AREA 3 - PHASE 1 FINAL PLAN
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
Parcels D-1 thru D-14, Non-Buildable Bulk Parcels D-15 thru D-17, and Open Space Lot 10

GENERAL NOTES:

1. THE PROPERTY IS ZONED NT PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN AND IS DESIGNATED DMUA PER FDP-DC-CRESCENT-1A.
2. SITE ANALYSIS

TOTAL AREA OF SUBDIVISION TO BE RECORDED	25.12 ACRES
LIMIT OF DISTURBANCE	6.9 ACRES
NUMBER OF PARCELS TO BE RECORDED	14
AREA OF PARCELS TO BE RECORDED	19.94 ACRES
NUMBER OF NON-BUILDABLE PARCELS UNDER THIS SUBMISSION	3
AREA OF NON-BUILDABLE PARCELS	0.61 ACRES
NUMBER OF OPEN SPACE LOTS TO BE RECORDED	1
AREA OF OPEN SPACE LOTS	3.12 ACRES
AREA OF PUBLIC ROADWAYS	0.85 ACRES

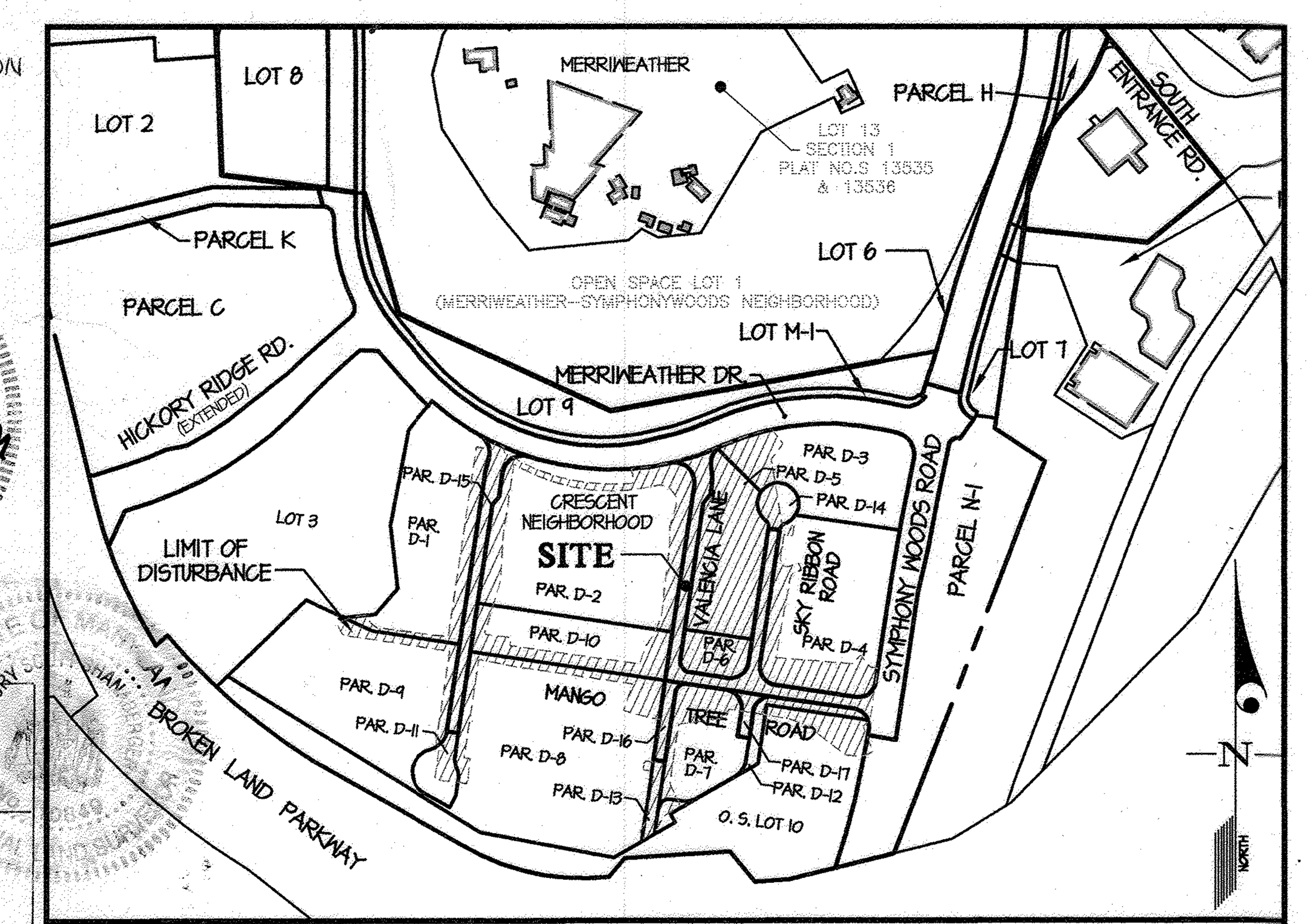
3. APPLICABLE DPZ FILE REFERENCES: FDP DC CRESCENT-1, FDP-DC-CRESCENT-1A, FDP-4-A-V, ECP 15-074, ECP 15-083, ECP 16-041, F 15-098, F 15-106, F 16-107, SDP 15-106, SDP 16-075, SDP 17-027, WP-17-052, WP 17-115, AND WP-18-020.
4. THE FOLLOWING PERMITS AND TRACKING NUMBERS HAVE BEEN ASSIGNED TO THIS PROJECT BY STATE AND FEDERAL AGENCIES:
   FOR THE MARYLAND DEPT. OF THE ENVIRONMENT: 14-NT-3189/201461063
   FOR THE ARMY CORPS OF ENGINEERS: CENAB-PP-RMN-2014-61063-M36
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
6. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
7. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
8. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
9. TRAFFIC CONTROL DEVICES: A) THE R1-1 (STOP) SIGNS AND THE STREET NAME SIGNS (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED. B) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY TRAFFIC CONTROL DEVICES. C) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MDMUTCD). D) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12GUAGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
10. 95% COMPACTION IN FILL AREAS SHALL MEET AASHTO T-180 REQUIREMENTS.
11. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED. TRAFFIC IMPACT STUDY AND TRAFFIC SIGNAL WARRANT ANALYSIS SUBMITTED AND APPROVED AS A PART OF THE FINAL DEVELOPMENT PLAN (FDP-DC-CRESCENT-1A) BY WELLS AND ASSOCIATES. A TRAFFIC STUDY WILL BE SUBMITTED WITH THE SITE DEVELOPMENT PLAN.
12. BOUNDARY INFORMATION IS FROM BOUNDARY SURVEYS BY GUTSCHICK, LITTLE, AND WEBER, P.A., DATED NOVEMBER, 2011.
13. HORIZONTAL AND VERTICAL DATUM IS BASED ON HOWARD COUNTY CONTROL STATIONS: 30GA, 36AA.
14. AERIAL TOPOGRAPHY BY MCKENZIE SNYDER, INC. ON MARCH, 2007 AND GUTSCHICK, LITTLE AND WEBER ON AUGUST, 2011. MASS GRADING PERFORMED UNDER SDP-16-075 SUPERCEDES AERIAL TOPOGRAPHY FOR EXISTING GRADES SHOWN ON THIS PLAN.
15. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, AND 100 YEAR FLOODPLAIN AREAS EXCEPT AS APPROVED IN A LETTER DATED MAY 9, 2016 IN WHICH THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DETERMINED THAT THE DISTURBANCES TO ENVIRONMENTAL SENSITIVE AREAS FOR THE IMPROVEMENTS SHOWN WITHIN THIS FINAL PLAN ARE ESSENTIAL AND NECESSARY.
16. THE CEMETERY INVENTORY MAPS DO NOT SHOW ANY CEMETERIES WITHIN THE PROJECT LIMITS.
17. THE SCENIC ROADS MAP DOES NOT INDICATE ANY SCENIC ROADS WITHIN OR ADJACENT TO THE PROJECT LIMITS.
18. EXISTING UTILITIES ARE BASED ON AVAILABLE HOWARD COUNTY RECORDS.
19. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT AS IS PART OF THE LITTLE PATUXENT SEWERAGE AREA.
20. ONLY THE WATER WITHIN AND SEWER WITHIN EITHER A PUBLIC EASEMENT OR RIGHT-OF-WAY IS PUBLIC. ALL OF THE REMAINING SEWER IS PRIVATE. SEE CONT. #24-4974-D FOR THE LIMITS OF OF THE PUBLIC AND SDP 17-027 OR SDP 18-005 FOR THE LIMITS OF THE PRIVATE.
21. THE 100 YEAR FLOODPLAIN SHOWN ON THESE PLANS WERE DETERMINED IN A FLOODPLAIN STUDY PREPARED BY BIOHABITATS AND WAS SUBMITTED AS PART OF F 15-098 AND F 15-106.
22. THIS SUBDIVISION IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1202(B)(1)(IV) OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE SUBJECT PROPERTY IS PART OF A PLANNED DEVELOPMENT WHICH HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50% OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
23. THIS SITE IS SUBJECT TO THE FINAL DEVELOPMENT PLAN RECORDED AS PLAT NUMBERS 24102 THRU 24110, THE NEIGHBORHOOD CONCEPT PLAN (NCP) RECORDED AS PLAT NUMBERS 23397 THRU 23402, THE NEIGHBORHOOD SPECIFIC DESIGN GUIDELINES (NSDG) RECORDED AS LIBER 16305 FOLIO 415 THRU 511 & LIBER 16306 FOLIO 1 THRU 150 AND THE NEIGHBORHOOD SPECIFIC IMPLEMENTATION PLAN (NSIP) RECORDED AS LIBER 16306 FOLIO 151 THRU 192.
24. THERE ARE NO KNOWN EXISTING DEDICATED BICYCLE LANES OR SHARED BICYCLE AND VEHICULAR TRAVEL LANES.
25. FOR INFORMATION ON THE POTENTIAL TRANSIT ROUTE CIRCULATION, SEE THE NEIGHBORHOOD SPECIFIC IMPLEMENTATION PLAN PAGES 16 AND 17.
26. FOR INFORMATION ON THE LOCATIONS OF PRIMARY AND SECONDARY PEDESTRIAN ROUTES AND THE BICYCLE CIRCULATION, SEE CHAPTER 3 OF THE CRESCENT NEIGHBORHOOD SPECIFIC DESIGN GUIDELINES. FOR INFORMATION ON THE STREET FRAMEWORK CHANGES, SEE CHAPTER 3 OF THE CRESCENT NEIGHBORHOOD SPECIFIC DESIGN GUIDELINES.
27. STREET TREE AND LANDSCAPE PLANS HAVE BEEN PREPARED BY A REGISTERED LANDSCAPE ARCHITECT AND ARE CERTIFIED TO CONFORM WITH THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES RECORDED IN THE LAND RECORDS OF HOWARD COUNTY IN LIBER 16305, FOLIO 415 THRU 511 AND LIBER 16306 FOLIO 1 THRU 150
28. (3) A SURETY IN THE AMOUNT OF $9300 WILL BE PROVIDED FOR THE STREET TREES AS PART OF THE DPW DEVELOPER AGREEMENT.
29. WATER AND SEWER SERVICE TO THESE PARCELS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122B OF THE HOWARD COUNTY CODE.
30. PUBLIC WATER AND SEWER ALLOCATIONS WILL BE GRANTED AT THE TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
31. ALL OF THE STREET LIGHTS THAT LIE WITHIN THE PUBLIC MULTI-PURPOSE EASEMENT SHALL BE PUBLICLY OWNED AND PRIVATELY MAINTAINED. ALL OF THE OTHER STREET LIGHTS WILL BE PRIVATELY OWNED AND PRIVATELY MAINTAINED.
32. THE ENVIRONMENTAL RESTORATION WORK SHOWN ON THESE PLANS MUST BE COMPLETED PRIOR TO THE ISSUANCE OF THE FIRST USE AND OCCUPANCY PERMIT FOR A BUILDING IN AREA 3.
33. STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED IN ACCORDANCE WITH CHAPTER 5 OF THE MDE STORMWATER MANAGEMENT DESIGN MANUAL, VOLUMES I AND 2. A PE VALUE OF 1.00" WAS CALCULATED FOR REDEVELOPMENT OF EXISTING IMPERVIOUS AREAS AND 2.20" FOR NEW DEVELOPMENT AREAS. DUE TO THE LIMITED SPACE HOWARD COUNTY HAS AGREED TO ALLOW THE REQUIRED VOLUMES TO BE PROVIDED BY HAVING THE TREATMENT OF THE WQv BE A STAND ALONE PRACTICE IN M-6 TREE PIT STRUCTURES, AND PROVIDE CPv QUANTITY MANAGEMENT IN AN UNDERGROUND EXTENDED DETENTION VAULTS. ONE OF THESE VAULTS IS LOCATED ON PARCEL D-10 AND PROVIDES CPv FOR A PORTION OF THE SITE AND PROVIDES MANAGEMENT FOR BOTH PUBLIC ROADWAYS AND PRIVATE PARCELS. ONE OTHER UNDERGROUND EXTENDED DETENTION VAULT IS LOCATED ON PARCEL D-2 AND PROVIDES CPv FOR THE REMAINING PORTION OF THE SITE AND PROVIDES MANAGEMENT FOR PRIVATE AREAS ONLY. REv WILL BE PROVIDED IN A STONERESERVOIR BELOW THE CPv VAULTS. CPv AND REv IS TO BE CONSTRUCTED UNDER THE PROJECT'S PHASE 1 SDP 17-027 PLAM SET. ANY CHANGES OR VARIATION TO THE PHASING OF THESE PLANS WILL REQUIRE CPv AND REv TO BE ADDRESSED. ALL OF THE STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
34. ALL OF THE PROPERTY WITHIN THE SITE SHOWN ON THIS FINAL PLAN IS INTENDED TO AND SHALL BE ONE DEVELOPMENT PROJECT NOT WITHSTANDING THAT IT MAY BE DEVELOPED IN PHASES AND OVER TIME, SO AS TO PROVIDE FOR THE ORDERLY DEVELOPMENT MAINTENANCE AND OPERATIONS OF THE PARCELS WITHIN THE PROPERTY IN A COORDINATED, COHESIVE MANNER. TO THIS END, THE PROPERTY OWNER HAS RECORDED A DECLARATION OF RECIPROCAL EASEMENT AGREEMENT (REA) IN THE LAND RECORDS OF HOWARD COUNTY AT LIBER 17871, FOLIO 496, CREATING RECIPROCAL EASEMENTS IN TO, OVER, AMD ACROSS ALL OF THE PARCELS FOR AMONG OTHER THINGS, VEHICULAR, PEDESTRIAN INGRESS AND EGREE, INSTALLATION OF UTILITIES AND DRAINAGE SYSTEMS, AND THE PROVISION OF CERTAIN AMENITIES, AS MORE PARTICULARLY SET FORTH THEREIN, ALL OF WHICH INURE THE BENEFIT OF AND PASS WITH WITH ALL PARCELS WITHIN THE PROPERTY AND SHALL APPLY TO AND BIND SUCCESSORS IN INTEREST IN THE PARCELS, OR ANY PORTION THEREOF, AND ANY OWNER THEREOF.
35. PROPERTY WITHIN THE AREA OF THIS FINAL PLAN IS NOW SUBJECT TO THE TERMS OF REA, WHICH AMONG OTHER THINGS, CREATES RECIPROCAL RIGHTS AND OBLIGATIONS OF HTE PROPERTY OWNERS AS TO ACCESS AND PARKING, UTILITIES AND STORMWATER MANAGEMENT, AMENITIES, LANDSCAPING, AND SETS FORTH THE PRIVATE MAINTENANCE RESPONSIBILITIES FOR ALL PRIVATELY OWNED COMMON AREAS AND/OR QUASI-PUBLIC AMENITIES (SUCH AS PRIVATE ROADWAYS, PRIVATE SIDEWALKS, AND DOWNTOWN COMMONS) AND PUBLIC ART TO BE MAINTAINED BY THE PROPERTY OWNERS, SUBJECT TO SUCH RESPONSIBILITIES BEING SHARED AMONG YTHE PROPERTY OWNER(S) OR ASSUMED BY A MAINTENANCE ORGANIZATION, THE COUNTY OR OTHER ORGANIZATION. PROPERTY OWNER ACKNOWLEDGES AND CONFIRMS THAT ANY REFERENCE IN THE REA TO AN OWNER'S RIGHT TO DEDICATE ALL OR A PORTION OF AN EASEMENT AREA OR MAINTENANCE OF ANY OFF-SITE AREA TO THE COUNTY IS SUBJECT TO THE COUNTY'S AFFIRMATIVE ACCEPTANCE OF ANY SUCH OBLIGATION WHICH IT MAY GRANT OR DENY, IN ITS OWN DETERMINATION, IN ACCORDANCE WITH THE COUNTY'S PROCEDURE.
36. (3) THERE IS A PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT SHOWN HEREIN. FOR SPECIFIC UTILITIES LOCATED WITHIN THE LIMITS OF SAID MULTI-PURPOSE AND UTILITY EASEMENT, SEE SHEETS 2 THROUGH 5. AREAS WITHIN SAID LIMITS THAT ARE TO BE PRIVATELY MAINTAINED, SEE SHEETS 2 THROUGH 4. FOR ADDITIONAL INFORMATION, SEE GENEARL NOTES 23 AND 24 ABOVE. MAINTENANCE RESPONSIBILITIESFOR ALL PRIVATE EASEMENT AREAS SHOWN HEREON ARE INCLUDED IN A CATEGORY(IES) WITHIN THE REA NOT WITHSTANDING ANY DIFFERENCES IN LABELING OR DESIGNATION.

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER
9-15-23

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET
10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22



KEY MAP
SCALE: 1" = 400'

EXPLANATION NOTE FOR THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT

THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT SHOWN ON THIS PLAT (F 17-059) ALSO APPEARS ON THE FOLLOWING CONSTRUCTION PLANS: F 17-059, F 18-017, CONT. #24-4974-D, SDP 17-027, AND SDP 18-005. THE EASEMENT IS INTENDED TO PROVIDE FOR THE MAINTENANCE OF THE FOLLOWING:

INFRASTRUCTURE ITEM	OWNERSHIP	MAINTENANCE	ASSOCIATED COUNTY FILE NUMBER
PUBLIC STORM DRAINS (1 & 4)	HOWARD COUNTY	HOWARD COUNTY	F 17-059 & F 18-017
PUBLIC STREET TREES	HOWARD COUNTY	HOWARD COUNTY (3)	F 17-059 & F 18-017
PUBLIC STREET LIGHT AND CONDUITS (1)	HOWARD COUNTY	PROPERTY OWNER	F 17-059 & F 18-017
PUBLIC WATER & SEWER (1 & 3)	HOWARD COUNTY	HOWARD COUNTY	CONT. #24-4974-D
STORMCEPTOR (1)	PROPERTY OWNER	HOWARD COUNTY	SDP 17-027 & SDP 18-005
THE FOLLOWING ITEMS LIE WITHIN THE LIMITS OF THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT AS PRIVATE EASEMENTS. THESE ARE THE RESPONSIBILITY OF THE PROPERTY OWNER(S) AS DESCRIBED IN THE RECIPROCAL EASEMENT AGREEMENT. SEE GENERAL NOTE 34.			
PRIVATE STORM DRAINS	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005
PRIVATE SWM DEVICES (2)	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005
PRIVATE WATER & SEWER (3)	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005
GREASE INTERCEPTOR	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005
PRIVATE STREET TREES	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005
PRIVATE STREET LIGHTS AND CONDUITS (1)	PROPERTY OWNER	PROPERTY OWNER	SDP 17-027 & SDP 18-005

(1) HOWARD COUNTY IS NOT RESPONSIBLE FOR RETURNING THE HARDSCAPE AREAS BACK TO EXISTING CONDITIONS. THE COUNTY IS ONLY OBLIGATED TO RETURN THE AREA TO EXISTING GRADE AND PROVIDE FEATURES CONSISTENT WITH A TYPICAL PUBLIC STREET.
(2) THIS WOULD INCLUDE, BUT ARE NOT LIMITED TO FEATURES SUCH AS CURB OPENINGS THAT CONVEY THE RUNOFF FROM THE CURB TO THE ESD DEVICES, STRUCTURES THAT PROVIDE CHANNEL PROTECTION, ETC.
(3) THE LIMITS OF PRIVATE AND PUBLIC WATER AND SEWER CONNECTIONS HAVE BEEN PROVIDED WITH CONT. #24-4974-D.
(4) THE LIMITS OF THE PRIVATE AND PUBLIC STORM DRAIN CONNECTIONS HAVE BEEN PROVIDED WITH F 17-059 AND F 18-017.

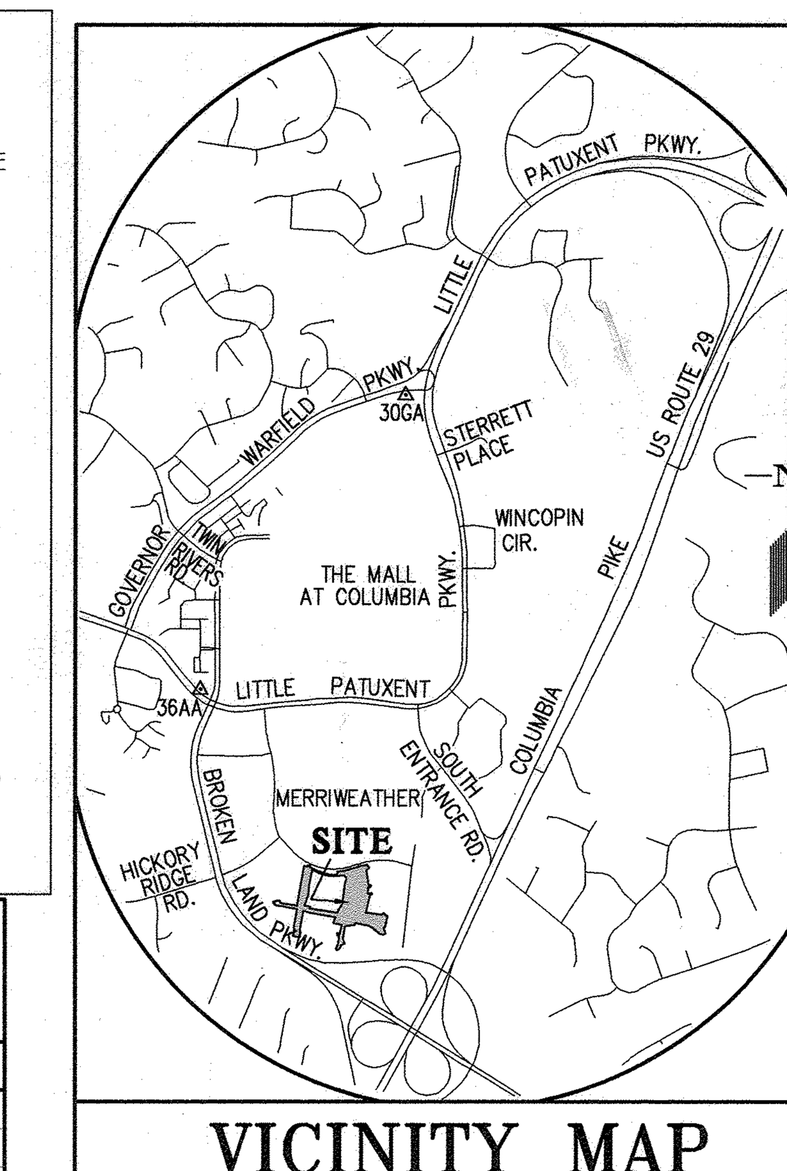
DESIGN MANUAL WAIVER INFORMATION:

VOLUME II DESIGN MANUAL WAIVER
ON DECEMBER 7, 2017, THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS GRANTED A DESIGN MANUAL WAIVER TO SECTION 5.4.B.4 OF THE HOWARD COUNTY DESIGN MANUAL, VOL. II, ALLOWING THE MINIMUM CLEARANCE BETWEEN WATER/SEWER AND OTHER UTILITIES FROM 5 FEET TO 3 FEET. THE WAIVER CAME WITH THE FOLLOWING UNDERSTANDING:

"THE CONDITIONED APPROVAL PROVIDED HEREIN IS APPLICABLE TO THE 26 "PINCH" POINTS (NUMBERED 1 THROUGH 28, SKIPPING 18 AND 26) DESCRIBED AND SHOWN ON THE ACCOMPANYING EXHIBIT ONLY (EXHIBIT 'A' WAS SUBMITTED AS PART OF THE ORIGINAL OCTOBER 10, 2017 DESIGN MANUAL WAIVER REQUEST). THE CONDITIONAL APPROVAL SHALL NOT BE CONSIDERED A WAIVER TO THE REQUIREMENTS OF DESIGN MANUAL VOLUME II - WATER AND SEWER, SECTION 5.4.B.4 FOR THE "ENTIRE" LIMITS OF THE SUBJECT CONTRACT PLANS.

REVISED MINIMUM CLEARANCE BETWEEN WATER/SEWER AND STORM DRAIN STRUCTURES:
THE NOVEMBER 21, 2017 LETTER REQUESTED A REDUCTION OF THE MINIMUM CLEARNACE BETWEEN WATER/SEWER AND STORM DRAIN STRUCTURES FROM 5 FEET TO 2.7 FEET TO ACCOUNT FOR "PINCH" POINT 16, WHERE THE MINIMUM CLEARANCE IS LESS THAN 3 FEET. THIS REDUCTION IS FOR "PINCH" POINT 16 ONLY IN CONSIDERATION THAT IT IS SHOWN IN THE ORIGINAL EXHIBIT ACCOMPANYING THE OCTOBER 10, 2017 LETTER AS 2.7 FEET, AND THERE DOES NOT APPEAR TO BE A FEASIBLE LAYOUT ADJUSTMENT TO IMPROVE THE CLEARANCE.

"PINCH POINTS" 24 AND 25:
AS REQUESTED IN THE ORIGINAL WAIVER RESPONSE, THE LAYOUT SURROUNDING "PINCH" POINTS 24 AND 25 HAVE BEEN ADJUSTED SUCH THAT THE LONGITUDINAL ALIGNMENT OF THE STORM DRAIN IS NO LONGER BETWEEN THE WATER AND SEWER MAINS, AND THAT 5 FEET OF CLEARANCE BETWEEN WATER/SEWER AND STORM DRAINS HAS BEEN PROVIDED; THEREFORE, WAIVERS FOR THESE "PINCH" POINTS ARE NO LONGER NECESSARY.



VICINITY MAP
SCALE: 1" = 2,000'
ADC MAP 32 GRID A-1

HOWARD COUNTY CONTROL STATIONS

30GA	36AA
NORTHING: 566,053.5979	NORTHING: 562,804.8537
EASTING: 1,352,177.5307	EASTING: 1,349,906.1701
ELEVATION: 339.878	ELEVATION: 359.151
(LATEST ADJ. NOV. 2008)	(LATEST ADJ. NOV. 2008)

ESD COMPUTATION SUMMARY (5)

DRAINAGE AREA #	ESD FACILITIES WITHIN DRAINAGE AREA	ESD TYPE	DRAINAGE AREA (SF.)	ESDv REQUIRED (CF)	ESDv MINIMUM (CF)	ESDv PROVIDED (CF)	WQv REQUIRED (CF)	WQv PROVIDED (CF)	Pe REQUIRED (IN)	Pe PROVIDED (IN)	REv PROVIDED (CF)	CPv PROVIDED (CF)
16	MBR-16, 17, 18, 19 & 20	M-6	15,598	2,717	907	967	907	967	1.00	1.07	0	0
19	MBR-61 & 62	M-6	26,002	4,529	1,492	1,744	1,492	1,744	1.00	1.17	0	0
21	MBR-66	M-6	15,754	2,744	923	945	923	945	1.00	1.02	0	0
22	MBR-24	M-6	11,860	2,066	697	700	697	700	1.00	1.00	0	0
23	MBR-23	M-6	13,978	2,434	819	833	819	833	1.00	1.02	0	0
24	MBR-22	M-6	13,192	2,298	776	776	776	776	1.00	1.00	0	0
25	MBR-44	M-6	10,476	1,825	552	823	552	823	1.00	1.49	0	0
26	MBR-45, 46 & 47	M-6	23,075	4,019	1,192	1,875	1,192	1,875	1.00	1.57	0	0
27	MBR-21 & 41	M-6	20,070	3,496	1,115	1,215	1,115	1,215	1.00	1.09	0	0
32A	MBR-25	M-6	5,671	988	332	333	332	333	1.00	1.00	0	0
33	MBR-68	M-6	4,873	849	286	300	286	300	1.00	1.05	0	0

	ESDv REQUIRED	ESDv PROVIDED
TOTALS	9,091	10,511 CF

NOTE:
1. FOR SOME OF THE FACILITIES, THE ESD AND DRAINAGE AREAS ARE NOT IDENTIFIED WITH THE SAME NUMBER.

(5) STORMWATER MANAGEMENT FACILITY OWNERSHIP AND MAINTENANCE RESPONSIBILITY TABLE

FACILITY	OWNERSHIP	MAINTENANCE	FACILITY	OWNERSHIP	MAINTENANCE
MBR-16	PRIVATE	PRIVATE	MBR-41	PRIVATE	PRIVATE
MBR-17	PRIVATE	PRIVATE	MBR-44	PRIVATE	PRIVATE
MBR-18	PRIVATE	PRIVATE	MBR-45	PRIVATE	PRIVATE
MBR-19	PRIVATE	PRIVATE	MBR-46	PRIVATE	PRIVATE
MBR-20	PRIVATE	PRIVATE	MBR-47	PRIVATE	PRIVATE
MBR-21	PRIVATE	PRIVATE	MBR-61	PRIVATE	PRIVATE
MBR-22	PRIVATE	PRIVATE	MBR-62	PRIVATE	PRIVATE
MBR-23	PRIVATE	PRIVATE	MBR-66	PRIVATE	PRIVATE
MBR-24	PRIVATE	PRIVATE	MBR-68	PRIVATE	PRIVATE
MBR-25	PRIVATE	PRIVATE			

SHEET INDEX

LEGEND

- 366 — EXISTING CONTOUR
- 300 — PROPOSED CONTOUR
- EXISTING TREELINE (DOES NOT MEET FOREST CRITERIA)
- LIMIT OF EXISTING FOREST
- LIMIT OF ULTIMATE FOREST
- EX. 8"S. — EXISTING SANITARY SEWER
- 8"S. — PROP. SANITARY SEWER
- EX. 8"W. — EXISTING WATERLINE
- 8"W. — PROPOSED WATERLINE
- PROPOSED FIRE HYDRANT
- EX. S.D. — EXISTING STORM DRAIN
- S.D. — PROPOSED STORM DRAIN
- TREE PLANTER
- EXISTING POST
- EXISTING POLE
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVEMENT
- SB — SB — STREAM / BANK BUFFER
- ### — FLOODPLAIN CROSS SECTION
- EXISTING TREE
- TREE SHOWN FOR BONDING PURPOSES ONLY
- SOIL BORING LOCATION
- PROPOSED CURB & GUTTER
- PROPOSED REVERSE
- CONCRETE SIDEWALK
- ERL-1 — 2014 ENVIRONMENTAL RESTORATION LIMITS
- ERL-2 — 2016 ENVIRONMENTAL RESTORATION LIMITS
- TREE PIT (M-6)
- CURB OPENING (TYP.)
- DRAINAGE DIVIDE
- SOIL TYPE BOUNDARY
- GbB / B — SOIL TYPE / SOIL GROUP
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE / CLEAN WATER DIVERSION
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- CIP — PROPOSED INLET PROTECTION
- TSOS — TEMPORARY STONE OUTLET STRUCTURE
- LOD — LIMIT OF DISTURBANCE
- ST # — SEDIMENT TRAP
- LIMIT OF WETLAND
- WETLAND AREA
- WB — WB — WETLAND BUFFER
- FP — FP — FP — 100 YEAR FLOODPLAIN
- STREAM BANK
- CENTERLINE OF STREAM

ON MAY 24, 2018 THE DIRECTOR OF THE DEPT. OF PLANNING AND ZONING APPROVED WP-18-105, AN ALTERNATIVE COMPLIANCE TO SECTION 16.116(a)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, TO PROVIDE A WALL MAINTENANCE EASEMENT WITHIN A BUFFER AREA. THE APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. ENCROACHMENT SHALL NOT EXTEND BEYOND THE APPROXIMATE 195 SF AS SHOWN ON THE EXHIBIT ADN SDP-18-005.

2. THE ORIGINALS ONLY PLAT SHALL BE RECORDED SHOWING THE EASEMENT AS APPROVED FOR SUBMISSION IN A LETTER DATED MAY 18, 2018.

3. ANY IMPACTS TO ENVIRONMENTAL RESTORATION PLANTING DUE TO ACCESS OR MAINTENANCE SHALL BE REPLANTED IN ACCORDANCE WITH F-15-106.

4. CONDITIONS OF APPROVAL OF THIS ALTERNATIVE COMPLIANCE SHALL BE ADDED TO ALL RELEVANT PLANS.

WP 17-052 NOTE:

ON JANUARY 31, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.119(e)(5) AND SECTION 16.120(c)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:

FOR SECTION 16-119(e)(5):
1. A SIGHT DISTANCE ANALYSIS MUST BE SUBMITTED FOR ALL SITE DEVELOPMENT PLANS PROPOSED AT PUBLIC AND PRIVATE STREET INTERSECTIONS IN DOWNTOWN COLUMBIA (ALL SIX NEIGHBORHOODS).
2. PLEASE INCLUDE A GENERAL NOTE WITH THE WP FILE NUMBER, THE REGULATORY SECTION NUMBER, THE DATE OF THE APPROVAL, AND THE CONDITIONS OF APPROVAL ON ALL FUTURE DOWNTOWN COLUMBIA PLANS.

FOR SECTION 16.120(c)(1):
3. ALTERNATIVE COMPLIANCE OF SECTION 16.120(c)(1) IS APPROVED ONLY FOR CRESCENT NEIGHBORHOOD PARCELS D-8 THROUGH PARCELS D-9 AS SHOWN ON THE ASSOCIATED PLAN EXHIBIT (ATTACHED) IF THE DEPARTMENT OF PUBLIC WORKS REQUIRES ALL ROADS PROVIDING FRONTAGE TO THESE PROPERTIES BE PRIVATE DUE TO ENHANCED DESIGN FEATURES AND MATERIALS.
4. A RECIPROCAL EASEMENT AGREEMENT MUST BE RECORDED FOR ALL PARCELS IN CRESCENT NEIGHBORHOOD AREA 3 TO OUTLINE THE OPERATION OF THE PRIVATE ROADWAYS FOR SAFE AND EFFICIENT ACCESS TO EACH INDIVIDUAL PARCEL AND PARKING AREA. THIS AGREEMENT MUST INCLUDE MAINTENANCE FOR STORM DRAINAGE, STORMWATER MANAGEMENT FACILITIES, SEWER SYSTEMS, SNOW REMOVAL, STREET LIGHTING, AND ANY OTHER TYPICAL ROADWAY MAINTENANCE AND OPERATIONAL ISSUES.
5. UNIMPEDED PUBLIC ACCESS FOR CRESCENT NEIGHBORHOOD PARCELS D-8 THROUGH D-9 MUST BE PROVIDED AT ALL TIMES FOR EMERGENCY PURPOSES, INCLUDING WHEN STREET FESTIVALS MAY CLOSE SECTIONS OF THE PRIVATE ROAD.
6. PLEASE INCLUDE A GENERAL NOTE WITH THE WP FILE NUMBER, THE REGULATORY SECTION NUMBER, THE DATE OF THE APPROVAL, AND THE CONDITIONS OF APPROVAL ON ALL FUTURE CRESCENT AREA 3 PLAN SUBMISSIONS.

WP 17-115 NOTE:

ON MAY 19, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.144(d)(2) AND SECTION 16.144 (r)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
1. F 17-059 MUST BE SUBMITTED ON OR BEFORE MAY 22, 2017.
2. ADD THE FILE NUMBER, SECTION, DECISION, DATE OF DECISION, AND ANY CONDITIONS OF APPROVAL AS A GENERAL NOTE ON THE PLAN.

WP 18-020 NOTE:

ON SEPTEMBER 8, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.144(d)(2) AND SECTION 16.144 (r)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
1. F 17-059 MUST BE SUBMITTED ON OR OCTOBER 2, 2017.
2. ADD THE FILE NUMBER, SECTION, DECISION, DATE OF DECISION, AND ANY CONDITIONS OF APPROVAL AS A GENERAL NOTE ON THE PLAN.

DESIGN MANUAL WAIVER INFORMATION:

VOLUME II DESIGN MANUAL WAIVER
ON DECEMBER 30, 2016, THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS GRANTED A DESIGN MANUAL WAIVER TO SECTIONS 3.3.B.2.C; 4.3.B.2.D AND 5.4.B.1 OF THE HOWARD COUNTY DESIGN MANUAL, VOL. II, WITH THE FOLLOWING UNDERSTANDING:
"SHOULD CIRCUMSTANCES CHANGE AS THE DESIGN PROCEEDS FORWARD, AND THESE MINIMUM CLEARANCES BETWEEN
1) WATER AND SEWER OF NO LESS THAN 10 FEET HORIZONTALLY [CENTER-TO-CENTER] OR
2) NO LESS THAN 6 FOOT VERTICAL CLEARANCE OF WATER ABOVE SEWER WHEN NECESSARY AND/OR
3) NO LESS THAN 5 FEET HORIZONTALLY TO ANY OTHER UTILITY [OUTSIDE TO OUTSIDE]
ARE FOUND TO NOT BE ACHIEVABLE, THEN RENEWED REVIEW AND APPROVAL IS REQUIRED."

VOLUME III DESIGN MANUAL WAIVER
ON JANUARY 19, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING, ALONG WITH THE DEPARTMENT OF PUBLIC WORKS ISSUED ITS CONCLUSION ON A DESIGN MANUAL WAIVER TO THE FOLLOWING SECTIONS OF THE HOWARD COUNTY DESIGN MANUAL, VOL. III:
I) SECTION 2.5.B.4 "REDUCE THE CURB FILLET RADIUS OF A NON-RESIDENTIAL AREA"
HOWARD COUNTY ASKED THAT 35' R BE PROVIDED FOR ALL PUBLIC ROAD FILLETS AND 25'R BE PROVIDED FOR ALL COMMERCIAL ENTRANCES ONTO PUBLIC ROADS. OTHER CURB FILLET RADII WOULD BE SUBJECT TO APPROVAL OF A TURNING ANALYSIS. THIS ANALYSIS WOULD HAVE TO TAKE LANDSCAPING AND EMERGENCY VEHICLE OVERHANG INTO CONSIDERATION. ALSO REQUESTED WAS THE USE OF REINFORCED TURN DOWN CURBS WHERE EMERGENCY VEHICLES MAY HAVE TO RIDE OVER THE CURB LINES.
II) SECTION 2.4.K "UTILITY LOCATIONS"
HOWARD COUNTY ASKED THAT THE DESIGN BE PROVIDED IN ACCORDANCE WITH THE DECEMEER 30, 2016 APPROVAL OF A WAIVER REQUEST TO DESIGN MANUAL WAIVER VOL. II.
III) SECTION 2.5.B "MINIMUM INTERSECTION SPACING"
HOWARD COUNTY HAD NO OBJECTION TO REDUCING THE SPACE FROM 500' TO 400' AS LONG AS THE PEAK HOUR TRAFFIC TO DRIVEWAY #1 IS MAINTAINED TO 200 VPH OR LESS.
IV) SECTION 2.6.D "INTERSECTION SPACING AND CORNER CLEARANCE"
THE COUNTY ACKNOWLEDGES THAT THE GARAGE ON PARCEL D-4 IS STILL BEING DESIGNED AND COULD BE SOME TIME UNTIL ITS FINAL DESIGN IS KNOWN. THEREFORE, THE COUNTY HAS DEFERRED A FINAL DECISION UNTIL THE SITE DEVELOPMENT PLAN AND FINAL PLAN STAGE.
V) SECTION 2.8 "THE USE OF PRIVATE ROADS"
THE COUNTY CONCLUDED THAT ALL OF THE ROADS CAN BE PRIVATE WITH THE EXCEPTION OF VALENCIA LANE, FROM MERRIWEATHER DRIVE DOWN TO MANGO TREE ROAD, AND MANGO TREE ROAD FROM VALENCIA LANE TO SYMPHONY WOODS ROAD.
VI) SECTION 2, APPENDIX A ©PUBLIC ROADWAY DESIGN CRITERIA^
THE COUNTY CONCLUDED THE POSTED SPEED COULD BE 25 MPH.

VOLUME IV DESIGN MANUAL WAIVER
ON JANUARY 3, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING GRANTED THE USE OF THE STORM DRAIN STRUCTURES SHOWN AS DETAIL D4.32 AND D4.35 IN THE HOWARD COUNTY DESIGN MANUAL, VOL. IV FOR THE CRESCENT NEIGHBORHOOD, AREA 3, AND OFFERED THE FOLLOWING:
I) ONLY USE THE GRATE INLETS WHEN THE TYPICAL TYPE 'A' INLET CANNOT BE USED DUE TO SPACE CONSTRAINTS.
II) WHEN A GRATE INLET IS USED, A CONCRETE COLLAR IS TO BE PROVIDED TO REDUCE THE CHANCE OF FAILURE DUE TO SETTLEMENT.
III) IT IS STILL THE COUNTY'S PREFERENCE TO USE THE TYPICAL TYPE 'A' INLET IN THE PUBLIC ROADS.

DESIGN MANUAL WAIVER INFORMATION:

VOLUME II DESIGN MANUAL WAIVER
ON OCTOBER 30, 2017, THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING GRANTED A DESIGN MANUAL WAIVER TO SECTION 2.2.C OF THE HOWARD COUNTY DESIGN MANUAL, VOL. III, ALLOWING MODIFICATIONS TO THE DESIGN STANDARDS OR TYPICAL SECTIONS.

