

GENERAL NOTES

- SUBJECT PROPERTY IS ZONED "PGCC" PER THE 1006/2013 COMPREHENSIVE ZONING PLAN.
- PRELIMINARY PLAN APPROVAL DATE: 11/21/2016
- GROSS AREA OF SITE SUBJECT TO SUBDIVISION = 74.63 AC.
- GROSS AREA OF PHASE I = 74.63 AC.
- OPEN SPACE LOT 73 TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- OPEN SPACE LOT 74 WILL BE OWNED AND MAINTAINED BY TURF VALLEY PROPERTY OWNERS ASSOCIATION, INC.
- GOLF SPACE LOTS 75 AND 76 WILL BE OWNED AND MAINTAINED BY MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
- LOTS WILL BE SERVICED BY PUBLIC WATER AND PUBLIC SEWER. PUBLIC WATER AND PUBLIC SEWER WILL BE EXTENDED FROM CONTRACT #04-4671-D, 24-4354-D, AND 20-1890-D.
- SOILS HAVE BEEN TAKEN FROM THE NROS WEB SOIL SURVEY WEBSITE.
- EXISTING TOPOGRAPHY IS BASED ON WINGS AERIAL MAPPING CO., INC. WITH 2 FOOT CONTOUR INTERVAL ON OR ABOUT JANUARY, 2006.
- BOUNDARY SURVEY PREPARED BY NJR & ASSOCIATES ON OR ABOUT MAY, 2017.
- THERE ARE NO HISTORIC STRUCTURES OR GEOMETRIES WITHIN THE PROJECT BOUNDARY.
- WETLAND LIMITS SHOWN ARE BASED ON A STUDY CONDUCTED BY EXPLORATION RESEARCH, INC. AND VERIFIED BY ECO-SCIENCE PROFESSIONALS, INC. ON MAY 31, 2016. 100-YEAR FLOODPLAIN LIMITS SHOWN ARE BASED ON A STUDY PREPARED BY BENCHMARK ENGINEERING, INC. DATED SEPTEMBER 2016. WETLANDS SHOWN ARE IN ACCORDANCE WITH THOSE SHOWN ON THE FOURTH AMENDMENT TO THE TURF VALLEY COMPREHENSIVE SKETCH PLAN (S-86-13, PB 368), APPROVED JULY, 28, 2006.
- PREVIOUS HOWARD COUNTY FILE NUMBERS: P-16-001, S-11-004, ECP-11-062, SP-08-006.
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- EXISTING UTILITIES TO BE MAINTAINED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- GEOTECHNICAL EXPLORATION AND TESTING HAS BEEN PERFORMED BY HILLIS-CARNES IN APRIL, 2016. IF FUTURE INVESTIGATIONS SHOW UNSATISFACTORY SOIL CONDITIONS FOR ANY OF THE STORMWATER MANAGEMENT TREATMENTS SHOWN, EITHER TARGET Pn AND RCN NUMBERS ARE MET BY THE USE OF THESE PRACTICES. THEREFORE CPV IS NOT REQUIRED. STORMWATER MANAGEMENT FOR A PORTION OF THIS DEVELOPMENT IS PROVIDED BY A REGIONAL STORMWATER MANAGEMENT POND CONSTRUCTED UNDER SDP-95-121. WOV, REV AND CPV REQUIREMENTS FOR THE AREAS THAT DRAIN TO THE REGIONAL STORMWATER MANAGEMENT FACILITY ARE PROVIDED BY THAT FACILITY. SEE THE STORMWATER MANAGEMENT REPORT FOR SDP-95-121 FOR DESIGN COMPUTATIONS FOR THE REGIONAL STORMWATER MANAGEMENT FACILITY.
- A FINAL FOREST CONSERVATION PLAN HAS BEEN PROVIDED IN ACCORDANCE WITH SECTION 16.1200 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE FOREST CONSERVATION MANUAL.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC GROUP, DATED JANUARY 07, 2005 AND WAS APPROVED UNDER THE 4TH AMENDED COMPREHENSIVE SKETCH PLAN ON APRIL 27, 2006.
- APPROVED PHASING CHART FOR THIS DEVELOPMENT IS ON RECORD IN DPZ FILES.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	410.531.5533
BGE(CONTRACTOR SERVICES)	410.850.4620
BGE(UNDERGROUND DAMAGE CONTROL)	410.787.9068
MISS UTILITY	1.800.257.7777
COLONIAL PIPELINE COMPANY	410.795.1390
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES	410.313.4900
HOWARD COUNTY HEALTH DEPARTMENT	410.313.2640
AT&T	1.800.252.1133
VERIZON	1.800.743.0033/410.224.9210
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- 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 LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY IN ADDITION TO MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL HDPE PIPE SPECIFICATION AND INSTALLATION SHALL MEET AASHTO M-252 TYPE S, M-294 TYPE S AND ASTM D2321, RESPECTIVELY.
- SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. DRIVEWAY PAVING TO BE HOWARD COUNTY STANDARD P-1 PAVING SECTION. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST, PRIOR TO CONSTRUCTION.
- TRAFFIC CONTROL DEVICES:
 A) THE R-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY 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 OF THE 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 SQUARE TUBE SLEEVE (12 GAUGE), SQUARE TUBE POST (14 GAUGE), INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (12 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.
 E) NO STREET TREE SHALL BE PLANTED WITHIN 30-FEET OF THE STOP SIGN - APPROACH DIRECTION.
 F) ALL DRIVEWAYS SHALL BE CONSTRUCTED AS PER HO. CO. STD. DETAIL R-6.03. DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING REQUIREMENTS:
 1) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
 2) SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM);
 3) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
 4) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
 5) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
 6) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
 G) ALL DITCHES AND SWALES WILL HAVE EROSION CONTROL MATTING.
 H) PERIMETER LANDSCAPING IS REQUIRED UNDER THIS PHASE OF DEVELOPMENT. STREET TREES AND INTERNAL LANDSCAPE TREES WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING FOR LOTS 1 THRU 17 WILL BE PROVIDED FOR AT THE SITE DEVELOPMENT PLAN STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED STREET TREES AND PARKING LOT LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT WITH THIS FINAL PLAN IN THE AMOUNT OF \$3,900 (13 SHADE TREES @ \$300.00 EACH).
 I) A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT SINCE IT IS MORE THAN FIVE HUNDRED FEET (500') FROM A PRINCIPAL OR INTERMEDIATE ARTERIAL HIGHWAY AND SINCE THE HEAVY TRUCK TRAFFIC ON INTERSTATE ROUTE 70 DOES NOT EXCEED AN ADT OF TEN THOUSAND (10,000) VEHICLES.
 J) STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF TWENTY FEET (20') SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. SEE STREET LIGHT CHART, SHEET 2.
 GENERAL NOTES CONTINUE THIS SHEET...

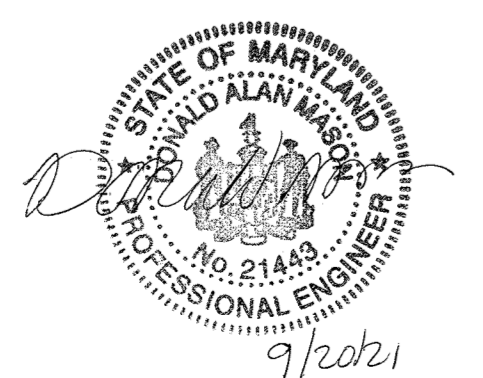
AS-BUILT CERTIFICATION
 I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
 Donald Mason, P.E. Date: 9/26/18

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 7/24/2018

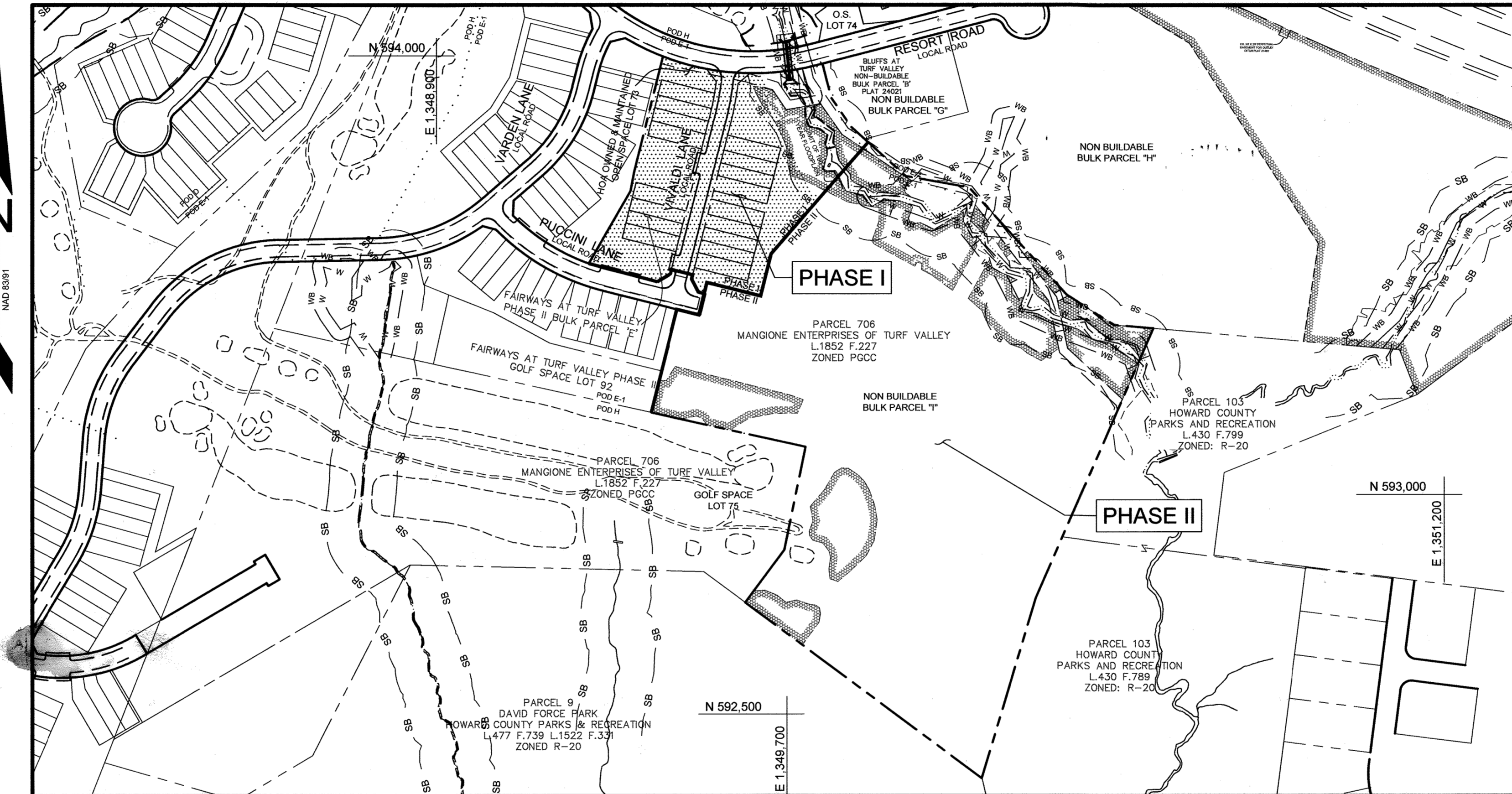
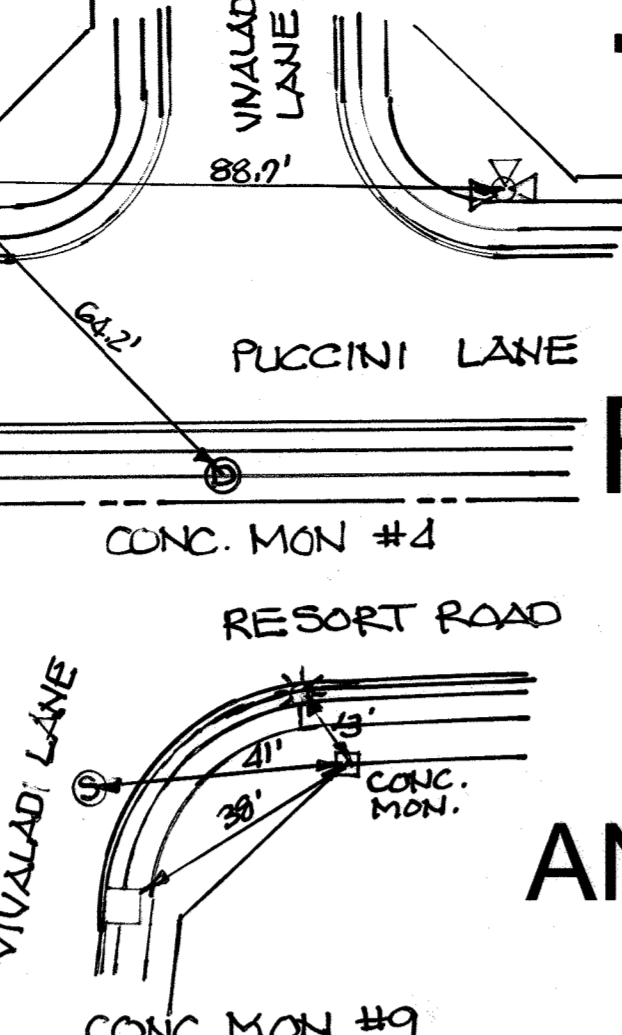
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 8/01/18

DATE: 7.26.18

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: 8/2/2022



TURF VALLEY, POD E-1 PHASE I FINAL ROAD CONSTRUCTION PLANS LOTS 1-17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76 AND NON-BUILDABLE BULK PARCELS G, H, AND I HOWARD COUNTY, MARYLAND



LOCATION MAP
 SCALE: 1"=200'

GENERAL NOTES CONTINUED...

- THIS PROJECT IS SUBJECT TO THE CRITERIA ESTABLISHED BY THE SECOND AMENDMENT TO THE TURF VALLEY RESIDENTIAL SUBDISTRICT FINAL DEVELOPMENT PLAN, RECORDED IN THE LAND RECORDS OF HOWARD COUNTY, MARYLAND AS PLAT NUMBER 20286 AND 20287.
- TURF VALLEY, POD E-1 (S-11-004) CONSTITUTED 74 UNITS/LOTS WHICH MET THE SKETCH PLAN MILESTONE DATES OF 12/21/09 THRU 5/31/11 FOR 74 OF THE 127 UNITS/LOTS, SECTION IV, RESIDENTIAL PHASE IV E AS ESTABLISHED BY THE REVISED PHASING PLAN DATED 7/14/08. THIS PHASE PROPOSES 17 UNITS/LOTS, PHASE II PROPOSES 55 UNITS/LOTS, FOR A TOTAL OF 72 UNITS/LOTS. THE 2 REMAINING UNITS FROM S-11-004 ARE BEING TRANSFERRED TO VILLAGES AT TURF VALLEY PHASE 3 (F-08-085) TO REPLACE SOME OF THE 35 UNITS WHICH TRANSFERRED TO VILLAGES AT TURF VALLEY PHASE 5.
- WAIVER PETITION WP-15-111 APPROVED ON APRIL 1, 2015 APPROVING WAIVER TO SUBSECTION 16.144(g)(3)(i); APPROVAL SUBJECT TO SUBMITTING PRELIMINARY PLANS TO THE DEPARTMENT OF PLANNING & ZONING ON OR BEFORE JUNE 5, 2016.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY BENCHMARK ENGINEERING, INC. IN SEPTEMBER 2016.
- THE HOMEOWNER ASSOCIATION WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL THE HEAD-IN PARKING AREAS INCLUDING PAVEMENT, STRIPING, CURB LITTER PICKUP AND SIDEWALKS.

STORMWATER MANAGEMENT SUMMARY

AREA UNDER PHASE I (SUBJECT TO SWM (LOD AREA))	3.10 ACS
AREA UNDER FLOODPLAIN	0 ACS
AREA UNDER WETLAND/WETLAND BUFFER	0 ACS
EXISTING WOODED AREA	2.63 ACS
EXISTING LAWN AREA	3.10 ACS
AREA OF DISTURBANCE (PHASE I ONLY)	0.4 ACS
EXISTING IMPERVIOUS AREA WITHIN LOD	0 ACS
PROPOSED IMPERVIOUS AREA	1.46 ACS
TARGET Pp FOR TREATMENT	1.8"
ESDv REQUIRED FOR TREATMENT	9,598 CF
ESDv PROVIDED	10,675 CF
Rev REQUIRED FOR TREATMENT	1,386 CF
Rev PROVIDED	2,965 CF
Pp PROVIDED	2.0"
Qp10	N/A
Qp100	N/A

HOUSING TYPE CHART

SINGLE FAMILY DETACHED LOTS	0
TOWNHOUSE	17

TURF VALLEY POD E-1 PHASING CHART

PHASE	TOWNHOUSE	SFD	TOTAL
PHASE I	17	0	17
PHASE II	25	30	55
TOTAL	42	30	72

OPEN SPACE CALCULATION

GROSS AREA	74.63
OPEN SPACE REQUIRED 15% OF GROSS	11.19
OPEN SPACE PROVIDED	25.69
NON-CREDITED	0.0
CREDITED O.S. PROVIDED	25.69

RIGHT OF WAY ELEVATION

R/W PT. NO.	DESCRIPTION	ELEVATION
1	REBAR & CAP	155.57'
2/G	REBAR & CAP	155.47'
3	REBAR & CAP	153.52'
9	CONC. MON.	144.07'
10	REBAR & CAP	141.45'
11	REBAR & CAP	147.69'
12	REBAR & CAP	140.00'
13	MAG NAIL	147.41'
4	CONC MON	154.61'

PARKING TABULATION:

PARKING REQUIRED:
 17 SINGLE-FAMILY ATTACHED (SFA) UNITS (2.5 SPACES PER UNIT) = 43

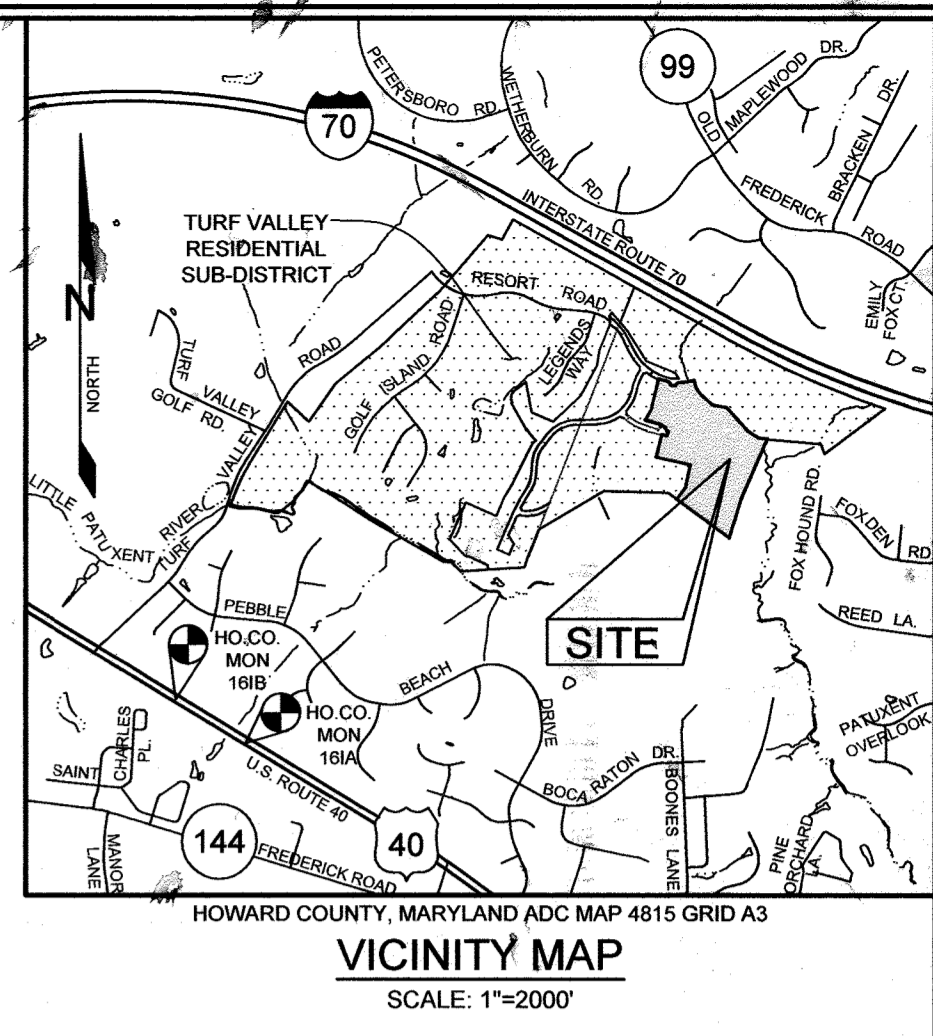
PARKING PROVIDED:
 SPACES WITHIN GARAGES/DRIVEWAYS OF SFA (2 SPACES EACH SFA) = 34
 SPACES WITHIN PARKING LOTS = 9
 TOTAL PARKING SPACES PROVIDED FOR SFA = 43

Turf Valley, Pod E-1 Phase I (F-17-095)
 Stormwater Management Information Chart

Lot/Parcel Number	Facility Name & Number	Practice Type (Quantity)	Public	Private	HOA Maintains	Misc.
Open Space Lot 73	Micro Bioretention MBR-1	M-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Non-Buildable Bulk Parcel "I" (Future O.S. Lot 77, F-17-096)	Micro Bioretention MBR-2	M-6		X	Yes	Located in Bulk Parcel. To be covered under a Developer's Agreement
Non-Buildable Bulk Parcel "I" (Future O.S. Lot 77, F-17-096)	Bioretention B-2	F-6		X	Yes	Located in Bulk Parcel. To be covered under a Developer's Agreement

LEGEND

EXISTING FLOODPLAIN	SB
EXISTING STREAM BUFFER	WB
EXISTING WETLAND BOUNDARY	W
EXISTING WETLAND BUFFER	WB
EXISTING WETLANDS	↓
EXISTING STREAM BANK	↓



- AS-BUILT NOTES:**
- HORIZONTAL AND VERTICAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM (MD 83) ADJ 07 AS PROJECTED FROM HO. CO. GEODETIC CONTROL STATIONS 1218 AND 1748.
 - THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND PRISM AND RTK GPS.
 - THE AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC.

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
161B	590,475.2538	1,344,753.9350	469.892	11.5' SOUTHWEST OF WBL RT. 40, 20.8' WEST OF PK IN N SHOULDER, 66.4' SOUTH OF LAST POST IN GUARDRAIL
161A	589,509.366	1,346,343.63	463.797	RT. 40, 0.35 MI WEST OF RT. 144 JOINT

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	ROAD PLAN AND PROFILE
3	STORM DRAIN DRAINAGE AREA MAP AND PROFILES
4	GRADING, SEDIMENT AND EROSION CONTROL PLAN - 1
5	GRADING, SEDIMENT AND EROSION CONTROL PLAN - 2
6	STORMWATER MANAGEMENT NOTES AND DETAILS
7	STORMWATER MANAGEMENT D.A. MAP
8	STORMWATER MANAGEMENT BORING LOGS
9	SEDIMENT AND EROSION CONTROL NOTES
10	SEDIMENT AND EROSION CONTROL DETAILS
11	LANDSCAPE PLAN
12	FOREST CONSERVATION PLAN

SITE ANALYSIS DATA CHART

NO.	DESCRIPTION	AREA
1	GROSS TRACT AREA	74.63 ± AC.
2	AREA WITHIN 100-YEAR FLOODPLAIN	1.83 AC.
3	TOTAL AREA OF 25% OR GREATER STEEP SLOPES (AREA NOT IN FLOODPLAIN)	2.4 AC.
4	NET TRACT AREA [1-(2+3)]	70.40 ± AC.
5	TOTAL NUMBER OF LOTS ALLOWED PER ZONING	N/A
6	TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED	17
7	AREA OF BUILDABLE LOTS	1.60 ± AC.
8	AREA OF OPEN SPACE LOTS	25.69 ± AC.
9	AREA OF BULK PARCELS	46.79 ± AC.
10	AREA OF PUBLIC RIGHT-OF-WAY	0.55 ± AC.

