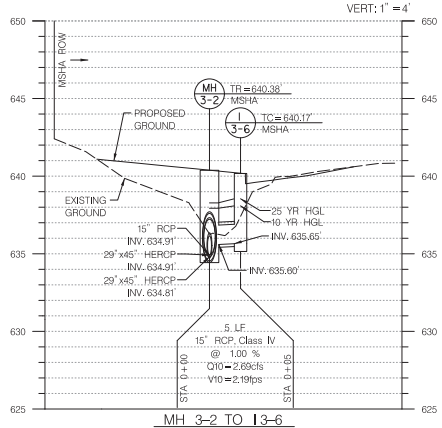


MH 3-3 TO I 3-8

MD 355 STA. 509+36 TO STA. 509+62

HORIZ: 1" = 20'

VERT: 1" = 4'

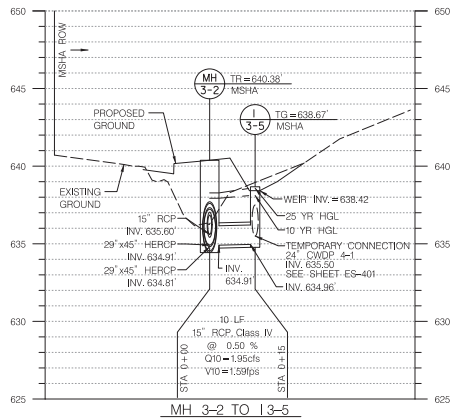


MH 3-2 TO I 3-6

MD 355 STA. 507+92 TO STA. 507+97

HORIZ: 1" = 20'

VERT: 1" = 4'



MH 3-2 TO I 3-5

MD 355 STA. 507+92 TO STA. 507+97

HORIZ: 1" = 20'

VERT: 1" = 4'

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

Gannett Fleming/GPI

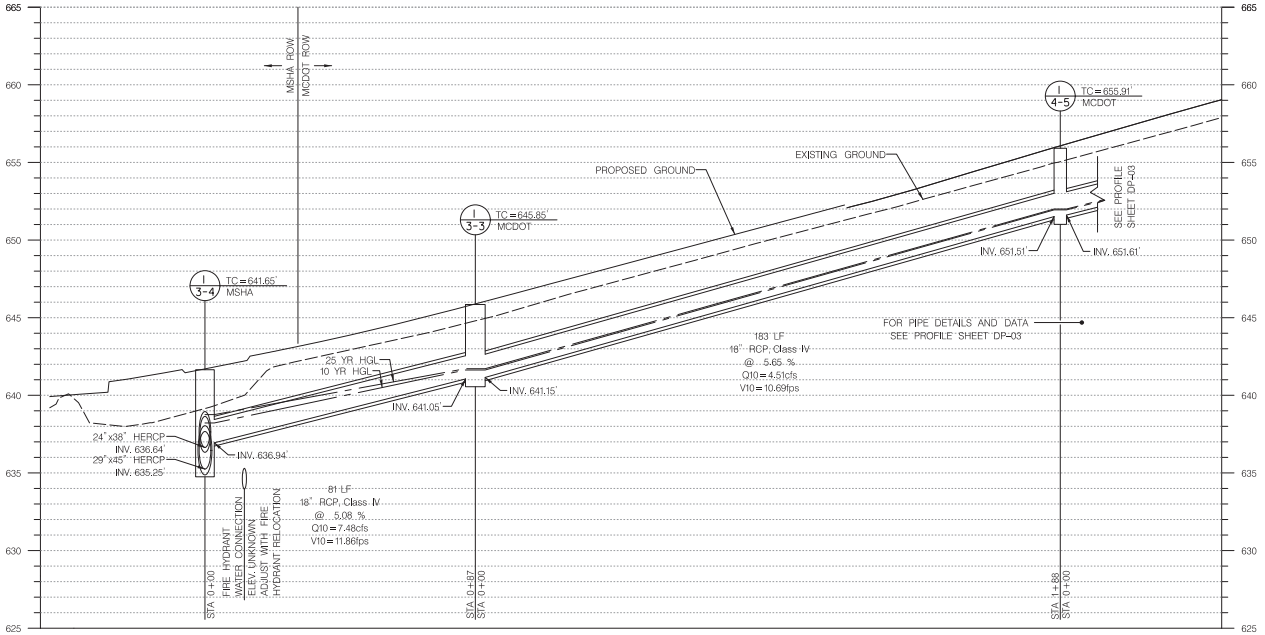
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE PROFILE SHEET

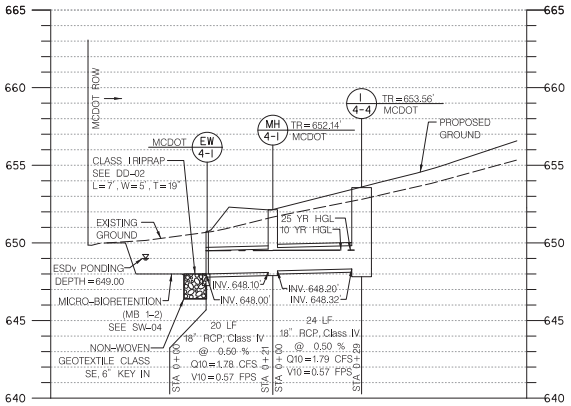
SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-01

DPS SC/SWM PERMIT SHEET NO. 4 of 45

C.I.P. Project No. : 508000 26 of 119



I 3–4 TO I 4–5
CLARKSBURG RD STA. 200+93 TO STA. 203+68
HORIZ: 1" = 20'
VERT: 1" = 4'



EW 4–1 TO I 4–4
CLARKSBURG RD STA. 203+13 TO STA. 203+45
HORIZ: 1" = 20'
VERT: 1" = 4'

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

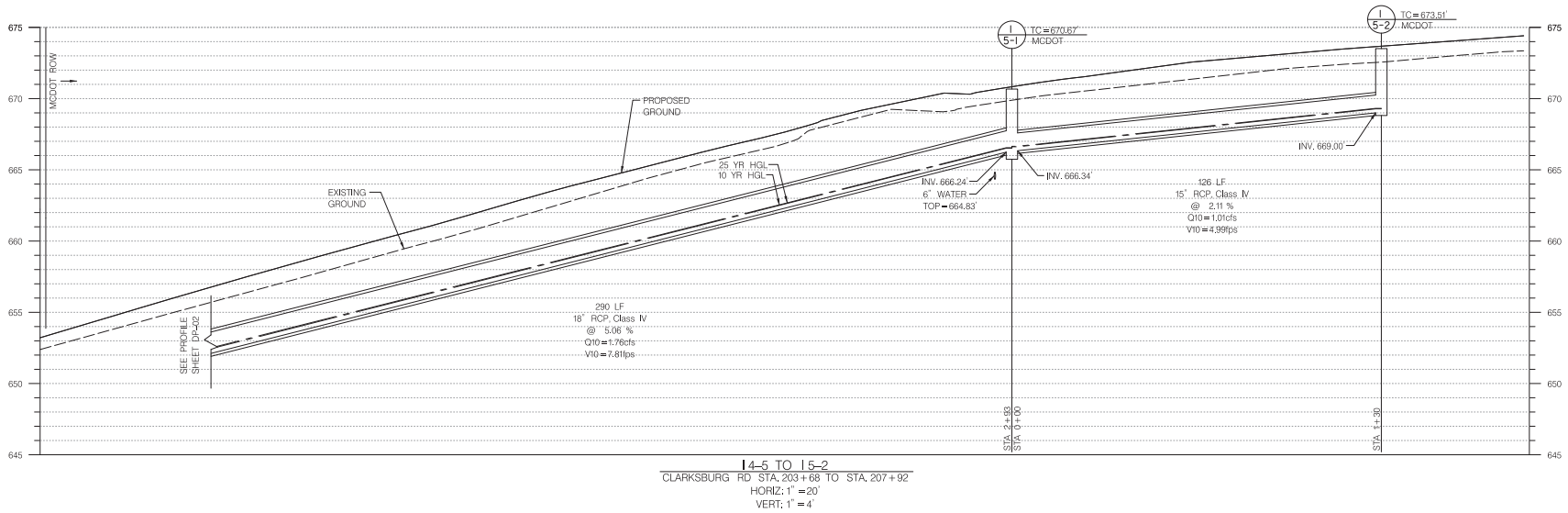
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE PROFILE SHEET

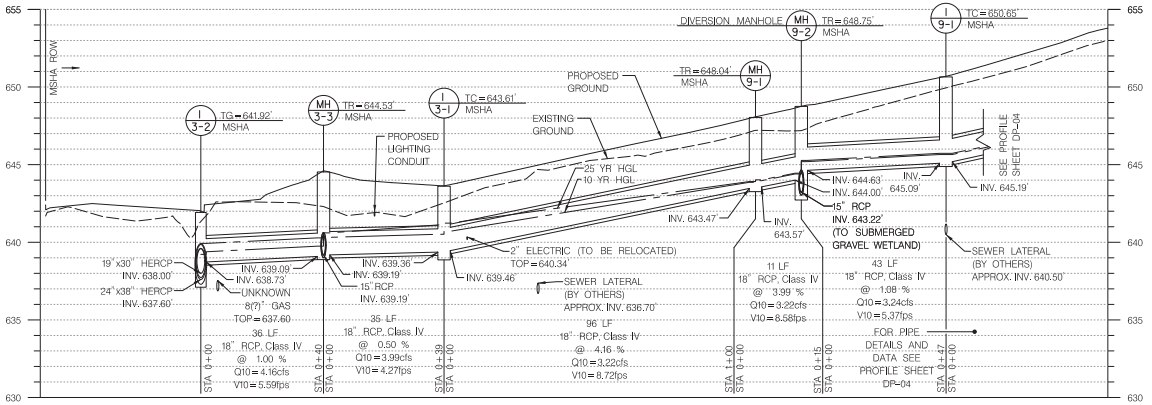
SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-02

DPS SC/SWM PERMIT SHEET NO. 5 of 45

C.I.P. Project No. : 508000 27 of 119



I 4-5 TO I 5-2
CLARKSBURG RD STA. 203+68 TO STA. 207+92
HORIZ: 1" = 20'
VERT: 1" = 4



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

Gannett Fleming/GPI

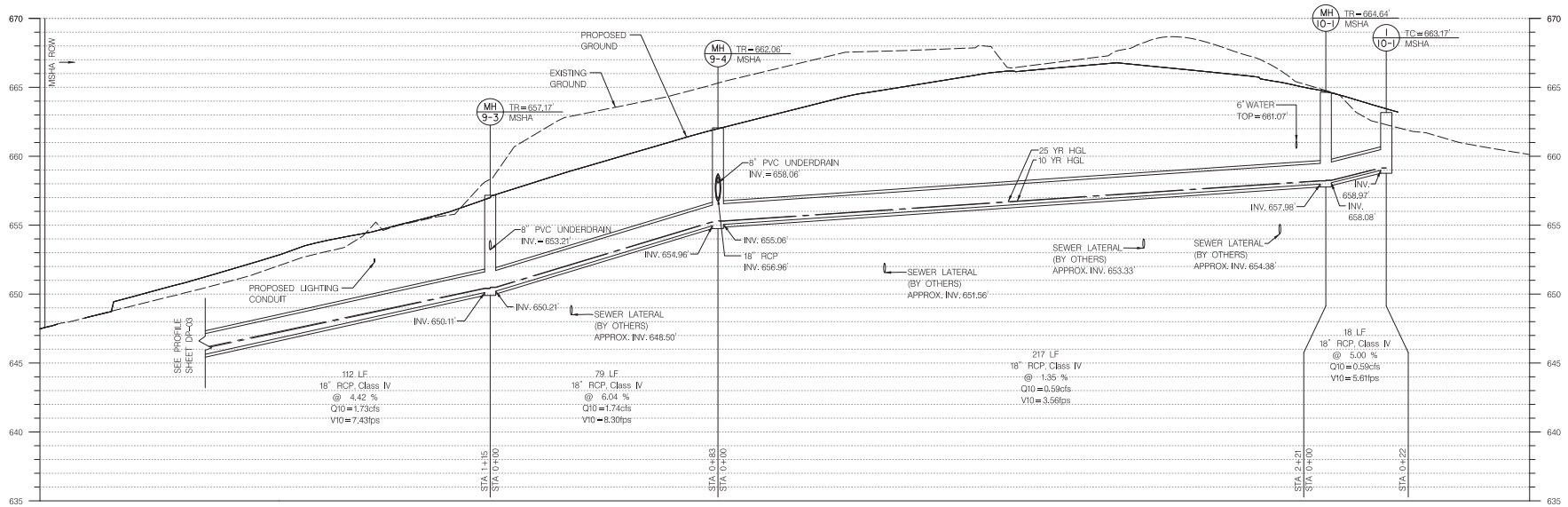
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE PROFILE SHEET

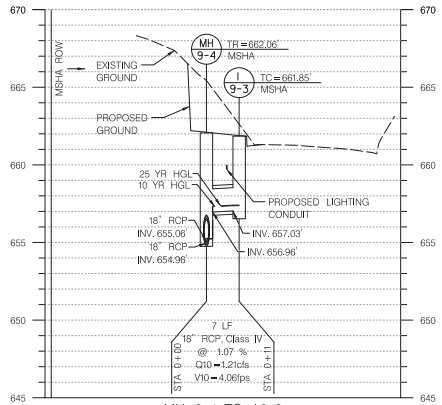
SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-03

DPS SC/SWM PERMIT SHEET NO. 6 of 45

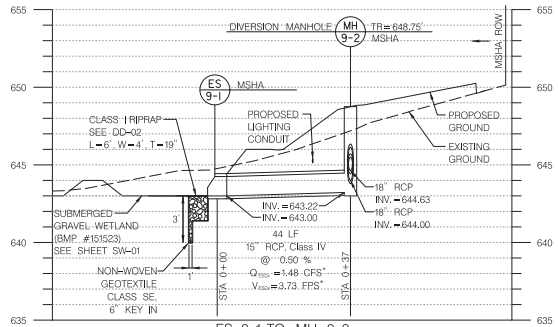
C.I.P. Project No. : 508000 28 of 119



I9-1 TO I10-1
MD 355 STA. 510+90 TO STA. 515+27
HORIZ: 1" = 20'
VERT: 1" = 4'



MH 9-4 TO I9-3
MD 355 STA. 512+87 TO STA. 512+87
HORIZ: 1" = 20'
VERT: 1" = 4'



ES 9-1 TO MH 9-2
MD 355 STA. 510+46 TO STA. 510+04
HORIZ: 1" = 20'
VERT: 1" = 4'

NOTE: Q AND V SHOWN ARE FOR ESDv STORM ONLY. PIPE DOES NOT RECEIVE FLOW FROM 10-YEAR STORM DUE TO DIVERSION MANHOLE (MH 9-2).

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT.

STORMWATER MANAGEMENT: ESD TO THE MEP AND OUTFALL RESTORATION
REVIEWED DATE
APPROVED DATE
282558
SM FILE #

SEDIMENT CONTROL TECHNICAL REQUIREMENTS:
REVIEWED DATE
APPROVED DATE

ADMINISTRATIVE REQUIREMENTS:
REVIEWED DATE
SEDIMENT CONTROL PERMIT NO. 283849

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.

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.

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

Gannett Fleming/GPI

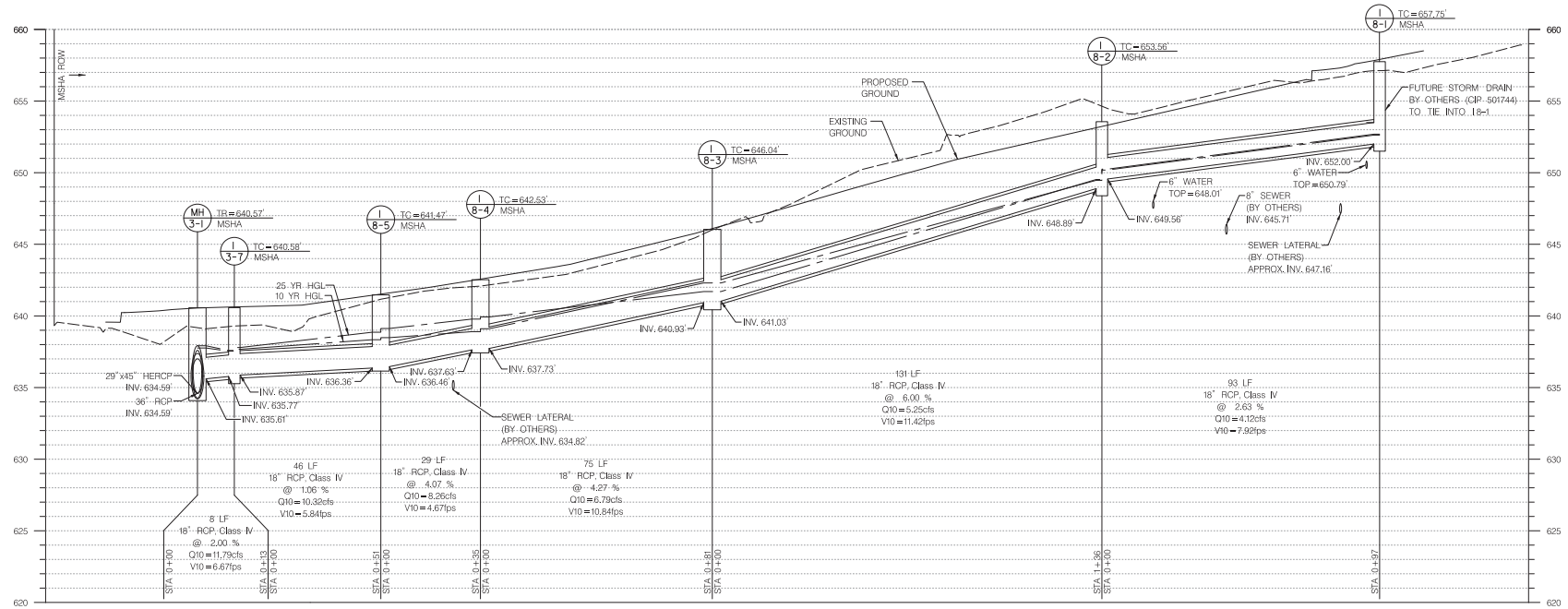
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE PROFILE SHEET

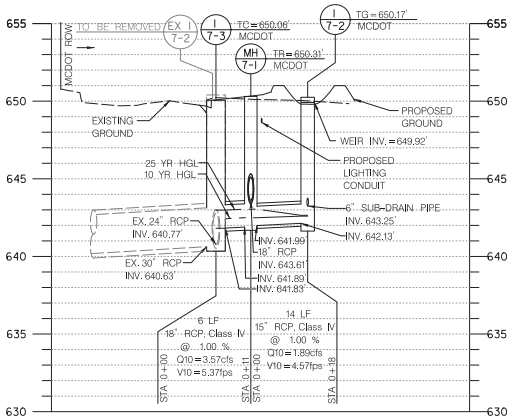
SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-04

DPS SC/SWM PERMIT SHEET NO. 7 of 45

C.I.P. Project No. : 508000 29 of 119



MH 3-1 TO I8-1
MD 355 STA. 507+48 TO STA. 503+35
HORIZ: 1" = 20'
VERT: 1" = 4'



I7-3 TO I7-2
CLARKSBURG RD STA. 216+64 TO 216+68
HORIZ: 1" = 20'
VERT: 1" = 4'

NOTE:
REMOVAL OF EXISTING INLET EX I7-2 WILL NOT BE MEASURED BUT WILL BE INCIDENTAL TO THE PLACEMENT OF THE PROPOSED STORM DRAIN PIPE AND STRUCTURES PER SPEC. SECTION 305.04.07.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

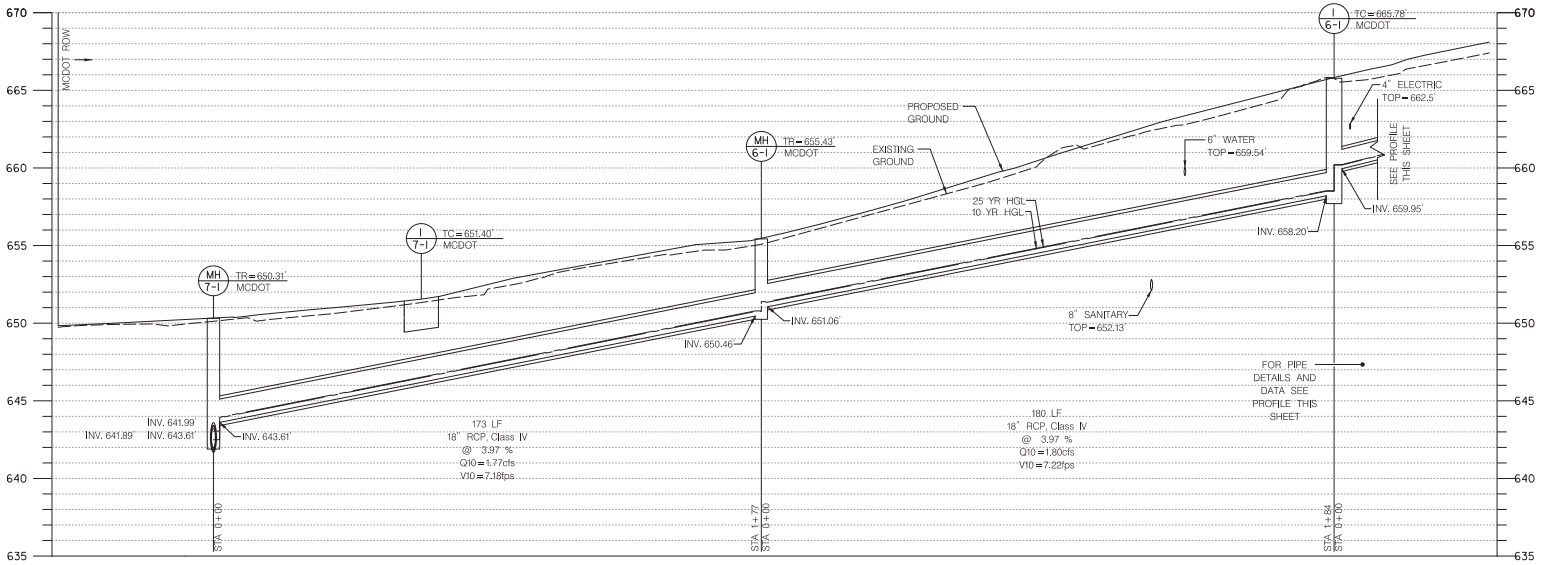
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

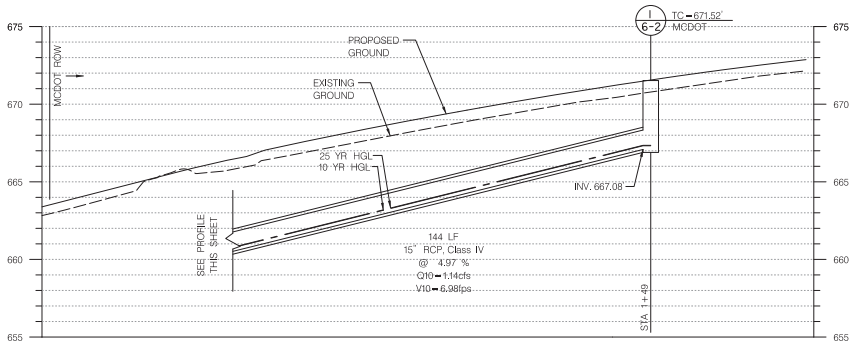
DRAINAGE PROFILE SHEET

SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-05

DPS SC/SWM PERMIT SHEET NO. 8 of 45

C.I.P. Project No. : 508000 30 of 119





Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE PROFILE SHEET

SCALE : AS SHOWN DATE: SEPTEMBER 2020 DP-06

DPS SC/SWM PERMIT SHEET NO. 9 of 45

C.I.P. Project No. : 508000 31 of 119

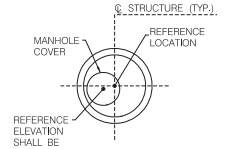
STRUCTURE SCHEDULE

DWG NO.	STRUCT. ID	TYPE	STD. NO.	OWNER	BASELINE	STATION	OFFSET (FT)	TOP OF STRUCTURE (FT)	DOWNSTREAM INVERT (FT)	TOTAL DEPTH (FT)	VERTICAL DEPTH (FT)	REMARKS
PS-03	I 3-1	PRECAST CIRCULAR COG INLET	MD 374.62	MSHA	MD 355	509+38.9	29.6 RT	TC 643.61	639.36	4.25	--	10' TROUGH OPENING, 18" RCP, 48" DIAMETER
PS-03	I 3-2	PRECAST TYPE S COMBINATION INLET DOUBLE GRATE TANDEM	MD 374.71	MSHA	CLARKSBURG	201+11.2	31.0 LT	TG 641.92	637.60	4.32	0.82	24"X38" HERCP
PS-03	I 3-3	"B" INLET	MC-502.01	MCDOT	CLARKSBURG	201+80.4	20.0 RT	TC 645.85	641.05	4.80	--	20' TROUGH OPENING, 18" RCP
PS-03	I 3-4	PRECAST SQUARE COG INLET	MD 374.51	MSHA	CLARKSBURG	200+93.5	20.0 RT	TC 641.65	635.25	6.40	0.23	20' TROUGH OPENING, 29"x45" HERCP, 6'X6'BOX
PS-03	I 3-5	SHA DOUBLE OPENING TYPE K INLET OPEN END GRATE	MD 378.05	MSHA	MD 355	507+85.6	58.8 RT	TG 638.67	634.96	3.71	0.21	15" RCP
PS-03	I 3-6	PRECAST CIRCULAR COS INLET	MD 374.63	MSHA	MD 355	507+97.6	35.5 RT	TC 640.17	635.65	4.52	--	10' TROUGH OPENING, 15" RCP, 48" DIAMETER
PS-03	I 3-7	PRECAST SQUARE COG INLET	MD 374.51	MSHA	MD 355	507+34.9	24.0 RT	TC 640.58	635.77	4.81	--	15' TROUGH OPENING, 18" RCP, 4'X4'BOX
PS-03	I 3-8	SHA DOUBLE OPENING TYPE K INLET OPEN END GRATE	MD 378.05	MSHA	MD 355	509+62.6	87.6 RT	TG 644.17	639.47	4.7	1.20	15" RCP
PS-03	MH 3-1	72" DIAMETER PRECAST MANHOLE	MD 384.05	MSHA	MD 355	507+47.8	26.9 RT	TR 640.57	634.59	5.98	--	29"X45" HERCP
PS-03	MH 3-2	72" DIAMETER PRECAST MANHOLE	MD 384.05	MSHA	MD 355	507+91.8	45.6 RT	TR 640.38	634.81	5.57	--	29X45" HERCP
PS-03	MH 3-3	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	509+36.0	69.8 RT	TR 644.53	639.09	5.62	--	18" RCP
PS-03	MH 3-4	60" DIAMETER PRECAST MANHOLE	MD 384.03	MCDOT	CLARKSBURG	201+41.9	33.7 LT	TR 643.48	639.11	4.37	--	19"X30" HERCP
PS-03	EW 3-1	STANDARD TYPE F ENDWALL CONCRETE ROUND PIPE	MD 358.01	MSHA	MD 355	507+34.5	37.4 LT	N/A	634.41	--	--	36" RCP, MODIFICATION CASE 2 (MD 358.03)
PS-04	I 4-2	SHA DOUBLE OPENING TYPE K INLET OPEN END GRATE	MD 378.05	MCDOT	CLARKSBURG	202+17.2	64.6 LT	TG 644.39	640.52	4.22*	0.72	19"X30" HERCP, TOTAL DEPTH MEASURED FROM 12" SUB-DRAIN NOT 15" RCP OUT. SEE NOTE BELOW.
PS-04	I 4-3	"B" INLET	MC-502.01	MCDOT	CLARKSBURG	202+17.2	31.0 LT	TC 647.39	640.15	7.24	--	10' TROUGH OPENING, 19"X30" HERCP
PS-04	I 4-4	"B" INLET	MC-502.01	MCDOT	CLARKSBURG	203+44.9	31.0 LT	TC 653.56	648.32	5.24	--	10' TROUGH OPENING, 18" RCP
PS-04	I 4-5	MODIFIED COG INLET	SEE DD-05	MCDOT	CLARKSBURG	203+68.3	20.0 RT	TC 655.91	651.51	4.40	--	20' TROUGH OPENING, 18" RCP
PS-04	MH 4-1	STANDARD SHALLOW MANHOLE 4 FT SQUARE	MD 383.00	MCDOT	CLARKSBURG	203+15.8	34.4 LT	TR 652.14	648.10	4.04	0.21	18" RCP, TYPE A FRAME
PS-04	EW 4-1	STANDARD TYPE C ENDWALL CONCRETE ROUND PIPE	MD 354.01	MCDOT	CLARKSBURG	203+13.4	55.3 LT	N/A	648.00	--	--	18" RCP
PS-05	I 5-1	MODIFIED COG INLET	SEE DD-05	MCDOT	CLARKSBURG	206+62.5	20.0 RT	TC 670.67	666.24	4.43	--	10' TROUGH OPENING, 18" RCP
PS-05	I 5-2	MODIFIED COG INLET	SEE DD-05	MCDOT	CLARKSBURG	207+92.3	20.0 RT	TC 673.51	669.00	4.51	--	10' TROUGH OPENING, 15" RCP
PS-06	I 6-1	"B" INLET	MC-502.01	MCDOT	CLARKSBURG	213+12.1	20.0 RT	TC 665.78	658.20	7.58	--	10' TROUGH OPENING, 18" RCP
PS-06	I 6-2	"B" INLET	MC-502.01	MCDOT	CLARKSBURG	211+63.0	20.0 RT	TC 671.52	667.08	4.44	--	10' TROUGH OPENING, 15" RCP
PS-06	MH 6-1	48" DIAMETER PRECAST MANHOLE	MD 384.01	MCDOT	CLARKSBURG	214+97.3	22.1 RT	TR 655.43	650.46	4.97	--	18" RCP
PS-07	I 7-1	NON-STANDARD COG OPENING FOR 6" CURB	SEE DD-04	MCDOT	CLARKSBURG	216+05.9	20.0 RT	TC 651.40	--	--	--	10' OPENING
PS-07	I 7-2	SHA SINGLE OPENING TYPE K INLET OPEN END GRATE	MD 378.05	MCDOT	CLARKSBURG	216+68.3	50.0 RT	TG 650.17	641.88	8.29	4.79	18" RCP
PS-07	I 7-3	NON-STANDARD 72" PRECAST CIRCULAR COG INLET	SEE DD-06	MCDOT	CLARKSBURG	216+75.7	20.0 RT	TC 650.06	640.59	9.47	--	10' TROUGH OPENING, EX. 30" RCP
PS-07	MH 7-1	48" DIAMETER PRECAST MANHOLE	MD 384.01	MCDOT	CLARKSBURG	216+73.0	31.6 RT	TC 650.31	641.89	8.42	--	18" RCP
PS-08	I 8-1	MODIFIED COG INLET	SEE DD-05	MSHA	MD 355	503+35.4	13.0 RT	TC 657.75	652.00	5.75	--	15' TROUGH OPENING, 18" RCP
PS-08	I 8-2	MODIFIED COG INLET	SEE DD-05	MSHA	MD 355	504+32.9	14.2 RT	TC 653.56	648.89	4.67	--	15' TROUGH OPENING, 18" RCP
PS-08	I 8-3	NON-STANDARD 6' X 6' PRECAST SQUARE COG INLET	SEE DD-06	MSHA	MD 355	505+68.4	23.6 RT	TC 646.04	640.93	5.11	--	15' TROUGH OPENING, 18" RCP
PS-08	I 8-4	NON-STANDARD 6' X 6' PRECAST SQUARE COG INLET	SEE DD-06	MSHA	MD 355	506+49.1	24.0 RT	TC 642.53	637.63	4.90	--	15' TROUGH OPENING, 18" RCP
PS-08	I 8-5	NON-STANDARD 6' X 6' PRECAST SQUARE COG INLET	SEE DD-06	MSHA	MD 355	506+83.8	24.0 RT	TC 641.47	636.36	5.11	--	15' TROUGH OPENING, 18" RCP
PS-09	I 9-1	PRECAST SQUARE COG INLET	MD 374.51	MSHA	MD 355	510+89.3	19.1 RT	TC 650.65	645.09	5.56	--	20' TROUGH OPENING, 18" RCP, 4'X4' BOX
PS-09	I 9-3	PRECAST SQUARE COG INLET	MD 374.51	MSHA	MD 355	512+87.2	13.0 RT	TC 661.85	657.03	4.82	--	15' TROUGH OPENING, 18" RCP, 4'X4' BOX
PS-09	MH 9-1	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	510+38.8	25.5 RT	TR 648.04	643.47	4.57	--	18" RCP
PS-09	MH 9-2	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	510+46.0	38.4 RT	TR 648.75	643.22	5.53	--	18" RCP, DIVERSION MANHOLE (SEE DD-02)
PS-09	MH 9-3	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	512+04.8	26.0 RT	TR 657.17	650.11	7.06	--	18" RCP
PS-09	MH 9-4	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	512+87.2	26.0 RT	TR 662.06	654.96	7.10	--	18" RCP
PS-09	ES 9-1	STANDARD CONCRETE END SECTION ROUND CONCRETE PIPE	MD 368.01	MSHA	MD 355	510+10.9	56.9 RT	N/A	643.00	--	--	15" RCP
PS-10	MH 10-1	48" DIAMETER PRECAST MANHOLE	MD 384.01	MSHA	MD 355	515+06.0	25.9 RT	TR 664.64	657.98	6.66	--	18" RCP
PS-10	I 10-1	MODIFIED COG INLET	SEE DD-05	MSHA	MD 355	515+27.4	13.0 RT	TC 663.17	658.97	4.20	--	10' TROUGH OPENING, 18" RCP

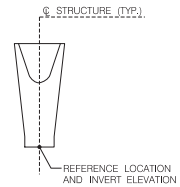
*NOTE: TOTAL DEPTH FOR I4-2 IS BASED ON INVERT OF 12" SUB-DRAIN INTO INLET. SEE DP-01 FOR INVERTS.

STRUCTURE SCHEDULE NOTES:

1. ALL VAULT DIMENSIONS ARE INSIDE DIMENSIONS.
2. DOWNSTREAM INVERT OUT IS LOWEST INVERT ELEVATION OF STRUCTURE.
3. TOTAL DEPTH IS THE DIFFERENCE BETWEEN DOWNSTREAM INVERT ELEVATION AND TC, TR, OR TG.



MANHOLE



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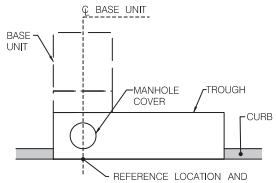
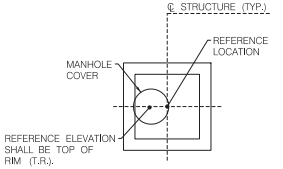
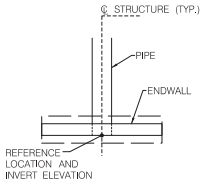


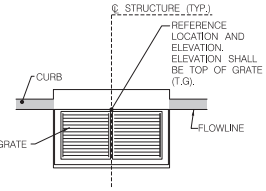
NON-STANDARD COG INLET



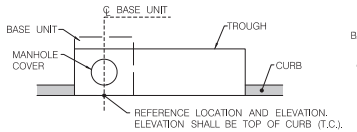
SQUARE SHALLOW MANHOLE



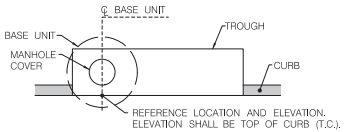
ENDWALL



SHA TYPE "S" INLET



SHA COG INLET FOR SQUARE BASE UNITS



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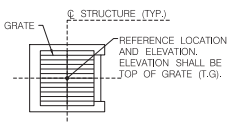

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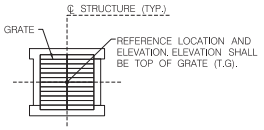
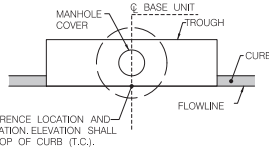
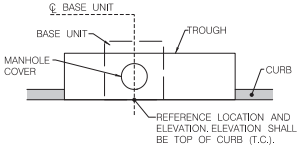


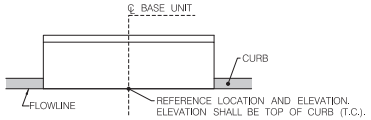
SHA DOUBLE OPEN TYPE "K" INLET



SHA COS INLET FOR ROUND BASE UNITS



"B" COG INLET



STANDARD AND NON-STANDARD COG OPENING

DRAINAGE STRUCTURE STAKEOUT LOCATION DETAILS
N.T.S.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE DETAILS

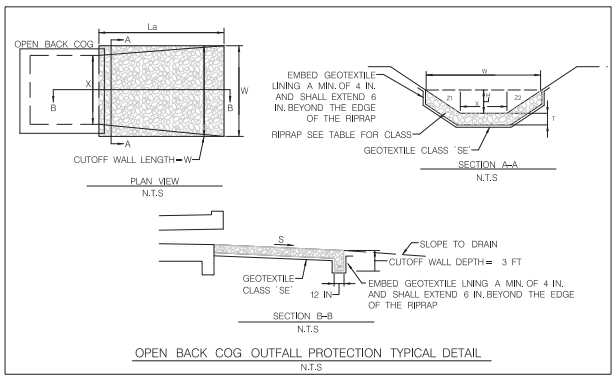
SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD-01

DPS SC/SWM PERMIT SHEET NO. 10 of 45

C.I.P. Project No. : 508000 32 of 119

PIPE SCHEDULE

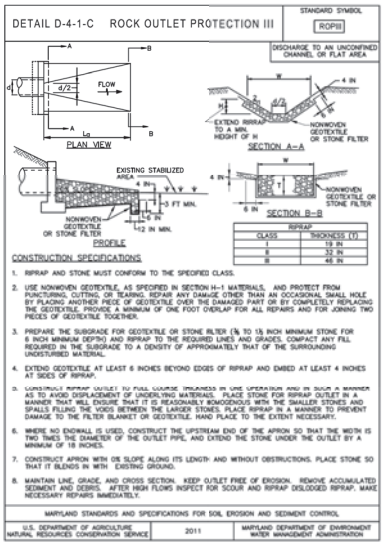
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE (IN)	TYPE	UPSTREAM INV. (FT)	DOWNSTREAM INV. (FT)	LENGTH (LF)
I 10-1	MH 10-1	18	RCP, CLASS IV	658.97	658.08	18
MH 10-1	MH 9-4	18	RCP, CLASS IV	657.98	655.06	217
MH 9-4	MH 9-3	18	RCP, CLASS IV	654.96	650.21	79
MH 9-3	I 9-1	18	RCP, CLASS IV	650.11	645.19	112
I 9-1	MH 9-2	18	RCP, CLASS IV	645.09	644.63	43
MH 9-2	MH 9-1	18	RCP, CLASS IV	644.00	643.57	11
MH 9-1	I 3-1	18	RCP, CLASS IV	643.47	639.46	96
I 3-1	MH 3-3	18	RCP, CLASS IV	639.36	639.19	35
MH 3-3	I 3-2	18	RCP, CLASS IV	639.09	638.73	36
I 3-2	I 3-4	24x38	HERCP, CLASS IV	637.60	636.64	52
I 3-4	MH 3-2	29x45	HERCP, CLASS IV	635.25	634.91	67
MH 3-2	MH 3-1	29x45	HERCP, CLASS IV	634.81	634.59	42
MH 3-1	EW 3-1	36	RCP, CLASS IV	634.59	634.41	63
I 4-2	I 4-3	19x30	HERCP, CLASS IV	640.52	640.25	27
I 4-3	MH 3-4	19x30	HERCP, CLASS IV	640.15	639.11	69
MH 3-4	I 3-2	19x30	HERCP, CLASS IV	639.11	638.00	26
I 3-8	MH 3-3	15	RCP, CLASS IV	639.47	639.19	28
I 3-6	MH 3-2	15	RCP, CLASS IV	635.65	635.60	5
I 3-5	MH 3-2	15	RCP, CLASS IV	634.96	634.91	10
I 5-2	I 5-1	15	RCP, CLASS IV	669.00	666.34	126
I 5-1	I 4-5	18	RCP, CLASS IV	666.24	651.61	290
I 4-5	I 3-3	18	RCP, CLASS IV	651.51	641.15	183
I 3-3	I 3-4	18	RCP, CLASS IV	641.05	636.94	81
I 4-4	MH 4-1	18	RCP, CLASS IV	648.32	648.20	24
MH 4-1	EW 4-1	18	RCP, CLASS IV	648.10	648.00	20
I 9-3	MH 9-4	18	RCP, CLASS IV	657.03	656.96	7
MH 9-2	ES 9-1	15	RCP, CLASS IV	643.22	643.00	44
I 8-1	I 8-2	18	RCP, CLASS IV	652.00	649.56	93
I 8-2	I 8-3	18	RCP, CLASS IV	648.89	641.03	131
I 8-3	I 8-4	18	RCP, CLASS IV	640.93	637.73	75
I 8-4	I 8-5	18	RCP, CLASS IV	637.63	636.46	29
I 8-5	I 3-7	18	RCP, CLASS IV	636.36	635.87	46
I 3-7	MH 3-1	18	RCP, CLASS IV	635.77	635.61	8
I 6-2	I 6-1	15	RCP, CLASS IV	667.08	659.95	144
I 6-1	MH 6-1	18	RCP, CLASS IV	658.20	651.06	180
MH 6-1	MH 7-1	18	RCP, CLASS IV	650.46	643.61	173
I 7-2	MH 7-1	15	RCP, CLASS IV	642.13	641.99	14
MH 7-1	I 7-3	18	RCP, CLASS IV	641.89	641.83	6



OPEN BACK COG OUTFALL PROTECTION TYPICAL DETAIL
N.T.S

COG OPENING OUTFALL PROTECTION SCHEDULE

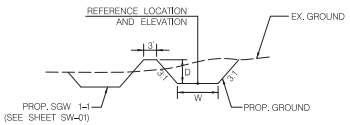
STRUCTURE ID	La (FT)	W (FT)	T (IN)	X (FT)	H (FT)	CLASS	S	QTY (SY)	CUTOFF WALL (LF)	Q10 (CFS)	V10 (FPS)	Z1 (FT:FT)	Z2 (FT:FT)
I 7-1	10.0	12.0	19	10.0	0.50	CLASS I	33%	13	11.0	1.79	0.36	2:1	2:1



RIPRAP OUTFALL SCHEDULE

STRUCTURE ID	L (FT)	W (FT)	T (IN)	H (FT)	CLASS	TYPE	QTY (SY)	CUTOFF WALL (LF)	Q10 (CFS)	V10 (FPS)
EW 4-1	7.0	5.0	19	1.50	CLASS I	ROP III	4	N/A	1.78	1.01
ES 9-1	6.0	4.0	19	1.25	CLASS I	ROP III	3	4.0	1.48*	3.73*

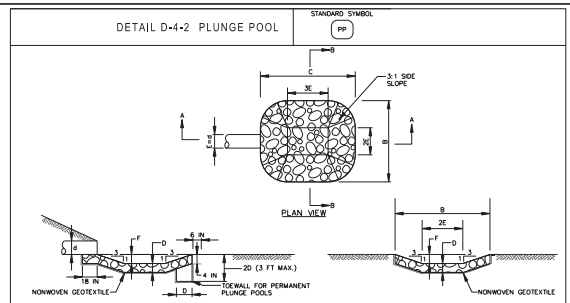
*NOTE: THE Q10 AND V10 SHOWN FOR THIS OUTFALL ARE THE Q AND V FOR THE ESDv STORM. THIS OUTFALL ONLY RECEIVES THE RUNOFF FOR THIS STORM DUE TO THE FLOW SPLITTER UPSTREAM.



DITCH TYPICAL SECTION
N.T.S.

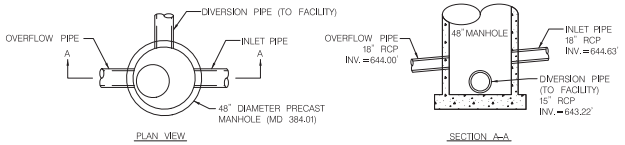
DITCH SCHEDULE

ID	STATION FROM	STATION TO	BASELINE	STATION	OFFSET	ELEV. (FT)	W (LF)	D (LF)	REMARKS	STABILIZATION QTY (SY)
DT-4-01	201+31.3	202+13.3	CLARKSBURG	201+31.3	159.8 LT	645.00	2	1.0	SEE SHEET DD-05 FOR SSM DETAIL	TYPE A SSM: 357
			CLARKSBURG	201+77.0	137.9 LT	644.56	2	1.0		
			CLARKSBURG	202+22.0	114.8 LT	644.11	2	1.0		
			CLARKSBURG	202+33.6	108.5 LT	644.00	2	1.0		
			CLARKSBURG	202+41.4	97.5 LT	643.94	2	1.0		
			CLARKSBURG	202+37.0	78.5 LT	643.85	2	1.0		
			CLARKSBURG	202+13.3	62.8 LT	643.72	2	1.0		



PLUNGE POOL SCHEDULE

STRUCTURE ID	B (FT)	C (FT)	D (IN)	d (IN)	E (FT)	F (FT)	CLASS	Q10 (CFS)	V10 (FPS)	QTY (SY)	CUTOFF WALL (LF)
EW 3-1	15.00	18.00	19	36	3.00	1.50	CLASS I	32.22	4.56	29	15



DIVERSION MANHOLE (MH 9-2) SCHEMATIC
N.T.S.

NOTES:
1. CONTRACTOR MUST VERIFY THE DIMENSIONS BETWEEN THE DIVERSION PIPE AND THE OVERFLOW PIPE PRIOR TO BACKFILL OF THE STRUCTURE AND NOTIFY THE DESIGN ENGINEER IMMEDIATELY OF ANY DISCREPANCY WITH THE DIMENSIONS ON THE APPROVED PLANS. STRUCTURES BUILT INCORRECTLY WILL REQUIRE REMOVAL AND REPLACEMENT.
2. DIVERSION MANHOLE WILL BE MEASURED AND PAID FOR AS 48" DIAMETER PRECAST MANHOLE.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

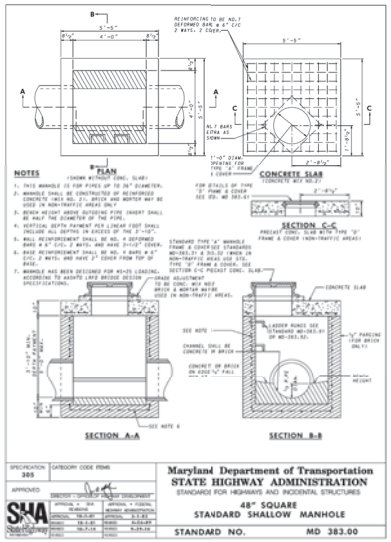
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

DRAINAGE DETAILS

SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD-02

DPS SC/SWM PERMIT SHEET NO. 11 of 45

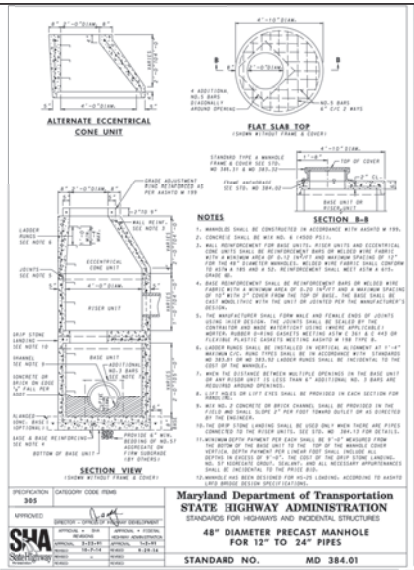
C.I.P. Project No. : 508000 33 of 119



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

48" SQUARE
STANDARD SHALLOW MANHOLE

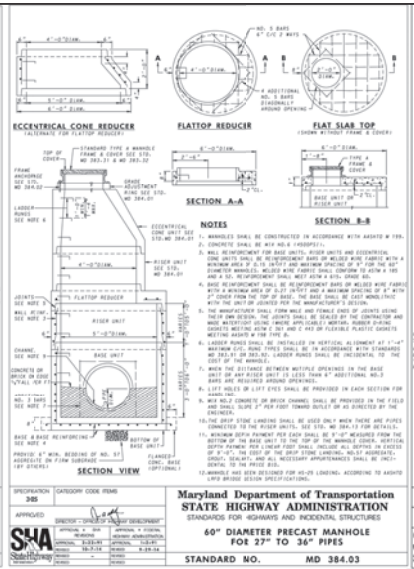
STANDARD NO. MD 383.00



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

48" DIAMETER PRECAST MANHOLE
FOR 12" TO 24" PIPES

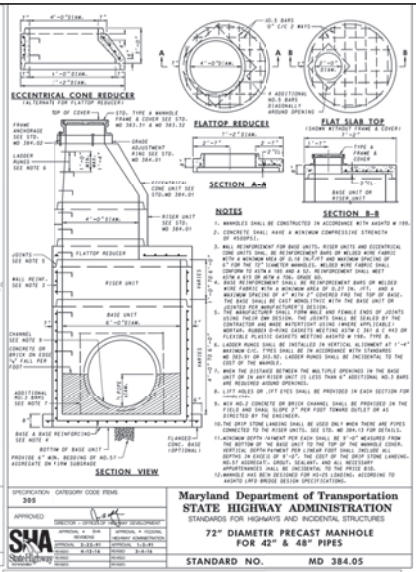
STANDARD NO. MD 384.01



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

60" DIAMETER PRECAST MANHOLE
FOR 27" TO 36" PIPES

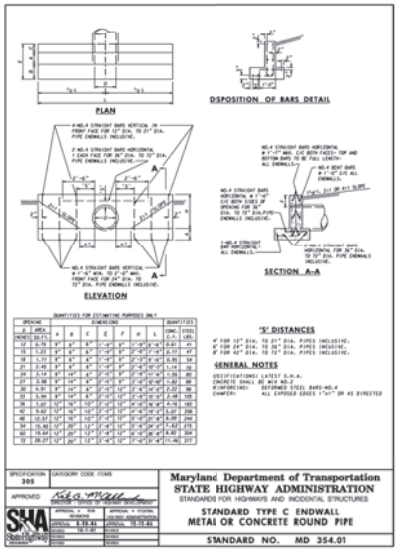
STANDARD NO. MD 384.03



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

72" DIAMETER PRECAST MANHOLE
FOR 42" & 48" PIPES

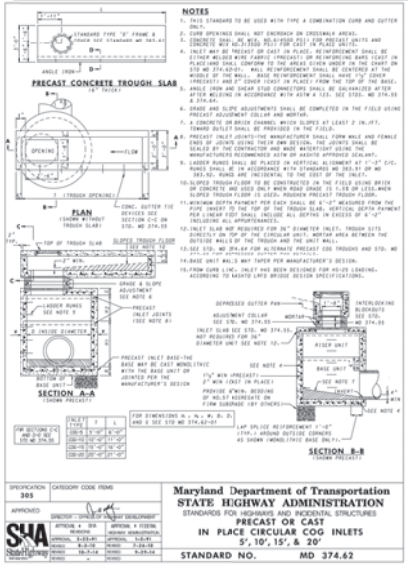
STANDARD NO. MD 384.05



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

STANDARD TYPE C ENDWALL
METAL OR CONCRETE ROUND PIPE

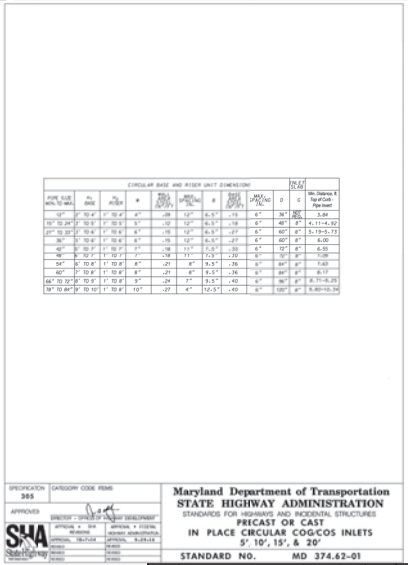
STANDARD NO. MD 354.01



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

PRECAST OR CAST
IN PLACE COG INLETS
5', 10', 15', & 20'

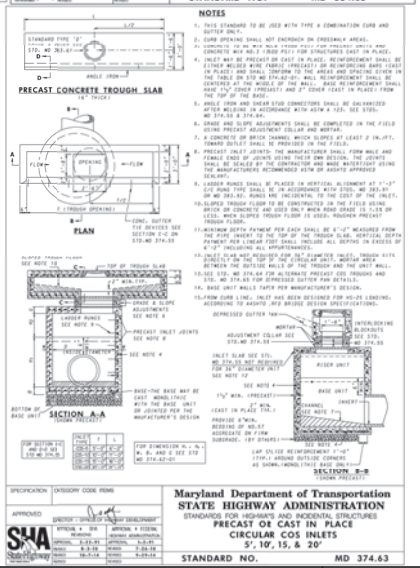
STANDARD NO. MD 374.62



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

PRECAST OR CAST
IN PLACE CIRCULAR COG-COS INLETS
5', 10', 15', & 20'

STANDARD NO. MD 374.62-01



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

PRECAST OR CAST IN PLACE
CIRCULAR COS INLETS
5', 10', 15, & 20'

STANDARD NO. MD 374.63

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

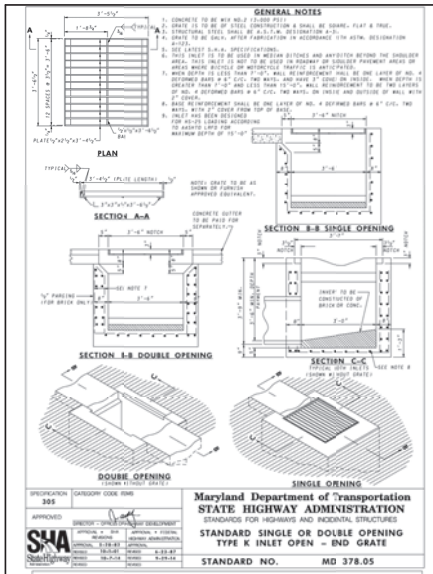
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

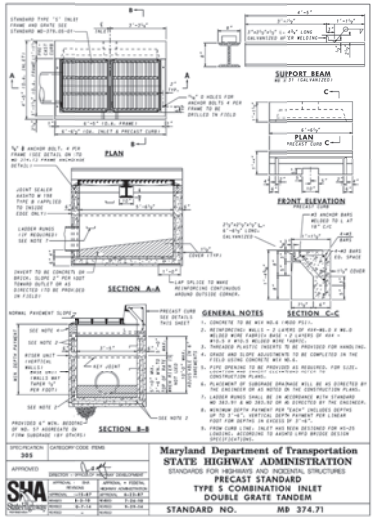
DRAINAGE DETAILS

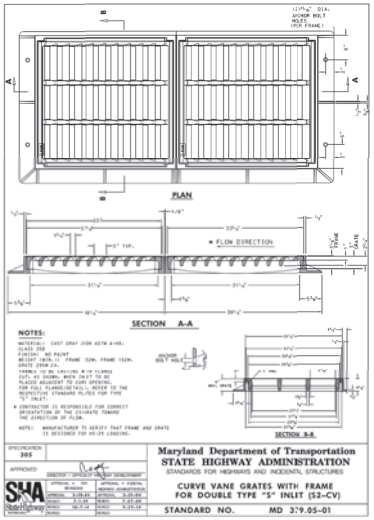
SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD-03

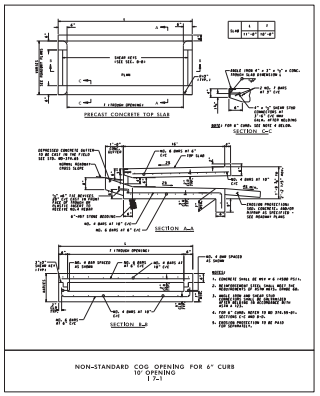
DPS SC/SWM PERMIT SHEET NO. 12 of 45

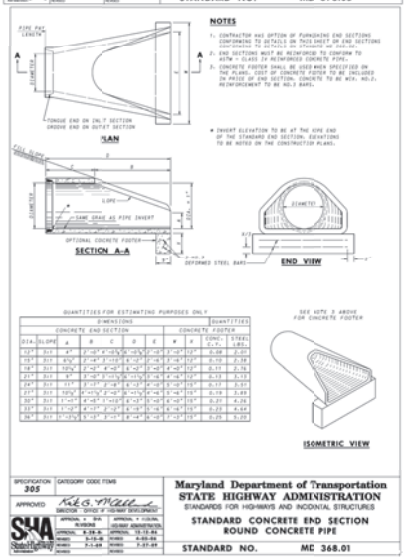
C.I.P. Project No. : 508000 34 of 119

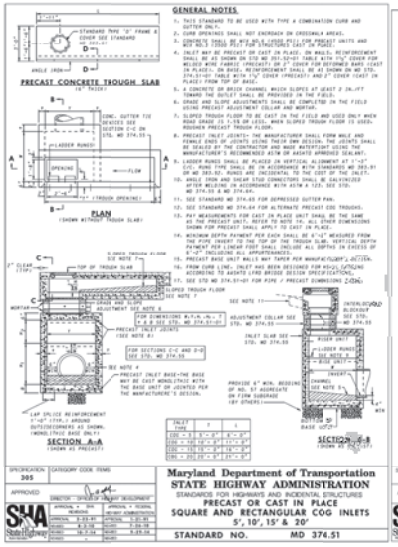


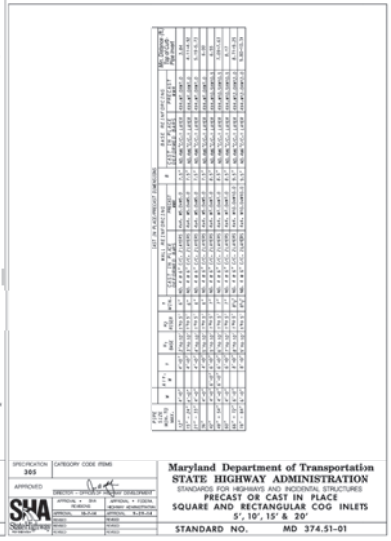


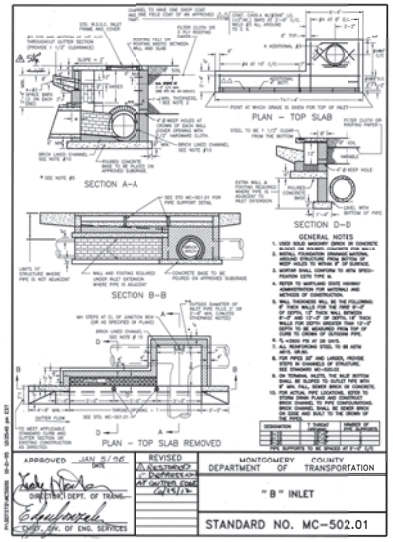












NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

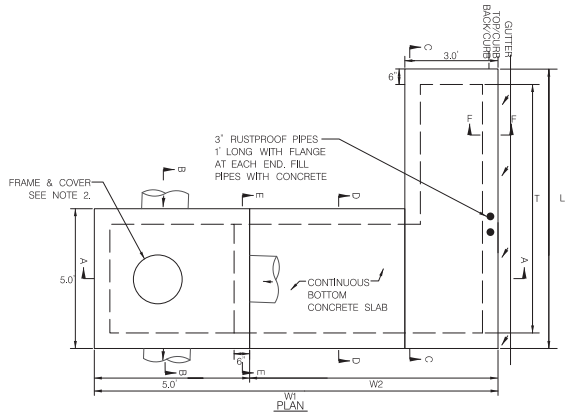
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

DRAINAGE DETAILS

SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD—04

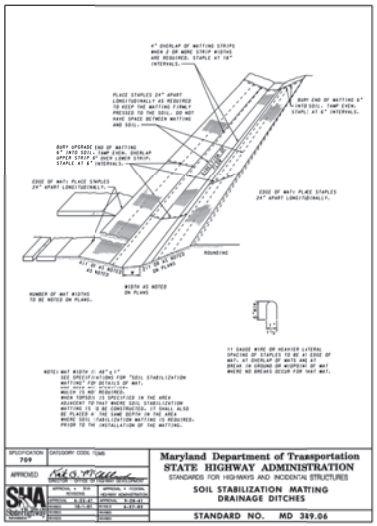
DPS SC/SWM PERMIT SHEET NO. 13 of 45

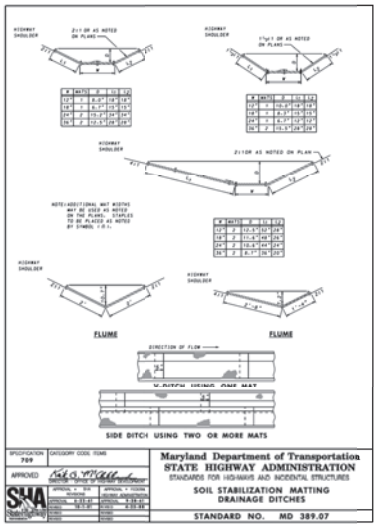
C.I.P. Project No. : 508000 35 of 119

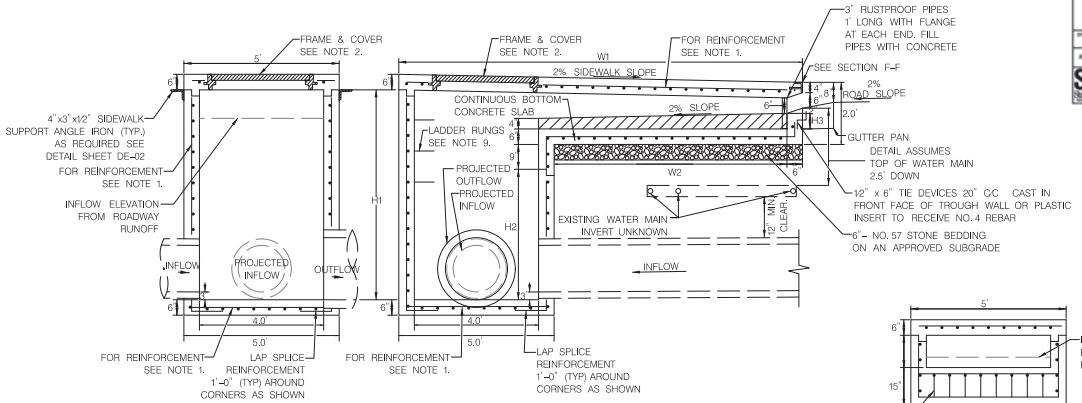


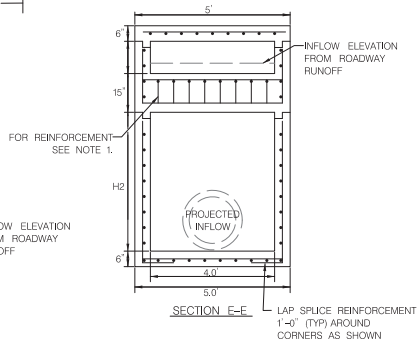
NOTES

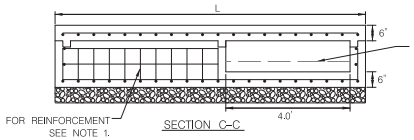
1. INLET MAY BE PRECAST OR CAST IN PLACE. REINFORCEMENT SHALL BE NO. 4 BARS PLACED IN THE CENTER OF TOOLS, AND INCIDENTALS REQUIRED TO SATISFACTORILY CONSTRUCT THE INLET AND COMPLETE THE WORK. INLET WALLS AT 6" C/C TWO WAYS. REINFORCEMENT STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
2. FOR MANHOLE FRAME AND COVER SEE MD 383.61.
3. CONCRETE SHALL BE MIX NO. 3.
4. CURB OPENINGS SHALL NOT ENCROACH ON CROSSWALK AREAS.
5. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 INFT TOWARD THE OUTLET SHALL BE PROVIDED IN THE FIELD.
6. GRADE AND SLOPE ADJUSTMENTS SHALL BE COMPLETED IN THE FIELD USING PRECAST ADJUSTMENT COLLAR AND MORTAR.
7. SLOPED TROUGH FLOOR TO BE CAST IN THE FIELD AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS. WHEN SLOPED TROUGH FLOOR IS USED, ROUGHEN PRECAST TROUGH FLOOR.
8. PRECAST INLET JOINTS–THE MANUFACTURE SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING THE MANUFACTURER'S RECOMMENDED ASTM OR AASHTO APPROVED SEALANT.
9. LADDER RUNGS SHALL BE PLACED IN VERTICAL ALIGNMENT AT 1'-3" C/C. RUNGS ARE INCIDENTAL TO THE COST OF THE INLET.
10. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123. SEE STDS. MD 374.55 & MD 374.64.
11. SEE STANDARD MD 374.65 FOR DEPRESSED GUTTER PAN.
12. CUSTOM COG INLET SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH CUSTOM COG INLET. PAYMENT WILL BE FULL COMPENSATION FOR ALL CONCRETE, REINFORCEMENT, LADDER RUNGS, EXCAVATION, LABOR, EQUIPMENT.

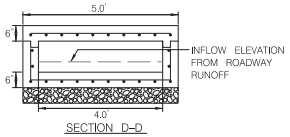


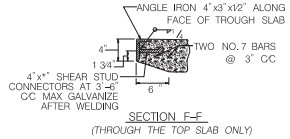












MODIFIED COG INLET
N.T.S.

