INDEX OF SHEETS

SEE SHEET 2

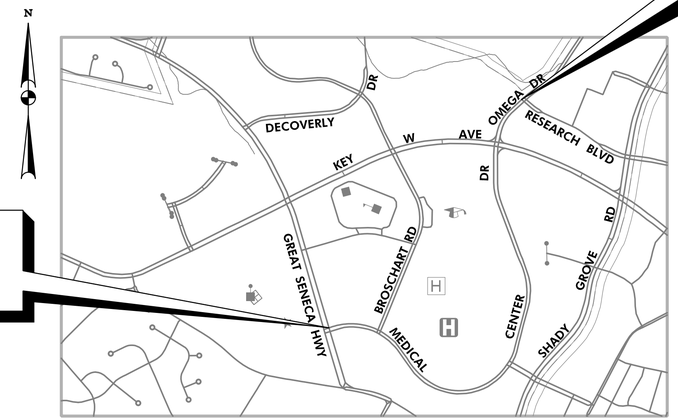
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION ENGINEERING

LIFE SCIENCES CENTER LOOP TRAIL

C.I.P. PROJECT NO. 0501742

LIMIT OF WORK
CIP NO. 0501742
LIFE SCIENCES CENTER LOOP TRAIL
OMEGA DRIVE STA. 207+00

LIMIT OF WORK
CIP NO. 0501742
LIFE SCIENCES CENTER LOOP TRAIL
MEDICAL CENTER DRIVE STA. 100+90



VICINITY MAP
SCALE: 1"=1000'

1000 0 1000 2000 feet

MONTGOMERY COUNTY
LENGTH OF PROJECT
MEDICAL CENTER DR = 1.17 MILES
OMEGA DR = 0.15 MILES

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

DESIGN DESIGNATION

ROADWAY	MEDICAL CENTER DRIVE		OMEGA DRIVE	
CONTROLS / YEARS	2017	2030	2017	2030
AVERAGE DAILY TRAFFIC (A.D.T.)	XX	XX	XX	XX
DESIGN HOURLY VOLUME (D.H.V.)	XX	XX	XX	XX
DIRECTIONAL DISTRIBUTION	XX%	XX%	XX%	XX%
% TRUCKS – A.D.T.	XX%	XX%	XX%	XX%
% TRUCKS – D.H.V.	XX%	XX%	XX%	XX%
DESIGN SPEED M.P.H.	30 M.P.H.		30 M.P.H.	
MASTER PLAN CLASSIFICATION	ARTERIAL		ARTERIAL	
TERRAIN	LEVEL		LEVEL	
CONTROL OF ACCESS	NONE		NONE	
ANTICIPATED POSTED SPEED	30 M.P.H.		30 M.P.H.	
DESIGN CRITERIA	AASHTO 2018: A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS		AASHTO 2018: A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS	
DENSITY (U,S,R)	SUBURBAN		SUBURBAN	

MISS UTILITY

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

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

TREE CANOPY REQUIREMENTS TABLE

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

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

Total Property Area	Total Disturbed Area
212,175 square feet	212,175 square feet
Shade Trees Required	**Shade Trees Proposed to be Planted**
80	TBD
Fee in Lieu (Trees Required – Trees Planted) x $250	$ TBD

Required Number of Shade Trees

Area (sq. ft.) of the Limits of Disturbance FROM	TO	Number of Shade Trees Required
1	6,000	3
6,001	8,000	6
8,001	12,000	9
12,001	14,000	12
14,001	40,000	15

If the square footage of the limits of disturbance is more than 40,000, then the number of shade trees required must be calculated using the following formula:

(Number of Square Feet in Limits of Disturbance ÷ 40,000) × 15

EXEMPTION CATEGORIES:

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

OWNER/PERMIT APPLICANT:
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
101 MONROE STREET
ROCKVILLE, MD 20850

PHONE NUMBER:
240-777-7296

CONTACT:
ROBERT GONZALES

RELATED REQUIRED PERMITS

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

IT IS THE RESPONSIBLITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL PERMIT

TYPE OF PERMIT	REQ'D	NOT REQ'D	PERMIT NO.	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS Floodplain district		X			
WATERWAYS/WETLAND(S)					
a. Corps of Engineers		X			
b. MDE		X			
c. MDE Water Quality Certification		X			
MDE Dam Safety		X			
* DPS ROADSIDE TREES PROTECTION PLAN	X				
N.P.D.E.S. NOTICE OF INTENT	X				DATE FILED
FEMA LOMR (REQUIRED POST CONSTRUCTION)		X			
OTHERS (Please List):	X				
a. SHA Access Permit	X				
MNCPPC - CONSTRUCTION		X			
DNR - ROADSIDE TREE PERMIT	X				

* A COPY OF THE APPROVED ROADSIDE TREE PROTECTION PLAN MUST BE DELIVERED TO THE SEDIMENT CONTROL INSPECTOR AT THE PRECONSTRUCTION MEEETING.

TECHNICAL REVIEW OF SEDIMENT CONTROL	ADMINISTRATIVE REVIEW
REVIEWED DATE	REVIEWED DATE
TECHNICAL REVIEW OF STORMWATER MANAGEMENT	**SMALL LOT DRAINAGE APPROVAL**
	N/A: ☐ OR
REVIEWED DATE	REVIEWED DATE
MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.	NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT.

DPS approval of a sediment control or stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not create or imply any right to divert or concentrate runoff onto any adjacent property without that property owner's permission. It does not relieve the design engineer or other responsible person of professional liability or ethical responsibility for the adequacy of the drainage design as it affects uphill or downhill properties.

SEDIMENT CONTROL PERMIT NO.

SM. FILE NO.
STORMWATER MANAGEMENT:

Gannett Fleming / GPI

35% SUBMISSION
DECEMBER, 2021

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:_____.

R-O-W PLAT NUMBERS

SURVEY BOOK NUMBERS

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: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

TITLE SHEET

SCALE : NTS DATE: NOVEMBER 2022 TI-01

DPS SC/SWM PERMIT SHEET NO. ___ of ___

C.I.P. Project No. : 0501742 1 of 87

10/17/2022
S:\Current Projects\Montgomery Co MD\Life Sciences Loop Trail\Drawings\TI01_SEQ_1.dgn

INDEX OF SHEETS

SHEET NO.	DWG NO.	TITLE
1	TI-01	TITLE SHEET
2	IN-01	INDEX OF SHEETS
3	GN-01	GENERAL NOTES AND ABBREVIATIONS
4	TS-01	TYPICAL SECTIONS
5	GT-01	PAVEMENT DETAIL SHEET
6-7	GS-01 - GS-02	GEOMETRY SHEETS
8-19	PS-01 - PS-12	ROADWAY PLAN SHEETS
20	MT-01	MAINTENANCE OF TRAFFIC GENERAL NOTES
21-30	SW-01 - SW-10	STORMWATER MANAGEMENT PLANS
31-38	SW-11 - SW-18	STORMWATER MANAGEMENT PROFILES
39-40	SW-19 - SW-20	STORMWATER MANAGEMENT DETAILS
41-42	DD-01 - DD-02	DRAINAGE DETAILS
43	EN-01	EROSION AND SEDIMENT CONTROL GENERAL NOTES
44	EN-02	EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION
45-56	ES-01 - ES-12	EROSION AND SEDIMENT CONTROL PLANS
57	ED-01	EROSION AND SEDIMENT CONTROL DETAILS
58-69	LD-01 - LD-12	LANDSCAPE PLANS
70-72	ST-01 - ST-03	STRUCTURE PLANS
73	LT-01	LIGHTING GENERAL NOTES AND DETAILS
74-85	LT-2.1 - LT-2.12	LIGHTING PLANS
86	LT-11	LIGHTING SCHEDULE
87	SG-01	SIGNAL PLAN

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

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Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
INDEX OF SHEETS

SCALE : NTS DATE: NOVEMBER 2022 IN–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 2 of 87

PLOTTED: 11/17/2022
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CONVENTIONAL SYMBOLS
EXISTING CONSTRUCTION

PROPERTY LINE
EDGE OF ROADWAY PAVING
EXISTING GROUND CONTOURS (10') — 50
EXISTING GROUND CONTOURS (2') — 54
FENCE
EDGE OF WOODED AREAS
TREE (FREE STANDING)
SIGN
LIGHT POLE
MAILBOX — M.B.
UTILITY POLE
STORM DRAIN — SD
WATER LINE — W
ABANDON WATER LINE — W
SANITARY — SS — SAN
GAS — G
ELECTRICAL HAND BOX - SIGNALS — H.B.
ELECTRIC (OVERHEAD) — POLE E
FLOW LINE
EXISTING ROADWAY
BASE LINE OR SURVEY LINE — 31 50 32
FIRE HYDRANT — F.H.
WETLAND BOUNDARY
EXISTING PIPE / CULVERT
EXISTING DROP INLET
WETLAND
WETLAND BUFFER — B
WATERS OF THE U.S. — WUS
BUSH / TREE
CONIFEROUS TREE
HISTORIC BOUNDARY — H

CONVENTIONAL SYMBOLS
PROPOSED CONSTRUCTION

℄ CONSTRUCTION — 101 +50 102
CURB & GUTTER
TRAVERSE POINT
FULL DEPTH CONSTRUCTION
PAVEMENT WEDGE AND LEVELING
MILL AND RESURFACE
PAVEMENT REMOVAL
CONCRETE PAVEMENT
HMA SHARED USE PATH
APPROXIMATE LIMITS OF CUT AND/OR FILL — C F
GRADING ELEVATION CONTOURS (10') — 50
GRADING ELEVATION CONTOURS (2') — 54
LIMIT OF DISTURBANCE — LOD
STORM DRAIN PIPE
DITCH FLOW LINE

ABBREVIATIONS

AASHTO ..American Association of State Highway Transportation Officials
ADT.....Average Daily Traffic
AHD.....Ahead
APPROX...Approximate
℄ or B/L..Baseline
BK .....Back /Book
BIT. .....Bituminous
B.C. .....Bituminous Concrete
B.M. .....Bench Mark
BOT. .....Bottom
C.C. .....Center of Curve
CAP.....Corrugated Aluminum Pipe
CAPA .....Corrugated Aluminum Pipe Arch
CATV.....Cable Television
C.B.R.....California Bearing Ratio
℄ or C/L ..Centerline
CL. .....Class
CLF.....Chainlink Fence
CMP.....Corrugated Metal Pipe
C.O. .....Cleanout
COMB.....Combination
CONC. .....Concrete
CONSTR. .Construction
COR. .....Corner
CORR. .....Correction
CPP–S .....Corrugated Polyethylene Pipe – Type 'S'
CSP .....Corrugated Steel Pipe – Aluminized Type 2
CSPA .....Corrugated Steel Pipe Arch – Aluminized Type 2
DC .....Degree of Curve
D.H.V. .....Design Hourly Volume
D.I. .....Drop Inlet
DIA. .....Diameter
D.O. .....Double Opening
E .....East
E .....Electric
E .....External Distance
EA .....Each
EB .....Eastbound
ELEV .....Elevation
ES .....End Section
EX or EXIST . Existing
FT .....Feet
F or FL ...Flowline
FB .....Foundation Boring
F.B.D. .....Flat Bottom Ditch
F.H. .....Fire Hydrant
FWD. .....Forward
G .....Gas
G.V. .....Gas Valve
H.B. .....Handbox
HDPE .....High Density Polyetheylene
HDWL. .....Headwall
HERCP.....Horizontal Ellipitical Reinforced Concrete Pipe
HP.....High Point
IN .....Inch
I.S.T.....Inlet Sediment Trap
INV. .....Invert
J.B. .....Junction Box
K .....K Inlet
L .....Length
LF .....Linear Feet
L.L. .....Liquid Limit
LP .....Low Point
L.P. .....Light Pole
LT. .....Left
MAC. .....Macadam
MB .....Mail Box
M.C. .....Moisture Content
M.D.D. .....Maximum Dry Content
MAX. .....Maximum
MC.....Montgomery County
MCDOT.....Montgomery County Department of Transportation
MH.....Manhole
MOD. .....Modified
MIN. .....Minimum
M–NCPPC..Maryland – National Capital Park and Planning Commission
N .....North
N/B .....Northbound
NE .....Northeast
N.P. .....Non–Plastic
O.C. .....On Center
OHE .....Overhead Electric
O.M. .....Optimum Moisture
PAV'T. .....Pavement
PB .....Pavement Boring
PC .....Point of Curvature
PCC .....Point of Compound Curvature
P/C .....Point of Crown
P/GE .....Profile Grade Elevation
P.G.E. .....Profile Ground Elevation
P.G.L. .....Profile Grade Line
P/GL .....Profile Ground Line
P/R .....Point of Rotation
P.I. .....Plasticity Index
PI .....Point of Intersection
POC .....Point On Curve
POT .....Point On Tangent
PPWP.....Polyvinyl Chloride Profile Wall Pipe
PROP .....Proposed
PRC .....Point of Reverse Curve
PT.....Point
PT.....Point of Tangency
PVC.....Point of Vertical Curve
PVC .....Polyvinyl Chloride
PVI .....Point of Vertical Intersection
PVRC.....Point of Vertical Reverse Curve
PVT .....Point of Vertical Tangency
R .....Radius
R.F. .....Rock Fragments
RT.....Right
RW or R/W..Right of Way
RCP .....Reinforced Concrete Pipe
RCPP .....Reinforced Concrete Pressure Pipe
R.Q.D. ...Rock Quality Designation
R.M. .....Rootmat
S .....South
SAN. .....Sanitary Sewer
SB.....Soil Boring
S/B .....Southbound
S.D. .....Storm Drain
S.D.D. .....Surface Drain Ditch
S/E .....Super Elevation
SF .....Silt Fence
SF .....Square Feet
SHT. .....Sheet
SPP .....Structural Steel Plate Pipe
SPPA .....Structural Steel Plate Pipe Arch
S.P.T. .....Standard Penetration Testing
SRP .....Steel Spiral Rib Pipe – Aluminized Type 2
SRPA .....Steel Spiral Rib Pipe Arch – Aluminized Type 2
SSD .....Stopping Sight Distance
SSF .....Super Silt Fence
STD. .....Standard
STA. .....Station
SO. .....Single Opening
SY .....Square Yards
SWM .....Stormwater Management
T .....Tangent
T .....Telephone
T.C. .....Top of Cover
T.G. .....Top of Grate
T or TL . Traverse Line
T.M. .....Top of Manhole
TRAV. .....Traverse
TS .....Temporary Swale
T.S. .....Top of Slab
T.S. .....Topsoil
TYP. .....Typical
U.D. .....Under Drain
U.G. .....Underground
U.P. .....Utility Pole
USDA .....United States Department of Agriculture
VCL .....Vertical Clearance
V.C.L. .....Vertical Curve Length
W .....Water
W .....West
WB .....Westbound
WB .....Wetland Buffer
W.M. .....Water Meter
W.S. .....Wrapped Steel
WUS .....Waters of the United States
W.V. .....Water Valve

GENERAL NOTES

1. RIGHT OF WAY LINES ARE SHOWN FOR ASSISTANCE IN INTERPRETING PLANS. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICIAL RIGHT OF WAY AND EASEMENT INFORMATION, SEE THE APPROPRIATE RIGHT OF WAY PLAN.

2. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST HOLES BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING. IF CLEARANCE IS LESS THAN TWELVE (12) INCHES, THEN CONTACT THE MONTGOMERY COUNTY DOT PROJECT MANAGER AND THE APPROPRIATE UTILITY BEFORE PROCEEDING WITH CONSTRUCTION.

3. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT LEAST 48 HOURS IN ADVANCE OF ANY EXCAVATION WORK AT 1–800–257–7777.

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

5. THE EXACT LOCATION AND TYPE OF SEDIMENT CONTROL DEVICES WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER, WHO RESERVES THE RIGHT TO ORDER ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES.

6. CONSTRUCTION EQUIPMENT SHALL HAVE TREADS /TIRES CLEANED PRIOR TO LEAVING THE LOD. ALL MATERIAL REMOVAL /LOAD OUT SHALL BE LIFTED FROM THE LOD. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING.

7. REFER TO THE CONTRACT DOCUMENTS FOR ROADWAY BORING, SOIL BORING AND INFILTRATION TESTING DATA SHEETS.

8. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE 2021 MDSHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, REVISIONS THEREOF OR ADDITIONS THERETO, THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS, THE LATEST VERSION OF THE MARYLAND MUTCD, AND ALL RELEVANT MONTGOMERY COUNTY STANDARD SPECIFICATIONS.

9. PAVEMENT RESURFACING SHALL BE COMPLETED WITHIN FOURTEEN (14) CALENDAR DAYS AFTER GRINDING. PAVEMENT GRINDING OPERATIONS SHALL NOT BEGIN UNLESS THERE IS A SUFFICIENT TIME TO RESURFACE THE ROADWAY BEFORE COLD WEATHER. SEE SP509 – GRINDING ASPHALT PAVEMENT.

10. CLEARING IS TO BE LIMITED TO LIMIT OF DISTURBANCE (LOD) AS SHOWN ON THE PLANS.

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

12. ALL DISTURBED AREAS TO BE SEEDED AND MULCHED UNLESS OTHERWISE NOTED.

13. TYPES OF STORM DRAIN STRUCTURES REFER TO THE "DESIGN STANDARDS" OF MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, UNLESS OTHERWISE NOTED.

14. WHEN THE DROP ON THE MAIN LINE THROUGH A STORM DRAIN STRUCTURE CAN BE ACCOMMODATED BY AN INVERT SLOPE OF 1.5:1 OR FLATTER, A ROUNDED CHANNEL LINED WITH SEWER BRICK ON EDGE SHALL BE BUILT TO THE CROWN OF THE PIPES. WHEN THE INVERT SLOPES WOULD BE GREATER THAN 1.5:1 A SPECIAL INVERT SHALL BE CONSTRUCTED AS NOTED.

15. ALL STORM DRAIN PIPE SHALL BE INSTALLED WITH CLASS "C" BEDDING UNLESS OTHERWISE SPECIFIED.

16. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAIN STRUCTURES, WHEN NECESSARY, TO MEET EXISTING CONDITIONS, AS APPROVED BY MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S PROJECT INSPECTOR.

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
GENERAL NOTES AND ABBREVIATIONS

SCALE : NTS DATE: NOVEMBER 2022 AB–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 3 of 87

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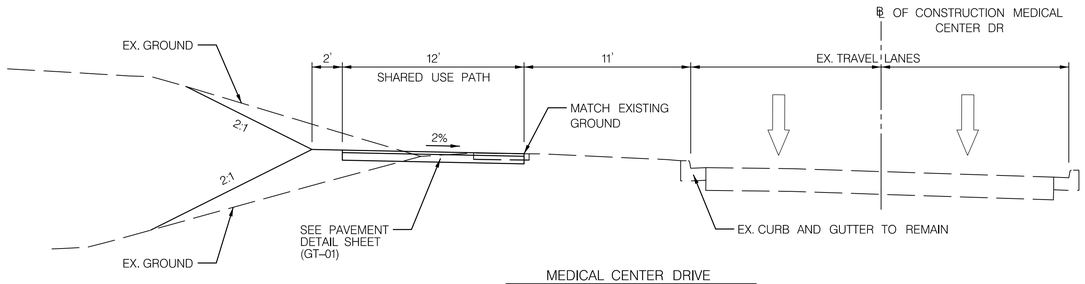
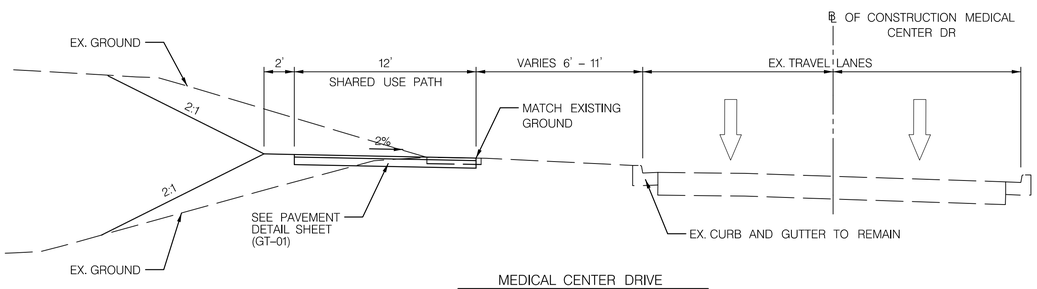
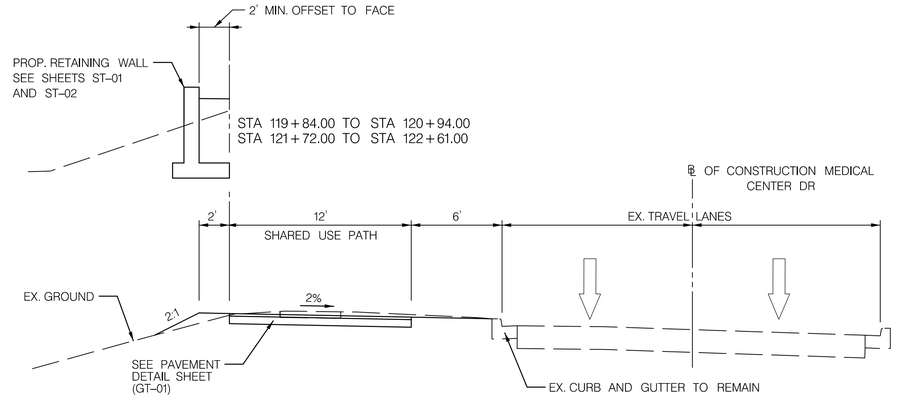


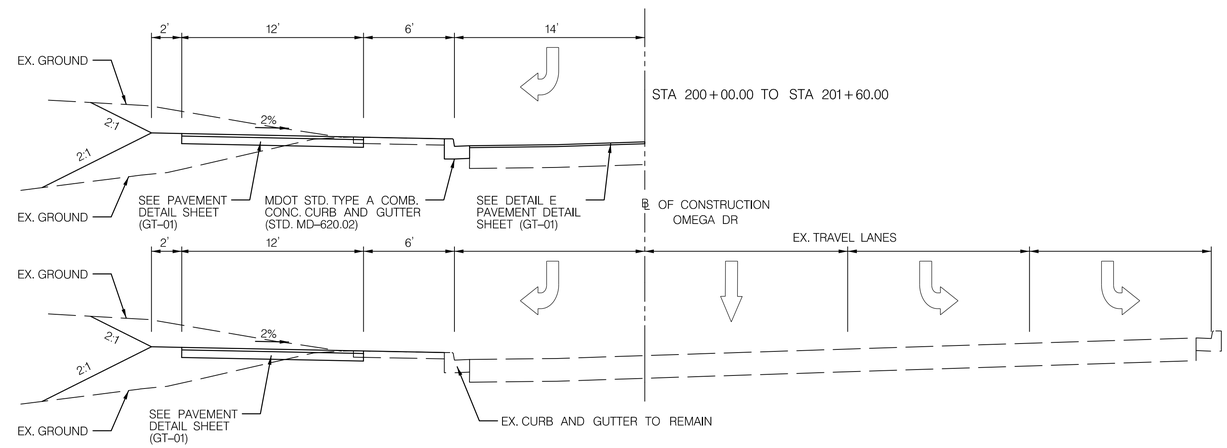
MEDICAL CENTER DRIVE
STA 101+00.00 TO STA 107+50.00
STA 136+50.00 TO STA 142+50.00



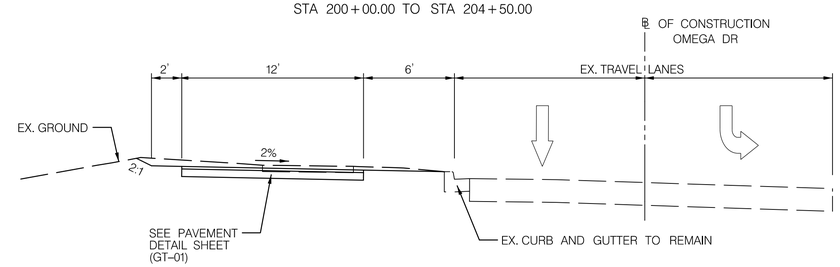
MEDICAL CENTER DRIVE
STA 107+50.00 TO STA 117+00.00
STA 123+50.00 TO STA 129+00.00
STA 134+50.00 TO STA 136+50.00
STA 142+50.00 TO STA 147+75.00
STA 151+50.00 TO STA 159+00.00



MEDICAL CENTER DRIVE
STA 117+00.00 TO STA 123+50.00
STA 129+00.00 TO STA 134+50.00
STA 147+75.00 TO STA 151+50.00



OMEGA BOULEVARD
STA 200+00.00 TO STA 204+50.00



OMEGA BOULEVARD
STA 204+50.00 TO STA 206+68.00

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

TYPICAL SECTIONS

SCALE : NTS DATE: NOVEMBER 2022 TS–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 4 of 87

PLOTTED: 11/17/2022
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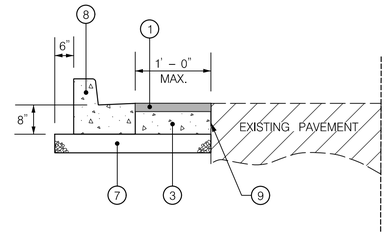
PAVEMENT LEGEND

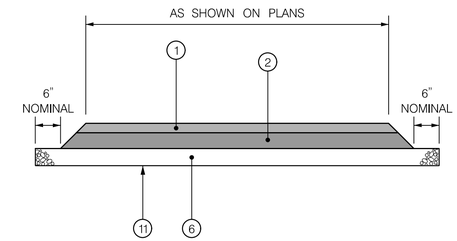
1	1.5"	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S–22, LEVEL 2
2	2.5"	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S–22, LEVEL 2
3	6.5"	PORTLAND CEMENT CONCRETE MIX NO. 9 (SEE NOTE 1)
4	5"	PLAIN PORTLAND CEMENT CONCRETE PAVEMENT MIX NO. 7
5	3"	GRADED AGGREGATE BASE COURSE
6	4"	GRADED AGGREGATE BASE COURSE
7	6"	GRADED AGGREGATE BASE COURSE (INCIDENTAL TO CURB AND GUTTER)
8	–	MDOT STANDARD TYPE D COMBINATION CONCRETE CURB AND GUTTER (STD. MD–620.02–01)
9	–	FULL DEPTH SAW CUT (INCIDENTAL TO CURB AND GUTTER)
10	–	FULL DEPTH SAW CUT
11	–	TOP OF SUBGRADE AND LIMIT OF EXCAVATION
12	–	TOP OF EXISTING PAVEMENT AFTER 1.5" FINE MILLING

NOTES:

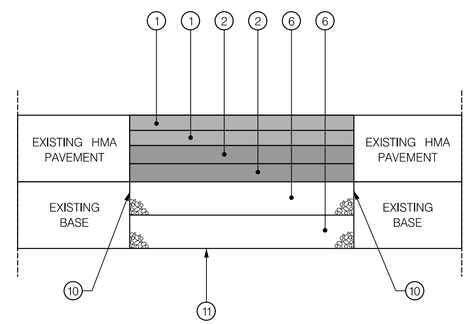
1. THIS WORK IS TO BE DONE AT THE CONTRACTOR'S OPTION. AN ADDITIONAL 1' WIDTH (MAXIMUM) EXCAVATION MAY BE USED FOR CURB & GUTTER FORM PLACEMENT. THE ADDITIONAL EXCAVATION WIDTH IS TO BE FILLED WITH A MINIMUM OF 6" GAB AND 6.5" PLAIN PORTLAND CEMENT CONCRETE MIX NO. 9, TO THE BOTTOM OF THE FINAL HMA SURFACE LAYER. PAYMENT SHALL BE INCIDENTAL TO THE LINEAR FOOT ITEM FOR CURB & GUTTER. TRANSVERSE JOINTS SHALL MATCH THOSE OF THE CURB & GUTTER. DOWEL BARS ARE NOT NECESSARY.



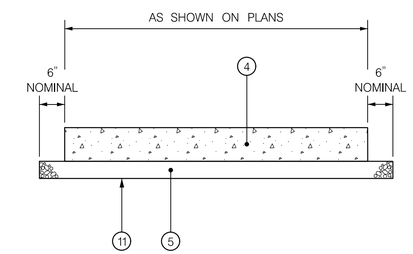
DETAIL A
CURB & GUTTER REPLACEMENT



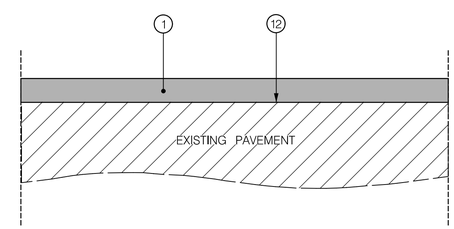
DETAIL B
ASPHALT PAVEMENT – SHARED USE PATH



DETAIL C
FULL DEPTH PAVEMENT



DETAIL D
CONCRETE PAVEMENT – SHARED USE PATH



DETAIL E
FINE MILLING AND OVERLAY

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

PAVEMENT DETAIL SHEET

SCALE : NTS DATE: NOVEMBER 2022 GT–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 5 of 87

PLOTTED: 11/7/2022
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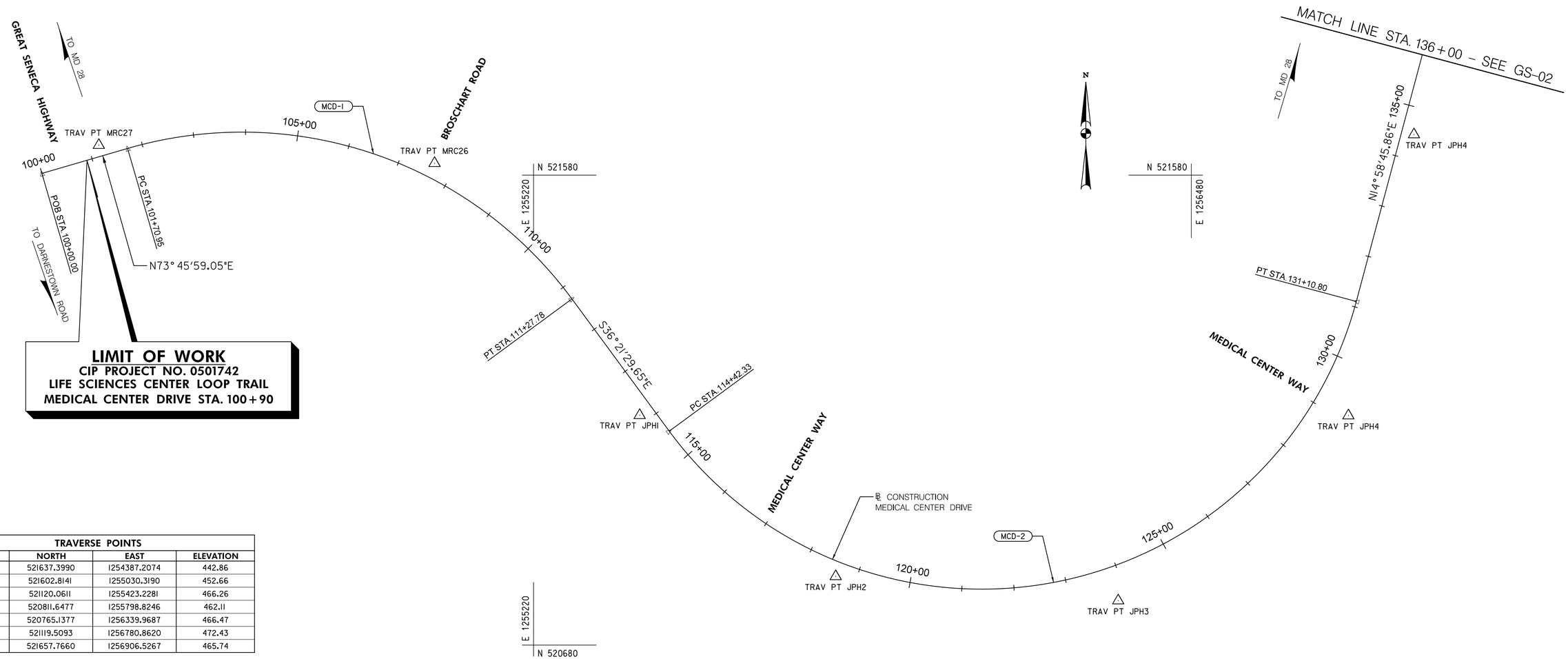

LIMIT OF WORK
CIP PROJECT NO. 0501742
LIFE SCIENCES CENTER LOOP TRAIL
MEDICAL CENTER DRIVE STA. 100+90

TRAVERSE POINTS			
POINT NO.	NORTH	EAST	ELEVATION
MRC27	521637.3990	1254387.2074	442.86
MRC26	521602.8141	1255030.3190	452.66
JPH1	521120.0611	1255423.2281	466.26
JPH2	520811.6477	1255798.8246	462.11
JPH3	520765.1377	1256339.9687	466.47
JPH4	521119.5093	1256780.8620	472.43
JPH5	521657.7660	1256906.5267	465.74

BASELINE CONTROL COORDINATES – MEDICAL CENTER DRIVE					
CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
	POB	100+00.00	521583.3469	1254278.1995	
MCD-1	PC	101+70.95	521631.1365	1254442.3332	N 73° 45'59.05" E
	PI	107+19.04	521784.3576	1254968.5718	
	PT	111+27.78	521342.9655	1255293.4977	S 36° 21'29.65" E
MCD-2	PC	114+42.33	521089.6437	1255479.9778	
	PI	129+88.33	519844.6157	1256396.4915	
	PT	131+10.80	521338.0734	1256796.0870	N 14° 58'45.86" E

CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
MCD-1	69° 52'31.30" RT	7° 18'10.17"	784.57	548.09	956.82	172.48
MCD-2	128° 39'44.48" LT	7° 42'41.08"	743.00	1545.99	1668.47	972.27

100' 0 100' 200'
SCALE: 1" = 100'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
GEOMETRY SHEET

SCALE : 1" = 100' DATE: NOVEMBER 2022 GS-01
DPS SC/SWM PERMIT SHEET NO. ___ of ___
C.I.P. Project No. : 0501742 6 of 87

PLOTTED: 11/17/2022
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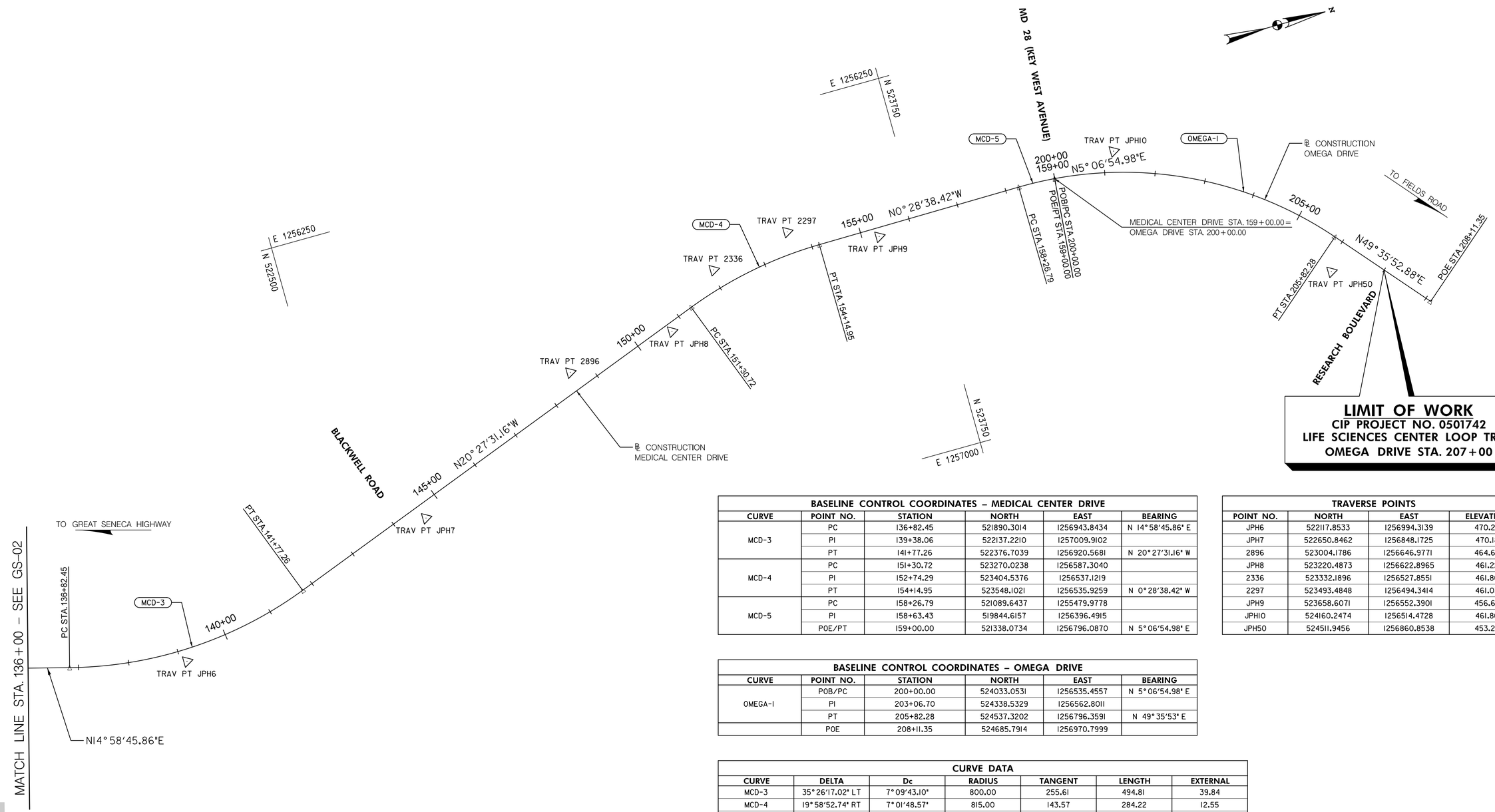

LIMIT OF WORK
CIP PROJECT NO. 0501742
LIFE SCIENCES CENTER LOOP TRAIL
OMEGA DRIVE STA. 207+00

BASELINE CONTROL COORDINATES – MEDICAL CENTER DRIVE

CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
MCD-3	PC	136+82.45	521890.3014	1256943.8434	N 14°58'45.86" E
	PI	139+38.06	522137.2210	1257009.9102	
	PT	141+77.26	522376.7039	1256920.5681	N 20°27'31.16" W
MCD-4	PC	151+30.72	523270.0238	1256587.3040	
	PI	152+74.29	523404.5376	1256537.1219	
	PT	154+14.95	523548.1021	1256535.9259	N 0°28'38.42" W
MCD-5	PC	158+26.79	521089.6437	1255479.9778	
	PI	158+63.43	519844.6157	1256396.4915	
	POE/PT	159+00.00	521338.0734	1256796.0870	N 5°06'54.98" E

TRAVERSE POINTS

POINT NO.	NORTH	EAST	ELEVATION
JPH6	522117.8533	1256994.3139	470.28
JPH7	522650.8462	1256848.1725	470.18
2896	523004.1786	1256646.9771	464.64
JPH8	523220.4873	1256622.8965	461.22
2336	523332.1896	1256527.8551	461.86
2297	523493.4848	1256494.3414	461.03
JPH9	523658.6071	1256552.3901	456.67
JPH10	524160.2474	1256514.4728	461.80
JPH50	524511.9456	1256860.8538	453.22

BASELINE CONTROL COORDINATES – OMEGA DRIVE

CURVE	POINT NO.	STATION	NORTH	EAST	BEARING
OMEGA-1	POB/PC	200+00.00	524033.0531	1256535.4557	N 5°06'54.98" E
	PI	203+06.70	524338.5329	1256562.8011	
	PT	205+82.28	524537.3202	1256796.3591	N 49°35'53" E
	POE	208+11.35	524685.7914	1256970.7999	

CURVE DATA

CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
MCD-3	35°26'17.02" LT	7°09'43.10"	800.00	255.61	494.81	39.84
MCD-4	19°58'52.74" RT	7°01'48.57"	815.00	143.57	284.22	12.55
MCD-5	5°35'33.41" RT	7°38'21.97"	750.00	36.63	73.21	0.89
OMEGA-1	44°28'57.89" RT	7°38'21.97"	750.00	306.70	582.28	60.29

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
GEOMETRY SHEET

SCALE : 1" = 100' DATE: NOVEMBER 2022 GS–02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 7 of 87

PLOTTED: 11/7/2022
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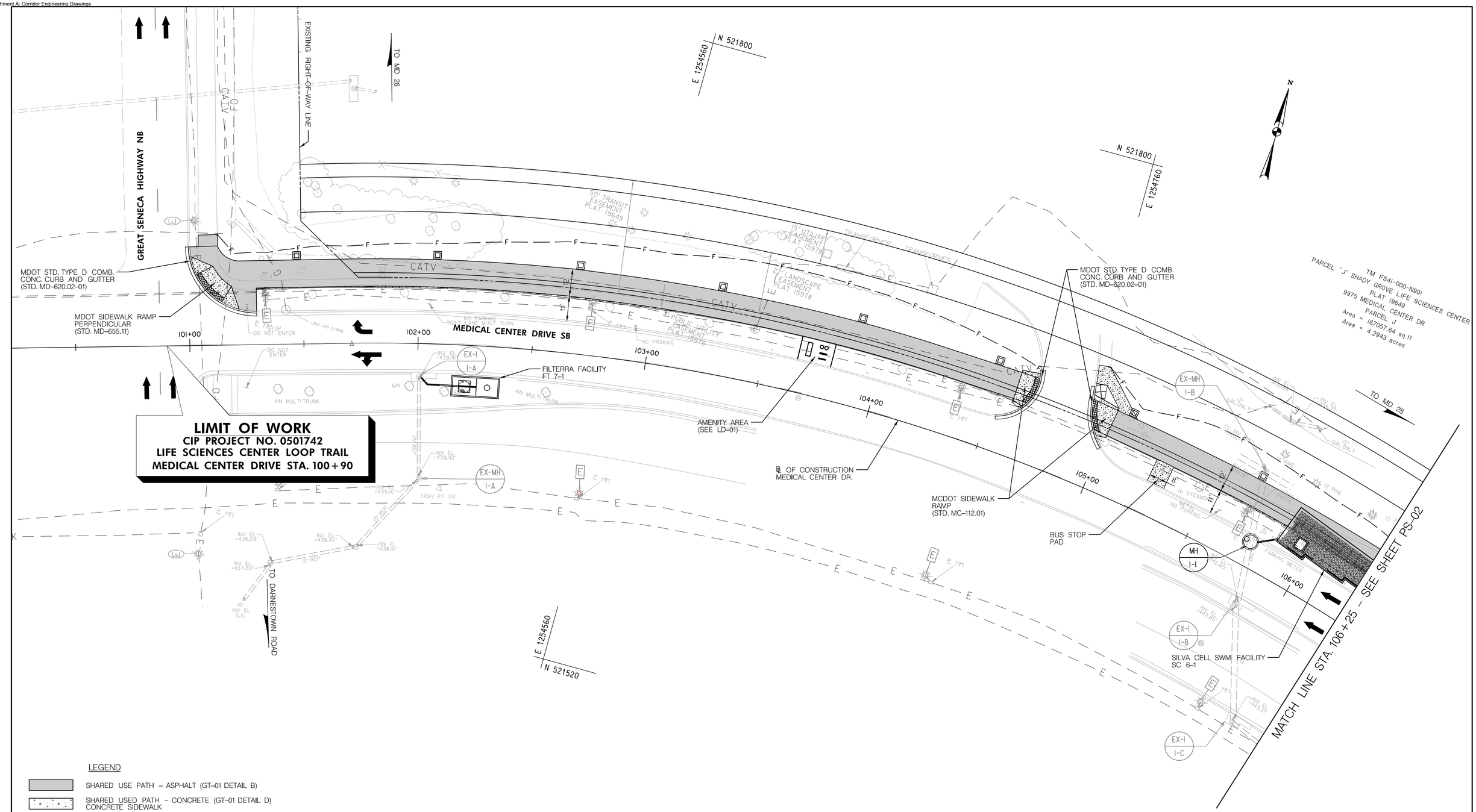

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT (GT-01 DETAIL C)
- FINE MILLING AND OVERLAY (GT-01 DETAIL E)
- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 8 of 87

PLOTTED: 11/17/2022
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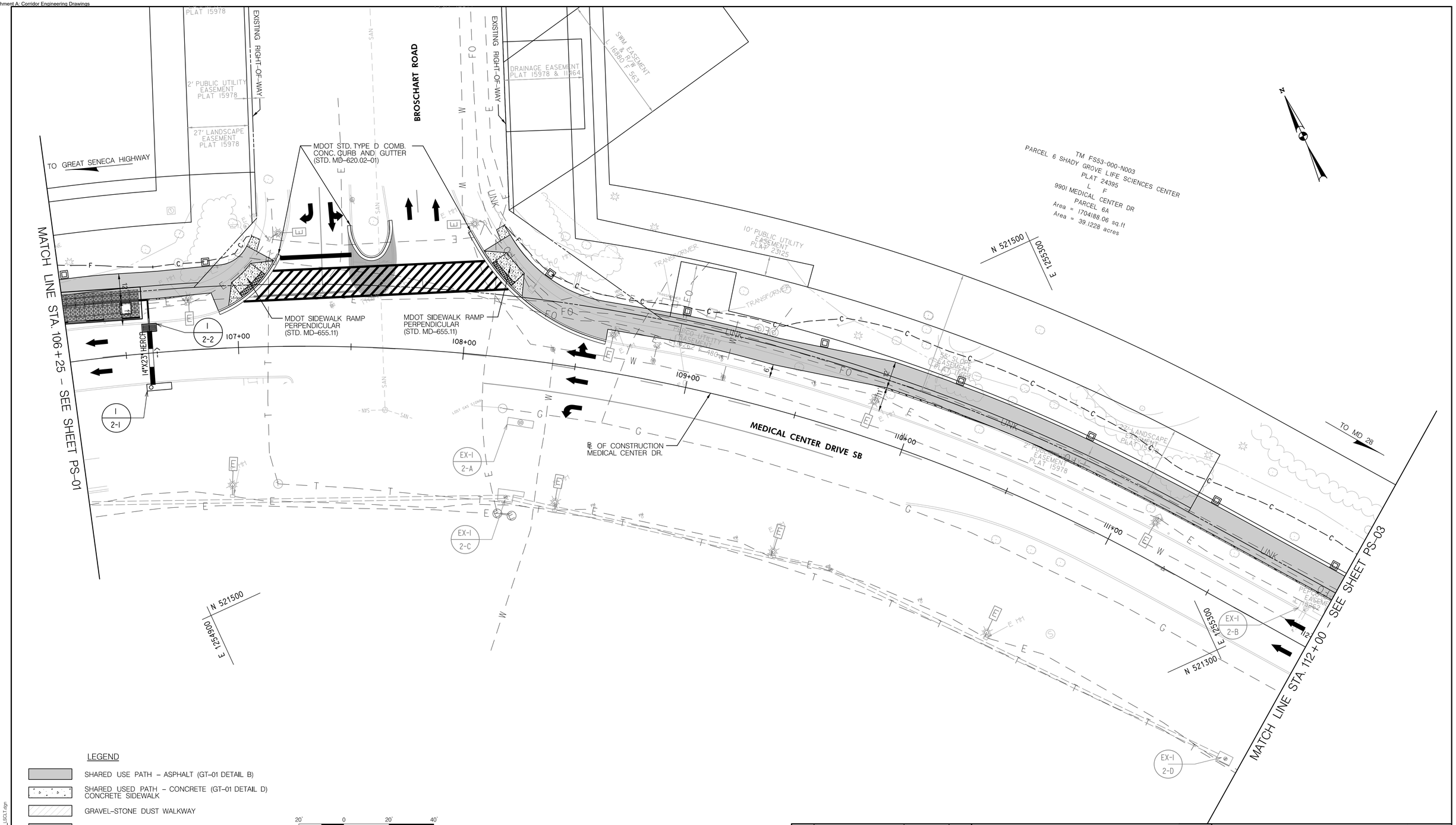

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20' 0 20' 40'
SCALE: 1" = 20'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 9 of 87

PLOTTED: 11/17/2022
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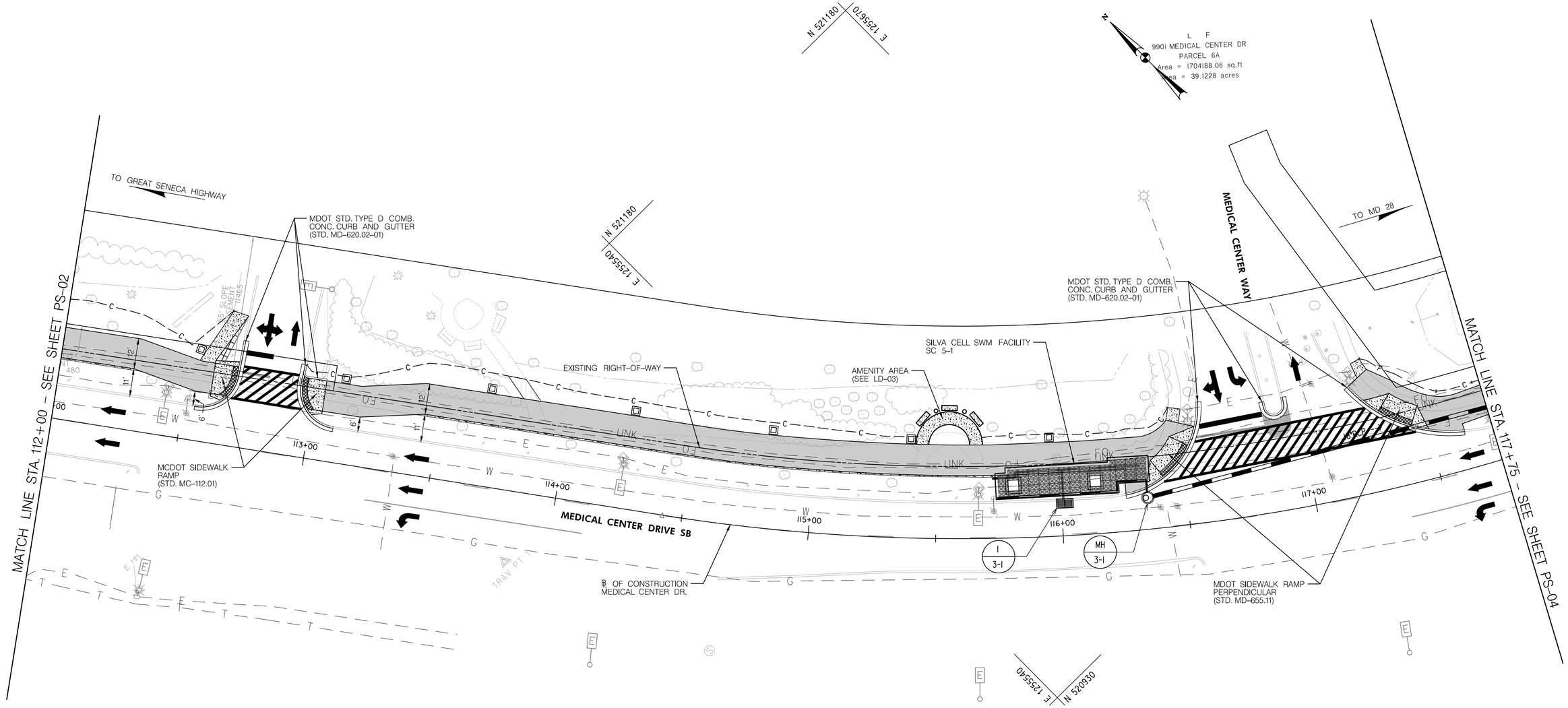

LEGEND

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- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-03

