

GENERAL NOTES

- SUBJECT PROPERTY IS ZONED "PGCC" PER THE 1008/2013 COMPREHENSIVE ZONING PLAN.
- PRELIMINARY PLAN APPROVAL DATE: 11/21/2016
- GROSS AREA OF PHASE II SITE SUBJECT TO SUBDIVISION = 21.33 AC.
- NUMBER OF PROPOSED BULK PARCELS: 1
- NUMBER OF OPEN SPACE LOTS: 5
- OPEN SPACE LOTS 77, 78, 80 AND 81 TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. OPEN SPACE LOT 78 WILL NOT RECEIVE CREDIT.
- GOLF SPACE LOT 79 TO BE OWNED AND MAINTAINED BY MANGIONE ENTERPRISES OF TURF VALLEY LIMITED PARTNERSHIP.
- NON-BUILDABLE BULK PARCEL 'J' TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- 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 #24-4671-D, 24-4354-D, AND 20-1850-D.
- SOILS HAVE BEEN TAKEN FROM THE MDCS WEB SOIL SURVEY WEBSITE.
- EXISTING TOPOGRAPHY IS BASED ON WINGS AERIAL MAPPING CO., INC. WITH 2 FOOT CONTOUR INTERVAL ON OR ABOUT JANUARY, 2005.
- BOUNDARY SURVEY PREPARED BY NJR & ASSOCIATES ON OR ABOUT MAY, 2017.
- THERE ARE NO HISTORIC STRUCTURES OR CEMETERIES 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 OCTOBER 24, 2007. 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, WP-15-111, WP-18-101.
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN PROVIDED.
- 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.
- GEOTECHNICAL EXPLORATION AND TESTING HAS BEEN PERFORMED BY HILLIS-CARNES IN APRIL, 2016 AND SEPTEMBER 2017. IF FUTURE INVESTIGATIONS SHOW UNSATISFACTORY SOIL CONDITIONS FOR ANY OF THE STORMWATER MANAGEMENT TREATMENTS SHOWN, EITHER UNDERDRAINS WILL BE PROVIDED OR A DIFFERENT PRACTICE WILL BE SUBMITTED.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NUMBERS 161A AND 161B WERE USED FOR THIS PROJECT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS EXCEPT AS PERMITTED.
- STORMWATER MANAGEMENT IS PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II, AS AMENDED BY THE MARYLAND STORMWATER ACT OF 2007. STORMWATER OBLIGATIONS ARE BEING MET BY THE USE OF MICRO-BIORETENTION, BIOTENTED DRY WELLS, SHEETFLOW TO CONSERVATION AREAS, AND DISCONNECTION OF ROOFTOP RUNOFF. ALL FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. SITE'S TARGET P₆ AND RCN NUMBERS ARE MET BY THE USE OF THESE PRACTICES, THEREFORE C₆ IS NOT REQUIRED.
- FOREST CONSERVATION OBLIGATIONS FOR PHASE I HAVE BEEN PROVIDED UNDER PHASE I (F-17-096) IN ACCORDANCE WITH SECTION 16.1000 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:

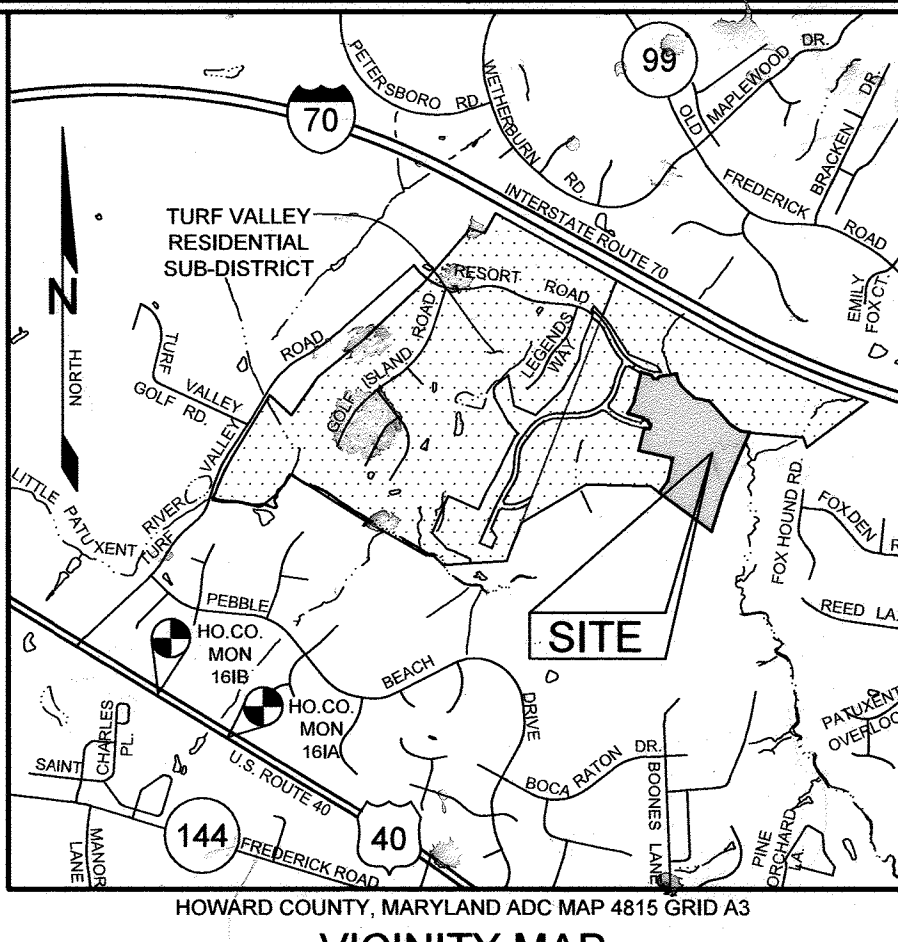
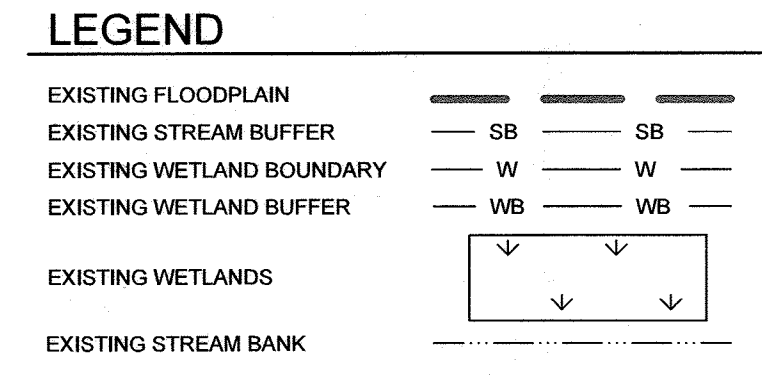
STATE HIGHWAY ADMINISTRATION	410.531.5533
BGE(CONTRACTOR SERVICES)	410.850.4620
BGE(UNDERGROUND DAMAGE CONTROL)	410.787.9068
MISS UTILITY	1.800.257.7777
COLUMBIA PIPELINE COMPANY	410.795.1390
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES	410.313.4900
HOWARD COUNTY HEALTH DEPARTMENT	410.313.2640
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 AND APPLICABLE:
 - ALL HDPE PIPE SPECIFICATION AND INSTALLATION SHALL MEET ASHOTO M-252 TYPE S, M-294 TYPE S AND ASTM D3221, 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:
 - THE R-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
 - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMDMTCU).
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (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.
 - NO STREET TREE CAN BE INSTALLED WITHIN 30' OF A STOP SIGN - APPROACH DIRECTION.
- ALL DRIVEWAYS WILL 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:
 - WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM).
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (+25-LOADING);
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- ALL DITCHES AND SWALES WILL HAVE EROSION CONTROL MATTING.
- PERMETER LANDSCAPING IS REQUIRED UNDER THIS PHASE OF DEVELOPMENT. STREET TREES, PARKING LOT LANDSCAPING, AND INTERIOR LANDSCAPING TREES WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING PLANTS TO BE PLANTED 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 PERMETER LANDSCAPING, STREET TREES AND PARKING LOT LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT WITH THIS FINAL PLAN IN THE AMOUNT OF \$18,000 (47 SHADE TREES @ \$300.00 EACH; 30 EVERGREEN TREES @ \$150.00 EACH).
- 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 AOT OF TEN THOUSAND (10,000) VEHICLES.
- 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.
- 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.
- HOMEOWNER ASSOCIATION WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL THE HEAD-IN PARKING AREAS INCLUDING PAVEMENT, STRIPING, CURB LIFT PICKUP AND SIDEWALKS.
- TWO (2) PRIVATE ROAD STREET NAME SIGN ASSEMBLIES FOR "ROSSINI LANE" SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS' / OWNERS' EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-6792 FOR DETAILS AND COST ESTIMATES.
- TURF VALLEY, POD E-1 (S-11-004) CONSTITUTED 74 UNITS/LOTS WHICH MET THE SKETCH PLAN MILESTONE DATES OF 12/1/09 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 55 UNITS/LOT, AND PHASE I PROPOSED 17 UNITS/LOT 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.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY BENCHMARK ENGINEERING, INC. IN SEPTEMBER 2016.
- THE DEPARTMENT OF PLANNING AND ZONING HAS DETERMINED THAT INSTALLATION OF THE SEWER IN THE STREAM BUFFER BETWEEN LOTS 37 AND 38 IS A NECESSARY DISTURBANCE IN ACCORDANCE WITH SUBSECTION 16.116(c) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

- AS-BUILT NOTES:**
- HORIZONTAL AND VERTICAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM AND BEING AS PROJECTED FROM NO. 07 GEODETIC CONTROL STATIONS 1618 AND 1745.
 - THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND PRISM AND RTK GPS.
 - THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC. IN REFERENCE TO GENERAL NOTE 22 WITH FACILITIES THAT ARE CONSTRUCTED ON LOT ARE NOT INCLUDED IN THIS AS-BUILT. INFORMATION FOR ON LOT SWM FACILITIES ARE INCLUDED IN A SEPARATE SUBMISSION AS PART OF THE GRADING AND ACCEPTANCE PROCEDURES.

PARK VIEW AT TURF VALLEY PHASE II

FINAL ROAD CONSTRUCTION PLANS

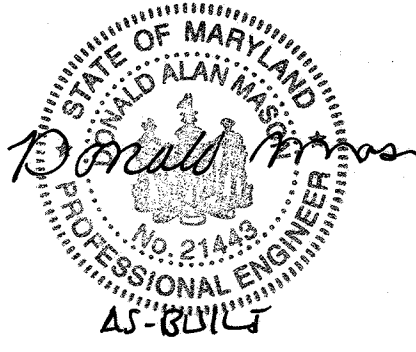
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81 GOLF SPACE LOT 79, NON-BUILDABLE BULK PARCEL 'J' HOWARD COUNTY, MARYLAND



AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications

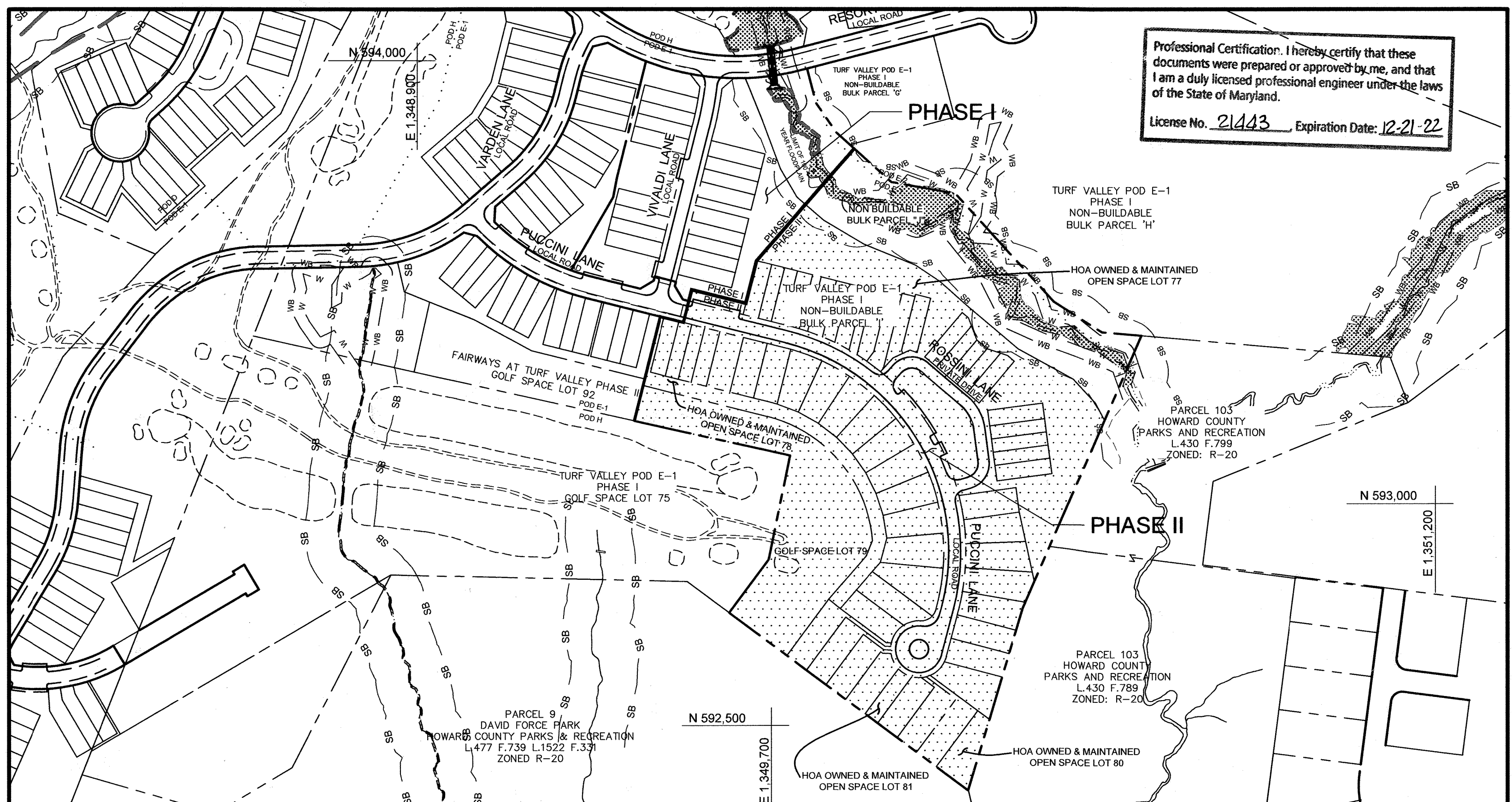
Donald Mason, P.E. Date: 8-18-22

REV	DATE	BY	DESCRIPTION
2	11.5.20	BE1	REVISE SUBDIVISION NAME
1	11.15.19	BE1	ADD GEN. NOTE A9, UPDATE SHEET INDEX, UPDATE ADDRESS IN SWM CHART, ERMK #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.

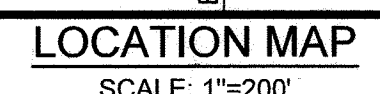
License No. 22270, Expiration Date: 6-30-21



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

GENERAL NOTES CONTINUED...