MODIFIED COG INLET DIMENSION TABLE							
INLET	T(FT)	L(FT)	H1(FT)	H2(FT)	H3(IN)	W1(FT)	W2(FT)
1-S	10.0	11.0	4.12	1.65	5.44	11.0	6.0
1-S-1	10.0	11.0	4.15	1.68	5.44	11.0	6.0
1-S-2	10.0	11.0	4.23	1.76	5.44	11.0	6.0
1-S-3	15.0	16.0	5.47	3.00	5.44	11.0	6.0
1-S-4	15.0	16.0	4.39	1.92	5.44	11.0	6.0
1-C-1	10.0	11.0	3.92	1.45	5.44	11.0	6.0

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

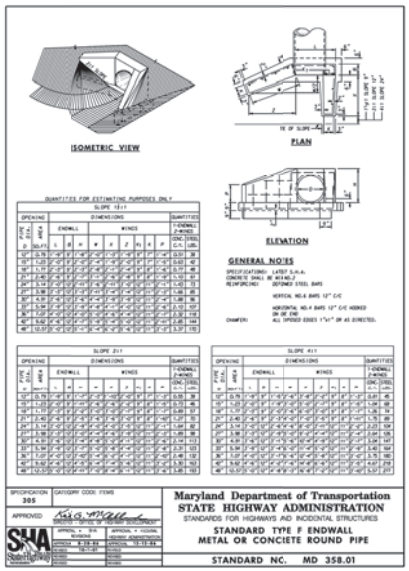
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

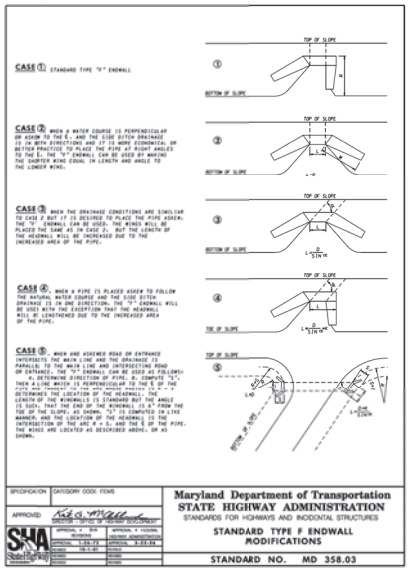
DRAINAGE DETAILS

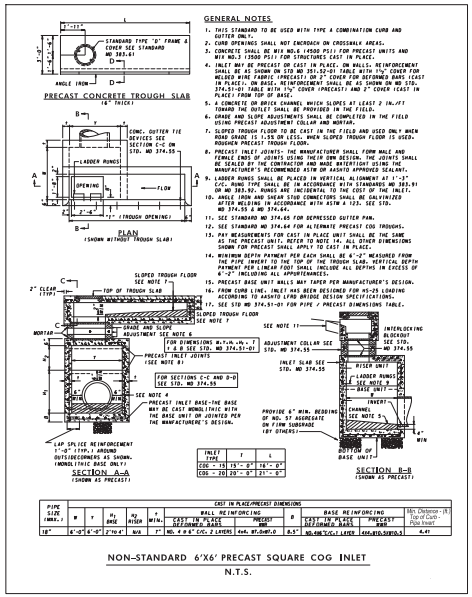
SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD-05

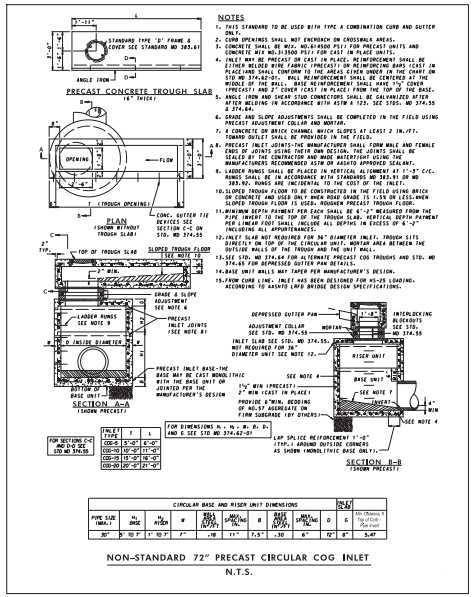
DPS SC/SWM PERMIT SHEET NO. 14 of 45

C.I.P. Project No. : 508000 36 of 119









NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: DMB

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

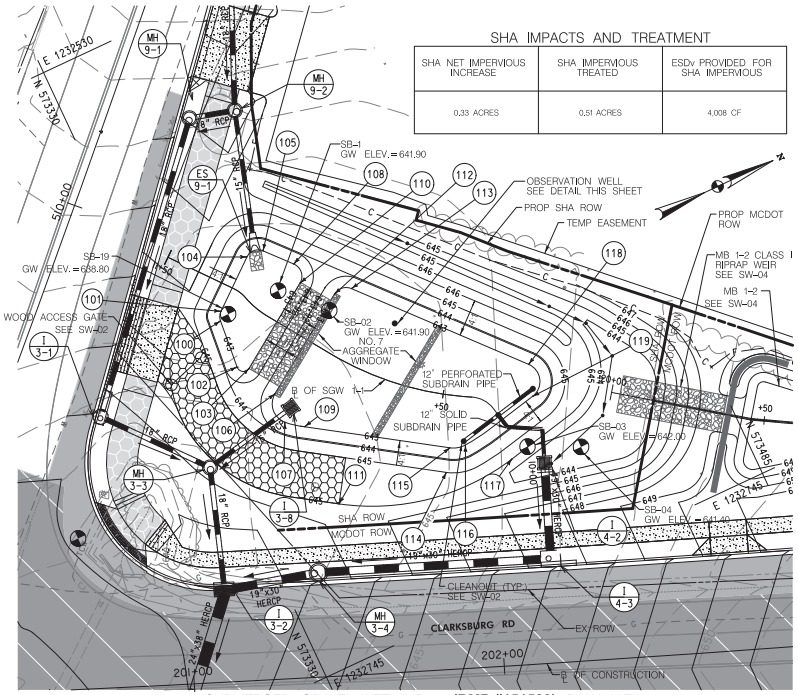
DRAINAGE DETAILS

SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 DD-06

DPS SC/SWM PERMIT SHEET NO. 15 of 45

C.I.P. Project No. : 508000 37 of 119

Gannett Fleming/GPI

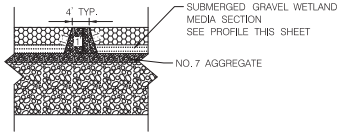


SUBMERGED GRAVEL WETLAND 1-1(**BMP #151523**) PLAN VIEW
SCALE: 1" = 20'

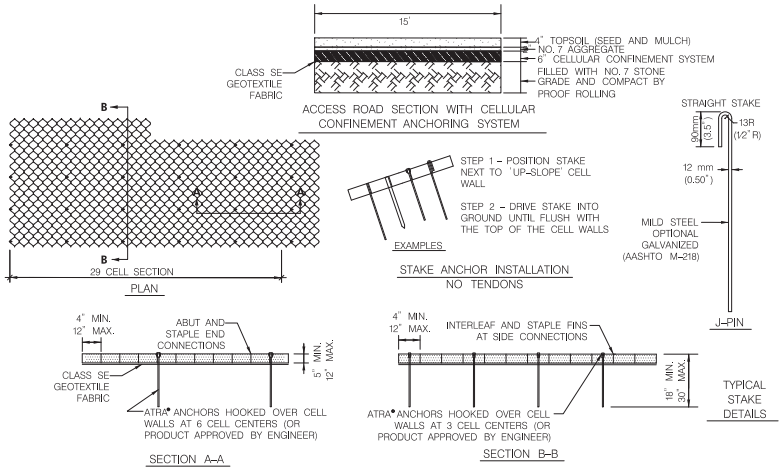
SHA IMPACTS AND TREATMENT

SHA NET IMPERVIOUS INCREASE	SHA IMPERVIOUS TREATED	ESDv PROVIDED FOR SHA IMPERVIOUS
0.33 ACRES	0.51 ACRES	4,008 CF

BIORETENTION SOIL MIX	
65 CY	CLARKSBURG - 201+14.5, 118.0 LT TO 202+17.4, 91.7 LT
COARSE SAND FOR STORMWATER MANAGEMENT FACILITIES	
33 CY	CLARKSBURG - 201+14.5, 118.0 LT TO 202+17.4, 91.7 LT
NO 7 AGGREGATE FOR STORMWATER MANAGEMENT FACILITIES	
43 CY	CLARKSBURG - 201+14.5, 118.0 LT TO 202+17.4, 91.7 LT
NO 57 AGGREGATE FOR STORMWATER MANAGEMENT FACILITIES	
206 CY	CLARKSBURG - 201+14.5, 118.0 LT TO 202+17.4, 91.7 LT
CLASS I EXCAVATION	
343 CY	CLARKSBURG - 201+14.5, 118.0 LT TO 202+17.4, 91.7 LT
CLASS I RIPRAP FOR SLOPE AND CHANNEL PROTECTION	
44 SY	CLARKSBURG - 201+27.8, 97.3 LT TO 201+46.1, 124.2 LT (WEIR)
12" SUB-DRAIN PIPE	
28 LF	CLARKSBURG - 201+91.4, 73.1 LT TO 202+14.9, 88.6 LT (PERFORATED)
25 LF	CLARKSBURG - 202+03.2, 80.9 LT TO 202+09.9, 63.6 LT (SOLID)
4 LF	CLARKSBURG - 201+91.4, 73.1 LT (SOLID, CLEANOUT)
4 LF	CLARKSBURG - 202+03.2, 80.9 LT (SOLID, CLEANOUT)
4 LF	CLARKSBURG - 202+14.9, 88.6 LT (SOLID, CLEANOUT)
ACCESS ROAD WITH CELLULAR CONFINEMENT LOAD SUPPORT SYSYTEM	
133 SY	CLARKSBURG - 200+93.1, 98.2 LT TO 201+52.8, 70.1 LT
WOOD ACCESS GATE	
1 EA	CLARKSBURG - 200+97.5, 96.6 LT TO 201+07.6, 104.9 LT

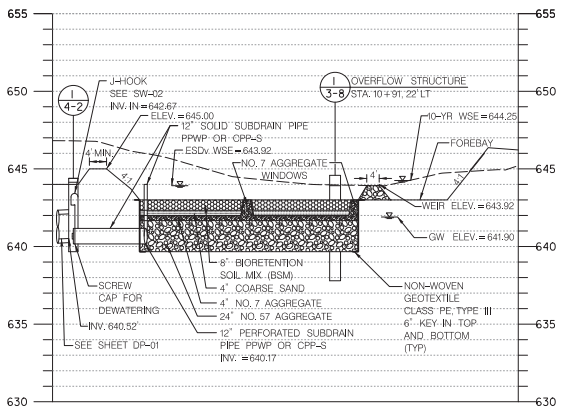


NO. 7 AGGREGATE WINDOW SECTION
NOT TO SCALE



TYPICAL CELLULAR CONFINEMENT ANCHOR SYSTEM
NOT TO SCALE

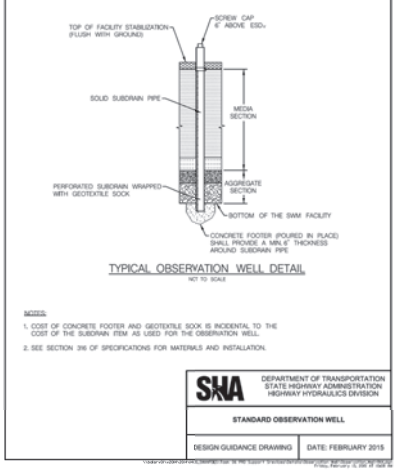
NOTES:
1. CONSTRUCTION OF THE PROPOSED SHA SUBMERGED GRAVEL WETLAND WILL CONFORM TO THE SHA STANDARD SPECIFICATION 316 FOR 'STORMWATER MANAGEMENT (SWM) FILTRATION FACILITIES' FROM THE JULY 2019 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS - WHICH CAN BE FOUND AT THE FOLLOWING LINK : https://policymanual.mdot.maryland.gov/mediawiki/index.php?title=316_STORMWAT R MANAGEMENT_(SWM)_FILTRATION_FACILITIES.
2. SUBMERGED GRAVEL WETLAND WILL BE OWNED AND OPERATED BY MDOT SHA. ALL MAINTENANCE OPERATIONS WILL BE THE SOLE RESPONSIBILITY OF MDOT SHA.



SUBMERGED GRAVEL WETLAND 1-1(**BMP #151523**) SECTION
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

GRADING TABLE

NO	BASELINE	STATION	OFFSET(FT)		NORTHING	EASTING	ELEVATION
100	CLARKSBURG	201+14.59	116.32	LT	573347.7283	1232626.5963	643.00
101	CLARKSBURG	201+14.92	119.38	LT	573349.1696	1232623.8796	643.00
102	CLARKSBURG	201+19.18	101.23	LT	573346.2626	1232642.2774	643.00
103	CLARKSBURG	201+23.16	100.64	LT	573349.6929	1232644.3870	643.00
104	CLARKSBURG	201+24.34	136.44	LT	573364.1720	1232611.5366	643.00
105	CLARKSBURG	201+29.70	138.12	LT	573369.6957	1232611.9598	643.00
106	CLARKSBURG	201+31.03	91.90	LT	573353.6433	1232655.3201	643.00
107	CLARKSBURG	201+33.75	82.63	LT	573352.6801	1232664.9190	643.00
108	CLARKSBURG	201+39.53	133.34	LT	573376.8859	1232620.0041	643.00
109	CLARKSBURG	201+40.14	80.84	LT	573357.8880	1232668.9436	643.00
110	CLARKSBURG	201+41.21	127.09	LT	573376.0929	1232626.4207	643.00
111	CLARKSBURG	201+49.82	55.38	LT	573357.3242	1232696.1503	645.00
112	CLARKSBURG	201+52.21	122.90	LT	573384.6046	1232634.3435	643.00
113	CLARKSBURG	201+57.88	124.37	LT	573390.3338	1232635.0493	643.00
114	CLARKSBURG	201+85.16	63.48	LT	573392.9255	1232701.6007	645.00
115	CLARKSBURG	201+86.80	71.31	LT	573397.3196	1232694.9155	643.00
116	CLARKSBURG	201+91.90	71.92	LT	573402.2470	1232696.2126	643.00
117	CLARKSBURG	202+06.67	66.46	LT	573413.8837	1232706.6533	645.00
118	CLARKSBURG	202+14.06	96.55	LT	573431.6907	1232681.3186	643.00
119	CLARKSBURG	202+14.69	86.19	LT	573428.4884	1232691.1943	643.00



Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

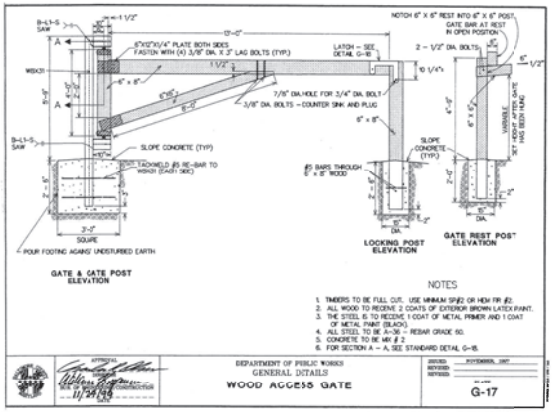
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

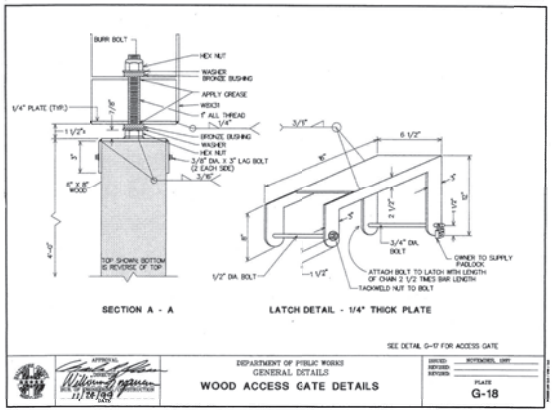
STORMWATER MANAGEMENT DETAILS SUBMERGED GRAVEL WETLAND 1-1

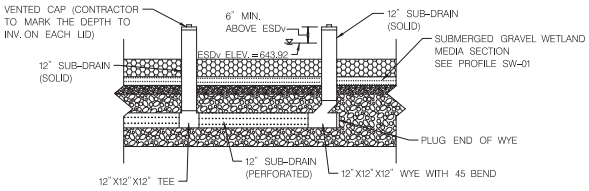
SCALE : AS SHOWN DATE: SEPTEMBER 2020 SW-01

DPS SC/SWM PERMIT SHEET NO. 16 of 45

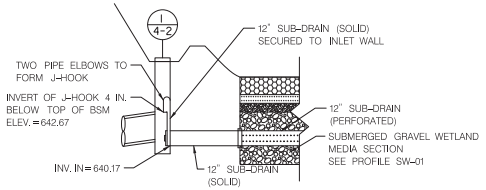
C.I.P. Project No. : 508000 38 of 119







TYPICAL SECTION: CLEANOUTS
NOT TO SCALE



J-HOOK
NOT TO SCALE

SWM FACILITY AS-BUILT CERTIFICATION DATA TABLE FOR N-2 SUBMERGED GRAVEL WETLAND

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
SGW 1-1 (BMP #151523)	N/A	16-AP-MO-004-XX

ACTIVITY	ADDITIONAL SUPPORTING DOCUMENTATION (SUBMIT 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	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF SUB-DRAIN, VERIFIED TYPE IS RPWP OR CPP-S, AND HAS SLOTTED PERFORATIONS.	☐ INSPECTION REPORT ☐ PHOTOGRAPHS PIPE TYPE: ☐ RPWP ☐ CPP-S	
OBSERVED INSTALLATION OF NO. 7 AGGREGATE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF COARSE SAND	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF APPROVED BIORETENTION SOIL MIX (BSM)	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ MATERIAL APPROVAL FORM	
OBSERVED INSTALLATION OF RELEASE STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS RELEASE STRUCTURE: ☐ INLET ☐ WEIR ☐ CHECK DAM ☐ OUTFALL ☐ NOT APPLICABLE ☐ OTHER (WRITE IN):	
OBSERVED FINAL GRADING OF SWM FACILITY	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
VERIFIED ESTABLISHMENT OF SPECIFIED VEGETATION	☐ INSPECTION REPORT ☐ PHOTOGRAPHS ☐ LANDSCAPE ACCEPTANCE LETTER	
OBSERVED VEGETATION AND VERIFIED AT LEAST A 50% SURVIVAL RATE, WITHIN SWM FACILITY, ONE YEAR AFTER INITIAL INSTALLATION	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
CELL 1 BOTTOM WIDTH (FT)	45		
CELL 1 BOTTOM LENGTH (FT)	33		
CELL 1 LEFT SIDE SLOPE (H:V) – CANNOT BE STEEPER THAN 3:1	4:1		
CELL 1 RIGHT SIDE SLOPE (H:V) – CANNOT BE STEEPER THAN 3:1	4:1		
CELL 2 BOTTOM WIDTH (FT)	39		
CELL 2 BOTTOM LENGTH (FT)	33		
CELL 2 LEFT SIDE SLOPE (H:V) – CANNOT BE STEEPER THAN 3:1	4:1		
CELL 2 RIGHT SIDE SLOPE (H:V) – CANNOT BE STEEPER THAN 3:1	4:1		
SUB-DRAIN PIPE DIAMETER (IN.) – MAY NOT DIFFER FROM VALUE SPECIFIED	12		
SUB-DRAIN INVERT OUT ELEVATION (FT)	640.17		
INVERTED J-HOOK OUTLET ELEVATION (FT.) – CANNOT BE MORE THAN 4 IN. BELOW CELL BOTTOM ELEVATION AND NOT HIGHER THAN THE CELL BOTTOM ELEVATION	642.67		
THICKNESS OF NO. 57 AGGREGATE (IN.)	24		
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 8 IN.	8		

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)	643.92		
ESDv PONDING DEPTH (IN.) – MAY NOT EXCEED 12 IN.	11		
2-YR WATER SURFACE ELEVATION (FT)	644.15		
10-YR WATER SURFACE ELEVATION (FT)	644.25		
10-YR FREEBOARD (IN.) – MAY NOT BE LESS THAN 9 IN. – MEASURED VERTICALLY FROM 10-YR WATER SURFACE ELEVATION TO PAVEMENT EDGE/SHOULDER	9.00		

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTANCE — APPROVING AUTHORITY: ☐ MDE ☐ PRD
ACCEPTED BY: _____ (NAME) DATE: _____
REVISED 04-10-2018

SWM FACILITY AS-BUILT CERTIFICATION DATA TABLE FOR FOREBAYS

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

SWM FACILITY NUMBER	MDE/PRD NUMBER	SHA CONTRACT NUMBER
SGW 1-1 (BMP #151523)	N/A	16-AP-MO-004-XX

ACTIVITY	SUPPORTING DOCUMENTATION AND INFORMATION (SUBMIT WITH SWM FACILITY AS-BUILT CERTIFICATION PACKAGE)	DATE(S) OF INSPECTION
PRIOR TO FOREBAY EXCAVATION: VERIFIED ESC MEASURES ARE INSTALLED AROUND THE FACILITY OR CONFIRMED SURROUNDING AREA IS STABILIZED AND CONFIRMED FOREBAY STAKEOUT	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED EXCAVATION AND GRADING OF FOREBAY	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF ENDWALLS AND END SECTIONS	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
BOTTOM ELEVATION (FT)	643.00		
SIDE SLOPES (H:V) – MAY NOT BE STEEPER THAN 3:1	4:1		
FREEBOARD (IN.) – MEASURED VERTICALLY FROM THE WATER SURFACE ELEVATION TO TOP OF EMBANKMENT/TOP OF FOREBAY	12		
INVERT IN ELEVATION (FT)	643.00		
INVERT OUT ELEVATION (FT)	N/A		
WEIR CREST ELEVATION (FT)	644.50		
TOP EMBANKMENT ELEVATION(FT)	645.00		

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTANCE — APPROVING AUTHORITY: ☐ MDE ☐ PRD
ACCEPTED BY: _____ (NAME) DATE: _____
REVISED 04-10-2018

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	MDE/PRD NUMBER	SHA CONTRACT NUMBER
SGW 1-1 (BMP #151523)	N/A	16-AP-MO-004-XX

ACTIVITY	SUPPORTING DOCUMENTATION AND INFORMATION (SUBMIT WITH SWM FACILITY AS-BUILT CERTIFICATION PACKAGE)	DATE(S) OF INSPECTION
OBSERVED EXCAVATION FOR STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF BEDDING	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED INSTALLATION OF STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	
OBSERVED PLACEMENT OF BACKFILL AROUND STRUCTURE	☐ INSPECTION REPORT ☐ PHOTOGRAPHS	

FEATURES FOR INLETS	DESIGN	AS-BUILT	DIFFERENCE
TOP ELEVATION (FT)	644.38		
INVERT IN ELEVATION (FT)	N/A		
INVERT OUT ELEVATION (FT)	634.74		
SUB-DRAIN INVERT IN ELEVATION (FT)	640.17		

SWM FACILITY AS-BUILT CERTIFICATION ACCEPTANCE — APPROVING AUTHORITY: ☐ MDE ☐ PRD
ACCEPTED BY: _____ (NAME) DATE: _____
REVISED 04-10-2018

STORMWATER MANAGEMENT AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY (FACILITIES) SHOWN ON THE PLANS AND INDIVIDUALLY IDENTIFIED BELOW HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS INCLUDED UNDER THE STATE HIGHWAY ADMINISTRATION PLAN REVIEW DIVISION APPROVAL, NUMBER ___ - 'R' - ___ EXCEPT AS NOTED IN GREEN ON THE "AS-BUILT" DRAWINGS. FURTHERMORE, THE GREEN-NOTED EXCEPTIONS DO NOT ADVERSELY AFFECT THE DESIGN AND/OR THE INTENDED PERFORMANCE OF THE FACILITY (FACILITIES).

BMP #151523

EACH SWM FACILITY IS IDENTIFIED INDIVIDUALLY BY A UNIQUE SWM FACILITY NUMBER

Name (Printed) Signature

Maryland Registration Number Date

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: _____."

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

NOTE: AS-BUILT CHECKLISTS CONTAINED IN THE CONTRACT DRAWINGS SHALL BE COMPLETED BY THE AS-BUILT INSPECTOR AND SUBMITTED TO THE SHA ALONG WITH THIS CERTIFICATION.

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
STORMWATER MANAGEMENT DETAILS
SUBMERGED GRAVEL WETLAND 1-1

SCALE : AS SHOWN DATE: SEPTEMBER 2020 SW-02

DPS SC/SWM PERMIT SHEET NO. 17 of 45

C.I.P. Project No. : 508000 39 of 119

CATEGORY 200
DRAINAGE

ACCESS ROAD WITH CELLULAR CONFINEMENT LOAD SUPPORT SYSTEM

DESCRIPTION. Construct access roads withcellular confinement load support systems.

MATERIALS.

No. 7 Aggregate	M 43, No. 7
Geotextile, Non-Woven	919.01, Class SE
Securing Pins and Staples	919.03
Topsoil	920.01
Fertilizer	920.03.01
Straw Mulch	920.04.01
Wood Cellulose Fiber	920.04.02
Soil Stabilization Matting (SSM)	920.05, Type A
Fasteners for SSM	920.05.02
Seed	920.06
Turfgrass Sod	920.06.03
SHA Turfgrass Seed Mix	920.06.07 (a)
SHA Special Purpose Seed Mix	920.06.07 (b)
SHA Temporary Seed Mix	920.06.07 (c)
Water	920.09.01

Geogrid. Non-woven geotextile strips thermos-welded into a cellular system. Cells shall be at least 2 in. long, 4 1/4 in. wide, and 2 in. deep. When extended, the grid shall cover at least 107 sq. ft.

CONSTRUCTION. Prepare subgrade per 208.03 and 211.03.02.

Place geotextile on the prepared surface for the full width of the area to be covered. Unroll the geotextile parallel to the base line. Do not drag the geotextile across the grade. Remove wrinkles and folds by stretching and pinning. Overlap the end of the roll in the direction of aggregate placement. Pin all roll ends and roll end overlays a maximum of 5 ft on center. Pin roll edges and roll edge overlaps a maximum of 5 ft on centr. For curves, fold or cut the geotextile and overlap in the direction of the turn. Pin folds in the geotextile a maximum of 5 ft on center. Immediately repair or replace damaged geotextile as directed. Overlap geotextile patches at least 3 ft into undamaged geotextile. Do not allow construction equipment on the bare geotextile.

Place aggregate on top of geotextile. Use the end dumping and spreading method. Place a single lift parallel to the baseline and at the thickness required to provide the specified compacted depth.

Starting with a panel of geogrid, use temporary pegging to hold one end and pull the geogrid out to its maximum length of 26 ft. This will reduce the width of the panel. Do not overextend. When

necessary, cut the geogrid to shape or size. Lay the next geogrid panel in the same way, adjacent to the first, and staple each of the open cell edges together to create a single panel out of the two grids. Continue with this method of installing remainingpanels of geogrid. Exercise care and do not walk on the geogrid. Walk only on timber boards placed on the geogrid when necessary to walk in areas of installed geogrid. When on a slope, fix the grid at regular intervals on the ground with pegs.

Do not stand on the empty geogrid itself until completely filled. Fill each end of the geogrid with a handful of aggregate to hold it in place. Ensure the geogrid is in constant contact with the ground when placing aggregate into the geogrid cells. Use a timber board on top of the geogrid to help better ensure contact is made. Once the ends have been filled, remove the temporary pegs or push them completely into the ground for improved stability. The geogrid may be filled manually or mechanically. If filled mechanically, do not drop the aggregate from more than 18 in. above the ground.

Rake the aggregate into the geogrid cells so that they are filled to the top. Once the area has been completed and the cells are filled to the top of the geogrid, place topsoil on the aggregate-filled geogrid cells per 701.03.

Placement of Topsoil. Place topsoil on the aggregate infill material to a minimum depth of 4 in. per 701.03.

Perform turfgrass establishment per Section 705 or turfgrass sod establishment per Section 708, whichever is specified. When turfgrass seed is specified, also install Type A soil stabilization matting (SSM) per Section 709.

MEASUREMENT AND PAYMENT. Access Road with Cellular Confinement Load Support System will be measured and paid for at the Contract unit price per square yard for Access Road with Cellular Confinement Load Support System. The payment will be full compensation for furnishing and installation of all geotextile, geogrid, aggregate, pegs, fasteners, pins, staples, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Topsoil will be measured and paid for per 701.04.

Soil Stabilization Matting (SSM) will be measured and paid for per 709.04.

Turfgrass Establishment will be measured and paid for per 705.04

Turfgrass Sod Establishment will be measured and paid for per 708.04.

Replacement of damaged geotextile with undamaged geotextile will be at no additional cost to the Administration.

317 STORMWATER MANAGEMENT (SWM) FACILITY AS-BUILT CERTIFICATION

317.01 DESCRIPTION

Submit a certification package that affirms that stormwater management (SWM) facilities and practices are constructed as specified or are functionally equivalent to the designs in the approved SWM Report, revising the certification package as needed until final acceptance.

317.01.01 SWM As-Built Engineer. The SWM As-Built Engineer (ABE) is responsible for assembling and certifying the SWM certification package. Duties include adequately documenting that the SWM facilities have been constructed as specified, and performing inspections during pertinent construction activities for SWM facilities and practices. The ABE shall be a Professional Engineer (P.E.) registered and licensed in the State of Maryland and who has at least three years of experience in SWM facility design and SWM facility construction. Submit one copy of the ABE's resume to the Engineer. The resume shall include the following.

(a) Full name of the ABE, License No. and expiration date.

(b) Name of employing company or firm.

(c) Contact information.

(d) Relevant work experience.

(e) Proof of valid certification of the Maryland Department of the Environment (MDE) Responsible Personnel for Erosion and Sediment Control training course (formerly "Green Card"). Note: All certifications for the former course MDE Responsible Personnel Training for Erosion and Sediment Control ("Green Card") expired on December 31,2016 and are no longer valid.

The ABE shall have the option to use designees, who are under the direct supervision of the ABE, to perform the following duties on behalf of the ABE.

(a) Documenting that the SWM facilities have been constructed as specified, including writing activity inspection reports, taking photographs, and obtaining copies of material approvals and material test results.

(b) Performing inspections during pertinent construction activities for SWM facilities and practices, completing the pertinent portions of the SWM facility as-built certification data tables.

When the ABE elects to use designees, submit the names and resumes indicating their experience in the design and inspection of SWM facilities, of those designees authorized by the ABE to represent the ABE-to-the Engineer. Only authorized designees may represent the ABE for the limited duties specified.

317.01.02 SWM Facility As-Built Certification Package. The SWM facility as-built certification package contains documentation that verifies that that all SWM facilities and practices on the Contract have been constructed as specified or are functionally equivalent to he designs in the approved SWM Report.

The SWM facility as-built certification package shall include the following for each SWM facility in the Contract, presented neatly and legibly, and organized in an easy-to-follow format.

(a) SWM facility construction inspection reports. The inspection reports shall include the following.

(1) The SWM facility identification number (BMP No or SWM Fac. No.) and type of SWM facility or practice.

(2) The date and location of the activity.

(3) Photographs, taken during inspections, that clearly show the construction activities as listed on the pertinent SWM facility as-built data tables, with narrative descriptions of what appears in the photographs, the dates the photographs were taken, and he locations.

(4) Verification of whether SWM facility as-built construction is as specified, noting any deviations from the Contract Documents and how the deviations have been addressed.

(b) Photographs of SWM facilities and practices after all landscaping has been installed and established, with narrative descriptions of what appears in the photographs.

(c) Copies of pertinent material approval forms.

(d) Copies of pertinent material and installation test reports and results.

(e) Completed as-built certification data tables.

(f) Green line as-built surveys of the SWM facilities and practices signed and sealed by a Professional Land Surveyor (PLS) who is registered and licensed in the State of Maryland. The as-built survey data shall be overlaid on the appropriate Contract plan sheet(s) and profile sheets, at the same scale and datum, and are coordinately correct. The as-built survey data shall be green in color, clearly legible and easily distinguishable from the Contract Document information. The SWM facility as-built surveys shall include the following.

(1) Contours. One-foot contour intervals or otherwise match the contour intervals shown in the Contract Documents. Contours shall cover the entire footprint of the SWM facility or practice as well as inflow and outflow conveyances when ditches or similar features convey runoff into or out of SWM facilities and practices.

(2) Drainage Structures. Includes all drainage structures within the footprint of the SWM facility, including but not limited to inlets, manholes, flow splitters, risers, weirs, end sections, headwalls, and end walls. As-built data shall include but is not limited to top of structure elevations, structure lengths, and structure widths; pipe inverts; pipe sizes, materials, and flow directions; orifice elevations; opening sizes; weir dimensions and elevations; check dam locations and dimensions; grates; and trash racks.

(3) Riprap and Aggregate. Includes dimensions of riprap and other areas within the footprint of the SWM facility and practice that show a surface layer of aggregate or riprap, including forebays.

(4) Embankment Information. Includes embankment heights, widths and elevations; clay core locations, dimensions, and elevations; cut-off trench locations, dimensions, and elevations; sediment filter diaphragm information; and sediment stair cradle information. Data that cannot be obtained from a field survey shall be provided by the ABE for inclusion with the SWM facility as-built survey.

(5) SWM Facility Maintenance Access Roads.

(6) Fences. Includes fence that surrounds the footprint of the SWM facility or practice.

(7) SWM Facility Profiles. Includes an overlay of green line as-built data on SWM facility profiles and typical sections including but not limited to check dam spacing; check dam top elevations, check dam dimensions, invert elevations, subbasin sizes, subbasin materials, aggregate and soil thicknesses, material types, clay core dimensions, and cut-off trench dimensions. Data that cannot be obtained from a field survey shall be provided by the ABE for inclusion with the SWM facility as-built survey.

(8) Certification. Seal, signature, license number, and date of license xpiration of the PLS who completes the SWM facility as-built survey.

(g) Applicable supporting computations demonstrating that the functionality of the SWM facilities and practices meet the approved designs as presented in the approved SWM Report. This is only necessary when tolerances are not met and shall include but is not limited to water surface elevations, freeboard, storage volume, depths, and other pertinent SWM functionality data that demonstrates the SWM facility performances meets the approved design.

(h) A narrative of justification for as-built deviations in SWM facilities and practices. This is only necessary when 317.01.02 (g) applies

(i) A copy of Final Acceptance from the Administration's Landscape Programs Division for the landscaping establishment.

(j) Seal, signature, license number, ad date of license expiration of the ABE.

317.01.03 Information Supplied by the Administration. Upon written request, the Administration will provide CADD files in DGN format and ne approved Final SWM Report in PDF format to facilitate completion of the SWM facility as-built certification package. Submit requests to the Engineer.

317.01.04 Submittals and Approval Process. Partial submittals of the SWM facility as-built package may be made as construction of each individual SWM facility and practice is completed. Otherwise, submit the entire SWM facility as-built paiage within 45 days of completion of construction activities associated with all SWM facilities and practices but not including establishment of the specified landscaping items. The landscaping phaseof SWM facilities and practices need not be completed to submit the SWM facility as-built certification package for Structural Acceptance but is required for Final Approval.

Resubmit the SWM facility as-built package with responses to all Administration comments that may be received. Resubmit as many times as necessary, updating the SWM facility as-built package as needed to address all Administration comments, and making any field adjustments as needed to correct deficiencies, until Structural Acceptance isissued. Some SWM facility types require approval from the Maryland Department of the Environment (MDE) in addition to approval from the Administration. Resubmit the SWM facility as-built package with responses to all MDE comments that may be received. The Administration will coordinate reviewsand correspondence with MDE.

Concurrent with the Administration review of the SWM facility as-built certification package for Structural Acceptance, ensure establishment of landscaping items continues and ensure the area is permanently stabilized. Once landscaping i established, ensure the remaining data table information is completed and submit the SWM facility as-suit certification package for Final Approval.

Submit the SWM facilities as-built packagethrough the Quality Assurance (QA) Toolkit.

317.02 MATERIALS

Not applicable.

317.03 CONSTRUCTION

Designate an ABE prior to beginning construction of SWM facilities and practices.

Failure to receive approval for the ABE, failure s ubmit information about the ABE designees, or failure of the ABE, or the ABE designees, to adequately monitor the specified construction activities will be grounds for replacement of the ABE and reconstruction of allwork on SWM facilities and practices that may have already been performed.

Perform all construction activities on SWM facilities and practices only in the presence of the ABE or the ABE designee. Failure to perform work in the presence of the ABE or the ABE designee will be grounds for removal and replacement of the ABE, and reconstruction of all work that may have already been performed.

Prior to beginning or continuing construction activities of SWM facilities and practices, ensure the ABE or the ABE designee is present. If the ABE or ABE designee is not present, suspend work on SWM facilities and practices and do not resume until the ABE or ABE designee is present for the activities.

Whenever the ABE or the ABE designee indicates that SWM facilities and practices under construction do not match the Contract Documents, immediately correct the deficiencies before moving to the next construction activity associated with SWM facilities and practices. If it is not possible to correct deficiencies due to the site conditions or constraints and not due to negligence and inasequate quality of work, cease work on SWM facilities and notify the Engineer.

Upon completion of constructing SWM facilities and practice, perform an as-built survey of the completed facility per 317.01.02 (f). Complete installation and establishment of landscaping items need not be completed to perform the as-built survey of SWM facilities and practices.

Submit the SWM facility as-built certification package per 317.01.04. Update SWM facilities as-built surveys when adjustments are made to address comments that may be received.

317.03.01 ABE Responsibilities. Ensure that the ABE performs the following.

(a) Is present for all activities specified on the SWM facilities as-built certification data tables, performs duties as specified, and records requisite information for the SWM facility as-built certification package. The ABE may elect to use i designee as specified in 317.01.01. Ensure the data is available at the Site and on-demand.

(b) Prepares written inspection reports for construction activities associated with SWM facilities and practices. The ABE may elect to use a designee as specified in 317.01.01.

(c) Takes photographs during construction activities of the SWM facilities and practices and of the completed SWM facilities, including photographs with completed landscape planting installation and establishment. The ABE may elect to use a designee as specified in 317.01.01.

(d) Obtains copies of material approvals for items associated with the SWM facilities and practices. The ABE may elect to use a designee as specified in 317.01.01.

(e) Obtains copies of compaction test results for SWM facility embankments. The ABE may elect to use a designee as specified in 317.01.01.

(f) Alerts the Contractor when SWM facilities and practices under construction do not match the Contract Documents. The ABE may elect to use a designee as specified in 317.01.01.

(g) When necessary, performs all computations but demonstrate SWM facilities and practices function in the manner as presented in the approved Final SWM Report, including with all revisions to the report that may result from Redline Revisions. At a minimum, the parameters examined by the ABE shall include but are nc limited to storage volumes, discharge rates, velocities, detention times, water surface elevations, freeboard, and all other information as recommended by the ABE and as requested by the Administration.

(h) Obtains copies of as-built surveys for the SWM facilities and practices.

(i) Prepares the SWM facility as-built certificationpackage.

317.03.02 Construction Tolerances. As follows. Values outside of tolerance may require computations per 317.03.01(g).

(a) Earthwork. Elevations within 3 in. (0.25 ft) of values specified or as otherwise noted on the northeast SWM facilitv as-built data table.

(b) Embankments, Clay Cores, and Cut-Off Trenches. Elevations not less than the values specified.

(c) Drainage Structures. Elevations within 1.25 in. (0.10 ft) of values specified.

(d) Pipe Inverts. Elevations within 1.25 in. (0.10 ft) of values specified.

(e) Riprap. Dimensions within 3 in. (0.25 ft) of values specified

(f) Freeboard. Not less than the values specified.

(g) Aggregate, Sand, Bioretention Soil Mix (BSM), and Mulch Thicknesses. Not less than values specified.

When construction tolerances cannot be met due to unforeseen site conditions or constraints, ensure that calculations are performed by the ABE per 317.05.01 (g) before proceeding with the next construction activity associated with SWM facilities and practices. If, after performing computations, the ABE determines that the SWM facilities do not meet the functional parameters in the approved Final SWM Report as constructed, reconstruct the SWM facilities to meet the functional parameters. If this is not possible due to the site conditions or constraints and not due to negligence and inadequate quality of work, cease work on SWM facilities and notify the Engineer.

317.04 MEASUREMENT AND PAYMENT

Stormwater Management (SWM) Facility As-Built Certification will not be measured but will be paid for at the Contract lump sum price and incrementally distributed per the payment schedule. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work. No additional compensation will be considered for addressing comments received on the submitted SWM facilities as-built certification package, revisions to the SWM facility as-suit certification package, or any construction activities necessary to address comments that may have been received or necessary to revise the SWM facility as-built certification package.

No adjustment to the payment schedule will be made for partial submittals of the SWM facility as-built certification package.

317.04.01 Payment Schedule. Payments will be made for the SWM facility as-built certification package as follows.

PAYMENT SCHEDULE	
ACTIVITY	PERCENTAGE OF PAYMENT
Initial submission of the entire SWM Facility As-Built Certification Package.	10
Structural Acceptance from the Highway Hydraulics Division and the Approving Authority.	30
Final Approval from the Highway Hydraulics Division and the Approving Authority.	10
TOTAL	100

317.04.02 Forfeiture of Payment. Failure to meet the requirements of the payment schedule will result in forfeiture of that percentage of payment.

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

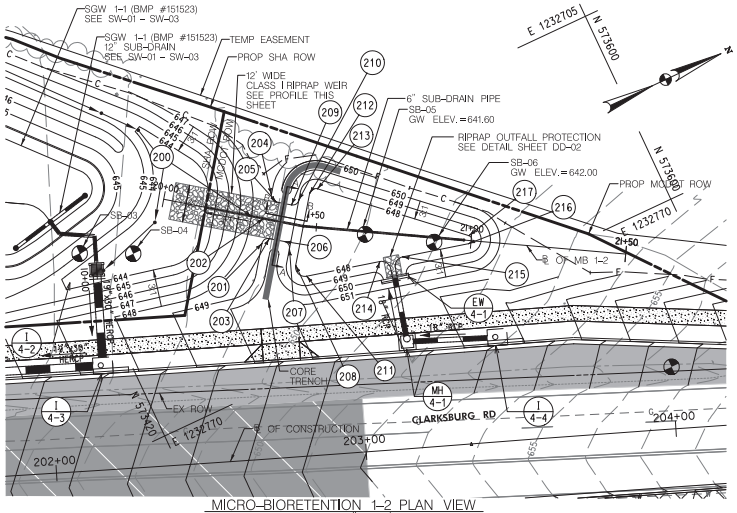
Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
STORMWATER MANAGEMENT DETAILS
SUBMERGED GRAVEL WETLAND 1–1

SCALE : AS SHOWN DATE: SEPTEMBER 2020 SW–03

DPS SC/SWM PERMIT SHEET NO. 18 of 45

C.I.P. Project No. : 508000 40 of 119



MICRO-BIORETENTION 1-2 PLAN VIEW
SCALE: 1" = 20'

BIORETENTION SOIL MIX		
65 CY	CLARKSBURG - 202+82.3, 58.8 LT TO 203+39.2, 65.5 LT	

COARSE SAND FOR STORMWATER MANAGEMENT FACILITIES		
17 CY	CLARKSBURG - 202+82.3, 58.8 LT TO 203+39.2, 65.5 LT	

NO 7 AGGREGATE FOR STORMWATER MANAGEMENT FACILITIES		
48 CY	CLARKSBURG - 202+82.3, 58.8 LT TO 203+39.2, 65.5 LT	

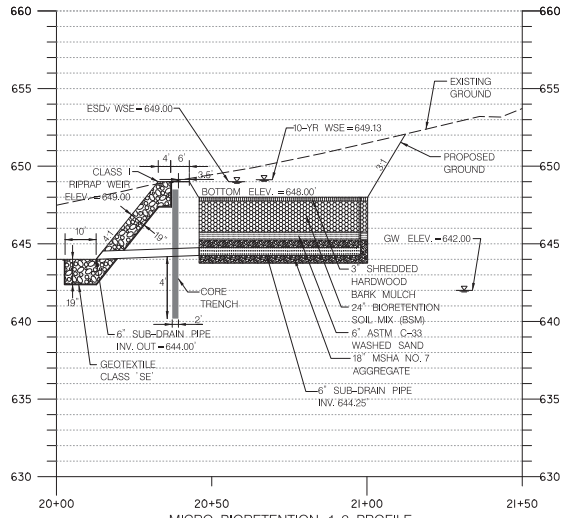
CLASS I EXCAVATION		
129 CY	CLARKSBURG - 202+82.3, 58.8 LT TO 203+39.2, 65.5 LT	

CLASS I RIPRAP FOR SLOPE AND CHANNEL PROTECTION		
46 SY	CLARKSBURG - 202+43.1, 85.1 LT TO 202+76.3, 76.3 LT (WEIR OUTFALL)	

6 INCH SUB-DRAIN PIPE		
33 LF	CLARKSBURG - 202+53.5, 82.4 LT TO 202+85.0, 74.0 LT (SOLID)	
52 LF	CLARKSBURG - 202+85.0, 74.0 LT TO 203+36.7, 65.7 LT (PERFORATED)	
4 LF	CLARKSBURG - 203+36.7, 65.7 LT (SOLID, CLEANOUT)	

SHREDDED HARDWOOD BARK MULCHING 3 INCH DEPTH		
96 SY	CLARKSBURG - 202+82.3, 58.8 LT TO 203+39.2, 65.5 LT	

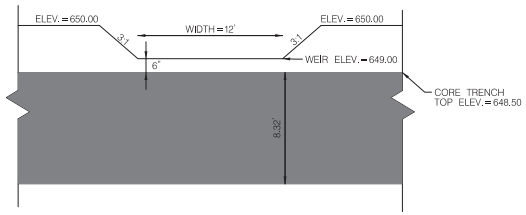
CLAY BACKFILL FOR CORE TRENCH		
36 CY	CLARKSBURG - 202+70.1, 51.6 LT TO 202+98.8, 91.6 LT	



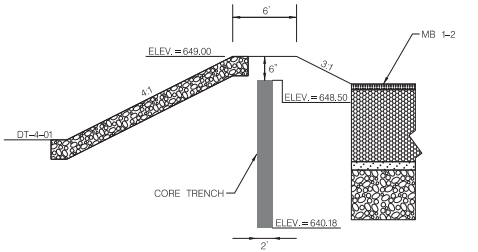
MICRO-BIORETENTION 1-2 PROFILE
HORIZONTAL SCALE: 1" = 20
VERTICAL SCALE: 1" = 4'

GRADING TABLE

NO	BASELINE	STATION	OFFSET(FT)		NORTHING	EASTING	ELEVATION
200	CLARKSBURG	202+68.46	78.41	LT	573475.3295	1232717.7170	648.00
201	CLARKSBURG	202+71.25	69.39	LT	573474.6714	1232727.1313	649.00
202	CLARKSBURG	202+72.38	77.37	LT	573478.5765	1232720.0802	649.00
203	CLARKSBURG	202+73.72	70.80	LT	573477.4649	1232726.6885	649.00
204	CLARKSBURG	202+75.42	84.84	LT	573484.0741	1232714.1857	649.00
205	CLARKSBURG	202+76.85	82.39	LT	573484.5169	1232716.9792	649.00
206	CLARKSBURG	202+78.59	69.51	LT	573481.5104	1232729.6268	649.00
207	CLARKSBURG	202+80.01	67.06	LT	573481.9533	1232732.4203	649.00
208	CLARKSBURG	202+81.66	61.60	LT	573481.5342	1232738.1023	648.00
209	CLARKSBURG	202+81.73	81.10	LT	573488.5624	1232719.9176	649.00
210	CLARKSBURG	202+84.20	82.51	LT	573491.3560	1232719.4747	649.00
211	CLARKSBURG	202+84.96	57.84	LT	573483.2510	1232742.7800	648.00
212	CLARKSBURG	202+87.83	84.32	LT	573495.3591	1232719.0682	648.00
213	CLARKSBURG	202+90.52	85.66	LT	573498.3223	1232718.7633	648.00
214	CLARKSBURG	203+08.95	60.83	LT	573506.5783	1232748.4658	648.00
215	CLARKSBURG	203+16.44	61.75	LT	573513.8650	1232750.2418	648.00
216	CLARKSBURG	203+38.02	64.37	LT	573534.8923	1232755.3671	648.00
217	CLARKSBURG	203+38.35	66.93	LT	573536.1013	1232753.0912	648.00



WEIR SECTION A-A
SCALE: N.T.S.

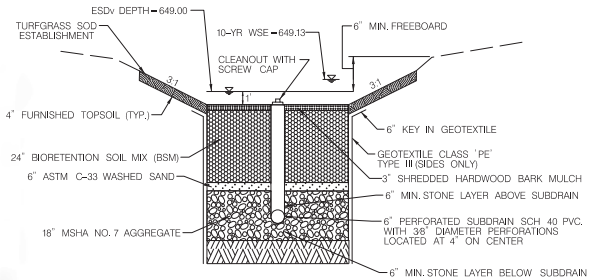


WEIR SECTION B-B
SCALE: N.T.S.

CONSTRUCTION INSPECTION CHECK-OFF LIST FOR MICRO BIORETENTION FACILITY

STAGE		COUNTY INSPECTOR INITIALS/DATE	OWNER/ DEVELOPER INITIALS/DATE
MANDATORY NOTIFICATION: Inspection and approval of each practice if required at these points prior to proceeding with construction. The permittee is required to give the MCDPS Inspection Facility four (04) hours notice (DPS Telephone 240-777-6311). The DPS inspector may waive an inspection, any time the inspection/activity to make the required inspection per a pre-scheduled development which has been confirmed with the DPS inspector in writing. Work completed without MCDPS approval may result in the permittee having to remove and reconstruct the inspected work. Upon completion of the project, a formal Stormwater Management As-Built must be submitted to MCDPS unless a Record Drawing Certification has been allowed instead. Each of the steps listed below must be verified by either the MCDPS Inspector OR the Owner/Developer.			
1	Excavation for Micro Bioretention facility conforms to approved plans		
2	Placement of stone backfill and underdrain system conforms to approved plans		
3	Placement of filter media conforms to approved plans		
4	Connecting pipes and/or grading conveyance to the facility constructed per the approved plans		
5	Final grading and permanent stabilization conforms to approved plans		

TOTAL NUMBER OF MICRO BIORETENTION FACILITIES INSTALLED PER THIS PERMIT:
APPROVED 2 CONSTRUCTED _____



MICRO-BIORETENTION TYPCIAL SECTION
SCALE: N.T.S.

SAND SPECIFICATIONS:

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications in Montgomery County. In addition to the ASTM C33 specification, sand must meet ALL of the following conditions:

1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also acceptable.
2. Sand must be silica based ... no limestone based products may be used. If the material is white or gray in color, it is probably not acceptable.
3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has become contaminated by improper storage or installation practices will be rejected.
4. Manufactured sand or stone dust is not acceptable under any circumstance.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

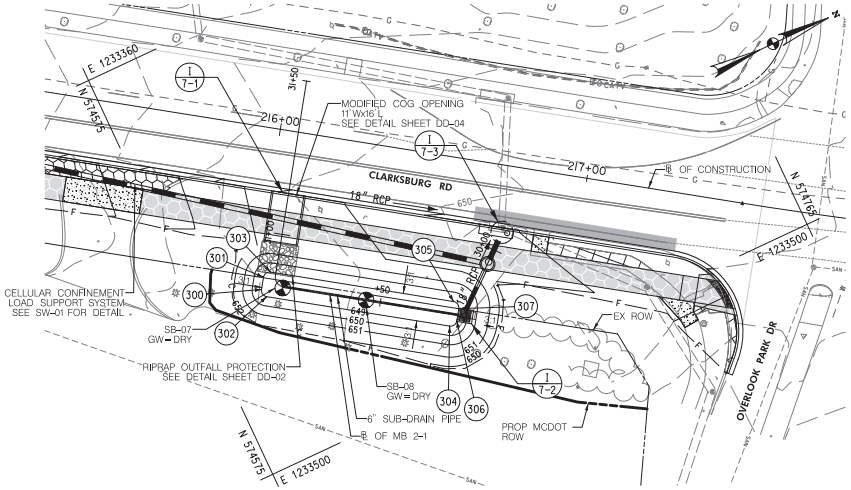
Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
STORMWATER MANAGEMENT DETAILS
MICRO-BIORETENTION 1-2

SCALE : AS SHOWN DATE: SEPTEMBER 2020 SW-04

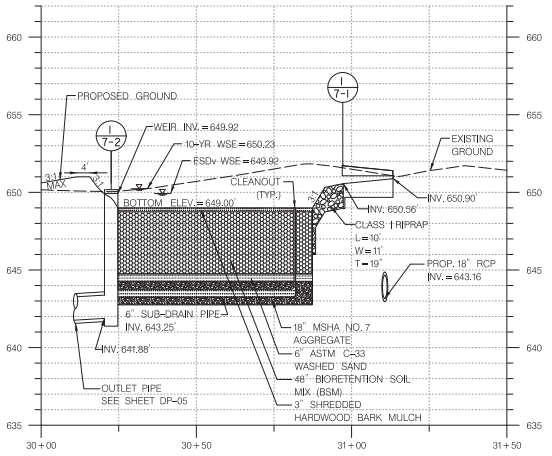
DPS SC/SWM PERMIT SHEET NO. 19 of 45

C.I.P. Project No. : 508000 41 of 119



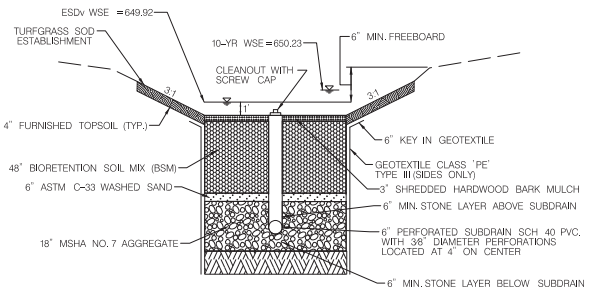
MICRO-BIORETENTION 2-1 PLAN VIEW
SCALE: 1" = 20'

BIORETENTION SOIL MIX	
76 CY	CLARKSBURG - 216+02.2, 49.9 RT TO 216+65.9, 50.0 RT
COARSE SAND FOR STORMWATER MANAGEMENT FACILITIES	
10 CY	CLARKSBURG - 216+02.2, 49.9 RT TO 216+65.9, 50.0 RT
NO. 7 AGGREGATE FOR STORMWATER MANAGEMENT FACILITIES	
28 CY	CLARKSBURG - 216+02.2, 49.9 RT TO 216+65.9, 50.0 RT
CLASS I EXCAVATION	
75 CY	CLARKSBURG - 216+02.2, 49.9 RT TO 216+65.9, 50.0 RT
6 INCH SUB-DRAIN PIPE	
57 LF	CLARKSBURG - 216+08.9, 49.9 RT TO 216+65.9, 50.0 RT (PERFORATED)
6 LF	CLARKSBURG - 216+08.9, 49.9 RT (SOLID, CLEANOUT)
ACCESS ROAD WITH CELLULAR CONFINEMENT LOAD SUPPORT SYSTEM	
25 SY	CLARKSBURG - 215+22.9, 20.7 RT TO 215+71.6, 20.7 RT
SHREDDED HARDWOOD BARK MULCHING 3 INCH DEPTH	
56 SY	CLARKSBURG - 216+02.2, 49.9 RT TO 216+65.9, 50.0 RT



MICRO-BIORETENTION 2-1 PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

GRADING TABLE						
NO	BASELINE	STATION	OFFSET(FT)	NORTHING	EASTING	ELEVATION
300	CLARKSBURG	216+02.15	51.90 RT	574596.9474	1233444.5576	648.00
301	CLARKSBURG	216+02.16	47.90 RT	574599.1970	1233441.2501	649.00
302	CLARKSBURG	216+04.15	53.90 RT	574597.4764	1233447.3361	649.00
303	CLARKSBURG	216+04.16	45.90 RT	574601.9755	1233440.7211	649.00
304	CLARKSBURG	216+63.84	53.98 RT	574646.8348	1233480.9063	649.00
305	CLARKSBURG	216+63.85	45.98 RT	574651.3338	1233474.2912	649.00
306	CLARKSBURG	216+65.85	51.98 RT	574649.6133	1233480.3773	649.00
307	CLARKSBURG	216+65.85	47.98 RT	574651.8628	1233477.0698	649.00



MICRO-BIORETENTION TYPICAL SECTION
SCALE: N.T.S.

CONSTRUCTION INSPECTION
CHECK-OFF LIST FOR MICRO BIORETENTION FACILITY

STAGE	COUNTY INSPECTOR INITIALS/DATE	OWNER/ DEVELOPER INITIALS/DATE
MANDATORY NOTIFICATION: Inspection and approval of each practice is required at three points prior to proceeding with construction. The permittee is required to give the MCDPS Regional Inspector twenty-four (24) hours notice (DPS telephone 240-777-0311). The DPS inspector may waive an inspection, and allow the owner/developer to make the required inspection per a prior scheduled arrangement which has been confirmed with the DPS inspector in writing. Work completed without MCDPS approval may result in the permittee having to remove and reconstruct the unapproved work. **Upon completion of the project, a formal Stormwater Management As-Built must be submitted to MCDPS unless a Record Driving Certification has been allowed instead.** Each of the steps listed below must be verified by either the MCDPS Inspector OR the Owner/Developer.		
1. Excavation for Micro Bioretention facility conforms to approved plans.		
2. Placement of stone backfill and underdrain system conforms to approved plans.		
3. Placement of filter media conforms to approved plans.		
4. Connecting pipes and/or grading conveyances to the facility constructed per the approved plans.		
5. Final grading and permanent stabilization conforms to approved plans.		

TOTAL NUMBER OF MICRO BIORETENTION FACILITIES INSTALLED PER THIS PERMIT:
APPROVED: 2 CONSTRUCTED: _____

SAND SPECIFICATIONS:

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1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also acceptable.
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4. Manufactured sand or stone dust is not acceptable under any circumstance.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
STORMWATER MANAGEMENT DETAILS
MICRO-BIORETENTION 2-1

SCALE : AS SHOWN DATE: SEPTEMBER 2020 SW-05

DPS SC/SWM PERMIT SHEET NO. 20 of 45

C.I.P. Project No. : 508000 42 of 119

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.

STANDARD EROSION AND SEDIMENT CONTROL NOTES: CONTINUED

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 SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.

15. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.

16. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED 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.

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”.

STANDARD SYMBOLS

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

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW   Drawn by: ECW   Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS EROSION & SEDIMENT CONTROL GENERAL NOTES

SCALE : NO SCALE   DATE: SEPTEMBER 2020   ES-01

DPS SC/SWM PERMIT SHEET NO. 21 of 45

C.I.P. Project No. : 508000   43 of 119

SEQUENCE OF CONSTRUCTION

EROSION AND SEDIMENT CONTROL PHASE 1

1. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRE CONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240) 777-6210 (48 HOURS NOTICE), THE OWNERS REPRESENTATIVE, AND THE SITE ENGINEER. IN ORDER FOR THE MEETING TO OCCUR, THE APPLICANT MUST PROVIDE ONE PAPER SET OF APPROVED SEDIMENT CONTROL PLANS TO THE MCDPS SEDIMENT CONTROL INSPECTOR AT THE PRECONSTRUCTION MEETING. IF NO PLANS ARE PROVIDED, THE MEETING SHALL NOT OCCUR AND WILL NEED TO BE RESCHEDULED PRIOR TO COMMENCING ANY WORK.

2. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.

3. PRIOR TO THE WEDGE AND LEVELING OF PAVEMENT AS SHOWN IN MOT STAGE 1; PERFORM CLEARING AND GRUBBING FOR THE INSTALLATION OF THE PERIMETER CONTROLS AS SHOWN ON PHASE 1 E&S PLANS. INSTALL SCE 1-1, DF 1-1, DF 1-2, SB 1-1, FB 1-1, AND TRR 1-1. ALL AREAS SHOWN AS SAME DAY STABILIZATION ON THE E&S PHASE 1 PLANS MAY BE COMPLETED DURING PHASE 1 OR ANY TIME THEREAFTER PRIOR TO FINAL MILLING AND OVERLAY OPERATIONS. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.

4. INSTALL SB 1-3 WITH CLEARWATER DIVERSION PUMP AND HOSE. DEWATER WORK AREA TO CONSTRUCT STORM DRAIN SYSTEM FROM EW 3-1 TO MH 3-1. DURING A NOAA FORECASTED 5 DAY DRY FORECAST PERIOD CONSTRUCT EW 3-1 AND OUTFALL PROTECTION AND PERFORM FINAL OUTFALL GRADING. A NOAA 5 DAY DRY FORECAST IS TO BE A 5 DAY SPAN WHERE THE CHANCE OF RAIN IS 20% OR LESS. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DIVERSION HOSE ACROSS MD 355 TO DEWATER THE UPSTREAM FLOW FROM THE EXISTING 36 INCH CULVERT BENEATH CLARKSBURG ROAD AS NEEDED DURING INSTALLAION OF STORM DRAIN FROM EW 3-1 TO MH 3-1. PRIOR TO STOPPING ANY WORK DURING THE INSTALLATION OF THE CULVERT FROM EW 3-1 TO MH 3-1 THE CONTRACTOR MUST STABILIZE THE WORK AREA AND PROVIDE A WATER TIGHT CONNECTION TO THE REMAINING SECTION OF EXISTING CULVERT TO ALLOW RUNOFF TO SAFELY FLOW THROUGH THE STORM DRAIN DURING NON WORKING HOURS. SANDBAGS FROM SB 1-1 SHALL BE REMOVED TO ALLOW FLOW DURING NON WORKING HOURS.

5. ONCE THE STORM DRAIN FROM EW 3-1 TO MH 3-1 IS CONSTRUCTED PERFORM EXCAVATION FOR TRR 1-1 AND INSTALL CWDP 1-1 INTO MH 3-1 OPENING TO ALLOW FOR FLOW THROUGH THE STORM DRAIN. INSTALL TYPE A STABILIZATION MATTING AND TEMPORARY RIPRAP TRR 1-1 AS SHOWN ON THE PLANS. INSTALL TOCF 1-1. REMOVE MAINTENANCE OF STREAM FLOW MEASURES.

6. CONTRACTOR SHALL CONSTRUCT STORM DRAIN SYSTEM FROM I 1-4 TO I 4-2 AS SHOWN ON E&S PHASE 1 PLANS. INSTALL CWDP 1-2. CONNECT UPSTREAM END OF CWDP 1-2 TO OUTFALL HOLE OF I 3-4 AND OUTFALL AS SHOWN INTO TRR 1-1. INSTALL SIP 1-3, COIP 1-2, AND CIP 1-1.

7. PERFORM PERMANENT STABILIZATION TO THE OUTFALL OF EW 3-1 AND DOWNSTREAM CHANNEL. WITH THE WRITTEN APPROVAL OF THE MCDPS INSPECTOR REMOVE E&S MEASURES ASSOCIATED WITH THE CONSTRUCTION OF THE EW 3-1 OUTFALL AND DOWNSTREAM CHANNEL (DF 1-1, SB 1-1, DF 1-2, FB 1-1 AND SCE 1-1). PERFORM PERMANENT STABILIZATION FOR AREAS DISTURBED BY THE REMOVAL OF THESE MEASURES.

8. CONTRACTOR MAY PERFORM WEDGE AND LEVEL OPERATIONS AS SHOWN IN MOT STAGE 1 OPERATIONS. CONTRACTOR MAY INSTALL STAGE 2 MOT CONTROLS ASSOCIATED WITH MOT STAGE 2 OPERATIONS.

9. INSTALL SCE 1-2 AND ALL REMAINING PERIMETER CONTROLS AS SHOWN ON E&S PHASE 1 PLANS (CWDP 1-3, DF 1-3, SB 1-2, AND TRR 1-2). THE EXISTING 36" RCP CULVERT SHALL BE USED AS A CLEARWATER DIVERSION BYPASS DURING PHASE 1.

10. INSTALL TGOS 1-1, TS 1-1, DF 1-4, SSF 1-1, SF 1-1, AND CWO 1-1. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.

11. BEGIN GRADING FOR MICRO-BIORETENTION MB 1-2. BEGIN GRADING AND PAVING FOR ROADWAY AND SIDEWALK SECTIONS AS SHOWN ON E&S PHASE 1 PLANS. CONSTRUCT STORM DRAIN EW 4-1 TO I 4-4. DURING A NOAA FORECASTED 3 DAY DRY PERIOD STABILIZE THE AREA DRAINING TO MB 1-2 AND INSTALL THE FILTER MEDIA OF MB 1-2. IMMEDIATELY AFTER INSTALLING MEDIA SECTION, INSTALL SILT FENCE 1-2. ONCE THE MEDIA HAS BEEN INSTALLED THE CONTRACTOR SHALL PROVIDE ADDITIONAL PROTECTION TO THE AREA NOT TO ALLOW FOR SEDIMENT LADEN RUNOFF TO ENTER THE FACILITY.

12. PERFORM REMAINING GRADING ASSOCIATED WITH PHASE 1. ONCE ALL CONSTRUCTION ASSOCIATED WITH PHASE 1 E&S IS PERMANENTLY STABILIZED AND WITH THE WRITTEN APPROVAL OF THE DPS INSPECTOR ALLOW RUNOFF TO ENTER I 4-2 AND I 4-3. REMOVE TGOS 1-1, CWDP 1-3, DF 1-4, DF 1-3, TRR 1-2, TS 1-1, CIP 1-1, COIP 1-2, SIP 1-3, SF 1-1, AND SSF 1-1.

13. MAINTAIN SCE 1-2, CWO 1-1 CWDP 1-1, CWDP 1-2, TOCF 1-1, AND TRR 1-1 TO BE USED DURING E&S PHASE 2 CONSTRUCTION ACTIVITIES. PROCEED TO E&S PHASE 2 WITH THE WRITTEN APPROVAL OF THE DPS INSPECTOR.

EROSION AND SEDIMENT CONTROL PHASE 2

14. PERFORM CLEARING AND GRUBBING AS REQUIRED FOR THE INSTALLATION OF THE PERIMETER CONTROLS AS SHOWN ON PHASE 2 E&S PLANS. CONTRACTOR SHALL PERFORM GRADING TO COMPLETE THE CLEAN WATER BYPASS DITCH (DT-4-01) AT CLARKSBURG ROAD STA. 201+31, 160 LT TO 202+13, 63 LT AS SHOWN IN SAME DAY STABILIZATION TO ALLOW FOR THE BYPASS OF OFF SITE RUNOFF AROUND THE SITE TO I 4-2.

15. INSTALL SF 2-1 AND SF 2-2. INSTALL STORM DRAIN SYSTEM FROM I 3-2 TO I 3-8 AND FROM MH 3-3 TO MH 9-1. CONTRACTOR SHALL NOT ALLOW FLOW INTO I 3-8 UNTIL THE UPSTREAM DRAINAGE AREA IS STABILIZED AND FREE OF SEDIMENT LADEN RUNOFF. AFTER STORM DRAIN SYSTEM IS CONSTRUCTED, INSTALL SF 2-3 THROUGH 2-13.

16. INSTALL TGOS 2-1 , TAB 2-1, DF 2-1, DF 2-2, DF 2-3, AND ASSOCIATED GRADING. ALL OTHER AREAS SHOWN AS SAME DAY STABILIZATION ON THE E&S PHASE 2 PLANS MAY BE COMPLETED DURING PHASE 2 OR ANY TIME THEREAFTER PRIOR TO FINAL MILLING AND OVERLAY OPERATIONS. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING. STABLIZE AND APPLY TYPE A SSM TO DESIGNATED AREA AS SHOWN ON PLANS. UPON WRITTEN APPROVAL OF THE DPS INSPECTOR, REMOVE SF 2-2.

17. BEGIN GRADING ASSOCIATED WITH THE CONSTRUCTION OF THE SUBMERGED GRAVEL WETLAND (SGW 1-1). CONSTRUCT ES 9-1 TO I 10-1. CONSTRUCT STORM DRAIN SYSTEM FROM MH 9-1 TO MH 9-2. NOTE THAT THIS STORM DRAIN CONSTRUCTION INVOLVES THE CONSTRUCTION OF THE DIVERSION MANHOLE (MH 9-2). CONTRACTOR MUST VERIFY THE RELATIONSHIP BETWEEN THE INVERT OF THE FLOW SPLITTER PIPE AND THE INVERT OF THE OVERFLOW PIPE WITHIN THE DIVERSION MANHOLE(MH 9-2) PRIOR TO BACKFILLING AROUND THE STRUCTURE. CONTRACTOR SHALL BLOCK FLOW FROM MH 9-1 T 9-1 TO ALLOW UPSTREAM WORK AREA TO FLOW TO TGOS 2-1. BEGIN GRADING AND PAVING FOR THE SIDEWALK AND ROADWAY. CONSTRUCT THE RETAINING WALL SECTIONS ASSOCIATED WITH PHASE 2.

18. STABILIZE ALL CONSTRUCTION AREAS. ALLOW RUNOFF INTO MH 9-1 FROM MH 9-2 AND BLOCK FLOW FROM MH 9-2 TO ES 9-1.

19. ONCE ALL CONSTRUCTION ASSOCIATED WITH PHASE 2 E&S IS PERMANENTLY STABILIZED AND WITH THE WRITTEN APPROVAL OF THE DPS INSPECTOR REMOVE ALL SEDIMENT CONTROL MEASURES. MAINTAIN CWDP 1-1, CWDP 1-2 AND TRR 1-1 TO BE USED DURING E&S PHASE 3 CONSTRUCTION ACTIVITIES. PROCEED TO E&S PHASE 3 WITH THE WRITTEN APPROVAL OF THE DPS INSPECTOR.

EROSION AND SEDIMENT CONTROL PHASE 3

20. INSTALL SCE 3-1, SF 3-1, AND SP 3-1 WITH ASSOCIATED PUMP AND HOSES. PERFORM FINAL GRADING AND INSTALL MEDIA FOR SGW 1-1. IN A SAME DAY STABILIZATION MANNER, REMOVE THE EXISTING UPSTREAM AND DOWNSTREAM END WALLS (EX EW 3-1 AND EX EW 3-2) OF THE EXISTING 36"RCP. REMOVE THE SECTIONS OF 36" RCP TO EXISTING ROAD EDGE ON BOTH THE UPSTREAM AND DOWNSTREAM ENDS. PROVIDE A BULK HEAD AT THE DOWNSTREAM END OF THE CULVERT AND ABANDON IN PLACE WITH FLOWABLE FILL FROM THE UPSTREAM END. PERFORM FINAL GRADING OF THE ROADWAY AND SIDEWALK AS SHOWN ON E&S PHASE 3 PLANS.

21. CONSTRUCT THE ROADWAY AND SIDEWALK AS SHOWN IN PHASE 3 PLANS IN A SAME DAY STABILIZATION MANNER AND PROVIDE PERMANENT STABILIZATION. ONCE ALL CONSTRUCTION ACTIVITIES ASSOCIATED WITH PHASE 3 ARE PERMANENTLY STABILIZED AND WITH THE WRITTEN APPROVAL OF THE DPS INSPECTOR PROCEED TO E&S PHASE 4.

EROSION AND SEDIMENT CONTROL PHASE 4

22. INSTALL ALL MOT STAGE 4 DEVICES. DURING A NOAA FORECASTED 5 DAY DRY PERIOD, CONSTRUCT STORM DRAIN FROM MH 3-1 TO I 3-5. INSTALL INLET PROTECTION SIP 4-5 IMMEDIATELY AFTER I 3-5 IS INSTALLED AS SHOWN ON THE PLANS. TEMPORARILY BLOCK FLOW FROM ENTERING TWO OTHER UPSTREAM OPENINGS IN MH 3-2.

23. DURING A NOAA FORECASTED 5 DAY DRY PERIOD INSTALL MDF 4-1, MDF 4-2, AND SBD 4-1 WITH ASSOCIATED CLEARWATER DIVERSION PIPE CWDP 4-1. CWDP 4-1 IS TO DISCHARGE INTO I 3-5 THROUGH A TEMPORARY OPENING. SEE PIPE PROFILE FOR INVERT OF OPENING. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.

24. REMOVE CWDP 1-1 AND CWDP 1-2. CONSTRUCT STORM DRAIN SECTION FROM MH 3-1 TO I 3-4. REMOVE EXISTING 36" CULVERT HEADWALL AND FILL PIPE WITH FLOWABLE FILL AND BULKHEAD.

25. CONSTRUCT REMAINING STORM DRAIN SYSTEM FROM MH 3-1 TO I 8-1, I 3-6 TO MH 3-2, AND FROM MH 3-2 TO I 5-2. INSTALL ALL INLET PROTECTIONS IMMEDIATELY AFTER THE INLET INSTALLATIONS AS SHOWN ON THE PLANS. AS EACH INLET PROTECTION IS INSTALLED ALL WORK UPSTREAM OF THAT INLET CAN BE COMPLETED. AFTER STORM DRAIN IS CONSTRUCTED, INSTALL SF 4-1 THROUGH 4-16.