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 10 of 87

PLOTTED: 11/17/2022
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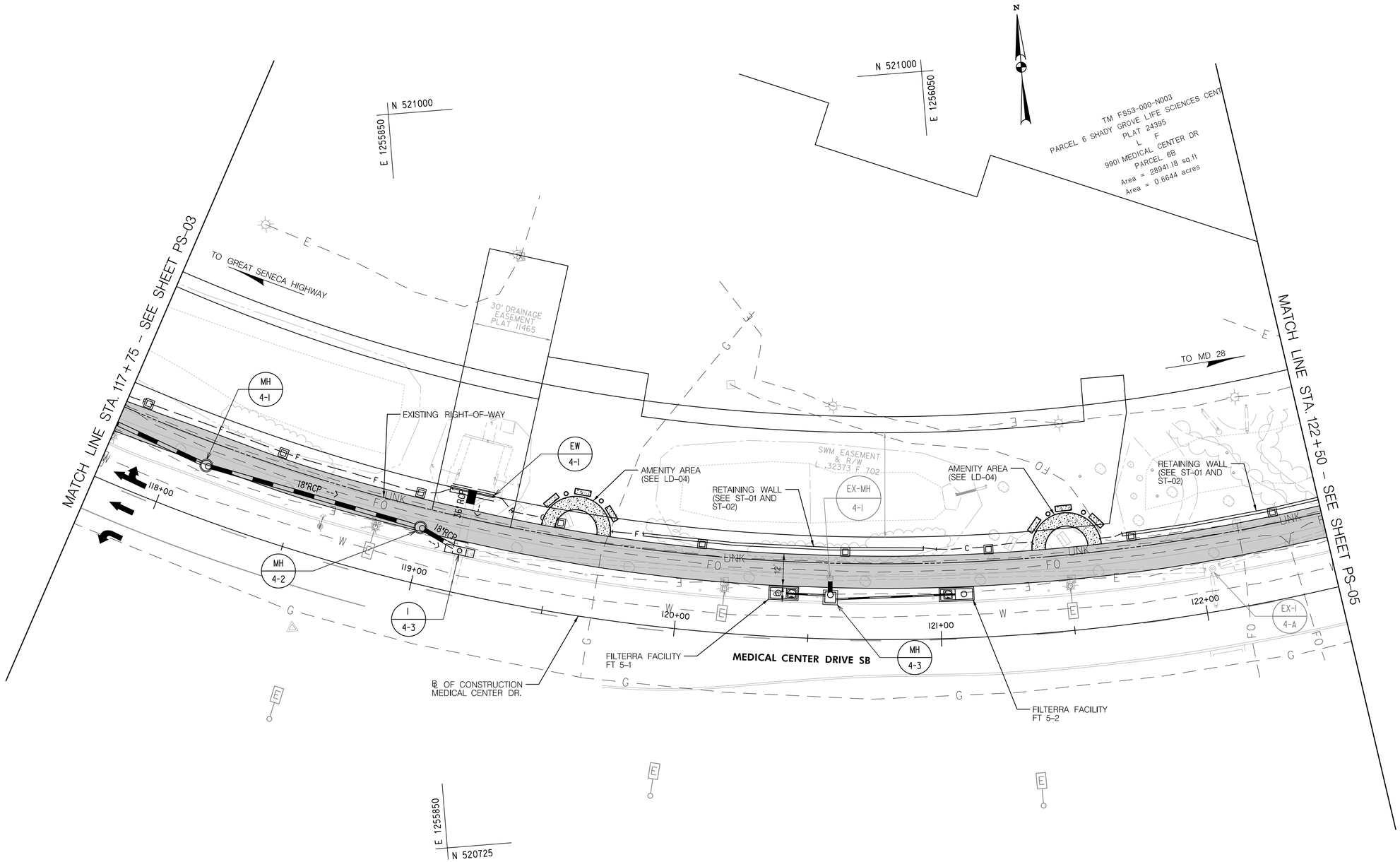

LEGEND

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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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-04

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 11 of 87

PLOTTED: 11/7/2022
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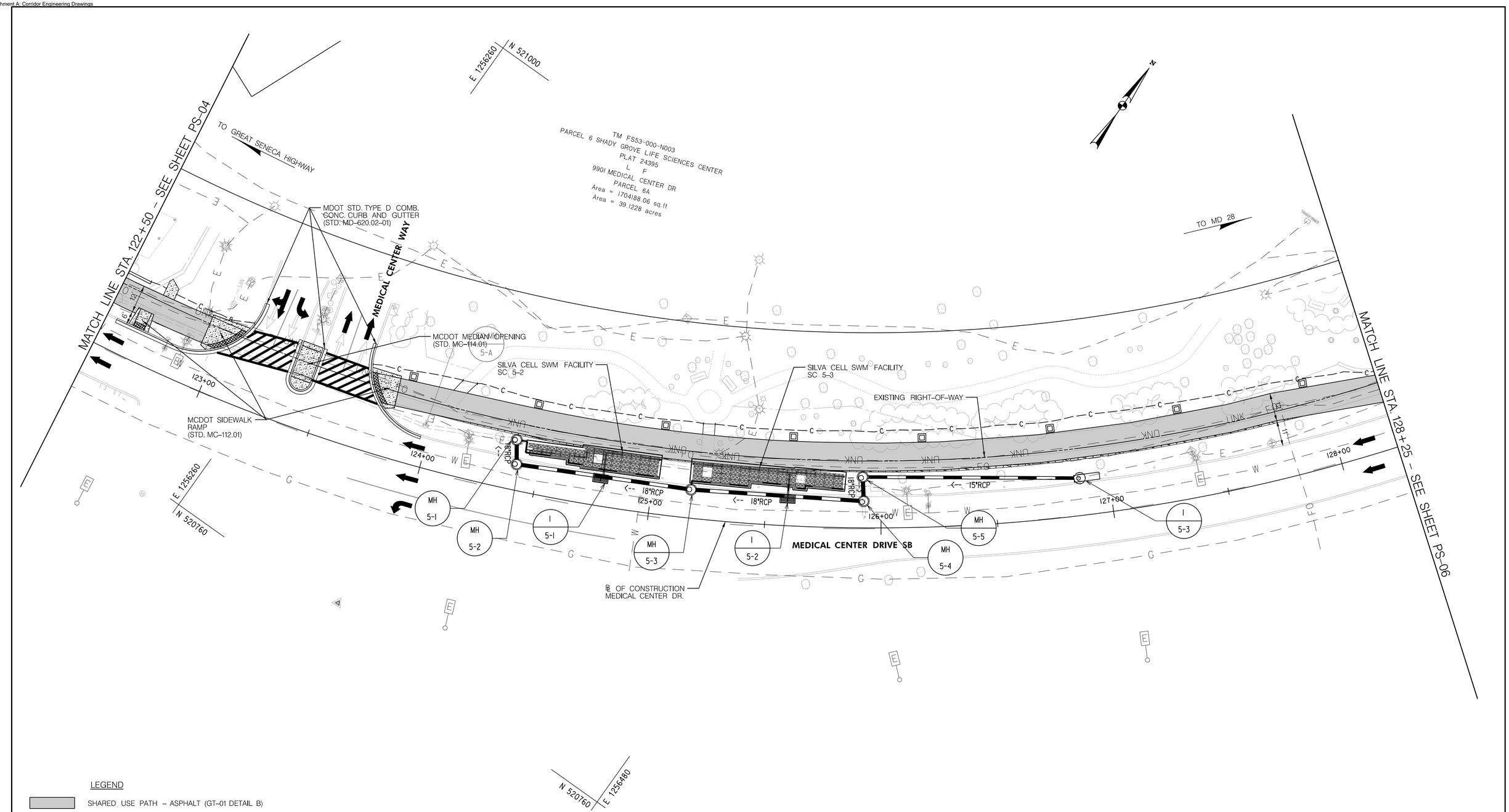

LEGEND

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- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
- GRAVEL-STONE DUST WALKWAY
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- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-05

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 12 of 87

PLOTTED: 11/7/2022
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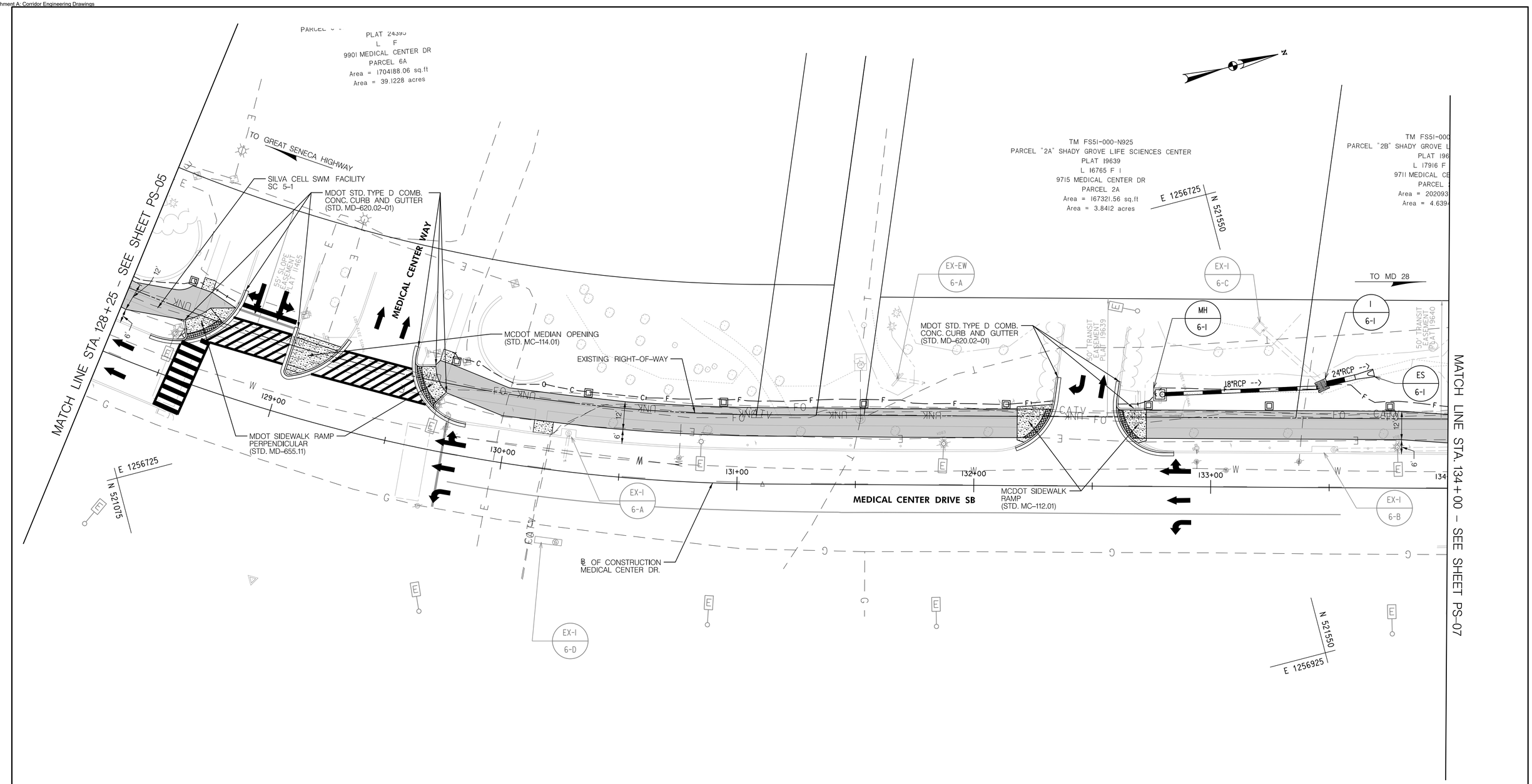

LEGEND

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- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-06

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 13 of 87

PLOTTED: 11/7/2022
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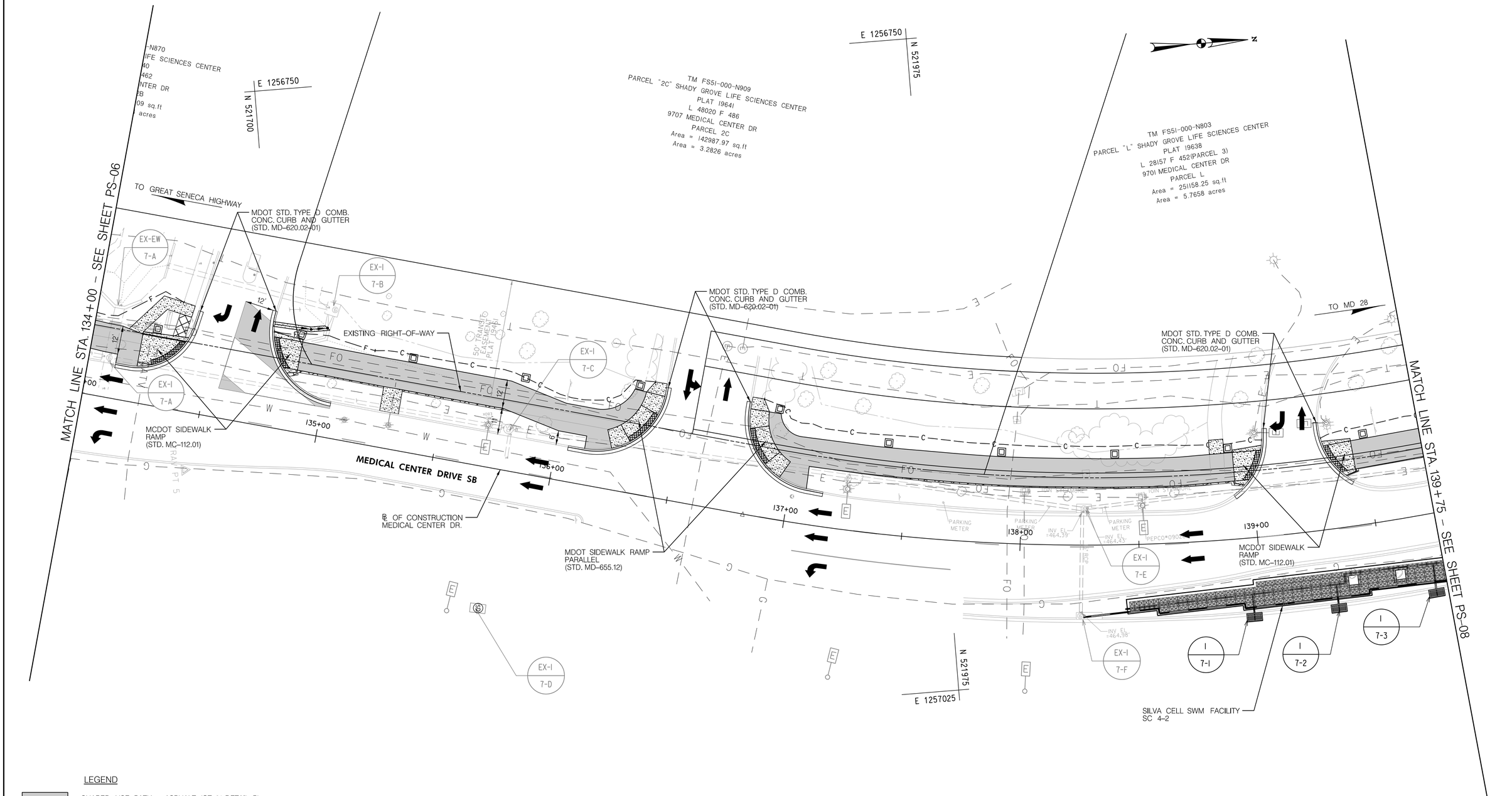

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
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- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-07

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 14 of 87

PLOTTED: 11/7/2022
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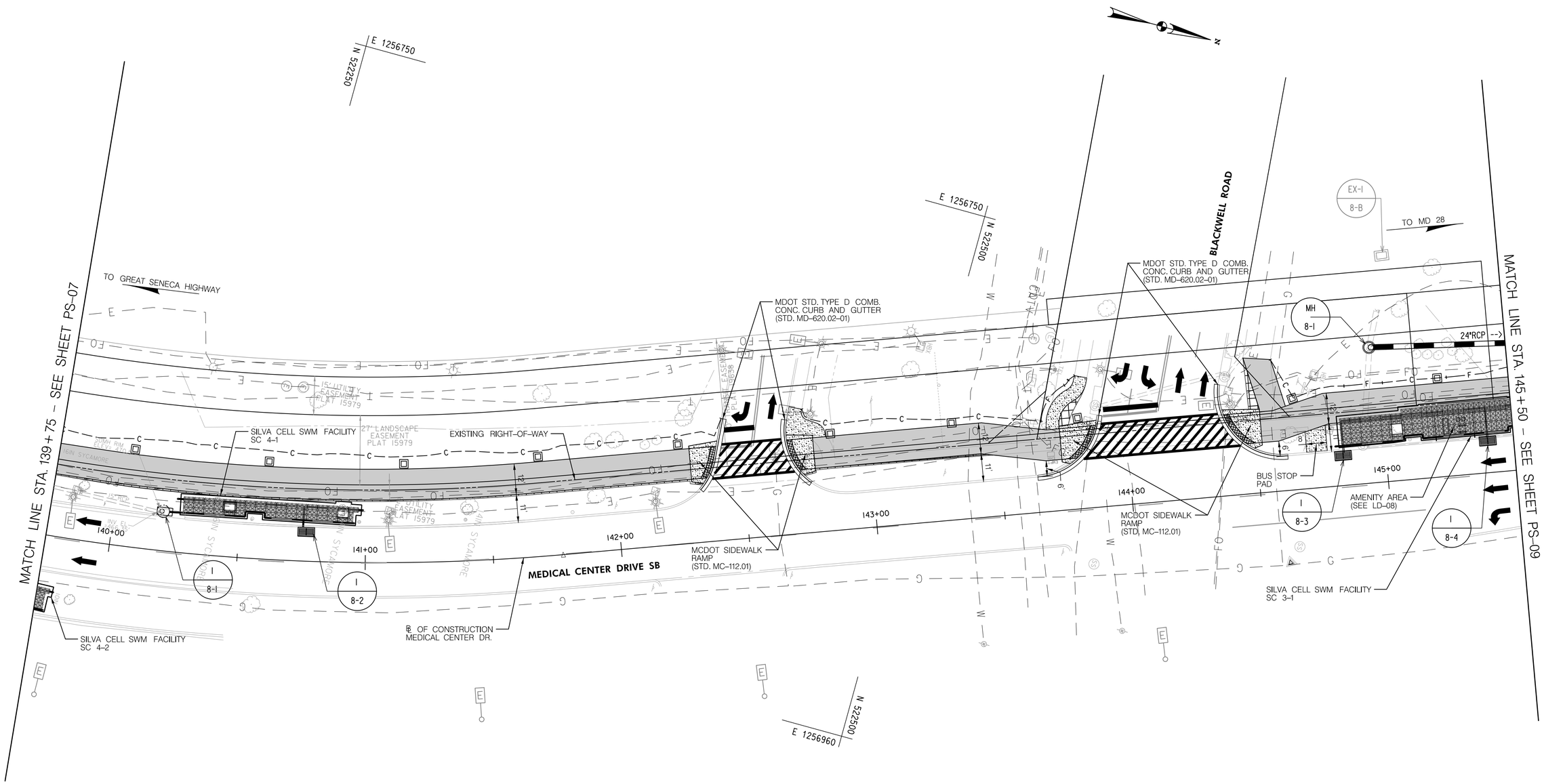

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
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- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

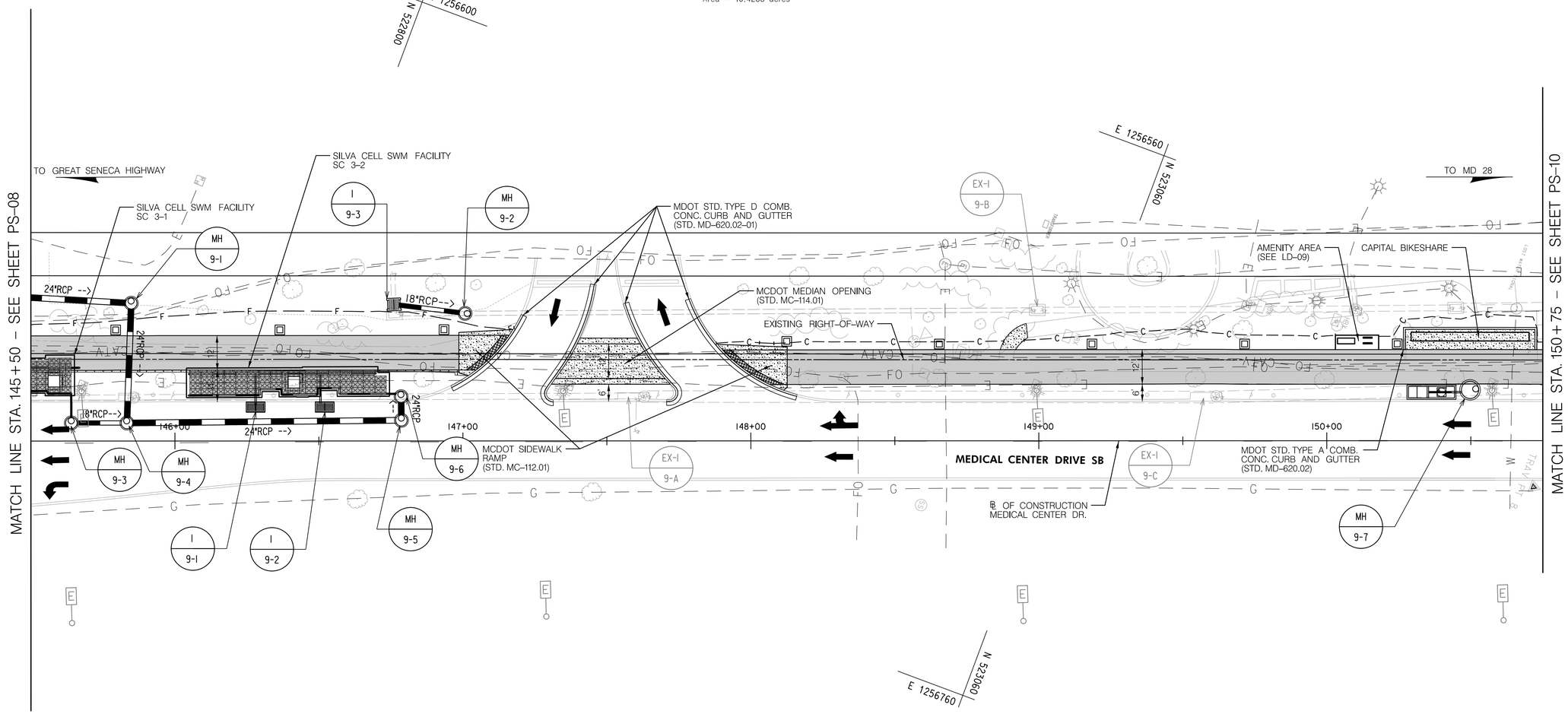
SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-08

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 15 of 87

PLOTTED: 11/17/2022
FILE: c:\pwworking\gfpwd1\ewxw4k\d2385685\pH0-P008_LSCLT.dgn

TM FS51-000-N546
JBG/ROCKVILLE NCI CAMPUS, LLC
EXHIBIT 'B' LEASE AREA ON PARCEL M
MO CO MED CENTER
L. 39254 F 178 (N546)
9613 MEDICAL CENTER DR (N546)
GROUND LEASE (PART OF PARCEL M PLAT BOOK 142 PLAT 16292)
Area = 454257.10 sq.ft
Area = 10.4283 acres



LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT (GT-01 DETAIL C)
- FINE MILLING AND OVERLAY (GT-01 DETAIL E)
- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-09
DPS SC/SWM PERMIT SHEET NO. ____ of ____
C.I.P. Project No. : 0501742 16 of 87

PLOTTED: 11/7/2022
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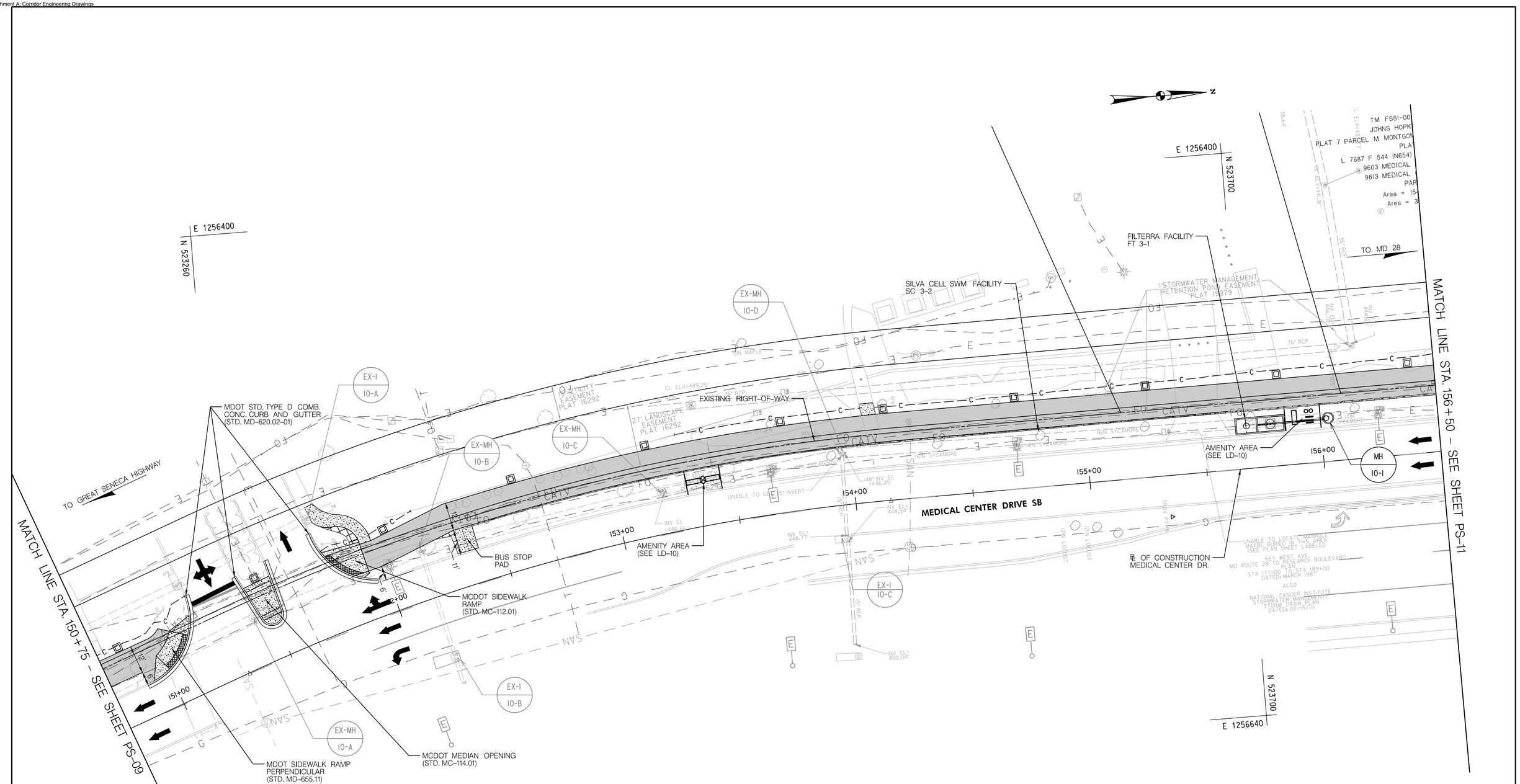

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
- GRAVEL-STONE DUST WALKWAY
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- FINE MILLING AND OVERLAY (GT-01 DETAIL E)
- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-10

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 17 of 87

PLOTTED: 11/7/2022
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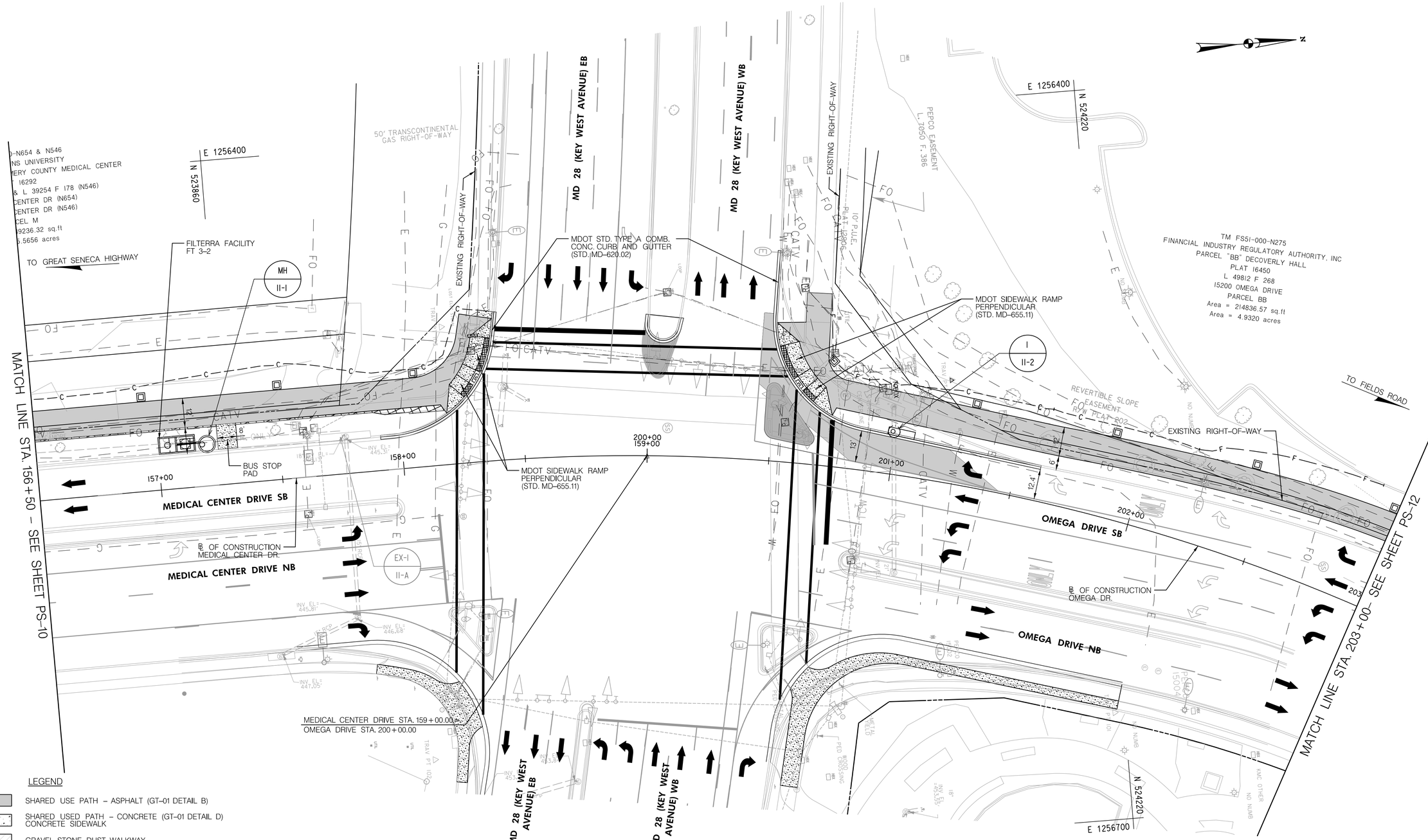

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
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- FULL DEPTH PAVEMENT (GT-01 DETAIL C)
- FINE MILLING AND OVERLAY (GT-01 DETAIL E)
- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-11

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 18 of 87

PLOTTED: 11/17/2022
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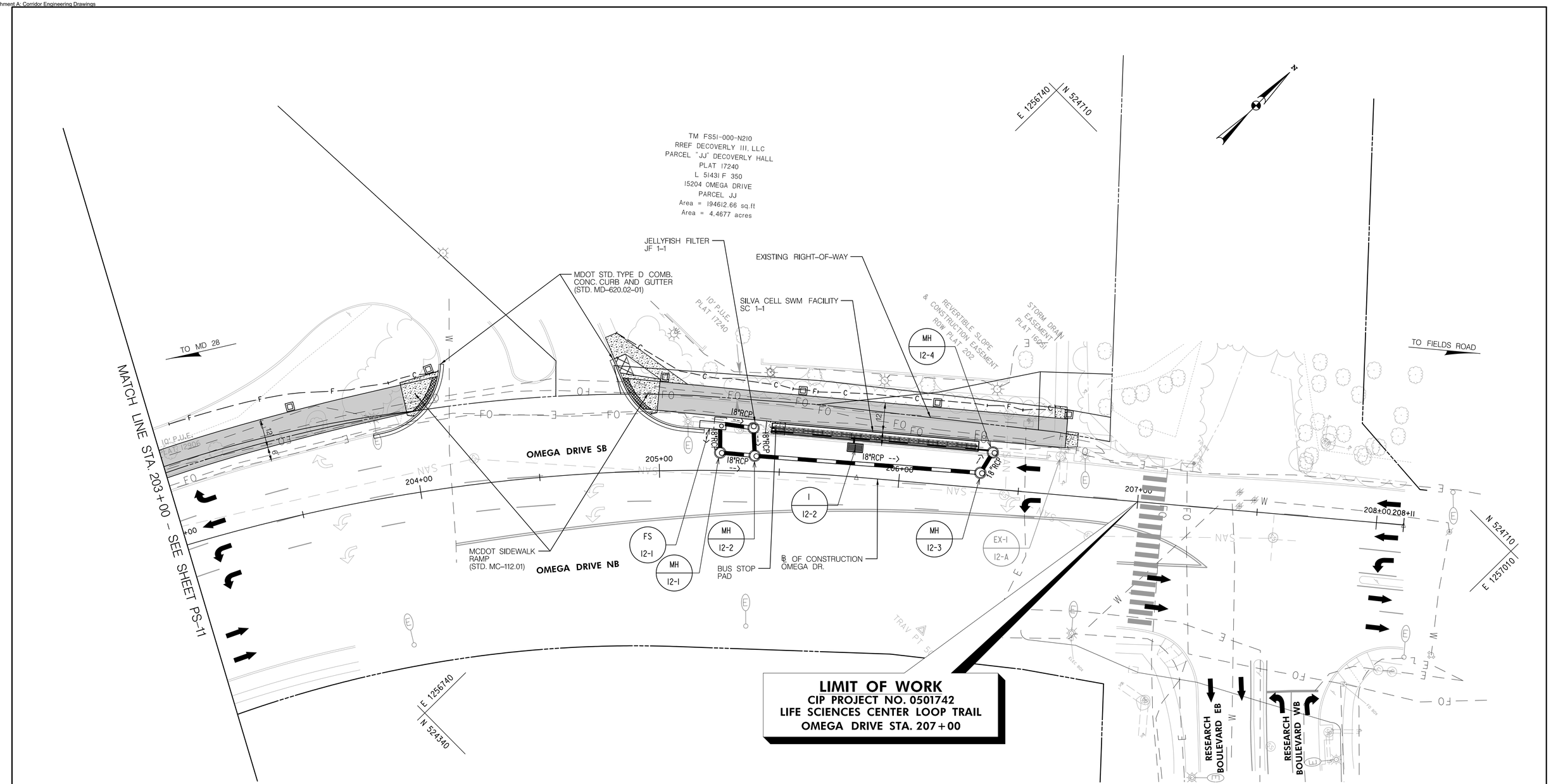

LEGEND

- SHARED USE PATH – ASPHALT (GT-01 DETAIL B)
- SHARED USED PATH – CONCRETE (GT-01 DETAIL D) CONCRETE SIDEWALK
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT (GT-01 DETAIL C)
- FINE MILLING AND OVERLAY (GT-01 DETAIL E)
- PAVEMENT REMOVAL
- DETECTABLE WARNING SURFACE
- TRAFFIC FLOW ARROW
- SILVA CELL SWM FACILITY

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
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
ROADWAY PLAN SHEET

SCALE : 1" = 20' DATE: NOVEMBER 2022 PS-12

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 19 of 87

PLOTTED: 11/7/2022
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GENERAL NOTES FOR MAINTENANCE OF TRAFFIC

(1) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MONTGOMERY COUNTY, MDOT SHA WORK ZONE TRAFFIC CONTROL STANDARDS, THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - 2011 EDITION (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.

(20) TRAFFIC CONTROL DEVICES AND OTHER CONSTRUCTION MATERIALS SHALL NOT INTRUDE INTO THE USABLE WIDTH OF THE SIDEWALK, TEMPORARY PATHWAY, OR OTHER PEDESTRIAN FACILITY.

(21) WHERE A SIDEWALK IS CLOSED DURING CONSTRUCTION, THE CONTRACTOR SHALL INSTALL A BARRIER ACROSS THE FULL WIDTH OF THE SIDEWALK APPROACHING THE CLOSURE. THIS BARRIER SHALL BE DETECTABLE BY A VISUALLY IMPAIRED INDIVIDUAL TRAVELING WITH THE AID OF A CANE.

(22) WHERE SIDEWALK INTERSECTS A TEMPORARY CONSTRUCTION ACCESS, THE CONTRACTOR SHALL PROVIDE AN ADA COMPLIANT PEDESTRIAN CROSSING THROUGH THE TEMPORARY CONSTRUCTION ACCESS.

(23) THE CONTRACTOR SHALL FOLLOW STANDARD NOS. MD 104.06-09A AND 104.06-09C TO MAINTAIN PEDESTRIAN ACCESS THROUGH THE SITE AND SHALL DO SIDEWALK IMPROVEMENTS TO ONE SIDE OF THE ROAD AT A TIME.

(24) THE CONTRACTOR SHALL MAINTAIN ACCESS/ EGRESS FOR ALL EMERGENCY VEHICLES.

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
MAINTENANCE OF TRAFFIC
GENERAL NOTES

SCALE : NTS DATE: NOVEMBER 2022 MT-01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 20 of 87

PLOTTED: 11/17/2022
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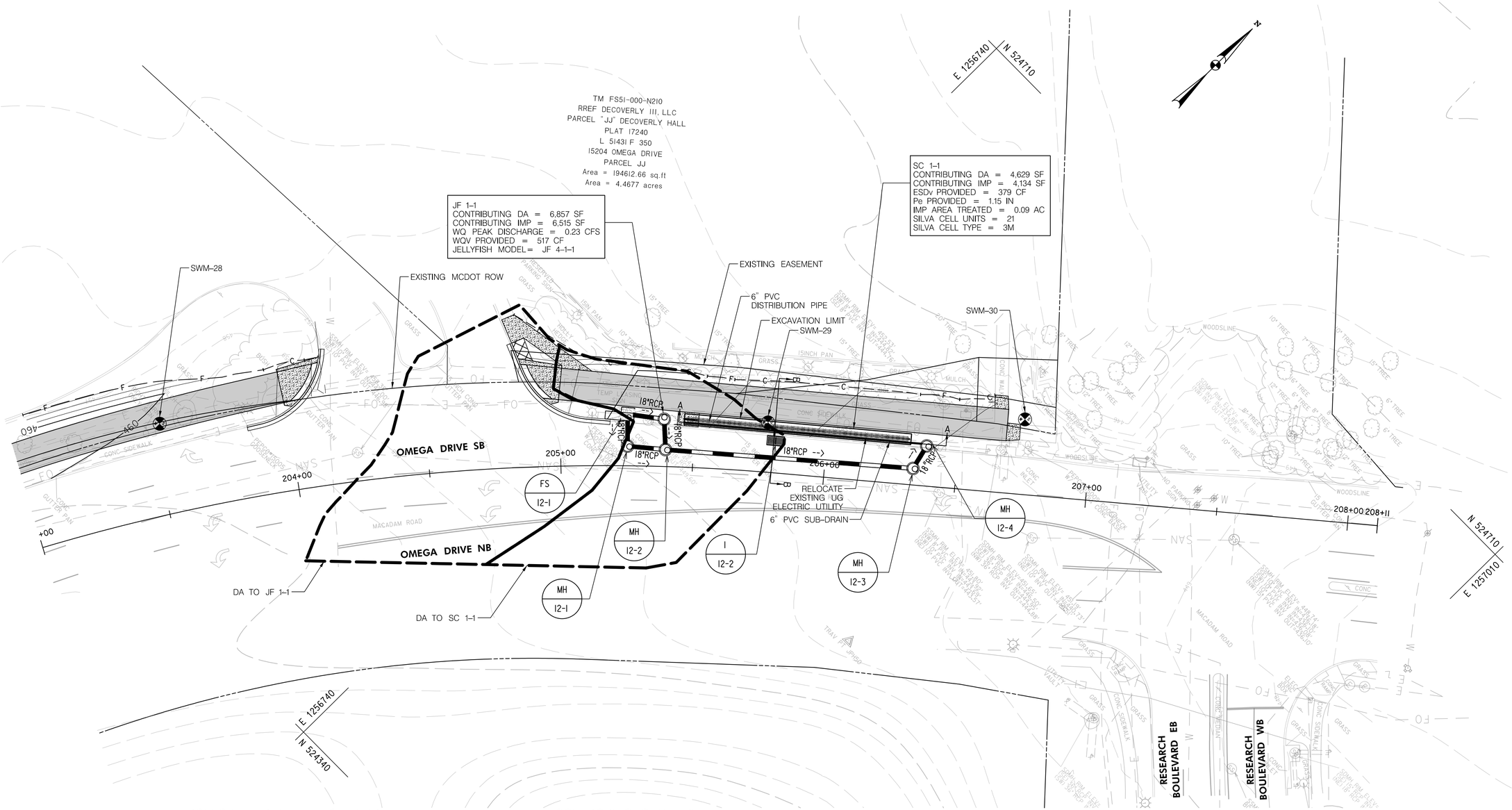

POI 1 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)	CPV REMAINING (CF)	CH. 3 TREATMENT PROVIDED (CF)
788	379	233	517

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-28	N/A	2.44
SWM-29	N/A	8.06
SWM-30	N/A	0.13

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PLAN
POI 1

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-01

DPS SC/SWM PERMIT SHEET NO. 2 of 21

C.I.P. Project No. : 0501742 21 of 87

PLOTTED: 11/7/2022
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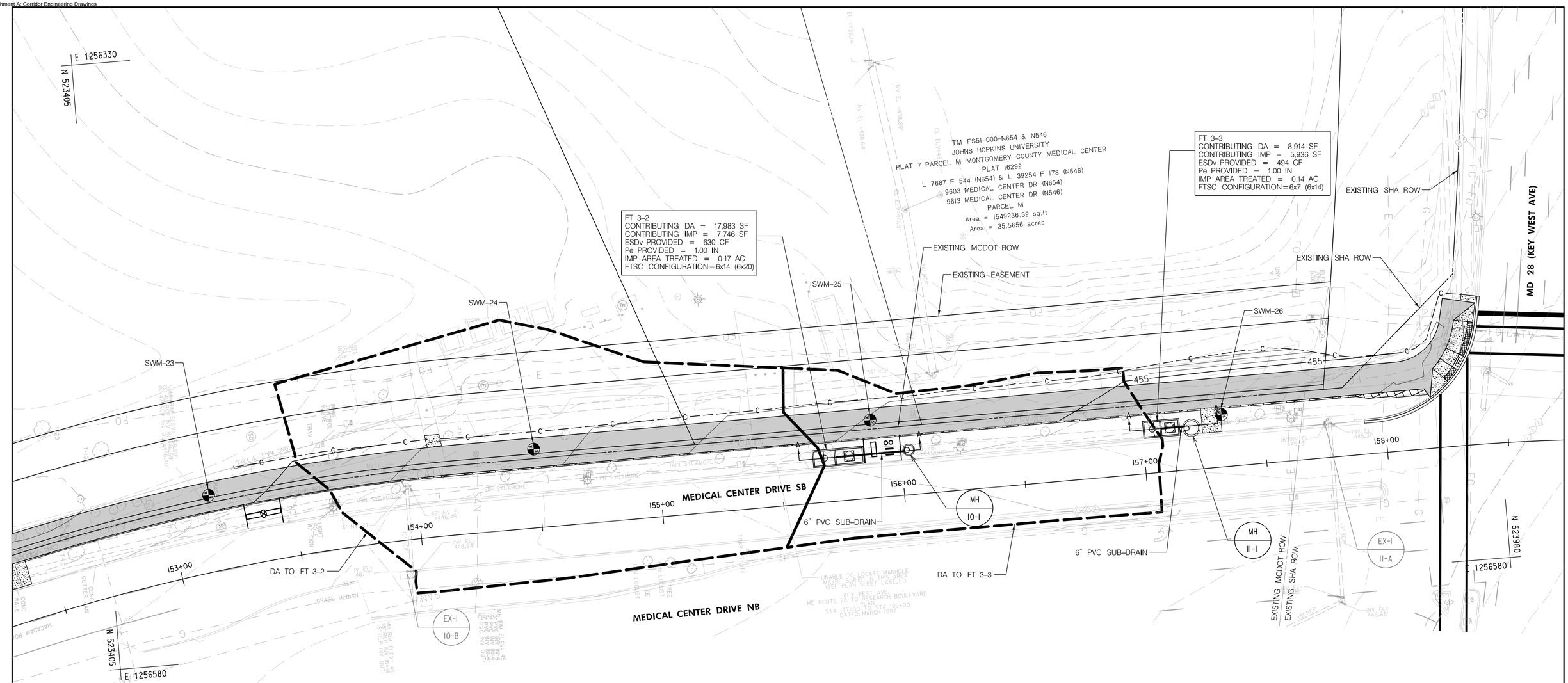

POI 3 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,503	4,534*

*1,031 CF EXCESS TREATMENT COMPENSATES FOR 1,007 CF REQUIREMENT IN POI 2 AND 9 CF REQUIREMENT IN LOI 1.

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-23	N/A	1.00
SWM-24	N/A	0.67
SWM-25	N/A	0.17
SWM-26	N/A	0.25

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PLAN
POI 3

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-02

DPS SC/SWM PERMIT SHEET NO. 3 of 21
C.I.P. Project No. : 0501742 22 of 87

PLOTTED: 11/17/2022
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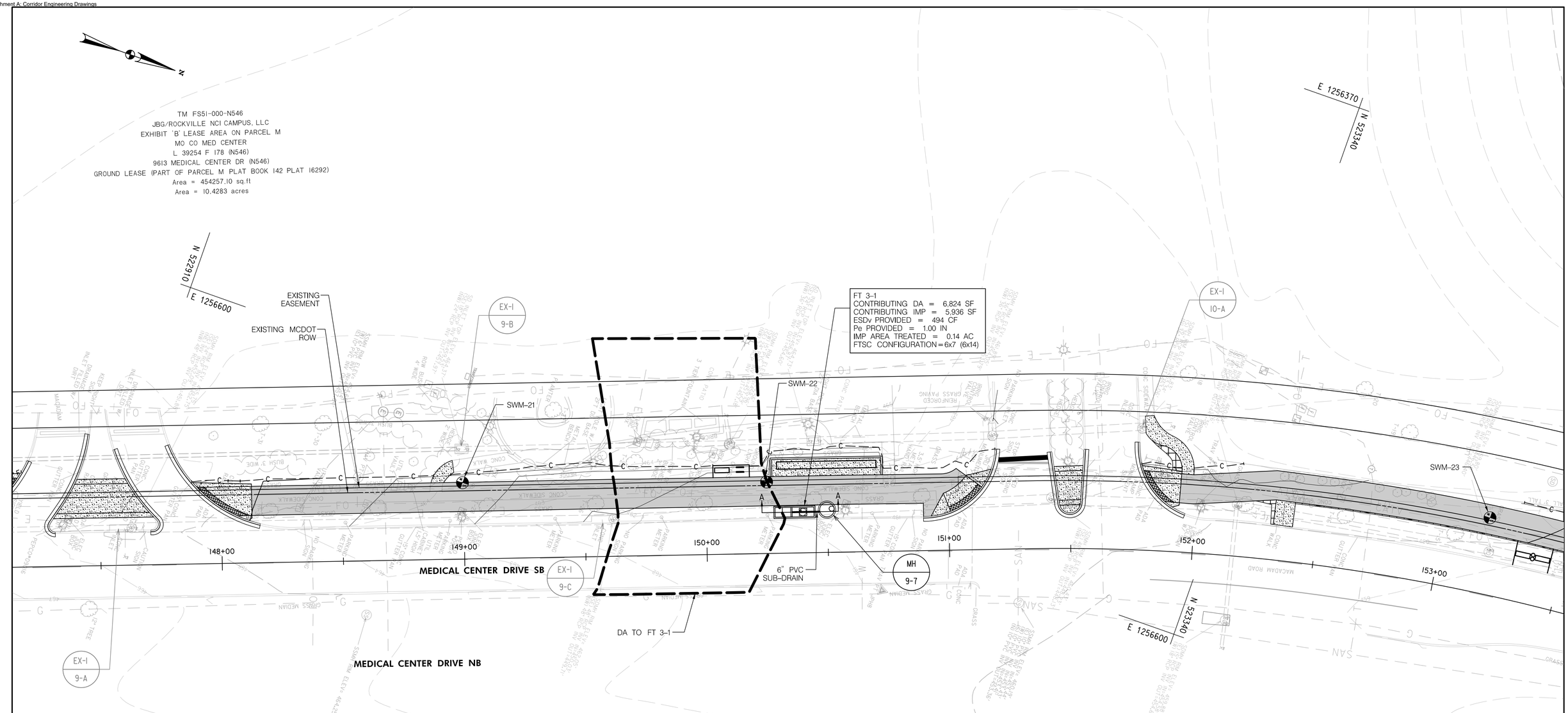

POI 3 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,503	4,534*

*1,031 CF EXCESS TREATMENT COMPENSATES FOR 1,007 CF REQUIREMENT IN POI 2 AND 9 CF REQUIREMENT IN LOI 1.

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-21	N/A	0.13
SWM-22	N/A	0.13
SWM-23	N/A	1.00

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

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

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 3, CONT.

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-03

DPS SC/SWM PERMIT SHEET NO. 4 of 21

C.I.P. Project No. : 0501742 23 of 87

PLOTTED: 11/7/2022
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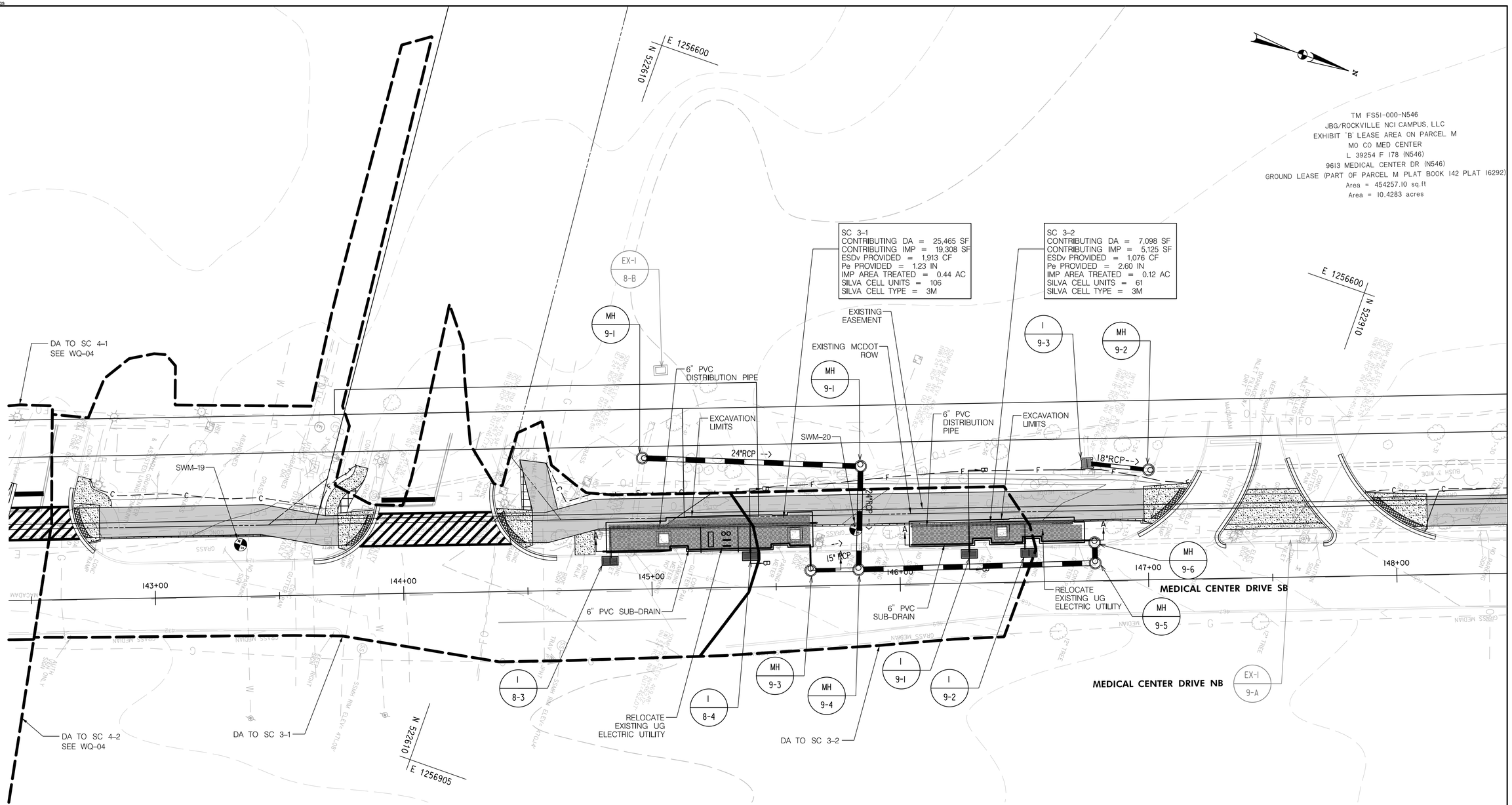

POI 3 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,503	4,534*

*1,031 CF EXCESS TREATMENT COMPENSATES FOR 1,007 CF REQUIREMENT IN POI 2 AND 9 CF REQUIREMENT IN LOI 1.

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-19	N/A	7.00
SWM-20	N/A	0.13

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 3, CONT.