STORMWATER MANAGEMENT SUMMARY

GROSS AREA UNDER PHASE II	21.33 ACS
AREA UNDER FLOODPLAIN	0.86 ACS
AREA UNDER WETLAND/WETLAND BUFFER	1.88 ACS
EXISTING WOODED AREA	14.2 ACS
EXISTING OPEN SPACE	3.37 ACS
AREA OF DISTURBANCE	13.51 ACS
EXISTING IMPERVIOUS AREA WITHIN LOD	0 ACS
PROPOSED IMPERVIOUS AREA	5.80 ACS
TARGET P ₆ FOR TREATMENT	1.8"
ESDV REQUIRED FOR TREATMENT	38,521 CF
ESDV PROVIDED	38,656 CF
R ₆ REQUIRED FOR TREATMENT	5,564 CF
R ₆ PROVIDED	12,884 CF
P ₆ PROVIDED	2.2"
Q ₆ 10	N/A
Q ₆ 100	N/A

PARKING TABULATION:

PARKING REQUIRED:
2.5 SPACES PER SFA AND SFD UNIT = 55 x 2.5 = 138

PARKING PROVIDED:
SPACES WITHIN GARAGES/DRIVEWAYS OF SFA (2 SPACES EACH SFA) = 50
SPACES WITHIN GARAGES/DRIVEWAYS OF SFD (2 SPACES EACH SFD) = 60
TOTAL PARKING SPACES PROVIDED = 138

SWM PRACTICE CHART

LOT NUMBER	ADDRESS	DISCONNECTION OF ROOFTOP RUNOFF	DISCONNECTION OF NON-ROOFTOP RUNOFF	SHEETFLOW TO CONSERVATION AREAS	DRY WELLS
		N-1 (NUMBER)	N-2 (Y/N)	N-3 (Y/N)	M-5 (NUMBER)
20	10338 Puccini Lane				2
21	10340 Puccini Lane				2
33	10505 Rossini Lane			Y	2
34	10507 Rossini Lane			Y	2
35	10511 Rossini Lane			Y	2
36	10511 Rossini Lane			Y	2
37	10513 Rossini Lane			Y	2
45	10405 Puccini Lane				1
46	10409 Puccini Lane				2
47	10413 Puccini Lane				2
48	10417 Puccini Lane				2
49	10421 Puccini Lane				2
50	10425 Puccini Lane				2
52	10433 Puccini Lane				2
53	10437 Puccini Lane				2
54	10436 Puccini Lane				2
55	10432 Puccini Lane				2
56	10428 Puccini Lane				2
57	10424 Puccini Lane				2
59	10414 Puccini Lane				1
60	10408 Puccini Lane				2
61	10402 Puccini Lane				2
62	10396 Puccini Lane				2
63	10390 Puccini Lane				2
64	10384 Puccini Lane				2
65	10378 Puccini Lane				2
66	10372 Puccini Lane				2
67	10366 Puccini Lane				2
69	10360 Puccini Lane				2
70	10354 Puccini Lane				2
71	10378 Puccini Lane				2
72	10344 Puccini Lane				2

APPROVED: DEPARTMENT OF PUBLIC WORKS
10/24/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
11.07.18

11.2.18

HOUSING TYPE CHART

SINGLE FAMILY DETACHED LOTS	30
TOWNHOUSE	25

OPEN SPACE CALCULATION

GROSS AREA	21.33
OPEN SPACE REQUIRED 15% OF GROSS	3.20
OPEN SPACE PROVIDED	7.99
NON-CREDITED	1.1
CREDITED O.S. PROVIDED	6.89

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

Turf Valley, Pod E-1 Phase II (F-17-096)

Stormwater Management Information Chart

Lot/Parcel Number	Facility Name & Number	Practice Type (Quantity)	Public	Private	HOA Maintains	Misc.
Open Space Lot 77	Micro Bioretention MBR-4	M-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Puccini Lane	Micro Bioretention MBR-5	M-6	X		Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 80	Micro Bioretention MBR-6	M-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 77	Bioretention B-3	F-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 77	Bioretention B-4	F-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 77	Bioretention B-5	F-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 77	Bioretention B-6	F-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement
Open Space Lot 77	Bioretention B-7	F-6		X	Yes	Located in Open Space Lot. To be covered under a Developer's Agreement

BENCHMARKS

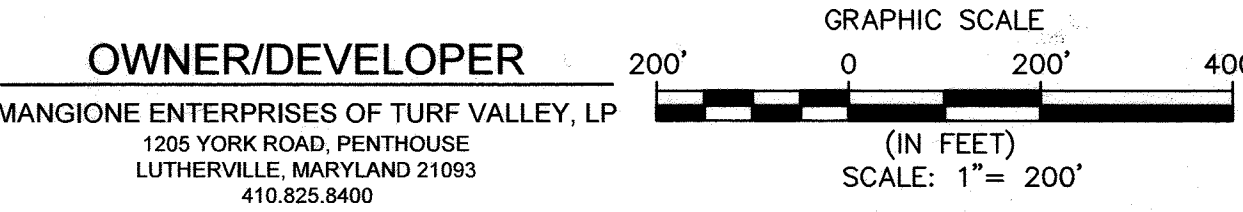
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
161B	590,475.2538	1,344,753.9350	469.892	11.5' SOUTHWEST OF WBL RT. 40, 28.8' WEST OF PK WALL IN SHOULDER, 66.4' SOUTH OF LAST POST IN GUARDRAIL.
161A	589,509.366	1,346,343.63	463.797	RT. 40, 0.35 MI WEST OF RT. 144 JOINT

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	ROAD PLAN AND PROFILE -1
3	ROAD PLAN AND PROFILE -2
4	STORM DRAIN DRAINAGE AREA MAP AND PROFILES
5	GRADING, SEDIMENT AND EROSION CONTROL PLAN - 1
6	GRADING, SEDIMENT AND EROSION CONTROL PLAN - 2
7	STORMWATER MANAGEMENT NOTES AND DETAILS - 1
8	STORMWATER MANAGEMENT NOTES AND DETAILS - 2
9	STORMWATER MANAGEMENT D.A. MAP
10	STORMWATER MANAGEMENT BORING LOGS - 1
11	STORMWATER MANAGEMENT BORING LOGS - 2
12	SEDIMENT AND EROSION CONTROL PLAN - 1
13	SEDIMENT AND EROSION CONTROL DETAILS
14-15	LANDSCAPE PLAN
16-20	RETAINING WALL PLANS

SITE ANALYSIS DATA CHART

ITEM	VALUE
1 GROSS TRACT AREA (PHASE II)	21.33 ± AC.
2 AREA WITHIN 100-YEAR FLOODPLAIN	0.86 AC.
3 TOTAL AREA OF 25% OR GREATER STEEP SLOPES (AREA NOT IN FLOODPLAIN)	0.95 AC.
4 NET TRACT AREA [1-(2+3)]	19.52 ± AC.
5 TOTAL NUMBER OF LOTS ALLOWED PER ZONING	N/A
6 TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED	55
7 AREA OF BUILDABLE LOTS	8.042 ± AC.
8 AREA OF OPEN SPACE LOTS	7.988 ± AC.
9 AREA OF BULK PARCELS	3.736 ± AC.
10 AREA OF PUBLIC RIGHT-OF-WAY	1.562 ± AC.



COVER SHEET
PARK VIEW AT TURF VALLEY
PHASE II

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J' POD 'E-1' SECTION IV/RESIDENTIAL PHASE IV E A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

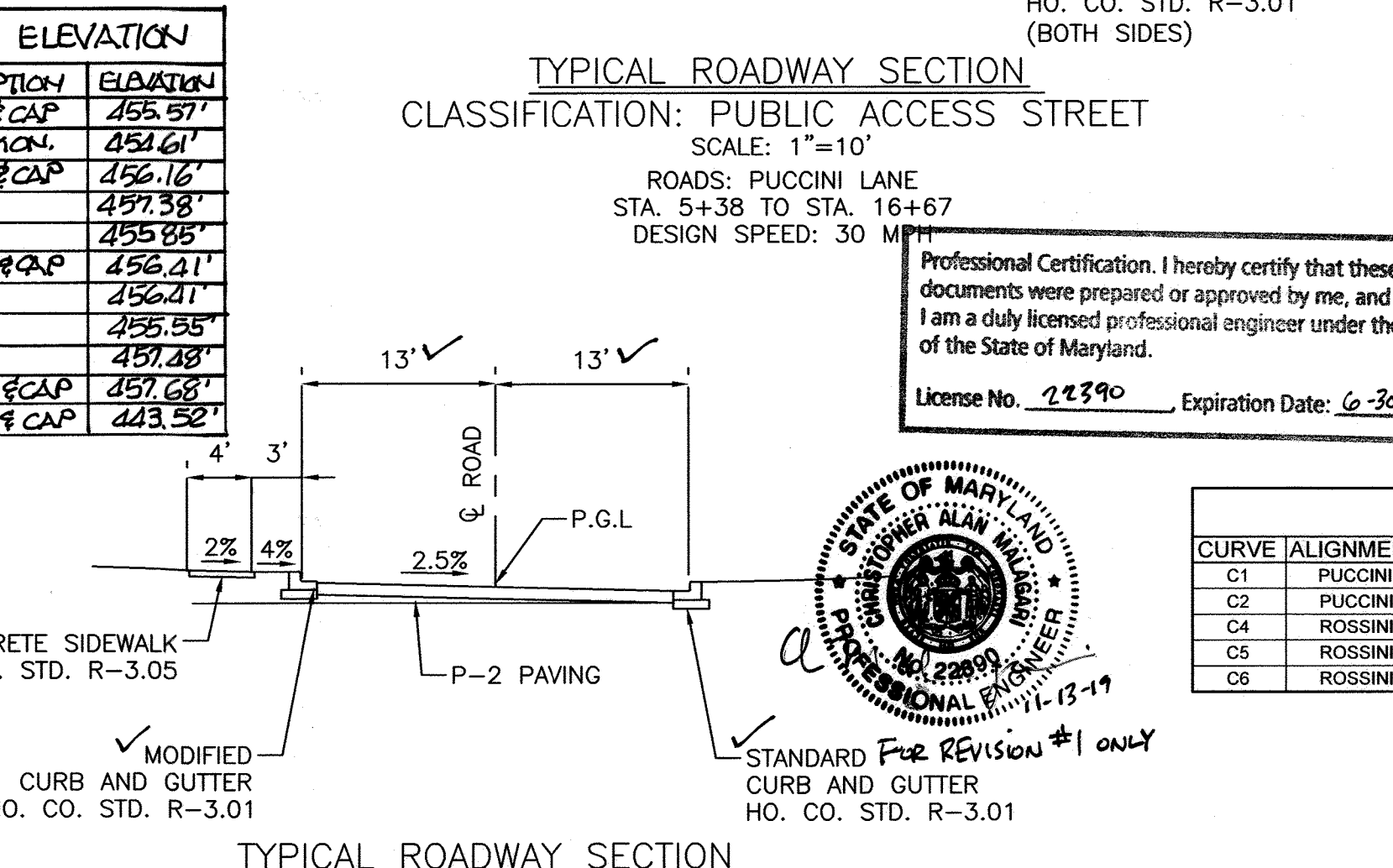
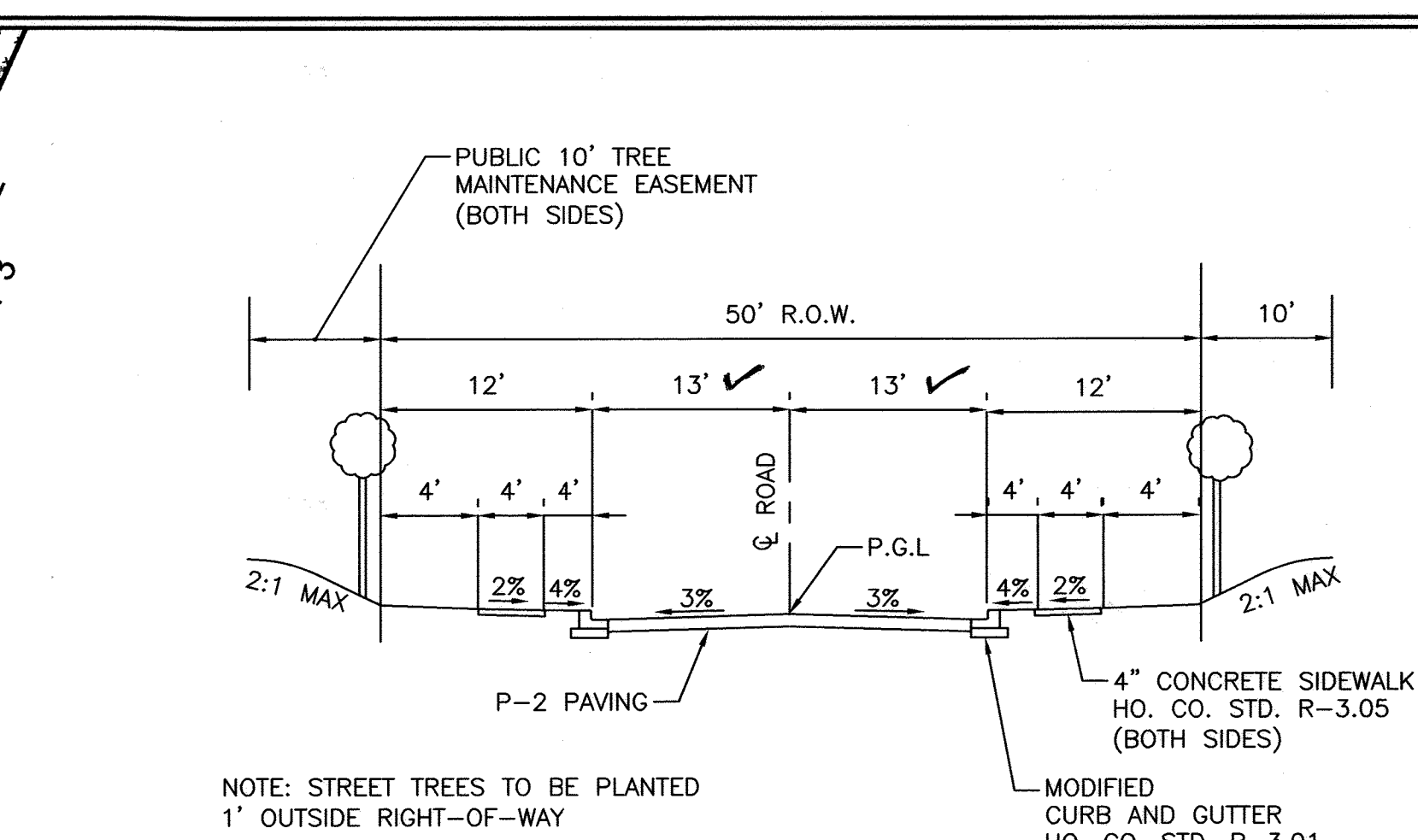
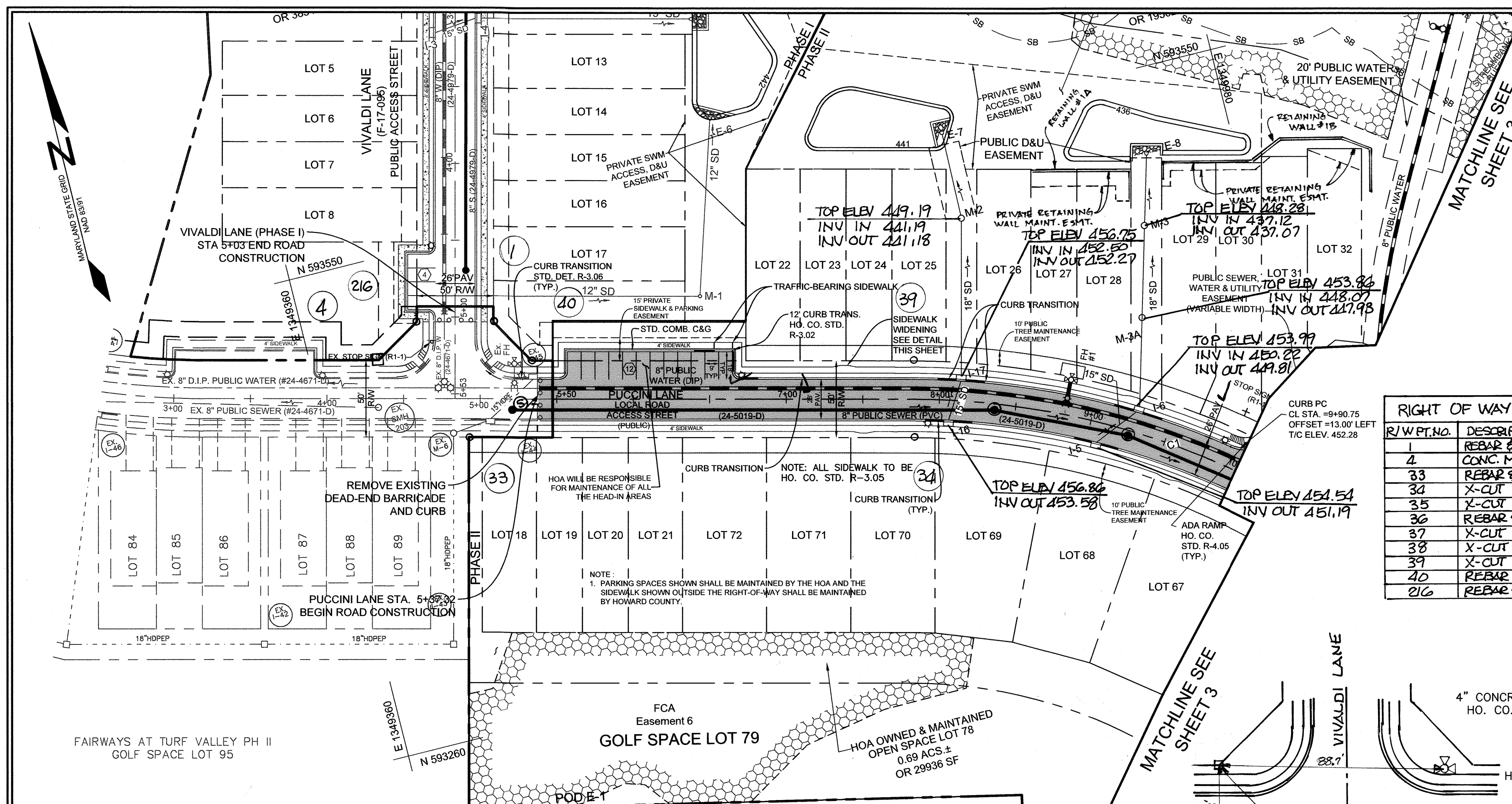
TAX MAP 17 GRID 13
2ND ELECTION DISTRICT

ZONED: PGCC HOWARD COUNTY, MARYLAND

DESIGN BY: MG/SK
DRAWN BY: MG/SK
CHECKED BY: NB
SCALE: AS SHOWN
DATE: OCTOBER 5, 2018
PROJECT #: 131701102
SHEET #: 1 of 20

KCI TECHNOLOGIES
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: 6/6/2019



PAVING SECTIONS

SEC. NO.	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <55 TO <7	27	3 TO <55 TO <7	27
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

NOTES:
 1. HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARbage TRUCKS.
 2. HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX).
 3. GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 8" MAX COMPACTED THICKNESS LAYERS.
 4. THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
 5. IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APPROX WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
 6. THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CURB VALUE FOR EACH ROADWAY.

