

ROAD CONSTRUCTION PLANS CAPERTON VILLAGE AT TURF VALLEY PHASE 2


A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'D' ESTABLISHED UNDER CAPERTON VILLAGE AT TURF VALLEY, PHASE 1, F-17-101

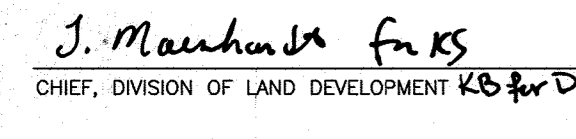
GENERAL NOTES

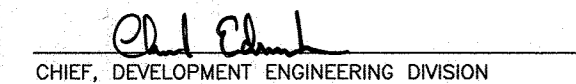
- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST COUNTY HOWARD COUNTY STANDARDS UNLESS ALTERNATE COMPLIANCES HAVE BEEN APPROVED AND NOTED BELOW.
- THE SUBJECT PROPERTY IS ZONED PGCC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- THIS PROJECT IS SUBJECT TO THE 3RD AMENDED TURF VALLEY MULTI-USE SUB-DISTRICT FINAL DEVELOPMENT PLAN RECORDED AS PLAT NUMBER 21009-21031 ON MARCH 26, 2010 AND THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NO. 1161 AND 0012 WERE USED FOR THIS PROJECT.
- TRACT BOUNDARY IS BASED ON A FIELD SURVEY PERFORMED BY JOHN B. MILDENBERG IN MARCH, 2006.
- THE EXISTING TOPOGRAPHY SHOWN IS BASED ON AERIAL TOPOGRAPHIC SURVEY PERFORMED BY WINGS AERIAL MAPPING, CO., FLOWN ON OR ABOUT JANUARY, 2006 AND BY GRADES SHOWN ON SDP-13-038 AND F-17-101.
- THE EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN TAKEN FROM AERIAL SURVEY, APPROVED CONTRACT DRAWINGS, AND FIELD SURVEYS LOCATIONS. IF NECESSARY, THE CONTRACTOR SHALL ADJUST ANY OR ALL STRUCTURE TOP ELEVATIONS TO MATCH PROPOSED GRADES.
- THERE ARE NO WETLANDS, STREAMS, THEIR REQUIRED BUFFERS, 100 YEAR-FLOODPLAINS, OR STEEP SLOPES 25% OR GREATER THAT ARE MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED ON THIS SITE.
- THE WETLAND LIMITS FOR TURF VALLEY ARE BASED ON A STUDY CONDUCTED BY EXPLORATION RESEARCH, INC. AND VERIFIED BY ECO-SCIENCE PROFESSIONALS, INC. ON MAY 26, 2016. THE LIMITS SHOWN ARE IN ACCORDANCE WITH THOSE SHOWN ON THE 4TH AMENDMENT TO THE TURF VALLEY COMPREHENSIVE SKETCH PLAN (S-86-13, PB 368) APPROVED JULY 28, 2006.
- THE OFFSITE 100-YEAR FLOODPLAIN LIMITS SHOWN ARE BASED ON A STUDY PREPARED BY BENCHMARK ENGINEERING, INC. UNDER F-15-056 AND APPROVED ON MAY 14, 2015.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES, BURIAL GROUNDS OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
- A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT AS NONE OF THE PROPOSED LOTS ARE WITHIN 500 FEET OF THE INTERSTATE 70 OR ROUTE 40 RIGHTS-OF-WAY.
- THE TRAFFIC STUDY WAS PREPARED BY TRAFFIC GROUP ON JANUARY 7, 2005. A SUPPLEMENTAL LETTER FOR TURF VALLEY CLUBHOUSE, PHASE 1, S-08-001, FOR 128 UNITS WAS PREPARED ON NOVEMBER 1, 2007 AND A SUPPLEMENTAL LETTER FOR THE TURF VALLEY CLUBHOUSE, PHASE 2, S-11-000, FOR 53 UNITS WAS PREPARED ON MAY 27, 2011 VERIFYING COMPLIANCE WITH THE 2000 STUDY. THE TRAFFIC STUDY WAS APPROVED UNDER S-08-001 AND S-11-003. "CAPERTON VILLAGE AT TURF VALLEY" WAS FORMERLY REFERRED TO AS "TURF VALLEY CLUBHOUSE".
- THIS SITE IS WITHIN THE METROPOLITAN DISTRICT.
- WATER & SEWER IS PUBLIC. THE CONTRACT NO. IS 14-4978-D. THE DRAINAGE AREA IS THE LITTLE PATUXENT. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122(B) OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWERAGE ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- THE GEO-TECHNICAL REPORT FOR THE GRANDFATHERED STORMWATER MANAGEMENT FACILITIES WAS SUBMITTED AND APPROVED UNDER SDP-13-038. NO ADDITIONAL GEO-TECHNICAL WORK IS NEEDED.
- THIS PROJECT IS EXEMPT FROM THE HOWARD COUNTY FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202(b)(1)(iv) OF THE HOWARD COUNTY CODE SINCE IT IS A PLANNED UNIT DEVELOPMENT WHICH HAD PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50% OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
- LANDSCAPING IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL VIA A CERTIFIED LANDSCAPE PLAN AS PART OF THIS PLAN SET. FINANCIAL SURETY FOR THE REQUIRED PERMETER AND INTERNAL RESIDENTIAL LANDSCAPE OBLIGATIONS SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THE FUTURE SITE DEVELOPMENT PLAN.
- STORMWATER MANAGEMENT FOR THIS PROJECT IS "GRANDFATHERED" TO THE MDE 2000 REGULATIONS AND WAS PROVIDED AND APPROVED UNDER SDP-13-038 BY TWO (F-6) BIO-RETENTION FACILITIES AND ONE (F-3) EXTENDED DETENTION FACILITY WITH MICRO-POND. THESE FACILITIES WERE CONSTRUCTED PRIOR TO THE MAY 4, 2011 IN ORDER TO RETAIN THEIR GRANDFATHERING STATUS. THE F-3 FACILITY IS PRIVATELY OWNED AND JOINTLY MAINTAINED AND THE F-6 FACILITIES ARE PRIVATELY OWNED AND PRIVATELY MAINTAINED. (N-2) DISCONNECTION OF NON-ROOFTOP RUNOFF HAS BEEN UTILIZED TO TREAT THE PROPOSED 10' GOLF CART PATH SINCE THIS PATH IS NOT WITHIN THE DRAINAGE AREA OF THE AFOREMENTIONED STORMWATER MANAGEMENT FACILITIES.
- THE ARTICLES OF INCORPORATION FOR THE HOMEOWNERS ASSOCIATION SHALL BE ACCEPTED BY THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO THE RECORDED OF THE SUBDIVISION PLAN.
- THE PURPOSE OF OPEN SPACE LOT 92 IS TO ENCOMPASS THE PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITY AND FOR THE USE OF THE RESIDENCES OF THIS SUBDIVISION. IT SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
THE PURPOSE OF OPEN SPACE LOT 93 IS TO ENCOMPASS THE PAVED GOLF CART PATH. IT SHALL BE OWNED AND MAINTAINED BY MANGIONE ENTERPRISES OF TURF VALLEY LIMITED PARTNERSHIP.
- THIS PROJECT IS EXEMPT FROM RECREATIONAL OPEN SPACE REQUIREMENTS SINCE IT IS ZONED PGCC.
- THIS PROJECT IS EXEMPT FROM THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SINCE IT IS ZONED PGCC.
- STREET LIGHT PLACEMENT AND 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.
- TRAFFIC CONTROL DEVICES:
 - THE R1-1 "STOP" SIGN AND STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - 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 OF THE TRAFFIC CONTROL DEVICES.
 - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUMUTCD).
 - 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 (1 1/2" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (1 1/2" GAUGE) - 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - 6" OF CRUSHER RUN BASE WITH TAR AND CHIP COATING (1.5" MIN)
 - GEOMETRY - MAX 15% GRADE, MAX 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (HQS LOAD)
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- APPLICABLE PREVIOUS HOWARD COUNTY FILE REFERENCES:

S-86-013, S-08-001, S-11-003, SDP-13-038, F-14-096, SP-16-010, F-17-101
- PRIOR TO THE GRADING PERMIT APPLICATION, THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 16.129 OF THE HOWARD COUNTY CODE.

- ### AS-BUILT NOTES:
- HORIZONTAL AND VERTICAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83. ALL CYAS PROJECTED FROM NAD 83. GEODETIC CONTROL STATIONS 16E1 AND 002.
 - THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A TOTAL STATION AND PRISM AND RANGERS.
 - THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC.

APPROVED: DEPARTMENT OF PUBLIC WORKS

 DATE: 3/6/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 DATE: 3-13-18


 DATE: 3-9-18

Practice	DA (sf)	Imp Area (sf)	% Imp	Rv	Pe required	ESDv (cf) Required/Provided	Pe Provided	Maint.		
(N-2) Disconnection of Non-Rooftop	#1	7899	2473	31%	0.33	1.0	218	218	1.0	Private
(N-2) Disconnection of Non-Rooftop	#2	34679	5830	17%	0.20	1.0	582	384	0.7	Private
(N-2) Disconnection of Non-Rooftop	#3	51,221	3,630	7%	0.11	1.0	488	78	0.2	Private
Totals		93,799	11,933	13%	0.18	1.0	1286	680		

Notes:
 1. Pe provided to the MEP. Full Pe treatment of the entire length of the cart path was not achievable due to the amount of catchment contributing area which could not be diverted around path.

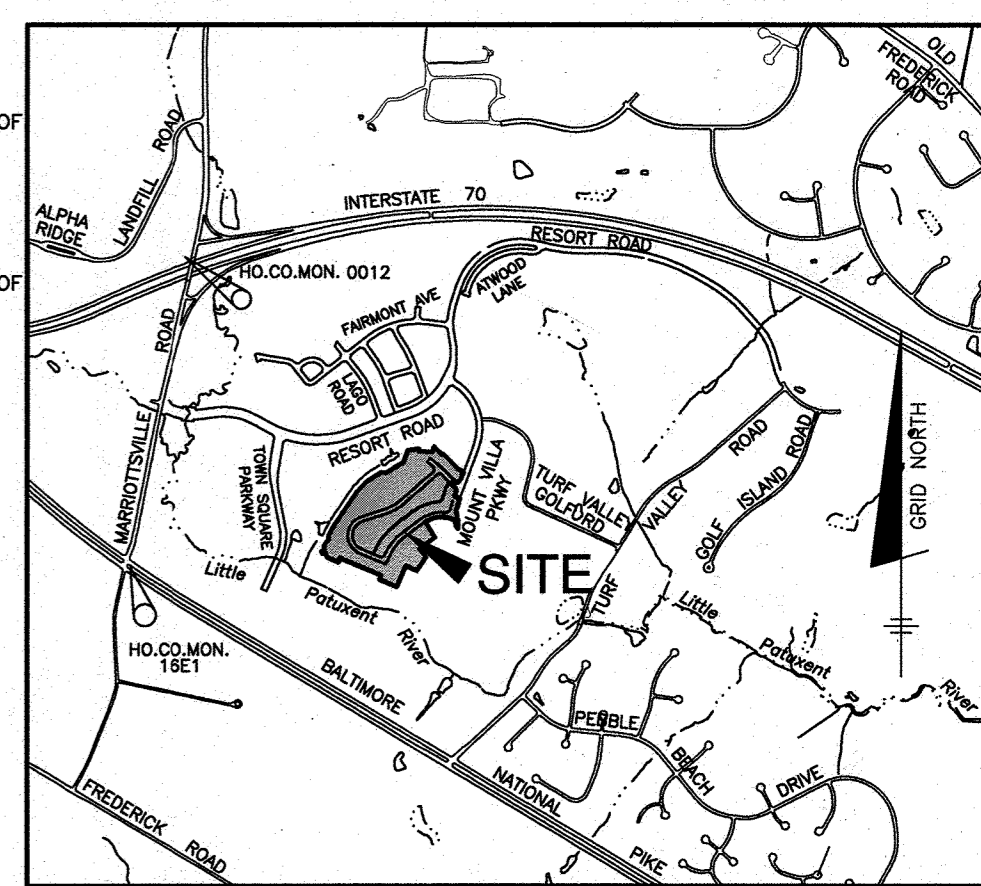
AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
 Date: 8-19-22
 Donald Mason, P.E.

ROAD	CLASSIFICATION	DESIGN SPEED	RIGHT-OF-WAY	PVMT TYPE
BRAVA COURT	PUBLIC ACCESS STREET	25 MPH	50 FEET	P-3
CAVALIER WOOD ROAD	PUBLIC ACCESS STREET	30 MPH	50 FEET	P-2

BENCHMARKS

NAD 83 HORIZONTAL
 HO. CO. #16E1 (AKA: 3438001)
 STAMPED BRASS DISK SET ON TOP OF
 A 3H DEEP COLUMN OF CONCRETE.
 N 593250.960' E 1340192.70'
 ELEVATION: 463.981'

HO. CO. #0012 (AKA: 3439001)
 STAMPED BRASS DISK SET ON TOP OF
 A 3H DEEP COLUMN OF CONCRETE.
 N 596502.760' E 1340864.37'
 ELEVATION: 466.295'



ROW#	PTNO	DESCRIPTION	ELEVATION
34	REBAR & CAP		451.37'
35	V-MARK		452.65'
36	MULL-IN-BRICK		470.82'
37	MULL-IN-BRICK		478.12'
38	REBAR & CAP		477.19'
39	CONC. MALL		482.00'
40	REBAR & CAP		483.10'
41	REBAR & CAP		483.11'
42	REBAR & CAP		466.23'
43	REBAR & CAP		466.23'
44	REBAR & CAP		474.42'
45	REBAR & CAP		472.04'
46	REBAR & CAP		472.04'
47	V-MARK		462.71'
48	REBAR & CAP		461.71'
100	REBAR & CAP		424.07'
102	REBAR & CAP		424.07'
102	REBAR & CAP		422.68'

Zoned: PGCC	Phase 1 (F-17-101)	Phase 2 (F-17-102)	Total
Gross Area	27.22 acres	12.73 acres *	27.22 acres
100yr Floodplain	0.00 acres	0.00 acres	0.00 acres
Steep Slopes 25% or >(outside floodplain)	0.00 acres	0.00 acres	0.00 acres
Net Area	27.22 acres	12.73 acres	27.22 acres
Number of Proposed Units:			
Single Family Detached:	15	36	51
Single Family Attached:	35	0	35
Apartments:	95	0	95
Total:	145	36	181
Area of Buildable Lots	5.03 acres	5.39 acres	10.42 acres
Area of Buildable Bulk Parcels	3.87 acres	0.00 acres	3.87 acres
Area of Non-Buildable Bulk Parcels	12.79 acres	2.01 acres	2.07 acres
Area of Proposed Right-of-way	2.11 acres	1.47 acres	3.58 acres
Open Space Calculations			
Area of Open Space Required (15% of gross)	4.08 acres	1.91 acres *	4.08 acres
Area of Open Space Provided	3.42 acres	3.86 acres	7.28 acres
Non-Credited	0.51 acres	0.04 acres	0.55 acres
Credited	2.91 acres	3.82 acres	6.73 acres
Recreational Open Space Required	NA (PGCC)	NA (PGCC)	NA (PGCC)
Parking Calculations			
Parking Required SFA and SFD Lots:	125	90	215
2.5 spaces per unit (Section 133.0.D.2.a)			
Parking Provided SFA and SFD Lots:	235	144	379
2 spaces per garage + 2 spaces per driveway (includes 34 spaces along Forum Place for total 8 P1)			
Parking Required Apartments:	219	NA	219
2.3 spaces per unit (Section 133.0.D.2.b)			
Parking Provided Apartments:	219 **	NA	219