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-04

DPS SC/SWM PERMIT SHEET NO. 5 of 21

C.I.P. Project No. : 0501742 24 of 87

PLOTTED: 11/12/2022
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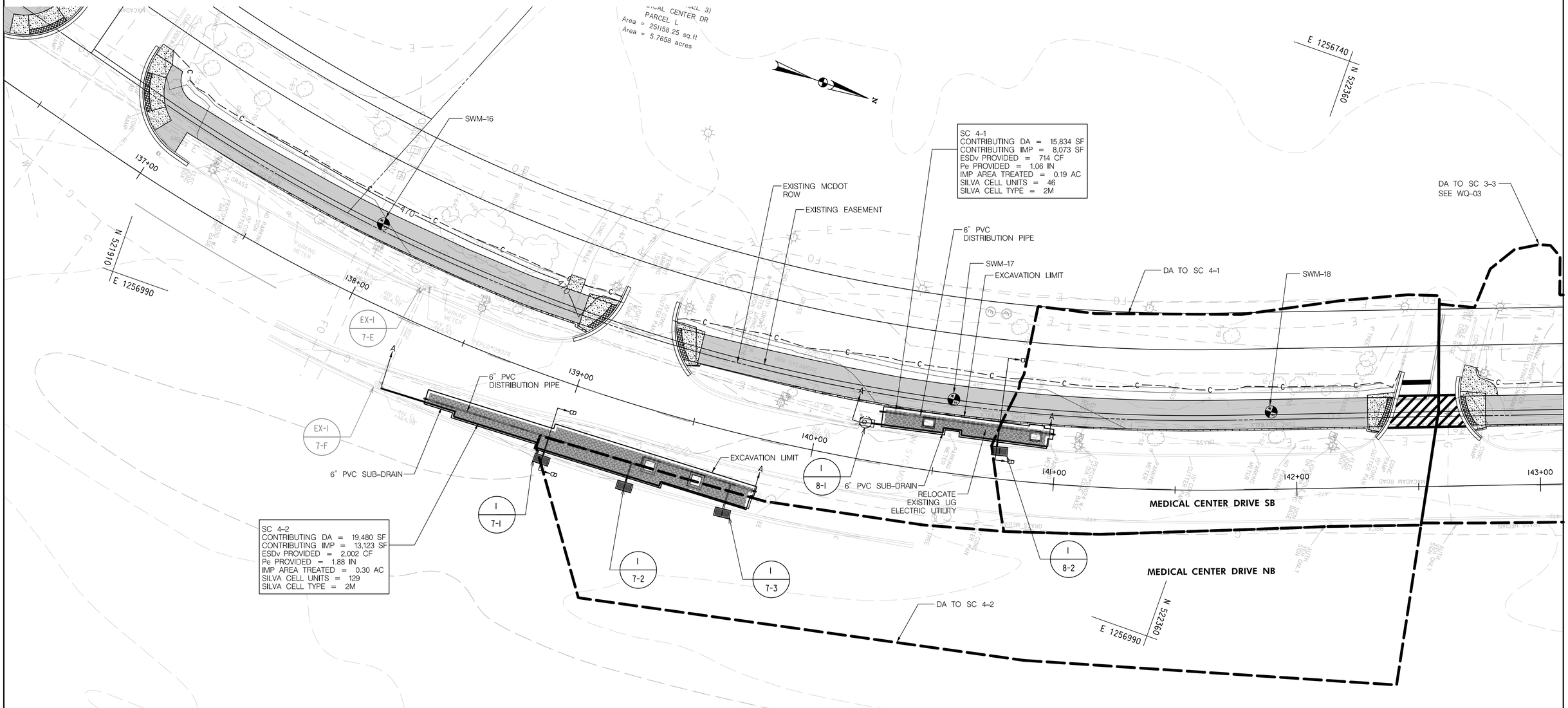

POI 4 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
2,663	2,716

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM–16	N/A	0.44
SWM–17	N/A	6.88
SWM–18	N/A	3.06

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL–STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT–OF–WAY
- EXISTING EASEMENT

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 4

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW–05

DPS SC/SWM PERMIT SHEET NO. 6 of 21

C.I.P. Project No. : 0501742 25 of 87

PLOTTED: 11/17/2022
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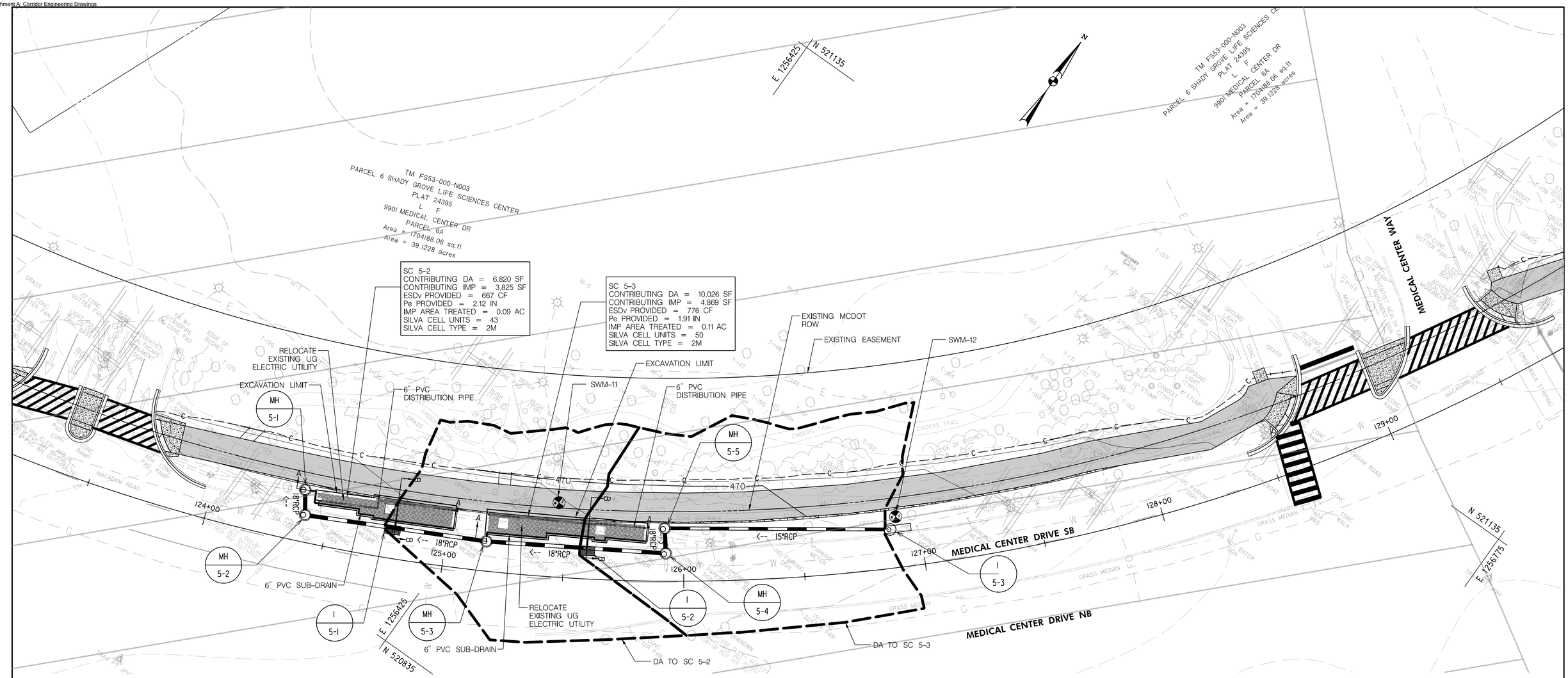

POI 5 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,033	3,173

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-11	N/A	1.19
SWM-12	N/A	0.25

NOTE: POI 5 IS WITHIN PINEY BRANCH SPECIAL PROTECTION AREA.

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PLAN
POI 5

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-06

DPS SC/SWM PERMIT SHEET NO. 7 of 21

C.I.P. Project No. : 0501742 26 of 87

PLOTTED: 11/7/2022
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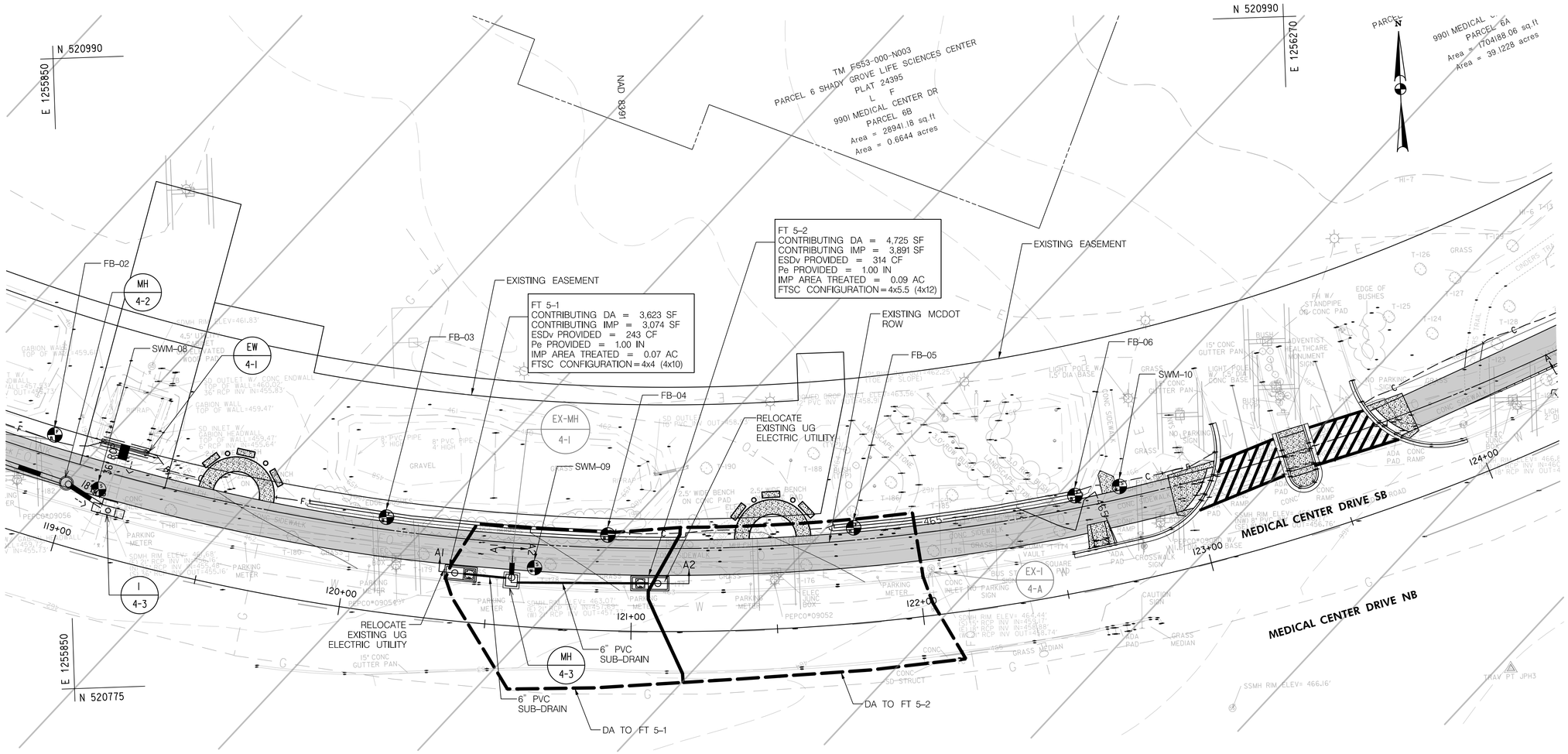

POI 5 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,033	3,173

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-08	N/A	0.00
SWM-09	N/A	0.12
SWM-10	N/A	0.06
FB-02	N/A	N/A
FB-03	N/A	N/A
FB-04	N/A	N/A
FB-05	450.5	N/A
FB-06	N/A	N/A

NOTE: POI 5 IS WITHIN PINEY BRANCH SPECIAL PROTECTION AREA.

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

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

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 5, CONT.

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-07

DPS SC/SWM PERMIT SHEET NO. 8 of 21

C.I.P. Project No. : 0501742 27 of 87

PLOTTED: 11/17/2022
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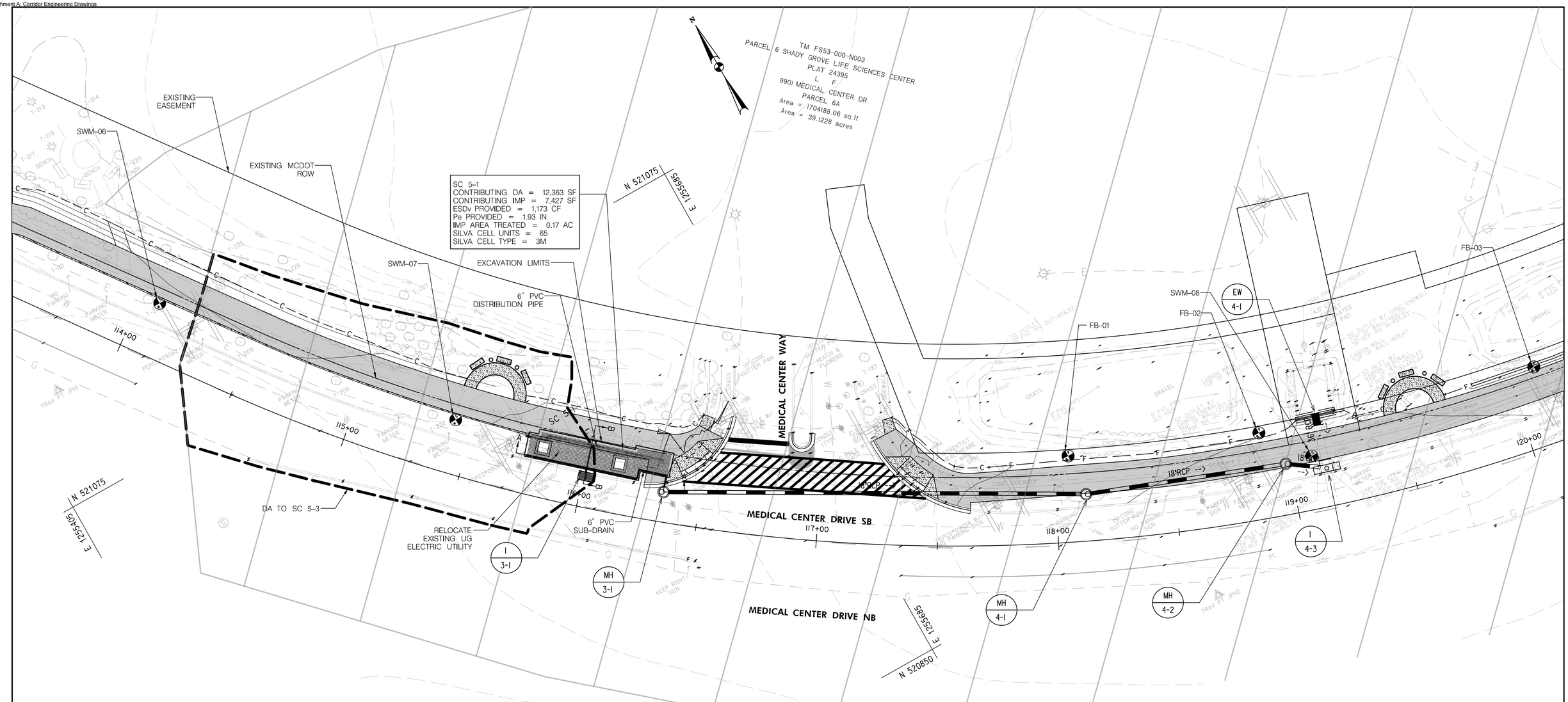

NOTE: POI 5 IS WITHIN PINEY BRANCH SPECIAL PROTECTION AREA.

POI 5 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
3,033	3,173

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-06	N/A	6.60
SWM-07	N/A	0.96
SWM-08	N/A	0.00
FB-01	N/A	N/A
FB-02	N/A	N/A
FB-03	N/A	N/A

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 5, CONT.

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-08

DPS SC/SWM PERMIT SHEET NO. 9 of 21

C.I.P. Project No. : 0501742 28 of 87

PLOTTED: 11/7/2022
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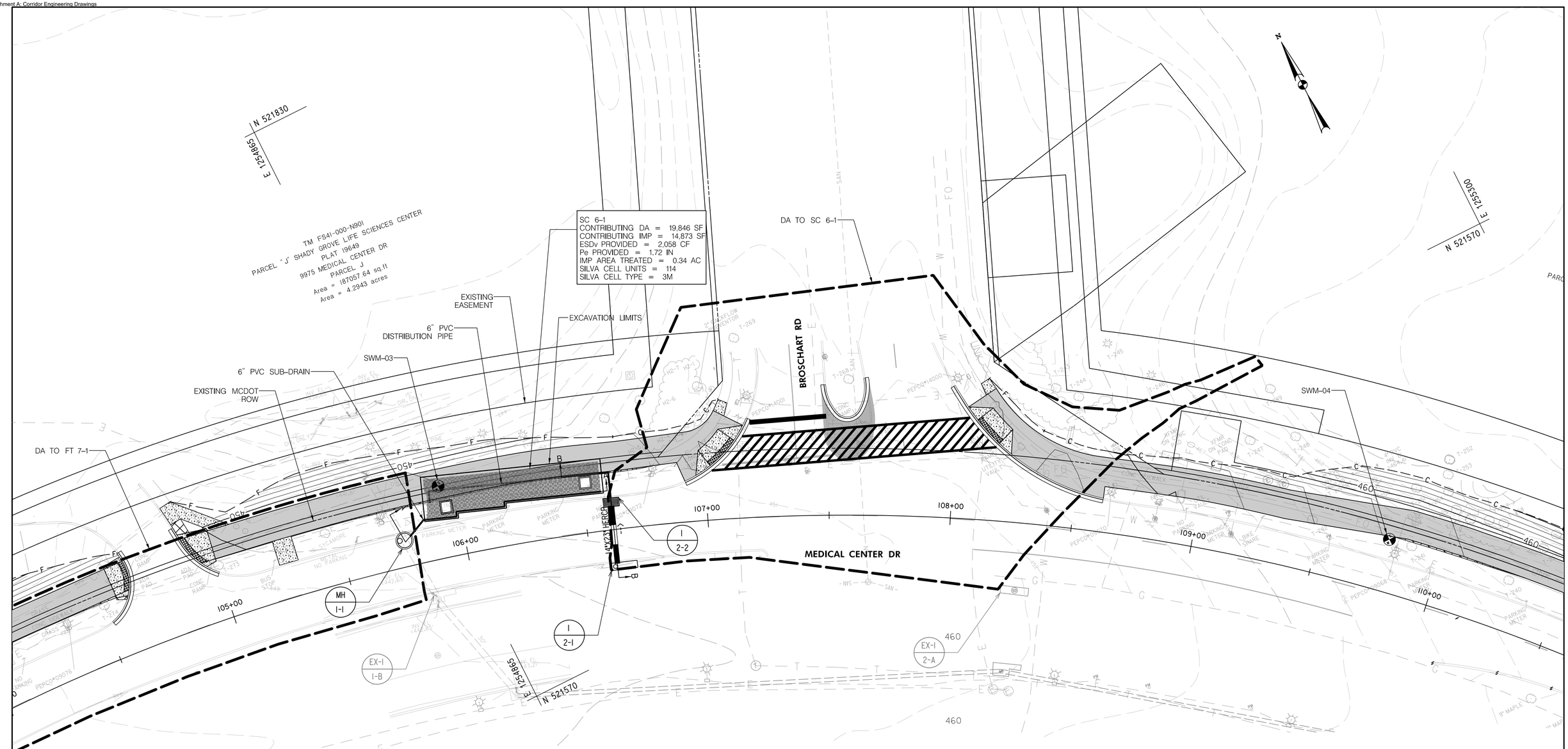

POI 6 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
1,781	2,058

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM-03	442.4	0.19
SWM-04	N/A	1.14

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL-STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

STORMWATER MANAGEMENT PLAN
POI 6

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-09

DPS SC/SWM PERMIT SHEET NO. 10 of 21

C.I.P. Project No. : 0501742 29 of 87

PLOTTED: 11/12/2022
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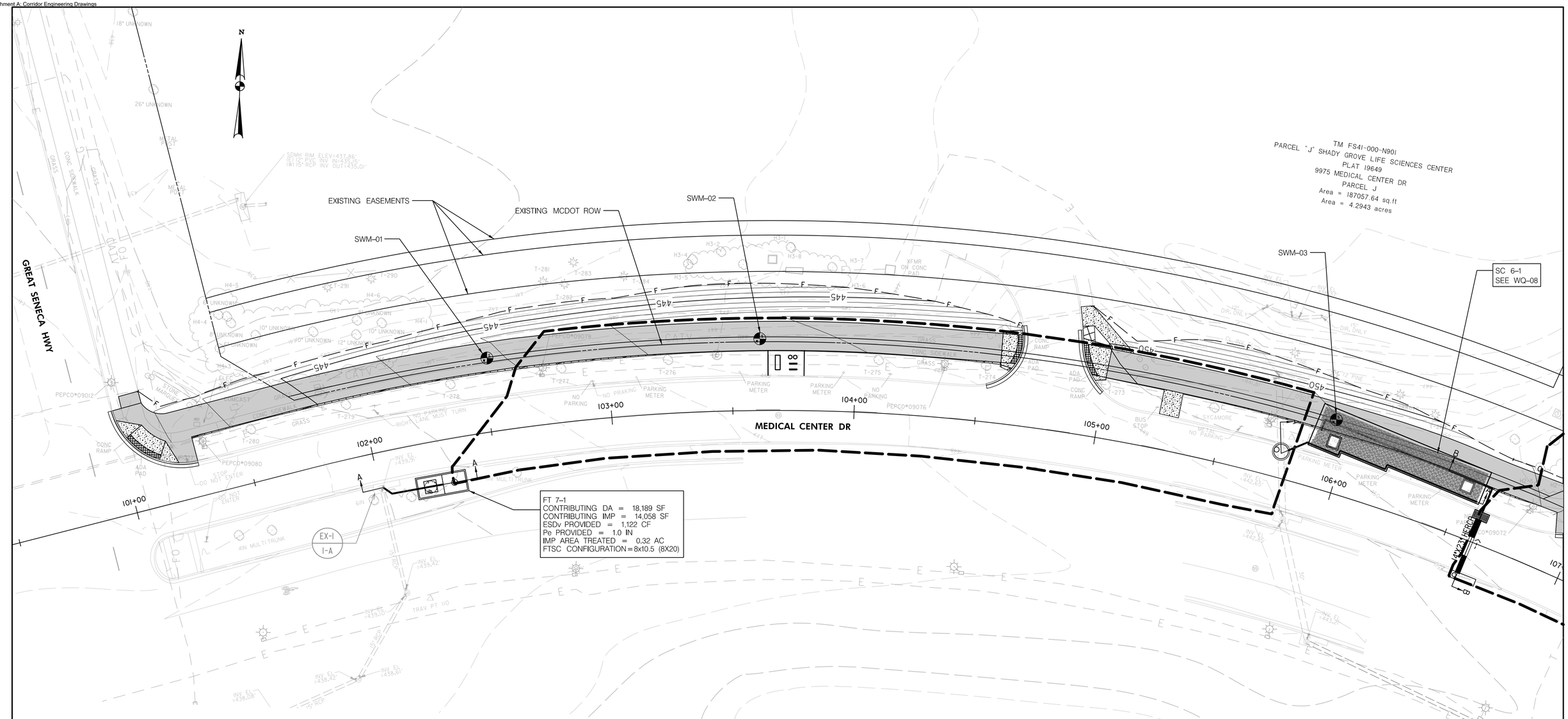

POI 7 SWM TREATMENT SUMMARY

ESDv REQUIRED (CF)	ESDv PROVIDED (CF)
1,781	2,058

SOIL BORING SUMMARY

SOIL BORING ID	GW ELEVATION	INFILTRATION RATE (IN/HR)
SWM–01	N/A	0.06
SWM–02	N/A	0.12
SWM–03	442.4	0.19

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

LEGEND

- SHARED USE PATH – ASPHALT
- SHARED USED PATH – CONCRETE
- GRAVEL–STONE DUST WALKWAY
- FULL DEPTH PAVEMENT
- FINE MILLING AND OVERLAY
- PAVEMENT REMOVAL
- DRAINAGE AREA
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING RIGHT–OF–WAY
- EXISTING EASEMENT

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PLAN
POI 7

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW–10

DPS SC/SWM PERMIT SHEET NO. 11 of 21

C.I.P. Project No. : 0501742 30 of 87

PLOTTED: 11/7/2022
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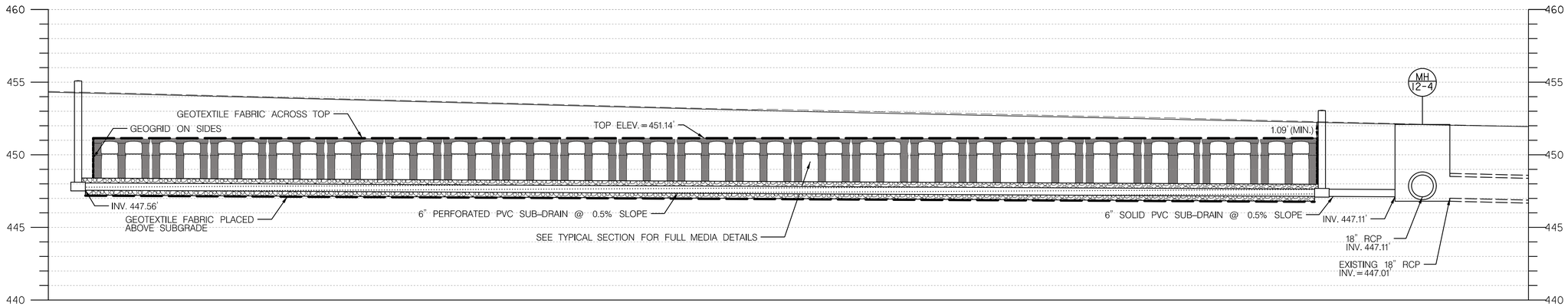
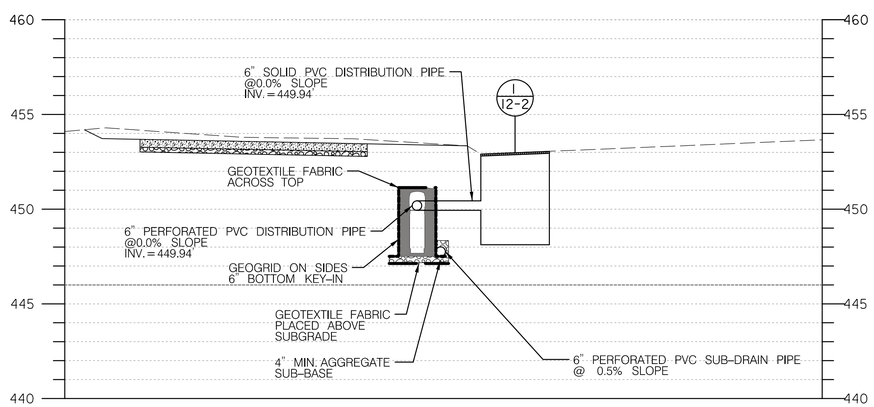
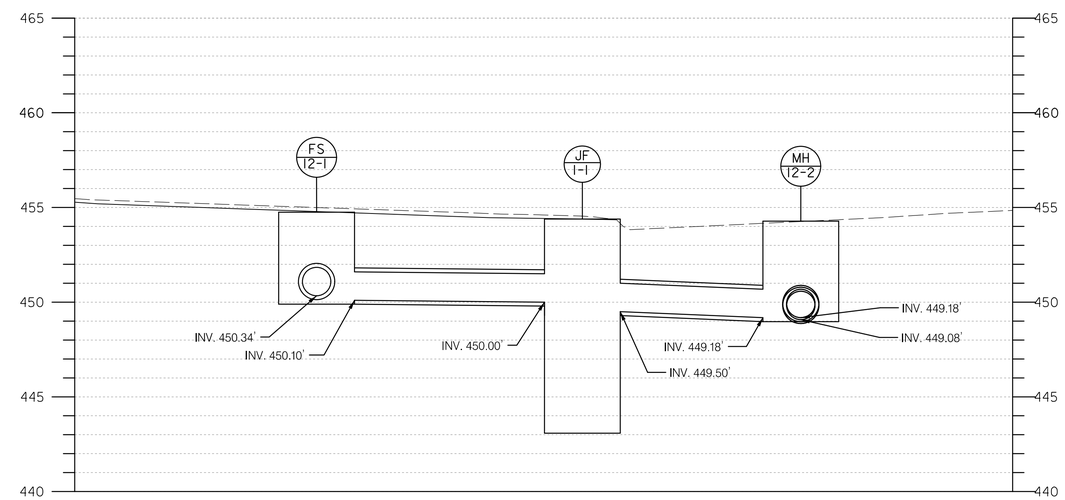


SILVA CELL 1–1 SECTION A–A
SCALE: 1" = 4'



SILVA CELL 1–1 SECTION B–B
SCALE: 1" = 4'



JELLYFISH FILTER 1–1 PROFILE
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

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GAITHERSBURG, MARYLAND

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Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW–11

DPS SC/SWM PERMIT SHEET NO. 12 of 21

C.I.P. Project No. : 0501742 31 of 87

PLOTTED: 11/7/2022
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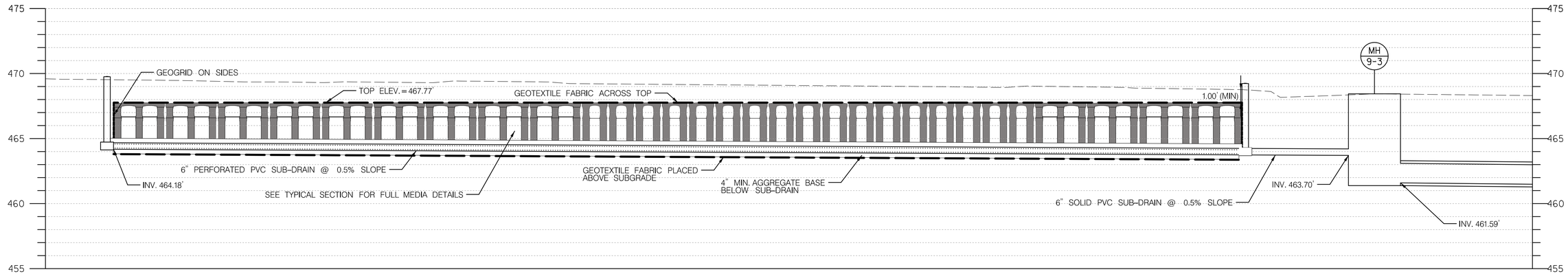
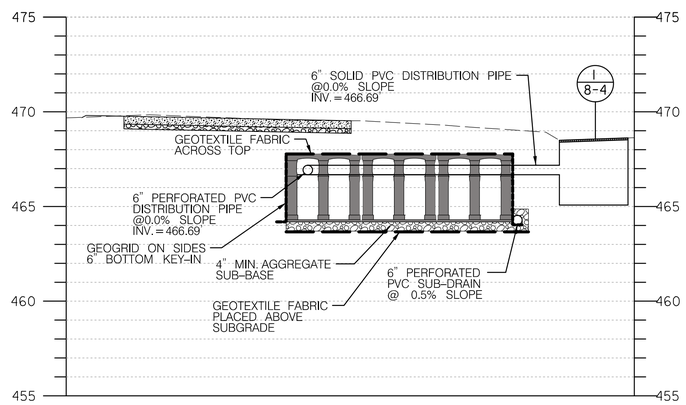
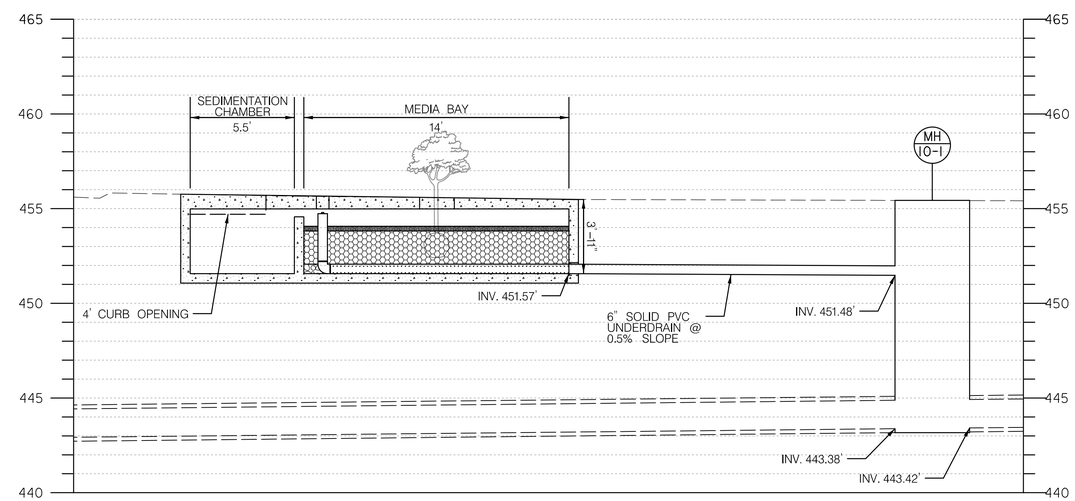


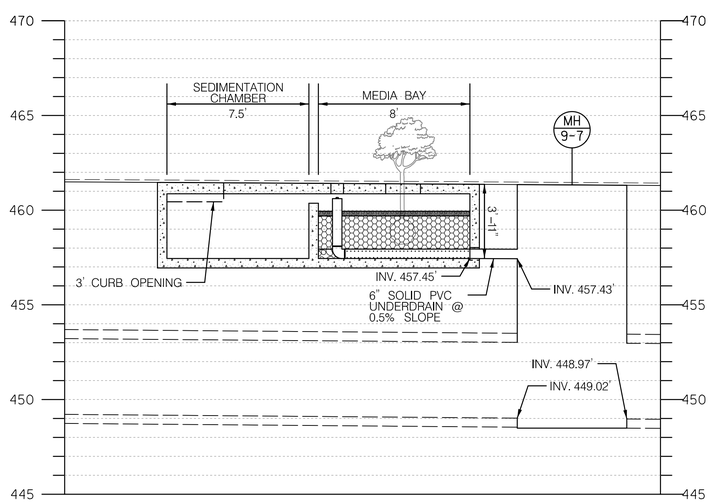
SILVA CELL 3-1 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 3-1 SECTION B-B
SCALE: 1" = 4'



FILTERRA 3-2 PROFILE A-A
SCALE: 1" = 4'



FILTERRA 3-1 PROFILE
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-12

DPS SC/SWM PERMIT SHEET NO. 13 of 21

C.I.P. Project No. : 0501742 32 of 87

PLOTTED: 11/7/2022
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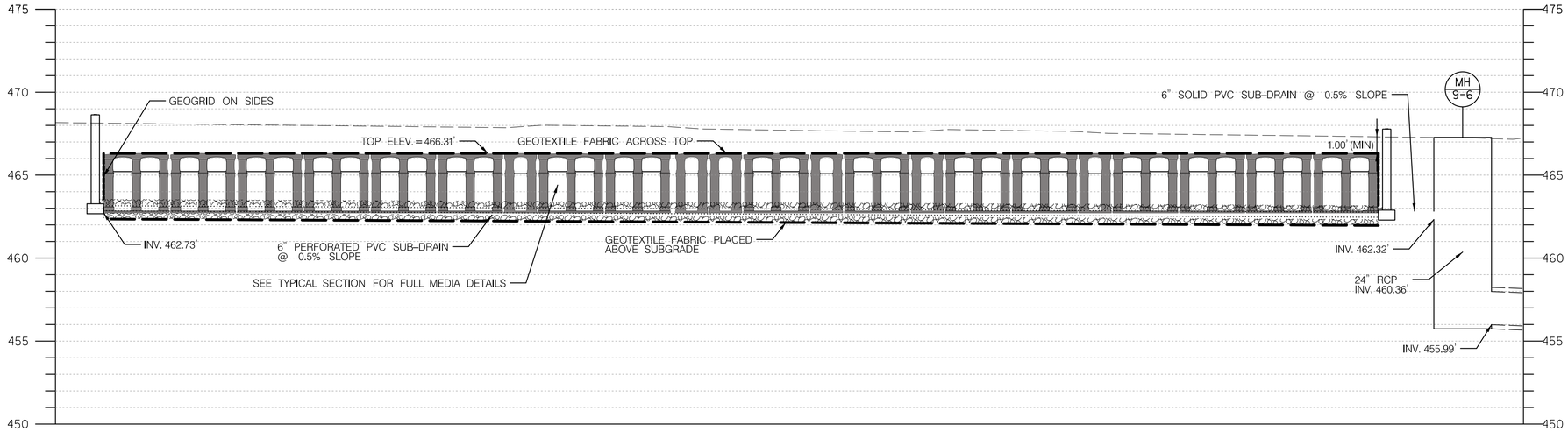
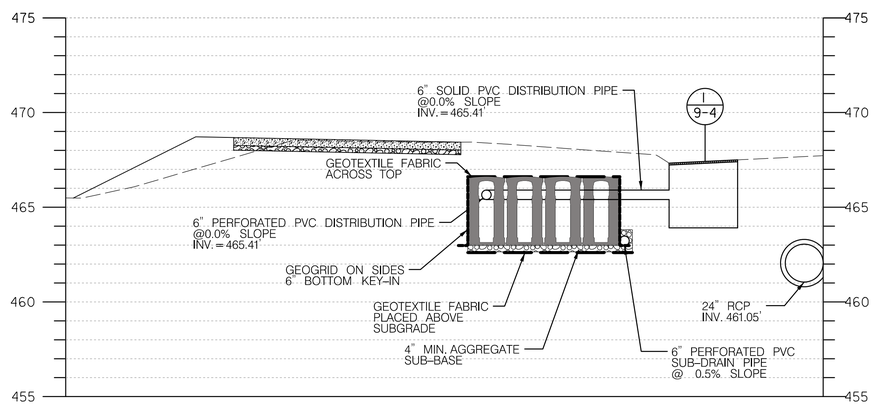
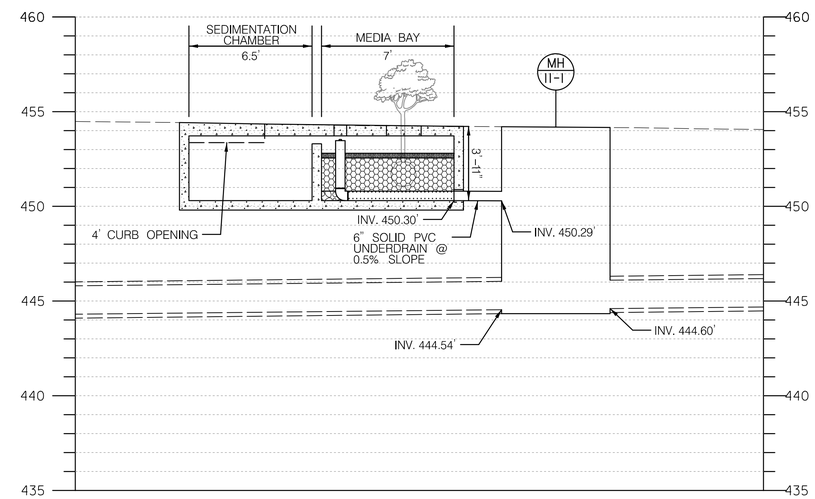


SILVA CELL 3-2 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 3-2 SECTION B-B
SCALE: 1" = 4'



FILTERRA 3-3 PROFILE A-A
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

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APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-13

DPS SC/SWM PERMIT SHEET NO. 14 of 21

C.I.P. Project No. : 0501742 33 of 87

PLOTTED: 11/17/2022
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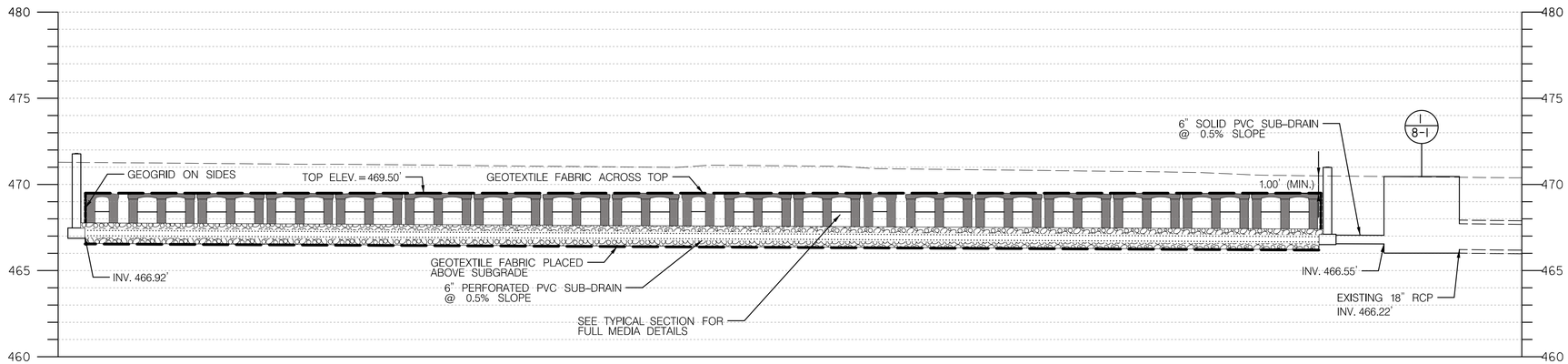
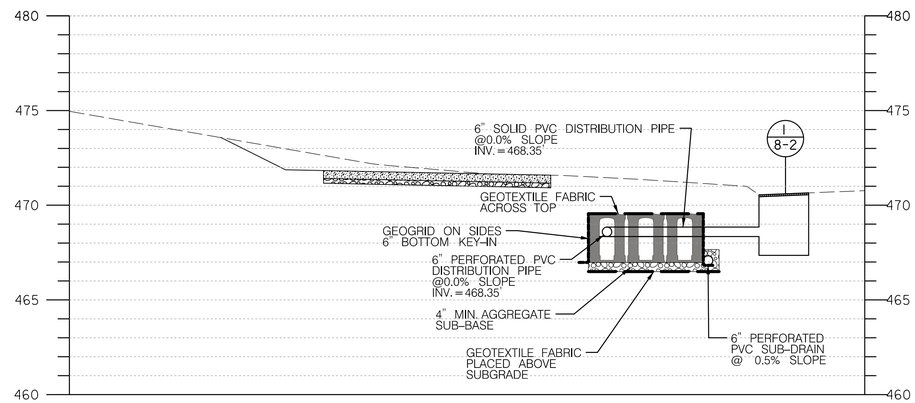


SILVA CELL 4-1 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 4-1 SECTION B-B
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-14

DPS SC/SWM PERMIT SHEET NO. 15 of 21

C.I.P. Project No. : 0501742 34 of 87

PLOTTED: 11/7/2022
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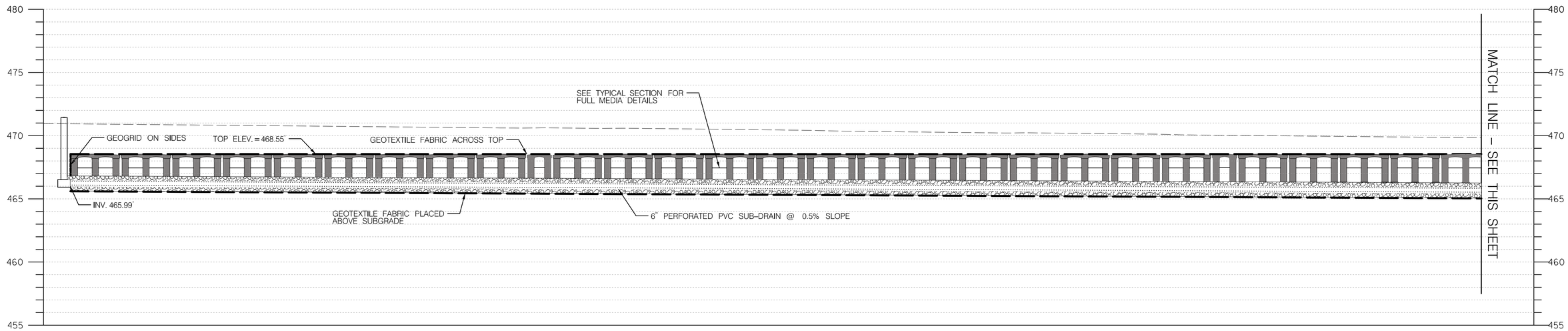
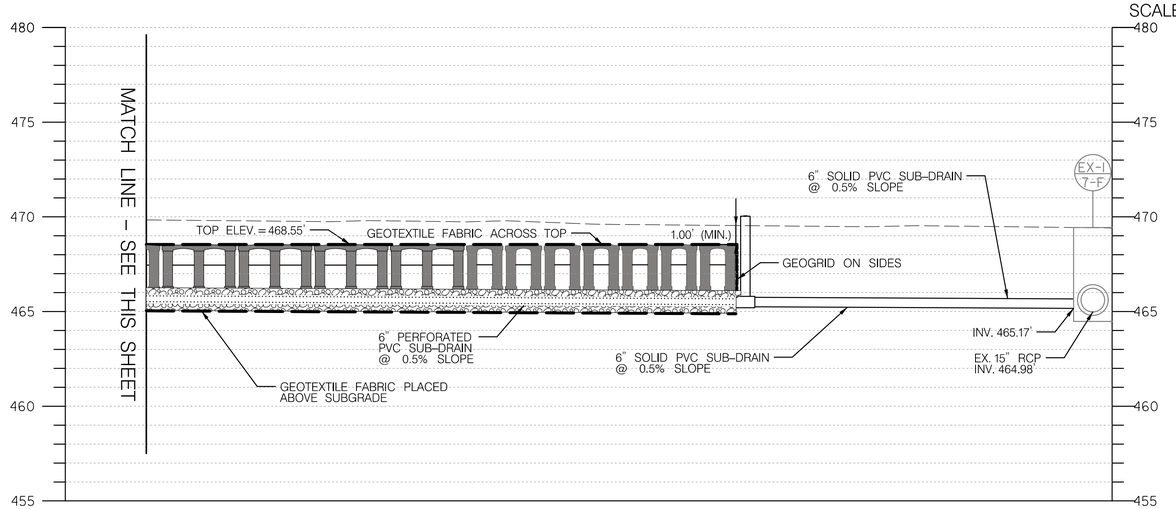
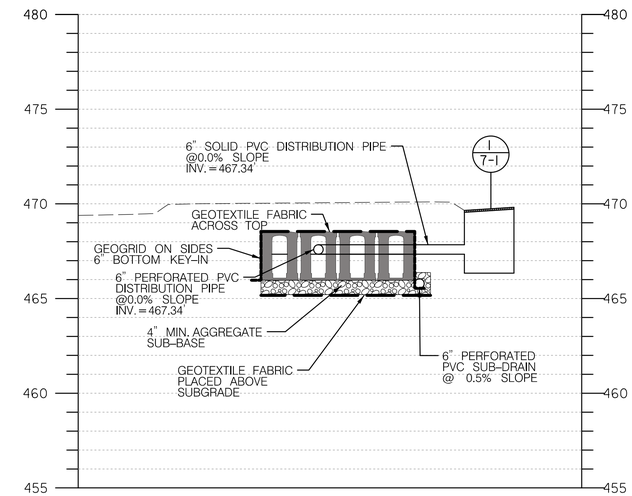


SILVA CELL 4-2 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 4-2 PROFILE A-A, CONTINUED
SCALE: 1" = 4'



SILVA CELL 4-2 SECTION B-B
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-15

DPS SC/SWM PERMIT SHEET NO. 16 of 21

C.I.P. Project No. : 0501742 35 of 87

PLOTTED: 11/17/2022
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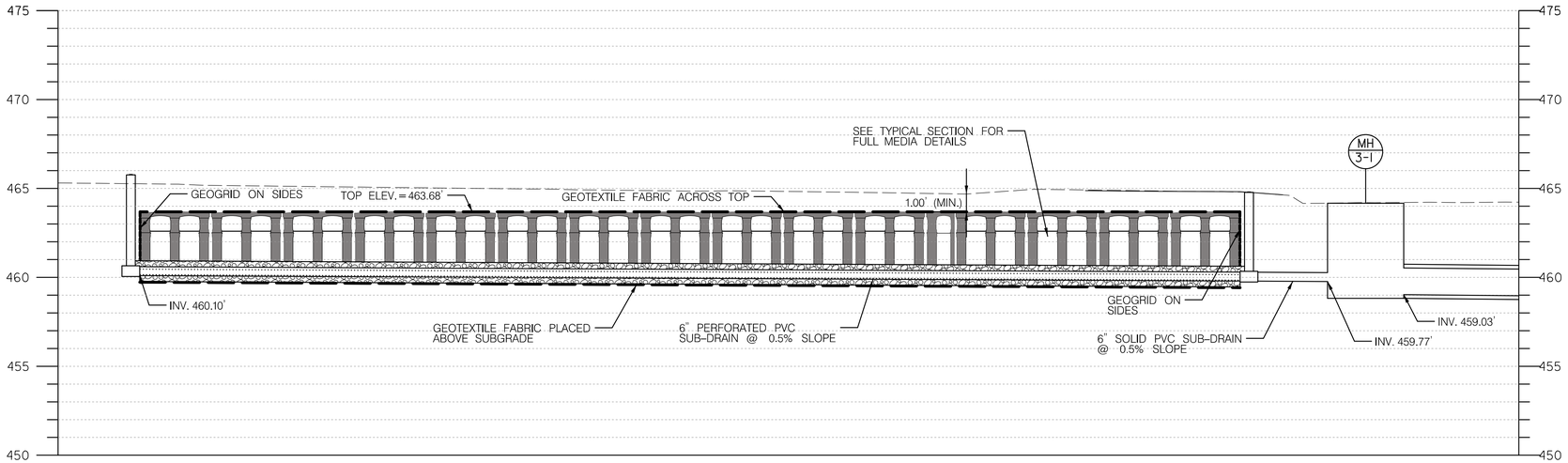
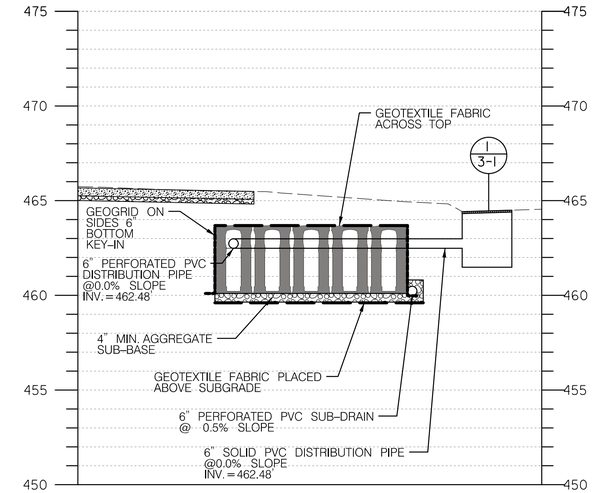
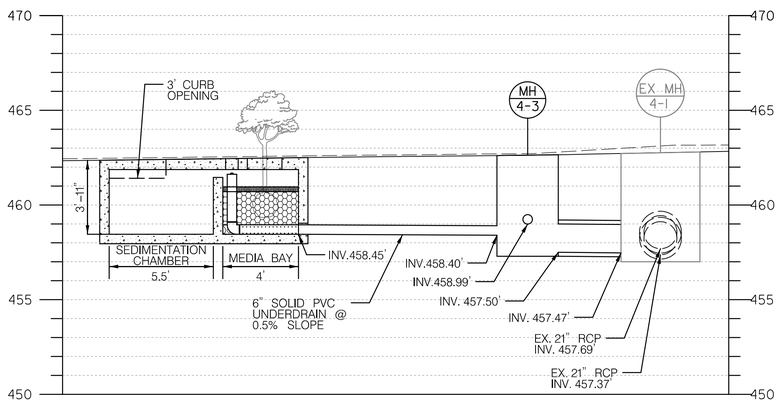