"THE RECOMMENDATION OF APPROVAL FOR THE ROADS WITHIN AREA 3 IS SUBJECT TO ALL EASEMENTS BEING IN PLACE AND SIGN-OFF ON A DETAILED AGREEMENT IDENTIFYING MAINTENANCE RESPONSIBILITIES, TERMS OF PUBLIC ACCESS AND EMERGENCY ACCESS AS PART OF THE FINAL DEVELOPER'S AGREEMENT FOR ALL PROJECTS PROPOSING PUBLIC OR PRIVATE ROADS IN CRESCENT-AREA 3. APPROVAL OF THE CROSS SLOPE ON SKY RIBBON IS SUBJECT TO THE STORM DRAIN INLETS MEETING THE SPREAD REQUIREMENTS PER HOWARD COUNTY DESIGN MANUAL, VOL. I."

THE DEPARTMENT OF PLANNING AND ZONING, ALONG WITH THE DEPARTMENT OF PUBLIC WORKS ALSO GRANTED A DESIGN MANUAL WAIVER TO SECTION 2.3.A.3.e OF THE HOWARD COUNTY DESIGN MANUAL, VOL. III, ALLOWING A PERMANENT NON-THROUGH STREET TO BE TERMINATED WITHOUT A CUL-DE-SAC.

"THE RECOMMENDATION OF APPROVAL FOR THE ROADS WITHIN AREA 3 IS SUBJECT TO AN EASEMENT OR MEMORANDUM OF UNDERSTANDING WITH THE DEVELOPER WITH AN UNDERSTANDING THAT ACCESS WILL BE ALLOWED TO VEHICLES, BOTH COUNTY AND GENERAL PUBLIC, AT ALL TIMES. ALSO, AS PART OF SNOW REMOVAL, COUNTY PLOWS WOULD PUSH THE SNOW FROM THE PUBLIC PORTION OF THE ROADWAY ON TO THE PRIVATE TURN AROUND AREA AND THE DEVELOPER OR ITS ENTITIES WOULD BE RESPONSIBLE FOR THE REMOVAL OF THE SNOW FROM THE PRIVATE AREAS."

WP 17-010 NOTE:

ON AUGUST 25, 2016 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVES A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.144 (d)(2) AND SECTION 16.144 (r)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, TO ALLOW AN EXTENSION OF 45 DAYS TO THE DEADLINE FOR ADDITIONAL INFORMATION.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1) THE PRELIMINARY EQUIVALENT SKETCH PLAN MUST BE SUBMITTED ON OR BEFORE SEPTEMBER 15, 2016.
2) PLEASE REFERENCE THE ALTERNATIVE COMPLIANCE PETITION NUMBER, SECTION REQUEST, THE DATE OF THE DECISION AND CONDITION OF APPROVAL ON ALL FUTURE PLANS FOR THIS SITE.

WP 17-049 NOTE:

ON DECEMBER 9, 2016 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVES A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.144 (d)(2) AND SECTION 16.144 (r)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, TO ALLOW AN EXTENSION OF 45 DAYS TO THE DEADLINE FOR ADDITIONAL INFORMATION.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1) THE PLAT ORIGINALS FOR F 16-107 MUST BE SUBMITTED ON OR BEFORE NOVEMBER 5, 21017.
2) PLEASE REFERENCE THE ALTERNATIVE COMPLIANCE PETITION NUMBER, SECTION REQUEST, THE DATE OF THE DECISION AND CONDITION OF APPROVAL ON ALL FUTURE PLANS FOR THIS SITE.

WP 18-021 NOTE:

ON SEPTEMBER 11, 2017 THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING APPROVED A REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.156(g)(2) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS:
1. SDP 17-027 MUST BE SUBMITTED ON OR BEFORE OCTOBER 2, 2017.
2. ADD THE FILE NUMBER, SECTION, DECISION, DATE OF DECISION, AND ANY CONDITIONS OF APPROVAL AS A GENERAL NOTE ON THE PLAN.

PURPOSE NOTE:

THE PURPOSE OF THIS PLAN IS TO UPDATE THE GENERAL NOTES TO REFLECT THE REVISIONS MADE ON 7-23-2018 AS REVISION #3 AND TO REVISE THE SWM INFORMATION AS A RESULT OF REVISION #5.

REPLACEMENT SHEET

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways MK — Date 9/12/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 10/29/19
Chief, Development Engineering Division — Date 9.17.19

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\Redlines\For Hotel and Building C\F 17-059\F 17-059_sheet 01_replacement.dwg | DES. DEV | DRN. ANL | CHK. MJT

DATE	REVISION	BY	APP'R.
8/12/2019	(5) UPDATED ESD INFORMATION BASED ON NEW LOCATIONS	JRC	
7/23/2018	(3) REV. MAINTENANCE RESPONSIBILITIES, NOTE 36, STREET TREE SURETY	GT	JRC

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2020
8/21/19

REVISED COVER SHEET

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP – GRID	SHEET
AUG., 2019	36 – 01	1 OF 25

F 17-059

PLOTTED: 8/13/2019 8:36 AM, LAST SAVED: 8/12/2019 5:00 PM, PLOTTED BY: Jennifer R. Dicks

LEGEND

- PUBLIC EASEMENT
- PRIVATE EASEMENT AREA
- EXISTING EASEMENTS
- EXISTING PAVING
- EXISTING CONCRETE WALKS
- ASPHALT PATH
- SB — 50' STREAM / BANK BUFFER
- WB — 25' WETLAND BUFFER
- 10-25% SLOPES
- +25% SLOPES
- FP — FLOODPLAIN
- STREAM CENTERLINE
- ERL-1 — 2014 ENVIRONMENTAL RESTORATION LIMITS
- ERL-2 — 2016 ENVIRONMENTAL RESTORATION LIMITS

NOTES

1. THE EXISTING CONTOURS SHOWN ON PARCELS D-1 THROUGH D-17 AND LOT 10 REFLECT THE MASS GRADING DONE UNDER SDP 16-075.
2. SOME OF THE STEEP SLOPES BEING SHOWN AS EXISTING CONDITIONS WERE CREATED AS PART OF THE WORK PERFORMED UNDER SDP 16-075 AND F 16-107. THE SEDIMENT TRAPS WITHIN PARCELS D-3 AND D-7 WERE ALSO CONSTRUCTED UNDER SDP 16-075.
3. WITH THE EXCEPTION OF OPEN SPACE LOT 4, ALL OF THE EASEMENTS AND PARCEL LINES SHOWN ARE PROPOSED WITH THIS FINAL PLAN AND ARE NOT PART OF THE EXISTING CONDITIONS. OPEN SPACE LOT 4 IS TO BE RESUBDIVIDED AS OPEN SPACE LOT 10 AS PART OF THIS FINAL PLAN.

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

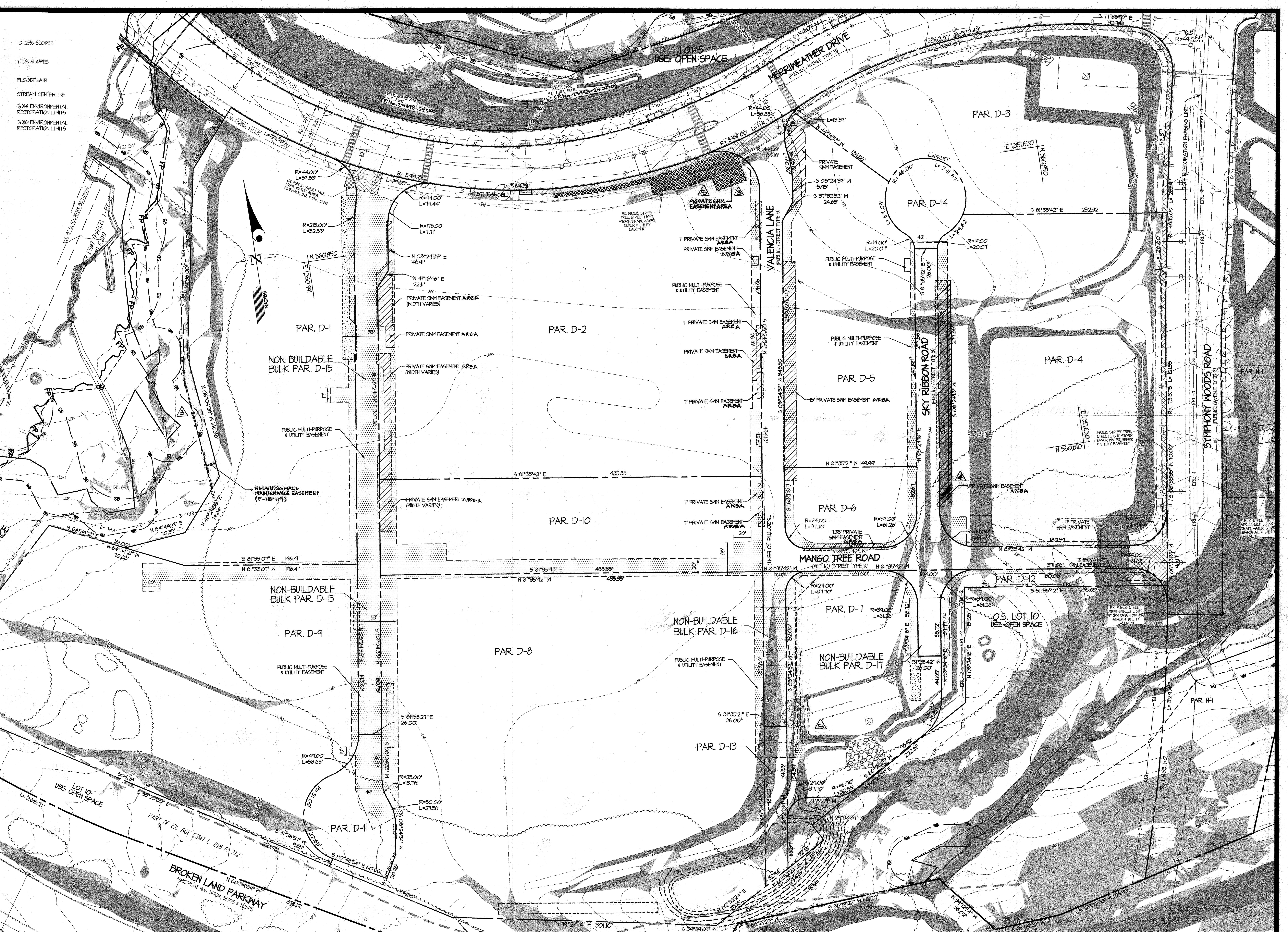
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND — GREGORY SCOTT SHANABERGER — No. 10849 — PROFESSIONAL LAND SURVEYOR

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER



SCALE: 1" = 50

0' 25 50 100 200

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1-11-18

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-02 – Existing Conditions Plan.dwg | DES. DEV | DRN. ANL | CHK. MJT

DATE	REVISION	BY	APP'R.
7-24-19	5 Revised Easements and Existing Grades	WGJ	DEV
12-12-18	4 REVISED PRIVATE SWM EASEMENT AREA LIMITS	GT	DEV
7-23-18	3 Additional SWM Easement area and wall Easement	GT	JRC

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2018
12/14/17

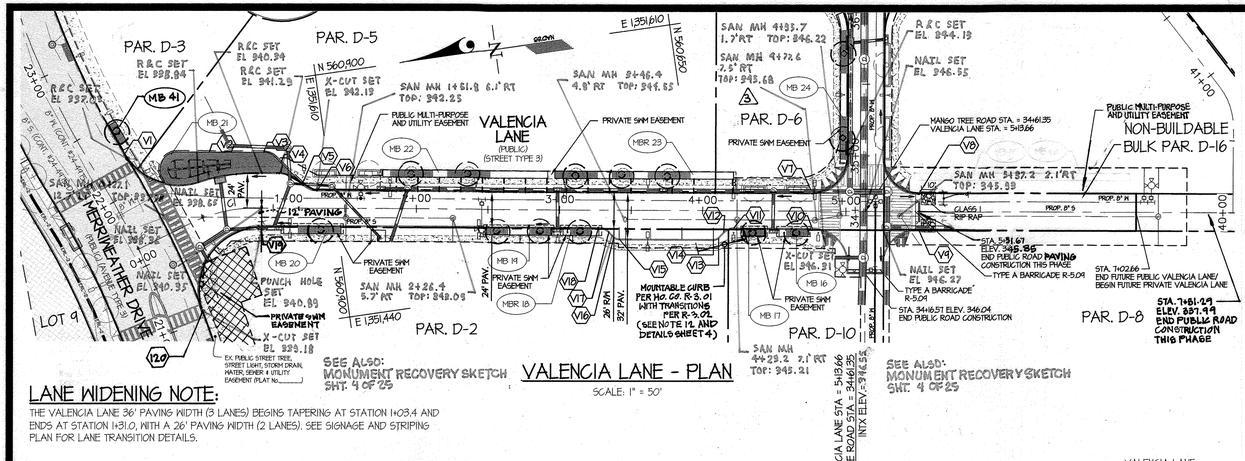
EXISTING CONDITIONS & EASEMENTS PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	2 OF 25

F 17-059

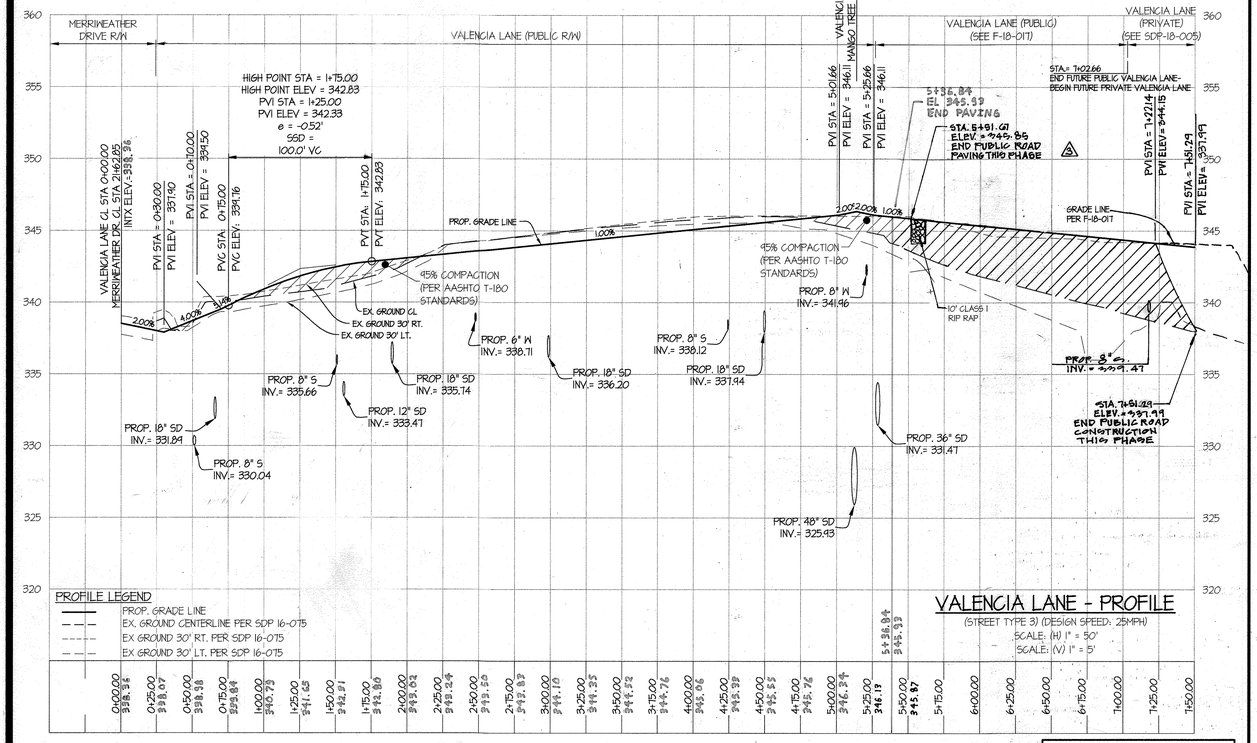


VALENCIA LANE - PLAN

SCALE: 1" = 50'

LANE WIDENING NOTE:

THE VALENCIA LANE 36' PAVING WIDTH (3 LANES) BEGINS TAPERING AT STATION 1+03.4 AND ENDS AT STATION 1+31.0, WITH A 26' PAVING WIDTH (2 LANES). SEE SIGNAGE AND STRIPING PLAN FOR LANE TRANSITION DETAILS.



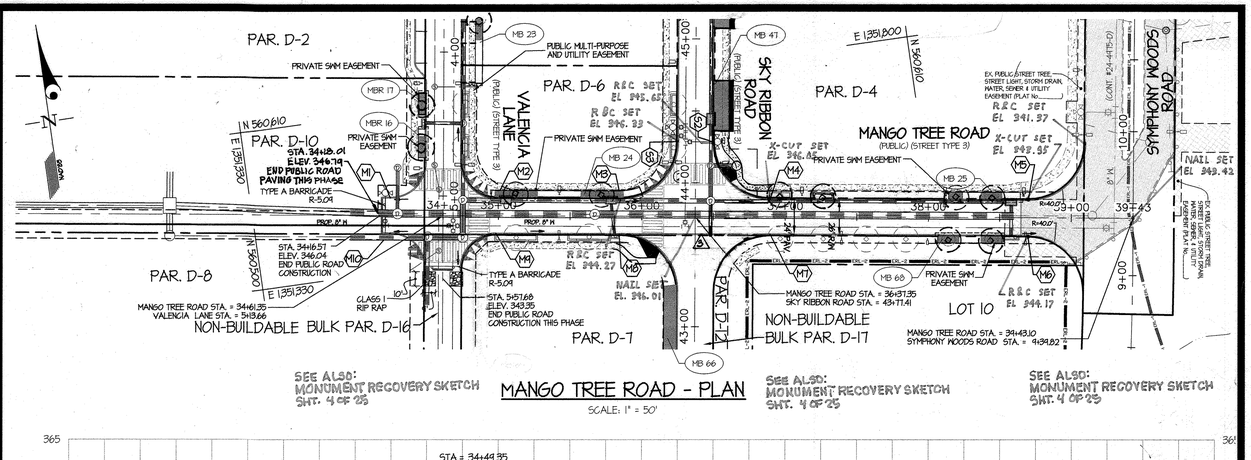
VALENCIA LANE - PROFILE

(STREET TYPE 3) (DESIGN SPEED: 25MPH)
SCALE: (H) 1" = 50'
SCALE: (V) 1" = 5'

0+00.00	0+25.00	0+50.00	0+75.00	1+00.00	1+25.00	1+50.00	1+75.00	2+00.00	2+25.00	2+50.00	2+75.00	3+00.00	3+25.00	3+50.00	3+75.00	4+00.00	4+25.00	4+50.00	4+75.00	5+00.00	5+25.00	5+50.00	5+75.00	6+00.00	6+25.00	6+50.00	6+75.00	7+00.00	7+25.00	7+50.00
338.56	338.07	338.38	338.84	340.79	341.65	342.81	342.80	343.04	343.24	343.20	343.23	344.10	344.32	344.35	344.76	345.06	345.24	345.39	345.74	346.21	346.18	345.99	345.87							

5+26.84	5+35.84
346.12	345.99

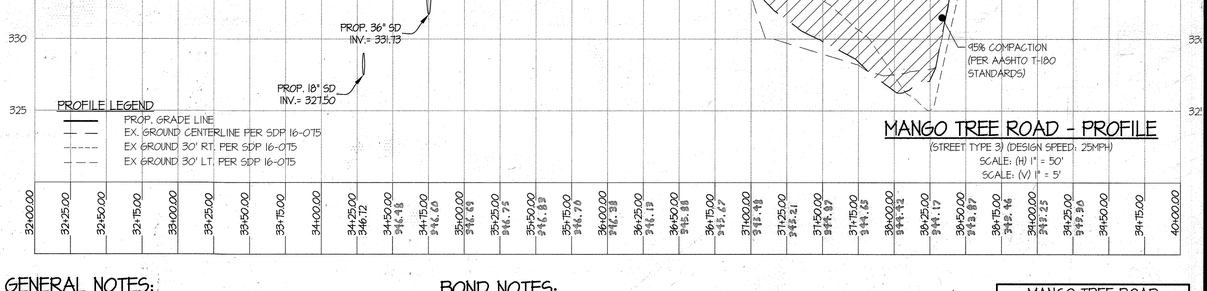
SEE ALSO: MONUMENT RECOVERY SKETCH SHT. 4 OF 25



MANGO TREE ROAD - PLAN

SCALE: 1" = 50'

SEE ALSO: MONUMENT RECOVERY SKETCH SHT. 4 OF 25



MANGO TREE ROAD - PROFILE

(STREET TYPE 3) (DESIGN SPEED: 25MPH)
SCALE: (H) 1" = 50'
SCALE: (V) 1" = 5'

32+00.00	32+25.00	32+50.00	32+75.00	33+00.00	33+25.00	33+50.00	33+75.00	34+00.00	34+25.00	34+50.00	34+75.00	35+00.00	35+25.00	35+50.00	35+75.00	36+00.00	36+25.00	36+50.00	36+75.00	37+00.00	37+25.00	37+50.00	37+75.00	38+00.00	38+25.00	38+50.00	38+75.00	39+00.00	39+25.00	39+50.00	40+00.00
346.47	346.47	346.47	346.47	346.47	346.47	346.47	346.47	346.47	346.12	346.48	346.60	346.69	346.75	346.89	346.76	346.88	346.79	346.88	346.79	346.67	346.21	346.67	346.89	346.72	346.82	346.89	346.96	346.86	346.82	346.47

GENERAL NOTES:

1. SEE SHEET 2 FOR EXISTING ITEMS TO BE REMOVED AND BEARINGS AND DISTANCES.
2. SEE SHEET 5 FOR TYPICAL ROAD SECTIONS.
3. SEE SHEET 5 FOR CURB DETAILS.
4. SEE SHEET 6 FOR FLOODPLAIN CROSS SECTION AND WSEL's.
5. SEE SHEETS 7-14 FOR STORM DRAIN INFORMATION.
6. SEE SHEET 11 FOR STREET TREES AND STREET LIGHTS.
7. ON MAY 9, 2016 HOWARD COUNTY DEPT. OF PLANNING & ZONING DETERMINED THAT THE DISTURBANCES TO ENVIRONMENTAL SENSITIVE AREAS FOR THE IMPROVEMENTS SHOWN WITHIN THIS FINAL PLAN ARE ESSENTIAL AND NECESSARY.
8. TRAFFIC BARRICADES AND CLASS I RIP RAP SHOWN AT END OF PUBLIC ROAD CONSTRUCTION SHALL NOT BE REQUIRED IF THE CONSTRUCTION OF MANGO TREE ROAD (PUBLIC), VALENCIA LANE (PUBLIC), AND THEIR CORRESPONDING PRIVATE ROAD EXTENSIONS AS A PART OF F 18-017, SDP 17-021, OR SDP 18-005 OCCUR CONCURRENTLY.
9. SEE SDP 17-021 FOR THE SPOT ELEVATIONS TO CONSTRUCT THE HANDICAP RAMPS AT THE INTERSECTION OF VALENCIA LANE AND MANGO TREE ROAD.
10. FOR THE INFORMATION THAT ESTABLISHES THE LIMIT OF PUBLIC MAINTENANCE RESPONSIBILITIES FOR THE STORM DRAIN, SEE SHEET 7.
11. FOR THE INFORMATION THAT ESTABLISHES THE LIMIT OF THE PUBLIC MAINTENANCE RESPONSIBILITIES FOR THE WATER AND SEWER, SEE CONT. #24-4474-D.

⚠12. THE LIMITS OF THE MAINTABLE CURB ON VALENCIA LANE INCLUDE TRANSITION CURB STA. 5+49.29 TO 4+29.29
MAINTABLE CURB STA. 4+09.29 TO 4+19.75
TRANSITION CURB STA 4+19.75 TO 4+29.75

BOND NOTES:

THE STREET TREES, STREET LIGHTS, 4' CONCRETE SIDEWALKS, AND SIDEWALK RAMPS (PER HOWARD COUNTY DETAIL R-4.03) ARE SHOWN FOR BONDING PURPOSES ONLY. THE IMPROVEMENTS ALONG THE ROAD FRONTAGE ARE TO BE CONSTRUCTED AS PART OF SDP 17-021. THEY WILL ONLY BE CONSTRUCTED AS A PART OF THESE PLANS IF NEEDED PRIOR TO THE COMPLETION OF THE STREETSCAPE ASSOCIATED WITH SDP 17-021.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS APPROVED PLANS AND SPECIFICATIONS.

10/10/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 9/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO. 26569

VALENCIA LANE

CURB FLOW LINE ELEVATION TABLE

PT. NO	STATION	OFFSET	ELEV.
(V1)	0+19.5	63.1' L	336.98
(V2)	0+55.1	24.0' L	338.45
(V3)	0+87.7	24.0' L	339.91
(V4)	1+09.5	24.0' L	340.82
(V5)	1+21.1	15.9' L	341.27
(V6)	1+30.9	12.0' L	341.63
(V7)	4+16.5	12.0' L	345.72
(V8)	5+50.8	12.0' L	345.72
(V9)	5+50.8	12.0' R	345.65
(M0)	4+74.2	12.0' R	345.52
(V11)	4+23.9	12.0' R	345.20
(V12)	4+14.2	15.9' R	345.10
(V13)			
(V14)	4+05.1	20.0' R	345.06
(V15)	3+43.7	20.0' R	344.36
(V16)			
(V17)	3+36.0	16.3' R	344.90
(V18)	3+28.3	12.0' R	344.19
(V19)	0+42.6	12.1' R	340.20
(V20)	0+19.7	62.5' R	339.14

MANGO TREE ROAD

CURB FLOW LINE ELEVATION TABLE

PT. NO	STATION	OFFSET	ELEV.
(M1)	34+24.5	12.1' L	346.47
(M2)	34+49.0	12.0' L	346.37
(M3)	35+06.4	12.0' L	346.36
(M4)	36+84.3	12.0' L	345.47
(M5)	38+66.2	12.2' L	343.46
(M6)	38+69.5	12.0' R	343.69
(M7)	36+84.1	12.1' R	345.36
(M8)	35+85.7	11.9' R	346.46
(M9)	34+47.6	12.2' R	346.59
(M10)	34+25.9	12.1' R	346.47

CURVE DATA CHART

CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
C1	VALENCIA LANE	0+41.24	0+87.68	100.00'	23.65'	46.44'	46.03'	S43°53'41"E	26°36'39"

SCALE: 1" = 50

0' 25 50 100 200

LEGEND

- EXISTING PAVING
- CONCRETE WALKS
- ASPHALT PATH
- PLANTER
- TREE PIT (M-6)
- SB — 50' STREAM / BANK BUFFER
- WB — 25' WETLAND BUFFER
- FLOODPLAIN
- STREAM CENTERLINE
- ERL-1 — 2014 ENVIRONMENTAL RESTORATION LIMITS
- ERL-2 — 2016 ENVIRONMENTAL RESTORATION LIMITS
- (B) BOND NOTE REFERENCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1.11.18

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. ANL | DRN. ANL | CHK. DEV

DATE	REVISION	BY	APP'R.
7-24-18	⚠ REMOVED MB-64 AND MB-65, REV. REFERENCE TO SWM EASEMENT AND REV. WALK/RAMPS	gk	DEV.
7-24-18	⚠ REVISION FOR Valencia Lane Street Trees, Easement, Storm Drain Stub & Note	gk	JRG

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018
12/14/17

STATE OF MARYLAND — CARLTON KENNETH GUTSCHICK — No. 12975 — REGISTERED PROFESSIONAL ENGINEER

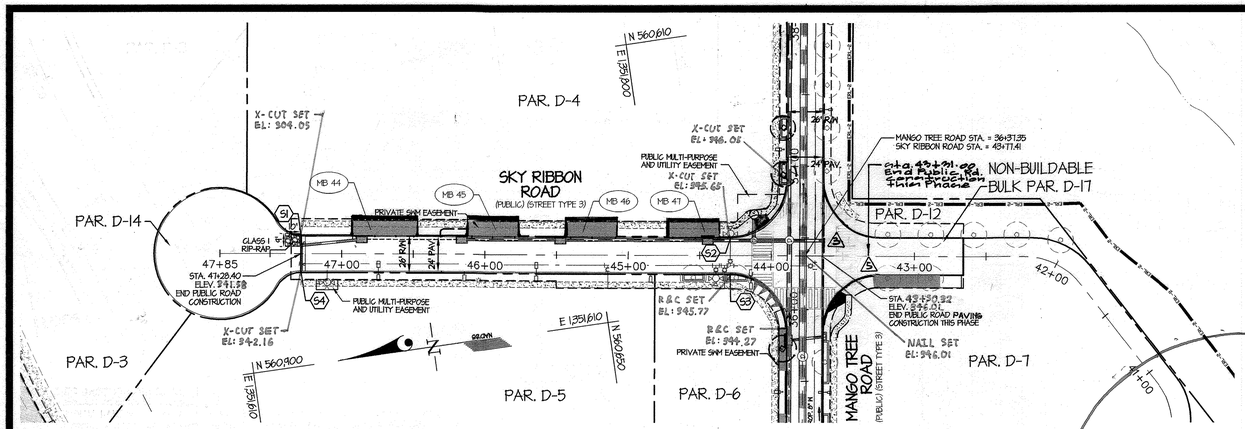
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

MANGO TREE ROAD and VALENCIA LANE - PLAN and PROFILE

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	3 OF 25

F 17-059



SKY RIBBON ROAD - PLAN

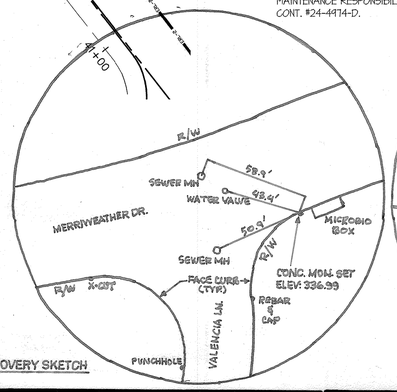
SCALE: 1" = 50'

GENERAL NOTES:

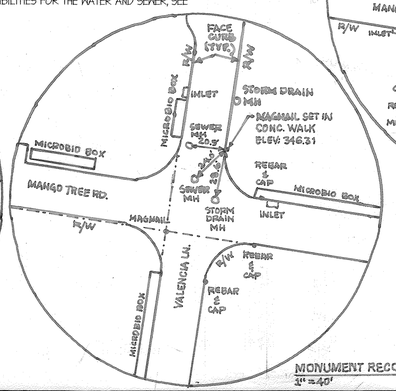
1. SEE SHEET 2 FOR EXISTING ITEMS TO BE REMOVED AND BEARINGS AND DISTANCES.
2. SEE SHEET 5 FOR TYPICAL ROAD SECTIONS.
3. SEE SHEET 5 FOR CURB DETAILS.
4. SEE SHEET 6 FOR FLOODPLAIN CROSS SECTION AND WSEL's.
5. SEE SHEETS 7-9 FOR STORM DRAIN INFORMATION.
6. SEE SHEET 11 FOR STREET TREES AND STREET LIGHTS.
7. ON MAY 9, 2016 HOWARD COUNTY DEPT. OF PLANNING & ZONING DETERMINED THAT THE DISTURBANCES TO ENVIRONMENTAL SENSITIVE AREAS FOR THE IMPROVEMENTS SHOWN WITHIN THIS FINAL PLAN ARE ESSENTIAL AND NECESSARY.
8. TRAFFIC BARRICADES AND CLASS I RIP RAP SHOWN AT END OF PUBLIC ROAD CONSTRUCTION SHALL NOT BE REQUIRED IF THE CONSTRUCTION OF MANGO TREE ROAD (PUBLIC), VALENCIA LANE (PUBLIC), AND THEIR CORRESPONDING PRIVATE ROAD EXTENSIONS AS A PART OF F 18-017, SDP 17-027, OR SDP 18-005 OCCUR CONCURRENTLY.
9. SEE SDP 17-027 FOR THE SPOT ELEVATIONS TO CONSTRUCT THE HANDICAP RAMPS AT THE INTERSECTION OF VALENCIA LANE AND MANGO TREE ROAD.
10. FOR THE INFORMATION THAT ESTABLISHES THE LIMIT OF PUBLIC MAINTENANCE RESPONSIBILITIES FOR THE STORM DRAIN, SEE SHEET 7.
11. FOR THE INFORMATION THAT ESTABLISHES THE LIMIT OF THE PUBLIC MAINTENANCE RESPONSIBILITIES FOR THE WATER AND SEWER, SEE CONT. #24-4414-D.

BOND NOTES:

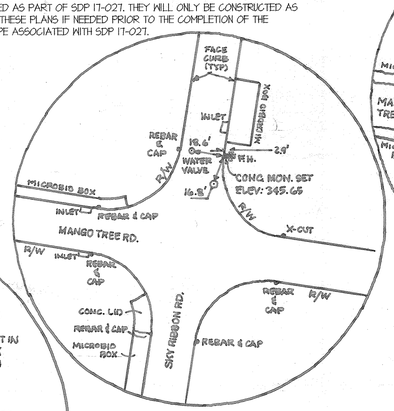
THE STREET TREES, STREET LIGHTS, 4' CONCRETE SIDEWALKS, AND SIDEWALK RAMPS (PER HOWARD COUNTY DETAIL R-4.03) ARE SHOWN FOR BONDING PURPOSES ONLY. THE IMPROVEMENTS ALONG THE ROAD FRONTAGE ARE TO BE CONSTRUCTED AS PART OF SDP 17-027. THEY WILL ONLY BE CONSTRUCTED AS A PART OF THESE PLANS IF NEEDED PRIOR TO THE COMPLETION OF THE STREETSCAPE ASSOCIATED WITH SDP 17-027.



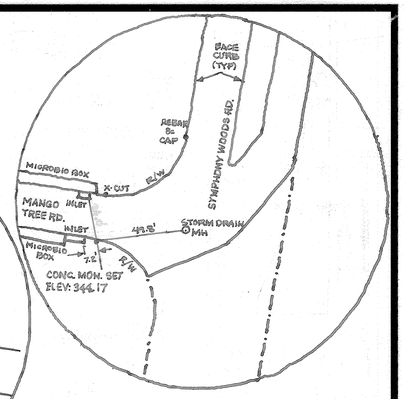
MONUMENT RECOVERY SKETCH
1" = 40'



MONUMENT RECOVERY SKETCH
1" = 40'



MONUMENT RECOVERY SKETCH
1" = 40'

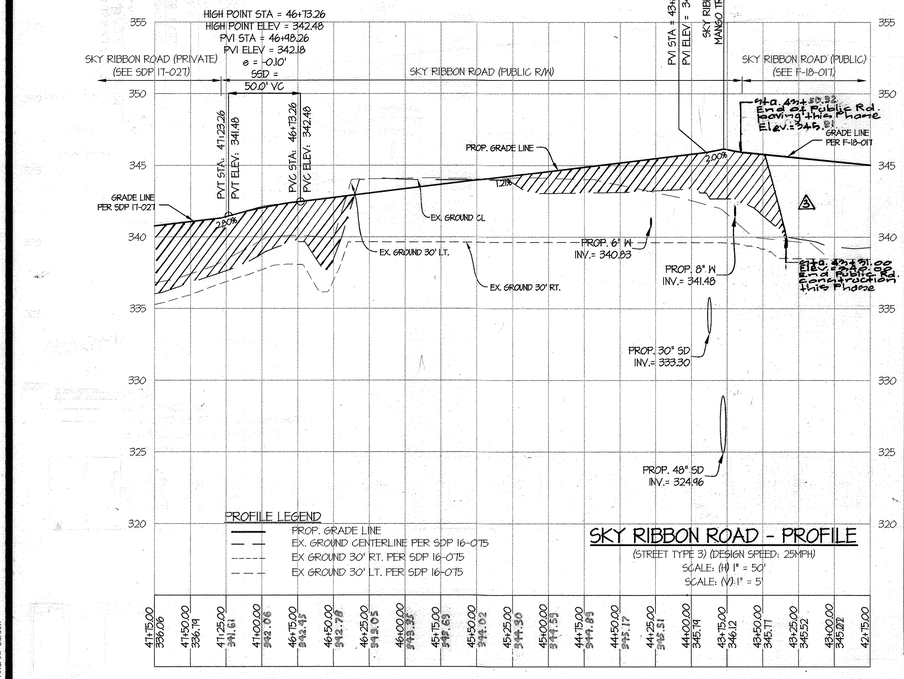


MONUMENT RECOVERY SKETCH
1" = 40'

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS

10/23/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 9/2/2024
AS-BUILT SURVEY DATED 2/1/22 TO 2/18/22

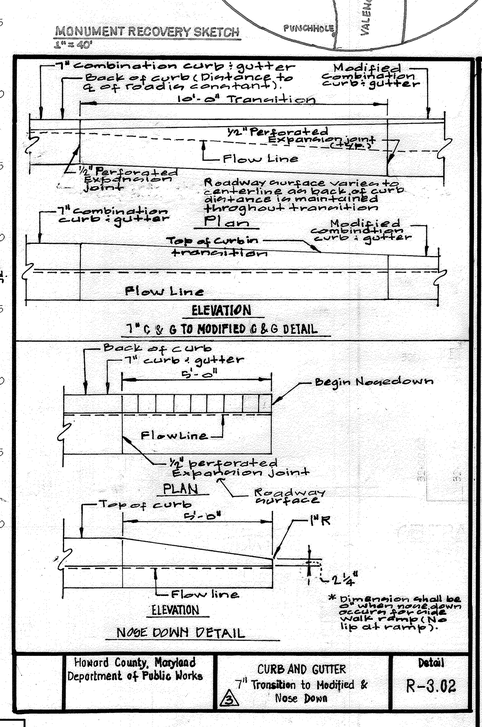
PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569



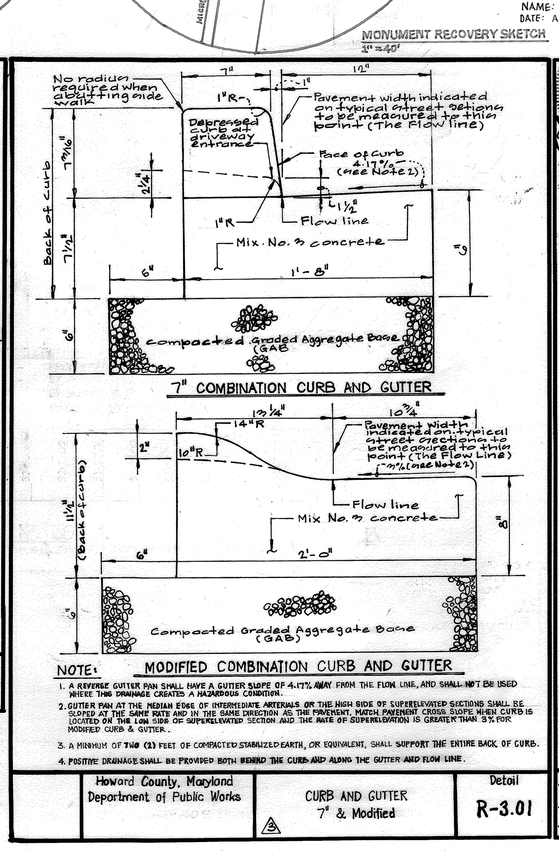
SKY RIBBON ROAD - PROFILE

(STREET TYPE 3) (DESIGN SPEED: 25MPH)

SCALE: (H) 1" = 50'
SCALE: (V) 1" = 5'



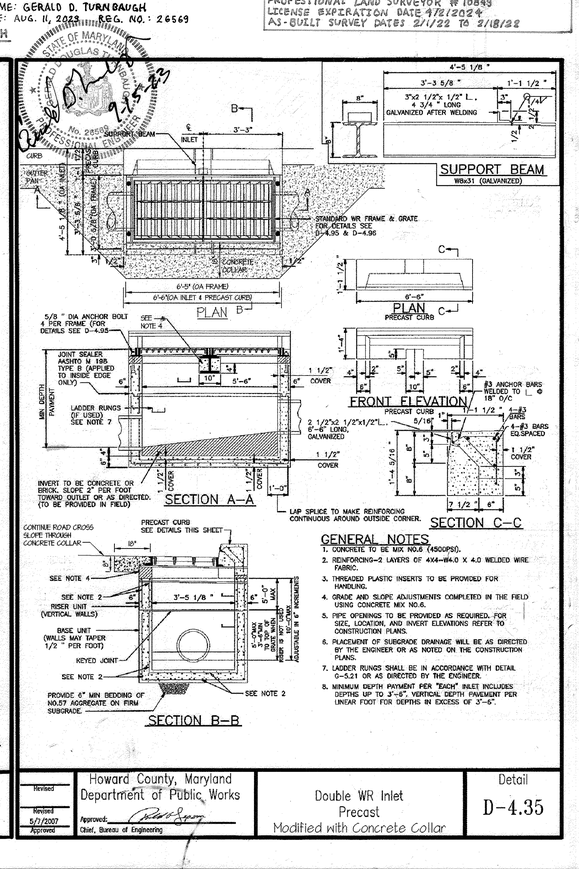
Howard County, Maryland Department of Public Works	CURB AND GUTTER 7" Transition to Modified & Nose Down	Detail R-3.02



NOTE: MODIFIED COMBINATION CURB AND GUTTER

1. A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
2. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
3. A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.

Howard County, Maryland Department of Public Works	CURB AND GUTTER 7" & Modified	Detail R-3.01



GENERAL NOTES:

1. CONCRETE TO BE MIX NO.6 (4500PSI).
2. REINFORCING-2 LAYERS OF 4X4-W4.0 X 4.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS 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 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 DETAIL G-5.21 OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-0". VERTICAL DEPTH PAVEMENT PER LINEAR FOOT FOR DEPTHS IN EXCESS OF 3'-0".