* This area is all or part of Non-Buildable Bulk Parcel 'D' established under Phase 1, F-17-101 and therefore, does not factor in "Total" column.
 ** Apartment parking shall be provided within Buildable Bulk Parcels 'A' and 'B' under a future Site Development Plan

FOR MONUMENT RECOVERY SKETCH
 SEE SHEET No 2

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21443, Expiration Date: 12-31-22

SHEET	TITLE
1	COVER SHEET
2	ROAD PLAN, PROFILE, & DETAILS: BRAVA COURT
3	ROAD PLAN, PROFILE, & DETAILS: CAVALIER WOOD ROAD
4	ROAD SIGNAGE, LIGHTING, AND STRIPING PLAN
5	LANDSCAPE PLAN
6	STORMWATER MANAGEMENT DRAINAGE AREA MAP
7	STORM DRAIN DRAINAGE AREA MAP
8	GRADING, SEDIMENT AND EROSION CONTROL PLAN
9	GRADING, SEDIMENT AND EROSION CONTROL NOTES
10	GRADING, SEDIMENT AND EROSION CONTROL DETAILS

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE SUITE 315 A ELICOTT CITY, MARYLAND 21043
 (P) 410-465-6105 (F) 410-465-6644
 WWW.BEI-ENGINEERING.COM

OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400

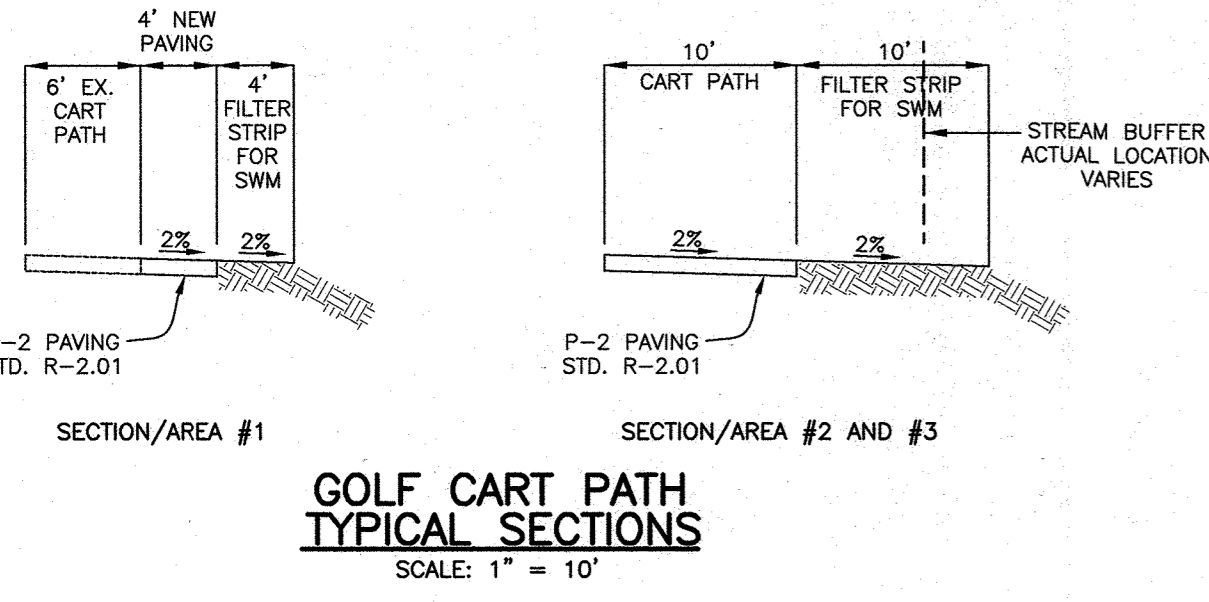
DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400

CAPERTON VILLAGE AT TURF VALLEY
 PHASE 2
 LOTS 56-91; OPEN SPACE LOTS 92-93;
 AND NON-BUILDABLE BULK PARCELS 'E'

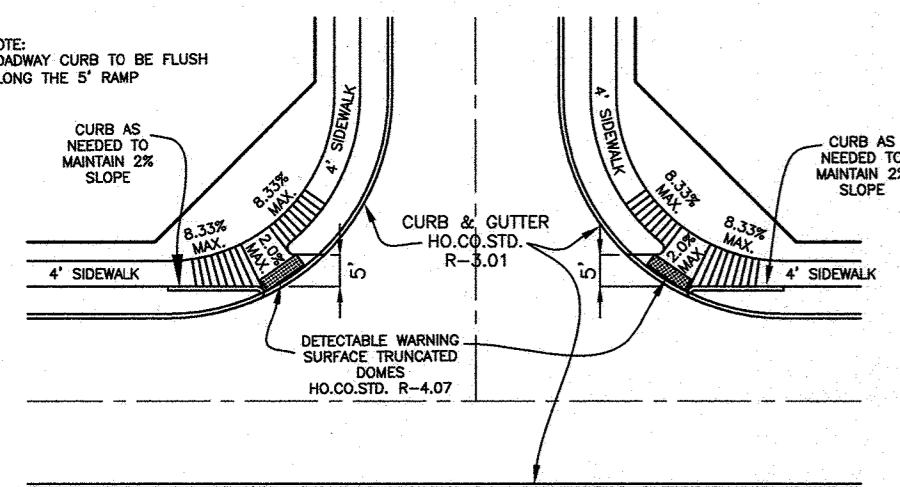
TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
 ZONED: PGCC

COVER SHEET

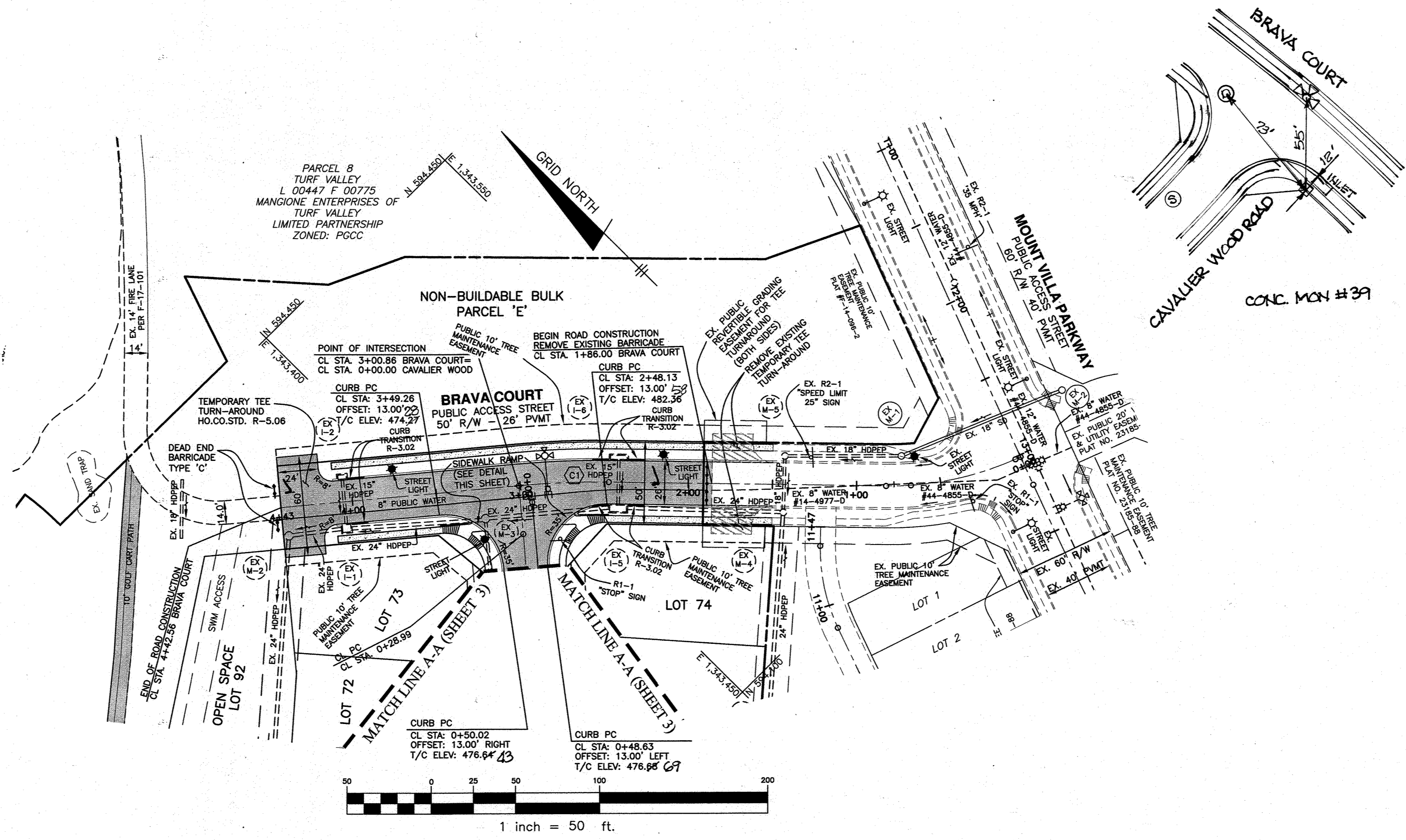
DATE: JANUARY 2, 2018
 SCALE: AS SHOWN
 SHEET PROJECT NO. 2757
 DESIGN: DBT DRAFT: DBT SHEET 1 OF 10



GOLF CART PATH TYPICAL SECTIONS
SCALE: 1" = 10'

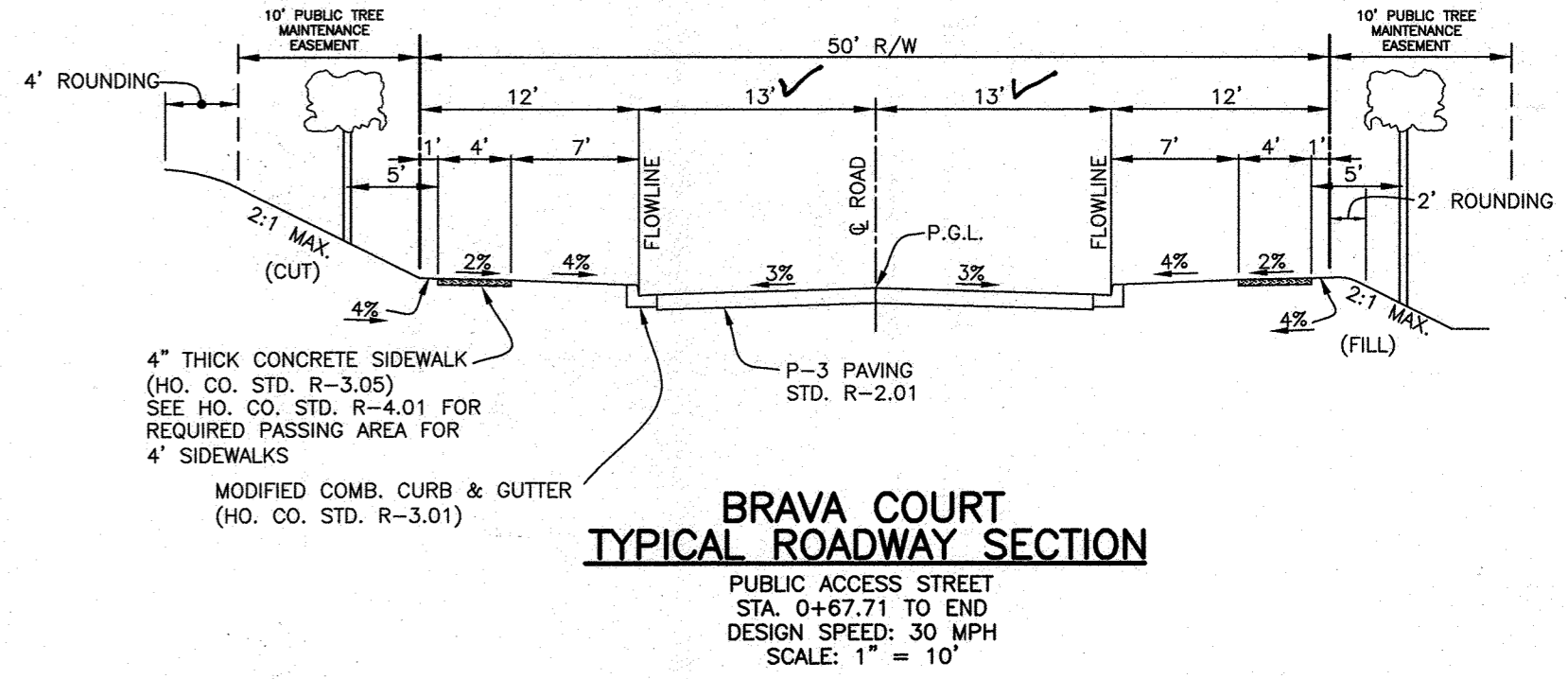


TYPICAL SIDEWALK RAMP DETAIL
SCALE: 1" = 30'

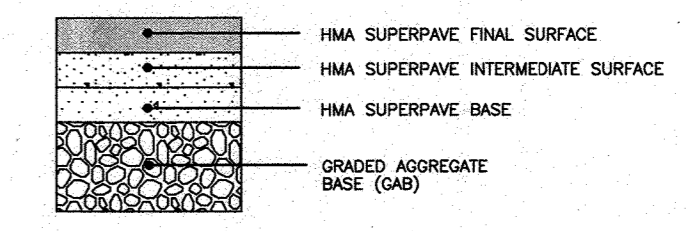


CENTER LINE CURVE DATA

CURVE	ALIGNMENT	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	Brava Court	2+47.32 TO 3+00.86	500.00'	53.53'	6°08'04"	26.79'	N47° 07' 43"W	53.51'



BRAVA COURT TYPICAL ROADWAY SECTION
PUBLIC ACCESS STREET
STA. 0+67.71 TO END
DESIGN SPEED: 30 MPH
SCALE: 1" = 10'