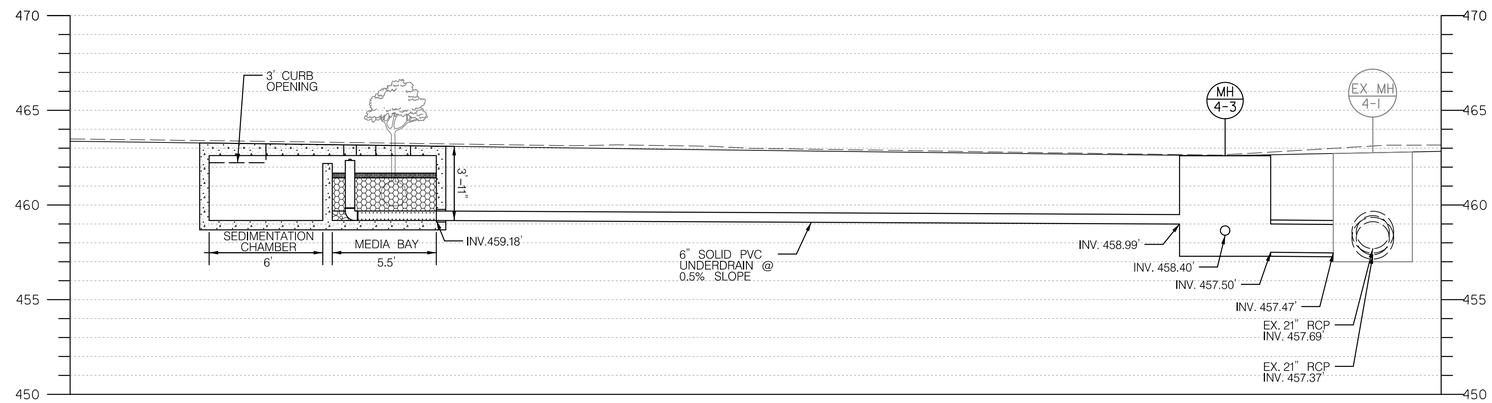
SILVA CELL 5-1 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 5-1 SECTION B-B
SCALE: 1" = 4'



FILTERRA 5-1 PROFILE A1-A1
SCALE: 1" = 4'



FILTERRA 5-2 PROFILE A2-A2
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-16

DPS SC/SWM PERMIT SHEET NO. 17 of 21

C.I.P. Project No. : 0501742 36 of 87

PLOTTED: 11/7/2022
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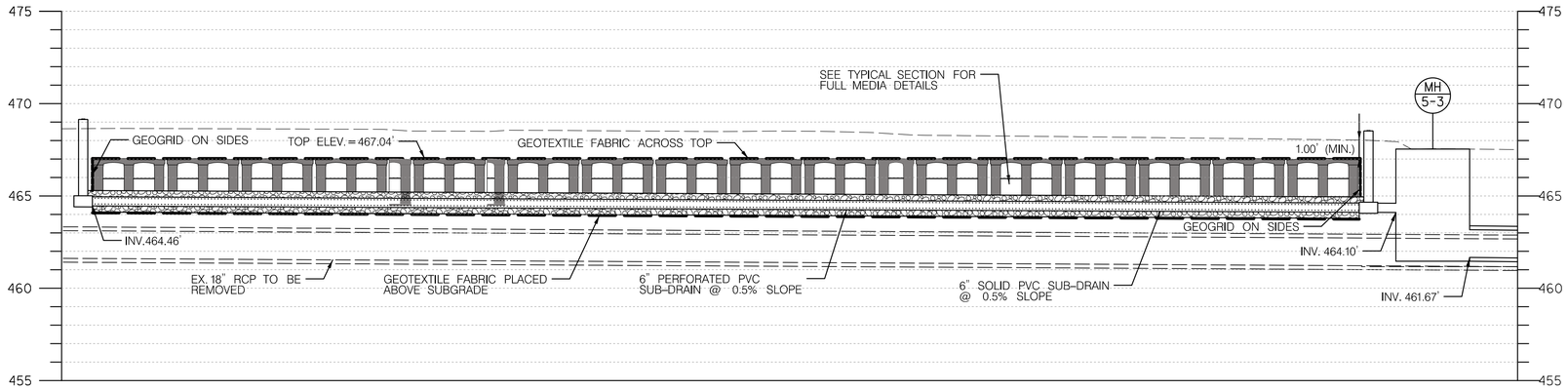
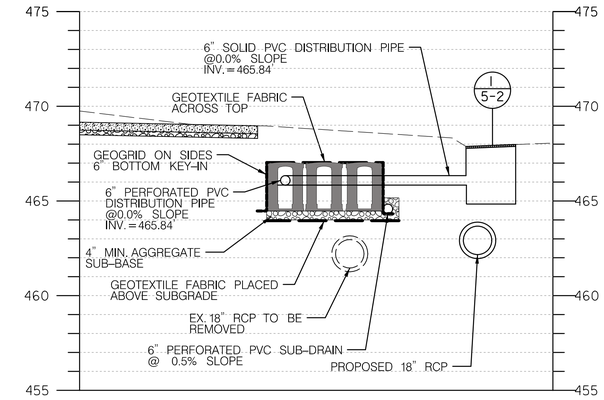
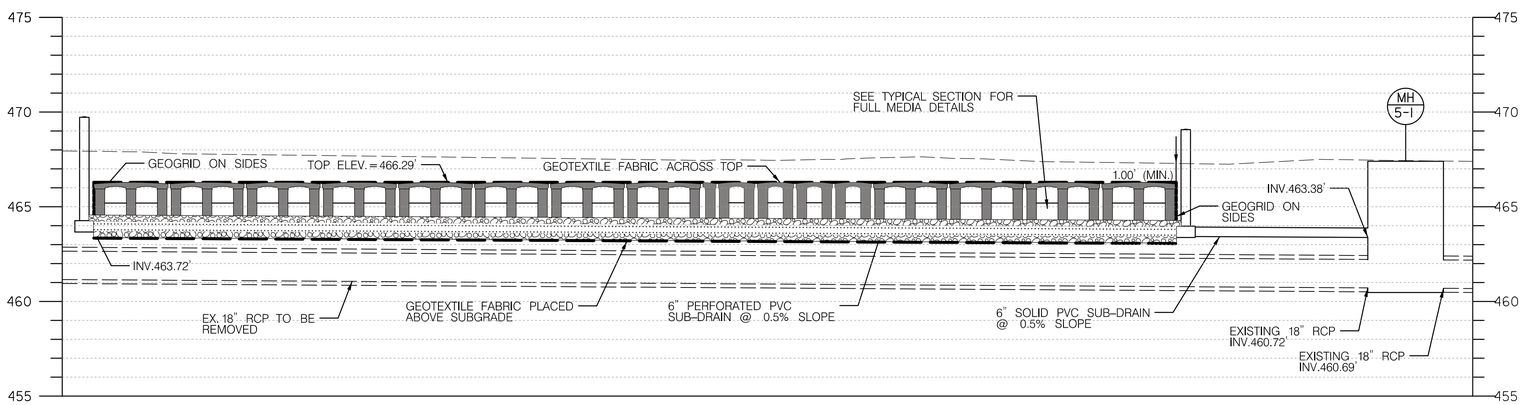


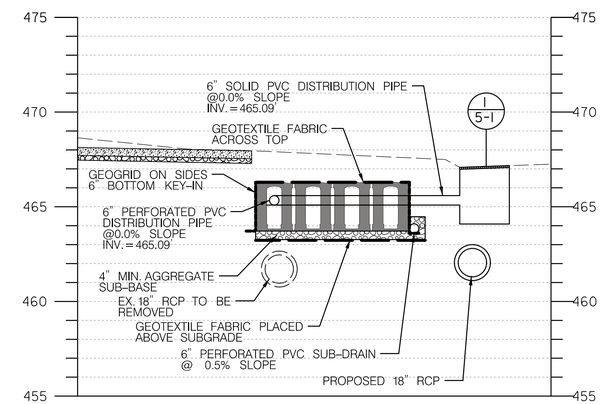
SILVA CELL 5-3 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 5-3 SECTION B-B
SCALE: 1" = 4'



SILVA CELL 5-2 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 5-2 SECTION B-B
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-17

DPS SC/SWM PERMIT SHEET NO. 18 of 21

C.I.P. Project No. : 0501742 37 of 87

PLOTTED: 11/7/2022
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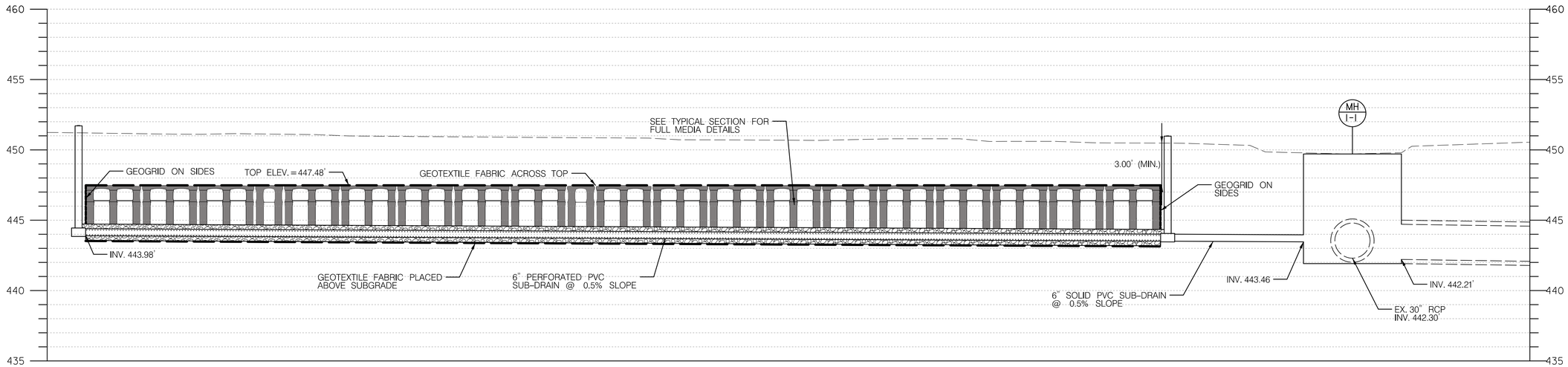
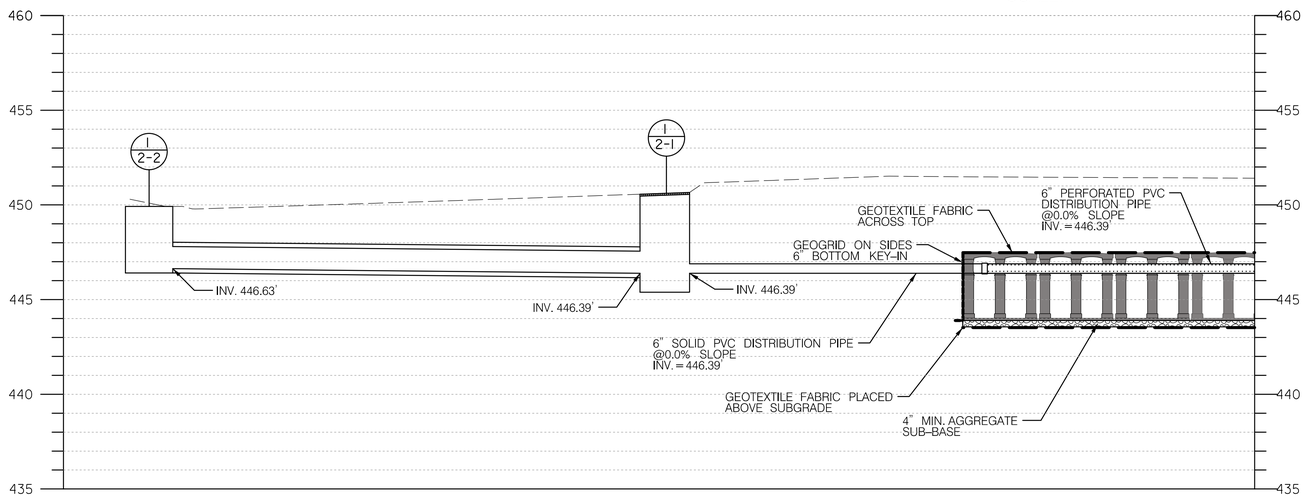
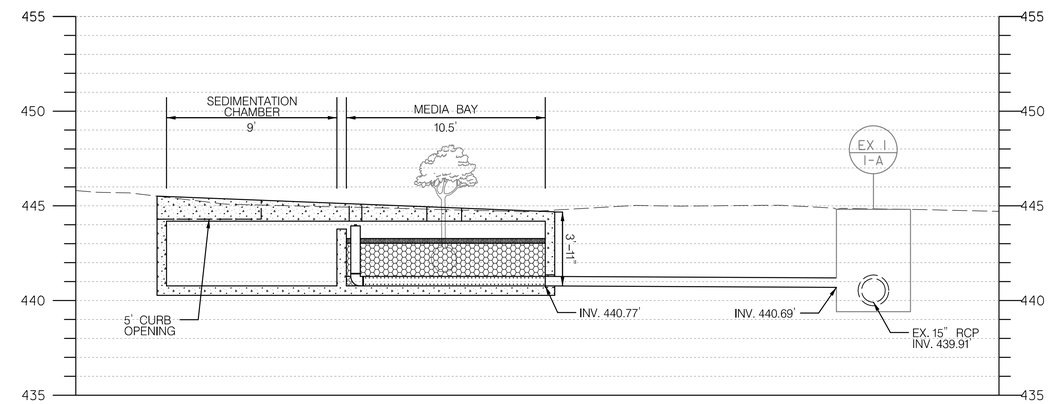


SILVA CELL 6-1 PROFILE A-A
SCALE: 1" = 4'



SILVA CELL 6-1 SECTION B-B
SCALE: 1" = 4'



FILTERRA 7-1 PROFILE
SCALE: 1" = 4'

NOTE:
SEE WQ SHEETS FOR LOCATIONS OF PROFILE AND SECTION CUTS.

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT PROFILES

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-18

DPS SC/SWM PERMIT SHEET NO. 19 of 21

C.I.P. Project No. : 0501742 38 of 87

PLOTTED: 11/17/2022
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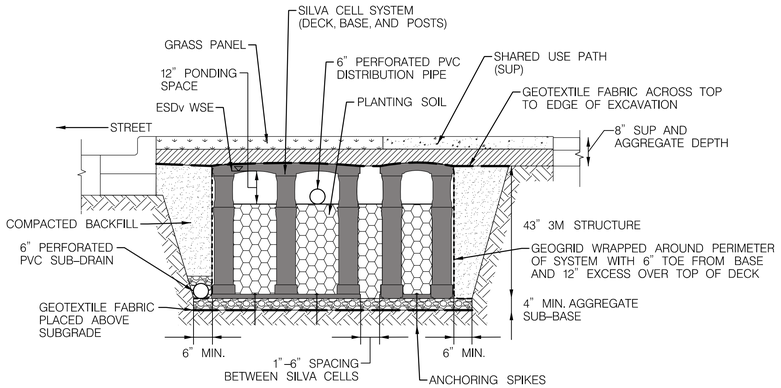
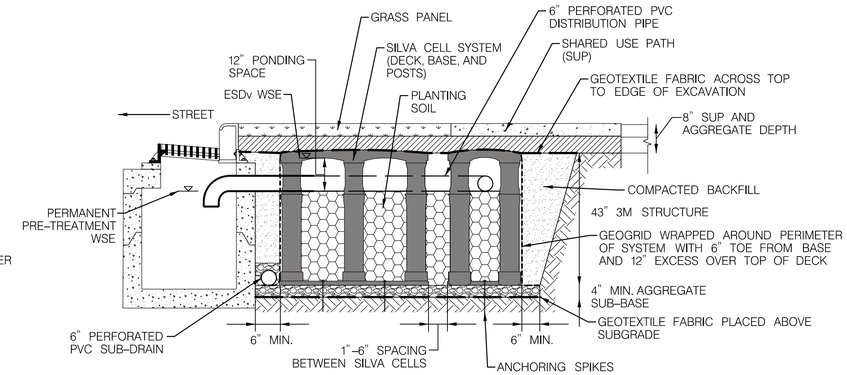
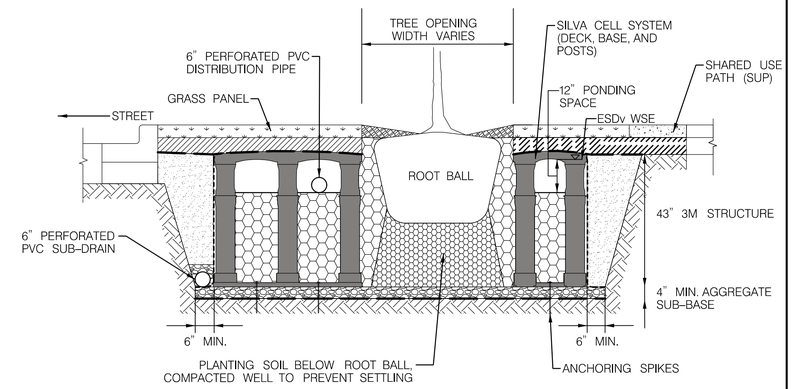


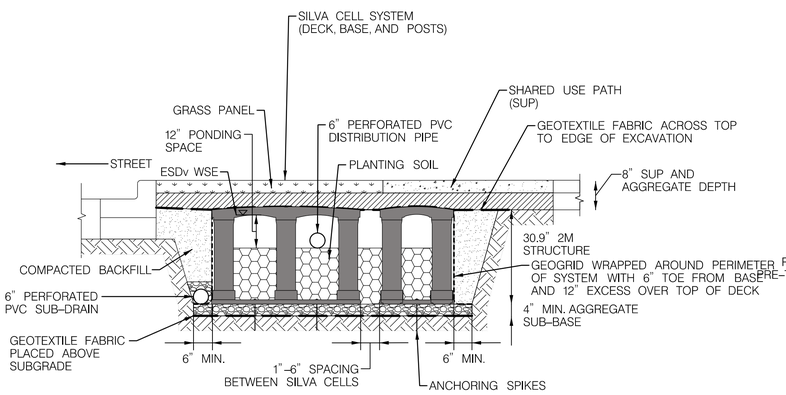
3M SILVA CELL TYPICAL SECTION (THROUGH CURB SECTION)
SCALE: NTS



3M SILVA CELL TYPICAL SECTION (THROUGH INLET SECTION)
SCALE: NTS



3M SILVA CELL TYPICAL SECTION (THROUGH TREE OPENING)
SCALE: NTS



2M SILVA CELL TYPICAL SECTION (THROUGH CURB SECTION)
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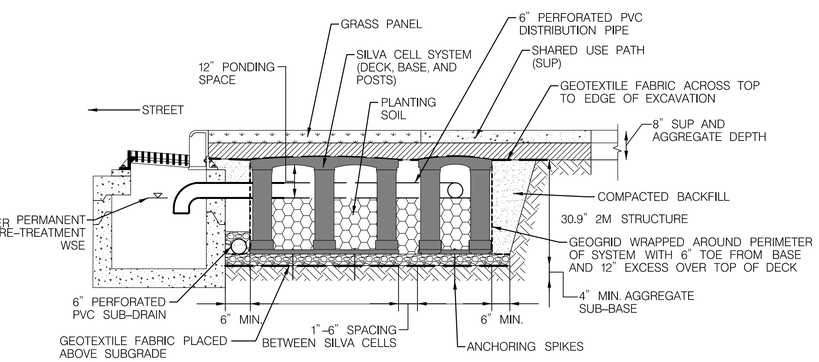
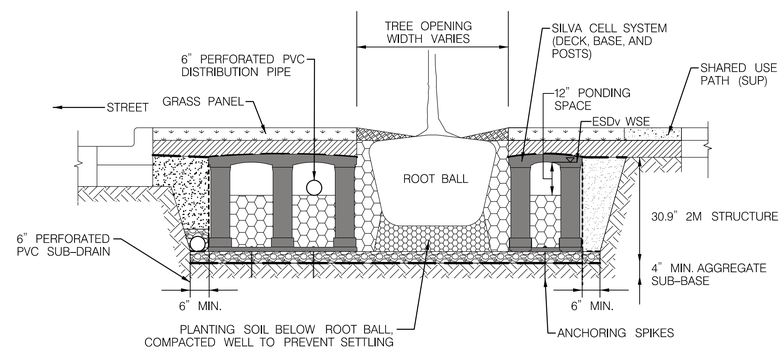


2M SILVA CELL TYPICAL SECTION (THROUGH INLET SECTION)
SCALE: NTS



2M SILVA CELL TYPICAL SECTION (THROUGH TREE OPENING)
SCALE: NTS

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT DETAILS

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-19

DPS SC/SWM PERMIT SHEET NO. 20 of 21

C.I.P. Project No. : 0501742 39 of 87

PLOTTED: 11/12/2022
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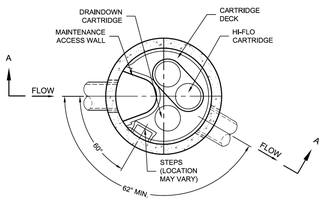
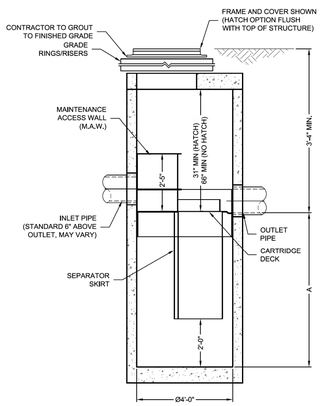


PLAN VIEW



SECTION A-A

Jellyfish® Filter

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 8,287,728; 8,221,618 & US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

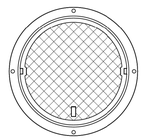
JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø48" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 0.45 CFS. IF THE SITE CONDITIONS EXCEED 0.45 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-3"	4'-2"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
MAX. CARTS HIGH-FLO / DRAINDOWN	2 / 1			

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



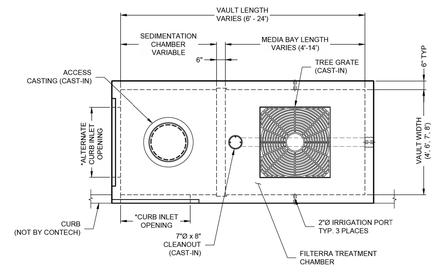
HATCH
(Ø36" CAST INTO SLAB)
N.T.S.

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

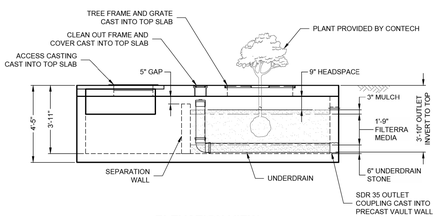
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

JELLYFISH JF4
STANDARD DETAIL
OFFLINE CONFIGURATION



*CURB INLET OPENING LENGTH BY VAULT WIDTH:
4' VAULT WIDTH: 3'-0" CURB OPENING
6' VAULT WIDTH: 4'-0" CURB OPENING
7' VAULT WIDTH: 4'-0" CURB OPENING
8' VAULT WIDTH: 5'-0" CURB OPENING

PLAN VIEW

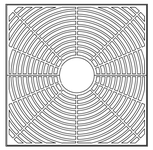


ELEVATION VIEW

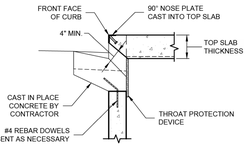
filterra

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 7,425,266; 7,425,267; 7,455,472; 7,455,473; RELATED FOREIGN PATENTS.

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE



TREE GRATE
36" x 36" OR 48" x 48"
(ACTUAL PRODUCT MAY VARY)
NOT TO SCALE



CURB INLET DETAIL
NOT TO SCALE

NOTES:
1. REQUIRED MINIMUM FILTERRA TREATMENT SURFACE AREA IS 91 SF/20,000 SF OF THE TOTAL DRAINAGE AREA PER MDE. STORAGE CAPACITY ASSUMES NO STORAGE IN MULCH, MEDIA AND STONE.
2. ALL VEGETATION PROVIDED BY CONTECH.
3. ADA COMPLIANT FULL GRATE COVERS WITH SHADE TOLERANT PLANT SPECIES AVAILABLE UPON REQUEST.
4. ALL INFORMATION IS BASED ON STANDARD 3.83' RIM TO OUTLET INVERT DEPTH. CONTACT CONTECH FOR CUSTOM SIZING IF DEPTH IS NOT 3.83'. ACCEPTABLE DEPTH IS 3.33' MIN. TO 5.00' MAX. RIM TO INVERT OUT.
5. PLEASE CONTACT YOUR CONTECH REPRESENTATIVE FOR SIZING RECOMMENDATIONS. www.conteches.com.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
7037 Ridge Road, Hanover, MD 21076
866-740-3318 410-796-5505 866-376-6511 FAX

FILTERRA SEDIMENTATION CHAMBER (FTSC)
CONFIGURATION DETAIL
MARYLAND

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
STORMWATER MANAGEMENT DETAILS

SCALE : AS SHOWN DATE: NOVEMBER 2022 SW-20

DPS SC/SWM PERMIT SHEET NO. 21 of 21

C.I.P. Project No. : 0501742 40 of 87

PLOTTED: 11/12/2022
FILE: C:\pwworking\gfpwd1\ewcd4\d1285685\p35W-D002_LSCLT.dgn

I:\COMMON\CAD\TREATMENT\13 JELLYFISH FILTERRA\STANDARD DRAWINGS\OFFLINE-OTL.DWG 5/11/2017 2:54 PM

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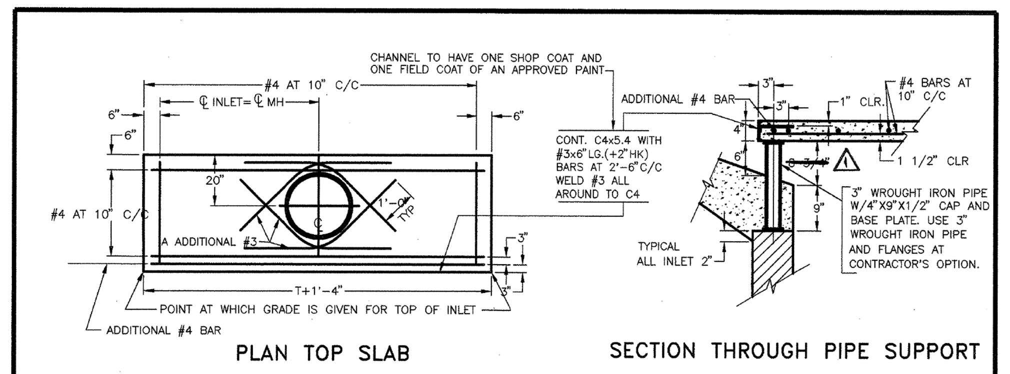
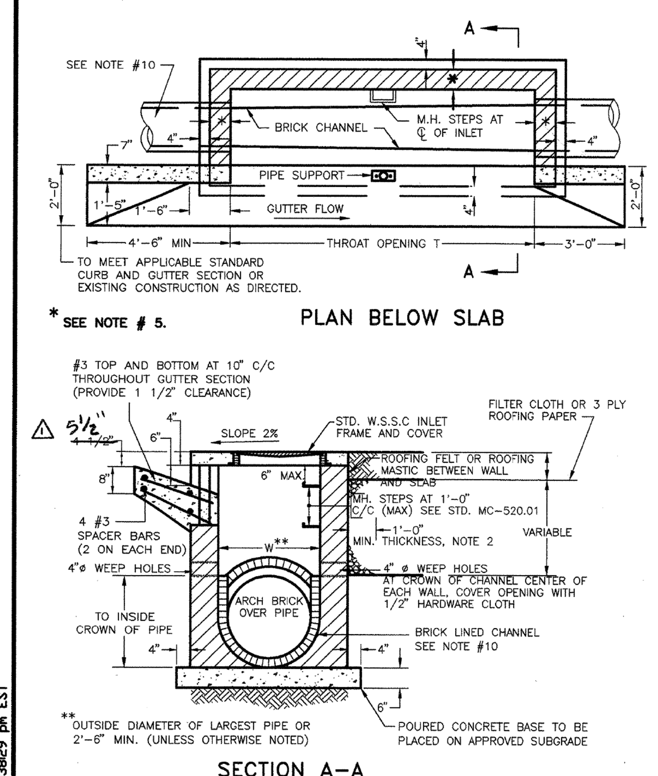


PLAN TOP SLAB

SECTION THROUGH PIPE SUPPORT



PLAN BELOW SLAB

SECTION A–A

GENERAL NOTES

1. USE SOLID MASONRY (BRICK OR CONCRETE BLOCK) OR POURED CONCRETE FOR WALLS.
2. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE.
3. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C 270 TYPE M.
4. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
5. WALL THICKNESS WILL BE THE FOLLOWING: 8" THICK WALLS FOR THE FIRST 8'–0" OF DEPTH, 12" THICK WALLS BETWEEN 8'–0" AND 12'–0" OF DEPTH, 16" THICK WALLS FOR DEPTH GREATER THAN 12'–0" DEPTH TO BE MEASURED FROM TOP OF CURB TO CROWN OF OUTGOING PIPE.
6. f'_c =3500 PSI AT 28 DAYS.
7. ALL REINFORCING STEEL TO BE ASTM A615, GR 60.
8. FOR PIPES 30" AND LARGER, PROVIDE STEPS IN CHANNELS OR STRUCTURES. SEE STANDARD MC–520.02
9. ON TERMINAL INLETS, THE INLET BOTTOM SHALL BE SLOPED TO OUTLET PIPE WITH SEWER BRICK OR CONCRETE, 9" MIN. FALL.
10. FOR ACTUAL PIPE LOCATIONS, REFER TO STORM DRAIN PLANS AND CONSTRUCT BRICK CHANNEL TO PIPE CONFIGURATIONS BRICK CHANNEL SHALL BE SEWER BRICK ON EDGE AND BUILT TO THE CROWN OF THE PIPE.

DESIGNATION	T THROAT OPENING	NUMBER OF PIPE SUPPORTS
A–5	5'–0"	0
A–10	10'–0"	1
A–15	15'–0"	2
A–20	20'–0"	3

PIPE SUPPORTS TO BE SPACED AT 5'–0" C/C

P:\DOTSTD\MC50101 10-15-95 6:38:29 pm EST

APPROVED JAN 5/96 DATE

DIRECTOR, DEPT. OF TRANS.

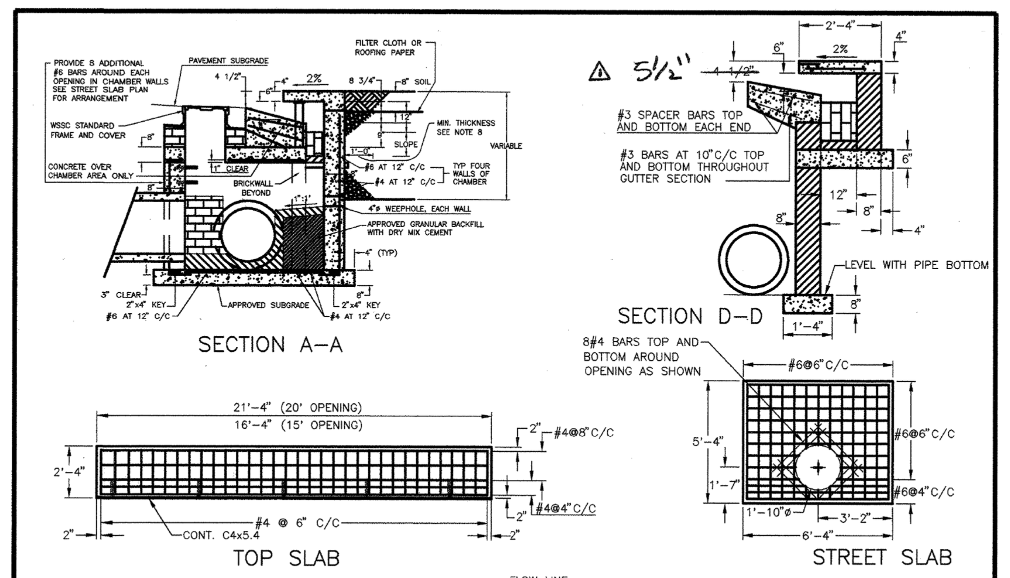
CHIEF, DIV. OF ENG. SERVICES

REVISED: ⚠ RESTORED 1" DEPRESSION AT GUTTER EDGE 6/25/12

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

"A" INLET

STANDARD NO. MC–501.01

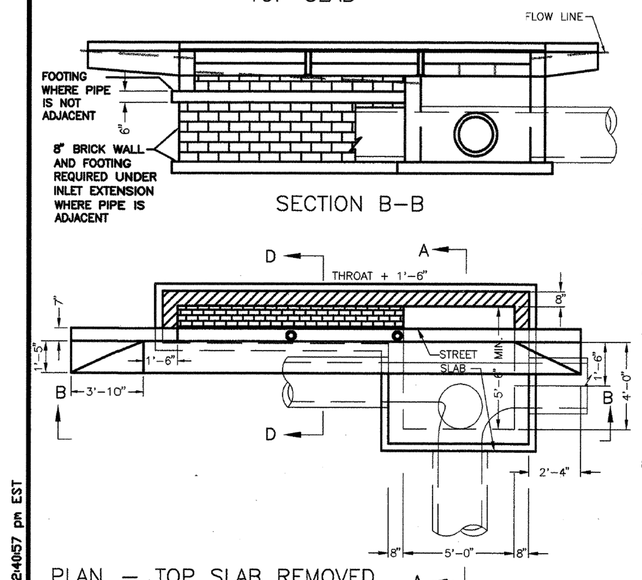


SECTION A–A

SECTION D–D

TOP SLAB

STREET SLAB



SECTION B–B

PLAN – TOP SLAB REMOVED

GENERAL NOTES

1. LOADING AASHTO HS 20–44
2. MOTAR SHALL CONFORM TO ASTM SPECIFICATION C 270 TYPE M .
3. REINFORCING STEEL REINFORCING STEEL FOR CONCRETE SHALL CONFORM TO AASHTO DESIGNATION: M31(ASTM A615) GRADE 60. ALL SPLICES SHALL BE LAPPED A MINIMUM OF 24 BAR DIAMETERS UNLESS OTHERWISE NOTED. MINIMUM COVER FOR REINFORCING BARS SHALL BE 2" UNLESS OTHERWISE NOTED.
4. FOR PIPES LARGER THAN 30" PROVIDE STEPS IN CHANNEL OF STRUCTURE.
5. FOR TYPE "A" INLET USE SECTION A–A WITH A THROAT OPENING OF 5'–0". LONGER OPENINGS REQUIRE SPECIAL DESIGN.
6. FOR TREATMENT OF THE CHANNEL, STEPS AND OTHER ASSOCIATED DETAILS, REFER TO THE STANDARD STORM DRAINAGE DETAILS OF THE W.S.S.C. OR MONTGOMERY COUNTY.
7. CONTRACTOR'S OPTION SPECIAL INLET WALL, MAY BE CONSTRUCTED OF BRICK SUBJECT TO THE FOLLOWING:
   A. 8" THICK WALLS FOR THE FIRST 5'–0" OF DEPTH.
   B. 12" THICK WALLS BETWEEN 5'–0" AND 8'–0" OF DEPTH.
   C. 16" THICK WALLS FOR DEPTHS GREATER THAN 8'–0"
   D. DEPTH WILL BE MEASURED FROM TOP OF CURB TO INVERT OF OUTGOING PIPE.
8. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE.

DESIGNATION	T THROAT OPENING	NUMBER OF PIPE SUPPORTS
B–10	10'–0"	1
B–15	15'–0"	2
B–20	20'–0"	3

P:\DOTSTD\MC50202 10-24-95 12:40:57 pm EST

APPROVED JAN 5/96 DATE

DIRECTOR, DEPT. OF TRANS.

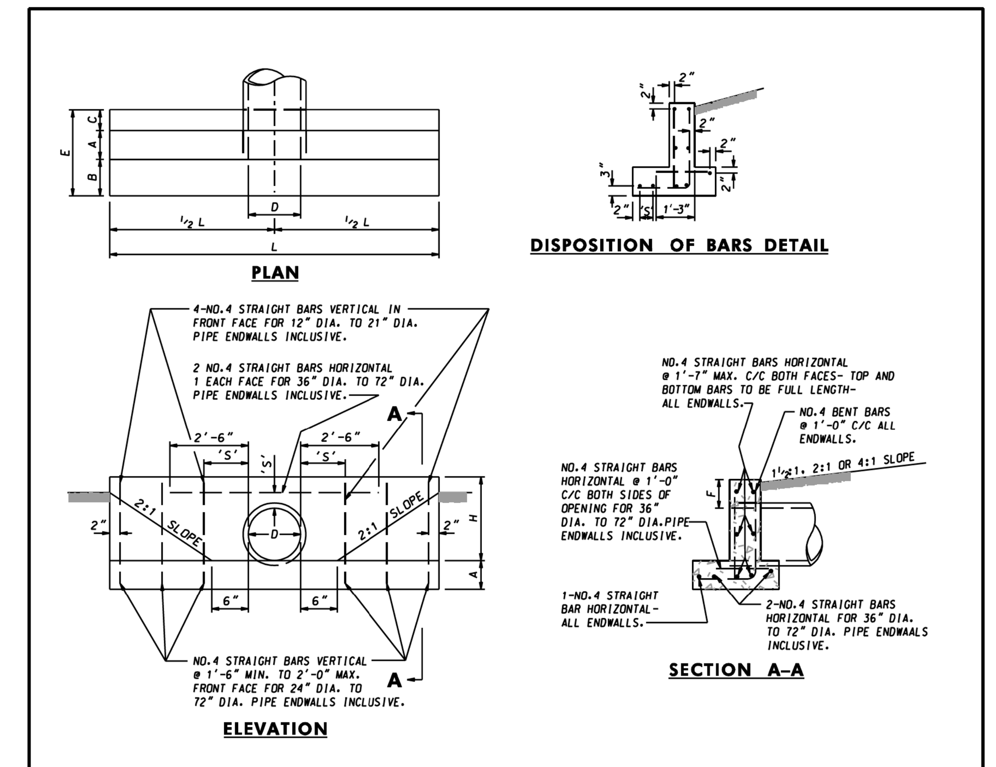
CHIEF, DIV. OF ENG. SERVICES

REVISED: ⚠ RESTORED 1" DEPRESSION AT GUTTER EDGE 6/25/12

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

REVERSE "B" INLET

STANDARD NO. MC–502.02



PLAN

DISPOSITION OF BARS DETAIL

ELEVATION

SECTION A–A

QUANTITIES FOR ESTIMATING PURPOSES ONLY

OPENING D INCHES	OPENING AREA SQ.FT.	A	B	C	E	F	H	L	CONC. C.Y.	STEEL LBS.
12	0.79	9"	6"	6"	1'–9"	9"	1'–9"	6'–6"	0.61	41
15	1.23	9"	6"	6"	1'–9"	9"	2'–0"	7'–9"	0.77	47
18	1.77	9"	6"	6"	1'–9"	9"	2'–3"	9'–0"	0.95	54
21	2.40	9"	6"	6"	1'–9"	9"	2'–6"	10'–3"	1.14	70
24	3.14	9"	14"	6"	2'–5"	9"	2'–9"	11'–6"	1.56	80
27	3.98	9"	14"	6"	2'–5"	9"	3'–0"	12'–10"	1.82	88
30	4.91	9"	14"	6"	2'–5"	12"	3'–6"	14'–2"	2.22	98
33	5.94	9"	14"	6"	2'–5"	12"	3'–9"	15'–5"	2.48	105
36	7.07	12"	16"	10"	3'–2"	12"	4'–0"	16'–8"	4.16	182
42	9.62	12"	16"	10"	3'–2"	12"	4'–6"	19'–2"	5.07	206
48	12.57	12"	16"	10"	3'–2"	12"	5'–0"	21'–8"	6.09	244
54	15.90	12"	20"	12"	3'–8"	12"	5'–6"	24'–2"	7.62	275
60	19.64	12"	20"	12"	3'–8"	12"	6'–0"	26'–8"	8.82	304
72	28.27	12"	20"	12"	3'–8"	12"	7'–0"	31'–8"	11.46	377

'S' DISTANCES

4" FOR 12" DIA. TO 21" DIA. PIPES INCLUSIVE.
6" FOR 24" DIA. TO 36" DIA. PIPES INCUSIVE.
8" FOR 42" DIA. TO 72" DIA. PIPES INCLUSIVE.

GENERAL NOTES

SPECIFICATIONS: LATEST S.H.A.
CONCRETE SHALL BE MIX NO.2
REINFORCING: DEFORMED STEEL BARS–NO.4
CHAMFER: ALL EXPOSED EDGES 1"x1" OR AS DIRECTED

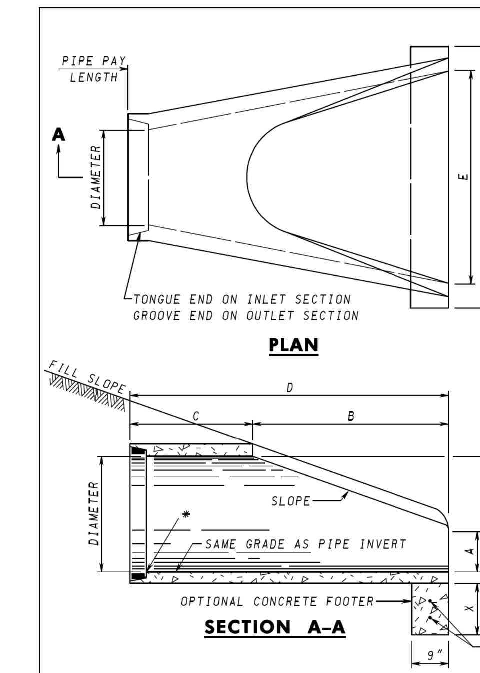
SPECIFICATION 305 | CATEGORY CODE ITEMS | APPROVED: DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–28–86	APPROVAL	12–12–86
REVISED	10–1–01	REVISED	
REVISED		REVISED	
REVISED		REVISED	

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



PLAN

SECTION A–A

END VIEW

NOTES

1. CONTRACTOR HAS OPTION OF FURNISHING END SECTIONS CONFORMING TO DETAILS ON THIS SHEET OR END SECTIONS CONFORMING TO DETAILS ON STANDARD MD 368.02.
2. END SECTIONS MUST BE REINFORCED TO CONFORM TO ASTM – CLASS IV REINFORCED CONCRETE PIPE.
3. CONCRETE FOOTER SHALL BE USED WHEN SPECIFIED ON THE PLANS. COST OF CONCRETE FOOTER TO BE INCLUDED IN PRICE OF END SECTION. CONCRETE TO BE MIX. NO.2. REINFORCEMENT TO BE NO.3 BARS.

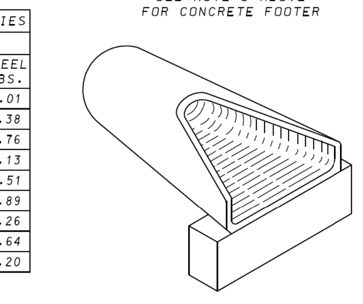
* INVERT ELEVATION TO BE AT THE PIPE END OF THE STANDARD END SECTION. ELEVATIONS TO BE NOTED ON THE CONSTRUCTION PLANS.

QUANTITIES FOR ESTIMATING PURPOSES ONLY

DIA.	SLOPE	A	B	C	D	E	W	X	CONC. C.Y.	STEEL LBS.
12"	3:1	4"	2'–0"	4'–0⅞"	6'–0⅞"	2'–0"	3'–0"	12"	0.08	2.01
15"	3:1	6½"	2'–4"	3'–10"	6'–2"	2'–6"	3'–6"	12"	0.10	2.38
18"	3:1	10¼"	2'–2"	4'–0"	6'–2"	3'–0"	4'–0"	12"	0.11	2.76
21"	3:1	9"	3'–0"	3'–1½"	6'–1½"	3'–6"	4'–6"	12"	0.13	3.13
24"	3:1	11"	3'–7"	2'–8"	6'–3"	4'–0"	5'–0"	15"	0.17	3.51
27"	3:1	10½"	4'–1½"	2'–0"	6'–1½"	4'–6"	5'–6"	15"	0.19	3.89
30"	3:1	1'–1"	4'–5"	1'–10"	6'–3"	5'–0"	6'–0"	15"	0.21	4.26
33"	3:1	1'–2"	4'–7"	2'–2"	6'–9"	5'–6"	6'–6"	15"	0.23	4.64
36"	3:1	1'–3½"	5'–3"	3'–1"	8'–4"	6'–0"	7'–3"	15"	0.25	5.20

(DIMENSIONS: CONCRETE END SECTION = SLOPE, A, B, C, D, E; CONCRETE FOOTER = W, X; QUANTITIES = CONC. C.Y., STEEL LBS.)

SEE NOTE 3 ABOVE FOR CONCRETE FOOTER



ISOMETRIC VIEW

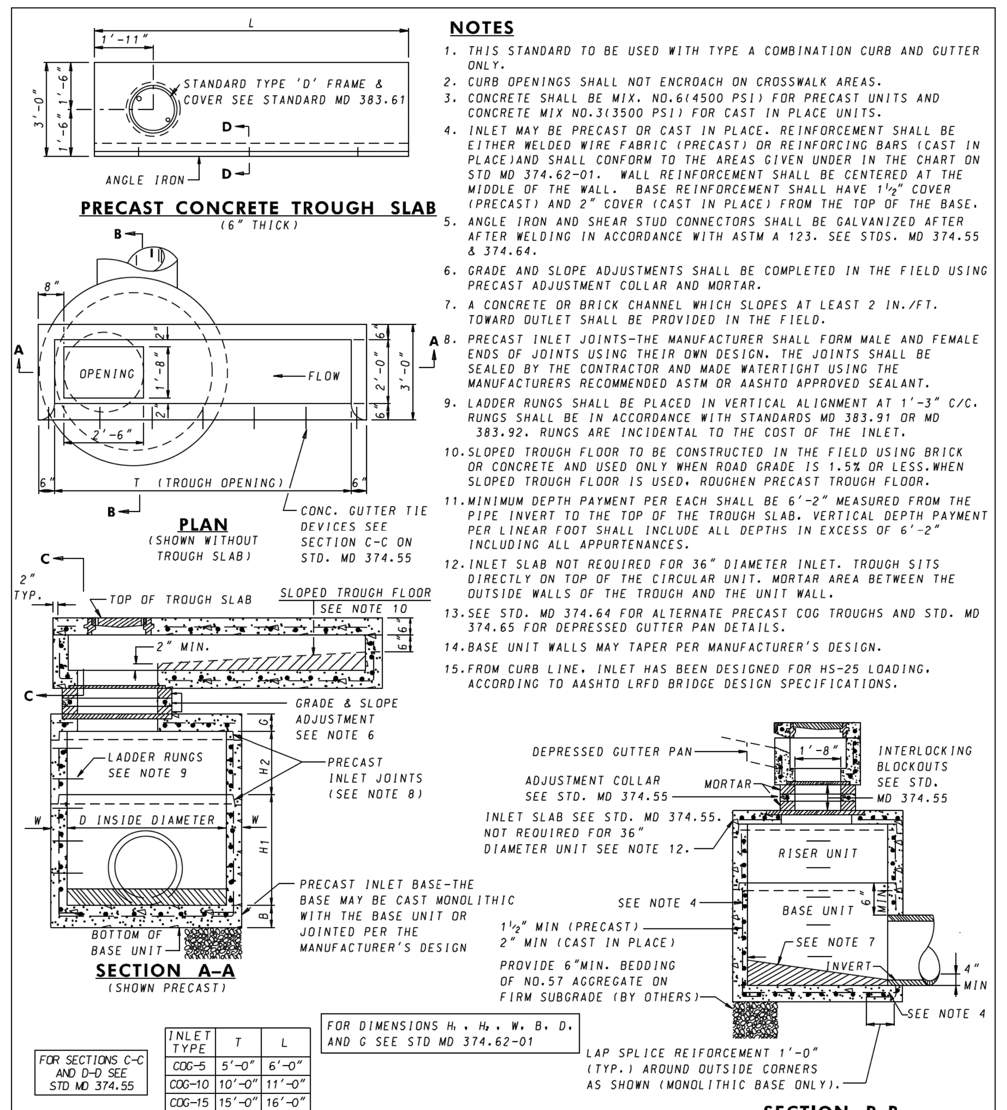
SPECIFICATION 305 | CATEGORY CODE ITEMS | APPROVED: DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8–28–86	APPROVAL	12–12–86
REVISED	3–15–06	REVISED	4–05–06
REVISED	7–1–09	REVISED	7–27–09
REVISED		REVISED	

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

STANDARD CONCRETE END SECTION ROUND CONCRETE PIPE

STANDARD NO. MD 368.01



PRECAST CONCRETE TROUGH SLAB (6" THICK)

PLAN (SHOWN WITHOUT TROUGH SLAB)

SECTION A–A (SHOWN PRECAST)

SECTION B–B (SHOWN PRECAST)

NOTES

1. THIS STANDARD TO BE USED WITH TYPE A COMBINATION CURB AND GUTTER ONLY.
2. CURB OPENINGS SHALL NOT ENCROACH ON CROSSWALK AREAS.
3. CONCRETE SHALL BE MIX. NO.6(4500 PSI) FOR PRECAST UNITS AND CONCRETE MIX NO.3(3500 PSI) FOR CAST IN PLACE UNITS.
4. INLET MAY BE PRECAST OR CAST IN PLACE. REINFORCEMENT SHALL BE EITHER WELDED WIRE FABRIC (PRECAST) OR REINFORCING BARS (CAST IN PLACE)AND SHALL CONFORM TO THE AREAS GIVEN UNDER IN THE CHART ON STD MD 374.62-01. WALL REINFORCEMENT SHALL BE CENTERED AT THE MIDDLE OF THE WALL. BASE REINFORCEMENT SHALL HAVE 1½" COVER (PRECAST) AND 2" COVER (CAST IN PLACE) FROM THE TOP OF THE BASE.
5. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER AFTER WELDING IN ACCORDANCE WITH ASTM A 123. SEE STDS. MD 374.55 & 374.64.
6. GRADE AND SLOPE ADJUSTMENTS SHALL BE COMPLETED IN THE FIELD USING PRECAST ADJUSTMENT COLLAR AND MORTAR.
7. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 IN./FT. TOWARD OUTLET SHALL BE PROVIDED IN THE FIELD.
8. PRECAST INLET JOINTS-THE MANUFACTURER 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 MANUFACTURERS RECOMMENDED ASTM OR AASHTO APPROVED SEALANT.
9. LADDER RUNGS SHALL BE PLACED IN VERTICAL ALIGNMENT AT 1'-3" C/C. RUNGS SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR MD 383.92. RUNGS ARE INCIDENTAL TO THE COST OF THE INLET.
10. SLOPED TROUGH FLOOR TO BE CONSTRUCTED IN THE FIELD USING BRICK OR CONCRETE AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS.WHEN SLOPED TROUGH FLOOR IS USED, ROUGHEN PRECAST TROUGH FLOOR.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 6'-2" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE TROUGH SLAB. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 6'-2" INCLUDING ALL APPURTENANCES.
12. INLET SLAB NOT REQUIRED FOR 36" DIAMETER INLET. TROUGH SITS DIRECTLY ON TOP OF THE CIRCULAR UNIT. MORTAR AREA BETWEEN THE OUTSIDE WALLS OF THE TROUGH AND THE UNIT WALL.
13. SEE STD. MD 374.64 FOR ALTERNATE PRECAST COG TROUGHS AND STD. MD 374.65 FOR DEPRESSED GUTTER PAN DETAILS.
14. BASE UNIT WALLS MAY TAPER PER MANUFACTURER'S DESIGN.
15. FROM CURB LINE. INLET HAS BEEN DESIGNED FOR HS-25 LOADING. ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

FOR SECTIONS C–C AND D–D SEE STD MD 374.55

INLET TYPE	T	L
COG–5	5'–0"	6'–0"
COG–10	10'–0"	11'–0"
COG–15	15'–0"	16'–0"
COG–20	20'–0"	21'–0"

FOR DIMENSIONS H_1, H_2, W, B, D, AND G SEE STD MD 374.62-01

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

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2–22–91	APPROVAL	1–2–91
REVISED	8–3–10	REVISED	7–26–10
REVISED	10–7–14	REVISED	9–29–14
REVISED	–	REVISED	

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

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

STANDARD NO. MD 374.62

CIRCULAR BASE AND RISER UNIT DIMENSIONS

PIPE SIZE MIN. TO MAX.	H_1 BASE	H_2 RISER	W	WALL AREA STEEL IN²/FT	MAX. SPACING IN.	B	BASE AREA STEEL IN²/FT	MAX. SPACING IN.	D	INLET SLAB G	Min. Distance, ft. Top of Curb - Pipe Invert
12"	2' TO 4'	1' TO 4'	4"	.09	12"	6.5"	.15	6"	36"	NOT REQ.	3.84
15" TO 24"	3' TO 5'	1' TO 5'	5"	.12	12"	6.5"	.18	6"	48"	8"	4.11–4.92
27" TO 33"	3' TO 6'	1' TO 6'	6"	.15	12"	6.5"	.27	6"	60"	8"	5.19–5.73
36"	5' TO 6'	1' TO 6'	6"	.15	12"	6.5"	.27	6"	60"	8"	6.00
42"	5' TO 7'	1' TO 7'	7"	.18	11"	7.5"	.30	6"	72"	8"	6.55
48"	6' TO 7'	1' TO 7'	7"	.18	11"	7.5"	.30	6"	72"	8"	7.09
54"	6' TO 8'	1' TO 8'	8"	.21	8"	9.5"	.36	6"	84"	8"	7.63
60"	7' TO 8'	1' TO 8'	8"	.21	8"	9.5"	.36	6"	84"	8"	8.17
66" TO 72"	8' TO 9'	1' TO 8'	9"	.24	7"	9.5"	.40	6"	96"	8"	8.71–9.25
78" TO 84"	9' TO 10'	1' TO 8'	10"	.27	4"	12.5"	.40	6"	120"	8"	9.80–10.34

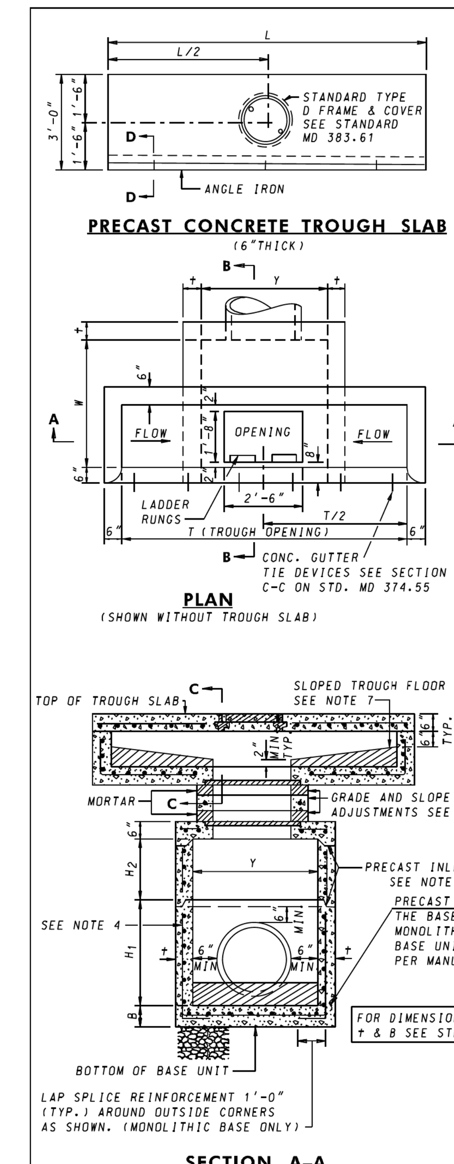
SPECIFICATION 305 | CATEGORY CODE ITEMS | APPROVED: DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	10–7–14	APPROVAL	9–29–14
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

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



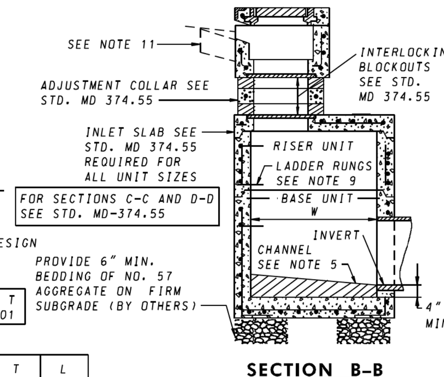
PRECAST CONCRETE TROUGH SLAB (6"THICK)

PLAN (SHOWN WITHOUT TROUGH SLAB)

SECTION A–A (SHOWN AS PRECAST)

NOTES

1. THIS STANDARD TO BE USED WITH TYPE A COMBINATION CURB AND GUTTER ONLY.
2. CURB OPENINGS SHALL NOT ENCROACH ON CROSSWALK AREAS.
3. CONCRETE SHALL BE MIX NO.6 (4500 PSI) FOR PRECAST UNITS AND CONCRETE MIX NO.3 (3500 PSI) FOR CAST IN PLACE UNITS.
4. INLET MAY BE PRECAST OR CAST IN PLACE. ON WALLS, REINFORCEMENT SHALL BE AS SHOWN ON TABLE (STD MD 379.61.01) WITH 2"COVER FOR WELDED WIRE FABRIC (PRECAST) OR 2" COVER FOR DEFORMED BARS (CAST IN PLACE). ON BASE, REINFORCEMENT SHALL BE AS SHOWN ON STD MD 374.61-01 WITH 1½" COVER (PRECAST) AND 2" COVER (CAST IN PLACE)FROM TOP OF BASE.
5. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 IN./FT 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 MANUFACTURER 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. SEE STANDARD MD 374.64 FOR ALTERNATE PRECAST COS TROUGHS.
13. PAY MEASUREMENTS FOR CAST IN PLACE UNIT SHALL BE THE SAME AS THE PRECAST UNIT. REFER TO NOTE 14. ALL OTHER DIMENSIONS SHOWN FOR PRECAST UNIT SHALL APPLY TO CAST IN PLACE UNIT.
14. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 6'-2" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE TROUGH SLAB. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 6'-2" INCLUDING ALL APPURTENANCES.
15. PRECAST BASE UNIT WALLS MAY TAPER PER MANUFACTURER'S DESIGN.
16. FROM CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS.