OWNER/DEVELOPER
 MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8400

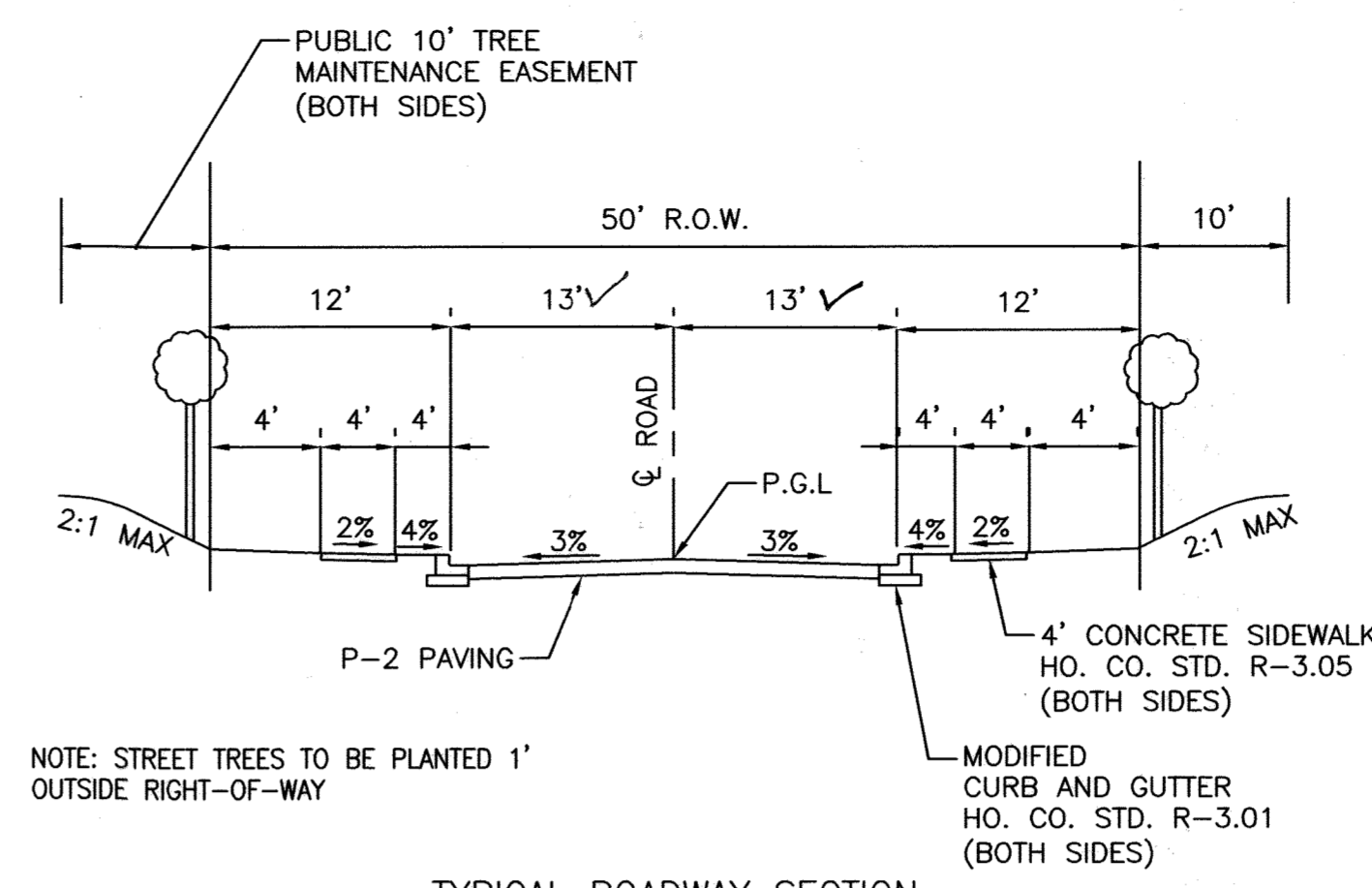
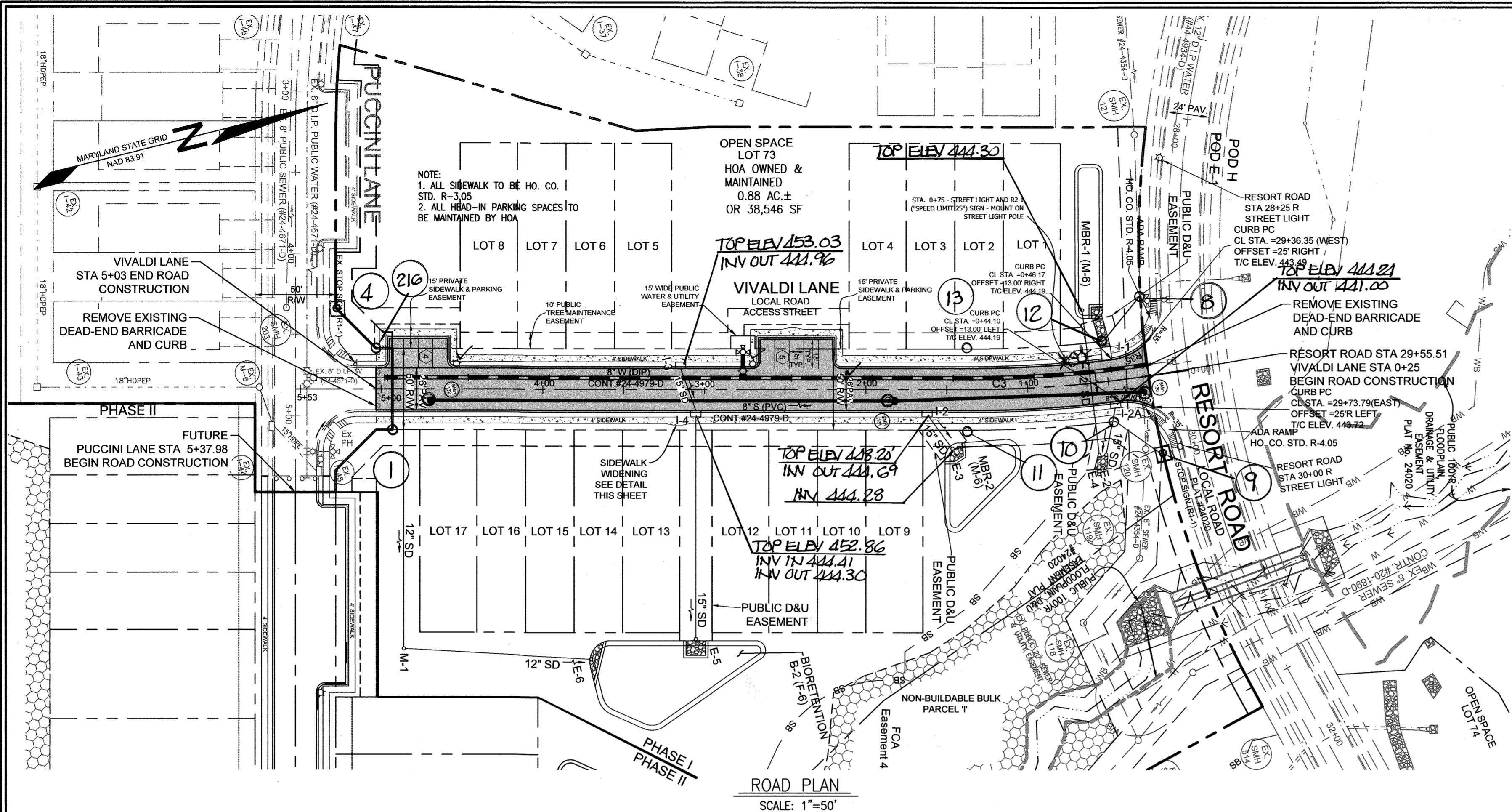
**COVER SHEET
 TURF VALLEY, POD E-1
 PHASE I**
 LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 25294

TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT
 ZONED: PGCC
 HOWARD COUNTY, MARYLAND

DESIGN BY: MGSK
 DRAWN BY: MGSK
 CHECKED BY: NB
 SCALE: AS SHOWN
 DATE: JUNE 15, 2018
 PROJECT #: 13170112
 SHEET #: 1 of 12

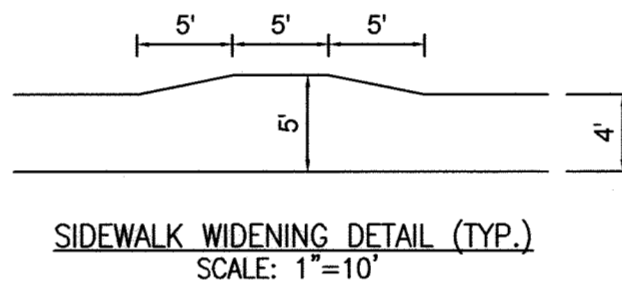
KCI TECHNOLOGIES
 11830 W. MARKET PLACE
 SUITE F
 PULTON, MD 20759
 PHONE: (410) 792-8086
 FAX: (410) 792-7419
 www.kci.com

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. 3372, EXPIRATION DATE: 6/16/2019

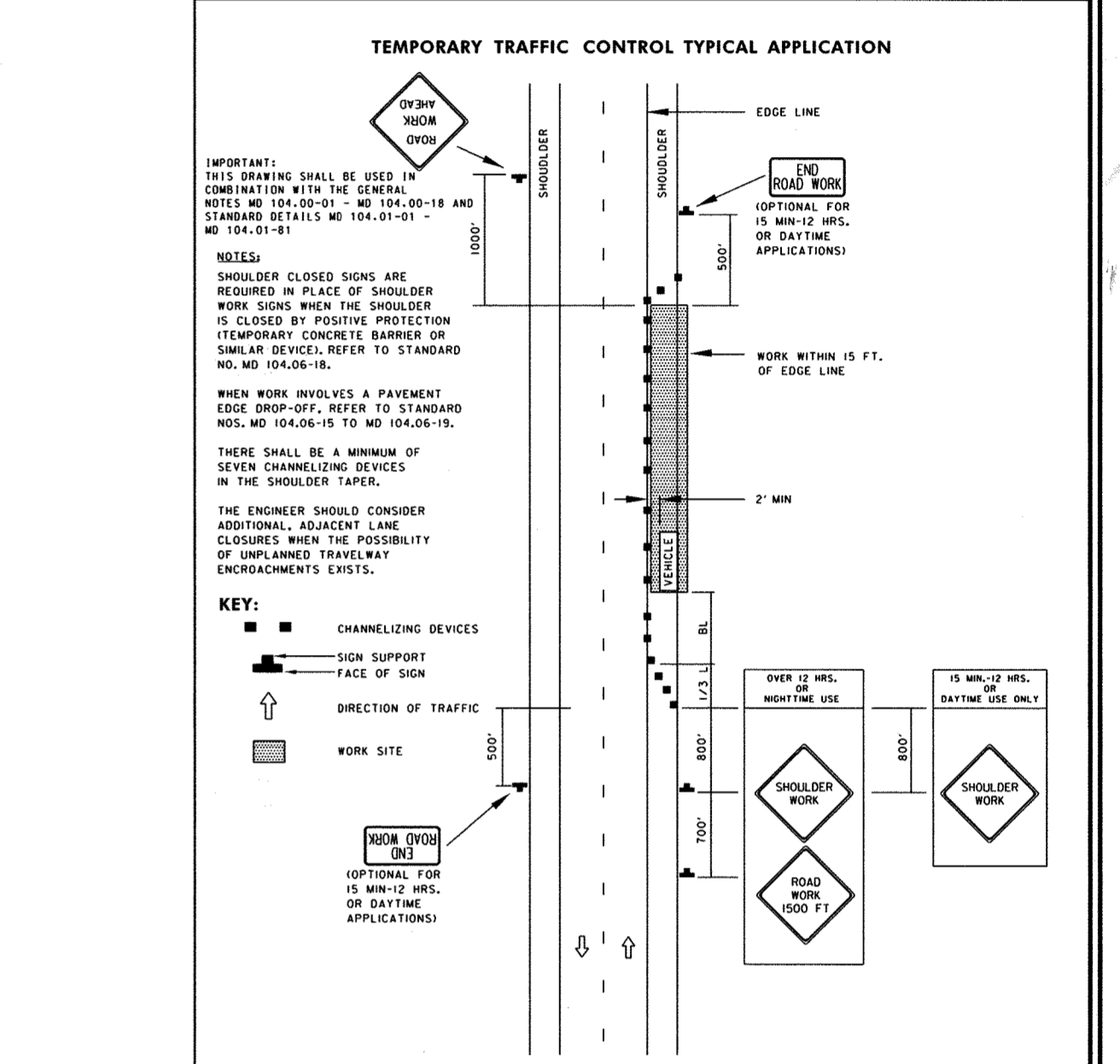


CURVE	STATION	LENGTH	RADIUS	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C3	0+36.06 TO 1+38.05	102.99	755.00'	07°48'57"	51.60'	S 14°03'00" W	102.91'

ROAD NAME	CLASSIFICATION	PAVING TYPE	DESIGN SPEED	LIMIT OF CONSTRUCTION	R/W
VIVALDI LANE	ACCESS STREET	P-2	30	STA 0+25 TO 5+03	50'



SEC. NO.	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	PAVING SECTIONS			
			TO <8	TO <7	TO <6	TO <7
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET, CUL-DE-SACS, RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0



SPECIFICATION: 104 CATEGORY CODE: FEMD APPROVED: [Signature] DATE: 8-11-19	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARD NO. MD 104.02-02
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LEGEND	
EXISTING FLOODPLAIN	SB
EXISTING STREAM BUFFER	W
EXISTING WETLAND BOUNDARY	WB
EXISTING WETLAND BUFFER	
EXISTING WETLANDS	
PROPOSED ROAD PAVEMENT	
PROPOSED SIDEWALK	
EXISTING STREAM BANK	
PROP. PUBLIC SEWER	
PROP. PUBLIC WATER	
PROP. PUBLIC STORM	
PROP. PUBLIC EASEMENT	
PROP. SETBACK LINE	
PROPERTY LINE	
PROPOSED STREETLIGHT	
PROPOSED STREET SIGN	

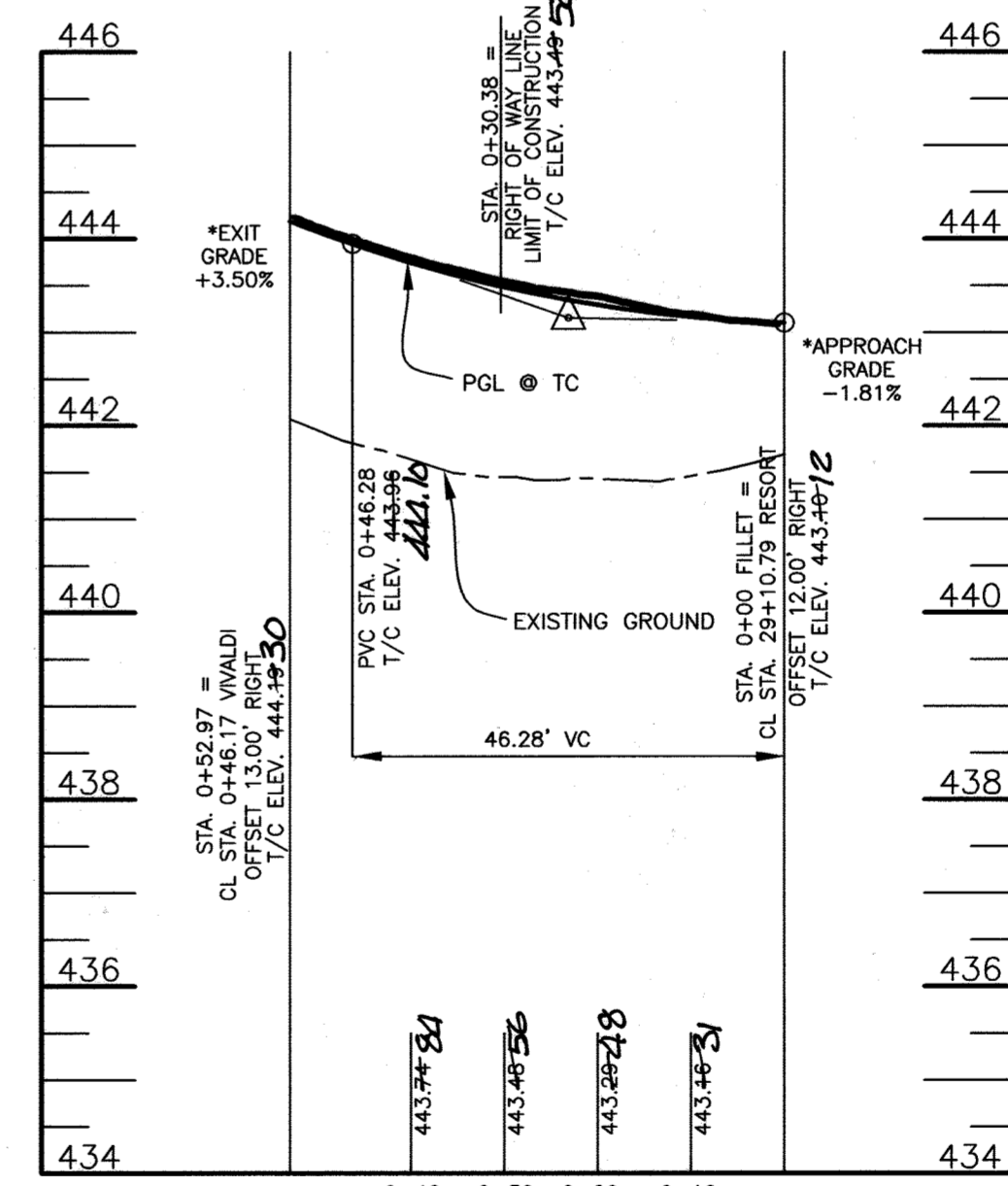
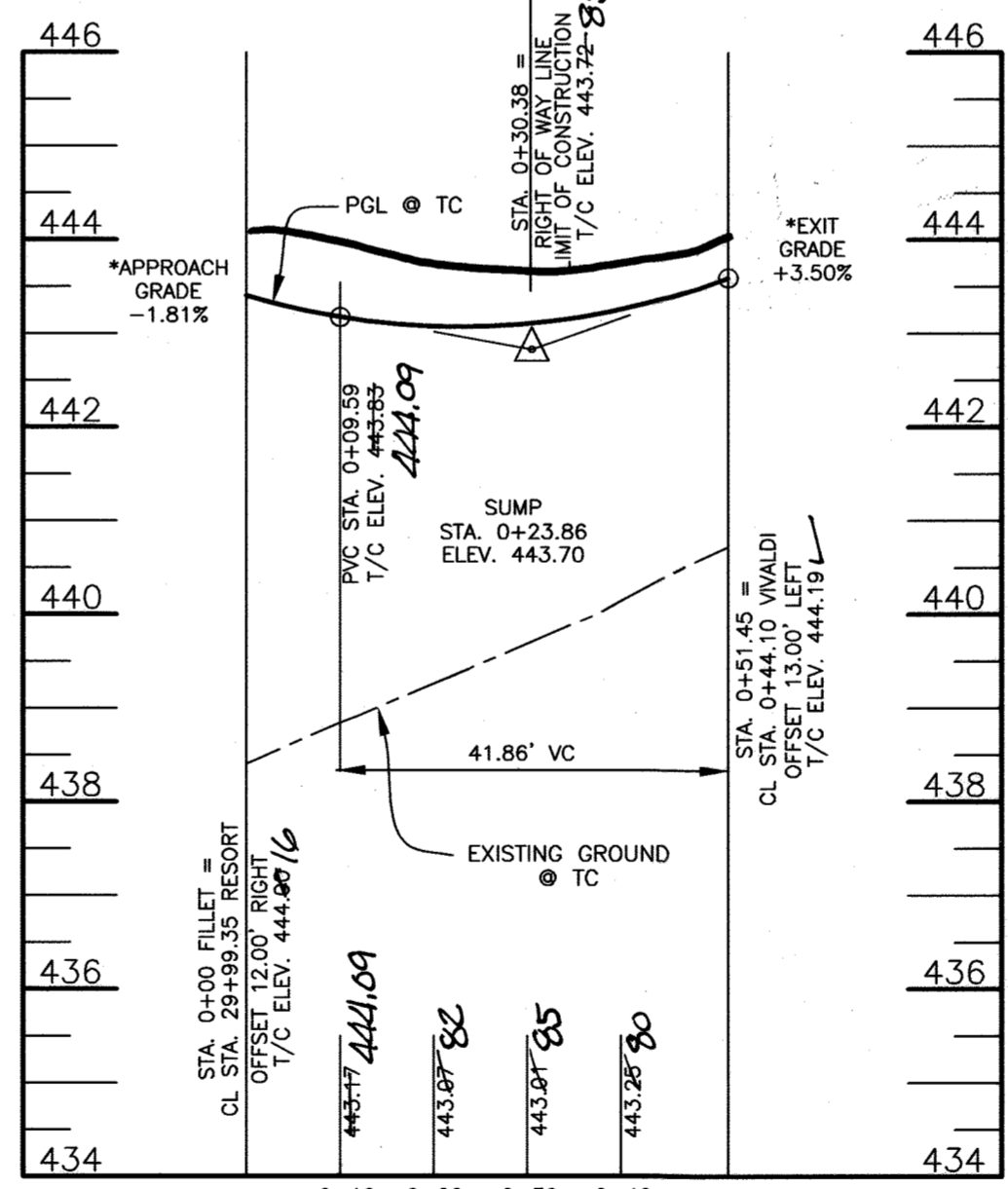
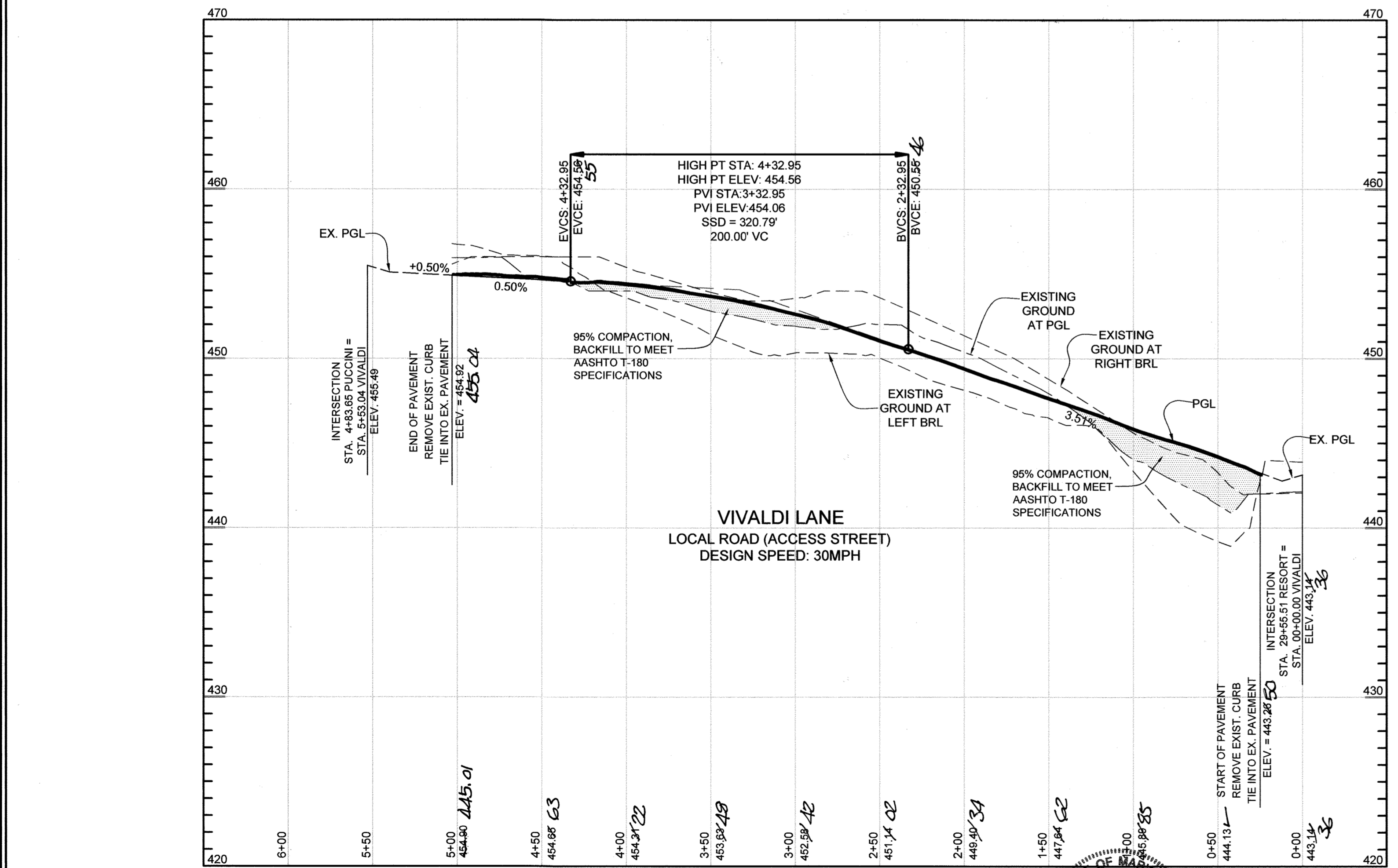
ROAD PLAN AND PROFILE TURF VALLEY, POD E-1 PHASE I

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

DESIGN BY: MGS/K
 DRAWN BY: MGS/K
 CHECKED BY: NB
 SCALE: 1"=50'
 DATE: JUNE 15, 2018
 PROJECT #: 13170102
 SHEET #: 2 of 12

KCI TECHNOLOGIES
 11830 W. MARKET PLACE
 SUITE F
 FULTON, MD 20759
 PHONE: (410) 792-8086
 FAX: (410) 792-7419
 WWW.KCI.COM



FIXTURE TYPE	POLE TYPE	LOCATION	STREET
LED-100 BLACK COLONIAL POST-TOP	14' BLACK FIBERGLASS	Q STA. 28+38 RIGHT	RESORT ROAD
LED-100 BLACK COLONIAL POST-TOP	14' BLACK FIBERGLASS	Q STA. 30+00 RIGHT	RESORT ROAD
LED-100 BLACK COLONIAL POST-TOP	14' BLACK FIBERGLASS	Q STA. 0+25.00 RIGHT	VIVALDI LANE
LED-100 BLACK COLONIAL POST-TOP	14' BLACK FIBERGLASS	Q STA. 2+70.00 RIGHT	VIVALDI LANE
LED-100 BLACK COLONIAL POST-TOP	14' BLACK FIBERGLASS	Q STA. 4+65.00 RIGHT	VIVALDI LANE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 7/24/2018
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 8/10/18
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 7.26.18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

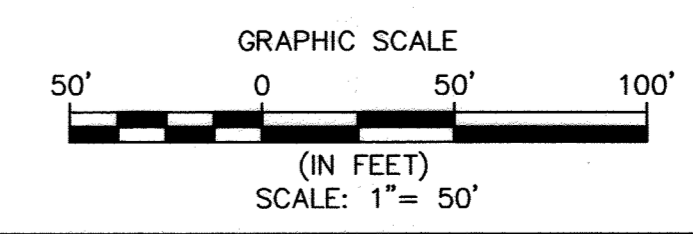
OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8400

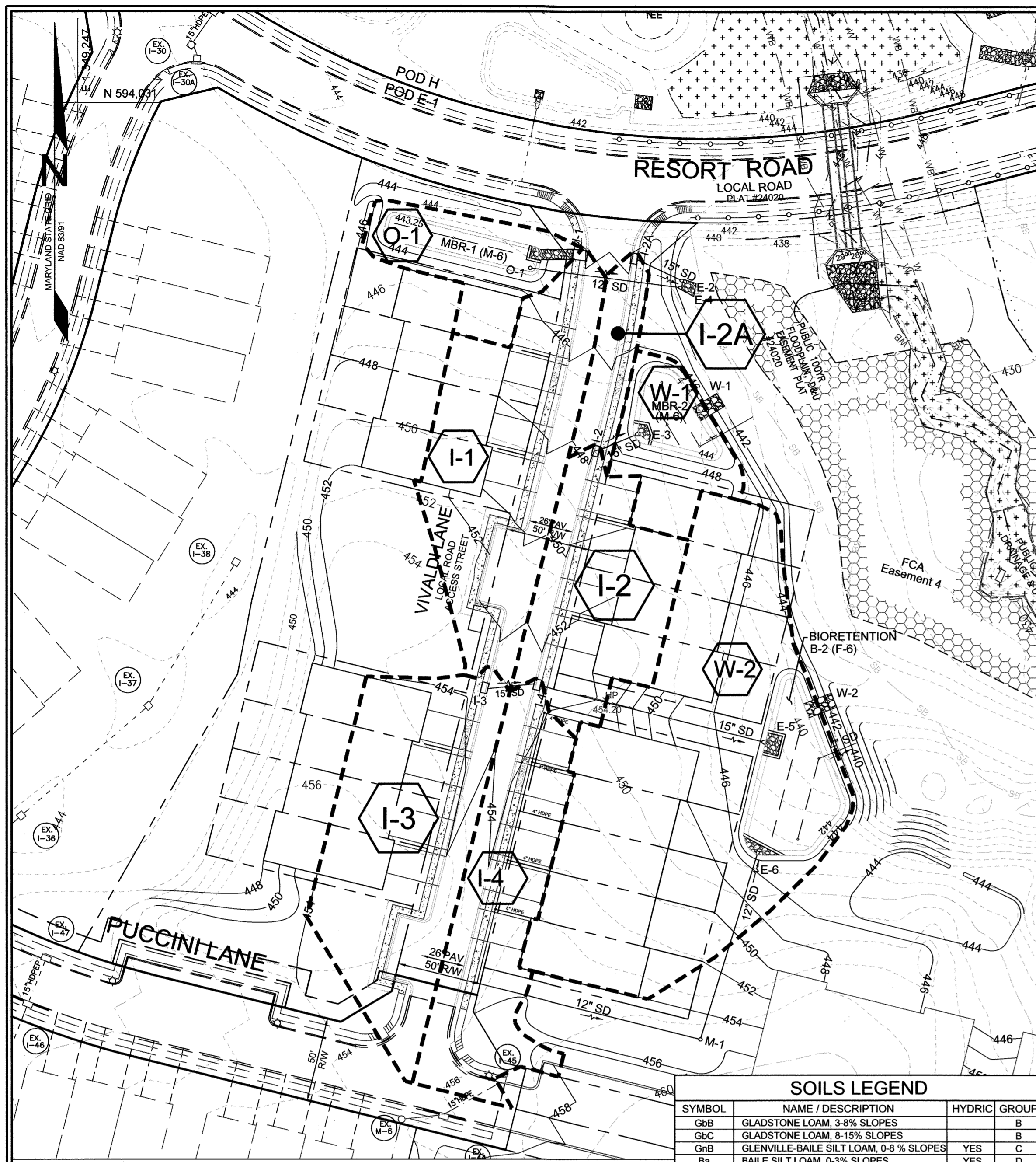
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21223 Expiration Date: 12-21-22



AS-BUILT
 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: 9/20/21





SYMBOL	NAME / DESCRIPTION	HYDRIC	GROUP
GbB	GLADSTONE LOAM, 3-9% SLOPES		B
GbC	GLADSTONE LOAM, 8-15% SLOPES		B
GbB	GLENNVILLE-BAILE SILT LOAM, 0-8% SLOPES	YES	C
Ba	BAILE SILT LOAM, 0-3% SLOPES	YES	D
MbD	MANOR LOAM, 15-25% SLOPES		B