26. BEGIN CONSTRUCTION OF STORM DRAIN SYSTEM FROM I 7-3 TO I 7-2. INSTALL SIP 4-14 AND CIP 4-12 IMMEDIATELY AFTER THE INLET INSTALLATIONS AS SHOWN ON THE PLANS. BEGIN CONSTRUCTION OF STORM DRAIN SYSTEM FROM I 7-3 TO I 6-2. INSTALL CIP 4-10 AND 4-11 IMMEDIATELY AFTER THE INLET INSTALLATIONS AS SHOWN ON THE PLANS. AS STORM DRAIN SYSTEM IS INSTALLED PAST I 7-1, INSTALL I 7-1. AFTER STORM DRAIN IS CONSTRUCTED, INSTALL SF 4-17 THROUGH 4-24.

27. PERFORM SURFACE GRADING FOR MICRO-BIORETENTION MB 2-1 AND ALL CONSTRUCTION ASSOCIATED WITH THE ROADWAY, SIDEWALK, AND RETAINING WALL.

28. INSTALL MEDIA SECTION FOR MICRO-BIORETENTION FACILITY MB 2-1. IMMEDIATELY AFTER INSTALLING MEDIA SECTION, INSTALL SILT FENCE 4-25 AND BLOCK FLOW TO I 7-1. NO DISTURBED RUNOFF IS ALLOWED TO ENTER THE MICRO-BIORETENTION FACILITIES ONCE THE MEDIA IS INSTALLED. ALL ADJACENT DISTURBANCE ASSOCIATED WITH THE INSTALLATION OF THE MEDIA MUST BE IMMEDIATELY STABILIZED THE SAME DAY.

29. ALL AREAS DESIGNATED AS SAME DAY STABILIZATION SHALL BE CONSTRUCTED IN A SAME DAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UN STABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

30. STABILIZE ALL PHASE 4 WORK AREA AND PERFORM FINAL LANDSCAPE INSTALLATION. REMOVE TEMPORARY BLOCK OF INLET I 7-1. WITH THE WRITTEN APPROVAL OF THE DPS ESC INSPECTOR, REMOVE ALL ESC MEASURES ASSOCIATED WITH PHASE 4 OF EROSION AND SEDIMENT CONTROL PLAN. IMMEDIATELY AFTER CWDP 4-1 IS REMOVED, PERMANENTLY CLOSE OPENING IN I 3-5 USED FOR CWDP 4-1.

31. ALL MOT STAGE 4 SIGNAL INSTALLATION IS TO BE CONSTRUCTED IN A SAME DAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UN STABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

GENERAL NOTES FOR SEQUENCE OF CONSTRUCTION

1. STORM DRAIN SYSTEMS SHALL BE CONSTRUCTED FROM DOWNSTREAM ENDS UNLESS OTHERWISE NOTED ON THE PLANS. DITCHES AND STEEP SLOPES SHALL BE STABILIZED WITH SEEDING AND TYPE A SOIL STABILIZATION MATTING IMMEDIATELY AFTER FINAL GRADING.

2. ONCE THE DRAINAGE AREA FOR THE STORM DRAIN SYSTEM IS STABILIZED, THE STORM DRAIN SYSTEM MUST BE FLUSHED, ANY TEMPORARY PIPES REMOVED, AND THE CONSTRUCTION OR UNBLOCKING OF ANY PERMANENT PIPES.

3. THE SEQUENCE OF CONSTRUCTION FOR EROSION AND SEDIMENT CONTROL SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE AND IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC PLANS.

4. ANY DEVIATION FROM THE APPROVED SEQUENCE OR EROSION AND SEDIMENT CONTROL MEASURES MUST BE APPROVED BY MCDPS.

5. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING A STORAGE AND STOCKPILE AREA. IF ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED AS A RESULT OF THE LOCATION OF THE STORAGE AND STOCKPILE AREA THEN THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FOR THOSE MEASURES.

6. ALL AREAS DESIGNATED AS SAME DAY STABILIZATION SHALL BE CONSTRUCTED IN A SAME DAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UN STABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL INSPECTION REPORTS AND MATERIAL TICKETS THAT ARE TO BE PROVIDED FOR THE PREPARATION OF THE AS-BUILT PLANS.

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

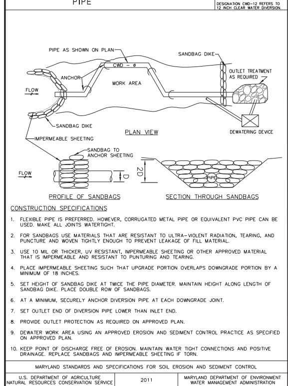
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
EROSION & SEDIMENT CONTROL
SEQUENCE OF CONSTRUCTION

SCALE : NO SCALE DATE: SEPTEMBER 2020 ES-02

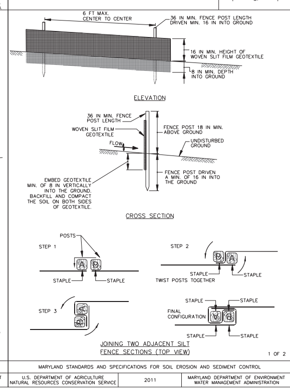
DPS SC/SWM PERMIT SHEET NO. 22 of 45

C.I.P. Project No. : 508000 44 of 119

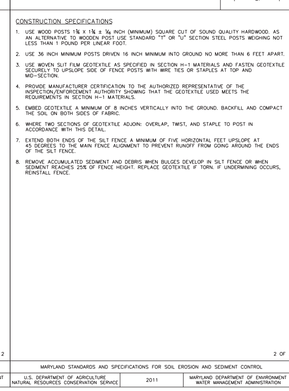
DETAIL C-6 CLEAR WATER DIVERSION PIPE



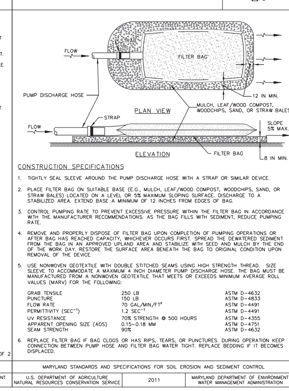
DETAIL E-1 SILT FENCE



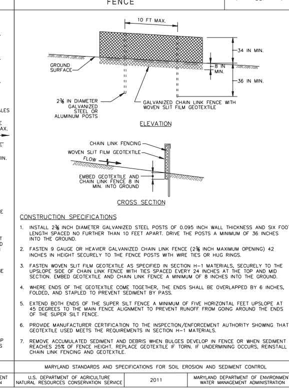
DETAIL E-1 SILT FENCE



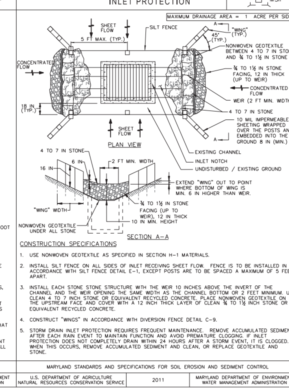
DETAIL F-4 FILTER BAG



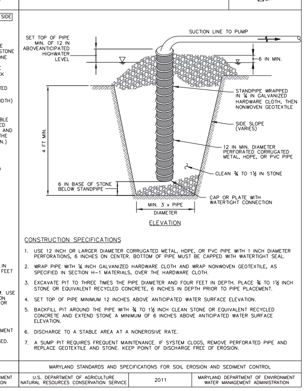
DETAIL E-3 SUPER SILT FENCE



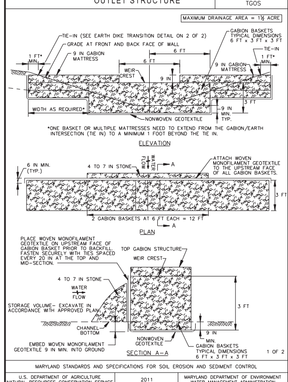
DETAIL E-9-5 MEDIAN SUMP INLET PROTECTION



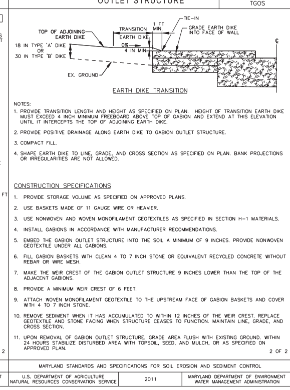
DETAIL F-2 SUMP PIT



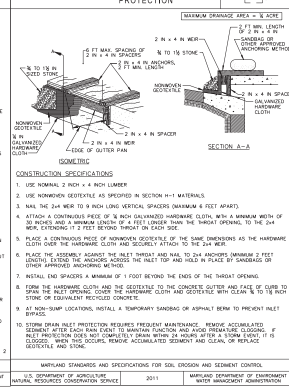
DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE



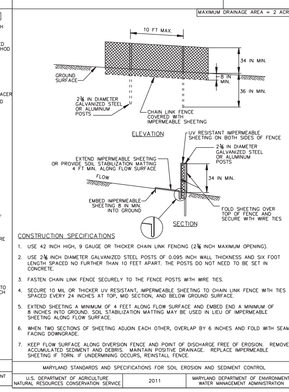
DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE



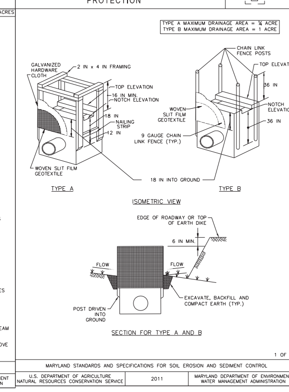
DETAIL E-9-3 CURB INLET PROTECTION



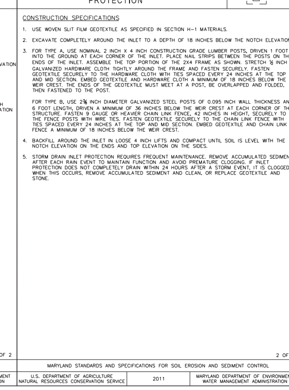
DETAIL C-9 DIVERSION FENCE



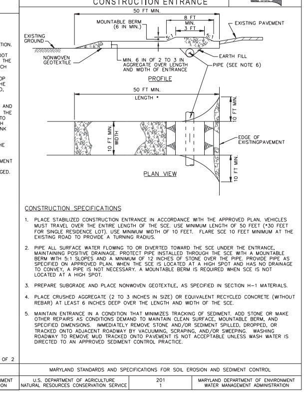
DETAIL E-9-1 STANDARD INLET PROTECTION



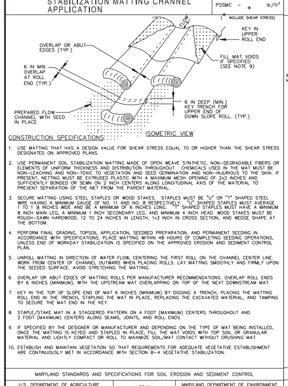
DETAIL E-9-1 STANDARD INLET PROTECTION



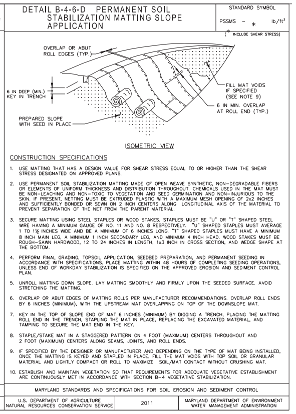
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION



DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION



Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

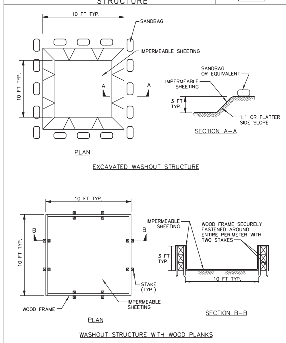
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS
EROSION AND SEDIMENT CONTROL DETAILS

SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 ES-03

DPS SC/SWM PERMIT SHEET NO. 23 of 45

C.I.P. Project No. : 508000 45 of 119

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE — STANDARD SYMBOL: CWS

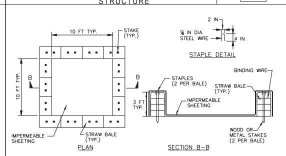


1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE — STANDARD SYMBOL: CWS



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

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

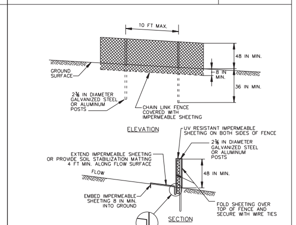
1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD.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

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

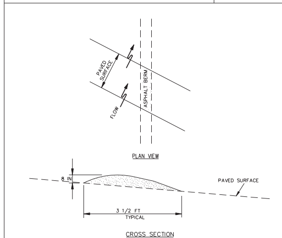
DETAIL: MODIFIED DIVERSION FENCE — STANDARD SYMBOL: MDF



CONSTRUCTION SPECIFICATIONS

1. USE 56 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

DETAIL C-5 TEMPORARY ASPHALT BERM — STANDARD SYMBOL: TAB



CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3½ FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
6. UPON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS OR AS SPECIFIED ON APPROVED PLAN.

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

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE

DESCRIPTION

THE WORK SHOULD CONSIST OF INSTALLING A TEMPORARY PUMP AROUND AND SUPPORTING MEASURES TO DIVERT FLOW AROUND INSTREAM CONSTRUCTION SITES.

IMPLEMENTATION SEQUENCE:

SEDIMENT CONTROL MEASURES, PUMP–AROUND PRACTICES, AND ASSOCIATED CHANNEL AND BANK CONSTRUCTION SHOULD BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL 1.2):

1. CONSTRUCTION ACTIVITIES INCLUDING THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES SHOULD NOT BEGIN UNTIL ALL NECESSARY EASEMENTS AND.OR RIGHT–OF–WAYS HAVE BEEN ACQUIRED. ALL EXISTING UTILITIES SHOULD BE MARKED IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT MAY RESULT FROM CONSTRUCTION AND SHOULD REPAIR THE DAMAGE AT HER/HIS OWN EXPENSE TO THE COUNTY'S OR UTILITY COMPANY'S SATISFACTION.

2. THE CONTRACTOR SHOULD NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT OR WMA SEDIMENT CONTROL INSPECTOR AT LEAST 5 DAYS BEFORE BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHOULD INFORM THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION AND THE PROVIDER OF LOCAL UTILITIES A MINIMUM OF 48 HOURS BEFORE STARTING CONSTRUCTION.

3. THE CONTRACTOR SHOULD CONDUCT A PRE–CONSTRUCTION MEETING ON SITE WITH THE WMA SEDIMENT CONTROL INSPECTOR, THE COUNTY PROJECT MANAGER, AND THE ENGINEER TO REVIEW LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHOULD STAKE OUT ALL LIMITS OF DISTURBANCE PRIOR TO THE PRE–CONSTRUCTION MEETING SO THEY MAY BE REVIEWED. THE PARTICIPANTS WILL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREAS AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS. TREES SHOULD NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM THE WMA OR LOCAL AUTHORITY.

4. CONSTRUCTION SHOULD NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHOULD STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.

5. UPON INSTALLATION OF ALL SEDIMENT CONTROL MEASURES AND APPROVAL BY THE SEDIMENT CONTROL INSPECTOR AND THE LOCAL ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT INSPECTION AND ENFORCEMENT DIVISION, THE CONTRACTOR SHOULD BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ENTRANCES. IN SOME CASES, WORK MAY BEGIN DOWNSTREAM IF APPROPRIATE. THE SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED UNLESS THE CONTRACTOR GETS WRITTEN APPROVAL FOR DEVIATIONS FROM THE WMA OR LOCAL AUTHORITY. WORK SHOULD NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS. THE PUMP AROUND SHALL REMAIN IN PLACE FOR THE DURATION OF THE CULVERT REPLACEMENT AND SHALL BE MANNED CONTINUOUSLY 24 HOURS PER DAY WHILE IN USE.

6. SANDBAG DIKES SHOULD BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHOULD BE PUMPED AROUND THE WORK AREA. THE PUMP SHOULD DISCHARGE ONTO A STABLE VELOCITY DISSIPATER MADE OF RIPRAP OR SANDBAGS.

7. WATER FROM THE WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A DEWATERING BASIN SEDIMENT BAG OR OTHER APPROVED SOURCE. THE MEASURE SHOULD BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.

8. TRAVERSING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED SHOULD BE AVOIDED. IF EQUIPMENT HAS TO TRAVERSE SUCH A REACH FOR ACCESS TO ANOTHER AREA, THEN TIMBER MATS OR SIMILAR MEASURES SHOULD BE USED TO MINIMIZE DISTURBANCE TO THE CHANNEL. TEMPORARY STREAM CROSSINGS SHOULD BE USED ONLY WHEN NECESSARY AND ONLY WHERE NOTED ON THE PLANS OR SPECIFIED (SEE SECTION 4, STREAM CROSSINGS, MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION).

9. ALL STREAM RESTORATION MEASURES SHOULD BE INSTALLED AS INDICATED BY THE PLANS AND ALL BANKS GRADED IN ACCORDANCE WITH THE GRADING PLANS AND TYPICAL CROSS SECTIONS.

10. AFTER AN AREA IS COMPLETED AND STABLIZED, THE CLEAN WATER DIKE SHOULD BE REMOVED. AFTER THE FIRST SEDIMENT FLUSH, A NEW CLEAN WATER DIKE SHOULD BE ESTABLISHED UPSTREAM FROM THE OLD SEDIMENT DIKE. FINALLY, UPON ESTABLISHMENT OF A NEW SEDIMENT DIKE BELOW THE OLD ONE, THE OLD SEDIMENT DIKE SHOULD BE REMOVED.

11. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHOULD BE ACCOMPLISHED BY LOCATING A SANDBAG DIKE AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHOULD DISCHARGE ONTO THE SAME VELOCITY DISSIPATER USED FOR THE MAIN STEM PUMP AROUND.

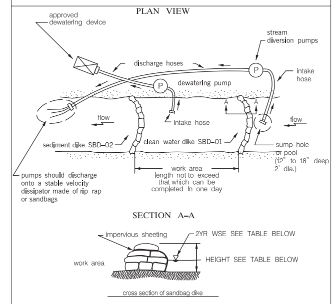
12. IF A TRIBUTARY IS TO BE RESTORED, CONSTRUCTION SHOULD TAKE PLACE ON THE TRIBUTARY BEFORE WORK ON THE MAIN STEM REACHES THE TRIBUTARY CONFLUENCE. CONSTRUCTION IN THE TRIBUTARY, INCLUDING PUMP AROUND PRACTICES, SHOULD FOLLOW THE SAME SEQUENCE AS FOR THE MAIN STEM OF THE RIVER OR STREAM. WHEN CONSTRUCTION ON THE TRIBUTARY IS COMPLETED, WORK ON THE MAIN STEM SHOULD RESUME. WATER FROM THE TRIBUTARY SHOULD CONTINUE TO BE PUMPED AROUND THE WORK AREA IN THE MAIN STEM.

13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO AND MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES INTIL THE SEDIMENT CONTROL INSPECTOR APPROVES THEIR REMOVAL.

14. AFTER CONSTRUCTION, ALL DISTURBED AREAS SHOULD BE REGRADED AND REVEGETATED AS PER THE PLANTING PLAN.

TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.2 – 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1.2: PUMP–AROUND PRACTICE



REVISED NOVEMBER 2000 PAGE 1.2 – 3

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS
EROSION AND SEDIMENT CONTROL DETAILS

SCALE : NOT TO SCALE DATE: SEPTEMBER 2020 ES–04

DPS SC/SWM PERMIT SHEET NO. 24 of 45

C.I.P. Project No. : 508000 46 of 119

KEY MAP

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

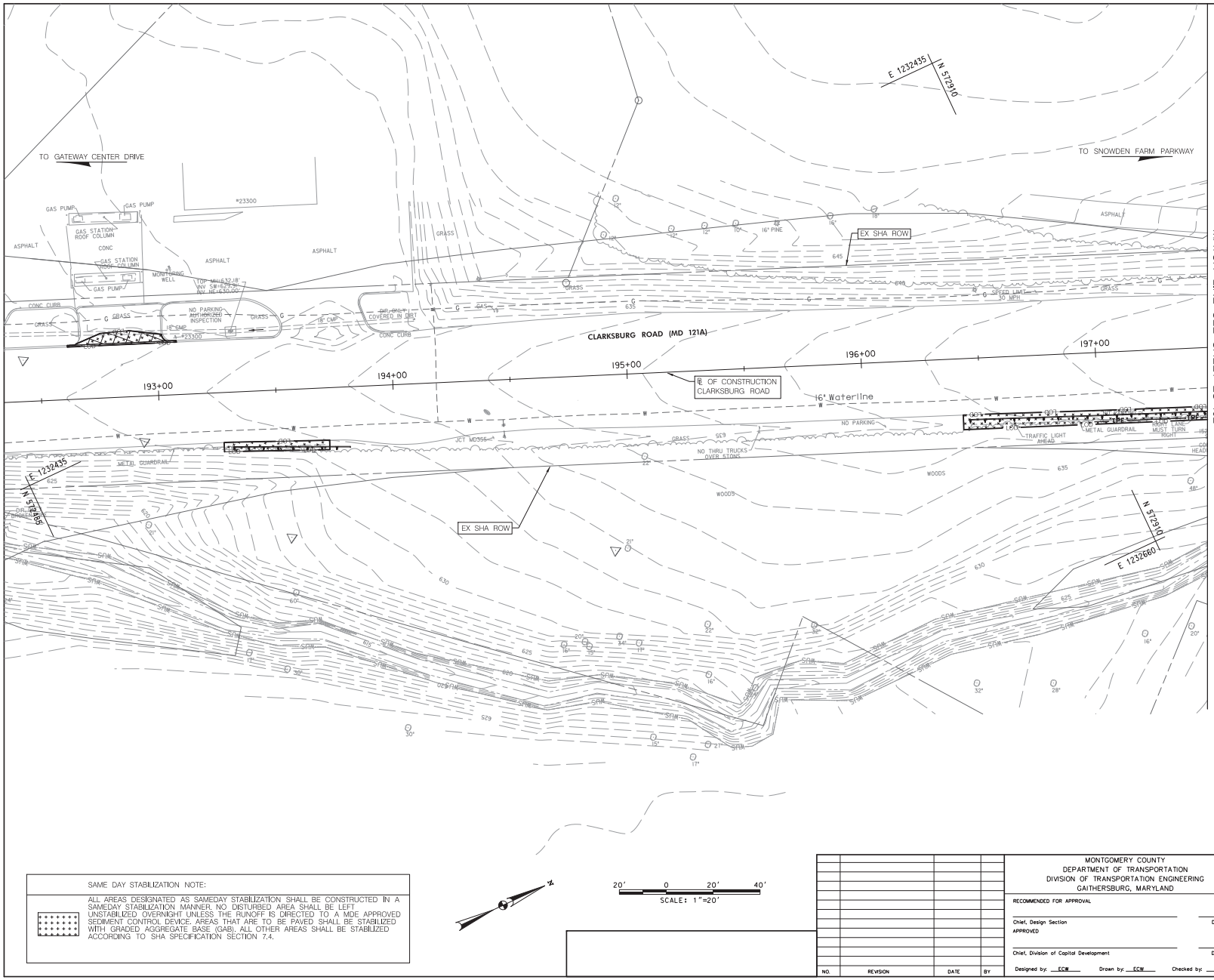
Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS EROSION & SEDIMENT CONTROL PHASE 1 COMPOSITE PLAN

SCALE : 1" = 100' DATE: FEBRUARY 2020 ES-100

DPS SC/SWM PERMIT SHEET NO. 25 of 45

C.I.P. Project No. : 508000 47 of 119



TEMPORARY MULCH	
152 SY	CLARKSBURG - STA 192+81 TO STA 197+48

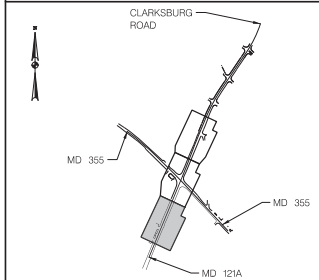
TEMPORARY SEED	
108 SY	CLARKSBURG - STA 192+81 TO STA 197+48

SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

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

KEY MAP



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

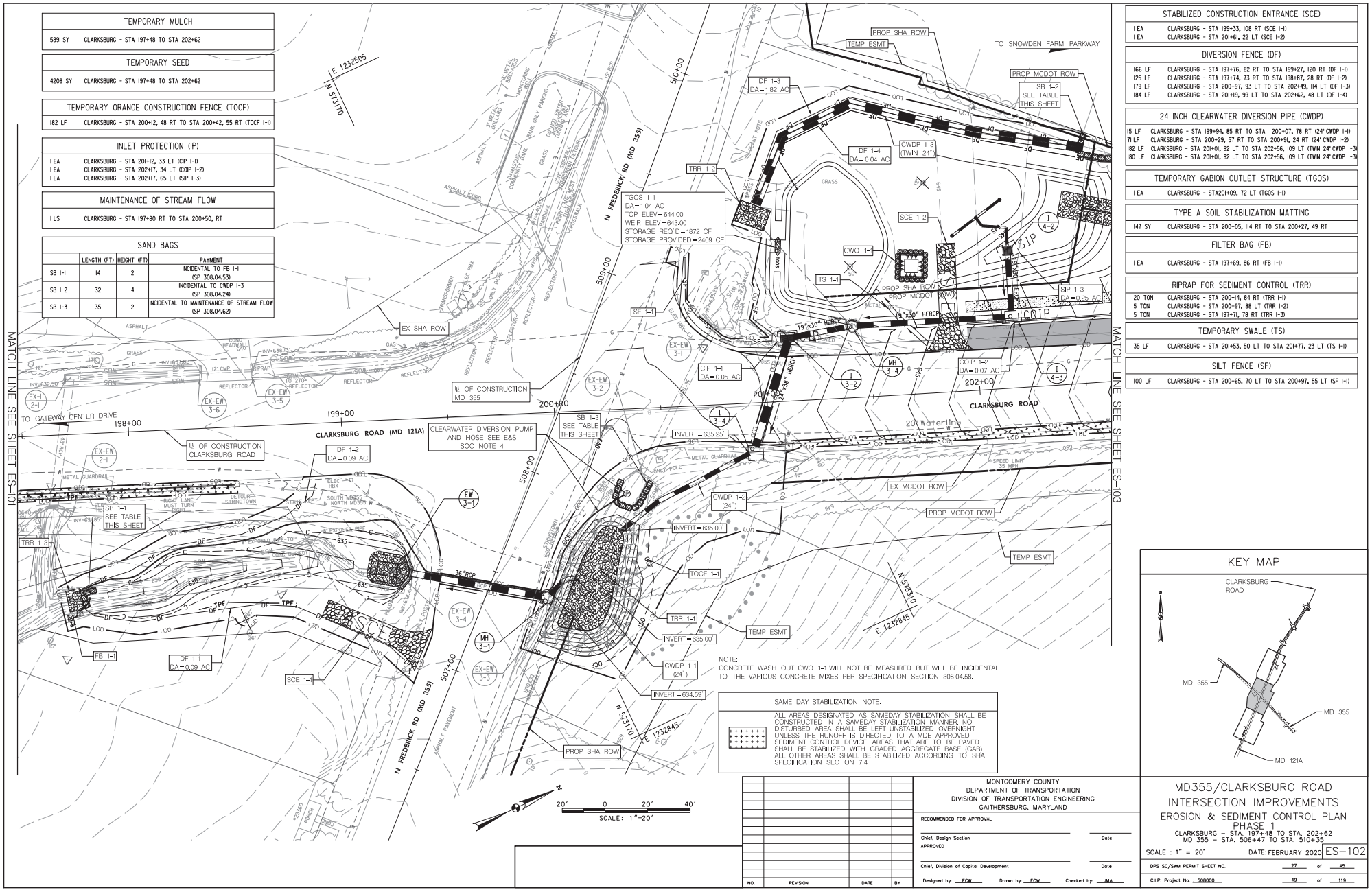
EROSION & SEDIMENT CONTROL PLAN PHASE 1

CLARKSBURG – STA. 192+34 TO STA. 197+48

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-101

DPS SC/SWM PERMIT SHEET NO. 26 of 45

C.I.P. Project No. : 508000 48 of 119



TEMPORARY MULCH	
5891 SY	CLARKSBURG - STA 197+48 TO STA 202+62

TEMPORARY SEED	
4208 SY	CLARKSBURG - STA 197+48 TO STA 202+62

TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF)	
182 LF	CLARKSBURG - STA 200+12, 48 RT TO STA 200+42, 55 RT (TOCF 1-1)

INLET PROTECTION (IP)	
1 EA	CLARKSBURG - STA 201+12, 33 LT (CIP 1-1)
1 EA	CLARKSBURG - STA 202+17, 34 LT (COIP 1-2)
1 EA	CLARKSBURG - STA 202+17, 65 LT (SIP 1-3)

MAINTENANCE OF STREAM FLOW	
1 LS	CLARKSBURG - STA 197+80 RT TO STA 200+50, RT

SAND BAGS			
	LENGTH (FT)	HEIGHT (FT)	PAYMENT
SB 1-1	14	2	INCIDENTAL TO FB 1-1 (SP 308.04.53)
SB 1-2	32	4	INCIDENTAL TO CWDP 1-3 (SP 308.04.24)
SB 1-3	35	2	INCIDENTAL TO MAINTENANCE OF STREAM FLOW (SP 308.04.62)

STABILIZED CONSTRUCTION ENTRANCE (SCE)	
1 EA	CLARKSBURG - STA 199+33, 108 RT (SCE 1-1)
1 EA	CLARKSBURG - STA 201+61, 22 LT (SCE 1-2)

DIVERSION FENCE (DF)	
166 LF	CLARKSBURG - STA 197+76, 82 RT TO STA 199+27, 120 RT (DF 1-1)
125 LF	CLARKSBURG - STA 197+74, 73 RT TO STA 198+87, 28 RT (DF 1-2)
179 LF	CLARKSBURG - STA 200+97, 93 LT TO STA 202+49, 114 LT (DF 1-3)
184 LF	CLARKSBURG - STA 201+19, 99 LT TO STA 202+62, 48 LT (DF 1-4)

24 INCH CLEARWATER DIVERSION PIPE (CWDP)	
15 LF	CLARKSBURG - STA 199+94, 85 RT TO STA 200+07, 78 RT (24" CWDP 1-1)
71 LF	CLARKSBURG - STA 200+29, 57 RT TO STA 200+91, 24 RT (24" CWDP 1-2)
182 LF	CLARKSBURG - STA 201+01, 92 LT TO STA 202+56, 109 LT (TWIN 24" CWDP 1-3)
180 LF	CLARKSBURG - STA 201+01, 92 LT TO STA 202+56, 109 LT (TWIN 24" CWDP 1-3)

TEMPORARY GABION OUTLET STRUCTURE (TGOS)	
1 EA	CLARKSBURG - STA201+09, 72 LT (TGOS 1-1)

TYPE A SOIL STABILIZATION MATTING	
147 SY	CLARKSBURG - STA 200+05, 114 RT TO STA 200+27, 49 RT

FILTER BAG (FB)	
1 EA	CLARKSBURG - STA 197+69, 86 RT (FB 1-1)

RIPRAP FOR SEDIMENT CONTROL (TRR)	
20 TON	CLARKSBURG - STA 200+14, 84 RT (TRR 1-1)
5 TON	CLARKSBURG - STA 200+97, 88 LT (TRR 1-2)
5 TON	CLARKSBURG - STA 197+71, 78 RT (TRR 1-3)

TEMPORARY SWALE (TS)	
35 LF	CLARKSBURG - STA 201+53, 50 LT TO STA 201+77, 23 LT (TS 1-1)

SILT FENCE (SF)	
100 LF	CLARKSBURG - STA 200+65, 70 LT TO STA 200+97, 55 LT (SF 1-1)

NOTE:
CONCRETE WASH OUT CWO 1-1 WILL NOT BE MEASURED BUT WILL BE INCIDENTAL TO THE VARIOUS CONCRETE MIXES PER SPECIFICATION SECTION 308.04.58.

SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

KEY MAP

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

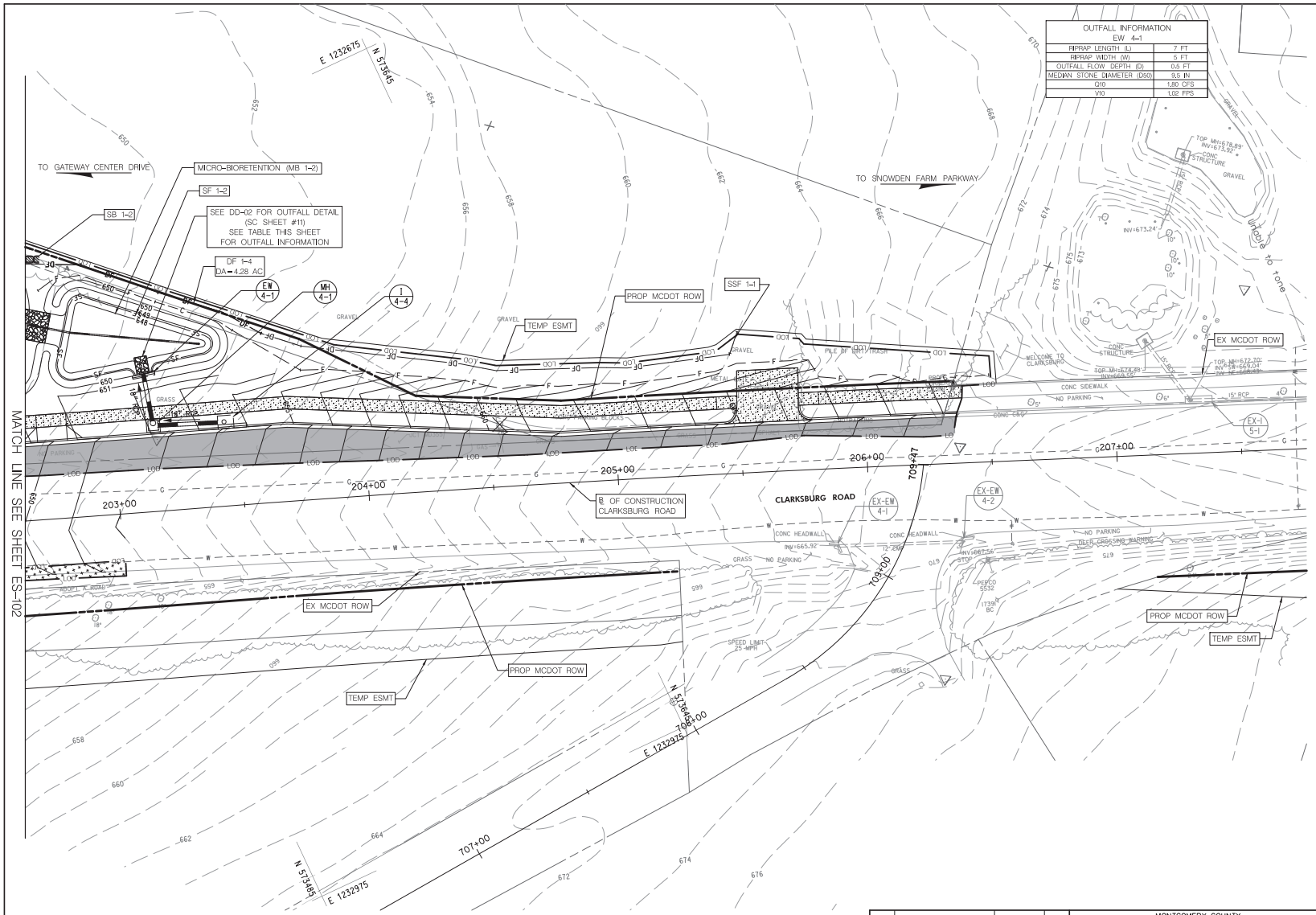
EROSION & SEDIMENT CONTROL PLAN PHASE 1

CLARKSBURG - STA. 197+48 TO STA. 202+62
MD 355 - STA. 506+47 TO STA. 510+35

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-102

DPS SC/SWM PERMIT SHEET NO. 27 of 45

C.I.P. Project No. : 508000 49 of 119



OUTFALL INFORMATION EW 4-1	
RIPRAP LENGTH (L)	7 FT
RIPRAP WIDTH (W)	5 FT
OUTFALL FLOW DEPTH (D)	0.5 FT
MEDIAN STONE DIAMETER (D50)	9.5 IN
Q10	1.80 CFS
V10	1.02 FPS

DIVERSION FENCE (DF)	
290 LF	CLARKSBURG - STA 202+62, 104 LT TO STA 205+47, 48 LT (DF 1-4)

SUPER SILT FENCE (SSF)	
9 LF	CLARKSBURG - STA 205+47, 48 LT TO STA 205+51, 57 LT (SSF 1-1)

SILT FENCE (SF)	
153 LF	CLARKSBURG - STA 202+79, 61 LT TO STA 203+42, 66 LT (SF 1-2)

TEMPORARY MULCH	
2876 SY	CLARKSBURG - STA 202+62 TO STA 206+51

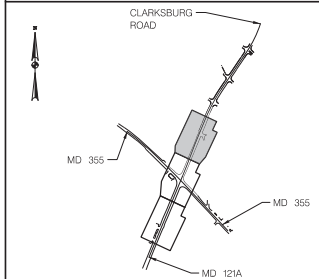
TEMPORARY SEED	
2054 SY	CLARKSBURG - STA 202+62 TO STA 206+51

SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

SCALE: 1"=20'

KEY MAP



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

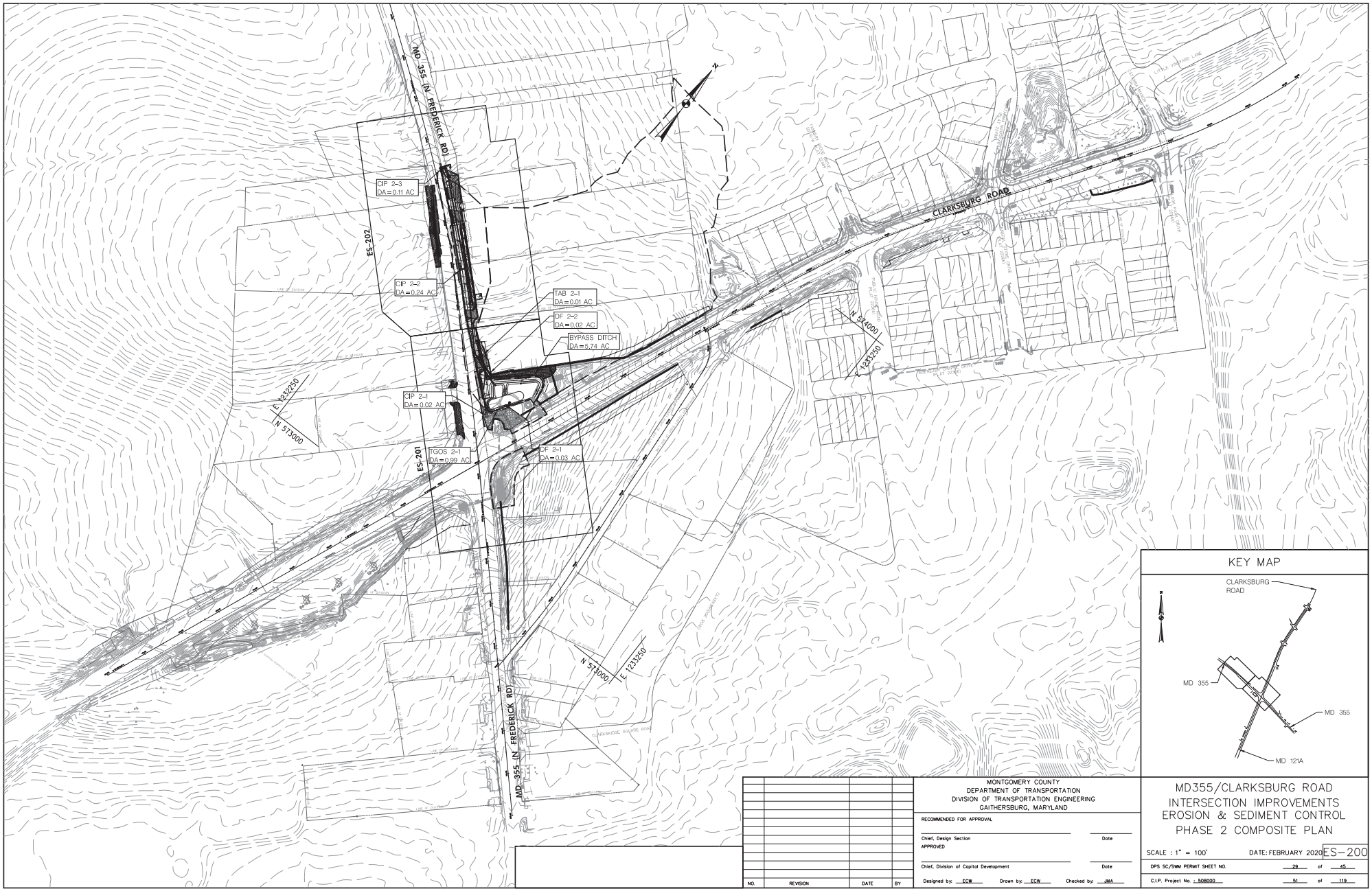
EROSION & SEDIMENT CONTROL PLAN PHASE 1

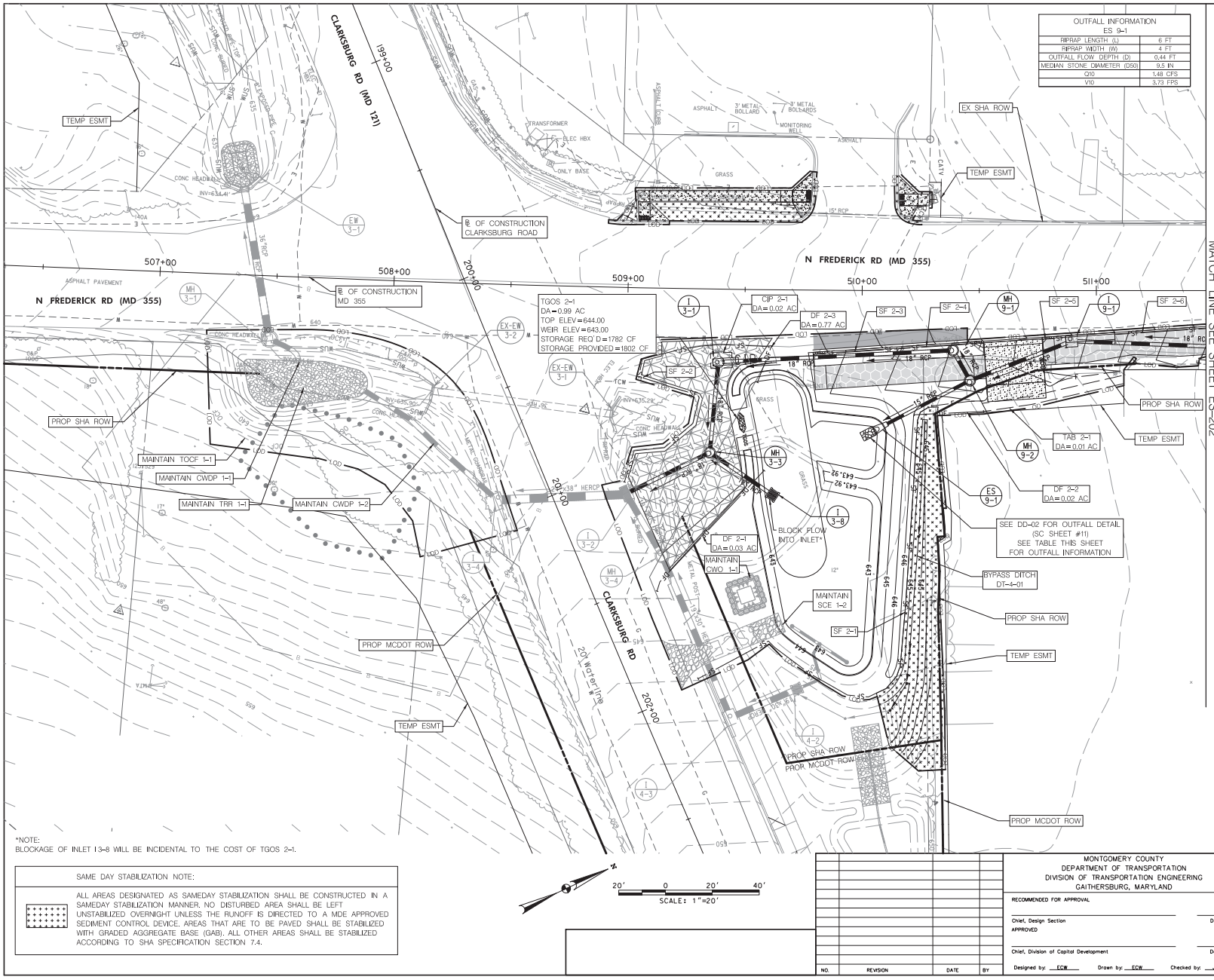
CLARKSBURG – STA. 202+62 TO STA. 207+76

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-103

DPS SC/SWM PERMIT SHEET NO. 28 of 45

C.I.P. Project No. : 508000 50 of 119


MD 355 (N FREDERICK RD)
CLARKSBURG ROAD
CIP 2-3
DA=0.11 AC
ES-202
CIP 2-2
DA=0.24 AC
TAB 2-1
DA=0.01 AC
DF 2-2
DA=0.02 AC
BYPASS DITCH
DA=5.74 AC
N 574000
E 1233250
E 1232250
N 573000
CIP 2-1
DA=0.02 AC
ES-201
TGOS 2-1
DA=0.99 AC
DF 2-1
DA=0.03 AC
N 573000
E 1233250
MD 355 (N FREDERICK RD)
CLARKROSE SQUARE ROAD
KEY MAP
CLARKSBURG ROAD
MD 355
I-270
MD 355
MD 121A
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND
RECOMMENDED FOR APPROVAL
Chief, Design Section
Date
APPROVED
Chief, Division of Capital Development
Date
NO.
REVISION
DATE
BY
Designed by: ECW
Drawn by: ECW
Checked by: JMA
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
EROSION & SEDIMENT CONTROL
PHASE 2 COMPOSITE PLAN
SCALE : 1" = 100'
DATE: FEBRUARY 2020
ES-200
DPS SC/SWM PERMIT SHEET NO.
29 of 45
C.I.P. Project No. : 508000
51 of 119



OUTFALL INFORMATION
ES 9-1

RIPRAP LENGTH (L)	6 FT
RIPRAP WIDTH (W)	4 FT
OUTFALL FLOW DEPTH (D)	0.44 FT
MEDIAN STONE DIAMETER (D50)	9.5 IN
Q10	1.48 CFS
V10	3.73 FPS

TEMPORARY GABION OUTLET STRUCTURE (TGOS)

1 EA	CLARKSBURG - STA 200+81, 42 LT (TGOS 2-1)

DIVERSION FENCE (DF)

70 LF	CLARKSBURG - STA 201+25, 88 LT TO STA 201+55, 26 LT (DF 2-1)
30 LF	CLARKSBURG - STA 201+38, 184 LT TO STA 201+27, 156 LT (DF 2-2)
17 LF	CLARKSBURG - STA 200+76, 111 LT TO STA 200+89, 100 LT (DF 2-3)

SILT FENCE (SF)

217 LF	CLARKSBURG - STA 201+27, 163 LT TO STA 201+96, 27 LT (SF 2-1)
144 LF	CLARKSBURG - STA 200+76, 110 LT TO STA 201+06, 31 LT (SF 2-2)
41 LF	MD 355 - STA 509+80, 32 RT TO STA 510+15, 25 RT (SF 2-3)
46 LF	MD 355 - STA 510+13, 29 RT TO STA 510+52, 28 RT (SF 2-4)
19 LF	MD 355 - STA 510+77, 26 RT TO STA 510+87, 24 RT (SF 2-5)
43 LF	MD 355 - STA 511+08, 22 RT TO STA 511+47, 16 RT (SF 2-6)

TEMPORARY MULCH

3710 SY	MD 355 - STA 508+87 TO STA 511+47

TEMPORARY SEED

2650 SY	MD 355 - STA 508+87 TO STA 511+47

TYPE A SOIL STABILIZATION MATTING

149 SY	CLARKSBURG - STA 200+73, 113 LT TO STA 201+49, 34 LT

INLET PROTECTION (CIP)

1 EA	MD 355 - STA 509+40, 30 RT (CIP 2-1)

TEMPORARY ASPHALT BERM (TAB)

61 LF	MD 355 - STA 510+52, 50 RT TO STA 511+11, 38 RT (TAB 2-1)

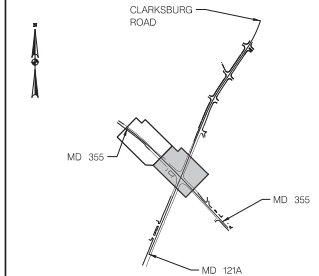
*NOTE:
BLOCKAGE OF INLET 13-8 WILL BE INCIDENTAL TO THE COST OF TGOS 2-1.

SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

SCALE: 1"=20'

KEY MAP



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

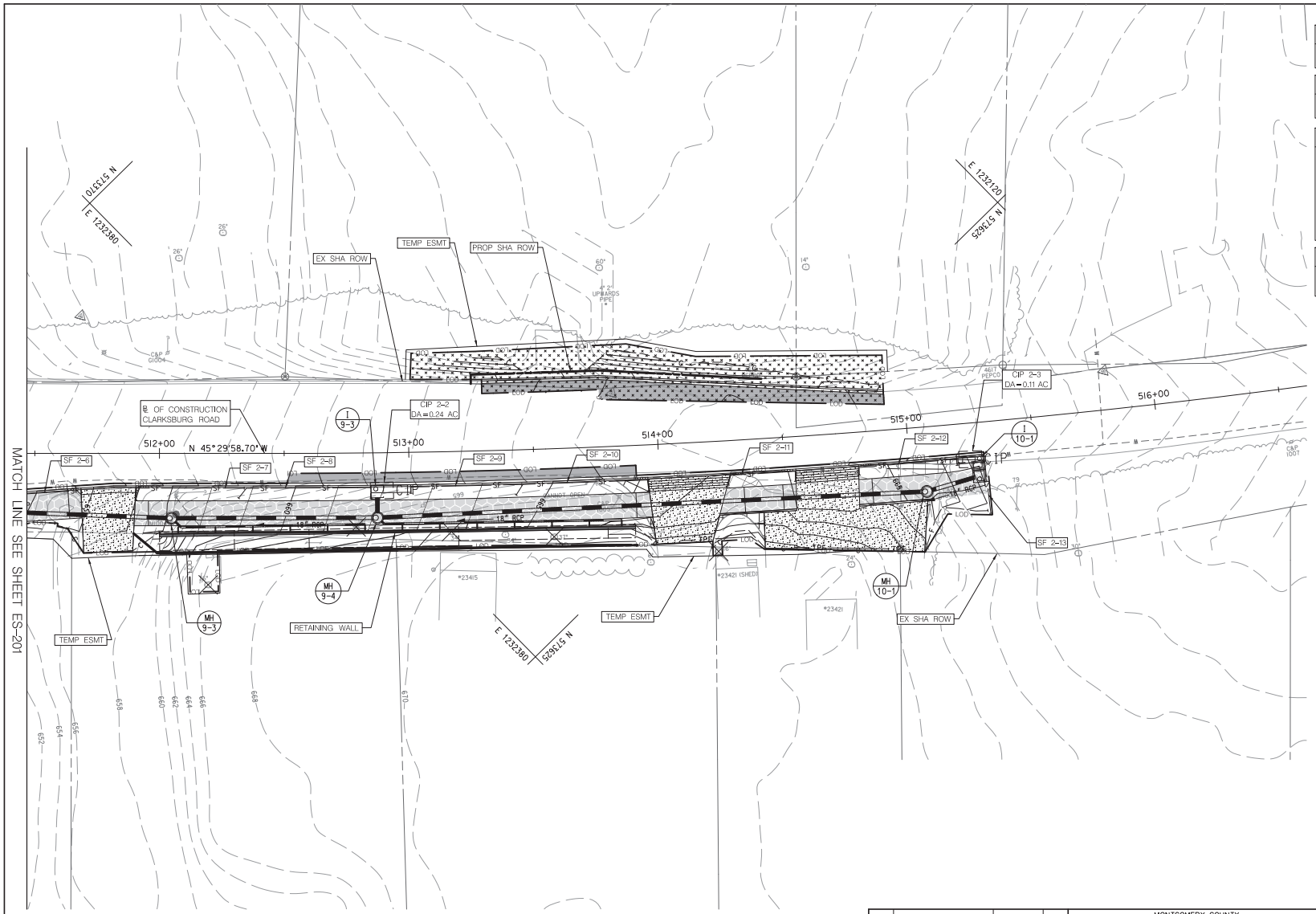
EROSION & SEDIMENT CONTROL PLAN PHASE 2

CLARKSBURG - STA. 198+73 TO STA. 202+66
MD 355 - STA. 506+33 TO STA. 511+47

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-201

DPS SC/SWM PERMIT SHEET NO. 30 of 45

C.I.P. Project No. : 508000 52 of 119



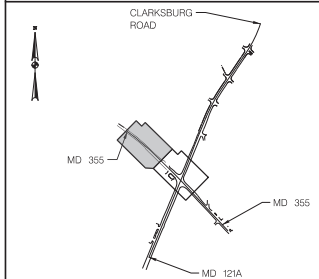
TEMPORARY MULCH	
2292 SY	MD 355 - STA 511+47 TO STA 515+42

TEMPORARY SEED	
1637 SY	MD 355 - STA 511+47 TO STA 515+42

SILT FENCE (SF)	
27 LF	MD 355 - STA 511+47, 16 RT TO STA 511+69, 20 RT (SF 2-6)
48 LF	MD 355 - STA 511+91, 19 RT TO STA 512+34, 14 RT (SF 2-7)
59 LF	MD 355 - STA 512+32, 18 RT TO STA 512+85, 18 RT (SF 2-8)
47 LF	MD 355 - STA 513+01, 16 RT TO STA 513+45, 14 RT (SF 2-9)
59 LF	MD 355 - STA 513+43, 18 RT TO STA 513+96, 18 RT (SF 2-10)
34 LF	MD 355 - STA 514+27, 18 RT TO STA 514+54, 18 RT (SF 2-11)
45 LF	MD 355 - STA 514+80, 17 RT TO STA 515+19, 16 RT (SF 2-12)
23 LF	MD 355 - STA 515+32, 16 RT TO STA 515+35, 37 RT (SF 2-13)

INLET PROTECTION (CIP)	
1 EA	MD 355 - STA 512+90, 14 RT (CIP 2-2)
1 EA	MD 355 - STA 515+24, 15 RT (CIP 2-3)

KEY MAP



SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

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

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

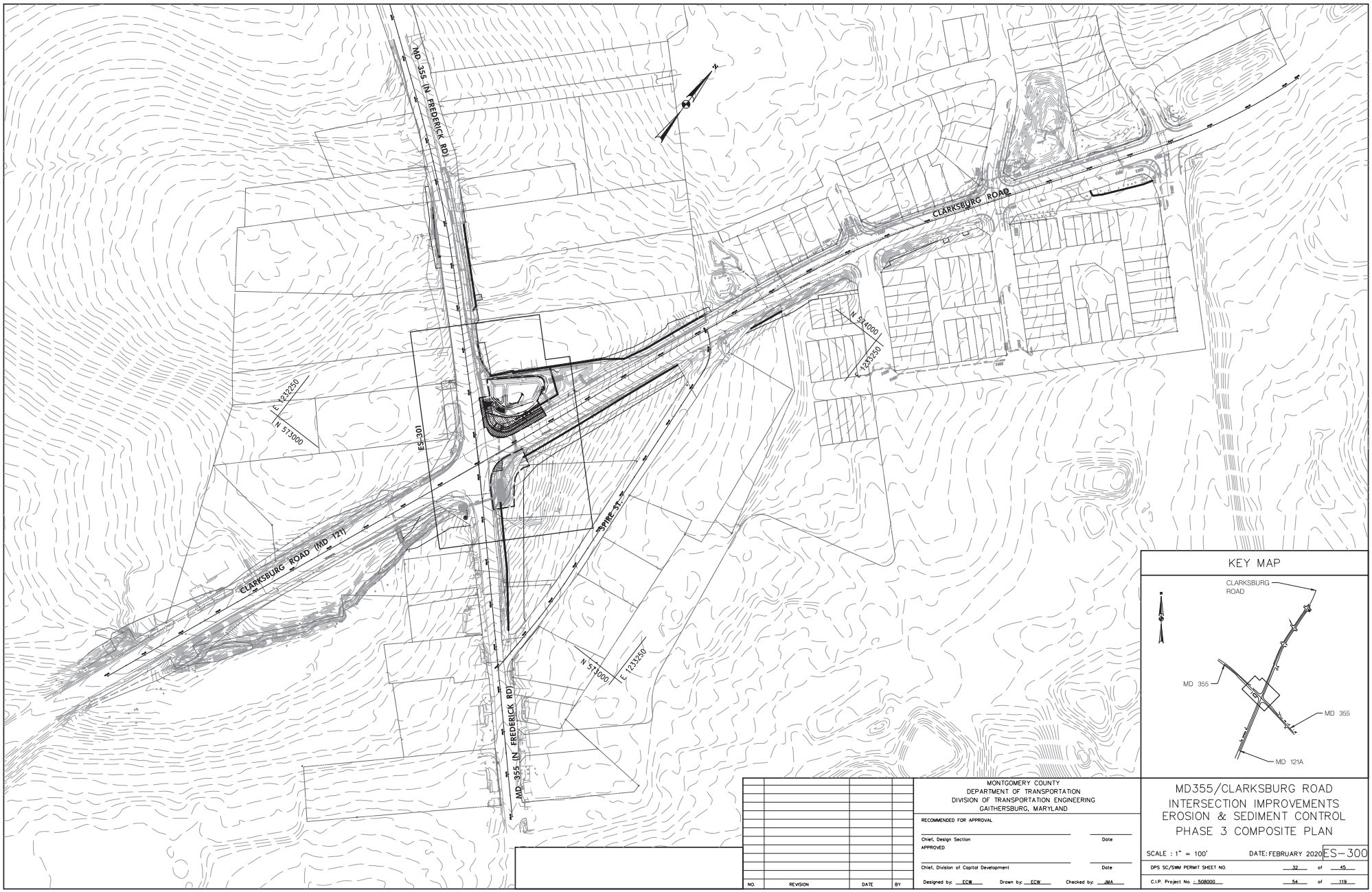
EROSION & SEDIMENT CONTROL PLAN PHASE 2

MD 355 - STA. 511+47 TO STA. 516+61

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-202

DPS SC/SWM PERMIT SHEET NO. 31 of 45

C.I.P. Project No. : 508000 53 of 119



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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

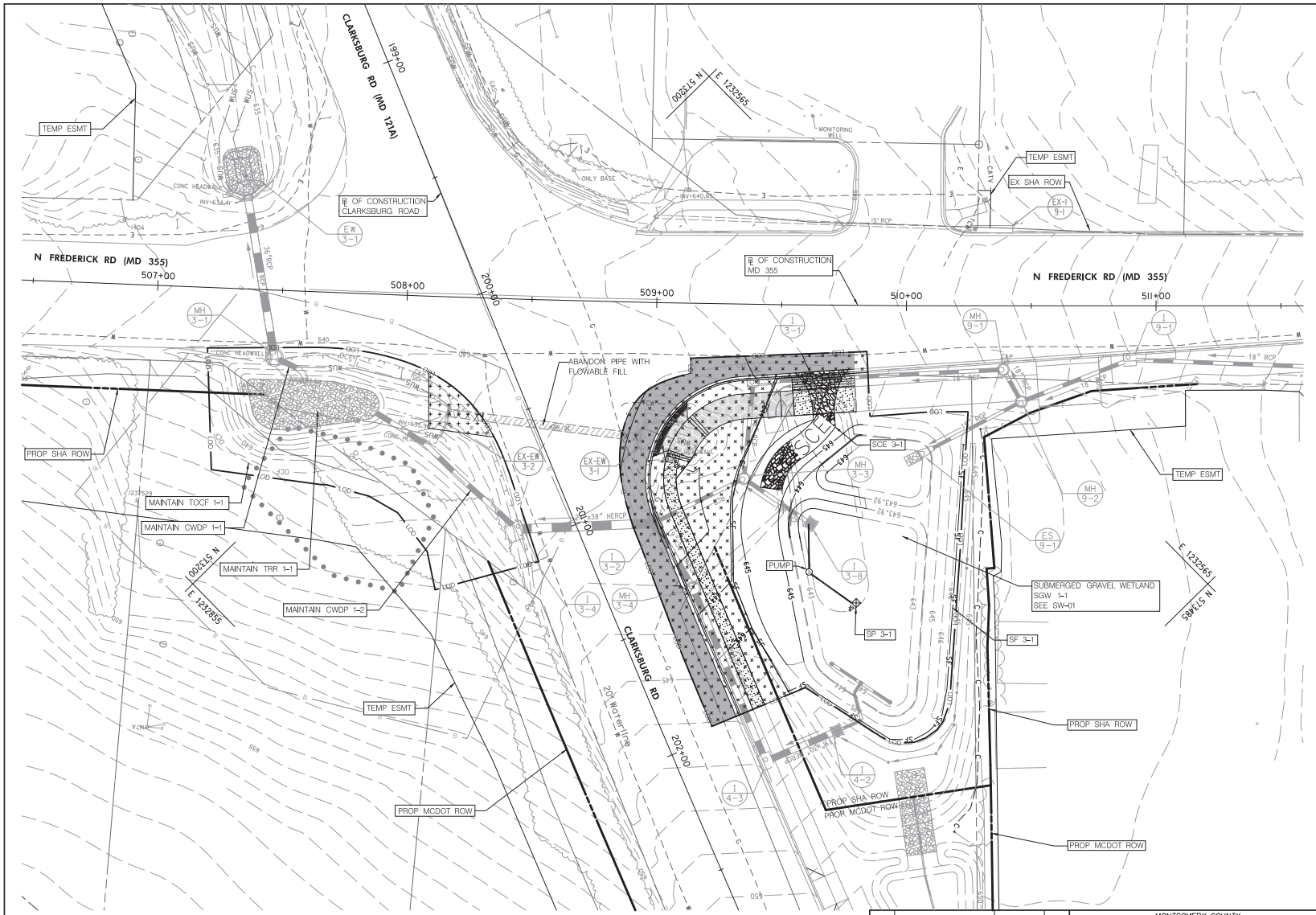
Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS EROSION & SEDIMENT CONTROL PHASE 3 COMPOSITE PLAN

SCALE : 1" = 100' DATE: FEBRUARY 2020 ES-300

DPS SC/SWM PERMIT SHEET NO. 32 of 45

C.I.P. Project No. : 508000 54 of 119



TEMPORARY SEED	
526 SY	CLARKSBURG - STA 200+56, 68 LT TO STA 201+96, 19 LT

TEMPORARY MULCH	
736 SY	CLARKSBURG - STA 200+56, 68 LT TO STA 201+96, 19 LT

STABILIZED CONSTRUCTION ENTRANCE (SCE)	
1 EA	CLARKSBURG - STA 201+04, 101 LT (SCE 3-1)

SILT FENCE (SF)	
316 LF	CLARKSBURG - STA 200+77, 97 LT TO STA 201+30, 156 LT (SF 3-1)

SUMP PIT (SP)	
1 EA	CLARKSBURG - STA 201+73, 92 LT (SP 3-1)

SAME DAY STABILIZATION NOTE:

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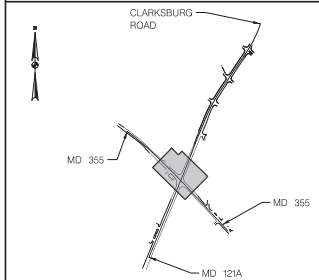
20' 0 20' 40'
SCALE: 1"=20'

KEY MAP



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

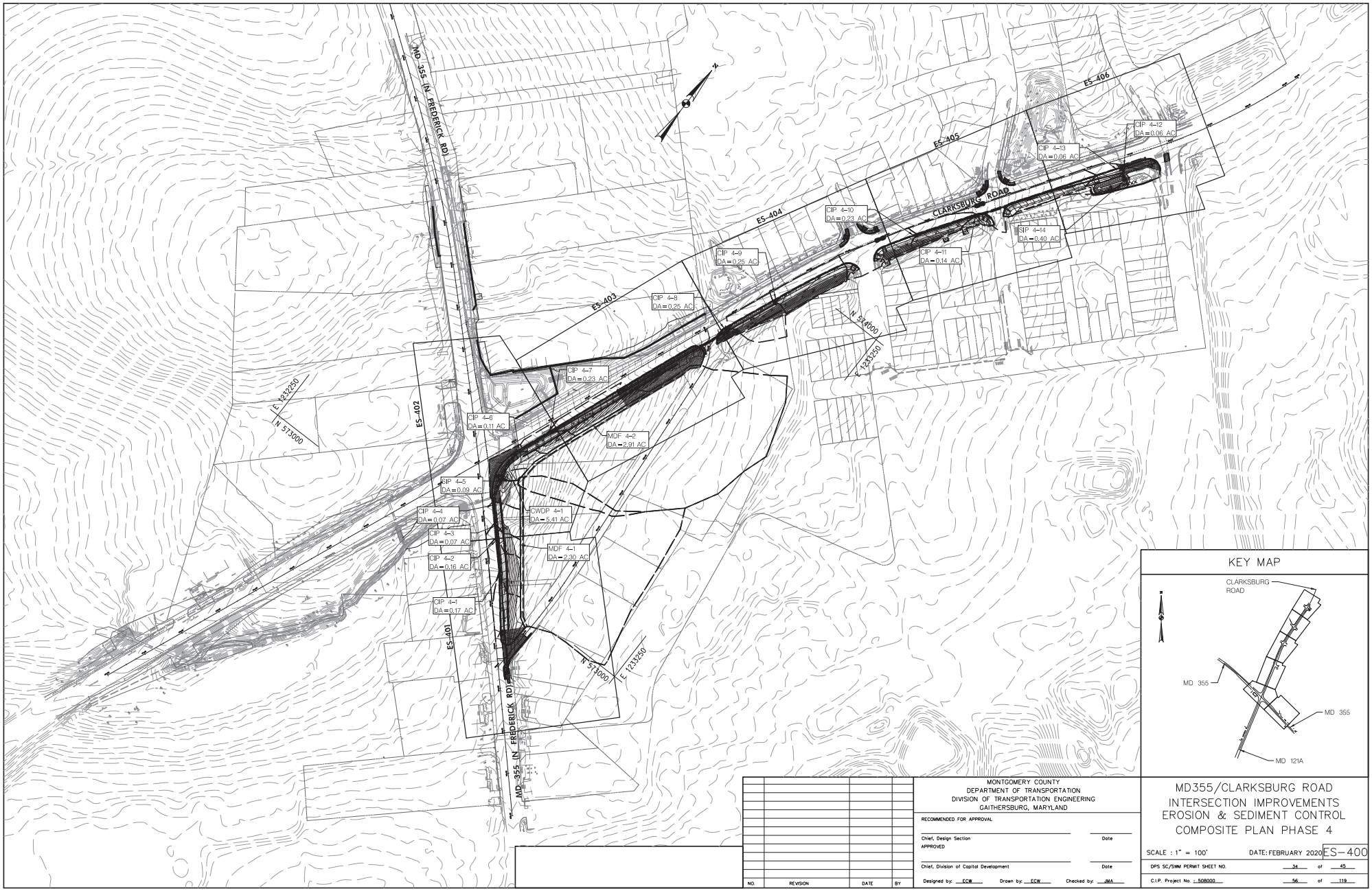
EROSION & SEDIMENT CONTROL PLAN PHASE 3

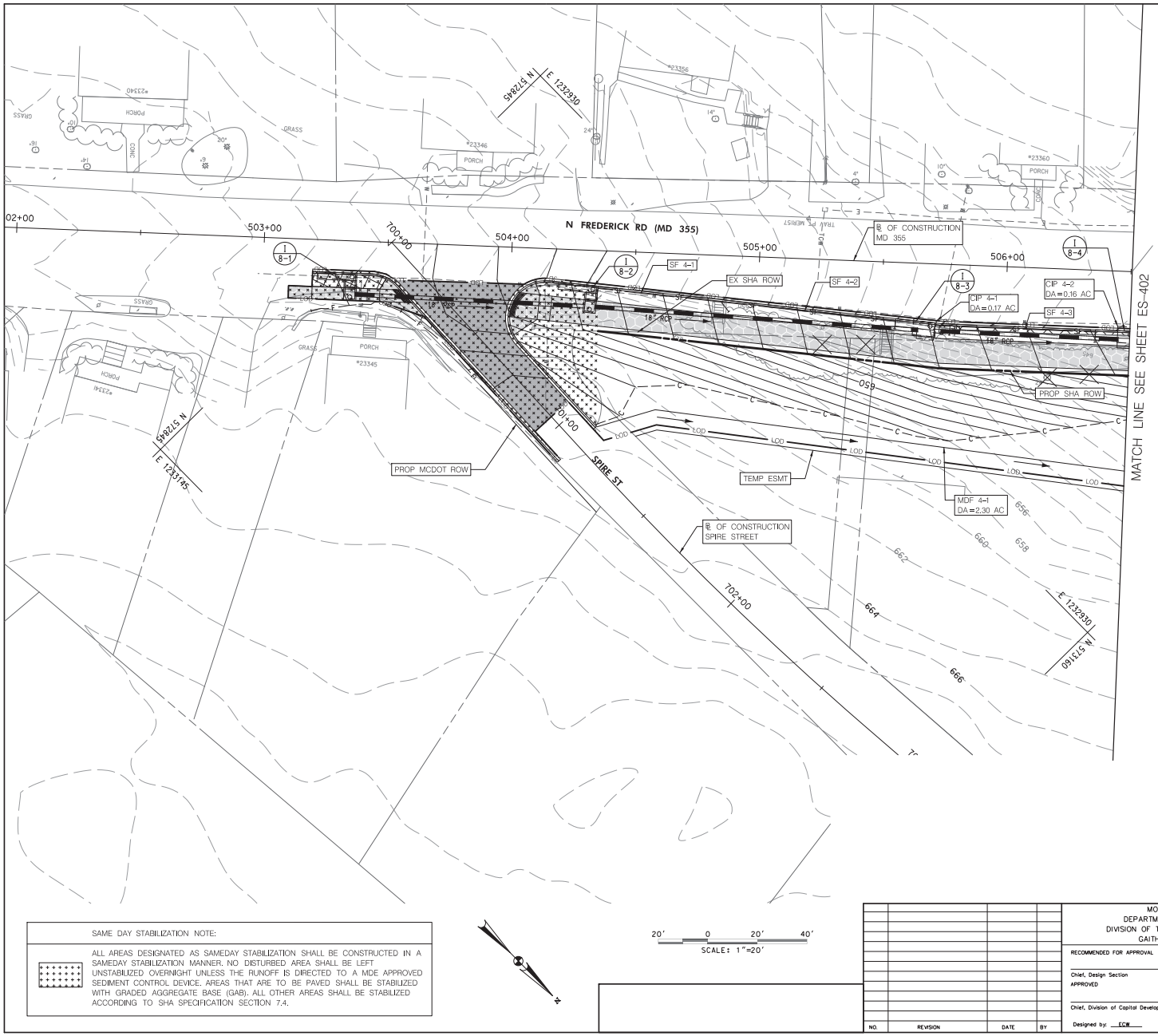
CLARKSBURG - STA. 198+75 TO STA. 202+68
MD 355 - STA. 506+46 TO STA. 511+59