SECTION B–B (SHOWN AS PRECAST)

FOR SECTIONS C–C AND D–D SEE STD. MD-374.55

FOR DIMENSIONS W, Y, H_1, H_2, T, t & B SEE STD. MD 374.61-01

INLET TYPE	T	L
COS–5	5'–0"	6'–0"
COS–10	10'–0"	11'–0"
COS–15	15'–0"	16'–0"
COS–20	20'–0"	21'–0"

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

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2–22–91	APPROVAL	1–2–91
REVISED	8–3–10	REVISED	7–26–10
REVISED	10–7–14	REVISED	9–29–14
REVISED	–	REVISED	

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

PRECAST OR CAST IN PLACE SQUARE AND RECTANGULAR COS INLETS 5', 10', 15' & 20'

STANDARD NO. MD 374.61

CAST IN PLACE/PRECAST DIMENSIONS

PIPE SIZE MIN. TO MAX.	W	Alt. W	Y	H_1 BASE	H_2 RISER	t MIN.	WALL REINFORCEMENT CAST IN PLACE DEFORMED BARS	WALL REINFORCEMENT PRECAST WWR	B	BASE REINFORCEMENT CAST IN PLACE DEFORMED BARS	BASE REINFORCEMENT PRECAST WWR	Min. Distance - (ft.) Top of Curb - Pipe Invert
12"	4'–0"		4'–0"	2' to 10'	1' to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	3.84
15" – 24"	4'–0"		4'–0"	3' to 10'	1' to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	4.11–4.92
27" – 33"	4'–0"		4'–0"	4' to 10'	1' to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	5.19–5.73
36"	4'–0"		4'–0"	5' to 10'	1' to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	6.00
42"	4'–0"	6'–0"	6'–0"	5' to 10'	1' to 5'	7	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W7.0xW7.0	8.5"	NO.4@6"C/C,1 LAYER	4X4,W10.5XW10.5	6.55
48" – 54"	4'–0"	6'–0"	6'–0"	6' to 10'	1' to 5'	7	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W7.0xW7.0	8.5"	NO.4@6"C/C,1 LAYER	4X4,W10.5XW10.5	7.09–7.63
60"	4'–0"		6'–0"	7' to 10'	1' to 5'	7	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W7.0xW7.0	8.5"	NO.4@6"C/C,1 LAYER	4X4,W10.5XW10.5	8.17
66" – 72"	6'–0"		8'–0"	8' to 10'	1' to 5'	8.5	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W10.0xW10.0	9.5"	NO.4@6"C/C,1 LAYER	4X4,W12.0XW12.0	8.71–9.25
78" – 84"	6'–0"		8'–0"	9' to 10'	1' to 5'	8.5	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W10.0xW10.0	9.5"	NO.4@6"C/C,1 LAYER	4X4,W12.0XW12.0	9.80–10.34

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

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	10–7–14	APPROVAL	9–29–14
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

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

PRECAST OR CAST IN PLACE SQUARE AND RECTANGULAR COS INLETS 5', 10', 15' & 20'

STANDARD NO. MD 374.61–01

PLOTTED: 11/17/2022
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Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

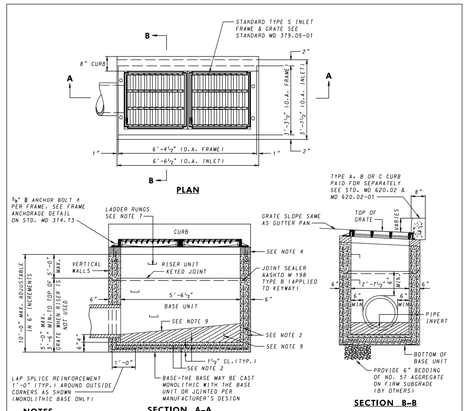
Designed by: ECW Drawn by: ECW Checked by: JMA

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
DRAINAGE DETAILS

SCALE : NTS DATE: NOVEMBER 2022 DD–01

DPS SC/SWM PERMIT SHEET NO. ____ of 21

C.I.P. Project No. : 0501742 41 of 87



NOTES

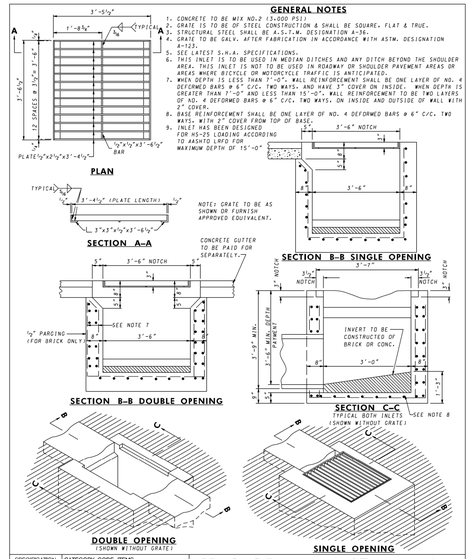
1. CONCRETE TO BE MIX NO. 6 (4500 PSI).
2. REINFORCING: WALLS - 2 LAYERS OF 4X4-W5.0 X W5.0 WELDED WIRE FABRIC; BASE - 2 LAYERS OF 4X4 - W7.0 X W7.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS MIN. 2", MAX. 9" SHALL BE COMPLETED IN THE FIELD USING CONCRETE MIX NO. 6.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED. FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO THE CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH STANDARD MD 383.91 OR 383.92. RUNGS ARE INCIDENTAL TO THE COST OF THE INLET.
8. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 3'-6" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE GRATE AT ITS HIGHEST POINT. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 3'-6" INCLUDING ALL APPURTENANCES.
9. CONCRETE OR BRICK INVERT TO BE PROVIDED IN THE FIELD AND SHALL SLOPE 2 IN./FT TOWARD OUTLET OR AS DIRECTED.
10. BASE WALLS UNIT MAY TAPER PER MANUFACTURER'S DESIGN.
11. FROM CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT		
SHA State Highway Administration	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL 2-22-91	APPROVAL 1-2-91	
	REVISED 8-3-10	REVISED 7-26-10	
	REVISED 10-7-14	REVISED 9-29-14	
	REVISED –	REVISED	

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

PRECAST STANDARD TYPE S INLET DOUBLE GRATE TANDEM

STANDARD NO. MD 374.70



GENERAL NOTES

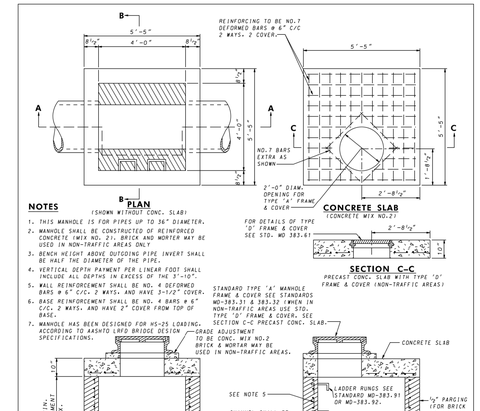
1. CONCRETE TO BE MIX NO.2 (3-000 PSI).
2. GRATE IS TO BE OF STEEL CONSTRUCTION & SHALL BE SQUARE, FLAT & TRUE.
3. STRUCTURAL STEEL SHALL BE A.S.T.M. DESIGNATION A-36.
4. GRATE TO BE GALV. AFTER FABRICATION IN ACCORDANCE WITH ASTM. DESIGNATION A-123.
5. SEE LATEST S.H.A. SPECIFICATIONS.
6. THIS INLET IS TO BE USED IN MEDIAN DITCHES AND ANY DITCH BEYOND THE SHOULDER AREA. THIS INLET IS NOT TO BE USED IN ROADWAY OR SHOULDER PAVEMENT AREAS OR AREAS WHERE BICYCLE OR MOTORCYCLE TRAFFIC IS ANTICIPATED.
7. WHEN DEPTH IS LESS THAN 7'-0", WALL REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, AND HAVE 3" COVER ON INSIDE. WHEN DEPTH IS GREATER THAN 7'-0" AND LESS THAN 15'-0", WALL REINFORCEMENT TO BE TWO LAYERS OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, ON INSIDE AND OUTSIDE OF WALL WITH 2" COVER.
8. BASE REINFORCEMENT SHALL BE ONE LAYER OF NO. 4 DEFORMED BARS @ 6" C/C, TWO WAYS, WITH 2" COVER FROM TOP OF BASE.
9. INLET HAS BEEN DESIGNED FOR HS-25 LOADING ACCORDING TO AASHTO LRFD FOR MAXIMUM DEPTH OF 15'-0"

SPECIFICATION 305	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT		
SHA State Highway Administration	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL 2-28-02	APPROVAL	
	REVISED 10-1-01	REVISED 6-23-87	
	REVISED 10-7-14	REVISED 9-29-14	
	REVISED	REVISED	

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

STANDARD SINGLE OR DOUBLE OPENING TYPE K INLET OPEN - END GRATE

STANDARD NO. MD 378.05



NOTES

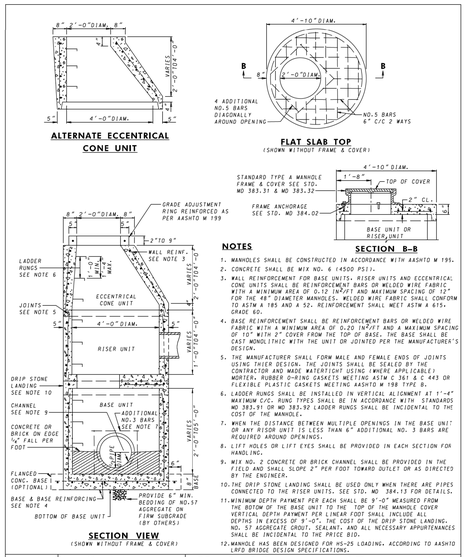
1. THIS MANHOLE IS FOR PIPES UP TO 36" DIAMETER.
2. MANHOLE SHALL BE CONSTRUCTED OF REINFORCED CONCRETE (MIX NO. 2). BRICK AND MORTER MAY BE USED IN NON-TRAFFIC AREAS ONLY.
3. BENCH HEIGHT ABOVE OUTGOING PIPE INVERT SHALL BE HALF THE DIAMETER OF THE PIPE.
4. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF THE 3'-10".
5. WALL REINFORCEMENT SHALL BE NO. 4 DEFORMED BARS @ 6" C/C, 2 WAYS, AND HAVE 3-1/2" COVER.
6. BASE REINFORCEMENT SHALL BE NO. 4 BARS @ 6" C/C, 2 WAYS, AND HAVE 2" COVER FROM TOP OF BASE.
7. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT		
SHA State Highway Administration	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL 10-1-01	APPROVAL 3-1-83	
	REVISED 10-1-01	REVISED 4-2-84	
	REVISED 10-7-14	REVISED 9-29-14	
	REVISED	REVISED	

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

48" SQUARE STANDARD SHALLOW MANHOLE

STANDARD NO. MD 383.00



NOTES

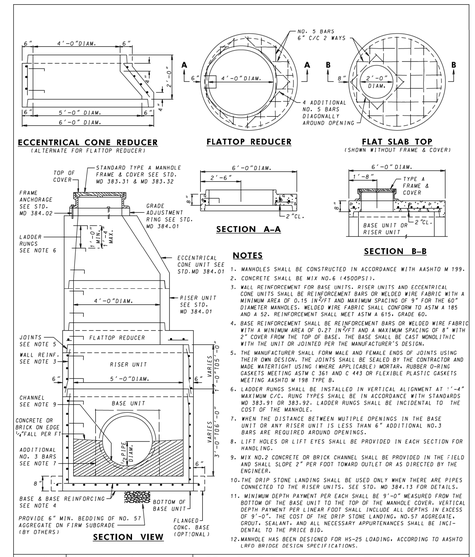
1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO. 6 (4500 PSI).
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.12 IN^2/FT AND MAXIMUM SPACING OF 12" FOR THE 48" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 52. REINFORCEMENT SHALL MEET ASTM A 615, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.20 IN^2/FT AND A MAXIMUM SPACING OF 10" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THIER DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTER, RUBBER O-RING GASKETS MEETING ASTM C 361 & C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR MD 383.92 LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MULTIPLE OPENINGS IN THE BASE UNIT OR ANY RISOR UNIT IS LESS THAN 6" ADDITIONAL NO. 3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 9'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 9'-0". THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT		
SHA State Highway Administration	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL 2-22-91	APPROVAL 1-2-91	
	REVISED 10-7-14	REVISED 9-29-14	
	REVISED –	REVISED	
	REVISED	REVISED	

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



NOTES

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
2. CONCRETE SHALL BE MIX NO.6 (4500PSI).
3. WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRICAL CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.15 IN^2/FT AND MAXIMUM SPACING OF 9" FOR THE 60" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 52. REINFORCEMENT SHALL MEET ASTM A 615, GRADE 60.
4. BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN^2/FT AND A MAXIMUM SPACING OF 8" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR, RUBBER O-RING GASKETS MEETING ASTM C 361 AND C 443 OR FLEXIBLE PLASTIC GASKETS MEETING AASHTO M 198 TYPE B.
6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR 383.92. LADDER RUNGS SHALL BE INCIDENTAL TO THE COST OF THE MANHOLE.
7. WHEN THE DISTANCE BETWEEN MUTIPLE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO.3 BARS ARE REQUIRED AROUND OPENINGS.
8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
9. MIX NO.2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. MD 384.13 FOR DETAILS.
11. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 9'-0" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 9'-0". THE COST OF THE DRIP STONE LANDING, NO.57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY APPURTENANCES SHALL BE INCIDENTAL TO THE PRICE BID.
12. MANHOLE HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

SPECIFICATION 305	CATEGORY CODE ITEMS		
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT		
SHA State Highway Administration	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
	APPROVAL 2-22-91	APPROVAL 1-2-91	
	REVISED 10-7-14	REVISED 9-29-14	
	REVISED –	REVISED	
	REVISED	REVISED	

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

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

DRAINAGE DETAILS

SCALE : NTS DATE: NOVEMBER 2022 DD-02

DPS SC/SWM PERMIT SHEET NO. ___ of 21

C.I.P. Project No. : 0501742 42 of 87

PLOTTED: 11/7/2022
FILE: C:\pwworking\gfpw01\ewcd8\d1285685\DD-D002_LSCLT.dgn

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY–EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE–CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.'

2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
   A. AT THE REQUIRED PRE–CONSTRUCTION MEETING.
   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
   C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
   E. PRIOR TO FINAL ACCEPTANCE.

3. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.

4. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.

5. THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.

6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
   A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

   ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.

9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SC/SM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.

12. SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NONMAINTENANCE 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.

STANDARD EROSION AND SEDIMENT CONTROL NOTES:CONTINUED

18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.

19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.

20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO THE POINT OF ONE–HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST–III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.

22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.

23. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THE TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.

24. NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1–800–257–7777, 48 HOURS PRIOR TO THE START OF WORK.

25. OFF–SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.

26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:
   A. PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON–SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS OF SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR
   B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON–EROSIVE OUTLET; OR
   C. THE PUMP INTAKE MAY BE FLOATED AND DISCHARGE INTO A DIRT BAG (12 OZ. NON–WOVEN FABRIC), OR APPROVED EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.

REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.

27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.

28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE *STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS*.

MISS UTILITY

Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The excavator must notify all public utility companies with under ground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation. The excavator is responsible for compliance with requirements of Chapter 36A of the Montgomery County Code.

STANDARD SYMBOLS

Item	Symbol
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
TEMPORARY SWALE	A-1 PLACE DESIGNATION (A-1,B-2, etc.) ON FLOW CHANNEL SIDE OF SWALE.
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
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	
WETLAND	
TEMP. RIPRAP	(TRR)

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL GENERAL NOTES

SCALE : NTS DATE: NOVEMBER 2022 EN–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 43 of 87

PLOTTED: 11/17/2022
FILE: c:\pwworking\gfpw01\ewoolls\d1285685\pES–N001–LSCLT.dgn

SEQUENCE OF CONSTRUCTION

NO WORK MAY PROCEED UNDER THIS PERMIT UNTIL THE CERTIFICATION OF PERMISSION HAS SUPPLIED THE DPS INSPECTOR WITH AN ITEMIZED LIST OF ALL PROPERTIES FOR WHICH PERMISSION IS NEEDED, ALONG WITH A SIGNED CERTIFICATION STATEMENT THAT ALL REQUIRED PERMISSIONS HAVE BEEN OBTAINED.

1. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRE–CONSTRUCTION MEETING MUST BE CONDUCTED ON–SITE WITH THEMONTGOMERY 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 PRE–CONSTRUCTION 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. PERFORM CLEARING AND GRUBBING FOR THE INSTALLATION OF THE EROSION AND SEDIMENT PERIMETER CONTROLS. NO VEHICLES SHALL LEAVE THE CONSTRUCTION SITE WITHOUT ENSURING THAT TIRES ARE FREE OF SEDIMENTS.

4. INSTALL ALL E&S PERIMETER CONTROL MEASURES INCLUDING SILT FENCE (SF), DIVERSION FENCE (DF), TEMPORARY RIPRAP (TRR), TEMPORARY STONE OUTLET STRUCTURES (TSOS), SANDBAGS, SUMP PITS, PORTABLE SEDIMENT TANK AND ALL TEMPORARY INLET PROTECTION DEVICES.

5. CONSTRUCT ALL PROPOSED UTILITY FEATURES AND SWM FACILITIES AS INDICATED ON PLANS. SMALL DISTURBED AREAS SHOWN ON CONSTRUCTION PLANS, AND DESIGNATED AS SAME DAY STABILIZATION SHALL BE PERMANENTLY STABILIZED AT THE END OF EACH WORK DAY.

6. PERFORM CONSTRUCTION ACTIVITIES AS SHOWN IN THE CONSTRUCTION PLANS INCLUDING DEMOLITION OF EXISTING FEATURES. INSTALL NEW SIDEWALK AS SHOWN ON PLANS. PERFORM EXCAVATION AS SHOWN AND INSTALL SOIL STABILIZATION MATTING. INSTALL ALL PROPOSED STORMDRAIN PIPES AND STRUCTURES DURING A NOAA 3 DAY DRY FORECAST PERIOD. USE PORTABLE SEDIMENT TANK AND SANDBAGS AS NECESSARY. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS DEVICES THROUGHOUT ENTIRE CONSTRUCTION ACTIVITIES. NO VEHICLES SHALL LEAVE THE CONSTRUCTION SITE WITHOUT ENSURING THAT TIRES ARE FREE OF SEDIMENTS.

7. CONDUCT LANDSCAPING ACTIVITIES AND PERFORM PERMANENT STABILIZATION FOR ALL DISTURBED AREAS.

8. ONCE ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, WITH THE APPROVAL FROM THE DPS INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES. ALL AREAS DISTURBED BY THE REMOVAL OF E&S CONTROLS SHALL BE STABILIZED THE SAME DAY.

9. CONTRACTOR MUST SUBMIT ALL OF THE SWM CONSTRUCTION INFORMATION INCLUDING TICKETS USED FOR AS–BUILT REVIEW TO DPS FOR APPROVAL

Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL
SEQUENCE OF CONSTRUCTION

SCALE : NTS DATE: NOVEMBER 2022 EN–02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 44 of 87

PLOTTED: 11/17/2022
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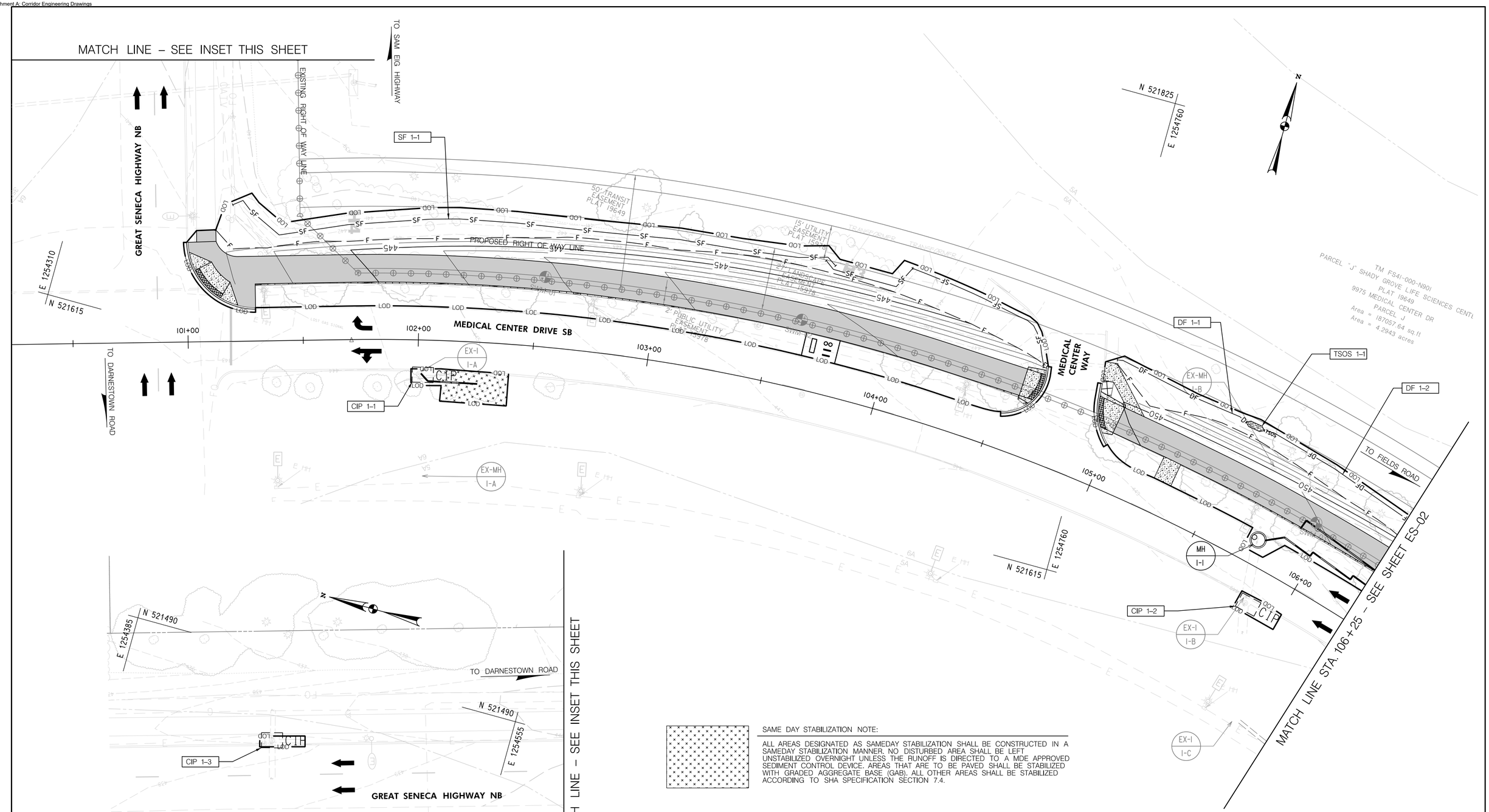

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20' 0 20' 40'
SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 45 of 87

PLOTTED: 11/17/2022
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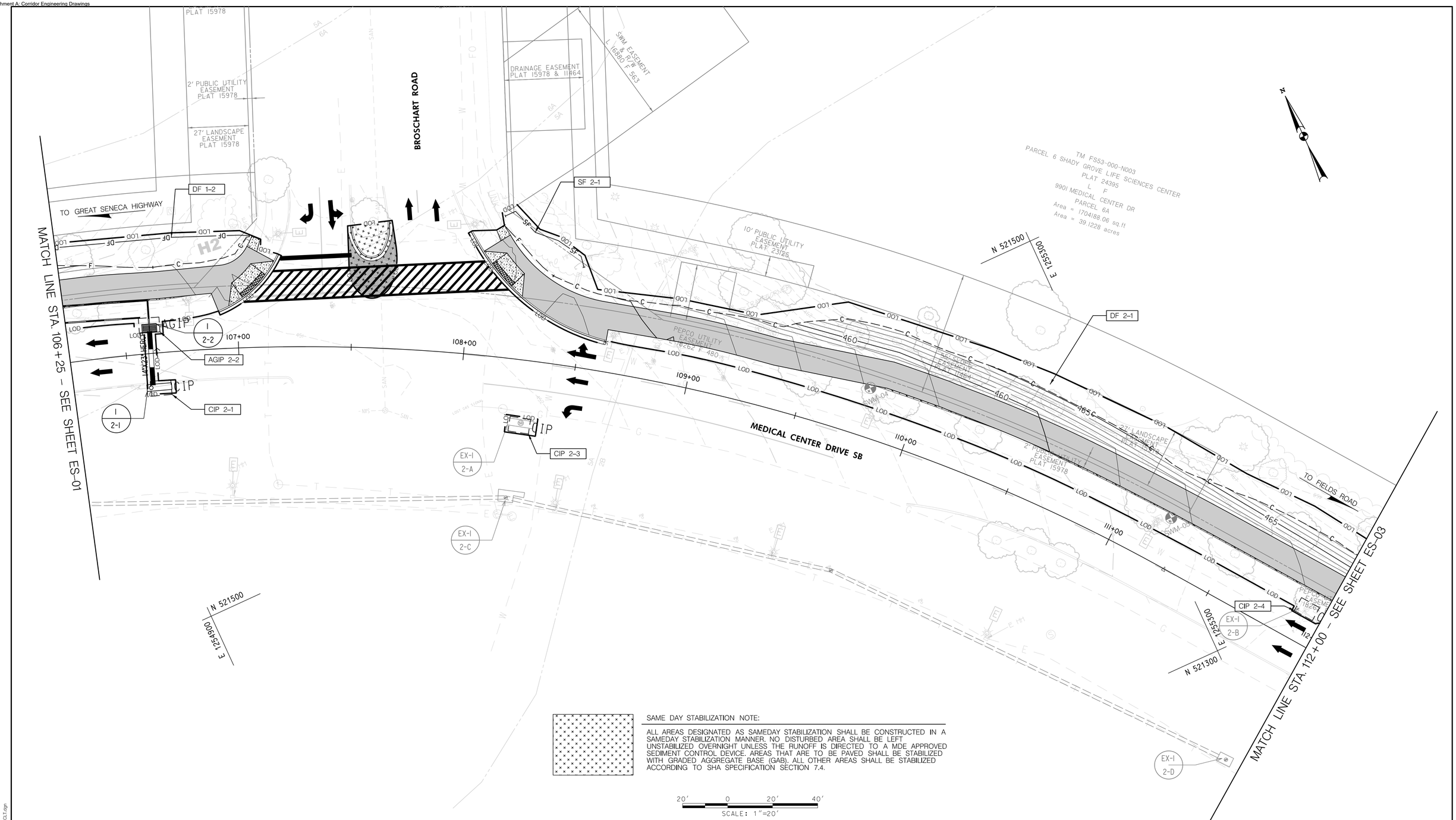

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES–02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 46 of 87

PLOTTED: 11/17/2022
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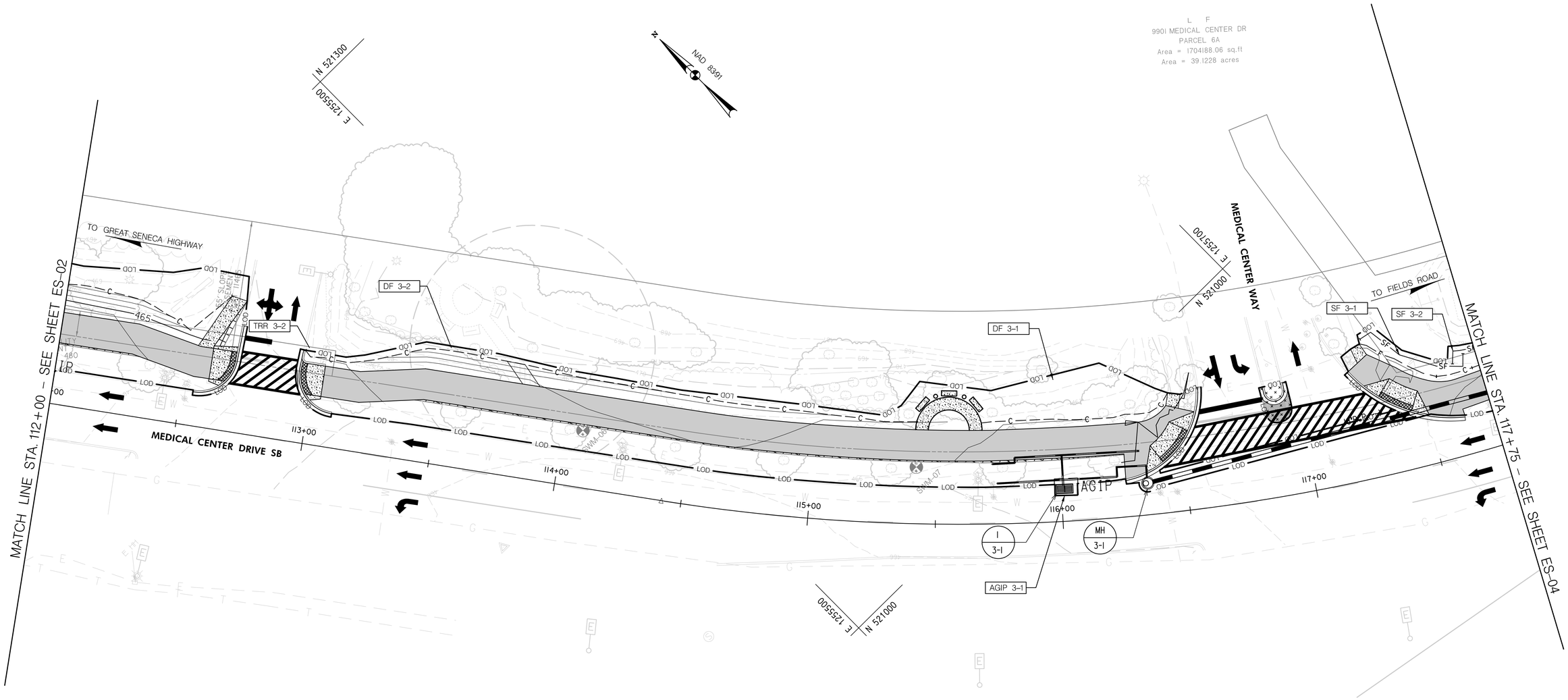

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Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-03

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 47 of 87

PLOTTED: 11/7/2022
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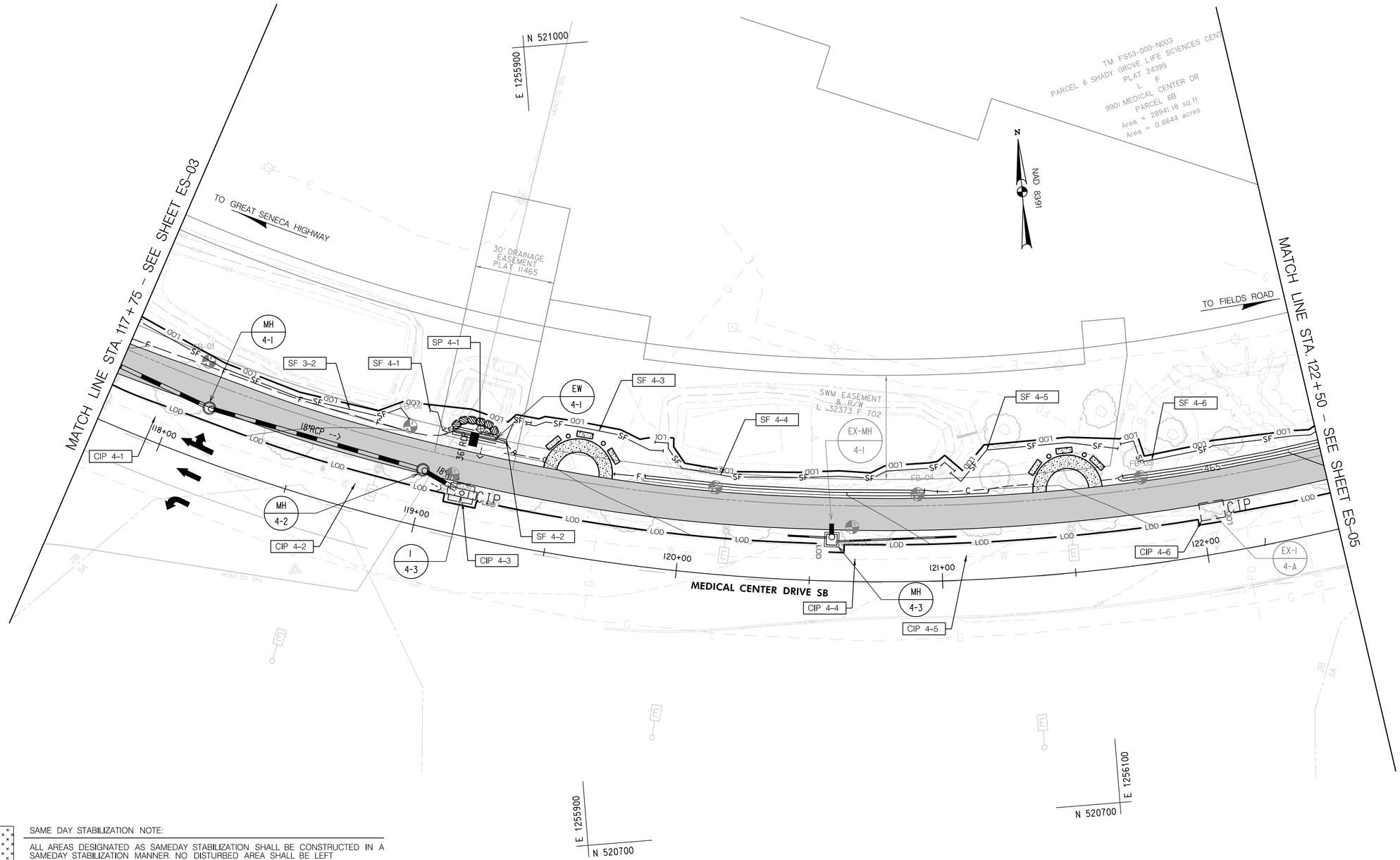

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Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-04

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 48 of 87

PLOTTED: 11/17/2022
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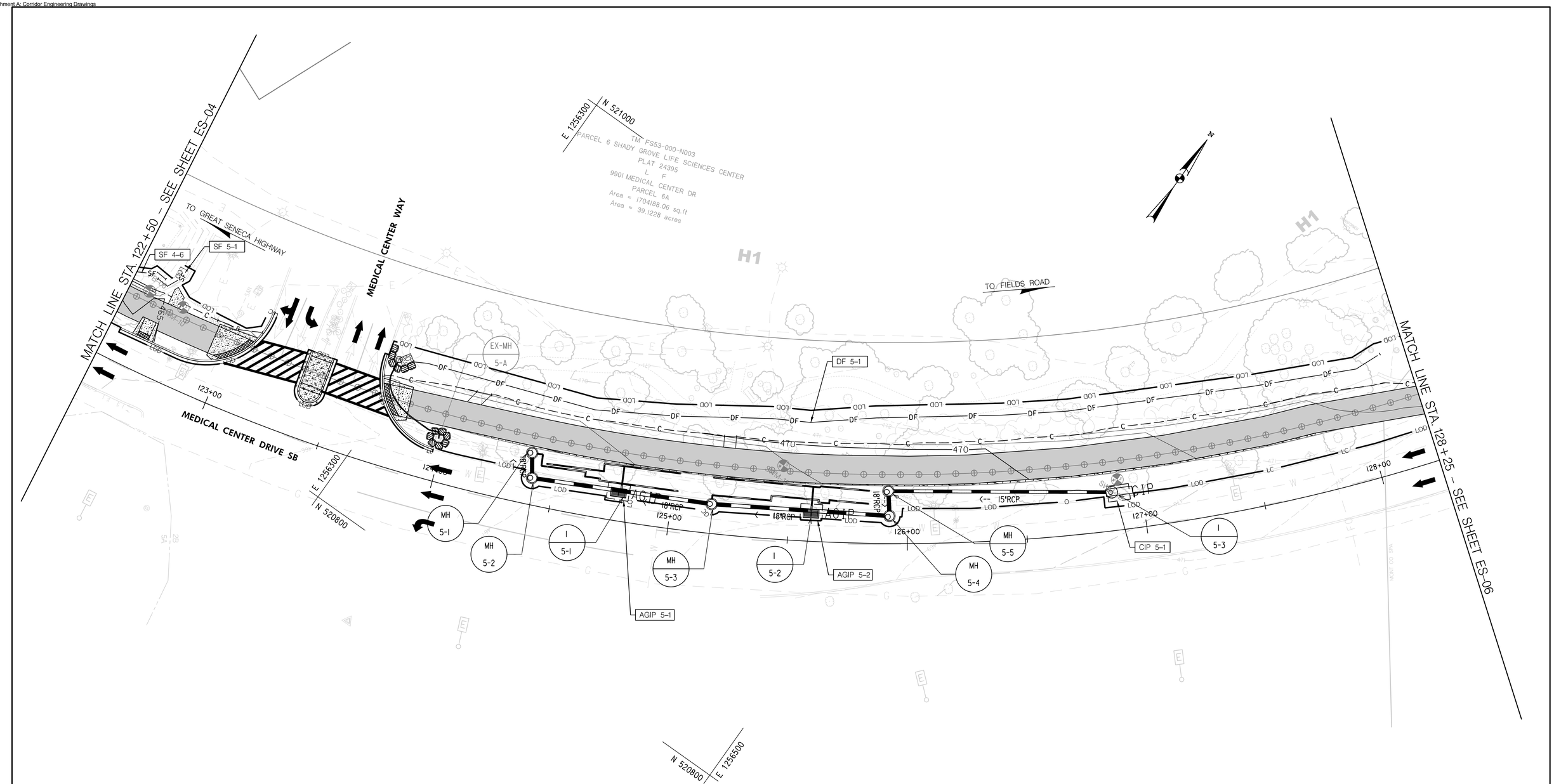

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Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES–05

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 49 of 87

PLOTTED: 11/7/2022
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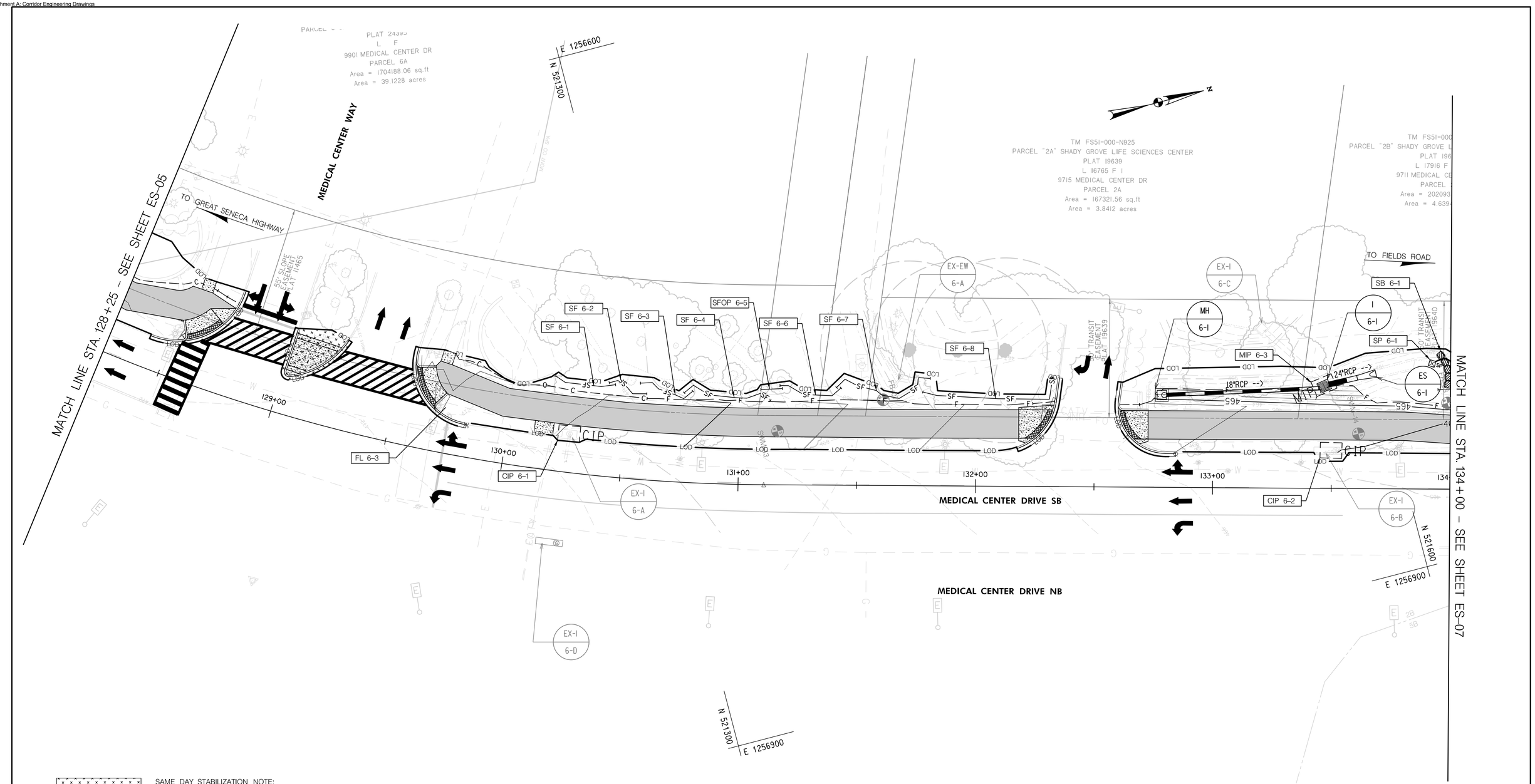

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Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES–06

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 50 of 87

PLOTTED: 11/12/2022
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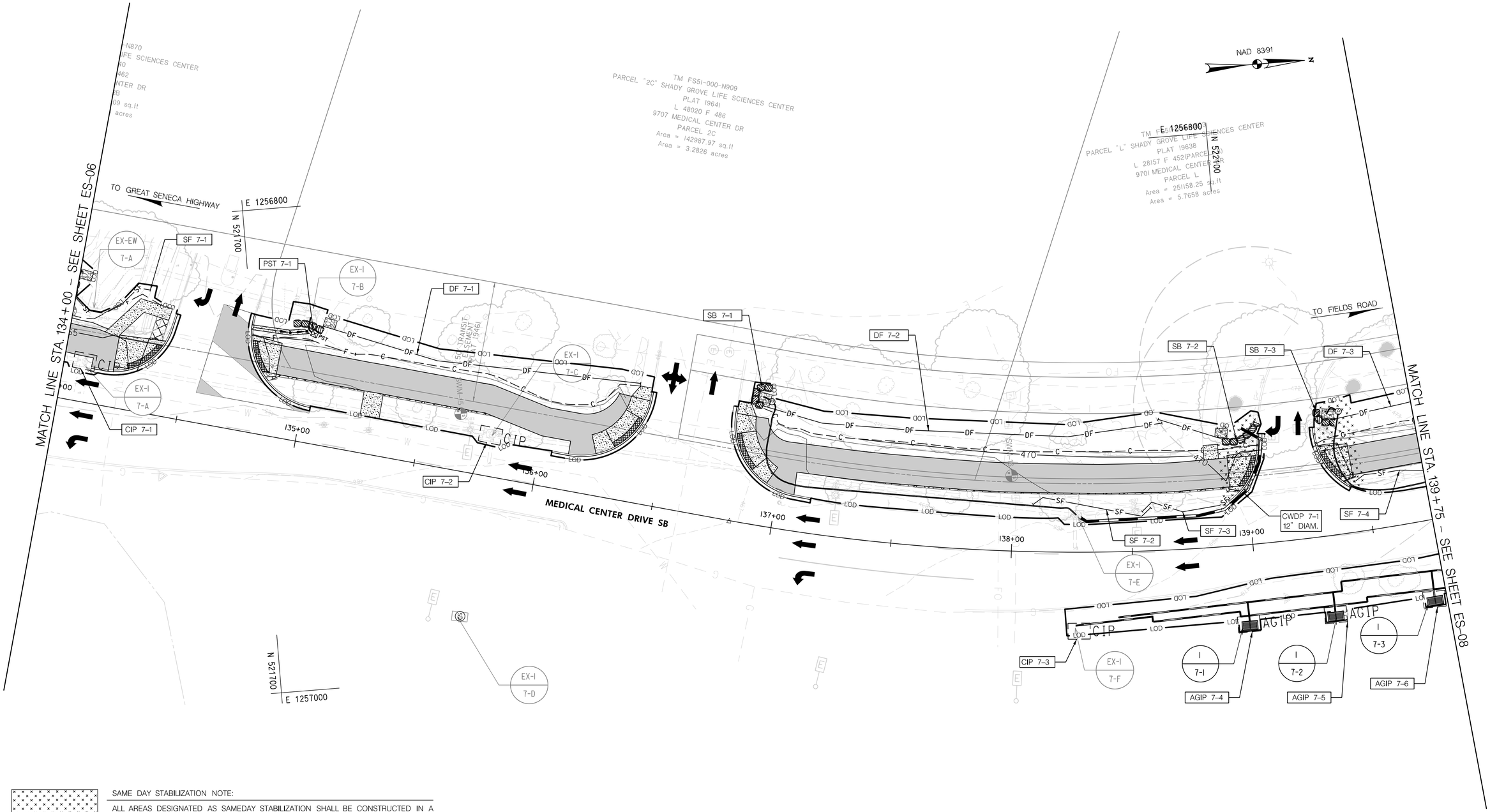

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Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-07

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 51 of 87

PLOTTED: 11/7/2022
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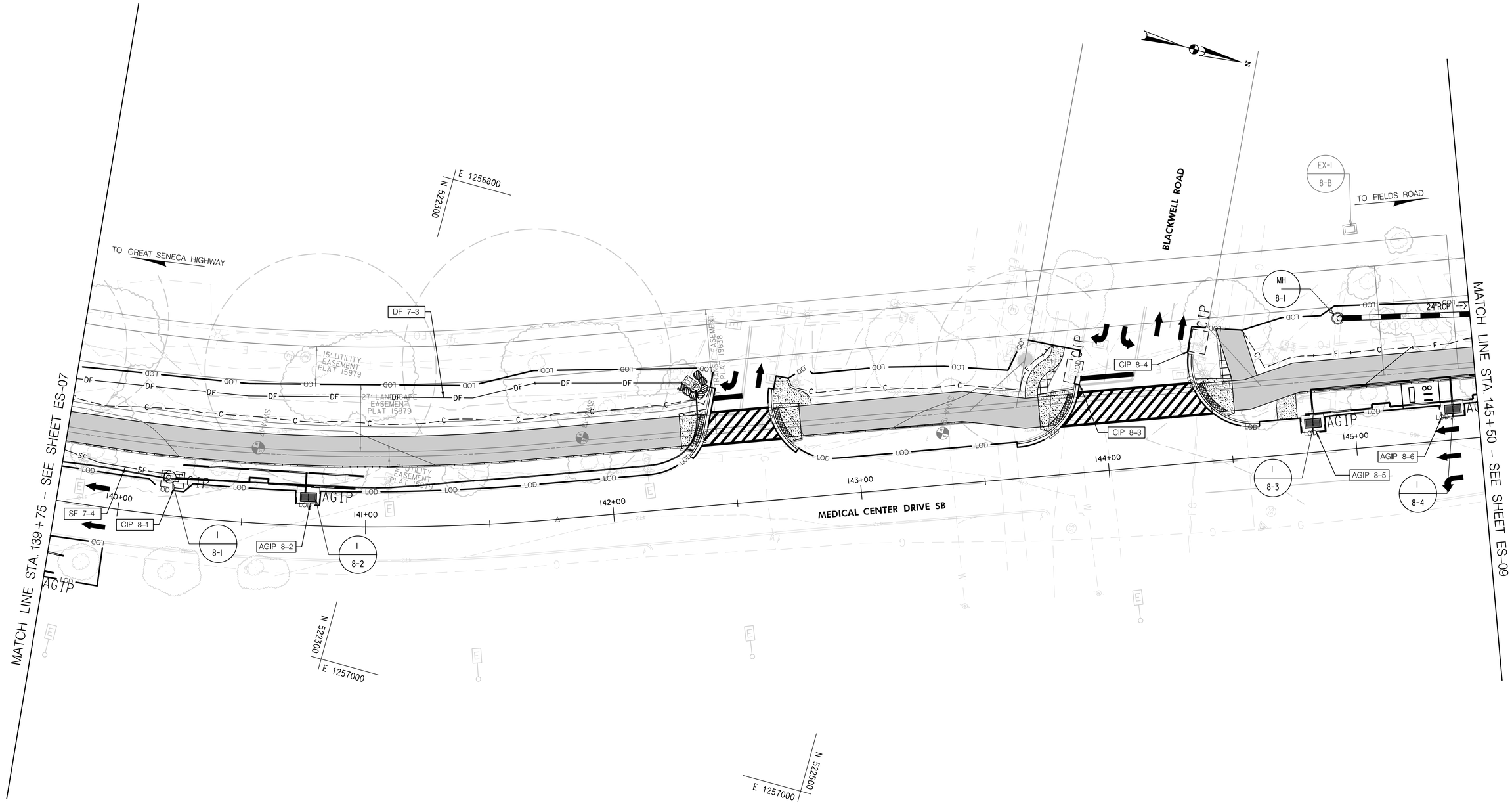