DRAINAGE AREA MAP
SCALE: 1"=50'

Structure Name	Location	Top Elevation	Invert In	Invert Out	Type	Ho. Co. Std. Detail	Maintenance
I-1	N 593940.71 E 1349549.01	444.36	-	443.75	Flow-thru A-5 (5' WIDTH)	SHA MD374.68	PUBLIC
I-2	N 593824.12 E 1349555.49	444.20	-	444.98	A-5 (5' WIDTH)	D-4.01	PUBLIC
I-2A	N 593938.98 E 1349578.54	443.85	-	441.25	A-5 (5' WIDTH)	D-4.01	PUBLIC
I-3	N 593682.95 E 1349489.43	453.03	-	444.96	A-5 (5' WIDTH)	D-4.01	PUBLIC
I-4	N 593685.20 E 1349520.76	452.96	444.81	444.30	A-5 (5' WIDTH)	D-4.01	PUBLIC
M-1	N 593574.79 E 1349659.53	455.00	451.30	451.20	4" DIA	G-5.12	PRIVATE
O-1	N 593932.96 E 1349516.98	443.50	-	440.08	15" Overflow	N/A	PRIVATE
E-2	N 593925.33 E 1349607.86	440.00	-	-	15" HDPE END SECT.	N/A	PUBLIC
E-3	N 593834.68 E 1349581.43	444.25	-	-	15" HDPE END SECT.	N/A	PUBLIC
E-4	N 593921.39 E 1349607.18	434.65	-	-	12" HDPE END SECT.	N/A	PRIVATE
E-5	N 593651.46 E 1349656.82	442.00	-	-	15" HDPE END SECT.	N/A	PUBLIC
E-6	N 593602.93 E 1349659.30	443.00	-	-	12" HDPE END SECT.	N/A	PRIVATE

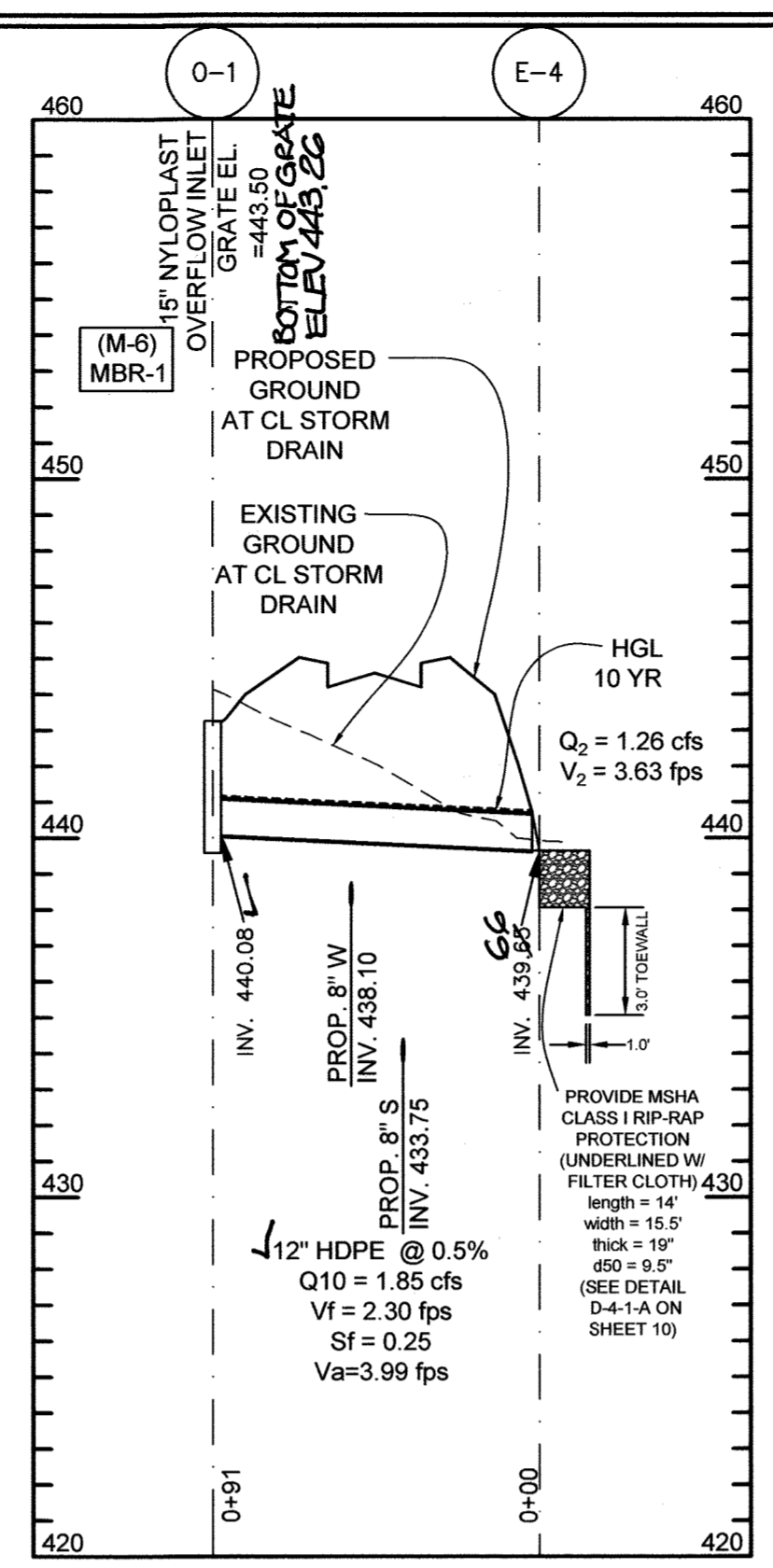
Note:
1. Invert IN for Flow-thru inlets refers to the gutter pan elevation at throat.
2. Top elevation for type 'A-5' inlet is top of face of the curb, center of inlet.
3. Top elevation for manhole is center of top cover.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Melania 7/24/2018
CHIEF, BUREAU OF HIGHWAYS

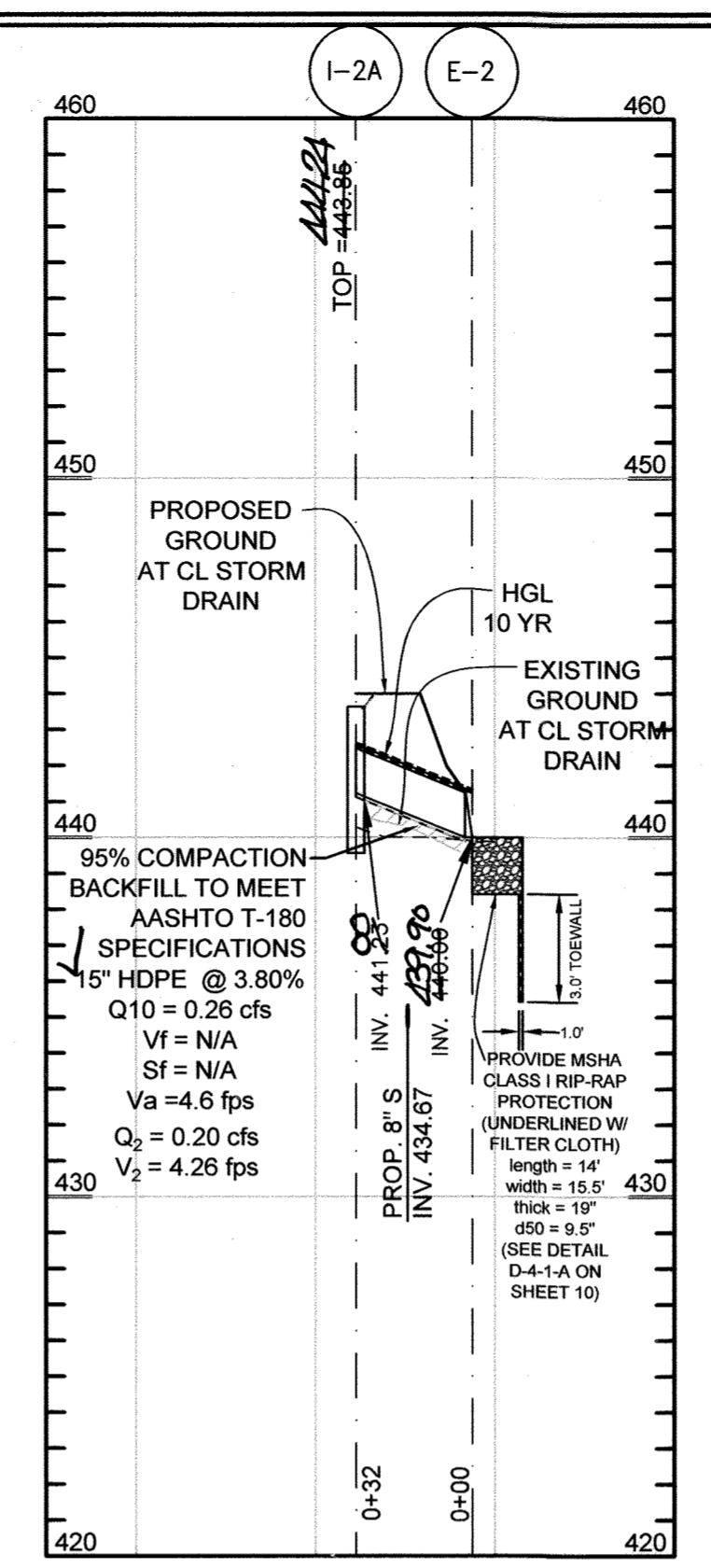
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kevin J. DeLoe 8/2/2018
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
Phil Edelman 7.26.18

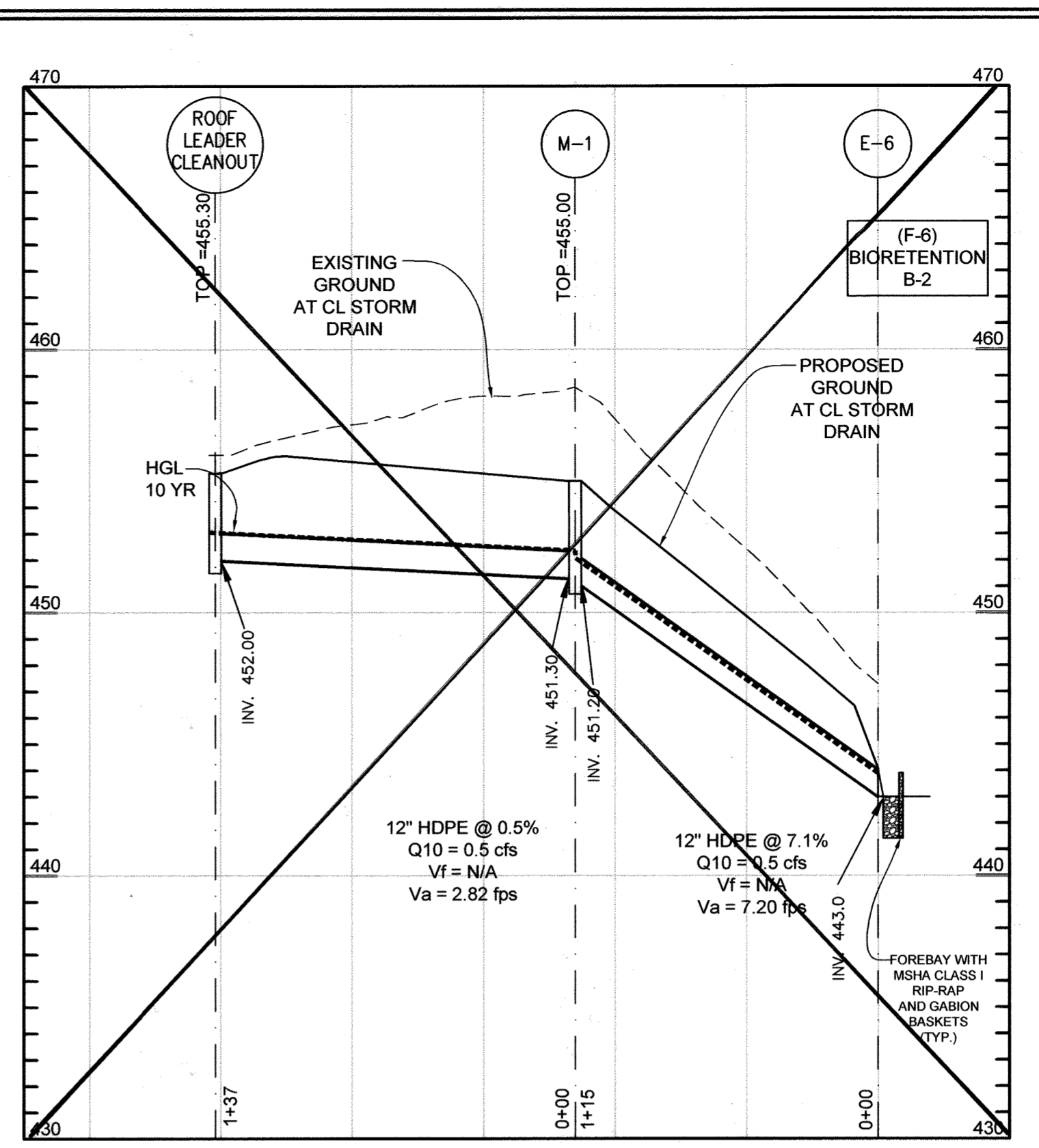
OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410.825.8400



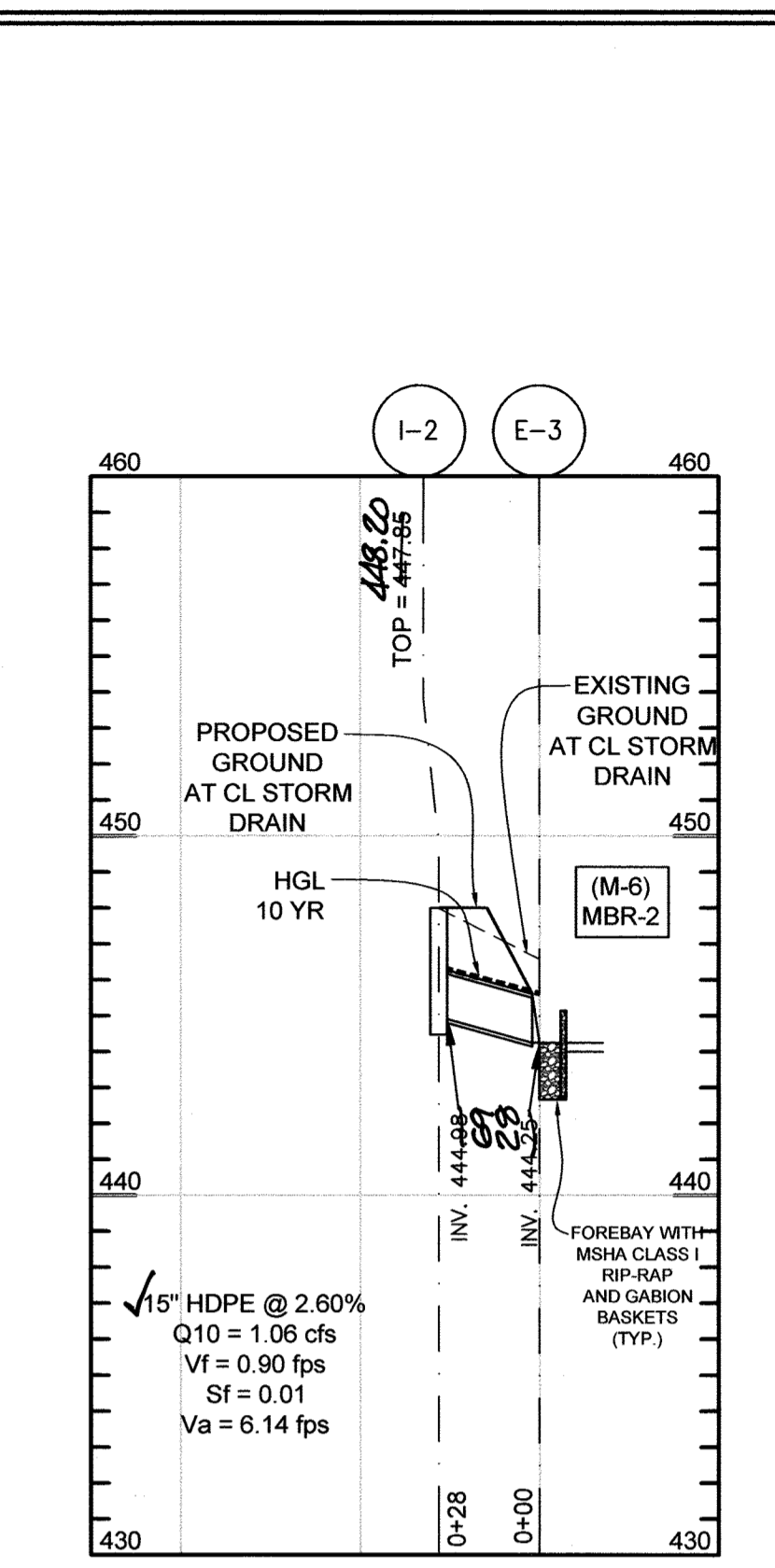
STORM DRAIN PROFILE - O-1 to E-4 (PRIVATE)
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



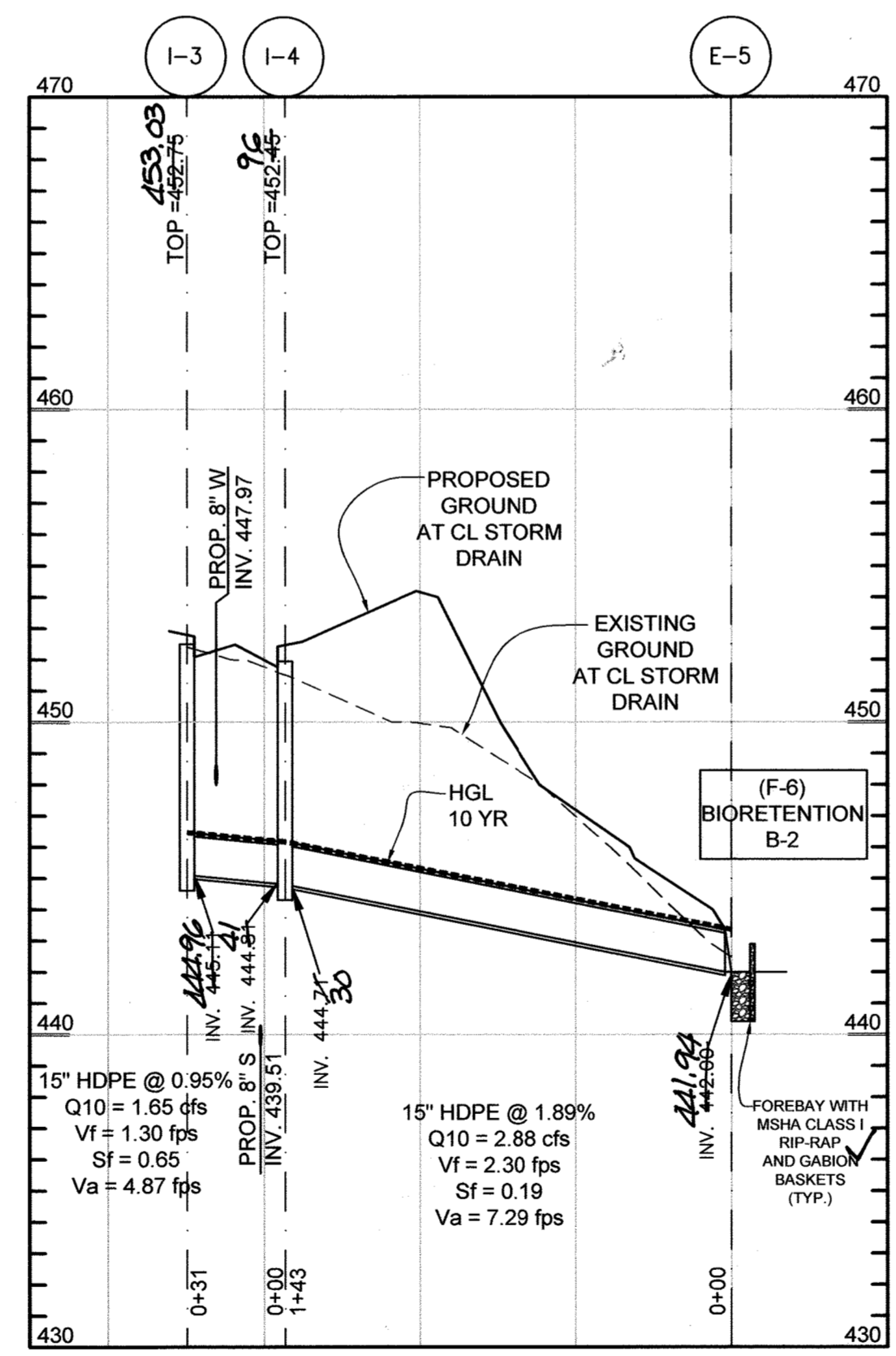
STORM DRAIN PROFILE I-2A to E-2 (PUBLIC)
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



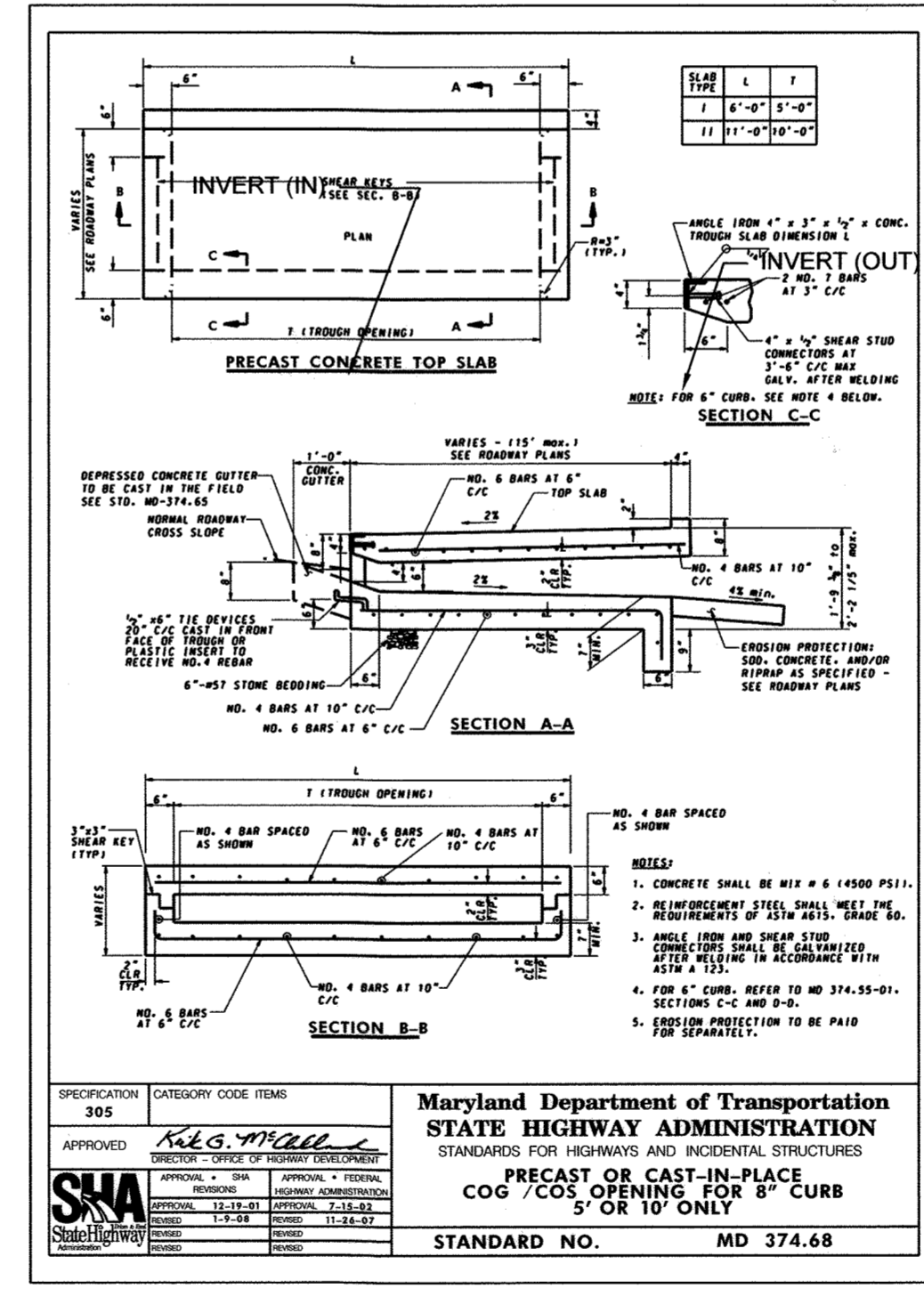
STORM DRAIN PROFILE O-3 to E-6 (PRIVATE)
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



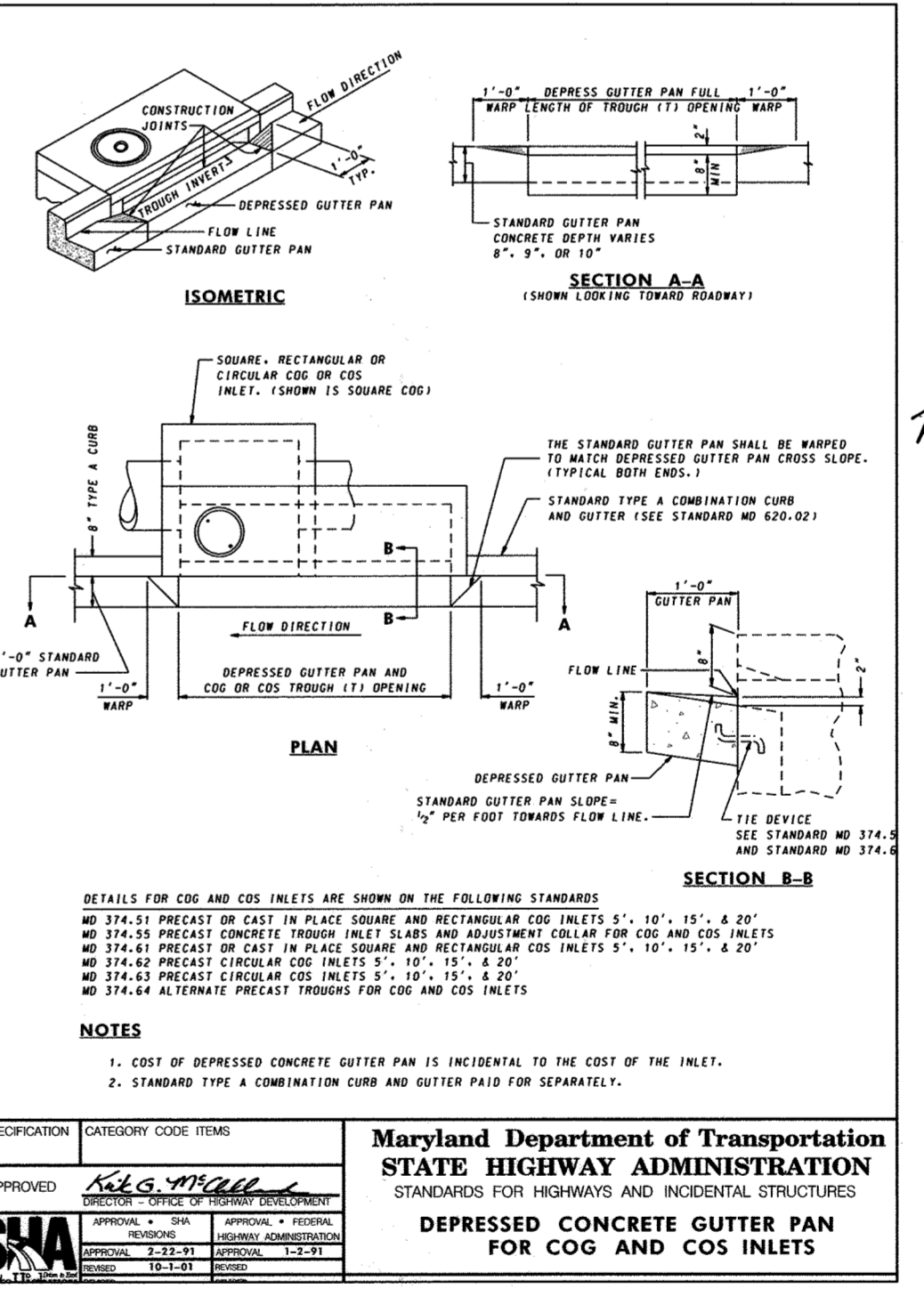
STORM DRAIN PROFILE I-2 to E-3 (PUBLIC)
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