STREET LIGHT TABLE

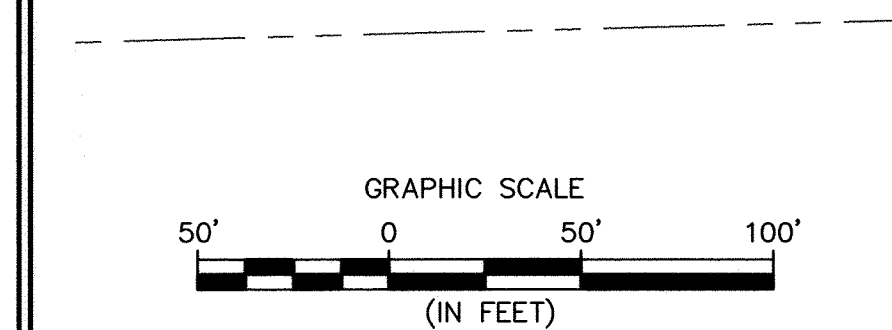
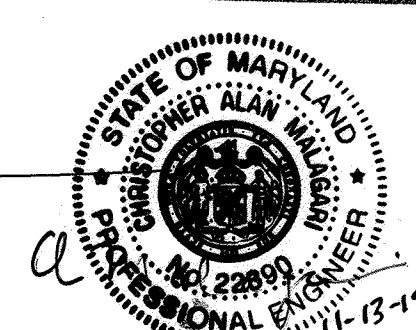
FIXTURE TYPE	POLE TYPE	LOCATION	STREET
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 6+25.88 LEFT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 7+93 RIGHT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 9+86.17 LEFT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 11+75.12 LEFT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 13+26.17 LEFT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 15+01.17 RIGHT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 16+72.17 LEFT	PUCCINI LANE
LED-100 BLACK COLONIAL POST-TOP	14" BLACK FIBERGLASS	Q STA. 17+16.50 RIGHT	PUCCINI LANE

CENTERLINE ROAD CURVE DATA

CURVE	ALIGNMENT	STATION	LENGTH	RADIUS	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C1	PUCCINI	7+82.08 TO 15+73.34	791.27	500.00'	90°40'22"	505.88'	S 30°38'50" E	711.25'
C2	PUCCINI	15+73.34 TO 16+67.15	115.45'	163.94'	40°20'58"	60.25'	S 34°53'50" E	113.08'
C4	ROSSINI	0+53.49 TO 1+22.90	69.44'	45.00'	88°24'05"	60.25'	N 86°06'41" E	62.75'
C5	ROSSINI	2+39.49 TO 2+13.17	73.69'	100.00'	42°13'06"	38.61'	S 28°34'14" E	72.03'
C6	ROSSINI	3+86.05 TO 4+49.77	63.72'	45.00'	81°08'00"	38.52'	S 33°06'20" W	58.53'

RIGHT OF WAY ELEVATION

R/W PT. NO.	DESCRIPTION	ELEVATION
1	REBAR & CAP	455.57'
2	CONC. MON.	454.61'
33	REBAR & CAP	456.16'
34	X-CUT	457.38'
35	X-CUT	455.85'
36	REBAR & CAP	456.41'
37	X-CUT	456.41'
38	X-CUT	455.55'
39	X-CUT	457.48'
40	REBAR & CAP	457.68'
216	REBAR & CAP	443.52'



LEGEND

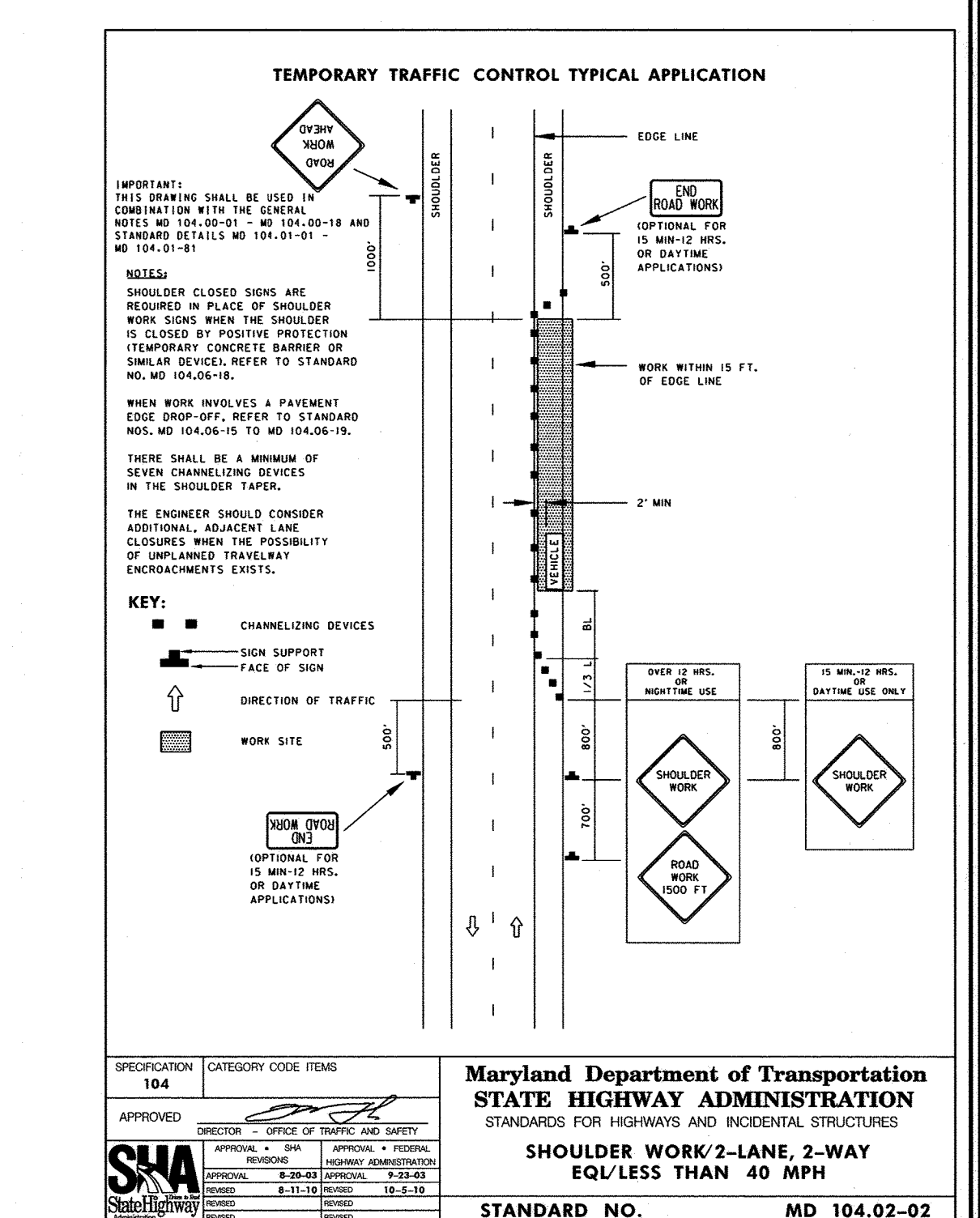
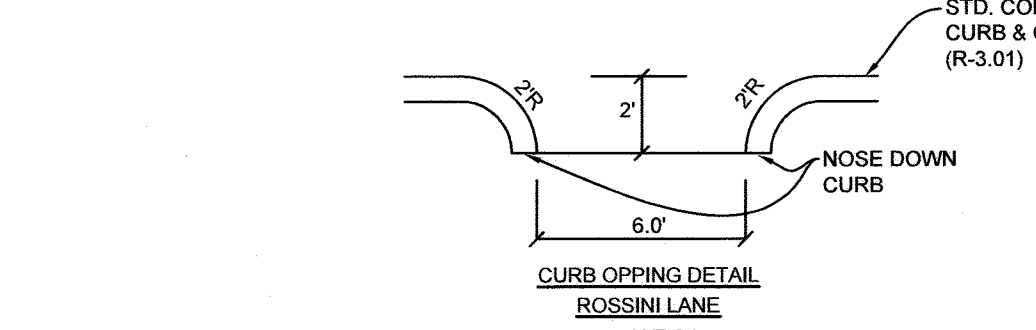
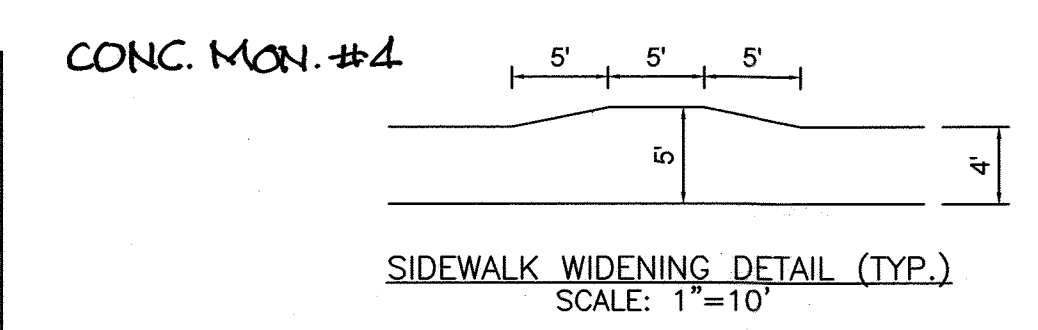
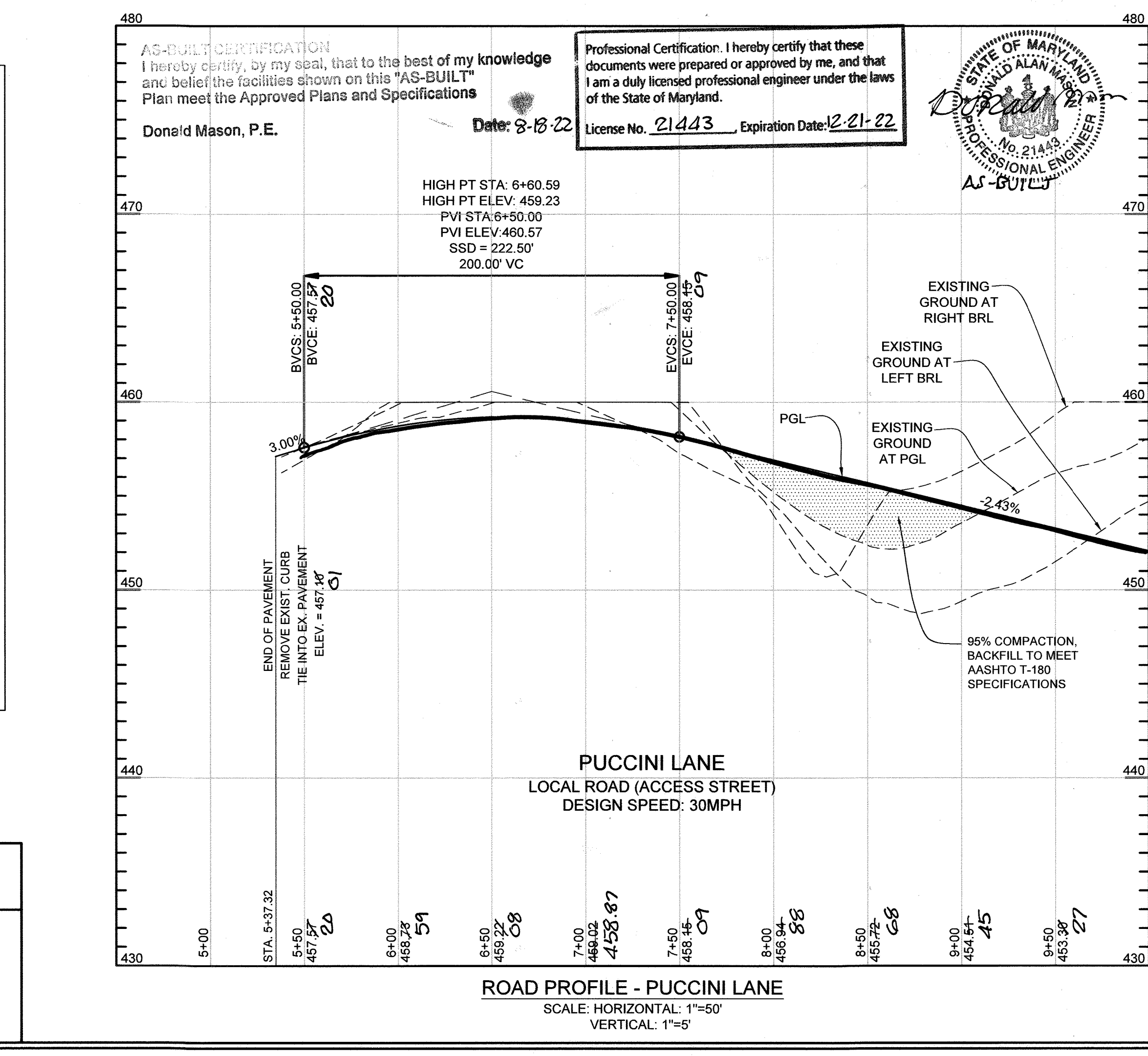
- EXISTING FLOODPLAIN
- EXISTING STREAM BUFFER
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND BUFFER
- EXISTING WETLANDS
- PROPOSED ROAD PAVEMENT
- PROPOSED SIDEWALK
- EXISTING STREAM BANK
- PROP. PUBLIC SEWER
- PROP. PUBLIC WATER
- PROP. PUBLIC STORM
- PROP. PUBLIC EASEMENT
- PROP. SETBACK LINE
- PROPERTY LINE
- PROPOSED STREETLIGHT
- PROPOSED STREET SIGN
- FOREST CONSERVATION EASEMENT
- 100-YEAR FLOODPLAIN EASEMENT

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 10/24/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 11-07-18