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Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-08

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 52 of 87

PLOTTED: 11/7/2022
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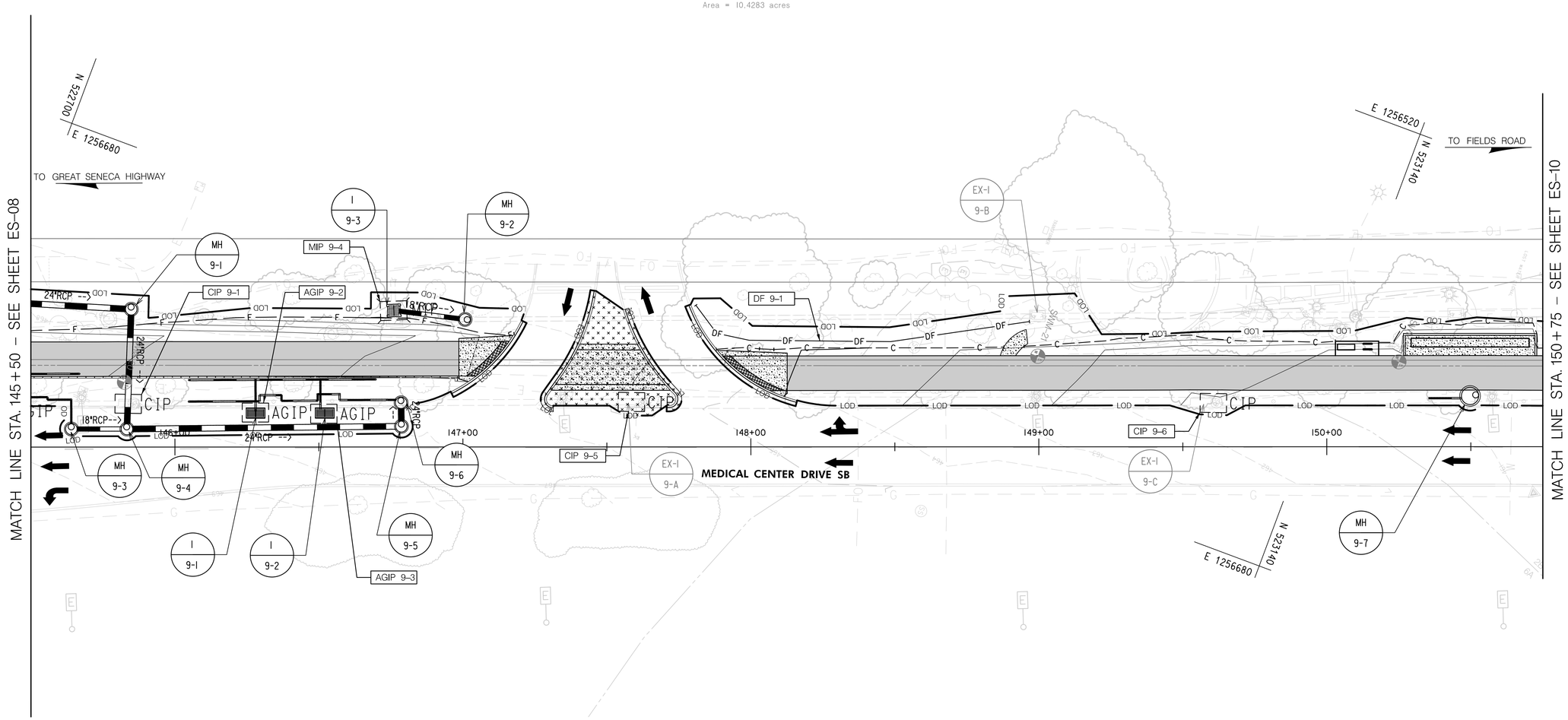
TM FS51-000-N546
JBG/ROCKVILLE NCI CAMPUS, LLC
EXHIBIT 'B' LEASE AREA ON PARCEL M
MO CO MED CENTER
L. 39254 F. 178 (N546)
9613 MEDICAL CENTER DR (N546)
GROUND LEASE (PART OF PARCEL M PLAT BOOK 142 PLAT 16292)
Area = 454257.10 sq.ft
Area = 10.4283 acres



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SCALE: 1" = 20'

Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-09

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 53 of 87

PLOTTED: 11/7/2022
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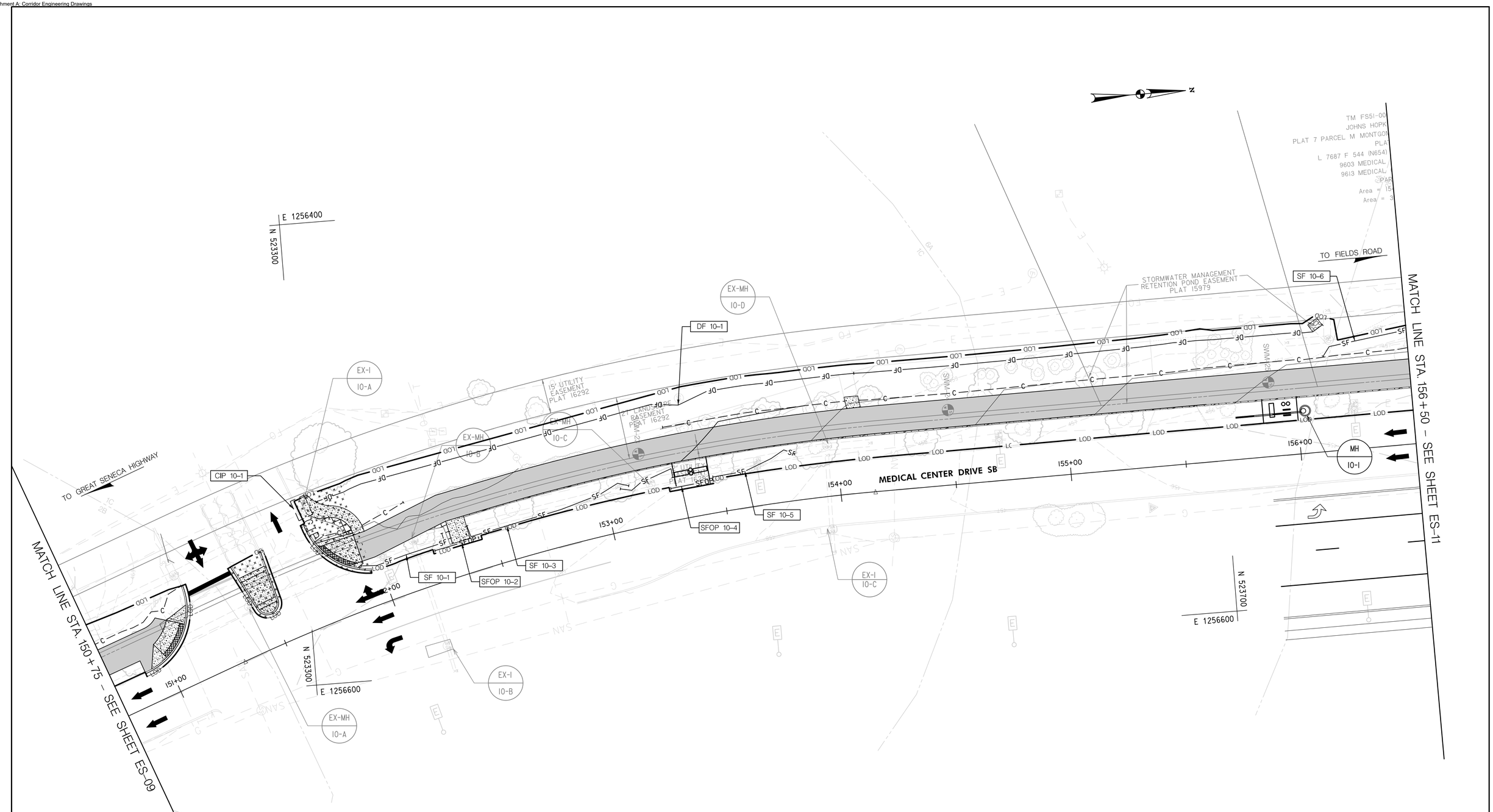

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MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES–10

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 54 of 87

PLOTTED: 11/7/2022
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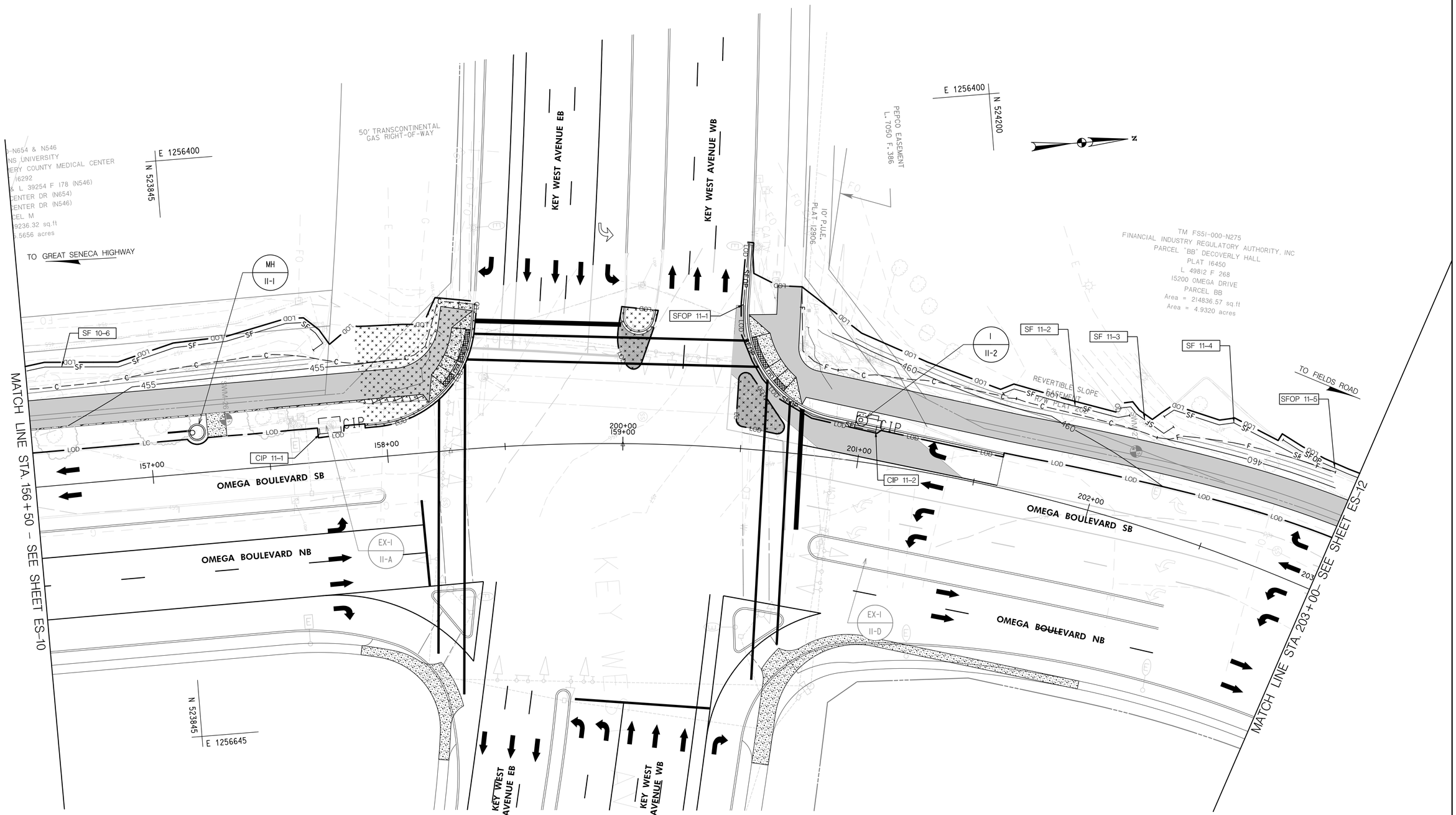

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MONTGOMERY COUNTY
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GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

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APPROVED

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LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-11

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 55 of 87

PLOTTED: 11/17/2022
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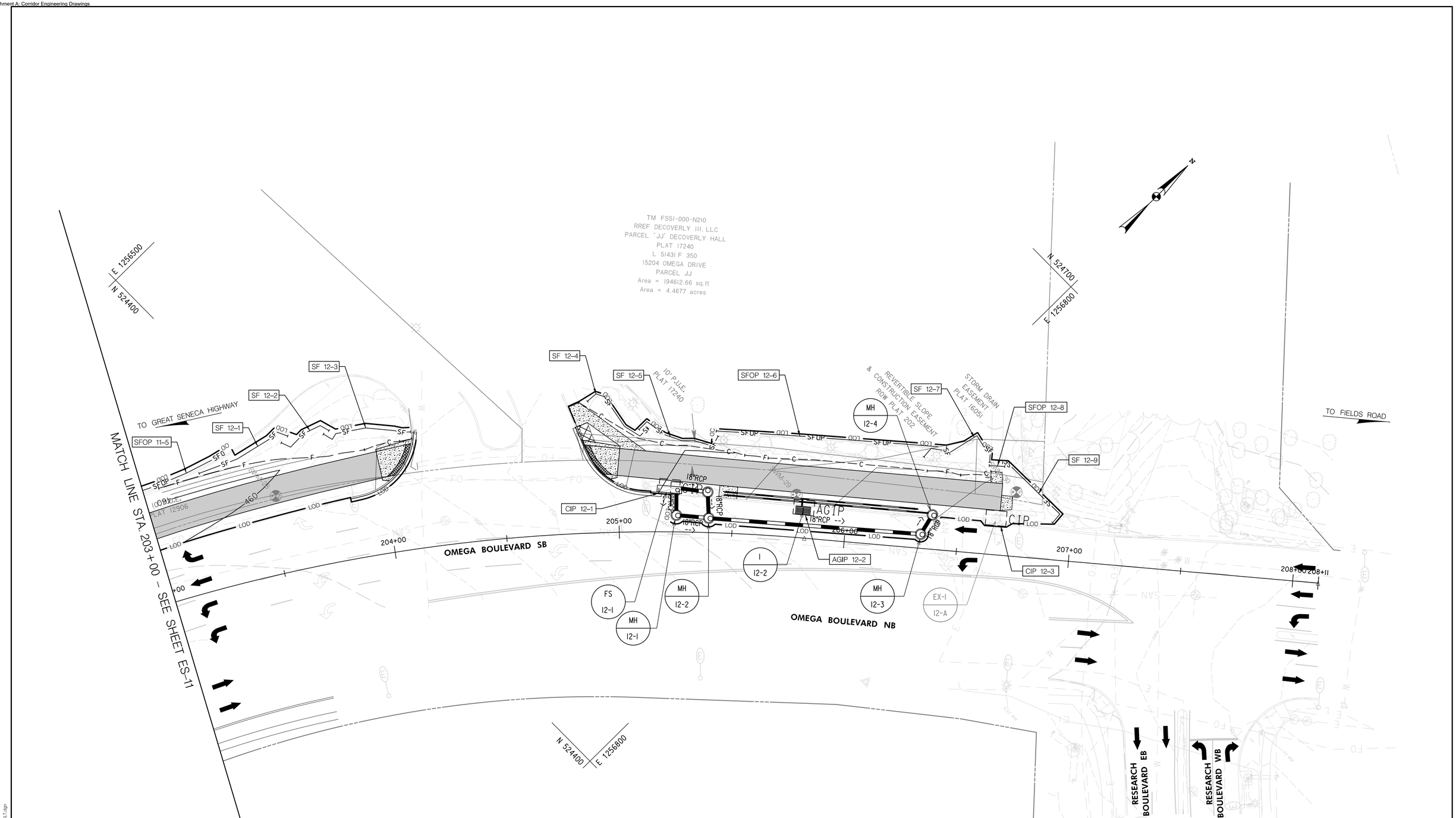

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

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LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL PLAN

SCALE : 1"=20' DATE: NOVEMBER 2022 ES-12

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 56 of 87

PLOTTED: 11/7/2022
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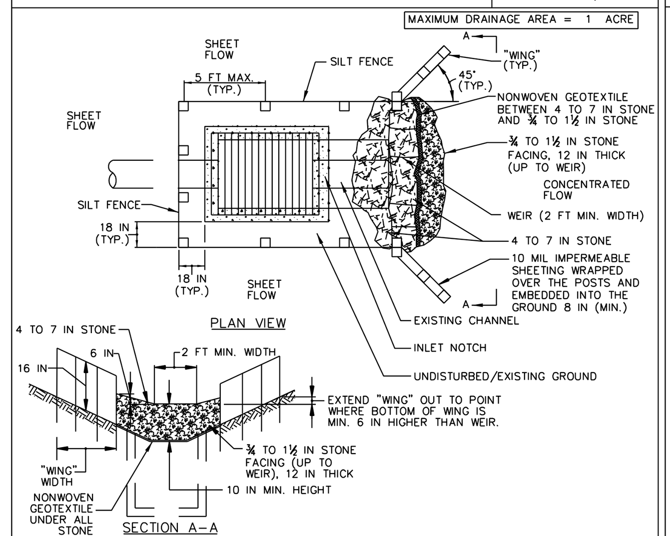
DETAIL E-9-4 MEDIAN INLET PROTECTION

STANDARD SYMBOL: MIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

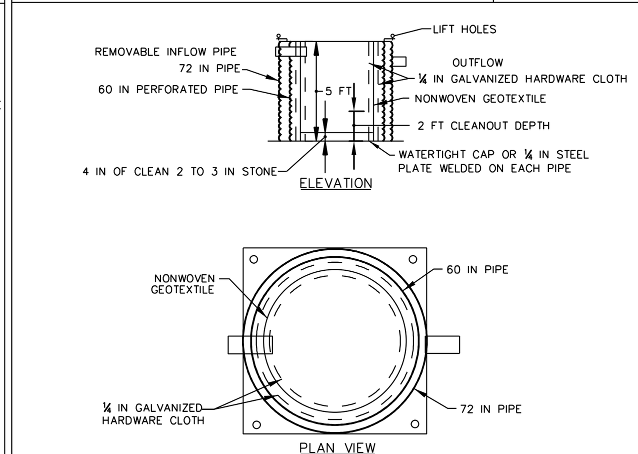
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. INSTALL SILT FENCE ON ALL SIDES OF INLET RECEIVING SHEET FLOW. FENCE IS TO BE INSTALLED IN ACCORDANCE WITH SILT FENCE DETAIL E-1, EXCEPT POSTS ARE TO BE SPACED A MAXIMUM OF 5 FEET APART.
3. INSTALL STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
4. CONSTRUCT "WINGS" IN ACCORDANCE WITH DIVERSION FENCE DETAIL C-9.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST



CONSTRUCTION SPECIFICATIONS

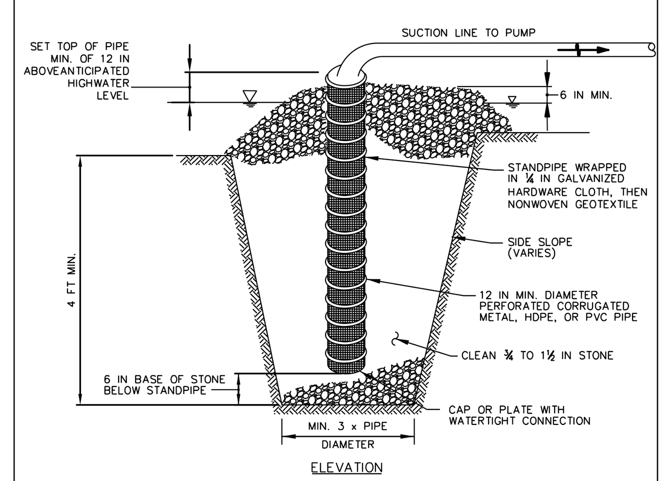
1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-2 SUMP PIT

STANDARD SYMBOL: SP



CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

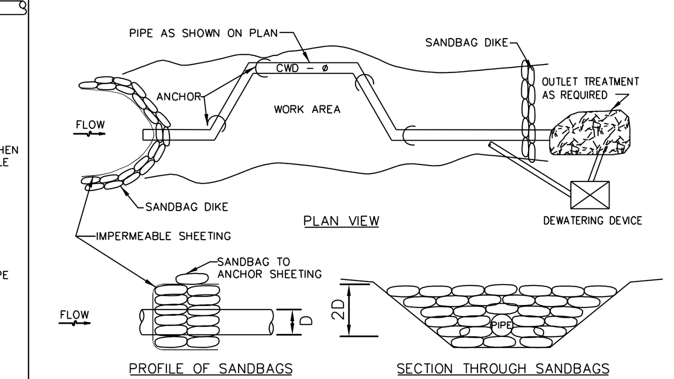
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL: CWD – 12

DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION.



CONSTRUCTION SPECIFICATIONS

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

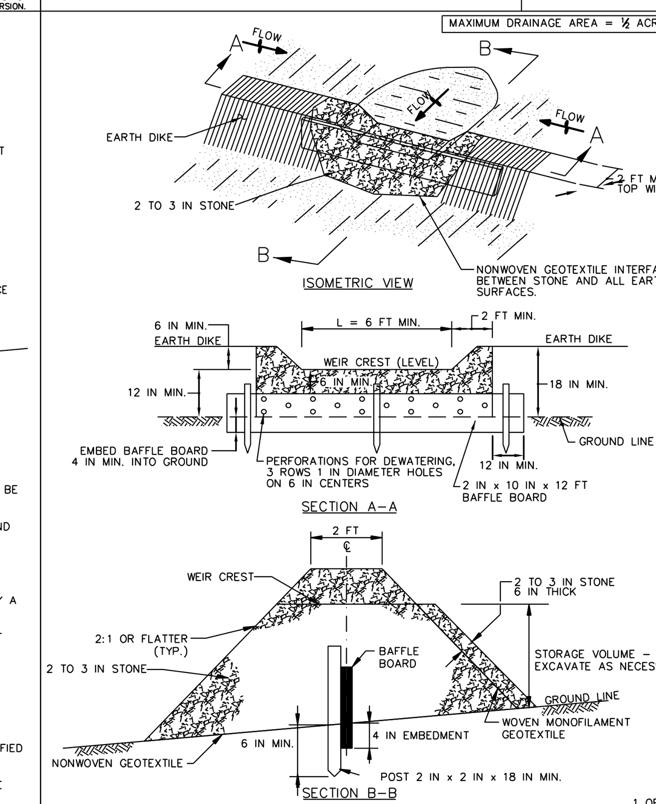
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

MAXIMUM DRAINAGE AREA = ½ ACRE



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER, EMBED A MINIMUM OF 4 INCHES INTO GROUND, AND EXTEND BAFFEL BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

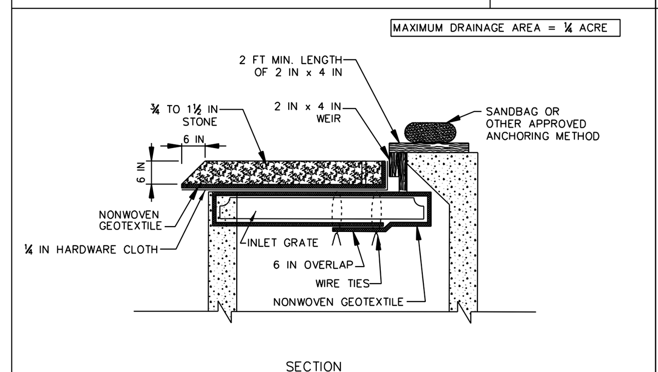
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

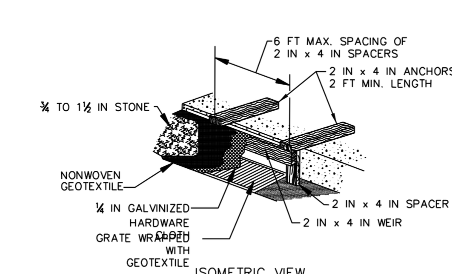
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

MAXIMUM DRAINAGE AREA = ¼ ACRE





1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.
6. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
7. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
9. FORM THE ¼ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
11. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

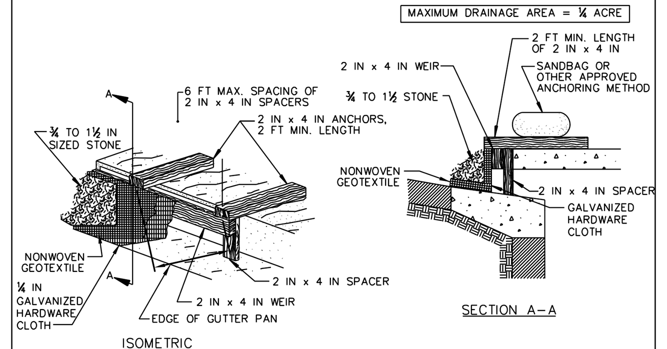
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

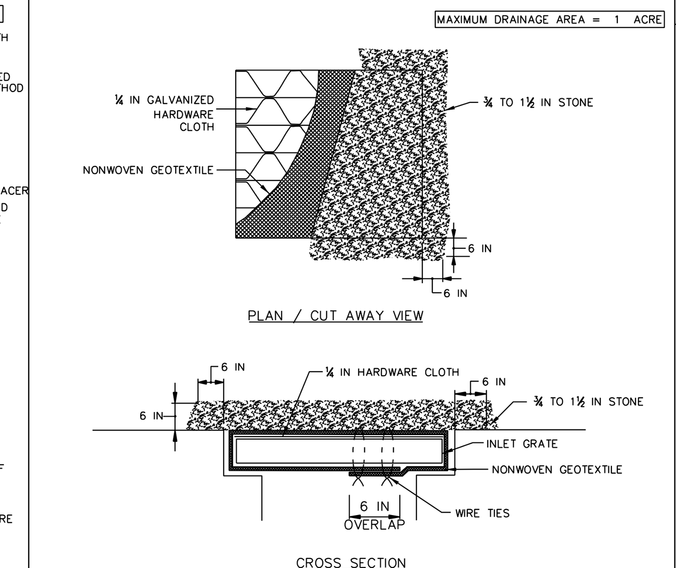
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



CONSTRUCTION SPECIFICATIONS

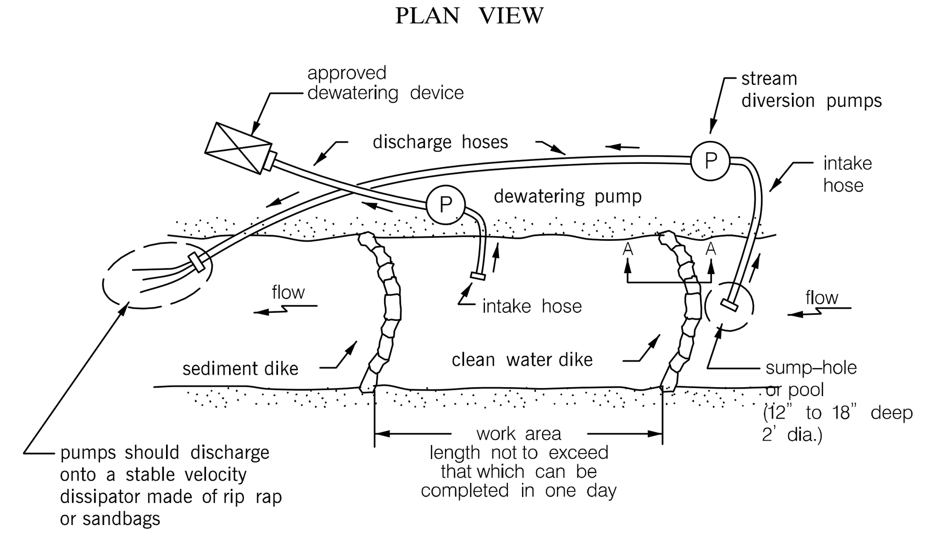
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

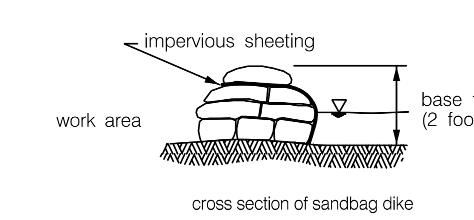
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1.2: PUMP–AROUND PRACTICE

PLAN VIEW



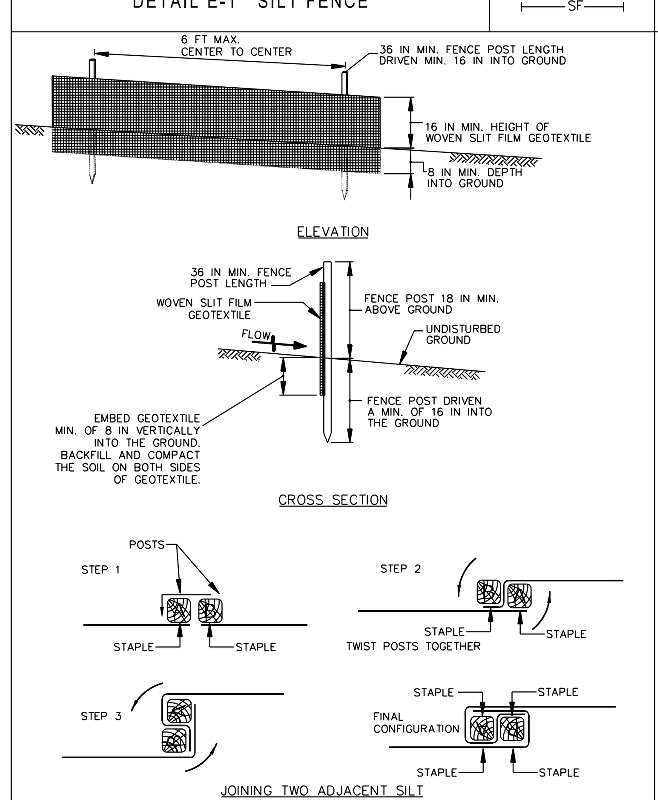
SECTION A–A



cross section of sandbag dike

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1⁄16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

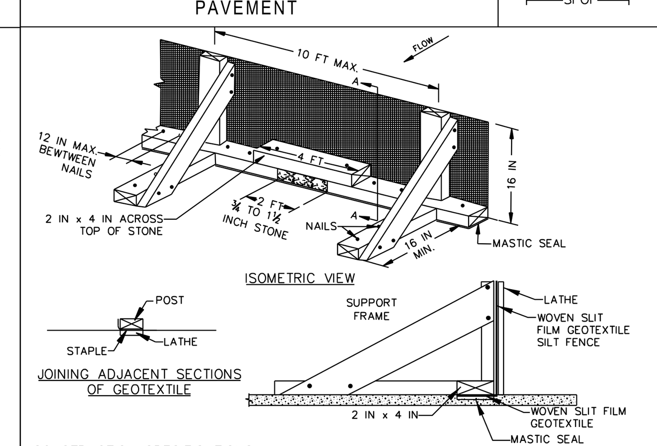
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL: SFOP



CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
9. SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

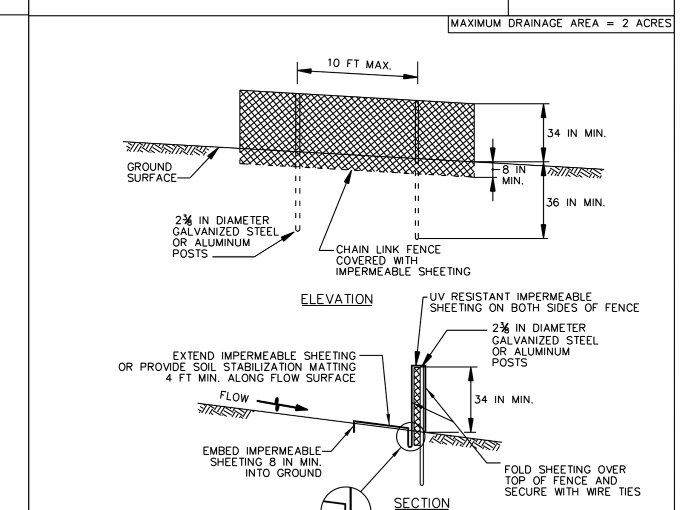
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

PLOTTED: 11/17/2022
FILE: c:\pwworking\gfpw01\ewoolls\d1285685\pES-D001_LSCLT.dgn

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
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

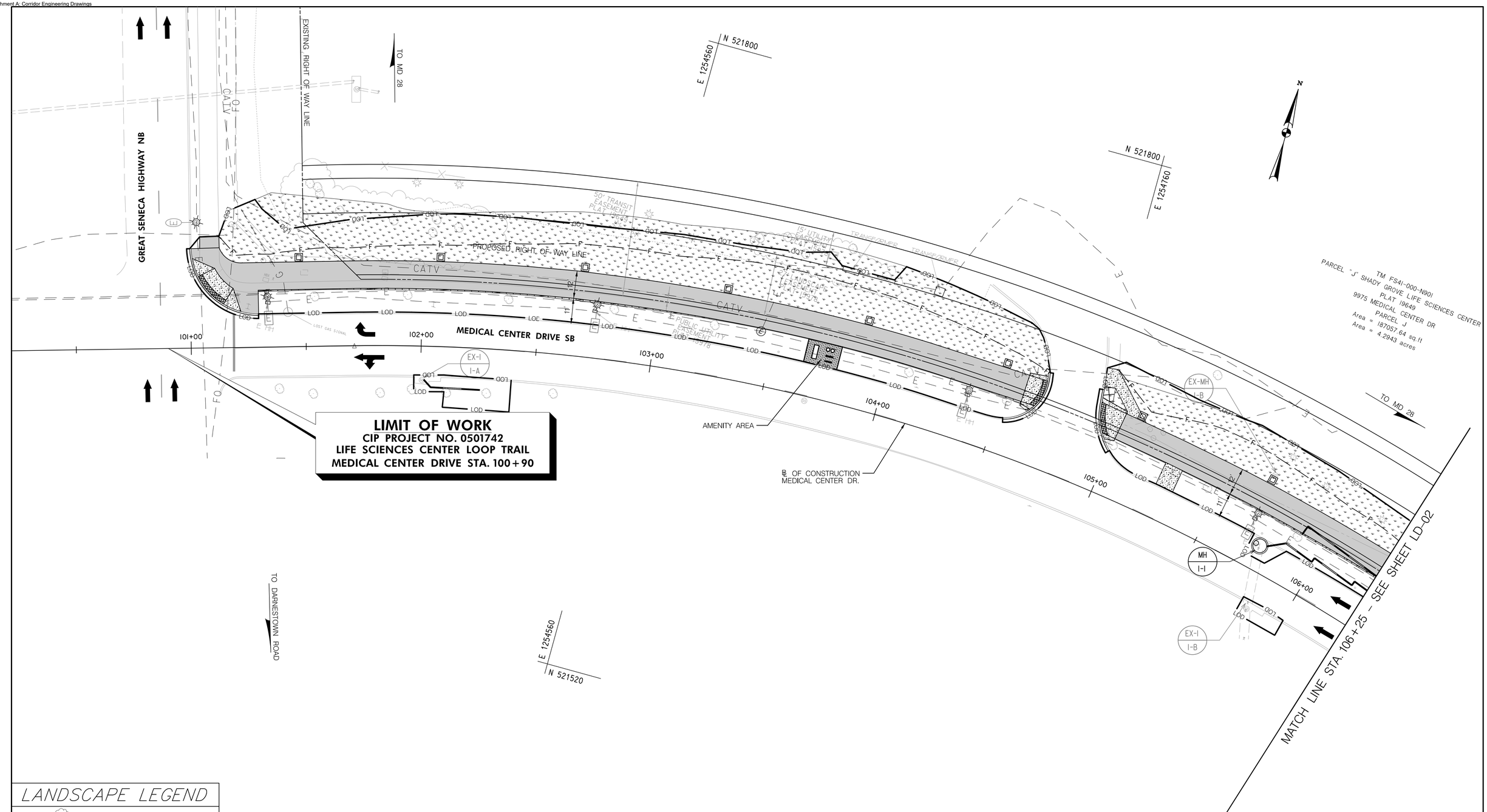
LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

EROSION AND SEDIMENT CONTROL DETAILS

SCALE : NTS   DATE: NOVEMBER 2022   ED–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742   57 of 87



LIMIT OF WORK
CIP PROJECT NO. 0501742
LIFE SCIENCES CENTER LOOP TRAIL
MEDICAL CENTER DRIVE STA. 100+90

LANDSCAPE LEGEND

- TREE TO REMAIN
- TREE TO BE REMOVED
- TURFGRASS ESTABLISHMENT
- TURFGRASS SOD ESTABLISHMENT
- QUERCUS BICOLOR (SWAMP WHITE OAK)
- AMELANCHIER CANADENSIS

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

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–01
DPS SC/SWM PERMIT SHEET NO. ____ of ____
C.I.P. Project No. : 0501742 58 of 87

PLOTTED: 11/17/2022
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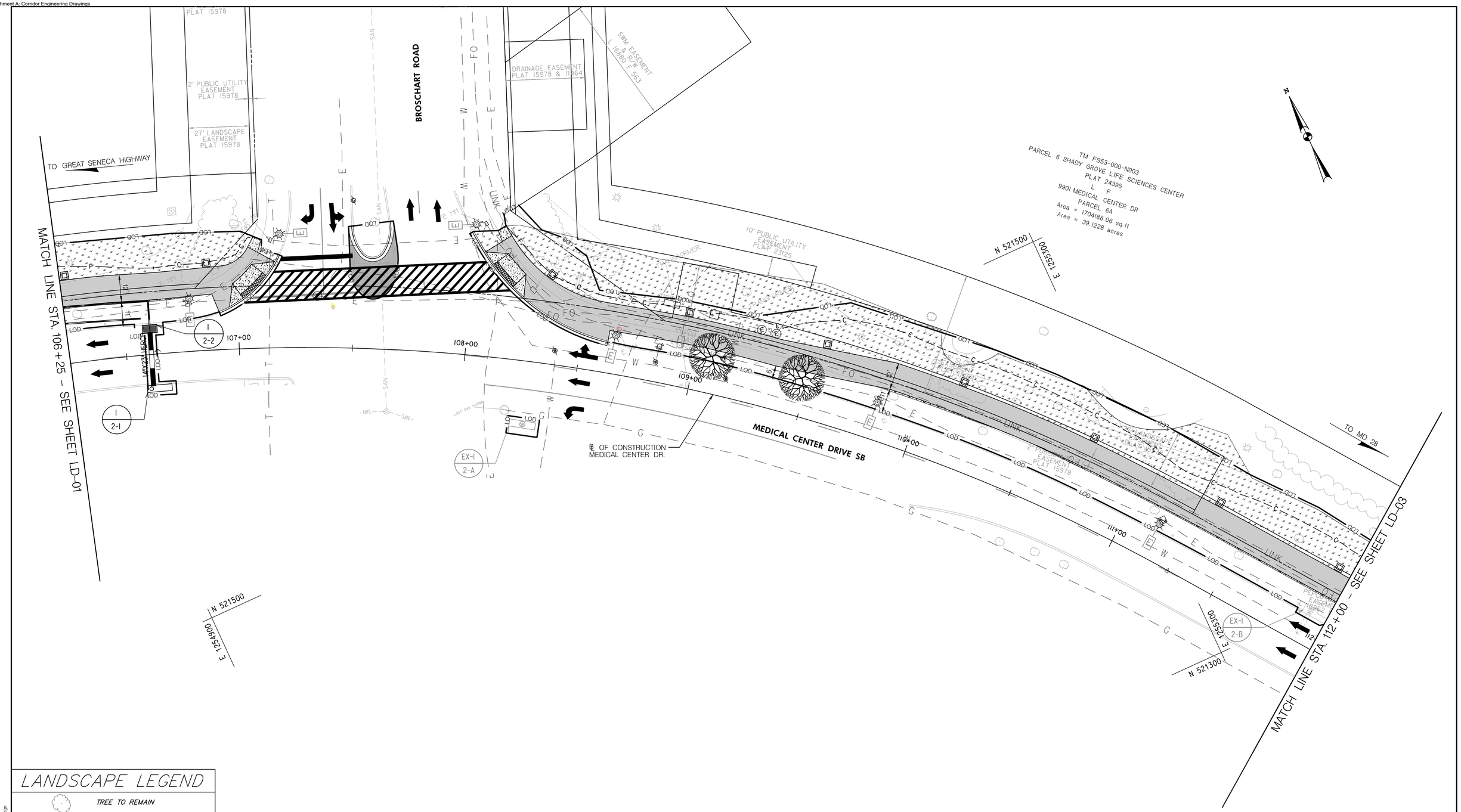

LANDSCAPE LEGEND

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

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 59 of 87

PLOTTED: 11/17/2022
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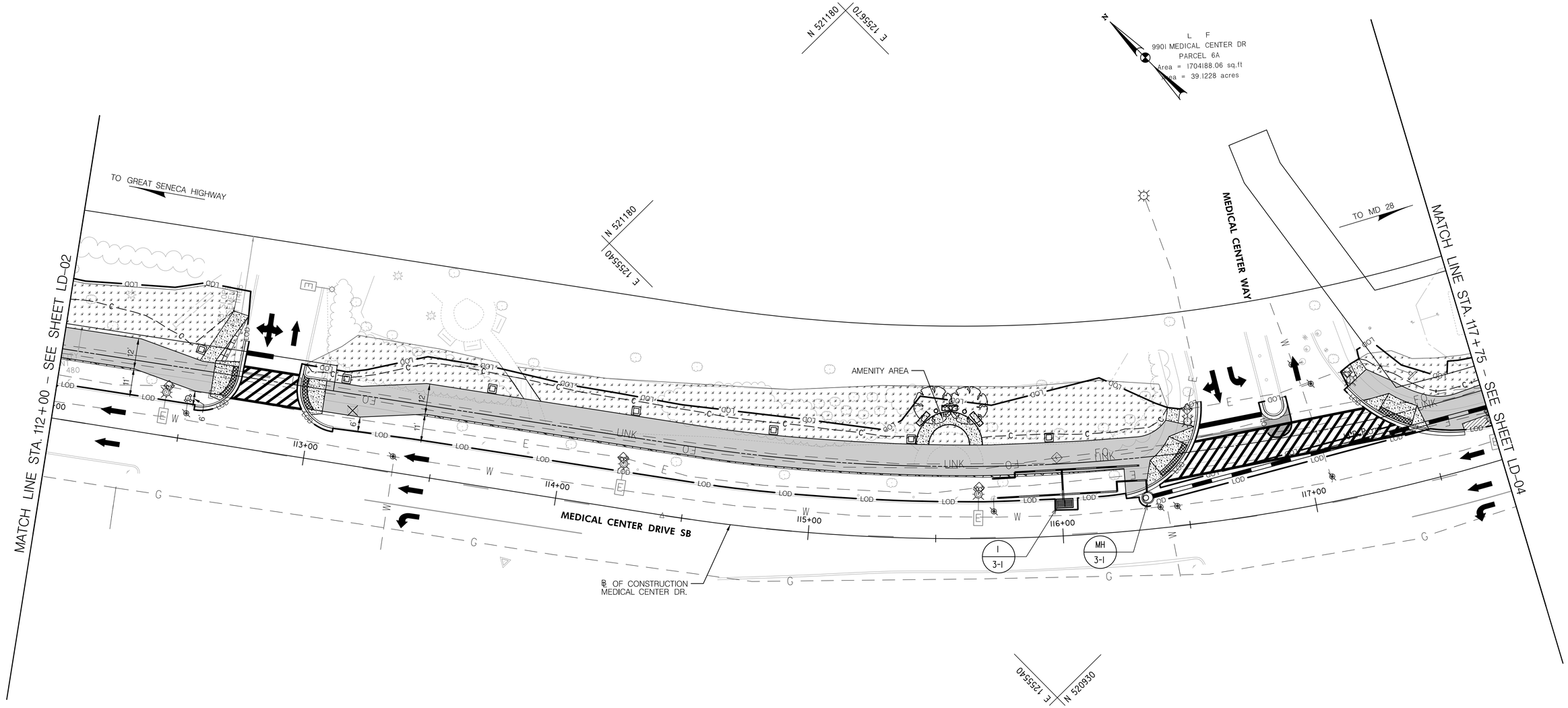

LANDSCAPE LEGEND

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

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–03

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 60 of 87

PLOTTED: 11/17/2022
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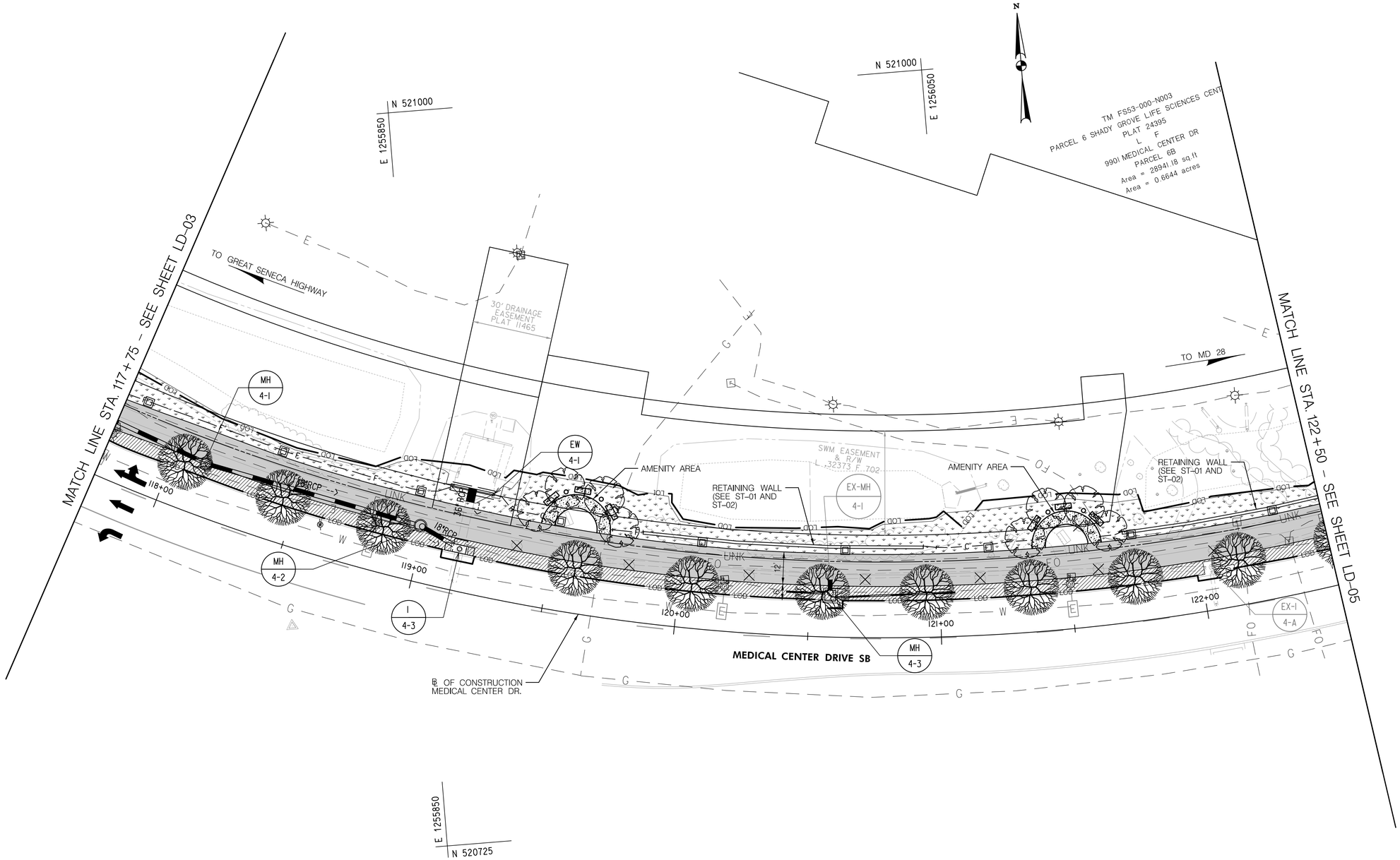

LANDSCAPE LEGEND

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SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD-04

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 61 of 87

PLOTTED: 11/17/2022
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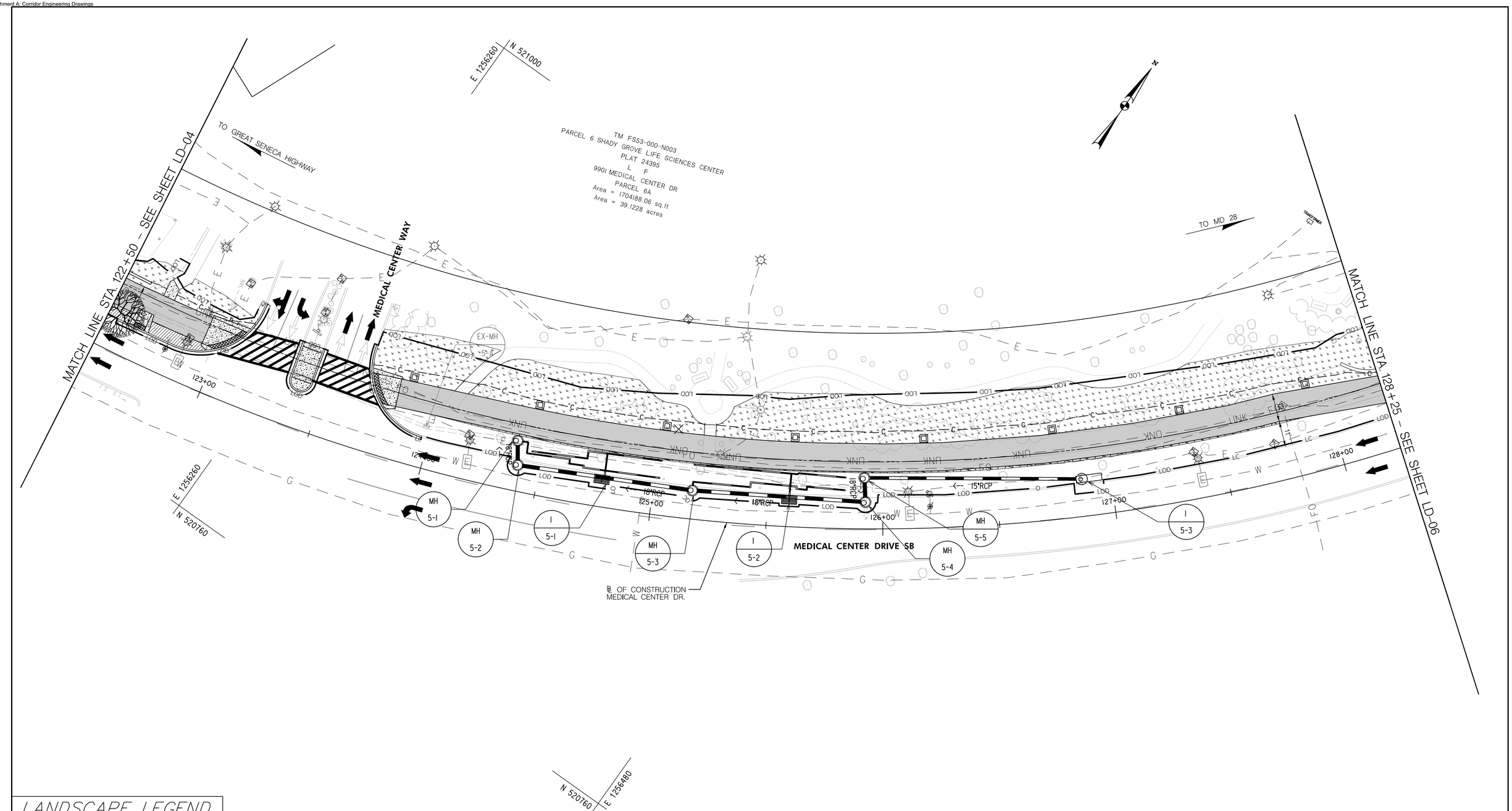