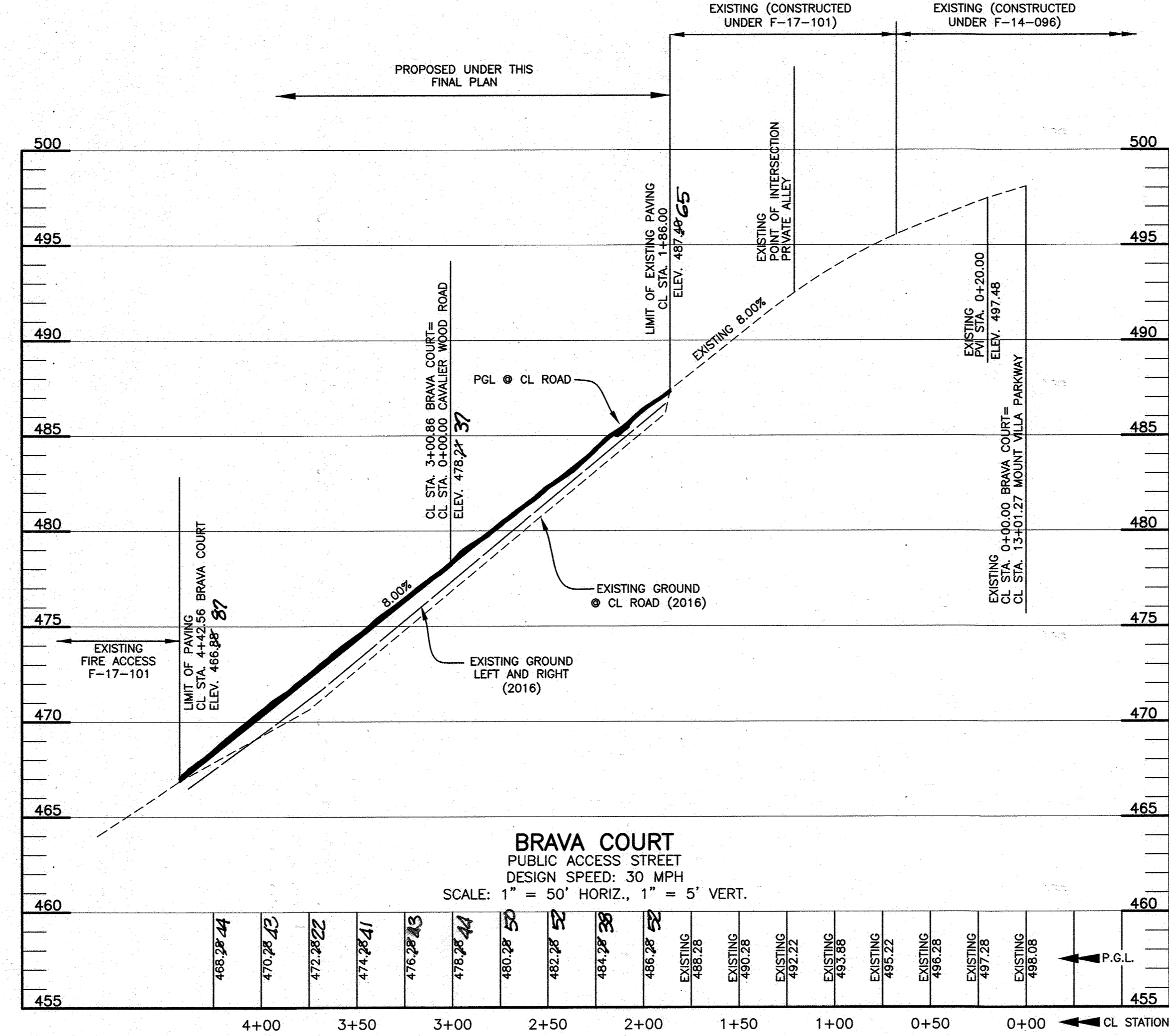
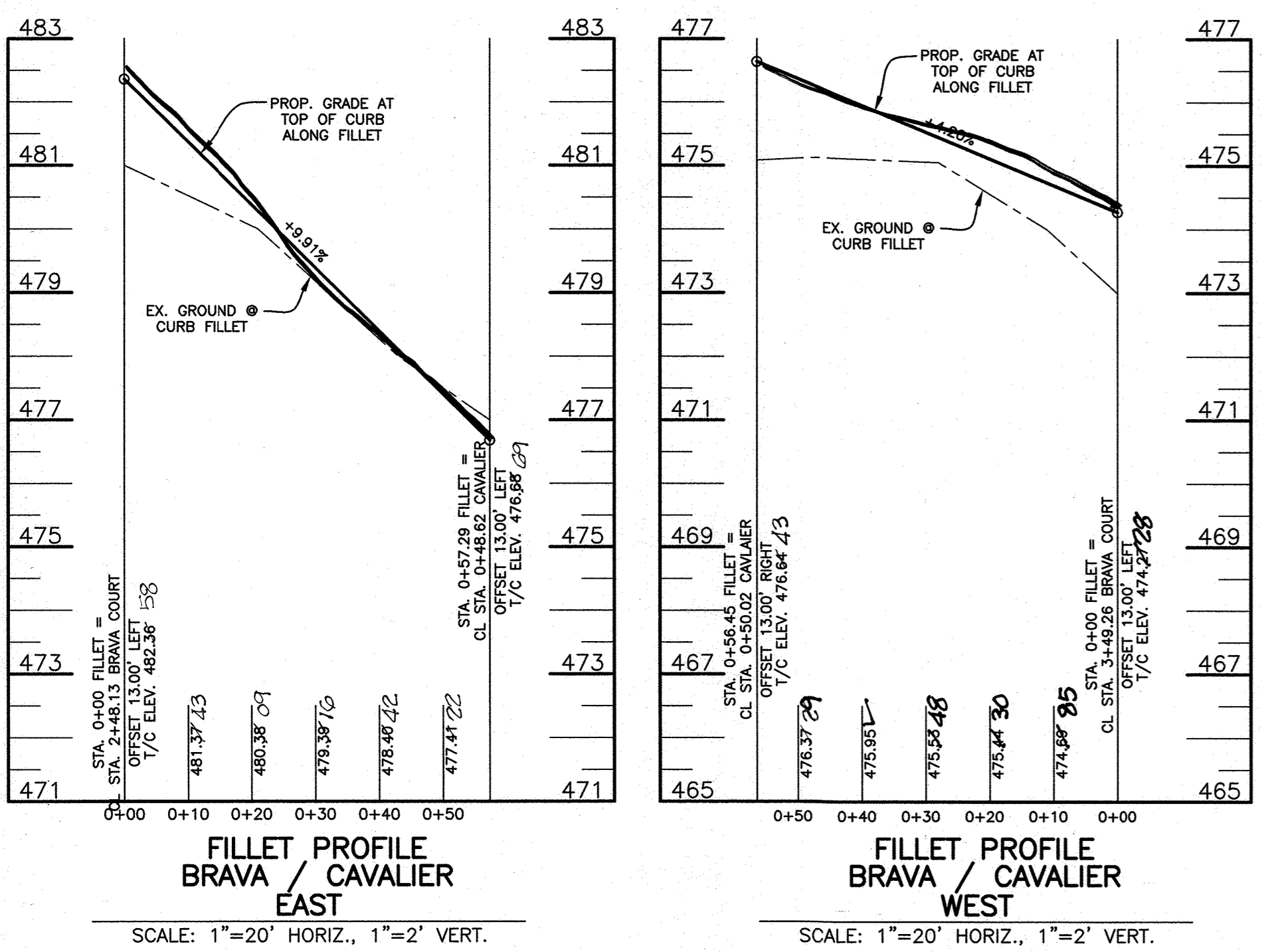
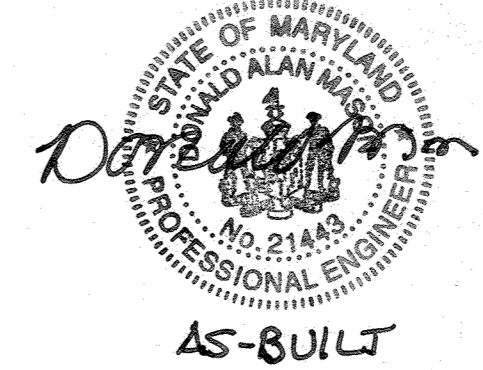


P-3 PAVING DETAIL

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
P-3	PARKING DRIVE ASLS: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC: RESIDENTIAL MINOR COLLECTORS: RESIDENTIAL	PAVEMENT MATERIAL (INCHES)					
		HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)					
		10.0	6.0	3.0	6.0	6.0	6.0

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. 21443 Expiration Date: 2-21-22

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
Donald Mason, P.E. Date: 8-19-22

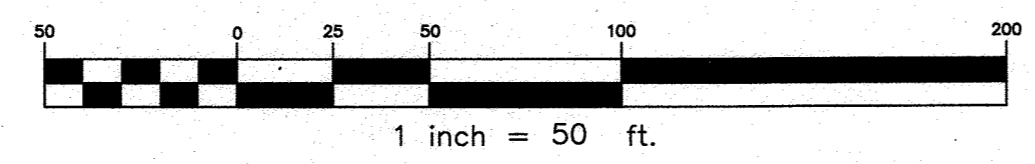
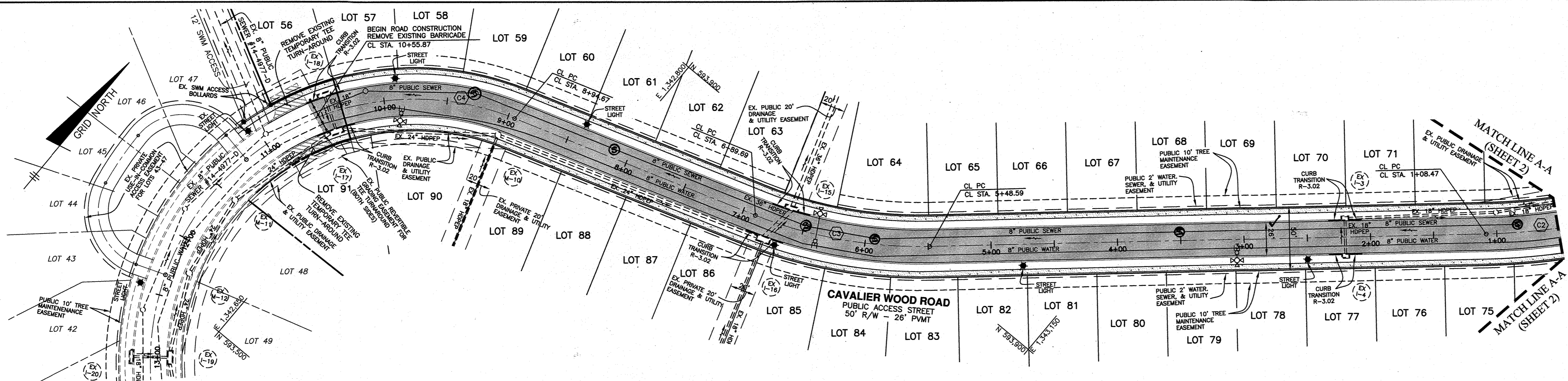


BRAVA COURT
PUBLIC ACCESS STREET
DESIGN SPEED: 30 MPH
SCALE: 1" = 50' HORIZ., 1" = 5' VERT.

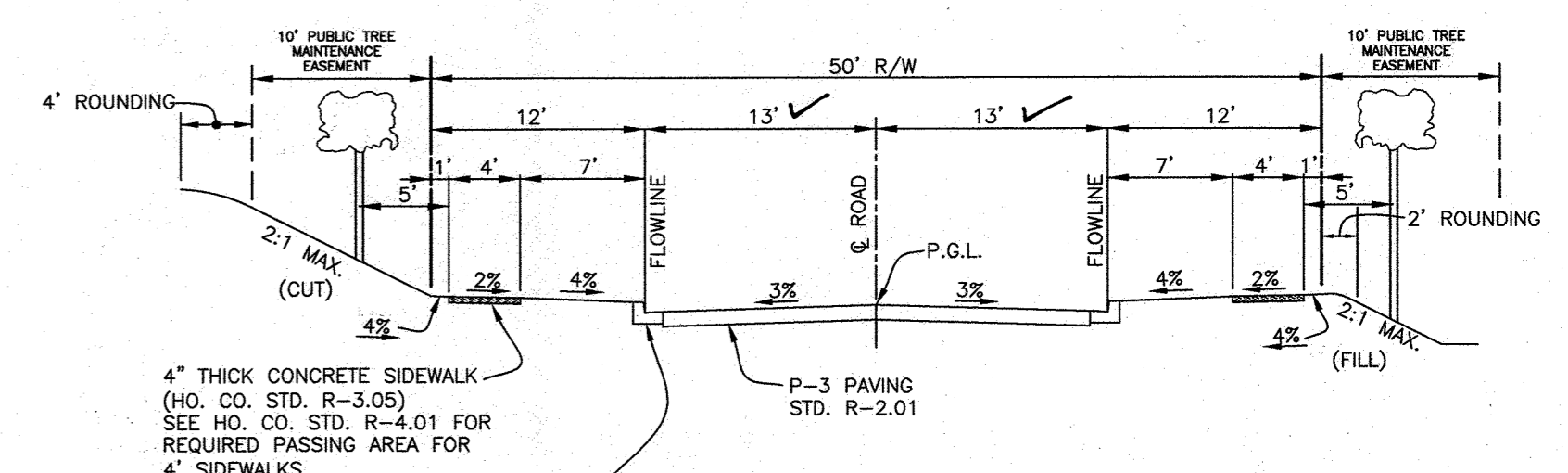
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 3/6/2018
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-13-18
CHIEF, DIVISION OF LAND DEVELOPMENT KB for DB
[Signature] 3-9-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
840 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8544
WWW.BE-CIVILENGINEERING.COM

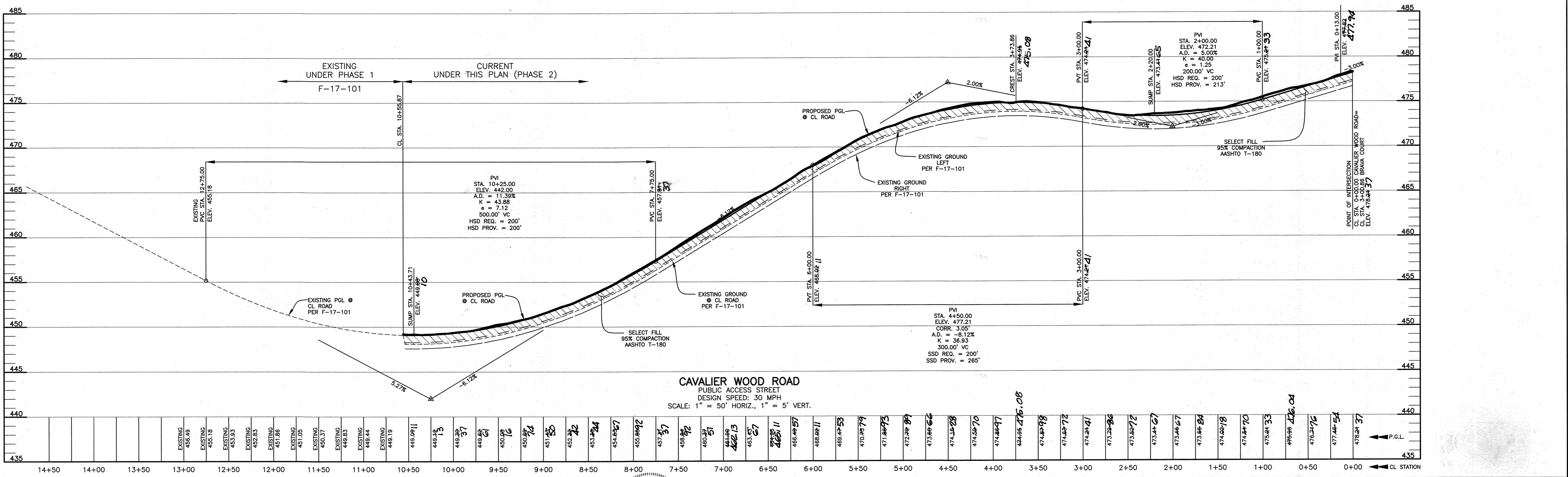
CAPERTON VILLAGE AT TURF VALLEY PHASE 2
LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'
TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
ZONED: PGCC
ROAD PLAN, PROFILE, & DETAILS BRAVA COURT
DATE: JANUARY 2, 2018 BEI PROJECT NO. 2757
SCALE: AS SHOWN SHEET 2 OF 10