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-301

DPS SC/SWM PERMIT SHEET NO. 33 of 45

C.I.P. Project No. : 508000 55 of 119


MD 355 (N. FREDERICK RD)
CLARKSBURG ROAD
ES-401
ES-402
ES-403
ES-404
ES-405
ES-406
CIP 4-1
DA = 0.17 AC
CIP 4-2
DA = 0.16 AC
CIP 4-3
DA = 0.07 AC
CIP 4-4
DA = 0.07 AC
SIP 4-5
DA = 0.09 AC
CIP 4-6
DA = 0.11 AC
CIP 4-7
DA = 0.23 AC
CIP 4-8
DA = 0.25 AC
CIP 4-9
DA = 0.25 AC
CIP 4-10
DA = 0.23 AC
CIP 4-11
DA = 0.14 AC
SIP 4-14
DA = 0.40 AC
CIP 4-13
DA = 0.06 AC
CIP 4-12
DA = 0.06 AC
MDF 4-1
DA = 2.30 AC
CWDP 4-1
DA = 5.41 AC
MDF 4-2
DA = 2.91 AC
E 1232250
N 573000
N 574000
E 1233250
N 573000
E 1233250
KEY MAP
CLARKSBURG ROAD
MD 355
MD 355
MD 121A
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND
RECOMMENDED FOR APPROVAL
Chief, Design Section
Date
APPROVED
Chief, Division of Capital Development
Date
NO.
REVISION
DATE
BY
Designed by: ECW
Drawn by: ECW
Checked by: JMA
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
EROSION & SEDIMENT CONTROL
COMPOSITE PLAN PHASE 4
SCALE : 1" = 100'
DATE: FEBRUARY 2020
ES-400
DPS SC/SWM PERMIT SHEET NO.
34 of 45
C.I.P. Project No. : 508000
56 of 119



TEMPORARY MULCH	
1319 SY	MD 355 - STA 503+20 TO STA 506+50

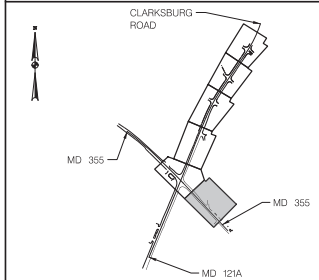
TEMPORARY SEED	
942 SY	MD 355 - STA 503+20 TO STA 506+50

MODIFIED DIVERSION FENCE (MDF)	
216 LF	MD 355 - STA 504+37, 71 RT TO STA 506+50, 63 RT (MDF 4-1)

INLET PROTECTION (CIP)	
1 EA	MD 355 - STA 505+67, 26 RT (CIP 4-1)
1 EA	MD 355 - STA 506+50, 26 RT (CIP 4-2)

SILT FENCE (SF)	
59 LF	MD 355 - STA 504+35, 19 RT TO STA 504+88, 23 RT (SF 4-1)
73 LF	MD 355 - STA 504+86, 19 RT TO STA 505+56, 27 RT (SF 4-2)
73 LF	MD 355 - STA 505+72, 29 RT TO STA 506+37, 29 RT (SF 4-3)

KEY MAP



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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

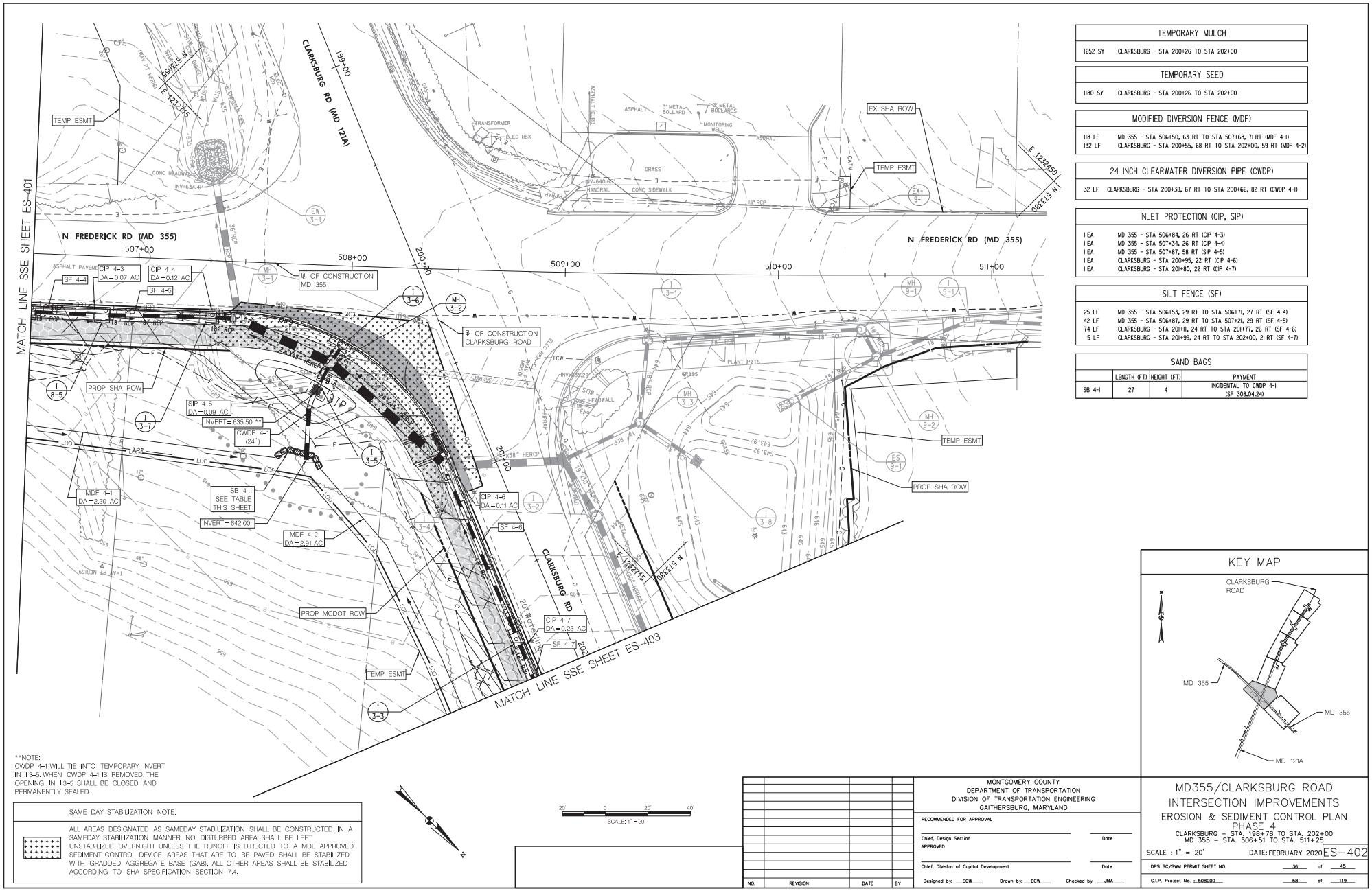
EROSION & SEDIMENT CONTROL PLAN PHASE 4

STATION 501+95 TO STATION 506+51

SCALE :1" = 20' DATE: FEBRUARY 2020 ES-401

DPS SC/SWM PERMIT SHEET NO. 35 of 45

C.I.P. Project No. : 508000 57 of 119



TEMPORARY MULCH	
1652 SY	CLARKSBURG - STA 200+26 TO STA 202+00

TEMPORARY SEED	
1180 SY	CLARKSBURG - STA 200+26 TO STA 202+00

MODIFIED DIVERSION FENCE (MDF)	
118 LF	MD 355 - STA 506+50, 63 RT TO STA 507+68, 71 RT (MDF 4-1)
132 LF	CLARKSBURG - STA 200+55, 68 RT TO STA 202+00, 59 RT (MDF 4-2)

24 INCH CLEARWATER DIVERSION PIPE (CWDP)	
32 LF	CLARKSBURG - STA 200+38, 67 RT TO STA 200+66, 82 RT (CWDP 4-1)

INLET PROTECTION (CIP, SIP)	
1 EA	MD 355 - STA 506+84, 26 RT (CIP 4-3)
1 EA	MD 355 - STA 507+34, 26 RT (CIP 4-4)
1 EA	MD 355 - STA 507+87, 58 RT (SIP 4-5)
1 EA	CLARKSBURG - STA 200+95, 22 RT (CIP 4-6)
1 EA	CLARKSBURG - STA 201+80, 22 RT (CIP 4-7)

SILT FENCE (SF)	
25 LF	MD 355 - STA 506+53, 29 RT TO STA 506+71, 27 RT (SF 4-4)
42 LF	MD 355 - STA 506+87, 29 RT TO STA 507+21, 29 RT (SF 4-5)
74 LF	CLARKSBURG - STA 201+11, 24 RT TO STA 201+77, 26 RT (SF 4-6)
5 LF	CLARKSBURG - STA 201+99, 24 RT TO STA 202+00, 21 RT (SF 4-7)

SAND BAGS			
	LENGTH (FT)	HEIGHT (FT)	PAYMENT
SB 4-1	27	4	INCIDENTAL TO CWDP 4-1 (SP 308.04.24)

**NOTE:
CWDP 4-1 WILL TIE INTO TEMPORARY INVERT IN 13-5. WHEN CWDP 4-1 IS REMOVED, THE OPENING IN 13-5 SHALL BE CLOSED AND PERMANENTLY SEALED.

SAME DAY STABILIZATION NOTE:

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SCALE: 1" = 20'

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

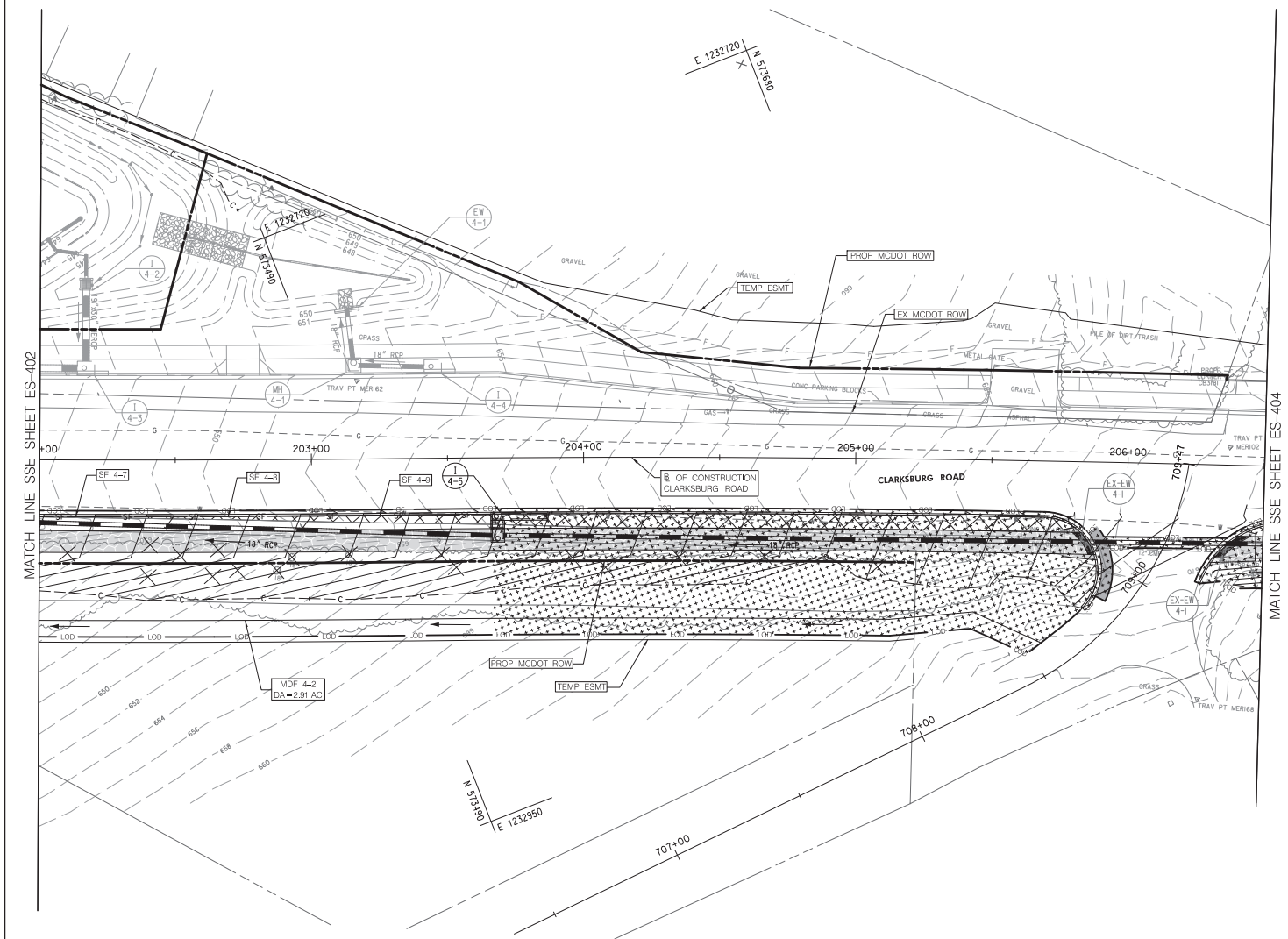
EROSION & SEDIMENT CONTROL PLAN PHASE 4

CLARKSBURG - STA. 198+78 TO STA. 202+00
MD 355 - STA. 506+51 TO STA. 511+25

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-402

DPS SC/SWM PERMIT SHEET NO. 36 of 45

C.I.P. Project No. : 508000 58 of 119



TEMPORARY MULCH	
2062 SY	CLARKSBURG - STA 202+00 TO STA 206+50

TEMPORARY SEED	
1473 SY	CLARKSBURG - STA 202+00 TO STA 206+50

MODIFIED DIVERSION FENCE (MDF)	
371 LF	CLARKSBURG - STA 202+00, 59 RT TO STA 205+69, 67 RT (MDF 4-2)

SILT FENCE (SF)	
48 LF	CLARKSBURG - STA 202+00, 21 RT TO STA 202+48, 21 RT (SF 4-7)
55 LF	CLARKSBURG - STA 202+46, 25 RT TO STA 202+99, 21 RT (SF 4-8)
76 LF	CLARKSBURG - STA 202+97, 25 RT TO STA 203+66, 26 RT (SF 4-9)

SAME DAY STABILIZATION NOTE:

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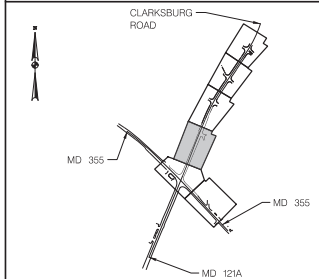
20' 0 20' 40'
SCALE: 1" = 20'

KEY MAP



NO.	REVISION	DATE	BY

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DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

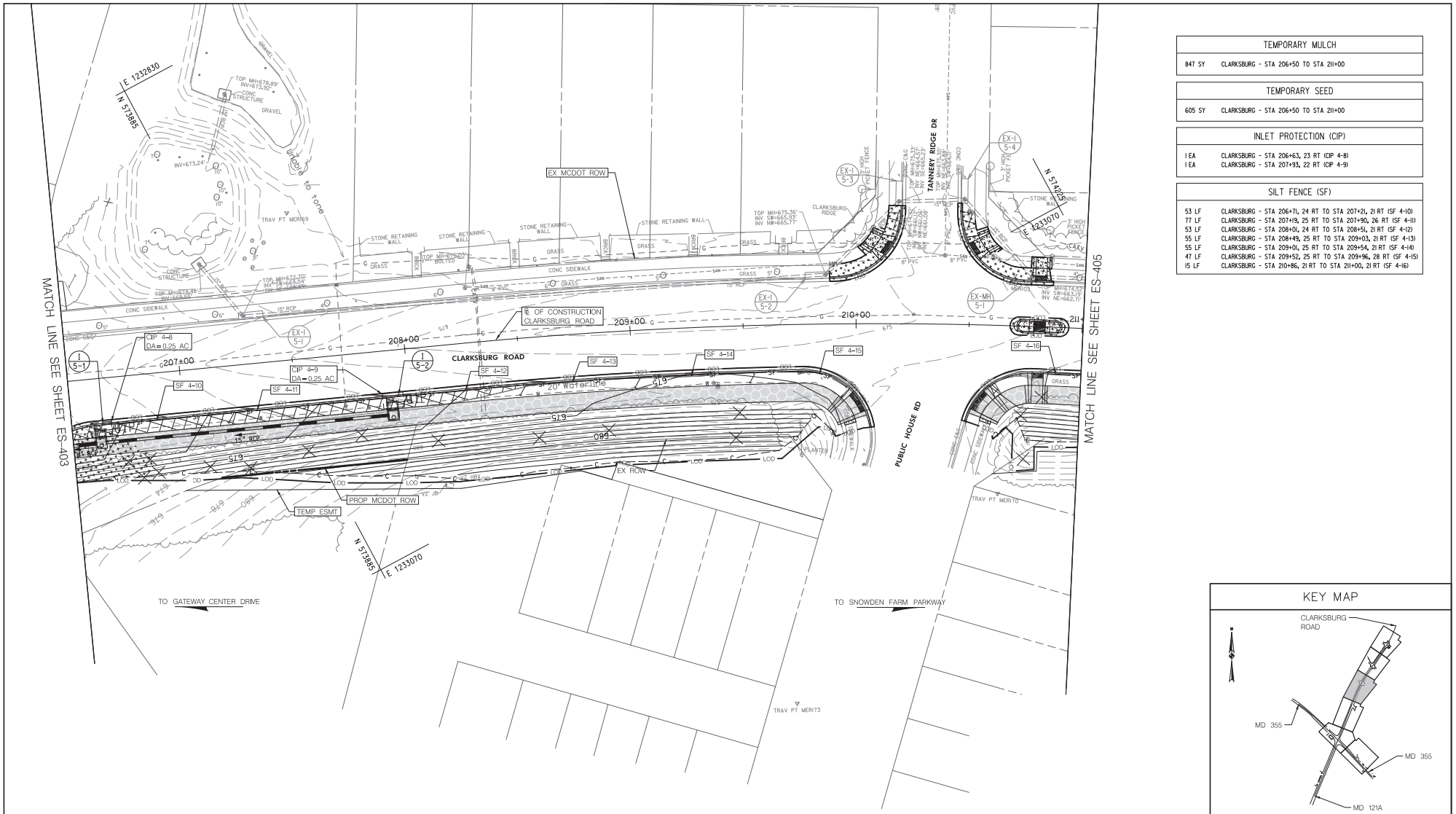
EROSION & SEDIMENT CONTROL PLAN PHASE 4

CLARKSBURG – STA. 202+00 TO STA. 206+50

SCALE : 1" =20' DATE: FEBRUARY 2020 ES-403

DPS SC/SWM PERMIT SHEET NO. 37 of 45

C.I.P. Project No. : 508000 59 of 119



TEMPORARY MULCH	
847 SY	CLARKSBURG - STA 206+50 TO STA 211+00

TEMPORARY SEED	
605 SY	CLARKSBURG - STA 206+50 TO STA 211+00

INLET PROTECTION (CIP)	
1 EA	CLARKSBURG - STA 206+63, 23 RT (CIP 4-8)
1 EA	CLARKSBURG - STA 207+93, 22 RT (CIP 4-9)

SILT FENCE (SF)	
53 LF	CLARKSBURG - STA 206+71, 24 RT TO STA 207+21, 21 RT (SF 4-10)
77 LF	CLARKSBURG - STA 207+19, 25 RT TO STA 207+90, 26 RT (SF 4-11)
53 LF	CLARKSBURG - STA 208+01, 24 RT TO STA 208+51, 21 RT (SF 4-12)
55 LF	CLARKSBURG - STA 208+49, 25 RT TO STA 209+03, 21 RT (SF 4-13)
55 LF	CLARKSBURG - STA 209+01, 25 RT TO STA 209+54, 21 RT (SF 4-14)
47 LF	CLARKSBURG - STA 209+52, 25 RT TO STA 209+96, 28 RT (SF 4-15)
15 LF	CLARKSBURG - STA 210+86, 21 RT TO STA 211+00, 21 RT (SF 4-16)

SAME DAY STABILIZATION NOTE:

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SCALE: 1" = 20'

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
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DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

KEY MAP

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

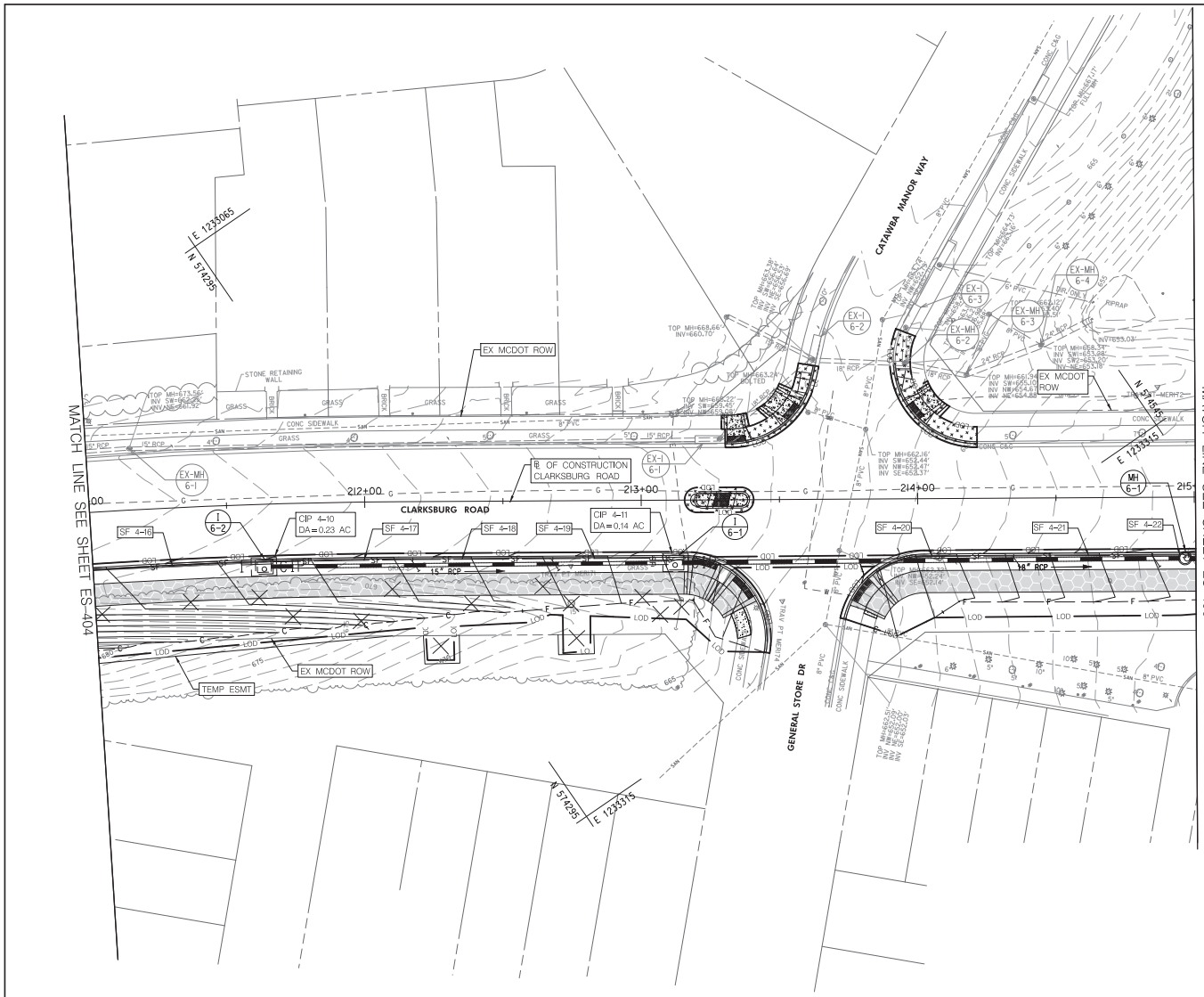
EROSION & SEDIMENT CONTROL PLAN PHASE 4

CLARKSBURG - STA. 206+50 TO STA. 211+00

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-404

DPS SC/SWM PERMIT SHEET NO. 38 of 45

C.I.P. Project No. : 508000 60 of 119



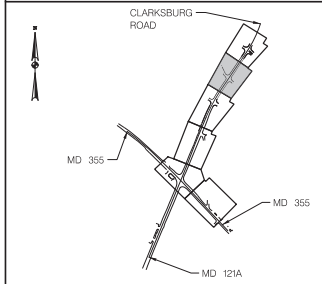
TEMPORARY MULCH	
707 SY	CLARKSBURG - STA 211+00 TO STA 215+00

TEMPORARY SEED	
505 SY	CLARKSBURG - STA 211+00 TO STA 215+00

INLET PROTECTION (CIP)	
1 EA	CLARKSBURG - STA 211+63, 22 RT (CIP 4-10)
1 EA	CLARKSBURG - STA 213+12, 22 RT (CIP 4-11)

SILT FENCE (SF)	
57 LF	CLARKSBURG - STA 211+00, 21 RT TO STA 211+55, 24 RT (SF 4-16)
55 LF	CLARKSBURG - STA 211+66, 21 RT TO STA 212+20, 25 RT (SF 4-17)
55 LF	CLARKSBURG - STA 212+17, 21 RT TO STA 212+70, 25 RT (SF 4-18)
39 LF	CLARKSBURG - STA 212+68, 21 RT TO STA 213+04, 24 RT (SF 4-19)
55 LF	CLARKSBURG - STA 213+85, 26 RT TO STA 214+37, 25 RT (SF 4-20)
55 LF	CLARKSBURG - STA 214+35, 21 RT TO STA 214+87, 25 RT (SF 4-21)
16 LF	CLARKSBURG - STA 214+85, 21 RT TO STA 215+00, 21 RT (SF 4-22)

KEY MAP



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SCALE: 1" = 20'

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

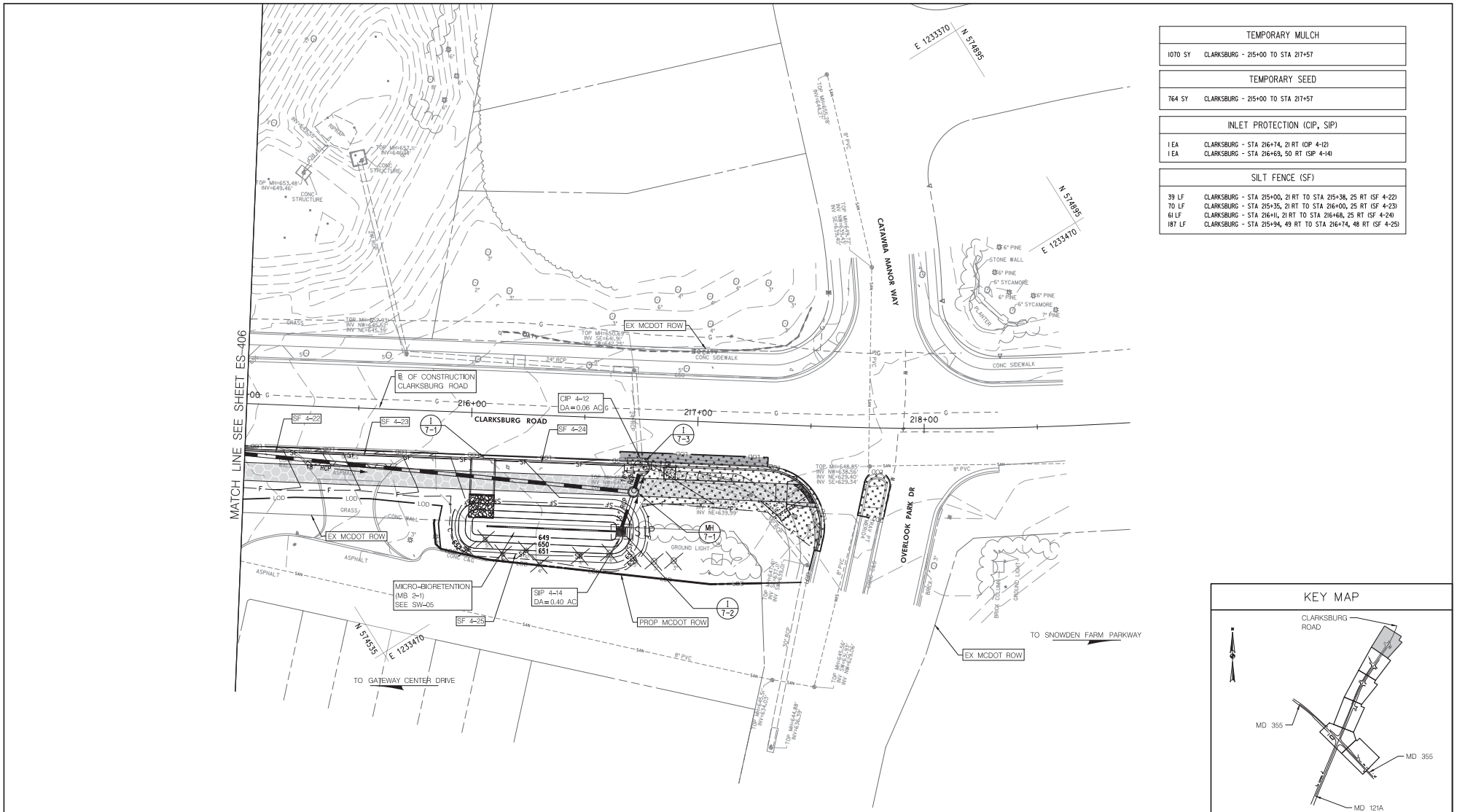
EROSION & SEDIMENT CONTROL PLAN PHASE 4

CLARKSBURG – STA. 211+00 TO STA. 215+00

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-405

DPS SC/SWM PERMIT SHEET NO. 39 of 45

C.I.P. Project No. : 508000 61 of 119



TEMPORARY MULCH	
1070 SY	CLARKSBURG - 215+00 TO STA 217+57

TEMPORARY SEED	
764 SY	CLARKSBURG - 215+00 TO STA 217+57

INLET PROTECTION (CIP, SIP)	
1 EA	CLARKSBURG - STA 216+74, 21 RT (CIP 4-12)
1 EA	CLARKSBURG - STA 216+69, 50 RT (SIP 4-14)

SILT FENCE (SF)	
39 LF	CLARKSBURG - STA 215+00, 21 RT TO STA 215+38, 25 RT (SF 4-22)
70 LF	CLARKSBURG - STA 215+35, 21 RT TO STA 216+00, 25 RT (SF 4-23)
61 LF	CLARKSBURG - STA 216+11, 21 RT TO STA 216+68, 25 RT (SF 4-24)
187 LF	CLARKSBURG - STA 215+94, 49 RT TO STA 216+74, 48 RT (SF 4-25)

KEY MAP

SAME DAY STABILIZATION NOTE:

ALL AREAS DESIGNATED AS SAMEDAY STABILIZATION SHALL BE CONSTRUCTED IN A SAMEDAY STABILIZATION MANNER. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MDE APPROVED SEDIMENT CONTROL DEVICE. AREAS THAT ARE TO BE PAVED SHALL BE STABILIZED WITH GRADED AGGREGATE BASE (GAB). ALL OTHER AREAS SHALL BE STABILIZED ACCORDING TO SHA SPECIFICATION SECTION 7.4.

SCALE: 1" = 20'

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ECW Drawn by: ECW Checked by: JMA

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

EROSION & SEDIMENT CONTROL PLAN PHASE 4

CLARKSBURG – STA. 215+00 TO STA. 218+91

SCALE : 1" = 20' DATE: FEBRUARY 2020 ES-406

DPS SC/SWM PERMIT SHEET NO. 40 of 45

C.I.P. Project No. : 508000 62 of 119

LANDSCAPING GENERAL NOTES

7.1 SHA LANDSCAPE NOTES. LANDSCAPE CONSTRUCTION WITHIN RIGHTS OF WAY OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) AND WITHIN SHA PROPERTY, EASEMENT AREAS AND LANDS TO BE CONVEYED TO SHA 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 AT 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/tocc at7.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.

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 WITHIN 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.

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

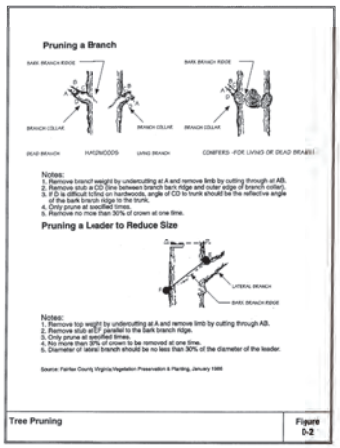
7.7 EXCAVATION AND DEBRIS REMOVAL. DEBRIS RELATED TO THE DEMOLITION OF SIDEWALKS, DRIVEWAYS, CURBS, TREES, STUMPS, ROOTS, FENCING, PIPES, AND OTHER MATERIALS THAT MAY INTERFERE WITH LANDSCAPE INSTALLATION OR FUTURE MAINTENANCE SHALL BE EXCAVATED AS NECESSARY FOR THEIR COMPLETE REMOVAL AND DISPOSAL.

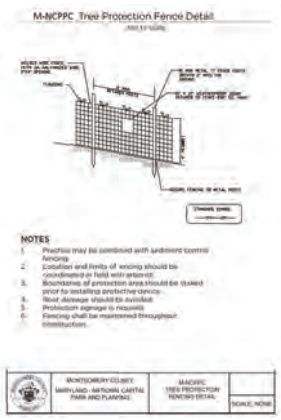
7.8 SOIL RESTORATION. AREAS OF PAVEMENT REMOVAL, EXCAVATION OR DRILLING IN LANDSCAPED AREAS SHALL REMOVE EXCAVATED DEBRIS AND RESTORE THE SUBGRADE WITH APPROVED SUBSOIL AND TOPSOIL PLACED IN CONFORMANCE WITH SECTION 701 OF THE SHA STANDARD SPECIFICATIONS.

1. A LAYER OF APPROVED TOPSOIL OF AT LEAST A 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 OF AT LEAST A 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 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 DISTURBED 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.





LANDSCAPING GENERAL NOTES: CONTINUED

7.11 SOIL STABILIZATION MATTING SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 709 OF THE SHA STANDARD SPECIFICATIONS, IN CONJUNCTION WITH TURFGRASS 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 CONJUNCTION WITH TURFGRASS ESTABLISHMENT.
2. AREAS STEEPER THAN 6:1 AND FLATTER THAN 4:1. TYPE A OR TYPE E MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER IN CONJUNCTION 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 BINDER IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT, UNLESS DELINEATED AND NOTED OTHERWISE.
4. IN AREAS OF MEADOW ESTABLISHMENT WITH TYPE D SOIL STABILIZATION 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 STABILIZATION MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER WITHIN THE DELINEATED AREAS.

7.12 MEADOW ESTABLISHMENT OR SHRUB SEEDING 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 ACRE.

7.13 TREE PRESERVATION AREAS. TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) SHALL BE INSTALLED IN LOCATIONS DELINEATED ON THE PLANS AS TREE PRESERVATION AREAS (TPA) 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, PER 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) ISSUED BY THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, OR THE APPROVED FOREST CONSERVATION PLAN (FCP) 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.

7.16 TREE BRANCH PRUNING SHALL BE PERFORMED OR DIRECTLY SUPERVISED BY A MARYLAND LICENSED TREE EXPERT IN CONFORMANCE WITH ANSI A300 STANDARDS PER SECTION 712 AS NECESSARY FOR ANY OF THE FOLLOWING: TO INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) ALONG DELINEATIONS ON PLANS; TO PERFORM TREE ROOT PRUNING ALONG DELINEATIONS ON PLANS; TO PROVIDE 8-FOOT CLEARANCE ABOVE SIDEWALK PAVEMENTS AND 16-FOOT CLEARANCE ABOVE ROADWAY PAVEMENTS; TO REPAIR TREE WOUNDS; AND TO PERFORM OTHER RECOMMENDED CLEANING, THINNING, REDUCING, AND PRUNING NECESSARY TO ACCOMMODATE UTILITIES. ALL DEBRIS SHALL BE REMOVED FROM SHA PROPERTY.

7.17 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 CONSTRUCTION ADJACENT TO TREES TO BE PRESERVED.

7.18 TREE FERTILIZING SHALL BE PERFORMED IN CONFORMANCE WITH OPERATION 3 - BROADCAST FERTILIZING PER SECTION 716. 20-16-12 FERTILIZER SHALL BE APPLIED TO THE SOIL SURFACE UNDER THE DRIPLINE OF TREES AT THE RATE OF 200 LBS. PER ACRE.

7.19 FINISHED MATERIALS. THE SUITABILITY, COLOR AND TEXTURE OF APPLICANT TO INSERT NAME OF MATERIALS WITH REFERENCES TO PAGES OF THE PLANS WHICH SPECIFY THESE MATERIALS TO BE INSTALLED SHALL BE APPROVED BEFORE INSTALLATION. THE CONTRACTOR SHALL FURNISH SAMPLES OR MAKE ARRANGEMENTS FOR INSPECTION AND APPROVAL AT THE PROJECT SITE.

7.20 FUTURE MAINTENANCE. ADDITIONAL MAINTENANCE THAT MAY BE REQUIRED AFTER HARDSCAPE, STREET FURNITURE OR PLANT MATERIALS ARE INSTALLED AND ACCEPTED BY SHA SUCH AS REPLACEMENT, WATERING, WEEDING, MULCHING OR PEST CONTROL MAY BE PROVIDED BY THE APPLICANT WHEN A PERMIT FOR THE PROPOSED WORK IS ISSUED BY THE SHA DISTRICT OFFICE.

7.21 INSTALL DEER PROTECTION CAGES AROUND ALL NEW TREES. DEER PROTCTION CAGES TO BE INSTALLED PER PLAN DETAILS.

7.22 INSTALL DEER PROTECTION FENCING AROUND ALL PERENNIAL PLANTINGS WITHIN BIO-RETENTION AREAS. DEER PROTECTION FENCING TO BE PLACED A MINIMUM OF 5' BEYOND PLANTING AREAS AND PROVIDE AN ACCESS POINT TO ALLOW FOR MAINTENANCE OPERATIONS INSIDE THE FENCE.

STATE OF MARYLAND
BRIAN EUGENE SHIPLEY
No. 3159
LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

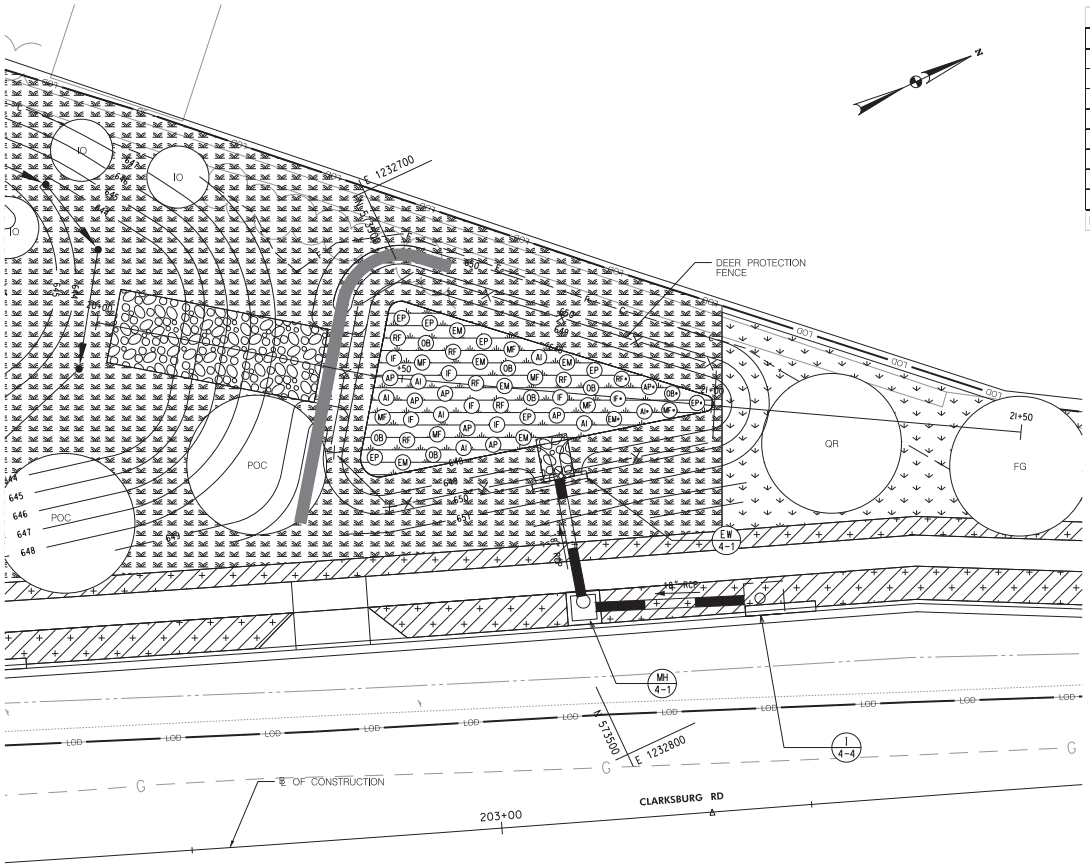
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPING
GENERAL NOTES

SCALE : NO SCALE DATE: SEPTEMBER 2020 LD-00
DPS SC/SWM PERMIT SHEET NO. 41 of 45
C.I.P. Project No. : 508000 63 of 119



BIORETENTION PLANT SCHEDULE

Form	Symbol	Quantity	Scientific Name	Common Name	Size	Spacing
Perennial	EM	67	*Eutrochium dubium*	Coastal Plain Joe Pye Weed	Quart	24" o.c
Perennial	RF	67	*Rudbeckia fulgida*	Orange Coneflower	Quart	24" o.c
Perennial	IV	67	*Iris Versicolor*	Blue Flag	Quart	24" o.c
Perennial	AP	67	*Andropogon gerardii*	Big Bluestem	Quart	24" o.c
Perennial	AI	67	*Asclepias incarnata*	Butterfly Weed	Quart	24" o.c
Perennial	MF	67	*Monarda fistulosa*	Wild Bergamot	Quart	24" o.c
Perennial	OB	67	*Oenothera biennis*	Common Evening Primrose	Quart	24" o.c
Perennial	EP	67	*Echinacea purpurea*	Eastern Purple Coneflower	Quart	24" o.c

Notes: Herbaceous plants to be planted in groups of to 10 to 15 plants

PLANT LOCATION KEY			
EM	10 QUARTS EUPATORIUM DUBIUS	EM+	7 QUARTS EUPATORIUM DUBIUS
RF	10 QUARTS RUDBECKIA FULGIDA	RF+	7 QUARTS RUDBECKIA FULGIDA
IF	10 QUARTS IRIS VERSICOLOR	IF+	7 QUARTS IRIS VERSICOLOR
AP	10 QUARTS ANDROPOGON GERARDII	AP+	7 QUARTS ANDROPOGON GERARDII
AI	10 QUARTS ASCLEPIAS INCARNATA	AI+	7 QUARTS ASCLEPIAS INCARNATA
MF	10 QUARTS MONARDA FISTULOSA	MF+	7 QUARTS MONARDA FISTULOSA
OB	10 QUARTS OENOTHERA BIENNIS	OB+	7 QUARTS OENOTHERA BIENNIS
EP	10 QUARTS ECHINACEA PURPUREA	EP+	7 QUARTS ECHINACEA PURPUREA

LEGEND

TURFGRASS ESTABLISHMENT
TURFGRASS SOD ESTABLISHMENT
UPLAND MEADOW ESTABLISHMENT
WET MEADOW ESTABLISHMENT
BIORETENTION MEADOW ESTABLISHMENT
SWM ACCESS ROAD
DEER PROTECTION FENCE
CRITICAL ROOT ZONE (CRZ)
TREE TO REMAIN
TREE TO BE REMOVED
LIGHT POLE
STRUCTURAL ROOT ZONE (SRZ)
TPF TREE PROTECTION FENCE
M-TPF M-NCPPC TREE PROTECTION FENCE
ADJUSTED CRZ

STATE OF MARYLAND · BRIAN EUGENE SHIELDS · No. 3199 · LANDSCAPE ARCHITECT

LANDSCAPE DETAIL
SCALE: 1" = 10'

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

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

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

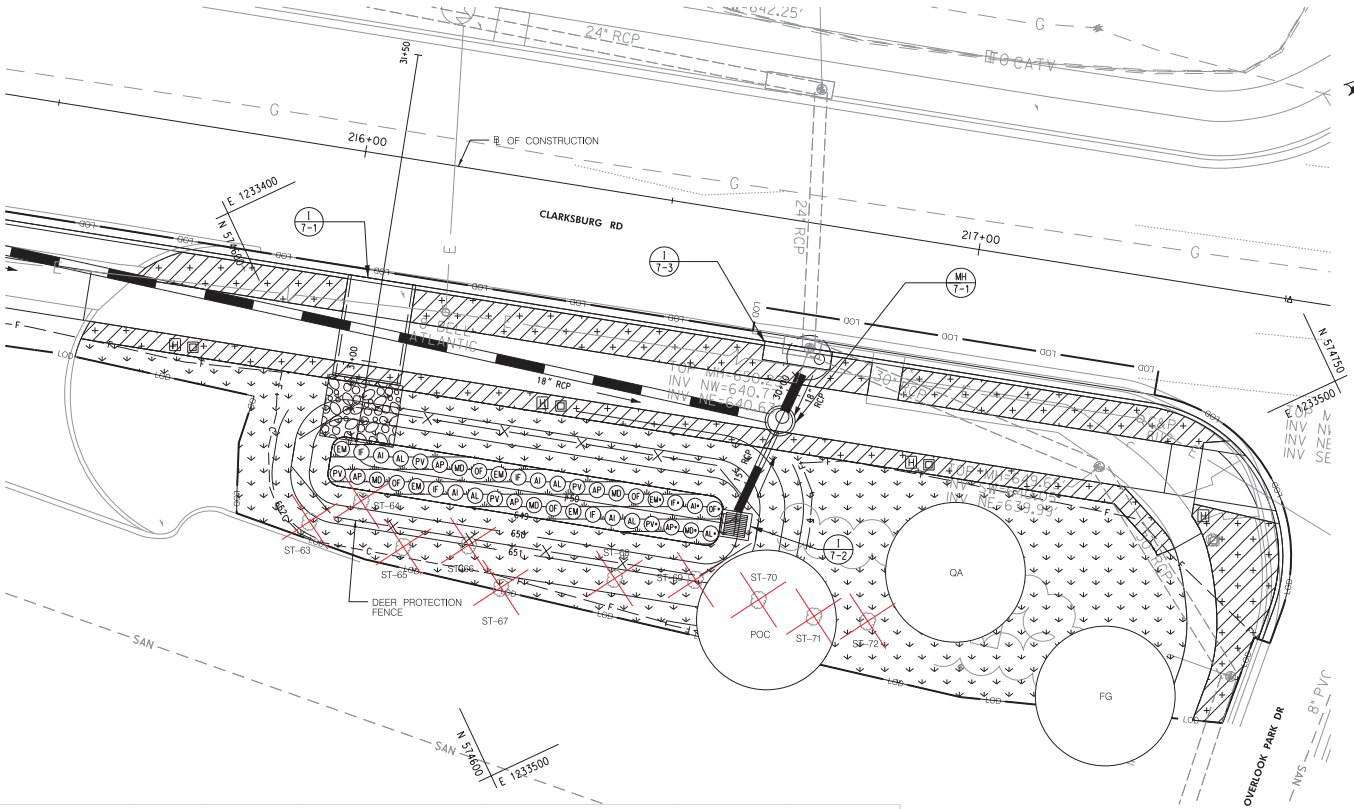
Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPE DETAIL
MICRO-BIORETENTION 1-2

SCALE : 1" = 10' DATE: SEPTEMBER 2020 LD-01

DPS SC/SWM PERMIT SHEET NO. 42 of 45

C.I.P. Project No. : 508000 64 of 119



PLANT LOCATION KEY			
EM	10 QUARTS EUPATORIUM DUBIUM	EM+	2 QUARTS EUPATORIUM DUBIUM
PV	10 QUARTS PANNICUM VIRGATUM	PV+	2 QUARTS PANNICUM VIRGATUM
IF	10 QUARTS IRIS VERSICOLOR	IF+	2 QUARTS IRIS VERSICOLOR
AP	10 QUARTS ANDROPOGON GERARDII	AP+	2 QUARTS ANDROPOGON GERARDII
AI	10 QUARTS ASCLEPIAS INCARNATA	AI+	2 QUARTS ASCLEPIAS INCARNATA
MD	10 QUARTS MONARDA DIDYMA	MD+	2 QUARTS MONARDA DIDYMA
OF	10 QUARTS OENOTHERA FRUTICOSA	OF+	2 QUARTS OENOTHERA FRUTICOSA
AL	10 QUARTS ASTER LAEVIS	AL+	2 QUARTS ASTER LAEVIS

BIORETENTION PLANT SCHEDULE

Form	Symbol	Quantity	Scientific Name	Common Name	Size	Spacing
Perennial	EM	42	*Eutrochium dubium*	Coastal Plain Joe Pye Weed	Quarts	24 In. o.c.
Perennial	PV	42	*Panicum virgatum*	Switch Grass	Quarts	24 In. o.c.
Perennial	IV	42	*Iris Versicolor*	Blue Flag	Quarts	24 In. o.c.
Perennial	AP	42	*Andropogon gerardii*	Big Bluestem	Quarts	24 In. o.c.
Perennial	AI	42	*Asclepias incarnata*	Butterfly Weed	Quarts	24 In. o.c.
Perennial	MD	42	*Monarda didyma*	Scarlet Beebalm	Quarts	24 In. o.c.
Perennial	OF	42	*Oenothera fruticosa*	Narrow Leaved Sundrops	Quarts	24 In. o.c.
Perennial	AL	42	*Aster laevis*	Smooth Blue Aster	Quarts	24 In. o.c.

Notes: Herbaceous plants to be planted in groups of to 10 to 15 plants

LANDSCAPE DETAIL
SCALE: 1" = 10'

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

SCALE: 1" = 10'

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

STATE OF MARYLAND — BRIAN STEVEN E. SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

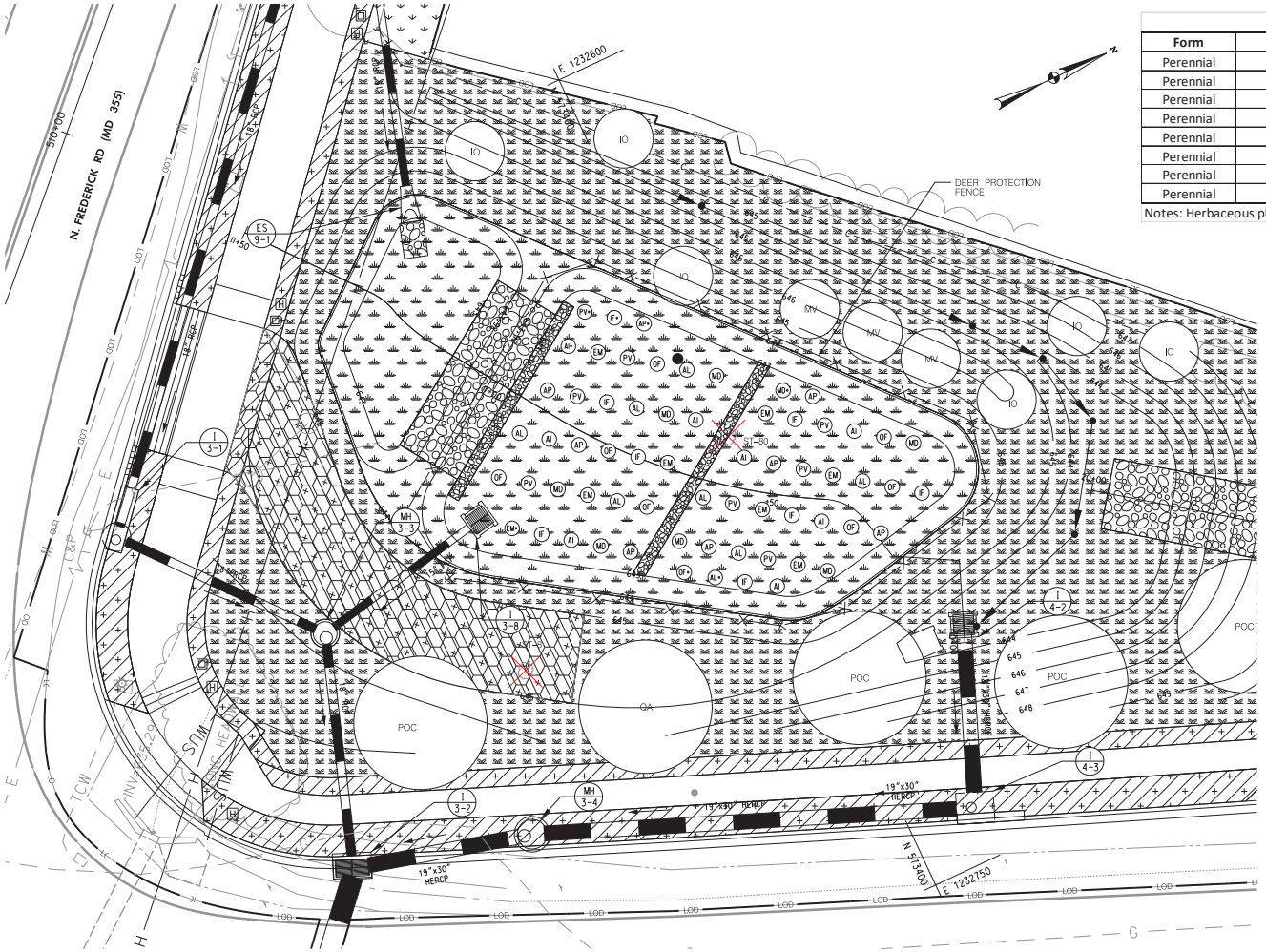
Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPE DETAIL
MICRO-BIORETENTION 2-1

SCALE : 1" = 10' DATE: SEPTEMBER 2020 LD-02

DPS SC/SWM PERMIT SHEET NO. 43 of 45

C.I.P. Project No. : 508000 65 of 119



LANDSCAPE DETAIL
SCALE: 1" = 10'

NOTE: TO BE REVIEWED BY MDOT SHA.

WETLAND PLANT SCHEDULE

Form	Symbol	Quantity	Scientific Name	Common Name	Size	Spacing
Perennial	EM	72	*Eutrochium dubium*	Coastal Plain Joe Pye Weed	Quarts	24 In. o.c.
Perennial	PV	72	*Panicum virgatum*	Switch Grass	Quarts	24 In. o.c.
Perennial	IV	72	*Iris Versicolor*	Blue Flag	Quarts	24 In. o.c.
Perennial	AP	72	*Andropogon gerardii*	Big Bluestem	Quarts	24 In. o.c.
Perennial	AI	72	*Asclepias incarnata*	Butterfly Weed	Quarts	24 In. o.c.
Perennial	MD	72	*Monarda didyma*	Scarlet Beebalm	Quarts	24 In. o.c.
Perennial	OF	72	*Oenothera fruticosa*	Narrow Leaved Sundrops	Quarts	24 In. o.c.
Perennial	AL	72	*Aster laevis*	Smooth Blue Aster	Quarts	24 In. o.c.

Notes: Herbaceous plants to be planted in groups of 10 to 15 plants

PLANT LOCATION KEY			
EM	10 QUARTS EUPATORIUM DUBIUM	EM+	2 QUARTS EUPATORIUM DUBIUS
PV	10 QUARTS PANNICUM VIRGATUM	PV+	2 QUARTS PANNICUM VIRGATUM
IF	10 QUARTS IRIS VERSICOLOR	IF+	2 QUARTS IRIS VERSICOLOR
AP	10 QUARTS ANDROPOGON GERARDII	AP+	2 QUARTS ANDROPOGON GERARDII
AI	10 QUARTS ASCLEPIAS INCARNATA	AI+	2 QUARTS ASCLEPIAS INCARNATA
MD	10 QUARTS MONARDA DIDYMA	MD+	2 QUARTS MONARDA DIDYMA
OF	10 QUARTS OENOTHERA FRUTICOSA	OF+	2 QUARTS OENOTHERA FRUTICOSA
AL	10 QUARTS ASTER LAEVIS	AL+	2 QUARTS ASTER LAEVIS

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

SCALE: 1" = 10'

STATE OF MARYLAND — BRIAN EUGENE SHIRLEY — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SUBMERGED GRAVEL WETLAND 1-1

SCALE : 1" = 10' DATE: SEPTEMBER 2020 LD-03

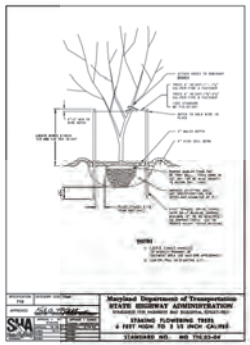
DPS SC/SWM PERMIT SHEET NO. 44 of 45

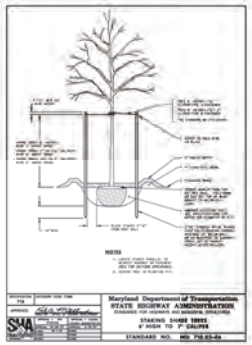
C.I.P. Project No. : 508000 66 of 119

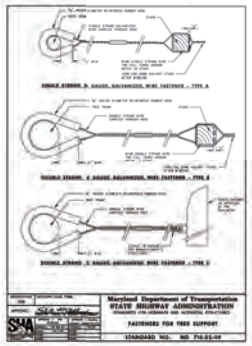
Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

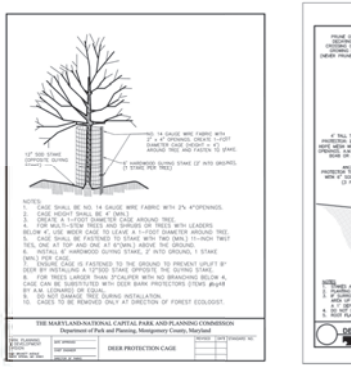
Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-1	48	Red Maple (*Acer rubrum*)	Fair	No	Save
ST-2	26	Red Maple (*Acer rubrum*)	Fair	No	Save
ST-3	26	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-4	26	Black Walnut (*Juglans nigra*)	Good	No	Save
ST-5	18	Red Cedar (*Juniperus virginiana*)	Good	No	Save
ST-6	30	Red Maple (*Acer rubrum*)	Poor	No	Remove
ST-7	40	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-8	50	Silver Maple (*Acer saccharinum*)	Fair	No	Remove
ST-9	11	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-10	16	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-11	19.5	Boxelder (*Acer negundo*)	Good	No	Remove
ST-12	10	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-13	11	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-14	21	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-15	21	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-16	14	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-17	12	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-18	10	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-19	9	Red Cedar (*Juniperus virginiana*)	Good	No	Remove
ST-20	12	Red Cedar (*Juniperus virginiana*)	Good	No	Remove
ST-21	14	Basswood (*Tilia americana*)	Good	No	Remove
ST-22	20	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-23	17	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-24	28	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-25	8.5	Boxelder (*Acer negundo*)	Good	No	Remove
ST-26	11	Redbud (*Cercis canadensis*)	Good	No	Remove
ST-27	10	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-28	23	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-29	6	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-30	24	Black Locust (*Robinia pseudoacacia*)	Poor	No	Remove
ST-31	15	Green Ash (*Fraxinus pennsylvanica*)	Good	No	Remove
ST-32	26	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-33	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-34	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-35	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-36	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-37	13	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-38	24	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-39	8	American Beech (*Fagus grandifolia*)	Fair	No	Remove
ST-40	8	Red Maple (*Acer rubrum*)	Fair	No	Remove
ST-41	12	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-42	8	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-43	6	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-44	7	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-45	8	Black Cherry (*Prunus serotina*)	Fair	No	Remove
ST-46	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-47	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-48	8	Black Locust (*Robinia pseudoacacia*)	Fair	No	Remove
ST-49	6	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-50	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-51	6	Black Locust (*Robinia pseudoacacia*)	Fair	Yes	Remove
ST-52	9	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-53	6	Pitch Pine (*Pinus rigida*)	Fair	Yes	Remove
ST-54	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-55	10	Black Locust (*Robinia pseudoacacia*)	Fair	No	Remove
ST-56	9	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-57	8	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-58	6	Pitch Pine (*Pinus rigida*)	Fair	No	Remove
ST-59	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-60	8	Black Cherry (*Prunus serotina*)	Poor	Yes	Remove
ST-61	8	Black Cherry (*Prunus serotina*)	Poor	Yes	Remove
ST-62	12	Honey Locust (*Gleditsia triacanthos*)	Fair	Yes	Remove
ST-63	6	White Pine (*Pinus strobus*)	Good	No	Remove
ST-64	5	White Pine (*Pinus strobus*)	Good	No	Remove
ST-65	6	White Pine (*Pinus strobus*)	Good	No	Remove
ST-66	5	White Pine (*Pinus strobus*)	Good	No	Remove
ST-67	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-68	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-69	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-70	3	White Pine (*Pinus strobus*)	Good	No	Remove
ST-71	3	White Pine (*Pinus strobus*)	Good	No	Remove
ST-72	3	White Pine (*Pinus strobus*)	Good	No	Remove
ST-73	3	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-74	10	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-75	28	Slippery Elm (*Ulmus rubra*)	Good	No	Remove
ST-76	8	Catalpa (*Catalpa speciosa*)	Good	No	Remove
ST-77	9	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-78	18	Slippery Elm (*Ulmus rubra*)	Good	No	Remove
ST-79	15	Catalpa (*Catalpa speciosa*)	Good	No	Remove
ST-80	12	Douglas Fir (*Pseudotsuga menziesii*)	Good	No	Remove
ST-81	36	Red Maple (*Acer rubrum*)	Fair	No	Remove
ST-82	12	Blue Spruce (*Picea pungens*)	Good	Yes	Remove
ST-83	34	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-84	37	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-85	6	Black Walnut (*Juglans nigra*)	Good	No	Save
ST-86	16	Elm (*Ulmus spp.*)	Poor	No	Remove
ST-87	24	Silver Maple (*Acer saccharinum*)	Fair	No	Save
ST-88	12	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-89	14	Black Willow (*Salix nigra*)	Good	Yes	Remove
ST-90	10	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-91	6	Black Willow (*Salix nigra*)	Fair	Yes	Remove
ST-92	8	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-93	12	Black Cherry (*Prunus serotina*)	Dead	Yes	Remove
ST-94	4	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-95	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-96	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-97	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-98	10	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-99	11	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-100	9	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-101	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-102	2	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-103	12	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-104	13	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-105	6	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-106	8	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-107	26	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-108	4	Black Cherry (*Prunus serotina*)	Dead	Yes	Remove
ST-109	10	Honeysuckle (*Lonicera japonica*)	Fair	No	Save

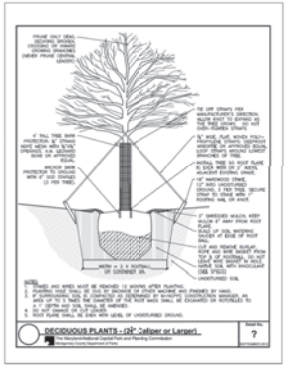
*Note: All trees are within the Montgomery County or MDOT SHA ROW (right-of-way) plus 50 feet. However, as noted, not all trees are within the ROW. In addition, some trees to be removed are in poor health and/or invasive. Twenty trees are to be removed from within the MDOT SHA Right of Way, of which nine are invasive.

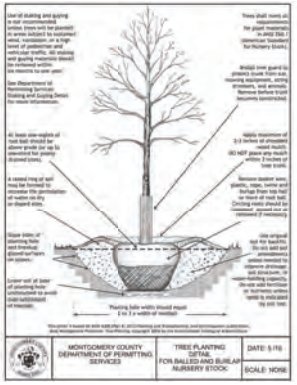


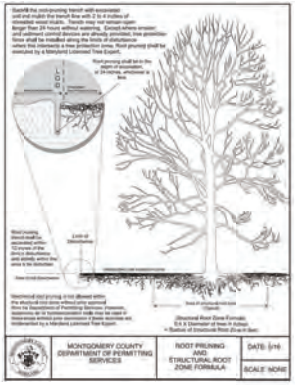


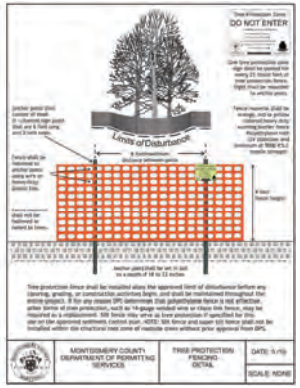












Summary Plant Schedule

Symbol	Species	Size	Spacing	Planting Method	Comment	Quantity
FG	*Fagus grandifolia* (American Beech)	2 inch cal.	22.5 ft. O.C	Hand or Half Automatic Planting	Single Trunk	6
POC	*Platanus occidentalis* (American Sycamore)	2 inch cal.	22.5 ft. O.C	Hand or Half Automatic Planting	Single Trunk	6
QA	*Quercus alba* (White oak)	2 inch cal.	22.5 ft. O.C	Hand or Half Automatic Planting	Single Trunk	10
QR	*Quercus rubra* (Northern Red Oak)	2 inch cal.	22.5 ft. O.C	Hand or Half Automatic Planting	Single Trunk	12
UAJ	*Ulmus americana 'Jefferson'* (American elm 'Jefferson')	2 inch cal.	22.5 ft. O.C	Hand or Half Automatic Planting	Single Trunk	13
NS	*Nyssa sylvatica* (Black Gum)	2 inch cal.	15 ft. O.C.	Hand or Half Automatic Planting	Single Trunk	14
IO	*Ilex opaca* (American Holly)	5 gallon and 5 ft.	15 ft. O.C.	Hand or Half Automatic Planting	Single Trunk	6
VPR	*Viburnum prunifolium* (Blackhaw)	5 gallon and 5 ft.	15 ft. O.C.	Hand or Half Automatic Planting	Single Trunk	6
HVA	*Hamamelis virginiana* (Witch-hazel)	5 gallon and 5 ft.	15 ft. O.C.	Hand or Half Automatic Planting	Single Trunk	3
MV	*Magnolia virginiana* (Sweetbay)	1 in. cal.	15 ft. O.C.	Hand or Half Automatic Planting	Single Trunk	3
EM	*Eutrochium dubium* (Coastal Plain Joe Pye Weed)	Quart	24" o.c	Hand Planting	Multi-Stemmed	181
PV	*Panicum virgatum* (Switchgrass)	Quart	24" o.c	Hand Planting	Multi-Stemmed	114
RF	*Rudbeckia fulgida* (Orange Coneflower)	Quart	24" o.c	Hand Planting	Multi-Stemmed	67
IV	*Iris versicolor* (Blue Flag)	Quart	24" o.c	Hand Planting	Multi-Stemmed	181
AP	*Andropogon gerardii* (Big Bluestem)	Quart	24" o.c	Hand Planting	Multi-Stemmed	181
AI	*Asclepias incarnata* (Butterfly Weed)	Quart	24" o.c	Hand Planting	Multi-Stemmed	181
MF	*Monarda fistulosa* (Wild Bergamot)	Quart	24" o.c	Hand Planting	Multi-Stemmed	67
MD	*Monarda didyma* (Scarlet Beebalm)	Quart	24" o.c	Hand Planting	Multi-Stemmed	114
OF	*Oenothera fruticosa* (Narrow Leaved Sundrops)	Quart	24" o.c	Hand Planting	Multi-Stemmed	114
OB	*Oenothera biennis* (Common Evening Primrose)	Quart	24" o.c	Hand Planting	Multi-Stemmed	67
AL	*Aster laevis* (Smooth Blue Aster)	Quart	24" o.c	Hand Planting	Multi-Stemmed	114
EP	*Echinacea purpurea* (Eastern Purple Coneflower)	Quart	24" o.c	Hand Planting	Multi-Stemmed	67

Tree Mitigation Planting Summary within MDOT SHA Right of Way

PLANTING SCHEDULE

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
POC	*Platanus occidentalis* (American Sycamore)	4	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
QA	*Quercus alba (White Oak)*	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk

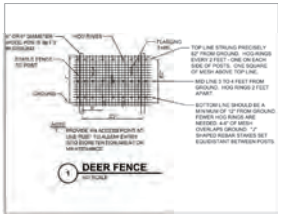
Flowering Trees

Symbol	Botanical/Common Name	Quantity	Size	Planting Method	Spacing	Comments
VPR	*Viburnum prunifolium* (Blackhaw)	6	5 gallon and 5 ft	Hand Planting	15 ft. O.C	Tree Form
IO	*Ilex opaca* (American Holly)	6	5 gallon and 5 ft	Hand or Half Automatic Planting	15 ft. O.C	Evergreen Broadleaf
MV	*Magnolia virginiana* (Sweetbay)	3	1 in. cal.	Hand or Half Automatic Planting	15 ft. O.C	Single Trunk
HVA	*Hamamelis virginiana* (American Witchhazel)	3	5 gallon and 5 ft	Hand Planting	15 ft. O.C	Tree Form

Note: Total trees to be planted within MDOT SHA Right of Way equal to 23.