STORM DRAIN PROFILE I-3 to E-5 (PUBLIC)
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



TYP. FLOW-THRU INLET DETAIL



DEPRESSED CONCRETE GUTTER PAN FOR COG AND COS INLETS

SD Inlet Area and "C" Factor Tabulation

Inlet #	Zoning (Z)	Area (A) Acres	"C" Factor Composite	% Imp (P)	Soil Type	Area (Sq Ft)	Imp Area Sq.Ft.	Grass area Sq.Ft.	"C" Factor Paved	"C" Factor Grass
I-1	PGCC	0.36 Ac.	0.68	77%	B	15,685	12,000	3,685	0.85	0.11
O-1	PGCC	0.13 Ac.	0.27	21%	B	5,620	1,200	4,420	0.85	0.11
I-2	PGCC	0.24 Ac.	0.67	76%	B	10,280	7,800	2,480	0.85	0.11
I-2A	PGCC	0.07 Ac.	0.64	72%	B	2,900	2,075	825	0.85	0.11
W-1	PGCC	0.14 Ac.	0.26	20%	B	6,080	1,200	4,880	0.85	0.11
I-3	PGCC	0.39 Ac.	0.63	71%	B	16,970	12,000	4,970	0.85	0.11
I-4	PGCC	0.28 Ac.	0.72	82%	B	12,195	10,000	2,195	0.85	0.11
W-2	PGCC	0.73 Ac.	0.52	48%	B	31,912	15,300	16,612	0.85	0.21

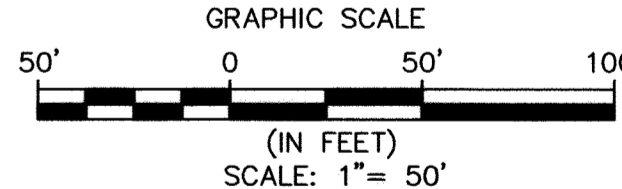
SIZE	TYPE	LENGTH (LF)	MAINTENANCE
12"	HDPE	343	PRIVATE
15"	HDPE	234	PUBLIC



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. 01443 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
Date: 9/20/21

Donald Mason, P.E. Date: 9/20/21



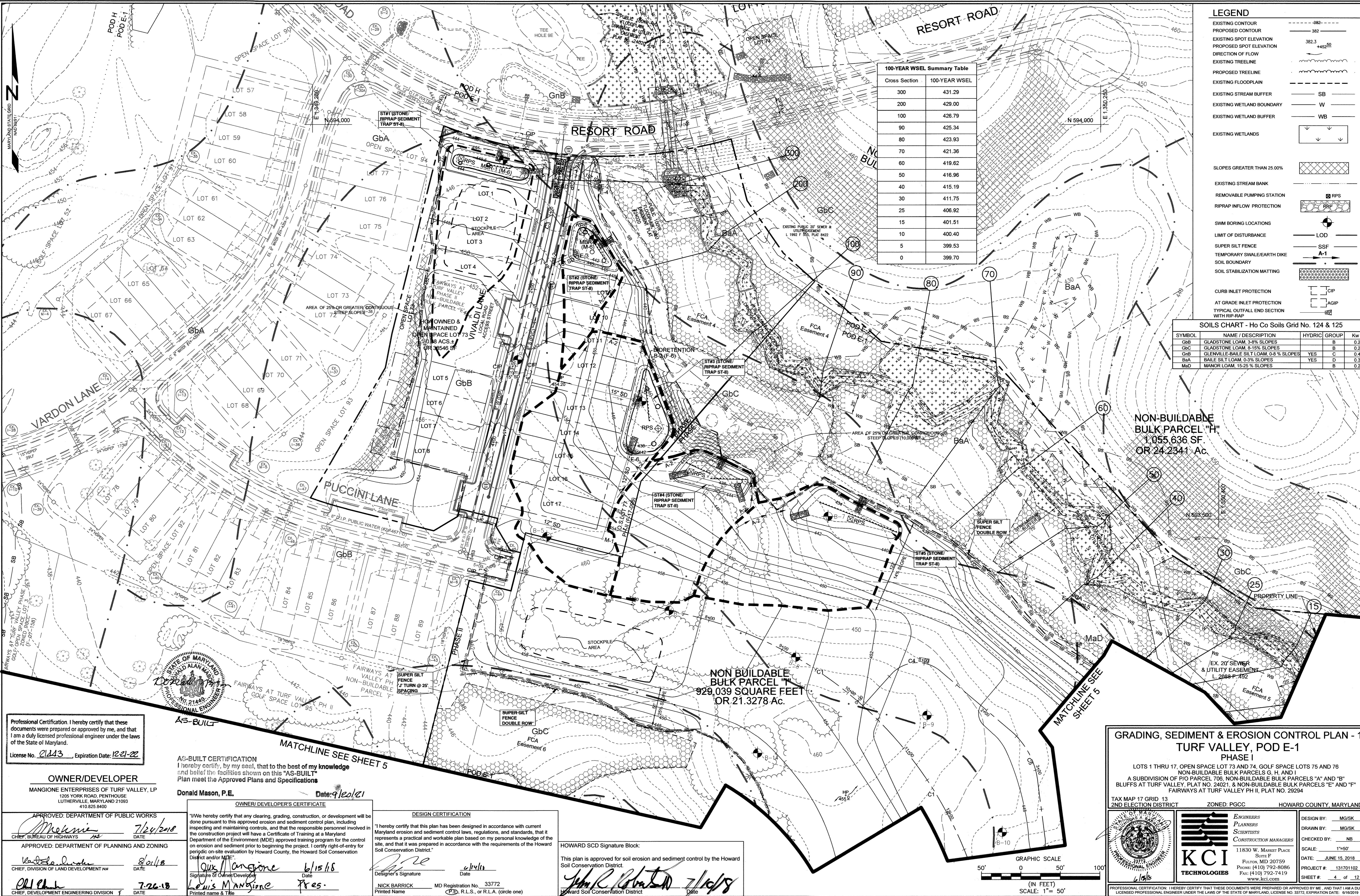
STORM DRAIN DRAINAGE AREA MAP AND PROFILES TURF VALLEY, POD E-1 PHASE I

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
NON-BUILDABLE BULK PARCELS G, H, AND I
A SUBDIVISION OF P/O PARCEL 708, NON-BUILDABLE BULK PARCELS "A" AND "B"
BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
11830 W. MARKET PLACE SUITE F FULTON, MD 207759 PHONE: (410) 792-8086 FAX: (410) 792-7419 www.kci.com

DESIGN BY: MG/SK
DRAWN BY: MG/SK
CHECKED BY: NB
SCALE: 1"=100'
DATE: JUNE 15, 2018
PROJECT #: 131701102
SHEET #: 3 of 12



100-YEAR WSEL Summary Table

Cross Section	100-YEAR WSEL
300	431.29
200	429.00
100	426.79
90	425.34
80	423.93
70	421.36
60	419.62
50	416.96
40	415.19
30	411.75
25	406.92
15	401.51
10	400.40
5	399.53
0	399.70

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING FLOODPLAIN
- EXISTING STREAM BUFFER
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND BUFFER
- EXISTING WETLANDS
- SLOPES GREATER THAN 25.00%
- EXISTING STREAM BANK
- REMOVABLE PUMPING STATION
- RIPRAP INFLOW PROTECTION
- SWM BORING LOCATIONS
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TEMPORARY SWALE/EARTH DIKE
- SOIL BOUNDARY
- SOIL STABILIZATION MATTING
- CURB INLET PROTECTION
- AT GRADE INLET PROTECTION
- TYPICAL OUTFALL END SECTION WITH RIP-RAP

SOILS CHART - Ho Co Soils Grid No. 124 & 125

SYMBOL	NAME / DESCRIPTION	HYDRIC	GROUP	Kw
GbB	GLADSTONE LOAM, 3-9% SLOPES		B	0.28
GbC	GLADSTONE LOAM, 8-15% SLOPES		B	0.28
GbE	GLENVILLE-BAILE SILT LOAM, 0-5% SLOPES	YES	C	0.43
BaA	BAILE SILT LOAM, 0-3% SLOPES	YES	D	0.37
MaD	MANOR LOAM, 15-25% SLOPES		B	0.28

NON-BUILDABLE BULK PARCEL "H"
1,055,636 SF.
OR 24,2341 Ac.

NON-BUILDABLE BULK PARCEL "I"
929,039 SQUARE FEET
OR 21.3278 Ac.

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. 21243, Expiration Date: 12-21-22

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410.825.8400

APPROVED: DEPARTMENT OF PUBLIC WORKS
Melanie 7/24/2018
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Waldemar 8/1/18
CHIEF, DIVISION OF LAND DEVELOPMENT NH

Phil 7-26-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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: 9/20/21

OWNER/DEVELOPER'S CERTIFICATE
I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.
Quinn Mangione 6/15/18
Signature of Owner/Developer Date
Lewis Mangione Pres.
Printed name & Title

DESIGN CERTIFICATION
I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Nick Barrick 6/14/18
Designer's Signature Date

HOWARD SCD Signature Block:
This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
John R. Blanton 7/16/18
Howard Soil Conservation District Date

GRADING, SEDIMENT & EROSION CONTROL PLAN - 1
TURF VALLEY, POD E-1
PHASE I

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
NON-BUILDABLE BULK PARCELS G, H, AND I
A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI TECHNOLOGIES
11830 W. MARKET PLACE
SUITE F
FULTON, MD 20759
PHONE: (410) 792-8086
FAX: (410) 792-7419
WWW.KCI.COM

DESIGN BY: MG/SK
DRAWN BY: MG/SK
CHECKED BY: NB
SCALE: 1"=50'
DATE: JUNE 15, 2018
PROJECT #: 13170102
SHEET #: 4 of 12

SEDIMENT TRAP DESIGN - PHASE I

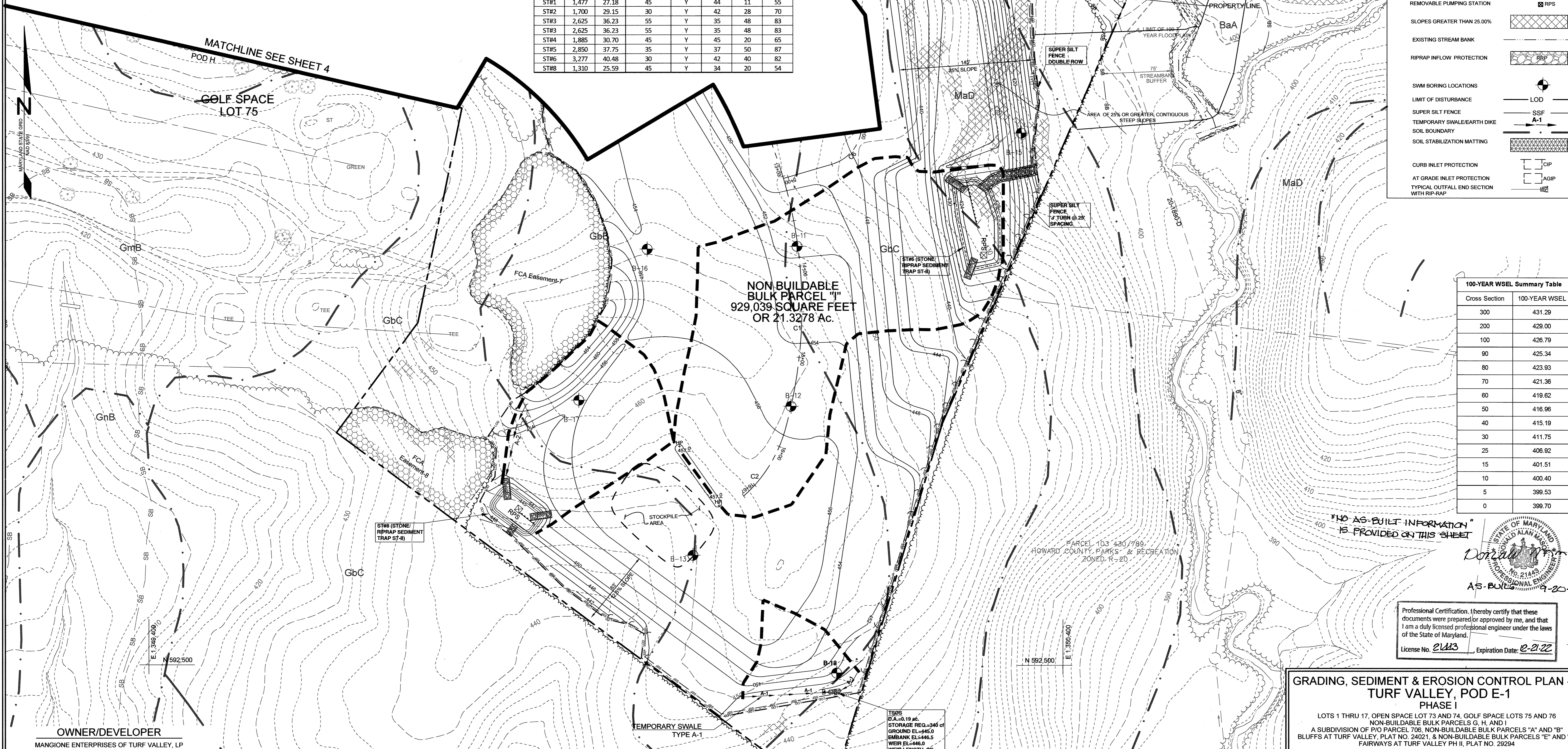
TRAP#	Phase	Initial DA(Ac)	Interim DA(Ac)	Final DA(Ac)	Trap Type	Total storage reqd. (Cu.Ft.)	Dry Vol. reqd. (Cu.Ft.)	Wet Vol. reqd. (Cu.Ft.)	Ex. Grade @ outlet	Top of embank.	Embank. Width (Ft.)	Trap Bottom El.	Bot. Area (sq.ft.)	Wet storage Area (sq.ft.)	Wet storage El.	Weir/Dry storage Area (sq.ft.)	Dry storage Area (sq.ft.)	Wet storage vol (Cu.Ft.)	Dry Storage Vol. (Cu.Ft.)	Total storage provided (Cu.Ft.)	Cleanout El.	Min. Length (Ft.)	Min. Width (Ft.)	Min. Weir Length (Ft.)	Side Slope (H:V ratio)	Outlet protection (L)	Outlet protection (D)
ST#1	Phase I	0.48	0.78	0.50	ST-II	2,796	1,398	1,398	443.0	444.0	4'	440.5	1050	442.0	1477	443.0	1793	1895	1635	3530	441.3	46	23	2	2:1	12"	19"
ST#2	Phase I	0.21	0.36	0.44	ST-II	1,592	796	796	442.0	446.0	4'	442.0	1060	444.0	1700	445.0	2070	2760	1885	4645	443.0	46	23	1	2:1	12"	12" (GIP)
ST#3	Phase I	1.50	1.75	0.92	ST-II	6,303	3,152	3,152	438.0	442.0	4'	438.0	1900	439.75	2625	441.0	3280	3959	3691	7650	439.9	68	34	6	2:1	12"	12" (GIP)
ST#4	Phase I	0.50	0.66	0.50	ST-II	2,364	1,182	1,182	440.0	442.0	4'	438.0	1160	440.0	1885	441.0	2320	3045	2103	5148	439.0	46	23	2	2:1	12"	12" (GIP)
ST#5	Phase I	1.50	0.70	1.50	ST-II	5,400	2,700	2,700	435.0	438.0	4'	434.0	1800	436.0	2850	437.0	3415	4650	3132.5	7783	435.0	68	34	6	2:1	12"	12" (GIP)
ST#6	Phase I	1.40	1.83	1.40	ST-II	6,598	3,299	3,299	424.0	428.0	4'	424.0	2358	426.0	3277	427.0	3767	5635	3522	9157	425.0	68	34	6	2:1	40"	12" (GIP)
ST#8	Phase I	0.10	0.59	0.59	ST-II	2,108	1,054	1,054	447.0	448.0	4'	445.0	1036	446.0	1310	447.0	1605	1173	1457.5	2631	445.5	46	23	1	2:1	12"	19"

SOILS CHART - Ho Co Soils Grid No. 124 & 125

SYMBOL	NAME / DESCRIPTION	HYDRIC	GROUP	Kw
GbB	GLADSTONE LOAM, 3-8% SLOPES		B	0.28
GbC	GLADSTONE LOAM, 8-15% SLOPES		B	0.28
GbB	GLENNVILLE-BAILE SILT LOAM, 0-8 % SLOPES	YES	C	0.43
BaA	BAILE SILT LOAM, 0-3% SLOPES		D	0.37
MaD	MANOR LOAM, 15-25 % SLOPES	YES	B	0.28

Baffle Board Design - Phase I

TRAP#	Wet storage Area (sq. ft.)	Effective Width (ft.)	Flow Length from Inflow Point to Outlet (ft.)	Baffle Boards Required ? (Y/N)	L1 (ft.)	L2 (ft.)	Effective Flow Length (ft.)
ST#1	1,477	27.18	45	Y	44	11	55
ST#2	1,700	29.15	30	Y	42	28	70
ST#3	2,625	36.23	55	Y	35	48	83
ST#3	2,625	36.23	55	Y	35	48	83
ST#4	1,885	30.70	45	Y	45	20	65
ST#5	2,850	37.75	35	Y	37	50	87
ST#6	3,277	40.48	30	Y	42	40	82
ST#8	1,310	25.59	45	Y	34	20	54



LEGEND

- EXISTING CONTOUR: ---382---
- PROPOSED CONTOUR: ---382---
- EXISTING SPOT ELEVATION: 382.3
- PROPOSED SPOT ELEVATION: 4452.50
- DIRECTION OF FLOW: →
- EXISTING TREELINE: [Symbol]
- PROPOSED TREELINE: [Symbol]
- EXISTING FLOODPLAIN: [Symbol]
- EXISTING WETLAND BOUNDARY: SB
- EXISTING STREAM BUFFER: W
- EXISTING WETLAND BUFFER: WB
- EXISTING WETLANDS: [Symbol]
- REMOVABLE PUMPING STATION: [Symbol]
- SLOPES GREATER THAN 25.00%: [Symbol]
- EXISTING STREAM BANK: [Symbol]
- RIPRAP INFLOW PROTECTION: [Symbol]
- SWM BORING LOCATIONS: [Symbol]
- LIMIT OF DISTURBANCE: LOD
- SUPER SILT FENCE: SSF
- TEMPORARY SWALE/EARTH DIKE: A-1
- SOIL BOUNDARY: [Symbol]
- SOIL STABILIZATION MATTING: [Symbol]
- CURB INLET PROTECTION: CIP
- AT GRADE INLET PROTECTION: AGIP
- TYPICAL OUTFALL END SECTION WITH RIP-RAP: [Symbol]

100-YEAR WSEL Summary Table

Cross Section	100-YEAR WSEL
300	431.29
200	429.00
100	426.79
90	425.34
80	423.93
70	421.36
60	419.62
50	416.96
40	415.19
30	411.75
25	406.92
15	401.51
10	400.40
5	399.53
0	399.70

NON-BUILDABLE BULK PARCEL "I"
929,039 SQUARE FEET
OR 21.3278 Ac.

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. 21413 Expiration Date: 6-21-22

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410 825 8400

APPROVED: DEPARTMENT OF PUBLIC WORKS
7/24/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
8/1/18

7.26.18

OWNER/DEVELOPER'S CERTIFICATE
"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Signature of Owner/Developer: *Louis Mangione* Date: 6/15/18
Printed name & Title: Louis Mangione Pres.

DESIGN CERTIFICATION
"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature: *Nick Barrick* Date: 6/14/18
Printed Name: NICK BARRICK MD Registration No. 33772
Professional Engineer (P.E., R.L.S., or R.L.A. (circle one))

HOWARD SCD Signature Block:
This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Signature: *John L. Roberts* Date: 7/10/18

GRADING, SEDIMENT & EROSION CONTROL PLAN - 2
TURF VALLEY, POD E-1
PHASE I

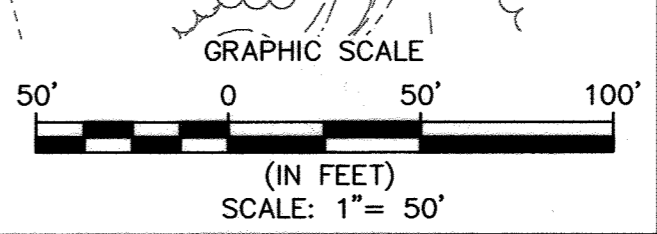
LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
NON-BUILDABLE BULK PARCELS G, H, AND I
A SUBDIVISION OF PIO PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 28294

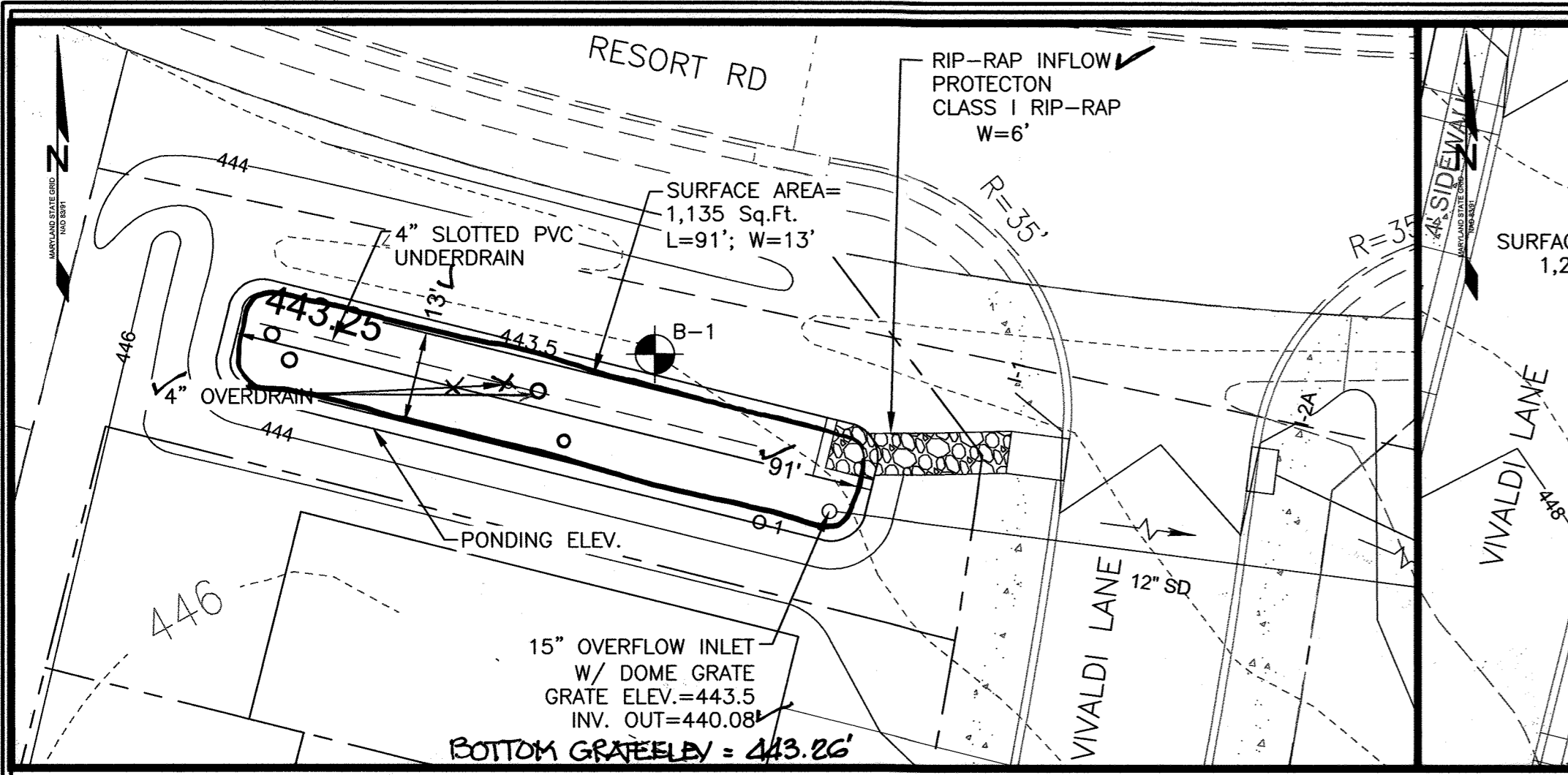
TAX MAP 17 GRID 13 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

DESIGN BY: MG/SK
DRAWN BY: MG/SK
CHECKED BY: NB
SCALE: 1"=50'
DATE: JUNE 15, 2018
PROJECT #: 131701102
SHEET #: 5 of 12

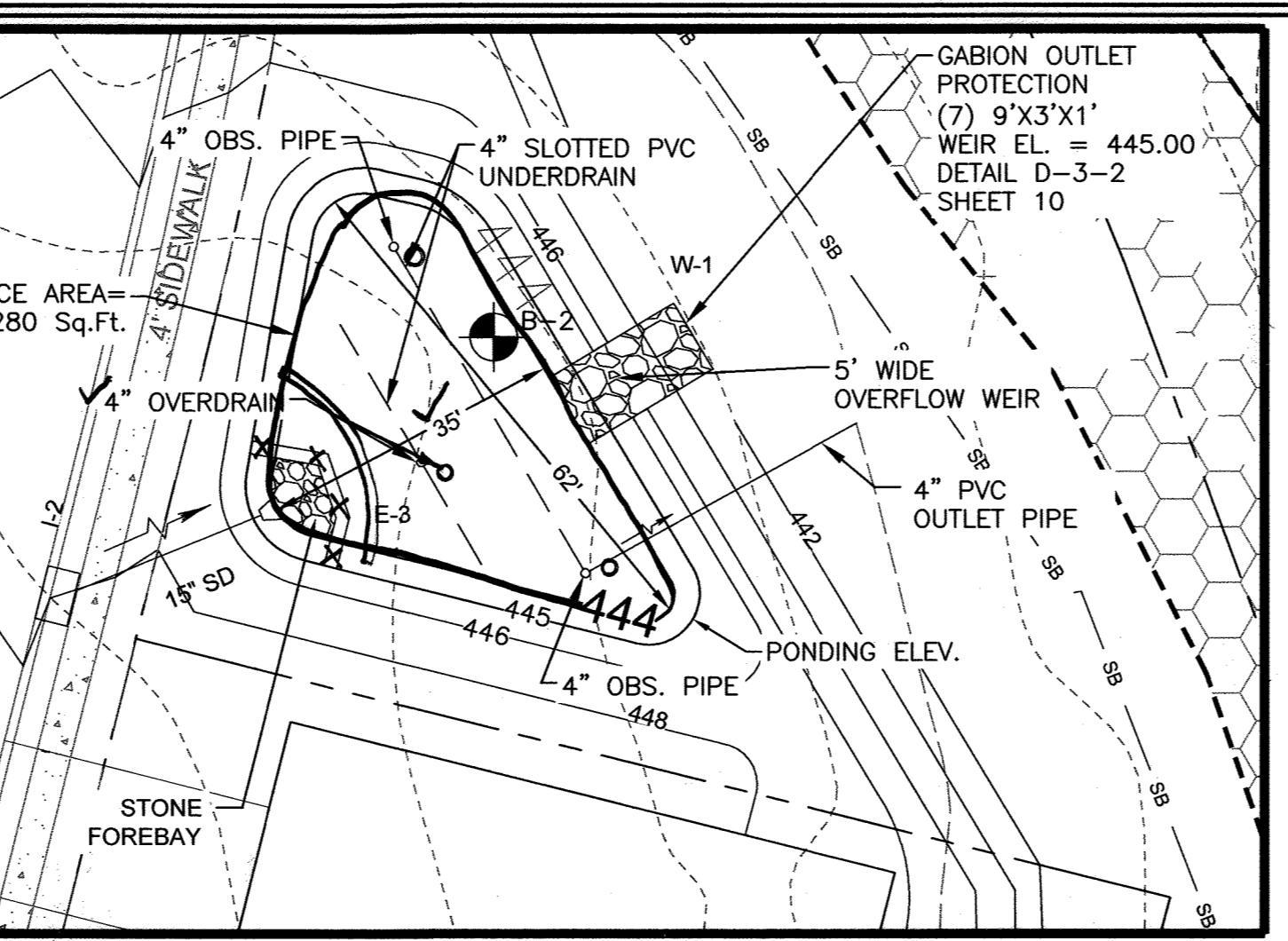
KCI TECHNOLOGIES
11830 W. MARKET PLACE
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FULTON, MD 20759
PHONE: (410) 792-8086
FAX: (410) 792-7419
WWW.KCI.COM