Revised	Howard County, Maryland Department of Public Works	Double WR Inlet Precast Modified with Concrete Collar	Detail D-4.35
Revised 5/1/2007 Approved	Approved: Chief, Bureau of Engineering		

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 12/20/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1-11-18

SCALE: 1" = 50
0' 25 50 100 200

SKY RIBBON ROAD CURB FLOW LINE ELEVATION TABLE			
PT. NO	STATION	OFFSET	ELEV.
(51)	47+81.0	12.5' R	341.01
(52)	44+29.9	11.9' R	345.22
(53)	44+29.5	12.1' L	345.77
(54)	47+29.9	12.2' L	341.59

NO.	REVISION	BY	APP'R.
1	7.24.19 REV. SWM EASEMENT AND REV. WALK/RAMPS	JH	DEV
2	8.23.18 Rev. Profile For Sky Ribbon Road, SD Inlet, Trees and added curb details	JH	JRC

DES. ANL | DRN. ANL | CHK. DEV

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018

12/14/17

SKY RIBBON ROAD - PLAN and PROFILE

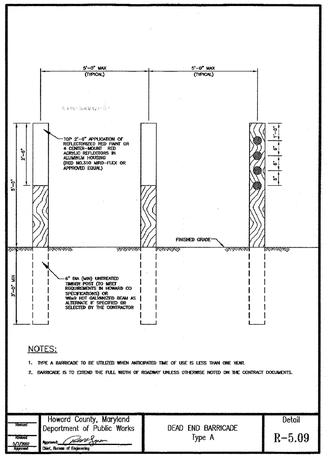
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
DEC., 2017	36 - 01	4 OF 25

F 17-059

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-03-04 - Road Plans.dwg, PLOTTED: 12/14/2017 4:19 PM, LAST SAVED: 12/14/2017 3:51 PM, PLOTTED BY: Andrew Larson

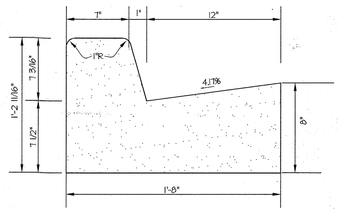


NOTES:

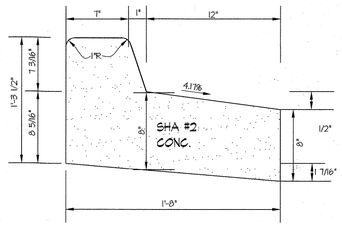
1. TYPE A BARRICADE TO BE UTILIZED WHEN ANTICIPATED TIME OF USE IS LESS THAN ONE YEAR.
2. BARRICADE IS TO EXTEND THE FULL WIDTH OF ROADWAY UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS.

Howard County, Maryland Department of Public Works	DEAD END BARRICADE Type A	Detail R-5.09

Revised — Dated 3/27/2007 Approved — Chief, Bureau of Engineering



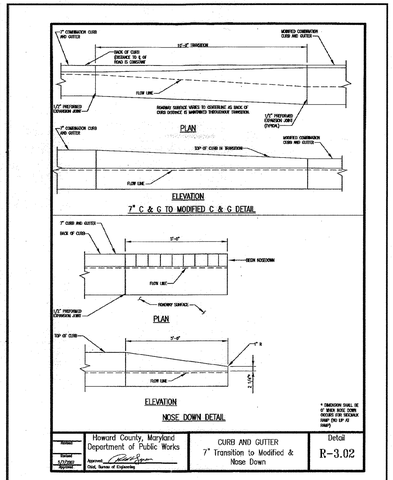
TYPE A STANDARD COMBINATION CURB AND GUTTER
NOT TO SCALE



NOTES:

1. 50' MAX. BETWEEN EXPANSION JOINTS & 10' MAX. BETWEEN CONTROL JOINTS.
2. STANDARD CURB & GUTTER SHALL BE USED WHERE THE DRIVEWAY SLOPES TOWARDS THE CURB & GUTTER. REVERSE CURB & GUTTER SHALL BE USED WHERE THE DRIVEWAY SLOPES AWAY FROM THE CURB & GUTTER.
3. PROVIDE A 5' TRANSITION TO OPEN SECTION.

TYPE-A REVERSE CONCRETE CURB AND GUTTER
NOT TO SCALE

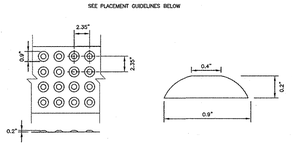


Howard County, Maryland Department of Public Works	CURB AND GUTTER 7" Transition to Modified & Nose Down	Detail R-3.02

Revised — Dated 3/27/2007 Approved — Chief, Bureau of Engineering

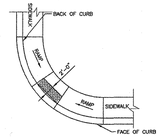
MAT DETAILS

SEE PLACEMENT GUIDELINES BELOW



DOME SPACING — DOME SECTION

PLACEMENT GUIDELINES



RAMP RADIAL AND ADJACENT TO CURB

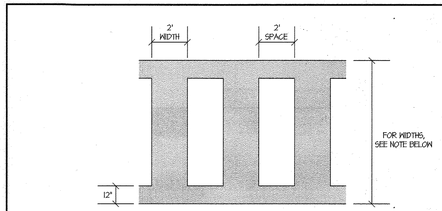
NOTES:

1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF THE CURB ARE NO LESS THAN 0.5" AND NO MORE 3.0" FROM THE BACK OF THE CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.

Howard County, Maryland Department of Public Works	~~SIDEWALK RAMP~~ Detectable Warning Truncated Domes	Detail R-4.07

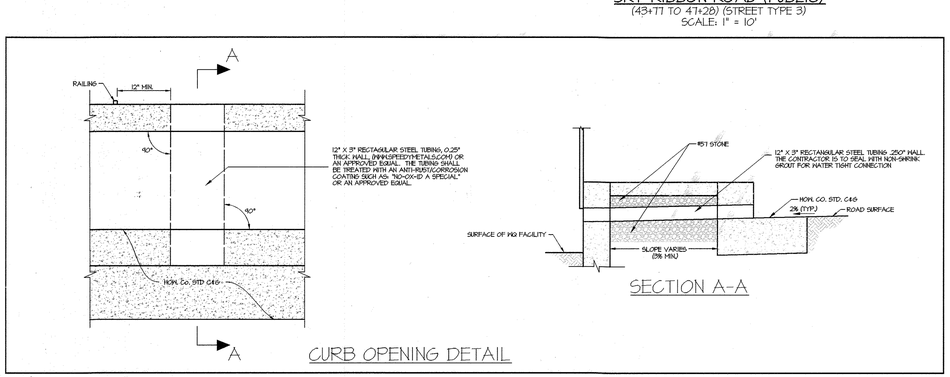
Revised — Dated 3/27/2007 Approved — Chief, Bureau of Engineering

NOTE TO CONTRACTOR:
THIS DETAIL IS ONLY TO BE USED FOR DETERMINING THE LOCATION OF THE DETECTABLE WARNING-TRUNCATED DOMES.

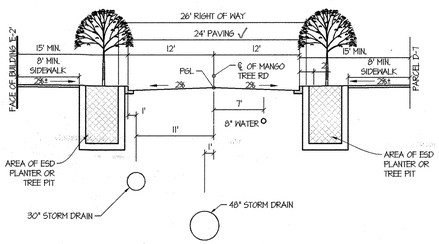


1. THE CROSSWALKS AT THE INTERSECTION OF VALENCIA LANE AND MANGO TREE ROAD WILL BE 15' WIDE. THE CROSSWALK AT VALENCIA LANE AND MERRIWEATHER DRIVE WILL BE 8' WIDE
2. THE CROSSWALKS WILL BE CAST IN PLACE CONCRETE WITH A BROOM FINISH AND SAW CUT SCORE LINES.

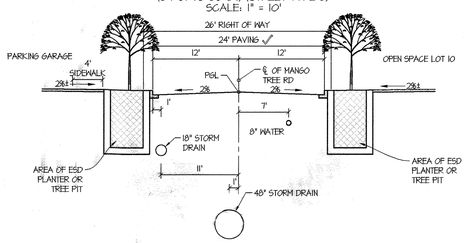
PEDESTRIAN CROSSWALK DETAIL
NO SCALE



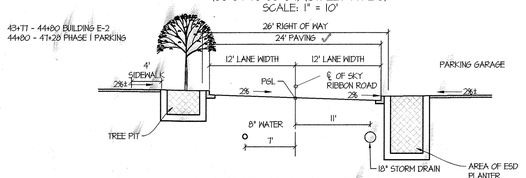
CURB OPENING DETAIL



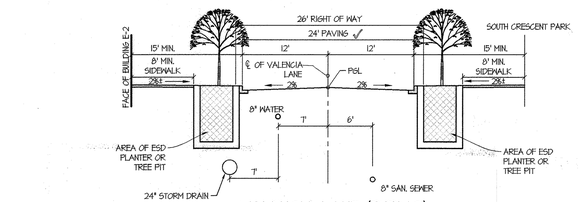
MANGO TREE ROAD (PUBLIC)
(34+61 TO 36+37) (STREET TYPE 3)
SCALE: 1" = 10'



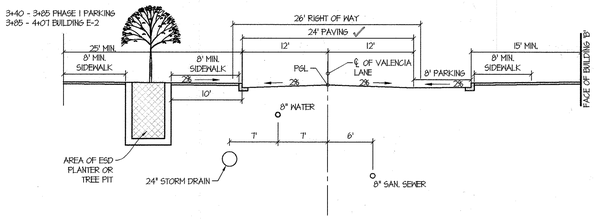
MANGO TREE ROAD (PUBLIC)
(36+37 TO 38+64) (STREET TYPE 3)
SCALE: 1" = 10'



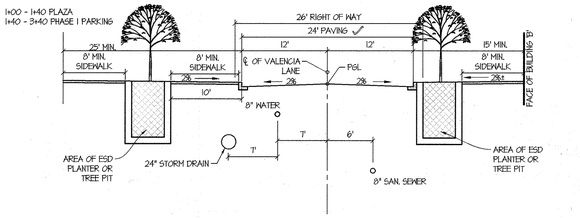
SKY RIBBON ROAD (PUBLIC)
(43+77 TO 47+28) (STREET TYPE 3)
SCALE: 1" = 10'



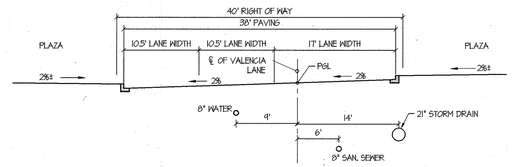
VALENCIA LANE (PUBLIC)
(4+03 TO 5+14) (STREET TYPE 3)
SCALE: 1" = 10'



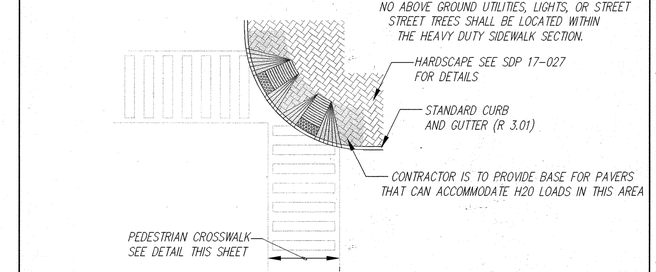
VALENCIA LANE (PUBLIC)
(3+40 TO 4+07) (STREET TYPE 3)
SCALE: 1" = 10'



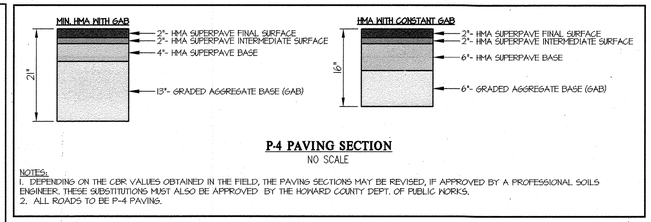
VALENCIA LANE (PUBLIC)
(1+30.94 TO 3+40) (STREET TYPE 3)
SCALE: 1" = 10'



VALENCIA LANE (PUBLIC)
(0+00 TO 1+04.50) (STREET TYPE 3)
SCALE: 1" = 10'



REINFORCED APRON DETAIL FOR RAMPS
AT VALENCIA LANE, MANGO TREE ROAD, AND SKY RIBBON ROAD
N.T.S.



P-4 PAVING SECTION
NO SCALE

NOTES:
1. DEPENDING ON THE CBR VALUES OBTAINED IN THE FIELD, THE PAVING SECTIONS MAY BE REVISED, IF APPROVED BY A PROFESSIONAL SOILS ENGINEER. THESE SUBSTITUTIONS MUST ALSO BE APPROVED BY THE HOWARD COUNTY DEPT. OF PUBLIC WORKS.
2. ALL ROADS TO BE P-4 PAVING.

NOTES:
1. ALL TYPICAL SECTIONS ARE DRAWN LOOKING UP STATION.
2. HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY IS FROM BACK OF CURB TO BACK OF CURB.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.
10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR, # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND — G. SCOTT SHANABERGER — No. 10849 — PROFESSIONAL LAND SURVEYOR

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

9-15-23

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 10/20/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1-11-18

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-25 - Road Details.dwg, 9/14/2023 8:44:31 AM, EFFINGER, BILL, Adobe PDF

DES. DEV	DRN. LAG	CHK. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018.
12/14/17

STATE OF MARYLAND — CARSON KENNETH GUTSCHICK — No. 12975 — PROFESSIONAL ENGINEER

TYPICAL ROAD SECTION & CURB DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	5 OF 25

F 17-059

RIVER STATION	WSEL	RIVER STATION	WSEL
20+73.62	318.83	8+01.60	———
20+19.41	318.59	7+00.06	305.31
19+75.41	318.45	6+38.50	305.23
18+84.71	318.02	5+91.44	304.44
18+28.08	317.76	5+21.03	302.44
17+57.45	317.64	3+98.60	300.07
17+35.09	317.60	3+24.76	298.63
17+13.67	317.44	2+39.86	297.56
16+76.41	317.20	1+77.00	296.96
16+32.75	316.91	1+09.84	296.70
15+86.01	316.81	0+87.90	296.60
15+40.16	316.25	0+41.55	295.80
15+00.19	315.79	1+98.83	297.24
14+44.82	315.32	2+84.83	297.25
13+99.64	314.86	3+70.51	297.26
13+56.92	314.81	4+49.80	297.30
13+00.82	314.65	5+26.24	298.26
12+60.70	313.85	5+91.22	301.27
12+20.99	312.39	6+44.54	———
11+57.50	310.17	6+99.36	———
10+91.95	309.51	7+61.26	———
10+32.25	309.27	8+35.89	———
9+81.61	309.16	9+00.85	———
9+40.87	309.08	9+68.18	———
8+96.06	———	10+19.78	313.44
8+45.27	———	———	———

NOTES:
1. ON MAY 9, 2016 HOWARD COUNTY DEPT. OF PLANNING & ZONING DETERMINED THAT THE DISTURBANCES SHOWN ARE ESSENTIAL & NECESSARY.

2. THE EXISTING CONTOURS SHOWN ON PARCELS D-1 THROUGH D-12 AND LOT 10 REFLECT THE MASS GRADING DONE UNDER SDP 16-075.

LEGEND
- ERL-1 — 2014 ENVIRONMENTAL RESTORATION LIMITS
- ERL-2 — 2016 ENVIRONMENTAL RESTORATION LIMITS
- LOD — LIMIT OF DISTURBANCE ROAD WORK
- MULTI-USE PATH LIMITS
- FP — FLOODPLAIN
- SB — STREAM BUFFER
- STREAM CENTERLINE
- ESD 88 — ESD FACILITY
- SSF — SUPER SILT FENCE

SCALE: 1" = 50
0' 25 50 100 200

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG 11, 2023 REG. NO.: 26569

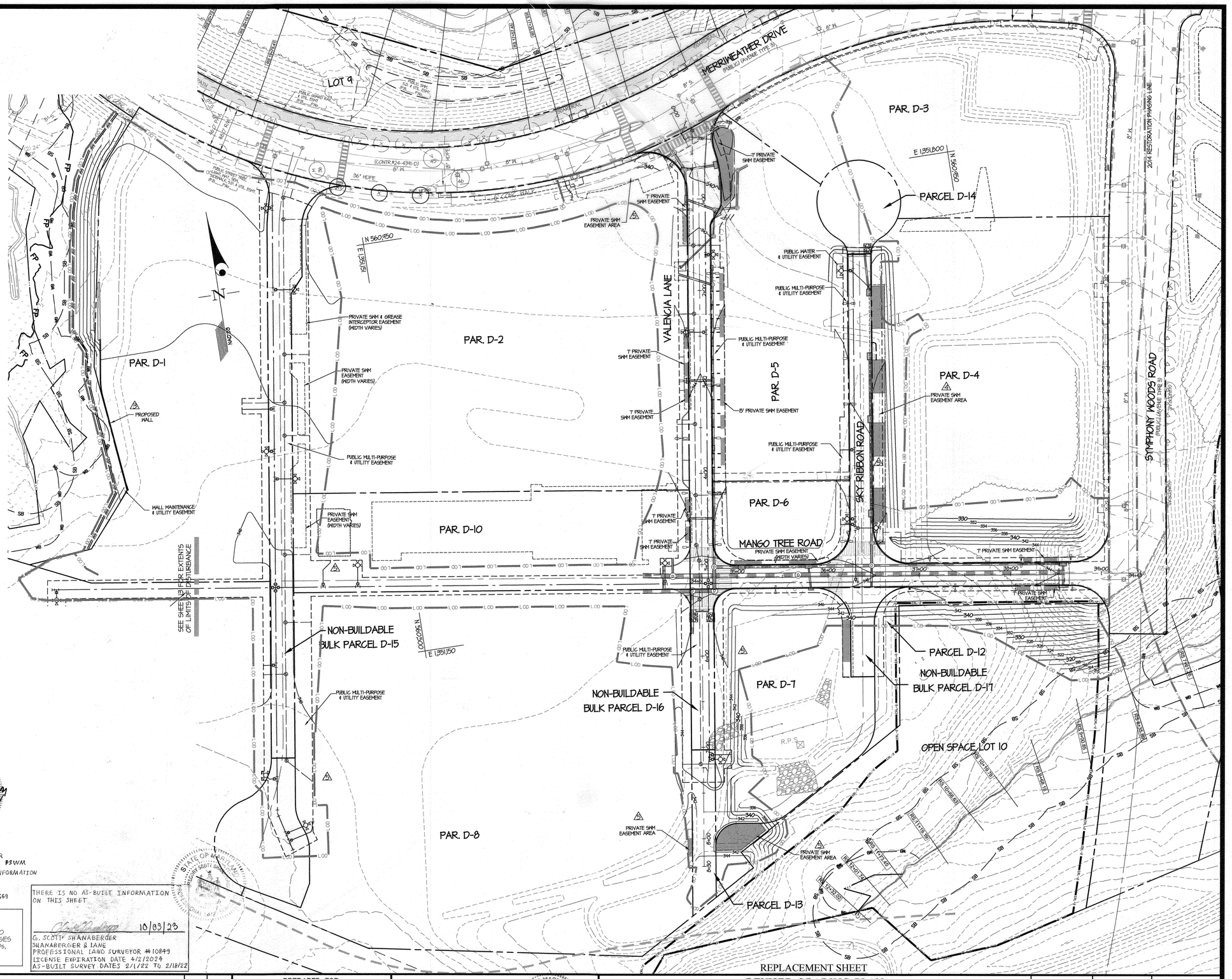
THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways MK — 9/12/2019 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — 10/29/19 Date
Chief, Development Engineering Division — 9.17.19 Date

PURPOSE NOTE:
THE PURPOSE OF THIS PLAN IS TO REFLECT THE REVISION #5 CHANGES TO THE GRADES, PROPOSED ESDs, LOD, FIRE HYDRANT AND SEWER HOUSE CONNECTION.



8/12/2019	⚠5 REMOVED MB-64 & 65, REVISED FHT, SHC, GRADES, AND LOD, ADDED LABEL FOR PRIVATE SWM EASEMENT AREA	JRC	
12/12/2018	⚠4 REVISED PRIVATE SWM EASEMENT AREA LIMITS	GT	DEV
7/30/2018	⚠3 REV. GRADING, PROPOSED WALL & REV. STORM DRAIN	GT	JRC
DATE	REVISION	BY	APP'R.

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-08 – Grading Plan.dwg, DES. DEV | DRN. ANL | CHK. MJT

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2020
8/21/19

REVISED GRADING PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
AUG., 2019	36 – 01	6 OF 25

F 17-059

FROM NO.	TO NO.	DIA. (IN) & TYPE OF PIPE	L (L)
STUB-E	M-3	12" HDPE	49'
M-3	M-2	18" HDPE	25'
M-2	I-2	21" HDPE	30'
I-2	M-19	21" HDPE	28'
M-19	M-1	24" HDPE	16'
STUB-K	M-1	18" HDPE	9'
STUB-D	M-2B	18" HDPE	10'
M-2B	M-2A	18" HDPE	36'
M-2A	M-2	18" HDPE	20'
I-1	M-19	18" HDPE	30'
I-15	M-17	18" HDPE	13'
M-17	I-14	24" HDPE	100'
I-14	I-13	24" HDPE	64'
I-13	M-16	24" HDPE	12'
M-16	M-11	24" HDPE	48'
STUB-F	M-17	18" HDPE	26'
I-17	I-14	18" HDPE	24'
I-16	M-16	18" HDPE	24'
I-21	I-20	18" HDPE	65'
I-20	I-19	18" HDPE	98'
I-19	M-18	18" HDPE	28'
M-18	M-12	24" HDPE	20'
M-12	I-6	30" HDPE	64'
I-6	I-5	30" HDPE	67'
I-5	M-11	30" HDPE	25'
M-11	M-10	36" HDPE	21'
M-10	M-9	36" HDPE	81'
M-9	STUB-H	42" RCCP	46'
STUB-L	M-18	24" HDPE	11'
I-8	I-7	15" HDPE	21'
I-7	M-12	18" HDPE	205'
STUB-J	M-12	18" HDPE	2.2'
STUB-G	M-6	48" RCCP	29'
M-6	M-4	48" RCCP	129'
M-4	STUB-B	48" RCCP	284'
I-4	STUB-C	15" HDPE	3'
I-18	I-6	15" HDPE	22'
STUB-I	M-4	24" HDPE	44'
STUB-M	M-6	18" RCCP	11'

'C' FACTOR COMPUTATIONS			
STRUCTURE	AREA (AC.)	'C'	IMPERVIOUS
STUB-K	0.86 Ac.	0.86	100%
I-1	0.46 Ac.	0.80	92%
I-2	0.18 Ac.	0.85	98%
STUB-D	0.87 Ac.	0.86	100%
STUB-E	0.98 Ac.	0.86	100%
STUB-F	0.98 Ac.	0.86	100%
I-15	0.30 Ac.	0.84	98%
I-17	0.25 Ac.	0.84	97%
I-14	0.23 Ac.	0.84	98%
I-13	0.09 Ac.	0.85	98%
I-16	0.04 Ac.	0.82	95%
I-15	0.30 Ac.	0.84	95%
STUB-G	14.41 Ac.	0.84	97%
STUB-I	3.10 Ac.	0.87	99%
I-5	0.11 Ac.	0.84	97%
I-6	0.16 Ac.	0.85	98%
I-18	0.07 Ac.	0.86	100%
STUB-J	0.42 Ac.	0.83	98%
I-7	0.13 Ac.	0.85	98%
I-8	0.11 Ac.	0.84	98%
I-11	0.09 Ac.	0.83	95%
I-20	0.14 Ac.	0.82	94%
I-21	0.24 Ac.	0.83	95%
I-4	0.25 Ac.	0.83	96%
STUB-L	1.83 Ac.	0.91	100%
STUB-M	1.52 Ac.	0.61	64%

NOTE: DRAINAGE DIVIDES SHOWN REFLECT LIMITS THAT WILL BE CREATED BY IMPROVEMENTS SHOWN ON SDP 17-027.

GRAPHIC SCALE - PLAN VIEW

0 25 50 100

1" = 50'

LIMIT OF PUBLIC STORM DRAIN MAINTENANCE CHART

STUB	STATION ℄ ROAD	OFFSET ℄ ROAD	O/S FACE OF CURB	CAP LOCATION
VALENCIA LANE				
STUB K	0+40	27.5' R	1.0'	N 560493.0186 E 1351443.9425
M2A-M2	1+11	34.3' L	11.2'	N 560426.8851 E 1351554.9625
STUB E	1+68	13.0' R	1.0'	N 560876.9283 E 1351491.7640
STUB F	1+85	13.0' R	1.0'	N 560854.7778 E 1351471.2332
STUB I	5+76	10.4' R	N/A	N 560473.3234 E 1351442.2372
SKY RIBBON ROAD				
STUB L	44+12	20.2' R	4.2'	N 560534.5564 E 1351661.3545
STUB C	47+28	5.8' R	6.2'	N 560854.6600 E 1351683.3745
MANGO TREE ROAD				
M4-M2	34+48	1.3' L	18.0'	N 560536.2545 E 1351443.3473
STUB J	36+48	13.0' R	1.0'	N 560442.9245 E 1351644.8730

THE INFORMATION SHOWN IN THIS TABLE IS FOR ESTABLISHING THE LIMITS OF THE PUBLIC STORM DRAIN FOR FUTURE MAINTENANCE BY DPW. FOR THE LOCATION OF THE END OF THE STUBS TO BE USED BY THE CONTRACTOR FOR THE INITIAL CONSTRUCTION, SEE THE STRUCTURE SCHEDULE ON SHEET 9.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/16/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-19-18

Chief, Development Engineering Division — Date 1.11.18

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #21083
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 8/1/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIED WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

NAME: GERALD D. TURNBAUGH DATE: AUG. 11 2023

REG. NO.: 28563

9.15.23

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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L:\CADD\DRAWINGS\DOWNTOWN - AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-07 - SD DAM.dwg, PLOTTED: 12/14/2017 1:25 PM, LAST SAVED: 12/14/2017 1:25 PM, PLOTTED BY: Luke Groom

DES. DEV	DRN. JH	CHK. MJT

DATE	REVISION	BY	APP'R.
7.24.19	⚠6 REMOVED MB-64 : 65, ADDED MB-61 : 62, REVISED PHT, SHG AND GRADES	gt	DEV.
7-24-18	⚠5 Revised stub and Proposed wall	gt	JRG
6-1-2018	⚠4 Revised I-3 to I-7 Pipe Diameter	gt	DEV.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2018

12/14/17

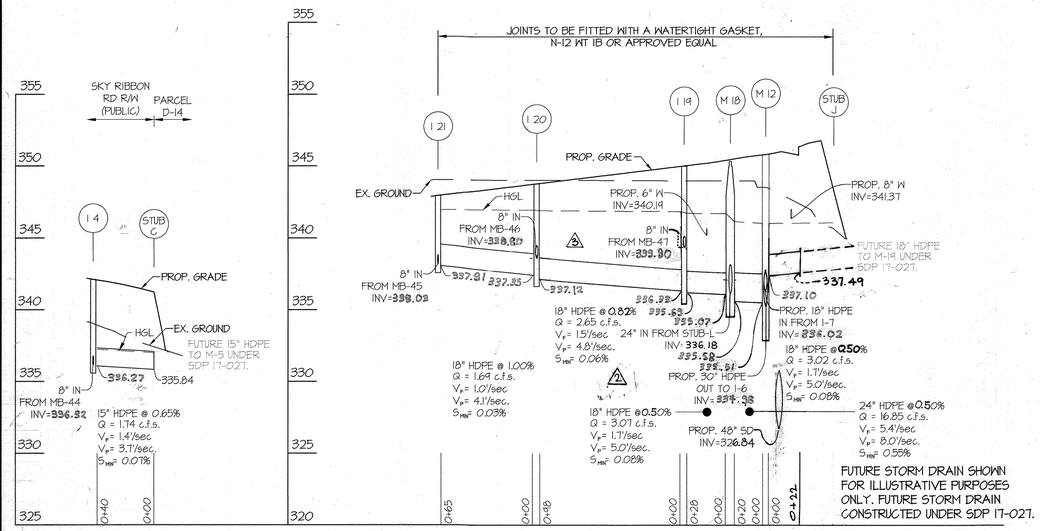
STORM DRAIN - DRAINAGE AREA MAP

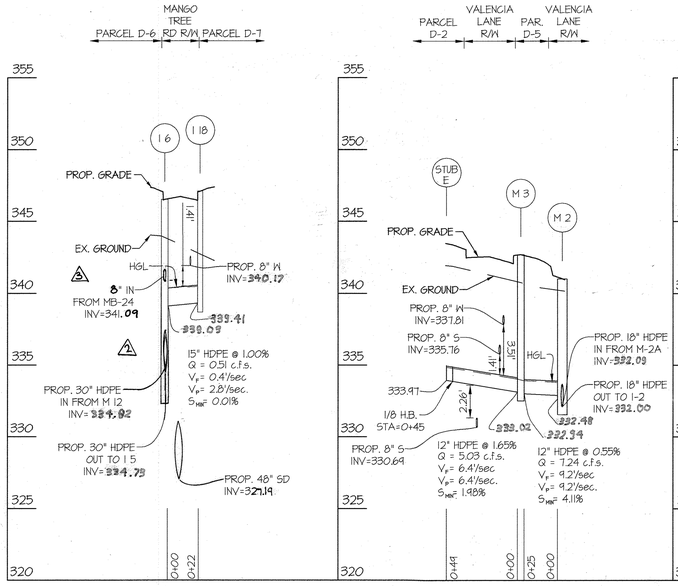
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

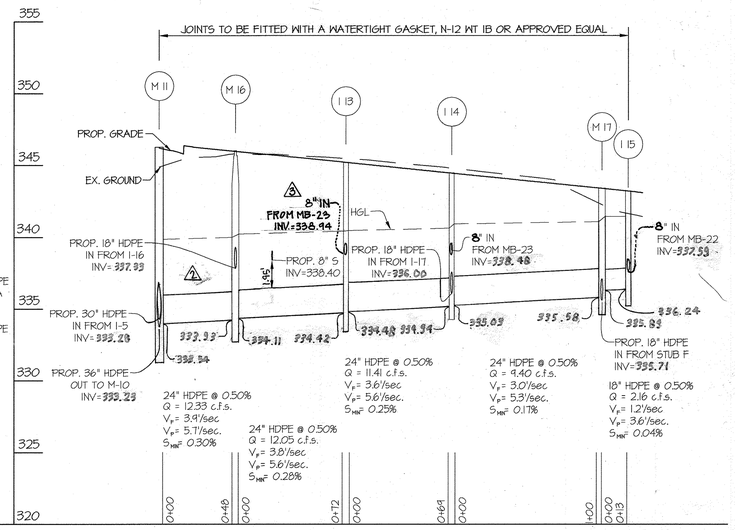
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

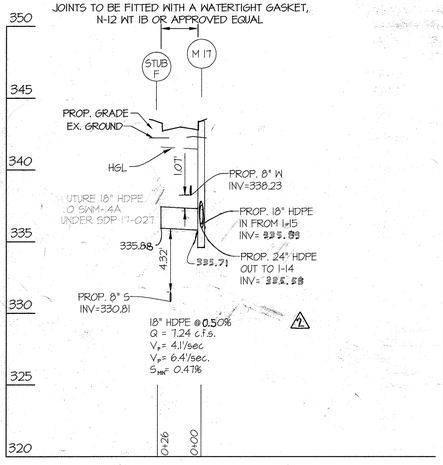
SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	7 OF 25

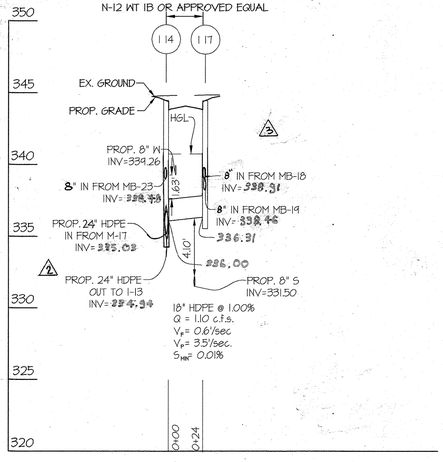
F 17-059

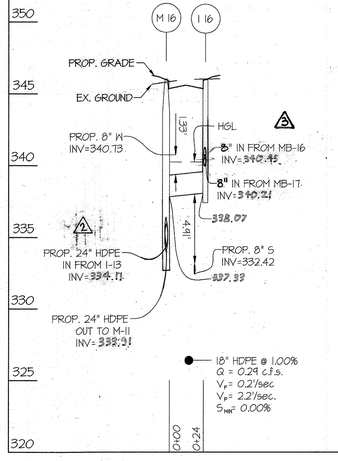


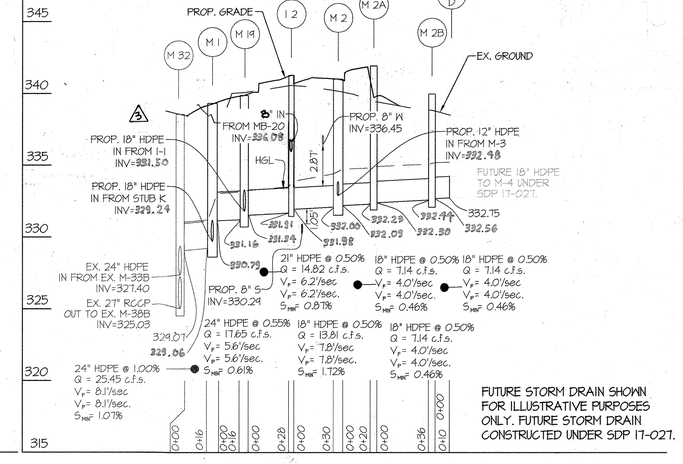


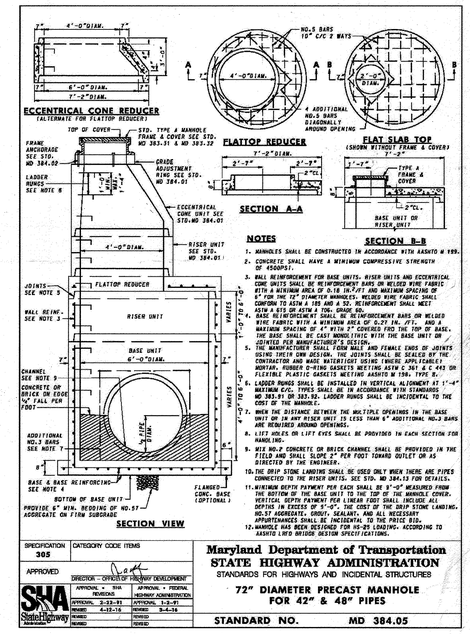












SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED

DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL – STATE REVISIONS	APPROVAL – FEDERAL HIGHWAY ADMINISTRATION
APPROVED: 5-23-91	APPROVED: 1-15-91
REVISED: 4-12-16	REVISED: 5-4-16
REVISED	REVISED
REVISED	REVISED

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

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

STANDARD NO. MD 384.05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-19-18

Chief, Development Engineering Division — Date 1-11-18

NOTE: SEE SHEET 9 FOR STRUCTURE SCHEDULE AND PIPE SCHEDULE.

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 9/2/2024
AS-BUILT SURVEY DATES 2/1/22 / 2/18/22

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L:\Cadd\Drawings\11071\11071-AREA 3\Plans or Profile\11071-AREA 3-F-08-09 - SD Profiles.dwg

DES. ANL	DRN. ANL	CHK. DEV

DATE	REVISION	BY	APPR.
7-25-18	Reviewing of Pipes from micro-bioretention planters #1 & #1 sub J	gt	JRC
6-4-2018	Revised storm drain inverts	gt	DEV.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

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12/14/17

STORM DRAIN PROFILES

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

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HOR: 1" = 50' VERT. 1" = 5'	NT	11071
DATE	TAX MAP – GRID	SHEET
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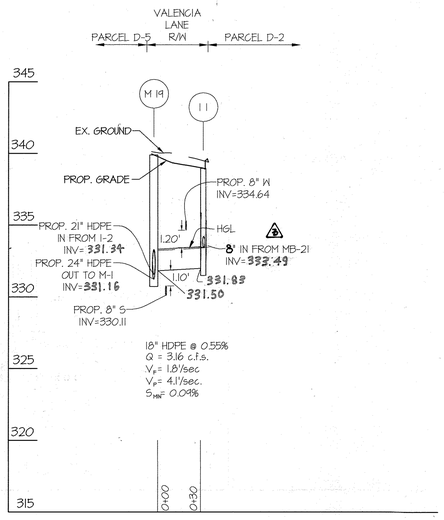
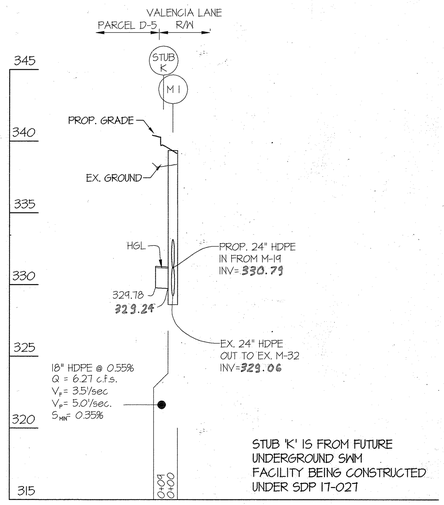
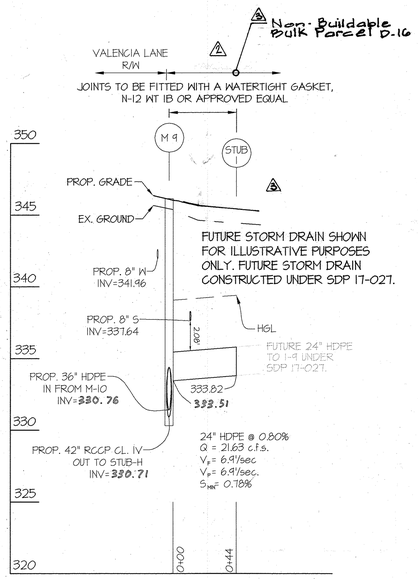
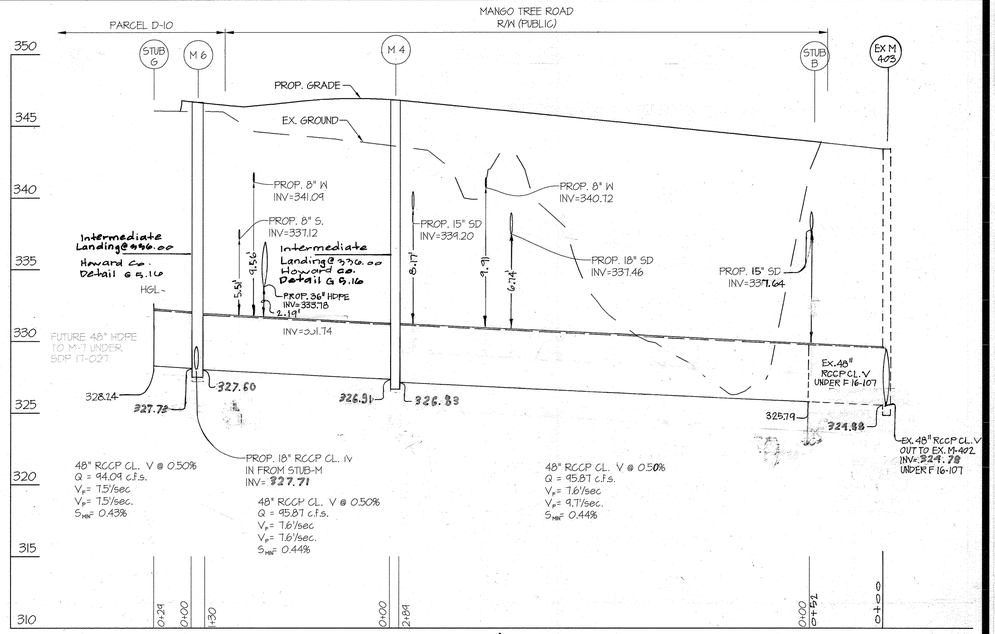








INLET STRUCTURE SCHEDULE

NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION PROPOSED UPPER	TOP ELEVATION PROPOSED LOWER	TOP ELEVATION AS-BUILT UPPER	TOP ELEVATION AS-BUILT LOWER	2 3 INVERT PROPOSED UPPER	2 3 INVERT PROPOSED LOWER	2 3 INVERT AS-BUILT UPPER	2 3 INVERT AS-BUILT LOWER	STD. DETAIL	1 LOCATIONS	REMARKS
I-1	DOUBLE WR INLET	3'-5⅛"	339.62	339.36	339.63	339.45	333.42	332.00	333.43	331.83	HO.CO. D-4.35	N 560,976 E 1,351,549	
I-2	A-10 INLET	3'-0"	341.51	341.07	341.40	341.01	336.09	331.70	336.08	331.91	HO.CO. D-4.03	N 560,943 E 1,351,510	
I-4	DOUBLE WR INLET	3'-5⅛"	342.70	342.51	342.64	342.52	336.14	336.10	336.92	336.27	HO.CO. D-4.35	N 560,812 E 1,351,692	
I-5	DOUBLE WR INLET	3'-5⅛"	347.17	347.04	347.13	347.13	341.09	334.43	340.75	334.83	HO.CO. D-4.35	N 560,539 E 1,351,507	
I-6	DOUBLE WR INLET	3'-5⅛"	347.12	347.04	347.04	347.01	341.09	334.87	340.17	334.73	HO.CO. D-4.35	N 560,528 E 1,351,579	
I-7	DOUBLE WR INLET	3'-5⅛"	344.33	344.25	344.20	344.09	338.69	337.91	338.44	336.96	HO.CO. D-4.35	N 560,987 E 1,351,856	
I-8	A-10 INLET	2'-6"	344.34	344.23	344.29	344.20	340.79	337.67	338.76	337.45	HO.CO. D-4.03	N 560,463 E 1,351,852	
I-13	A-5 INLET	2'-6"	345.18	345.11	345.19	345.13	338.94	338.70	338.74	338.42	HO.CO. D-4.01	N 560,671 E 1,351,495	
I-14	A-5 INLET	2'-6"	344.78	344.74	344.52	344.43	338.94	338.15	338.48	338.24	HO.CO. D-4.01	N 560,744 E 1,351,505	
I-15	A-5 INLET	2'-6"	343.23	343.11	343.15	343.02	337.84	336.92	337.50	336.26	HO.CO. D-4.01	N 560,866 E 1,351,523	
I-16	A-5 INLET	2'-6"	345.46	345.40	345.43	345.38	340.42	338.06	340.45	338.07	HO.CO. D-4.01	N 560,544 E 1,351,459	
I-17	A-5 INLET	2'-6"	344.45	344.34	344.48	344.40	338.91	336.32	338.51	336.51	HO.CO. D-4.01	N 560,748 E 1,351,482	
I-18	A-5 INLET	2'-6"	347.04	347.03	347.07	347.04	---	339.34		338.41	HO.CO. D-4.01	N 560,504 E 1,351,519	
I-19	DOUBLE WR INLET	3'-5⅛"	345.64	345.55	345.62	345.55	339.68	336.24	339.00	336.20	HO.CO. D-4.35	N 560,513 E 1,351,658	
I-20	DOUBLE WR INLET	3'-5⅛"	344.40	344.30	344.98	344.96	338.81	337.14	338.80	337.12	HO.CO. D-4.35	N 560,674 E 1,351,673	
I-21	DOUBLE WR INLET	3'-5⅛"	343.56	343.41	343.51	343.50		338.08	338.09	337.51	HO.CO. D-4.35	N 560,743 E 1,351,683	