Tree Mitigation Planting Summary

Symbol	Species	Size	Spacing	Quantity
FG	*Fagus grandifolia* (American Beech)	2 inch cal.	40 ft. O.C	6
POC	*Platanus occidentalis* (American Sycamore)	2 inch cal.	40 ft. O.C	6
QA	*Quercus alba* (White oak)	2 inch cal.	40 ft. O.C	10
QR	*Quercus rubra* (Northern Red Oak)	2 inch cal.	40 ft. O.C	12
UAJ	*Ulmus americana 'Jefferson'* (American elm 'Jefferson')	2 inch cal.	40 ft. O.C	13
NS	*Nyssa sylvatica* (Black Gum)	2 inch cal.	40 ft. O.C	14
IO	Ilex opaca/American Holly	5 gallon and 5 ft	25 ft. O.C	6
MV	*Magnolia virginiana* (Sweet Bay)	1 inch cal.	25 ft. O.C	3
VPR	*Viburnum prunifolium* (Blackhaw)	5 gallon and 5 ft	25 ft. O.C	6
HVA	*Hamamelis virginiana* (American Witchhazel)	5 gallon and 5 ft	25 ft. O.C	3
	Total Number of Mitigation Trees to be Planted			**79**



Existing Tree and Mature Shrub Removal Summary and Mitigation Summary within MDOT SHA Right of Way

Number of Trees to be Removed	Number of Trees to be Planted Within SHA Right of Way	Under Option 3, Number of Trees Planted on Adjacent MNCPPC property	Trees Requiring Additional Mitigation
20	23	36	0

STATE OF MARYLAND
BRIAN EUGENE SHIRLEY
No. 3199
LANDSCAPE ARCHITECT

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

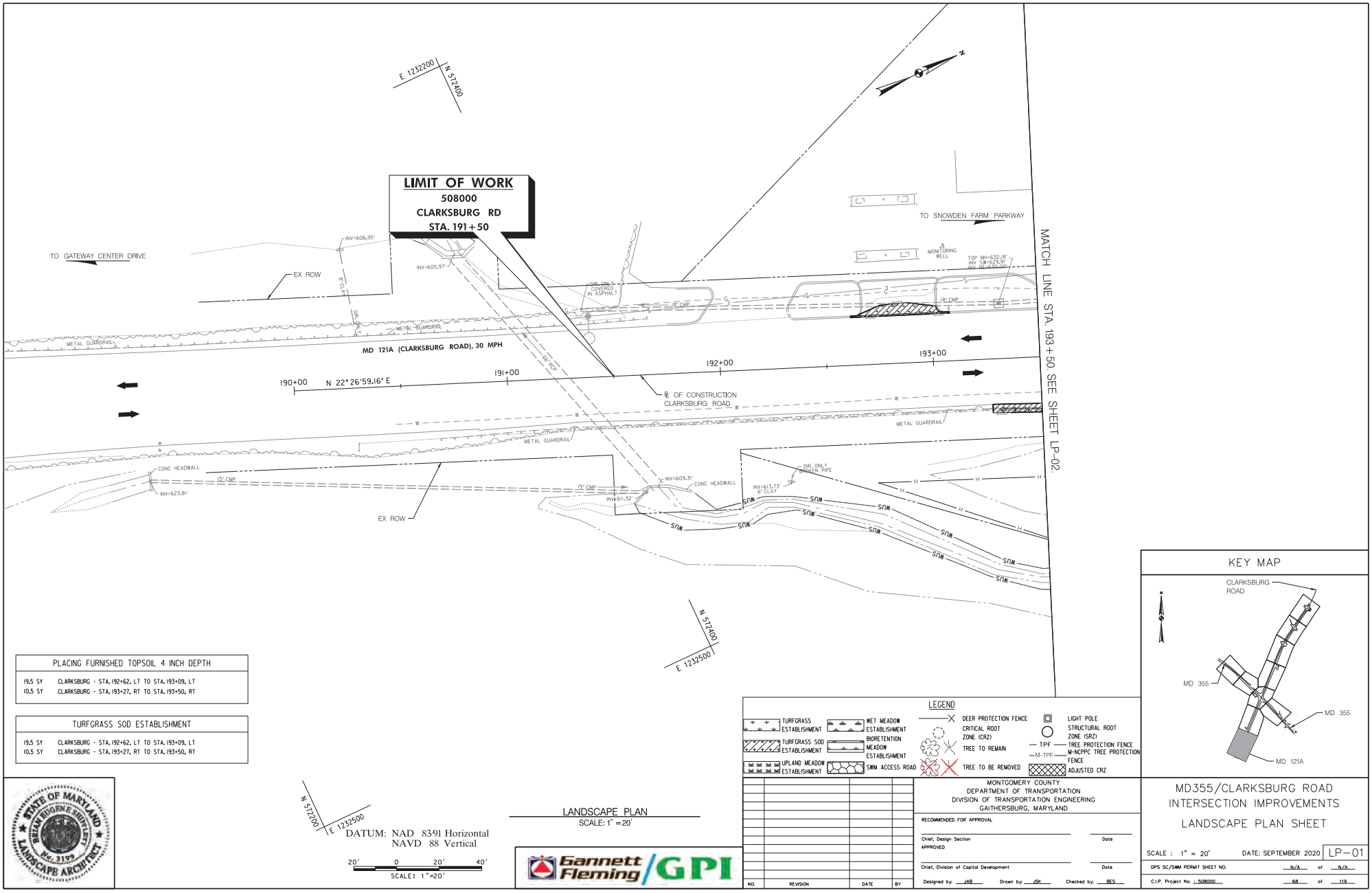
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE DETAIL
TREE PLANTINGS

SCALE : N.T.S. DATE: SEPTEMBER 2020 LD—04

DPS SC/SWM PERMIT SHEET NO. 45 of 45

C.I.P. Project No. : 508000 67 of 119



PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
19.5 SY	CLARKSBURG - STA. 192+62, LT TO STA. 193+09, LT
10.5 SY	CLARKSBURG - STA. 193+27, RT TO STA. 193+50, RT

TURFGRASS SOD ESTABLISHMENT	
19.5 SY	CLARKSBURG - STA. 192+62, LT TO STA. 193+09, LT
10.5 SY	CLARKSBURG - STA. 193+27, RT TO STA. 193+50, RT

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION
- MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

KEY MAP

STATE OF MARYLAND
BRIAN EUGENE SHIPLEY
No. 3199
LANDSCAPE ARCHITECT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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

LANDSCAPE PLAN
SCALE: 1" =20'

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

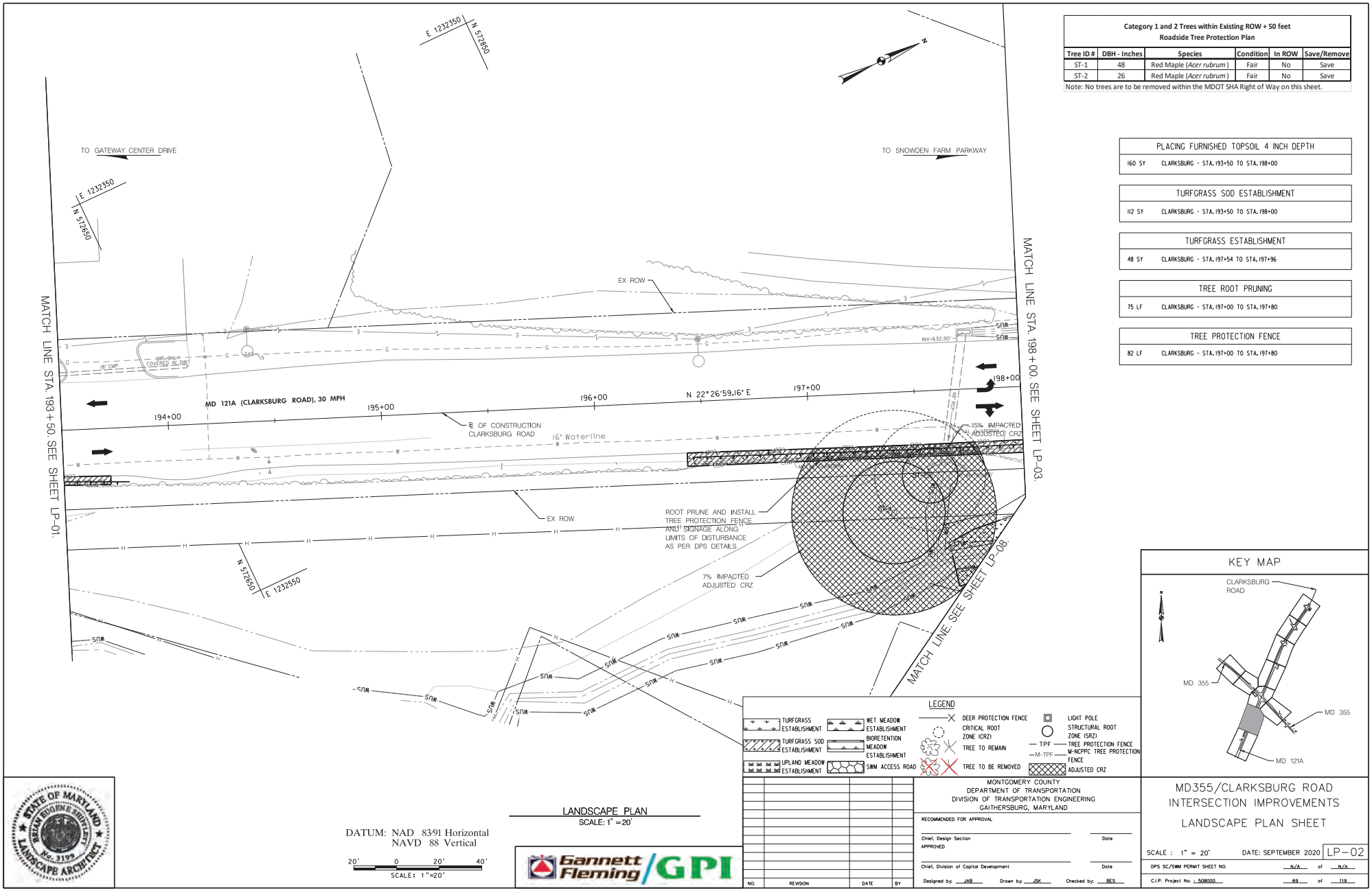
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 68 of 119



Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-1	48	Red Maple (*Acer rubrum*)	Fair	No	Save
ST-2	26	Red Maple (*Acer rubrum*)	Fair	No	Save

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet.

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
160 SY	CLARKSBURG - STA. 193+50 TO STA. 198+00

TURFGRASS SOD ESTABLISHMENT	
112 SY	CLARKSBURG - STA. 193+50 TO STA. 198+00

TURFGRASS ESTABLISHMENT	
48 SY	CLARKSBURG - STA. 197+54 TO STA. 197+96

TREE ROOT PRUNING	
75 LF	CLARKSBURG - STA. 197+00 TO STA. 197+80

TREE PROTECTION FENCE	
82 LF	CLARKSBURG - STA. 197+00 TO STA. 197+80

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

KEY MAP

LANDSCAPE PLAN
SCALE: 1" =20'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI

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DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-02

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 69 of 119

NOTES:

1. ALL MATERIALS AND PLANTING PROCEDURES FRONTING M-NCPPC PROPERTY (EAST SIDE FROM STA. 504+00 TO STA. 508+00 AND SOUTH SIDE FORM STA. 200+00 TO STA. 206+00) SHALL CONFORM TO THE M-NCPPC SPECIFICATION SECTION 723.
2. PLANTS SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI z60.1)
3. THE CONTRACTOR AND LANDSCAPE SUBCONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH M-NCPPC REPRESENTATIVE TO COORDINATE PLANTING AND AFTER-CARE.
4. THE CONTRACTOR SHALL STAKE OUT ALL TREE LOCATIONS FOR APPROVAL BY THE M-NCPPC REPRESENTATIVE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND COORDINATE PLANTINGS WITH ALL EXISTING UTILITIES. IF DISCREPANCIES OCCUR BECAUSE OF UTILITY LOCATIONS OR OTHER EXISTING CONDITIONS THE CONTRACTOR SHALL NOTIFY M-NCPPC IMMEDIATELY TO COORDINATE ANY NECESSARY ADJUSTMENTS.
6. ALL PLANT MATERIAL SHALL BE LABELED BY THE NURSERY AND DELIVERED WITH LABELS IN PLACE FOR INSPECTION. SUBSTITUTIONS IN PLANT SPECIES OR SIZE WILL NOT BE PERMITTED EXCEPT WITH THE APPROVAL OF THE M-NCPPC REPRESENTATIVE. DO NOT PRUNE UNTIL PLANT MATERIAL HAS BEEN PLANTED BUT AS SOON THEREAFTER AS IS ADVISABLE UNDER STANDARD HORTICULTURAL PRACTICES. FOR TREE PRUNING AND CARE METHODS PLEASE REFER TO ANSI A-300, LATEST EDITION.
7. THE CONTRACTOR SHALL MULCH AND WATER ALL PLANTS WELL ON THE DAY THEY ARE PLANTED. INDIVIDUAL PLANTING SHALL BE MULCHED. ACCEPTABLE MULCH SHALL BE HARDWOOD ONLY. MULCH MUST BE WELL-AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL-AGED MULCH IS DEFINED AS MULCH THAT HAS BEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS. THE CONTRACTOR SHALL APPLY THE MULCH UNIFORMLY TO A 2 TO 3-INCH DEPTH BARK SHALL BE KEPT 3 TO 4 INCHES AWAY FROM ALL TRUNKS AND WOODY STEMS.
8. IN CASE OF DISCREPANCIES BETWEEN QUANTITIES ON THE PLANT LIST AND THE PLAN, THE PLAN SHALL GOVERN.

PLANTING SCHEDULE within MDOT SHA Right of Way

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
POC	*Platanus occidentalis* (American Sycamore)	2	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk
QA	*Quercus alba (White Oak)*	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk

Flowering Trees

Symbol	Botanical/Common Name	Quantity	Size	Planting Method	Spacing	Comments
VPR	*Viburnum prunifolium* (Blackhaw)	6	5 gallon and 5 ft	Hand Planting	15 ft. O.C.	Tree Form
HVA	*Hamamelis virginiana* (American Witchhazel)	3	5 gallon and 5 ft	Hand Planting	15 ft. O.C.	Tree Form

Note: Twelve trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.

PLANTING SCHEDULE outside of MDOT SHA Right of Way

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
QA	*Quercus alba (White Oak)*	1	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
QR	*Quercus rubra (Northern Red Oak)*	4	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-5	18	Red Cedar (*Juniperus virginiana*)	Good	No	Save
ST-6	30	Red Maple (*Acer rubrum*)	Poor	No	Remove
ST-7	40	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-8	50	Silver Maple (*Acer saccharinum*)	Fair	No	Remove
ST-9	11	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-10	16	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-11	19.5	Boxelder (*Acer negundo*)	Good	No	Remove
ST-12	10	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-13	11	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-14	21	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-88	12	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-89	14	Black Willow (*Salix nigra*)	Good	Yes	Remove
ST-90	10	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-91	6	Black Willow (*Salix nigra*)	Fair	Yes	Remove
ST-92	8	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-93	12	Black Cherry (*Prunus serotina*)	Dead	Yes	Remove
ST-94	4	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-95	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-96	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-97	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-98	10	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-99	11	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-100	9	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-101	12	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-102	2	Tree of Heaven (*Ailanthus altissima*)	Fair	Yes	Remove
ST-103	12	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-104	13	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-105	6	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-106	8	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-108	4	Black Cherry (*Prunus serotina*)	Dead	Yes	Remove

Note: Seventeen trees are to be removed within the MDOT SHA Right of Way on this sheet.

TURFGRASS SOD ESTABLISHMENT	
608 SY	CLARKSBURG - STA. 198+00 TO STA. 202+00

TURFGRASS ESTABLISHMENT	
1625 SY	CLARKSBURG - STA. 198+05 TO STA. 202+00

UPLAND MEADOW ESTABLISHMENT	
295 SY	CLARKSBURG - STA. 200+88 TO STA. 202+00

WET MEADOW ESTABLISHMENT	
279 SY	CLARKSBURG - STA. 201+10 TO STA. 202+00

TREE ROOT PRUNING	
19 LF	MD 355 - STA. 507+00, RT TO STA. 507+19, RT

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
2550 SY	CLARKSBURG - STA. 198+00 TO STA. 202+00

TREE PROTECTION FENCE	
19 LF	MD 355 - STA. 507+00, RT TO STA. 507+19, RT

NOTE:
SEE SHEET # LD-03 FOR PLANTINGS AND SUBMERGED GRAVEL WETLAND 1-1.

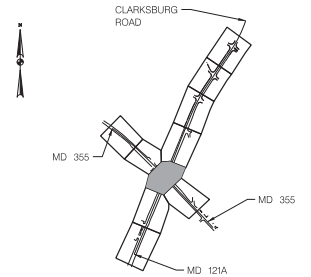
DECIDUOUS TREES LESS THAN 6 INCHES IN DIAMETER ARE NATURALLY REGENERATING IN THESE AREAS OF THE RIGHT OF WAY.

LANDSCAPE PLAN
SCALE: 1" = 20'

LEGEND

TURFGRASS ESTABLISHMENT
TURFGRASS SOD ESTABLISHMENT
UPLAND MEADOW ESTABLISHMENT
WET MEADOW ESTABLISHMENT
BIORETENTION MEADOW ESTABLISHMENT
SWM ACCESS ROAD
DEER PROTECTION FENCE
CRITICAL ROOT ZONE (CRZ)
TREE TO REMAIN
TREE TO BE REMOVED
LIGHT POLE
STRUCTURAL ROOT ZONE (SRZ)
TPF — TREE PROTECTION FENCE
M-TPF — M-NCPPC TREE PROTECTION FENCE
ADJUSTED CRZ

KEY MAP



DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

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

STATE OF MARYLAND
BRIAN EUGENE BRUFFEY
No. 3199
LANDSCAPE ARCHITECT

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

NO.	REVISION	DATE	BY

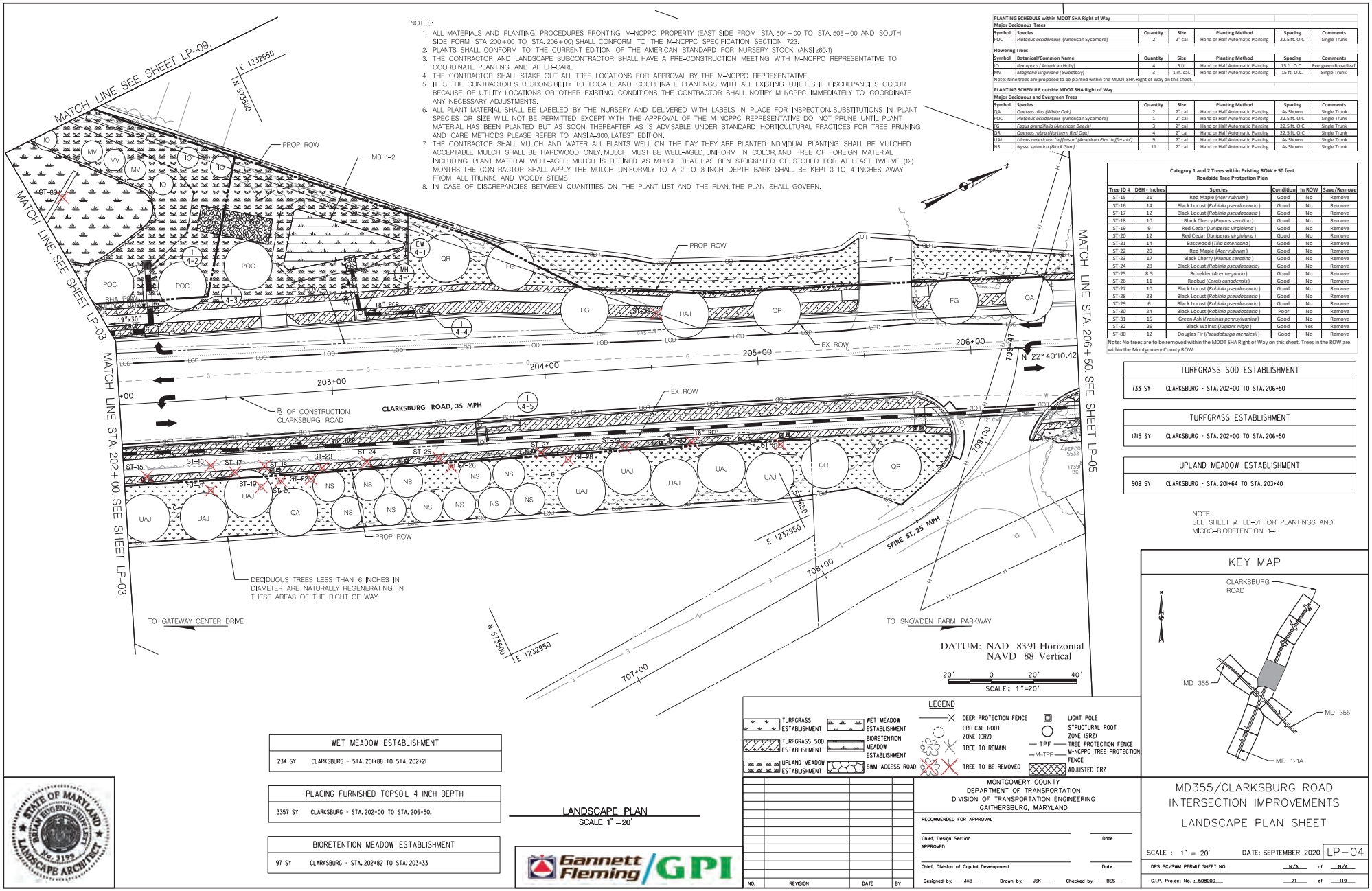
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-03

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 70 of 119



NOTES:

1. ALL MATERIALS AND PLANTING PROCEDURES FRONTING M-NCPPC PROPERTY (EAST SIDE FROM STA. 504+00 TO STA. 508+00 AND SOUTH SIDE FORM STA. 200+00 TO STA. 206+00) SHALL CONFORM TO THE M-NCPPC SPECIFICATION SECTION 723.
2. PLANTS SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1)
3. THE CONTRACTOR AND LANDSCAPE SUBCONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH M-NCPPC REPRESENTATIVE TO COORDINATE PLANTING AND AFTER-CARE.
4. THE CONTRACTOR SHALL STAKE OUT ALL TREE LOCATIONS FOR APPROVAL BY THE M-NCPPC REPRESENTATIVE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND COORDINATE PLANTINGS WITH ALL EXISTING UTILITES. IF DISCREPANCIES OCCUR BECAUSE OF UTILITY LOCATIONS OR OTHER EXISTING CONDITIONS THE CONTRACTOR SHALL NOTIFY M-NCPPC IMMEDIATELY TO COORDINATE ANY NECESSARY ADJUSTMENTS.
6. ALL PLANT MATERIAL SHALL BE LABELED BY THE NURSERY AND DELIVERED WITH LABELS IN PLACE FOR INSPECTION. SUBSTITUTIONS IN PLANT SPECIES OR SIZE WILL NOT BE PERMITTED EXCEPT WITH THE APPROVAL OF THE M-NCPPC REPRESENTATIVE. DO NOT PRUNE UNTIL PLANT MATERIAL HAS BEEN PLANTED BUT AS SOON THEREAFTER AS IS ADVISABLE UNDER STANDARD HORTICULTURAL PRACTICES. FOR TREE PRUNING AND CARE METHODS PLEASE REFER TO ANSI A-300, LATEST EDITION.
7. THE CONTRACTOR SHALL MULCH AND WATER ALL PLANTS WELL ON THE DAY THEY ARE PLANTED. INDIVIDUAL PLANTING SHALL BE MULCHED. ACCEPTABLE MULCH SHALL BE HARDWOOD ONLY. MULCH MUST BE WELL-AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL-AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS. THE CONTRACTOR SHALL APPLY THE MULCH UNIFORMLY TO A 2 TO 3-INCH DEPTH BARK SHALL BE KEPT 3 TO 4 INCHES AWAY FROM ALL TRUNKS AND WOODY STEMS.
8. IN CASE OF DISCREPANCIES BETWEEN QUANTITIES ON THE PLANT LIST AND THE PLAN, THE PLAN SHALL GOVERN.

PLANTING SCHEDULE within MDOT SHA Right of Way

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
POC	*Platanus occidentalis* (American Sycamore)	2	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk

Flowering Trees

Symbol	Botanical/Common Name	Quantity	Size	Planting Method	Spacing	Comments
IO	*Ilex opaca* (American Holly)	4	5 ft.	Hand or Half Automatic Planting	15 ft. O.C.	Evergreen Broadleaf
MV	*Magnolia virginiana* (Sweetbay)	3	1 in. cal.	Hand or Half Automatic Planting	15 ft. O.C.	Single Trunk

Note: Nine trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.

PLANTING SCHEDULE outside MDOT SHA Right of Way

Major Deciduous and Evergreen Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
QA	*Quercus alba* (White Oak)	2	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
POC	*Platanus occidentalis* (American Sycamore)	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk
FG	*Fagus grandifolia* (American Beech)	3	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk
QR	*Quercus rubra* (Northern Red Oak)	4	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C.	Single Trunk
UAJ	*Ulmus americana 'Jefferson'* (American Elm 'Jefferson')	9	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
NS	*Nyssa sylvatica* (Black Gum)	11	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-15	21	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-16	14	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-17	12	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-18	10	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-19	9	Red Cedar (*Juniperus virginiana*)	Good	No	Remove
ST-20	12	Red Cedar (*Juniperus virginiana*)	Good	No	Remove
ST-21	14	Basswood (*Tilia americana*)	Good	No	Remove
ST-22	20	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-23	17	Black Cherry (*Prunus serotina*)	Good	No	Remove
ST-24	28	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-25	8.5	Boxelder (*Acer negundo*)	Good	No	Remove
ST-26	11	Redbud (*Cercis canadensis*)	Good	No	Remove
ST-27	10	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-28	23	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-29	6	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-30	24	Black Locust (*Robinia pseudoacacia*)	Poor	No	Remove
ST-31	15	Green Ash (*Fraxinus pennsylvanica*)	Good	No	Remove
ST-32	26	Black Walnut (*Juglans nigra*)	Good	Yes	Remove
ST-80	12	Douglas Fir (*Pseudotsuga menziesii*)	Good	No	Remove

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet. Trees in the ROW are within the Montgomery County ROW.

TURFGRASS SOD ESTABLISHMENT		
733 SY	CLARKSBURG - STA. 202+00 TO STA. 206+50	

TURFGRASS ESTABLISHMENT		
1715 SY	CLARKSBURG - STA. 202+00 TO STA. 206+50	

UPLAND MEADOW ESTABLISHMENT		
909 SY	CLARKSBURG - STA. 201+64 TO STA. 203+40	

NOTE:
SEE SHEET # LD-01 FOR PLANTINGS AND MICRO-BIORETENTION 1-2.

WET MEADOW ESTABLISHMENT		
234 SY	CLARKSBURG - STA. 201+88 TO STA. 202+21	

PLACING FURNISHED TOPSOIL 4 INCH DEPTH		
3357 SY	CLARKSBURG - STA. 202+00 TO STA. 206+50.	

BIORETENTION MEADOW ESTABLISHMENT		
97 SY	CLARKSBURG - STA. 202+82 TO STA. 203+33	

LANDSCAPE PLAN
SCALE: 1" =20'

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

KEY MAP

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPE PLAN SHEET

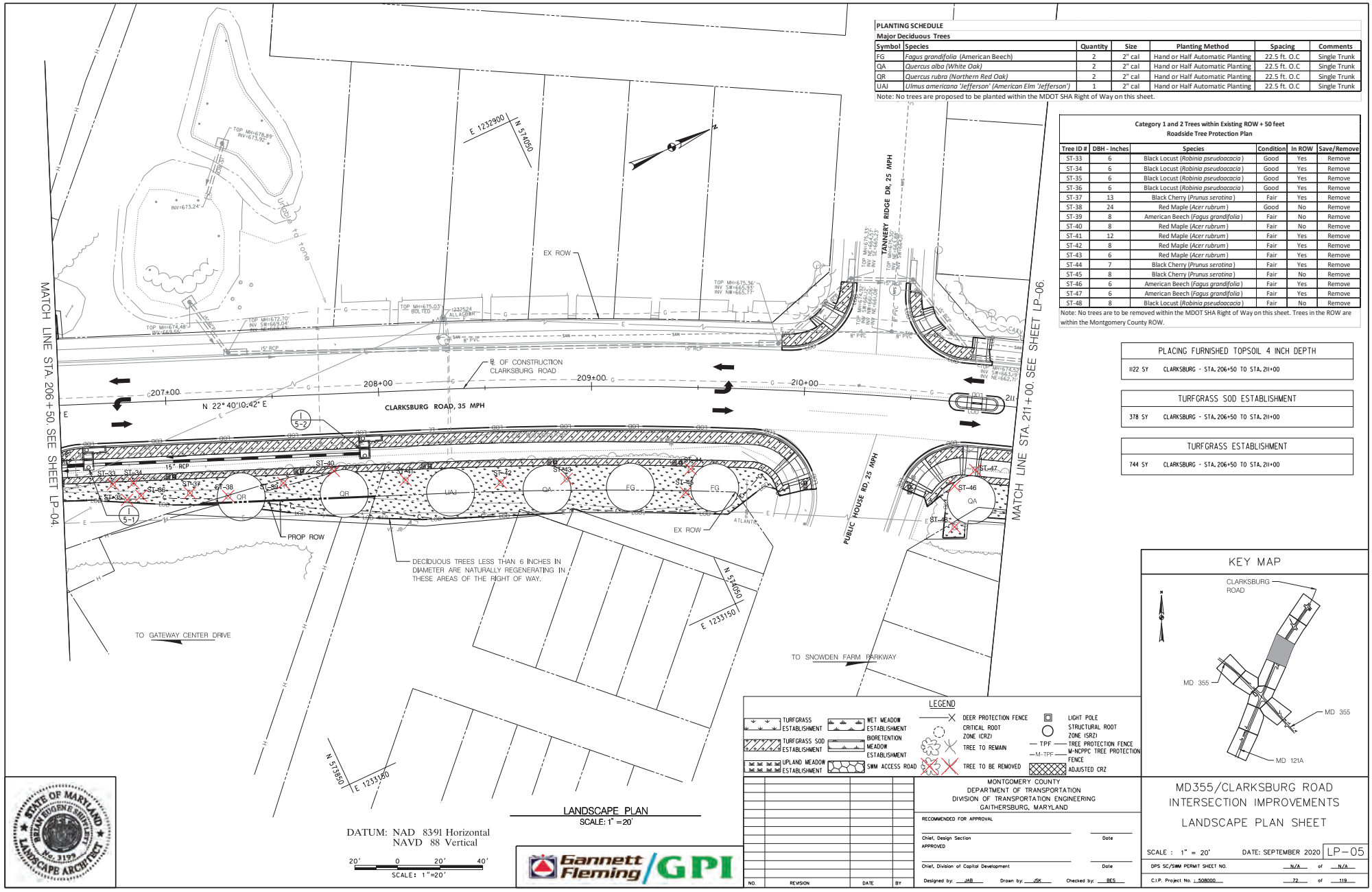
SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-04

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 71 of 119

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI



LANDSCAPE PLAN
SCALE: 1" =20'

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

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

PLANTING SCHEDULE

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
FG	*Fagus grandifolia* (American Beech)	2	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
QA	*Quercus alba (White Oak)*	2	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
QR	*Quercus rubra (Northern Red Oak)*	2	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
UAJ	*Ulmus americana 'Jefferson' (American Elm 'Jefferson')*	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk

Note: No trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-33	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-34	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-35	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-36	6	Black Locust (*Robinia pseudoacacia*)	Good	Yes	Remove
ST-37	13	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-38	24	Red Maple (*Acer rubrum*)	Good	No	Remove
ST-39	8	American Beech (*Fagus grandifolia*)	Fair	No	Remove
ST-40	8	Red Maple (*Acer rubrum*)	Fair	No	Remove
ST-41	12	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-42	8	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-43	6	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-44	7	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-45	8	Black Cherry (*Prunus serotina*)	Fair	No	Remove
ST-46	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-47	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-48	8	Black Locust (*Robinia pseudoacacia*)	Fair	No	Remove

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet. Trees in the ROW are within the Montgomery County ROW.

PLACING FURNISHED TOPSOIL 4 INCH DEPTH		
1122 SY	CLARKSBURG - STA. 206+50 TO STA. 211+00	

TURFGRASS SOD ESTABLISHMENT		
378 SY	CLARKSBURG - STA. 206+50 TO STA. 211+00	

TURFGRASS ESTABLISHMENT		
744 SY	CLARKSBURG - STA. 206+50 TO STA. 211+00	

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION
- MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

KEY MAP

STATE OF MARYLAND
BRIAN EUGENE SHIELDS
No. 3199
LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

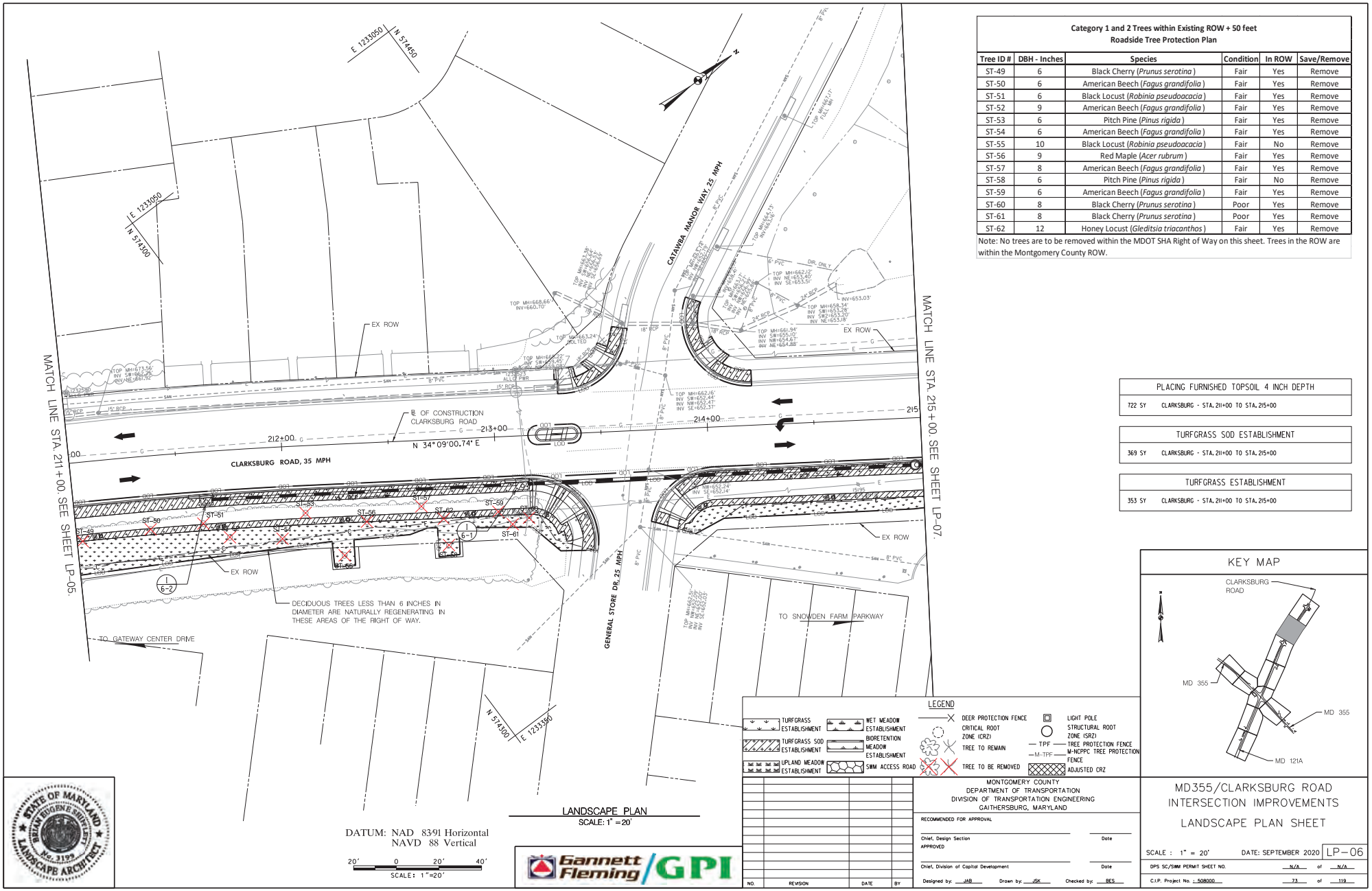
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-05

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 72 of 119



Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-49	6	Black Cherry (*Prunus serotina*)	Fair	Yes	Remove
ST-50	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-51	6	Black Locust (*Robinia pseudoacacia*)	Fair	Yes	Remove
ST-52	9	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-53	6	Pitch Pine (*Pinus rigida*)	Fair	Yes	Remove
ST-54	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-55	10	Black Locust (*Robinia pseudoacacia*)	Fair	No	Remove
ST-56	9	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-57	8	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-58	6	Pitch Pine (*Pinus rigida*)	Fair	No	Remove
ST-59	6	American Beech (*Fagus grandifolia*)	Fair	Yes	Remove
ST-60	8	Black Cherry (*Prunus serotina*)	Poor	Yes	Remove
ST-61	8	Black Cherry (*Prunus serotina*)	Poor	Yes	Remove
ST-62	12	Honey Locust (*Gleditsia triacanthos*)	Fair	Yes	Remove

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet. Trees in the ROW are within the Montgomery County ROW.

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
722 SY	CLARKSBURG - STA. 211+00 TO STA. 215+00

TURFGRASS SOD ESTABLISHMENT	
369 SY	CLARKSBURG - STA. 211+00 TO STA. 215+00

TURFGRASS ESTABLISHMENT	
353 SY	CLARKSBURG - STA. 211+00 TO STA. 215+00

KEY MAP

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION
- MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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

LANDSCAPE PLAN
SCALE: 1" =20'

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

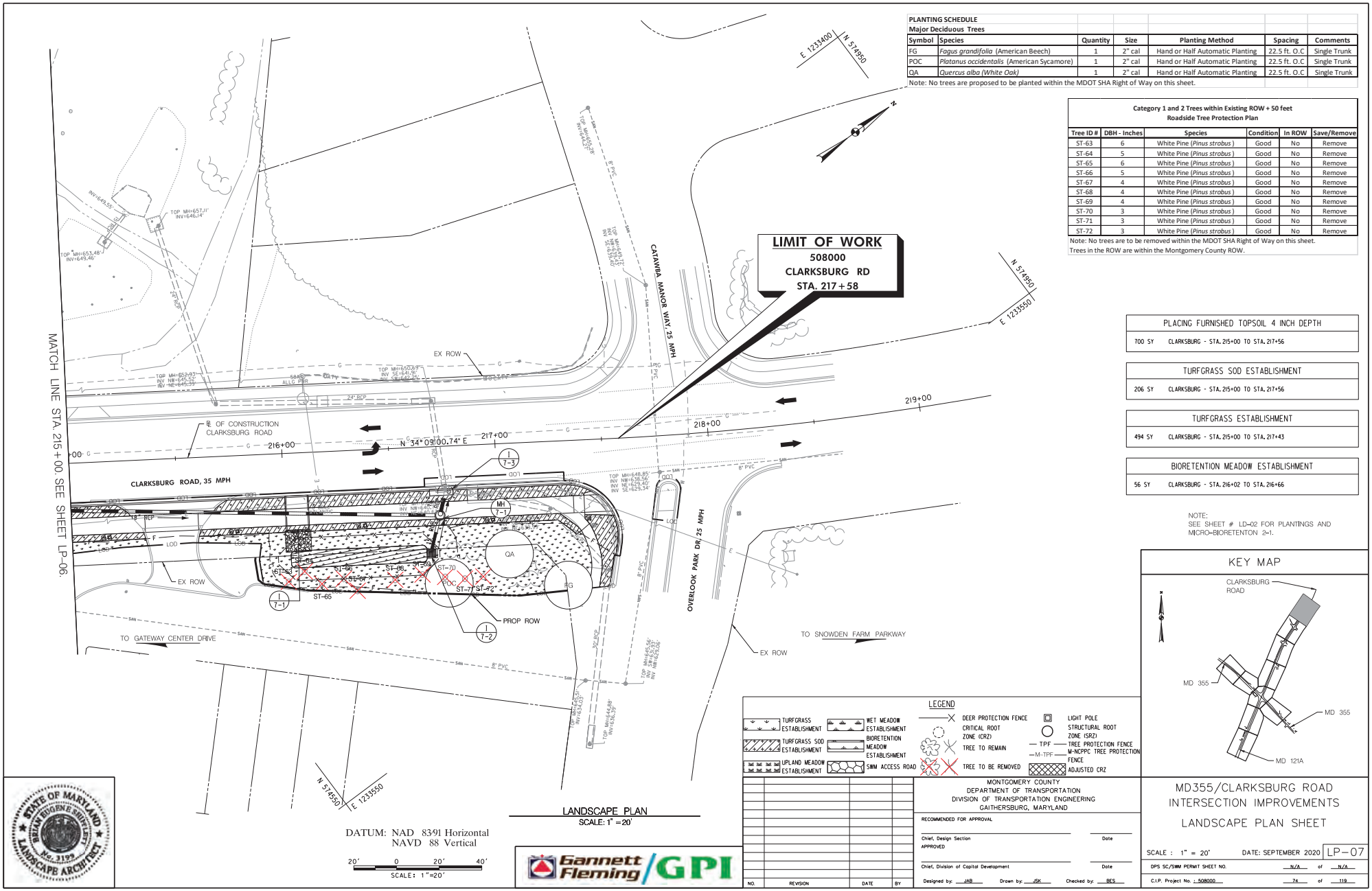
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-06

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 73 of 119



LANDSCAPE PLAN
SCALE: 1" =20'

PLANTING SCHEDULE						
Major Deciduous Trees						
Symbol	**Species**	**Quantity**	**Size**	**Planting Method**	**Spacing**	**Comments**
FG	*Fagus grandifolia* (American Beech)	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
POC	*Platanus occidentalis* (American Sycamore)	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
QA	*Quercus alba (White Oak)*	1	2" cal	Hand or Half Automatic Planting	22.5 ft. O.C	Single Trunk
Note: No trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.						

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-63	6	White Pine (*Pinus strobus*)	Good	No	Remove
ST-64	5	White Pine (*Pinus strobus*)	Good	No	Remove
ST-65	6	White Pine (*Pinus strobus*)	Good	No	Remove
ST-66	5	White Pine (*Pinus strobus*)	Good	No	Remove
ST-67	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-68	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-69	4	White Pine (*Pinus strobus*)	Good	No	Remove
ST-70	3	White Pine (*Pinus strobus*)	Good	No	Remove
ST-71	3	White Pine (*Pinus strobus*)	Good	No	Remove
ST-72	3	White Pine (*Pinus strobus*)	Good	No	Remove

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet.
Trees in the ROW are within the Montgomery County ROW.

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
700 SY	CLARKSBURG - STA. 215+00 TO STA. 217+56

TURFGRASS SOD ESTABLISHMENT	
206 SY	CLARKSBURG - STA. 215+00 TO STA. 217+56

TURFGRASS ESTABLISHMENT	
494 SY	CLARKSBURG - STA. 215+00 TO STA. 217+43

BIORETENTION MEADOW ESTABLISHMENT	
56 SY	CLARKSBURG - STA. 216+02 TO STA. 216+66

NOTE:
SEE SHEET # LD-02 FOR PLANTINGS AND MICRO-BIORETENTON 2-1.

LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

KEY MAP

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-07

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 74 of 119

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NOTES:

1. ALL MATERIALS AND PLANTING PROCEDURES FRONTING M-NCPPC PROPERTY (EAST SIDE FROM STA. 504+00 TO STA. 508+00 AND SOUTH SIDE FORM STA. 200+00 TO STA. 206+00) SHALL CONFORM TO THE M-NCPPC SPECIFICATION SECTION 723.
2. PLANTS SHALL CONFORM TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1)
3. THE CONTRACTOR AND LANDSCAPE SUBCONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH M-NCPPC REPRESENTATIVE TO COORDINATE PLANTING AND AFTER-CARE.
4. THE CONTRACTOR SHALL STAKE OUT ALL TREE LOCATIONS FOR APPROVAL BY THE M-NCPPC REPRESENTATIVE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND COORDINATE PLANTINGS WITH ALL EXISTING UTILITES. IF DISCREPANCIES OCCUR BECAUSE OF UTILITY LOCATION SOR OTHER EXISTING CONDITIONS THE CONTRACTOR SHALL NOTIFY M-NCPPC IMMEDIATELY TO COORDINATE ANY NECESSARY ADJUSTMENTS.
6. ALL PLANT MATERIAL SHALL BE LABELED BY THE NURSERY AND DELIVERED WITH LABELS IN PLACE FOR INSPECTION. SUBSTITUTIONS IN PLANT SPECIES OR SIZE WILL NOT BE PERMITTED EXCEPT WITH THE APPROVAL OF THE M-NCPPC REPRESENTATIVE. DO NOT PRUNE UNTIL PLANT MATERIAL HAS BEEN PLANTED BUT AS SOON THEREAFTER AS IS ADVISABLE UNDER STANDARD HORTICULTURAL PRACTICES. FOR TREE PRUNING AND CARE METHODS PLEASE REFER TO ANSI A-300, LATEST EDITION.
7. THE CONTRACTOR SHALL MULCH AND WATER ALL PLANTS WELL ON THE DAY THEY ARE PLANTED. INDIVIDUAL PLANTIN SHALL BE MULCHED. ACCEPTABLE MULCH SHALL BE HARDWOOD ONLY. MULCH MUST BE WELL-AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL-AGED MULCH IS DEFINED AS MULCH THAT HAS BEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS. THE CONTRACTOR SHALL APPLY THE MULCH UNIFORMLY TO A 2 TO 3-INCH DEPTH BARK SHALL BE KEPT 3 TO 4 INCHES AWAY FROM ALL TRUNKS AND WOODY STEMS.
8. IN CASE OF DISCREPANCIES BETWEEN QUANTITIES ON THE PLANT LIST AND THE PLAN, THE PLAN SHALL GOVERN.

PLANTING SCHEDULE

Major Deciduous Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
QA	*Quercus alba (White Oak)*	3	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
QR	*Quercus rubra (Northern Red Oak)*	2	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
UAJ	*Ulmus americana 'Jefferson' (American Elm 'Jefferson')*	3	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk
NS	*Nyssa sylvatica (Black Gum)*	3	2" cal	Hand or Half Automatic Planting	As Shown	Single Trunk

Note: No trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-3	26	Black Walnut (*Juglans nigra*)	Good	No	Remove
ST-4	26	Black Walnut (*Juglans nigra*)	Good	No	Save
ST-73	3	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-74	10	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-75	28	Slippery Elm (*Ulmus rubra*)	Good	No	Remove
ST-76	8	Catalpa (*Catalpa speciosa*)	Good	No	Remove
ST-77	9	Black Locust (*Robinia pseudoacacia*)	Good	No	Remove
ST-78	18	Slippery Elm (*Ulmus rubra*)	Good	No	Remove
ST-79	15	Catalpa (*Catalpa speciosa*)	Good	No	Remove
ST-107	26	Black Walnut (*Juglans nigra*)	Poor	No	Remove
ST-109	10	Honeysuckle (*Lonicera japonica*)	Fair	No	Save

Note: No trees are to be removed within the MDOT SHA Right of Way on this sheet.

TURFGRASS SOD ESTABLISHMENT

280 SY MD 355 - STA. 503+20 TO STA. 507+00

TURFGRASS ESTABLISHMENT

1448 SY MD 355 - STA. 504+06 TO STA. 507+00

TREE ROOT PRUNING

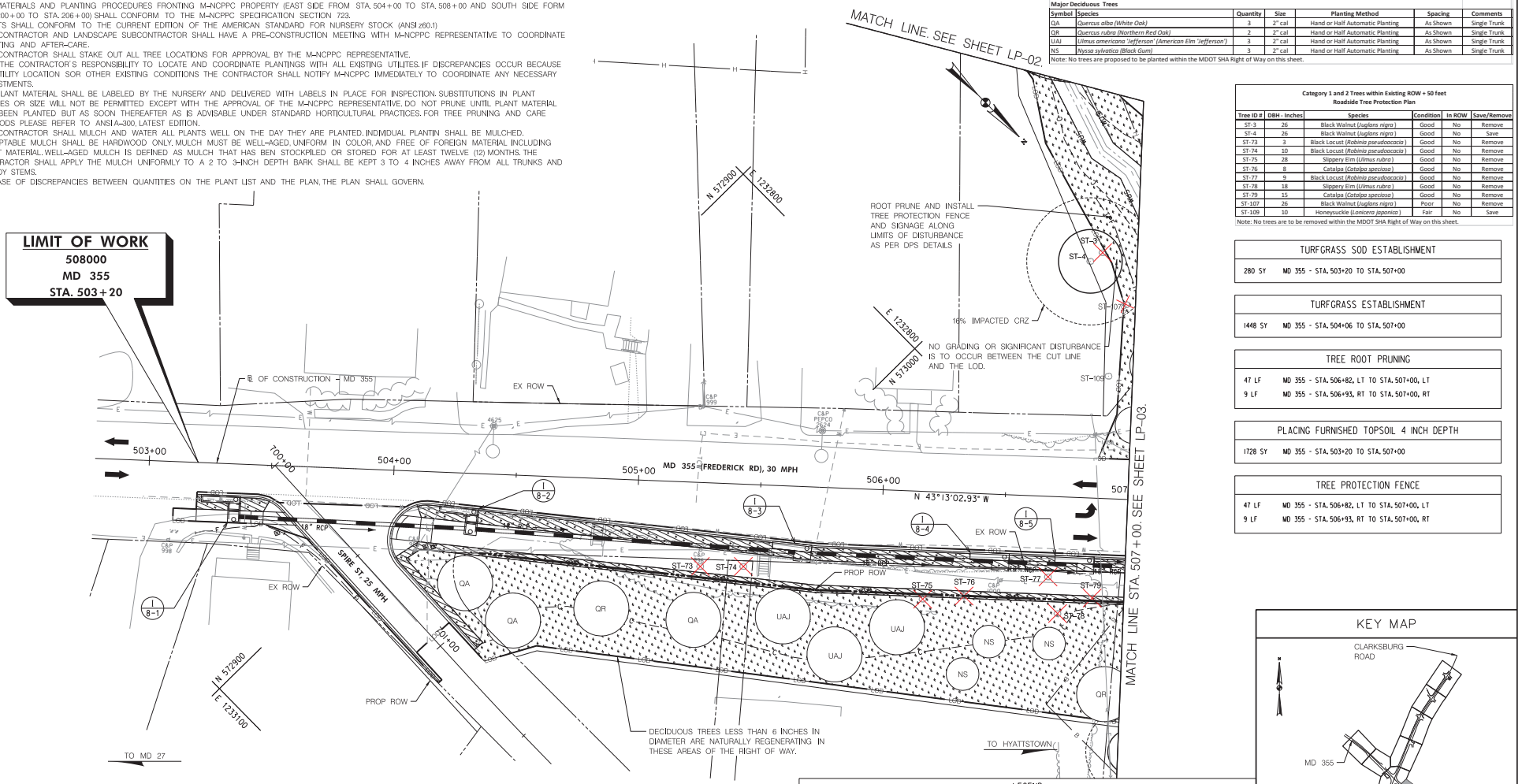
47 LF MD 355 - STA. 506+82, LT TO STA. 507+00, LT
9 LF MD 355 - STA. 506+93, RT TO STA. 507+00, RT

PLACING FURNISHED TOPSOIL 4 INCH DEPTH

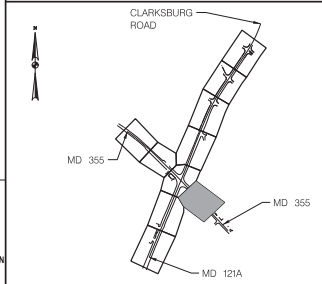
1728 SY MD 355 - STA. 503+20 TO STA. 507+00

TREE PROTECTION FENCE

47 LF MD 355 - STA. 506+82, LT TO STA. 507+00, LT
9 LF MD 355 - STA. 506+93, RT TO STA. 507+00, RT



KEY MAP



LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
- WET MEADOW ESTABLISHMENT
- BIORETENTION
- MEADOW ESTABLISHMENT
- SWM ACCESS ROAD
- DEER PROTECTION FENCE
- CRITICAL ROOT ZONE (CRZ)
- TREE TO REMAIN
- TREE TO BE REMOVED
- LIGHT POLE
- STRUCTURAL ROOT ZONE (SRZ)
- TPF — TREE PROTECTION FENCE
- M-TPF — M-NCPPC TREE PROTECTION FENCE
- ADJUSTED CRZ

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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

LANDSCAPE PLAN
SCALE: 1" =20'

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

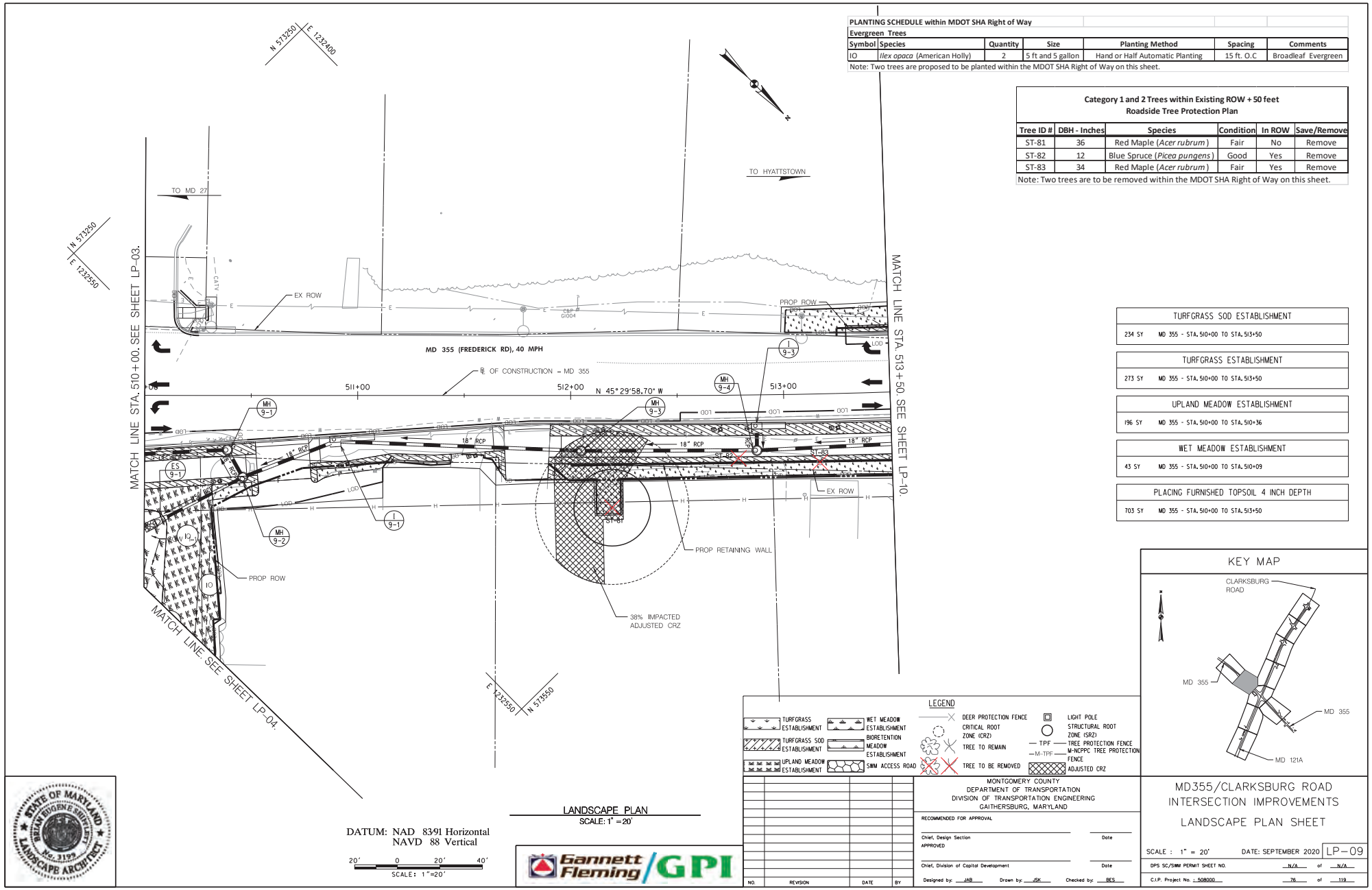
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-08

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 75 of 119



PLANTING SCHEDULE within MDOT SHA Right of Way

Evergreen Trees

Symbol	Species	Quantity	Size	Planting Method	Spacing	Comments
IO	*Ilex opaca* (American Holly)	2	5 ft and 5 gallon	Hand or Half Automatic Planting	15 ft. O.C	Broadleaf Evergreen

Note: Two trees are proposed to be planted within the MDOT SHA Right of Way on this sheet.

Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-81	36	Red Maple (*Acer rubrum*)	Fair	No	Remove
ST-82	12	Blue Spruce (*Picea pungens*)	Good	Yes	Remove
ST-83	34	Red Maple (*Acer rubrum*)	Fair	Yes	Remove

Note: Two trees are to be removed within the MDOT SHA Right of Way on this sheet.

TURFGRASS SOD ESTABLISHMENT	
234 SY	MD 355 - STA. 510+00 TO STA. 513+50

TURFGRASS ESTABLISHMENT	
273 SY	MD 355 - STA. 510+00 TO STA. 513+50

UPLAND MEADOW ESTABLISHMENT	
196 SY	MD 355 - STA. 510+00 TO STA. 510+36

WET MEADOW ESTABLISHMENT	
43 SY	MD 355 - STA. 510+00 TO STA. 510+09

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
703 SY	MD 355 - STA. 510+00 TO STA. 513+50

KEY MAP

LEGEND

TURFGRASS ESTABLISHMENT
TURFGRASS SOD ESTABLISHMENT
UPLAND MEADOW ESTABLISHMENT
WET MEADOW ESTABLISHMENT
BIORETENTION MEADOW ESTABLISHMENT
SWM ACCESS ROAD
DEER PROTECTION FENCE
CRITICAL ROOT ZONE (CRZ)
TREE TO REMAIN
TREE TO BE REMOVED
LIGHT POLE
STRUCTURAL ROOT ZONE (SRZ)
TPF — TREE PROTECTION FENCE
M-TPF — M-NCPPC TREE PROTECTION FENCE
ADJUSTED CRZ

DATUM: NAD 83-91 Horizontal
NAVD 88 Vertical

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

LANDSCAPE PLAN
SCALE: 1" =20'

STATE OF MARYLAND — BRIAN EUGENE SHIELDS — No. 3199 — LANDSCAPE ARCHITECT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

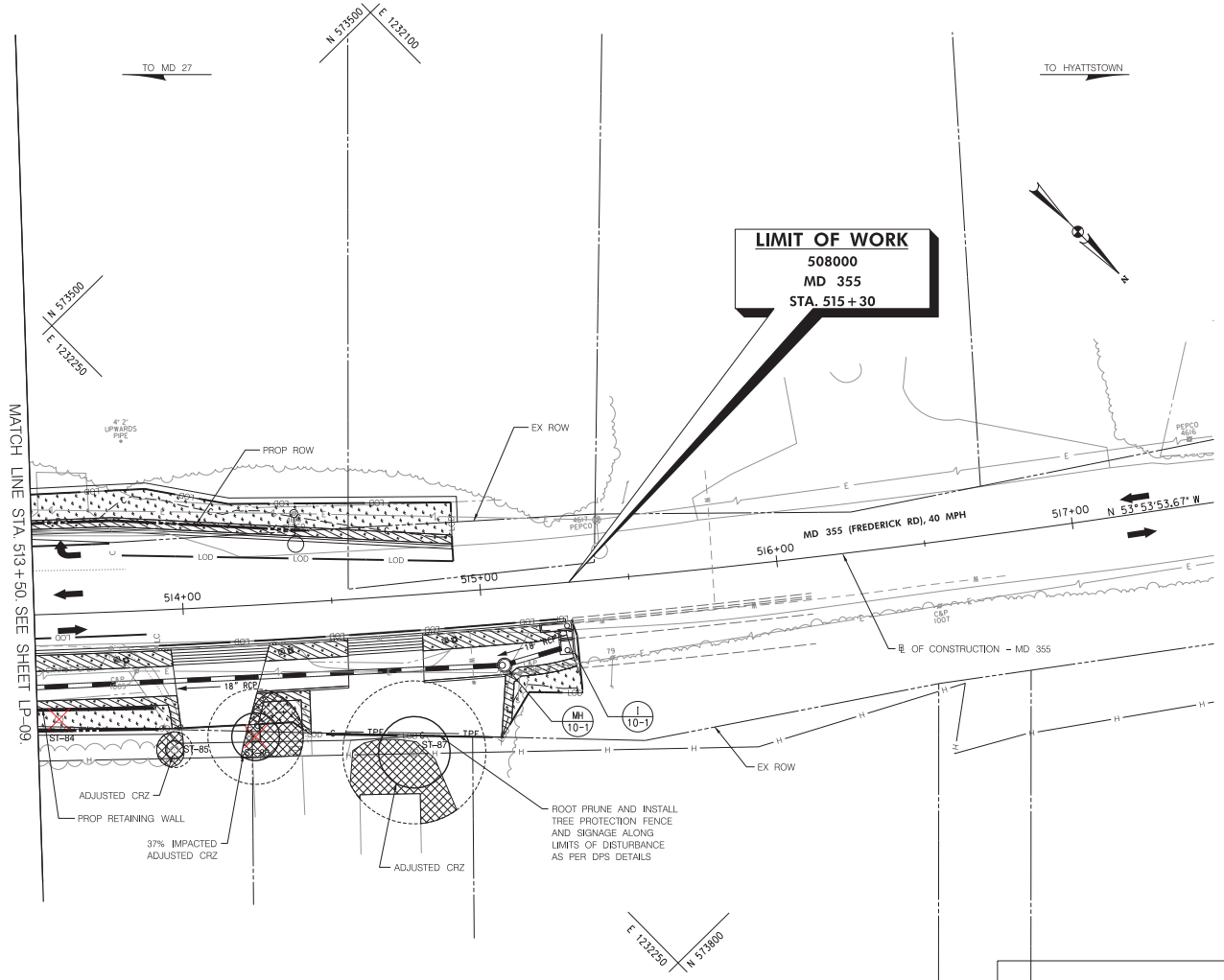
Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-09

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 76 of 119



Category 1 and 2 Trees within Existing ROW + 50 feet
Roadside Tree Protection Plan

Tree ID #	DBH - Inches	Species	Condition	In ROW	Save/Remove
ST-84	37	Red Maple (*Acer rubrum*)	Fair	Yes	Remove
ST-85	6	Black Walnut (*Juglans nigra*)	Good	No	Save
ST-86	16	Elm (*Ulmus spp.*)	Poor	No	Remove
ST-87	24	Silver Maple (*Acer saccharinum*)	Fair	No	Save

Note: One tree is to be removed within the MDOT SHA Right of Way on this sheet.

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
364 SY	MD 355 - STA. 513+50 TO STA. 515+30

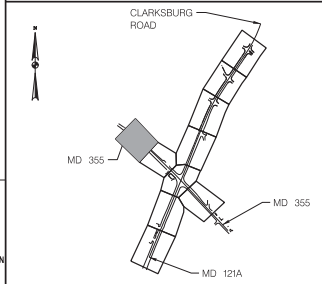
TREE PROTECTION FENCE	
42 LF	MD 355 - STA. 514+52, RT TO STA. 514+97, RT

TURFGRASS SOD ESTABLISHMENT	
160 SY	MD 355 - STA. 513+50 TO STA. 515+30

TURFGRASS ESTABLISHMENT	
204 SY	MD 355 - STA. 513+50 TO STA. 515+30

TREE ROOT PRUNING	
42 LF	MD 355 - STA. 514+52, RT TO STA. 514+97, RT

KEY MAP



LEGEND

- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- UPLAND MEADOW ESTABLISHMENT
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STATE OF MARYLAND — BRIAN EUGENE SHIELEY — No. 3199 — LANDSCAPE ARCHITECT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

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

LANDSCAPE PLAN
SCALE: 1" =20'

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: JAB Drawn by: JSK Checked by: BES

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
LANDSCAPE PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 LP-10
DPS SC/SWM PERMIT SHEET NO. N/A of N/A
C.I.P. Project No. : 508000 77 of 119

SPECIFICATIONS:

– SHA SPECIFICATIONS DATED JULY 2020
– REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.

DESIGN:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2017 AND ALL INTERIMS.

CONCRETE: LOAD AND RESISTANCE FACTOR DESIGN METHOD. THE DESIGN COMPRESSIVE STRENGTH SHALL BE
f'c = 3000 PSI FOR ELEMENTS USING MIX NO.3 CONCRETE

REINFORCING STEEL: fy = 60 000 PSI.

CONCRETE:

ALL CONCRETE SHALL BE MIX NO. 3 (3500 PSI).

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60

ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

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

KEYS:

ALL CONCRETE CONSTRUCTION KEYS ARE NOMINAL SIZE.

EXISTING STRUCTURE:

ALL DIMENSIONS AFFECTED BY THE GEOMETRICS, AND/OR LOCATION OF THE EXISTING STRUCTURE(S) SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR, BEFORE ANY CONSTRUCTION IS DONE, AND BEFORE ANY MATERIAL IS ORDERED OR FABRICATED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE ENGINEER WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK DETAIL DRAWINGS. THE ± MARKS SHOWN WITH DIMENSIONS AND STATIONS DO NOT INDICATE ANY DEGREE OF PRECISION. THESE MARKS ± INDICATE EXISTING DIMENSIONS AND STATIONS THAT MAY VARY AND DO REQUIRE FIELD VERIFICATION BY THE CONTRACTOR.

- EXISTING STRUCTURE(S) SHOWN IN LONG DASHED LINES.
- PORTIONS OF EXISTING STRUCTURE(S) SHOWN HATCHED TO BE REMOVED.

RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON EXISTING OR NEW STRUCTURE/OR STORING MATERIALS ON/OR AGAINST STRUCTURES:

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

DESIGN PARAMETERS:

RETAINING WALLS FOLLOW MDOT SHA TYPE C STANDARD SECTIONS FOR "POOR" SOIL AND TWO FOOT SURCHARGE.

DESIGN SAFE BEARING PRESSURE = 3.0 KSF

EARTH PRESSURE CALCULATED BASED ON COULOMB THEORY.

ANGLE OF INTERNAL FRICTION° = 30 DEGREES

SAFE BEARING PRESSURES ARE FACTORED RESISTANCES.

CONCRETE FORM LINER:

A. THE FORM LINER FINISH SHALL MATCH THE TEXTURED FINISH SPECIFIED IN THE CONTRACT DOCUMENTS. THE MATERIALS USED IN CONSTRUCTION OF THE ARCHITECTURAL TREATMENT SHALL COMPLY WITH SECTION 420.02 FOR CONCRETE MATERIALS AND FORM WORK. THE CONTRACTOR SHALL SUBMIT SAMPLES TO THE ENGINEER FOR APPROVAL.