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-2-18



ROAD PLAN AND PROFILE -1
PARK VIEW AT TURF VALLEY
 PHASE II

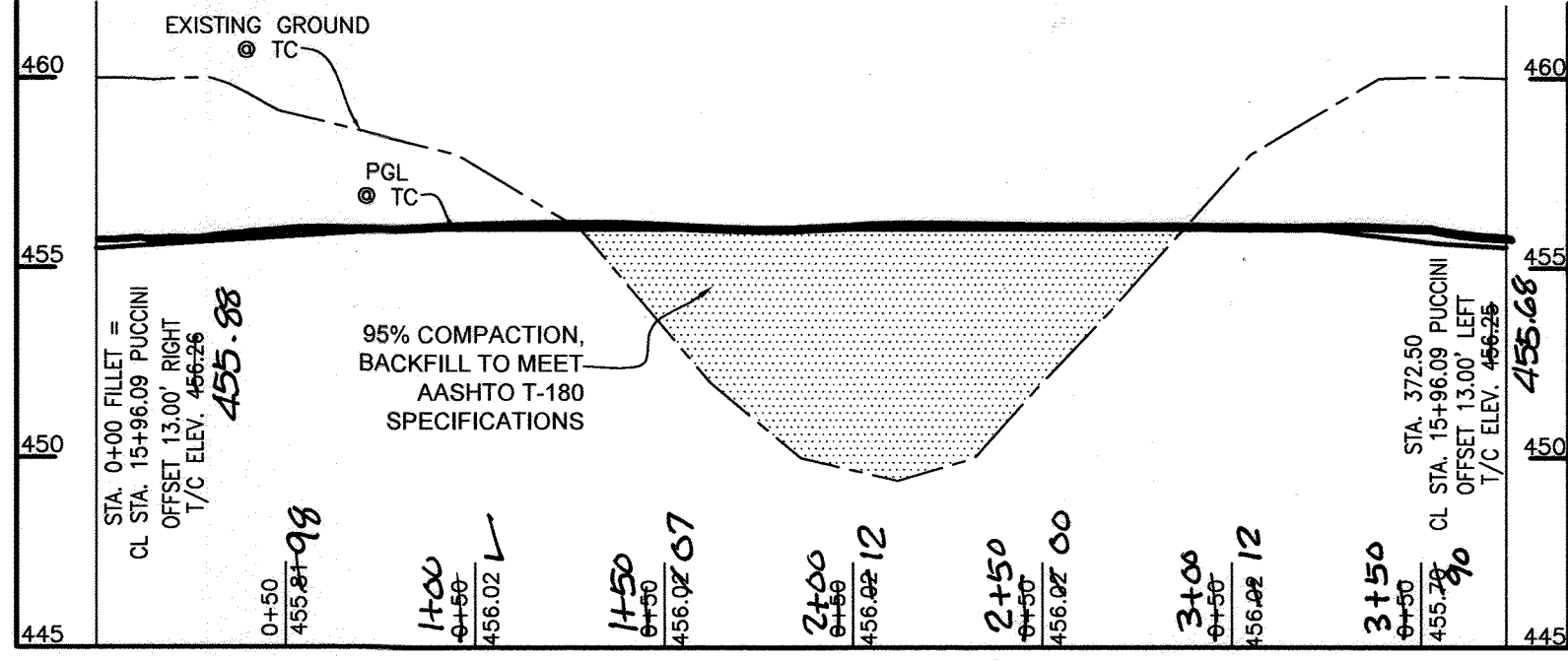
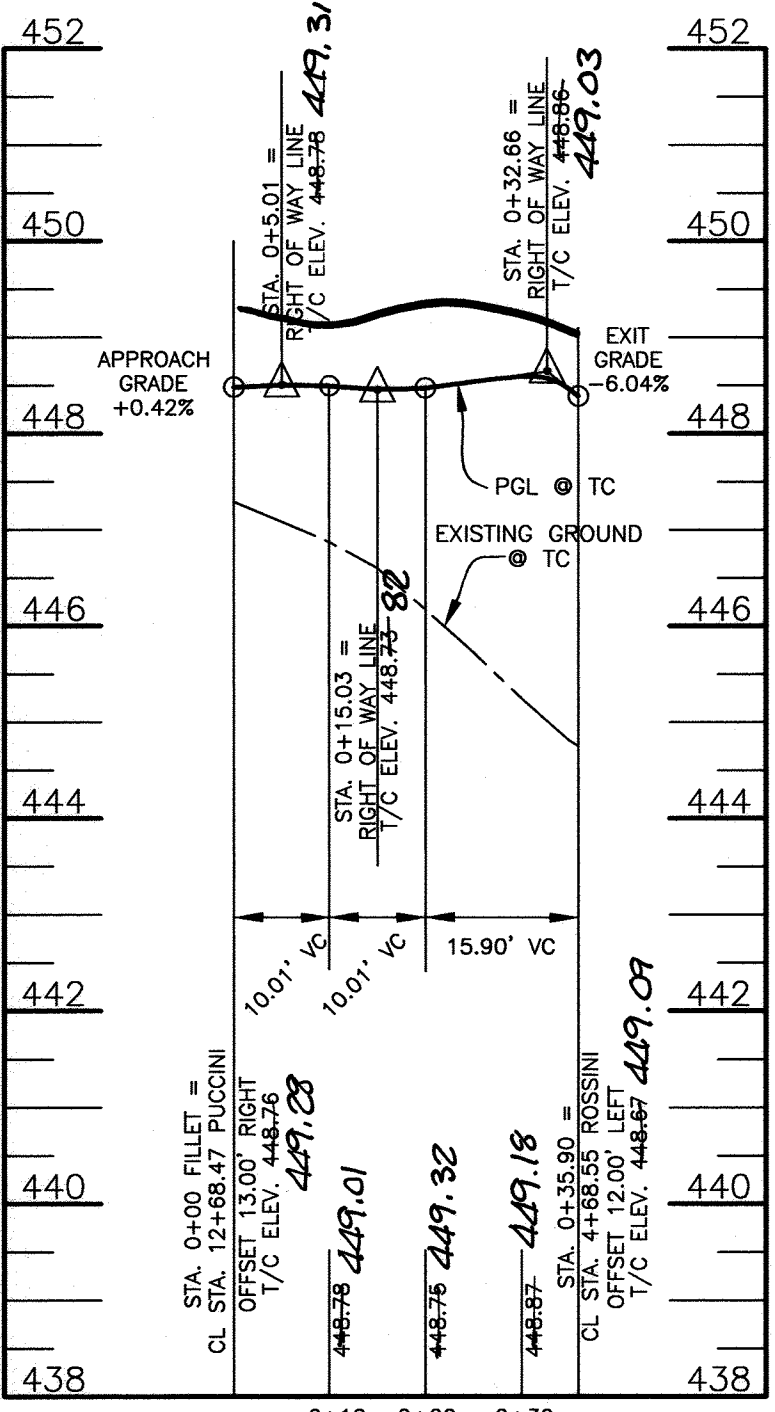
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J'
 POD 'E-1' SECTION IV, RESIDENTIAL PHASE IV E
 A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

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: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 2 of 20

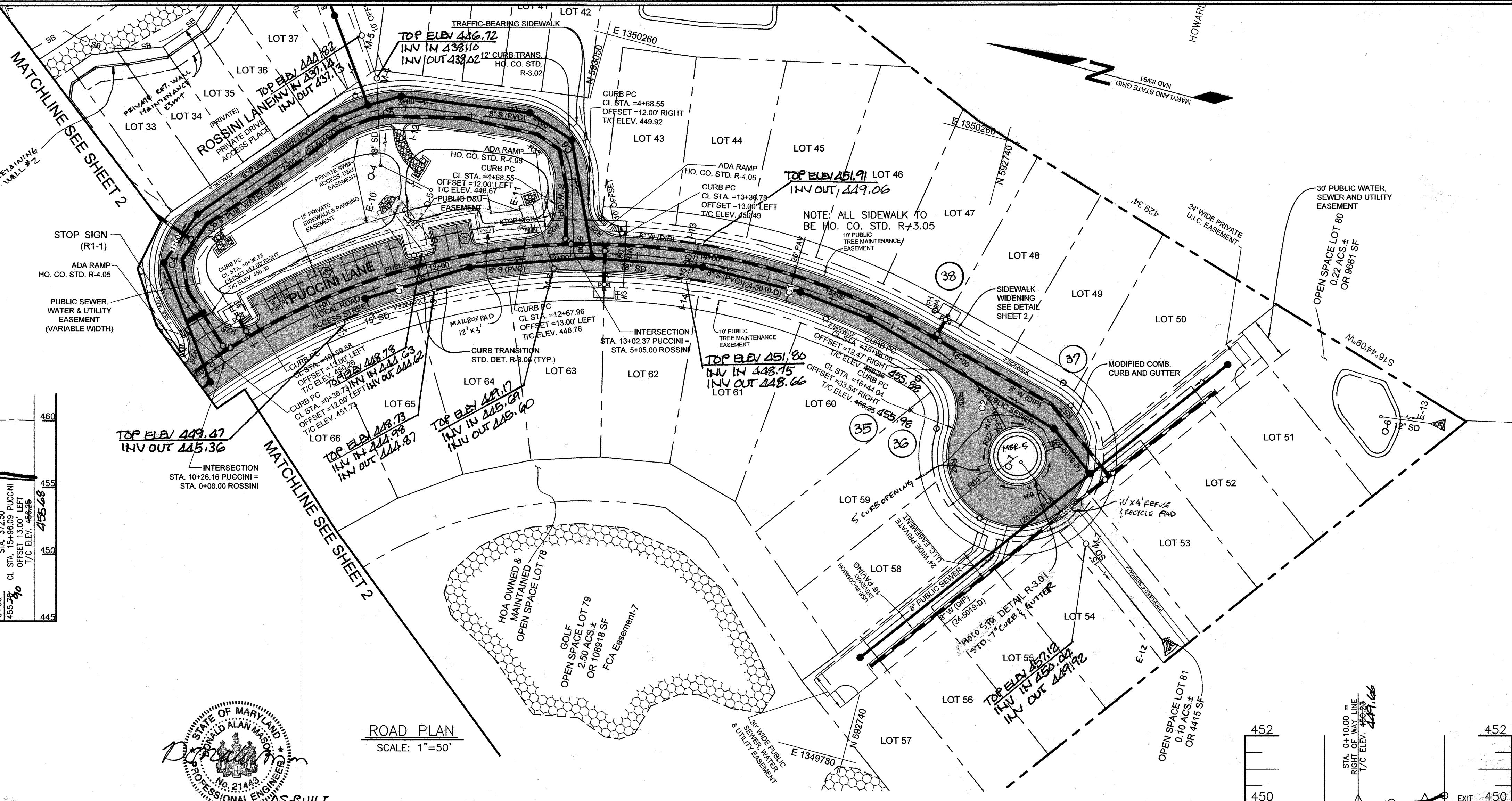
KCI TECHNOLOGIES
 11830 W. MARKET PLACE
 SUITE F
 FULTON, MD 20759
 PHONE: (410) 752-8086
 FAX: (410) 752-7419
 WWW.KCI.COM

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: 6/18/2019.



**FILLET PROFILE
 NORTH CORNER
 PUCCHINI LA./ROSSINI LA. (S)**
 SCALE: 1"=20' HORIZ., 1"=2' VERT.

PUCCHINI LA. CU-DE-SAC PROFILE
 SCALE: 1"=50' HORIZ., 1"=5' VERT.

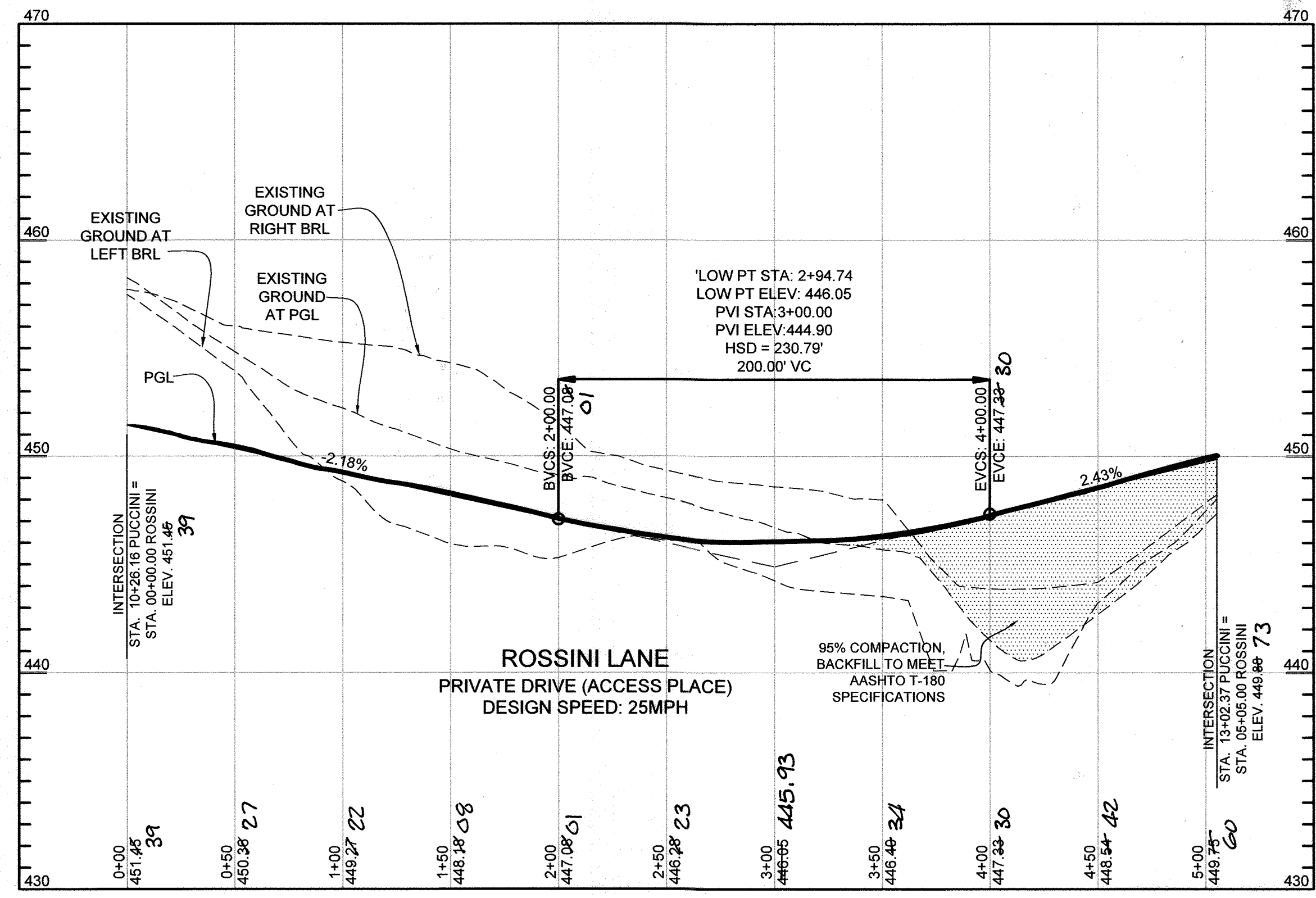


Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21443, Expiration Date: 12-21-22

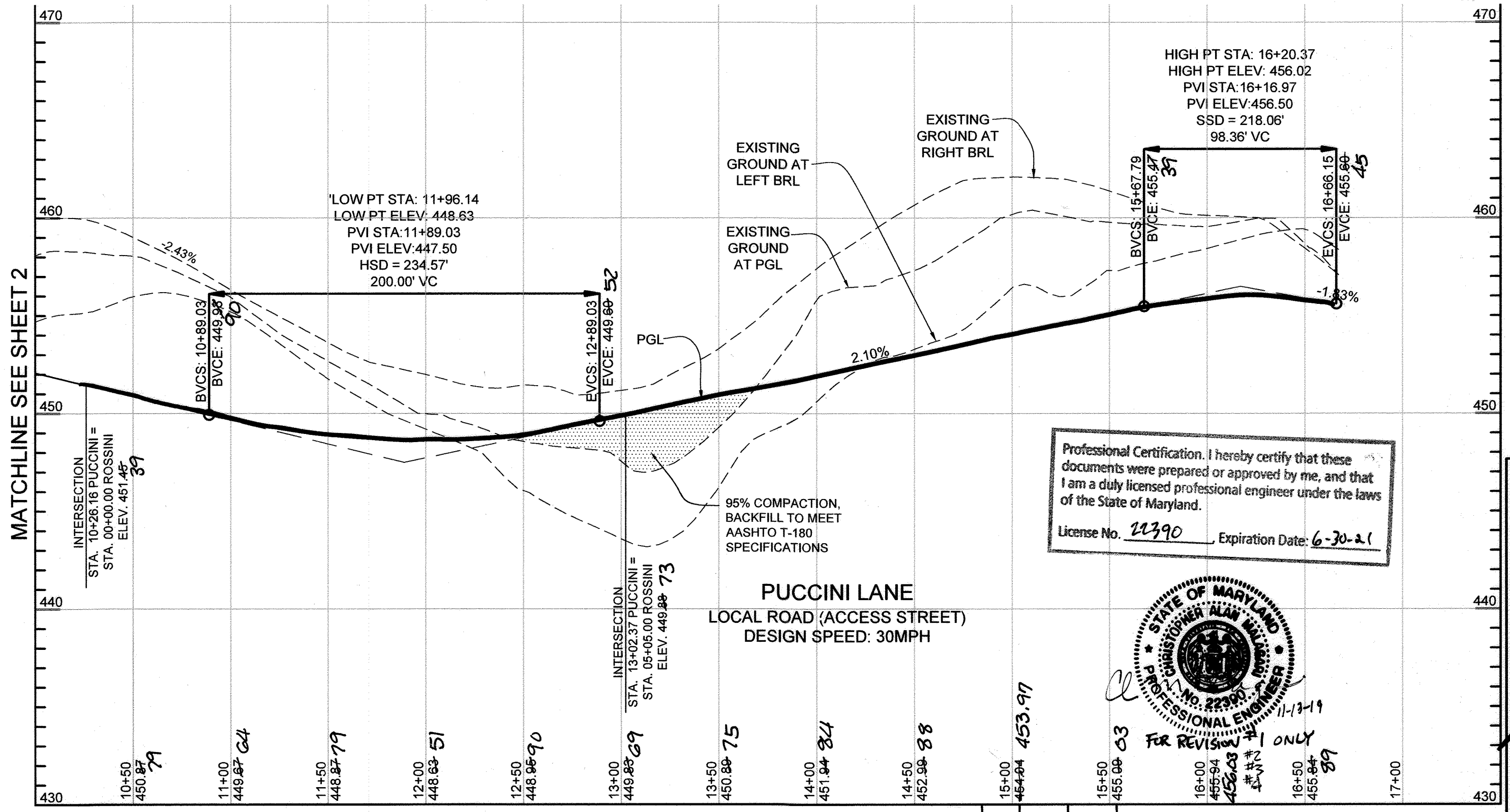
ROAD PLAN
 SCALE: 1"=50'

AS-BUILT CERTIFICATION
 I hereby certify, to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications
 Donald Mason, P.E. Date: 8-18-22

1	12.5.22	BE1	REVISE CURB ISLAND IN PUCCHINI LA. CU-DE-SAC TO 1" STD. CURB
3	4.11.21	BE1	ADD TRASH PAD AT END OF PUCCHINI LANE, ADD MAULBOX PAD AT PUCCHINI STA. 12+40. REVISE BI 51.6 OUTLINE PER AS-BUILT