MANHOLE STRUCTURE SCHEDULE

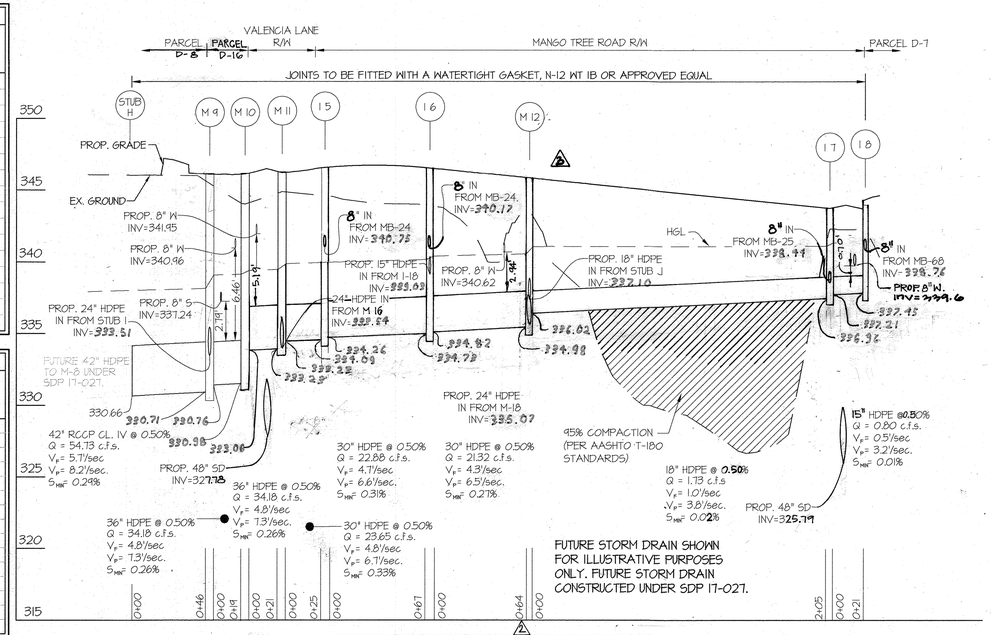
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION PROPOSED UPPER	TOP ELEVATION PROPOSED LOWER	TOP ELEVATION AS-BUILT UPPER	TOP ELEVATION AS-BUILT LOWER	2 INVERT PROPOSED UPPER	2 INVERT PROPOSED LOWER	2 INVERT AS-BUILT UPPER	2 INVERT AS-BUILT LOWER	STD. DETAIL	1 LOCATIONS	REMARKS
M-1	STANDARD MANHOLE	5'-0"	334.30	---	333.81		331.17	324.23	330.79	329.06	HO.CO. G-5.13	N 560,997 E 1,351,805	
M-2	STANDARD MANHOLE	4'-0"	341.03	---	340.92		332.90	332.12	332.48	332.00	HO.CO. G-5.12	N 560,928 E 1,351,538	
M-2A	STANDARD MANHOLE	4'-0"	341.95	---	341.62		332.42	332.32	332.26	332.29	HO.CO. G-5.12	N 560,333 E 1,351,562	
M-2B	STANDARD MANHOLE	4'-0"	340.00	---	339.66		332.70	332.60	332.56	332.44	HO.CO. G-5.12	N 560,966 E 1,351,568	
M-3	STANDARD MANHOLE	4'-0"	342.71	---	342.45		333.14	333.04	333.02	332.94	HO.CO. G-5.12	N 560,889 E 1,351,593	
M-4	STANDARD MANHOLE	4'-0"	346.81	---	346.76		327.29	327.29	326.91	326.89	MD 384.05	N 560,519 E 1,351,564	
M-6	STANDARD MANHOLE	6'-0"	346.24	---			328.08	327.98			MD 384.05	N 560,539 E 1,351,431	
M-9	STANDARD MANHOLE	6'-0"	346.08	---	346.26		333.46	330.92	330.51	330.71	MD 384.05	N 560,523 E 1,351,449	
M-10	STANDARD MANHOLE	6'-0"	346.07	---	346.18		333.20	331.52	332.06	330.98	MD 384.05	N 560,519 E 1,351,474	
M-11	STANDARD MANHOLE	5'-0"	346.10	---	346.39		334.80	333.80	333.54	333.23	HO.CO. G-5.13	N 560,520 E 1,351,495	
M-12	STANDARD MANHOLE	5'-0"	345.84	---	345.79		337.38	335.29	337.10	334.98	HO.CO. G-5.13	N 560,518 E 1,351,630	
M-16	STANDARD MANHOLE	4'-0"	345.97	---	345.98		337.83	334.24	337.92	337.23	HO.CO. G-5.12	N 560,545 E 1,351,486	
M-17	STANDARD MANHOLE	4'-0"	343.41	---	343.84		336.25	335.15	335.09	335.58	HO.CO. G-5.12	N 560,848 E 1,351,523	
M-18	STANDARD MANHOLE	4'-0"	345.46	---	345.48		336.16	335.60	335.69	335.51	HO.CO. G-5.12	N 560,541 E 1,351,691	
M-19	STANDARD MANHOLE	4'-0"	339.30	---	339.67		331.83	331.24	331.50	331.16	HO.CO. G-5.12	N 560,972 E 1,351,513	

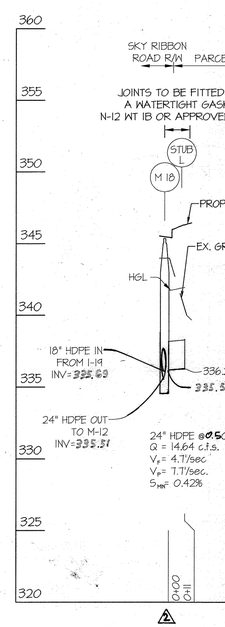
1 COORDINATE POINT GIVEN IS TO THE CENTERLINE OF STRUCTURE AT THE FACE OF CURB FOR INLETS AND TO THE CENTERLINE OF STRUCTURE FOR MANHOLES AND END SECTIONS.

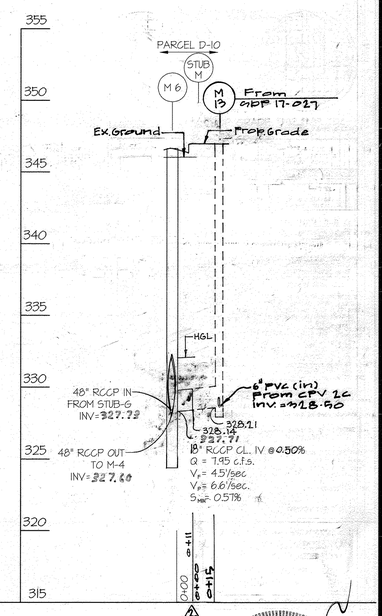
2 TOP ELEVATIONS FOR ALL INLET TYPES ARE GIVEN AS TOP OF CURB.

3 SEE SHEET 8 FOR MD 384.05 DETAIL

4 SEE SHEET 4 FOR HOWARD COUNTY DETAIL D-4.35, WITH THE MODIFICATION OF A CONCRETE COLLAR.







PIPE SCHEDULE

SIZE	TYPE	QUANTITY (LF.)	REMARKS
12"	HDPE	74	
15"	HDPE	25	
18"	HDPE	615	5
21"	HDPE	28	
24"	HDPE	428	
30"	HDPE	156	
36"	HDPE	40	
18"	RCCP CL. IV	11	
42"	RCCP CL. IV	46	
48"	RCCP CL. V	447	

STORM DRAIN STUB SCHEDULE

STUB	TYPE	INVERT PROPOSED	INVERT AS-BUILT	LOCATIONS	REMARKS
B	48" RCCP	325.79	---	N 560,476.1240 E 1,351,856.2811	
G	15" HDPE	335.84	---	N 560,854.6600 E 1,351,643.3145	
D	18" HDPE	332.75	---	N 560,970.3593 E 1,351,581.6142	
E	12" HDPE	333.97	---	N 560,873.0290 E 1,351,489.0838	
F	18" HDPE	335.08	---	N 560,864.3158 E 1,351,487.7455	
G	48" RCCP	328.24	---	N 560,544.7181 E 1,351,348.2221	
H	42" RCCP	330.66	---	N 560,521.7090 E 1,351,345.6470	
I	24" HDPE	333.82	---	N 560,413.3234 E 1,351,442.2372	
J	18" HDPE	337.49	---	N 560,492.9818 E 1,351,644.4916	4
K	18" HDPE	329.78	---	N 560,992.1344 E 1,351,491.7560	
L	24" HDPE	336.24	---	N 560,538.1925 E 1,351,666.5282	
M	18" RCCP	328.44	---	N 560,558.5412 E 1,351,433.3403	

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET CURRENT APPROVED PLANS AND SPECIFICATIONS.

10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 9/2/2024
AS-BUILT SURVEY DATES 8/1/22 TO 2/18/22

STATE OF MARYLAND G. SCOTT SHANABERGER No. 10849 PROFESSIONAL LAND SURVEYOR

PROFESSIONAL ENGINEER AS BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
NAME: GERALD D. TURNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569

STATE OF MARYLAND GERALD DOUGLAS TURNBAUGH No. 26569 PROFESSIONAL ENGINEER
9.15.23

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1.11.18

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\ER-AREA 3\PLANS OF DCP\17-059 Prelim\11071_AREA 3-1-18-18 - SP Profiles.dwg DES. ANL. DRN. ANL. CHK. DEV.

DATE	REVISION	BY	APP'R.
7-25-18	2 Rev. Pipe Inverts from Micro-Bioretention Planters	JJ	JRC
6-5-18	2 Revised Profiles and schedules	JJ	DEV.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018
12/14/17

STATE OF MARYLAND CARLTON KENNETH GUTSCHICK No. 12975 PROFESSIONAL ENGINEER

STORM DRAIN PROFILES

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
HOR: 1" = 50' VERT. 1" = 5'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	9 OF 25

F 17-059

PAVEMENT MARKING INSTALLATION

Ⓐ INSTALL 5" WHITE PAVEMENT MARKING

Ⓑ INSTALL 5" DOUBLE YELLOW PAVEMENT MARKING

Ⓒ INSTALL 5" DOUBLE YELLOW PAVEMENT MARKING (TEMPORARY TAPE STRIPING)

Ⓓ INSTALL 5" WHITE PAVEMENT MARKING (TEMPORARY TAPE STRIPING)

PAVEMENT MARKING NOTES

1. ALL LONG LINE MARKINGS TO BE APPLIED USING THERMOPLASTIC MATERIAL.

2. THE CROSSWALK AND ARROWS TO BE INSTALLED USING PREFORMED HEAT APPLIED TAPE OR THERMOPLASTIC.

3. ALL PAVEMENT MARKINGS ARE TO BE LOCATED OR APPROVED BY THE TRAFFIC DIVISION PRIOR TO THE PLACEMENT OF ANY MARKINGS.

4. ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS ARE TO BE REMOVED BY GRINDING ONLY. HOWARD COUNTY TRAFFIC (410-313-5752) WILL DETERMINE WHICH EXISTING MARKINGS SHALL BE REMOVED.

5. EXISTING CROSSWALKS AND OTHER EXISTING PAVEMENT MARKINGS SHOWN ON MERRIWEATHER DRIVE AND SYMPHONY WOODS ROAD ARE INSTALLED AS PART OF F 16-107 PLAN

SIGNING NOTES

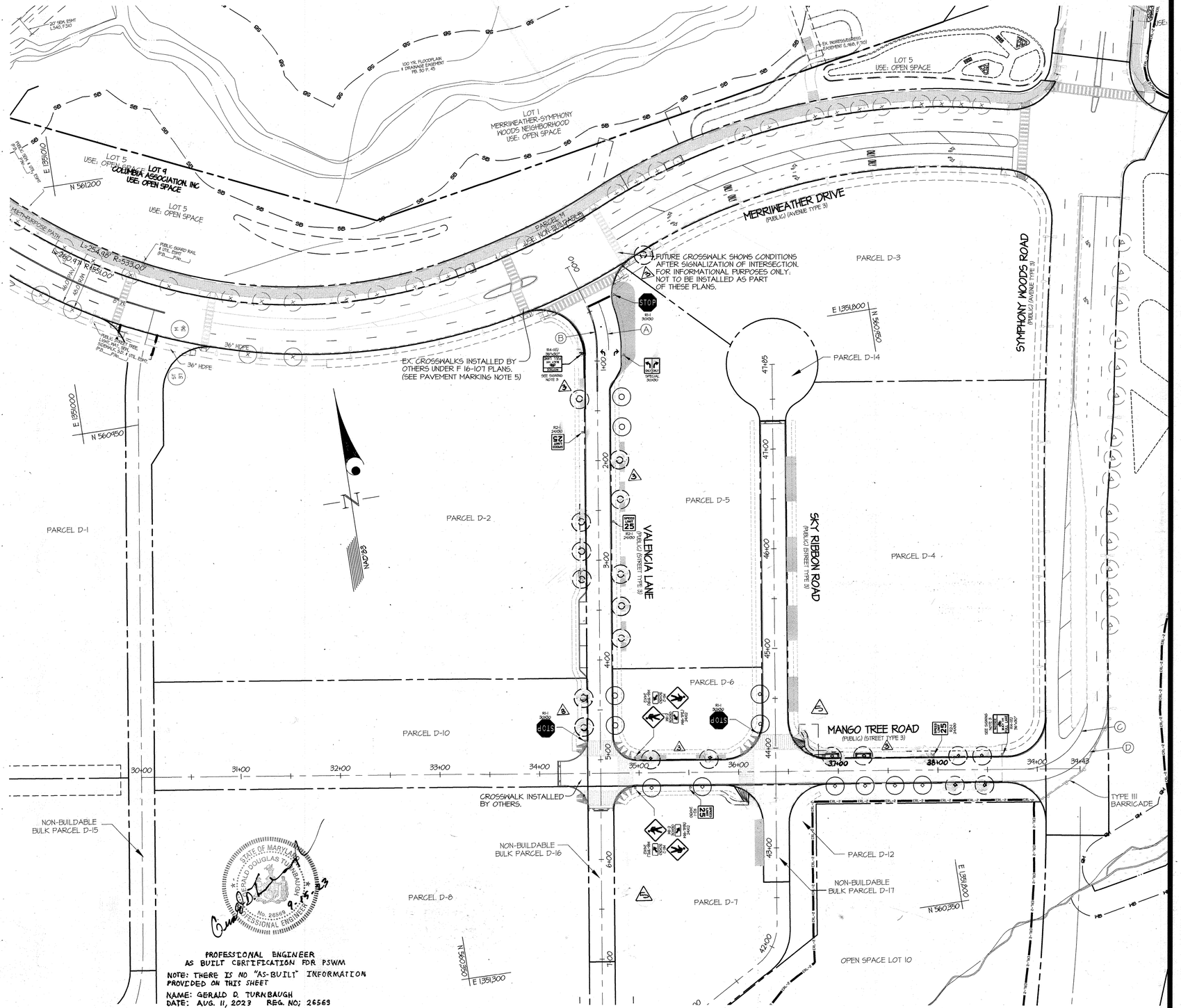
1. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GUAGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GUAGE) - 3' LONG. A GALVANIZED STEEL POLE SHALL BE MOUNTED ON TOP OF EACH POST. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE THE GROUND.

2. ALL SIGNS LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION.

3. FULL LANE BICYCLE USE IS ONLY SUPPORTED WITH POSTED DESIGN SPEEDS OF 25 MPH OR LESS.

4. THE CONTRACTOR SHOULD MAKE EVERY EFFORT FOR STREET TREES TO BE PLACED A MINIMUM OF 15' FROM REGULATORY SIGNS AND ALL INTERSECTIONS, 5' FROM A STREET DRAIN INLET STRUCTURE, 5' FROM AN OPEN SPACE STRIP, 10' FROM A DRIVEWAY, AND LOCATED WITH CONSIDERATION TO UNDERGOUND UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL SET UP A FIELD MEETING WITH THE COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF THE STREET TREES AND REGULATORY SIGNS.

SIGN SCHEDULE			
VALENCIA LANE			
TYPE	SIZE	STATION	OFFSET
R1-1	30X30	0+44.6	29.5' LT.
R4-11	30X30	0+92.5	15.0' RT.
SPECIAL	30X30	0+94.2	21.0' LT.
R2-1	24X30	1+71.5	15.0' RT.
R2-1	24X30	2+61.2	15.0' LT.
R1-1	30X30	4+81.2	15.5' RT.
MANGO TREE ROAD			
W11-2/W16-7P(L) W11-2/W16-7P(R)	30X30	34+95.9	15.0' LT.
W11-2/W16-7P(R) W11-2/W16-7P(L)	30X30	34+95.9	15.0' RT.
R2-1	24X30	35+51.5	15.0' RT.
R2-1	24X30	37+95.4	15.0' LT.
R4-11	30X30	38+64.8	15.0' LT.
SKY RIBBON ROAD			
R1-1	30X30	44+15.2	17.4' LT.



SCALE: 1" = 50

0' 25 50 100 200

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO; 26569

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 12/5/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-19-18

Chief, Development Engineering Division — Date 1.11.18

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BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-10 - Signing and Striping.dwg

DES. DEV	DRN. LAG	CHK. MJT

DATE	REVISION	BY	APP'R.
7-24-19	⚠ Removed E&S and Revised crosswalk/sidewalk Ramps	WJ	DEV
7-25-18	⚠ Rev. tree symbol, size, tree location, and removed tree	gt	JRE

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018

12/14/17

SIGNING AND STRIPING PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	10 OF 25

F 17-059

PLANT LIST				
SYMBOL	QTY.	TYPE	NAMES (BOTANICAL / SCIENTIFIC)	SIZE/COMMENTS
	SHADE TREES			
A ○	15	UA	ULMUS AMERICANA 'PRINCETON' / PRINCETON AMERICAN ELM	3 1/2" CAL. B&B
◇	14	QP	QUERCUS PHELLOS / WILLOW OAK	4" CAL. B&B
⬠	2	GB	GINKGO BILOBA 'PRINCETON SENTRY' / PRINCETON SENTRY GINKGO	3.5" CAL. B&B

STREET TREE NOTES:
1. PER THE NEIGHBORHOOD DESIGN GUIDELINES, SUPPLEMENTAL PLANTINGS ALONG THE STREETSCAPE CAN BE PROVIDED TO OFFSET THE SHORTAGE OF STREET TREES. SHRUBS AND OTHER PLANTINGS WILL BE PROVIDED WITH THE S.D.P. TO SATISFY THE LANDSCAPE OBLIGATION.
2. PLANTS MUST BE A MINIMUM OF 4' FROM CROSSWALKS AND HANDICAP CURB CUTS.
3. MAINTAIN INTERSECTION SIGHT TRIANGLES AND PEDESTRIAN MOVEMENT BY ENSURING LOWER BRANCHES ARE PRUNED AND MAINTAINED 8' ABOVE GRADE.
4. THE CONTRACTOR SHOULD MAKE EVERY EFFORT FOR STREET TREES TO BE PLACED A MINIMUM OF 15' FROM REGULATORY SIGNS AND ALL INTERSECTIONS, 5' FROM A STREET DRAIN INLET STRUCTURE, 5' FROM AN OPEN SPACE STRIP, 10' FROM A DRIVEWAY, AND LOCATED WITH CONSIDERATION TO UNDERGROUND UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL SET UP A FIELD MEETING WITH THE COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF THE STREET TREES AND REGULATORY SIGNS.
5. REFER TO PAGE 33 OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES FOR ADDITIONAL STREET TREE PROVISIONS.
6. STREET LIGHTS ARE TO BE PRIVATELY OWNED AND PUBLICLY MAINTAINED.
7. SEE SHEET 12 FOR STREET LIGHT DETAILS.

TOTAL LENGTH OF CURB BEING CONSTRUCTED (R/W): 1904'
NUMBER OF TREES REQUIRED @ 1 PER 40 FEET: 48
NUMBER OF TREES PROVIDED: 31

SURETY FOR STREET TREES:

STREET TREES ARE TO BE BONDED WITH THE DPW COST ESTIMATE FOR ROAD CONSTRUCTION

(31) SHADE TREES X $300 = $9,300
TOTAL = $9,300

Bond Notes
The street trees, street lights, 4' concrete sidewalks & sidewalk Ramps (Per Howard County Detail R-4.05) are shown For Bonding Purposes Only. The Improvements Along The Road Frontage Are to Be Constructed As Part of SDP-17-027 & SDP-18-005. They Will Only Be Constructed As Part of These Plans If Needed Prior To The Completion of The Streetscape Associated With SDP-17-027 & SDP-18-005.

STREET LIGHT SCHEDULE

LOCATION			TYPE	LOCATION			TYPE
℄ STA. 0+58	VALENCIA LANE	23.3' RT.	B	℄ STA. 35+42	MANGO TREE ROAD	15.2' LT.	A
℄ STA. 0+67	VALENCIA LANE	21.2' LT.	A	℄ STA. 37+12	MANGO TREE ROAD	15.1' LT.	A
℄ STA. 1+12	VALENCIA LANE	15.2' RT.	B	℄ STA. 38+12	MANGO TREE ROAD	15.2' LT.	B
℄ STA. 1+21	VALENCIA LANE	24.5' LT.	A	℄ STA. 38+67	MANGO TREE ROAD	15.2' LT.	A
℄ STA. 1+82	VALENCIA LANE	16.0' LT.	B	℄ STA. 39+42	MANGO TREE ROAD	15.2' RT.	B
℄ STA. 2+42	VALENCIA LANE	16.0' LT.	A	℄ STA. 37+39	MANGO TREE ROAD	15.1' RT.	B
℄ STA. 2+44	VALENCIA LANE	15.1' RT.	B	℄ STA. 37+91	MANGO TREE ROAD	15.1' RT.	A
℄ STA. 2+91	VALENCIA LANE	17.2' RT.	A	℄ STA. 38+68	MANGO TREE ROAD	15.1' RT.	B
℄ STA. 3+04	VALENCIA LANE	16.0' LT.	B	℄ STA. 44+14	SKY RIBBON ROAD	17.4' LT.	B
℄ STA. 3+62	VALENCIA LANE	16.0' LT.	A	℄ STA. 44+14	SKY RIBBON ROAD	17.4' RT.	A
℄ STA. 3+62	VALENCIA LANE	22.7' RT.	B	℄ STA. 44+84	SKY RIBBON ROAD	13.0' LT.	A
℄ STA. 4+22	VALENCIA LANE	16.0' LT.	B	℄ STA. 45+64	SKY RIBBON ROAD	13.0' LT.	B
℄ STA. 4+22	VALENCIA LANE	15.4' RT.	A	℄ STA. 46+14	SKY RIBBON ROAD	13.0' LT.	A
℄ STA. 4+78	VALENCIA LANE	15.9' LT.	B	℄ STA. 46+74	SKY RIBBON ROAD	13.0' LT.	B
℄ STA. 4+81	VALENCIA LANE	15.1' RT.	A				

TYPES:
A) LED-55 ON A 14' BRONZE FIBERGLASS POLE
B) LED-55 AT 14' AND LED-165 AT 22' ON A 22' BRONZE FIBERGLASS POLE

I HEREBY CERTIFY THAT THIS PLAN MEETS ALL OF THE REQUIREMENTS AND DESIGN INTENT OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDLINES RECORDED IN THE LAND RECORDS OF HOWARD COUNTY IN LIBER 16305, FOLIO 415.

SCALE: 1" = 50
0' 25 50 100 200

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/16/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1-18-18

LEGEND

PROPOSED STREET TREE (SHOWN FOR BONDING PURPOSES ONLY)
EXISTING STREET TREES PER F 15-106 AND F 16-107
EXISTING STREET LIGHTS PER F 16-107
LED-55 ON A 14' BRONZE FIBERGLASS POLE
LED-55 AT 14' AND LED-165 AT 22' ON A 22' BRONZE FIBERGLASS POLE
ZONE 1 - UPLAND FOREST REFORESTATION
ZONE 2 - FLOODPLAIN FOREST REFORESTATION
ZONE 3 - SUPPLEMENTAL FLOODPLAIN FOREST REFORESTATION & INVASIVES TREATMENT

PLANT COMPOSITION SCHEDULE

Zone 1 - Upland Forest Reforestation — Size (acres): 1.45

Overall Minimum Spacing (ft.)	Quantity per acre	Frequency (%)	Species Quantity	Wetland Indicator Status	Vegetation Strata / Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft)
20	109				TREES					
		10	16	FACU	*Liriodendron tulipifera*	Tulip poplar	CONT	Random	3" CAL	63
		10	16	FACU	*Fagus grandifolia*	American beech	CONT	Random	1.25" CAL	63
		20	32	FACU	*Quercus falcata*	Southern red oak	CONT	Random	2" CAL	51
		25	39		*Quercus velutina*	Black oak	CONT	Random	2" CAL	40
		5	8	FACU	*Quercus alba*	White oak	CONT	Random	1.25" CAL	91
		5	8		*Quercus rubra*	Red oak	CONT	Random	1.25" CAL	91
		10	16	FAC	*Nyssa sylvatica*	Black gum	CONT	Random	2" CAL	63
			135		= total					
					MIDSTORY TREES					
		5	8	FACU	*Cornus florida*	Flowering dogwood	CONT	Random	1.25" CAL	91
		10	16	FAC	*Amelanchier canadensis*	Serviceberry	CONT	Random	1.25" CAL	63
		100	24		= total					
30	48				SHRUB					
		30	21	UPL	*Viburnum acerifolium*	Maple-leaf Viburnum	CONT	Random	3 GAL	55
		15	10	FAC	*Viburnum dentatum*	Southern arrowwood	CONT	Random	3 GAL	77
		10	7		*Vaccinium pallidum*	Lowbush blueberry	CONT	Random	2 GAL	96
		25	17		*Hamamelis virginiana*	Witchhazel	CONT	Random	3 GAL	60
		20	14	FACU	*Cercis canadensis*	Redbud	CONT	Random	2 GAL	68
		100	69		= total					
25	70				HERBACEOUS					
		40	41		*Arrynium filix-femina*	Common lady fern	CONT	Random	QUART	39
		40	41	FACU	*Polystichum acrostichoides*	Christmas fern	CONT	Random	QUART	39
		20	20		*Eurybia divaricata*	White wood aster	CONT	Random	QUART	55
		100	102		= total					
N/A	35				HERBACEOUS SEED					
		10	13		*Carex pensylvanica*	Pennsylvania sedge	SEED	LB of P.L.S. 76%	N/A	N/A
		25	32	UPL	*Elymus hystrix*	Bottlebrush grass	SEED	LB of P.L.S. 76%	N/A	N/A
		25	13	FACW	*Elymus virginicus*	Virginia wild rye	SEED	LB of P.L.S. 76%	N/A	N/A
		25	13	FACU	*Tridens flavus*	Purpletop	SEED	LB of P.L.S. 76%	N/A	N/A
		15	8	FAC	*Dichanthelium clandestinum*	Deertongue	SEED	LB of P.L.S. 76%	N/A	N/A
		100	92							

PLANT COMPOSITION SCHEDULE

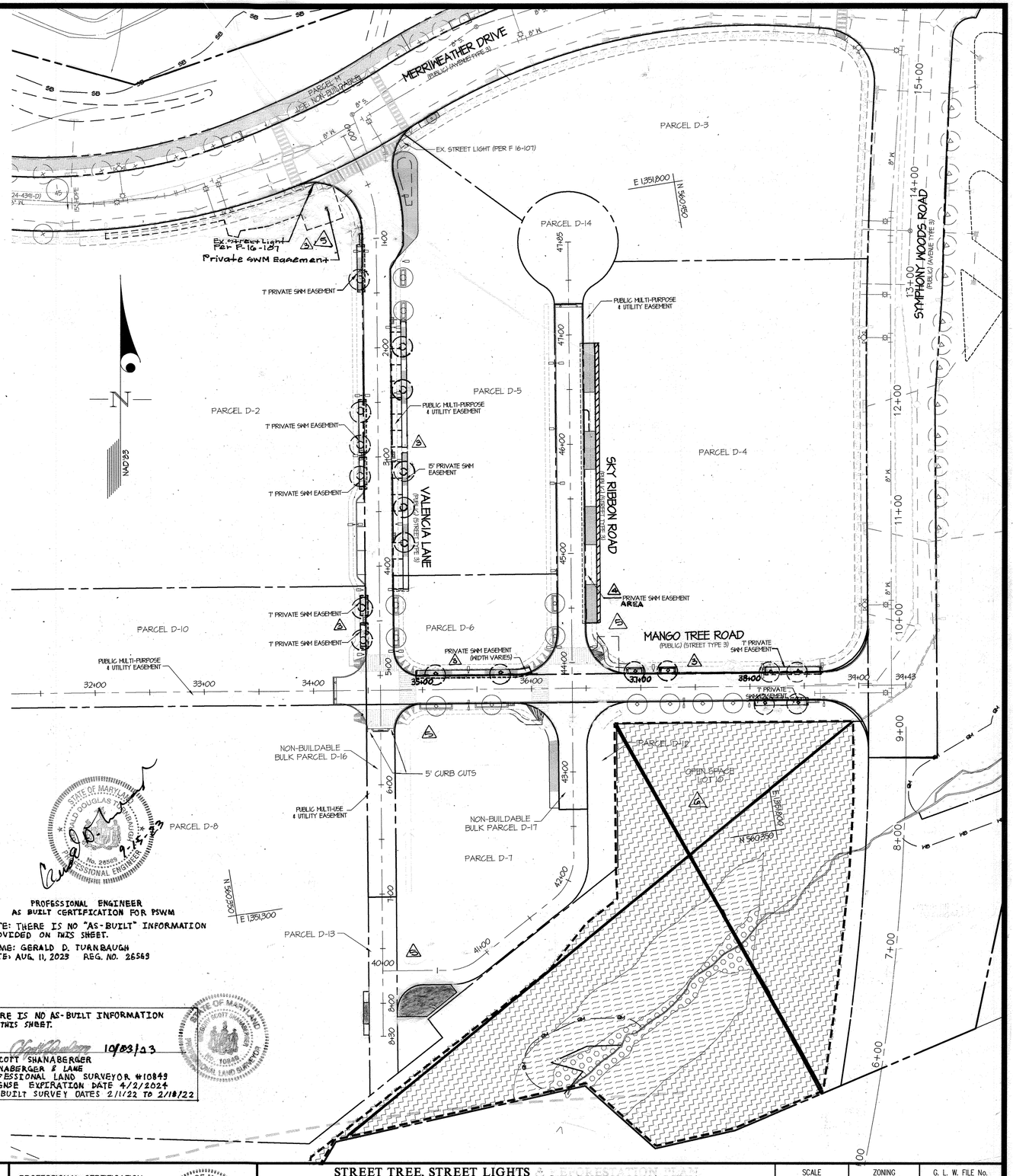
Zone 2 - Floodplain Forest Reforestation — Size (acres): 0.24

Overall Minimum Spacing (ft.)	Quantity per acre	Frequency (%)	Species Quantity	Wetland Indicator Status	Vegetation Strata / Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft)
20	109				TREES					
		20	5	FAC	*Acer rubrum*	Red maple	CONT	Random	3" CAL	45
		10	3	FACW	*Quercus palustris*	Pin oak	CONT	Random	1.25" CAL	63
		15	4	FACW	*Quercus bicolor*	Swamp white oak	CONT	Random	1.25" CAL	51
		5	1	OBL	*Salix nigra*	Black willow	CONT	Random	2" CAL	88
		5	1	FAC	*Quercus phellos*	Willow oak	CONT	Random	2" CAL	88
		25	7	FACW	*Platanus occidentalis*	American sycamore	CONT	Random	2" CAL	40
		10	3	FAC	*Nyssa sylvatica*	Black gum	CONT	Random	1.25" CAL	63
			24		= total					
					MIDSTORY TREES					
		5	1	FACW	*Betula nigra*	River birch	CONT	Random	1.5" CAL	88
		5	1	FAC	*Carpinus caroliniana*	Ironwood	CONT	Random	1.25" CAL	88
		100	2		= total					
12	303				SHRUB					
		20	15	FACW	*Cornus amomum*	Silky dogwood	CONT	Random	3 GAL	27
		15	11	OBL	*Alnus serrulata*	Smooth alder	CONT	Random	2 GAL	31
		30	22	FAC	*Lindera benzoin*	Common spicebush	CONT	Random	2 GAL	22
		15	11	FACW	*Cornus sericea*	Red osier dogwood	CONT	Random	3 GAL	31
		20	15	FAC	*Viburnum dentatum*	Southern arrowwood	CONT	Random	3 GAL	27
		100	74		= total					
N/A	35				HERBACEOUS SEED					
		10	1	FACW	*Scirpus cyperinus*	Wool grass	SEED	LB of P.L.S. 76%	N/A	N/A
		25	2	FACW	*Elymus riparius*	Riverbank wild rye	SEED	LB of P.L.S. 76%	N/A	N/A
		25	2	FACW	*Elymus virginicus*	Virginia wild rye	SEED	LB of P.L.S. 76%	N/A	N/A
		25	2	OBL	*Calamagrostis canadensis*	Bluejoint reedgrass	SEED	LB of P.L.S. 76%	N/A	N/A
		15	2	FAC	*Dichanthelium clandestinum*	Deertongue	SEED	LB of P.L.S. 76%	N/A	N/A
		100								

PLANT COMPOSITION SCHEDULE

Zone 3 - Supplemental Floodplain Forest Reforestation — Size (acres): 0.57

Overall Minimum Spacing (ft.)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata / Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft)
25	70			TREES					
		20	8	*Acer rubrum*	Red maple	CONT	Random	2" CAL	56
		10	4	*Quercus palustris*	Pin oak	CONT	Random	1.25" CAL	79
		15	6	*Quercus bicolor*	Swamp white oak	CONT	Random	1.25" CAL	64
		5	2	*Quercus phellos*	Willow oak	CONT	Random	1.25" CAL	111
		5	2	*Salix nigra*	Black willow	CONT	Random	2" CAL	111
		25	10	*Platanus occidentalis*	American sycamore	CONT	Random	2" CAL	50
		10	4	*Nyssa sylvatica*	Black gum	CONT	Random	1.25" CAL	79
			36	= total					
25	70			MIDSTORY TREES					
		5	2	*Betula nigra*	River birch	CONT	Random	1.5" CAL	111
		5	2	*Acer negundo*	Boxelder	CONT	Random	1.25" CAL	111
		100	4	= total					
12	303			SHRUB					
		20	35	*Cornus amomum*	Silky dogwood	CONT	Random	3 GAL	27
		15	26	*Alnus serrulata*	Smooth alder	CONT	Random	2 GAL	31
		30	52	*Lindera benzoin*	Common spicebush	CONT	Random	3 GAL	22
		15	26	*Cornus sericea*	Red osier dogwood	CONT	Random	2 GAL	31
		20	35	*Viburnum dentatum*	Southern arrowwood	CONT	Random	2 GAL	27
		100	174	= total					



GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.
12-10-20	10 REVISED TO MOVE LOT 10 REFORESTATION FROM 1760 TO F 18-017	HKT	DEV
7-24-19	9 Revised MBR to Crosswalks/Sidewalk Ramps & Sun Font Add Bond Note	WJG	DEV
12-12-18	8 REVISED PRIVATE SWM EASEMENT AREA LIMITS	GT	DEV
7-26-18	7 Rev. tree symbol, size, tree location, and removed tree	GT	JRC

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\ 17-059 Plans\11071_AREA 3-F-11-12 – Street Trees.dwg
E:\BOOZ\10/24/2017 11:52 AM, LAST SAVED: 10/24/2017 11:49 AM, PLOTTED BY: Luke Groom

DES. DEV | DRN. JRD | CHK. MJT

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018
12/14/17

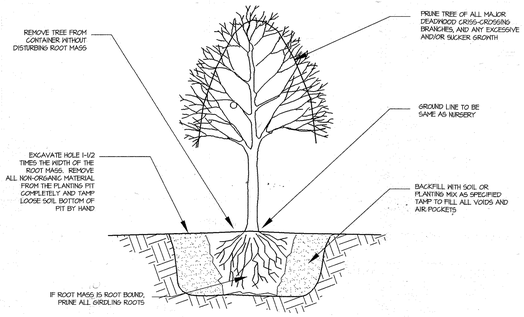
STREET TREE, STREET LIGHTS & RECREATION PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

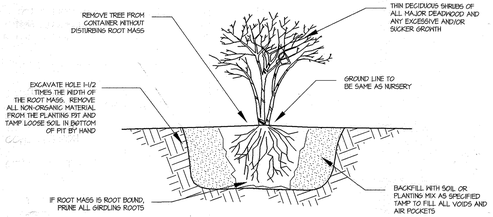
SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	11 OF 25

F 17-059



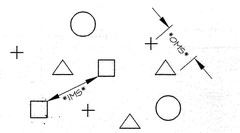
TREE PLANTING - CONTAINER GROWN

NOT TO SCALE



SHRUB PLANTING - CONTAINER GROWN

NOT TO SCALE



OMS- AN OVERALL MINIMUM SPACING DISTANCE "OMS" IS ASSIGNED TO THE PLANTING CONFIGURATION "SEE PLANT SCHEDULE"

IMS- AN INDIVIDUAL MINIMUM SPACING DISTANCES "IMS" IS ASSIGNED TO EACH INDIVIDUAL SPECIES "SEE PLANT SCHEDULE"

NOTE: EACH SYMBOL INDICATES A DIFFERENT SPECIES

PLANT SPACING - RANDOM

PLAN VIEW

NOT TO SCALE

Professional Certification

(By ok: A For Revision #3 only)

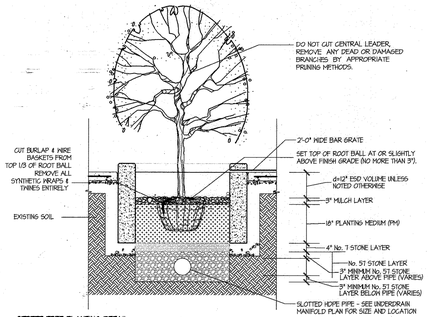
I hereby certify that these plans were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the Laws of the State of Maryland,

License No.: 39426

Expiration Date: 08-15-2018

Signature of Registered Engineer — Date: 8/9/18

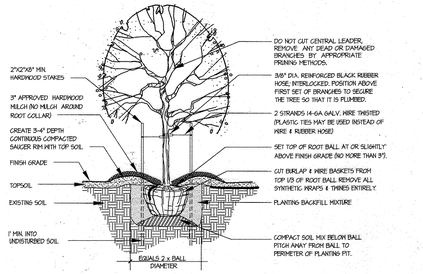
FOR RETAINING WALL PLAN LAYOUT, SECTION AND SCHEDULES ONLY



STREET TREE PLANTING DETAIL

FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER

NTS



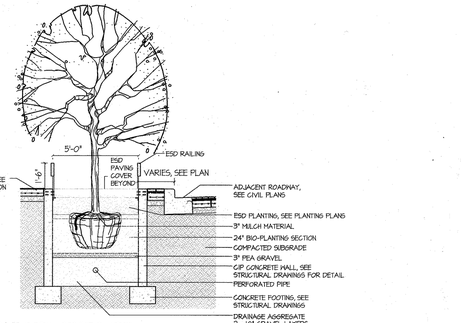
NOTE: ALL SUPPORTING DEVICES (STAKES, WIRES, ETC.) SHALL BE REMOVED AFTER 2 GROWING SEASONS.

DECIDUOUS TREE PLANTING DETAIL

FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER

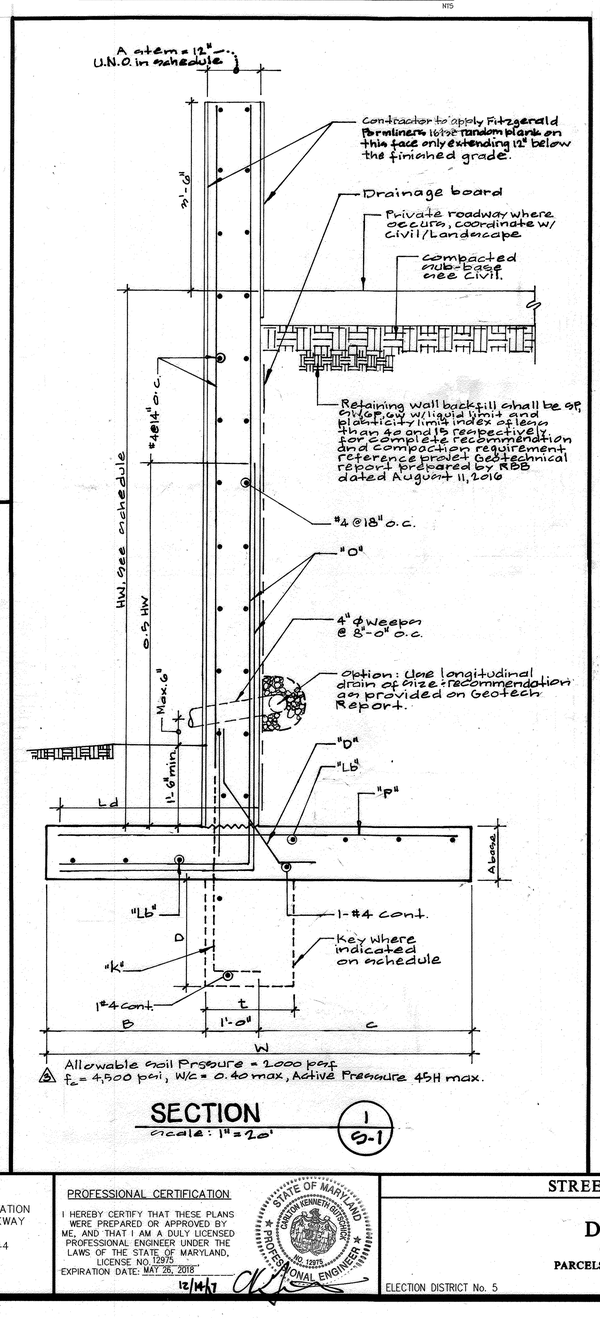
PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM.
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER — 9.15



STREET TREE PLANTING DETAIL FOR ESD PLANTERS

NTS



Allowable soil Pressure = 2000 psf.
f_{ac} = 4,500 psi, W/C = 0.40 max, Active Pressure 45H max.