B. FORM LINERS SHALL BE A HIGH QUALITY REUSABLE PRODUCT MANUFACTURED OF HIGH STRENGTH URETHANE. THE FORM LINER SHALL ATTACH EASILY TO THE FORMING SYSTEM AND SHALL NOT COMPRESS MORE THAN 0.021 FT WHEN POURED VERTICALLY AT A RATE OF 10 FT/HOUR. THE LINERS SHALL BE CAPABLE OF WITHSTANDING ANTICIPATED CONCRETE POUR PRESSURES WITHOUT LEAKING CAUSING PHYSICAL OR VISUAL DEFECTS. THE LINERS SHALL BE REMOVABLE WITHOUT CAUSING CONCRETE SURFACE DETERIORATION OR WEAKNESS IN THE SUBSTRATE.

C. PRIOR TO EACH POUR, THE FORM LINERS SHALL BE CLEANED AND FREE OF BUILD-UP. EACH LINER SHALL BE VISUALLY INSPECTED FOR BLEMISHES AND TEARS. REPAIRS SHALL BE MADE IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

D. FORM LINERS SHALL BE SECURELY ATTACHED TO FORMS IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND WITH LESS THAN A ¼ INCH SEAM.

E. WHEN FORM OR WALL TIES ARE USED WHICH RESULT IN A PORTION OF THE TIE PERMANENTLY EMBEDDED IN THE CONCRETE, THE CONTRACTOR SHALL SUBMIT THE TYPE OF FORM TIES TO THE ENGINEER FOR APPROVAL.

F. THE RELEASE AGENT SHALL BE COMPATIBLE WITH THE SURFACE FINISH AND CONCRETE STAIN TO BE APPLIED. FORM RELEASE AGENT SHALL BE A NONSTAINING PETROLEUM DISTILLATE FREE FROM WATER, ASPHALTIC AND OTHER INSOLUBLE RESIDUE, OR EQUIVALENT PRODUCT. THE RELEASE AGENT SHALL BE APPLIED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

CONCRETE FORM LINER (CONT.):

G. SIMULATED STONE FORM LINERS SHALL BE INSTALLED, PREPARED, STRIPPED, HANDLED, OR OTHERWISE UTILIZED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER. LINER BUTT JOINTS SHALL BE CAREFULLY BLENDED INTO THE APPROVED PATTERN AND BE REMOVED DURING FINISHING OF THE FINAL CONCRETE SURFACE. VISIBLE VERTICAL OR HORIZONTAL SEAMS OR CONSPICUOUS FORM MARKS CREATED BY BUTT JOINTS JOINING THE SIMULATED STONE FORM LINERS WILL BE CAUSE FOR REJECTION. FORM TIE HOLES SHALL BE PLACED IN THE GROUT PATTERN JOINTS. THE TIES SHALL BE DESIGNED SO THAT ALL MATERIAL IN THE DEVICE BE TO A DEPTH OF AT LEAST 1 INCH BEHIND THE CONCRETE FACE (BOTTOM OF GROUT PATTERN JOINT) CAN BE DISENGAGED AND REMOVED WITHOUT SPALLING OR DAMAGING THE CONCRETE. THE TIE HOLES SHALL BE FINISHED IN CONFORMANCE WITH STANDARD CONCRETE PRACTICES AND ACCEPTABLE TO THE ENGINEER. ALL PATCHING MATERIAL SHALL MATCH THE COLOR AND APPEARANCE OF THE CAST CONCRETE SURFACE.

H. COLOR AND SURFACE FINISH

1. THE APPROVED SAMPLE PANELS SHALL BE THE BASIS FOR DETERMINING THE APPROPRIATE COLOR/STAIN APPLICATION. ANY AREAS LACKING A UNIFORM APPEARANCE CONSISTENT WITH THE APPROVED SAMPLES SHALL BE RECOLORED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE COUNTY.

2. THE CONTRACTOR SHALL PRESSURE WASH THE SURFACE WITH WATER, WITH A PRESSURE WASHER SET AT 3000 PSI TO REMOVE LAITANCE. THE FAN NOZZLE SHALL BE HELD PERPENDICULAR TO THE SURFACE AT A DISTANCE OF 1 TO 2 FT. ABRASIVE BLASTING WILL BE PROHIBITED EXCEPT WHERE SPECIFIED. THE COMPLETED SURFACE SHALL BE FREE OF BLEMISHES, DISCOLORATIONS, SURFACE VOIDS AND CONSPICUOUS FORM MARKS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL CORRECT ANY SURFACE PROBLEMS AT NO ADDITIONAL COST TO THE COUNTY.

3. ALL MATERIALS SHALL BE FURNISHED, PREPARED, APPLIED, CURED, AND STORED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR USE INTENDED AS SPECIFIED HEREIN WITH SPECIAL ATTENTION GIVEN TO RECOMMENDED TEMPERATURE RANGE.

4. THE EXPANSION JOINTS SHOWN ON THE PLANS SHALL BE FINISHED IN A MANNER THAT WILL VISUALLY CONTINUE AN UNINTERRUPTED SIMULATED STONE PATTERN. A SAMPLE OF THE COLOR EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE SAMPLE PANEL FOR APPROVAL.

5. SPECIAL SURFACE FINISH SHALL BE APPLIED TO ALL EXPOSED SIMULATED STONE FORMED CONCRETE SURFACES EXCEPT THE PARAPET CAPS, WHICH SHALL BE UNFINISHED AND SEALED WITH A MATTE FINISH TRANSPARENT WATERPROOFING COATING.

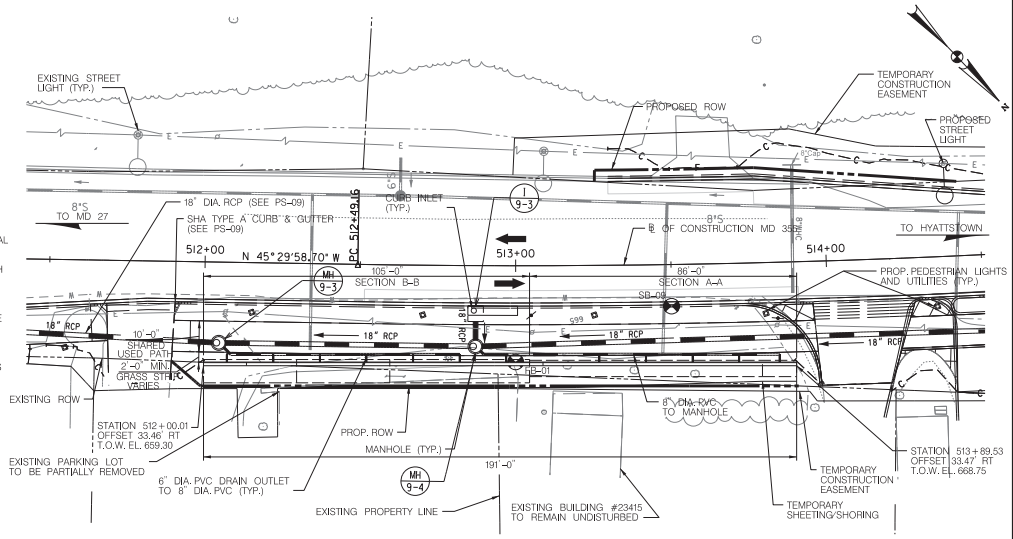
I. THE FORM LINER PATTERN SHALL BE CUSTOM ROCK INTERNATIONAL PATTERN #1114 OR AN APPROVED EQUIVALENT. THE FORM LINER SHALL REPLICATE A REAL STONE PATTERN CONSISTING OF RANDOM CUT STONE VENEER WITH THE FOLLOWING DIMENSIONAL RANGES FOR INDIVIDUAL STONE.

1. THE INDIVIDUAL STONE SIZES RANGE FROM BETWEEN 19 TO 53 INCHES.

2. THE DIMENSION OF FORM LINER REVEAL FROM THE OUTERMOST FACE OF STONE TO THE INSIDE FACE OF THE GROUT PATTERN SHALL BE AN AVERAGE OF 1 3/4 INCHES, BUT A MAXIMUM OF 2 1/2 INCHES.

J. CONCRETE STAIN. THREE COLORS (ONE BASE COLOR, ONE SURFACE COLOR, AND ONE HIGHLIGHT COLOR) SHALL BE APPLIED TO GIVE THE APPEARANCE OF NATURAL STONE. THE BASE COLOR SHALL BE APPLIED TO THE ENTIRE SURFACE (STONES AND GROUT PATTERN JOINTS). THE SURFACE COLOR SHALL BE APPLIED TO 80% OF THE SURFACE OF SIMULATED STONE (FRONT FACE AND EDGES). THE HIGHLIGHT COLOR SHALL BE APPLIED TO 10–70% OF THE SURFACE OF THE SIMULATED STONES (FRONT FACE AND EDGES). THE SURFACE AND HIGHLIGHT COLOR SHALL BE APPLIED TO THE SIMULATED STONES USING A SPONGE, AND SHALL NOT BE APPLIED TO THE GROUT PATTERN JOINTS. THE COLORS AND APPLICATION RATES SHALL BE AS FOLLOWS:

	PERCENT COVERAGE	PANTONE COLOR RANGE
BASE COLOR	100	COOL GRAY 5U
SURFACE COLOR	80% OF STONE SURFACE & EDGES	COOL GRAY 3U
HIGHLIGHT 1	10–70	COOL GRAY 4U



GENERAL PLAN – RETAINING WALL
SCALE: 1" = 20'

NOTES:

1. THE DESIGN OF THE TEMPORARY SHEETING/SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE DONE BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND, AND SUBMITTED TO AREA ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. SHOP DRAWINGS FOR RETAINING WALL MUST BE REVIEWED AND APPROVED BY THE AREA ENGINEER & MCDOT.
3. FOR RETAINING WALL ELEVATION, REFER TO SHEET ST-102.
4. FOR RETAINING WALL SECTION A-A & B-B, REFER TO SHEET ST-103.
5. FOR STANDARD JOINT AND WALL DRAINAGE SYSTEM DETAILS, REFER TO SHEET ST-103.
6. FOR STANDARD REINFORCING DETAILS, REFER TO SHEETS ST-104 & ST-105.
7. FOR BORING LOGS REFER TO SHEET ST-106.
8. BASELINE OFFSETS ARE MEASURED TO THE REAR FACE OF THE RETAINING WALL.
9. FOR 8" DIA PVC AND ADDITIONAL DRAINAGE DETAILS SEE SHEETS PS-09, DP-04 & DD-01 THROUGH DD-05.

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

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

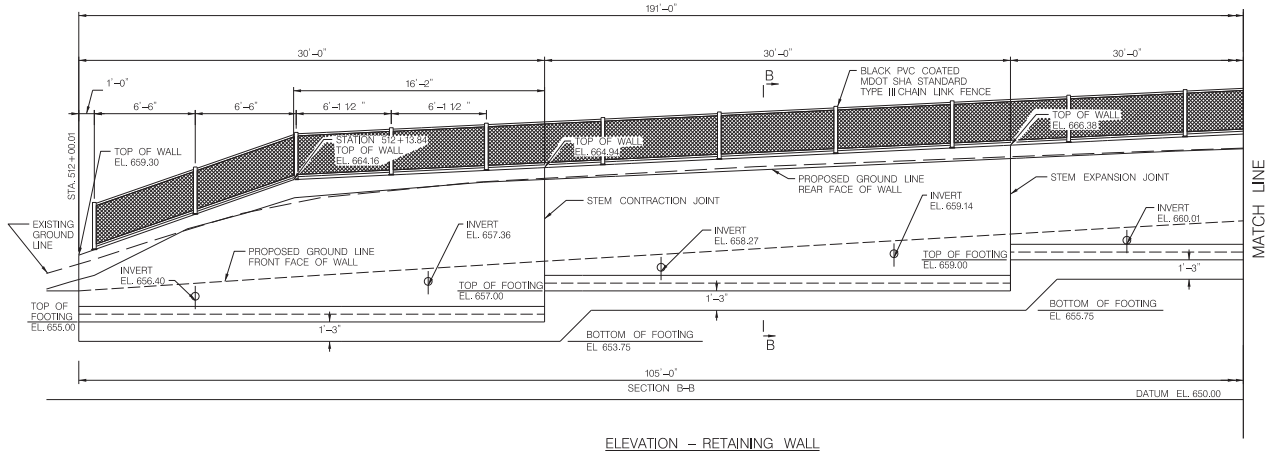
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

RETAINING WALL GENERAL PLAN AND NOTES

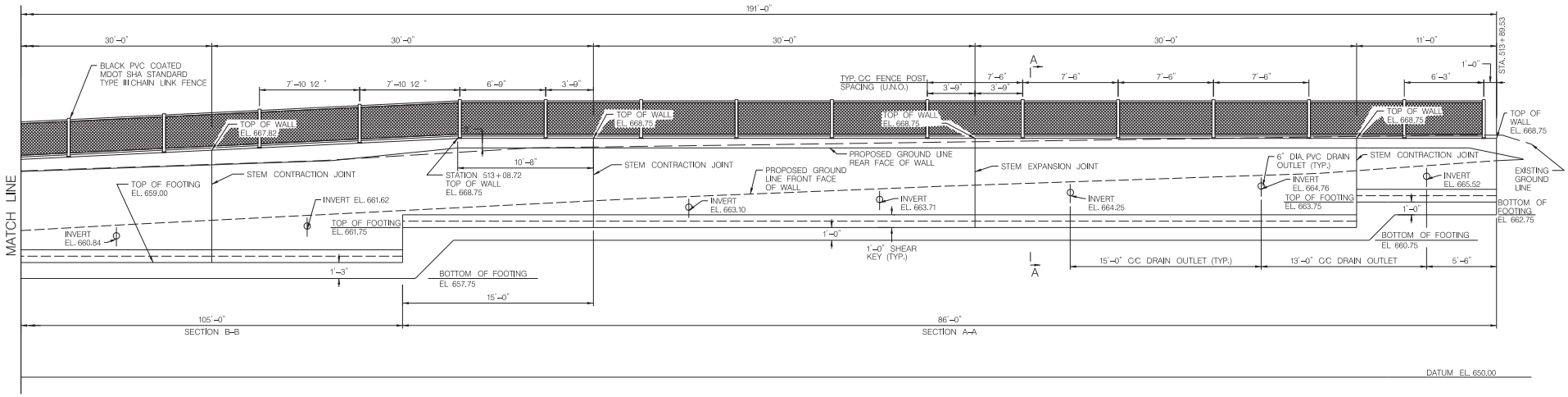
SCALE : AS SHOWN DATE: OCTOBER 2020 ST–101

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 78 of 119



ELEVATION – RETAINING WALL
SCALE: 1/4" = 1'-0"



ELEVATION – RETAINING WALL
SCALE: 1/4" = 1'-0"

NOTES:

1. RETAINING WALL ELEVATION IS SHOWN FROM THE REAR FACE OF THE WALL TO MATCH THE GENERAL PLAN ORIENTATION SHOWN ON ST-101.
2. WEEP HOLES ARE SHOWN PROJECTED LOCATIONS ON THE OPPOSITE FACE OF THE WALL (FRONT FACE).
3. FOR STEM EXPANSION AND CONTRACTION JOINT DETAILS, SEE MDOT SHA STANDARD NO. RW-401 SHOWN ON ST-103.

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

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

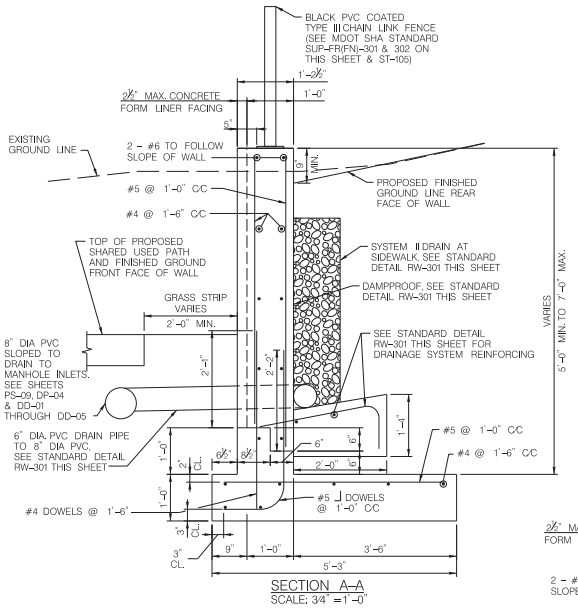
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

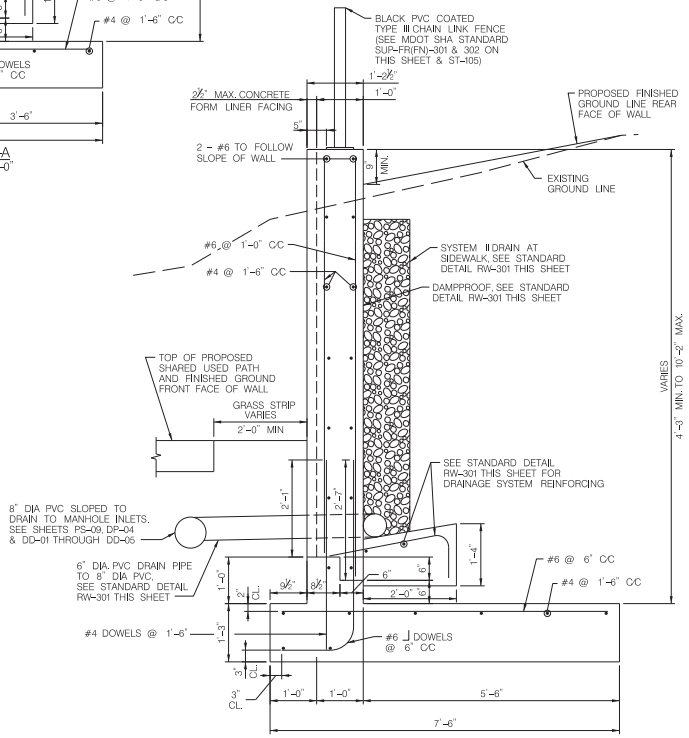
RETAINING WALL ELEVATION

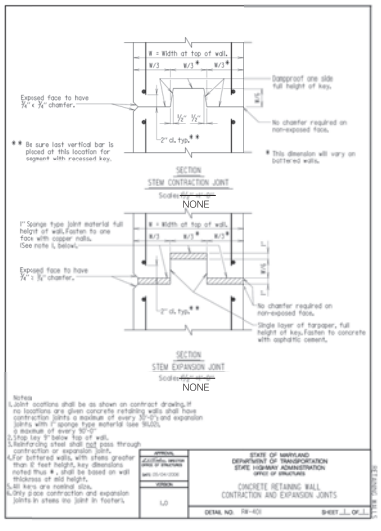
SCALE : AS SHOWN DATE: OCTOBER 2020 ST-102

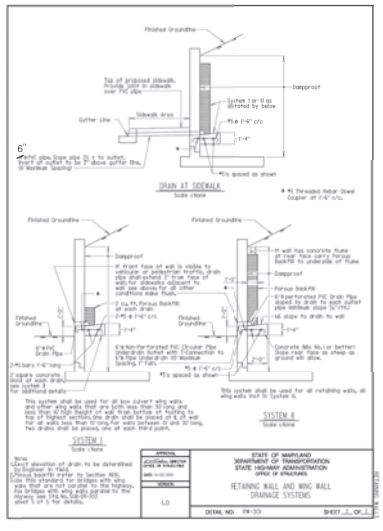
DPS SC/SWM PERMIT SHEET NO. N/A of N/A

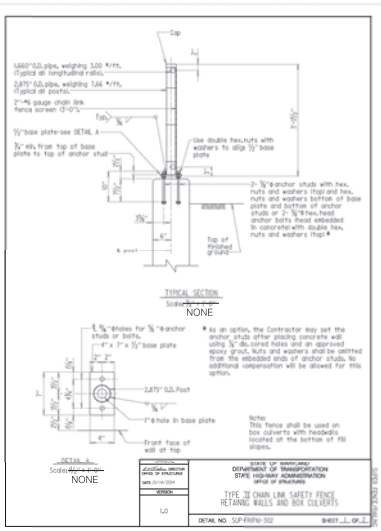
C.I.P. Project No. : 508000 79 of 119

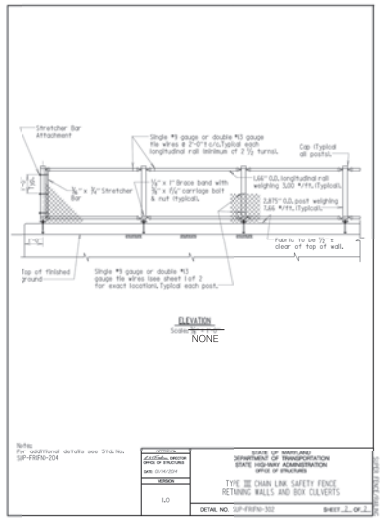












Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

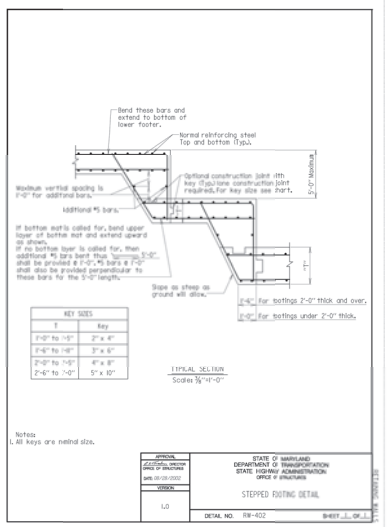
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

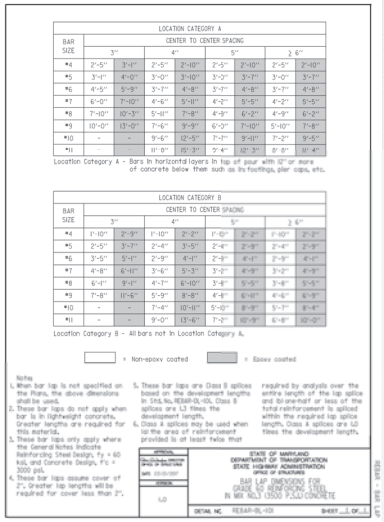
RETAINING WALL SECTIONS AND STANDARD DETAILS

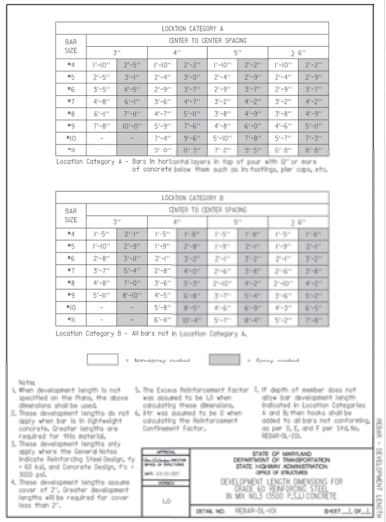
SCALE : AS SHOWN DATE: OCTOBER 2020 ST-103

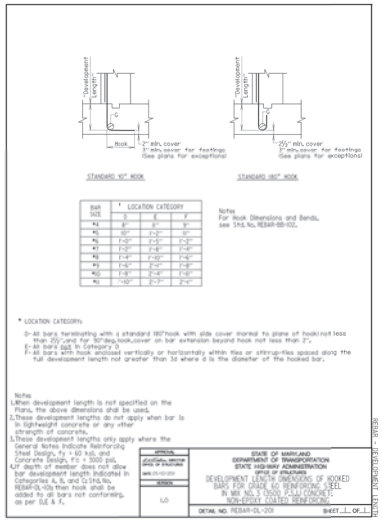
DPS SC/SWM PERMIT SHEET NO. N/A of N/A

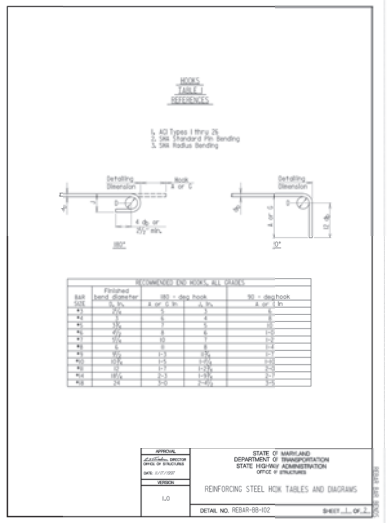
C.I.P. Project No. : 508000 80 of 119

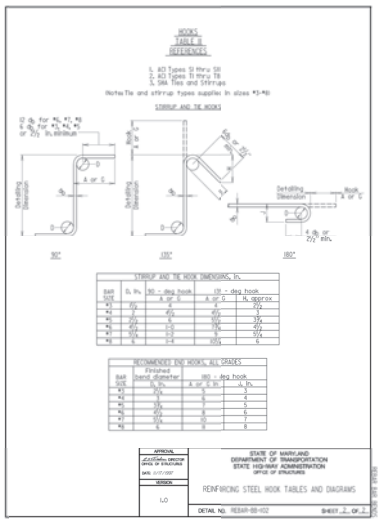


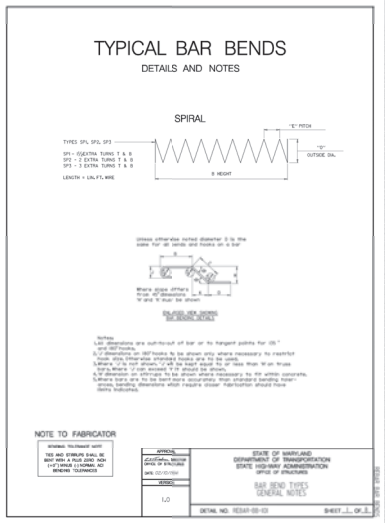


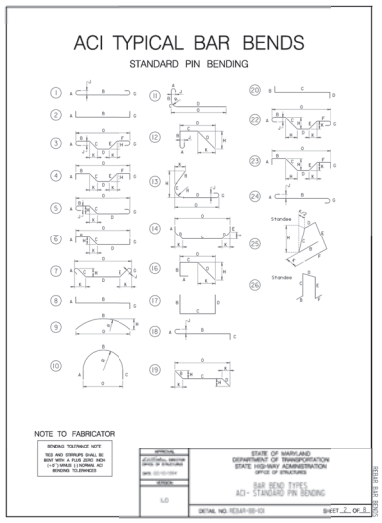












Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

STANDARD DETAILS 1

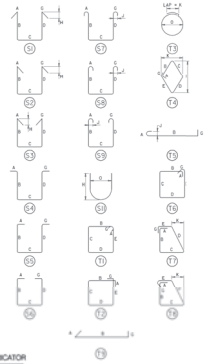
SCALE : N.T.S. DATE: OCTOBER 2020 ST-104

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 81 of 119

ACI TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUG ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

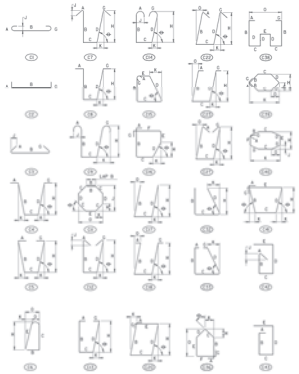
BAR BEND TYPES
ACI TIES A

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 3 OF 3

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

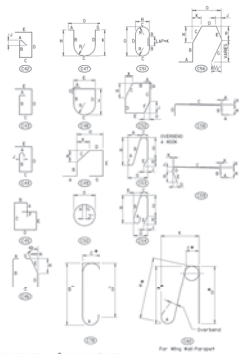
BAR BEND TYPES
SHA - TIES AND STIRRUPS

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 4 OF 3

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

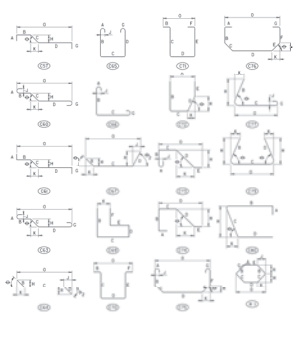
BAR BEND TYPES
SHA - TIES AND STIRRUPS

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 5 OF 3

SHA TYPICAL BAR BENDS

STANDARD PIN BENDING



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

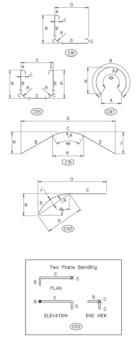
BAR BEND TYPES
SHA - STANDARD PIN BENDING

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 6 OF 3

SHA TYPICAL BAR BENDS

RADIUS BENDING



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

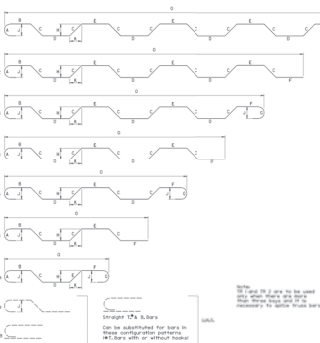
BAR BEND TYPES
SHA - RADIUS BENDING

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 7 OF 3

SHA TYPICAL BAR BENDS

TRUSS BAR CONFIGURATIONS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (1-0") INSIDE (-) NORMAL TO BENDING TOLERANCES

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

BAR BEND TYPES
TRUSS BAR CONFIGURATIONS

DESIGN 1.0

DETAIL NO. REBAR-BB-03 SHEET 8 OF 3

GENERAL NOTES

Specifications — Latest SHA Specifications and Special Provisions for materials and construction. Latest AASHTO Standard Specifications for Highway Bridges for design.

Materials — Posts and rails shall conform to ASTM F-1083, Schedule 80. Fabric shall be 6 gauge, 2" PVC coated mesh conforming to RA.06.

All posts, braces, fittings and hardware shall be PVC coated. Coating shall conform to RA.03 except that nuts, bolts and washers shall also be PVC coated and touched up after installation.

All plates shall be steel conforming to ASTM A 709 Grade 36.

Anchor studs, or anchor bolts shall conform to ASTM A 276, Type 430 or Type 304 stainless steel annealed, hot-finished. Ultimate strength 70 000 psi min., 20% min. elongation. Threads may be rolled or cut.

Epoxy grout for anchor studs in cored holes shall conform to RG.04.06.

PVC color for all elements of fence shall be black unless otherwise noted.

Construction — All longitudinal rails shall be parallel to top of wall.

All posts shall be set normal to top of wall for roadway grades 6% or less. For grades over 6% posts shall be set plumb.

The chain link fence shall be true to line, taut, tight fit to top of wall (no maximum gap) and shall comply with the best practice for fence construction of this type.

Post and rails shall be permanently positioned before fabric is placed.

For post spacing see pertinent structure sheets.

Pressented longitudinal rails, if cut, shall have the cut end coated with PVC touch up material supplied by the manufacturer prior to erection.

If Contractor elects to place anchor studs after placing concrete wall, newly placed rebars shall be located so that coring does not damage same, all holes shall be cored (not drilled) and the diameter of the cored holes for the anchor studs shall be 3/4".

The furnishing, fabricating, erecting, etc., of all new chain link fence on the retaining wall or culvert headwalls and wing walls, complete in place, will not be measured for payment but all costs thereof shall be included in the Contract lump sum prices for the pertinent Retaining Wall or Box Culvert Items.

Measurement and Payments — Any defects uncovered by the inspection of welds on base plates and poles shall be repaired or replaced by new members at no additional cost to the Administration.

APPROVAL

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

CHAIN LINK SAFETY FENCE
RETAINING WALLS AND BOX CULVERTS
GENERAL NOTES

DESIGN 1.0

DETAIL NO. SLF-FRPM-33 SHEET 1 OF 1

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

STANDARD DETAILS 2

SCALE : N.T.S. DATE: OCTOBER 2020 ST-105

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 82 of 119

RECORD OF SUBSURFACE EXPLORATION

Project: MD 355 and Clarksburg Road Intersection Improvements
Location: Montgomery County, MD
Job Number: 4140-02
Inspector: Sam Kimani
Boring Method: HSA
Hole Diameter: 8"
Water Level at Completion: Dry, caved @ 7.9'

Boring Number: FB-01
Drilling Company: MDA Drilling Inc.
Driller: Duane Addison
Date Drilled: 05-08-17 & 06-08-17
Surface Elevation: 668.5' (est)
Hammer Weight/Drop: 140 lb/30 in
Water Level After 24 hrs: Backfilled upon completion.

Elevation (ft)	Water Level Depth (ft)	Description	Depth (ft)	Sampler	Number	Blows/6"	Recovery (inches)	Remarks
668.5			0.0					Offset 15 feet north from staked location to the parking lot due to steep slope. 3.5 inches of asphalt pavement. 6 inches of gravel and sand.
668		Brown / grayish brown, moist, stiff, sandy CLAY, with soft rock fragments (Residual Soil).						
667					S-1	7 - 8 - 5	10	
666			2.5					
665		Reddish brown / red, most, very stiff, sandy CLAY, with rock fragments (Residua Soil).			S-2	12 - 13 - 16	18	
664			5.0					
663		Gray / brown, moist, hari, sandy lean CLAY, trace rock fragments (Residual Soil.			S-3	14 - 14 - 17	21	
662			7.5					
661								
660		Gray / reddish brown, moist, hard, sandy lean CLAY, trace rock fragments (Residual Soil).			S-4	13 - 17 - 15	14	
659		T.O.F. EL. 659.00	10.0					
658								
657		B.O.F. EL. 657.75	12.5					
656								
655								
654		Gray / brownish gray, moist, hard, SILT, with rock fragments (Decomposed rock).			S-5	26 - 50/5"	11	
653		Bottom of Boring @ 14.4ft	15.0					
652								

EBA Engineering, Inc.
4813 Seton Drive
Baltimore, Maryland 21215

■ = Split Spoon

▽ Water Level At Completion
▼ Water Level After 24 hrs
⊔ Caved Depth At Completion
⊠ Caved Depth After 24 hrs

Sheet: 1 of 1

RECORD OF SUBSURFACE EXPLORATION

Project: MD 355 and Clarksburg Road Intersection Improvements
Location: Montgomery County, MD
Job Number: 4140-02
Inspector: Girish Bhatt
Boring Method: HSA
Hole Diameter: 8"
Water Level at Completion: Dry, caved @ 6.8'

Boring Number: SB-09
Drilling Company: MDA Drilling Inc.
Driller: Duane Addison
Date Drilled: 06-22-17 & 06-22-17
Surface Elevation: 663.5' (est)
Hammer Weight/Drop: 140 lb/30 in
Water Level After 24 hrs: Backfilled upon completion.

Elevation (ft)	Water Level Depth (ft)	Description	Depth (ft)	Sampler	Number	Blows/6"	Recovery (inches)	Remarks
663.5			0.0					Offset 7 feet southwest from marked location due to steep slope and existing waterline. 8 inches of asphalt pavement. 10 inches of concrete pavement.
663		T.O.F. EL. 661.75						
662		Reddish brown / gray, moist, stiff, CLAY, with rock fragments (Residual Soil).			S-1	2 - 4 - 5	10	
661		B.O.F. EL. 660.75	2.5					
660		Gray / reddish brown, medium dense, silty SAND, with rock fragment (Residual Soil).			S-2	7 - 14 - 14	16	
659			5.0					
658								Bulk sample collected from 1.5 to 8.5 feet.
657		Gray / reddish brown, very dense, silty ROCK FRAGMENTS, with sand (Residual Sol).			S-3	32 - 35 - 50/5"	16	
656			7.5					
655		Gray / reddish brown, very dense, silty ROCK FRAGMENTS, with sand (Residual Sol).			S-4	25 - 30 - 28	14	
654			10.0					
653		Bottom of Boring @ 10.0 ft						
652			12.5					
651								
650								
649								
648								
647								

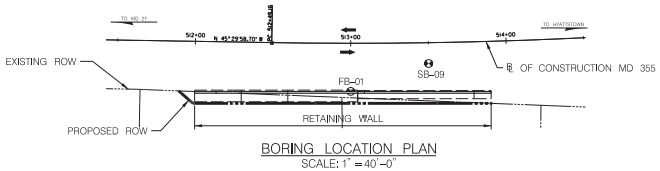
EBA Engineering, Inc.
4813 Seton Drive
Baltimore, Maryland 21215

■ = Split Spoon

▽ Water Level At Completion
▼ Water Level After 24 hrs
⊔ Caved Depth At Completion
⊠ Caved Depth After 24 hrs

Sheet: 1 of 1

BORING LOGS
SCALE: N.T.S.



BORING LOCATION PLAN
SCALE: 1" = 40'-0"

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: VTD Drawn by: GMJ Checked by: RGB

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

BORING LOGS

SCALE : AS SHOWN DATE: OCTOBER 2020 ST-106

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 83 of 119

GENERAL NOTES FOR MAINTENANCE OF TRAFFIC

(1) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MONTGOMERY COUNTY, MD SHA WORK ZONE TRAFFIC CONTROL STANDARDS AND THE MD MUTCD AND SUBSEQUENT REVISIONS ADOPTED BY THE STATE OF MARYLAND, THE PROJECT BOOK OF SPECIAL PROVISIONS, AND THE OTHER CONTRACT DOCUMENTS.

(2) PAVEMENT MARKINGS NO LONGER APPLICABLE SHALL BE REMOVED COMPLETELY AS DIRECTED BY THE ENGINEER.

(3) TEMPORARY PAINT SHALL BE USED ON PAVED SURFACES ONLY AND IS TO BE MAINTAINED TO ENSURE CONTINUOUS REFLECTIVITY AND VISIBILITY. TEMPORARY PAINT SHALL NOT BE USED ON THE FINAL SURFACE. BLACK PAINT SHALL NOT BE PERMITTED.

(4) TEMPORARY TAPE SHALL BE PERMITTED ON EITHER ASPHALT OR CONCRETE SURFACES.

(5) ALL EXISTING SIGNS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION UNLESS A CHANGE IS DIRECTED BY THE ENGINEER.

(6) VARIABLE MESSAGE SIGN(S) MESSAGES MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

(7) ADVANCE WARNING SIGNS SHALL BE INSTALLED AT A MINIMUM SPACING OF 200 FEET TO AN EXISTING SIGN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

(8) SIGNS USED FOR TEMPORARY TRAFFIC CONTROL THAT ARE NOT APPLICABLE FOR A PARTICULAR CONSTRUCTION STAGE SHALL BE REMOVED OR COMPLETELY COVERED WITH A NON-TRANSPARENT MATERIAL.

(9) EXCAVATIONS IN AREAS WHERE THE WORK BUFFER IS LESS THAN ONE LANE SHALL BE BACKFILLED WITH GAB FOR MOT PRIOR TO THE END OF THE WORK DAY IN CONFORMANCE WITH STD. MD 104.01-28 OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(10) NO WORK IS TO BEGIN UNTIL ALL ADVANCE WARNING SIGNS, CHANNELIZATION DEVICES, AND PAVEMENT MARKINGS ARE IN PLACE AND OPERATIONAL.

(11) THE CONTRACTOR SHALL USE STEEL PLATES TO COVER ANY AND ALL OPEN TRENCHES AT THE END OF THE WORK DAY OR WHEN ALL LANES OF TRAFFIC ARE TO BE OPENED TO TRAFFIC.

(12) TYPICAL APPLICATIONS TO BE USED FOR OFF-PEAK HOUR WORK MAY BE MODIFIED AS REQUIRED BASED ON FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

(13) FLAGGING OPERATIONS IDENTIFIED WITHIN SPECIFIC SEQUENCES OF CONSTRUCTION SHALL BE UTILIZED AT THE DISCRETION OF THE COUNTY TRAFFIC ENGINEER. THE COST OF FLAGGING OPERATIONS SHALL BE CONSIDERED INCIDENTAL TO MAINTENANCE OF TRAFFIC OPERATIONS.

(14) THE CONTRACTOR SHALL MAINTAIN A MINIMUM 11' TRAVEL LANE IN EACH DIRECTION.

(15) MAINTAIN TRAFFIC SIGNAL OPERATIONS AT ALL TIMES. CONTRACTOR SHALL CONTACT MR. KAMAL HAMUD OF MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION TO COORDINATE SIGNAL WORK.

(16) ASPHALT AND GRADED AGGREGATE BASE FOR MAINTENANCE OF TRAFFIC WILL BE INCIDENTAL TO MAINTENANCE OF TRAFFIC COST.

(17) THE CONTRACTOR SHALL COORDINATE WITH MOCO AND WMATA REGARDING BUS STOPS WITHIN WORK ZONE.

(18) PORTABLE VARIABLE MESSAGE SIGNS SHALL BE LOCATED AND DISPLAY MESSAGES AS DIRECTED BY THE ENGINEER. PROTECT AND DELINEATE PORTABLE VARIABLE MESSAGE SIGNS IN ACCORDANCE WITH MDSHA STANDARD NO. MD 104.01-22.

(19) PORTABLE VARIABLE MESSAGE SIGNS SHALL BE INSTALLED AND OPERATIONAL ALERTING THE PUBLIC OF UPCOMING CONSTRUCTION AND NEW TRAFFIC PATTERNS AT LEAST 7 DAYS PRIOR TO BEGINNING OF CONSTRUCTION AND SHALL BE USED PRIOR TO ANY NEW PHASE.

SEQUENCE OF CONSTRUCTION - STAGE 1

(1) REMOVE EXISTING TRAFFIC BARRIER ON NORTHEAST CORNER OF INTERSECTION (CLARKSBURG TRIANGLE) AND REPLACE WITH TEMPORARY CONCRETE BARRIER, PLACE TYPE E END TREATMENT ON EACH END. CONTRACTOR SHALL MAINTAIN BARRIER UNTIL STAGE 4 OF CONSTRUCTION WHEN ROADSIDE HAZARDS NO LONGER REQUIRE PROTECTION.

(2) BEGIN CONSTRUCTION OF DRAINAGE FEATURES AS SHOWN ON EROSION AND SEDIMENT PHASE I PLANS UTILIZING FLAGGER OPERATIONS (MD 104.02-10) AND INTERSECTION FLAGGING OPERATIONS (MD 104.02-14), SHOULDER WORK (MD 104.02-02 AND MD 104.03-02) AND LEFT LANE CLOSURE (MD 104.03-04) \ RIGHT LANE CLOSURE (MD 104.03-06) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING OFF PEAK HOURS.
(B) AT THE END OF THE WORK DAY ROADWAY ELEVATION SHALL BE BROUGHT TO MAINTAIN A MAXIMUM 2 INCH DROP-OFF.

(3) WEDGE AND LEVEL CLARKSBURG ROAD, MAINTAINING TRAFFIC ON MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD UTILIZING FLAGGER OPERATIONS (MD 104.02-10) AND INTERSECTION FLAGGING OPERATIONS (MD 104.02-14) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING OFF PEAK HOURS.
(B) AT THE END OF THE WORK DAY ROADWAY ELEVATION SHALL BE BROUGHT TO MAINTAIN A MAXIMUM 2 INCH DROP-OFF.

SEQUENCE OF CONSTRUCTION - STAGE 2

(1) MAINTAIN TWO WAY TRAFFIC ON EXISTING MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD.

(2) BEGIN GRADING AND CONSTRUCTION OF WIDENING ON MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD UTILIZING SHOULDER WORK (MD 104.02-02 AND MD 104.03-02) AND RIGHT LANE CLOSURE (MD 104.03-06) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING A WORK SHIFT.
(B) AT THE END OF THE WORK DAY ROADWAY ELEVATION SHALL BE BROUGHT TO MAINTAIN A MAXIMUM 2 INCH DROP-OFF.

(3) CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTIAL STREETS/DRIVEWAYS AT ALL TIMES.

SEQUENCE OF CONSTRUCTION - STAGE 3

(1) MAINTAIN TWO WAY TRAFFIC ON EXISTING MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD.

(2) BEGIN GRADING AND CONSTRUCTION OF WIDENING ON MD 355 (N FREDERICK ROAD) AND MD 121A (CLARKSBURG ROAD) UTILIZING SHOULDER WORK (MD 104.02-02 AND MD 104.03-02) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING A WORK SHIFT.
(B) AT THE END OF THE WORK DAY ROADWAY ELEVATION SHALL BE BROUGHT TO MAINTAIN A MAXIMUM 2 INCH DROP-OFF.

(3) CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTIAL STREETS/DRIVEWAYS AT ALL TIMES.

SEQUENCE OF CONSTRUCTION - STAGE 4

(1) SHIFT TRAFFIC AS NEEDED TO MAINTAIN TWO WAY TRAFFIC ON EXISTING MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD.

(2) BEGIN GRADING AND CONSTRUCTION OF WIDENING/SHARED USE PATH ALONG MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD UTILIZING SHOULDER WORK (MD 104.02-02 AND MD 104.03-02) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING A WORK SHIFT.
(B) AT THE END OF THE WORK DAY ROADWAY ELEVATION SHALL BE BROUGHT TO MAINTAIN A MAXIMUM 2 INCH DROP-OFF.

(3) PERFORM FULL DEPTH CONSTRUCTION OF SPIRE INTERSECTION AT MD 355, UTILIZING DETOUR SIGNAGE AS SHOWN ON MT-06.

(4) WEDGE AND LEVEL SPIRE INTERSECTION AT CLARKSBURG ROAD, UTILIZING DETOUR SIGNAGE AS SHOWN ON MT-07.

(5) STEP 3 AND 4 OF THIS STAGE SHALL NOT BE PERFORMED CONCURRENTLY. ACCESS TO SPIRE STREET MUST BE MAINTAINED AT ALL TIMES.

SEQUENCE OF CONSTRUCTION - STAGE 5

(1) MAINTAIN TWO WAY TRAFFIC ON EXISTING MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD.

(2) BEGIN CONSTRUCTION OF PROPOSED SIGNALS UTILIZING SHOULDER WORK (MD 104.02-02 AND MD 104.03-02) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

(A) CONTRACTOR SHALL PERFORM AS MUCH WORK AS CAN BE ACCOMPLISHED DURING A WORK SHIFT.

(3) CONTRACTOR SHALL INSTALL PROPOSED SIGNALS ON FINISHED ELEVATIONS PRIOR TO FINE MILLING AND RESURFACING ROADWAY,

(4) CONTRACTOR SHALL TRANSFER OPERATIONS TO NEW TRAFFIC SIGNAL. CONTRACTOR SHALL ALERT DRIVERS TO THE SIGNAL CHANGE TWO WEEKS PRIOR TO SIGNAL ACTIVATION USING G3-1(1) WITH ORANGE FLAGS.

(5) ACTIVATE NEW TRAFFIC SIGNAL AT MD 355 (N FREDERICK ROAD) AND CLARKSBURG ROAD.

(6) CONTRACTOR SHALL REMOVE EXISTING SIGNAL EQUIPMENT.

(7) PERFORM FINE MILLING AND RESURFACING AND INSTALL PAVEMENT MARKING ON FINAL PAVEMENT SURFACE.

(8) BEGIN CONSTRUCTION OF MEDIAN ISLANDS ON CLARKSBURG ROAD UTILIZING WORK IN CENTER OF LOW VOLUME ROAD (MD 104.02-06) OR APPLICABLE MONTGOMERY COUNTY STANDARDS.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

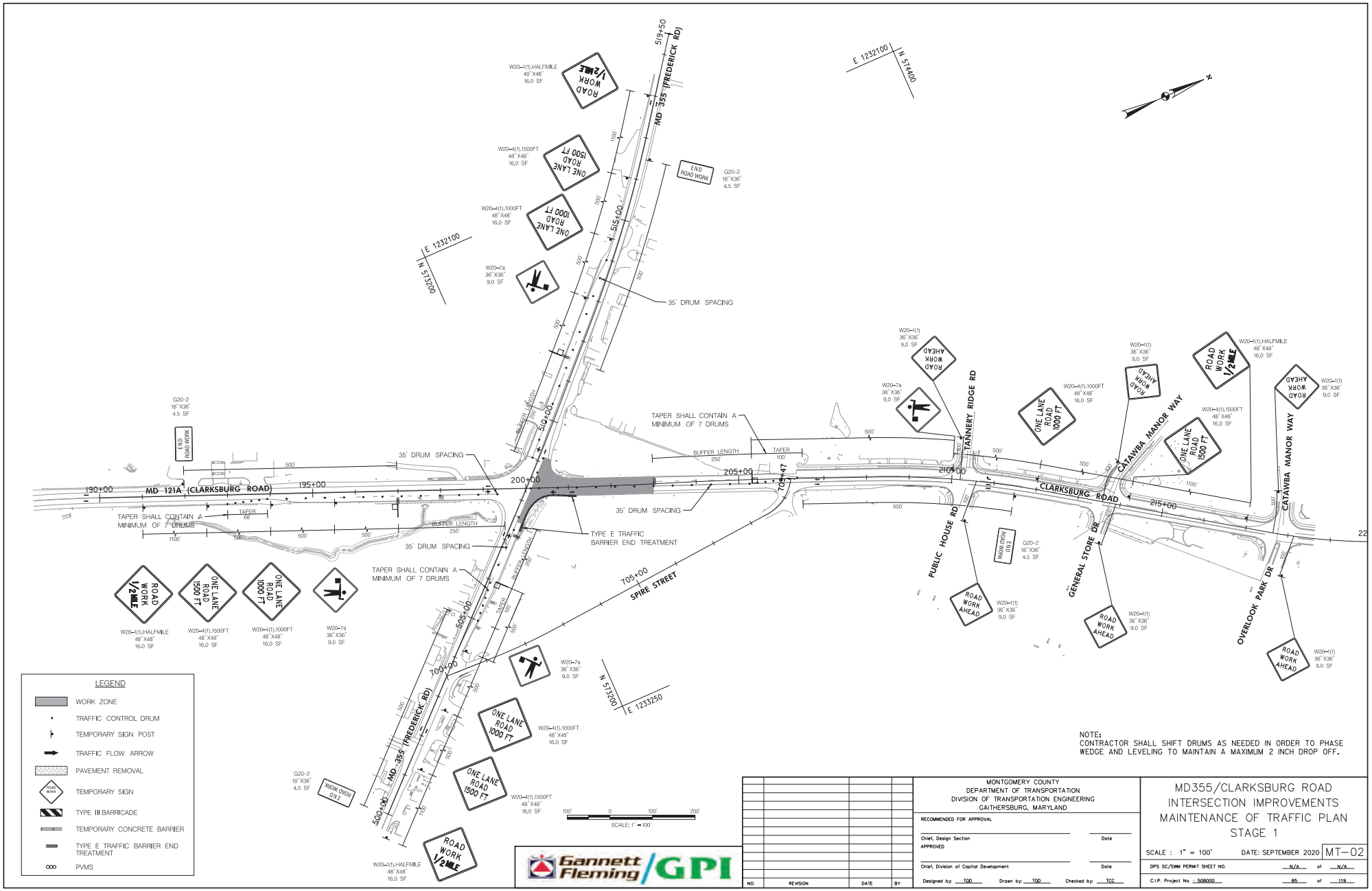
Designed by: TDD Drawn by: TDD Checked by: TCC

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
GENERAL NOTES & SEQUENCE

SCALE : N.T.S. DATE: SEPTEMBER 2020 MT-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 84 of 119


MD 355 (FREDERICK RD)
MD 121A (CLARKSBURG ROAD)
CLARKSBURG ROAD
SPIRE STREET
TANNERY RIDGE RD
PUBLIC HOUSE RD
GENERAL STORE DR
CATAWBA MANOR WAY
OVERLOOK PARK DR
35' DRUM SPACING
TAPER SHALL CONTAIN A MINIMUM OF 7 DRUMS
TYPE E TRAFFIC BARRIER END TREATMENT
ROAD WORK 1/2 MILE
ONE LANE ROAD 1000 FT
ONE LANE ROAD 1500 FT
ROAD WORK AHEAD
END ROAD WORK
E 1232100 N 514400
E 1232100 N 513200
N 513200 E 1233250
LEGEND
WORK ZONE
TRAFFIC CONTROL DRUM
TEMPORARY SIGN POST
TRAFFIC FLOW ARROW
PAVEMENT REMOVAL
TEMPORARY SIGN
TYPE III BARRICADE
TEMPORARY CONCRETE BARRIER
TYPE E TRAFFIC BARRIER END TREATMENT
PVMS
NOTE:
CONTRACTOR SHALL SHIFT DRUMS AS NEEDED IN ORDER TO PHASE WEDGE AND LEVELING TO MAINTAIN A MAXIMUM 2 INCH DROP OFF.
SCALE: 1" = 100'
Gannett Fleming/GPI
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND
RECOMMENDED FOR APPROVAL
Chief, Design Section
Date
APPROVED
Chief, Division of Capital Development
Date
Designed by: TOD
Drawn by: TOD
Checked by: TCC
NO. REVISION DATE BY
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 1
SCALE : 1" = 100'
DATE: SEPTEMBER 2020
MT-02
DPS SC/SWM PERMIT SHEET NO. N/A of N/A
C.I.P. Project No. : 508000
85 of 119


MD 355 (FREDERICK RD)
MD 121A (CLARKSBURG ROAD)
CLARKSBURG ROAD
SPIRE STREET
TANNERY RIDGE RD
PUBLIC HOUSE RD
CATAWBA MANOR WAY
GENERAL STORE DR
OVERLOOK PARK DR
ROAD WORK AHEAD
END ROAD WORK
SHOULDER WORK
ROAD WORK 1500 FT
ROAD WORK 1/2 MILE
RIGHT LANE CLOSED 1000 FT
RIGHT LANE CLOSED 1500 FT
W20-1(1) 48"X48" 16.0 SF
W20-1(1) 36"X36" 9.0 SF
W20-1(1),HALFMILE 48"X48" 16.0 SF
W20-5(1) 48"X48" 16.0 SF
W21-5(1) 48"X48" 16.0 SF
W4-2R 36"X36" 9.0 SF
G20-2 18"X36" 4.5 SF
35' DRUM SPACING
TYPE E TRAFFIC BARRIER END TREATMENT
BUFFER LENGTH 250'
TAPER 120'
E 1232100
N 574400
N 573200
E 1233250
SCALE: 1" = 100'
LEGEND
WORK ZONE
TRAFFIC CONTROL DRUM
TEMPORARY SIGN POST
TRAFFIC FLOW ARROW
PAVEMENT REMOVAL
TEMPORARY SIGN
TYPE III BARRICADE
TEMPORARY CONCRETE BARRIER
TYPE E TRAFFIC BARRIER END TREATMENT
PVMS

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

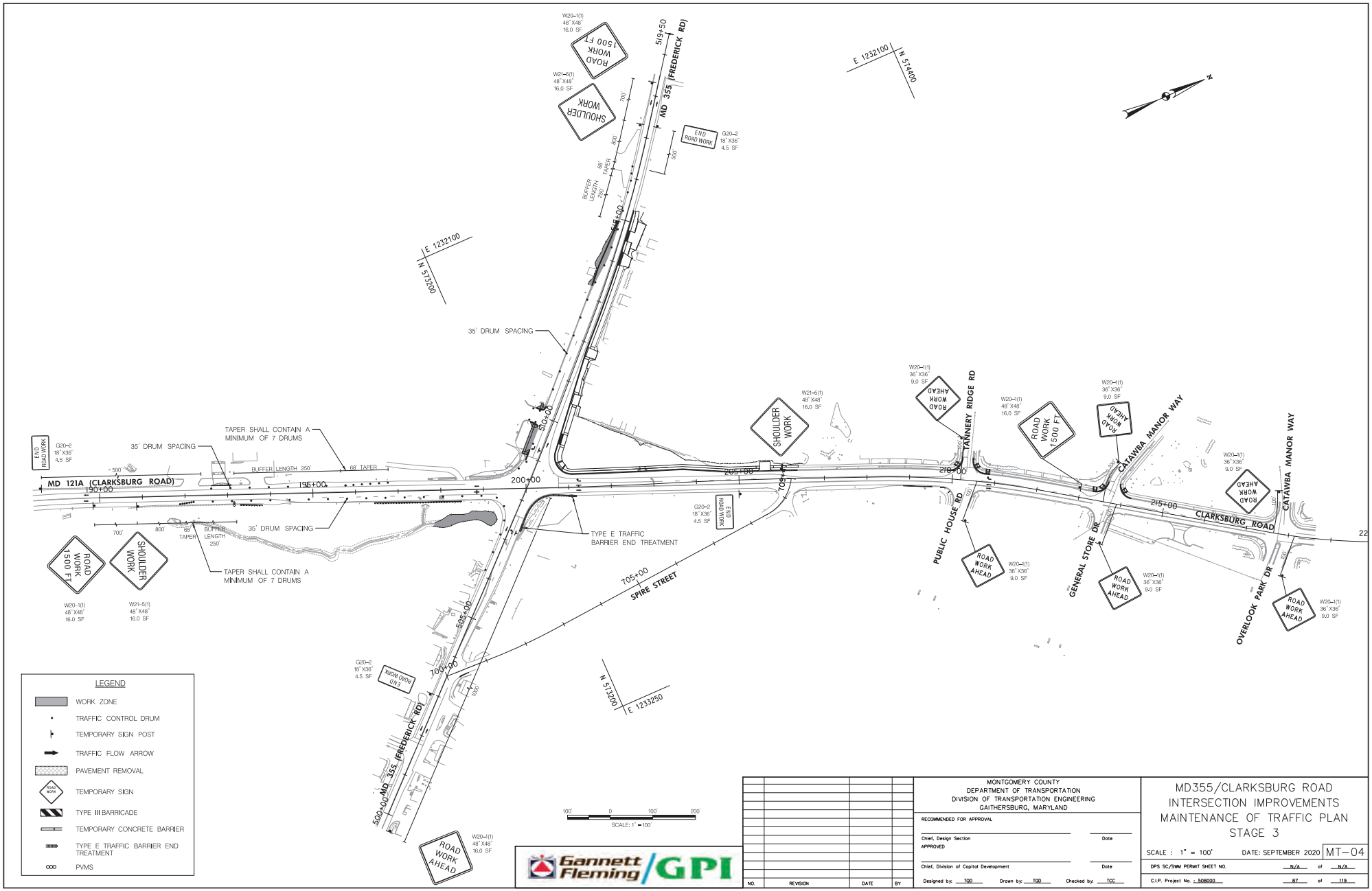
Designed by: TQD Drawn by: TQD Checked by: TCC

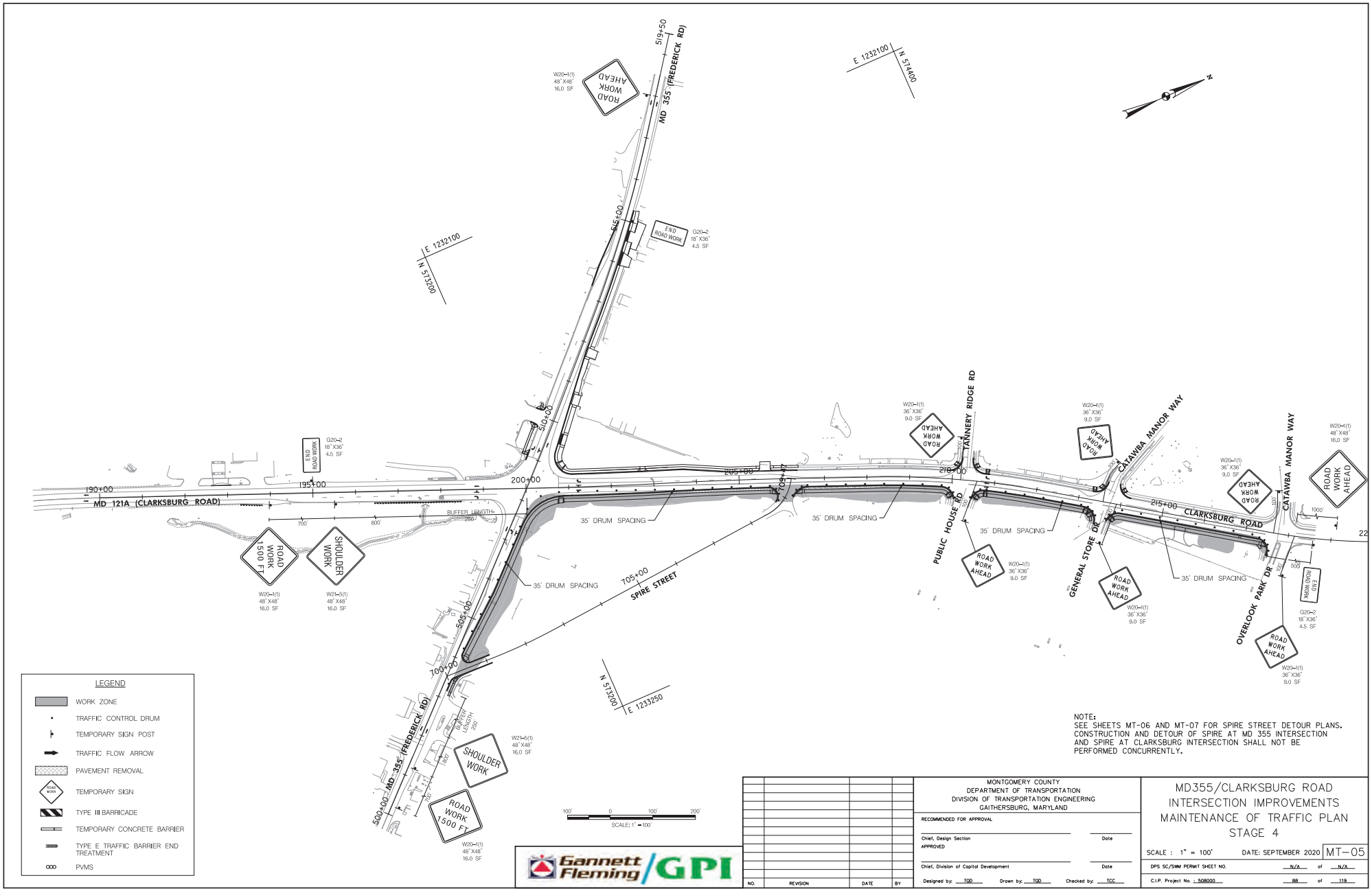
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 2

SCALE : 1" = 100' DATE: SEPTEMBER 2020 MT-03

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. 508000 86 of 119


MD 121A (CLARKSBURG ROAD)
MD 355 (FREDERICK RD)
SPIRE STREET
CLARKSBURG ROAD
PUBLIC HOUSE RD
TANNERY RIDGE RD
CATAWBA MANOR WAY
GENERAL STORE DR
OVERLOOK PARK DR
35' DRUM SPACING
TAPER SHALL CONTAIN A MINIMUM OF 7 DRUMS
TYPE E TRAFFIC BARRIER END TREATMENT
BUFFER LENGTH 250'
68' TAPER
ROAD WORK 1500 FT
SHOULDER WORK
ROAD WORK AHEAD
END ROAD WORK
LEGEND
WORK ZONE
TRAFFIC CONTROL DRUM
TEMPORARY SIGN POST
TRAFFIC FLOW ARROW
PAVEMENT REMOVAL
TEMPORARY SIGN
TYPE III BARRICADE
TEMPORARY CONCRETE BARRIER
TYPE E TRAFFIC BARRIER END TREATMENT
PVMS
SCALE: 1" = 100'
Gannett Fleming/GPI
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND
RECOMMENDED FOR APPROVAL
Chief, Design Section
APPROVED
Chief, Division of Capital Development
Designed by: TOD
Drawn by: TOD
Checked by: TCC
NO. REVISION DATE BY
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
STAGE 3
SCALE : 1" = 100'
DATE: SEPTEMBER 2020
MT-04
DPS SC/SWM PERMIT SHEET NO. N/A of N/A
C.I.P. Project No. : 508000 87 of 119



NOTE:
SEE SHEETS MT-06 AND MT-07 FOR SPIRE STREET DETOUR PLANS. CONSTRUCTION AND DETOUR OF SPIRE AT MD 355 INTERSECTION AND SPIRE AT CLARKSBURG INTERSECTION SHALL NOT BE PERFORMED CONCURRENTLY.