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. 33772, EXPIRATION DATE: 6/16/2019

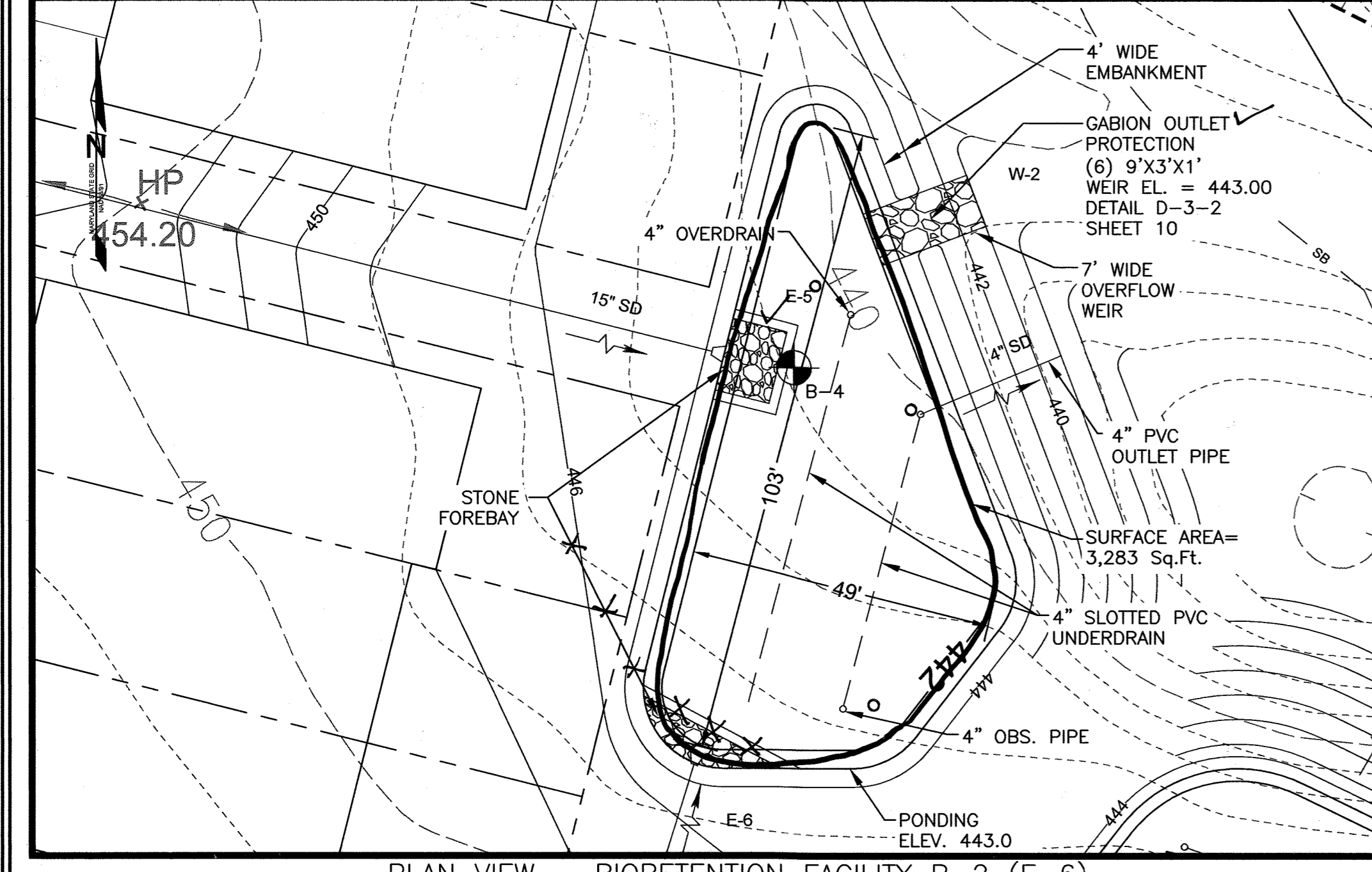




PLAN VIEW - MICROBIORETENTION FACILITY MBR-1 (M-6) SCALE: 1"=20'

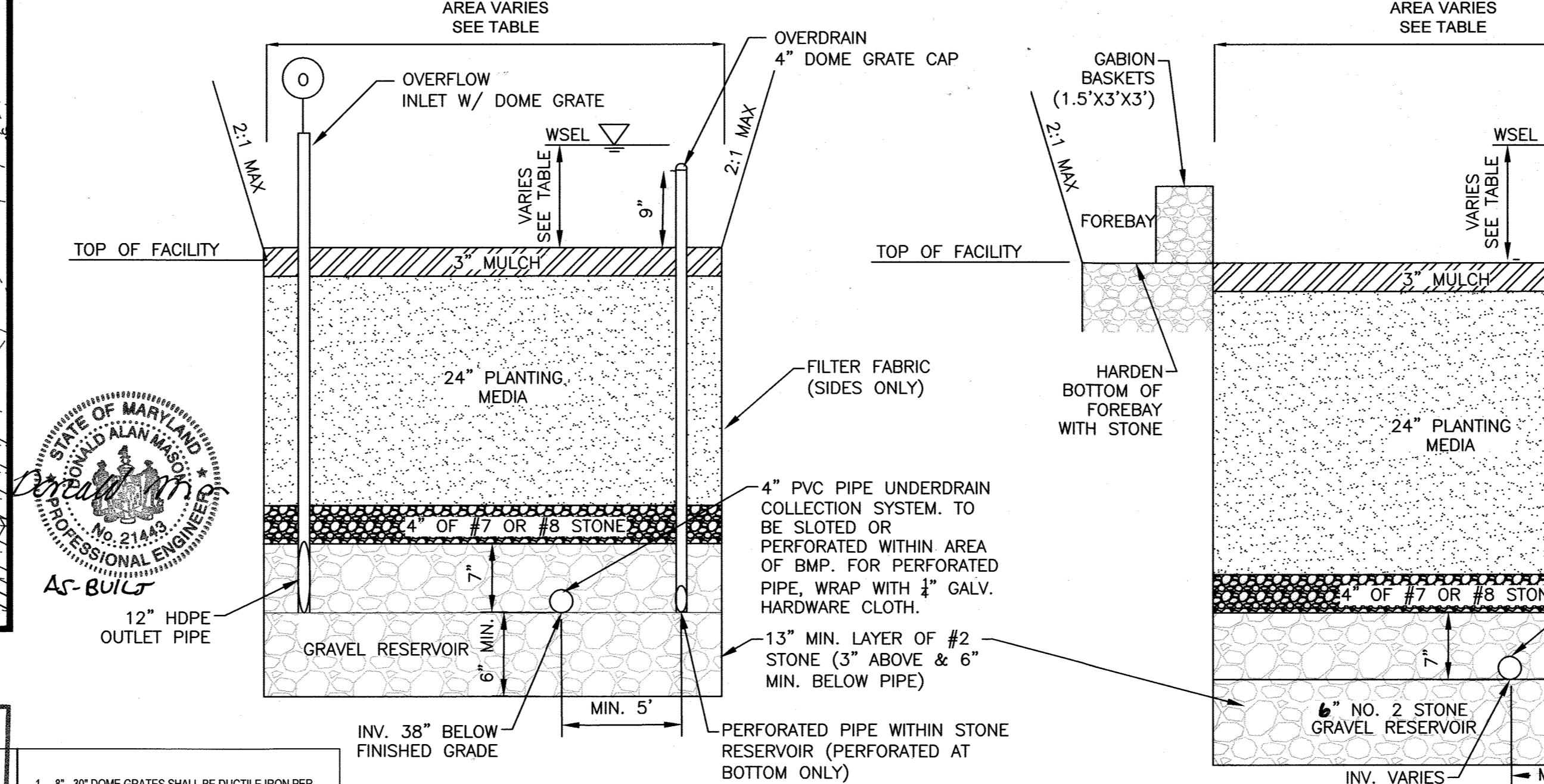


PLAN VIEW - MICROBIORETENTION FACILITY MBR-2 (M-6) SCALE: 1"=20'



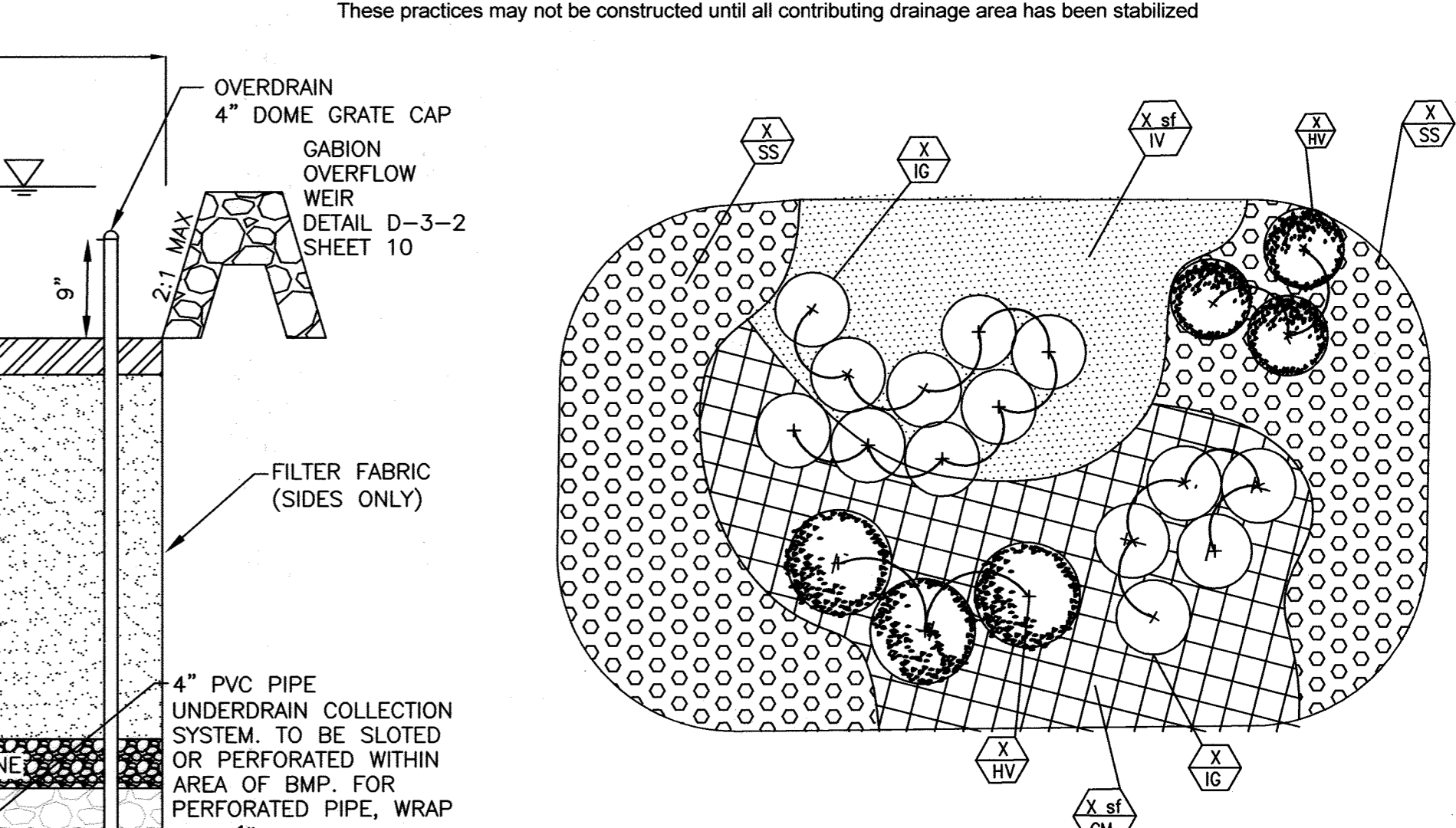
PLAN VIEW - BIORETENTION FACILITY B-2 (F-6) SCALE: 1"=20'

FACILITY NAME	TOP OF FACILITY	WSEL	PONDING DEPTH (FT)	TOP OF EMBANKMENT	UNDERDRAIN INVERT	OVERFLOW INVERT	WEIR/OVERFLOW INLET GRADE ELEVATION	FREEBOARD	GRAVEL RESERVOIR	SURFACE AREA (SQ. FT.)	OUTLET STRUCTURE	OWNERSHIP/ MAINTENANCE
M-6 MICRO-BIORETENTION (MBR-1)	443.25	443.50	0.25	444.00	440.08	443.40	443.80	6"	30"	1,135 SF	15" NYLOPLAST OVERFLOW INLET	PRIVATE
M-6 MICRO-BIORETENTION (MBR-2)	443.25	445.00	1.00	446.00	440.83	444.75	445.10	1'-0"	13"	1,280 SF	5" WIDE WEIR	PRIVATE
F-6 BIORETENTION (B-2)	443.00	443.00	0.00	443.50	439.63	442.75	443.00	1'-0"	13"	3,283 SF	7" WIDE WEIR	PRIVATE

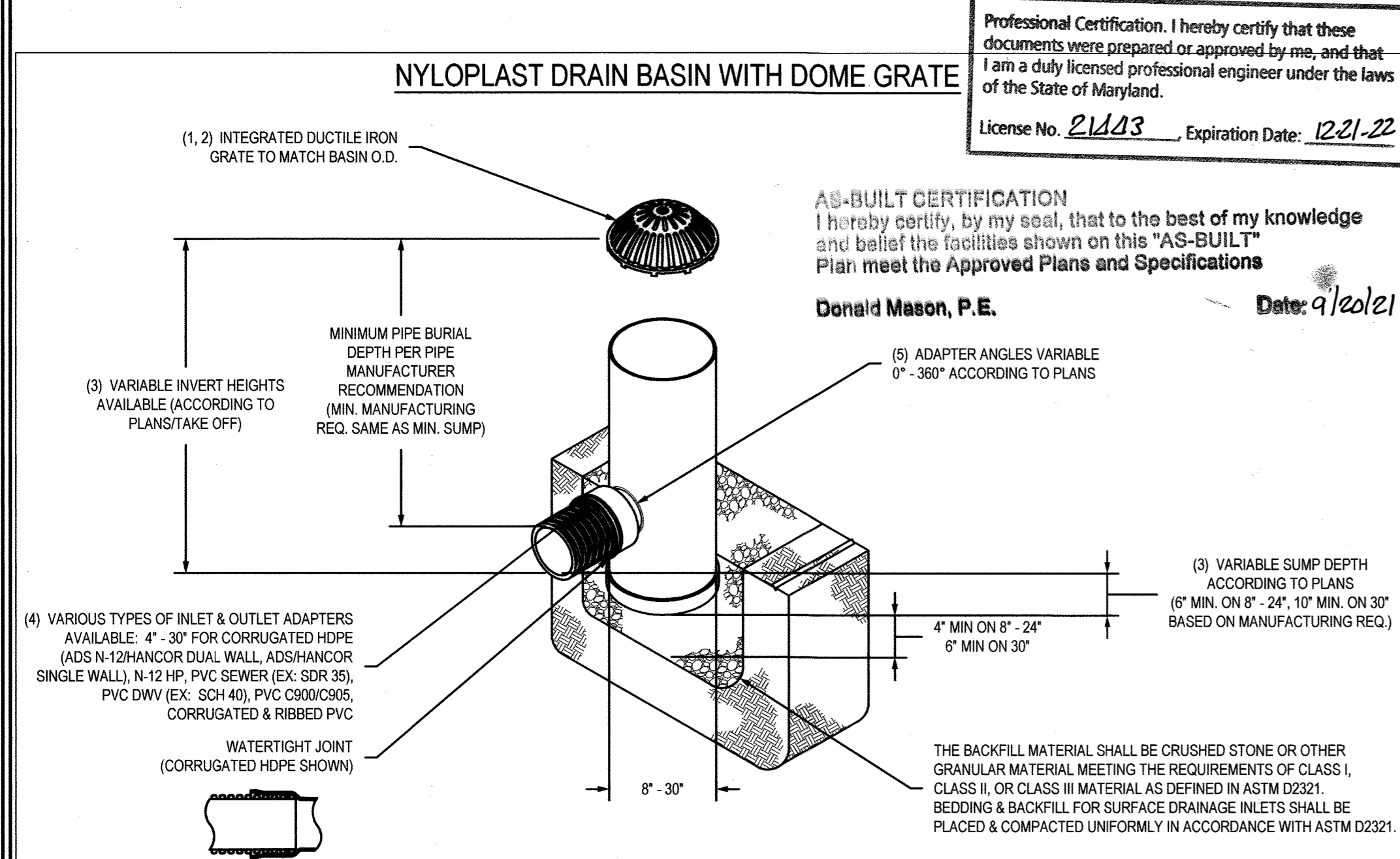


TYPICAL FACILITY SECTION WITH OVERFLOW INLET SCALE: NTS

TYPICAL FACILITY SECTION WITH OVERFLOW WEIR SCALE: NTS



TYPICAL PLANTING PLAN FOR SWM FACILITIES SCALE: NTS



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. 21413, Expiration Date: 12/21/22

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: 9/20/21

- 8" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A53 GRADE 70-50-05.
- 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-119-045.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 8" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-119-065.
- DRAINAGE CONNECTIONS SHALL BE TIGHTENED TO CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL, N-12 HP, & PVC SEWER (4" - 24").
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- 8" - 30" DOME GRATES HAVE NO LOAD RATING.

DRAWN BY	EBC	MATERIAL
DATE	03-25-10	
REVISED BY	NMI	PROJECT NO./NAME
DATE	03-11-16	
DWG SIZE	A	SCALE 1:40 SHEET 1 OF 1
3130 VERONA AVE BURLINGAME, CA 94010 P/N (770) 932-2443 F/N (770) 932-2490 WWW.NYLOPLAST.COM		
TITLE	DRAIN BASIN WITH DOME GRATE QUICK SPEC INSTALLATION DETAIL	
DWG NO.	7001-110-397	REV D

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	USDA soil types loamy sand or sandy loam; clay content < 5%
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 6" 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 underdrain pipes. Perforated pipe shall be wrapped with 1/4-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 carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

OWNER/DEVELOPER
 MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.625.8400
 GRAPHIC SCALE
 100' 0 100' 200'
 (IN FEET)
 SCALE: 1"= 100'

STORMWATER MANAGEMENT NOTES AND DETAILS
TURF VALLEY, POD E-1
PHASE I
 LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

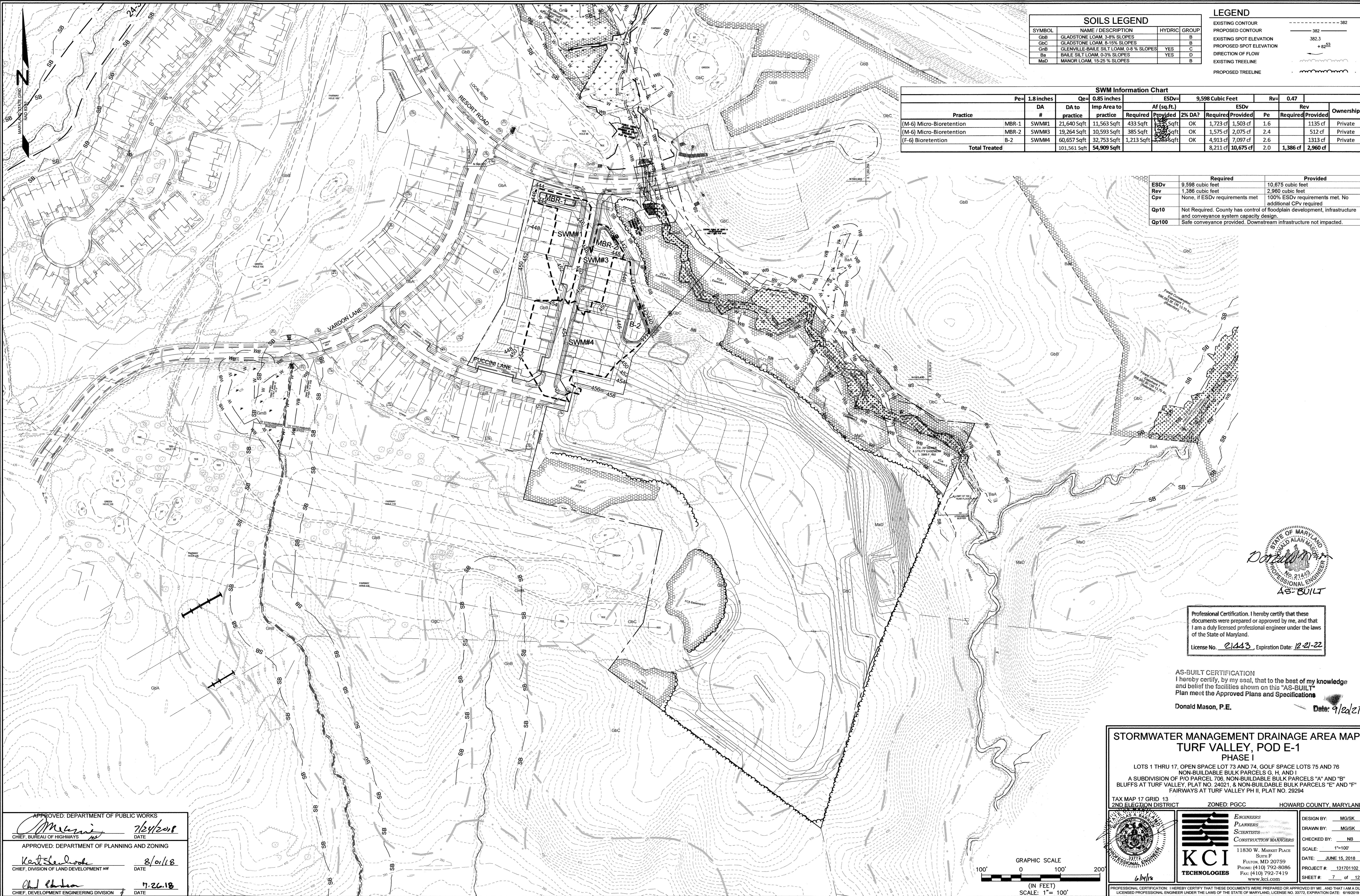
ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
 11830 W. MARKET PLACE
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 PULMON, MD 20775
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DESIGN BY: MGS/K
 DRAWN BY: MGS/K
 CHECKED BY: NB
 SCALE: 1"=100'
 DATE: JUNE 15, 2018
 PROJECT #: 131701102
 SHEET #: 6 of 12

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. 3372, EXPIRATION DATE: 6/16/2019

APPROVED: DEPARTMENT OF PUBLIC WORKS
 7/24/2018
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 8/01/18
 CHIEF, DIVISION OF LAND DEVELOPMENT
 7-26-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Quantity	Key	Botanical Name	Common Name	Type	Condition	Size	Remarks
14	16	41	IG	Ilex glabra	Inkberry	Shrub	Container 12"
11	13	33	HV	Aronia arbutifolia	Red Chokeberry	Shrub	Container 12" - 24"
118	133	342	IV	Iris versicolor	Blue Flag	Perennial	Seedlings Plant 15" Apart
118	133	342	GM	Geranium maculatum	Cranesbill	Perennial	Seedlings Plant 15" Apart
118	133	342	SS	Solidago sphacelata	Goldenrod	Perennial	Seedlings Plant 15" Apart

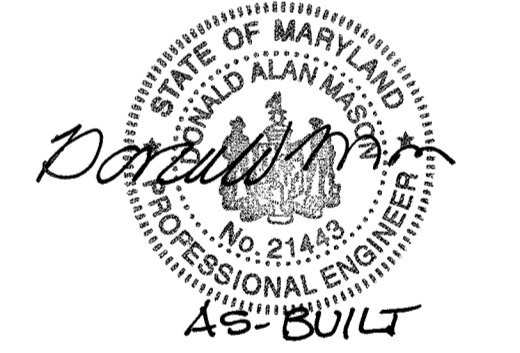


SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	HYDRIC	GROUP
GbB	GLADSTONE LOAM, 3-8% SLOPES		B
GbC	GLADSTONE LOAM, 8-15% SLOPES		B
GhB	GLENNVILLE-BAILE SILT LOAM, 0-8% SLOPES	YES	C
Ba	BAILE SILT LOAM, 0-3% SLOPES	YES	D
MaD	MANOR LOAM, 15-25% SLOPES		B

LEGEND	
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING SPOT ELEVATION	382.3
PROPOSED SPOT ELEVATION	+82.5
DIRECTION OF FLOW	→
EXISTING TREELINE	~~~~~
PROPOSED TREELINE	~~~~~

SWM Information Chart											
Practice	DA #	DA to practice	Qe= 0.85 inches Imp Area to practice	ESDv= 9,598 Cubic Feet		Rv= 0.47	Rev		Ownership	Rv= 0.47	
				Required	Provided		Required	Provided		Required	Provided
(M-6) Micro-Bioretentation	MBR-1	SWM#1	21,640 Sqft	11,563 Sqft	433 Sqft	1,723 cf	1,503 cf	1.6	1135 cf	Private	1135 cf
(M-6) Micro-Bioretentation	MBR-2	SWM#3	19,264 Sqft	10,593 Sqft	385 Sqft	1,575 cf	2,075 cf	2.4	512 cf	Private	512 cf
(F-6) Bioretention	B-2	SWM#4	60,657 Sqft	32,733 Sqft	1,213 Sqft	4,913 cf	7,097 cf	2.6	1313 cf	Private	1313 cf
Total Treated				101,561 Sqft	54,909 Sqft	8,211 cf	10,675 cf	2.0	1,386 cf	2,960 cf	

	Required	Provided
ESDv	9,598 cubic feet	10,675 cubic feet
Rv	1,386 cubic feet	2,960 cubic feet
Cpv	None, if ESDv requirements met	100% ESDv requirements met. No additional CPv required
Qp10	Not Required. County has control of floodplain development, infrastructure and conveyance system capacity design.	
Qp100	Safe conveyance provided. Downstream infrastructure not impacted.	