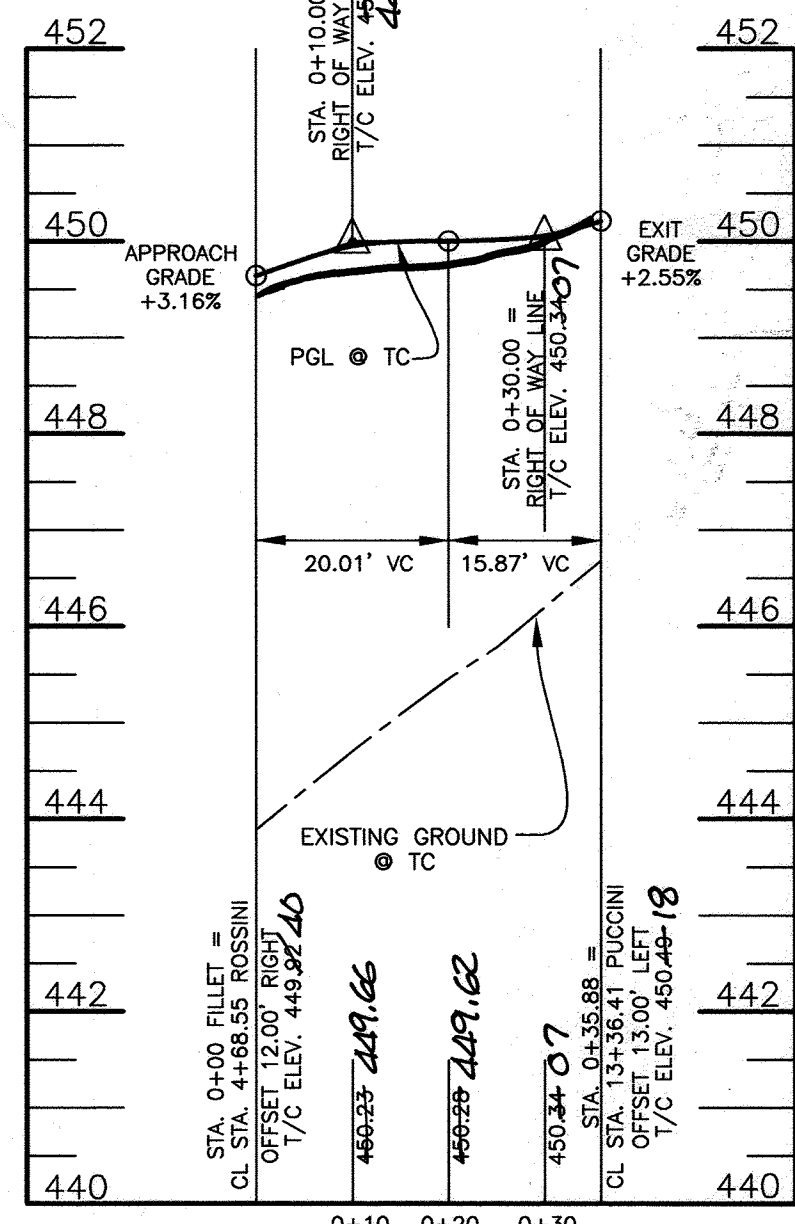


ROAD PROFILE - ROSSINI LANE
 SCALE: HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'



ROAD PROFILE - PUCCHINI LANE
 SCALE: HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'

ROAD PROFILE - PUCCHINI LANE
 SCALE: HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'



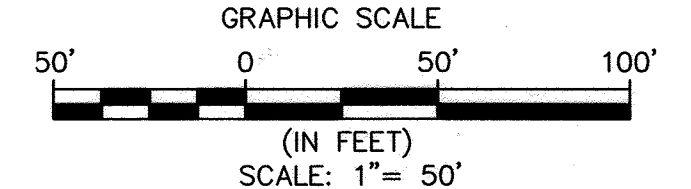
**FILLET PROFILE
 SOUTH CORNER
 PUCCHINI LA./ROSSINI LA. (S)**
 SCALE: 1"=20' HORIZ., 1"=2' VERT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 10/26/2018

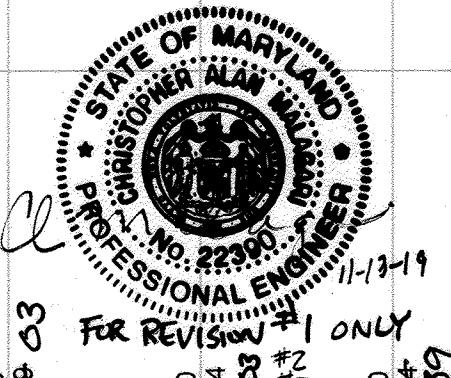
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 11-07-18

APPROVED: DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-2-18

OWNER/DEVELOPER
 MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1208 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. 22390, Expiration Date: 6-30-21



2	1.15.20	BE1	REVISE SUBDIVISION NAME
1	11.15.19	BE1	ADD RET. WALL AND EASEMENT ON LOTS 33-37, REVISE E-12 (shown REVISE SHEET NUMBER)

**ROAD PLAN AND PROFILE -2
 PARK VIEW AT TURF VALLEY
 PHASE II**

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J'
 POD 'E-1' SECTION IV, RESIDENTIAL PHASE IV E
 A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

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

KCI TECHNOLOGIES
 ENGINEERS PLANNERS SCIENTISTS
 CONSTRUCTION MANAGERS
 11830 W. MARKET PLACE
 SUITE F
 FULFORD, 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: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 3 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

- UTILITY NOTE:
- CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE OF) THE TRENCH.
 - PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
 - ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

100-YEAR WSEL Summary Table

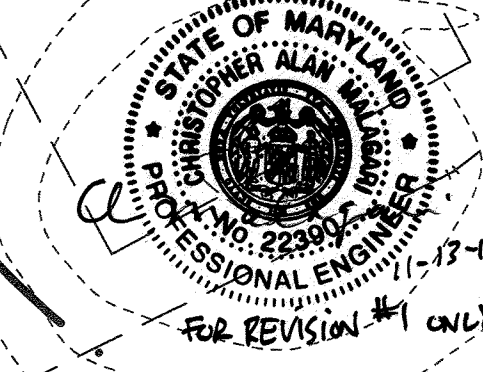
Cross Section	100-YEAR WSEL
300	431.29
200	429.00
100	426.79
90	425.34
80	423.93
70	421.36
60	419.62
50	416.96
40	415.19
30	411.75
25	406.92
15	401.51
10	400.40
5	399.53
0	399.70

CONSTRUCTION NOTE:
FOR INSTALLATION OF 8" WATER MAIN EXTENSION TO RAVENWOOD SUBDIVISION, ONLY DISTURB THE AREA TO BE BACKFILLED AND STABILIZED IN ONE WORKING DAY.

LEGEND

EXISTING CONTOUR	---382---
PROPOSED CONTOUR	---382---
EXISTING SPOT ELEVATION	382.3
PROPOSED SPOT ELEVATION	445.25
DIRECTION OF FLOW	→
EXISTING TREELINE	~~~~~
PROPOSED TREELINE	~~~~~
EXISTING FLOODPLAIN	=====
EXISTING STREAM BUFFER	SB
EXISTING WETLAND BOUNDARY	W
EXISTING WETLAND BUFFER	WB
EXISTING WETLANDS	↓ ↓ ↓
FOREST CONSERVATION EASEMENT	⊘ ⊘ ⊘
100-YEAR FLOODPLAIN EASEMENT	⊘ ⊘ ⊘
SLOPES GREATER THAN 25.00%	⊘ ⊘ ⊘
EXISTING STREAM BANK	=====
SWM DRY WELL	⊠
RIPRAP INFLOW PROTECTION	⊠
BORING LOCATIONS	⊕
LIMIT OF DISTURBANCE	— LOD —
SUPER SILT FENCE	— SSF —
TEMPORARY SWALE/EARTH DIKE	— A-1 —
SOIL BOUNDARY	—
CURB INLET PROTECTION	⊠ CIP
AT GRADE INLET PROTECTION	⊠ AGIP
TYPICAL OUTFALL END SECTION WITH RIP-RAP	⊠

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 22390 Expiration Date: 6-30-21



NON-BUILDABLE BULK PARCEL "H"
1,055,636 SF
OR 24,234.1 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. 21443 Expiration Date: 12-31-22



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
GhB	GLENVILLE-BAILE SILT LOAM, 0-8% 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

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

NOTE:
1. SEDIMENT TRAPS ST#4, #5, #6 & #8 CONSTRUCTED UNDER PHASE I WILL BE MAINTAINED AND WILL BE FUNCTIONAL FOR PHASE II.
2. DRY WELLS SHOWN ON THIS PLAN WILL BE CONSTRUCTED AT THE TIME OF BUILDING ON INDIVIDUAL LOTS.

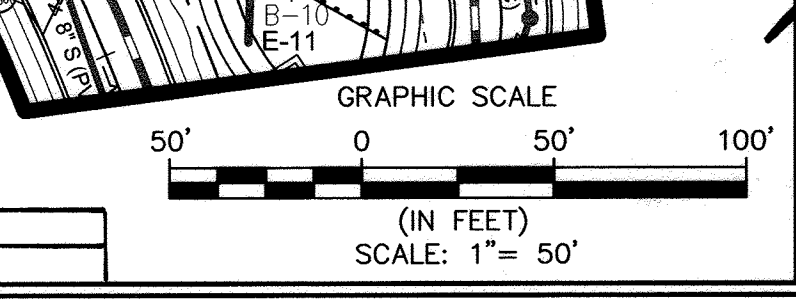
OWNER/DEVELOPER'S CERTIFICATE
"We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will 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: 10/4/18
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."
Signature of Designer: Nick Barrick
Date: 10/18/18
Printed Name: NICK BARRICK
MD Registration No. 33772
P.E., R.L.S., or R.L.A. (circle one)

HOWARD SCD Signature Block:
Signature of Howard Soil Conservation District: [Signature]
Date: 10/17/18

NOTE: BORING LOGS FOR BORING NUMBERS B-1 TO B-5 ARE SHOWN ON PHASE I PLANS (F-17-095). BORING LOGS FOR BORINGS B-6 TO B-18 ARE SHOWN ON SHEETS 10 AND 11.

REV	DATE	BY	ADD. RET. WALLS 1A, 1B, AND 2. REVISE REAR. ADJUST L.O.D.	DESCRIPTION
1	11.15.19	BEI		



GRADING, SEDIMENT & EROSION CONTROL PLAN - 1
PARK VIEW AT TURF VALLEY
PHASE II

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL "J" AND "E-1" SECTION IV/RESIDENTIAL PHASE IV E A SUBDIVISION OF BULK PARCEL "T", TURF VALLEY POD E-1, PHASE I
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: OCTOBER 5, 2018
PROJECT #: 131701102
SHEET #: 5 of 20

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

SEDIMENT TRAP DESIGN - PHASE II

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. Width (Ft.)	Embank. Width (Ft.)	Trap Bottom El.	Bot. Area (sq.ft.)	Wet storage Area (sq.ft.)	Wet storage vol (Cu.Ft.)	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#4	Phase I	0.50	0.96	0.50	ST-II	3,471	1,736	1,736	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"	
ST#9	Phase II	0.50	0.55	0.55	ST-II	1,983	992	992	426.0	426.0	4'	424.0	1700	424.5	2050	425.0	2420	938	1117.5	2055	424.3	46	23	2	2:1	12"	12"	(GIP)

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

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

TRAP#	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. Width (Ft.)	Embank. Width (Ft.)	Trap Bottom El.	Bot. Area (sq.ft.)	Wet storage Area (sq.ft.)	Wet storage vol (Cu.Ft.)	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.)
ST#7	1.94	3.15	3.53	ST-I	12,712	6,356	6,356	448.0	448.0	4'	443.25	8234	445.0	10220	446.5	11980	16147	16650	32797

Cleanout El.	Min. Length (Ft.)	Min. Width (Ft.)	Side Slope (H:V ratio)	Riser Diameter (in.)	Barrel Diameter (in.)	Trash Rack Diameter (in.)	Trash Rack Height (in.)	Anti-Seep collar (Ft.)	Outlet protection (LxW)	Outlet protection (D)
444.1	85	42	2:1	36	27	54	25	6.25'x6.25'	10'x10'	19"

NOTE: SEE SHEET 12 FOR BAFFLE BOARD DESIGN AND DIMENSIONS

NOTE: SEE SHEET 16 FOR TRAP AND BOTTOM WALL ELEVATIONS.

MATCHLINE SEE SHEET 5

MATCHLINE SEE SHEET 5



LEGEND

- EXISTING CONTOUR: --- 382 ---
- PROPOSED CONTOUR: --- 382 ---
- EXISTING SPOT ELEVATION: 382.3
- PROPOSED SPOT ELEVATION: 4452.50
- DIRECTION OF FLOW: [Arrow]
- EXISTING TREELINE: [Wavy line]
- PROPOSED TREELINE: [Wavy line]
- EXISTING FLOODPLAIN: [Dashed line]
- EXISTING STREAM BUFFER: SB
- EXISTING WETLAND BOUNDARY: W
- EXISTING WETLAND BUFFER: WB
- EXISTING WETLANDS: [Symbol]
- FOREST CONSERVATION EASEMENT: [Symbol]
- 100-YEAR FLOODPLAIN EASEMENT: [Symbol]
- SLOPES GREATER THAN 25.00%: [Symbol]
- EXISTING STREAM BANK: [Symbol]
- SWM DRY WELL: [Symbol]
- RIPRAP INFLOW PROTECTION: [Symbol]
- BORING LOCATIONS: [Symbol]
- LIMIT OF DISTURBANCE: LOD
- SUPER SILT FENCE: SSF
- TEMPORARY SWALE/EARTH DIKE: A-1
- SOIL BOUNDARY: [Symbol]
- CURB INLET PROTECTION: [Symbol]
- AT GRADE INLET PROTECTION: [Symbol]
- TYPICAL OUTFALL END SECTION WITH RIP-RAP: [Symbol]

- BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS**
- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
 - Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
 - Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
 - Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
 - All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fence shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
 - After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
 - To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
 - Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.
 - Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
 - Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
 - Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

OWNER/DEVELOPER
 MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8450

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 10/24/2018
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 11-07-18
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 11-2-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

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: 10/4/18
 Title: 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: 10/17/18
 Title: MD Registration No. 33772
 (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: [Signature]
 Date: 10/17/18

NOTE: BORING LOGS FOR BORING NUMBERS B-1 TO B-5 ARE SHOWN ON PHASE I PLANS (E-17-095). BORING LOGS FOR BORINGS B-6 TO B-18 ARE SHOWN ON SHEETS 10 AND 11.

NOTE:

- SEDIMENT TRAPS ST#4, ST#5, ST#6, & ST#8 CONSTRUCTED UNDER PHASE I WILL BE MAINTAINED, AND WILL BE FUNCTIONAL FOR PHASE II.
- DRY WELLS SHOWN ON THIS PLAN WILL BE CONSTRUCTED WITH SDP FOR INDIVIDUAL LOTS.