CENTER LINE CURVE DATA								
CURVE	ALIGNMENT	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C2	Cavalier Wood Road	0+28.99 TO 1+08.47	500.00'	79.48'	9°06'27"	39.82'	S44° 21' 28"W	79.39'
C3	Cavalier Wood Road	5+48.59 TO 6+89.69	350.00'	141.10'	23°05'56"	71.52'	S60° 27' 40"W	140.15'
C4	Cavalier Wood Road	8+94.67 TO 14+04.02	210.00'	509.35'	138°58'10"	561.21'	S02° 31' 33"W	393.36'



CAVALIER WOOD ROAD TYPICAL ROADWAY SECTION
 PUBLIC ACCESS STREET
 STA. 0+00 TO STA. 16+81.76
 DESIGN SPEED: 30 MPH
 SCALE: 1" = 10'

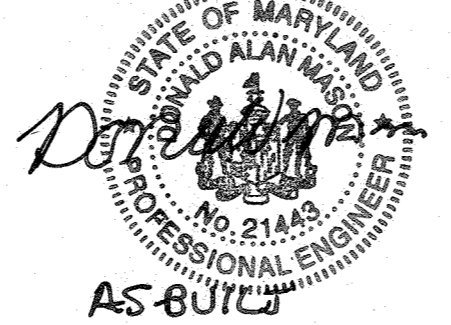


CAVALIER WOOD ROAD
 PUBLIC ACCESS STREET
 DESIGN SPEED: 30 MPH
 SCALE: 1" = 50' HORIZ., 1" = 5' VERT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 3/12/18
 BUREAU OF HIGHWAYS
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-13-18
 CHIEF, DIVISION OF LAND DEVELOPMENT FOR DP
 DATE

[Signature] 3-9-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21443 Expiration Date: 12-21-22

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 Donald Mason, P.E. Date: 3-19-22

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-8844
 WWW.BE-CIVILENGINEERING.COM

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. 21118 Expiration Date: 6-30-2019

OWNER:
 MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400

DEVELOPER:
 MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
 410-825-8400

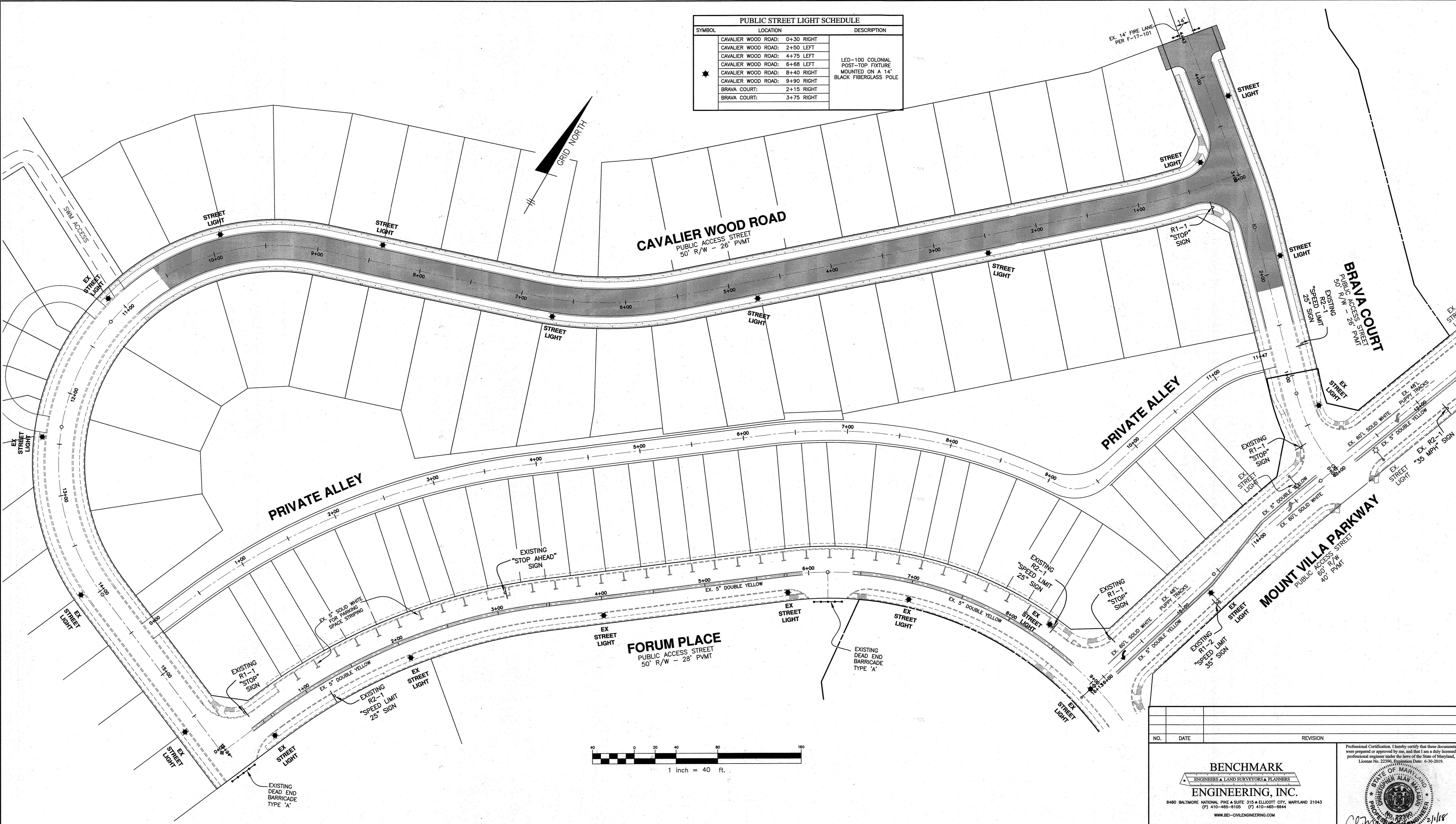
CAPERTON VILLAGE AT TURF VALLEY
 PHASE 2
 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'

TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
 ZONED: PGCC

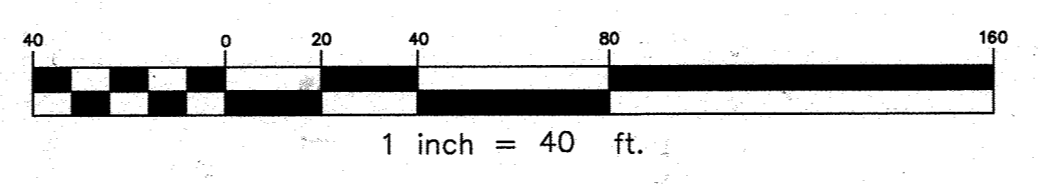
ROAD PLAN, PROFILE, AND DETAILS
CAVALIER WOOD ROAD

DATE: JANUARY 2, 2018 BEI PROJECT NO. 2757
 SCALE: AS SHOWN SHEET 3 OF 10

PUBLIC STREET LIGHT SCHEDULE		
SYMBOL	LOCATION	DESCRIPTION
★	CAVALIER WOOD ROAD: 0+30 RIGHT	LED-100 COLONIAL POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
	CAVALIER WOOD ROAD: 2+50 LEFT	
	CAVALIER WOOD ROAD: 4+75 LEFT	
	CAVALIER WOOD ROAD: 6+68 LEFT	
	CAVALIER WOOD ROAD: 8+40 RIGHT	
	CAVALIER WOOD ROAD: 9+90 RIGHT	
	CAVALIER WOOD ROAD: 2+15 RIGHT	
BRAVA COURT: 2+15 RIGHT		
	BRAVA COURT: 3+75 RIGHT	



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 3/12/18
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 J. Marchese for IC5 3-13-18
 CHIEF, DIVISION OF LAND DEVELOPMENT KB for DB
 Phil Edwards 3-9-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



LEGEND
 [Shaded Area] PROPOSED ROAD THIS PLAN
 "NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"
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 License No. 21443, Expiration Date: 12-21-22

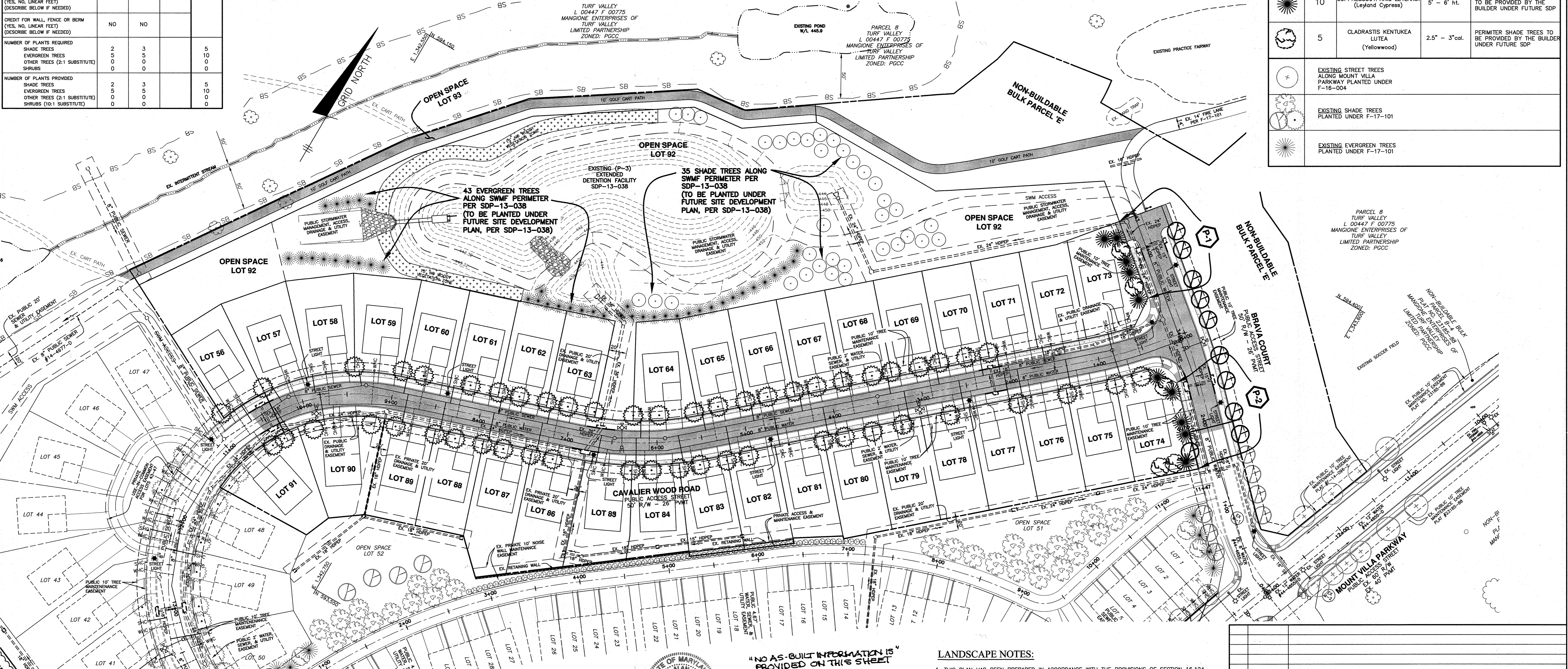
AS-BUILT 8-19-22
[Professional Seal]

NO. DATE REVISION	
BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BE-CIVILENGINEERING.COM	
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. 22390, Expiration Date: 6-30-2019. <i>[Professional Seal]</i>	
OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	
DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	
CAPERTON VILLAGE AT TURF VALLEY PHASE 2 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E' TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND ZONED: PGCC	
STREET LIGHT, SIGNAGE AND STRIPING PLAN	
DATE: JANUARY 2, 2018 SCALE: AS SHOWN	BEI PROJECT NO. 2757 SHEET 4 OF 10
DESIGN: DBT	DRAFT: DBT

SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	SFA LOT SIDE TO ROAD	SFA LOT SIDE TO ROAD	TOTALS
	(P-1)	(P-2)	
LANDSCAPE TYPE	C	C	
	1:40 shade 1:20 evergreen	1:40 shade 1:20 evergreen	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	92'	100'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	
NUMBER OF PLANTS REQUIRED			
SHADE TREES	2	3	5
EVERGREEN TREES	5	5	10
OTHER TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS	0	0	0
NUMBER OF PLANTS PROVIDED			
SHADE TREES	2	3	5
EVERGREEN TREES	5	5	10
OTHER TREES (2:1 SUBSTITUTE)	0	0	0
SHRUBS (1:1 SUBSTITUTE)	0	0	0

STREET TREE SCHEDULE			
LINEAR FEET OF RIGHT-OF-WAY	CAVALIER WOOD RD	BRAVA COURT	TOTAL
	1,967'	403'	
LINEAR FEET OF CREDIT	0	0	
LINEAR FEET OF REQUIRED PLANTING	1,967'	403'	
TREE SIZE	LARGE 1:40 LF	LARGE 1:40 LF	
TREES REQUIRED	49*	10	59

* 3 ADDITIONAL TREES ARE BEING PLANTED UNDER THIS PLAN PER F-17-101. THUS, UNDER THIS PHASE, A TOTAL OF 52 TREES SHALL BE PLANTED ALONG CAVALIER WOOD ROAD.



LANDSCAPE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	52	TILIA CORDATA (Greenspire Littleleaf Linden)	2.5" - 3" cal.	STREET TREES ALONG MOUNT VILLA PARKWAY AND CAVALIER WOOD ROAD TO BE PROVIDED BY THE DEVELOPER
	10	PLATANUS X ACERFOLIA (Bloodgood London Plane)	2.5" - 3" cal.	STREET TREES ALONG BRAVA COURT AND FORUM PLACE TO BE PROVIDED BY THE DEVELOPER
	10	CUPRESSOCYPARIS LEYLANDI (Leyland Cypress)	5' - 6' ht.	PERIMETER EVERGREEN TREES TO BE PROVIDED BY THE BUILDER UNDER FUTURE SDP
	5	CLADRASITIS KENTUCKEA LUTEA (Yellowwood)	2.5" - 3" cal.	PERIMETER SHADE TREES TO BE PROVIDED BY THE BUILDER UNDER FUTURE SDP
		EXISTING STREET TREES ALONG MOUNT VILLA PARKWAY PLANTED UNDER F-16-004		
		EXISTING SHADE TREES PLANTED UNDER F-17-101		
		EXISTING EVERGREEN TREES PLANTED UNDER F-17-101		

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature]
LOUIS MANGIONE
MANGIONE ENTERPRISES OF TURF VALLEY, LP