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

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: 9/20/21

APPROVED: DEPARTMENT OF PUBLIC WORKS
Melanie 7/24/2018
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Karl 8/10/18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chad 7-26-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

STORMWATER MANAGEMENT DRAINAGE AREA MAP
TURF VALLEY, POD E-1
PHASE I

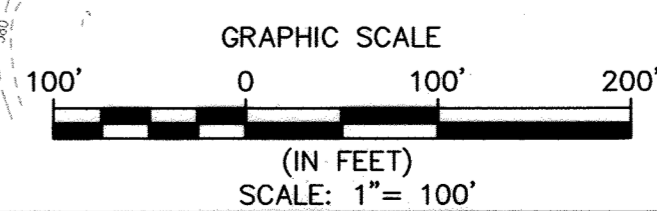
LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

11830 W. MARKET PLACE
 SUITE F
 FULTON, MD 20759
 PHONE: (410) 792-8086
 FAX: (410) 792-7419
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DESIGN BY: MG/SK
 DRAWN BY: MG/SK
 CHECKED BY: NB
 SCALE: 1"=100'
 DATE: JUNE 15, 2018
 PROJECT #: 13170102
 SHEET #: 7 of 12

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. 33772, EXPIRATION DATE: 6/16/2019



HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name Turf Valley Pod E-1 SWM Boring No. B-1
Location Ellicott City, Maryland Job # 16170A

SAMPLER
Datum MSL Hammer Wt. 140 lbs. Hole Diameter 6" Foreman M. Voelker
Surf. Elev. 443.6 ft Hammer Drop 30 in. Rock Core Diameter N/A Inspector N/A
Date Started 3-23-16 Pipe Size 2" in. Boring Method HSA Date Completed 3-23-16

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot Curve		
							N	10	30
0		Brown, moist, loose, micaceous silty SAND, trace fine rock fragments (SM)	Offset boring 8W due to drainage No topsoil	12		2-2-3	5		
5		with trace clay	5-inch diameter PVC pipe installed at 4.5' depth for infiltration test in adjacent drilled hole	18		3-3-3	6		
10		Dark brown and gray, moist, medium stiff, micaceous SILT (ML)	S-3 Lab Results: NM%= 21.2%, PL= 35, LL= 42, PI= 7, USCS= SM, AASHTO= A-5(0)	13	21.2	3-2-3	5		
15		Bottom of boring at 12.0 feet	Backfilled after 24 hours	12		4-4-4	8		
20				15		3-2-5	7		

SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 8.0' BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. DRY ft. 8.0' ft. CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name Turf Valley Pod E-1 SWM Boring No. B-2
Location Ellicott City, Maryland Job # 16170A

SAMPLER
Datum MSL Hammer Wt. 140 lbs. Hole Diameter 6" Foreman M. Voelker
Surf. Elev. 444.6 ft Hammer Drop 30 in. Rock Core Diameter N/A Inspector N/A
Date Started 3-24-16 Pipe Size 2" in. Boring Method HSA Date Completed 3-24-16

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot Curve		
							N	10	30
0		Orange and white, damp, very dense to dense to very dense, silty fine-coarse SAND AND fine-coarse ROCK FRAGMENTS (SM-GM)	5-inches Topsoil Hard drilling 0'-8.5'	10		18-50/6"	50/6"		
5			5-inch diameter PVC pipe installed at 7' depth for infiltration test in adjacent drilled hole	6		18-50/5"	50/5"		
10			Backfilled after 24 hours	11		20-18-17	35		
15		Bottom of boring at 8.7 feet		1		50/2"	50/2"		

SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 7.7' BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. DRY ft. 7.7' ft. CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name Turf Valley Pod E-1 SWM Boring No. B-3
Location Ellicott City, Maryland Job # 16170A

SAMPLER
Datum MSL Hammer Wt. 140 lbs. Hole Diameter 6" Foreman M. Voelker
Surf. Elev. 451.8 ft Hammer Drop 30 in. Rock Core Diameter N/A Inspector N/A
Date Started 3-25-16 Pipe Size 2" in. Boring Method HSA Date Completed 3-25-16

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot Curve		
							N	10	30
0		White and tan, damp, very dense to dense to very dense, silty fine-coarse SAND AND fine-coarse ROCK FRAGMENTS (SM-GM)	5-inches Topsoil	8		30-50/5"	50/5"		
5			5-inch diameter PVC pipe installed at 2' depth for infiltration test in adjacent drilled hole	13		7-20-50/5"	70/11"		
10			Hard drilling 0'-8.5'	4		18-17-26	43		
15			Backfilled after 24 hours	6		16-21-46	67		
20		Bottom of boring at 10.0 feet							

SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 4.5' BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. DRY ft. 4.5' ft. CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name Turf Valley Pod E-1 SWM Boring No. B-4
Location Ellicott City, Maryland Job # 16170A

SAMPLER
Datum MSL Hammer Wt. 140 lbs. Hole Diameter 6" Foreman M. Voelker
Surf. Elev. 442.2 ft Hammer Drop 30 in. Rock Core Diameter N/A Inspector N/A
Date Started 3-28-16 Pipe Size 2" in. Boring Method HSA Date Completed 3-28-16

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot Curve		
							N	10	30
0		Tan and brown, damp, very dense, fine-coarse SAND AND fine-medium ROCK FRAGMENTS (SP-GP)	5-inches Topsoil	11		3-20-41	61		
5		Brown, damp, stiff, micaceous SILT, little fine rock fragments (ML)	5-inch diameter PVC pipe installed at 4' depth for infiltration test in adjacent drilled hole	10		7-5-6	11		
10		Light brown, damp, medium dense, silty SAND, little fine rock fragments (SM)		5		6-8-7	15		
15		Bottom of boring at 10.0 feet	Backfilled after 24 hours	12		12-13-12	25		

SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 4.5' BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. DRY ft. 4.5' ft. CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name Turf Valley Pod E-1 SWM Boring No. B-5
Location Ellicott City, Maryland Job # 16170A

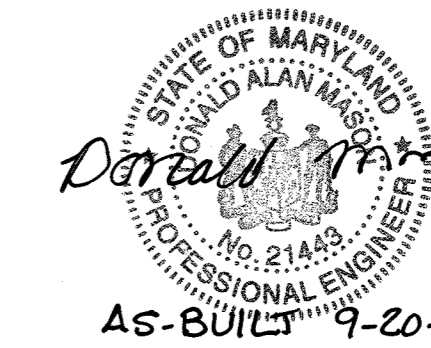
SAMPLER
Datum MSL Hammer Wt. 140 lbs. Hole Diameter 6" Foreman M. Voelker
Surf. Elev. 458.1 ft Hammer Drop 30 in. Rock Core Diameter N/A Inspector N/A
Date Started 3-28-16 Pipe Size 2" in. Boring Method HSA Date Completed 3-28-16

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot Curve		
							N	10	30
0		Red, damp, medium stiff, CLAY (CL)	5-inches Topsoil	12		3-3-7	10		
5		Red, damp, medium stiff, SILT, little clay, trace mica and sand (ML)		12		3-3-5	8		
10		Reddish-brown, damp, medium stiff, micaceous SILT, some clay (CL-ML)	5-inch diameter PVC pipe installed at 7' depth for infiltration test in adjacent drilled hole	6		3-3-3	6		
15		Gold and brown, damp, medium stiff, micaceous SILT (ML)		10		4-3-4	7		
20		Bottom of boring at 10.0 feet	Backfilled after 24 hours						

SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 5.5' BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. DRY ft. 5.5' ft. CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

"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. 21423, Expiration Date: 2-2-22

AS-BUILT 9-20-21

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410.825.8400

STORMWATER MANAGEMENT BORING LOGS
TURF VALLEY, POD E-1
PHASE I

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
NON-BUILDABLE BULK PARCELS G, H, AND I
A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13 ZONED: PGCC HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT

	ENGINEERS	DESIGN BY: <u>MG/SK</u>
	PLANNERS	DRAWN BY: <u>MG/SK</u>
	SCIENTISTS	CHECKED BY: <u>NB</u>
	CONSTRUCTION MANAGERS	SCALE: <u>AS SHOWN</u>
11830 W. MARKET PLACE SUITE F FULTON, MD 20759 PHONE: (410) 792-8086 FAX: (410) 792-7419 WWW.KCI.COM		DATE: <u>JUNE 15, 2018</u>
KCI TECHNOLOGIES		PROJECT #: <u>13170102</u>
		SHEET #: <u>8 of 12</u>

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. 3372, EXPIRATION DATE: 6/16/2019

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7/24/2018
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/01/18
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 7.26.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD 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 with >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: 53.3 +/- Acres
 Area Disturbed: 16.3 +/- Acres (Phase I and mass grading for Phase II)
 Area to be roofed or paved: 1.46 +/- Acres (Phase I)
 Area to be vegetatively stabilized: 14.84 +/- Acres (Phase I)
 Total Cut: 41,000 Cu. Yds.
 Total Fill: 45,500 Cu. Yds.
 Offsite waste/borrow area location: TBD

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 L.O.D. 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.

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.

- 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.

VEGETATIVE ESTABLISHMENT

Following initial soil disturbances or redistribution, permanent or temporary stabilization shall be completed within three calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and seven days for all other disturbed or graded areas on the project site.

1. **Permanent Seeding:**
 - A. Soil Tests: Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of initial rough grading or as recommended by the sediment control inspector. Rates and analyses will be provided to the grading inspector as well as the contractor. Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of sulfates. The minimum soil conditions required for permanent vegetative establishment are:
 - a. Soil pH shall be between 6.0 and 7.0.
 - b. Soluble salts shall be less than 500 parts per million (ppm).
 - c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
 - d. Soil shall contain 1.5% minimum organic matter by weight.
 - e. Soil must contain sufficient pore space to permit adequate root penetration.
 - f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with the Standard and Specification for Soil Preparation, Topsoiling and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or amendments made as recommended by a certified agronomist.
 - B. Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds dolomitic limestone and 21 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3-5 inches on slopes flatter than 3:1.
 - C. Seeding: Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be ¼ inch in clayey soils and ½ inch in sandy soils when using other than the hydroseeder method. Irrigate where necessary to support adequate growth until vegetation is firmly established. If other seed mixes are to be used, select from Table B3 and B5 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
 - D. Mulching: Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading. Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). If a mulch-anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.
 - E. Securing Straw Mulch: Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:
 - i. Use a mulch-anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely.
 - ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
 - iii. Liquid binders may be used. Apply at higher rates at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
 - iv. Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

2. **Temporary Seeding:**
 - Lime: 100 pounds of dolomitic limestone per 1,000 square feet.
 - Fertilizer: 15 pounds of 10-10-10 per 1,000 square feet.
 - Seed: Perennial rye - 0.92 pounds per 1,000 square feet (February 1 through April 30 or August 15 through October 31).
 Millet - 0.92 pounds per 1,000 square feet (May 1 through August 15).
 - Mulch: Same as 1 D and E above.

3. No fills may be placed on frozen ground. All fill is to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All compaction requirements are in accordance to Anne Arundel County Standard Specifications for Construction as well as the AA County Design Manual and Standard Details. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

4. **Permanent Sod:**
 Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted in section (B) above. Permanent sod is to be tall fescue, state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod.

5. **Mining Operations:**
 Sediment control plans for mining operations must include the following seeding dates and mixtures:
 For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and sericea lespedeza at the minimum rate of 0.5 pounds per 1,000 square feet.

6. Topsoil shall be applied as per the Standard and Specifications for Soil Preparation, Topsoiling, and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

SEQUENCE OF CONSTRUCTION

(FOR PHASE I CONSTRUCTION AND MASS GRADING FOR PHASE II)

1. Obtain grading permit - 1 day
2. Notify Howard County DPW, Construction Inspection Division (CID) (313-1855) at least 24 hours before starting any work. - 1 day
3. Install stabilized construction entrance, perimeter super silt fence, and inlet protection to existing inlets 1-44, 1-45 on Puccini Lane, and 1-2 on Resort Road. Clear and grub area needed to construct sediment traps - 1 month
4. Construct Sediment Traps - 14 days
5. With Inspector's approvals, clear and grub site to LOD. - 1 month
6. Mass grade Phase II and rough grade Phase I and begin road construction for Phase I. - 1 month
7. Construct water, sewer, and storm drain system. Provide inlet protection at inlet 1-2A. - 2 months
8. Fine grade site and complete road construction. - 1 month
9. Stabilize all disturbed areas with seed and mulch - 2 weeks
10. Convert sediment traps ST#1, #2, and #3 to bioretention facilities, and stabilize any disturbed area. - 1 month
11. Sediment traps ST#4, #5, #6 AND #8 to remain in place and maintained for Phase II construction.
12. With approval of Inspector, remove super silt fence and stabilize. - 1 week

STOCKPILE AREA

PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

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.

"NO AS-BUILT INFORMATION IS PROVIDED THIS SHEET"



AS-BUILT 9-20-21

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8400

**SEDIMENT AND EROSION CONTROL NOTES
TURF VALLEY, POD E-1
PHASE I**

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

	ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS	DESIGN BY: MGS/K DRAWN BY: MGS/K CHECKED BY: NB SCALE: AS SHOWN DATE: JUNE 15, 2018 PROJECT #: 131701102 SHEET #: 9 of 102
		11830 W. MARKET PLACE SUITE F FULTON, MD 20759 PHONE: (410) 792-8086 FAX: (410) 792-7419 www.kci.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. 33772, EXPIRATION DATE: 6/16/2019.

AS-BUILT

F-17-095

APPROVED: DEPARTMENT OF PUBLIC WORKS CHIEF, BUREAU OF HIGHWAYS	7/24/2018 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING CHIEF, DIVISION OF LAND DEVELOPMENT	8/01/18 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION	7-26-18 DATE

OWNER/DEVELOPER'S CERTIFICATE

"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Signature of Owner/Developer:
 Date: 6/15/18
 Printed name & Title: Louis Mangione Pres.