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. 21213 Expiration Date: 12-21-22

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. 22270 Expiration Date: 12-30-21

NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET

GRAPHIC SCALE
 0 50 100
 (IN FEET)
 SCALE: 1" = 50'

GRADING, SEDIMENT & EROSION CONTROL PLAN - 2
PARK VIEW AT TURF VALLEY
 PHASE II

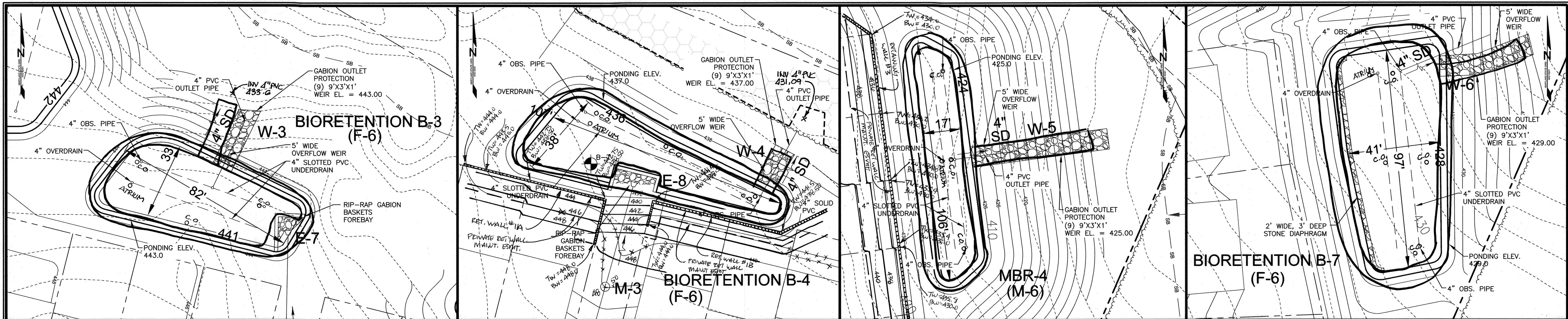
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J'
 POD E-1' SECTION IV, RESIDENTIAL PHASE IV E
 A SUBDIVISION OF BULK PARCEL 'T', TURF VALLEY POD E-1, PHASE I

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: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 6 of 20

KCI TECHNOLOGIES
 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

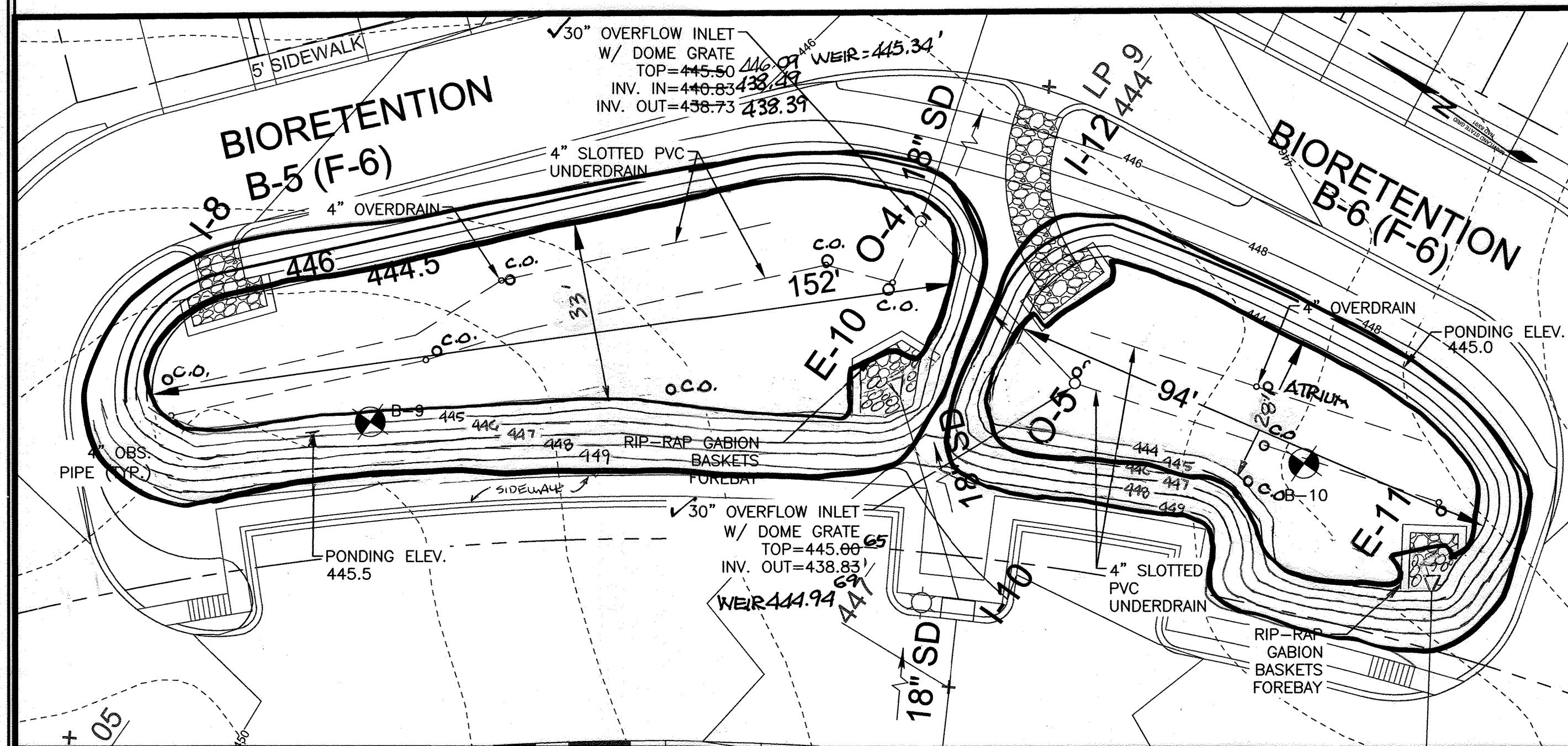


PLAN VIEW - B-3
SCALE: 1"=20'

PLAN VIEW - B-4
SCALE: 1"=20'

PLAN VIEW - MBR-4
SCALE: 1"=20'

PLAN VIEW - B-7
SCALE: 1"=20'



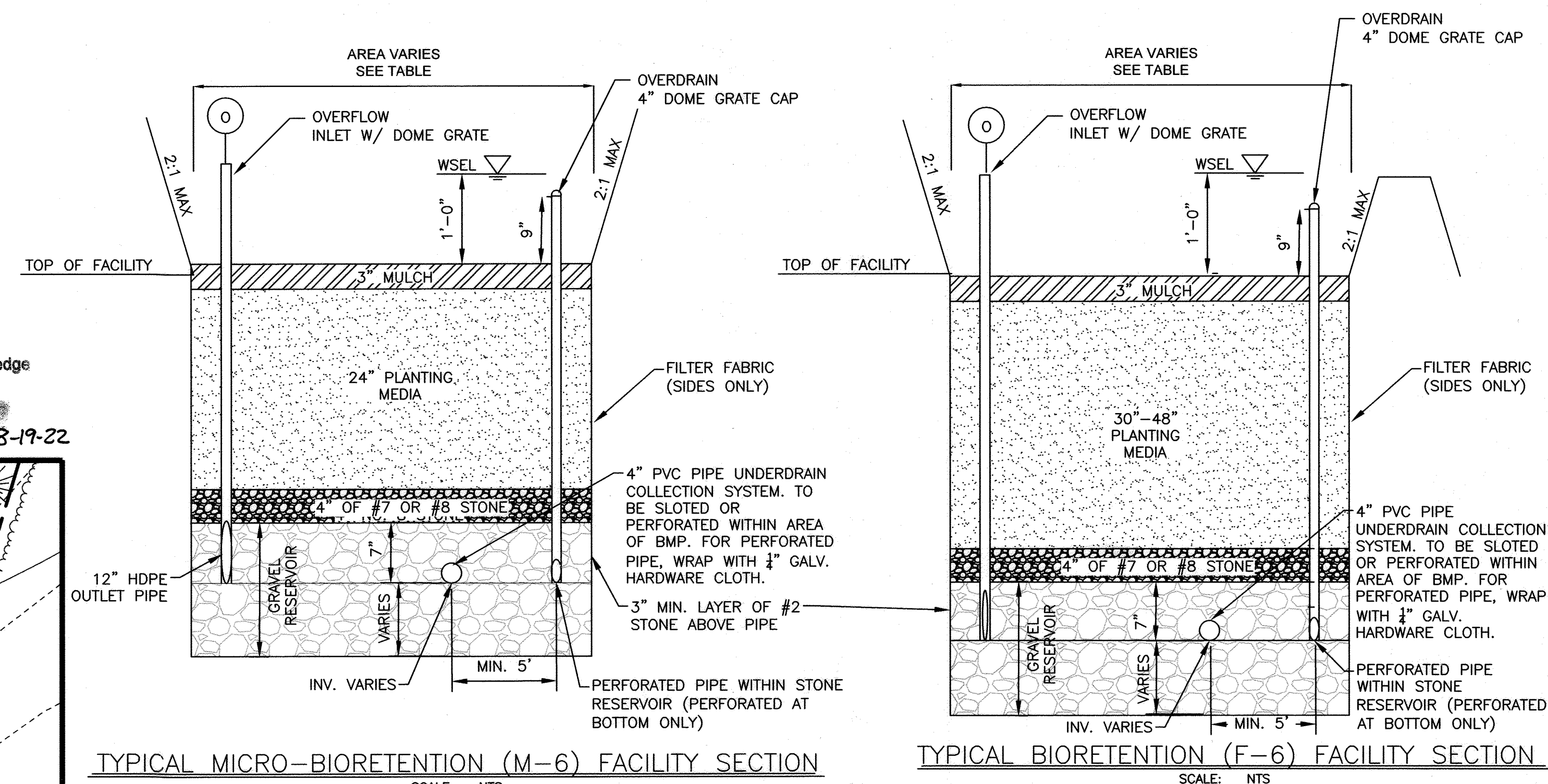
PLAN VIEW - B-5 AND B-6
SCALE: 1"=20'

FACILITY NAME	TOP OF FACILITY	PONDING ELEV.	TOP OF EMBANKMENT	UNDERDRAIN INVERT	OVERDRAIN INVERT	WEIR/OVERFLOW INLET GRATE ELEVATION	10-YR WSEL	FREEBOARD	FILTER BED DEPTH	PONDING DEPTH	GRAVEL RESERVOIR	SURFACE AREA (AF)	OUTLET STRUCTURE	OWNERSHIP/ MAINTENANCE
F-6 BIORETENTION (B-3)	442.00	443.00	444.00	432.33	437.00	443.00	443.36	8"	30"	12"	19'	2,240 SF	5' WIDE WEIR	PRIVATE
F-6 BIORETENTION (B-4)	436.00	437.00	438.00	432.33	437.00	437.00	437.31	8"	30"	12"	19'	2,146 SF	5' WIDE WEIR	PRIVATE
F-6 BIORETENTION (B-5)	444.50	445.00	446.00	440.83	445.28	445.50	445.87	1'-2"	30"	12"	19'	4,670 SF	30" OVERFLOW INLET	PRIVATE
F-6 BIORETENTION (B-6)	444.00	445.00	446.00	438.83	444.78	445.00	445.40	1'-7"	48"	12"	46'	2,935 SF	30" OVERFLOW INLET	PRIVATE
M-6 MICRO-BIORETENTION (MBR-4)	424.00	425.00	426.00	420.83	424.75	425.00	425.23	9"	24"	12"	13'	1,728 SF	5' WIDE WEIR	PRIVATE
F-6 BIORETENTION (B-7)	428.00	429.00	430.00	424.33	428.75	429.00	429.25	9"	30"	12"	19'	3,906 SF	5' WIDE WEIR	PRIVATE
M-6 MICRO-BIORETENTION (MBR-5)	464.00	465.00	466.00	450.83	464.75	465.00	465.30	4"	24"	12"	55'	697 SF	18" OVERFLOW INLET	PUBLIC & HOA
M-6 MICRO-BIORETENTION (MBR-6)	438.00	439.00	440.00	434.83	438.75	439.00	439.24	9"	24"	12"	25'	1,311 SF	18" OVERFLOW INLET	PRIVATE



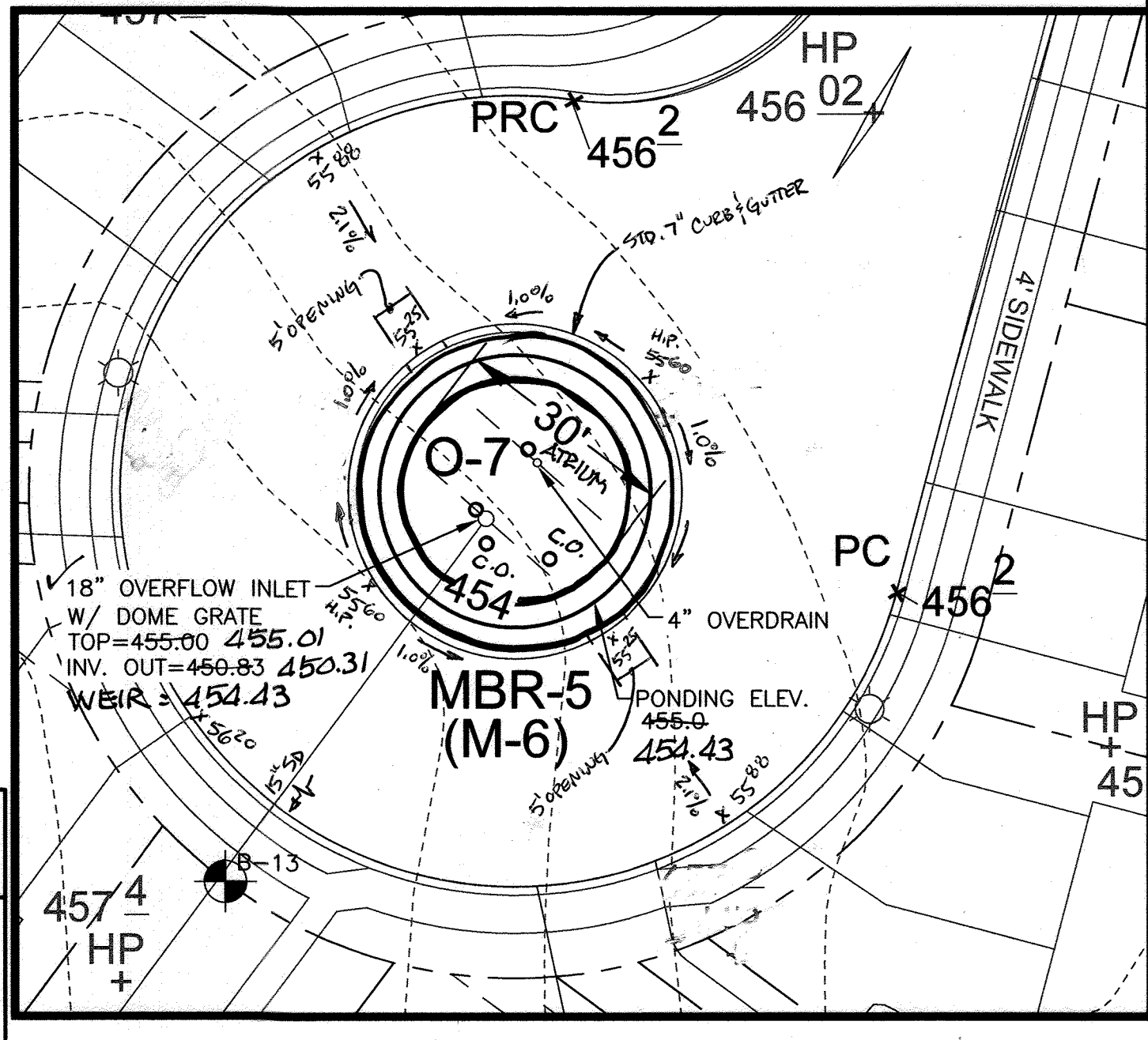
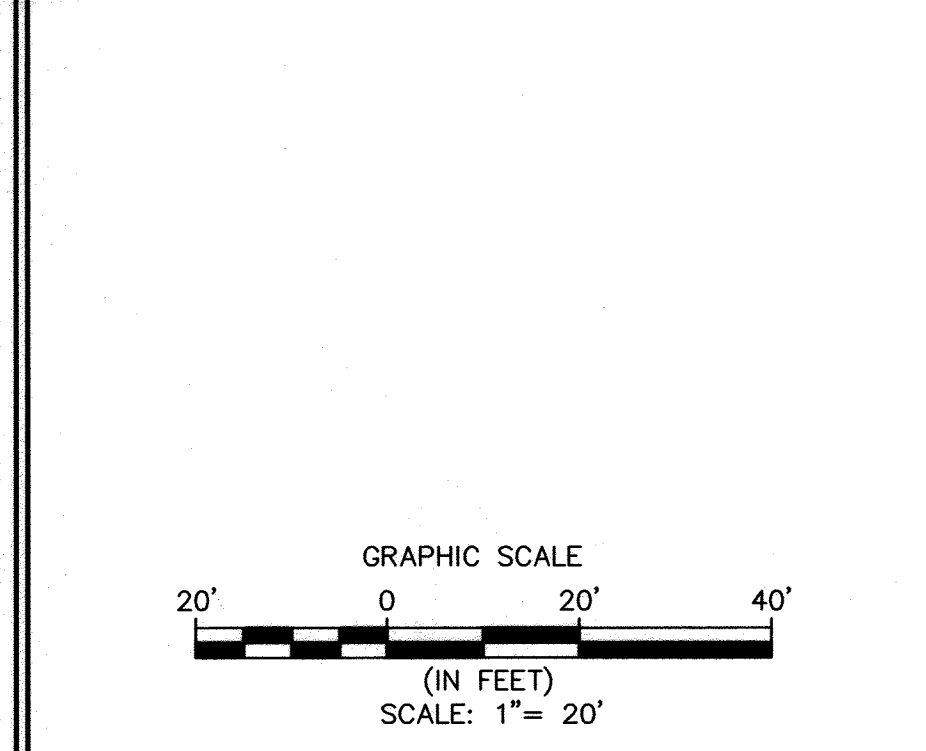
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21143, Expiration Date: 12-21-22