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

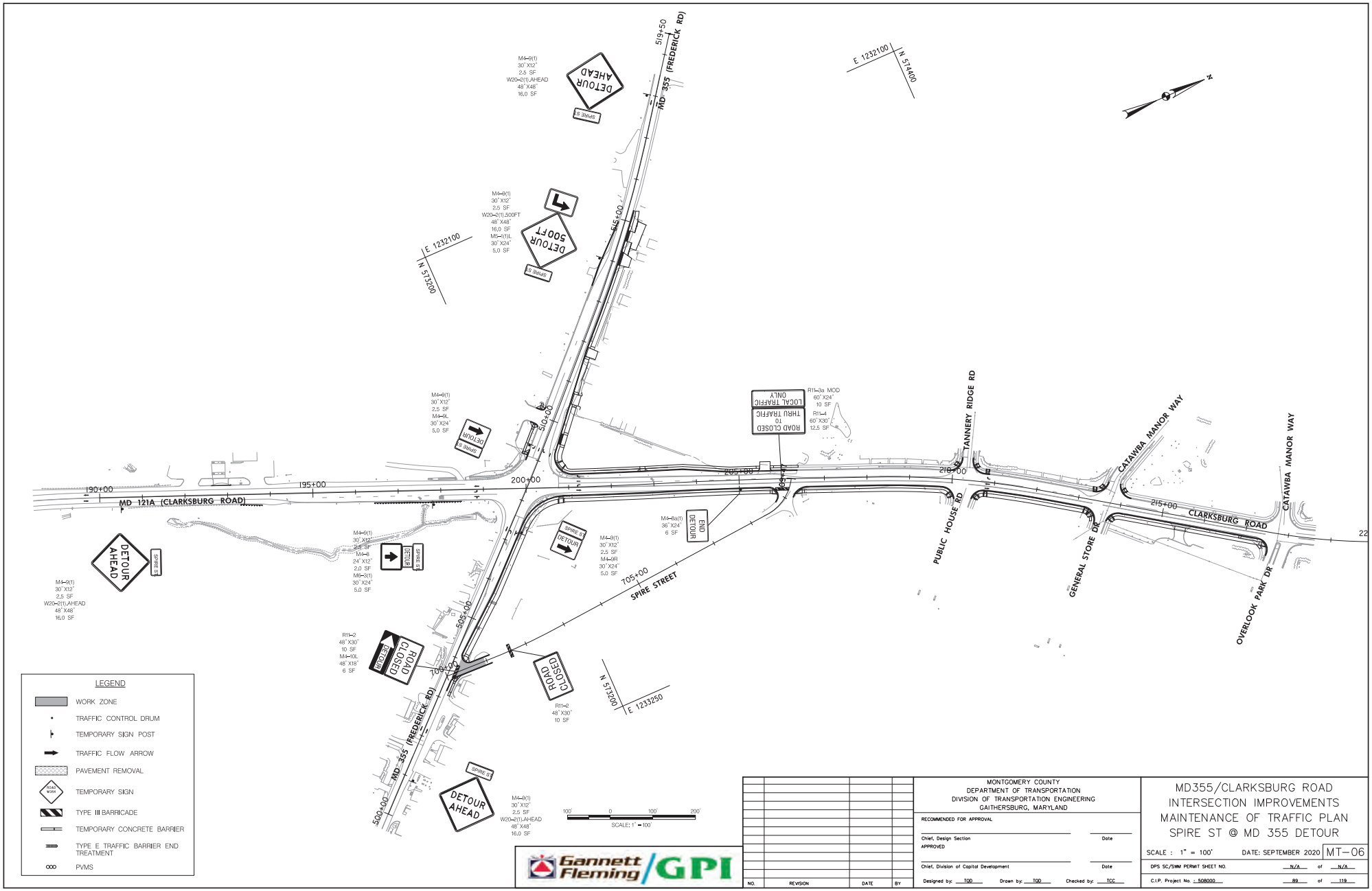
Designed by: TOD Drawn by: TOD Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS MAINTENANCE OF TRAFFIC PLAN STAGE 4

SCALE : 1" = 100' DATE: SEPTEMBER 2020 MT-05

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 88 of 119


MD 355 (FREDERICK RD)
MD 121A (CLARKSBURG ROAD)
SPIRE STREET
CLARKSBURG ROAD
TANNERY RIDGE RD
CATAWBA MANOR WAY
PUBLIC HOUSE RD
GENERAL STORE DR
OVERLOOK PARK DR
DETOUR AHEAD
DETOUR 500FT
ROAD CLOSED AHEAD
ROAD CLOSED
END DETOUR
ROAD CLOSED TO THRU TRAFFIC LOCAL TRAFFIC ONLY
E 1232100
N 514400
N 513200
E 1233250
N 513200
E 1232100
LEGEND
WORK ZONE
TRAFFIC CONTROL DRUM
TEMPORARY SIGN POST
TRAFFIC FLOW ARROW
PAVEMENT REMOVAL
TEMPORARY SIGN
TYPE III BARRICADE
TEMPORARY CONCRETE BARRIER
TYPE E TRAFFIC BARRIER END TREATMENT
PVMS
SCALE: 1" = 100'
Gannett Fleming/GPI
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND
RECOMMENDED FOR APPROVAL
Chief, Design Section
Date
APPROVED
Chief, Division of Capital Development
Date
Designed by: TOD
Drawn by: TOD
Checked by: TCC
NO.
REVISION
DATE
BY
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN
SPIRE ST @ MD 355 DETOUR
SCALE : 1" = 100'
DATE: SEPTEMBER 2020
MT-06
DPS SC/SWM PERMIT SHEET NO.
N/A
of
N/A
C.I.P. Project No. : 508000
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of
119

LEGEND

- WORK ZONE
- TRAFFIC CONTROL DRUM
- TEMPORARY SIGN POST
- TRAFFIC FLOW ARROW
- PAVEMENT REMOVAL
- TEMPORARY SIGN
- TYPE III BARRICADE
- TEMPORARY CONCRETE BARRIER
- TYPE E TRAFFIC BARRIER END TREATMENT
- PVMS

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

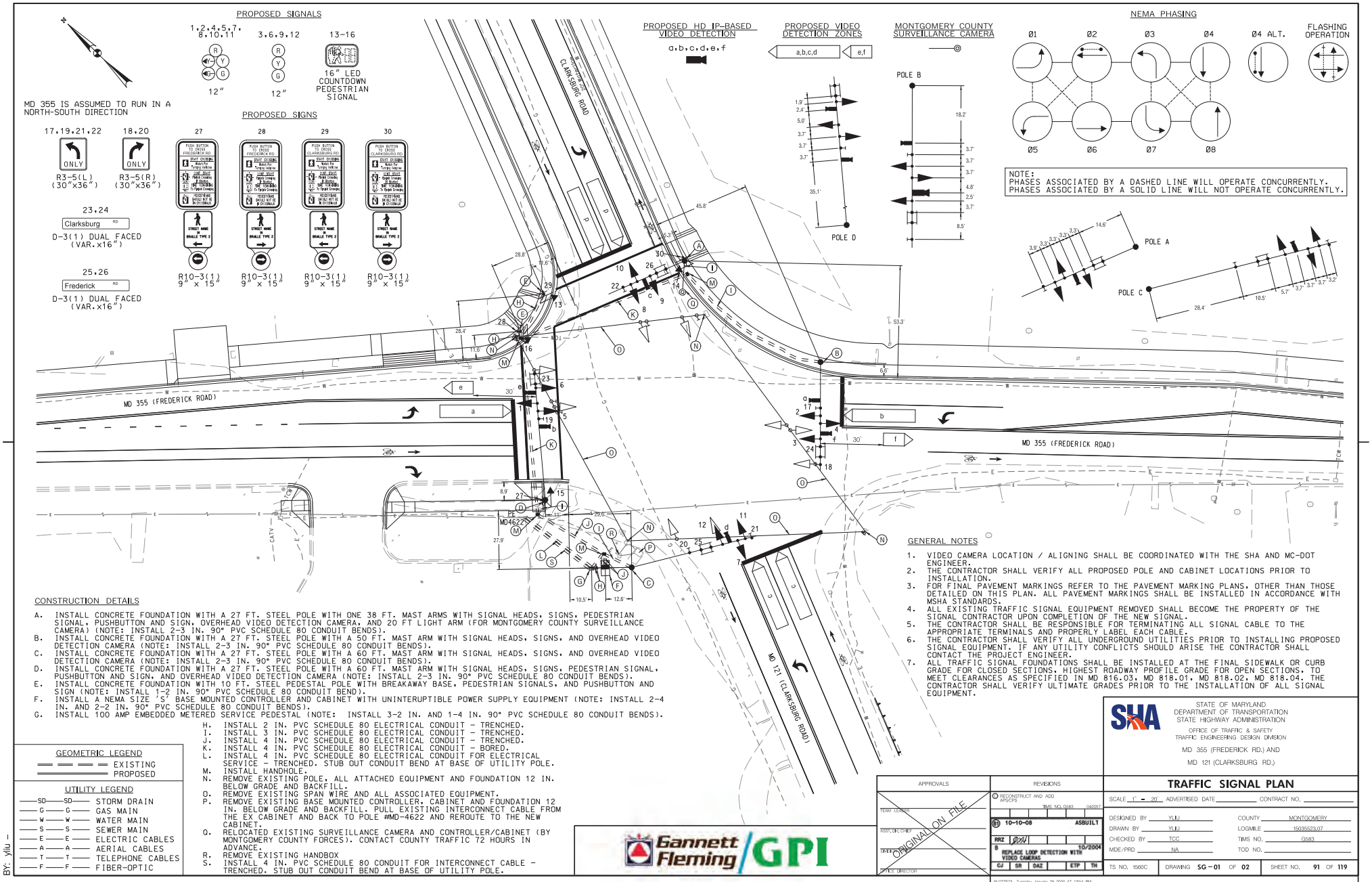
Designed by: TQD Drawn by: TQD Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS MAINTENANCE OF TRAFFIC PLAN SPIRE ST @ CLARKSBURG RD DETOUR

SCALE : 1" = 100' DATE: SEPTEMBER 2020 MT-07

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. 508000 90 of 119



CONSTRUCTION DETAILS

A. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH ONE 38 FT. MAST ARMS WITH SIGNAL HEADS, SIGNS, PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN, OVERHEAD VIDEO DETECTION CAMERA, AND 20 FT LIGHT ARM (FOR MONTGOMERY COUNTY SURVEILLANCE CAMERA) (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
B. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH A 50 FT. MAST ARM WITH SIGNAL HEADS, SIGNS, AND OVERHEAD VIDEO DETECTION CAMERA (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
C. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH A 60 FT. MAST ARM WITH SIGNAL HEADS, SIGNS, AND OVERHEAD VIDEO DETECTION CAMERA (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
D. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH A 60 FT. MAST ARM WITH SIGNAL HEADS, SIGNS, PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN, AND OVERHEAD VIDEO DETECTION CAMERA (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
E. INSTALL CONCRETE FOUNDATION WITH 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE, PEDESTRIAN SIGNALS, AND PUSHBUTTON AND SIGN (NOTE: INSTALL 1-2 IN. 90° PVC SCHEDULE 80 CONDUIT BEND).
F. INSTALL A NEMA SIZE 'S' BASE MOUNTED CONTROLLER AND CABINET WITH UNINTERUPTIBLE POWER SUPPLY EQUIPMENT (NOTE: INSTALL 2-4 IN. AND 2-2 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
G. INSTALL 100 AMP EMBEDDED METERED SERVICE PEDESTAL (NOTE: INSTALL 3-2 IN. AND 1-4 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
H. INSTALL 2 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
I. INSTALL 3 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
J. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
K. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - BORED.
L. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT FOR ELECTRICAL SERVICE - TRENCHED. STUB OUT CONDUIT BEND AT BASE OF UTILITY POLE.
M. INSTALL HANDHOLE.
N. REMOVE EXISTING POLE, ALL ATTACHED EQUIPMENT AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL.
O. REMOVE EXISTING SPAN WIRE AND ALL ASSOCIATED EQUIPMENT.
P. REMOVE EXISTING BASE MOUNTED CONTROLLER, CABINET AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL. PULL EXISTING INTERCONNECT CABLE FROM THE EX CABINET AND BACK TO POLE #MD-4622 AND REROUTE TO THE NEW CABINET.
Q. RELOCATED EXISTING SURVEILLANCE CAMERA AND CONTROLLER/CABINET (BY MONTGOMERY COUNTY FORCES). CONTACT COUNTY TRAFFIC 72 HOURS IN ADVANCE.
R. REMOVE EXISTING HANDBOX
S. INSTALL 4 IN. PVC SCHEDULE 80 CONDUIT FOR INTERCONNECT CABLE - TRENCHED. STUB OUT CONDUIT BEND AT BASE OF UTILITY POLE.

GENERAL NOTES

1. VIDEO CAMERA LOCATION / ALIGNING SHALL BE COORDINATED WITH THE SHA AND MC-DOT ENGINEER.
2. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
3. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS, OTHER THAN THOSE DETAILED ON THIS PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MSHA STANDARDS.
4. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
6. 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.
7. 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

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

Gannett Fleming/GPI

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

REVISIONS
1 RECONSTRUCT AND ADD PPSPS TIMS NO.G583 04/2017
B 10-10-08 ASBUILT
RRZ
B REPLACE LOOP DETECTION WITH VIDEO CAMERAS 10/2004
CJ SR DAZ ETP TH

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 355 (FREDERICK RD.) AND
MD 121 (CLARKSBURG RD.)

TRAFFIC SIGNAL PLAN

SCALE 1" = 20' ADVERTISED DATE _____ CONTRACT NO. _____
DESIGNED BY YLIU COUNTY MONTGOMERY
DRAWN BY YLIU LOGMILE 15035523.07
CHECKED BY TCC TIMS NO. G583
MDE/PRD NA TOD NO.
TS NO. 1560C DRAWING SG-01 OF 02 SHEET NO. 91 OF 119

PLOTTED: Tuesday, January 28, 2020 AT 12:54 PM
FILE: H:\5974-Task 18 Clarksburg Rd at MD 355\Planset\p8G-P001_MD355.dgn
BY: yliu

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 355 (FREDERICK ROAD) AND MD 121A (CLARKSBURG ROAD) IN MONTGOMERY COUNTY. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

THE PROJECT WILL RECONSTRUCT THE EXISTING SPAN WIRE SIGNAL TO A MAST ARM SIGNAL WITH NEW SIGNAL HEADS, VIDEO DETECTION CAMERAS, AND OVERHEAD SIGNS. AUDIBLE PEDESTRIAN PUSHBUTTONS WITH COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL BE INSTALLED ACROSS THE NORTH AND EAST LEGS OF THE INTERSECTION. THIS PROJECT WILL ALSO REPLACE THE EXISTING NEMA SIZE "6" BASE MOUNTED CABINET WITH A NEW NEMA SIZE "S" BASE MOUNTED CABINET WITH SYSTEM MASTER CONTROLLER AND BATTERY BACKUP.

II. INTERSECTION OPERATION

1. THE SIGNAL IS TO OPERATE IN A NEMA EIGHT (8) PHASE, FULLY-ACTUATED MODE, WITH BOTH THE MD 355 AND CLARKSBURG ROAD APPROACHES OPERATING CONCURRENTLY. AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE SHALL BE PROVIDED FOR BOTH THE NORTHBOUND AND SOUTHBOUND APPROACHES OF MD 355 AND BOTH THE EASTBOUND AND WESTBOUND APPROACHES OF CLARKSBURG ROAD. A CONCURRENT COUNTDOWN PEDESTRIAN PHASE IS PROVIDED TO CROSS THE EAST LEG ACROSS CLARKSBURG ROAD AND AN ACTUATED ALTERNATE COUNTDOWN PEDESTRIAN PHASE IS PROVIDED TO CROSS THE NORTH LEG ACROSS MD 355.

2. A PROPOSED NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER WITH VIDEO DETECTION INTERFACE, 2 WIRE APS CENTRAL CONTROL UNIT, BATTERY BACKUP AND ALL NECESSARY EQUIPMENT HOUSED IN A NEMA SIZE "S" BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS INTERSECTION.

III. SPECIAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLES TO THE APPROPRIATE TERMINALS AND SHALL PROPERLY LABEL EACH CABLE.

2. ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.

3. APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 355 (FREDERICK ROAD):

A. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS FREDERICK AT CLARKSBURG, WAIT".

B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS CLARKSBURG ROAD:

A. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS CLARKSBURG AT FREDERICK, WAIT".

B. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

THE FOLLOWING CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

DISTRICT #3:

MR. ANDRE FUTRELL
DISTRICT ENGINEER
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MR. DEREK GUNN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7498

VACANT
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
PHONE: (301) 513-7341

MR. GREGORY EDWARDS
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 513-7304

MR. MARK LOEFFLER
DISTRICT UTILITY ENGINEER
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MONTGOMERY COUNTY DOT:

MR. KAMAL HAMUD
TEAM LEADER, TRAFFIC SIGNALS
MONTGOMERY COUNTY DOT
DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS
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MR. STEVE YOUNG
SUPERVISOR, MONTGOMERY COUNTY TECHNICAL CENTER
MONTGOMERY COUNTY DOT
DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS
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OFFICE OF TRAFFIC & SAFETY:

MS. VIVIAN BERRA-FIGUEREO
CHIEF, TRAFFIC OPERATIONS DIVISION
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MS. KELLY CALDWELL-HARPER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7625

MR. SONNY BAILEY
CHIEF, SIGN OPERATION SECTION
PHONE: (410) 787-7670

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED, SUPPLIED AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	QUANTITY
203030	TEST PIT EXCAVATION	11 CY
801004	CONCRETE FOR SIGNAL FOUNDATION	18 CY
801605	SHEET ALUMINUM SIGNS	50 SF
	– PEDESTRIAN PUSHBUTTON AND PEDESTRIAN EDUCATION R10-3(1) SIGN (9"X15"). (NOTE: SIGN TO READ "PUSH BUTTON TO CROSS FREDERICK ROAD").	2 EA
	– PEDESTRIAN PUSHBUTTON AND PEDESTRIAN EDUCATION R10-3(1) SIGN (9"X15"). (NOTE: SIGN TO READ "PUSH BUTTON TO CROSS CLARKSBURG ROAD").	2 EA
	– RIGHT TURN ONLY R3-5R SIGN (30"X36") MAST ARM MOUNTED.	2 EA
	– LEFT TURN ONLY R3-5L SIGN (30"X36") MAST ARM MOUNTED.	4 EA
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	630 LF
805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	180 LF
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	45 LF
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	115 LF
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	90 LF
807500	EMBEDDED METERED SERVICE PEDESTAL	1 EA
808060	UP TO 20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE	1 EA
810022	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	170 LF
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	4 EA
816003	HD IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	6 EA
818004	10 FOOT BREAKAWAY PEDESTAL POLE	2 EA
818030	STEEL POLE WITH A SINGLE 38 FOOT MAST ARM	1 EA
818036	STEEL POLE WITH A SINGLE 50 FOOT MAST ARM	1 EA
818041	STEEL POLE WITH A SINGLE 60 FOOT MAST ARM	2 EA
837001	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	6 EA
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	52 EA
860285	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD	4 EA
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	610 LF
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	700 LF
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	1960 LF
865210	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	4 EA
865300	2-WIRE APS CENTRAL CONTROL UNIT	1 EA
873002	REMOVE AND DISPOSAL OF EXISTING SIGNAL EQUIPMENT	1 LS

A. EQUIPMENT TO BE FURNISHED, SUPPLIED AND INSTALLED BY THE CONTRACTOR. (CONTINUED)

ITEM NO.	DESCRIPTION	QUANTITY
800000	FURNISH AND INSTALL CONTROLLER CABINET, SIZE "S" WITH CONTROLLER	1 EA
800000	FURNISH AND INSTALL CABINET EXTENSION BASE, SIZE "S"	1 EA
800000	FURNISH AND INSTALL VIDEO DETECTION INTERFACE EQUIPMENT: 1-8 CAMERAS	1 EA
800000	FURNISH AND INSTALL UPS EQUIPMENT FOR "S" CABINET	1 EA

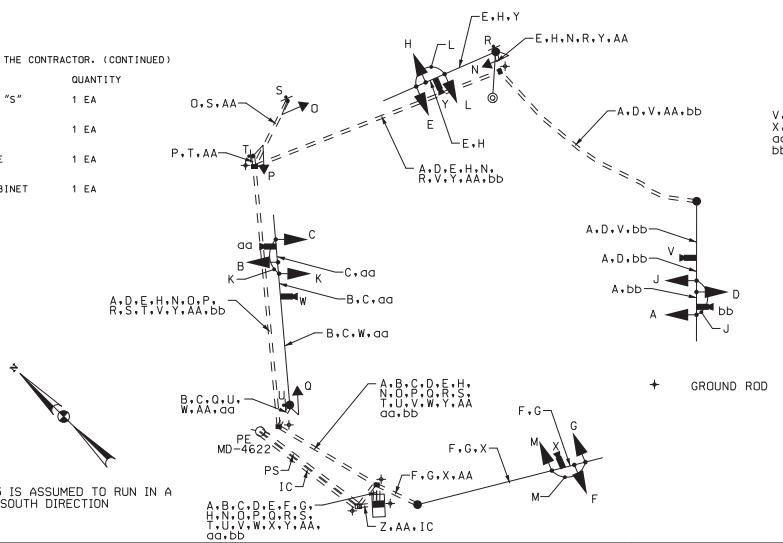
PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
PHASE 1 AND 5	←G/R	←G/R	R	←G/R	←G/R	R	R	R	R	R	R	R	DW	DW	DW	DW	
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																	
PHASE 1 AND 6	←G/G	←G/G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	
1 AND 6 CHANGE	←Y/G	←Y/G	G	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 2 AND 5	R	R	R	←G/G	←G/G	G	R	R	R	R	R	R	W/K	W/K	DW	DW	
2 AND 5 CHANGE	R	R	R	←Y/G	←Y/G	G	R	R	R	R	R	R	W/K	W/K	DW	DW	
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	R	R	W/K	W/K	DW	DW	
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 3 AND 7	R	R	R	R	R	R	←G/R	←G/R	R	←G/R	←G/R	R	DW	DW	DW	DW	
3 AND 7 CHANGE TO 3 AND 8, 4 AND 7, OR 4 AND 8																	
PHASE 3 AND 8	R	R	R	R	R	R	←G/G	←G/G	G	R	R	R	DW	DW	DW	DW	
3 AND 8 CHANGE	R	R	R	R	R	R	←Y/G	←Y/G	G	R	R	R	DW	DW	DW	DW	
PHASE 4 AND 7	R	R	R	R	R	R	R	R	R	←G/G	←G/G	G	DW	DW	DW	DW	
4 AND 7 CHANGE	R	R	R	R	R	R	R	R	R	←Y/G	←Y/G	G	DW	DW	DW	DW	
PHASE 4 AND 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	DW	DW	
4 AND 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	
PHASE 4 ALT	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	W/K	W/K	
PED CLEARANCE	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW	FL/DW	FL/DW	
4 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	

WIRING KEY

A, B, C, D, E, F, G, H	7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
J, K, L, M, N, O, P, Q	5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
R, S, T, U	2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
V, W, X, Y, aa, bb	VIDEO DETECTION CABLE (3 CONDUCTOR NO. 18 AWG)
Z	3-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG THHN/THWN)
AA	1 CONDUCTOR (NO. 6 AWG) STRANDED BARE COPPER GROUND WIRE
PS	PROPOSED POWER SERVICE - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG THHN/THWN)
IC	INTERCONNECT CABLE (12 PAIR EXISTING)

WIRING DIAGRAM



MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 355 (FREDERICK RD.) AND
MD 121 (CLARKSBURG RD.)

GENERAL INFORMATION SHEET

SCALE NTS ADVERTISED DATE _____ CONTRACT NO. _____

DESIGNED BY YLIU
DRAWN BY YLIU
CHECKED BY TCC
MDE/PRD NA

COUNTY MONTGOMERY
LOGMILE 15035523.07
TIMS NO. G583
TOD NO. _____

TS NO. 1560C | DRAWING SG-02 OF 02 | SHEET NO. 92 OF 119

Gannett Fleming / GPI

BY: yliu

PLOTTED: Tuesday, January 28, 2020 AT 12:57 PM
FILE: H:\5874-Task 18 Clarksburg Rd at MD 355\Plansets\SG-P002_MD355.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

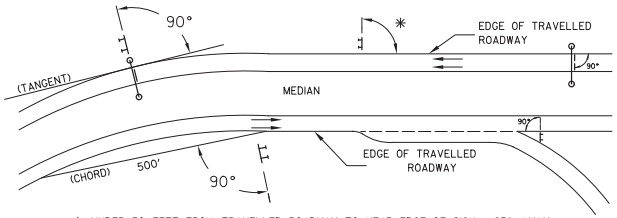
GUIDE SIGNS
EACH GUIDE SIGN IS IDENTIFIED BY A SIGN NUMBER ON THE PLANS AND IN THE TABULATIONS. (GM-1, GM-2, GM-3, etc)
SIGNS ON STRUCTURES ARE IDENTIFIED WITH A NUMBER AND WHERE VARIATIONS OCCUR, A LOWER CASE LETTER. (OH-1a, OH-1b, OH-1c)

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:

PROJECT REQUIREMENTS CONT'D

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).

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"

APPROVALS

TEAM LEADER

ASST. DIV. CHIEF

DIVISION CHIEF

OFFICE DIRECTOR

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

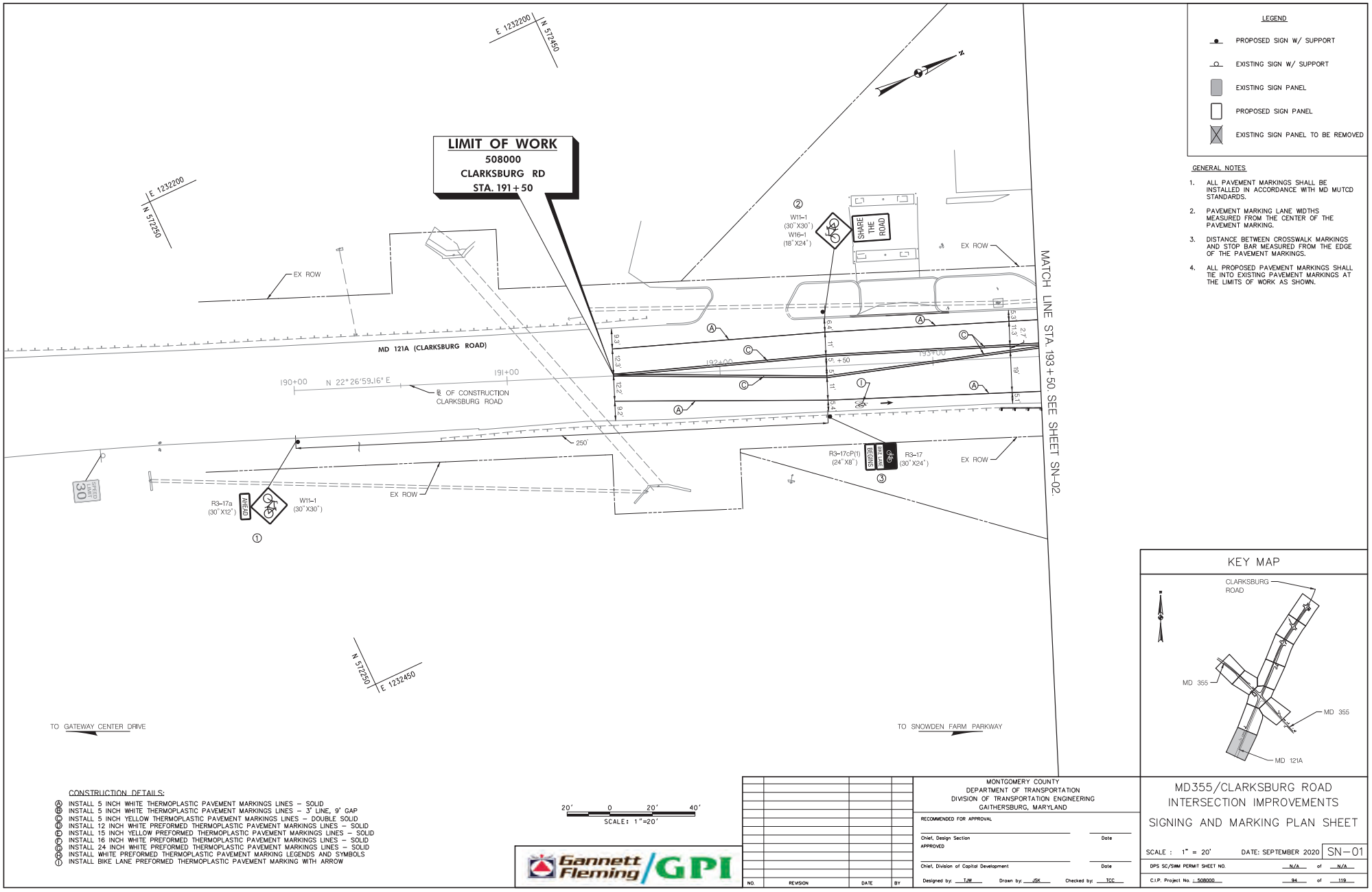
Designed by: _____ Drawn by: JSK Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS
SIGNING AND MARKING
GENERAL NOTES AND PROPOSALS

SCALE : N.T.S. DATE: SEPTEMBER 2020 SN-00

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 93 of 119



LEGEND

- PROPOSED SIGN W/ SUPPORT
- EXISTING SIGN W/ SUPPORT
- EXISTING SIGN PANEL
- PROPOSED SIGN PANEL
- EXISTING SIGN PANEL TO BE REMOVED

GENERAL NOTES

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MD MUTCD STANDARDS.
2. PAVEMENT MARKING LANE WIDTHS MEASURED FROM THE CENTER OF THE PAVEMENT MARKING.
3. DISTANCE BETWEEN CROSSWALK MARKINGS AND STOP BAR MEASURED FROM THE EDGE OF THE PAVEMENT MARKINGS.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL TIE INTO EXISTING PAVEMENT MARKINGS AT THE LIMITS OF WORK AS SHOWN.

KEY MAP

CONSTRUCTION DETAILS:

- Ⓐ INSTALL 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- Ⓑ INSTALL 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS LINES – 3' LINE, 9' GAP
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- Ⓗ INSTALL WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
- Ⓘ INSTALL BIKE LANE PREFORMED THERMOPLASTIC PAVEMENT MARKING WITH ARROW

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

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

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Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

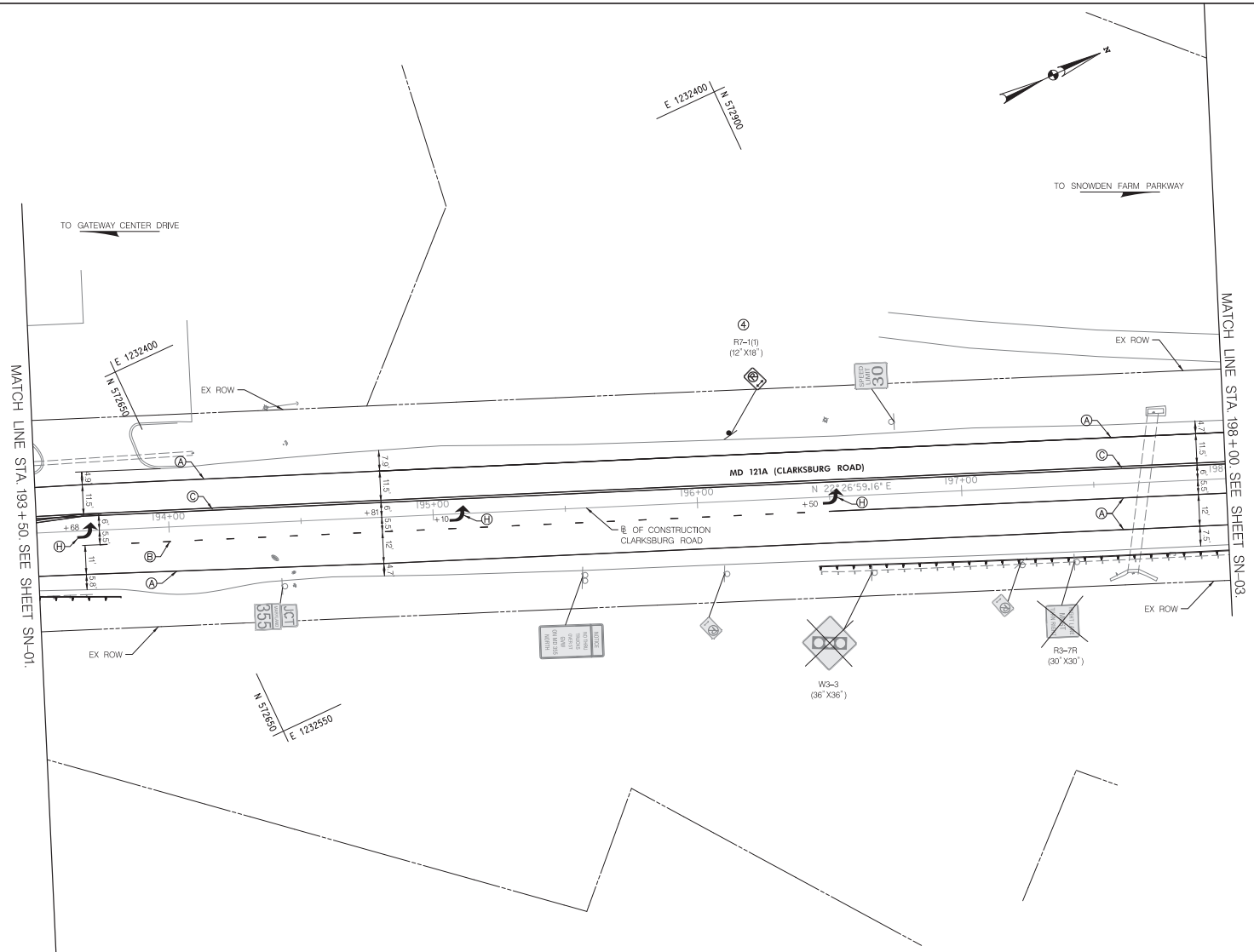
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 94 of 119



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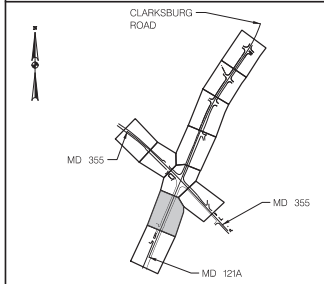

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20' 0 20' 40'
SCALE: 1" = 20'

Gannett Fleming/GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

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Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

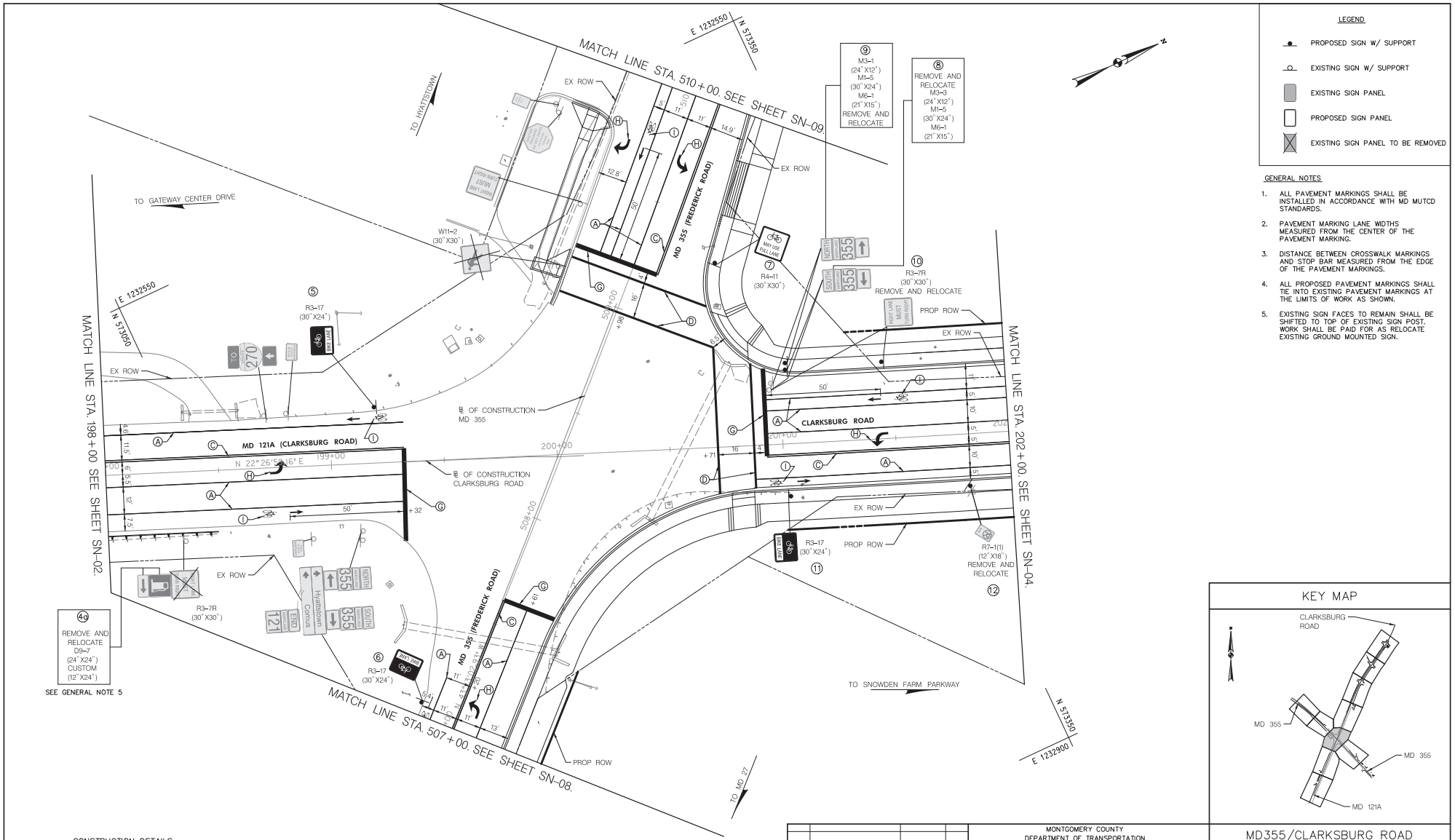
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–02

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 95 of 119



LEGEND

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4. ALL PROPOSED PAVEMENT MARKINGS SHALL TIE INTO EXISTING PAVEMENT MARKINGS AT THE LIMITS OF WORK AS SHOWN.
5. EXISTING SIGN FACES TO REMAIN SHALL BE SHIFTED TO TOP OF EXISTING SIGN POST. WORK SHALL BE PAID FOR AS RELOCATE EXISTING GROUND MOUNTED SIGN.

KEY MAP

CONSTRUCTION DETAILS:

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SCALE: 1"=20'

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DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

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Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

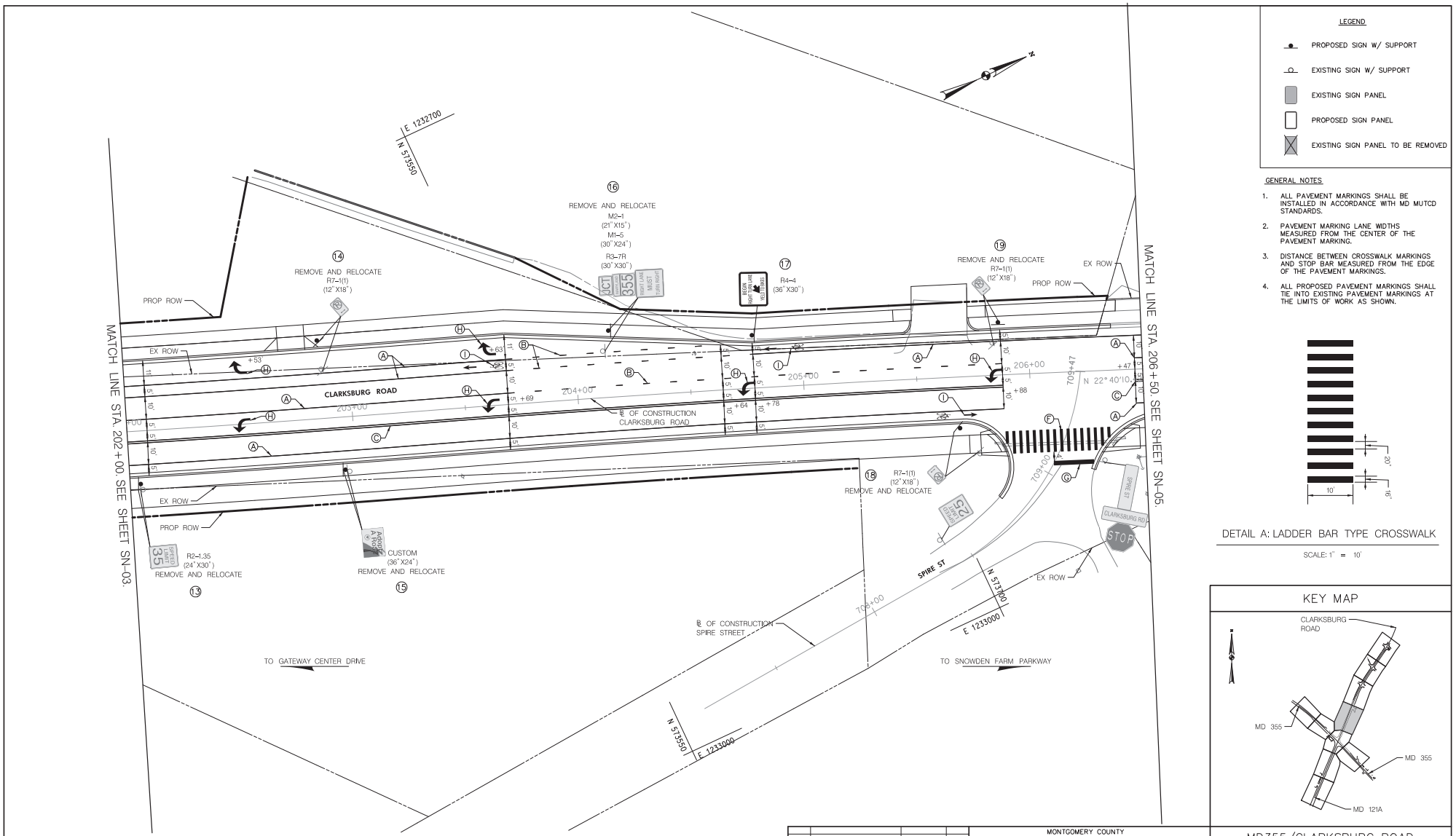
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–03

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 96 of 119



LEGEND

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DETAIL A: LADDER BAR TYPE CROSSWALK

SCALE: 1" = 10'

KEY MAP

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Chief, Division of Capital Development — Date

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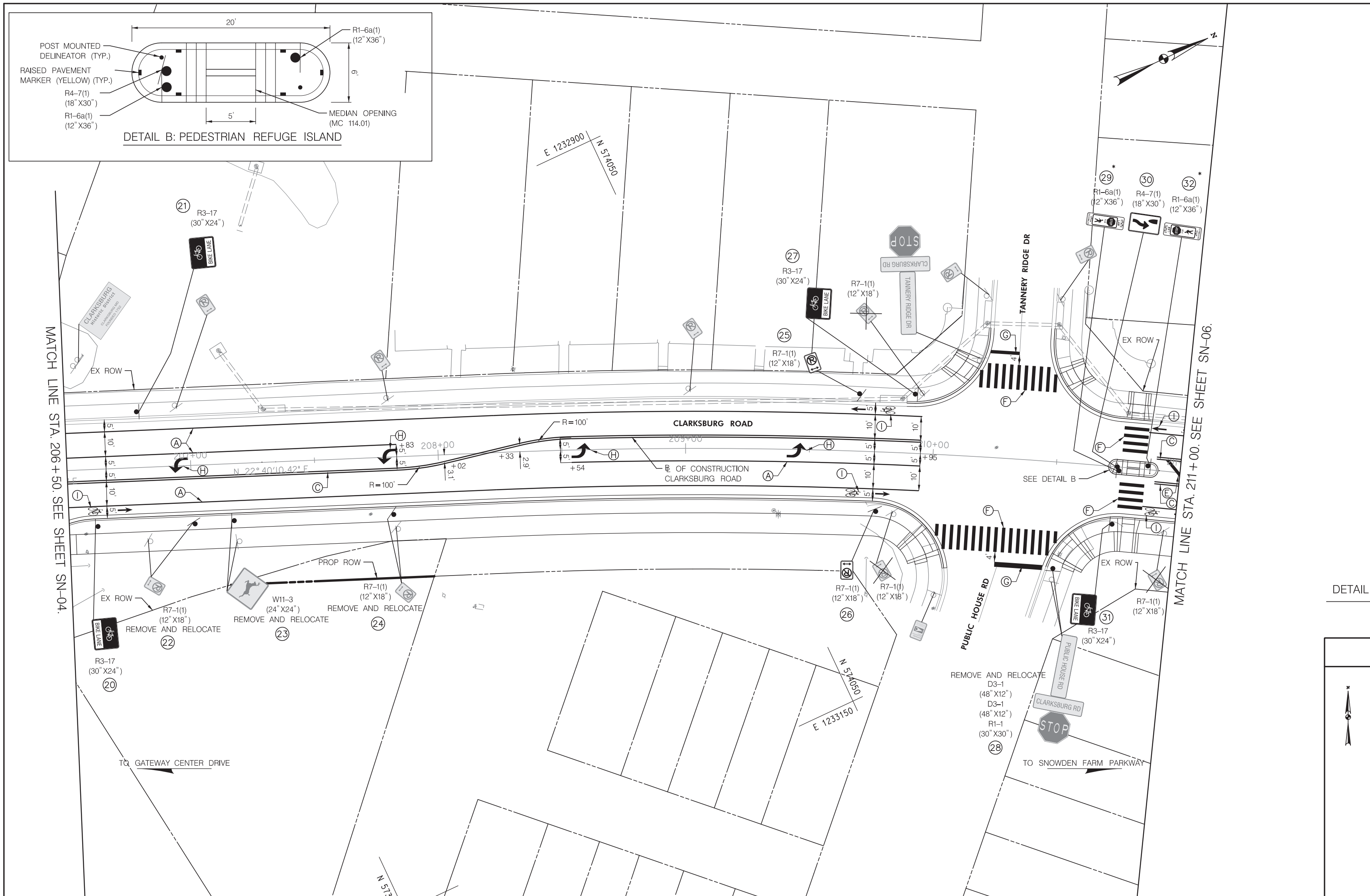
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN-04

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 97 of 119



LEGEND

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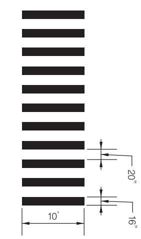
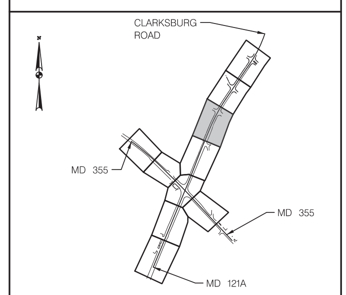


DETAIL A: LADDER BAR TYPE CROSSWALK

SCALE: 1" = 10'

KEY MAP



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Gannett Fleming / GPI

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DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

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Chief, Design Section ______ Date ______

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Chief, Division of Capital Development ______ Date ______

Designed by: TJW Drawn by: JSK Checked by: TCC

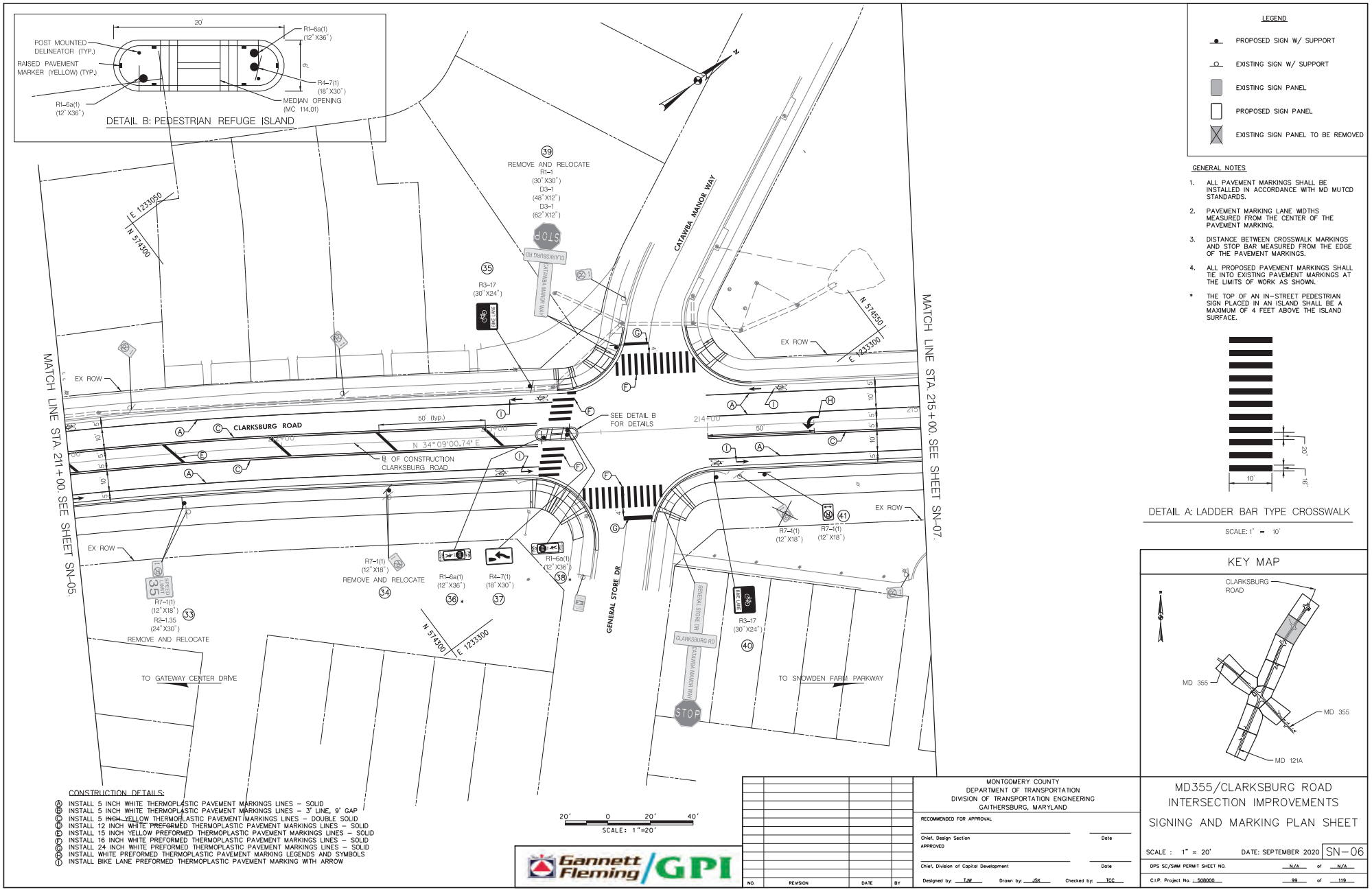
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN-05

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 98 of 119



LEGEND

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DETAIL A: LADDER BAR TYPE CROSSWALK

SCALE: 1" = 10'

KEY MAP

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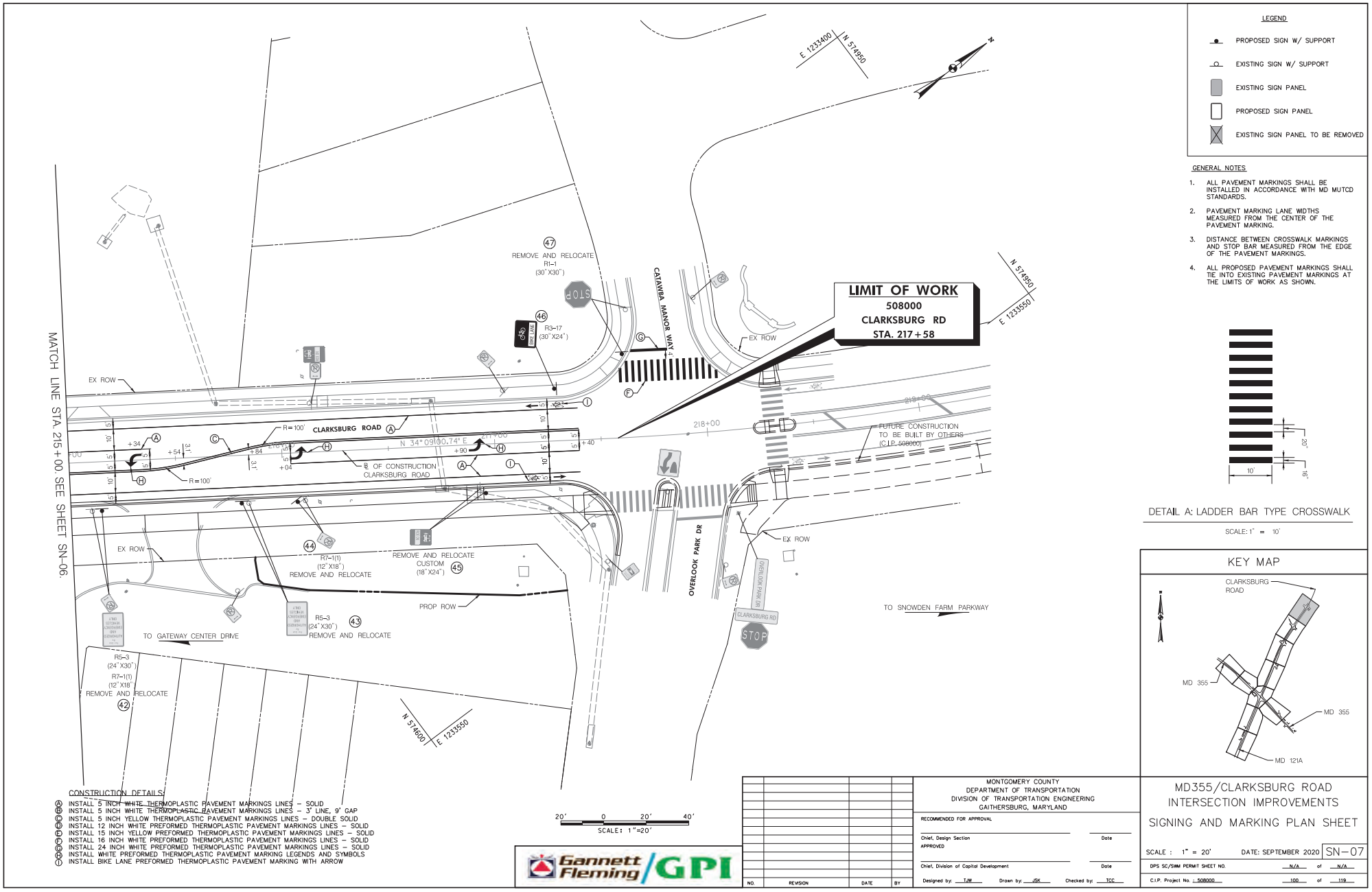
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–06

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 99 of 119



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MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–07

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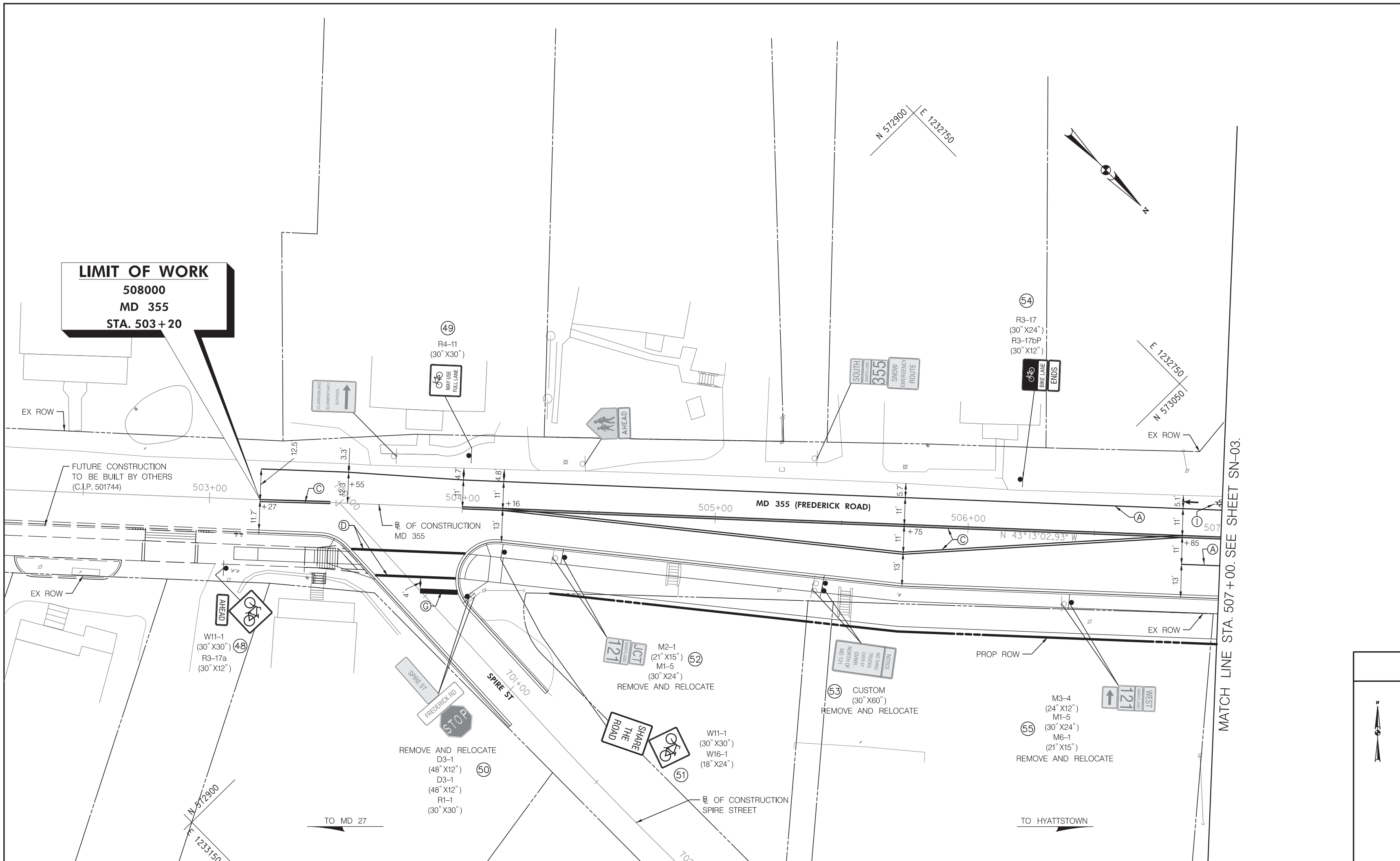
C.I.P. Project No. : 508000 100 of 119



LEGEND

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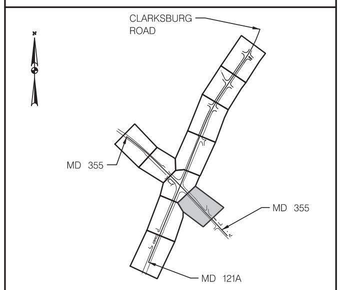

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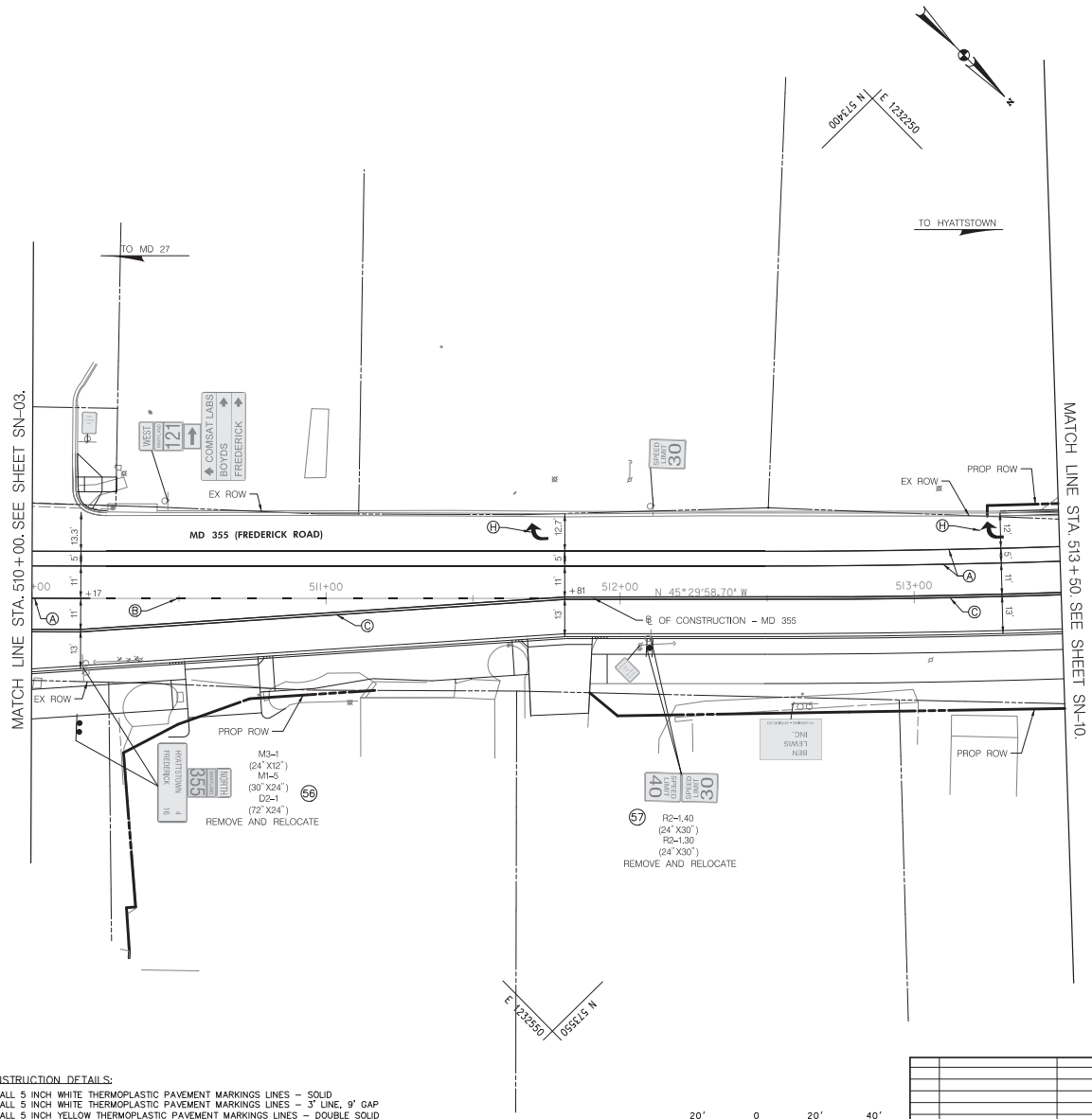
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–08

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 101 of 119



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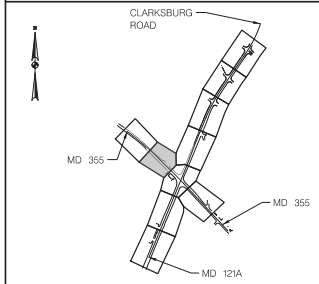
Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

KEY MAP



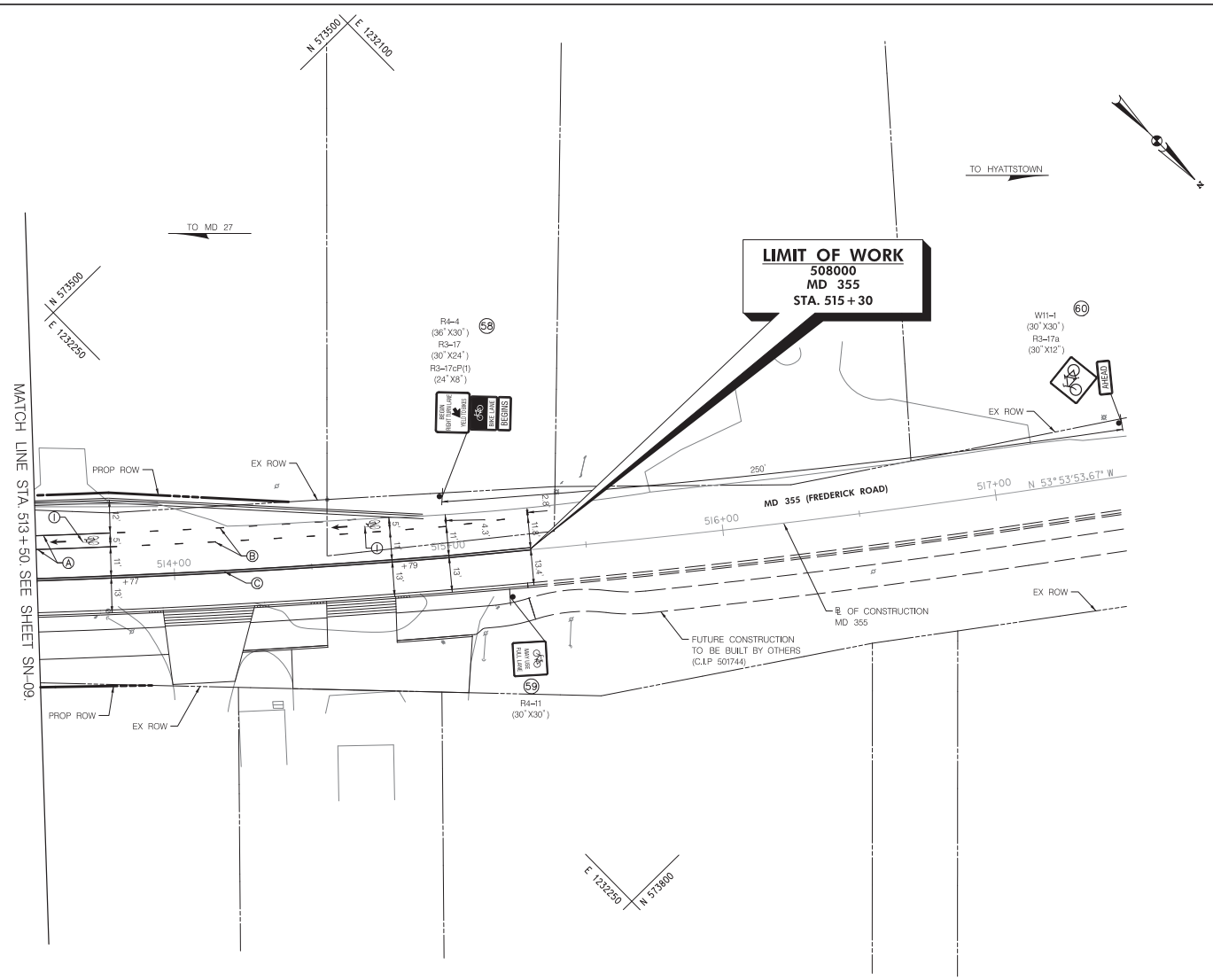
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN–09

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 102 of 119



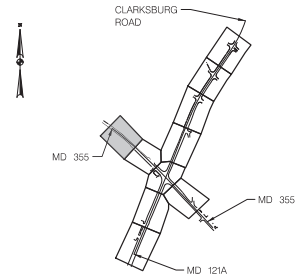
LEGEND

- PROPOSED SIGN W/ SUPPORT
- EXISTING SIGN W/ SUPPORT
- EXISTING SIGN PANEL
- PROPOSED SIGN PANEL
- EXISTING SIGN PANEL TO BE REMOVED

GENERAL NOTES

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MD MUTCD STANDARDS.
2. PAVEMENT MARKING LANE WIDTHS MEASURED FROM THE CENTER OF THE PAVEMENT MARKING.
3. DISTANCE BETWEEN CROSSWALK MARKINGS AND STOP BAR MEASURED FROM THE EDGE OF THE PAVEMENT MARKINGS.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL TIE INTO EXISTING PAVEMENT MARKINGS AT THE LIMITS OF WORK AS SHOWN.

KEY MAP



CONSTRUCTION DETAILS:

- (A) INSTALL 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- (B) INSTALL 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS LINES – 3' LINE, 9' GAP
- (C) INSTALL 5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKINGS LINES – DOUBLE SOLID
- (D) INSTALL 12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- (E) INSTALL 15 INCH YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- (F) INSTALL 16 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- (G) INSTALL 24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LINES – SOLID
- (H) INSTALL WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
- (I) INSTALL BIKE LANE PREFORMED THERMOPLASTIC PAVEMENT MARKING WITH ARROW

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

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

SIGNING AND MARKING PLAN SHEET

SCALE : 1" = 20' DATE: SEPTEMBER 2020 SN-10

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 103 of 119

SHEET NO.	SIGN NO.	REMARKS	CODE NUMBERS *																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SN-01																						
	1	W11-1 (30"X30"); R3-17a (30"X12")	8.75	1	1																	
	2	W11-1 (30"X30"); W16-1 (18"X24")	9.25	1	1																	
	3	R3-17 (30"X24"); R3-17cP(1) (24"X8")	6.33	1	1																	
		PAVEMENT MARKINGS/MISC.						400	801						10							
SN-02																						
	4	R7-1(1) (12"X18")	1.5	1	1																	
		REMOVAL OF EXISTING SIGNS					15.25															
		PAVEMENT MARKINGS/MISC.						1144	936					46.5								
SN-03																						
	4a	RELOCATE D9-7 (24"X24"); CUSTOM (12"X24")				6																
	5	R3-17 (30"X24")	5	1	1																	
	6	R3-17 (30"X24")	5	1	1																	
	7	R4-11 (30"X30")	6.25	1	1																	
	8	RELOCATE M3-3 (24"X12"); M1-5 (30"X24"); M6-1 (21"X15")		1	1	9.19																
	9	RELOCATE M3-1 (24"X12"); M1-5 (30"X24"); M6-1 (21"X15")		1	1	9.19																
	10	RELOCATE R3-7R (30"X30")		1	1	6.25																
	11	R3-17 (30"X24")	5	1	1																	
	12	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
		REMOVAL OF EXISTING SIGNS					12.5															
		PAVEMENT MARKINGS/MISC.						1153	763	258			142	77.5	50							
SN-04																						
	13	RELOCATE R2-1.35 (24"X30")		1	1	5																
	14	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
	15	RELOCATE CUSTOM SIGN (36"X24")		1	1	6																
	16	RELOCATE M2-1 (21"X15"); M1-5 (30"X24"); R3-7R (30"X30")		1	1	13.44																
	17	R4-4 (36"X30")	7.5	1	1																	
	18	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
	19	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
		PAVEMENT MARKINGS/MISC.						1058	783			148	18	93	30							
SN-05																						
	20	R3-17 (30"X24")	5	1	1																	
	21	R3-17 (30"X24")	5	1	1																	
	22	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
	23	RELOCATE W11-3 (24"X24")		1	1	4																
	24	RELOCATE R7-1(1) (12"X18")		1	1	1.5																
	25	R7-1(1) (12"X18")	1.5	1	1																	
	26	R7-1(1) (12"X18")	1.5	1	1																	
	27	R3-17 (30"X24")	5	1	1																	
	28	RELOCATE R1-1 (30"X30"); D3-1 (48"X12"); D3-1 (48"X12")		1	1	14.25																
	29	R1-6a(1) (12"X36")	3	1	1																	
	30	R4-7(1) (18"X30")	3.75	1	1																	
	31	R3-17 (30"X24")	5	1	1																	
	32	R1-6a(1) (12"X36")	3	1	1																	
		REMOVAL OF EXISTING SIGNS					4.5															
		PAVEMENT MARKINGS/MISC.						992	732		19	344	32	62	50	2	6					
		SUBTOTAL THIS SHEET	87.33	32	32	82.32	32.25	4747	4015	258	19	492	192	279	140	2	6	-	-	-	-	-

* CODE NUMBER DESCRIPTION & UNIT		
CODE NUMBERS	DESCRIPTION	UNIT
1	SHEET ALUMINUM SIGNS	SF
2	SQUARE PERFORATED TUBULAR STEEL SIGN POSTS	EA
3	SQUARE TUBULAR STEEL ANCHOR BASES	EA
4	RELOCATE EXISTING GROUND MOUNTED SIGNS	SF
5	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS	SF
6	5 INCH WHITE THERMOPLASTIC PAVEMENT MARKING LINES	LF
7	5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKING LINES	LF
8	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
9	15 INCH YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
10	16 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
11	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
12	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS	SF
13	BIKE LANE PREFORMED THERMOPLASTIC PAVEMENT MARKING WITH ARROW	SF
14	POST MOUNTED DELINEATOR	EA
15	RAISED PAVEMENT MARKER	EA

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS SIGNING AND MARKING INDEX OF QUANTITIES

SCALE : N.T.S. DATE: SEPTEMBER 2020 SN-11.1

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 104 of 119

SHEET NO.	SIGN NO.	REMARKS	CODE NUMBERS *																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SN-06																						
	33	RELOCATE R7-1(I) (12"X18"); R2-1.35 (24"X30")		1	1	6.5																
	34	RELOCATE R7-1(I) (12"X18")		1	1	1.5																
	35	R3-17 (30"X24")	5	1	1																	
	36	R1-6a(I) (12"X36")	3	1	1																	
	37	R4-7(I) (18"X30")	3.75	1	1																	
	38	R1-6a(I) (12"X36")	3	1	1																	
	39	RELOCATE R1-1 (30"X30"); D3-1 (48"X12"); D3-1 (62"X12")		1	1	16.91																
	40	R3-17 (30"X24")	5	1	1																	
	41	R7-1(I) (12"X18")	1.5	1	1																	
		REMOVAL OF EXISTING SIGNS					1.5															
		PAVEMENT MARKINGS/MISC.						748	1081		126	346	25	15.5	40	2	6					
SN-07																						
	42	RELOCATE R5-3 (24"X30"); R7-1(I) (12"X18")		1	1	6.5																
	43	RELOCATE R5-3 (24"X30")		1	1	5																
	44	RELOCATE R7-1(I) (12"X18")		1	1	1.5																
	45	RELOCATE CUSTOM SIGN (18"X24")		1	1	3																
	46	R3-17 (30"X24")	5	1	1																	
	47	RELOCATE R1-1 (30"X30")		1	1	6.25																
		PAVEMENT MARKINGS/MISC.						649	481			143	17	46.5	20							
SN-08																						
	48	W11-1 (30"X30"); R3-17a (30"X12")	8.75	1	1																	
	49	R4-11 (30"X30")	6.25	1	1																	
	50	RELOCATE D3-1 (48"X12"); D-3-1 (48"X12"); R1-1 (30"X30")		1	1	14.25																
	51	W11-1 (30"X30"); W16-1 (18"X24")	9.25	1	1																	
	52	RELOCATE M2-1 (21"X15"); M1-5 (30"X24")		1	1	7.19																
	53	RELOCATE CUSTOM SIGN (30"X60")		2	2	12.5																
	54	R3-17 (30"X24"); R3-17bP (30"X12")	7.5	1	1																	
	55	RELOCATE M3-4 (24"X12"); M1-5 (30"X24"); M6-1 (21"X15")		1	1	9.19																
		PAVEMENT MARKINGS/MISC.						395	1195	77			15		10							
SN-09																						
	56	RELOCATE M3-1 (24"X12"); M1-5 (30"X24"); D2-1 (72"X24")		2	2	19																
	57	RELOCATE R2-1.40 (24"X30"), R2-1.30 (24"X30")		1	1	10																
		PAVEMENT MARKINGS/MISC.						768	701					31								
SN-10																						
	58	R4-4 (36"X30"); R3-17 (30"X24"); R3-17cP(I) (24"X8")	13.83	1	1																	
	59	R4-11 (30"X30")	6.25	1	1																	
	60	W11-1 (30"X30"); R3-17a (30"X12")	8.75	1	1																	
		PAVEMENT MARKINGS/MISC.						139	360						20							
		SUBTOTAL THIS SHEET	86.83	30	30	119.29	1.5	2699	3818	77	126	489	57	93	90	2	6	-	-	-	-	-
		PROJECT TOTAL	174.16	62	62	201.61	33.75	7446	7833	335	145	981	249	372	230	4	12	-	-	-	-	-
		PROJECT TOTAL (ROUNDED)	175	62	62	202	34	7446	7833	335	145	981	249	372	230	4	12	-	-	-	-	-

* CODE NUMBER DESCRIPTION & UNIT		
CODE NUMBERS	DESCRIPTION	UNIT
1	SHEET ALUMINUM SIGNS	SF
2	SQUARE PERFORATED TUBULAR STEEL SIGN POSTS	EA
3	SQUARE TUBULAR STEEL ANCHOR BASES	EA
4	RELOCATE EXISTING GROUND MOUNTED SIGNS	SF
5	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS	SF
6	5 INCH WHITE THERMOPLASTIC PAVEMENT MARKING LINES	LF
7	5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKING LINES	LF
8	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
9	15 INCH YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
10	16 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
11	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF
12	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS	SF
13	BIKE LANE PREFORMED THERMOPLASTIC PAVEMENT MARKING WITH ARROW	SF
14	POST MOUNTED DELINEATOR	EA
15	RAISED PAVEMENT MARKER	EA

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TJW Drawn by: JSK Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS SIGNING AND MARKING INDEX OF QUANTITIES

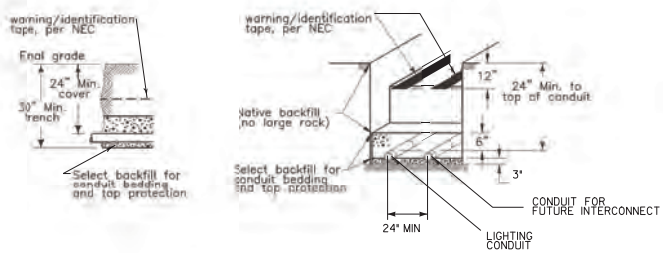
SCALE : N.T.S. DATE: SEPTEMBER 2020 SN-11.2

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 105 of 119

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE AND THE REQUIREMENTS OF ALL LOCAL CODES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION OVER THE WORK.
2. ALL UNDERGROUND UTILITIES ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT LEAST 48 HOURS PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE LIGHTING STRUCTURE WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED.
3. ALL STREET LIGHT EQUIPMENT AND MATERIALS SHALL BE SUBMITTED TO MCDOT FOR APPROVAL PRIOR TO BEING INSTALLED ON THE PROJECT.
4. INSTALLATION OF ALL UNDERGROUND LIGHTING FACILITIES ARE ALSO SUBJECT TO POTOMAC EDISON INSPECTION AND WRITTEN APPROVAL BEFORE CONCEALMENT. FAILURE TO OBTAIN SUCH INSPECTION WILL RESULT IN THE UNCOVERING OF FACILITIES AT THE CONTRACTOR'S EXPENSE. CALL 301-829-7025 TWO WORKING DAYS IN ADVANCE TO ARRANGE INSPECTION.
5. ALL CONDUITS SHALL BE INSTALLED PRIOR TO SIDE PATH CONSTRUCTION.
6. RUN ONE WAY CONDUIT BETWEEN LIGHTING HANDHOLE AND THE POLE LOCATION.
7. MINIMUM TRENCH DIMENSIONS SHALL BE BASED ON PROVIDING ADEQUATE COVER PER NEC AND NESC CODES (DEPTH) AND ACCEPTABLE WORKING AREAS (WIDTH). CONDUIT IS TO HAVE TWO (2) FEET MINIMUM OF COVER OVER IT.
8. THE BOTTOM OF THE TRENCH SHALL BE RELATIVELY SMOOTH, UNDISTURBED EARTH, WELL-TAMPED EARTH, OR SAND, WHICH IS FREE OF ROCK, CINDERS OR SHARP OBJECTS.
9. ALL SWEEPBENDS SHALL BE A MINIMUM OF 36 INCHES RADIUS.
10. ALL JOINTS SHALL BE GLUED TOGETHER. CONDUIT SHALL BE CLEANED AND PLUGGED AT EACH END TO KEEP WATER AND DIRT OUT. 1/4" UNBROKEN NYLON OR POLYPROPYLENE PULL ROPE SHALL BE INSTALLED IN EACH CONDUIT DUCT.
11. CONTRACTOR SHALL INSTALL MARKING TAPE ONE FOOT (1') ABOVE EACH CONDUIT RUN.
12. CONTRACTOR SHALL BACKFILL AROUND ALL CONDUITS WITH SIX (6) INCHES OF STONE DUST. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL AND NOT CONTAIN LARGE ROCKS (GREATER THAN 4 INCH) OR ROCKS WITH SHARP EDGES.
13. BACKFILL SHALL BE COMPACTED IN SIX INCH LAYERS BY HAND OR USING WITH PNEUMATIC OR VIBRATING TAMPING EQUIPMENT TO LESSEN THE EFFECTS OF SETTING.
14. ALL LIGHTING HANDHOLES SHALL BE PICKED UP FROM POTOMAC EDISON. CALL 301-829-7025 TWO WORKING DAYS IN ADVANCE TO ARRANGE PICK UP.
15. ALL LIGHTING HANDHOLES SHALL BE INSTALLED WITH THE LONG DIMENSION PARALLEL TO THE ROADWAY/SIDE PATH.
16. ALL LIGHTING HANDHOLES SHALL INCLUDE A GROUND ROD.
17. TOP OF LIGHTING HANDHOLE SHALL BE APPROXIMATELY ONE INCH (1") ABOVE FINAL GRADE.
18. CONTRACTOR SHALL PROVIDE PULL STRING FROM MD355 SIGNAL CONTROLLER TO OVERLOOK PARK DRIVE FOR FUTURE INSTALLATION OF INTERCONNECT CABLE.
19. PROPOSED TRAFFIC HANDBOX FOR FUTURE INTERCONNECT USE SHALL BE LOCATED A MAXIMUM 200FT APART.