HOWARD SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

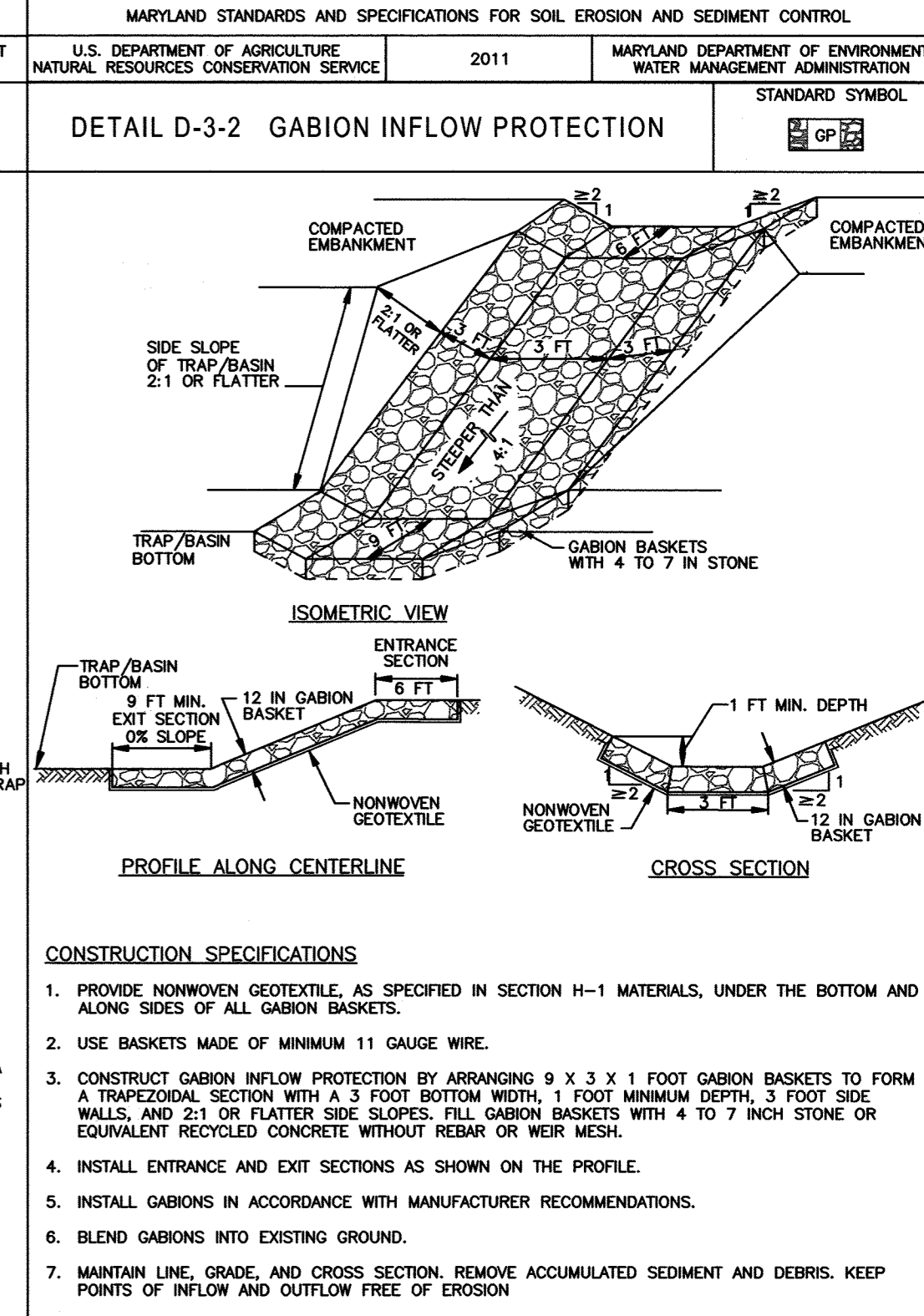
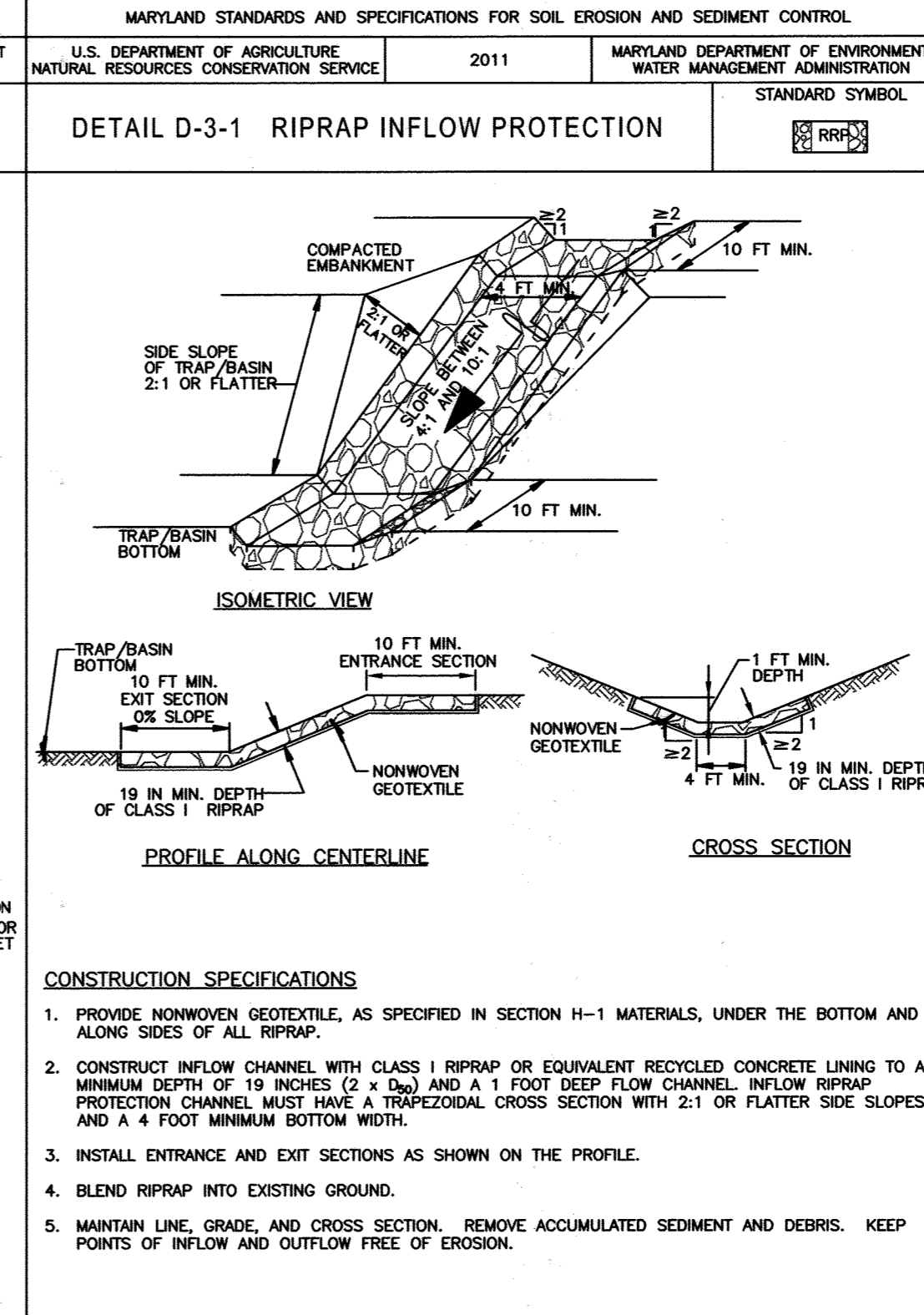
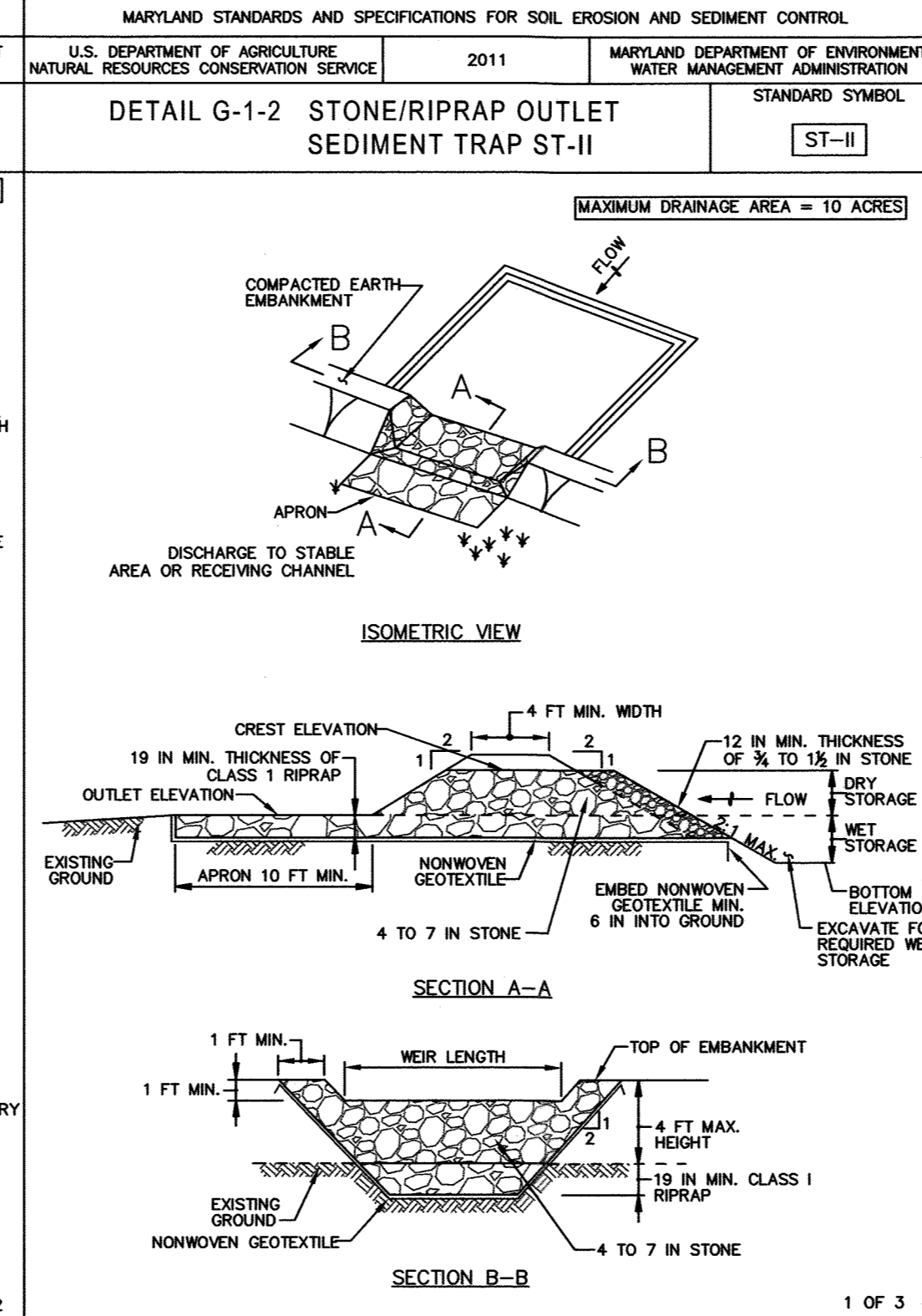
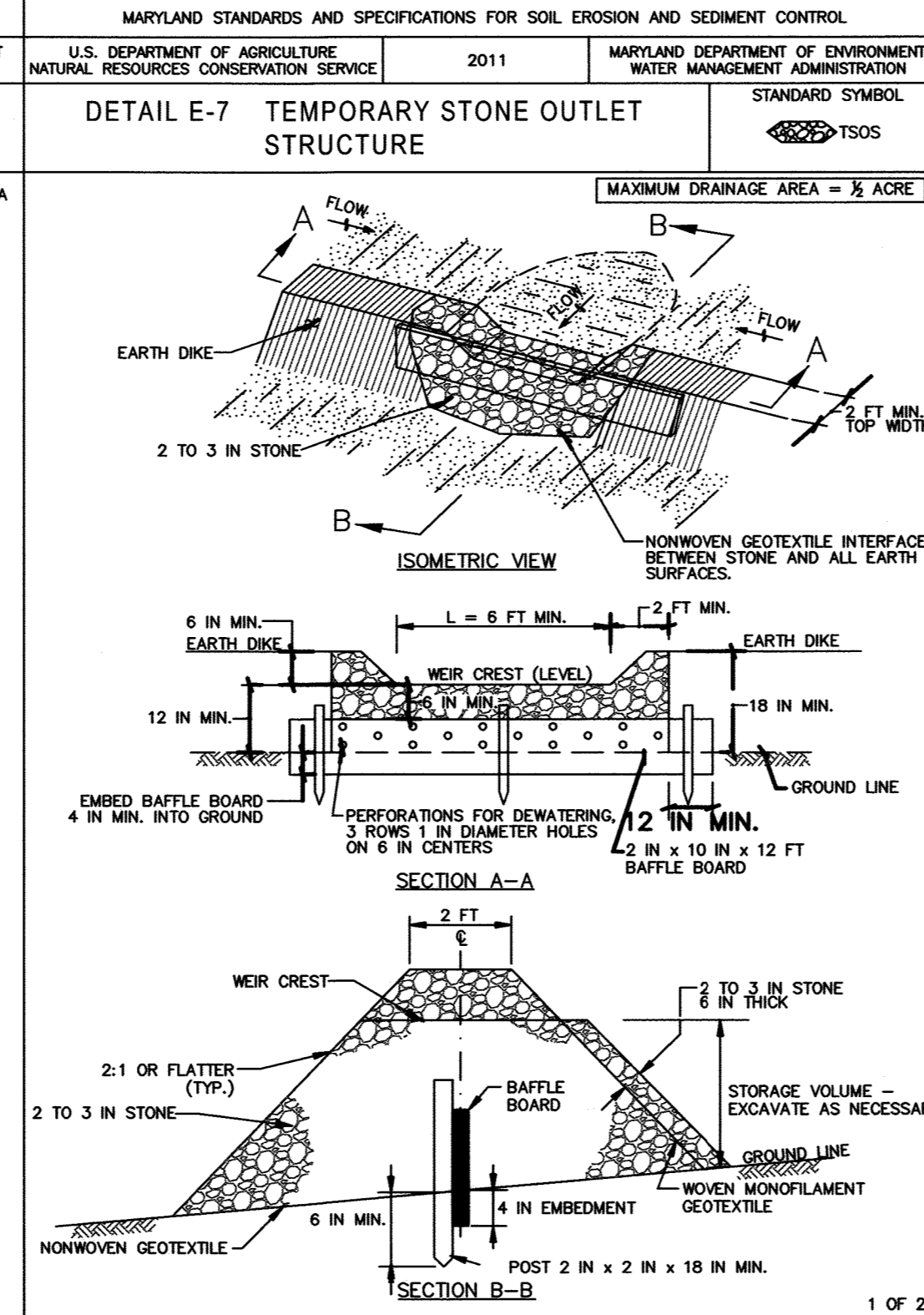
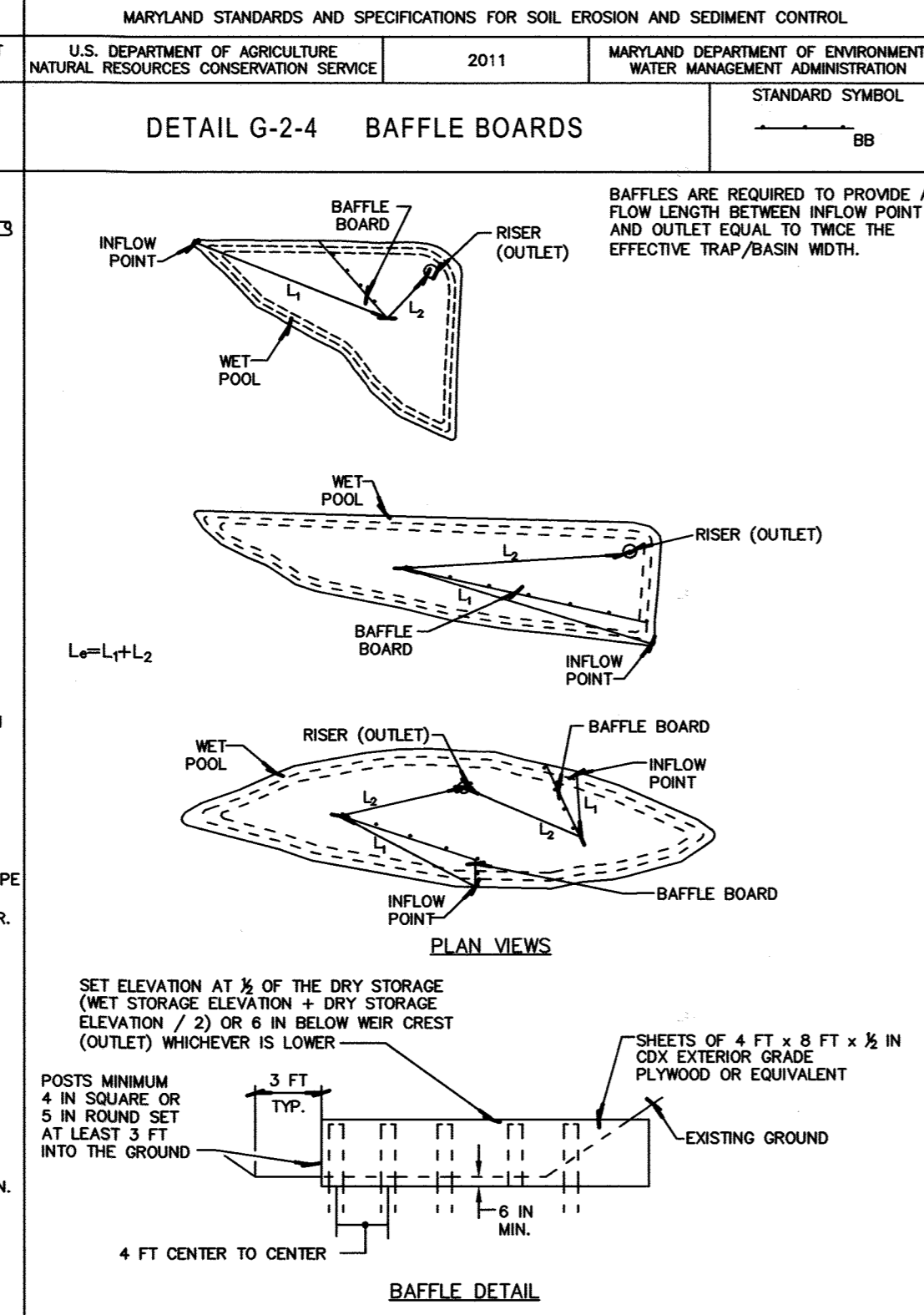
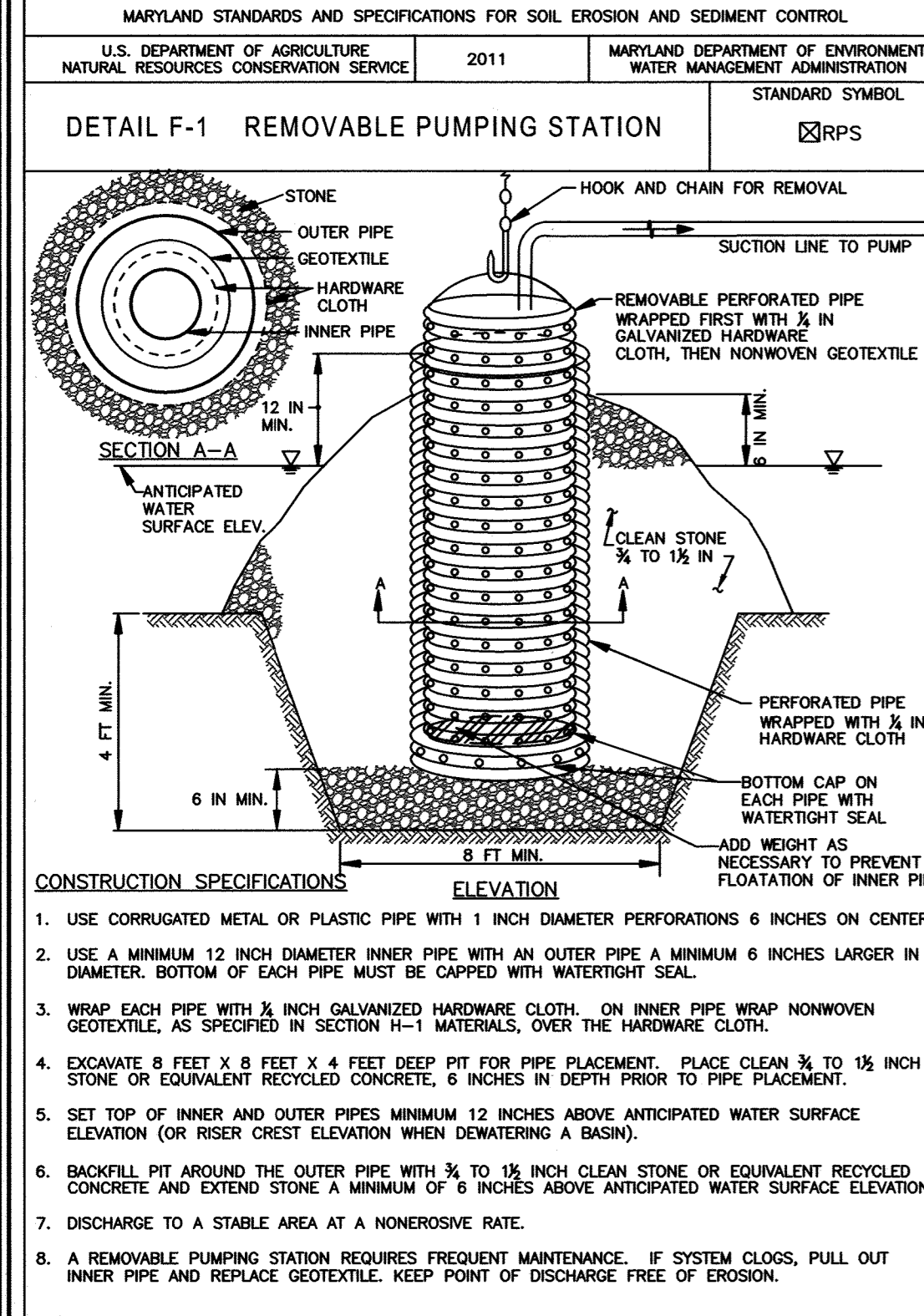
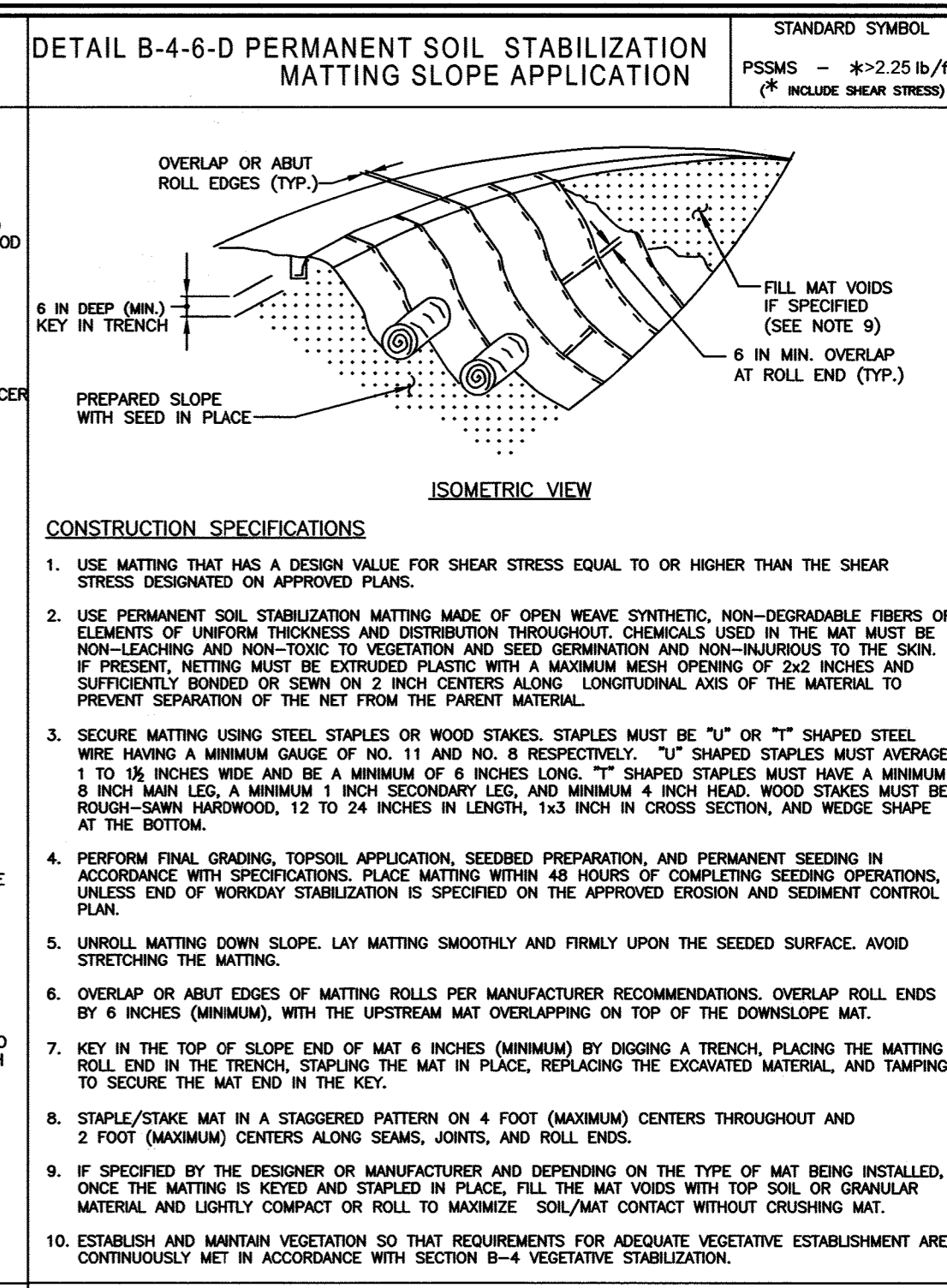
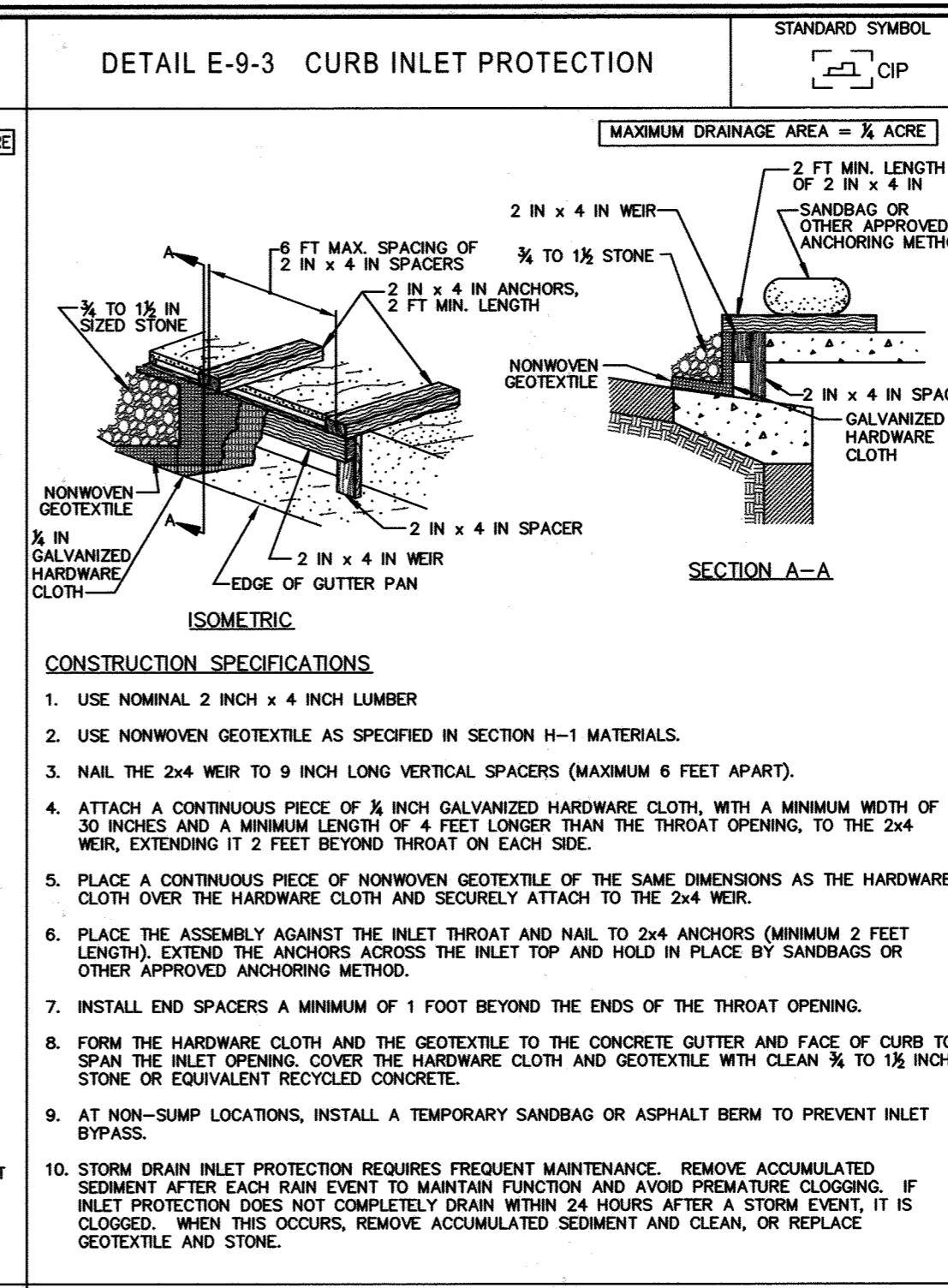
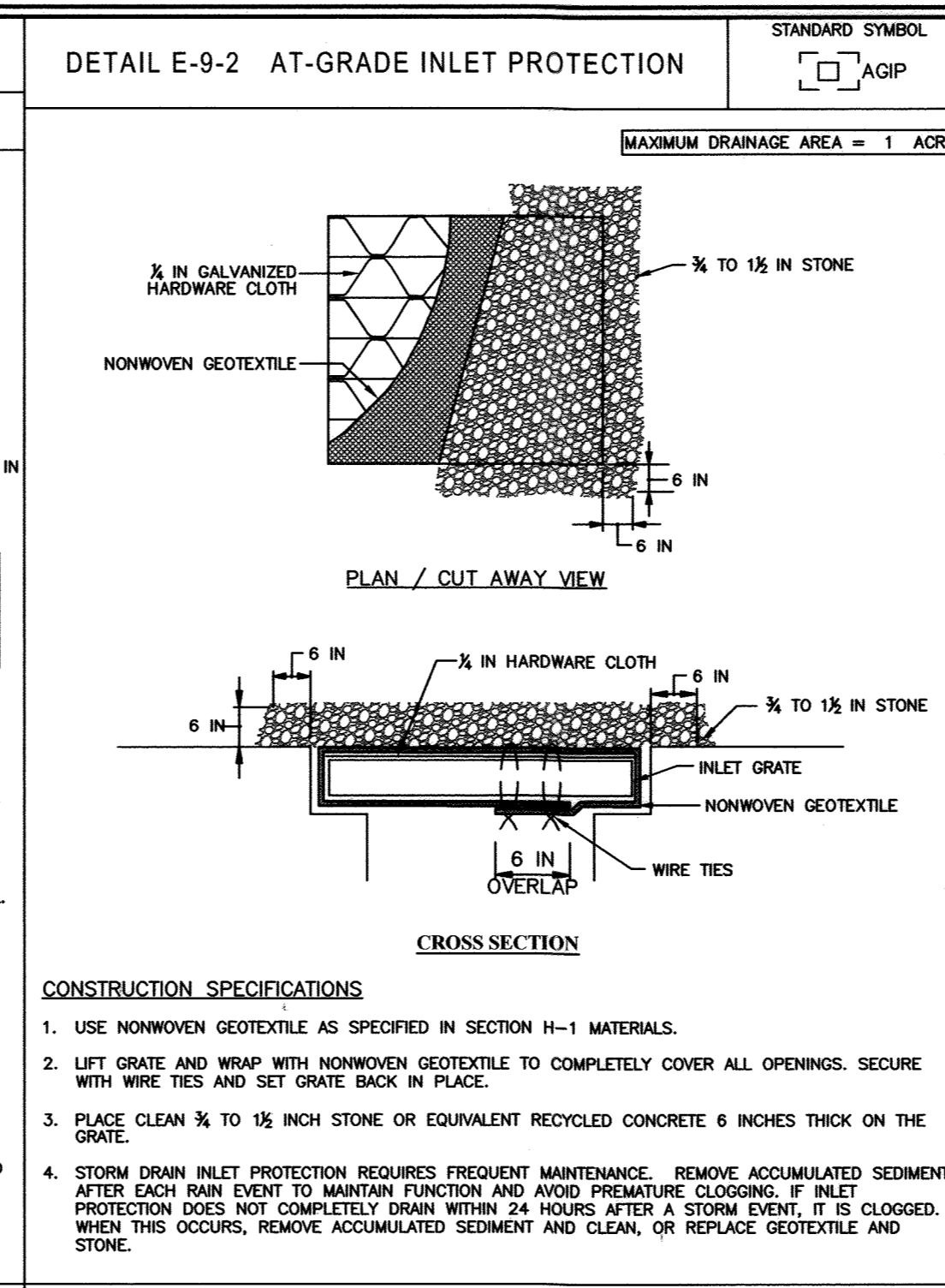
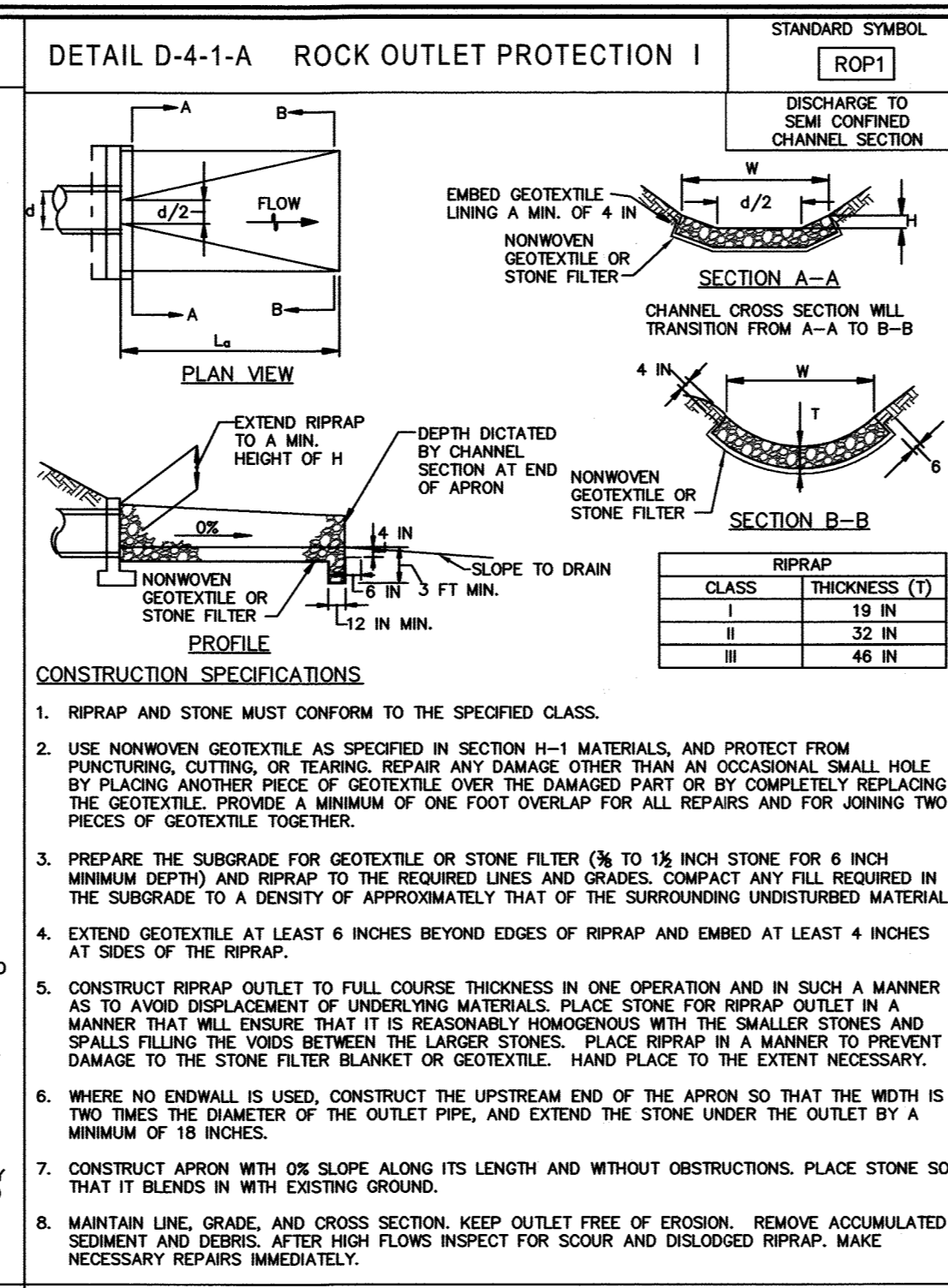
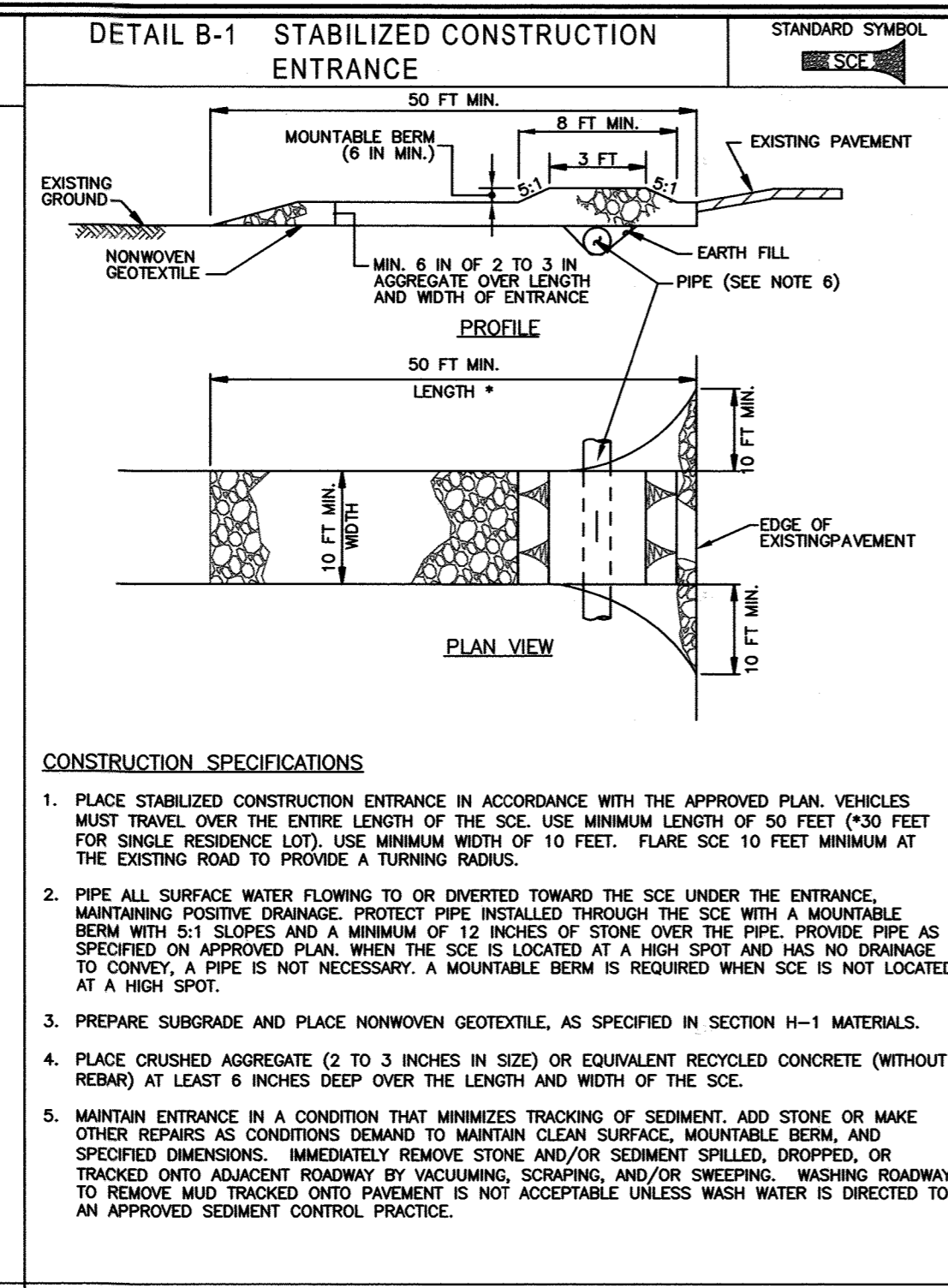
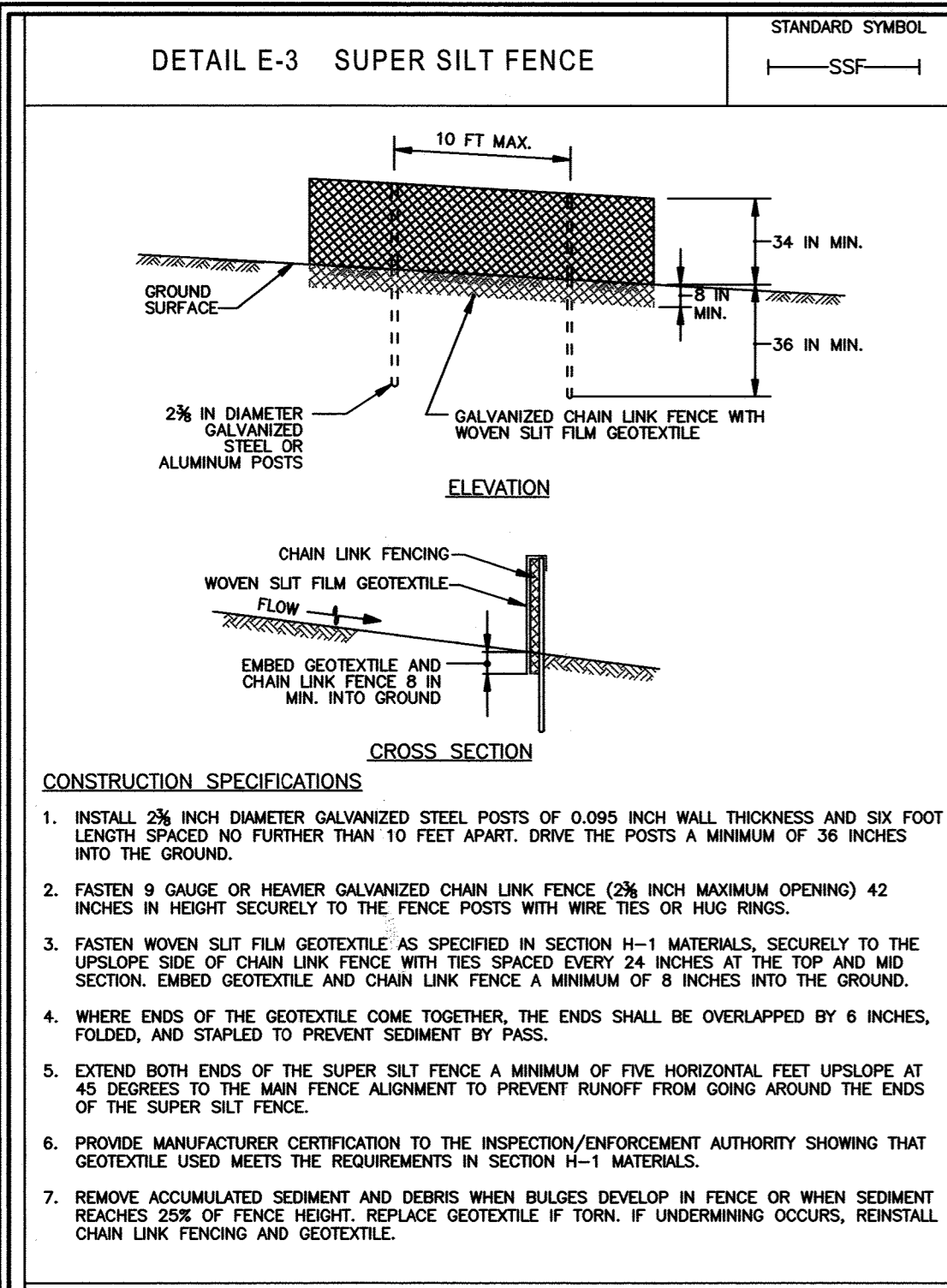
Date: 6/15/18