SECTION — scale: 1" = 20' — 1 / S-1

NW RETAINING WALL LAYOUT PLAN

scale: 1" = 50'

SK-A IS RESPONSIBLE FOR REVISION 3 ON THIS SHEET.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN. MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/21/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND — G. SCOTT SHANABERGER — 10849 — PROFESSIONAL LAND SURVEYOR

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-9-18

Chief, Development Engineering Division — Date 1-11-18

GLW GUTSCHICK LITTLE & WEBER, P.A.

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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\DIR-AREA 2\PLANS BY GLW\ 17-059 Plans\11071_AREA 3-F-11-12 - Street Tree.dwg, 8/2/2017 11:54 AM, LAST SAVED: 12/4/2017 11:43 AM, PLOTTED BY: Lara Gibson

DES. DEV	DRN. JRD	CHK. MJT

DATE	REVISION	BY	APP'R.
8-1-18	Proposed wall	gt	JRC

PREPARED FOR:

THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975 EXPIRATION DATE: MAY 26, 2018

STATE OF MARYLAND — CHARLTON KENNETH GOEDECKE — NO. 12975 — PROFESSIONAL ENGINEER

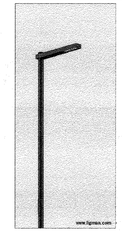
12/14/17

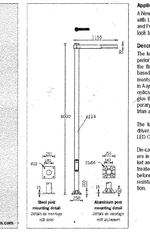
Product Spec Sheet

Light Linear Denver 1 — DE-2000X

Street and area luminaires — IP65 - CLASS I - CE - IM07 — LIGMAN — The quality of life ...

Project : Location : Type : Quantity : Note :





Application

A New Minimalist LED Luminaire Design coupled with Lignan Premium Technology pole designs and Positioning Possibilities brings a brand new look to premises un-imagined area's.

Description:

The luminaire utilizes streetlight optics with superior light distributions and gives the specifier the flexibility of different mounting possibilities based on angle, height and distribution requirements. Opportunities for using 2:1 luminaires in Asymmetrical Type II, III, IV distributions lens optics while meeting current Dark Sky criteria, give the Denver Series a new look for contemporary plazas, event area's, as well as pedestrian and Urban landscapes.

The luminaire rated as CLASS I with integral driver. Colour temperatures 3000K and 4000K. LED CRI >80 and life time 50,000 Hours.

Die-cast aluminium body. Stainless steel fasteners in grade 316. Durable silicone rubber gasket and clear toughened glass. The luminaire is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance and chemicalcontamination protection.

Steel pole mounting detail (Offset on montage not shown)

Aluminium pole mounting detail (Offset on montage not shown)

Product Code

Model No.	Lens	System Power W	Lumen lm	Colour	CCT	Distribution Type	Weight kg
DE-2000-T2 - W30	24 LED	55	7967	3000K	A+	Type 2	23.0
DE-2000-T3 - W30	24 LED	55	7572	3000K	A+	Type 3	23.0
DE-2000-T4 - W30	24 LED	55	7525	3000K	A+	Type 4	23.0
DE-2000-T2 - W40	24 LED	55	7775	4000K	A+	Type 2	23.0
DE-2000-T3 - W40	24 LED	55	7387	4000K	A+	Type 3	23.0
DE-2000-T4 - W40	24 LED	55	7343	4000K	A+	Type 4	23.0
DE-2000-T2 - W30	24 LED	78	11091	3000K	A+	Type 2	23.0
DE-2000-T3 - W30	24 LED	78	10542	3000K	A+	Type 3	23.0
DE-2000-T4 - W30	24 LED	78	10480	3000K	A+	Type 4	23.0
DE-2000-T2 - W40	24 LED	78	10824	4000K	A+	Type 2	23.0
DE-2000-T3 - W40	24 LED	78	10315	4000K	A+	Type 3	23.0
DE-2000-T4 - W40	24 LED	78	10277	4000K	A+	Type 4	23.0
DE-2000-T2 - W30	40 LED	110	15513	3000K	A+	Type 2	27.0
DE-2000-T3 - W30	40 LED	110	14733	3000K	A+	Type 3	27.0
DE-2000-T4 - W30	40 LED	110	14645	3000K	A+	Type 4	27.0
DE-2000-T2 - W40	40 LED	110	15112	4000K	A+	Type 2	27.0
DE-2000-T3 - W40	40 LED	110	14403	4000K	A+	Type 3	27.0
DE-2000-T4 - W40	40 LED	110	14352	4000K	A+	Type 4	27.0
DE-2000-T2 - W30	56 LED	156	21779	3000K	A+	Type 2	27.0
DE-2000-T3 - W30	56 LED	156	20672	3000K	A+	Type 3	27.0
DE-2000-T4 - W30	56 LED	156	20531	3000K	A+	Type 4	27.0
DE-2000-T2 - W40	56 LED	156	21193	4000K	A+	Type 2	27.0
DE-2000-T3 - W40	56 LED	156	20203	4000K	A+	Type 3	27.0
DE-2000-T4 - W40	56 LED	156	20083	4000K	A+	Type 4	27.0

Ordering guide sample

DE-2000 - T2 - W40 - ASMB

Switch | Safe | Gear | Accessory

Colour Temperature
W30 – Warm white 3000K
W40 – Neutral white 4000K

Product Spec Sheet

Light Linear Denver 3 — DE-2002X

Street and area luminaires — IP65 - CLASS I - CE - IM07 — LIGMAN — The quality of life ...

Project : Location : Type : Quantity : Note :

Application

A New Minimalist LED Luminaire Design coupled with Lignan Premium Technology pole designs and Positioning Possibilities brings a brand new look to premises un-imagined area's.

Description

The luminaire utilizes streetlight optics with superior light distributions and gives the specifier the flexibility of different mounting possibilities based on angle, height and distribution requirements. Opportunities for using 2:1 luminaires in Asymmetrical Type II, III, IV distributions lens optics while meeting current Dark Sky criteria, give the Denver Series a new look for contemporary plaza's, event area's, as well as pedestrian and Urban landscapes.

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Die-cast aluminium body. Stainless steel fasteners in grade 316. Durable silicone rubber gasket and clear toughened glass. The luminaire is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance and chemicalcontamination protection.

Steel pole mounting detail (Offset on montage not shown)

Aluminium pole mounting detail (Offset on montage not aluminium)

Product Code

Model No.	Lens	System Power W	Lumen lm	Colour	CCT	Distribution Type	Weight kg
DE-2002-T2 - W30	24 LED	110	7986	3000K	A+	Type 2	33.5
DE-2002-T3 - W30	24 LED	110	7545	3000K	A+	Type 3	33.5
DE-2002-T4 - W30	24 LED	110	7501	3000K	A+	Type 4	33.5
DE-2002-T2 - W40	24 LED	110	7930	4000K	A+	Type 2	33.5
DE-2002-T3 - W40	24 LED	110	7534	4000K	A+	Type 3	33.5
DE-2002-T4 - W40	24 LED	110	7720	4000K	A+	Type 4	33.5
DE-2002-T2 - W30	24 LED	156	11978	3000K	A+	Type 2	33.5
DE-2002-T3 - W30	24 LED	156	11406	3000K	A+	Type 3	33.5
DE-2002-T4 - W30	24 LED	156	11338	3000K	A+	Type 4	33.5
DE-2002-T2 - W40	24 LED	156	11920	4000K	A+	Type 2	33.5
DE-2002-T3 - W40	24 LED	156	11334	4000K	A+	Type 3	33.5
DE-2002-T4 - W40	24 LED	156	11330	4000K	A+	Type 4	33.5
DE-2002-T2 - W30	40 LED	220	15226	3000K	A+	Type 2	37.5
DE-2002-T3 - W30	40 LED	220	13944	3000K	A+	Type 3	37.5
DE-2002-T4 - W30	40 LED	220	13732	3000K	A+	Type 4	37.5
DE-2002-T2 - W40	40 LED	220	15128	4000K	A+	Type 2	37.5
DE-2002-T3 - W40	40 LED	220	13824	4000K	A+	Type 3	37.5
DE-2002-T4 - W40	40 LED	220	13734	4000K	A+	Type 4	37.5
DE-2002-T2 - W30	52 LED	312	23756	3000K	A+	Type 2	37.5
DE-2002-T3 - W30	52 LED	312	21669	3000K	A+	Type 3	37.5
DE-2002-T4 - W30	52 LED	312	21609	3000K	A+	Type 4	37.5
DE-2002-T2 - W40	52 LED	312	24186	4000K	A+	Type 2	37.5
DE-2002-T3 - W40	52 LED	312	24070	4000K	A+	Type 3	37.5
DE-2002-T4 - W40	52 LED	312	24110	4000K	A+	Type 4	37.5

Ordering guide sample

DE-2002 - T2 - W40 - ASMB

Switch | Safe | Gear | Accessory

Colour Temperature
W30 – Warm white 3000K
W40 – Neutral white 4000K

Product Spec Sheet

Light Linear Denver 1 — DE-2000X

Street and area luminaires — IP65 - CLASS I - CE - IM07 — LIGMAN — The quality of life ...

Accessory

Shut-round kit PCM-SR

Light symbol

T2 T3 T4

Colour Code

01 02 03 05 06

Black RAL 9011 | Dark Grey RAL 7043 | White RAL 9003 | Matt Silver RAL 9006 | Bronze RAL 8014 | RESET

Photometric

Product Spec Sheet

Light Linear Denver 3 — DE-2002X

Street and area luminaires — IP65 - CLASS I - CE - IM07 — LIGMAN — The quality of life ...

Accessory

Shut-round kit PCM-SR

Light symbol

T2 T3 T4

Colour Code

01 02 03 05 06

Black RAL 9011 | Dark Grey RAL 7043 | White RAL 9003 | Matt Silver RAL 9006 | Bronze RAL 8014 | RESET

Photometric

CANTILEVERED RETAINING WALL SCHEDULE

r = 130 pcf ϕ = 30° P_a = 45H μ = 0.38 F'c = 4,500 psi Fy = 60,000 psi
Backfill: level w/ traffic surcharge, Max. W/C Ratio = 0.40
Drained wall soil bearing Pressure = 2,000 psi

CONCRETE DIMENSIONS						STEM REINFORCEMENT		BASE REINFORCEMENT		
HW (ft)	W (ft-in)	B (ft-in)	C (ft-in)	A base (in)	KEY (D x t)	"d" size @ in	"D" size @ in	"P" size @ in	"Lb" size	"k" size @ in
4.0	4'-0"	1'-0"	2'-0"	12	-	#4@18"	#4@9	#4@9	5"#4	-
5.0	5'-6"	1'-0"	3'-6"	12	-	#4@18"	#4@9	#4@9	7"#4	-
6.0	6'-6"	1'-0"	4'-6"	12	-	#4@9	#4@9	#4@9	8"#4	-
7.0	6'-9"	1'-9"	4'-6"	12	12x12	#4@8	#4@9	#4@8	6"#5	#4@9
8.0	7'-3"	1'-9"	4'-6"	12	12x12	#4@6	#4@9	#5@10	6"#5	#4@9
9.0	8'-0"	2'-6"	4'-6"	12	12x18	#5@9	#4@9	#5@10	7"#5	#4@9
10.0	8'-0"	3'-0"	4'-0"	12	20x20	#6@9	#4@9	#5@10	7"#5	#5@8
11.0	9'-0"	3'-3"	4'-9"	12	24x20	#8@9	#4@6	#6@12	8"#5	#5@8
12.0	10'-0"	3'-6"	5'-6"	12	24x20	#8@7	#5@9	#6@9	9"#5	#5@8
13.0	11'-0"	4'-3"	5'-9"	15	26x20	#8@7	#5@9	#6@9	9"#6	#5@8
14.0	11'-6"	4'-9"	5'-9"	15	30x20	#8@6	#5@9	#6@9	9"#6	#5@8
15.0	12'-0"	5'-6"	6'-6"	18	30x20	#9@6	#6@9	#6@8	9"#7	#5@8

STREET TREE & STREET LIGHT DETAILS

DOWNTOWN COLUMBIA

CRESCENT NEIGHBORHOOD

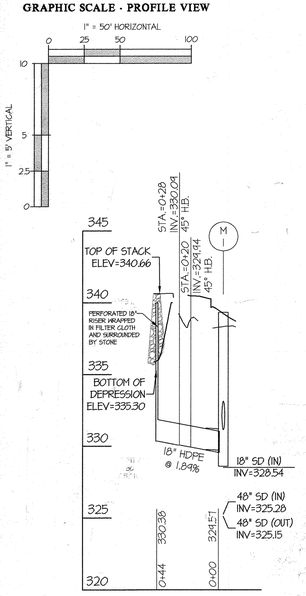
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
DEC., 2017	36 - 01	12 OF 25

F 17-059

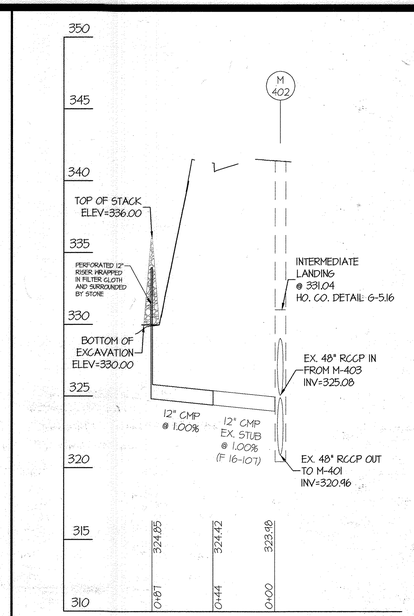
GRAPHIC SCALE · PROFILE VIEW



OUTLET FOR CLEAN WATER DIKES #1 AND #2

SCALE: 1"=50' HORIZ. & 1"=5' VERT.

NOTE: 4" PERFORATIONS REQUIRED IN THE RISER PIPE BETWEEN THE ELEVATIONS OF 335.5 AND 340.0. THERE ARE 9 PERFORATIONS PER ROW AND THEY ARE TO BE SPACED EVENLY AROUND THE CIRCUMFERENCE OF THE PIPE. VERTICALLY, THE PERFORATIONS ARE TO BE SPACED 6" APART.



OUTLET FOR CLEAN WATER IN FUTURE GARAGE LOCATION

SCALE: 1"=50' HORIZ. & 1"=5' VERT.

NOTE: 2" PERFORATIONS REQUIRED IN THE RISER PIPE BETWEEN THE ELEVATIONS OF 328.0 AND 332.0. THERE ARE 8 PERFORATIONS PER ROW AND THEY ARE TO BE SPACED EVENLY AROUND THE CIRCUMFERENCE OF THE PIPE. VERTICALLY, THE PERFORATIONS ARE TO BE SPACED 6" APART.

CLEAN WATER DIVERSION DIKES

No.	DRAINAGE AREA	AVG. SLOPE	TREATMENT	DISCHARGE AT OUTLET	SHEAR STRESS AT OUTLET	FLOW DEPTH	FLOW VELOCITY
CWD #1	1.82 AC.	1.46%	A-2	2.25 CFS	0.24 LB/FT²	0.54 FT.	3.63 FT/SEC
CWD #2	2.35 AC.	0.57%	A-2	6.61 CFS	0.16 LB/FT²	1.01 FT.	3.29 FT/SEC

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

John R. Robertson 12/28/17

Howard S.C.D. Date

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

ENGINEER'S SIGNATURE 12/14/17 DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIORNMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER/BUILDER 10/14/17 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways 10/6/2018 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development 1-19-18 Date

Chief, Development Engineering Division 1-11-18 Date

EARTH DIKES

No.	DRAINAGE AREA	AVG. SLOPE	TREATMENT	SHEAR STRESS AT OUTLET
ED #1	0.84 AC.	0.82%	A-1	0.15 LB/FT²

LEGEND

IB — PROPOSED INLET BLOCKING (SEE NOTE 3, THIS SHEET)

TAB — TEMPORARY ASPHALT BERM

CWP — CLEAR WATER PIPE

SANDBAG BARRIER

CIP — PROPOSED INLET PROTECTION (SEE NOTE 3, THIS SHEET)

STABILIZED CONSTRUCTION ENTRANCE

SSF — PROPOSED SUPER SILT FENCE

ED / CWD # (A-2) — PROPOSED EARTH DIKE / CLEAN WATER DIVERSION DIKE

SOIL TYPE DIVIDE

SOIL TYPE AND HYDROLOGIC SOIL GROUPING IDENTIFICATION

SOIL TYPE	SOIL DESCRIPTION	Kw	SOILS GROUP
BaA	Baile silt loam, 0 to 3 percent slopes	0.32	"D"
GbB	Gladstone loam, 3 to 8 percent slopes	0.20	"B"
GbC	Gladstone loam, 8 to 15 percent slopes	0.28	"B"
GmB	Glenville silt loam, 3 to 8 percent slopes	0.37	"C"
Ha	Hartboro - Codorus silt loams, 0 to 3 percent slopes	0.37	"D"
MoD	Manor loam 15-25 percent slopes , very rocky	0.32	"D"

LEGEND

- Prop. Grade (Initial)
- Prop. Grade (Final)
- Lod-1 — Limits of Disturbance (Initial)
- LOD — Limits of Disturbance (Final)

NOTES:

1. ON MAY 9, 2016 HOWARD COUNTY DEPT. OF PLANNING & ZONING DETERMINED THAT THE DISTURBANCES SHOWN ARE ESSENTIAL AND NECESSARY.
2. THE EXISTING CONTOURS SHOWN ON PARCELS D-1 THROUGH D-17 AND LOT 10 REFLECT THE MASS GRADING DONE UNDER SDP 16-075.
3. INLET PROTECTION IS TO BE PROVIDED AT STRUCTURES LABELED AS CIP IN ACCORDANCE WITH DETAIL E.4.3. INLETS LABELED AS IB ARE TO BE BLOCKED SO THAT NO RUNOFF CAN ENTER THE STRUCTURE. THE CONTRACTOR IS TO COORDINATE THE MATERIALS AND METHODS TO BE USED TO ALTER DETAIL E.4.3 WITH THE SEDIMENT CONTROL INSPECTOR IN THE FIELD TO ACCOMPLISH THIS.

STATE OF MARYLAND GERALD DOUGLAS TURNBAUGH No. 26569 PROFESSIONAL ENGINEER 9.14.23

PROFESSIONAL ENGINEER AS BUILT CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NAME: GERALD D. TURNBAUGH

DATE: AUG. 11, 2023 REG. NO.: 26569

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/11/22 TO 2/18/22

STATE OF MARYLAND G. SCOTT SHANABERGER No. 10849 PROFESSIONAL LAND SURVEYOR

GRAPHIC SCALE - PLAN VIEW
0 25 50 100
1" = 50'

THIS PLAN IS FOR SEDIMENT CONTROL PURPOSES ONLY

7-24-19	⚠6 REVISED MBRs, FHT, SHG, GRADES, LOD, SSF	GT.	DEV.
7-26-18	⚠5 Rev. grading at Valencia Lane & Proposed wall	GT.	JRE
5-22-18	⚠4 Updated sediment control Devices & Grading	GT.	DEV.
DATE	REVISION	BY	APP'R.

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-13 - SC Plan.dwg, PLOTTED: 12/14/2017 1:24 PM, LAST SAVED: 12/13/2017 11:59 AM, LAST SAVED BY: Luke Groom

DES. DEV | DRN. JH | CHK. MJT

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018.

12/14/17

STATE OF MARYLAND CARLTON KENNETH RIVERSON No. 12975 PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	13 OF 25

F 17-059

PIPE OULET SEDIMENT TRAP #1
(CONSTRUCTED UNDER SDP 16-075)

SEDIMENT CONTROL DESIGN INFORMATION		
DRAINAGE AREA - INITIAL	5.0	ACRES
DRAINAGE AREA - INTERIM	N/A	ACRES
DRAINAGE AREA - FINAL	5.0	ACRES
TOTAL STORAGE REQUIRED	18,000	CF
TOTAL STORAGE PROVIDED	18,140	CF
WET STORAGE REQUIRED	9,000	CF
WET STORAGE PROVIDED	9,140	CF
DRY STORAGE REQUIRED	9,000	CF
DRY STORAGE PROVIDED	9,000	CF
TRAP BOTTOM ELEVATION	324.0	FT
TRAP BOTTOM DIMENSIONS	110' X 60'	FT x FT
RISER CREST (DRY STORAGE) ELEVATION	326.25	FT
OUTLET (WET STORAGE) ELEVATION	326.25	FT
CLEANOUT ELEVATION	324.60	FT
TOP OF EMBANKMENT ELEVATION	328.00	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	4'	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CMP	
RISER DIAMETER	42"	IN
BARREL DIAMETER	30"	IN
TRASH RACK DIAMETER	60"	IN
TRASH RACK HEIGHT	27"	IN
ANTI-SEEP COLLAR DIMENSIONS	2-7.75' X 7.75'	FT
OUTLET PROTECTION - LENGTH	N/A	FT
OUTLET PROTECTION - WIDTH	N/A	FT
OUTLET PROTECTION - DEPTH	N/A	IN

STONE OULET SEDIMENT TRAP #2
(CONSTRUCTED UNDER SDP 16-075)

SEDIMENT CONTROL DESIGN INFORMATION		
DRAINAGE AREA - INITIAL	6.60	ACRES
DRAINAGE AREA - INTERIM	N/A	ACRES
DRAINAGE AREA - FINAL	6.72	ACRES
TOTAL STORAGE REQUIRED	24,192	CF
TOTAL STORAGE PROVIDED	25,956	CF
WET STORAGE REQUIRED	12,096	CF
WET STORAGE PROVIDED	13,236.8	CF
DRY STORAGE REQUIRED	12,096	CF
DRY STORAGE PROVIDED	12,719.9	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	338.00	FT
TRAP BOTTOM ELEVATION	336.00	FT
TRAP DIMENSIONS	112' X 50'	FT x FT
WEIR LENGTH	28'	FT
WEIR CREST (DRY STORAGE) ELEVATION	338.50*	FT
CLEANOUT ELEVATION	336.80	FT
TOP OF EMBANKMENT ELEVATION	340.20	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	6'	FT
OUTLET PROTECTION - LENGTH	20'	FT
OUTLET PROTECTION - DEPTH	19"	IN

* NOTE: SET WEIR CREST ELEVATION AT 339.20 (THIS IS THE 1 YEAR WATER SURFACE STORAGE ELEVATION TO CONFORM TO TEMPORARY STORMWATER MANAGEMENT REQUIREMENT)

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND · GREGORY SCOTT SHANABERGER · No. 10849 · PROFESSIONAL LAND SURVEYOR

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

STATE OF MARYLAND · GERALD DOUGLAS TURNBAUGH · No. 26569 · PROFESSIONAL ENGINEER · 9-15-23

PIPE OUTET SEDIMENT TRAP #3
(constructed with this Plan)

FOR CONSTRUCTION, SEE HSCD DETAIL G-1-1

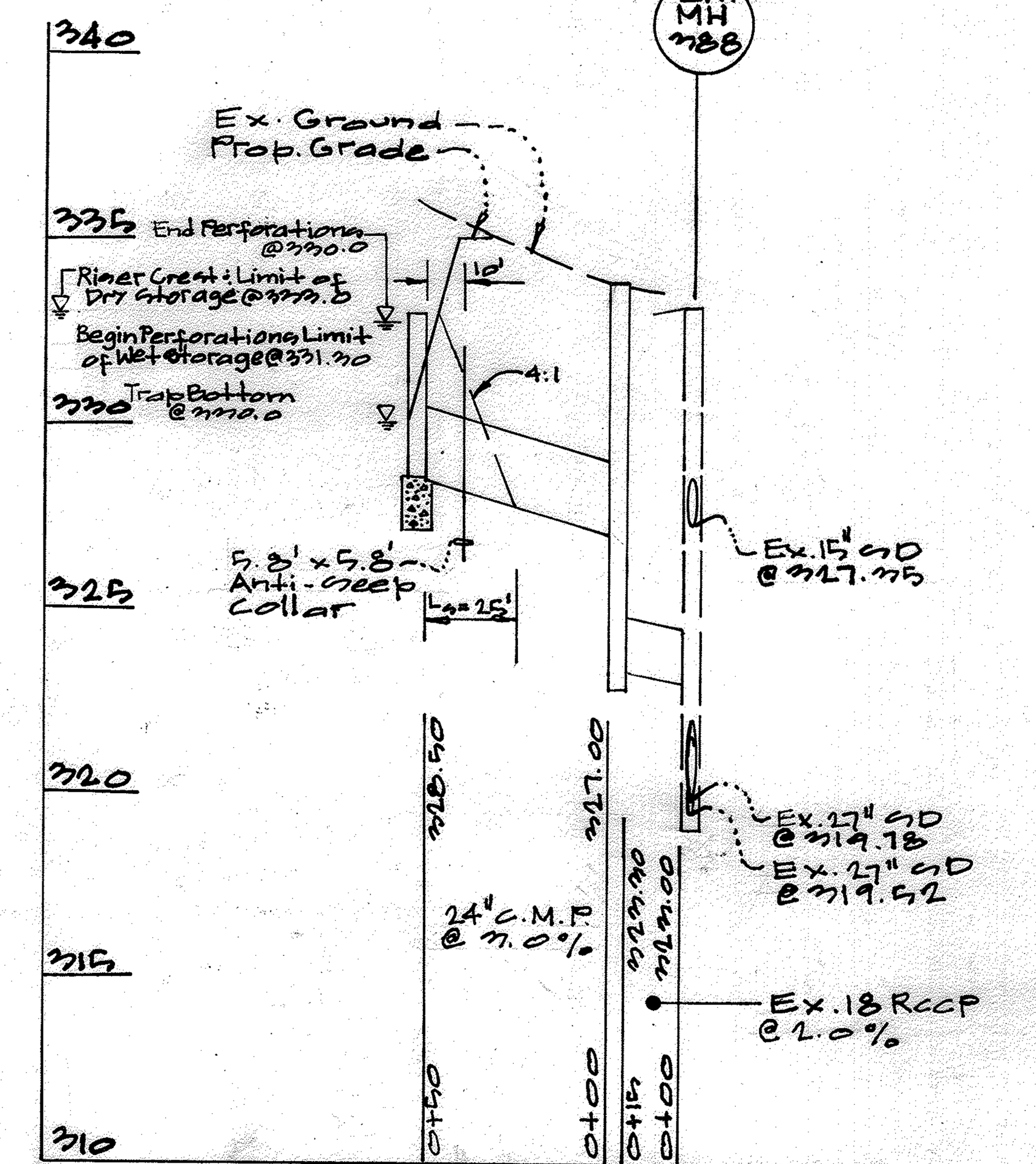
SEDIMENT CONTROL DESIGN INFORMATION		
DRAINAGE AREA - INITIAL	21	ACRES
DRAINAGE AREA - INTERIM	N/A	ACRES
DRAINAGE AREA - FINAL	3.0	ACRES
TOTAL STORAGE REQUIRED	13,289	CF
TOTAL STORAGE PROVIDED	15,664	CF
WET STORAGE REQUIRED	5,400	CF
WET STORAGE PROVIDED	6,240	CF
DRY STORAGE REQUIRED	8,429	CF
DRY STORAGE PROVIDED	9,424	CF
TRAP BOTTOM ELEVATION	330.00	FT
TRAP BOTTOM DIMENSIONS	100 x 42'	Ft. x Ft.
RISER CREST (DRY STORAGE) ELEVATION	333.00	FT.
OUTLET (WET STORAGE) ELEVATION	331.30	FT.
CLEANOUT ELEVATION	330.65	FT.
TOP OF EMBANKMENT ELEVATION	335.00	FT
SIDE SLOPE	2:1	H:V RAIO
EMBANKMENT TOP WIDTH	4'	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CMP	
RISER DIAMETER	33"	IN.
BARREL DIAMETER	24"	IN.
TRASH RACK DIAMETER	48"	IN.
TRASH RACK HEIGHT	23"	IN
ANTI-SEEP COLLAR DIMENSIONS	1-5.8' x 5.8'	FT.
OUTLET PROTECTION - LENGTH	N/A	FT.
OUTLET PROTECTION - WIDTH	N/A	FT.
OUTLET PROTECTION - DEPTH	N/A	IN.

LEGEND

— — — (long dash)	SEDIMENT CONTROL EXISTING CONDITIONS DRAINAGE DIVIDE
- - - - (short dash)	SEDIMENT CONTROL PROPOSED CONDITIONS DRAINAGE DIVIDE
——ERL-1——	2014 ENVIRONMENTAL RESTORATION LIMITS
——ERL-2——	2016 ENVIRONMENTAL RESTORATION LIMITS
(light shading)	MODERATELY STEEP SLOPES (15-25%)
(dark shading)	STEEP SLOPES (25%+)

SCALE: 1" = 100'

0' 50' 100' 200' 400'



⚠ PIPE RISER OUTFALL PROFILE TRAP #3
Scale: 1" = 5' (Vert.)
1" = 50' (Horz.)

NOTE:
PART OF THE WORK BEING PROPOSED UNDER THIS PLAN IS BACK FILLING SEDIMENT TRAP #1 CONSTRUCTED UNDER SDP 16-075 AND REPLACING IT WITH SEDIMENT TRAP #3 BEING CONSTRUCTED UNDER THESE PLANS

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

John R Robertson 12/28/17
Howard S.C.D. Date

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

ENGINEER'S SIGNATURE 12/14/17 DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION, CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIORNMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER/BUILDER 12/14/17 DATE

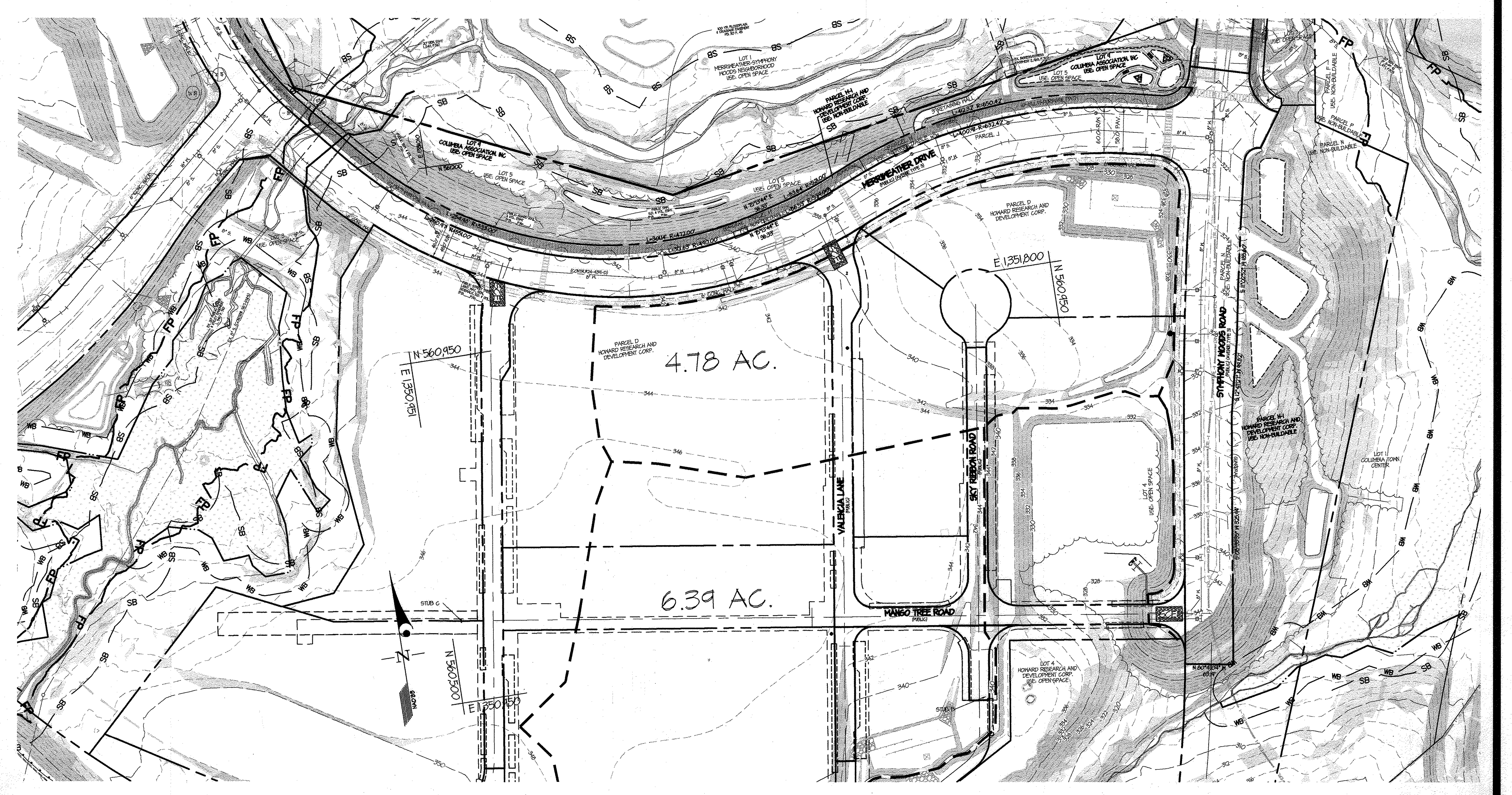
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways 1/3/2018 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
L. Marshall for KS — Chief, Division of Land Development 1-19-18 Date
Chief, Development Engineering Division 1-11-18 Date

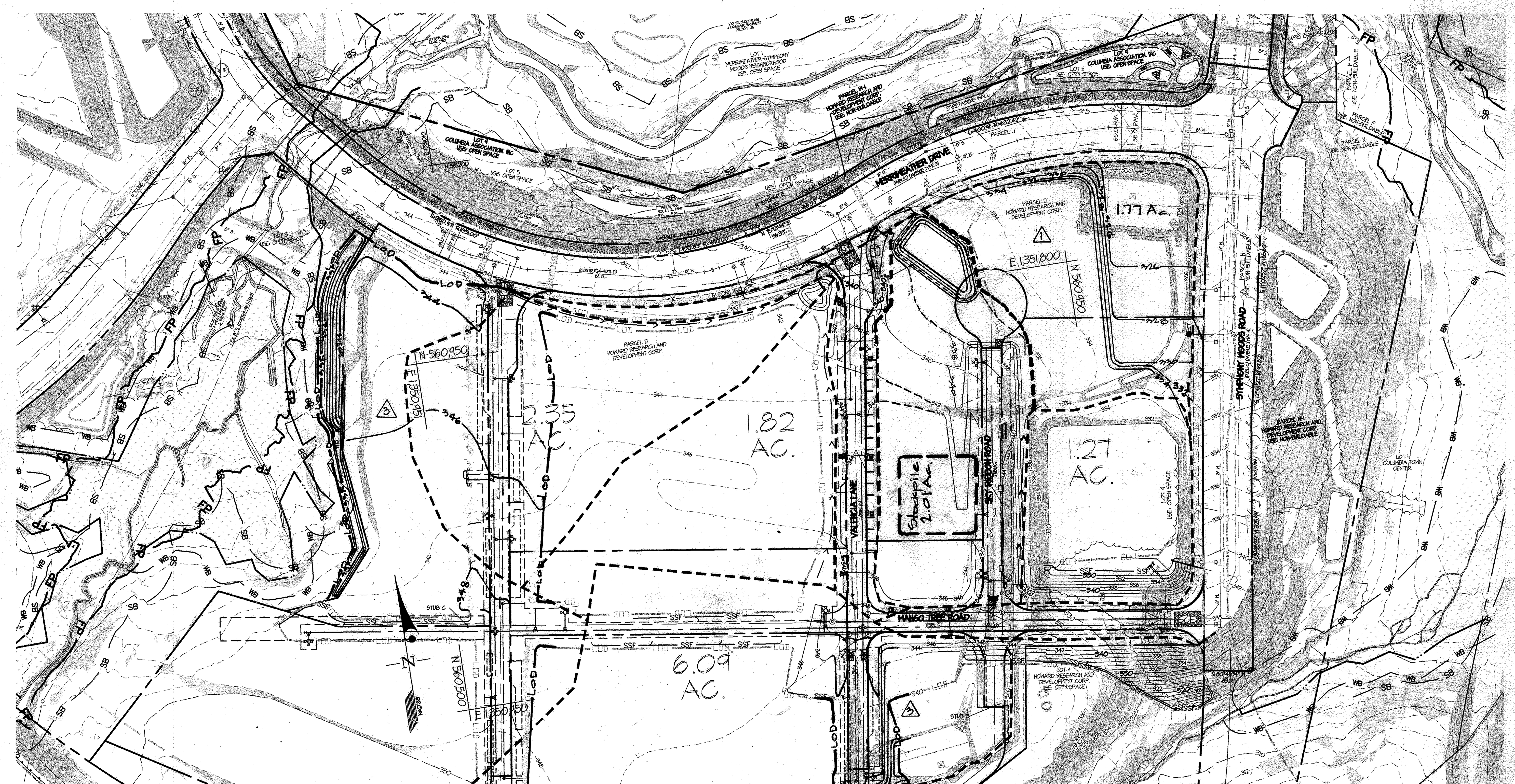
SEQUENCE OF CONSTRUCTION:

1. OBTAIN GRADING PERMIT. (1 DAY)
2. ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR (1 DAY)
3. INSPECT SEDIMENT TRAPS 1 AND 2 CONSTRUCTED UNDER SDP 16-075 AND MAKE ANY NECESSARY REPAIRS. THE TRAPS HAVE BEEN SHOWN ON THESE PLANS AS EXISTING (3 DAYS)
4. INSTALL CURB INLET PROTECTION AT EXISTING I-38A. THIS STRUCTURE WAS CONSTRUCTED UNDER F 16-107. (1 DAY)
5. INSTALL THE STORM DRAIN FROM THE EXISTING STUB "K" OUT OF EXISTING MH 32 THAT WAS CONSTRUCTED UNDER F16-107 TO MH 1 AND THE 18" HDPE DIRECTED TOWARD THE DEPRESSION TO BE GRADED UNDER ITEM 7. (2 DAYS)
6. INSTALL THE STONE CONSTRUCTION ENTRANCE AT VALENCIA LANE AND MERRIWEATHER DRIVE. (1 DAY)
7. GRADE THE DEPRESSION AT THE 18" HDPE INSTALLED UNDER ITEM 5 ABOVE AS WELL AS THE VERTICAL STACK AND STONE. CONSTRUCTION OF THE VERTICAL STACK AND STONE IS TO BE CONSTRUCTED PER THE SPECIFICATIONS FOR A DE-WATERING DEVICE. SEE HSCD DETAIL G-2-7. (1 DAY)
8. CONSTRUCT CLEAN WATER DIVERSION #2 ALONG MERRIWEATHER DRIVE. THE CONTRACTOR IS TO BEGIN AT THE DOWNSTREAM END AND WORK UPHILL. (1 WEEK)
9. INSTALL THE EARTH DIKES AND SUPER SILT FENCE TO THE LIMITS SHOWN AS "INITIAL". (3 DAYS)
10. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR BEGIN GRADING SHOWN AS "INITIAL". (3 DAYS)
11. RELOCATE THE EARTH DIKES AND SUPER SILT FENCE TO THE LIMITS SHOWN AS "FINAL". (3 DAYS)
12. CONSTRUCT PIPE OUTLET SEDIMENT TRAP #3 PER HSCD DETAIL G-1-1. (3 DAYS)
13. INSTALL THE REMAINDER OF THE STONE CONSTRUCTION ENTRANCES AND SUPER SILT FENCE AS SHOWN ON THESE PLANS. SIGNIFICANT FILLS WILL BE NEEDED TO BE PLACED IN THE AREA OF THE STONE CONSTRUCTION ENTRANCE AT THE INTERSECTION OF MANGO TREE ROAD AND SYMPHONY WOODS ROAD. INITIALLY, THE CONTRACTOR WILL ONLY HAVE ACCESS TO THE SITE FROM MERRIWEATHER DRIVE UNTIL THE GRADES IN THE AREA OF MANGO TREE ROAD HAVE BEEN ESTABLISHED AND THE STONE CONSTRUCTION ENTRANCE INSTALLED. (3 DAYS)
14. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR BEGIN MASS GRADING. THIS WILL INCLUDE THE BACK FILLING OF THE PIPE OUTLET SEDIMENT TRAP #1 CONSTRUCTED UNDER SDP 16-075. THE CONTRACTOR IS TO INSTALL THE CLEAN WATER DIVERSION TO THE WEST OF VALENCIA LANE AS SOON AS THE GRADES ALLOW TO DIVERT RUNOFF DRAINING FROM THE WEST TO THE DEPRESSION (CONSTRUCTED UNDER ITEM 7 ABOVE) AT THE INTERSECTION OF VALENCIA LANE AND MERRIWEATHER DRIVE. (2 WEEKS)
15. AS MANGO TREE ROAD IS PLACED ON GRADE AND RUNOFF CAN NO LONGER BE CONVEYED TO THE TEMPORARY GABION OUTLET STRUCTURE CONSTRUCTED UNDER SDP 16-075, INSTALL THE DEWATERING TYPE STRUCTURE IN THE SOUTHEAST CORNER OF PARCEL D-4 AND 12" HDPE PIPE THAT TIES INTO EX. MH 323, WHICH WAS CONSTRUCTED UNDER F 16-107. (2 WEEKS)
16. AS THE ROADS ARE BEING PLACED ON GRADE, INSTALL THE STORM DRAIN, WATER, AND SEWER LINES AS SOON AS THE GRADES ALLOW. WHERE INLETS ARE SHOWN WITH CURB INLET PROTECTION OR INLET BLOCKING, THE DEVICE IS TO BE INSTALLED IMMEDIATELY AFTER FINAL GRADES AROUND THE STRUCTURE HAVE BEEN ESTABLISHED. PROVIDE BERMS AS INDICATED TO DIRECT RUNOFF TO INLETS OR CURB CUTS TO ALLOW RUNOFF TO BE DIRECTED TO PERIMETER SEDIMENT CONTROL DEVICES. THE CONTRACTOR IS TO INSTALL EARTHERN BERMS INITIALLY, AND THEN CONVERT THEM TO ASPHALT BERMS AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. INSTALL THE RIP RAP AT THE SOUTH END OF VALENCIA LANE TO PROTECT THE NEWLY PLACED FILL. (1 MONTH)
17. BEGIN FINE GRADING THE AREA OF THE ROADWAYS. (1 WEEK)
18. INSTALL THE CURB AND GUTTER, SIDEWALK, AND BASE PAVING. (2 WEEKS)
19. AS AREAS ARE STABILIZED AND PERMISSION IS OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES CAN BE REMOVED. THE CONTRACTOR IS TO IMMEDIATELY STABILIZE ANY AREAS THAT ARE DISTURBED AS A RESULT. THE CURB INLET PROTECTION BLOCKING AND TEMPORARY ASPHALT BERMS, AS WELL AS THE DEWATERING DEVICE LOCATED IN THE SOUTHEAST CORNER OF PARCEL D-4 AND AT THE INTERSECTION OF VALENCIA LANE AND MERRIWEATHER DRIVE ARE TO REMAIN UNTIL SUCH TIME THE GRADES AND SEDIMENT CONTROL MEASURES PROPOSED UNDER SDP 17-027 HAVE BEEN ESTABLISHED AND THE DEVICES ARE NO LONGER NEEDED. (2 WEEKS)
20. THE SURFACE COURSE OF PAVING ON ALL ROADS BEING CONSTRUCTED UNDER THIS FINAL PLAN WILL BE DELAYED UNTIL SOME POINT IN THE CONSTRUCTION PROPOSED UNDER SDP 17-027 SO THAT IT IS NOT DAMAGED BY CONSTRUCTION EQUIPMENT BEING USED FOR THE CONSTRUCTION OF THE BUILDINGS. THIS WILL NEED TO BE COORDINATED WITH THE SEDIMENT CONTROL INSPECTOR IN THE FIELD. (1 WEEK)
21. THE STORM WATER MANAGEMENT DEVICES WILL BE INSTALLED WITH THE HARDSCAPE AND OTHER ROAD SIDE IMPROVEMENTS UNDER SDP 17-027.
22. BACK FILL SEDIMENT TRAP #3. SEDIMENT TRAP #2 WILL REMAIN TO BE UTILIZED FOR FUTURE CONSTRUCTION. (3 DAYS)

EXISTING CONDITIONS SEDIMENT CONTROL DRAINAGE AREA MAP — SCALE: 1"=100'



PROPOSED CONDITIONS SEDIMENT CONTROL DRAINAGE AREA MAP — SCALE: 1"=100'



GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-14 - SC DAM.dwg | DES. DEV | DRN. JH | CHK. MJT

DATE	REVISION	BY	APP'R.
7-26-18	⚠3 Rev. Grading on Valencia Lane & Proposed wall	GT.	JRC
3.28.18	⚠1 Added Pipe Riser Profile, Updated sediment Trap location & Grading.	GT.	DEV.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 26, 2018
12/14/17

STATE OF MARYLAND · CARLTON KENNETH GUTSCHICK · NO. 12975 · PROFESSIONAL ENGINEER

SEDIMENT CONTROL DRAINAGE AREA MAPS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	NT	11071
DATE	**TAX MAP - GRID**	**SHEET**
DEC., 2017	36 - 01	14 OF 25

F 17-059

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-14 - SC DAM.dwg,
PLOTTED: 12/14/2017 1:31 PM, LAST SAVED: 9/28/2017 1:49 PM, PLOTTED BY: Doug Vande Ryt

SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

   A. PRIOR TO THE START OF EARTH DISTURBANCE,
   B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
   C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
   D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WTIH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:
   Total Area of Site : 25.1 Acres
   Acres Area Disturbed : 9.0 Acres
   ⚠ Area to be roofed or paved : 0.8 Acres
   Areas to be vegetatively stabilized : 8.2 Acres
   Total Cut : 1,846 Cu. Yds.
   Total Fill : 10,715 Cu. Yds.