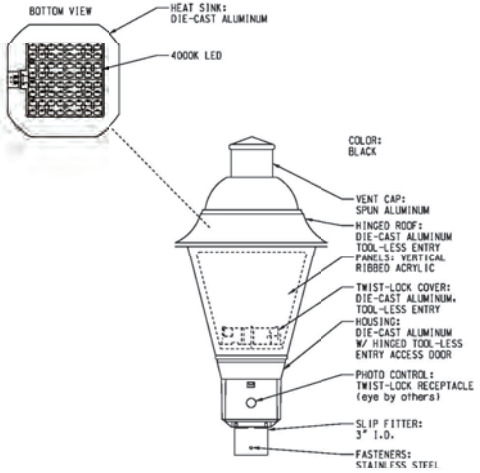


TRENCHED CONDUIT BEDDING AND TOP PROTECTION DETAIL

SCALE: N.T.S.

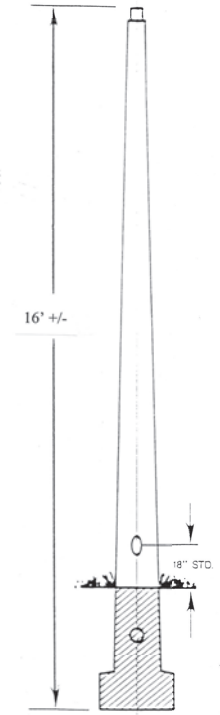
STREETLIGHT POST NUMBERING TAG

SCALE: N.T.S.



COLONIALPOST-TOP LED LUMINAIRE

SCALE: N.T.S.



DIRECT BURIAL FIBERGLASS POLE

SCALE: N.T.S.

Gannett Fleming/GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCC

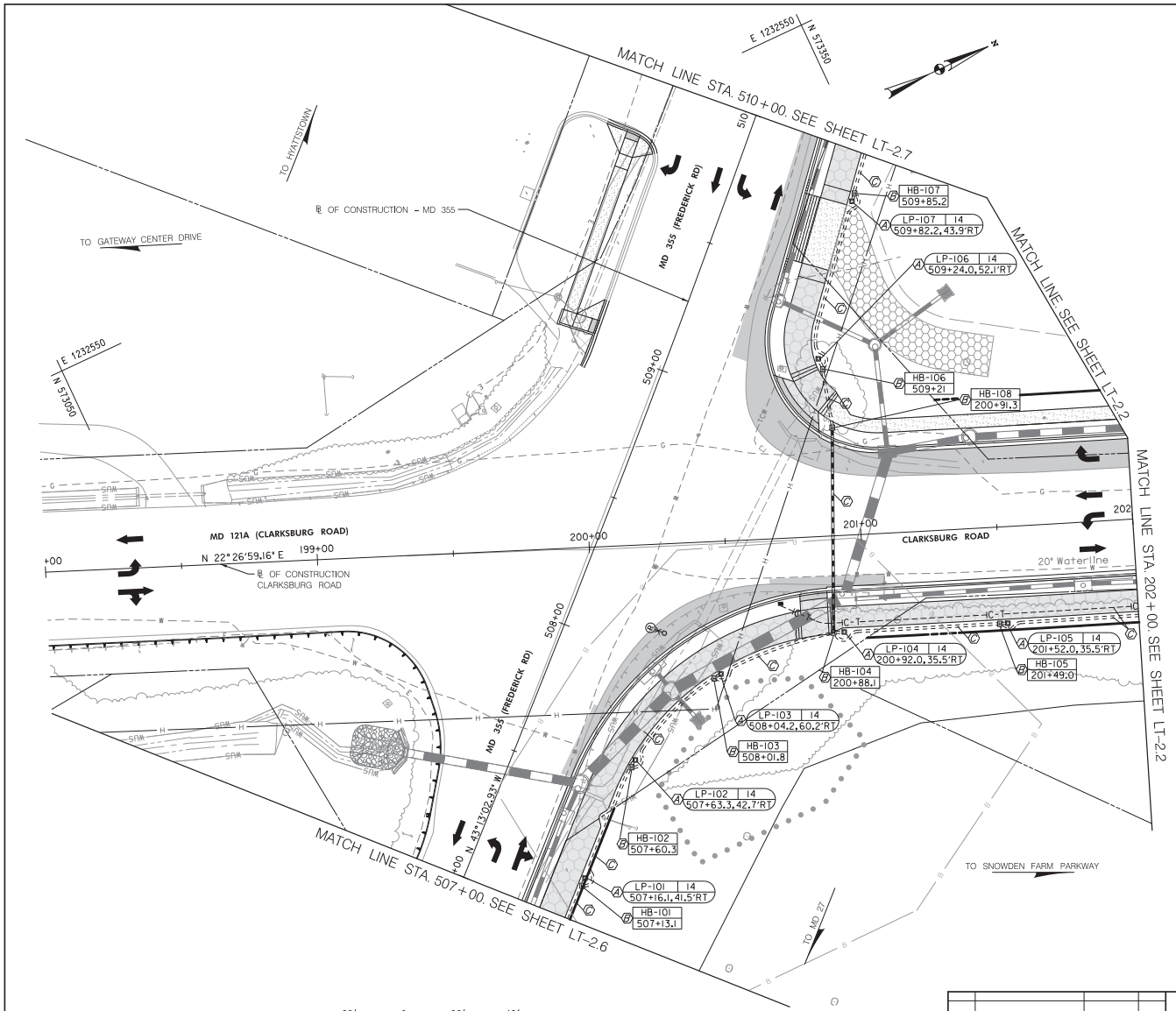
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

LIGHTING GENERAL NOTES AND DETAILS

SCALE : N.T.S. DATE: FEBRUARY 2020 LT-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 106 of 119



UTILITY LEGEND

— SAN —	SANITARY SEWER	— T —	TELEPHONE
— G —	GAS	— FO —	CABLE TV
— W —	WATER	— CATV —	FIBER OPTIC
— E —	ELECTRIC		

LIGHTING LEGEND

- PROPOSED 40 WATT LED DECORATIVE POST TOP LUMINAIRE AND POLE (BY POTOMAC EDISON)
- PROPOSED COBRAHEAD LIGHTING ON UTILITY POLE (BY POTOMAC EDISON)
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING POST TOP LIGHTING TO RELOCATE
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY POTOMAC EDISON)
- 3 IN SCHEDULE 40 PVC CONDUIT - ONE WAY, TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - TWO WAY, TRENCHED
- 3 IN SCHEDULE 80 PVC CONDUIT - TWO WAY, BORED
- PROPOSED LIGHTING HAND HOLE

LP-XXX | MH — POLE ID
STA. AND OFFSET — MOUNTING HEIGHT / STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

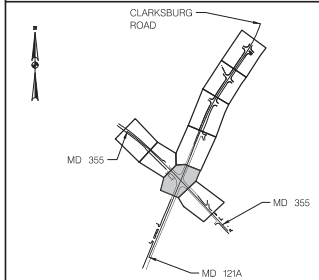
INTERCONNECT LEGEND

- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED FOR FUTURE INTERCONNECT USE
- 3 IN SCHEDULE 80 PVC CONDUIT - BORED FOR FUTURE INTERCONNECT USE
- PROPOSED TRAFFIC HANDBOX FOR FUTURE INTERCONNECT USE

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY POTOMAC EDISON)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL PVC CONDUIT
- (D) RELOCATE EXISTING POST TOP LIGHTING
- (E) INSTALL TRAFFIC HANDBOX

KEY MAP



NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCC

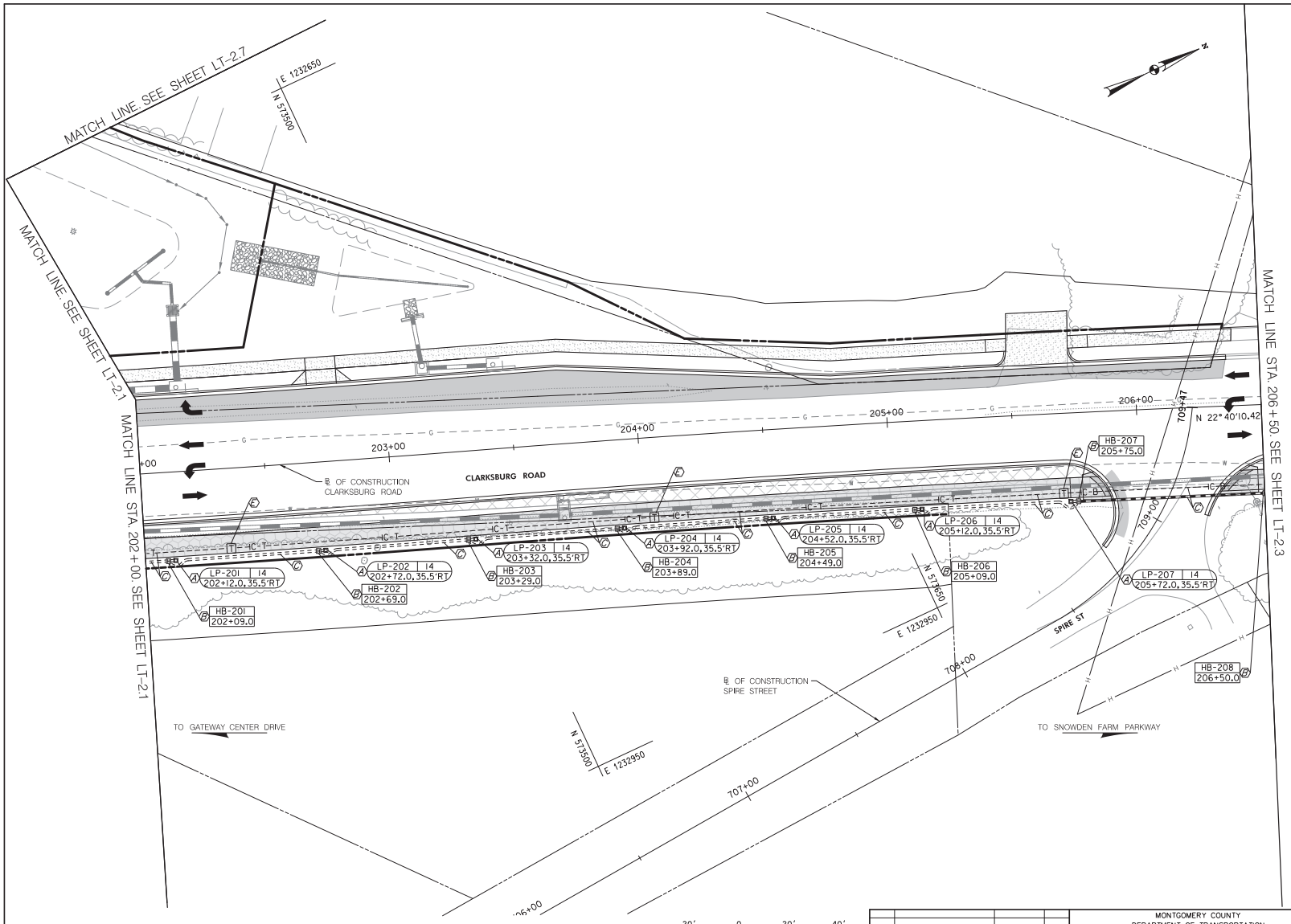
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.1

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 107 of 119



UTILITY LEGEND

- SAN — SANITARY SEWER
- G — GAS
- W — WATER
- E — ELECTRIC
- T — TELEPHONE
- FO — CABLE TV
- CATV — FIBER OPTIC

LIGHTING LEGEND

- PROPOSED 40 WATT LED DECORATIVE POST TOP LUMINAIRE AND POLE (BY POTOMAC EDISON)
- PROPOSED COBRAHEAD LIGHTING ON UTILITY POLE (BY POTOMAC EDISON)
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING POST TOP LIGHTING TO RELOCATE
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- 3 IN SCHEDULE 80 PVC CONDUIT - TWO WAY, BORED
- PROPOSED LIGHTING HAND HOLE

LP-XXX | MH — POLE ID
STA. AND OFFSET — MOUNTING HEIGHT / STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

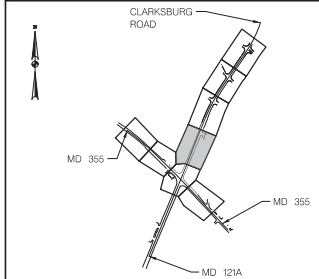
INTERCONNECT LEGEND

- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED FOR FUTURE INTERCONNECT USE
- 3 IN SCHEDULE 80 PVC CONDUIT - BORED FOR FUTURE INTERCONNECT USE
- PROPOSED TRAFFIC HANDBOX FOR FUTURE INTERCONNECT USE

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY POTOMAC EDISON)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL PVC CONDUIT
- (D) RELOCATE EXISTING POST TOP LIGHTING
- (E) INSTALL TRAFFIC HANDBOX

KEY MAP



NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCC

Gannett Fleming/GPI

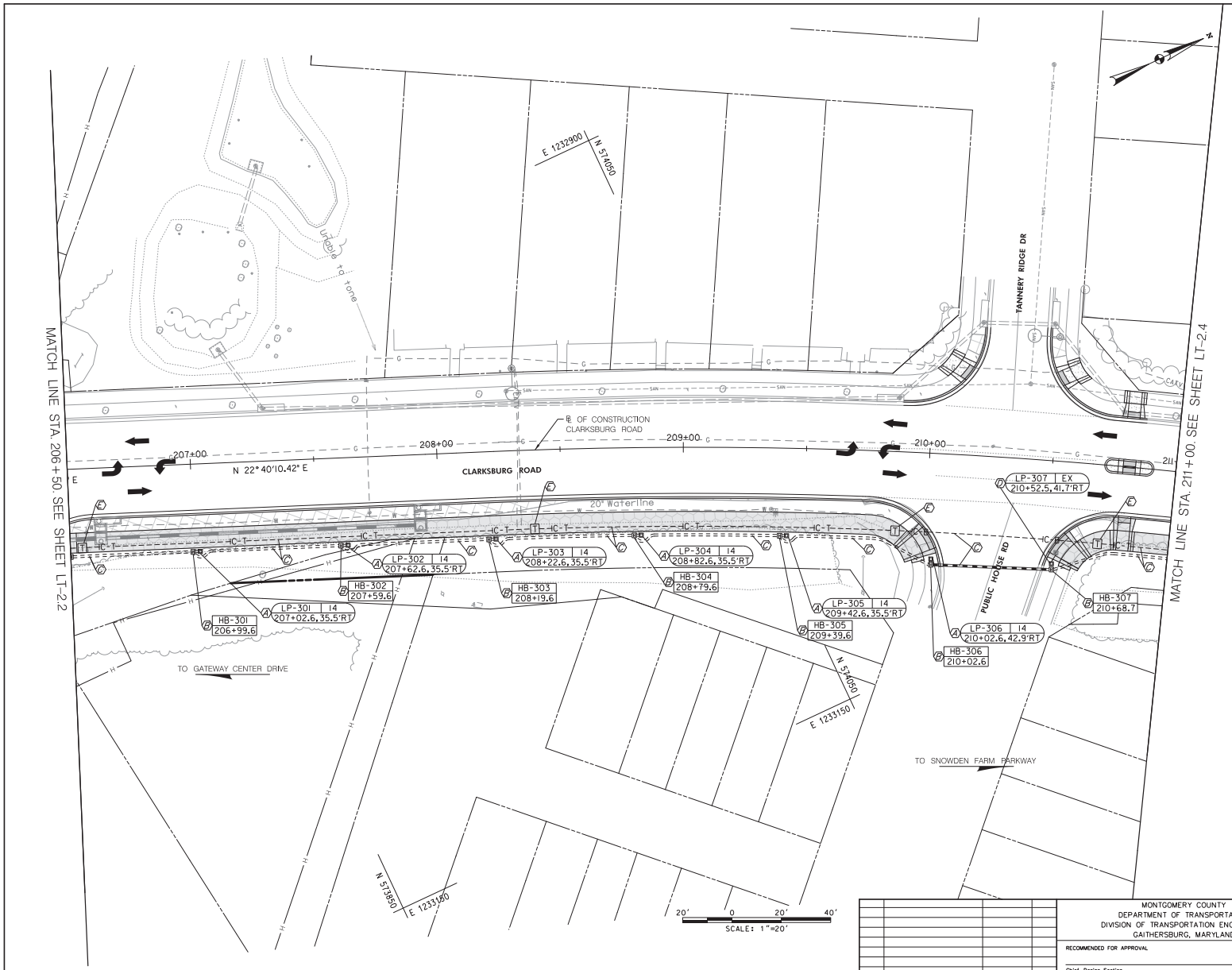
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.2

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 108 of 119



UTILITY LEGEND

— SAN —	SANITARY SEWER	— T —	TELEPHONE
— G —	GAS	— FO —	CABLE TV
— W —	WATER	— CATV —	FIBER OPTIC
— E —	ELECTRIC		

LIGHTING LEGEND

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- PROPOSED LIGHTING HAND HOLE

LP-XXX (POLE ID) | MH (MOUNTING HEIGHT)
STA. AND OFFSET (STATION & OFFSET)

HB-XXX (HAND HOLE ID)
XXX (STATION)

INTERCONNECT LEGEND

- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED FOR FUTURE INTERCONNECT USE
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CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY POTOMAC EDISON)
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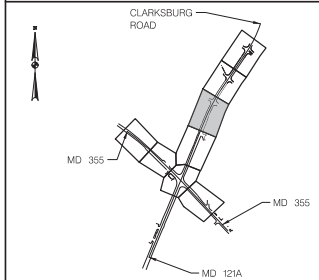
KEY MAP



Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.3

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 109 of 119

UTILITY LEGEND

— SAN —	SANITARY SEWER	— T —	TELEPHONE
— G —	GAS	— FO —	CABLE TV
— W —	WATER	— CATV —	FIBER OPTIC
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- PROPOSED LIGHTING HAND HOLE

POLE ID
LP-XXX | MH — MOUNTING HEIGHT
STA. AND OFFSET — STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

INTERCONNECT LEGEND

- -HC-T- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED FOR FUTURE INTERCONNECT USE
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- PROPOSED TRAFFIC HANDBOX FOR FUTURE INTERCONNECT USE

CONSTRUCTION DETAIL

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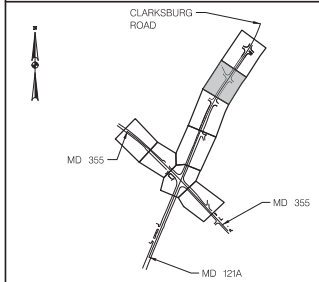

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MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

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Designed by: YLIU Drawn by: YLIU Checked by: TCC

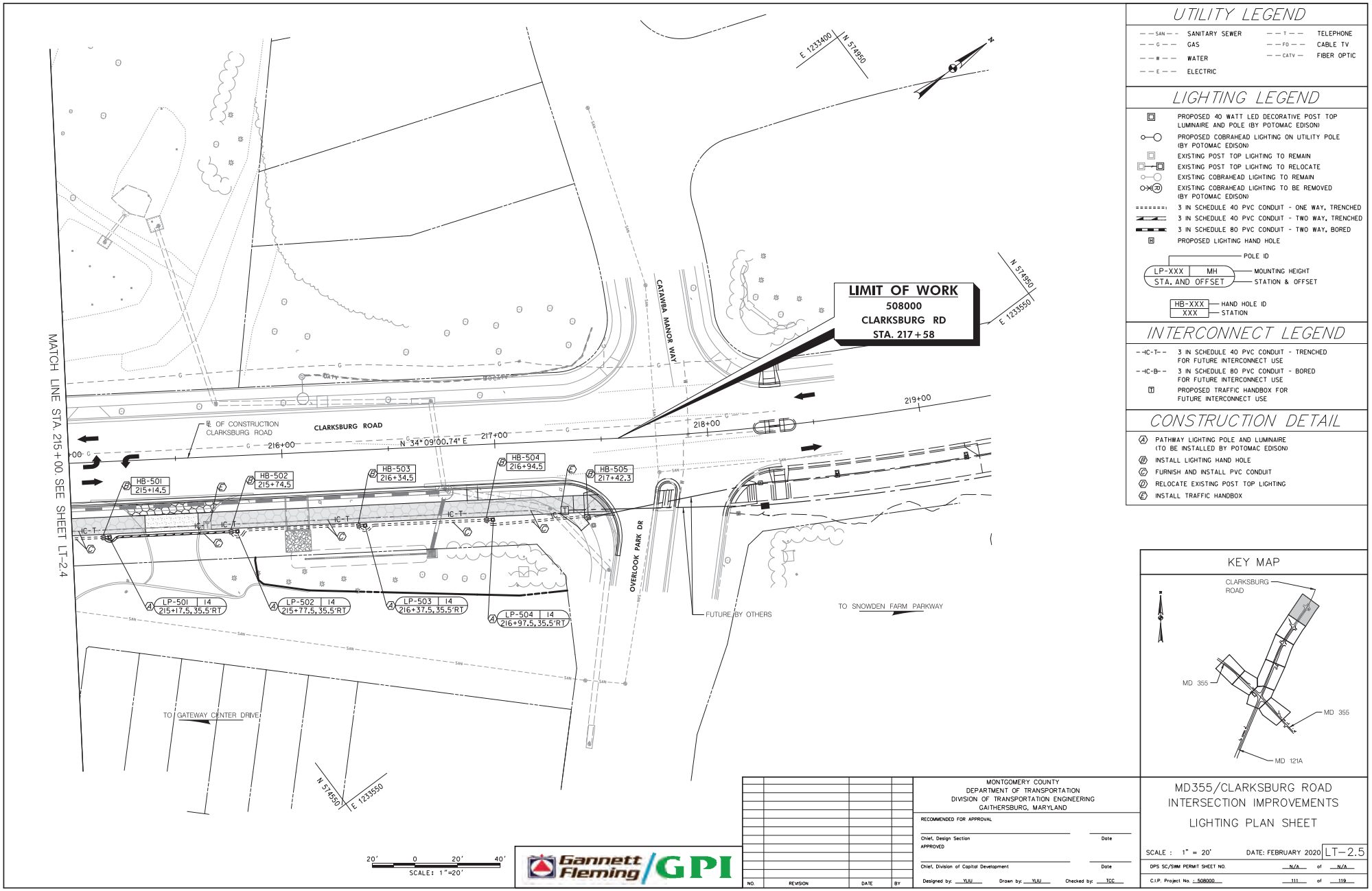
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.4

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 110 of 119



UTILITY LEGEND

SAN — SANITARY SEWER	T — TELEPHONE
G — GAS	FO — CABLE TV
W — WATER	CATV — FIBER OPTIC
E — ELECTRIC	

LIGHTING LEGEND

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- PROPOSED LIGHTING HAND HOLE

POLE ID
LP-XXX | MH — MOUNTING HEIGHT
STA. AND OFFSET — STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

INTERCONNECT LEGEND

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KEY MAP

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MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

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Gannett Fleming / GPI

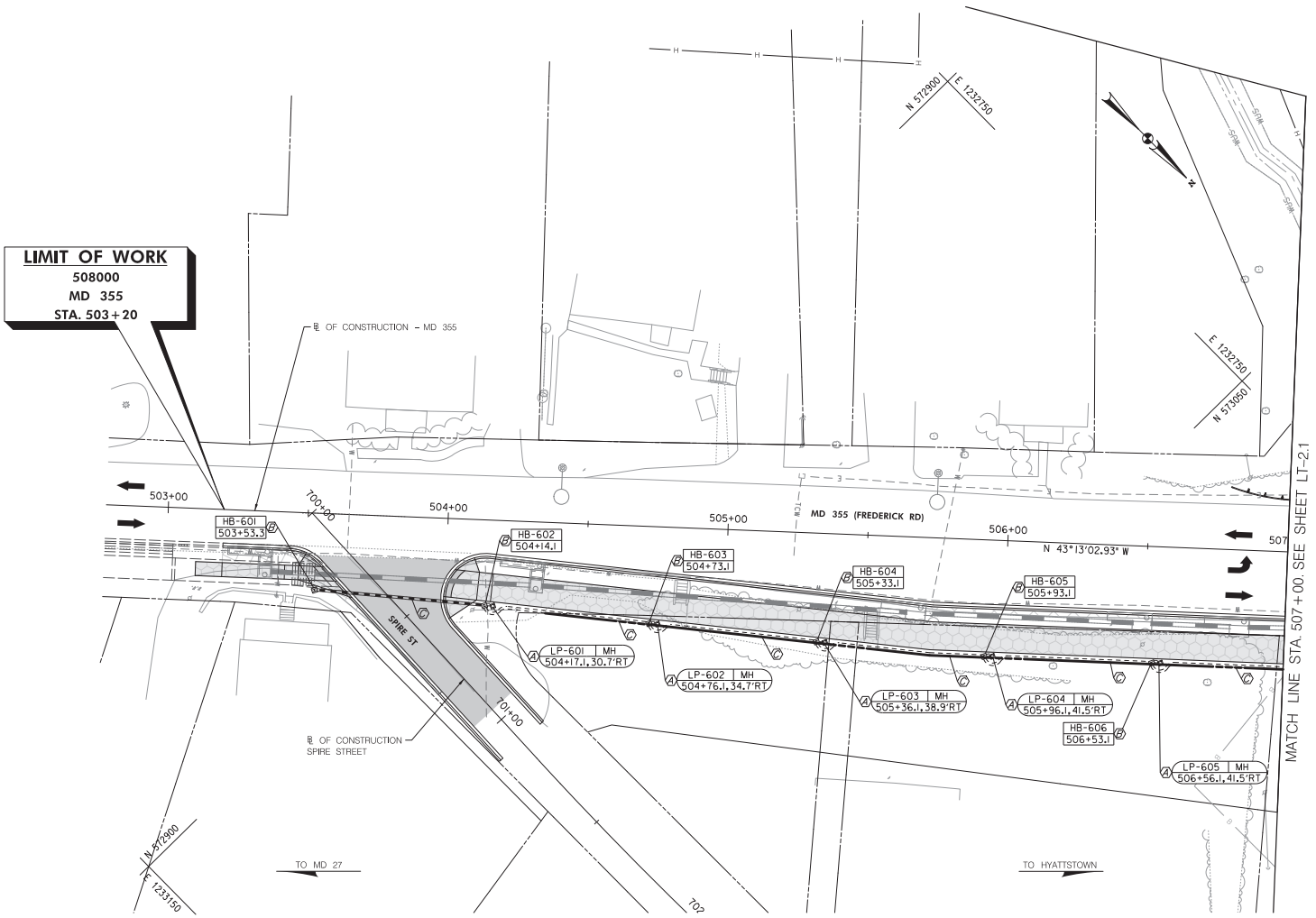
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.5

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 111 of 119



UTILITY LEGEND

- SAN — SANITARY SEWER
- G — GAS
- W — WATER
- E — ELECTRIC
- T — TELEPHONE
- FO — CABLE TV
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POLE ID
LP-XXX | MH — MOUNTING HEIGHT
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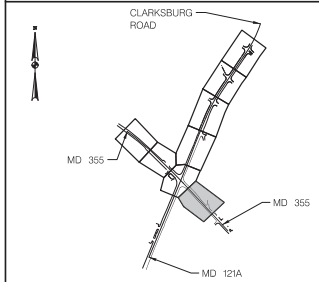

20' 0 20' 40'
SCALE: 1"=20'

Gannett Fleming/GPI

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Chief, Division of Capital Development — Date

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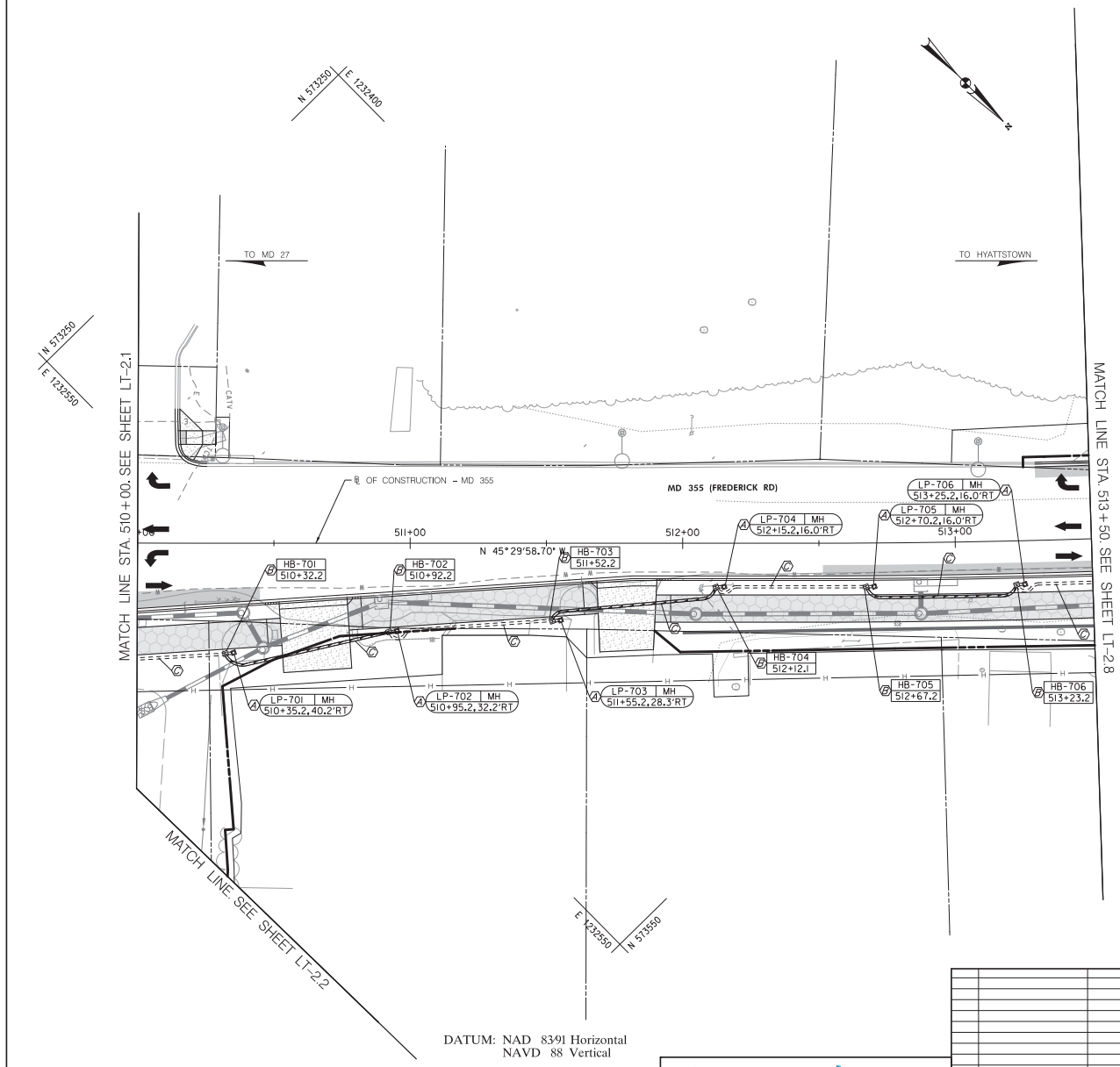
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.6

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 112 of 119



UTILITY LEGEND

— SAN —	SANITARY SEWER	— T —	TELEPHONE
— G —	GAS	— FO —	CABLE TV
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POLE ID
LP-XXX | MH — MOUNTING HEIGHT
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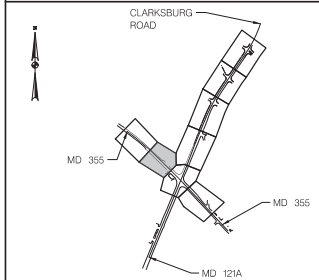
KEY MAP



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GAITHERSBURG, MARYLAND

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Chief, Division of Capital Development — Date

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Gannett Fleming/GPI

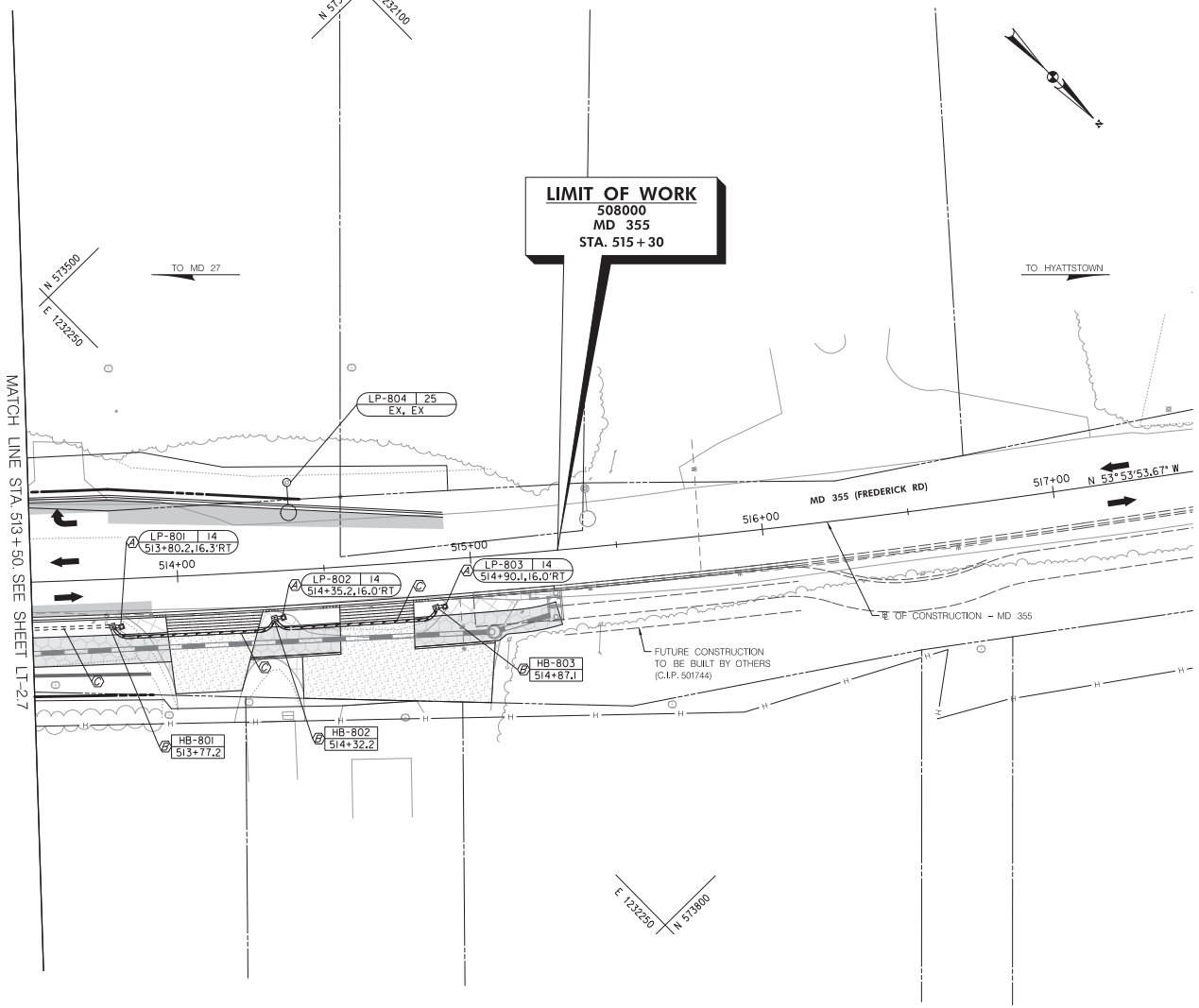
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT–2.7

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 113 of 119



UTILITY LEGEND

— — SAN — —	SANITARY SEWER	— — T — —	TELEPHONE
— — G — —	GAS	— — FO — —	CABLE TV
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LP-XXX | MH — POLE ID; MOUNTING HEIGHT
STA. AND OFFSET — STATION & OFFSET

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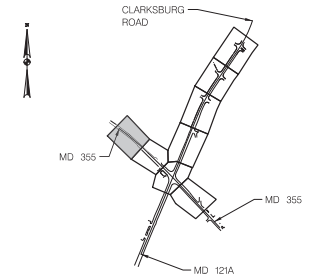

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Gannett Fleming/GPI

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING PLAN SHEET

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-2.8

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 114 of 119

POLE SCHEDULE

POLE ID	DRAWING NUMBER	HEIGHT AND TYPE OF POLE	MAST ARM LENGTH	SETBACK FROM EDGE OF SHOULDER, FACE OF CURB OR FACE OF W-BEAM	LUMINAIRE/ WATTAGE	TYPE OF BASE	POLE LOCATION
LP-101	LT-2.1	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	507+16.1, 41.5' RT
LP-102	LT-2.1	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	507+63.3, 42.7' RT
LP-103	LT-2.1	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	508+04.2, 60.2' RT
LP-104	LT-2.1	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	200+92.0, 35.5' RT
LP-105	LT-2.1	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	201+52.0, 35.5' RT
LP-106	LT-2.1	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	509+24.0, 52.1' RT
LP-107	LT-2.1	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	509+82.2, 43.9' RT
LP-201	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	202+12.0, 35.5' RT
LP-202	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	202+72.0, 35.5' RT
LP-203	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	203+32.0, 35.5' RT
LP-204	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	203+92.0, 35.5' RT
LP-205	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	204+52.0, 35.5' RT
LP-206	LT-2.2	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	205+12.0, 35.5' RT
LP-207	LT-2.2	16' ROUND FIBERGLASS POLE	-	14.9' FACE OF CURB	40 WATT LED	DIRECT BURIAL	205+72.0, 35.5' RT
LP-301	LT-2.3	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	207+02.6, 35.5' RT
LP-302	LT-2.3	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	207+62.6, 35.5' RT
LP-303	LT-2.3	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	208+22.6, 35.5' RT
LP-304	LT-2.3	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	208+82.6, 35.5' RT
LP-305	LT-2.3	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	209+42.6, 35.5' RT
LP-306	LT-2.3	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	210+02.6, 42.9' RT
LP-307	LT-2.3	EX TO RELOCATE	-	3.0' FACE OF CURB	-	-	210+52.5, 41.7' RT
LP-401	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	211+11.5, 35.5' RT
LP-402	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	211+70.5, 35.5' RT
LP-403	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	212+29.5, 35.5' RT
LP-404	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	212+88.5, 35.5' RT
LP-405	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	213+97.5, 36.3' RT
LP-406	LT-2.4	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	214+57.5, 35.5' RT
LP-501	LT-2.5	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	215+17.5, 35.5' RT
LP-502	LT-2.5	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	215+77.5, 35.5' RT
LP-503	LT-2.5	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	216+37.5, 35.5' RT
LP-504	LT-2.5	16' ROUND FIBERGLASS POLE	-	15.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	216+97.5, 35.5' RT
LP-601	LT-2.6	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	504+17.1, 30.7' RT
LP-602	LT-2.6	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	504+76.1, 34.7' RT
LP-603	LT-2.6	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	505+36.1, 38.9' RT
LP-604	LT-2.6	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	505+96.1, 41.5' RT
LP-605	LT-2.6	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	506+56.1, 41.5' RT
LP-701	LT-2.7	16' ROUND FIBERGLASS POLE	-	17.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	510+35.2, 40.2' RT
LP-702	LT-2.7	16' ROUND FIBERGLASS POLE	-	13.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	510+95.2, 32.2' RT
LP-703	LT-2.7	16' ROUND FIBERGLASS POLE	-	13.5' FACE OF CURB	40 WATT LED	DIRECT BURIAL	511+55.2, 28.3' RT
LP-704	LT-2.7	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	512+15.2, 16.0' RT
LP-705	LT-2.7	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	512+70.2, 16.0' RT
LP-706	LT-2.7	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	513+25.2, 16.0' RT
LP-801	LT-2.8	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	513+80.2, 16.3' RT
LP-802	LT-2.8	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	514+35.2, 16.0' RT
LP-803	LT-2.8	16' ROUND FIBERGLASS POLE	-	3.0' FACE OF CURB	40 WATT LED	DIRECT BURIAL	514+90.1, 16.0' RT
LP-804	LT-2.8	EX UTILITY POLE	10 FT	EX	145 WATT LED	EX	EX

ALL DIMENSIONS SHOWN ARE MEASURED FROM OBJECT TO CENTER LINE OF PROPOSED LIGHT POLE.

LIGHTING HAND HOLE SCHEDULE

HAND HOLE ID	DRAWING NUMBER	STATION
HB-101	LT-2.1	507+13.1, 41.5' RT
HB-102	LT-2.1	507+60.3, 42.2' RT
HB-103	LT-2.1	508+01.8, 58.4' RT
HB-104	LT-2.1	200+88.1, 35.5' RT
HB-105	LT-2.1	201+49.0, 35.5' RT
HB-106	LT-2.1	509+21.0, 55.0' RT
HB-107	LT-2.1	509+85.2, 43.9' RT
HB-108	LT-2.1	200+91.3, 39.8' LT
HB-201	LT-2.2	202+09.0, 35.5' RT
HB-202	LT-2.2	202+69.0, 35.5' RT
HB-203	LT-2.2	203+29.0, 35.5' RT
HB-204	LT-2.2	203+89.0, 35.5' RT
HB-205	LT-2.2	204+49.0, 35.5' RT
HB-206	LT-2.2	205+09.0, 35.5' RT
HB-207	LT-2.2	205+75.0, 35.5' RT
HB-208	LT-2.2	206+50.0, 35.5' RT
HB-301	LT-2.3	206+99.6, 35.5' RT
HB-302	LT-2.3	207+59.6, 35.5' RT
HB-303	LT-2.3	208+19.6, 35.5' RT
HB-304	LT-2.3	208+79.6, 35.5' RT
HB-305	LT-2.3	209+39.6, 35.5' RT
HB-306	LT-2.3	210+02.6, 42.9' RT
HB-307	LT-2.3	210+52.6, 44.0' RT
HB-401	LT-2.4	211+08.5, 35.5' RT
HB-402	LT-2.4	211+67.5, 35.5' RT
HB-403	LT-2.4	212+26.5, 35.5' RT
HB-404	LT-2.4	212+85.5, 35.5' RT
HB-405	LT-2.4	213+22.7, 37.5' RT
HB-406	LT-2.4	213+94.5, 37.8' RT
HB-407	LT-2.4	214+54.5, 35.5' RT
HB-501	LT-2.5	215+14.5, 35.5' RT
HB-502	LT-2.5	215+74.5, 35.5' RT
HB-503	LT-2.5	216+34.5, 35.5' RT
HB-504	LT-2.5	216+94.5, 35.5' RT
HB-505	LT-2.5	217+42.3, 36.6' RT
HB-601	LT-2.6	503+53.3, 27.4' RT
HB-602	LT-2.6	504+14.1, 30.4' RT
HB-603	LT-2.6	504+73.1, 34.5' RT
HB-604	LT-2.6	505+33.1, 38.7' RT
HB-605	LT-2.6	505+93.1, 41.5' RT
HB-606	LT-2.6	506+53.1, 41.5' RT
HB-701	LT-2.7	510+32.2, 40.4' RT
HB-702	LT-2.7	510+92.2, 32.4' RT
HB-703	LT-2.7	511+55.2, 28.5' RT
HB-704	LT-2.7	512+12.2, 16.0' RT
HB-705	LT-2.7	512+67.2, 16.0' RT
HB-706	LT-2.7	513+22.2, 16.0' RT
HB-801	LT-2.8	513+77.2, 16.3' RT
HB-802	LT-2.8	514+32.2, 16.0' RT
HB-803	LT-2.8	514+87.1, 16.0' RT

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCC

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

LIGHTING SCHEDULE

SCALE : 1" = 20' DATE: FEBRUARY 2020 LT-03

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 115 of 119

GRADING TABLE

ROADWAY	STATIONS FROM	STATIONS TO	EXCAVATION CLASS 1 CUT FROM XSECTS	TOPSOIL CUT	TOPSOIL FILL	ROOTMAT CUT	ROOTMAT FILL	TOTAL	SUITABLE FOR EMBANK.	SHRINK/SWELL FACTOR (%)	AVAIL. FOR EMBANK.	CLASS 2 TOTAL FROM XSECS	CLASS 2 LOSS DUE TO HANDLING	CLASS 2 AVAIL. FOR EMBANK.	EROSION & SEDIMENT ORIGINAL EXCAVATION	EROSION & SEDIMENT CLEAN-OUT EXCAVATION	EMBANKMENT FILL FROM XSECT	EMBANKMENT FILL TOT. EXCAVATION ON EMBANKMENT	EMBANKMENT CAPPING BORROW CAPPING	EMBANKMENT CAPPING BORROW TOT. EXCAVATION ON EMBANKMENT	EMBANKMENT SELECT BORROW FROM XSECT	EMBANKMENT SELECT BORROW TOT. EXCAVATION ON EMBANKMENT
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒
CLARKSBURG ROAD	192+62	193+50	0					0									0	0				
	193+50	198+00	16					16									1	1				
	198+00	202+00	736					736									183	183				
	202+00	206+50	503					503									419	419				
	206+50	211+00	329					329									112	112				
	211+00	215+00	101					101									96	96				
	215+00	217+85	37					37									31	31				
	POI1 SWM		686					686									202	202				
	POI1 SWM (MEDIA)		472					472									0	0				
	MB 2-1		74					74									12	12				
	MB 2-1 (MEDIA)		75					75									0	0				
MD 355	503+00	507+00	703					703									20	20				
	507+00	510+00	90					90									890	890				
	510+00	513+50	342					342									100	100				
	513+50	515+30	239					239									0	0				
	STREAM OUTFALL		83					83									23	23				
ESC	SILT FENCE															150						
	TRR 1-1														169	5						
	TGOS 1-1														131	5						
	TOTAL		4486					4486							300	160	2089	2089				

SUMMARY OF EARTHWORK

EXCAVATION

Ⓐ	TOTAL CLASS I EXCAVATION (COL. 8)	4486	C.Y.
Ⓑ	TOTAL CLASS 2 EXCAVATION (COL. 12)	-	C.Y.
Ⓒ	TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT (COL. 11 + COL. 14)	-	C.Y.
Ⓓ	TOTAL EROSION & SEDIMENT CONTROL EXCAVATION (COL. 15 + COL. 16)	460	C.Y.

EMBANKMENT

Ⓔ	TOTAL COMMON BORROW REQUIRED (COL. 18) (COLS. 17 + 5 + 7)	2089	C.Y.
Ⓕ	TOTAL CAPPING BORROW REQUIRED (COL. 20)	-	C.Y.
Ⓖ	TOTAL SELECT BORROW REQUIRED (COL. 22)	-	C.Y.
Ⓗ	WASTE		C.Y.
Ⓘ	COMMON BORROW REQUIRED	2089	C.Y.
Ⓙ	BORROW DENSIFIED @ 25%	523	C.Y.
Ⓚ	TOTAL COMMON BORROW REQUIRED	2612	C.Y.

PROPOSAL QUANTITIES

CLASS I EXCAVATION	4500	C.Y.
CLASS I-A EXCAVATION	50	C.Y.
CLASS 2 EXCAVATION		C.Y.
COMMON BORROW	2620	C.Y.
CAPPING BORROW		C.Y.
SELECT BORROW	50	C.Y.

Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

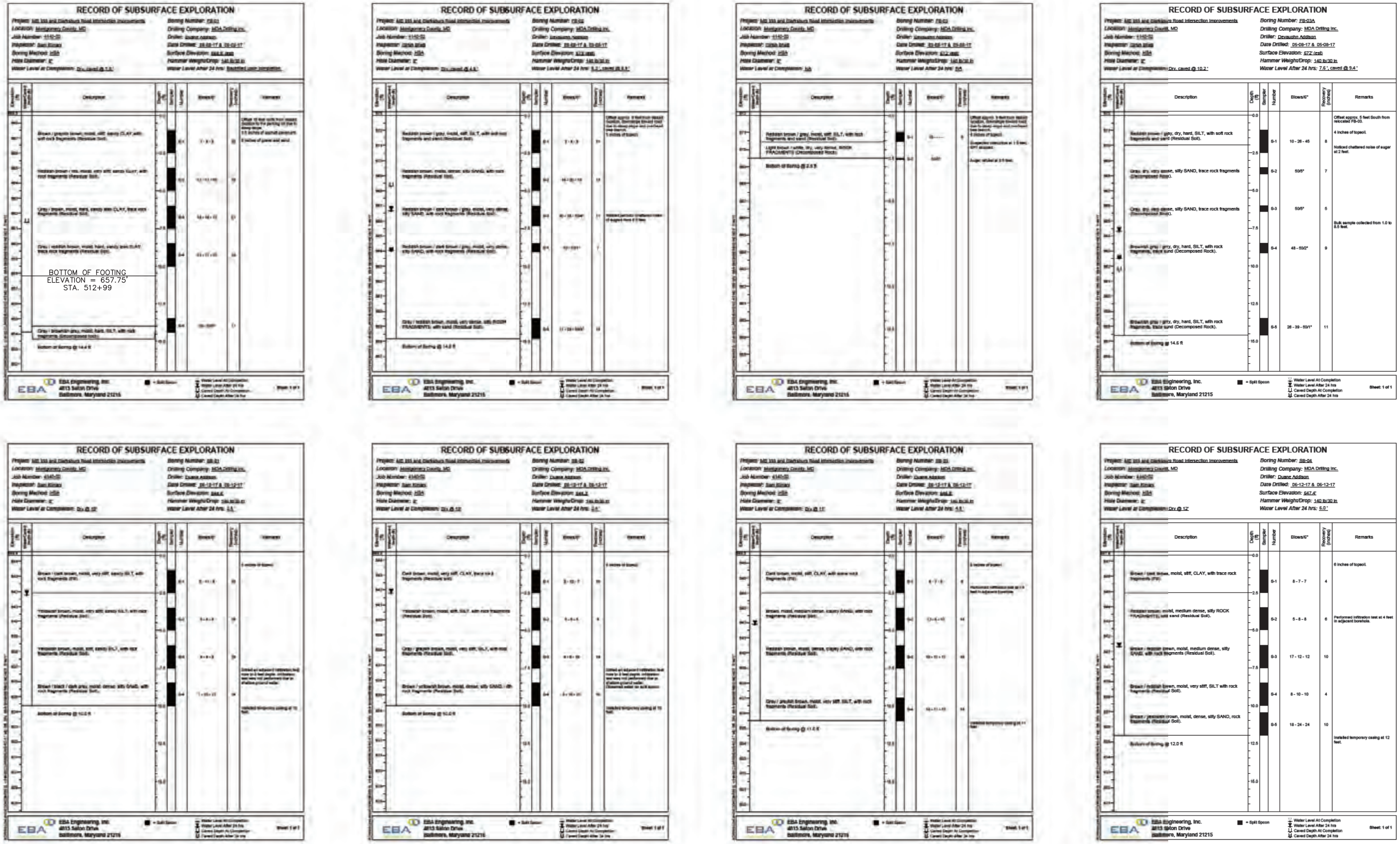
Designed by: TJW Drawn by: JSK Checked by: YLIU

MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS
GRADING TABLE AND
SUMMARY OF EARTHWORK

SCALE : N.T.S. DATE: SEPTEMBER 2020 GR-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 116 of 119



FOR INFORMATION PURPOSES ONLY

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: ______ Drawn by: JSK Checked by: YLIU

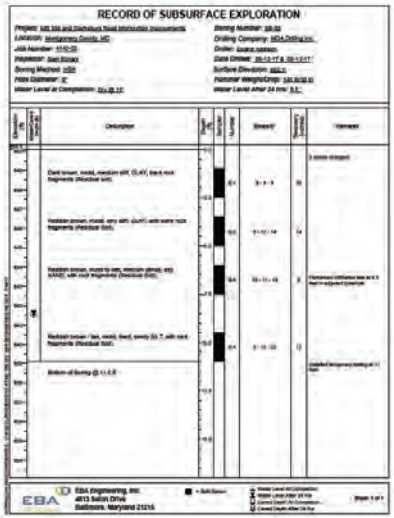
MD355/CLARKSBURG ROAD
INTERSECTION IMPROVEMENTS

BORING LOGS

SCALE : N.T.S. DATE: SEPTEMBER 2020 BL-01

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 117 of 119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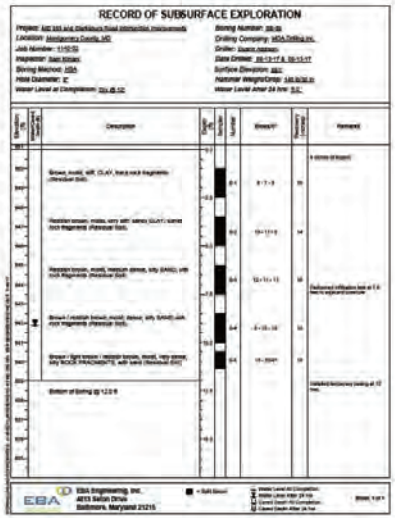
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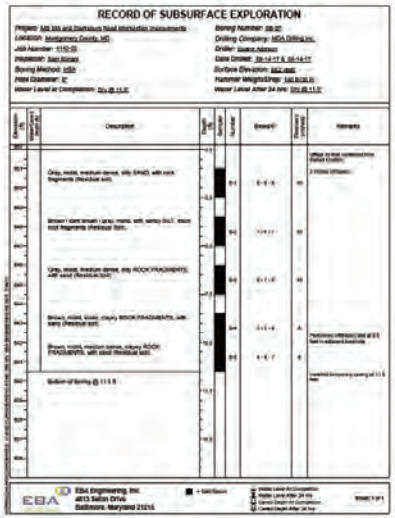
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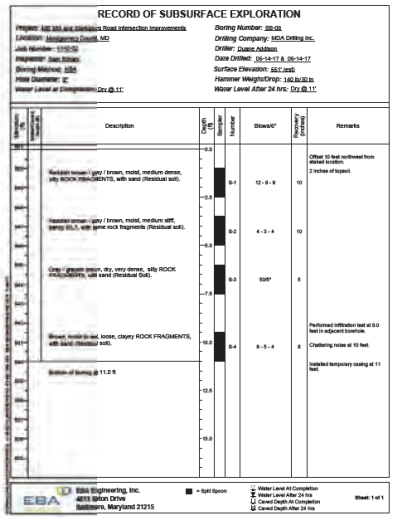
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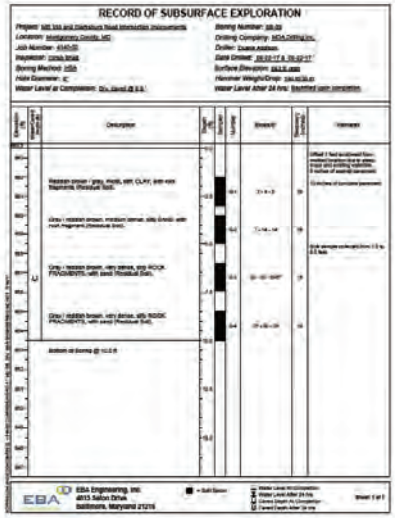
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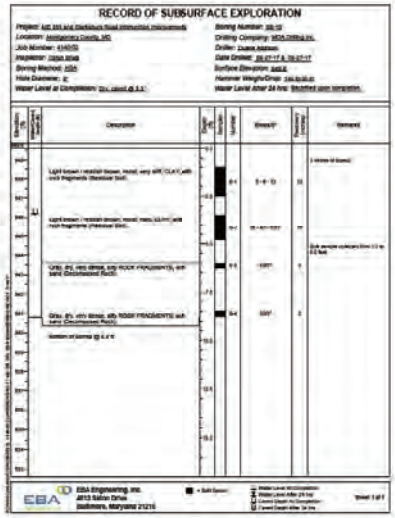
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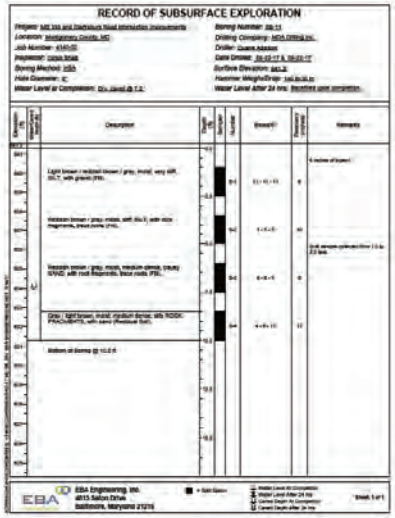
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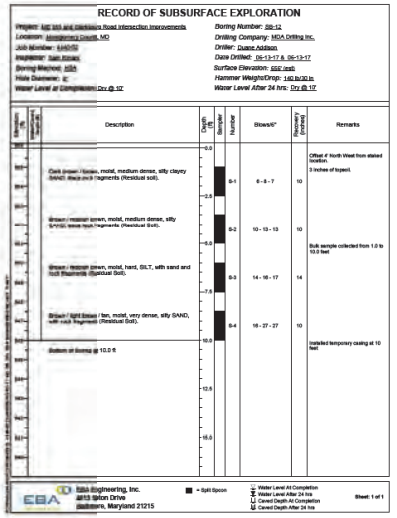

RECORD OF SUBSURFACE EXPLORATION

FOR INFORMATION PURPOSES ONLY

Gannett Fleming/GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: _____ Drawn by: JSK Checked by: YLIU

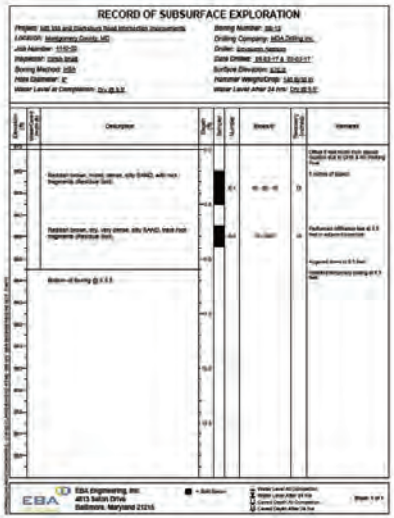
MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

BORING LOGS

SCALE : N.T.S. DATE: SEPTEMBER 2020 BL–02

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 118 of 119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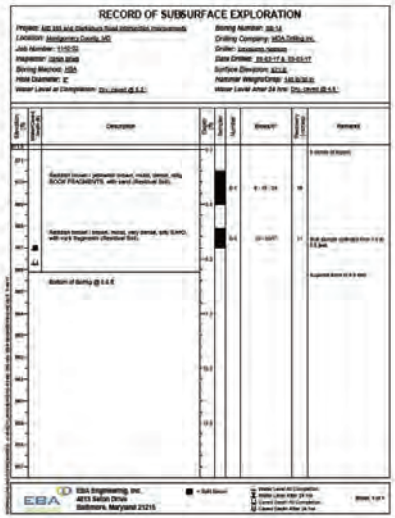
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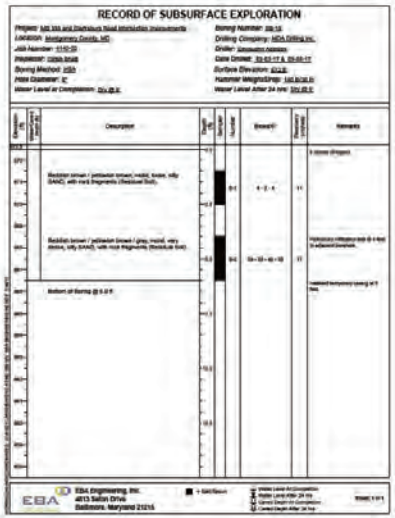
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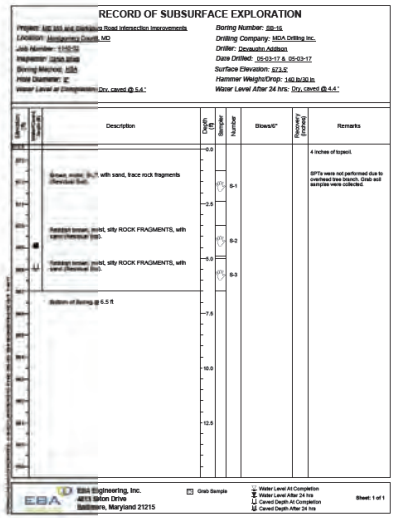
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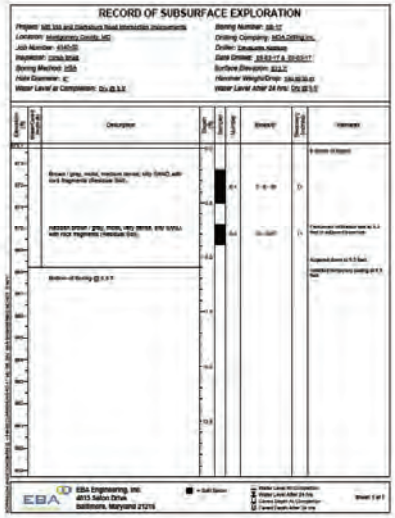
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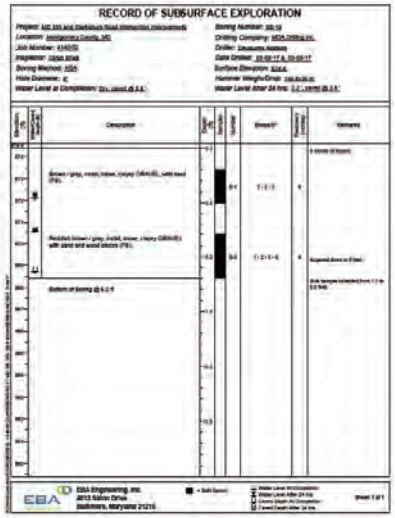
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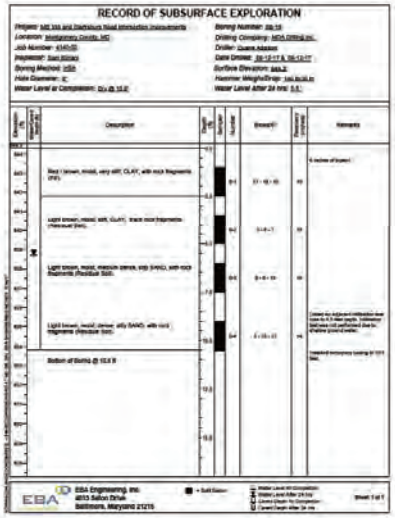
RECORD OF SUBSURFACE EXPLORATION

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: _____ Drawn by: JSK Checked by: YLIU

MD355/CLARKSBURG ROAD INTERSECTION IMPROVEMENTS

BORING LOGS

SCALE : N.T.S. DATE: SEPTEMBER 2020 BL–03

DPS SC/SWM PERMIT SHEET NO. N/A of N/A

C.I.P. Project No. : 508000 119 of 119