2/1/18
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

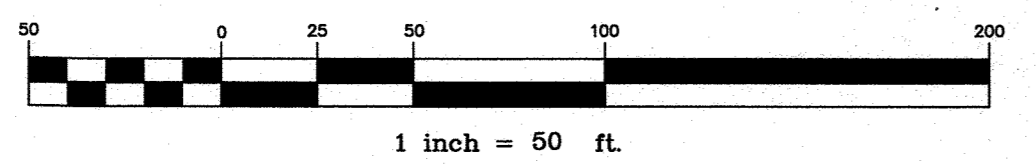
[Signature]
CHIEF, BUREAU OF HIGHWAYS

3/1/2018
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

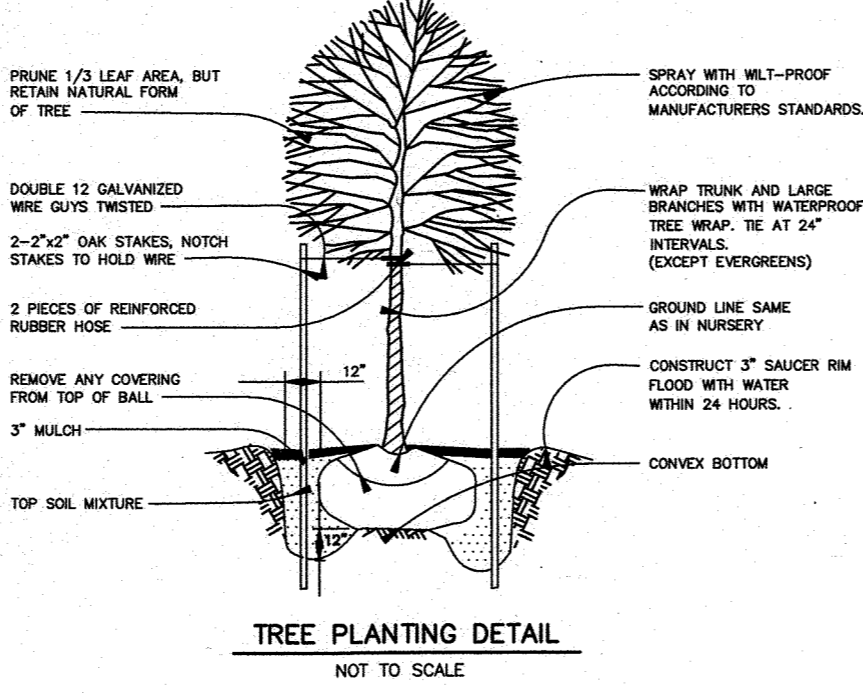
[Signature]
S. M...
CHIEF, DIVISION OF LAND DEVELOPMENT

3-9-18
DATE



LEGEND

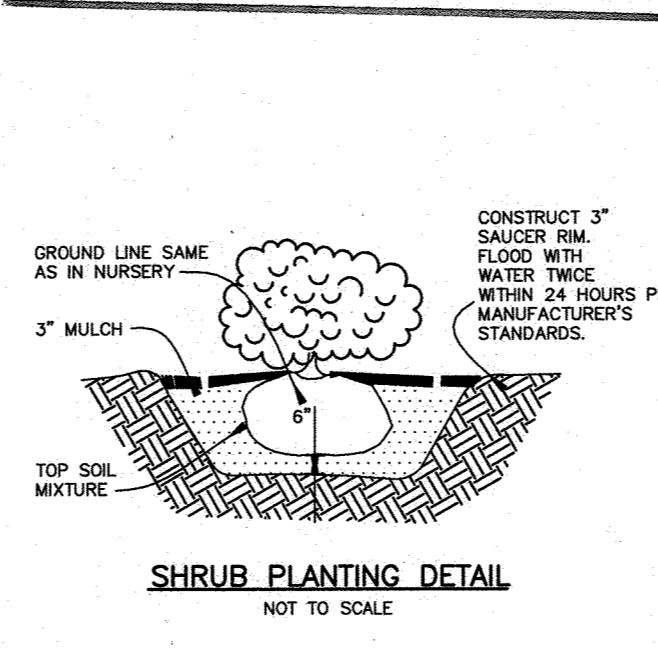
	TREELINE
	STORM DRAIN PIPE
	FIRE HYDRANT
	STREET LIGHT
	PROPOSED PAVING



"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

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. 21443, Expiration Date: 12-21-22



- LANDSCAPE NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - STREET TREE LOCATIONS:**
 - A. WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS 6 FEET OR GREATER, THE TREES SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AND SHALL BE CENTERED BETWEEN THE CURB AND SIDEWALK.
 - B. WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS LESS THAN 6 FEET, TREES MAY BE PLANTED 3 FEET FROM THE SIDEWALK IN THE DIRECTION AWAY FROM THE ROAD. A 10-FOOT WIDE TREE MAINTENANCE EASEMENT SHALL BE REQUIRED IF THE RIGHT-OF-WAY IS LIMITED.
 - C. TREES SHALL BE PLANTED 6 FEET BEHIND CURB WHEN THERE ARE NO SIDEWALKS.
 - D. TREES TO BE PLANTED MINIMUM 30 FEET FROM SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB. TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A STORM DRAIN INLET, OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
 - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
 - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
 - FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THE FUTURE SITE DEVELOPMENT PLAN.

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 315 ELICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-6544
WWW.BE-CIVILENGINEERING.COM

CAPERTON VILLAGE AT TURF VALLEY
PHASE 2
LOTS 56-91; OPEN SPACE LOTS 92-93;
AND NON-BUILDABLE BULK PARCELS 'E'

TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
ZONED: PGCC

LANDSCAPE PLAN

OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

DATE: JANUARY 2, 2018 BEI PROJECT NO. 2757
SCALE: AS SHOWN SHEET 5 OF 10

DRAINAGE AREA 'G' STORMWATER MANAGEMENT SUMMARY TABLE									
Practice	DA (sf)	Imp Area (sf)	% Imp	Rv	Pe required	ESDv (cf) Required/Provided	Pe Provided	Maint.	
(N-2) Disconnection of Non-Rooftop	AREA #1	7899	2473	31%	0.33	218 / 218	1.0	Private	
(N-2) Disconnection of Non-Rooftop	AREA #2	34679	5830	17%	0.20	582 / 384	0.7	Private	
(N-2) Disconnection of Non-Rooftop	AREA #3	51,221	3,630	7%	0.11	486 / 78	0.2	Private	
Totals		93,799	11,933	13%	0.16	1286	680		

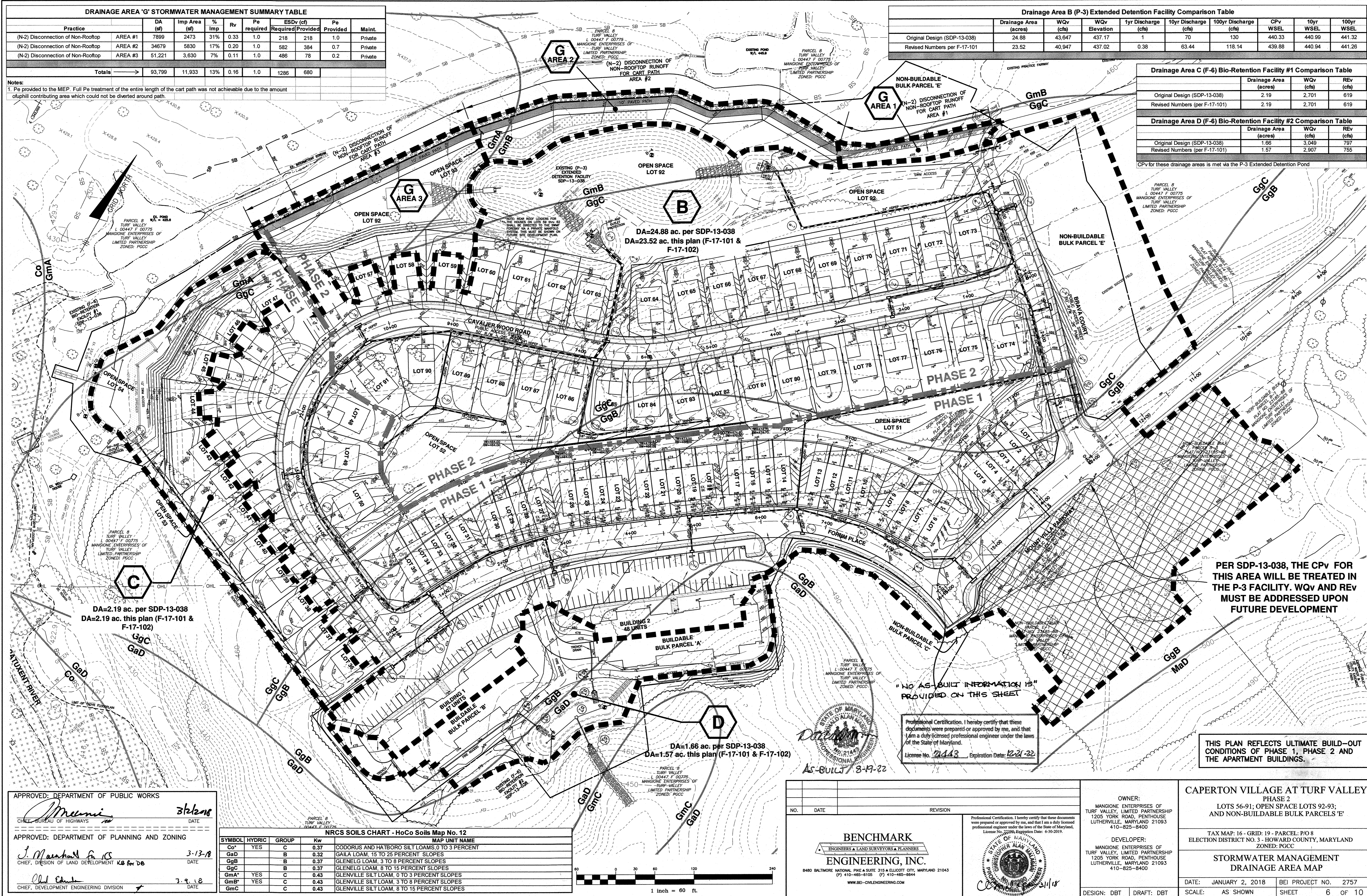
Notes:
 1. Pe provided to the MEP. Full Pe treatment of the entire length of the cart path was not achievable due to the amount of uphill contributing area which could not be diverted around path.

Drainage Area B (P-3) Extended Detention Facility Comparison Table									
	Drainage Area (acres)	WQv (cfs)	WQv Elevation	1yr Discharge (cfs)	10yr Discharge (cfs)	100yr Discharge (cfs)	CPv WSEL	10yr WSEL	100yr WSEL
Original Design (SDP-13-038)	24.88	43,647	437.17	1	70	130	440.33	440.99	441.32
Revised Numbers per F-17-101	23.52	40,947	437.02	0.38	63.44	118.14	439.88	440.94	441.26

Drainage Area C (F-6) Bio-Retention Facility #1 Comparison Table			
	Drainage Area (acres)	WQv (cfs)	REV (cfs)
Original Design (SDP-13-038)	2.19	2,701	619
Revised Numbers per F-17-101	2.19	2,701	619

Drainage Area D (F-6) Bio-Retention Facility #2 Comparison Table			
	Drainage Area (acres)	WQv (cfs)	REV (cfs)
Original Design (SDP-13-038)	1.66	3,049	797
Revised Numbers per F-17-101	1.57	2,907	755

CPv for these drainage areas is met via the P-3 Extended Detention Pond



DA=24.88 ac. per SDP-13-038
 DA=23.52 ac. this plan (F-17-101 & F-17-102)

DA=2.19 ac. per SDP-13-038
 DA=2.19 ac. this plan (F-17-101 & F-17-102)

DA=1.66 ac. per SDP-13-038
 DA=1.57 ac. this plan (F-17-101 & F-17-102)

PER SDP-13-038, THE CPv FOR THIS AREA WILL BE TREATED IN THE P-3 FACILITY. WQv AND REV MUST BE ADDRESSED UPON FUTURE DEVELOPMENT

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

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. 21443 Expiration Date: 12-21-22

THIS PLAN REFLECTS ULTIMATE BUILD-OUT CONDITIONS OF PHASE 1, PHASE 2 AND THE APARTMENT BUILDINGS.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHEF, BUREAU OF HIGHWAYS
 DATE: 3/26/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 J. Marshall for US
 CHIEF, DIVISION OF LAND DEVELOPMENT KB for DB
 DATE: 3-13-18

Chief, Development Engineering Division
 DATE: 3-9-18

NRCS SOILS CHART - HoCo Soils Map No. 12				
SYMBOL	HYDRIC	GROUP	Kw	MAP UNIT NAME
Co*	YES	C	0.37	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT
GaD		B	0.32	GAILA LOAM, 15 TO 25 PERCENT SLOPES
GgB		B	0.37	GLENELG LOAM, 3 TO 8 PERCENT SLOPES
GgC		B	0.37	GLENELG LOAM, 8 TO 15 PERCENT SLOPES
GmA*	YES	C	0.43	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES
GmB*	YES	C	0.43	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES
GmC		C	0.43	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES

1 inch = 60 ft.

NO. DATE REVISION

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 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE SUITE 315 & ELLIOTT CITY, MARYLAND 21043
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 410-825-8400

DEVELOPER:
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 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093
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CAPERTON VILLAGE AT TURF VALLEY
 PHASE 2
 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'

TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
 ZONED: PGCC

STORMWATER MANAGEMENT DRAINAGE AREA MAP

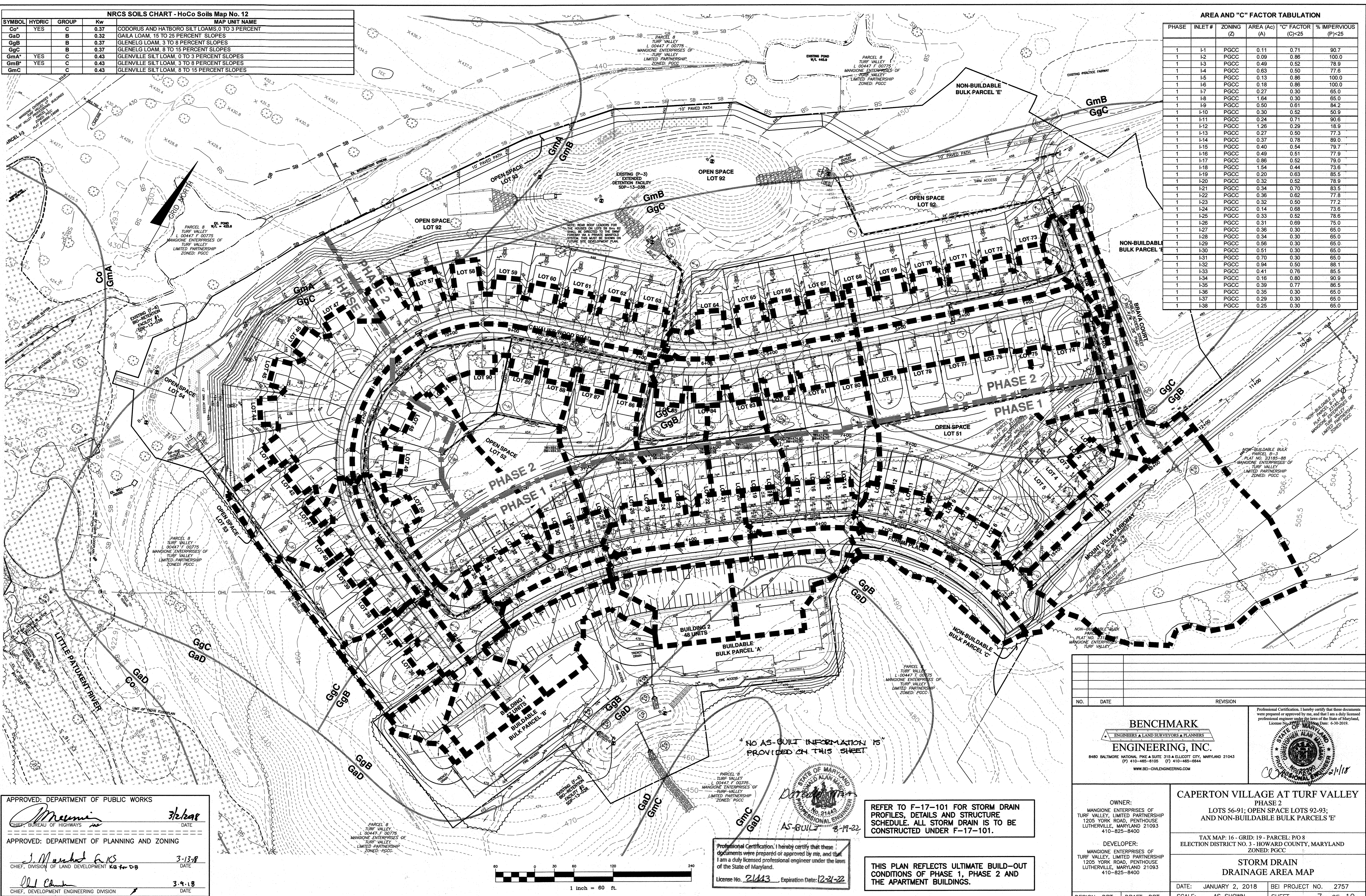
DATE: JANUARY 2, 2018
 SCALE: AS SHOWN

BEI PROJECT NO. 2757
 SHEET 6 OF 10

AS-BUILT F-17-102

NRCS SOILS CHART - HoCo Soils Map No. 12				
SYMBOL	HYDRIC	GROUP	Kw	MAP UNIT NAME
Co*	YES	C	0.37	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT
GaD		B	0.32	GAILA LOAM, 15 TO 25 PERCENT SLOPES
GgB		B	0.37	GLENELG LOAM, 3 TO 8 PERCENT SLOPES
GgC		B	0.37	GLENELG LOAM, 8 TO 15 PERCENT SLOPES
GmA*	YES	C	0.43	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES
GmB*	YES	C	0.43	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES
GmC		C	0.43	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES