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: 8-19-22

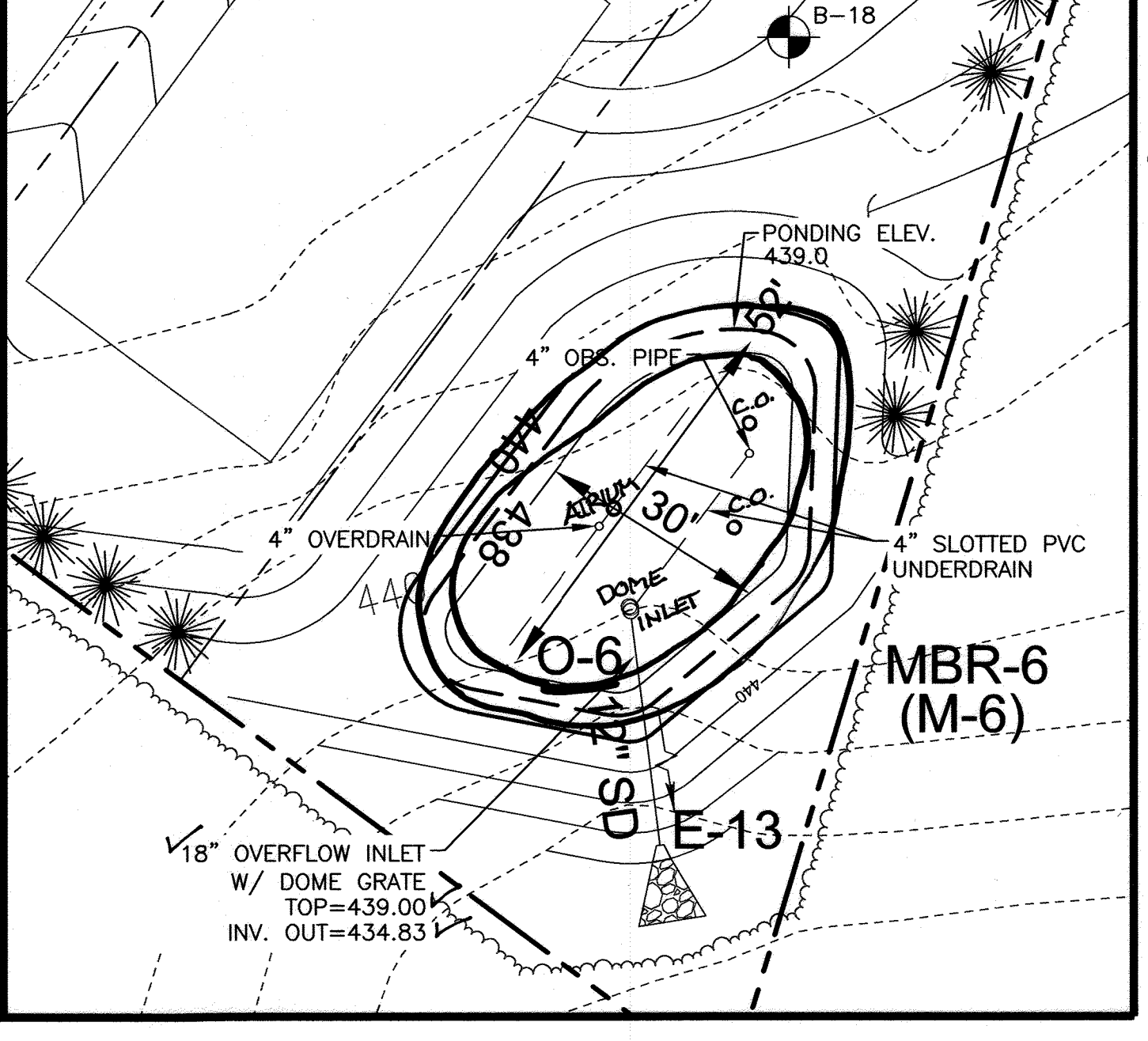


TYPICAL MICRO-BIORETENTION (M-6) FACILITY SECTION
SCALE: NTS

TYPICAL BIORETENTION (F-6) FACILITY SECTION
SCALE: NTS

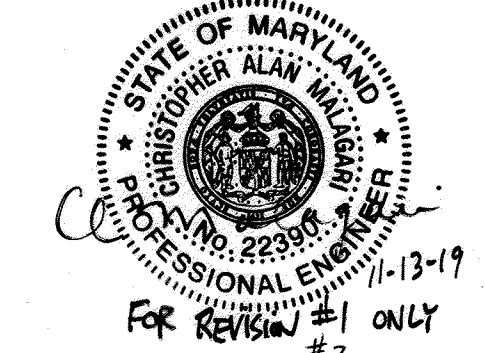


PLAN VIEW - MBR-5
SCALE: 1"=20'



PLAN VIEW - MBR-6
SCALE: 1"=20'

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 22390, Expiration Date: 6-30-21



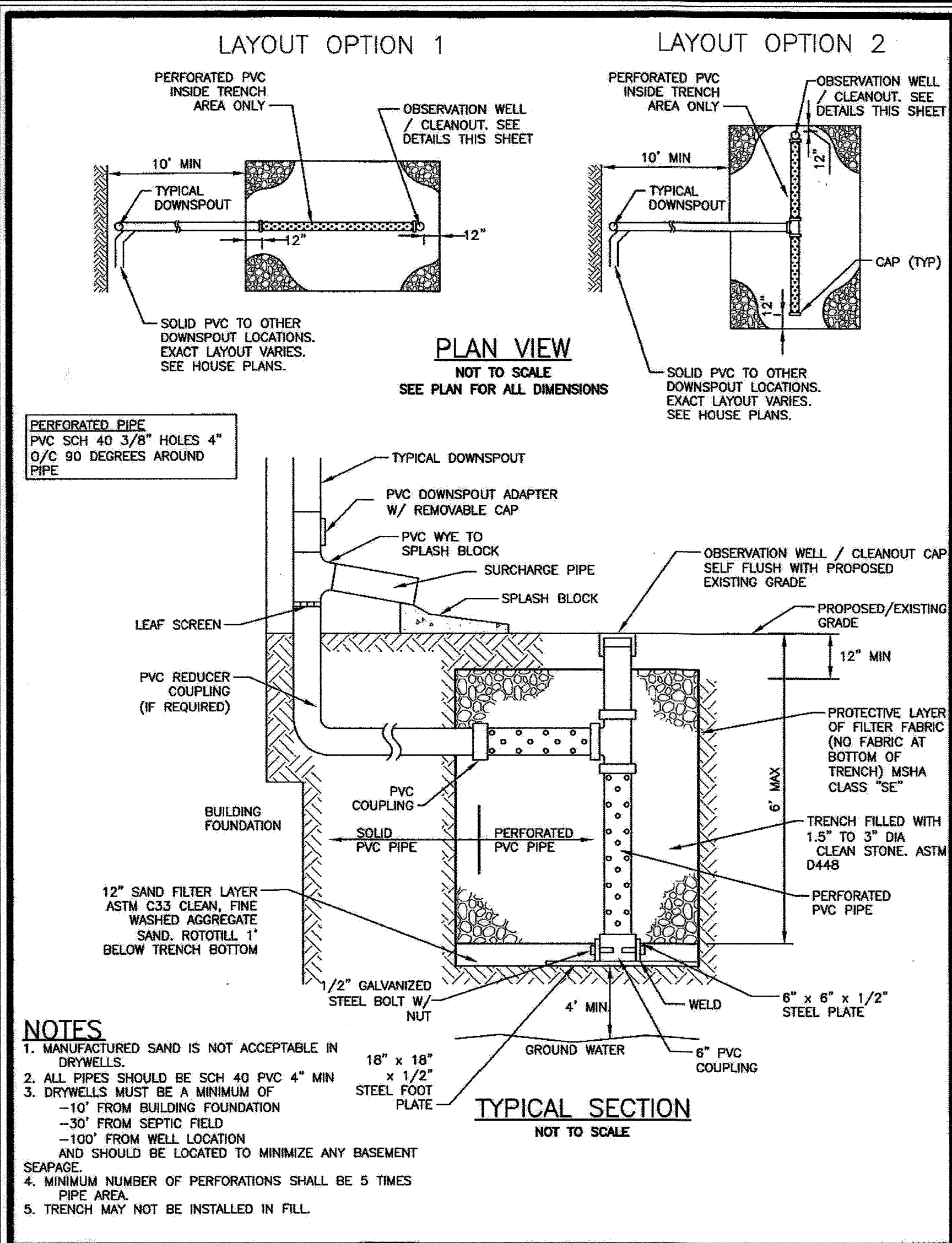
REV	DATE	BY	DESCRIPTION
1	11.19.19	BE1	ADD RETAINING WALLS AT B-4 AND MBR-4
2	11.19.20	BE1	REVISE GRADES. REVISE SHT NUMBER
3	11.19.21	BE1	REVISE BUMPERS TO BE GRADING. PER AS-BUILT CONDITIONS. REVISE SURFACE AREA IN TABLE
4	12.5.22	BE1	REVISE CURB-DE-SAC ISLAND IN PAVING LANE TO STD. 7" C&G. ADD CURB OPENINGS. ADD SLOTTED GRATES

STORMWATER MANAGEMENT NOTES AND DETAIL - 1
PARK VIEW AT TURF VALLEY
PHASE II
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'L'
POD 'E-1' SECTION IV/RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I
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: AS SHOWN
DATE: OCTOBER 5, 2018
PROJECT #: 131701102
SHEET #: 7 of 20

KCI TECHNOLOGIES
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FAX: (410) 792-7410
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: 12-31-2019



Revised	Howard County, Maryland Department of Public Works	Roof Drain Drywell Private	Detail
Revised 5/7/2007	Approved: Chief, Bureau of Engineering		D-9.01
Approved			

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRY WELLS (M-5)

- The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
- Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
- A log book shall be maintained to determine the rate at which the facility drains.
- When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)]

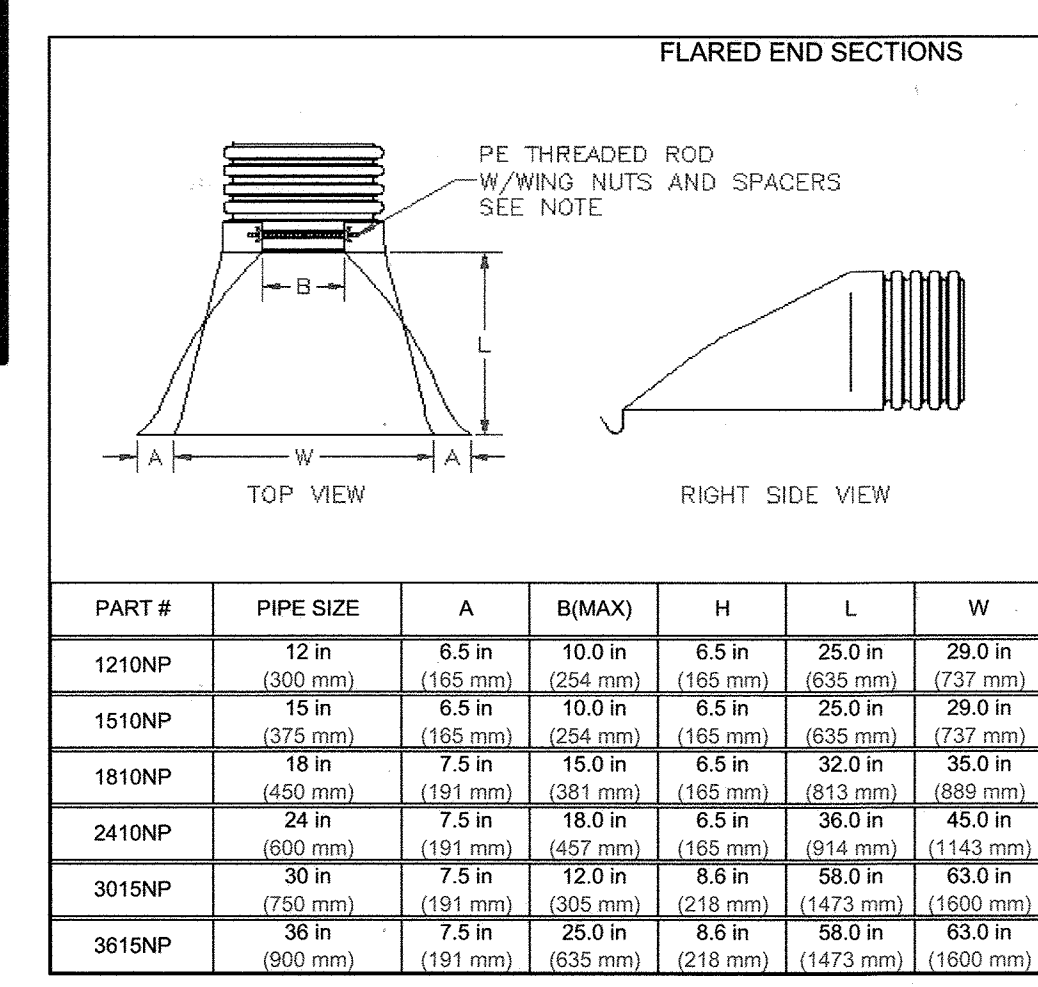
- Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The Owner shall ensure the areas receiving runoff are protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

APPROVED: DEPARTMENT OF PUBLIC WORKS	10/26/2018
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	11-07-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION	11-2-18
OWNER/DEVELOPER	
MANGIONE ENTERPRISES OF TURF VALLEY, LP	
1205 YORK ROAD, PENTHOUSE	
LUTHERVILLE, MARYLAND 21093	
410.825.8400	

(M-5) Dry Wells Location Chart

Lot #	No. of Dry Wells	Total Area Treated	Size
20	2	1,106 Sqft	6' x 5.5' x 5'
21	2	1,106 Sqft	6' x 5.5' x 5'
45	1	810 Sqft	6' x 5.5' x 5'
46	2	1,620 Sqft	6' x 5.5' x 5'
47	2	1,620 Sqft	6' x 5.5' x 5'
48	2	1,620 Sqft	6' x 5.5' x 5'
49	2	1,620 Sqft	6' x 5.5' x 5'
50	2	1,620 Sqft	6' x 5.5' x 5'
52	2	1,620 Sqft	6' x 5.5' x 5'
53	2	1,620 Sqft	6' x 5.5' x 5'
54	2	1,620 Sqft	6' x 5.5' x 5'
55	2	1,620 Sqft	6' x 5.5' x 5'
56	2	1,620 Sqft	6' x 5.5' x 5'
57	2	1,620 Sqft	6' x 5.5' x 5'
59	1	810 Sqft	6' x 5.5' x 5'
60	2	1,620 Sqft	6' x 5.5' x 5'
61	2	1,620 Sqft	6' x 5.5' x 5'
62	2	1,620 Sqft	6' x 5.5' x 5'
63	2	1,620 Sqft	6' x 5.5' x 5'
64	2	1,620 Sqft	6' x 5.5' x 5'
65	2	1,620 Sqft	6' x 5.5' x 5'
66	2	1,620 Sqft	6' x 5.5' x 5'
69	2	1,620 Sqft	6' x 5.5' x 5'
70	2	1,620 Sqft	6' x 5.5' x 5'
71	2	1,620 Sqft	6' x 5.5' x 5'
72	2	1,620 Sqft	6' x 5.5' x 5'
Total	50	39,472 Sqft	

NOTE: DRY WELLS TO BE CONSTRUCTED WITH SDP FOR INDIVIDUAL LOTS



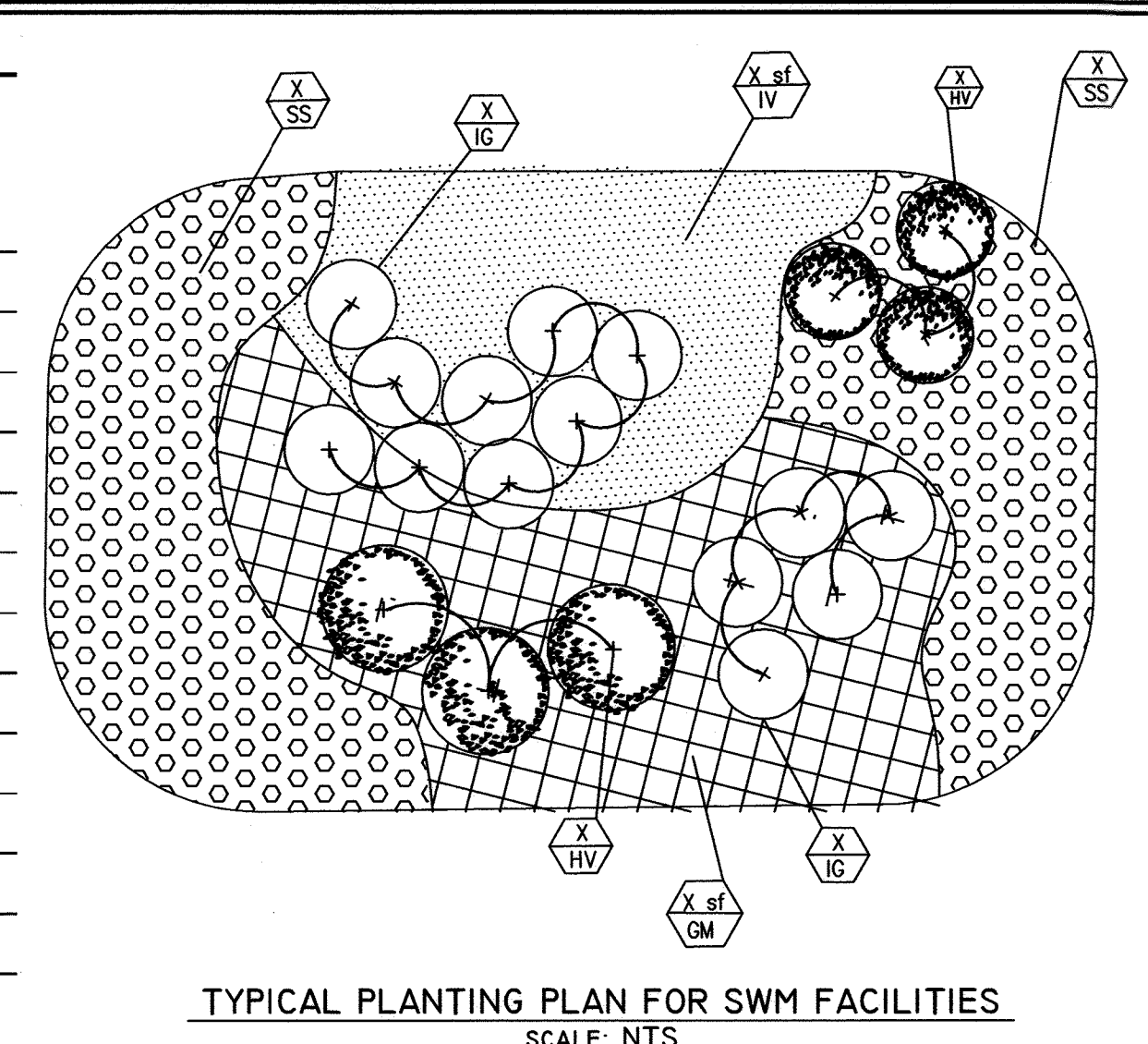
"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