LANDSCAPE LEGEND

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- AMELANCHIER CANADENSIS

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–05

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 62 of 87

PLOTTED: 11/7/2022
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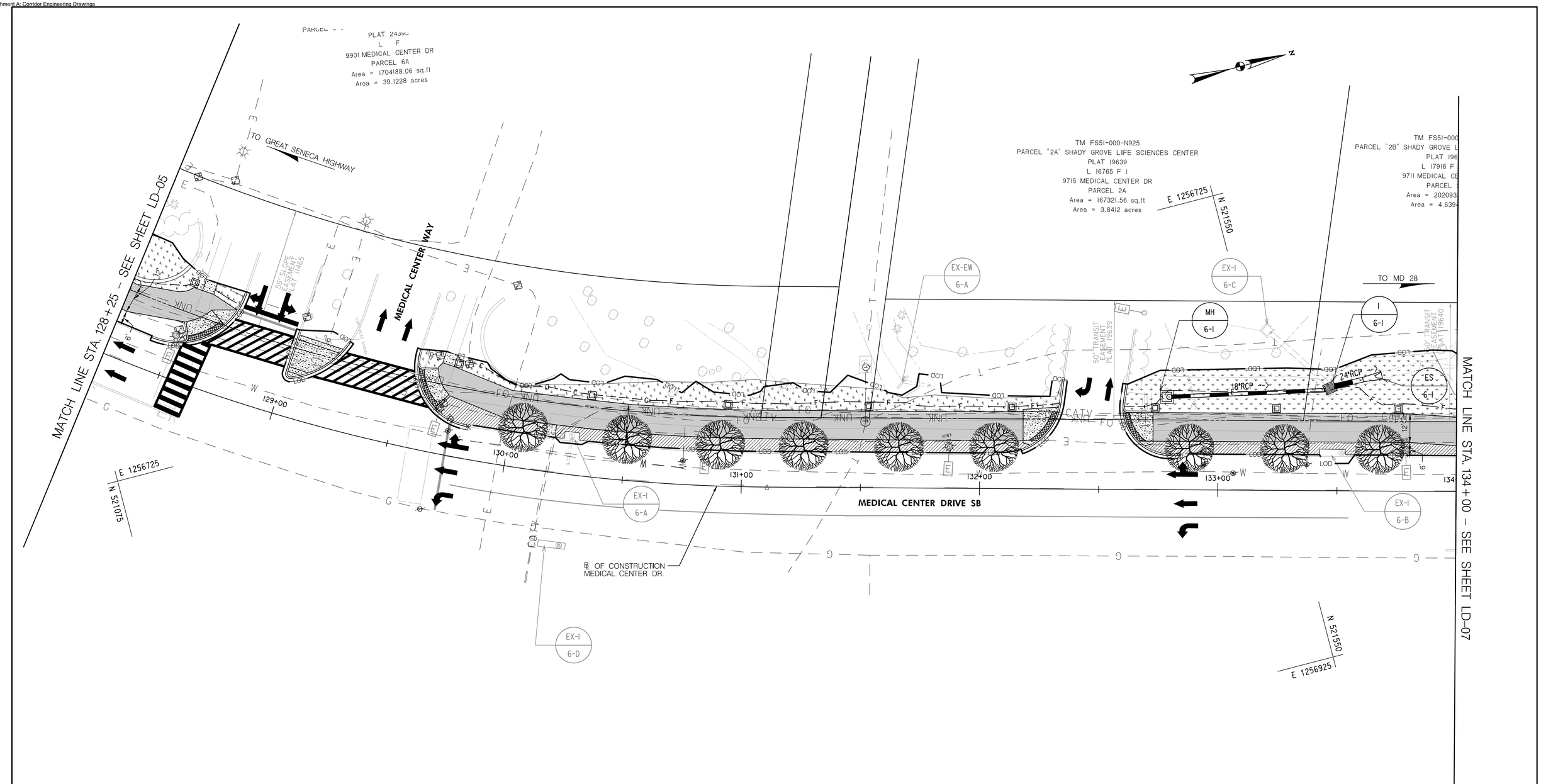

LANDSCAPE LEGEND

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SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD-06

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 63 of 87

PLOTTED: 11/17/2022
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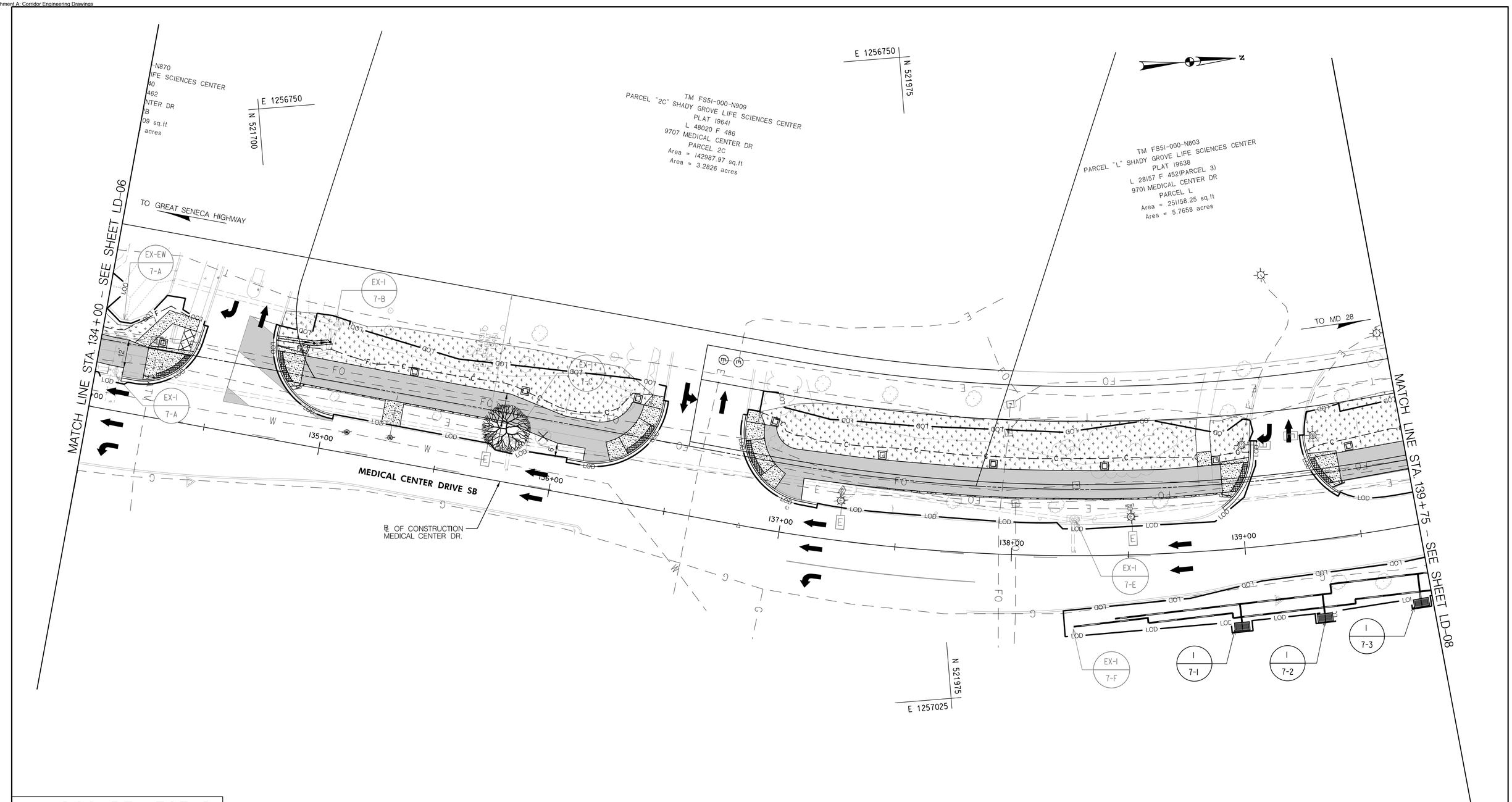

LANDSCAPE LEGEND

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- AMELANCHIER CANADENSIS

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SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–07

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 64 of 87

PLOTTED: 11/17/2022
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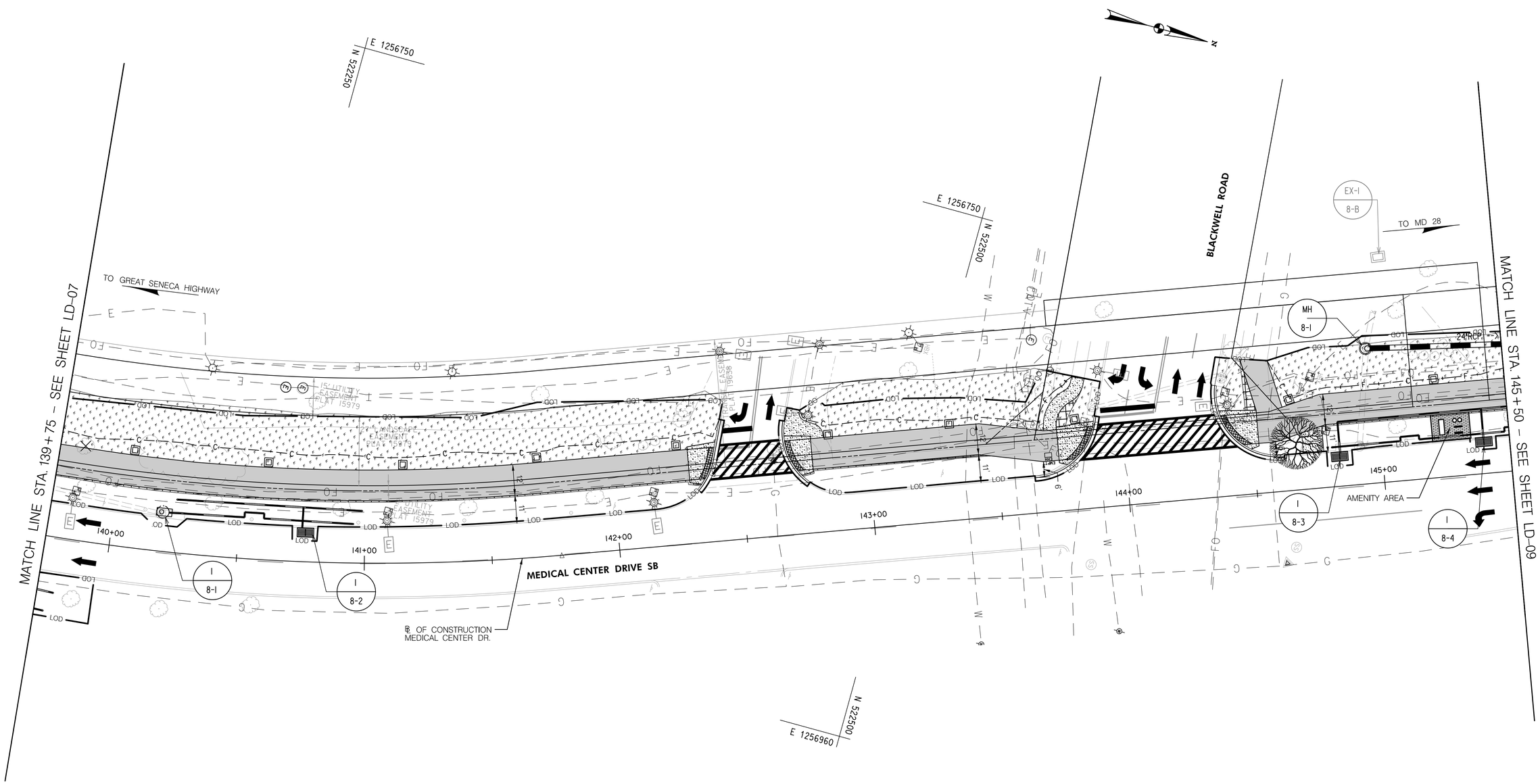

LANDSCAPE LEGEND

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Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–08

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 65 of 87

PLOTTED: 11/17/2022
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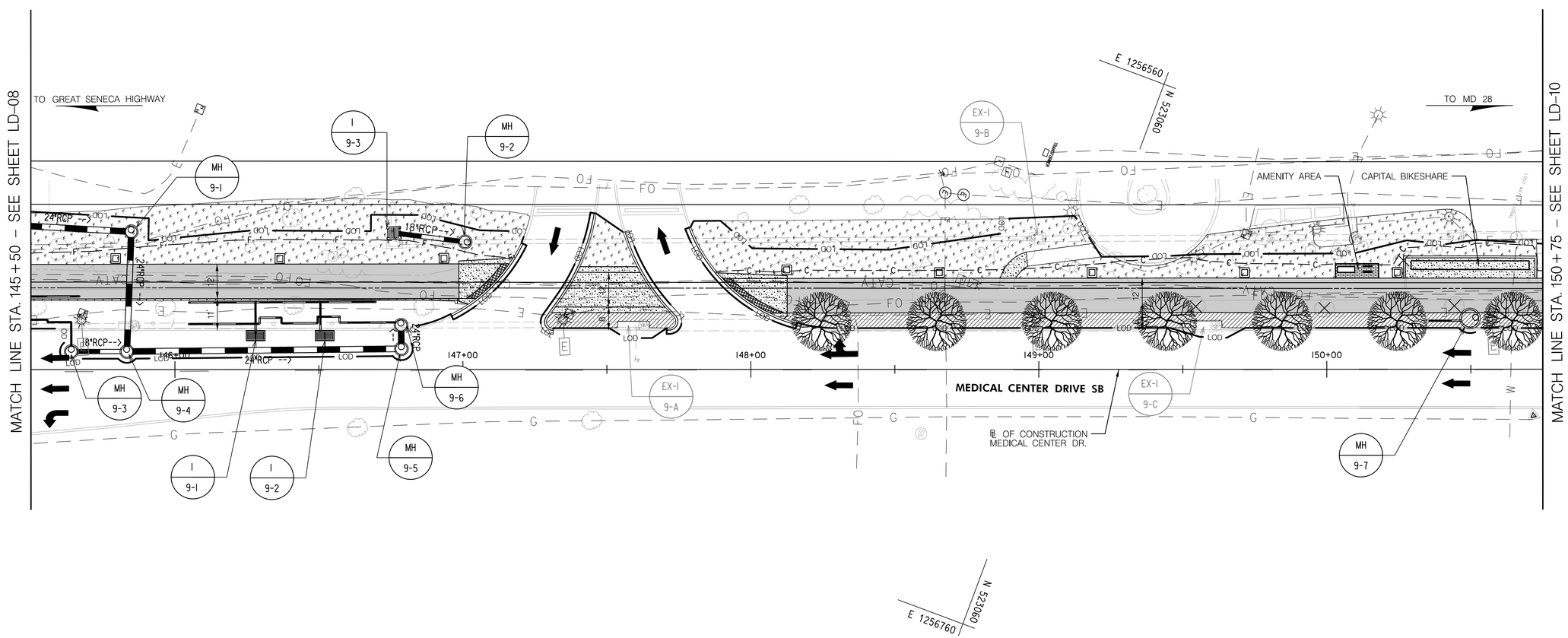
TM FS51-000-N546
JBG/ROCKVILLE NCI CAMPUS, LLC
EXHIBIT 'B' LEASE AREA ON PARCEL M
MO CO MED CENTER
L. 39254 F. 178 (N546)
9613 MEDICAL CENTER DR. (N546)
GROUND LEASE (PART OF PARCEL M PLAT BOOK 142 PLAT 16292)
Area = 454257.10 sq.ft
Area = 10.4283 acres



LANDSCAPE LEGEND

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SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–09

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 66 of 87

PLOTTED: 11/7/2022
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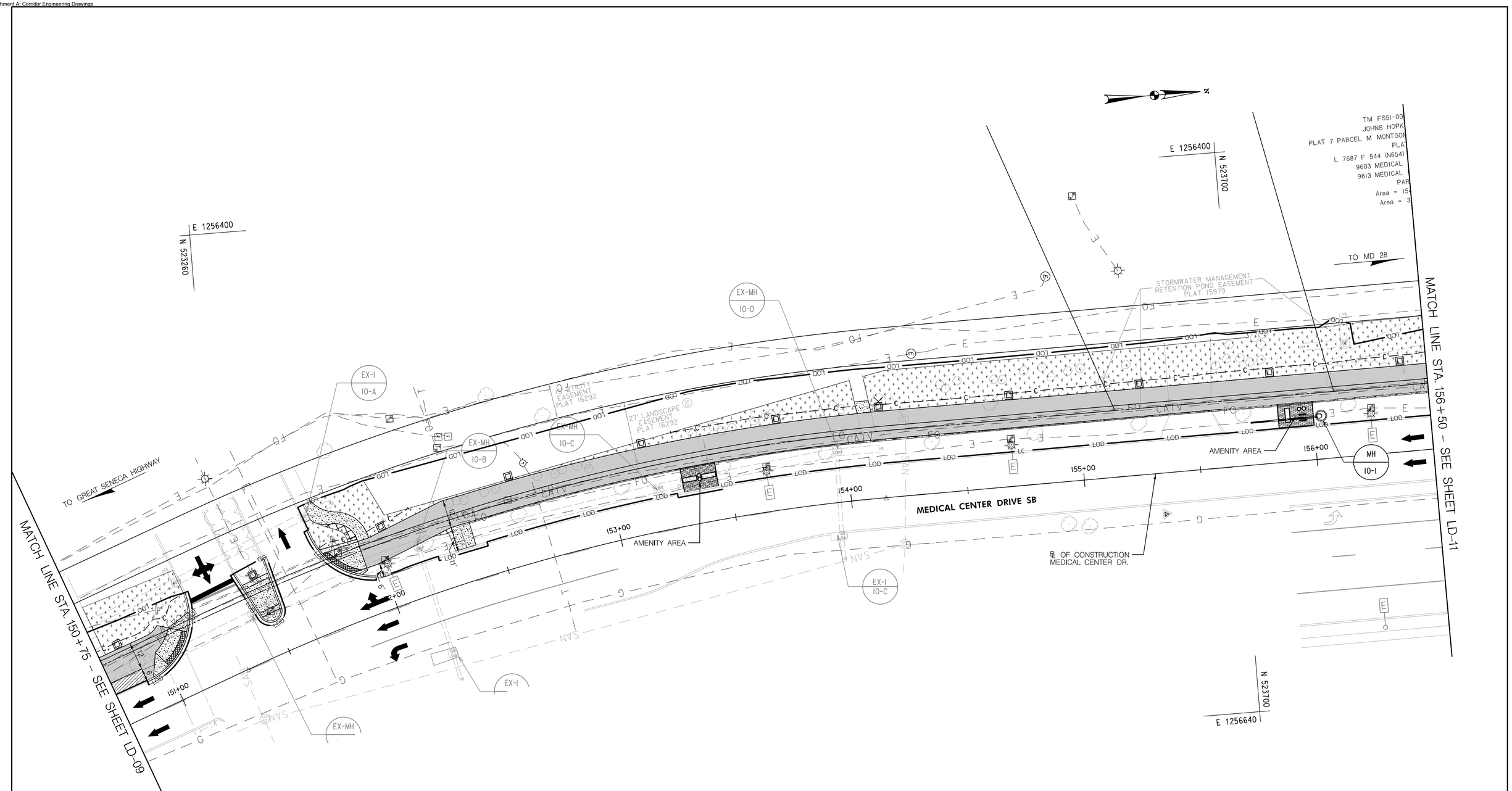

LANDSCAPE LEGEND

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- QUERCUS BICOLOR (SWAMP WHITE OAK)
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20' 0 20' 40'
SCALE: 1" = 20'

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–10

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 67 of 87

PLOTTED: 11/17/2022
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LANDSCAPE LEGEND

- TREE TO REMAIN
- TREE TO BE REMOVED
- TURFGRASS ESTABLISHMENT
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Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–11

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 68 of 87

PLOTTED: 11/17/2022
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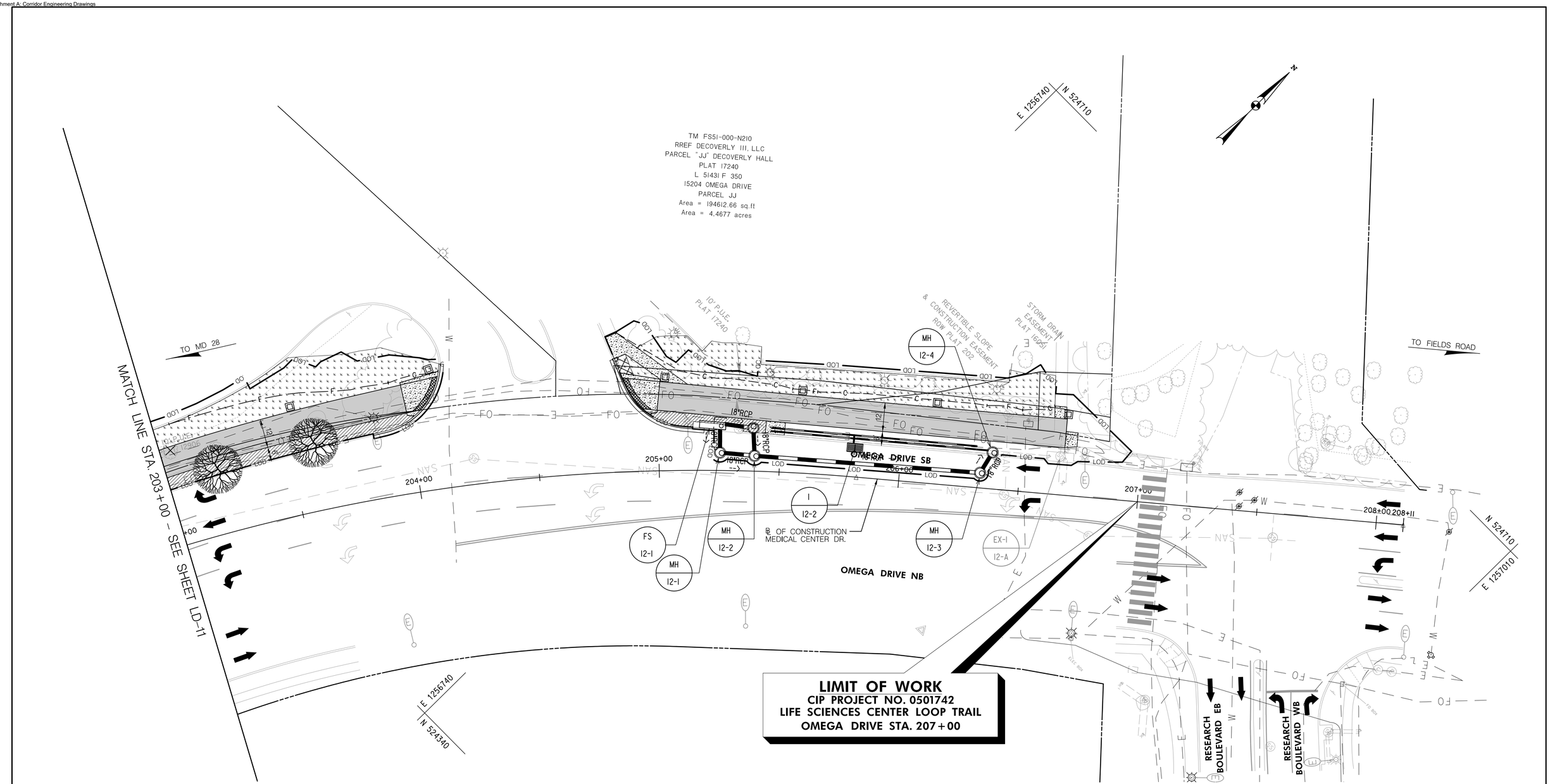

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Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: TCW Drawn by: TCW Checked by: YLIU

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LANDSCAPE PLANS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LD–12

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 69 of 87

PLOTTED: 11/17/2022
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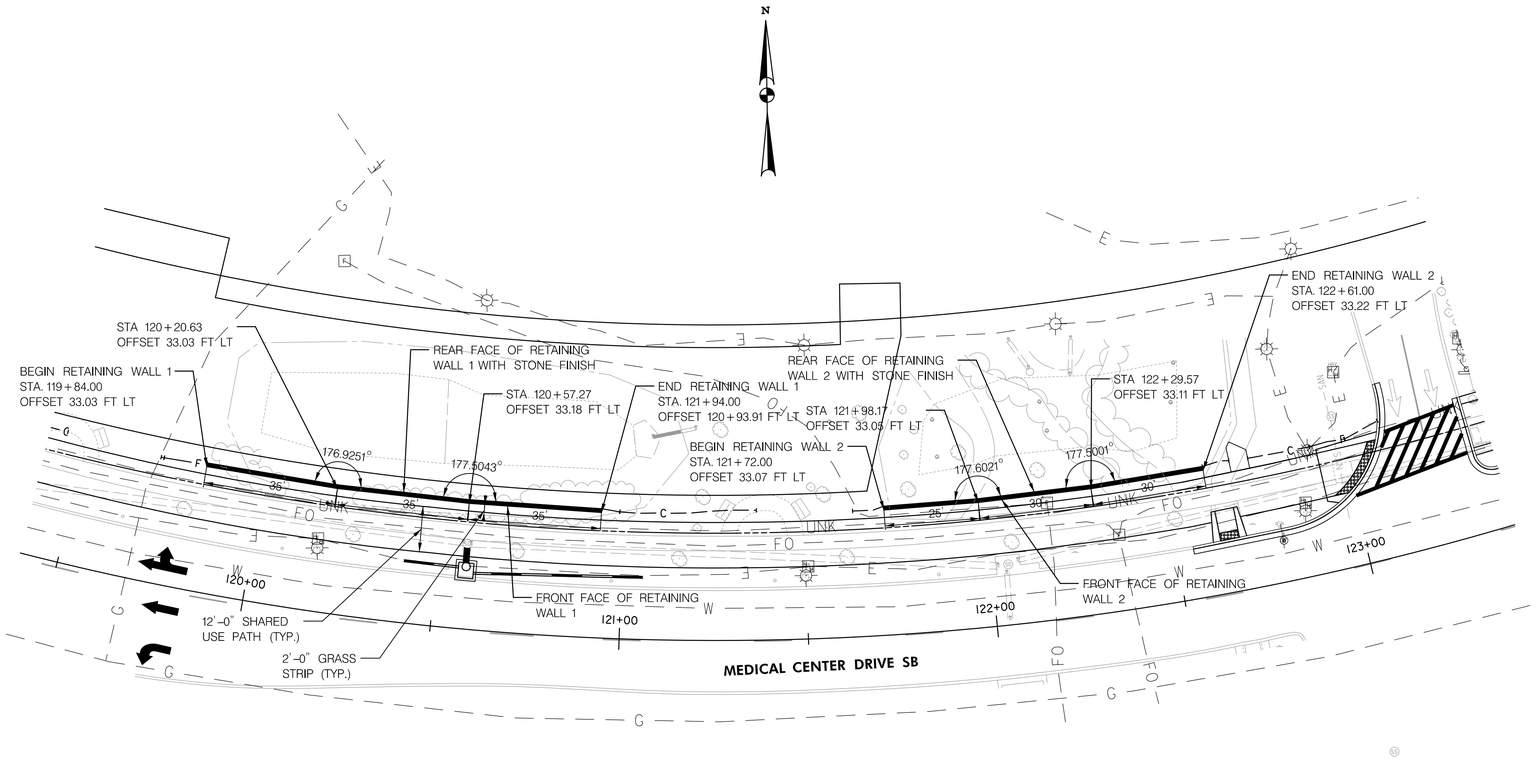

GENERAL PLAN – RETAINING WALLS
SCALE: 1" = 20'
NOTE: BASELINE OFFSETS TO THE FRONT FACE OF WALL

SPECIFICATIONS:
– SHA SPECIFICATIONS DATED JULY 2021
– 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.

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.

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: KAC Drawn by: TCW Checked by: VTD

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
RETAINING WALL PLAN

SCALE : 1" = 20' DATE: NOVEMBER 2022 ST–01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 70 of X 87

PLOTTED: 11/12/2022
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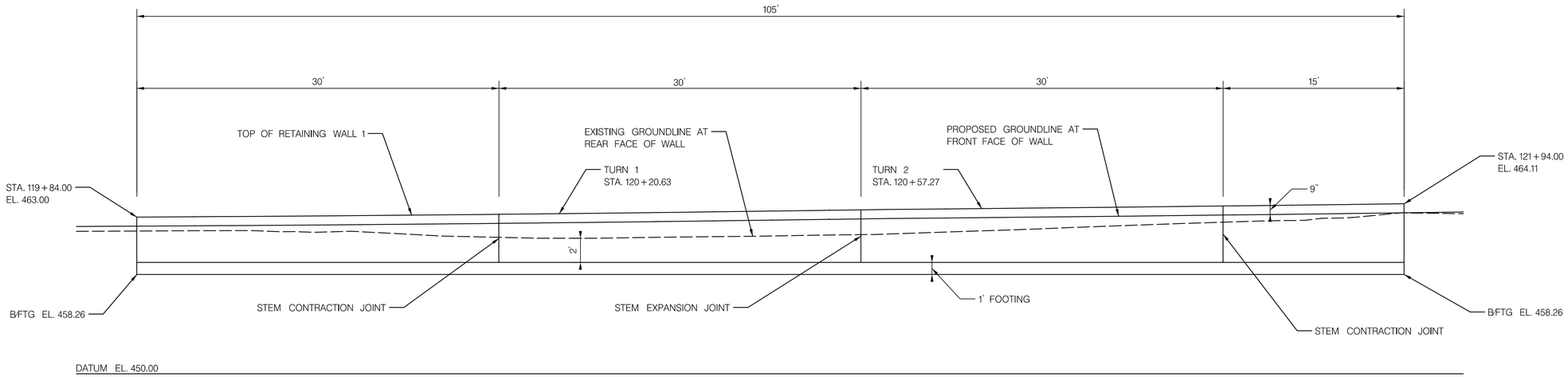
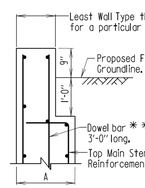


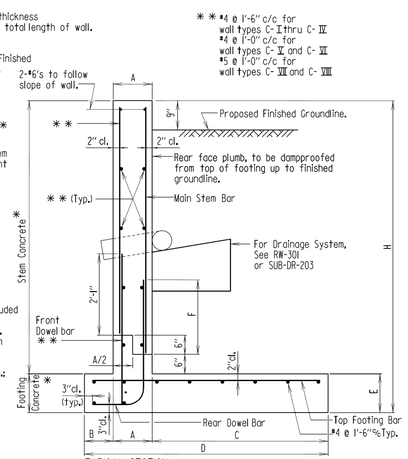
ELEVATION – RETAINING WALL 1

SCALE: 1" = 5'



DETAIL A

Scale: None
(See note 2 below)



* Where specific footing concrete and stem concrete items are included in the Proposal for a particular wall, these shall be the pay limits. Where no specific items have been set up in the Proposal, the cost of wall shall be included in the main structure Contract price, i.e.: box culvert, (where wings are included in box culvert item),; retaining wall, (where no separate pay items are established), etc.

TYPICAL SECTION

Scale: NONE

Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c

Notes:

1. A "Poor Soil Condition" is that foundation material that can support a safe bearing pressure of 3 ksf and has an angle of friction of 30°.
2. If in the length of a wall the type of wall changes and provides for a different thickness of stem, then "Detail A" shall be used for all walls of greater than the least wall thickness.
3. Contractor has option of lapping main stem reinforcement with rear dowel reinforcement as shown; or by extending the rear dowel reinforcement with no splicing. However, no additional compensation to Contractor will be allowed for whichever alternative is selected.
4. These walls are valid if traffic is present on the level area adjacent to the wall.

APPROVAL
DIRECTOR OFFICE OF STRUCTURES
DATE: 12/04/2013
VERSION
1.0

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

TYPE C RETAINING WALL SECTION
(FOR POOR SOIL CONDITION AND
TWO FOOT SURCHARGE)

DETAIL NO. RW-104 SHEET 1 OF 1

RETAINING WALLS

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: KAC Drawn by: TCW Checked by: VTD

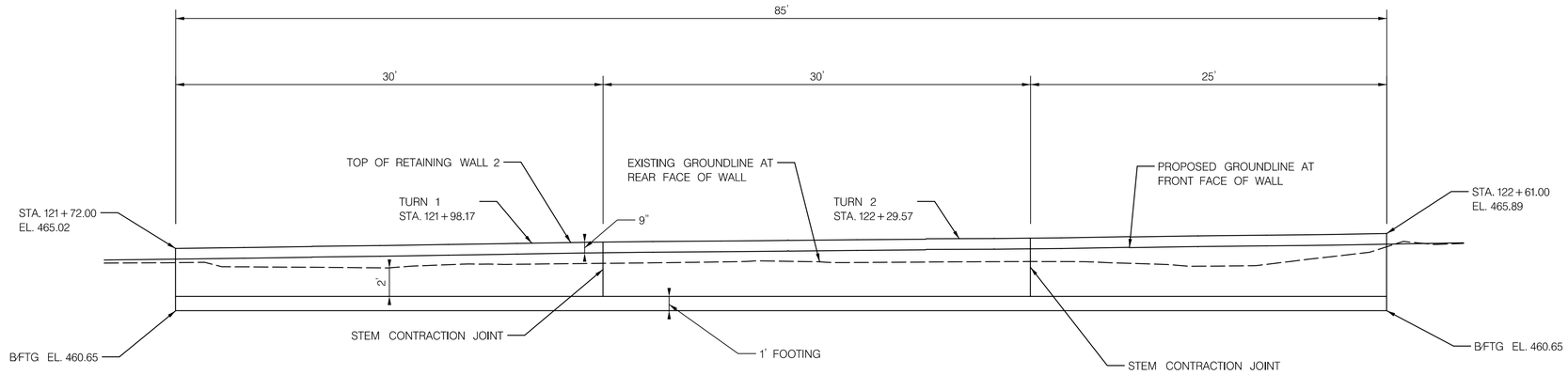
LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
RETAINING WALL 1 ELEVATION
AND TYPICAL SECTION

SCALE : 1" = 5' DATE: NOVEMBER 2022 ST–02

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 71 of 87

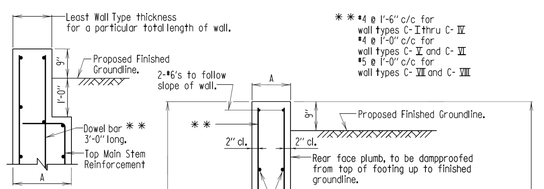
PLOTTED: 11/7/2022
FILE: c:\pwworking\gfpw01\wxc48\d1085685\ST-P002_LSCLT.dgn



DATUM EL. 450.00

ELEVATION – RETAINING WALL 2

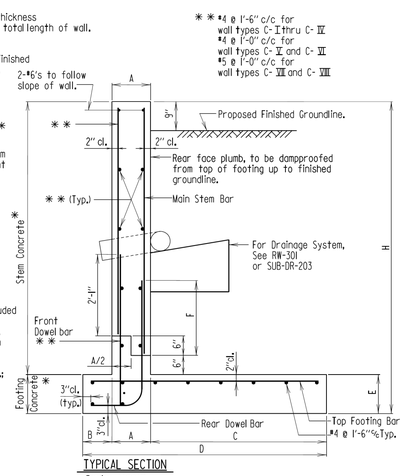
SCALE: 1" = 5'



DETAIL A

Scale: None

(See note 2 below)



* Where specific footing concrete and stem concrete items are included in the Proposal for a particular wall, these shall be the pay limits. Where no specific items have been set up in the Proposal, the cost of wall shall be included in the main structure Contract price, i.e.; box culvert, (where wings are included in box culvert item).; retaining wall, (where no separate pay items are established), etc.

TYPICAL SECTION

Scale: NONE

Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c

Notes:

1. A "Poor Soil Condition" is that foundation material that can support a safe bearing pressure of 3 ksf and has an angle of friction of 30°.
2. If in the length of a wall the type of wall changes and provides for a different thickness of stem, then "Detail A" shall be used for all walls of greater than the least wall thickness.
3. Contractor has option of lapping main stem reinforcement with rear dowel reinforcement as shown; or by extending the rear dowel reinforcement with no splicing. However, no additional compensation to Contractor will be allowed for whichever alternative is selected.
4. These walls are valid if traffic is present on the level area adjacent to the wall.

APPROVAL

DIRECTOR, OFFICE OF STRUCTURES

DATE: 12/04/2013

VERSION

1.0

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

TYPE C RETAINING WALL SECTION (FOR POOR SOIL CONDITION AND TWO FOOT SURCHARGE)

DETAIL NO. RW-104 SHEET __ OF __

RETAINING WALLS

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: KAC Drawn by: TCW Checked by: VTD

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

RETAINING WALL 2 ELEVATION AND TYPICAL SECTION

SCALE : 1" = 20' DATE: NOVEMBER 2022 ST–03

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 72 of X 87

PLOTTED: 11/12/2022
FILE: C:\pwworking\gfpwd1\ewcd4\ut28568\ut_ST-P003_LSCLT.dgn

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 PEPCO INSPECTION AND WRITTEN APPROVAL BEFORE CONCEALMENT. FAILURE TO OBTAIN SUCH INSPECTION WILL RESULT IN THE UNCOVERING OF FACILITIES AT THE CONTRACTOR'S EXPENSE. CALL 301-670-8808 OR 301-670-8828 7:00 TO 9:00 AM OR 3:00 TO 4:00 PM TWO WORKING DAYS IN ADVANCE TO ARRANGE INSPECTION.
5. ALL CONDUITS SHALL BE INSTALLED PRIOR TO SIDE PATH OR SIDEWALK CONSTRUCTION.
6. RUN TWO WAY CONDUIT FOR ROADWAY AND DRIVEWAY CROSSINGS BETWEEN LIGHTING HANDHOLES. RUN ONE WAY CONDUIT BETWEEN OTHER LIGHTING HANDHOLES AND 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 PULL LINE 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 PEPCO 12X24X24 STREET LIGHT SPLICE BOX AS SHOWN AND SHALL BE PURCHASED FROM PEPCO.
15. ALL SPLICE BOX SHALL BE INSTALLED WITH THE LONG DIMENSION PARALLEL TO THE ROADWAY/SIDE PATH/SIDEWALK.
16. ALL SPLICE BOX SHALL INCLUDE A GROUND ROD.

STREETLIGHT POST NUMBERING TAG

SCALE: N.T.S.

COLONIALPOST-TOP LED LUMINAIRE

SCALE: N.T.S.

DIRECT BURIAL FIBERGLASS POLE

SCALE: N.T.S.

PEPCO 12X24X24 STREET LIGHT SPLICE BOX

SCALE: N.T.S.

NO.	REVISION	DATE	BY

Gannett Fleming / GPI

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING GENERAL NOTES AND DETAILS

SCALE : N.T.S. DATE: NOVEMBER 2022 LT-01

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 73 of 87

PLOTTED: 11/17/2022
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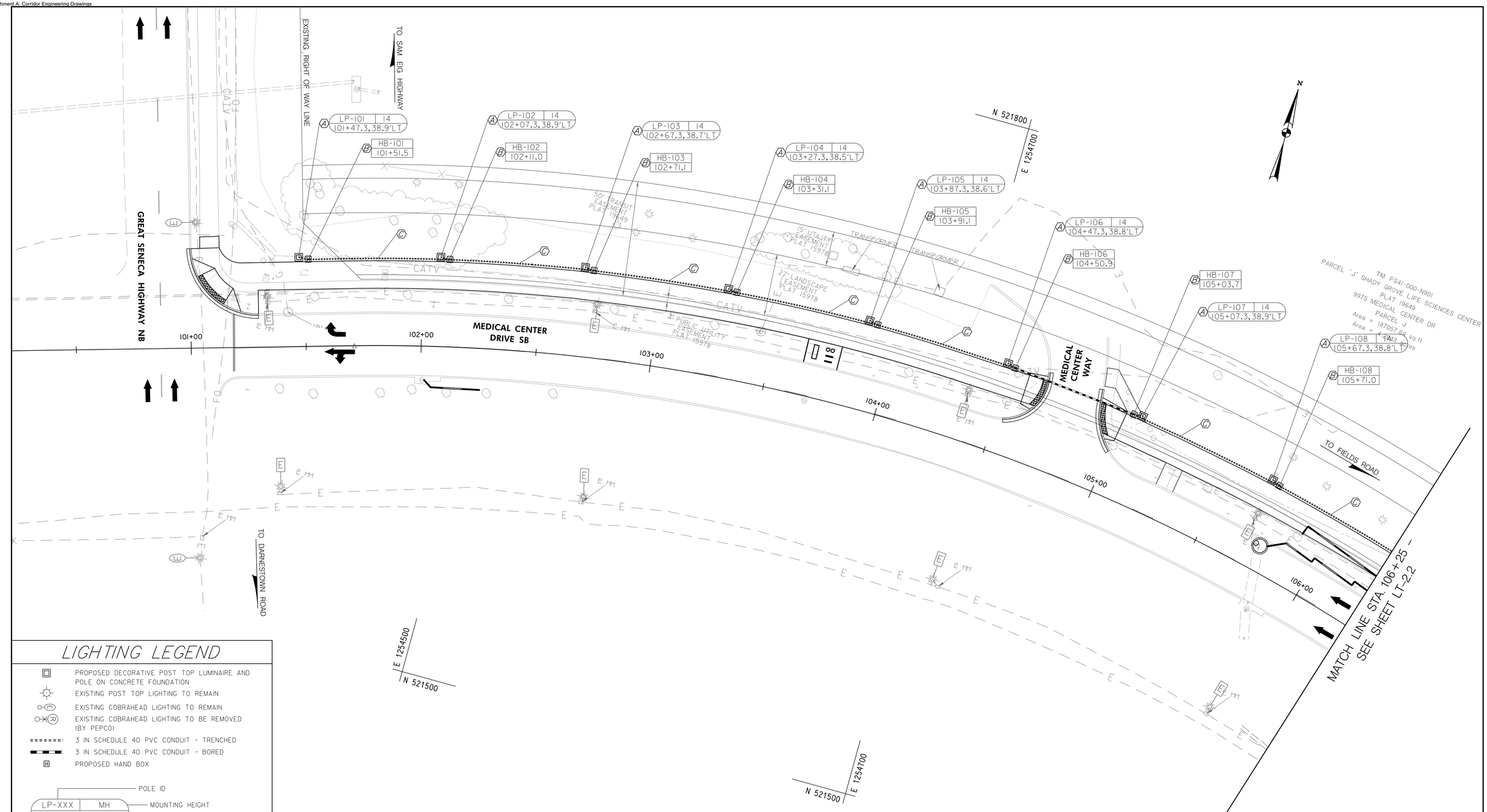

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.1

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 74 of 87

PLOTTED: 11/17/2022
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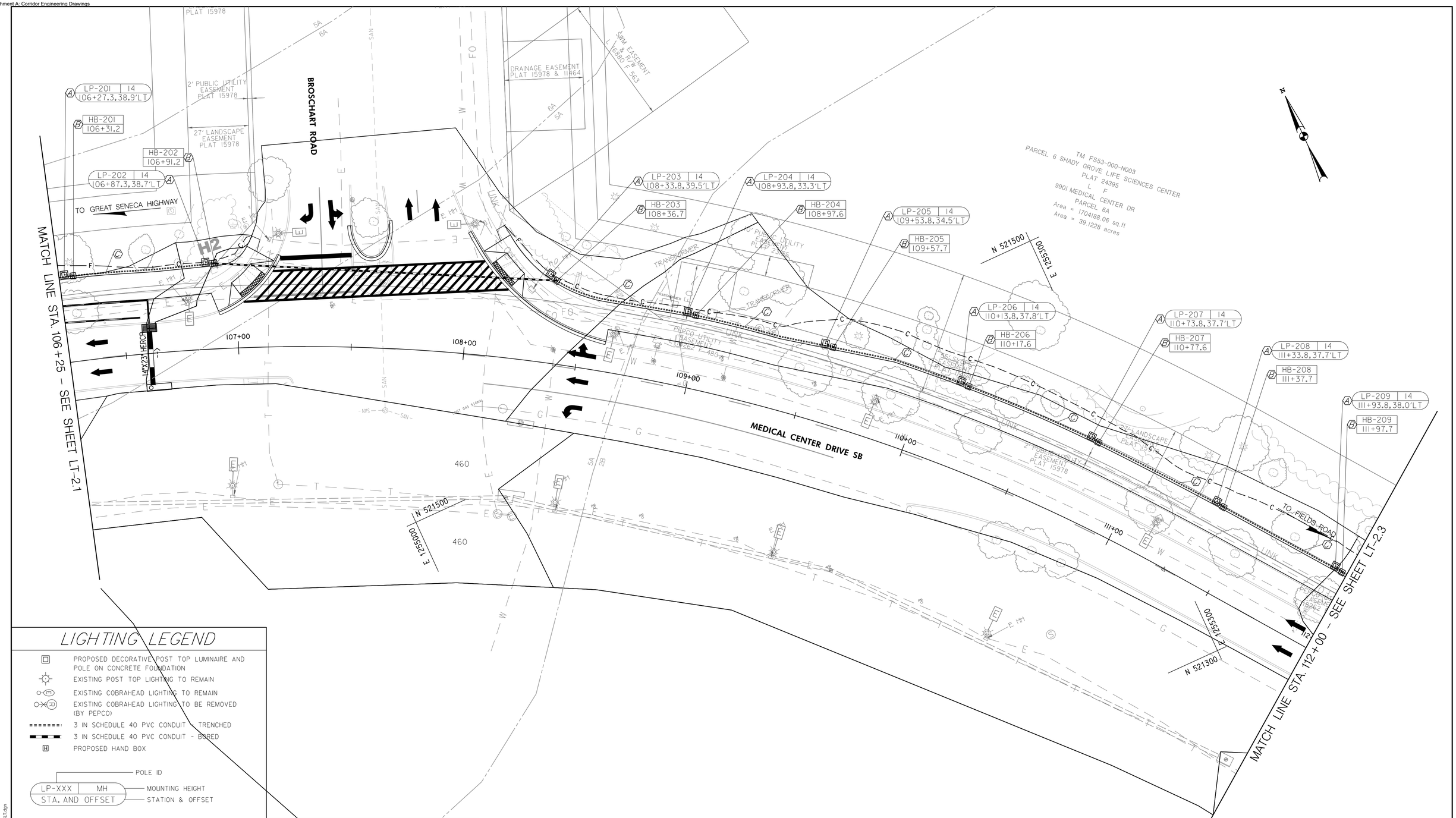

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — —	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–2.2

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 75 of 87

PLOTTED: 11/7/2022
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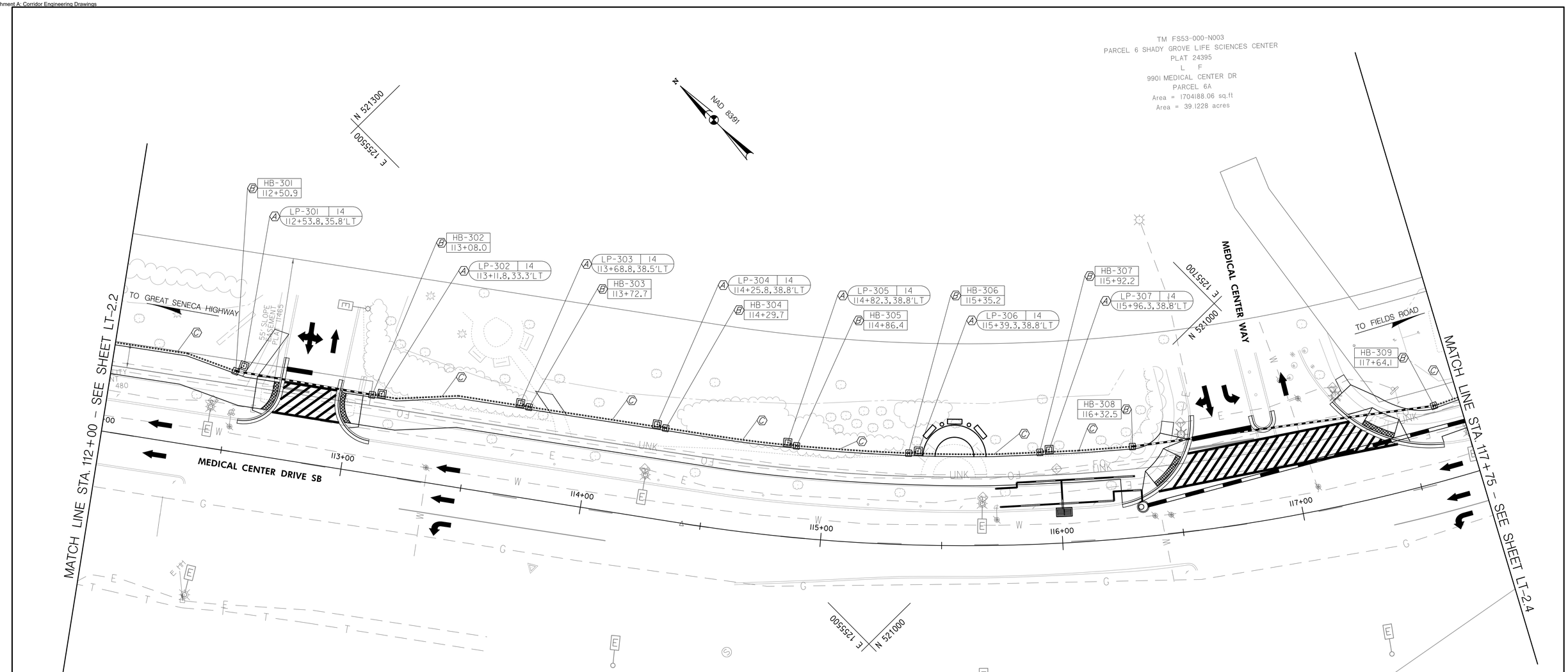

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.3

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 76 of 87

PLOTTED: 11/17/2022
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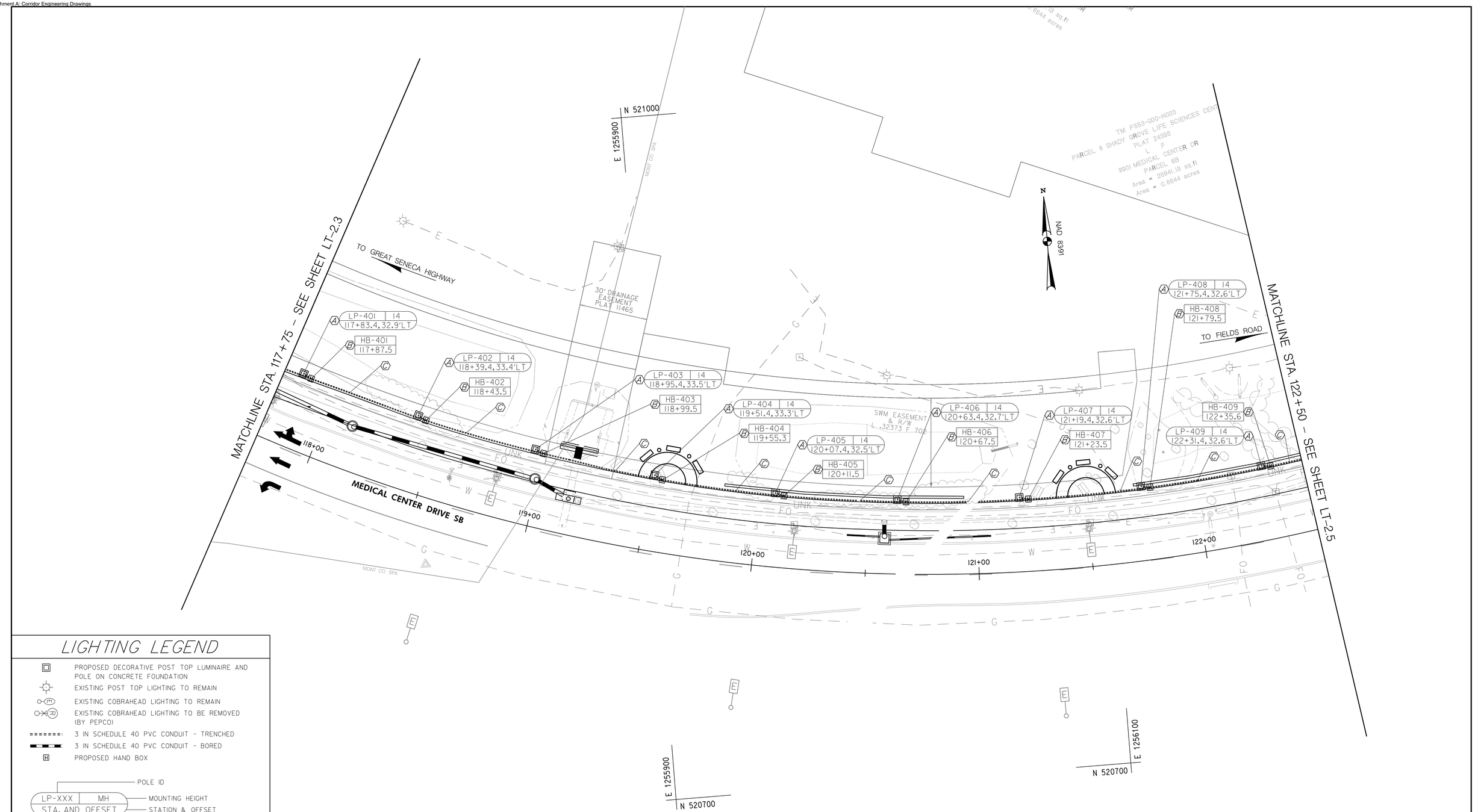

LIGHTING LEGEND

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- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