AREA AND "C" FACTOR TABULATION					
PHASE	INLET #	ZONING (Z)	AREA (Ac) (A)	"C" FACTOR (C)<25	% IMPERVIOUS (P)>25
1	1-1	PGCC	0.11	0.71	90.7
1	1-2	PGCC	0.09	0.86	100.0
1	1-3	PGCC	0.49	0.52	78.9
1	1-4	PGCC	0.63	0.50	77.6
1	1-5	PGCC	0.13	0.86	100.0
1	1-6	PGCC	0.18	0.86	100.0
1	1-7	PGCC	0.27	0.30	65.0
1	1-8	PGCC	1.64	0.30	65.0
1	1-9	PGCC	0.50	0.61	84.2
1	1-10	PGCC	0.30	0.52	80.9
1	1-11	PGCC	0.24	0.71	90.6
1	1-12	PGCC	1.26	0.29	18.9
1	1-13	PGCC	0.27	0.50	77.3
1	1-14	PGCC	0.37	0.78	89.0
1	1-15	PGCC	0.40	0.54	79.7
1	1-16	PGCC	0.49	0.51	77.9
1	1-17	PGCC	0.86	0.52	79.0
1	1-18	PGCC	1.54	0.44	73.6
1	1-19	PGCC	0.20	0.63	85.5
1	1-20	PGCC	0.32	0.52	78.9
1	1-21	PGCC	0.34	0.70	83.5
1	1-22	PGCC	0.36	0.62	77.8
1	1-23	PGCC	0.32	0.50	77.2
1	1-24	PGCC	0.14	0.68	73.6
1	1-25	PGCC	0.33	0.52	78.6
1	1-26	PGCC	0.31	0.69	75.0
1	1-27	PGCC	0.36	0.30	65.0
1	1-28	PGCC	0.34	0.30	65.0
1	1-29	PGCC	0.56	0.30	65.0
1	1-30	PGCC	0.51	0.30	65.0
1	1-31	PGCC	0.70	0.30	65.0
1	1-32	PGCC	0.94	0.50	88.1
1	1-33	PGCC	0.41	0.76	85.5
1	1-34	PGCC	0.16	0.80	90.9
1	1-35	PGCC	0.39	0.77	86.5
1	1-36	PGCC	0.35	0.30	65.0
1	1-37	PGCC	0.29	0.30	65.0
1	1-38	PGCC	0.25	0.30	65.0



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 3/2/18
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3-13-18
 CHIEF, DIVISION OF LAND DEVELOPMENT KB for DB DATE

[Signature] 3-9-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"



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. 21443 Expiration Date: 12-21-22

REFER TO F-17-101 FOR STORM DRAIN PROFILES, DETAILS AND STRUCTURE SCHEDULE. ALL STORM DRAIN IS TO BE CONSTRUCTED UNDER F-17-101.

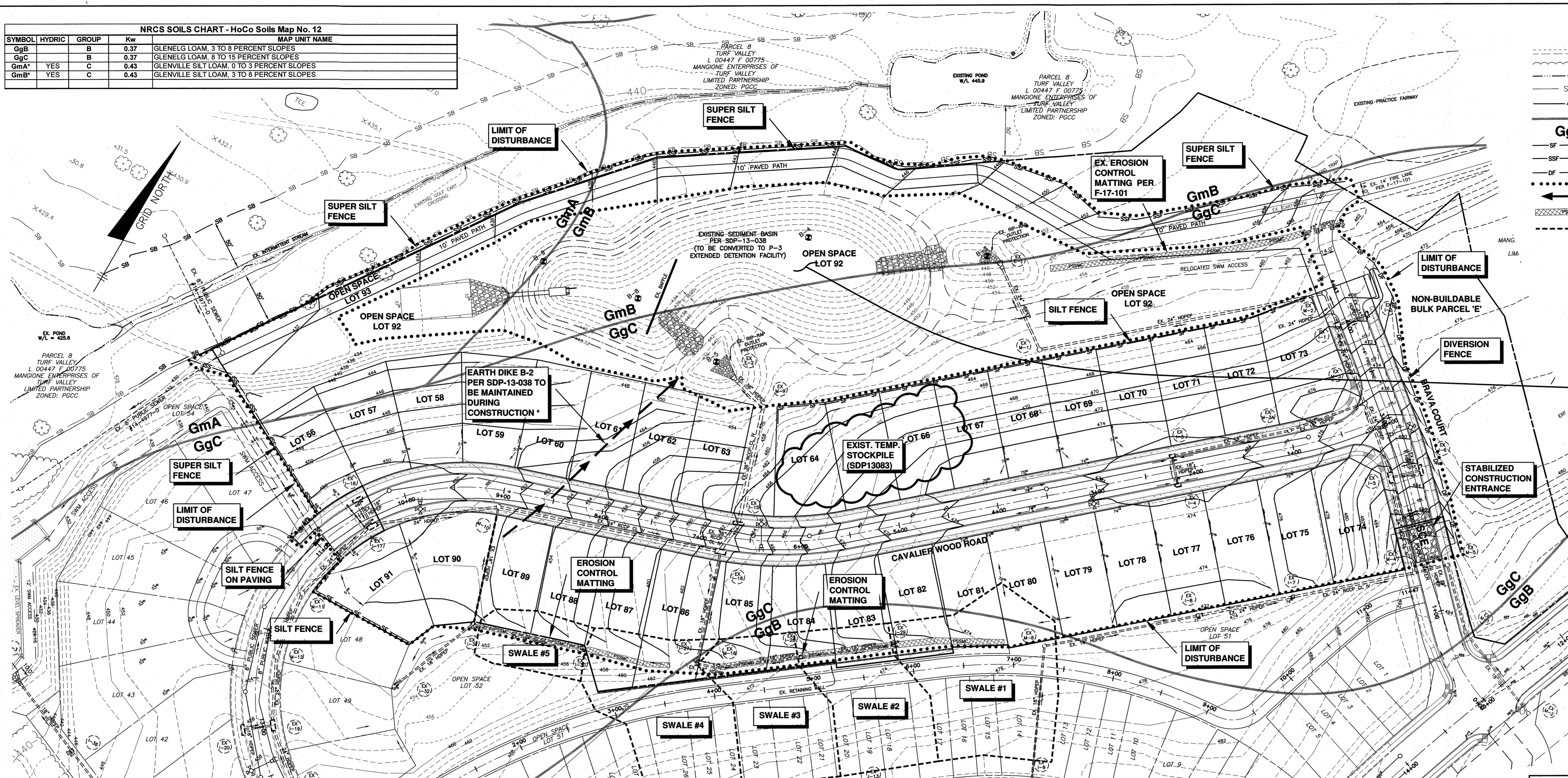
THIS PLAN REFLECTS ULTIMATE BUILD-OUT CONDITIONS OF PHASE 1, PHASE 2 AND THE APARTMENT BUILDINGS.

NO. DATE REVISION	
BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8450 BALTIMORE NATIONAL PIKE & SUITE 315 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-6844 WWW.BEI-CIVILENGINEERING.COM	
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. 21443, dated 8-19-2019. 	
CAPERTON VILLAGE AT TURF VALLEY PHASE 2 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'	
TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND ZONED: PGCC	
STORM DRAIN DRAINAGE AREA MAP	
OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400
DATE: JANUARY 2, 2018 SCALE: AS SHOWN	BEI PROJECT NO. 2757 SHEET 7 OF 10
DESIGN: DBT DRAFT: DBT	

NRCS SOILS CHART - HoCo Soils Map No. 12			
SYMBOL	HYDRIC	GROUP	MAP UNIT NAME
GgB		B	GLENNELG LOAM, 3 TO 8 PERCENT SLOPES
GgC		C	GLENNELG LOAM, 8 TO 15 PERCENT SLOPES
GmA*	YES	C	GLENNVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES
GmB*	YES	C	GLENNVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES

LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING STREAM
- EXISTING STREAM BUFFER
- PROPOSED CONTOURS
- SOILS DELINEATION
- SOILS TYPE
- SILT FENCE
- SUPER SILT FENCE
- DIVERSION FENCE
- LIMIT OF DISTURBANCE
- EARTH DIKE/CLEANWATER DIVERSION DIKE
- PERMANENT SOIL STABILIZATION MATTING
- DRAINAGE AREA



**EXIST. SEDIMENT BASIN #1
CONSTRUCTED UNDER
SDP-13-038**

EXISTING DRAINAGE AREA: 20.5 AC +/-
 PROPOSED DRAINAGE AREA: 20.5 AC +/-
 WET STORAGE REQUIRED: 36,900 CF
 WET STORAGE PROVIDED: 45,064 CF
 DRY STORAGE REQUIRED: 36,900 CF
 DRY STORAGE PROVIDED: 75,084 CF
 WEIR LENGTH: 36.0' PRINCIPAL SPILLWAY
 STORAGE DEPTH BELOW OUTLET: 6.07'
 CLEANOUT ELEVATION: 435.15
 TRAP BOTTOM: 434.10
 TRAP DIMENSIONS: 315'x40'
 WET STORAGE ELEVATION: 437.10
 CREST ELEVATION: 440.17

**NOTE: TO REMAIN UNTIL
FUTURE PHASE 2, F-17-102,
IS COMPLETED AND
STABILIZED.**

**THIS PLAN IS FOR GRADING,
SEDIMENT,
AND EROSION CONTROL ONLY**

ENGINEER'S CERTIFICATE

I 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.

C. Malaga 2/1/18
ENGINEER DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE 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.

D. Wang 2/1/18
DEVELOPER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Roberts 2/13/18
HOWARD SOIL CONSERVATION DISTRICT DATE

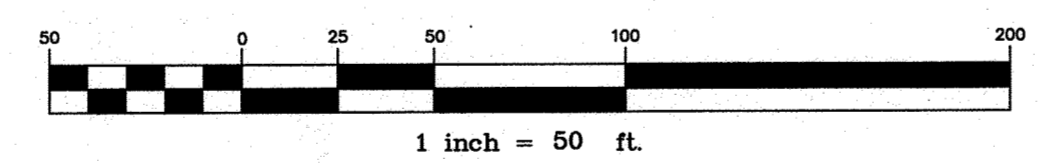
APPROVED: DEPARTMENT OF PUBLIC WORKS

M. Green 3/2/2018
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

2. Marko for DS 3-13-18
CHIEF, DIVISION OF LAND DEVELOPMENT FOR DPZ DATE

Ch. P. ... 3-9-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



SEQUENCE OF CONSTRUCTION

- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK
- Obtain grading permit. Notify D.I.L.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)
 - Hold on-site pre-construction meeting. (1 day)
 - Install stabilized construction entrance. Clear and grub as necessary to install perimeter controls (i.e. super silt fence, diversion fence). Once cleared and grubbed, install perimeter controls. Start with the diversion fencing. (1 week)
 - Bring road bed to subgrade, begin mass grading of site, and install utilities (i.e. water, sewer, and house connections). Ensure that the existing earth dike is maintained throughout the mass grading. (6 weeks)
 - Install curb and gutter. Once installed, the interior earth dike can be removed. (1 week)
 - Base pave all roads. (1 week)
 - Complete mass grading of lots and stabilize in accordance with the permanent seedbed notes. (2 weeks)
 - Construct the paved golf cart path. (1 week)
 - Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seedbed notes. (1 week)
- Note: The existing sediment basin to remain until future Phase 2 is completed and stabilized at which time it can be converted to its permanent SWMF configuration. Flush entire storm drain system prior to conversion.
- Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:
 A. 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1
 B. 7 calendar days for all other disturbed areas.
 During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.

* NOTE: EARTH DIKE TO BE REPLACED BY A MACADAM BERM AT THE DISCRETION OF THE CID INSPECTOR. "NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"



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. 21443, Expiration Date: 12-31-22

<p>BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-8444 WWW.BE-CIVILENGINEERING.COM</p>		
<p>CAPERTON VILLAGE AT TURF VALLEY PHASE 2 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'</p>		
<p>TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND ZONED: PGCC</p>		
<p>GRADING, SEDIMENT AND EROSION CONTROL PLAN</p>		
<p>OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400</p>	<p>DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400</p>	
<p>DATE: JANUARY 2, 2018</p>	<p>SCALE: AS SHOWN</p>	<p>BEI PROJECT NO. 2757 SHEET 8 OF 10</p>

HOWARD SOIL CONSERVATION DISTRICT (HSCD) SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works... 2. All vegetative and structural practices are to be installed according to the provisions of this plan...

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

A mound or pile of soil protected by appropriately designed erosion and sediment control measures. Provide a designated location for the temporary storage of soil that controls the potential for erosion...

Table with 2 columns: Category and Value. Includes: Total Area of Site: 12.69 Acres; Area Disturbed: 8.48 Acres; Area to be roofed or paved: 1.32 Acres; Area to be vegetatively stabilized: 7.16 Acres; Total cut: 20,000 Cu Yds; Total fill: 20,000 Cu Yds.

8. Additional sediment control must be provided, if deemed necessary by the CD. The site and all controls shall be inspected by the contractor weekly and the next day after each rain event...

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Controlling the suspension of dust particles from construction activities. Purpose: To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage...

- 1. Muffles: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments... 2. Vegetative Cover: See Section B-4-4 Temporary Stabilization... 3. Tillage: Till to roughen surface and bring clods to the surface...

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved wastewater structure. 13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

*CUT/FILL NUMBERS ARE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR TO VERIFY.

Table with 3 columns: NO., DATE, REVISION. Rows 1, 2, 3.

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. 21443, Expiration Date: 12-21-22.

BENCHMARK ENGINEERS, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-8644 WWW.BE-CIVILENGINEERING.COM

CAPERTON VILLAGE AT TURF VALLEY PHASE 2 LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E' TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND ZONED: PGCC

SEDIMENT AND EROSION CONTROL NOTES DATE: JANUARY 2, 2018 BEI PROJECT NO. 2757 SCALE: AS SHOWN SHEET 9 OF 10

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Using vegetation as cover to protect exposed soil from erosion. Purpose: To promote the establishment of vegetation on exposed soil. Conditions Where Practice Applies: On all disturbed areas not stabilized by other methods...