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
   - INSPECTION DATE
   - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   - NAME AND TITLE OF INSPECTOR
   - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND /OR CURRENT ACTIVITIES
   - EVIDENCE OF SEDIMENT DISCHARGES
   - IDENTIFICATION OF PLAN DEFICIENCIES
   - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   - PHOTOGRAPHS
   - MONITORING/SAMPLING
   - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   - OTHER INSPECTION ITEMS AS REQUIRED BY THE "GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES" (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
    - USE I AND IP MARCH 1 - JUNE 15
    - USE III AND IIIP OCTOBER 1 - APRIL 30
    - USE IV MARCH 1 - MAY 31

16. A COPY OF THIS PLAN, THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 12/14/17
ENGINEER'S SIGNATURE DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION, CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIORNMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 12/14/17
SIGNATURE OF DEVELOPER/BUILDER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[signature] 1/3/2018
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[signature] 1/19/18
Chief, Division of Land Development Date
[signature] 1.11.18
Chief, Development Engineering Division Date

STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION
CONSTRUCTION AND MATERIAL SPECIFICATIONS con't

b. Topsoil must be free of plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified. c. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate if 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

a. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

a. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

1. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
2. Organic content of topsoil shall be not less than 1.5 percent by weight.
3. Topsoil having soluble salt greater than 500 parts per mill shall not be used.
4. No sod or seed shall be placed on soil which has been with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of photo-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

b. Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

a. When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

b. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

c. Topsoil shall be uniformly distributed in a 4' -8' layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water

d. Topsoil shall not be placed while the topsoil or subsoil is frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

a. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

1. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
2. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate prior to use.
3. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet. b. Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA Pub. #1 , Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

PURPOSE
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

CONDITIONS WHERE PRACTICE APPLIES
I. This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplied of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil specifications - soil to be used as topsoil must meet the following:

a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.Materials.

DUST CONTROL

Definition
Controlling dust blowing and movement on construction sites and roads.

Purpose
To prevent blowing and movement of dust from exposes soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies
This practice is applicable to areas subject to dust blowing and movements where on and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaces about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
[signature] 12/28/17
Howard S.C.D. Date

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

1. Temporary Stabilization

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization

a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

i. Soil pH between 6.0 and 7.0.

ii. Soluble salts less than 500 parts per million (ppm).

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.

iv. Soil contains 1.5 percent minimum organic matter by weight.

v. Soil contains sufficient pore space to permit adequate root penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

3. Topsoiling is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

4. Areas having slopes steeper than 2:1 require special consideration and design.

5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

6. Topsoil Application

a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

1. Specifications

a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.

b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.

c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.

d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

2. Application

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorous), 200 pounds per acre; K20 (potassium), 200 pounds per acre.

ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors.

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.

v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

2. Application

a. Apply mulch to all seeded areas immediately after seeding.

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. **Use of asphalt binders is strictly prohibited.**

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

TEMPORARY SEEDING SUMMARY

Hardiness Zone (from Figure B.3): 6b **Seed Mixture** (from Table B.1):					Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	ANNUAL RYEGRASS	40 lb/ac	Mar.1 to May 15. Aug. 1 to Oct. 15	0.5 inches	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
2	PEARL MILLET	20 lb/ac	MAY 16 to JULY 31	0.5 inches		

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation
Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments
Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

Seeding
For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching
Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition
To stabilize disturbed soils with permanent vegetation.

Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.

Notes:
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

c. Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO: 26569
[seal: STATE OF MARYLAND, GERALD DOUGLAS TURNBAUGH, No. 26569, PROFESSIONAL ENGINEER] [signature] 9-15-23

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION con't

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

PERMANENT SEEDING SUMMARY

Hardiness Zone (from Figure B.3): 6b **Seed Mixture** (from Table B.3): #9 (Tall Fescue/ Kentucky Bluegrass)					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
9	*CERTIFIED TALL FESCUE BLEND (95% BY WEIGHT: FALCON IV, PENN 1901 & REBEL EXEDA) AND CERTIFIED KENTUCKY BLUEGRASS BLEND (5% BY WEIGHT: COURTYARD, RAVEN & YANKEE)	6-8 LB/10,00SF	Mar. 1 to May15. Aug. 15 to Oct. 15	¼ - ½ in ¼ - ½ in ¼ - ½ in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)

* OTHER CULTIVARS LISTED AS "PROVEN" IN THE MOST CURRENT UMD TT-77 MAY ALSO BE USED.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.

c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.

d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.

b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.

d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

3. Sod Maintenance

a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.

b. After the first week, sod watering is required as necessary to maintain adequate moisture content.

c. Do not mow until the sod is firmly rooted. No more than ? of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation
Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments
In lieu of soil test recommendations, use one of the following schedules

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).

2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding
For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching
Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance
Inspect all seeded areas and make needed repairs, replacements and reseedings.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.
[signature] 10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22
[seal: STATE OF MARYLAND, GREGORY SCOTT SHANABERGER, No. 10849, PROFESSIONAL LAND SURVEYOR]

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-15-16 - SC Notes & Details.dwg | DES. DEV | DRN. JH | CHK. MJT

DATE	REVISION	BY	APP'R.
7-29-18	⚠ Updated LOD Area	9+	DEV.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975, EXPIRATION DATE: MAY 26, 2018
12/14/17 [signature]
[seal: STATE OF MARYLAND, CARLTON KENNETH GUTSCHICK, NO. 12975, PROFESSIONAL ENGINEER]

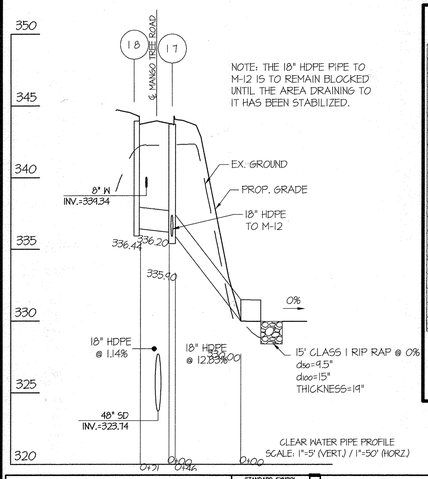
SEDIMENT CONTROL NOTES AND DETAILS

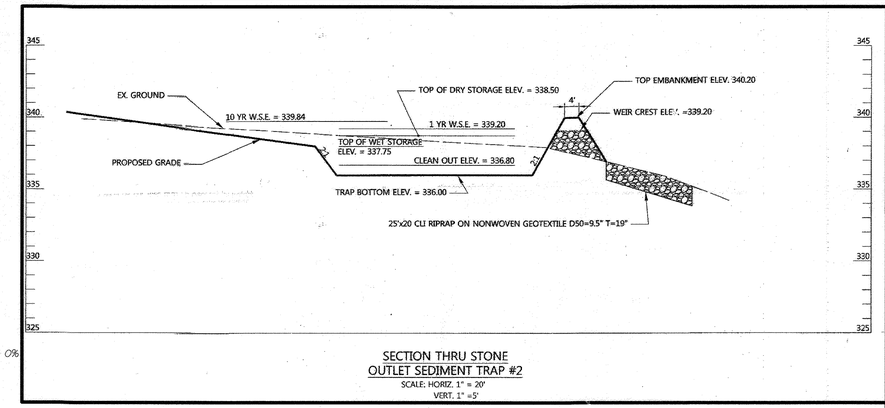
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

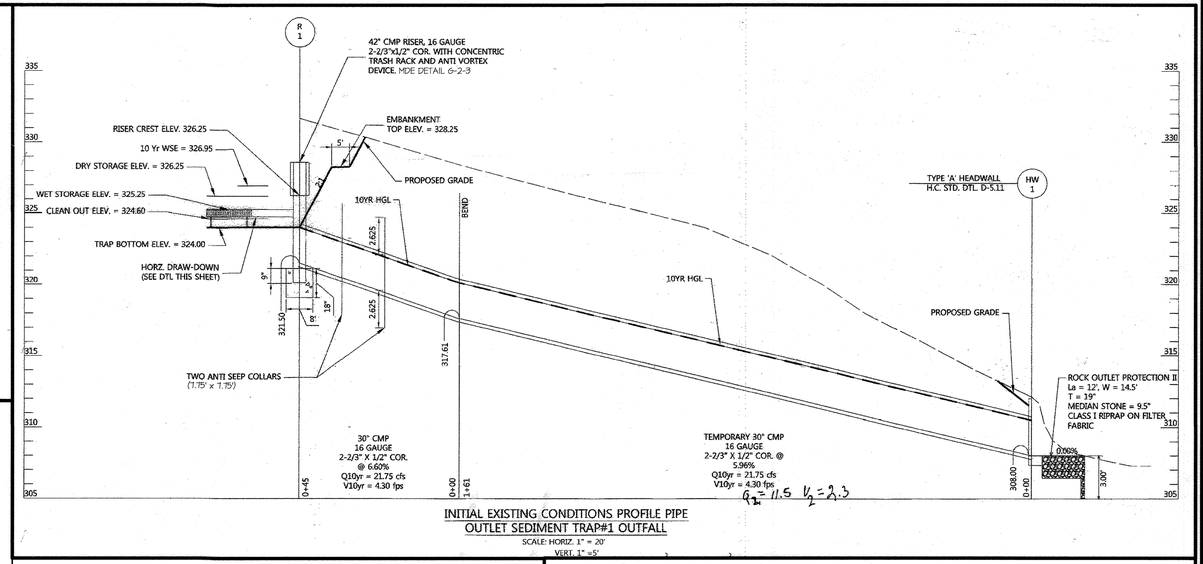
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
DEC., 2017	36 - 01	15 OF 25

F 17-059





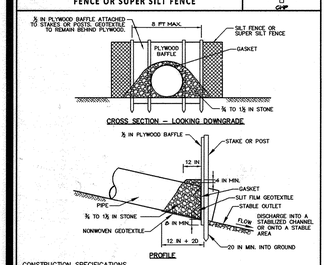
SECTION THRU STONE
OUTLET SEDIMENT TRAP #2
SCALE: HORIZ. 1" = 20'
VERT. 1" =5'



INITIAL EXISTING CONDITIONS PROFILE PIPE
OUTLET SEDIMENT TRAP#1 OUTFALL
SCALE: HORIZ. 1" = 20'
VERT. 1" =5'

DETAIL E-4 CLEAR WATER PIPE THROUGH SILT FENCE OR SUPER SILT FENCE

STANDARD SYMBOL: SF



CONSTRUCTION SPECIFICATIONS

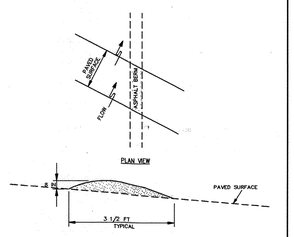
1. INSTALL SILT FENCE OR SUPER SILT FENCE IN ACCORDANCE WITH DETAIL E-1 OR DETAIL E-2.
2. AT THE PIPE LOCATION, CUT AND PULL BACK THE WOVEN SILT FILM GEOTEXTILE AND CHAIN LINK FENCING. SECURE GEOTEXTILE TO PIPE WITH GASKET. INSTALL ADDITIONAL STAKES OR POSTS IF NECESSARY TO ACCOMMODATE THE INSTALLATION OF THE BAFFLE BOARD.
3. EXTRENCH ½ INCH PLYWOOD BAFFLE A MINIMUM OF 8 INCHES AND SECURE TO THE UPGRADE SIDE OF THE FENCE STAKES OR POSTS. BAFFLE SHOULD BE AT LEAST THE HEIGHT OF THE FENCE.
4. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE BEHIND THE PLYWOOD BAFFLE ON NONWOVEN GEOTEXTILE AND EXTEND 12 INCH MIN. ALONG TOP OF PIPE AND TO A HEIGHT OF 4 INCHES ABOVE THE TOP OF PIPE.
5. USE NONWOVEN AND WOVEN SILT FILM GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN SEDIMENT REACHES 6 INCHES IN HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL BAFFLE, CHAIN LINK, AND GEOTEXTILE. REPLACE STONE IF DISPLACED. 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-5 TEMPORARY ASPHALT BERM

STANDARD SYMBOL: ATB



CONSTRUCTION SPECIFICATIONS

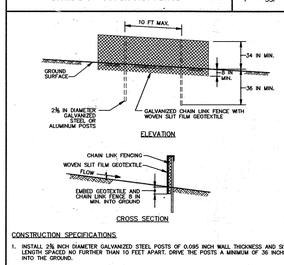
1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3½ FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

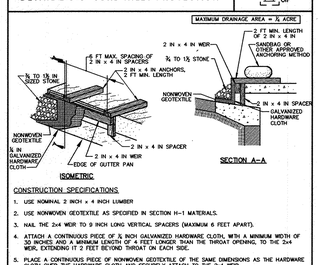
1. INSTALL 2½ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2¼ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURERS CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP



CONSTRUCTION SPECIFICATIONS

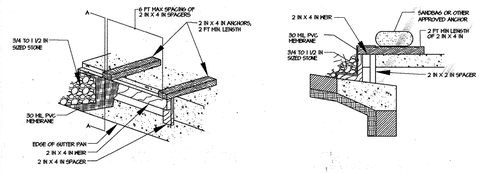
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING 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 SO THAT THE FLOW EXPERIENCES NO OBSTRUCTION. SECURE 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

NOTE: INLETS INDICATED IN PLAN BY (IB) ARE INLETS THAT ARE TO BE COMPLETELY BLOCKED USING MATERIALS AND METHODS APPROVED BY THE SEDIMENT CONTROL INSPECTOR.

INLET BLOCKING DETAIL

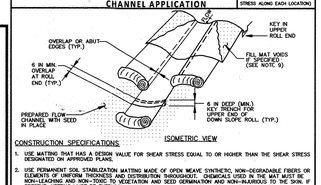


ULTIMATE PIPE OUTLET SEDIMENT
TRAP#1 OUTFALL PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" =5'

NOTE: PIPE OUTLET SEDIMENT TRAP #1 AND STONE OUTLET SEDIMENT TRAP #2 WERE CONSTRUCTED UNDER SDP 16-075. FOR ADDITIONAL INFORMATION, NOT SHOWN ON THESE PLANS, REFER TO SDP 16-075. SEE SHEET 14 OF THIS PLAN SET FOR BOTTOM, CLEAN OUT ELEVATIONS AND OTHER INFORMATION FOR THE ROUTINE MAINTENANCE OF THE TRAPS.

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

STANDARD SYMBOL: PSSMC (SEE SHEET 13 FOR SHEAR STRESS ALONG EACH LOCATION)



CONSTRUCTION SPECIFICATIONS

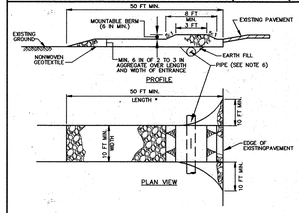
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON THE APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NONTOXIC AND NONINJURIOUS TO SEED AND SEEDLINGS UNDER NORMAL GERMINATION AND NON-INJURIOUS TO THE SOIL. IF REQUIRED, MATTING MUST BE BIODEGRADABLE AND PHOTODEGRADABLE. THICKNESS OF SYNTHETIC MATTING AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL DIMENSION, AND OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF MD. 11 AND AS A RECOMMENDED "U" SHAPED STAPLES MUST HAVE MINIMUM 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 3 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. FOR SUCCESSIVE ROLLS IN THE CHANNEL, OVERLAP, BEGIN PLACING ROLLS, LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE, AND AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT A INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT TEMPORARY PROVISIONS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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 B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

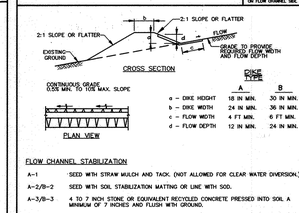
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: ED (SEE ABBREVIATIONS SHEET FOR FLOW FORMULA, USE Q=10)



FLOW CHANNEL STABILIZATION

A–1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A–2/B–2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A–3/B–3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

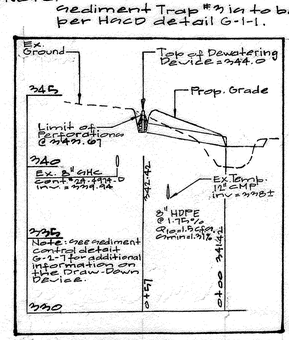
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

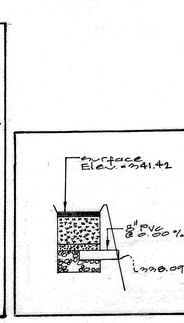
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

** NOTE: FOR CMP@
c – DIKE HEIGHT IS 30 IN MIN.
d – FLOW DEPTH IS 14 IN MIN.

Note: sediment Trap #3 is to be constructed per HACD detail G-1-1.



TEMPORARY OUTFALL - END OF VALENCIA LANE
scale: 1" = 5' (vert.)
1" = 50' (Horiz.)



section A-A

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

ENGINEER'S SIGNATURE — DATE 12/14/17

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER/BUILDER — DATE 12/14/17

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-19-18

Chief, Development Engineering Division — Date 1-11-18

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. — Date 12/28/17

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 22569

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANADERGER
SHANADERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-15-16 - SC Notes & Details.dwg, PLOTTED: 12/14/2017 12:02 PM, LAST SAVED:12/12/2017 10:58 AM, PLOTTED BY: Luke Groom

DES. DEV	DRN. JH	CHK. MJT

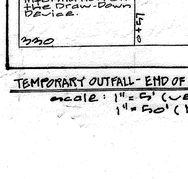
DATE	REVISION	BY	APP'R.
7-24-19	8 ADDED DETAILS FOR TEMPORARY OUTFALL AT END OF VALENCIA LANE	gt	DEV

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 19751, EXPIRATION DATE: MAY 26, 2018

12/14/17



SEDIMENT CONTROL NOTES AND DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS
D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	16 OF 25

F 17-059

GRAPHIC SCALE - PLAN VIEW
0 25 50 100
1" = 50'

N 561200
E 1351800
N 560950
E 1351100
N 560950
E 1351800
N 560,096

LOT 5 USE: OPEN SPACE
LOT 5 USE: OPEN SPACE
LOT 5 USE: OPEN SPACE
LOT 3 USE: OPEN SPACE
PARCEL M USE: NON-RESIDENTIAL
PARCEL D HOWARD RESEARCH AND DEVELOPMENT CORP.
PARCEL D HOWARD RESEARCH AND DEVELOPMENT CORP.
PARCEL N 2011 RESTORATION PHASING LINE USE: NON-RESIDENTIAL
LOT 4 USE: OPEN SPACE
LOT 4 HOWARD RESEARCH AND DEVELOPMENT CORP. USE: OPEN SPACE

MERRIWEATHER DRIVE (RELIGH AVENUE TYPE 3)
SYMPHONY WOODS ROAD (RELIGH AVENUE TYPE 3)
COOPERSIDE LI
MANGO TREE ROAD
VALENCIA LANE

6' CONC. WALK
10' MULTI-PURPOSE PATH
GUARDRAIL
PUBLIC SAN. S.D. E ETC. EASM'T. (CONTR.#24-4341-D)
PUBLIC STORM DRAIN EASEMENT
PUBLIC REVERTIBLE CONSTRUCTION EASEMENT
15% SLOPE
NAD 83

MB 16 MB 17 MB 18 MB 19 MB 20 MB 21 MB 22 MB 23 MB 24 MB 25 MB 41 MB 44 MB 45 MB 46 MB 47 MB 65 MB 66 MB 68
MBR 64 MBR 65
STUB A STUB B STUB C STUB D STUB E STUB F STUB G STUB H STUB I STUB J STUB K STUB L STUB M STUB N STUB O STUB P
M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M13 M14 M15 M16 M17 M18
I 1 I 2 I 3 I 4 I 5 I 6 I 7 I 8 I 9 I 10 I 11 I 12 I 13 I 14 I 15 I 16 I 17 I 18 I 19 I 20 I 21

MBR 64
MBR 65

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569

STATE OF MARYLAND GERALD DOUGLAS TURNBAUGH No. 26569 PROFESSIONAL ENGINEER

MBR's 64/65 TREAT A PART OF MANGO TREE ROAD THAT IS PUBLIC AND A PART OF VALENCIA LANE THAT IS PRIVATE. THEY WILL BE CONSTRUCTED WITH THE DEVELOPMENT OF SDP 17-027.

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/1/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND G. SCOTT SHANABERGER 10849 PROFESSIONAL LAND SURVEYOR

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/26/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1.11.18

GLW GUTSCHICK LITTLE & WEBER, P.A.
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3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.
7-24-19	6 REVISED MBR's, FHT, SHC, GRADES, WALK/RAMPS	gt.	DEV.
7-26-18	5 Rev. street trees, SD stub, Proposed wall	gt	JRC

DES: DEV | DRN.: JH | CHK.: MJT

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 12975
EXPIRATION DATE: MAY 28, 2018

STATE OF MARYLAND GORDON KENNETH GUTSCHICK No. 12975 PROFESSIONAL ENGINEER
12/14/17

STORMWATER MANAGEMENT LOCATION PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE BULK PARCELS D-15 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP – GRID	SHEET
DEC., 2017	36 – 01	17 OF 25

F 17-059

L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-17 – SWM Location.dwg, PLOTTED 12/14/2017 3:47 PM, PLOTTED BY: Luke Groom
L:\CADD\DRAWINGS\11071\11071-AREA 3\PLANS BY GLW\F 17-059 Plans\11071_AREA 3-F-17 – SWM Location.dwg, PLOTTED 12/14/2017 3:48 PM, LAST SAVED 12/14/2017 3:47 PM

LEGEND

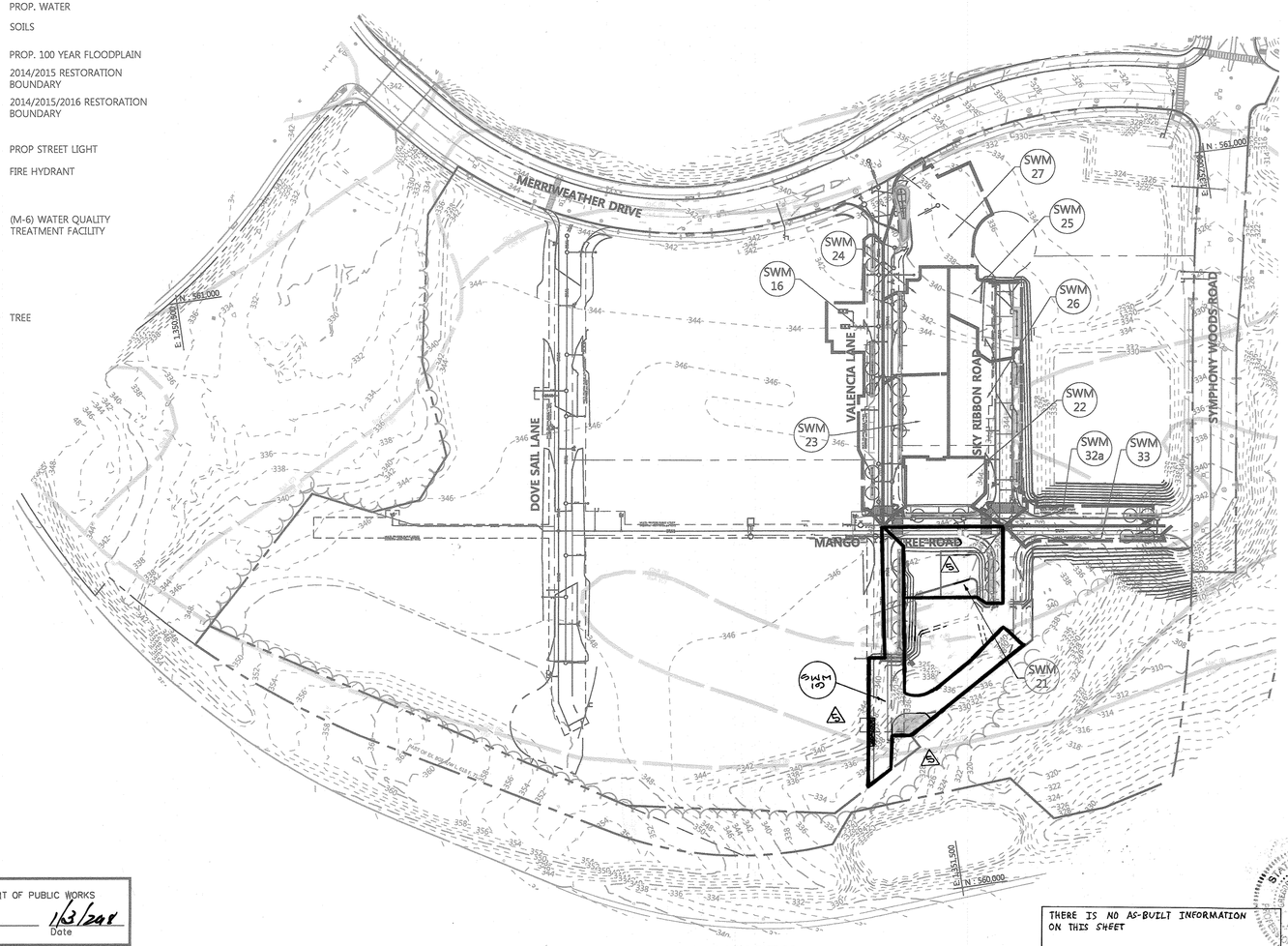
- LIMIT OF DISTURBANCE
- PROPERTY LINE
- PARCEL LINE
- 490 / 488 — EX. CONTOURS
- EX. 4" S.
- EX. 12" D.
- EX. 6" W.
- EX. SEWER
- EX. STORM DRAIN
- EX. WATER
- EX. TREELINE
- PROP. BUILDING
- PROP. CURB
- 490 / 488 — PROP. CONTOURS
- 8" S — PROP. EASEMENT
- PROP. SEWER
- 12" SD. — PROP. STORM DRAIN
- 8" W — PROP. WATER
- GUC (B) / GEC (B) — SOILS
- PROP. 100 YEAR FLOODPLAIN
- ERB — 2014/2015 RESTORATION BOUNDARY
- ERB — 2014/2015/2016 RESTORATION BOUNDARY
- PROP STREET LIGHT
- FIRE HYDRANT
- OPENED AREA / COVERED AREA WITH PANELS — (M-6) WATER QUALITY TREATMENT FACILITY
- TREE

(M-6) MODULAR MICRO-BIORETENTION SEQUENCE OF CONSTRUCTION

1. ONCE CONTRIBUTING DRAINAGE AREAS TO FACILITIES HAVE BEEN STABILIZED, EXCAVATE TO SUB-GRADE. SPECIAL CARE SHOULD BE TAKEN NOT TO DAMAGE THE NEWLY CONSTRUCTED STORM DRAIN OVERFLOW INLET AND ASSOCIATED OUTFALL PIPES.
2. ONCE VERIFIED SUB-GRADES HAVE BEEN ESTABLISHED, INSTALL CONTAINMENT WALL FOOTING AND WALL SYSTEM.
3. PLACE REQUIRED DEPTH OF GRAVEL JACKET OF NO.57 OR NO. 6 AGGREGATE IN BOTTOM OF EXCAVATION UP TO INVERT OF UNDERDRAIN & OVERFLOW PIPES.
4. INSTALL UNDERDRAINS AND ASSOCIATED PARTS & TIE PIPES TO INLET WALLS AT THEIR PRESCRIBED INVERT ELEVATIONS.
4. PLACE REMAINDER (7") OF THE 20" GRAVEL JACKET. CHECK FOR LEVELNESS.
5. PLACE 2" PEA GRAVEL LAYER OVER GRAVEL JACKET.
6. BACKFILL TOPSOIL FILTER MEDIA (TOTAL 24") IN LIFTS OF 12" TO 18". DO NOT COMPACT. INSTALL LANDSCAPE PLANTINGS.
7. INSTALL RIP RAP INFLOW PROTECTION AT ALL CURB OPENING * ROOF DRAIN INFLOW POINTS.
8. ADD 3" MULCH AND STONE LAYER.

(M-6) STANDARD MICRO-BIORETENTION SEQUENCE OF CONSTRUCTION

1. ONCE CONTRIBUTING DRAINAGE AREAS TO FACILITIES HAVE BEEN STABILIZED, EXCAVATE TO SUB-GRADE. SPECIAL CARE SHOULD BE TAKEN NOT TO DAMAGE THE NEWLY CONSTRUCTED STORM DRAIN OVERFLOW INLET AND ASSOCIATED OUTFALL PIPES.
2. ONCE VERIFIED SUB-GRADES HAVE BEEN ESTABLISHED, PLACE REQUIRED DEPTH OF GRAVEL JACKET OF NO.57 OR NO. 6 AGGREGATE IN BOTTOM OF EXCAVATION UP TO INVERT OF UNDERDRAIN & OVERFLOW PIPES.
3. PLACE 3' WIDE STRIPS OF FILTER FABRIC DOWN ON 3" GRAVEL LAYER TO SUPPORT UNDERDRAIN SYSTEM. PLACE UNDERDRAINS IN CENTER OF FABRIC & TIE PIPES TO INLET WALLS AT THEIR PRESCRIBED INVERT ELEVATIONS.
4. PLACE REMAINDER (7") OF THE 10" GRAVEL JACKET. CHECK FOR LEVELNESS.
5. PLACE 2" PEA GRAVEL LAYER OVER GRAVEL JACKET.
6. BACKFILL TOPSOIL FILTER MEDIA (TOTAL 24") IN LIFTS OF 12" TO 18". DO NOT COMPACT. INSTALL LANDSCAPE PLANTINGS.
7. INSTALL RIP RAP INFLOW PROTECTION AT ALL CURB OPENING INFLOW POINTS.
8. SEED OR SOD 3:1 SIDE SLOPES. ADD 3" MULCH LAYER.



PLAN VIEW

100 0 100 200 300

SCALE: 1"=100'

TABLE B.4.1 MATERIALS SPECIFICATIONS FOR MICRO-BIORENTENTION, RAIN GARDENS & LANDSCAPE INFILTRATION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A, TABLE A.4	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL [2' TO 4" DEEP]	LOAMY SAND (60 - 65%) & COMPOST (35 – 40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
CURTAIN DRAIN	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2" TO 5"	
GEOTEXTILE		N/A	PE TYPE 1 NONWOVEN
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 8" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH ¼-INCH GALVANIZED HARDWARE CLOTH
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'c = 3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 350.R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

STORMWATER MANAGEMENT SUMMARY CHART

Drainage Area #	Drainage Area (s.f.)	Imp. Area (s.f.)	ESDv Req. (c.f.)	WQv Req. (c.f.)	Pe Req. (inches)	WQv Prov. (c.f.)	Pe Prov. (inches)	REv Prov. (c.f.)	CPv Prov. (c.f.)	(M-6) Facilities Within Drainage Area
SWM 16	15,598	15,077	2,717	907	1.00	967	1.07	0	0	Facilitiies MB16,MB17, MB18, MB19 & MB20
~~SWM 20~~	~~16,950~~	~~16,575~~	~~2,952~~	~~997~~	~~1.00~~	~~1,000~~	~~1.00~~	~~0~~	~~0~~	~~Facilities MB64 & MB65~~
SWM 21	~~13,760~~	~~13,341~~	~~2,396~~	~~803~~	~~1.00~~	~~918~~	~~1.14~~	0	0	Facility MB66
SWM 22	11,860	11,584	2,066	697	1.00	700	1.00	0	0	Facility MB24
SWM 23	13,978	13,603	2,434	819	1.00	833	1.02	0	0	Facility MB23
SWM 24	13,192	12,893	2,298	776	1.00	776	1.00	0	0	Facility MB22
SWM 25	~~10,203~~	~~9,733~~	~~1,777~~	~~585~~	~~1.00~~	~~648~~	~~1.14~~	0	0	Facility MB44
SWM 26	~~22,450~~	~~21,344~~	~~3,910~~	~~1,284~~	~~1.00~~	~~1,423~~	~~1.11~~	0	0	Facilities MB45, MB46 & MB47
SWM 27	20,070	18,534	3,496	1,115	1.00	1,215	1.09	0	0	Facilities MB21 & MB41
SWM 32a	5,671	5,521	988	332	1.00	333	1.00	0	0	Facility MB25
SWM 33	4,873	4,761	849	286	1.00	300	1.05	0	0	Facility MB68
SWM 10	20,002	24,705	4,529	1,492	1.00	1,744	1.17	0	0	Facilities MB61 & MB62
SWM 21	15,754	15,336	2,744	923	1.00	945	1.02	0	0	Facilities MB66
SWM 25	10,476	9,171	1,825	582	1.00	823	1.49	0	0	Facilities MB44
SWM 26	23,078	19,800	4,010	1,302	1.00	1,879	1.57	0	0	Facilities MB45, MB46 & MB47

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

a. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

b. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR, DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

c. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED. THE OWNER SHALL INSPECT CONCRETE CONTAINMENT WALLS ANNUALLY. REPAIR AND PATCH CONTAINMENT WALLS AS NEEDED PER HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

d. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

e. PERIODICALLY REMOVE TRASH & DEBRIS AS IT ACCUMULATES.

f. REMOVE AND REPLACE TOP FEW INCHES OF FILTER MEDIA WHEN WATER PONDS FOR MORE THAN 48 HRS.

g. PRUNE AND REPLACE DEAD VEGETATION AS NECESSARY.

h. WATER VEGETATION DURING DRY PERIODS.

NOTE:

1. THE (M-6) MICRO-BIORETENTION FACILITIES SHOWN ON THESE PLANS WILL BE PRIVATELY OWNED AND MAINTAINED.
2. (REv) GROUNDWATER RECHARGE VOLUME AND (CPv) CHANNEL PROTECTION VOLUME MANAGEMENT ARE BEING PROVIDED IN SDP-17-027.

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/11/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM.
NOTE: THERE IS NO "AS-BUILT" INFORMATION ON THIS SHEET.
NAME: GERALD D. TURNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

9-15-23

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. 26569, EXPIRATION DATE: 7/18/19.