DESIGN CERTIFICATION

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature:
 Date: 6/15/18

NICK BARRICK MD Registration No. 33772
 Printed Name (P.E., R.L.S., or R.L.A. (circle one))



OWNER/DEVELOPER'S CERTIFICATE

"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Signature of Owner/Developer: *Aus Mangione* Date: 6/15/18
 Signature of Owner/Developer: *Louis Mangione* Date: Pres.
 Printed name & title: *Louis Mangione*

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *M. M. M.* Date: 7/24/2018
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Robt. S. S.* Date: 8/1/18
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF ENGINEERING DIVISION
 Signature: *Phil P.* Date: 7-24-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

HOWARD SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Signature: *John P.* Date: 7/10/18
 Howard Soil Conservation District

DESIGN CERTIFICATION

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature: *Nick B.* Date: 6/14/18
 Designer's Signature: *Nick B.* Date: 6/14/18
 Nick BARRICK MD Registration No. 33772
 Printed Name: *Nick B.* (P.E., R.L.S., or R.L.A. (circle one))

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

CONSTRUCTION SPECIFICATIONS

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

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 G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
- CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBSTRUCTIVE MATERIAL FOR THE EMBANKMENT.
- CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
- PLACE 1 FOOT OF CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
- CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
- STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
- REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (TOP OF WEIR STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT BLOCK KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY PINE, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPRINKLY, MAINTAIN LINE, GRADE, AND CROSS SECTION.
- WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
- ON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8400

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

SEDIMENT AND EROSION CONTROL DETAILS
 TURF VALLEY, POD E-1
 PHASE I

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
 NON-BUILDABLE BULK PARCELS G, H, AND I
 A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
 BLUFFS AT TURF VALLEY, PLAT NO. 24021, & NON-BUILDABLE BULK PARCELS "E" AND "F"
 FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 23294

TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

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.

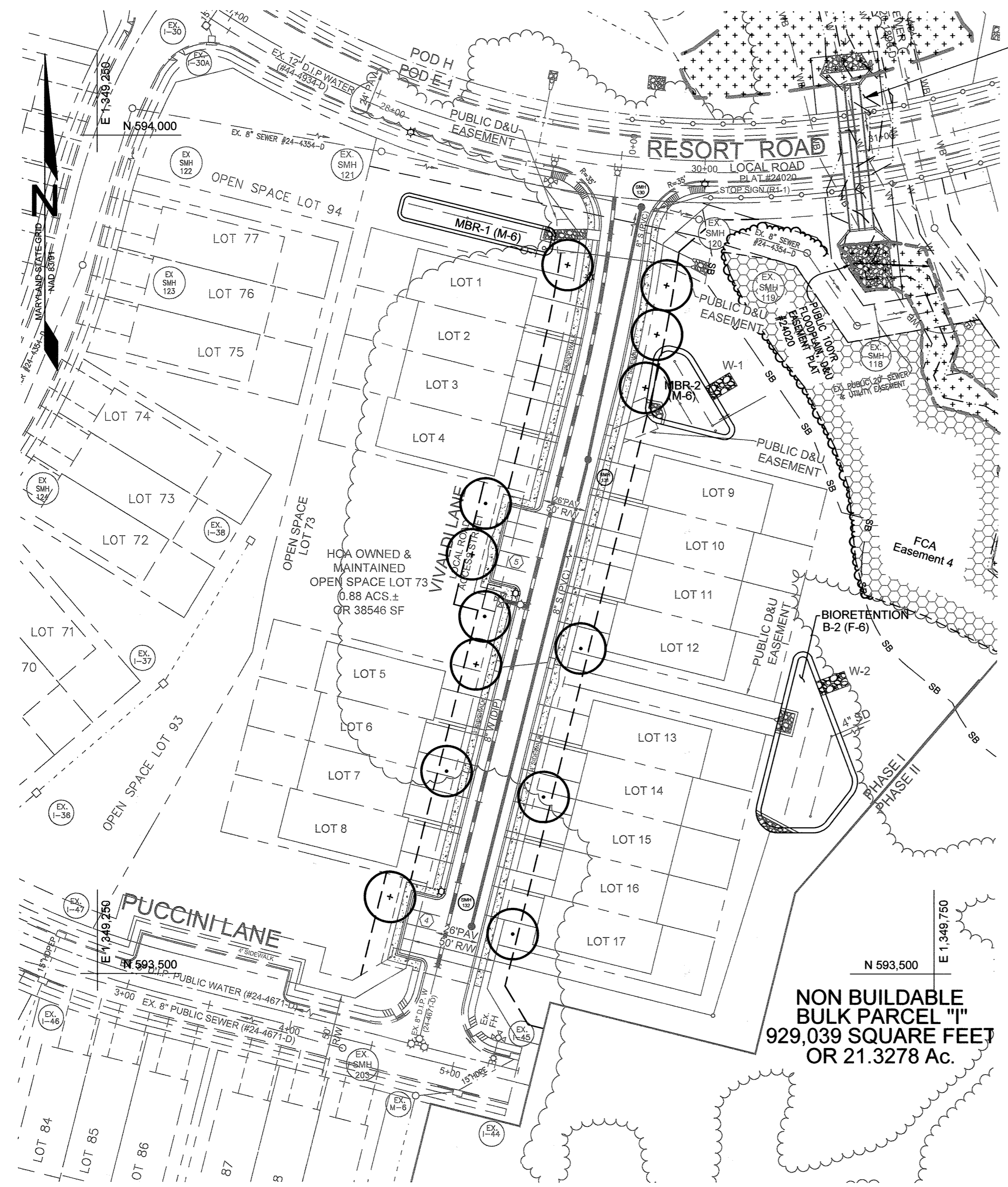
License No. 21443 Expiration Date: 12-21-22

DESIGN BY: MGSK
DRAWN BY: MGSK
CHECKED BY: NB
SCALE: AS SHOWN
DATE: JUNE 15, 2018
PROJECT #: 131701102
SHEET #: 10 of 12

KCI TECHNOLOGIES
 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
 11830 W. MARKET PLACE
 SUITE F
 FULTON, MD 20759
 PHONE: (410) 792-8086
 FAX: (410) 792-7419
 WWW.KCI.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. 33772, EXPIRATION DATE: 6/16/2019.

AS-BUILT



TWIN 60" RCCP CULVERTS (F-16-004, THE BLUFFS AT TURF VALLEY)

RESIDENTIAL DEVELOPMENT PARKING LOT LANDSCAPING	
Number of Parking Spaces	5
Number of trees required	1
1 Shade Trees per 10 Spaces	1
Shade Trees provided	1

STREET TREE SCHEDULE			
STREET NAME	LF REQUIRED	TREES REQUIRED	TREES PROVIDED
VIVALDI LANE	468	12 (1 per 40 LF)	12

LANDSCAPE SCHEDULE				
KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
⊙	6	ACER RUBRUM	2 1/2"-3" CAL.	B & B
⊙	7	OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B

- LANDSCAPE NOTES**
- 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 LANDSCAPING 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 THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
 - THE OWNER, TENANT, 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.
 - NO PERIMETER LANDSCAPING IS REQUIRED UNDER THIS PHASE OF DEVELOPMENT. STREET TREES AND INTERNAL LANDSCAPE TREES WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING FOR LOTS 1 THRU 17 WILL BE PROVIDED FOR AT THE SITE DEVELOPMENT PLAN STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT WITH THIS FINAL PLAN IN THE AMOUNT OF \$3,900 (13 SHADE TREES @ \$300.00 EACH).

SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING	
Number of Dwelling Units	17 SFA
Number of trees required	17
1 Shade Trees per DU SFA, 1:3 DU APTS	17
Shade Trees provided	0**

**NOTE: TO BE PROVIDED AT SDP STAGE

LANDSCAPE PLAN
SCALE: 1"=50'

LEGEND

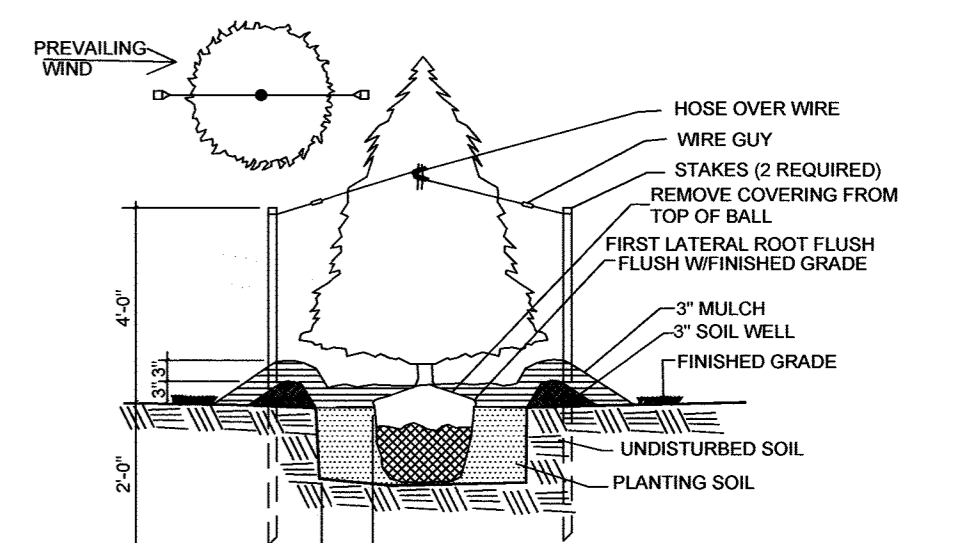
EXISTING CONTOUR	--- 382
PROPOSED CONTOUR	--- 382
EXISTING SPOT ELEVATION	382.3
PROPOSED SPOT ELEVATION	+82.53
DIRECTION OF FLOW	→
EXISTING TREELINE	~~~~~
PROPOSED TREELINE	~~~~~
PROPOSED LANDSCAPING	⊙ ⊙

OWNER/DEVELOPER
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1205 YORK ROAD, FENTHOUSE
LUTHERVILLE, MARYLAND 21095
410.825.8400

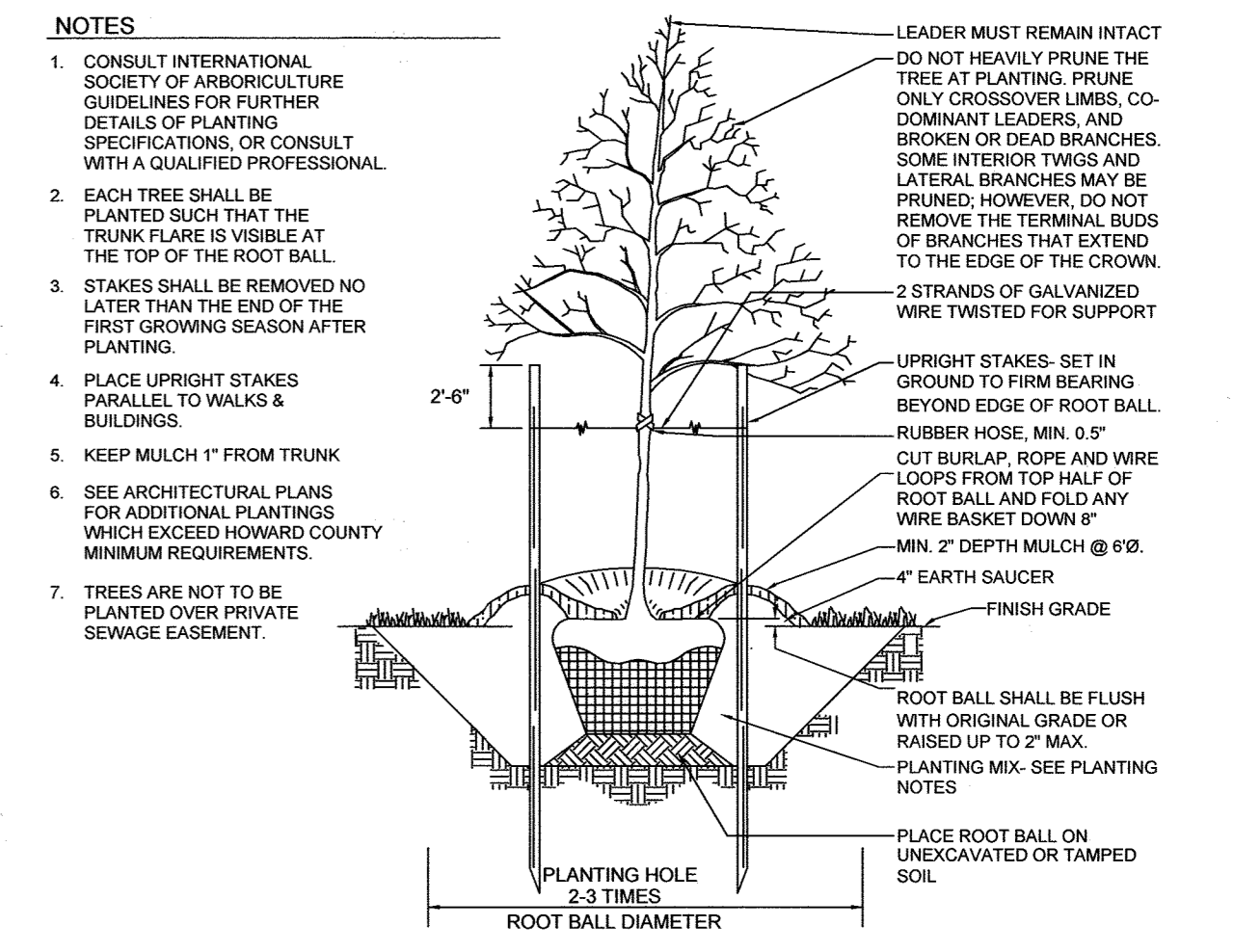
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7/24/2018
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/01/18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 7-26-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



EVERGREEN TREE DETAIL
NOT TO SCALE



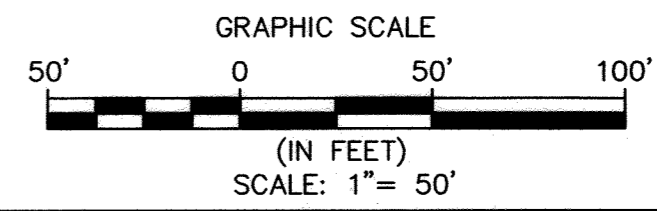
TYPICAL TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE

- NOTES**
- CONSULT INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES FOR FURTHER DETAILS OF PLANTING SPECIFICATIONS, OR CONSULT WITH A QUALIFIED PROFESSIONAL.
 - EACH TREE SHALL BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
 - STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
 - PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
 - KEEP MULCH 1" FROM TRUNK.
 - SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
 - TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.

"NO AS-BUILT INFORMATION" IS PROVIDED 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 PLAN
TURF VALLEY, POD E-1
PHASE I**

LOTS 1 THRU 17, OPEN SPACE LOT 73 AND 74, GOLF SPACE LOTS 75 AND 76
NON-BUILDABLE BULK PARCELS G, H, AND I
A SUBDIVISION OF P/O PARCEL 706, NON-BUILDABLE BULK PARCELS "A" AND "B"
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FAIRWAYS AT TURF VALLEY PH II, PLAT NO. 29294

TAX MAP 17 GRID 13 ZONED: PGCC HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT

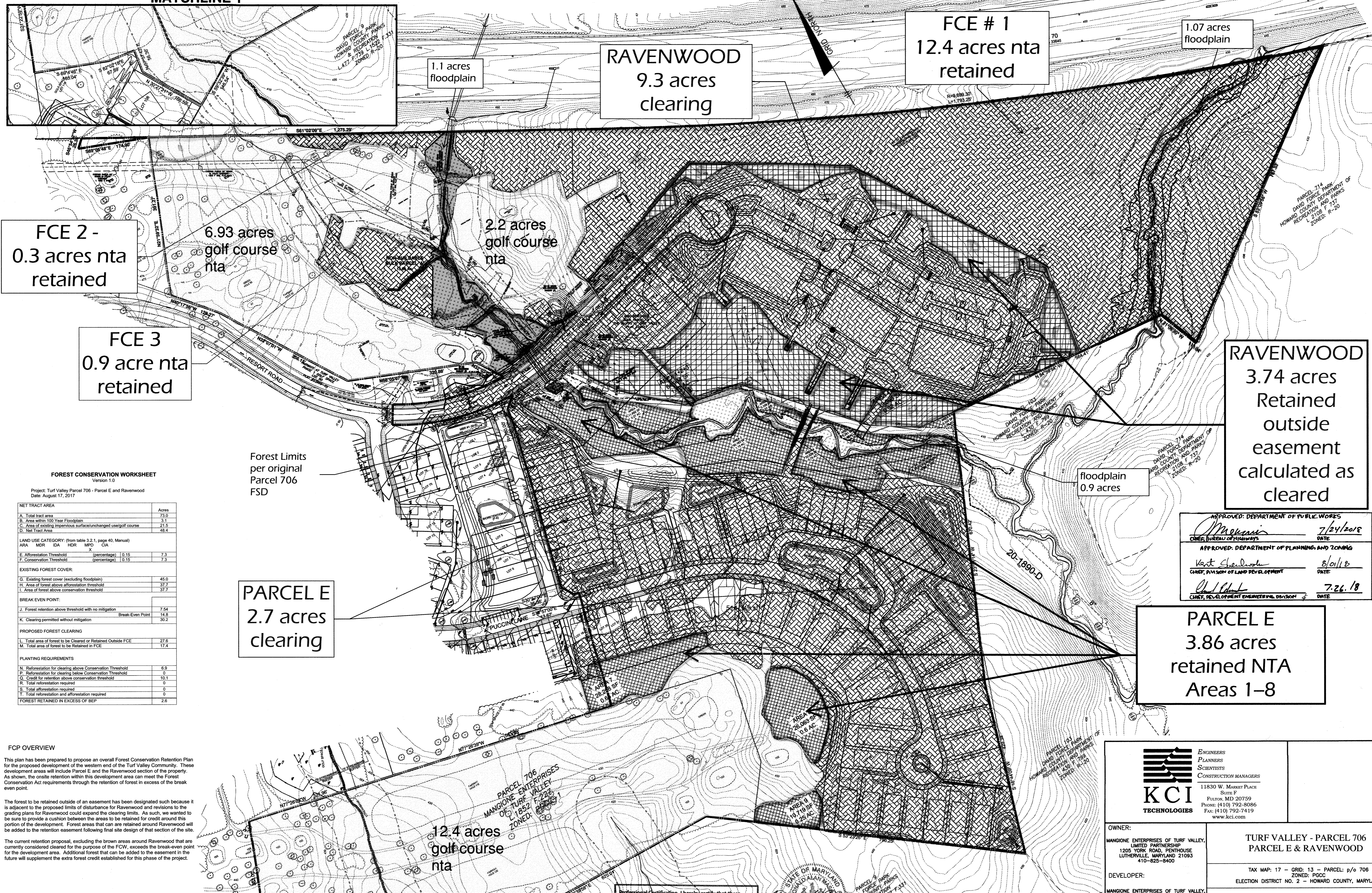
ENGINEERS
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SCIENTISTS
CONSTRUCTION MANAGERS

11830 W. MARKET PLACE
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FAX: (410) 792-7419
www.kci.com

DESIGN BY: MGS/K
DRAWN BY: MGS/K
CHECKED BY: NB
SCALE: 1"=50'
DATE: JUNE 15, 2018
PROJECT #: 131701102
SHEET #: 11 of 12

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. 3372, EXPIRATION DATE: 8/16/2019.

MATCHLINE 1



**FCE 2 -
0.3 acres nta
retained**

**6.93 acres
golf course
nta**

**1.1 acres
floodplain**

**RAVENWOOD
9.3 acres
clearing**

**FCE # 1
12.4 acres nta
retained**

**1.07 acres
floodplain**

**FCE 3
0.9 acre nta
retained**

**2.2 acres
golf course
nta**

**RAVENWOOD
3.74 acres
Retained
outside
easement
calculated as
cleared**

**floodplain
0.9 acres**

**PARCEL E
2.7 acres
clearing**

**PARCEL E
3.86 acres
retained NTA
Areas 1-8**

**12.4 acres
golf course
nta**

FOREST CONSERVATION WORKSHEET
Version 1.0

Project: Turf Valley Parcel 706 - Parcel E and Ravenwood
Date: August 17, 2017

NET TRACT AREA		Acres			
A. Total tract area		73.0			
B. Area within 100 Year Floodplain		3.1			
C. Area of existing impervious surface/unchanged use/golf course		21.5			
D. Net Tract Area		48.4			
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)					
AREA	MOR	IDA	HDR	MFD	CIA
E. Afforestation Threshold (percentage)		0.15			7.3
F. Conservation Threshold (percentage)		0.15			7.3
EXISTING FOREST COVER:					
G. Existing forest cover (excluding floodplain)					45.0
H. Area of forest above afforestation threshold					37.7
I. Area of forest above conservation threshold					37.7
BREAK EVEN POINT:					
J. Forest retention above threshold with no mitigation					7.24
K. Clearing permitted without mitigation					30.2
PROPOSED FOREST CLEARING					
L. Total area of forest to be Cleared or Retained Outside FCE					27.6
M. Total area of forest to be Retained in FCE					17.4
PLANTING REQUIREMENTS					
N. Reforestation for clearing above Conservation Threshold					6.9
O. Reforestation for clearing below Conservation Threshold					0
P. Credits for retention above conservation threshold					10.1
R. Total reforestation required					0
S. Total afforestation required					0
T. Total reforestation and afforestation required					0
FOREST RETAINED IN EXCESS OF BEP					2.6

Forest Limits
per original
Parcel 706
FSD

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 7/24/2018
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/01/18
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 7.26.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FCP OVERVIEW

This plan has been prepared to propose an overall Forest Conservation Retention Plan for the proposed development of the western end of the Turf Valley Community. These development areas will include Parcel E and the Ravenwood section of the property. As shown, the onsite retention within this development area can meet the Forest Conservation Act requirements through the retention of forest in excess of the break even point.

The forest to be retained outside of an easement has been designated such because it is adjacent to the proposed limits of disturbance for Ravenwood and revisions to the grading plans for Ravenwood could expand the clearing limits. As such, we wanted to be sure to provide a cushion between the areas to be retained for credit around the portion of the development. Forest areas that can be retained around Ravenwood will be added to the retention easement following final site design of that section of the site.

The current retention proposal, excluding the brown areas around Ravenwood that are currently considered cleared for the purpose of the FCW, exceeds the break-even point for the development area. Additional forest that can be added to the easement in the future will supplement the extra forest credit established for this phase of the project.

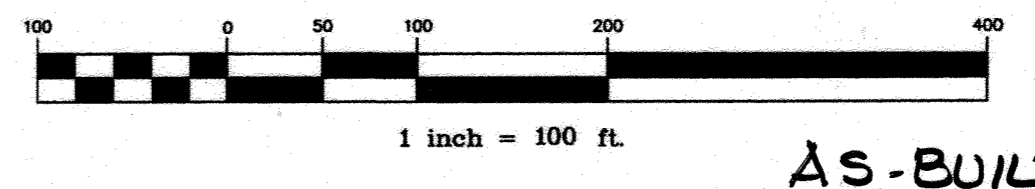
Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
100 W. 9th St., Suite 100, Annapolis, MD 21403
Tel: 410-293-1100
www.ecosciencetechnology.com

PLAN PREPARED BY:
[Signature]
JOHN CANNON
MD DNR FCA QUALIFIED PROFESSIONAL

MATCHLINE 1 "NO AS-BUILT INFORMATION" IS PROVIDED 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. 21413 Expiration Date: 12-21-22

[Signature]
STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 21413
AS-BUILT 9/20/18



AS-BUILT

 KCI TECHNOLOGIES ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 11830 W. MARKET PLACE SUITE #3 FULTON, MD 20759 PHONE: (410) 792-8086 FAX: (410) 792-7419 www.kci.com	OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	TURF VALLEY - PARCEL 706 PARCEL E & RAVENWOOD TAX MAP: 17 - GRID: 13 - PARCEL: p/o 706 ZONED: POGC ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND
	DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	FOREST CONSERVATION PLAN DATE: JUNE 18, 2018 BEI PROJECT NO. 2697 DESIGN: DBT DRAFT: DBT SCALE: AS SHOWN SHEET 12 OF 12