Adequate Vegetative Establishment. Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseeds within the planting season.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Establishment of vegetative cover on cut and fill slopes. Purpose: To provide timely vegetative cover on cut and fill slopes as work progresses. Conditions Where Practice Applies: Any cut or fill slope greater than 15 feet in height.

Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses. 2. Construction sequence example (Refer to Figure B.1):

1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses. 2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet...

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

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.

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.

Topsoiling. 1. Topsoil is prepared over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth.

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 Amendments (Fertilizer and Lime Specifications). 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment.

Soil Amendments (Fertilizer and Lime Specifications). 3. 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.

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

The application of seed and mulch to establish vegetative stabilization. Definition: Definition. Purpose: To protect disturbed soils from erosion during and at the end of construction.

Application. 1. Specifications. a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be tested by re-testing by a recognized seed laboratory.

Mulching. 1. Mulch Materials (in order of preference). a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color.

Application. 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...

Application. 3. Anchoring. a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

To stabilize disturbed soils with permanent vegetation. Definition: Definition. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

General Use. 1. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone from Figure B.3 and based on the site condition or purpose found on Table 2.

Maintenance. The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B.4 Vegetative Stabilization.

Soil Installation. 1. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.

Soil 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.

Soil Installation. 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 mulch soil to a depth of 4 inches.

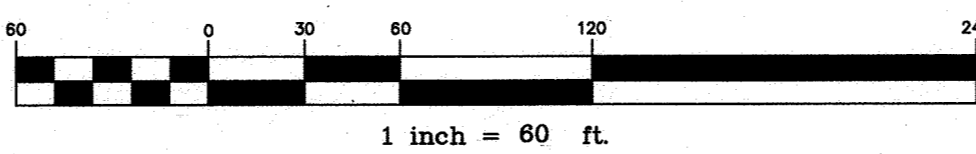
Soil Installation. 3. Sod Maintenance. b. After the first week, soil watering is required as necessary to maintain adequate moisture content. c. Do not mow until the sod is firmly rooted.

Permanent Seeding Summary. Table with columns: Hardness Zone, Seed Mixture, Application Rate, Seeding Dates, Seeding Depths, N, P205, K2O, Lime Rate.

Table B.1: Temporary Seeding for Site Stabilization

Table with 5 columns: Plant Species, Seeding Rate 1/, Recommended Seeding Dates by Plant Hardness Zone 3/, Seeding Depth 2/, Sb and 6a, 7a and 7b.

Notes: 1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. 2/ For sandy soils, plant seeds at twice the depth listed above.



ENGINEER'S CERTIFICATE. I 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.

DEVELOPER'S CERTIFICATE. I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

APPROVED, DEPARTMENT OF PUBLIC WORKS. CHIEF, BUREAU OF HIGHWAYS. DATE: 3/2/2018.