12-15-17
DATE

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

PROFESSIONAL ENGR. NO. 26569

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1/19/18

Chief, Development Engineering Division — Date 1-11-18

DAFT McCUNE WALKER INC

501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.
7.24.19	Update Esd Widths, TW & BW Elevs & Sta. accordingly, Add MB61 & MB62	WDJ	

PREPARED FOR:

THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

STORMWATER MANAGEMENT DRAINAGE AREA MAP

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-2, D-3, D-4, D-5, D-6, D-10 & D-14

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
SCALE	NT	11071
DATE	TAX MAP – GRID	SHEET
AUG., 2017	36 – 01	18 OF 25

F 17-059

A:\SIGNS\SIGNS BRIDGEHEAD FILES\SHEET FILES\F-17-059_PLAN PHASE 1\SIGNS_SWM_CA_F-17-059_PH1.DWG 12/15/2017 8:09 AM

BORING LOG — BORING SWM-114 (PAGE 1 OF 1)

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/16/16 — COMPLETED 5/16/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/16/16		0	10.0		Dry	
5/17/16		24	10.0		Dry	

SURFACE EL = 335.3 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.0 / 335.3	S1	7-12-15-9	27	SM	Crushed Stone = 2"; Moist, Dense, Black Silty SAND, trace Rock Fragments (FILL)	3.50				
2.0 / 333.3	S2	7-8-8-8	16	SM	Moist, Medium Dense, Brown Silty SAND, trace Rock Fragments and mica USDA: Sandy Loam					
	S3	7-7-7-8	14							
	S4	10-10-16-19	26							
	S5	11-11-16-20	27							
10.0 / 325.3					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-120 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/11/16 — COMPLETED 5/11/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/11/16		0	18.9		Dry	
5/12/16		24	18.9		Dry	

SURFACE EL = 340.8 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 340.7	S1	6-6-5-4	11	SM	Crushed Stone = 2"; Moist, Medium Dense, Brown Silty SAND, trace Rock Fragments and mica (FILL)					
2.0 / 338.8	S2	6-4-4-6	8	SM	Moist, Loose to Medium Dense, Brown Silty SAND, trace Rock Fragments and mica USDA: Sandy Loam					
	S3	3-3-5-5	8							
	S4	5-6-8-10	14							
	S5	4-5-5-4	10							
	S6	6-10-10	20							
18.5 / 322.3	S7	50/5"	50/5"	SM	Decomposed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
18.9 / 321.9					Terminated at 18.9 feet					

REMARKS:

BORING LOG — BORING SWM-127 (PAGE 1 OF 1)

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Materials and Construction Inspection and Testing
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/10/16 — COMPLETED 5/10/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/10/16		0	20.0		13.6	332.8
5/11/16		24	20.0		12.1	334.3

SURFACE EL = 346.4 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 346.2	S1	2-4-4-3	8	SM	Topsoil = 2"; Moist, Loose, Brown Silty SAND, trace mica (FILL)		13			
2.0 / 344.4	S2	1-2-2-4	4	CL-ML	Moist, Soft, Brown Sandy Silty CLAY		16	21	28	7
4.0 / 342.4	S3	4-8-15-50	23	SM	Moist, Medium Dense, Tan/Brown Silty SAND USDA: Sandy Loam					
6.0 / 340.4	S4	50/5"	50/5"	SM	Decomposed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
8.0 / 338.4	S5	50/3"	50/3"	SM	Highly Weathed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
	S6	50/3"	50/3"							
18.5 / 327.9	S7	16-25-28	53	SM	Decomposed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
20.0 / 326.4					Terminated at 20.0 feet					

REMARKS:

BORING LOG — BORING SWM-128 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 06-24-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/14/16 — COMPLETED 6/14/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/14/16		0	10.0	10.5	Dry	
6/15/16		24	10.0		Dry	

SURFACE EL = 342.6 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.3 / 342.4	S1	6-6-5-6	11	SM	Topsoil = 3"; Moist, Loose, Brown Silty SAND, trace Rock Fragments (FILL)		1			
2.0 / 340.6	S2	2-2-2-2	4	ML	Moist, Soft to Medium Stiff, Brown Sandy SILT, trace Rock Fragments USDA: Loam		19			
	S3	1-1-2-2	3							
	S4	2-2-3-3	5				26			
8.0 / 334.6	S5	2-4-4-4	8	SM	Moist, Loose, Brown Silty SAND, trace Rock Fragments		18			
10.0 / 332.6					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-129 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/11/16 — COMPLETED 5/11/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/11/16		0	10.0		Dry	
5/12/16		24	10.0		Dry	

SURFACE EL = 345.1 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 345.0	S1	4-4-3-3	7	SM	Crushed Stone = 2"; Moist, Loose, Brown Silty SAND					
	S2	2-2-3-3	5							
4.0 / 341.1	S3	4-5-7-15	12	SM	Moist, Medium Dense, Tan Silty SAND USDA: Sandy Loam					
6.0 / 339.1	S4	4-26-30-34	56	SM	Decomposed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
8.0 / 337.1	S5	21-24-22-22	46	SM	Moist, Very Dense, Tan Sandy SILT, trace mica					
10.0 / 335.1					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-130 (PAGE 1 OF 1)

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/11/16 — COMPLETED 5/11/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/11/16		0	9.9		Dry	
5/12/16		24	9.9		Dry	

SURFACE EL = 341.6 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 341.4	S1	4-3-3	6	SM	Asphalt = 2"; Moist, Loose to Medium Dense, Brown Silty SAND					
3.0 / 338.6	S2	4-6-11-14	17	SM	Moist, Medium Dense, Tan Silty SAND USDA: Sandy Loam					
	S3	9-14-12-12	26							
	S4	13-15-15-20	30							
8.0 / 333.6	S5	29-34-38-50/5"	50/5"	SM	Decomposed Rock: Sampled as Moist, Very Dense, Tan Silty SAND, trace mica					
9.9 / 331.7					Terminated at 9.9 feet					

REMARKS:

BORING LOG — BORING SWM-134 (PAGE 1 OF 1)

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Telephone No. (410) 363-1555
www.balterco.com

CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/9/16 — COMPLETED 6/9/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/9/16		0	10.0	7.6	Dry	
6/10/16		24	10.0	10.1	Dry	

SURFACE EL = 324.4 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.1 / 324.3	S1	3-5-4-5	9	ML	Topsoil = 1"; Moist, Stiff, Brown Sandy SILT, trace Rock Fragments and mica					
	S2	4-5-5-4	10							
	S3	3-3-5-5	8							
	S4	5-5-3-6	8							
8.0 / 316.4	S5	3-3-4-4	7	SM	Moist, Loose, Brown Silty SAND, trace mica					
10.0 / 314.4					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-135 (PAGE 1 OF 1)

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/9/16 — COMPLETED 6/9/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/9/16		0	10.0	9.8	Dry	
6/10/16		24	10.0		Dry	

SURFACE EL = 332.9 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.1 / 332.8	S1	2-2-3-4	5	ML	Topsoil = 1"; Moist, Loose to Medium Dense, Brown Sandy SILT, trace Rock Fragments and mica (FILL)					
	S2	4-4-6-6	10							
4.0 / 328.9	S3	2-3-3-3	6	ML	Moist, Loose to Very Loose, Brown Sandy SILT, trace Rock Fragments and mica	1.25				
	S4	3-4-6-8	10			3.50				
	S5	1-1-2-3	3							
10.0 / 322.9					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-136 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/14/16 — COMPLETED 6/14/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/14/16		0	5.5	5.4	Dry	
6/15/16		24	5.5		Dry	

SURFACE EL = 333.6 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.0 / 333.6	S1	16-19-12-10	31	SM	Topsoil = 0"; Moist, Dense, Gray Silty SAND, trace Rock Fragments and mica (FILL)					
2.0 / 331.6	S2	8-3-3-5	6	SM	Moist, Loose, Brown Silty SAND, trace mica					
4.0 / 329.6	S3	3-50/2"	50/2"	SM	Highly Weathered Rock: Sampled as Moist, Very Dense, Black/Brown Silty SAND, trace Rock Fragments and mica					
5.5 / 328.1	S4	50/0"	50/0"		Terminated at 5.5 feet					

REMARKS:

BORING LOG — BORING SWM-137 (PAGE 1 OF 1)

The Robert B. Balter Company
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Telephone No. (410) 363-1555
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 06-24-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/13/16 — COMPLETED 6/13/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/13/16		0	13.6	13.6	13.5	323.1
6/14/16		24	13.6		13.0	323.6

SURFACE EL = 336.6 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.3 / 336.4	S1	10-6-4-3	10	SM	Crushed Stone = 3"; Moist, Loose, Brown Silty SAND, trace Rock Fragments and mica (FILL)					
2.0 / 334.6	S2	4-5-5-5	10	SC	Moist, Loose, Brown Clayey SAND USDA: Sandy Loam					
4.0 / 332.6	S3	3-3-3-3	6	SM	Moist, Loose, Brown Silty SAND, trace mica					
	S4	3-3-4-6	7							
8.0 / 328.6	S5	15-28-28-50/4"	50/4"	SM	Decomposed Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica					
	S6	50/1"	50/1"							
13.6 / 323.0					Terminated at 13.6 feet					

REMARKS:

BORING LOG — BORING SWM-138 (PAGE 1 OF 1)

The Robert B. Balter Company
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/10/16 — COMPLETED 5/10/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/10/16		0	8.0		Dry	
5/11/16		24	8.0		Dry	

SURFACE EL = 344.1 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 343.9	S1	7-6-7-5	13	SM	Topsoil = 2"; Moist, Medium Dense, Brown Silty SAND, trace Rock Fragments					
2.0 / 342.1	S2	11-50		SM	Decomposed Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica					
4.0 / 340.1	S3	50/4"	50/4"	SM	Highly Weathered Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica USDA: Sand					
	S4	50/2"	50/2"							
8.0 / 336.1	S5	50/0"	50/0"		Terminated at 8.0 feet					

REMARKS:

BORING LOG — BORING SWM-151 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 05-23-16
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 5/13/16 — COMPLETED 5/13/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
5/13/16		0	7.5		Dry	
5/16/16		72	7.5		7.5	332.4

SURFACE EL = 339.9 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.3 / 339.7	S1	3-4-30-50/4"	50/4"	SM	Topsoil = 3"; Moist, Dense, Brown Silty SAND					
1.0 / 338.9	S2	50/4"	50/4"	SM	Decomposed Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica USDA: Loamy Sand					
4.0 / 335.9	S3	50/3"	50/3"	SM	Highly Weathred Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica					
7.5 / 332.4	S4	50/0"	50/0"		Terminated at 7.5 feet					

REMARKS:

BORING LOG — BORING SWM-152 (PAGE 1 OF 1)

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Telephone No. (410) 363-1555
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 06-24-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/13/16 — COMPLETED 6/13/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/13/16		0	10.5	2.8	Dry	
6/14/16		24	10.5	7.3	Dry	

SURFACE EL = 339.7 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.2 / 339.5	S1	6-6-5-10	11	SM	Topsoil = 2"; Moist, Medium Dense, Brown Silty SAND, trace mica USDA: Loamy Sand					
	S2	9-8-7-9	15							
	S3	7-6-5-3	11							
	S4	4-5-11-11	16							
8.0 / 331.7	S5	16-26-32-50	58	SM	Decomposed Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica					
	S6	50	50							
10.5 / 329.2					Terminated at 10.5 feet					

REMARKS:

BORING LOG — BORING SWM-153 (PAGE 1 OF 1)

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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 06-24-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/13/16 — COMPLETED 6/13/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/13/16		0	10.8	10.8	Dry	
6/14/16		24	10.8		Dry	

SURFACE EL = 339.7 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.1 / 339.6	S1	26-29-17-9	46	SM	Crushed Stone = 2"; Moist, Dense, Brown Silty SAND, trace Rock Fragments and mica (FILL)					
2.0 / 337.7	S2	5-5-5-7	10	SM	Moist, Loose, Silty SAND, trace Rock Fragments and mica USDA: Loamy Sand					
	S3	3-2-4-6	6							
6.0 / 333.7	S4	6-10-12-14	22	SM	Moist, Medium Dense, Silty SAND, trace Rock Fragments and mica					
8.0 / 331.7	S5	10-26-32-37	58	SM	Decomposed Rock: Sampled as Moist, Very Dense, Brown Silty SAND, trace Rock Fragments and mica					
	S6	28-50/4"	50/4"							
10.8 / 328.9					Terminated at 10.8 feet					

REMARKS:

BORING LOG — BORING SWM-154 (PAGE 1 OF 1)

The Robert B. Balter Company
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Telephone No. (410) 363-1555
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/13/16 — COMPLETED 6/13/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/13/16		0	10.0	6.4	Dry	
6/14/16		24	10.0		Dry	

SURFACE EL = 340.1 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.0 / 340.1	S1	23-16-9-8	25	SM	Topsoil = 0"; Moist, Medium Dense, Brown Silty SAND, trace Rock Fragments and mica (FILL)					
2.0 / 338.1	S2	5-8-10-8	18	SM	Moist, Medium Dense, Brown Silty SAND USDA: Sand					
4.0 / 336.1	S3	3-3-4-3	7	SC	Moist, Loose, Brown Clayey SAND	1.50				
6.0 / 334.1	S4	4-5-10-9	15	SM	Moist, Loose to Medium Dense, Brown Silty SAND					
	S5	3-5-4-4	9							
10.0 / 330.1					Terminated at 10.0 feet					

REMARKS:

BORING LOG — BORING SWM-155 (PAGE 1 OF 1)

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
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CLIENT The Howard Hughes Corporation — PROJECT NAME Crescent Area 3 SWM
PROJECT LOCATION Columbia, MD — PROJECT NUMBER 16770-0 — DATE TESTED 06-24-2016
RIG ATV R-Tired CME 750 — METHOD Hollow Stem Auger — SAMPLER: 2-in OD SS — HAMMER: 140# — FALL: 30" — AUTO? Yes
DATE STARTED 6/10/16 — COMPLETED 6/10/16
DRILLER Blake Strawderman — HELPER Dustin Hurd
REVIEWED BY J. Cooper — SITE DELAYS
LOCATION As Staked — BULK SAMPLES

WATER LEVELS: DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)
6/10/16		0	12.0	7.6	Dry	
6/13/16		72	12.0	12.0	Dry	

SURFACE EL = 339.6 ft

Stratum Change Depth/El (ft)	Sample	SPT Blows/6"	N Value	USCS	Material Description	PP (tsf)	NMC %	PL	LL	PI
0.0 / 339.6	S1	7-13-8-6	21	SM	Topsoil = 0"; Moist, Medium Dense, Brown Silty SAND, trace Rock Fragments (FILL)					
2.0 / 337.6	S2	4-4-5-5	9	ML	Moist, Medium Stiff to Stiff, Brown Sandy SILT, trace mica USDA: Silt Loam					
	S3	3-3-5-6	8			2.25				
6.0 / 333.6	S4	4-4-3-5	7	SM	Moist, Loose, Brown Silty SAND, trace mica					
	S5	2-2-5-3	7							
	S6	3-4-5-5	9							
12.0 / 327.6					Terminated at 12.0 feet					

REMARKS:

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 1-19-18
Chief, Development Engineering Division — Date 1.11.18

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET
10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER — 9.15.23

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. 26569, EXPIRATION DATE: 7/18/19.

12-15-17
DATE

PROFESSIONAL ENGR. NO. 26569

DMW — DAFT McCUNE WALKER INC
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

DES.	DRN.	CHK.	DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

SOIL BORING LOGS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-2, D-3, D-4, D-5, D-6, D-10 & D-14

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

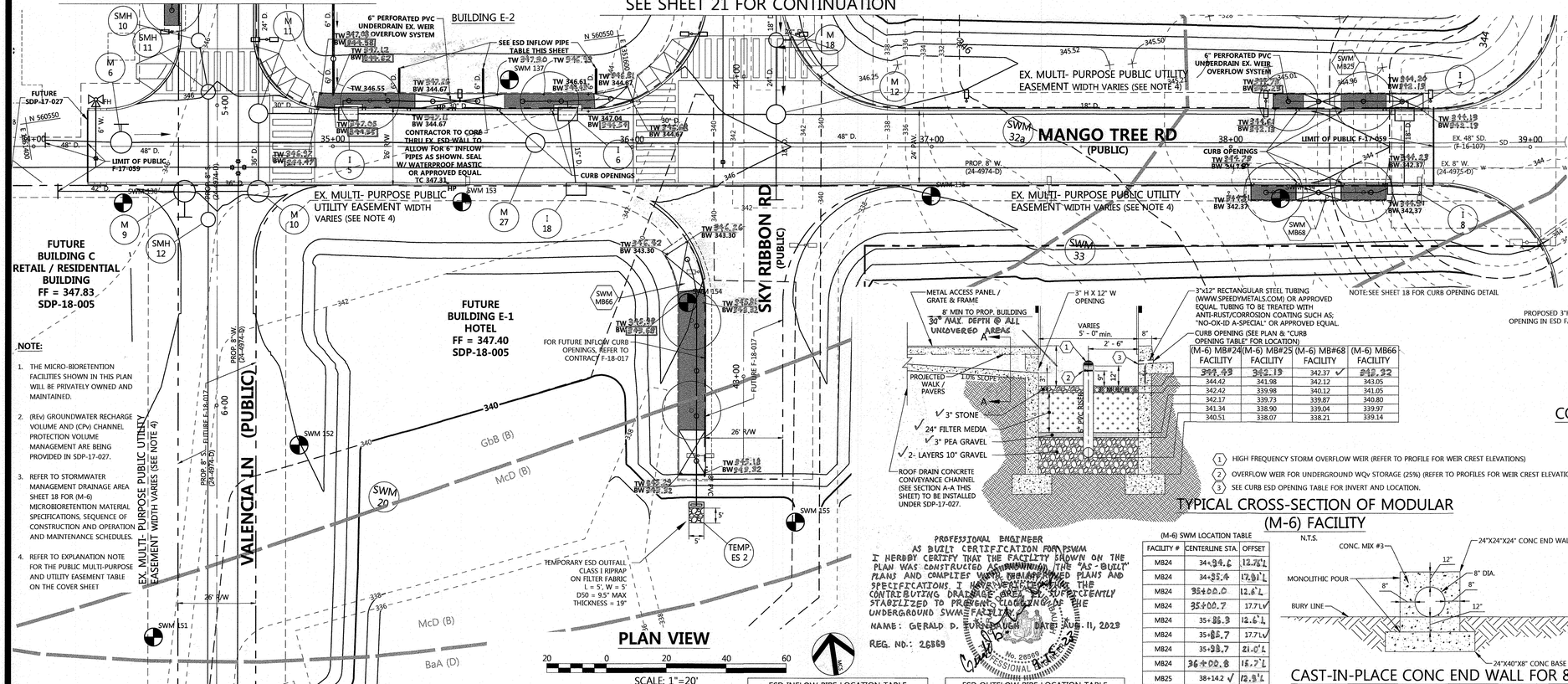
SCALE	ZONING	G. L. W. FILE No.
SCALE	NT	11071
DATE	TAX MAP - GRID	SHEET
AUG., 2017	36 - 01	19 OF 25

F 17-059

A:\04038\04038.B0\ENG\RCAD FILES\SHEET FILES\F-17-059 PLAN PHASE 1\04038_SWM_F_BORING LOGS PH1.DWG 12/15/2017 8:08 AM

SEE SHEET 22 FOR CONTINUATION

SEE SHEET 21 FOR CONTINUATION



PLAN VIEW

SCALE: 1"=20'

NOTE:

1. THE MICRO-BIORETENTION FACILITIES SHOWN IN THIS PLAN WILL BE PRIVATELY OWNED AND MAINTAINED.
2. (REv) GROUNDWATER RECHARGE VOLUME AND (CPv) CHANNEL PROTECTION VOLUME MANAGEMENT ARE BEING PROVIDED IN SDP-17-027.
3. REFER TO STORMWATER MANAGEMENT DRAINAGE AREA SHEET 18 FOR (M-6) MICROBIORETENTION MATERIAL SPECIFICATIONS, SEQUENCE OF CONSTRUCTION AND OPERATION AND MAINTENANCE SCHEDULES.
4. REFER TO EXPLANATION NOTE FOR THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT TABLE ON THE COVER SHEET

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.

G. Scott Shanaberger 10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND — G. SCOTT SHANABERGER — No. 10849 — PROFESSIONAL LAND SURVEYOR

ESD INFLOW PIPE LOCATION TABLE

FACILITY NO.	STATION	OFFSET	INVERT	PIPE DIA. (IN.)
MB24	43+31.41 01.94 12.69	22.30' LT 21.67' LT 21.67' LT	343.55	6"

ESD OUTFLOW PIPE LOCATION TABLE

FACILITY NO.	STATION	OFFSET	INVERT	PIPE DIA. (IN.)
MB24 *	35+05.16	12.6'LT	340.75	8" ✓
	35+28.12	12.6'LT	340.17	8" ✓
MB25 *	38+58.00	12.9'LT	338.49	8" ✓
MB64	6+91.14	27.01' LT	339.44	10"
MB68 **	38+62.07	15.6' RT	338.76	8" ✓
MB66 **	42+68.02	15.69' RT	339.87	8"

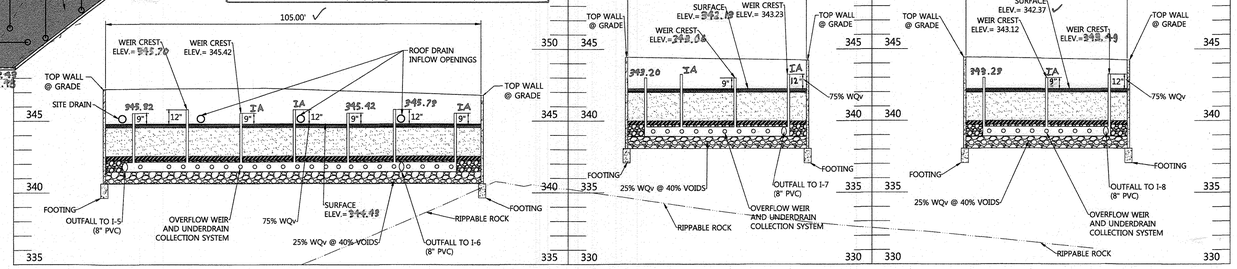
* DIRECT INLET WALL PENETRATION
** END CONDITION - OUTFALL

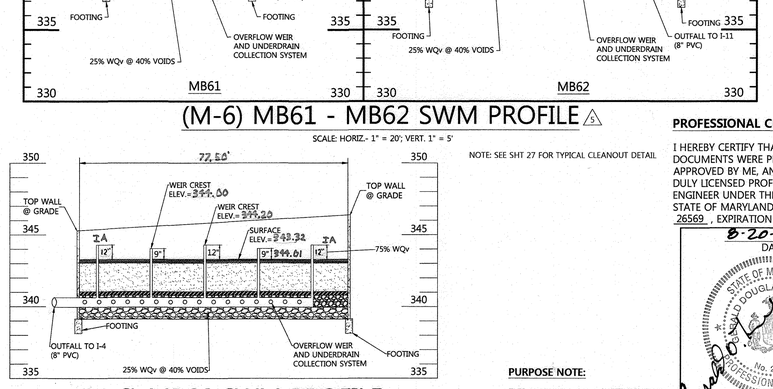
ESD INFLOW PIPE FROM BUILDING E-2 ROOF DRAINAGE

FACILITY NO.	℄ ROAD STATIONS	OFFSET	INVERT *	PIPE DIA. (IN.)
MB 24	35+00.18	17.67' LT.	344.92	6"
	34+21.80	17.80' LT.	349.74	1'X0.8' TRENCH DRAIN
	35+48.83	17.74' LT.	344.72	1'X0.8' TRENCH DRAIN
	35+56.27	17.76' LT.	344.70	1'X0.8' TRENCH DRAIN

* REFLECTS INSIDE WALL FACE OF ESD PENETRATION

849.68 - ENGINEER'S FIELD ADJUSTMENT
IA: INACCESSIBLE DUE TO COVERED PANEL
"IA" MEANS "INACCESSIBLE FOR MEASURING ELEVATION"

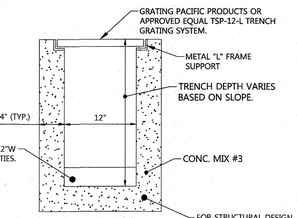




MANGO TREE RD
ESD OPENING FROM CURB TABLE

ESD	INSIDE ELEV @ ESD BOX	CENTERLINE ROADWAY STATION	INSIDE ELEV @ ESD BOX	ESD
	LEFT		RIGHT	
MB24	346.89	35+10.58	344.14	MB68
	346.43	35+25.26	343.92	
	346.49	35+40.30	343.77	
	346.98	35+55.53	343.57	
	346.45	35+72.99		
	346.87	35+89.53		
	348.92	38+28.57		
MB25	348.74	38+37.09		
	348.66	38+51.26		

*FOR CURB FLOWLINE STATIONS AND ELEVATIONS SEE ROAD PLAN SHEETS 3 AND 4.



CROSS-SECTION A-A
ROOF DRAIN CONCRETE CONVEYANCE CHANNEL DETAIL
SCALE: 1"=1.0'

(M-6) MB#24 FACILITY	(M-6) MB#25 FACILITY	(M-6) MB#68 FACILITY	(M-6) MB66 FACILITY
344.43	342.15	342.37 ✓	342.32
344.42	341.98	342.12	343.05
342.42	339.98	340.12	341.05
342.17	339.73	339.87	340.80
341.34	338.90	339.04	339.97
340.51	338.07	338.21	339.14

TYPICAL CROSS-SECTION OF MODULAR (M-6) FACILITY

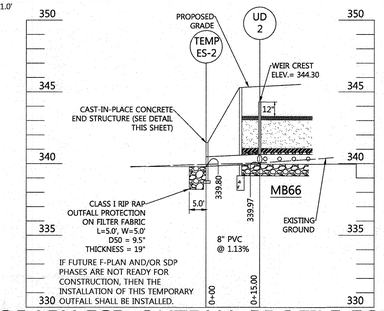
1. HIGH FREQUENCY STORM OVERFLOW WEIR (REFER TO PROFILE FOR WEIR CREST ELEVATIONS)
2. OVERFLOW WEIR FOR UNDERGROUND WQv STORAGE (25%) (REFER TO PROFILES FOR WEIR CREST ELEVATIONS)
3. SEE CURB ESD OPENING TABLE FOR INVERT AND LOCATION.

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE INSPECTED THE CONTRIBUTING DRAINAGE AREA TO SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
NAME: GERALD D. DOUGLASS DUNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569
STATE OF MARYLAND — GERALD DOUGLASS DUNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

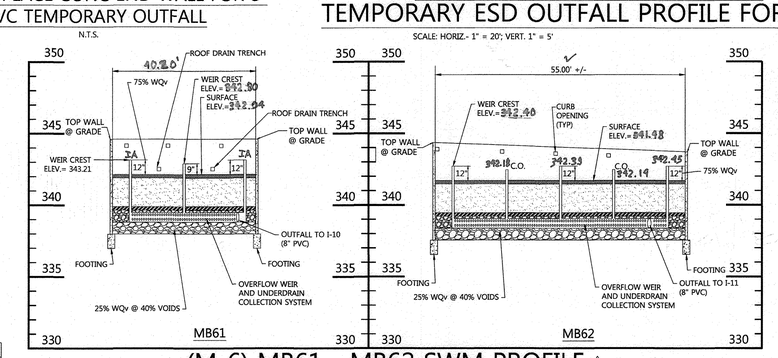
(M-6) SWM LOCATION TABLE

FACILITY #	CENTERLINE STA.	OFFSET
MB24	34+94.6	12.7'L
	35+55.4	17.9'L
	35+00.0	12.6'L
	35+00.7	17.7'L
	35+86.3	12.6'L
	35+85.7	17.7'L
	35+98.7	21.0'L
	36+00.8	15.7'L
MB25	38+14.2 ✓	12.9'L
	38+14.2 ✓	17.8'L
	38+14.2 ✓	17.8'L
	38+64.8	12.9'L
	38+64.2 ✓	17.8'L
MB68	38+06.2	12.7'R
	38+06.3	17.7'R
	38+51.2	12.7'R
	38+51.2	17.7'R
MB66	42+67.9	12.7'L
	42+67.4	21.7'L
	43+28.5	12.8'L
	43+25.42	21.8'L
	43+41.4	26.0'L
	43+46.6	18.8'L

CAST-IN-PLACE CONC END WALL FOR 8" PVC TEMPORARY OUTFALL



TEMPORARY ESD OUTFALL PROFILE FOR MB66



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. 26569, EXPIRATION DATE: 7/18/21

8-20-19
DATE

STATE OF MARYLAND — GERALD DOUGLASS DUNBAUGH — No. 26569 — PROFESSIONAL ENGINEER

PROFESSIONAL ENGR. NO. 26569

PURPOSE NOTE:

THIS SHEET REPLACES A SHEET SIGNED ON 01-19-2018 AND MODIFIES THE LOCATION OF THE ESD DEVICES TO REFLECT REVISIONS MADE TO SDP-18-005.

LEGEND

- LIMIT OF DISTURBANCE
- PROPERTY LINE
- PARCEL LINE
- 490 EX. CONTOURS
- 488
- EX. 4" S. EX. SEWER
- EX. 12" D. EX. STORM DRAIN
- EX. 6" W. EX. WATER
- EX. TREELINE
- PROP. BUILDING
- PROP. CURB
- 490 PROP. CONTOURS
- 488
- PROP. EASEMENT
- 8" S PROP. SEWER
- 12" SD. PROP. STORM DRAIN
- 8" W PROP. WATER
- GbC (B) SOILS
- GbC (B)
- PROP STREET LIGHT
- FIRE HYDRANT
- OPENED AREA / COVERED AREA WITH PANELS (M-6) WATER QUALITY TREATMENT FACILITY
- SWM 111 SOIL BORING
- TREE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 9/12/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 10/25/19

Chief, Development Engineering Division — Date 10.29.19

DAFT McCUNE WALKER INC
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

DES. | DRN. | CHK.

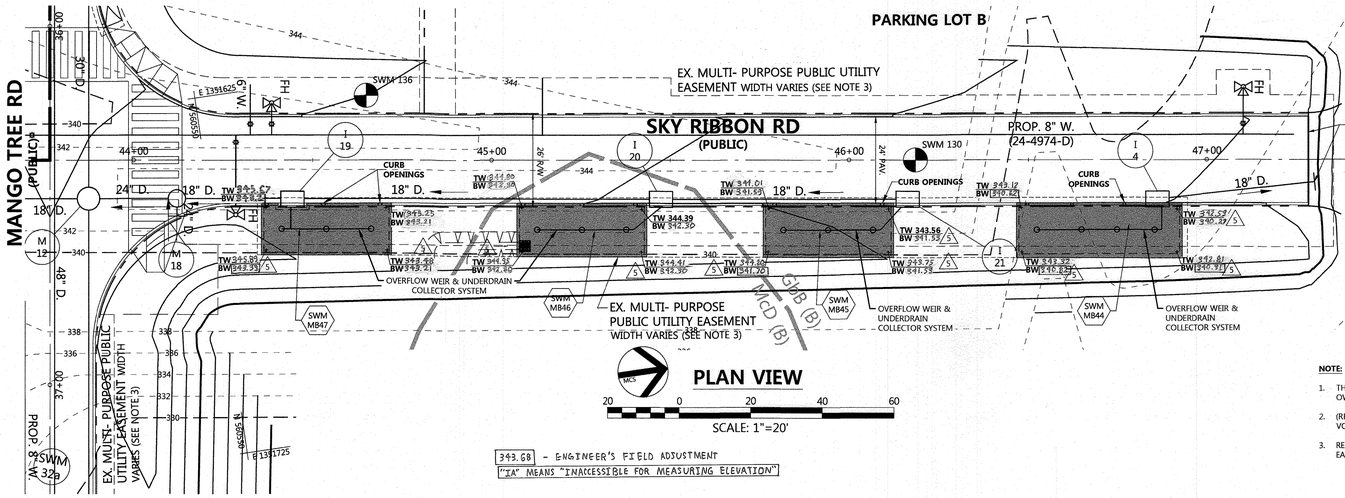
DATE	REVISION	BY	APP'R.
08/15/2019	6 UPDATE ESD WIDTHS, TW & BW ELEV's, & STATION OFFSETS	ACP/PAB	

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

REVISED STORMWATER MANAGEMENT PLAN
6 REPLACEMENT SHEET
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-2, D-3, D-4, D-5, D-6, D-10 & D-14
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
SCALE	NT	11071
DATE	TAX MAP - GRID	SHEET
AUG., 2017	36 - 01	20 OF 25

F 17-059



343.68 - ENGINEER'S FIELD ADJUSTMENT
"IA" MEANS "INACCESSIBLE FOR MEASURING ELEVATION"

NOTE:

1. THE MICRO-BIORETENTION FACILITIES SHOWN IN THIS PLAN WILL BE PRIVATELY OWNED AND MAINTAINED.
2. (REv) GROUNDWATER RECHARGE VOLUME AND (CPv) CHANNEL PROTECTION VOLUME MANAGEMENT ARE BEING PROVIDED IN SDP-17-027.
3. REFER TO EXPLANATION NOTE FOR THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT TABLE ON THE COVER SHEET

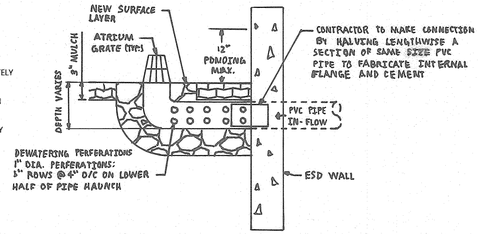
NOTE: SEE SHEET 18 FOR CURB OPENING DETAIL

CURB OPENINGS

	CENTERLINE ROADWAY STATION	
	RIGHT	LEFT
MB47	44+38 (5)	(5) NA
	44+59.8 (5)	
	44+69.4 (5)	
MB46	45+13.7 (5)	
	45+23.9 (5)	
	45+49.4 (5)	
	45+82.7 (5)	
MB45	45+92.7 (5)	
	46+11.4	
	46+32.1	
MB44	46+51.4 (5)	
	46+63.7 (5)	
	46+77.6 (5)	
	46+91.2 (5)	

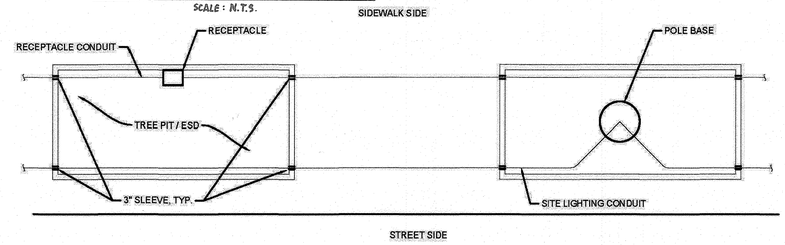
LEGEND

- LIMIT OF DISTURBANCE
- PROPERTY LINE
- PARCEL LINE
- 490 EX. CONTOURS
- 488 EX. CONTOURS
- EX. 4" S. EX. SEWER
- EX. 12" D. EX. STORM DRAIN
- EX. 6" W. EX. WATER
- EX. TREELINE
- PROP. BUILDING
- PROP. CURB
- 490 PROP. CONTOURS
- 488 PROP. CONTOURS
- 8" S PROP. EASEMENT
- PROP. SEWER
- 12" SD. PROP. STORM DRAIN
- 8" W PROP. WATER
- GbC (B) SOILS
- GbC (B) SOILS
- PROP STREET LIGHT
- FIRE HYDRANT
- OPENED AREA / COVERED AREA WITH PANELS (M-6) WATER QUALITY TREATMENT FACILITY
- SWM 111 SOIL BORING



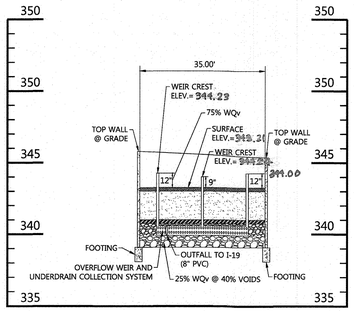
EV. INFLOW MODIFICATION WERE EV. INFLOW BECOMES BURIED DUE TO RAISED FILTER/MULCH BED (TYP.)

SCALE: N.T.S.



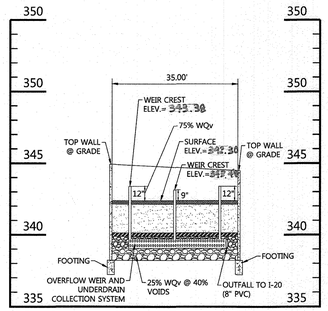
MODULAR (M-6) FACILITY CONDUIT PENETRATION

SCALE: N.T.S.



(M-6) MB47 SWM PROFILE

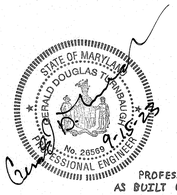
SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



(M-6) MB46 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

(M-6) SWM LOCATION TABLE		
FACILITY #	CENTERLINE STA.	OFFSET
MB47	44+37.26	12.76' R
MB47	44+37.21	25.88' R
MB47	44+72.39	12.50' R
MB47	44+72.35	26.68' R
MB46	45+08.73	12.51' R
MB46	45+08.69	26.11' R
MB46	45+48.91	12.63' R
MB46	45+48.79	26.22' R
MB45	45+77.54	12.74' R
MB45	45+77.38	26.93' R
MB45	46+13.62	12.81' R
MB45	46+13.57	26.33' R
MB44	46+48.19	12.47' R
MB44	46+48.14	26.38' R
MB44	46+83.18	12.49' R
MB44	46+83.31	26.52' R



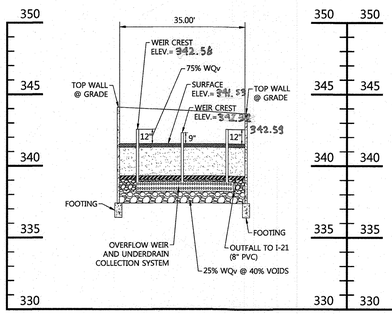
PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

NAME: GERALD D. TURNBAUGH DATE: AUG. 11, 2023
REG. NO.: 26569

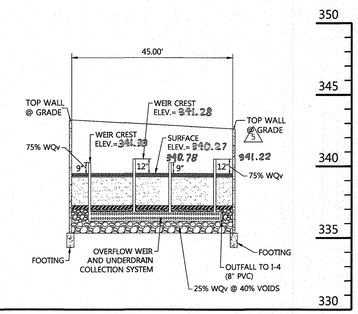
AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.

10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE: 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22



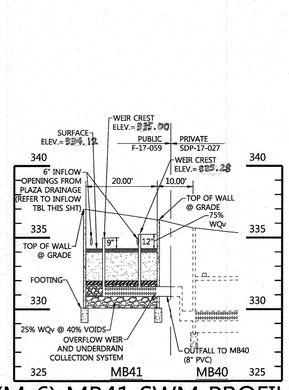
(M-6) MB45 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



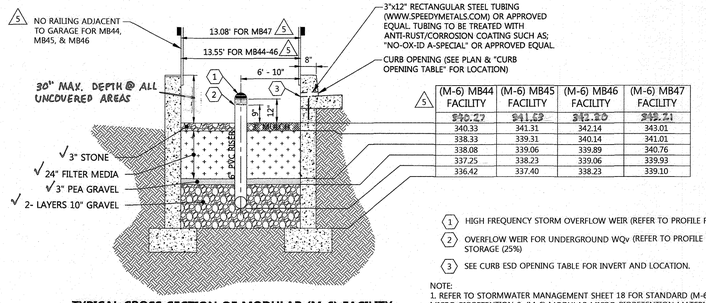
(M-6) MB44 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



(M-6) MB41 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



(M-6) MB44 FACILITY	(M-6) MB45 FACILITY	(M-6) MB46 FACILITY	(M-6) MB47 FACILITY
~~342.47~~	~~341.69~~	~~341.80~~	~~342.21~~
340.33	341.31	342.14	343.01
338.33	339.31	340.14	341.01
338.08	339.06	339.89	340.76
337.25	338.23	339.06	339.93
336.42	337.40	338.23	339.10

(1) HIGH FREQUENCY STORM OVERFLOW WEIR (REFER TO PROFILE FOR RIM ELEVATION.)
(2) OVERFLOW WEIR FOR UNDERGROUND WQv STORAGE (25%)
(3) SEE CURB ESD OPENING TABLE FOR INVERT AND LOCATION.

TYPICAL CROSS-SECTION OF MODULAR (M-6) FACILITY

SCALE: N.T.S.

NOTE:
1. REFER TO STORMWATER MANAGEMENT SHEET 18 FOR STANDARD (M-6) MICRO-BIORETENTION & (M-6) MODULAR MICRO-BIORETENTION MATERIAL SPECIFICATIONS, SEQUENCE OF CONSTRUCTION AND OPERATION & MAINTENANCE SCHEDULES.
2. CONTRACTOR SHALL INSTALL REAR (M-6) MODULAR WALL FLUSH WITH GARAGE WALL. THIS INSTALLATION MAY REQUIRE CAST-IN-PLACE PROCEDURES. (M-6) WIDTH DIMENSIONS WILL VARY ALONG SKY RIBBON RD. GARAGE WALL FACE.

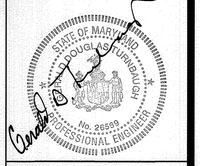
PURPOSE NOTE:

THIS SHEET REPLACES A SHEET SIGNED ON 01-19-2018 AND MODIFIES THE LOCATION OF THE ESD DEVICES TO REFLECT REVISIONS MADE TO SDP-18-005.

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. 26569, EXPIRATION DATE: 7/18/21

8-20-19
DATE



PROFESSIONAL ENGR. NO. 26569

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways MK — Date 9/12/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development SAR — Date 10/29/19

Chief, Development Engineering Division MP — Date 9.17.19

DMW DAFT McCUNE WALKER INC
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM
DES. DRN. CHK.