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UTILITY LEGEND

— — SAN — — — —	SANITARY SEWER
— — G — — — —	GAS
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— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–2.4

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 77 of 87

PLOTTED: 11/17/2022
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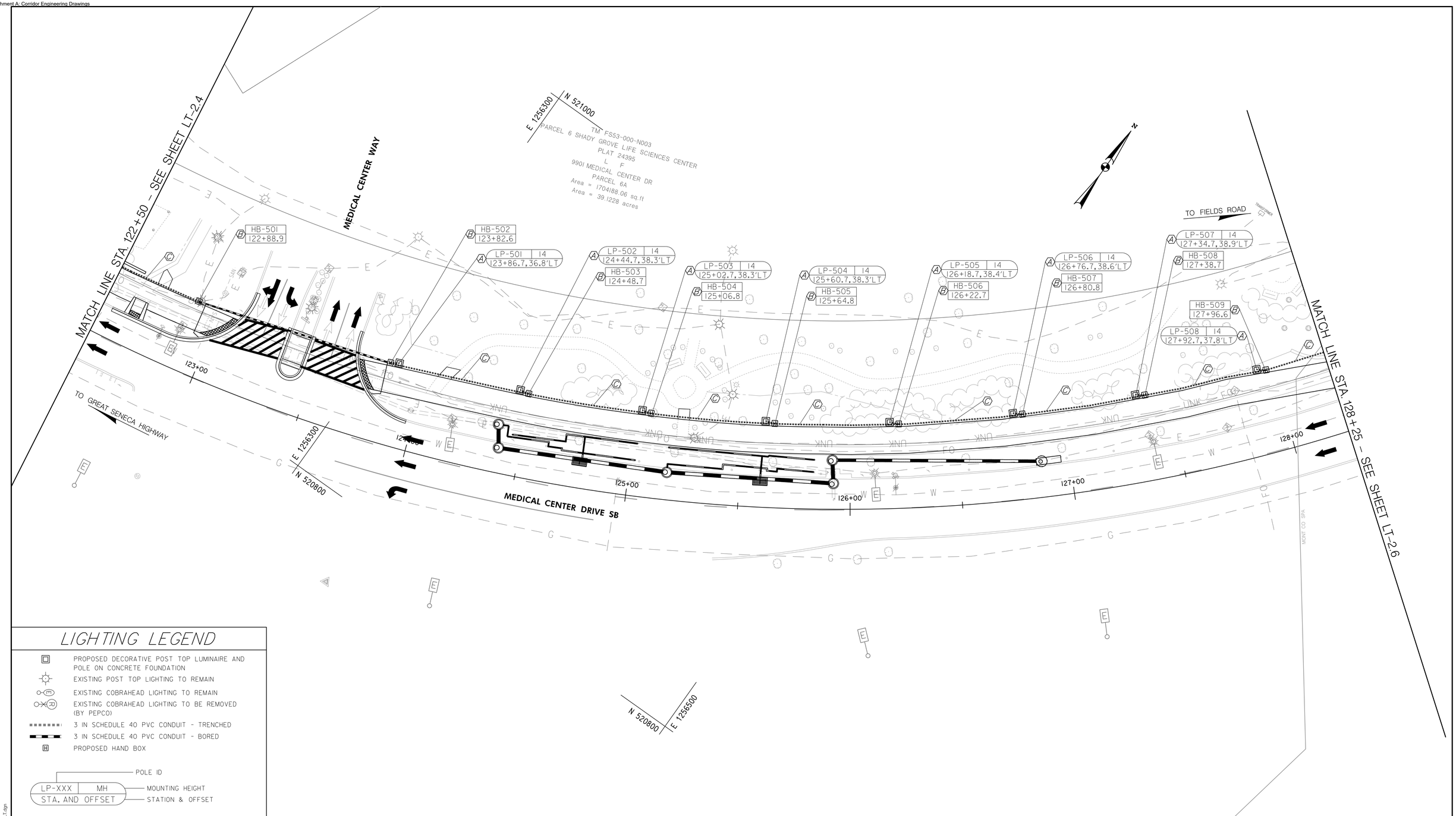

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX | MH — POLE ID; MOUNTING HEIGHT
STA. AND OFFSET — STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–2.5

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 78 of 87

PLOTTED: 11/7/2022
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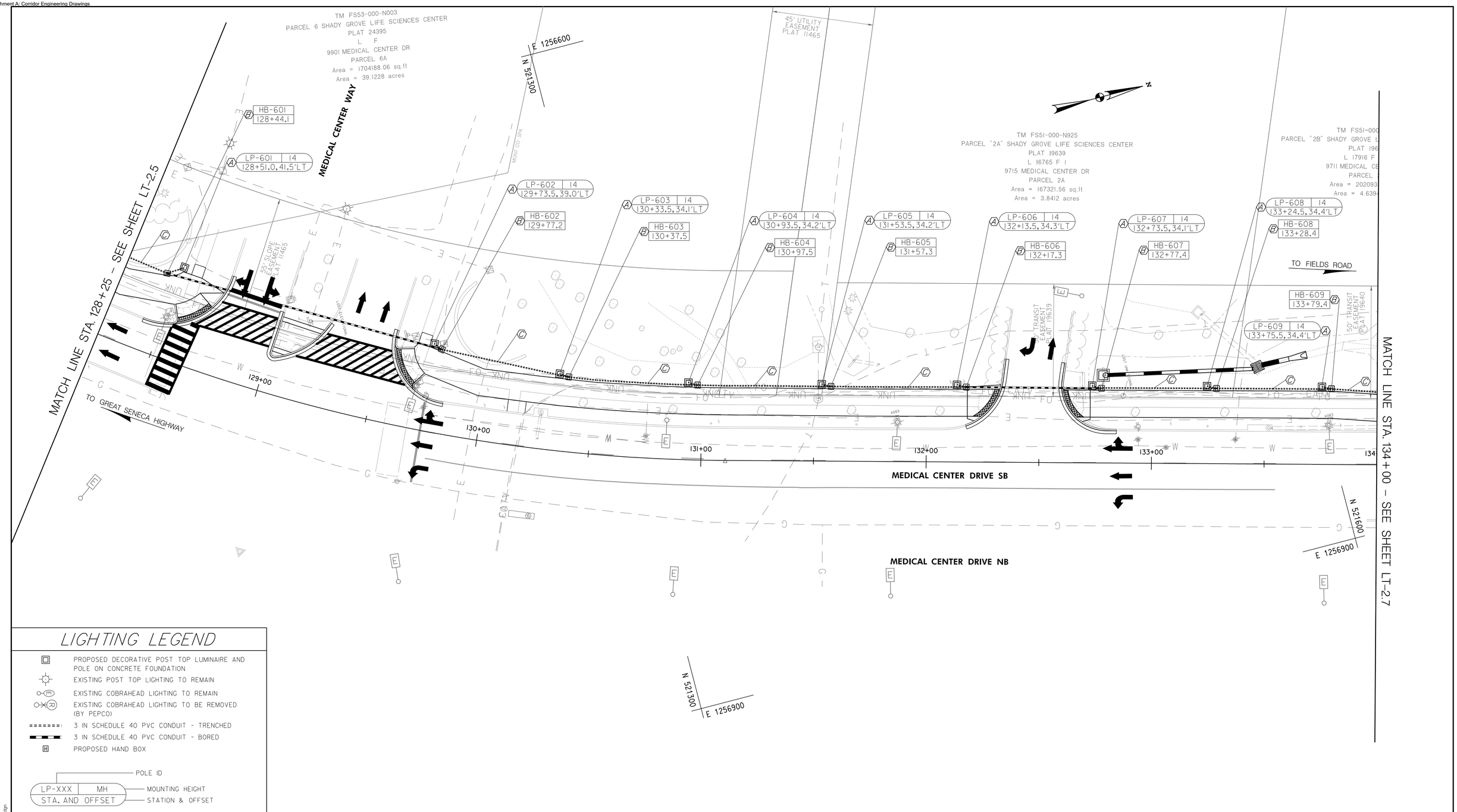

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
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- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.6

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 79 of 87

PLOTTED: 11/17/2022
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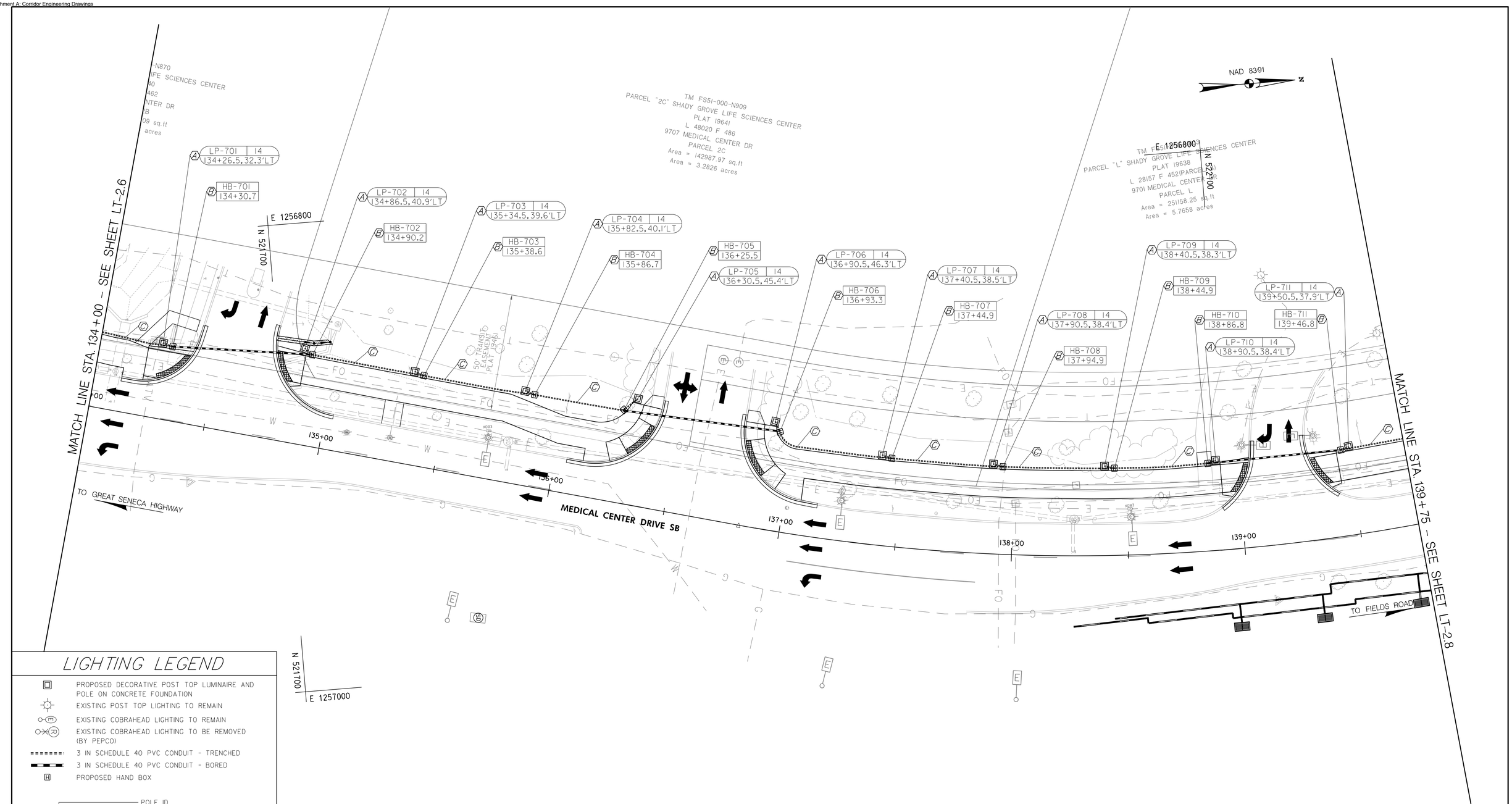

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — —	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–2.7

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 80 of 87

PLOTTED: 11/17/2022
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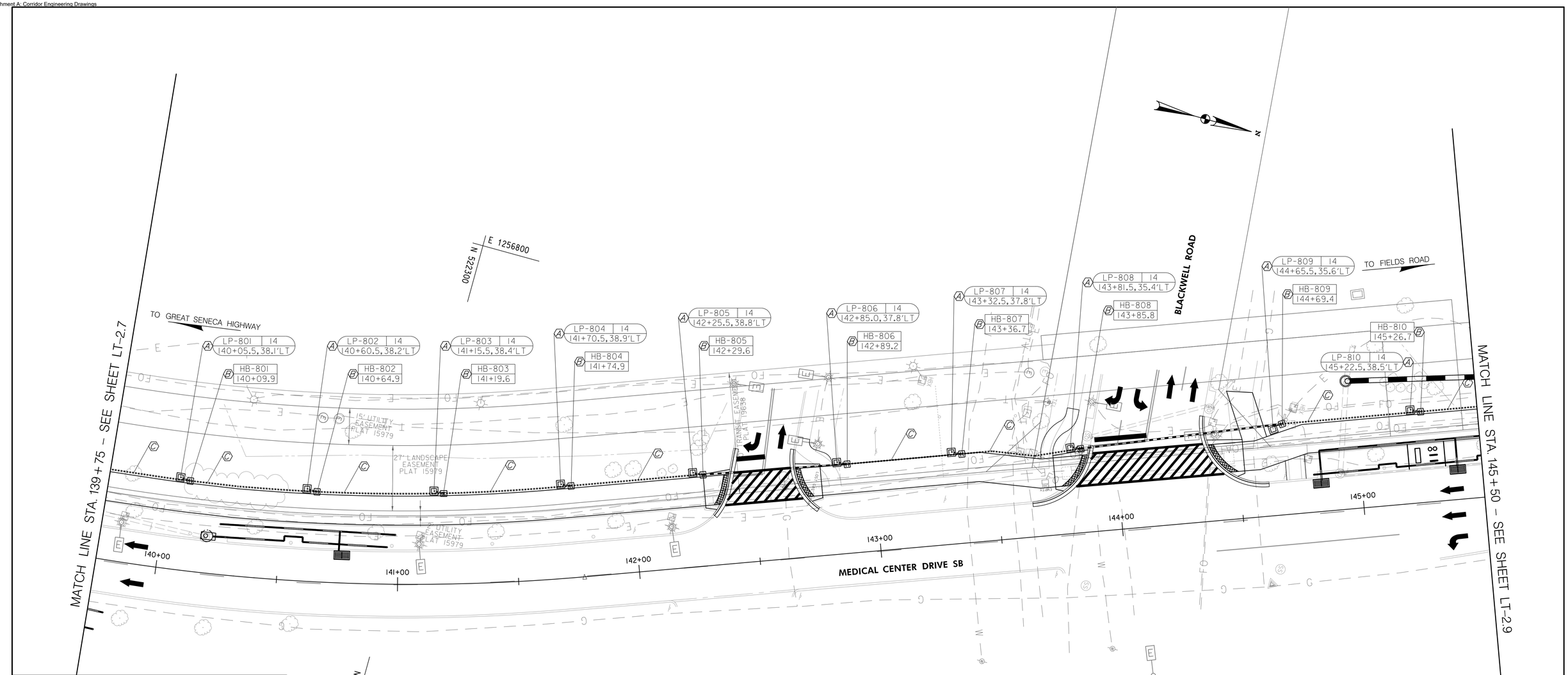
NAD 8391



LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
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- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
- 3 IN SCHEDULE 40 PVC CONDUIT - TRENCHED
- 3 IN SCHEDULE 40 PVC CONDUIT - BORED
- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
- (C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

— — SAN — — — —	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–2.8

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 81 of 87

PLOTTED: 11/17/2022
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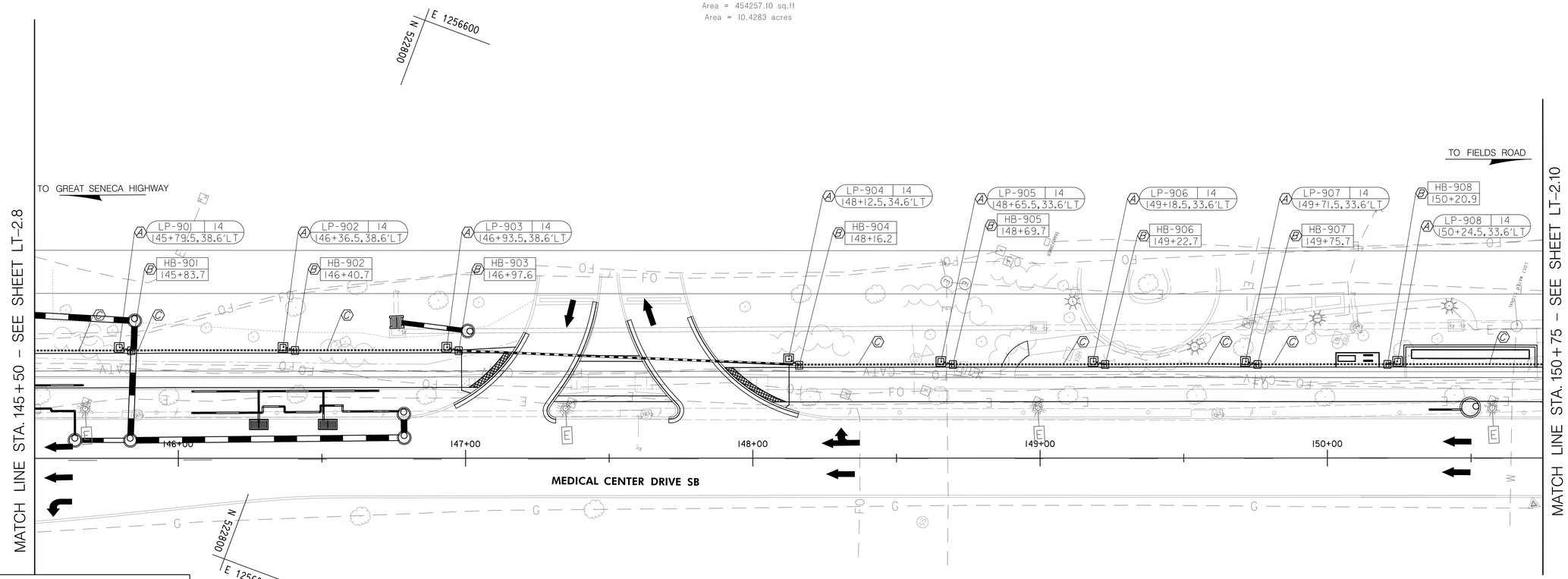
TM FS51-000-N546
JBG/ROCKVILLE NCI CAMPUS, LLC
EXHIBIT 'B' LEASE AREA ON PARCEL M
MO CO MED CENTER
L. 39254 F. 178 (N546)
9613 MEDICAL CENTER DR (N546)
GROUND LEASE (PART OF PARCEL M PLAT BOOK 142 PLAT 16292)
Area = 454257.10 sq.ft
Area = 10.4283 acres

NAD 83/91



LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO REMAIN
- EXISTING COBRAHEAD LIGHTING TO BE REMOVED (BY PEPCO)
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- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
- (B) INSTALL LIGHTING HAND HOLE
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UTILITY LEGEND

— — SAN — — — —	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
— — E — — — —	ELECTRIC
— — T — — — —	TELEPHONE
— — FO — — — —	CABLE TV
— — CATV — — —	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.9

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 82 of 87

PLOTTED: 11/17/2022
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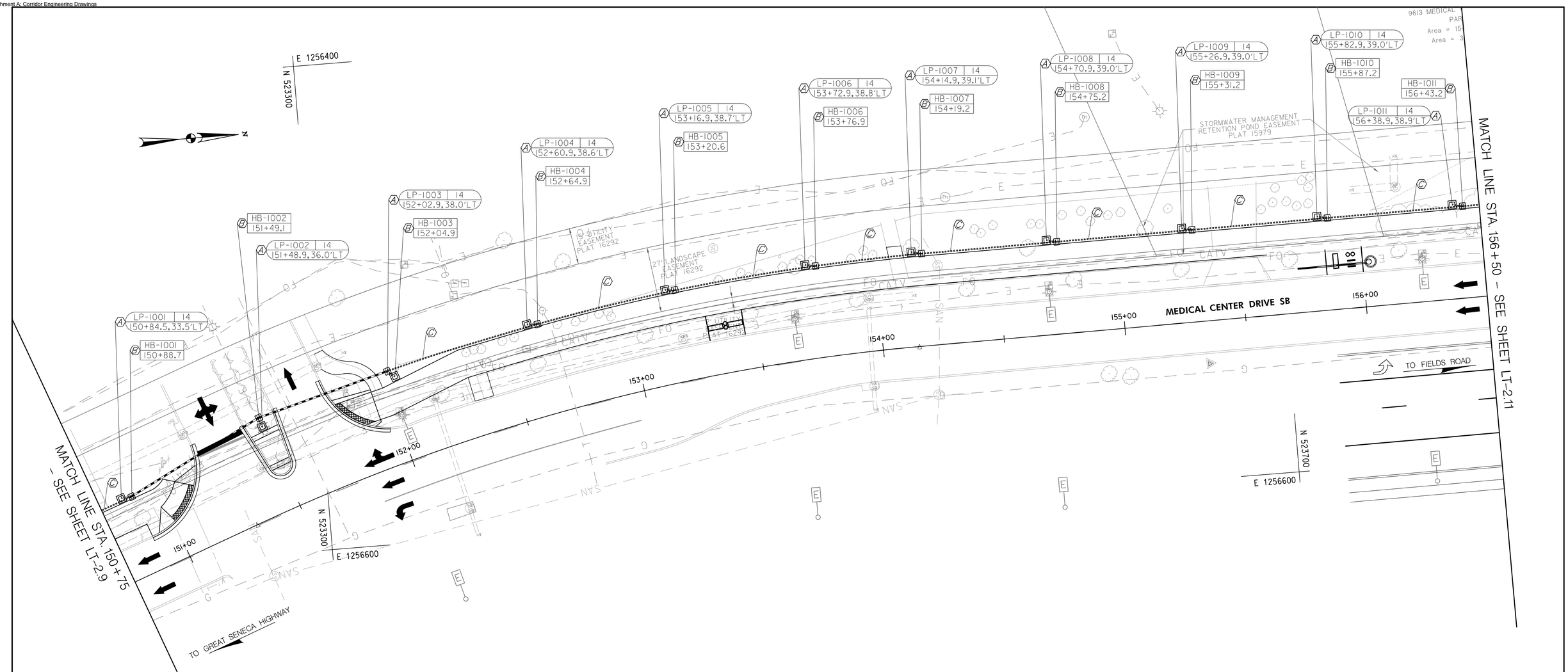

LIGHTING LEGEND

- PROPOSED DECORATIVE POST TOP LUMINAIRE AND POLE ON CONCRETE FOUNDATION
- EXISTING POST TOP LIGHTING TO REMAIN
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- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

CONSTRUCTION DETAIL

- (A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
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UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
— — W — — — —	WATER
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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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Chief, Design Section — Date
APPROVED
Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.10

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 83 of 87

PLOTTED: 11/17/2022
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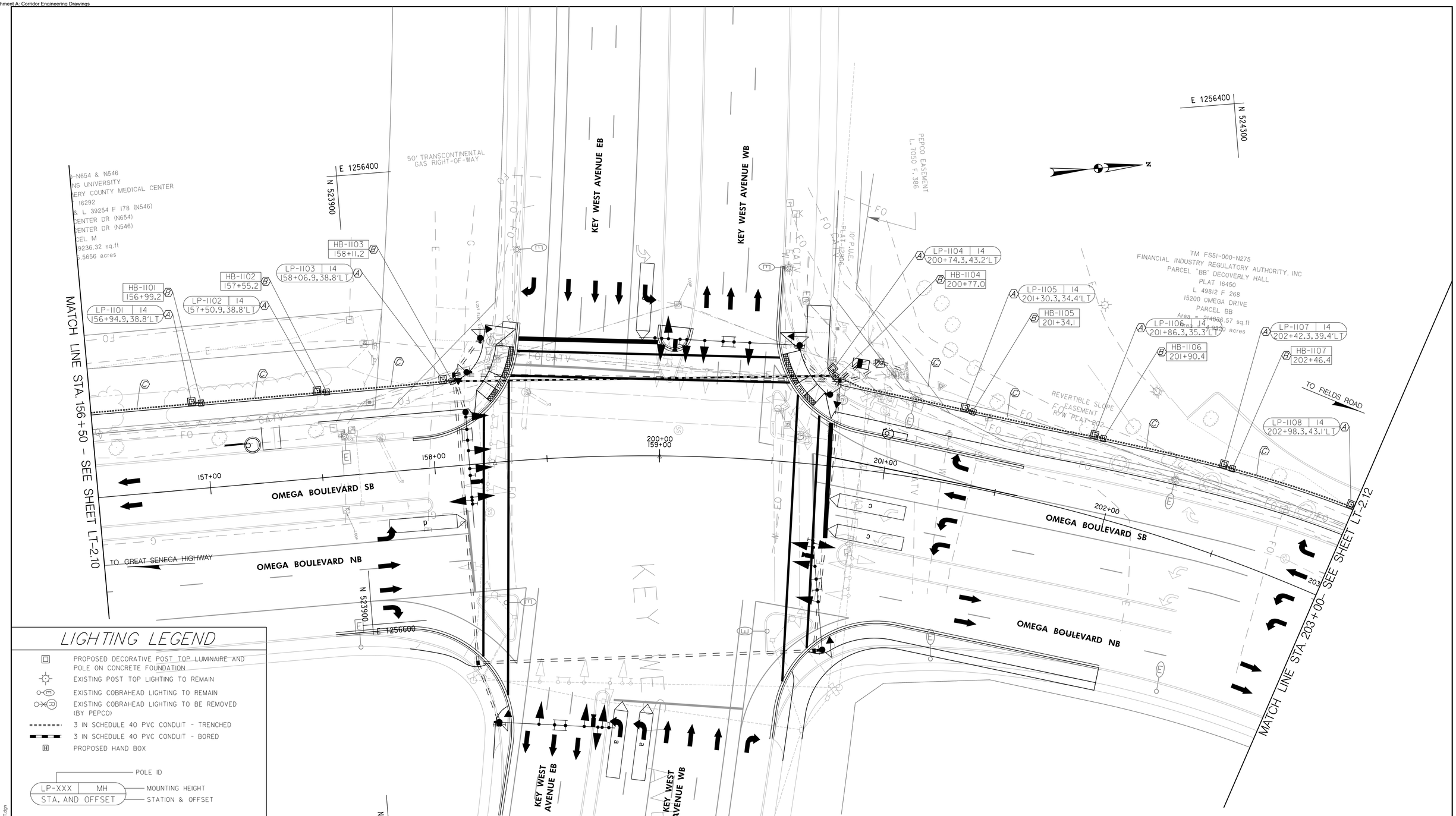

LIGHTING LEGEND

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- PROPOSED HAND BOX

LP-XXX | MH — POLE ID; MOUNTING HEIGHT
STA. AND OFFSET — STATION & OFFSET

HB-XXX — HAND HOLE ID
XXX — STATION

CONSTRUCTION DETAIL

(A) PATHWAY LIGHTING POLE AND LUMINAIRE (TO BE INSTALLED BY PEPCO)
(B) INSTALL LIGHTING HAND HOLE
(C) FURNISH AND INSTALL ONE WAY PVC CONDUIT

UTILITY LEGEND

SAN	SANITARY SEWER
G	GAS
W	WATER
E	ELECTRIC
T	TELEPHONE
FO	CABLE TV
CATV	FIBER OPTIC

Gannett Fleming / GPI

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

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

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT–11

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 84 of 87

PLOTTED: 11/17/2022
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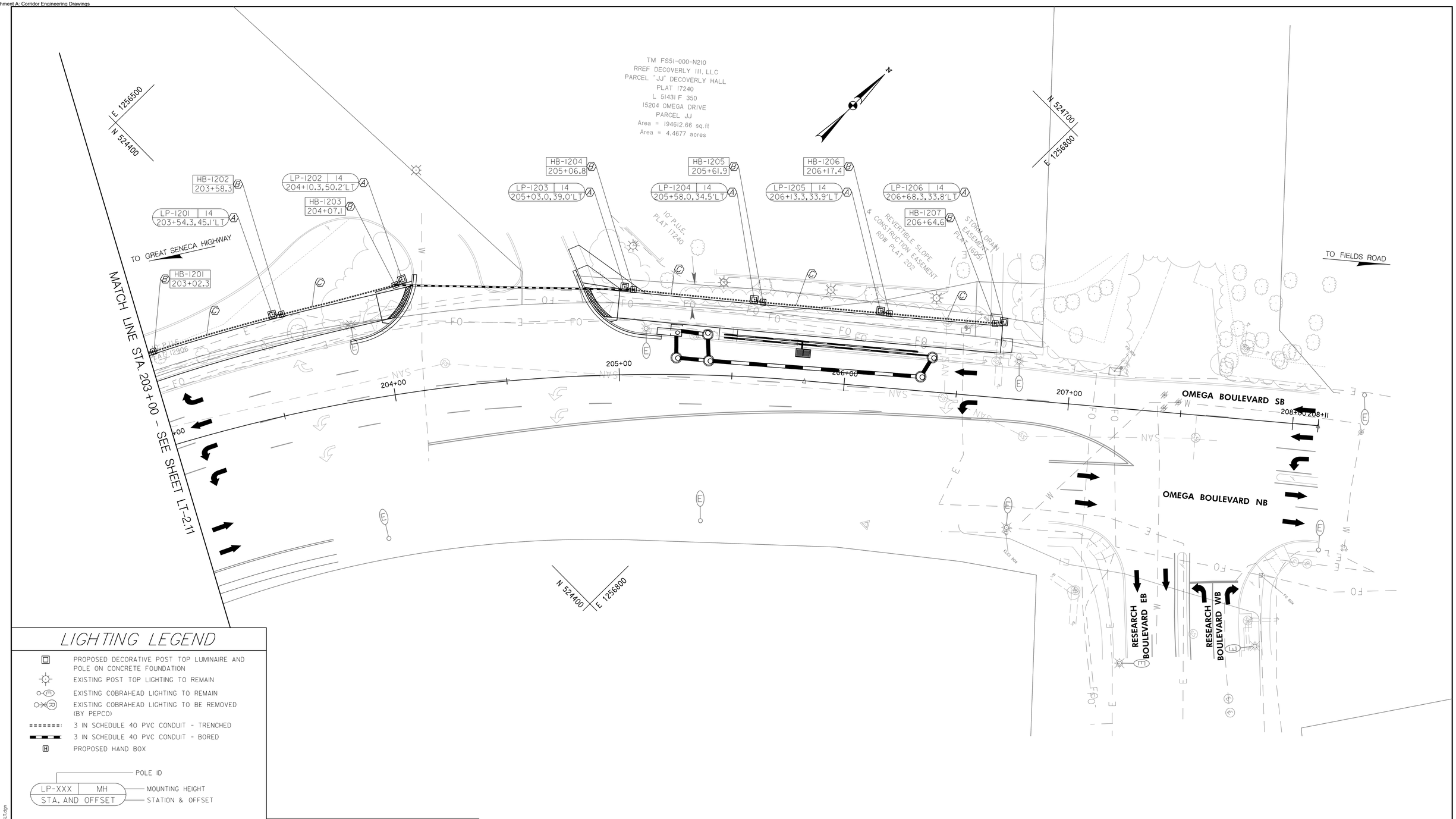

LIGHTING LEGEND

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- PROPOSED HAND BOX

LP-XXX	MH
STA. AND OFFSET	

POLE ID
MOUNTING HEIGHT
STATION & OFFSET

HB-XXX
XXX

HAND HOLE ID
STATION

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UTILITY LEGEND

— — SAN — — — -	SANITARY SEWER
— — G — — — —	GAS
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Gannett Fleming / GPI

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL

FROM GREAT SENECA HWY TO RESEARCH BLVD.

LIGHTING PLAN SHEETS

SCALE : 1" = 20' DATE: NOVEMBER 2022 LT-2.12

DPS SC/SWM PERMIT SHEET NO. ____ of ____

C.I.P. Project No. : 0501742 85 of 87

PLOTTED: 11/17/2022
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POLE SCHEDULE

POLE ID	DRAWING NUMBER	HEIGHT AND TYPE OF POLE	SETBACK FROM BACK EDGE OF SIDEPATH	LUMINAIRE/ WATTAGE	TYPE OF BASE	POLE LOCATION
LP–101	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	101+47.3,38.9' LT
LP–102	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	102+07.3,38.9' LT
LP–103	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	102+67.3,38.7' LT
LP–104	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	103+27.3,38.5' LT
LP–105	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	103+87.3,38.6' LT
LP–106	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	104+47.3,38.8' LT
LP–107	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	105+07.3,38.9' LT
LP–108	LT–2.1	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	105+67.3,38.8' LT
LP–201	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	106+27.3,38.9' LT
LP–202	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	106+87.3,38.7' LT
LP–203	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	108+33.8,39.5' LT
LP–204	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	108+93.8,33.3' LT
LP–205	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	109+53.8,34.5' LT
LP–206	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	110+13.8,37.8' LT
LP–207	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	110+73.8,37.7' LT
LP–208	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	111+33.8,37.7' LT
LP–209	LT–2.2	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	111+93.8,38.0' LT
LP–301	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	112+53.8,35.8' LT
LP–302	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	112+53.8,35.8' LT
LP–303	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	113+68.8,38.5' LT
LP–304	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	114+25.8,38.8' LT
LP–305	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	114+82.3,38.8' LT
LP–306	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	115+39.3,38.8' LT
LP–307	LT–2.3	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	115+96.3,38.8' LT
LP–401	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	117+83.4,32.9' LT
LP–402	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	118+39.4,33.4' LT
LP–403	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	118+95.4,33.5' LT
LP–404	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	119+51.4,33.3' LT
LP–405	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	120+07.4,32.5' LT
LP–406	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	120+63.4,32.7' LT
LP–407	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	121+19.4,32.6' LT
LP–408	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	121+75.4,32.6' LT
LP–409	LT–2.4	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	122+31.4,32.6' LT
LP–501	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	123+86.7,36.8' LT
LP–502	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	124+44.7,38.3' LT
LP–503	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	125+02.7,38.3' LT
LP–504	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	125+60.7,38.3' LT
LP–505	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	126+18.7,38.4' LT
LP–506	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	126+76.7,38.6' LT
LP–507	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	127+34.7,38.9' LT
LP–508	LT–2.5	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	127+92.7,37.8' LT
LP–601	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	128+51.0,41.5' LT
LP–602	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	129+73.5,39.0' LT
LP–603	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	130+33.5,34.1' LT
LP–604	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	130+93.5,34.2' LT
LP–605	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	131+53.5,34.2' LT
LP–606	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	132+13.5,34.3' LT
LP–607	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	132+73.5,34.1' LT
LP–608	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	133+24.5,34.4' LT
LP–609	LT–2.6	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	133+75.5,34.4' LT
LP–701	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	134+26.5,32.3' LT
LP–702	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	134+86.5,40.9' LT

ALL DIMENSIONS SHOWN ARE MEASURED FROM OBJECT TO CENTER LINE OF PROPOSED LIGHT POLE.

POLE SCHEDULE

POLE ID	DRAWING NUMBER	HEIGHT AND TYPE OF POLE	SETBACK FROM BACK EDGE OF SIDEPATH	LUMINAIRE/ WATTAGE	TYPE OF BASE	POLE LOCATION
LP–703	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	135+34.5,39.6' LT
LP–704	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	135+82.5,40.1' LT
LP–705	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	136+30.5,45.4' LT
LP–706	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	136+90.5,46.3' LT
LP–707	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	137+40.5,38.5' LT
LP–708	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	137+90.5,38.4' LT
LP–709	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	138+40.5,38.3' LT
LP–710	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	138+90.5,38.4' LT
LP–711	LT–2.7	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	139+50.5,37.9' LT
LP–801	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	140+05.5,38.1' LT
LP–802	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	140+60.5,38.2' LT
LP–803	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	141+15.5,38.4' LT
LP–804	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	141+70.5,38.9' LT
LP–805	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	142+25.5,38.8' LT
LP–806	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	142+85.0,37.8' LT
LP–807	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	143+32.5,37.8' LT
LP–808	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	143+81.5,35.4' LT
LP–809	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	144+65.5,35.6' LT
LP–810	LT–2.8	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	145+22.5,38.5' LT
LP–901	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	145+79.5,38.6' LT
LP–902	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	146+36.5,38.6' LT
LP–903	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	146+93.5,38.6' LT
LP–904	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	148+12.5,34.6' LT
LP–905	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	148+65.5,33.6' LT
LP–906	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	149+18.5,33.6' LT
LP–907	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	149+71.5,33.6' LT
LP–908	LT–2.9	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	150+24.5,33.6' LT
LP–1001	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	150+84.5,33.5' LT
LP–1002	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	151+48.9,36.0' LT
LP–1003	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	152+02.9,38.0' LT
LP–1004	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	152+60.9,38.6' LT
LP–1005	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	153+16.9,38.7' LT
LP–1006	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	153+72.9,38.8' LT
LP–1007	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	154+14.9,39.1' LT
LP–1008	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	154+70.9,39.0' LT
LP–1009	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	155+26.9,39.0' LT
LP–1010	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	155+82.9,39.0' LT
LP–1011	LT–2.10	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	156+38.9,38.9' LT
LP–1101	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	156+94.9,38.8' LT
LP–1102	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	157+50.9,38.8' LT
LP–1103	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	158+06.9,38.8' LT
LP–1104	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	200+74.3,43.2' LT
LP–1105	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	201+30.3,34.4' LT
LP–1106	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	201+86.3,35.3' LT
LP–1107	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	202+42.3,39.4' LT
LP–1108	LT–2.11	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	202+98.3,43.1' LT
LP–1201	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	203+54.3,45.1' LT
LP–1202	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	204+10.3,50.2' LT
LP–1203	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	205+03.0,39.0' LT
LP–1204	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	205+58.0,34.5' LT
LP–1205	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	206+13.3,33.9' LT
LP–1206	LT–2.12	16' BLACK FIBERGLASS POLE	2.0'	40 WATT LED	DIRECT BURIAL	206+68.3,33.8' LT

HAND HOLE SCHEDULE

HAND HOLE ID	DRAWING NUMBER	STATION
HB–101	LT–2.1	101+51.5
HB–102	LT–2.1	102+11.0
HB–103	LT–2.1	102+71.1
HB–104	LT–2.1	103+31.1
HB–105	LT–2.1	103+91.1
HB–106	LT–2.1	104+50.9
HB–107	LT–2.1	105+03.7
HB–108	LT–2.1	105+71.0
HB–201	LT–2.2	106+31.2
HB–202	LT–2.2	106+91.2
HB–203	LT–2.2	108+36.7
HB–204	LT–2.2	108+97.6
HB–205	LT–2.2	109+57.7
HB–206	LT–2.2	110+17.6
HB–207	LT–2.2	110+77.6
HB–208	LT–2.2	111+37.7
HB–209	LT–2.2	111+97.7
HB–301	LT–2.3	112+50.9
HB–302	LT–2.3	113+08.0
HB–303	LT–2.3	113+72.7
HB–304	LT–2.3	114+29.7
HB–305	LT–2.3	114+86.4
HB–306	LT–2.3	115+35.2
HB–307	LT–2.3	115+92.2
HB–308	LT–2.3	116+32.5
HB–309	LT–2.3	117+64.1
HB–401	LT–2.4	117+87.5
HB–402	LT–2.4	118+43.5
HB–403	LT–2.4	118+99.5
HB–404	LT–2.4	119+55.3
HB–405	LT–2.4	120+11.5
HB–406	LT–2.4	120+67.5
HB–407	LT–2.4	121+23.5
HB–408	LT–2.4	121+79.5
HB–409	LT–2.4	122+35.6
HB–501	LT–2.5	122+88.9
HB–502	LT–2.5	123+82.6
HB–503	LT–2.5	124+48.7
HB–504	LT–2.5	125+06.8
HB–505	LT–2.5	125+64.8
HB–506	LT–2.5	126+22.7
HB–507	LT–2.5	126+80.8
HB–508	LT–2.5	127+38.7
HB–509	LT–2.5	127+96.6
HB–601	LT–2.6	128+44.1
HB–602	LT–2.6	129+77.2
HB–603	LT–2.6	130+37.5
HB–604	LT–2.6	130+97.5
HB–605	LT–2.6	131+57.3
HB–606	LT–2.6	132+17.3
HB–607	LT–2.6	132+77.4
HB–608	LT–2.6	133+28.4
HB–609	LT–2.6	133+79.4

HAND HOLE SCHEDULE

HAND HOLE ID	DRAWING NUMBER	STATION
HB–701	LT–2.7	134+30.7
HB–702	LT–2.7	134+90.2
HB–703	LT–2.7	135+38.6
HB–704	LT–2.7	135+86.7
HB–705	LT–2.7	136+25.5
HB–706	LT–2.7	136+93.3
HB–707	LT–2.7	137+44.9
HB–708	LT–2.7	137+94.9
HB–709	LT–2.7	138+44.9
HB–710	LT–2.7	138+86.8
HB–711	LT–2.7	139+46.8
HB–801	LT–2.8	140+09.9
HB–802	LT–2.8	140+64.9
HB–803	LT–2.8	141+19.6
HB–804	LT–2.8	141+74.9
HB–805	LT–2.8	142+29.6
HB–806	LT–2.8	142+89.2
HB–807	LT–2.8	143+36.7
HB–808	LT–2.8	143+85.8
HB–809	LT–2.8	144+69.4
HB–810	LT–2.8	145+26.7
HB–901	LT–2.9	145+83.7
HB–902	LT–2.9	146+40.7
HB–903	LT–2.9	146+97.6
HB–904	LT–2.9	148+16.2
HB–905	LT–2.9	148+69.7
HB–906	LT–2.9	149+22.7
HB–907	LT–2.9	149+75.7
HB–908	LT–2.9	150+20.9
HB–1001	LT–2.10	150+88.7
HB–1002	LT–2.10	151+49.1
HB–1003	LT–2.10	152+04.9
HB–1004	LT–2.10	152+64.9
HB–1005	LT–2.10	153+20.6
HB–1006	LT–2.10	153+76.9
HB–1007	LT–2.10	154+19.2
HB–1008	LT–2.10	154+75.2
HB–1009	LT–2.10	155+31.2
HB–1010	LT–2.10	155+87.2
HB–1011	LT–2.10	156+43.2
HB–1101	LT–2.11	156+99.2
HB–1102	LT–2.11	157+55.2
HB–1103	LT–2.11	158+11.2
HB–1104	LT–2.11	200+77.0
HB–1105	LT–2.11	201+34.1
HB–1106	LT–2.11	201+90.4
HB–1107	LT–2.11	202+46.4
HB–1201	LT–2.12	203+02.3
HB–1202	LT–2.12	203+58.3
HB–1203	LT–2.12	204+07.1
HB–1204	LT–2.12	205+06.8
HB–1205	LT–2.12	205+61.9
HB–1206	LT–2.12	206+17.4
HB–1207	LT–2.12	206+64.6

PLOTTED: 11/17/2022
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NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL

Chief, Design Section — Date

APPROVED

Chief, Division of Capital Development — Date

Designed by: YLIU Drawn by: YLIU Checked by: TCW

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.
LIGHTING SCHEDULE

SCALE : N.T.S. DATE: NOVEMBER 2022 LT–11

DPS SC/SWM PERMIT SHEET NO. ______ of ______

PROPOSED SIGNALS

1,2,3,6,7,10, 11,12,15,16 — 12″

4,5,8,9,13, 14,17,18 — 12″

19-24 — 16″ LED COUNTDOWN PEDESTRIAN SIGNAL

PROPOSED HD IP-BASED VIDEO DETECTION

a,b,c,d

PROPOSED VIDEO DETECTION ZONES

a,b,c,d

PROPOSED SIGNS

25-30 — R3-5(L) (30″x36″)

31 — Medical Center DR / Omega DR — D-3(1) (VAR.x32″)

32 — Omega DR / Medical Center DR — D-3(1) (VAR.x32″)

33,34 — Key West AVE — D-3(1) (VAR.x16″)

41 — WEST MARYLAND 28 — SHIELD ASSEMBLY (36″x72″)

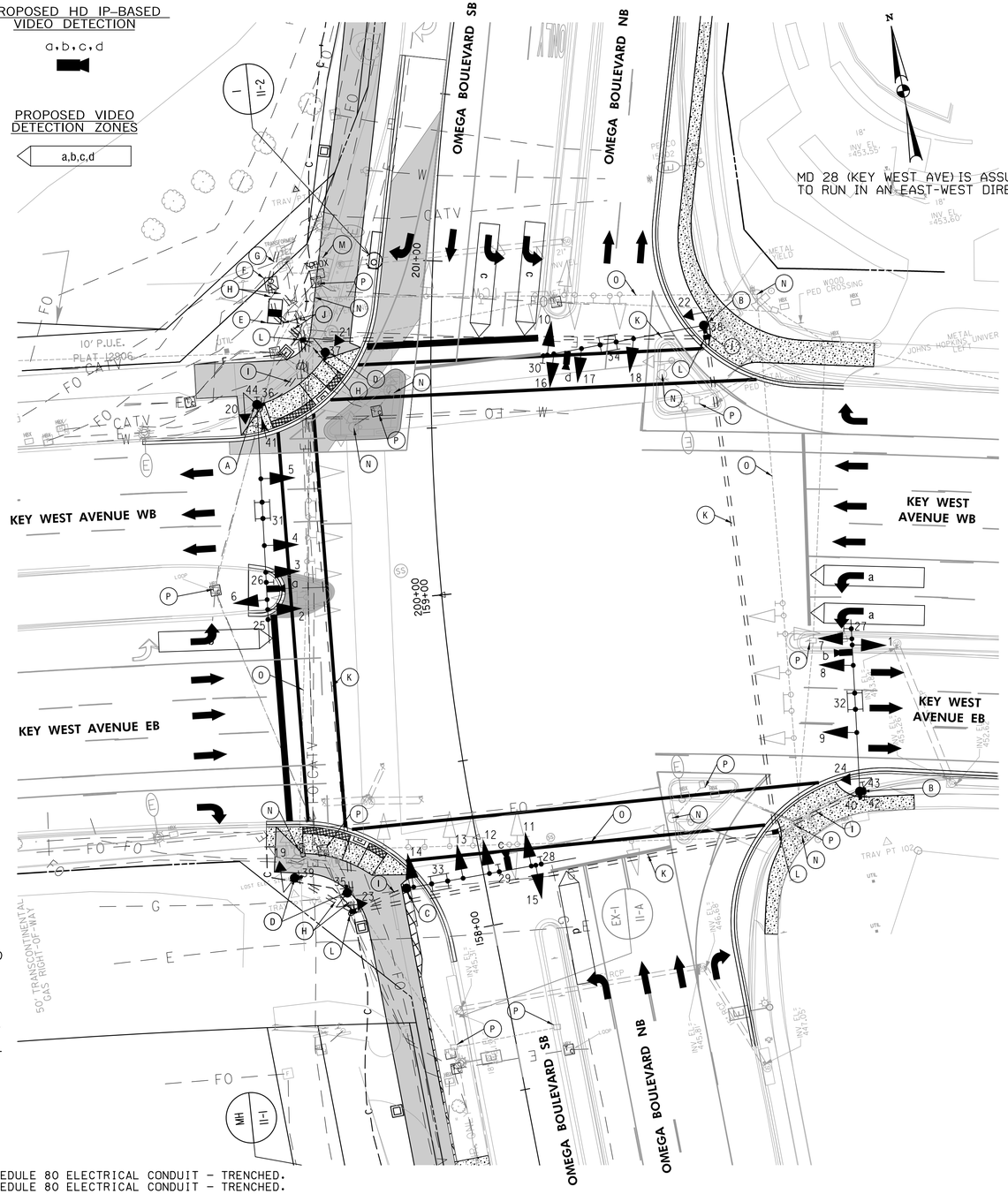
42 — EAST MARYLAND 28 — SHIELD ASSEMBLY (24″x48″)

43 — EAST MARYLAND 28 — SHIELD ASSEMBLY (36″x72″)

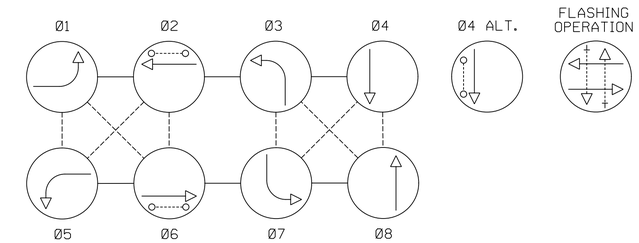
44 — WEST MARYLAND 28 — SHIELD ASSEMBLY (24″x48″)

35, 36, 37, 38, 39.40 — PUSH BUTTON TO CROSS KEY WEST / OMEGA / MEDICAL CENTER; START CROSSING Watch For Turning Vehicles; DONT START Finish Crossing If Started; TIME REMAINING To Finish Crossing; PEDESTRIANS SHOULD NOT BE IN CROSSWALK; STREET NAME IN BRAILLE TYPE 2

R10-3(1) 9″ x 15″



NEMA PHASING



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

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 MDOT SHA 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.
8. FOR CONSTRUCTION OF SIDEWALK, SHARED USE PATH AND CURB RAMPS REFER TO THE ROADWAY PLANS.
9. SIGNAL PLANS ARE ONLY VALID FOR ONE YEAR FROM DATE OF MD SHA APPROVAL.
10. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18″ FROM A 60″ X 60″ LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
11. THE 10′ SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
12. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
13. ALL SIDEWALK RAMPS SHALL BE INSTALLED AS PER STANDARDS MD 655.11, MD 655.12 AND MD655.21 AS SHOWN ON THIS DRAWING.
14. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.08 AND 4E.10 AND FIG. 4E-3 AND 4E-4 OF THE NCHRP PUBLICATION. "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTION, OFFICE OF TRAFFIC AND SAFETY.

CONSTRUCTION DETAILS

A. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH ONE 70 FT. MAST ARMS WITH SIGNAL HEADS, SIGNS, COUNTDOWN PEDESTRIAN SIGNAL, AND OVERHEAD VIDEO DETECTION CAMERA WITH 5 FT EXTENSION POLE (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
B. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH ONE 50 FT. MAST ARM WITH SIGNAL HEADS, SIGNS, COUNTDOWN PEDESTRIAN SIGNAL, AND OVERHEAD VIDEO DETECTION CAMERAS WITH 5 FT EXTENSION POLE (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
C. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH ONE 50 FT. MAST ARM WITH SIGNAL HEADS, SIGNS, AND OVERHEAD VIDEO DETECTION CAMERAS WITH 5 FT EXTENSION POLE (NOTE: INSTALL 2-3 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
D. INSTALL CONCRETE FOUNDATION WITH A 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY COUPLINGS PER MD STD 801.01-01, COUNTDOWN PEDESTRIAN SIGNAL, PUSHBUTTON STATION AND SIGN (NOTE: INSTALL 1-2 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
E. INSTALL A NEMA SIZE 'S' BASE MOUNTED CONTROLLER AND CABINET WITH UNINTERUPTIBLE POWER SUPPLY EQUIPMENT AND ALL OTHER NECESSARY EQUIPMENT (NOTE: INSTALL 3-4 IN. AND 1-2 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
F. INSTALL 100 AMP EMBEDDED METERED SERVICE PEDESTAL (NOTE: INSTALL 3-2 IN. AND 1-4 IN. 90° PVC SCHEDULE 80 CONDUIT BENDS).
G. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT FOR ELECTRICAL SERVICE - TRENCHED. STUB OUT CONDUIT BEND AT EXISTING TRANSFORMER.
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 HANDHOLE.
M. REMOVE EXISTING BASE MOUNTED CONTROLLER, CABINET AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL. PULL EXISTING INTERCONNECT CABLE FROM THE EX CABINET AND REROUTE TO THE NEW CABINET.
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 HANDBOX
Q. PROPOSED PAVEMENT MARKING. SEE SIGNING AND MARKING PLANS FOR DETAIL.
R. INSTALL OVERSIZED HANDHOLE PER MD STD 811.05 - 811.07..

GEOMETRIC LEGEND

EXISTING
PROPOSED

UTILITY LEGEND

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

Gannett Fleming / GPI

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

REVISIONS				
12 RECONSTRUCT AMD# XXXX				
		TIMS NO. XXXX		12/2021
CJ				

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

LIFE SCIENCES CENTER LOOP TRAIL
FROM GREAT SENECA HWY TO RESEARCH BLVD.

CONCEPT SIGNAL PLAN

SCALE 1″ = 20′ ADVERTISED DATE ____ CONTRACT NO. ____

DESIGNED BY –
DRAWN BY –
CHECKED BY
MDE/PRD

COUNTY MONTGOMERY
LOGMILE 15002819.16
TIMS NO.
TOD NO.

TS NO. 4057G | DRAWING SG – 01 OF 01 | SHEET NO. X

PLOTTED: 11/17/2022
FILE: c:\pwworking\gfpw01\ewoolls\d1285685\pSG-P001_LSCLT.dgn

BY: ewoolls –