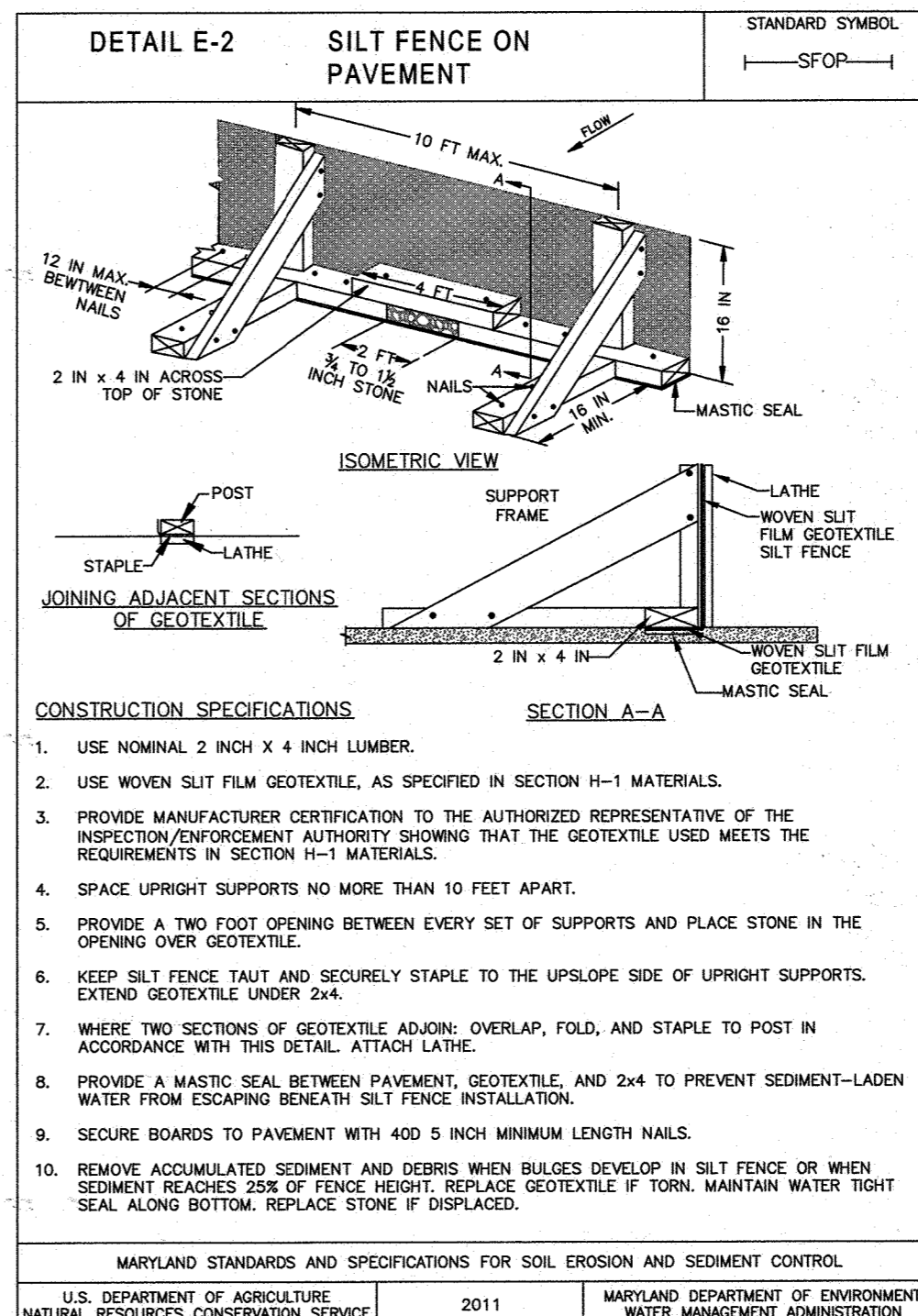
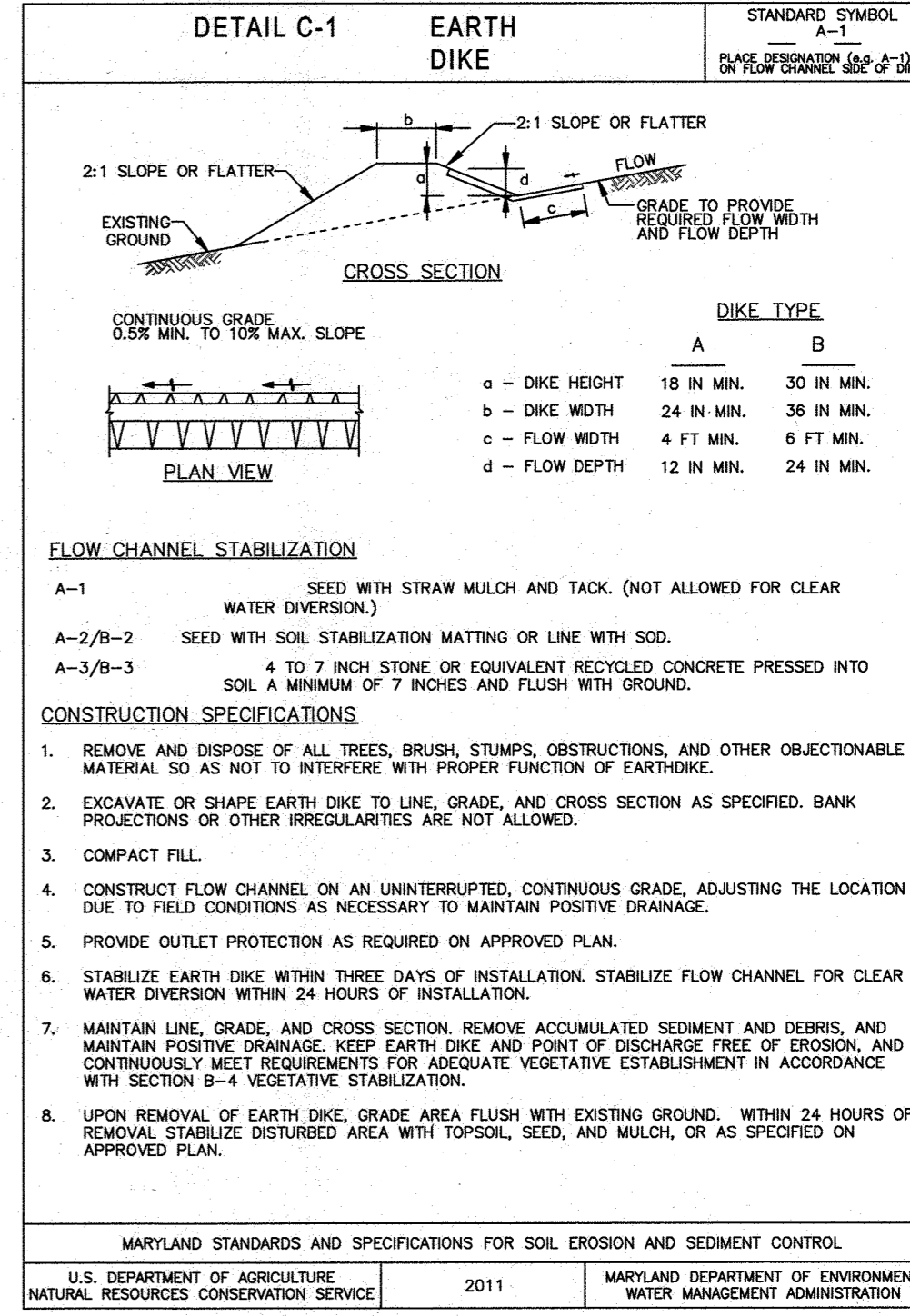
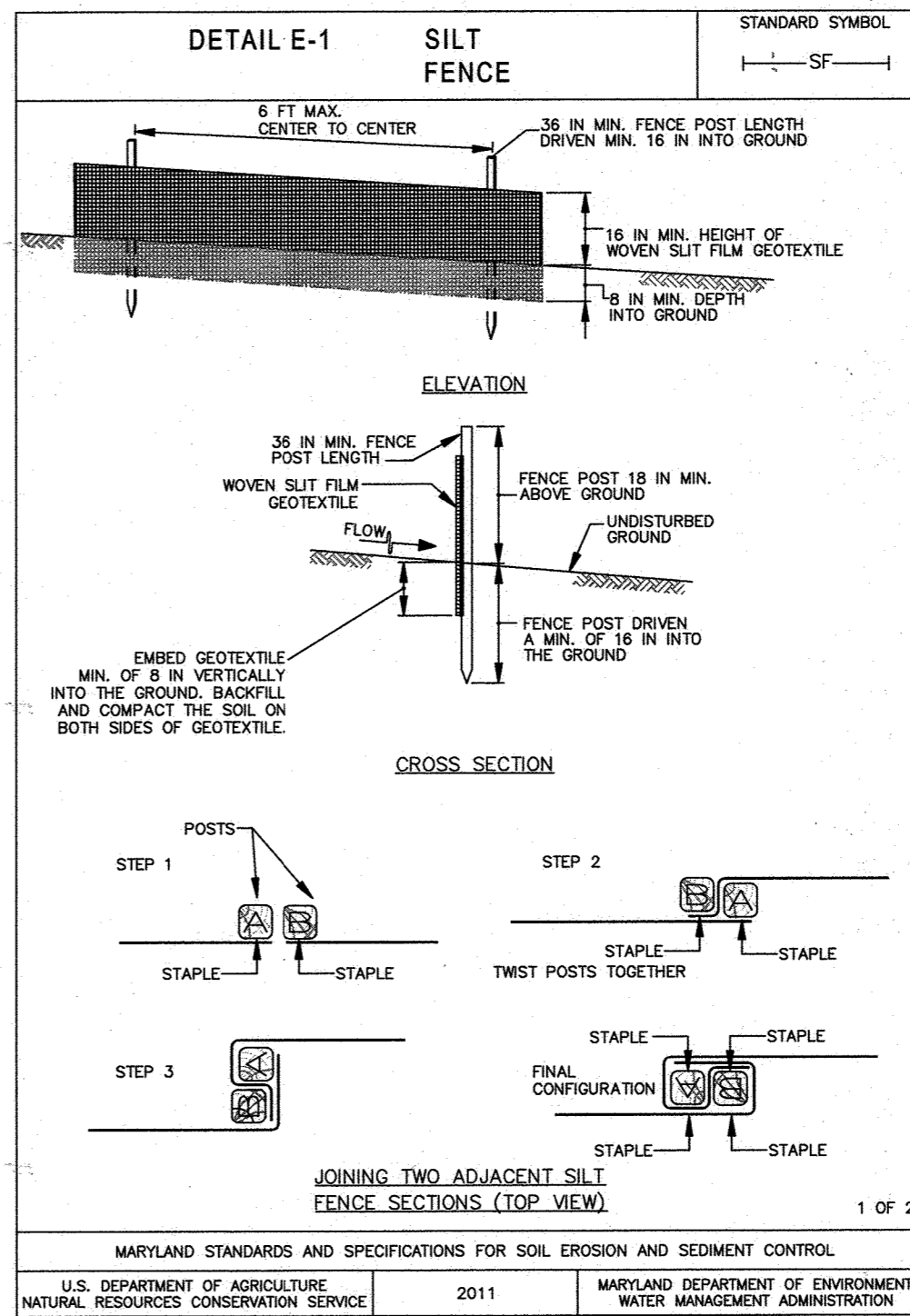
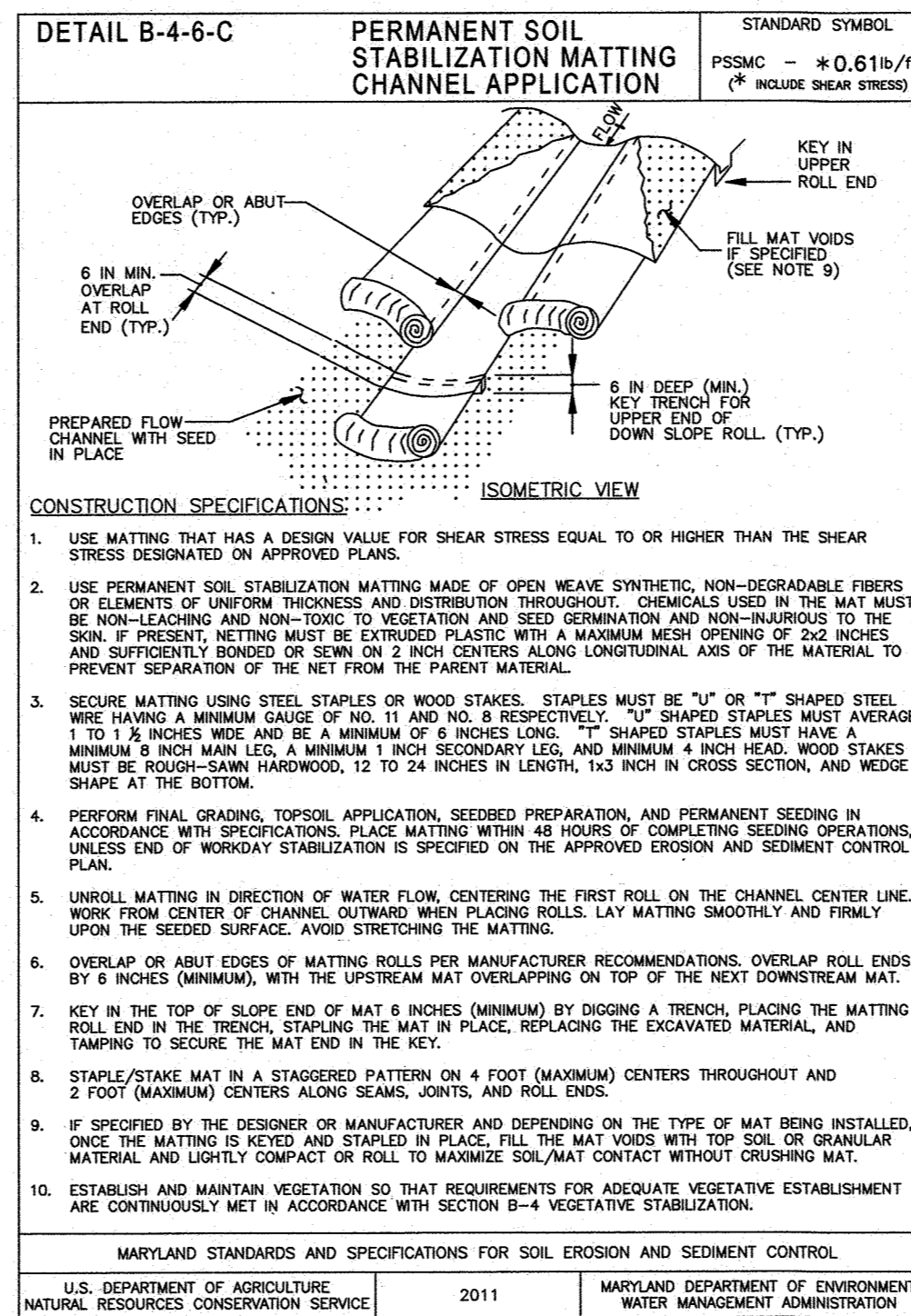
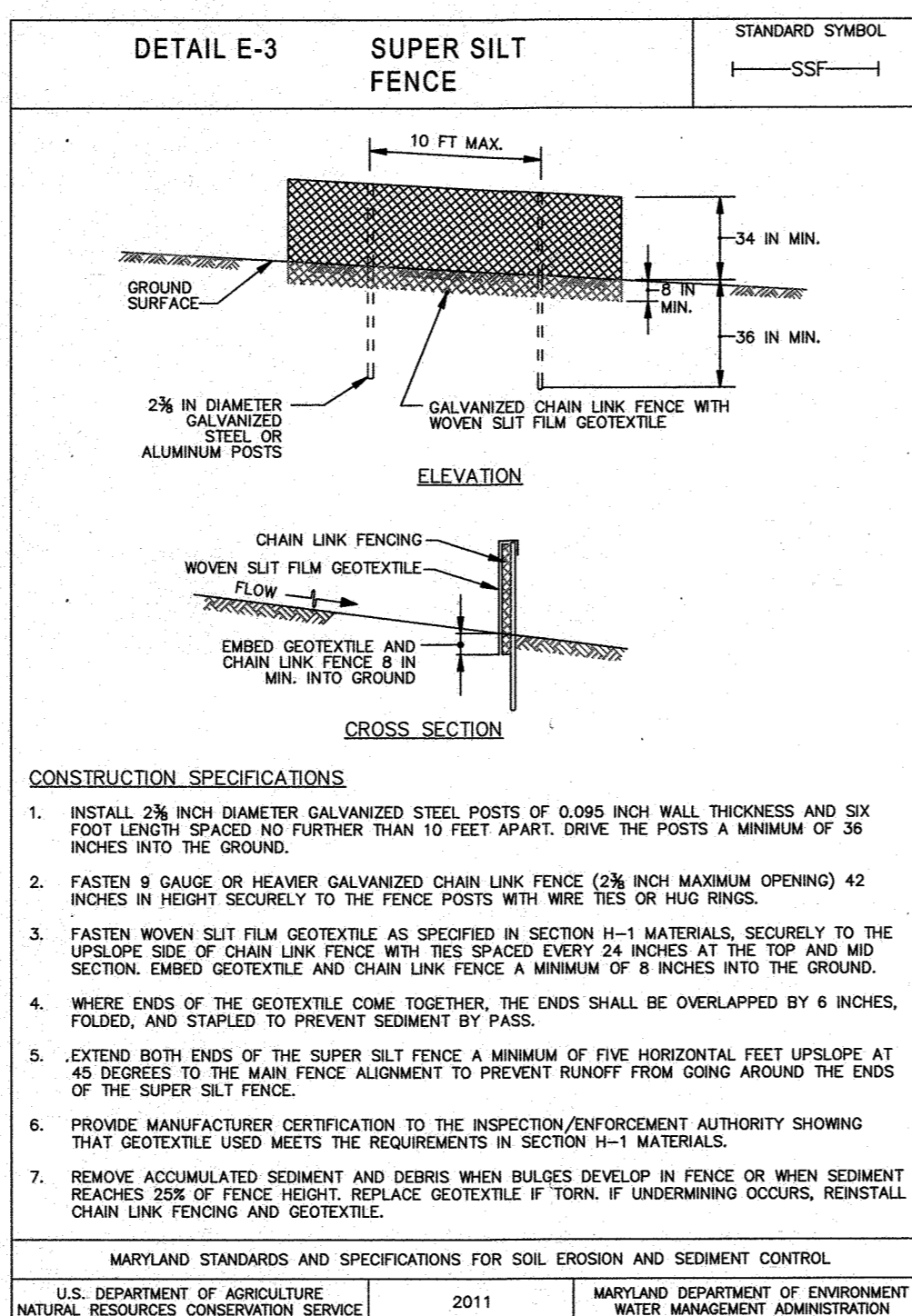
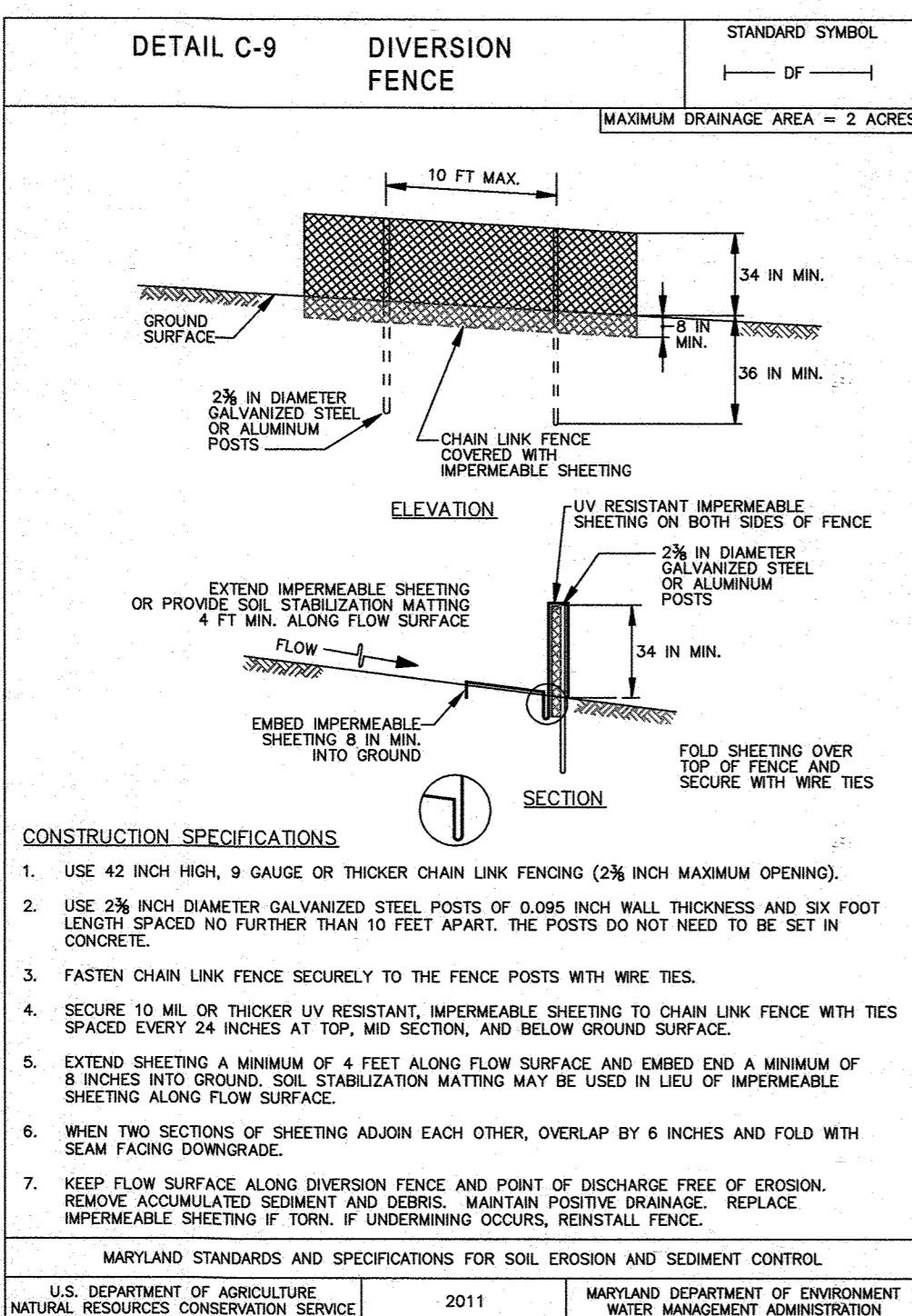
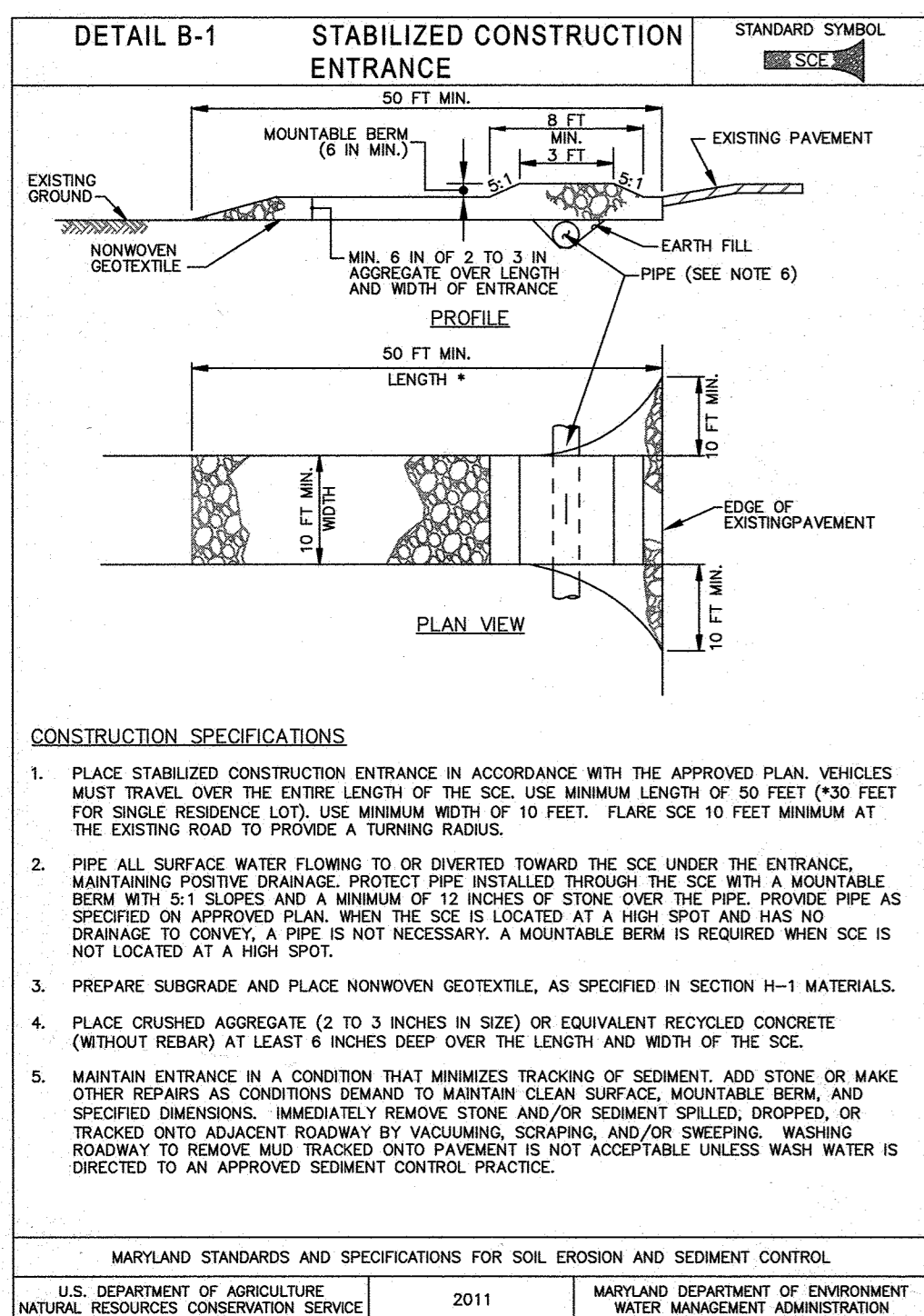
APPROVED, DEPARTMENT OF PLANNING AND ZONING. S. Marchand, P.E. DATE: 2-13-18. CHIEF, DIVISION OF LAND DEVELOPMENT.

*NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET

Professional Certification seal for David R. ... License No. 21443, Expiration Date: 12-21-22.

Professional Certification seal for David R. ... License No. 21443, Expiration Date: 12-21-22.

Professional Certification seal for David R. ... License No. 21443, Expiration Date: 12-21-22.



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Cl Malaga 2/1/18
ENGINEER DATE

DEVELOPER'S CERTIFICATE

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John R. Blanton 2/1/18
DEVELOPER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Blanton 2/13/18
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Michael 3/2/2018
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
J. Marks 3-13-18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad 3-9-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

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. **21443** Expiration Date: **12-2-22**

AS-BUILT 2-17-22

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS & LAND SURVEYORS & PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-465-8105 (F) 410-465-8644
WWW.BE-CIVILENGINEERING.COM

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. **21443** Expiration Date: **12-2-22**

CAPERTON VILLAGE AT TURF VALLEY PHASE 2
LOTS 56-91; OPEN SPACE LOTS 92-93; AND NON-BUILDABLE BULK PARCELS 'E'

TAX MAP: 16 - GRID: 19 - PARCEL: P/O 8
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND
ZONED: PGCC

SEDIMENT AND EROSION CONTROL DETAILS

OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400

DATE: JANUARY 2, 2018 BEI PROJECT NO. 2757
SCALE: AS SHOWN SHEET 10 OF 10