DATE	REVISION	BY	APP'R.
08/15/2019	(2) UPDATE ESD WIDTHS, TW & BW ELEV's, & STATION OFFSETS	ACP	
07/30/2018	(1) ADDED MB41 PROFILE	JT	JRC

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 420
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

REVISED STORMWATER MANAGEMENT PLAN
(2) REPLACEMENT SHEET
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-2, D-3, D-4, D-5, D-6, D-10 & D-14
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
SCALE	NT	11071
DATE	TAX MAP - GRID	SHEET
AUG., 2017	36 - 01	21 OF 25

F 17-059

A:\MDDMDOCS\BRENDRIDGE\FILES\SHEET FILES\F-17-059 PLAN PHASE (REDLINE PLANS)\DRP\DRP ASCHMENT SHEET(S)01 - (MDD_SWM) - SKY RIBBON RD\DRP ASCHMENT SHEET(S)01 - (MDD_SWM) - SKY RIBBON RD.DWG, 8/14/2023 12:06 PM

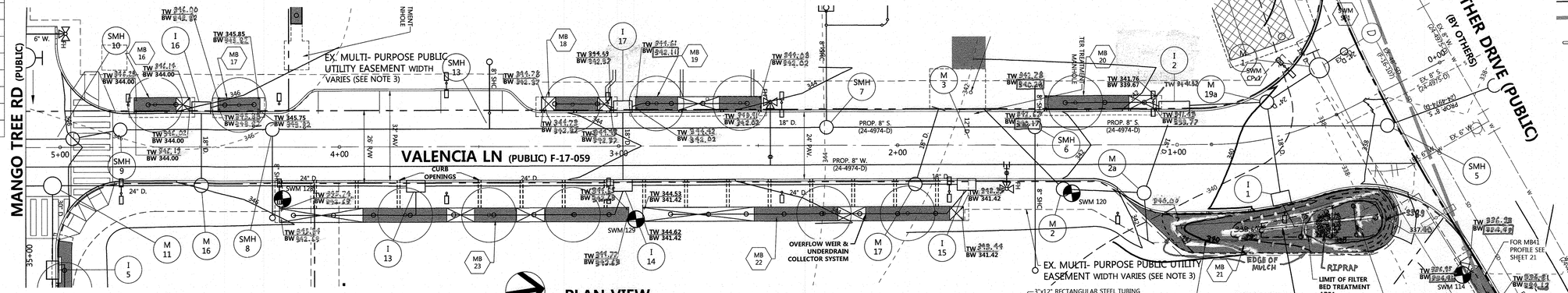
(M-6) SWM LOCATION TABLE			(M-6) SWM LOCATION TABLE			(M-6) SWM LOCATION TABLE			(M-6) SWM LOCATION TABLE			(M-6) SWM LOCATION TABLE			(M-6) SWM LOCATION TABLE		
FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET
MB16	4+74.24	12.71'R	MB17	4+49.57	12.70'R	MB18	3+27.29	12.74'R	MB19	2+94.04 ✓	12.64'R	MB20	1+97.99	12.69'R	MB21	0+98.04	30.0'L
MB16	4+78.97	17.68'R	MB17	4+49.55	17.72'R	MB18	3+27.29	17.74'R	MB19	2+94.04 ✓	17.67'R ✓	MB20	1+97.99	17.53'R	MB21	0+75.04	31.5'L
MB16	4+28.40	12.75'R	MB17	4+28.32	12.59'R	MB18	3+02.33	12.71'R	MB19	2+48.89	12.74'R	MB20	1+02.15	12.79'R	MB21	0+42.04	40.5'L
MB16	4+53.40	17.75'R	MB17	4+28.42	17.78'R	MB18	3+01.38	17.80'R	MB19	2+49.04 ✓	17.78'R	MB20	1+07.17	17.68'R			

(M-6) SWM LOCATION TABLE					
FACILITY #	CENTERLINE STA.	OFFSET	FACILITY #	CENTERLINE STA.	OFFSET
MB22	13+76.58	21.87'L	MB23	23+96.48	21.96'L
MB22	11+76.55	26.98'L	MB23	23+96.56	27.03'L
MB22	24+91.51	21.96'L	MB23	4+21.64	22.04'L
MB22	24+91.90	27.01'L	MB23	4+21.37	26.92'L

(M-6) SWM LOCATION TABLE		
FACILITY #	CENTERLINE STA.	OFFSET
MB41	22+22.71	24.27'RT
	22+22.94	29.26'RT
	22+98.94	24.22'RT
	22+98.58	29.33'

CURB OPENINGS

CENTERLINE STATION	
LEFT	RIGHT
0+64.84	1+67.98
0+76.96	1+17.75
0+89.27	1+91.53
1+04.27	1+46.39
1+85.87	2+50.00
2+00.85	2+29.17
2+16.06	2+77.80
2+30.94	2+03.85
2+45.98	3+16.98
2+60.77	3+26.28
2+75.87	4+29.39
2+90.89	4+61.95
3+06.57	4+72.35
3+21.57	
3+36.54	
3+50.06	
3+75.82	
3+89.89	
4+08.91	
4+21.15	



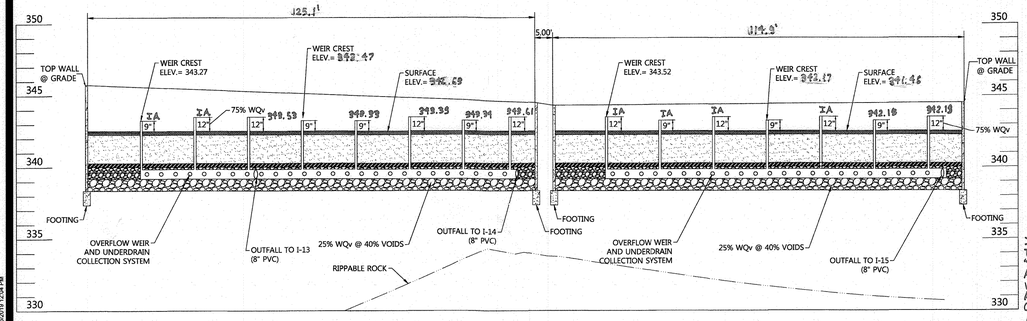
PLAN VIEW

SCALE: 1"=20'

349.68 - ENGINEER'S FIELD ADJUSTMENT

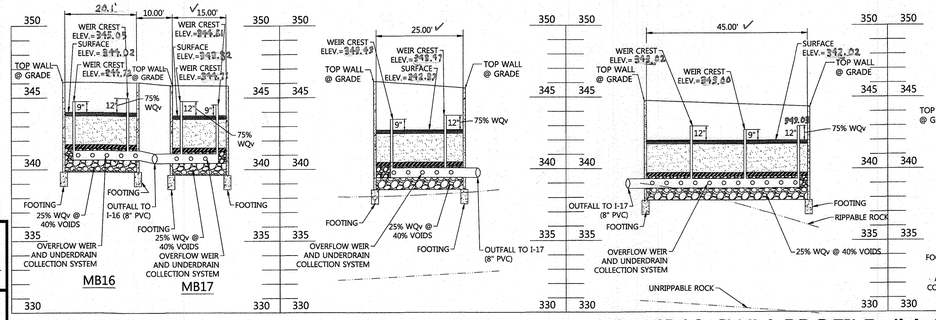
IA= INACCESSABLE DUE TO COVERED PANEL

"IA" MEANS "INACCESSABLE FOR MEASURING ELEVATION.



(M-6) MB23 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



(M-6) MB16 & MB17 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

(M-6) MB22 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

(M-6) MB18 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

(M-6) MB19 SWM PROFILE

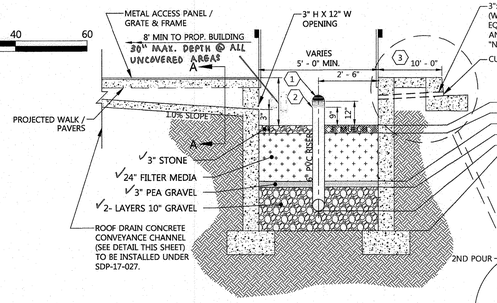
SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

(M-6) MB20 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'

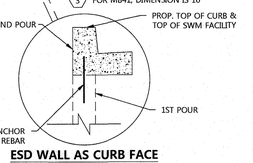
(M-6) MB21 SWM PROFILE

SCALE: HORIZ.- 1" = 20'; VERT. 1" = 5'



TYPICAL CROSS-SECTION OF MODULAR (M-6) FACILITY

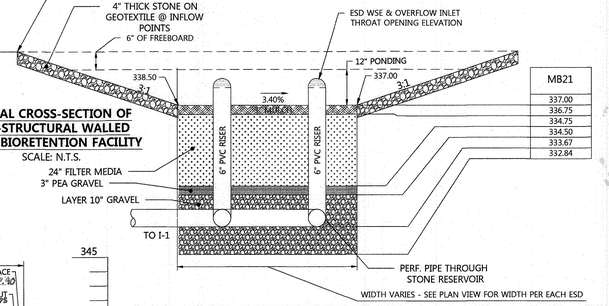
SCALE: N.T.S.



(M-6) MB16 FACILITY	(M-6) MB17 FACILITY	(M-6) MB18 FACILITY	(M-6) MB19 FACILITY	(M-6) MB20 FACILITY	(M-6) MB22 FACILITY	(M-6) MB23 FACILITY	(M-6) MB41 FACILITY
344.02	342.34	342.97	342.02	331.77	341.96	342.68	347.97 - 340.46
343.75	343.50	342.24	341.70	339.42	341.17	342.27	333.97
341.75	341.50	340.24	339.70	337.42	339.17	340.27	331.97
341.50	341.25	339.99	339.45	337.17	338.92	340.02	331.72
340.67	340.42	339.16	338.62	336.34	338.09	339.19	330.89
339.84	339.59	338.33	337.79	335.51	337.26	338.36	330.06

TYPICAL CROSS-SECTION OF NON-STRUCTURAL WALLED MICRO-BIORETENTION FACILITY

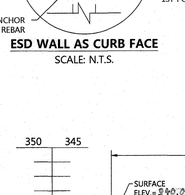
SCALE: N.T.S.



MB21
337.00
336.75
334.75
334.50
333.67
332.84

ESD WALL AS CURB FACE

SCALE: N.T.S.



CROSS-SECTION A-A ROOF DRAIN CONCRETE CONVEYANCE CHANNEL DETAIL

SCALE: 1"=1.0'

NOTE:

1. THE (M-6) MICRO-BIORETENTION FACILITIES SHOWN ON THESE PLANS WILL BE PRIVATELY OWNED AND MAINTAINED.
2. (REv) GROUNDWATER RECHARGE VOLUME AND (CPv) CHANNEL PROTECTION VOLUME MANAGEMENT ARE BEING PROVIDED IN SDP-17-027.
3. REFER TO EXPLANATION NOTE FOR THE PUBLIC MULTI-PURPOSE AND UTILITY EASEMENT TABLE ON THE COVER SHEET

PROFESSIONAL ENGINEER AS BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLAN WS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

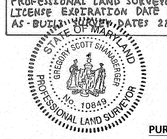
NAME: GERALD D. TURNBAUGH
DATE: AUG 11, 2023 REG. NO.: 26569

AS- BUILT CERTIFICATION

I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 9/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22



PURPOSE NOTE:

THIS SHEET REPLACES A SHEET SIGNED ON 01-19-2018 AND MODIFIES THE LOCATION OF THE ESD DEVICES TO REFLECT REVISIONS MADE TO SDP-18-005.

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. 26569 , EXPIRATION DATE: 7/18/21 .

8-20-19
DATE

PROFESSIONAL ENGR. NO. 26569

NOTE: COORDINATION WITH SURVEYOR WILL BE NEEDED FOR CONSTRUCTION AND STAKEOUT OF THIS FACILITY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways MK — Date 9/12/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 10/29/19

Chief, Development Engineering Division — Date 10.29.19

DMW
DAFT McCUNE WALKER INC
501 FAIRMOUNT AVENUE SUITE 300 TOWSON, MD 21286
P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.
08/15/2019	3 UPDATE ESD CENTERLINE LOCATIONS & OFFSETS, CURB OPENING LOCATIONS	ACP/PAB	
07/30/2018	3 ADDED MB41 INFORMATION	JT	JRC

PREPARED FOR:

THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

REVISED STORMWATER MANAGEMENT PLAN

3 REPLACEMENT SHEET

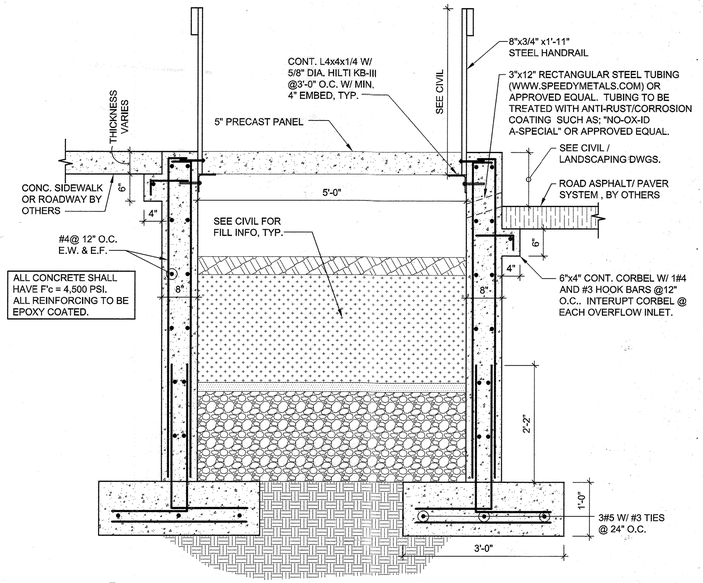
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-2, D-3, D-4,
D-5, D-6, D-10 & D-14

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
SCALE	NT	11071
DATE	TAX MAP - GRID	SHEET
AUG., 2017	36 - 01	22 OF 25

F 17-059

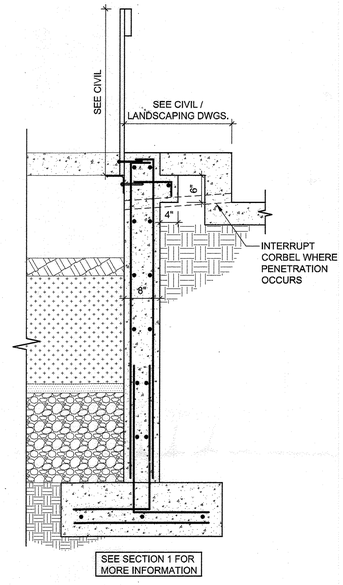
A:\2438\2438 BIDING\Road FILES\SHEET FILES\F-17-059 PHASE 1\RESILIENCE PLANS\REPLACEMENT SHEETS\22 - 2438 - SWM1_VALENCIA DRS REPLACEMENT.DWG 8/15/2019 12:34 PM



SECTION @ ESD IN OPEN SPACE

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

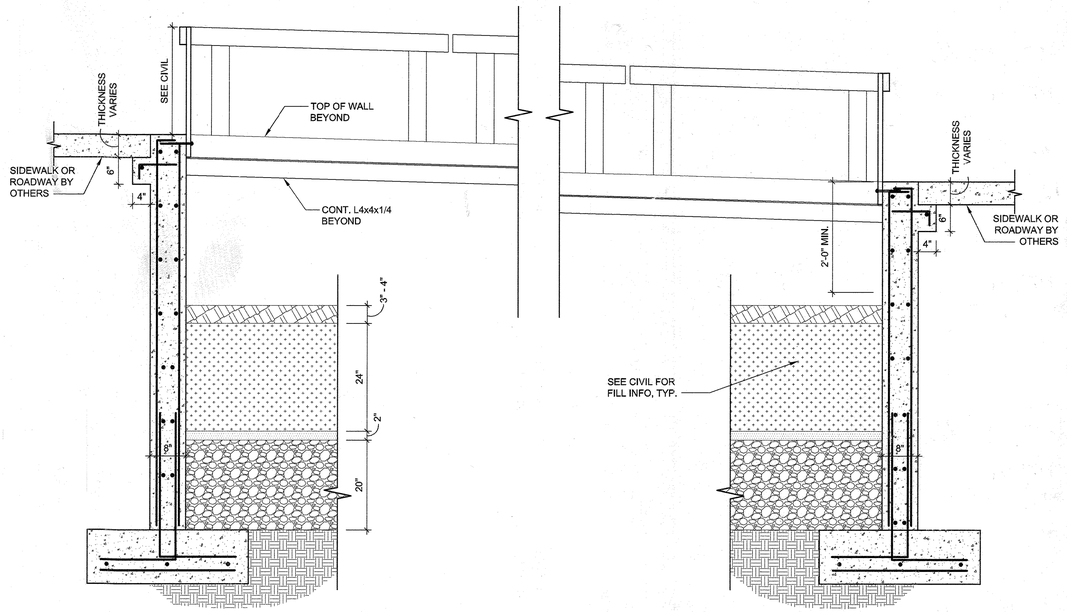
1 / S-2



SECTION @ ESD IN CONCRETE PAVING AREA W/ STREET PARKING

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

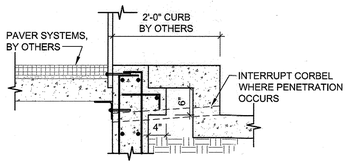
2 / S-2



SECTION

SEE SECTION 1 FOR MORE INFORMATION

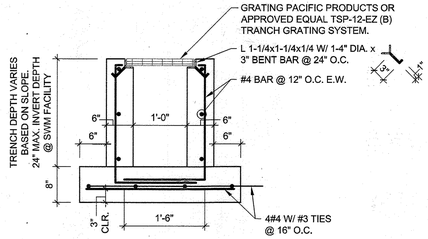
3 / S-2



SECTION @ ESD IN PAVER AREA NEXT TO CURB

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

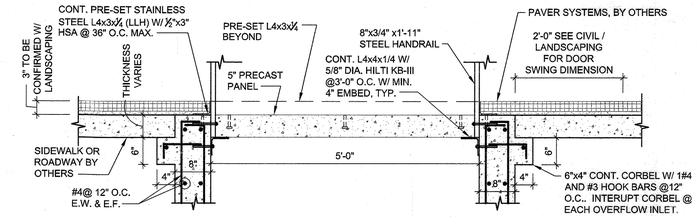
2A / S-2



CROSS SECTION A-A ROOF DRAIN CONCRETE CONVEYANCE CHANNEL DETAIL

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

4 / S-2



ALL CONCRETE SHALL HAVE F'c = 4,500 PSI. ALL REINFORCING TO BE EPOXY COATED.

SECTION @ ESD IN PAVER AREA

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

1A / S-2

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date 1/3/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 1-19-18

Chief, Development Engineering Division — Date 1.11.18

STATE OF MARYLAND — WALDE E. CHOISER — 39426 — PROFESSIONAL ENGINEER — 12/13/17

SEE SHEET 12 FOR SITE RETAINING WALL DETAILS.

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PSWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

STATE OF MARYLAND — GERALD DOUGLAS TURNBAUGH — No. 26569 — PROFESSIONAL ENGINEER — 8.11.23

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

STATE OF MARYLAND — G. SCOTT SHANABERGER — 10849 — PROFESSIONAL LAND SURVEYOR

SK&A MD
Smislova, Kehnemui & Associates, PA
12435 Park Potomac Avenue, Suite 300 • Potomac, MD 20854
P 301.881.1441 F 301.881.9664 W skaengineers.com
SK&A JOB NUMBER: 1-15079-33/53

DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.
8-3-18	⚠ Note For Proposed Wall	GL	JRC

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 39426, EXPIRATION DATE: 08/15/2018.

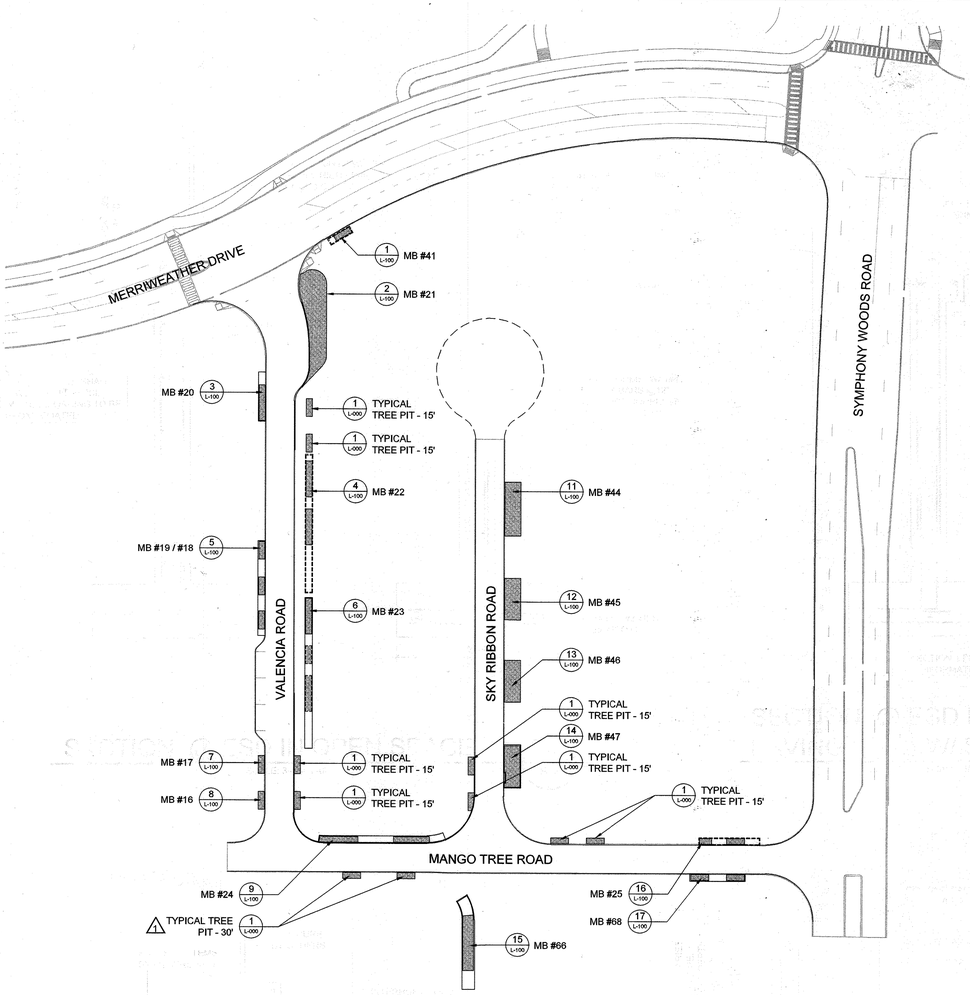
S-2 ESD STRUCTURES

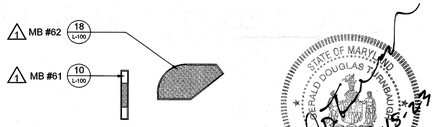
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-15, NON-BUILDABLE BULK PARCELS
D-16 THRU D-17 & OPEN SPACE LOT 10

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
NTS	NT	11071
DATE	TAX MAP – GRID	SHEET
SEPT., 2017	36 – 01	23 OF 25

F 17-059





1 SITE KEY PLAN

1"=60'-0"

0 30' 60' 120' N

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR PIWM
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

THERE IS NO "AS-BUILT" INFORMATION ON THIS SHEET
10/03/23
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR # 10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/11/22 TO 2/18/22

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date 9/12/2019

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 10/29/19
Chief, Development Engineering Division — Date 9.17.19

PURPOSE STATEMENT:
THIS SHEET REPLACES A SHEET SIGNED ON 1/19/2018 AND MODIFIED THE LOCATION OF SOME ESDS AND CLARIFIES THE DETAIL NAMES OF THE CORRESPONDING ENLARGEMENTS.

⚠ REPLACEMENT SHEET

SPECIFICATIONS: PLANTING MATERIAL AND PLANTING METHOD

1. PLANTING NOTES
   1.1. THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP AND TRANSPLANT ALL OF THE PLANT MATERIALS CALLED FOR ON DRAWINGS AND/OR LISTED IN THE PLANT SCHEDULE.
2. PLANT NAMES
   2.1. PLANT NAMES USED IN THE PLANT SCHEDULE SHALL CONFORM WITH "STANDARDIZED PLANT NAMES," LATEST EDITION.
3. PLANT STANDARDS
   3.1. ALL PLANT MATERIAL SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK" LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (HERE- AFTER REFERRED TO AS AAN STANDARDS). ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, SHALL HAVE A NORMAL HABIT OF GROWTH AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL-BRANCHED AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL INJURIES.
   3.2. ALL PLANTS SHALL BE NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATE CONDITIONS AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HEELED-IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
4. PLANT MEASUREMENTS
   4.1. ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE AS APPROVED BY THE DESIGN REVIEW COMMITTEE (DRC).
   4.1.1. CALIPER MEASUREMENTS SHALL BE TAKEN SIX INCHES (6") ABOVE GRADE FOR TREES UNDER FOUR-INCH (4") CALIPER AND TWELVE (12") ABOVE GRADE FOR TREES FOUR INCHES (4") IN CALIPER AND OVER.
   4.1.2. MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX FEET (6'), MAXIMUM EIGHT FEET (8').
   4.1.3. CALIPER, HEIGHT, SPREAD AND SIZE OF BALL SHALL BE GENERALLY AS FOLLOWS:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" – 3.5"	14'–16'	6'–8'	32" DIAMETER
3.5"– 4"	14'–16'	8'–10'	36" DIAMETER
4" – 4.5"	16'–18'	8'–10'	40" DIAMETER
4.5"– 5"	16'–17'	10'–12'	44" DIAMETER
5" – 5.5"	16'–20'	10'–12'	48" DIAMETER
5.5"– 6"	18'–20'	12'–14'	52" DIAMETER

   4.1.4. ALL PLANT MATERIAL SHALL GENERALLY AVERAGE THE MEDIAN FOR THE SIZE RANGES INDICATED ABOVE AS INDICATED IN THE "AAN STANDARDS".
5. PLANT IDENTIFICATION
   5.1. LEGIBLE LABELS SHALL BE ATTACHED TO ALL SHADE TREES, MINOR TREES, SPECIMEN SHRUBS AND BUNDLES OR BOXES OF OTHER PLANT MATERIAL GIVING THE BOTANICAL AND COMMON NAMES, SIZE AND QUANTITY OF EACH. EACH SHIPMENT OF PLANTS SHALL BEAR CERTIFICATES OF INSPECTION AS REQUIRED BY FEDERAL, STATE AND COUNTY AUTHORITIES.
6. PLANT INSPECTION
   6.1. THE DESIGN REVIEW COMMITTEE MAY, UPON REQUEST BY THE BUILDER OR DEVELOPER, AT LEAST TEN (10) DAYS PRIOR TO THE INSTALLATION OF ANY PROPOSED PLANT MATERIAL, INSPECT ALL PROPOSED PLANT MATERIAL AT THE SOURCE OF ORIGIN.

B. PLANTING METHODS

ALL PROPOSED PLANT MATERIALS THAT MEET THE SPECIFICATIONS IN SECTION A ARE TO BE PLANTED IN ACCORDANCE WITH THE FOLLOWING METHODS DURING THE PROPER PLANTING SEASONS AS DESCRIBED IN THE FOLLOWING:

1. PLANTING SEASONS
   THE PLANTING OF DECIDUOUS TREES, SHRUBS AND VINES SHALL BE FROM MARCH 1ST TO JUNE 15TH AND FROM SEPTEMBER 15TH TO DECEMBER 15TH. PLANTING OF DECIDUOUS MATERIAL MAY BE CONTINUED DURING THE WINTER MONTHS PROVIDING THERE IS NO FROST IN THE GROUND AND FROST-FREE TOPSOIL PLANTING MIXTURES ARE USED. THE PLANTING OF EVERGREEN MATERIAL SHALL BE FROM MARCH 15TH TO JUNE 15TH AND FROM AUGUST 15TH TO DECEMBER 1ST. NO PLANTING SHALL BE DONE WHEN THE GROUND IS FROZEN OR EXCESSIVELY MOIST. NO FROZEN OR WET TOPSOIL SHALL BE USED AT ANY TIME.
2. DIGGING
   ALL PLANT MATERIAL SHALL BE DUG, BALLED AND BURLAPPED (B&B) IN ACCORDANCE WITH THE "AAN STANDARDS".
3. EXCAVATION OF PLANT PITS
   THE LANDSCAPING CONTRACTOR SHALL EXCAVATE ALL PLANT PITS, VINE PITS, HEDGE TRENCHES AND SHRUB BEDS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
   A. LOCATIONS OF ALL PROPOSED PLANT MATERIAL SHALL BE STAKED AND APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT BEFORE ANY OF THE PROPOSED PLANT MATERIAL IS INSTALLED BY THE LANDSCAPE CONTRACTOR.
   B. ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, VERTICAL SIDES; DEPTH SHALL NOT BE LESS THAN 6" DEEPER THAN THE ROOT BALL, DIAMETER SHALL NOT BE LESS THAN TWO TIMES THE DIAMETER OF THE ROOT BALL AS SET FORTH IN THE FOLLOWING SCHEDULE.
   C. IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE EXCAVATED TO AT LEAST 18" DEPTH MINIMUM. AREAS DESIGNATED FOR GROUND COVERS AND VINES SHALL BE EXCAVATED TO AT LEAST 12" IN DEPTH MINIMUM.
   D. DIAMETER AND DEPTH OF TREE PITS SHALL GENERALLY BE AS FOLLOWS:

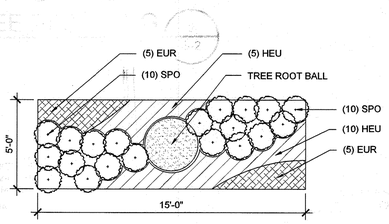
PLANT SIZE	ROOT BALL	PIT DIA.	PIT DEPTH
3" - 3.5"CAL.	32"	64"	28"
3.5"- 4" CAL.	36"	72"	32"
4" - 4.5"CAL.	40"	80"	36"
4.5"- 5" CAL.	44"	88"	40"
5" - 5.5"CAL.	48"	96"	44"
5.5"- 6" CAL.	52"	104"	48"

   A 20 % COMPACTION FIGURE OF THE SOIL TO BE REMOVED IS ASSUMED AND WILL BE ALLOWED IN CALCULATION OF EXTRA TOPSOIL. THE TABULATED PIT SIZES ARE FOR PURPOSES OF UNIFORM CALCULATION AND SHALL NOT OVERRIDE THE SPECIFIED DEPTHS BELOW THE BOTTOMS OF THE ROOT BALLS.
4. STAKING, GUYING AND WRAPPING
   ALL PLANT MATERIAL SHALL BE STAKED OR GUYED, AND WRAPPED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   A. STAKES: SHALL BE SOUND WOOD 2" X 2" ROUGH SAWN OAK OR SIMILAR DURABLE WOODS, OR LENGTHS, MINIMUM 7'-0" FOR MAJOR TREES AND 5'-0" MINIMUM FOR MINOR TREES.
   B. WIRE AND CABLE: WIRE SHALL BE #10 GA. GALVANIZED OR BETHANIZED ANNEALED STEEL WIRE. FOR TREES OVER 3" CALIPER, PROVIDE 5/16" TURN BUCKLES, EYE AND EYE WITH 4" TAKE-UP. FOR TREES OVER 5" CALIPER, PROVIDE 3/16", 7 STRAND CABLE CADMIUM PLATED STEEL, WITH GALVANIZED "EYE" THIMBLES OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.
   C. HOSE: SHALL BE NEW, 2 PLY REINFORCED RUBBER HOSE, MINIMUM 1/2" I.D. "PLASTIC LOCK TIES" OR "PAUL'S TREES BRACES" MAY BE USED IN PLACE OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.
   D. ALL TREES UNDER 3" IN CALIPER ARE TO BE PLANTED AND STAKED IN ACCORDANCE WITH THE ATTACHED PLANTING DETAILS.
5. PLANT PRUNING, EDGING AND MULCHING
   A. EACH TREE, SHRUB OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER TO ITS PARTICULAR REQUIREMENTS, IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE. BROKEN OR BRUISED BRANCHES SHALL BE REMOVED WITH CLEAN CUTS FLUSH WITH THE ADJACENT TRUNK OR BRANCHES. ALL CUTS OVER 1" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED ANTISEPTIC TREE WOUND DRESSING.
   B. ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND CULTIVATED TO THE LINES SHOWN ON THE DRAWING. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND CULTIVATED TO THE FULL DIAMETER OF THE PIT. SOD WHICH HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES OF ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGES OF SHRUB AREAS, HEDGE TRENCHES AND VINE POCKETS.
   C. AFTER CULTIVATION, ALL PLANT MATERIALS SHALL BE MULCHED WITH A 3" LAYER OF FINE, SHREDDED PINE BARK, PEAT MOSS, OR ANOTHER APPROVED MATERIAL OVER THE ENTIRE AREA OF THE BED OR SAUCER.
6. PLANT INSPECTION AND ACCEPTANCE
   THE DESIGN REVIEW COMMITTEE SHALL BE RESPONSIBLE FOR INSPECTING ALL PLANTING PROJECTS ON A PERIODIC BASIS TO ASSURE THAT ALL WORK IS PROCEEDING IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
7. PLANT GUARANTEE
   ALL PLANT MATERIAL SHALL BE GUARANTEED FOR THE DURATION OF ONE FULL GROWING SEASON, AFTER FINAL INSPECTION AND ACCEPTANCE OF THE WORK IN THE PLANTING PROJECT. PLANTS SHALL BE ALIVE AND IN SATISFACTORY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD.
   A. FOR THIS PURPOSE, THE "GROWING SEASON" SHALL BE THAT PERIOD BETWEEN THE END OF THE "SPRING" PLANTING SEASON, AND THE COMMENCEMENT OF THE "FALL" PLANTING SEASON.
   B. GUARANTEE FOR PLANTING PERFORMED AFTER THE SPECIFIED END OF THE "SPRING" PLANTING SEASON, SHALL BE EXTENDED THROUGH THE END OF THE NEXT FOLLOWING "SPRING" PLANTING SEASON.

SODDING

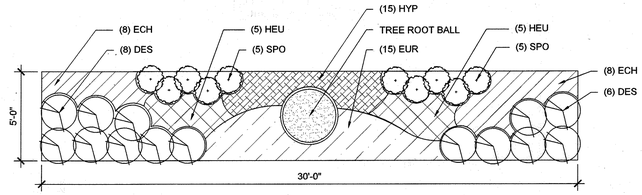
ALL SODDING SHALL BE IN ACCORDANCE TO THE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" LATEST EDITION, APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

ALL SOD SHALL BE STRONGLY ROOTED SOD, NOT LESS THAN TWO YEARS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE ONLY SOD CAPABLE OF GROWTH DEVELOPMENT WHEN PLANTED AND IN STRIPS NOT MORE THAN 18" WIDE X 4" LONG. PROVIDE SOD COMPOSED PRINCIPALLY OF IMPROVED STRAIN KENTUCKY BLUEGRASS, SUCH AS, COLUMBIA, VICTA, OR ESCORT.



1 TYPICAL TREE PIT PLANTING - 15'

1/4"=1'-0"



2 TYPICAL TREE PIT PLANTING - 30'

1/4"=1'-0"

MASTER PLANT SCHEDULE

QTY.	KEY	BOTANICAL/COMMON NAME	SIZE	ROOT	COMMENTS
SHRUBS					
31	CL	Clethra alnifolia 'Sixteen Candles' Sweet Pepperbush	#5	Cont.	North American Native
12	CS	Cornus sericea Red Twig Dogwood	#7	Cont.	North American Native 36" Spd.
75	IG	Ilex glabra 'Chamzin' Nordic Inkberry	#5	Cont.	North American Native
⚠1 77	IV	Ilex verticillata 'Red Sprite' / Red Sprite Winterberry	#3	Cont.	North American Native 24" HT.
⚠1 111	EUP	Eutrochium dubium 'Little Joe' Joe Pye Weed	#1	Cont.	North American Native 18" O.C.
⚠1 33	IRI	Iris versicolor Blue Flag Iris	#1	Cont.	North American Native 18" O.C.
⚠1 46	MON	Monarda didyma Bee Balm	#1	Cont.	North American Native 18" O.C.
⚠1 61	PAN	Panicum virgatum Switchgrass	#1	Cont.	North American Native 36" O.C.

QTY.	KEY	BOTANICAL/COMMON NAME	SIZE	ROOT	COMMENTS
SEASONAL ROTATION (SPRING / FALL)					
15	AMS	Amsonia hubrichtii Threadleaf Bluestar	#1	Cont.	North American Native 24" O.C.
⚠1 266	ASC	Asclepias tuberosa Butterfly Weed	SP#4	Cont.	North American Native 18" O.C.
⚠1 100	DES	Deschampsia flexuosa Wavy Hair Grass	#1	Cont.	North American Native
⚠1 178	ECH	Echinacea purpurea Purple Coneflower	#1	Cont.	North American Native 18" O.C.
⚠1 396	EUR	Euphorbia amygdaloides var. robbiae Wood Spurge	#1	Cont.	18" O.C.
70	HEM	Hemerocallis 'Hyperion' Daylilly	#1	Cont.	24" O.C.
⚠1 503	HEU	Heuchera 'Palace Purple' Coral Bells	#1	Cont.	North American Native 18" O.C.
⚠1 114	HYP	Hypericum calycinum St. John's Wort	#1	Cont.	12" O.C.
65	NEP	Nepeta x faassenii 'Walker's Low' Catmint	#1	Cont.	18" O.C.
115	PAN	Panicum virgatum Switchgrass	#1	Cont.	North American Native 36" O.C.
⚠1 452	SPO	Sporobolus heterolepsis Prairie Dropseed	#1	Cont.	North American Native 24" O.C.

4/24/2019	⚠1	ESD REVISIONS + DETAIL NAME CLARIFICATION		
DATE	REVISION		BY	APP'R.

DES. | DRN. | CHK.

MAHAN RYKIEL ASSOCIATES INC

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

REVISED ESD LOCATION PLAN, NOTES AND LEGEND

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE
BULK PARCELS D-15 THRU D-17, AND O.S. LOT 10
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
DEC.15, 2017	36 - 01	24 OF 25

F 17-059

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

10/03/23

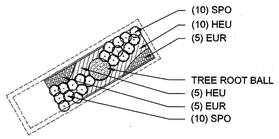
G. SCOTT SHANABERGER
SHANABERGER & LANE
PROFESSIONAL LAND SURVEYOR #10849
LICENSE EXPIRATION DATE 4/2/2024
AS-BUILT SURVEY DATES 2/1/22 TO 2/18/22

PROFESSIONAL ENGINEER
AS BUILT CERTIFICATION FOR MWM

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NAME: GERALD D. TURNBAUGH
DATE: AUG. 11, 2023 REG. NO.: 26569

9-15-23



1 MB #41 PLANTING PLAN
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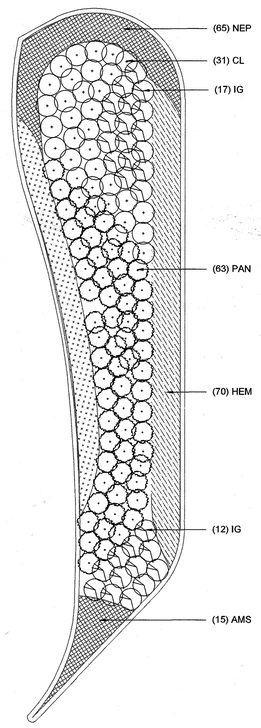

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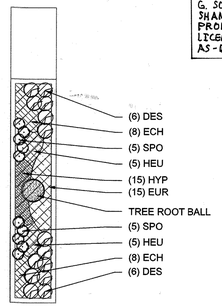

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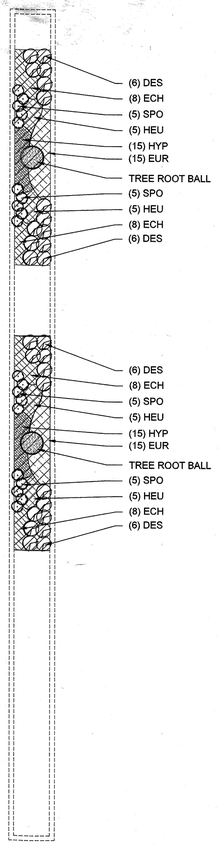

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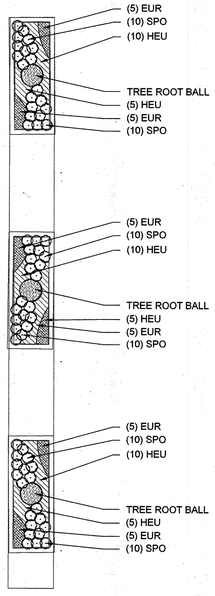

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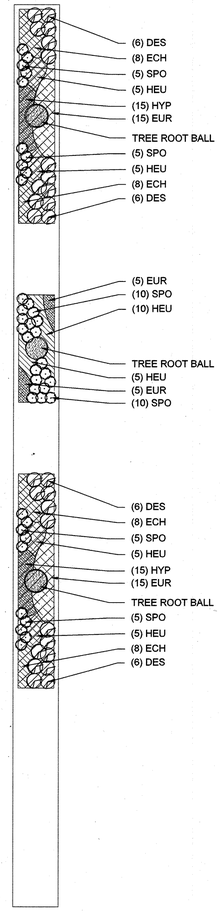

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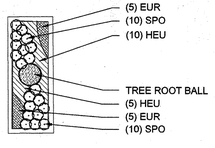

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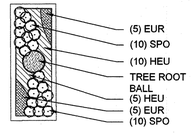

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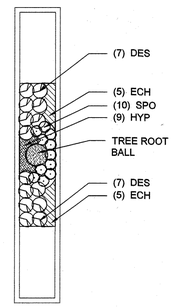

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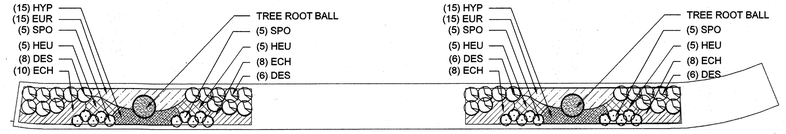

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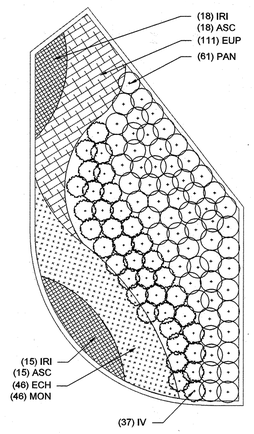

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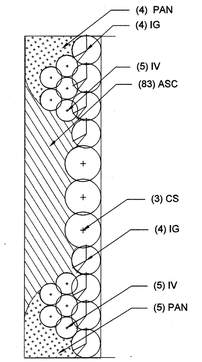

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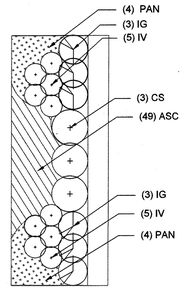

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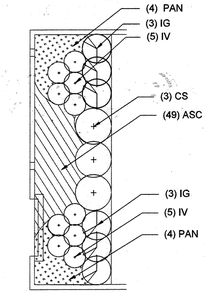

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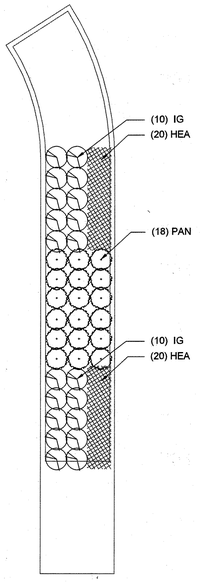

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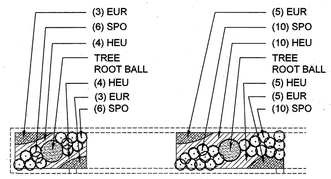
14 MB #47 PLANTING PLAN
1"=10'



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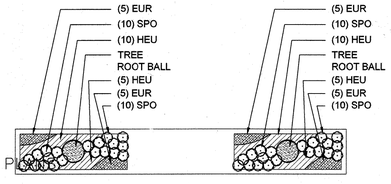

17 MB #68 PLANTING PLAN
1"=10'

PURPOSE STATEMENT:
THIS SHEET REPLACES A SHEET SIGNED ON 1/19/2018 AND MODIFIED THE LOCATION OF SOME ESDS AND CLARIFIES THE DETAIL NAMES OF THE CORRESPONDING ENLARGEMENTS.

⚠ REPLACEMENT SHEET

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways MK — 9/12/2019 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — 10/24/19 Date
Chief, Development Engineering Division — 9.17.19 Date

REVISED ESD PLANTING P

MAHAN RYKIEL ASSOCIATES INC

DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.
4/24/2019	⚠1 ESD REVISIONS + DETAIL NAME CLARIFICATION		

PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

REVISED ESD PLANTING PLANS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS D-1 THRU D-14, NON-BUILDABLE
BULK PARCELS D-15 THRU D-17, AND O.S. LOT 10
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F 17-059