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

AS-BUILT 8-19-22

REV	DATE	BY	DESCRIPTION
2	11.5.20	BEI	REVISE SUBDIVISION NAME
1	11.12.19	BEI	REVISE SHEET NUMBER
REV			



SWM Planting Schedule

MBR-4	MBR-5	MBR-6	Quantity							Key	Botanical Name	Common Name	Type	Area/plant (sq.ft.)	Condition	Size	Remarks
			B-3	B-4	B-5	B-6	B-7										
21	9	16	28	27	60	33	45	IG	Ilex glabra	Inkberry	Shrub	80	Container	12"		Plant 3' Apart	
17	7	13	22	21	48	27	36	HV	Aronia arbutifolia	Red Chokeberry	Shrub	100	Container	12" - 24"		Plant 3' Apart	
177	73	137	230	223	499	278	376	IV	Iris versicolor	Blue Flag	Perennial	9.6	Seedlings			Plant 15" Apart	
177	73	137	230	223	499	278	376	GM	Geranium maculatum	Cranesbill	Perennial	9.6	Seedlings			Plant 15" Apart	
177	73	137	230	223	499	278	376	SS	Solidago sphecelata	Goldenrod	Perennial	9.6	Seedlings			Plant 15" Apart	

Table B.4.1 Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration-

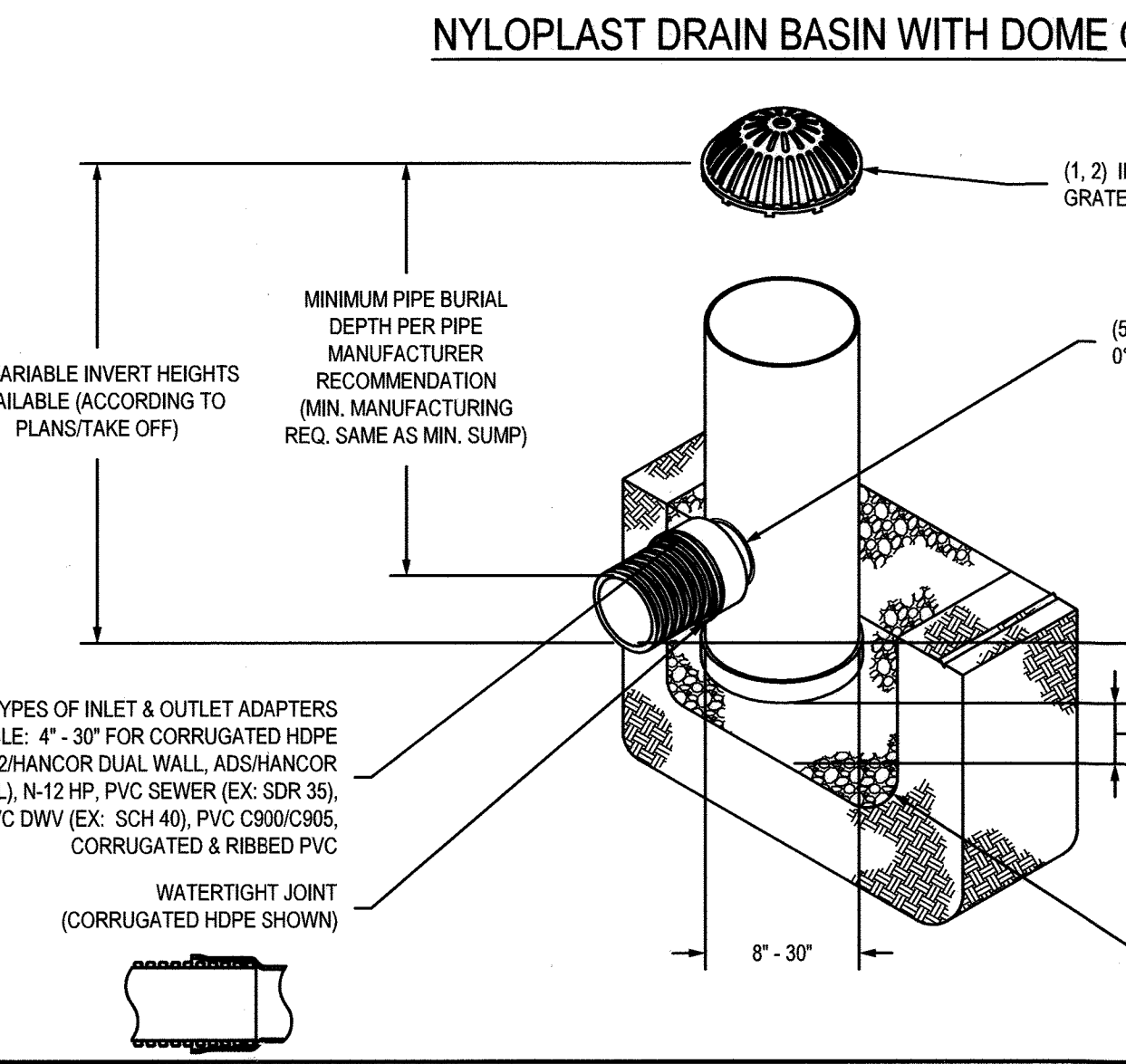
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5% OR MD-SHA BIORETENTION SOIL MIX (BSM)
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 underneath 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.

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

- The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or washout. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

CONSTRUCTION SPECIFICATIONS: B.4.C Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Berms

- Material Specifications:**
 - The allowable materials to be used in these practices are detailed in Table B.4.1.
- Filtering Media or Planting Soil:**
 - The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenion practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.
 - The planting soil shall be tested and shall meet the following criteria:
 - Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
 - Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
 - Clay Content - Media shall have a clay content of less than 5%.
 - pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.
 - There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.
- Compaction:**
 - It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoists to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.
 - Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.
 - Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.
 - When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.
 - When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.
- Plant Material:**
 - Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.
- Plant Installation:**
 - Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.
 - Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.
 - Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.
 - Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.
 - The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, defecates, or at a minimum, impede this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.
- Underdrains:**
 - Underdrains should meet the following criteria:
 - Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
 - Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with 1/4" (No. 4 or 4x4) galvanized hardware cloth.
 - Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
 - The main collector pipe shall be at a minimum 0.5% slope.
 - A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
 - A 4" layer of pea gravel (1/2" to 3/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".
 - The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).
- Miscellaneous:**
 - These practices may not be constructed until all contributing drainage area has been stabilized



NYLOPLAST DRAIN BASIN WITH DOME GRATE QUICK SPEC INSTALLATION DETAIL.

DRAWN BY	DATE	MATERIAL
EBG	03-25-10	
REVISD BY	DATE	PROJECT NO./NAME
NMH	03-11-16	
DWG SIZE	A	SCALE
		1:40 SHEET 1 OF 1
TITLE	DRAIN BASIN WITH DOME GRATE	
DWG NO.	7001-110-397	REV D

3130 VERONIA AVE
BURLINGAME, CA 94010
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

STORMWATER MANAGEMENT NOTES AND DETAILS-2 PARK VIEW AT TURF VALLEY PHASE II

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J' POD 'E-1' SECTION IV RESIDENTIAL PHASE IV E A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

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: AS SHOWN	DATE: OCTOBER 5, 2018	PROJECT #: 131701102	SHEET #: 8 of 20
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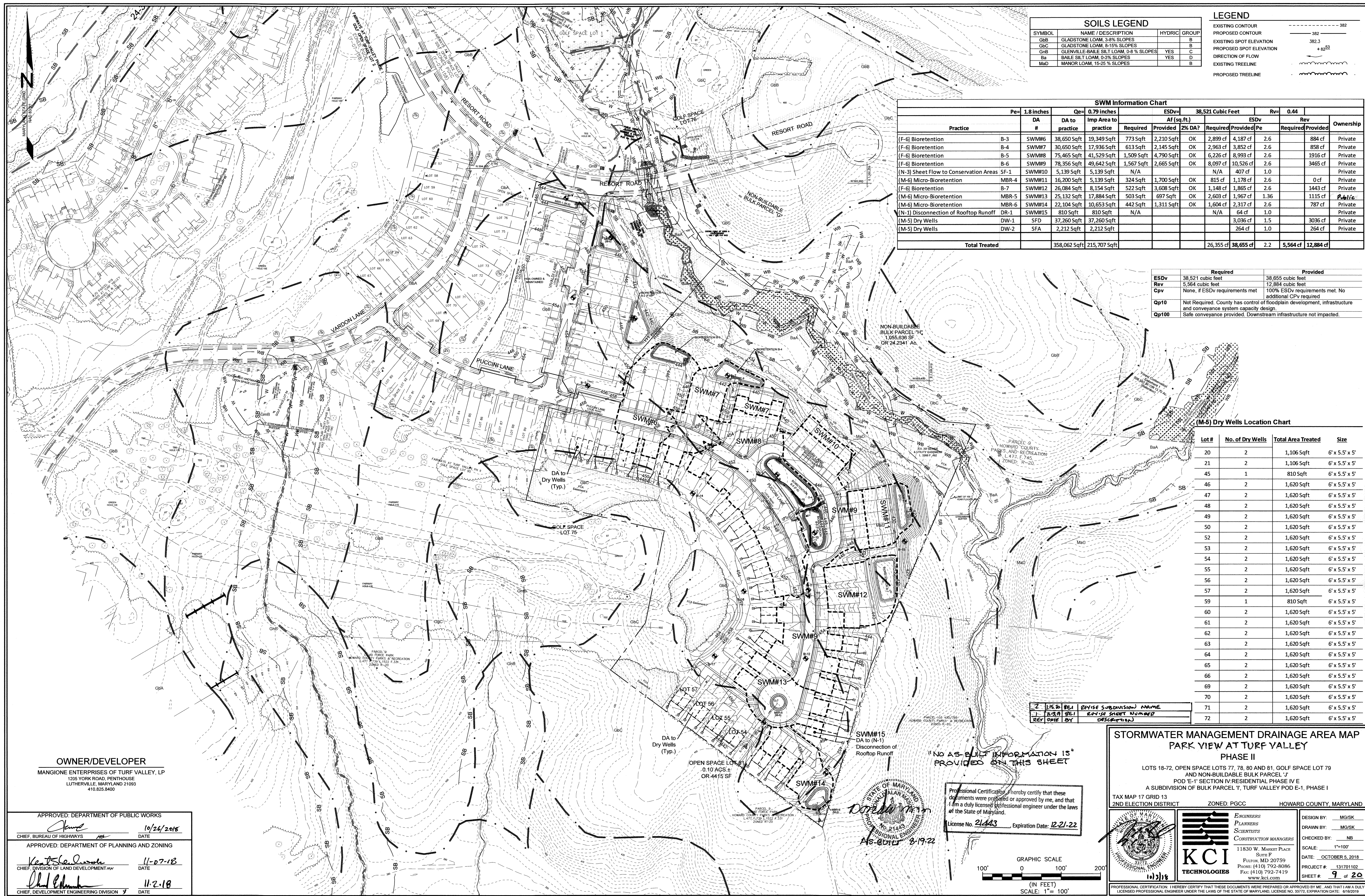
3377 PROFESSIONAL ENGINEER

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AS-BUILT F-17-096



SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	HYDRIC	GROUP
GbB	GLADSTONE LOAM, 3-8% 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
MaD	MANOR LOAM, 15-25% SLOPES		B

LEGEND	
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	EXISTING SPOT ELEVATION
---	PROPOSED SPOT ELEVATION
---	DIRECTION OF FLOW
---	EXISTING TREELINE
---	PROPOSED TREELINE

SWM Information Chart												
Practice	Pe= 1.8 inches DA #	Qe= 0.79 inches DA to practice	Imp Area to practice	ESDv= 38,521 Cubic Feet			Rv= 0.44	Rev		Ownership		
				Required	Provided	% DA?		Required	Provided			
(F-6) Bioretention	B-3 SWM#6	38,650 Sqft	19,349 Sqft	773 Sqft	2,210 Sqft	OK	2,899 cf	4,187 cf	2.6	884 cf	Private	
(F-6) Bioretention	B-4 SWM#7	30,650 Sqft	17,936 Sqft	613 Sqft	2,145 Sqft	OK	2,963 cf	3,852 cf	2.6	858 cf	Private	
(F-6) Bioretention	B-5 SWM#8	75,465 Sqft	41,529 Sqft	1,509 Sqft	4,790 Sqft	OK	6,226 cf	8,993 cf	2.6	1916 cf	Private	
(F-6) Bioretention	B-6 SWM#9	78,356 Sqft	49,642 Sqft	1,567 Sqft	2,665 Sqft	OK	8,097 cf	10,526 cf	2.6	3465 cf	Private	
(N-3) Sheet Flow to Conservation Areas	SF-1 SWM#10	5,139 Sqft	5,139 Sqft	N/A	N/A		N/A	407 cf	1.0	0 cf	Private	
(M-6) Micro-Bioretention	MBR-4 SWM#11	16,200 Sqft	5,139 Sqft	324 Sqft	1,700 Sqft	OK	815 cf	1,178 cf	2.6	0 cf	Private	
(F-6) Bioretention	B-7 SWM#12	26,084 Sqft	8,154 Sqft	522 Sqft	3,608 Sqft	OK	1,148 cf	1,865 cf	2.6	1443 cf	Private	
(M-6) Micro-Bioretention	MBR-5 SWM#13	25,132 Sqft	17,884 Sqft	503 Sqft	697 Sqft	OK	2,603 cf	1,967 cf	1.36	1115 cf	Public	
(M-6) Micro-Bioretention	MBR-6 SWM#14	22,104 Sqft	10,653 Sqft	442 Sqft	1,311 Sqft	OK	1,604 cf	2,317 cf	2.6	787 cf	Private	
(N-1) Disconnection of Rooftop Runoff	DR-1 SWM#15	810 Sqft	810 Sqft	N/A	N/A		N/A	64 cf	1.0	0 cf	Private	
(M-5) Dry Wells	DW-1 SFD	37,260 Sqft	37,260 Sqft					3,036 cf	1.5	3036 cf	Private	
(M-5) Dry Wells	DW-2 SFA	2,212 Sqft	2,212 Sqft					264 cf	1.0	264 cf	Private	
Total Treated								26,355 cf	38,655 cf	2.2	5,564 cf	12,884 cf

	Required	Provided
ESDv	38,521 cubic feet	38,655 cubic feet
Rev	5,564 cubic feet	12,884 cubic feet
Cpv	None, if ESDv requirements met	100% ESDv requirements met. No additional CPV required.
Op10	Not Required. County has control of floodplain development, infrastructure and conveyance system capacity design.	
Op100	Safe conveyance provided. Downstream infrastructure not impacted.	

(M-5) Dry Wells Location Chart

Lot #	No. of Dry Wells	Total Area Treated	Size
20	2	1,106 Sqft	6' x 5.5' x 5'
21	2	1,106 Sqft	6' x 5.5' x 5'
45	1	810 Sqft	6' x 5.5' x 5'
46	2	1,620 Sqft	6' x 5.5' x 5'
47	2	1,620 Sqft	6' x 5.5' x 5'
48	2	1,620 Sqft	6' x 5.5' x 5'
49	2	1,620 Sqft	6' x 5.5' x 5'
50	2	1,620 Sqft	6' x 5.5' x 5'
52	2	1,620 Sqft	6' x 5.5' x 5'
53	2	1,620 Sqft	6' x 5.5' x 5'
54	2	1,620 Sqft	6' x 5.5' x 5'
55	2	1,620 Sqft	6' x 5.5' x 5'
56	2	1,620 Sqft	6' x 5.5' x 5'
57	2	1,620 Sqft	6' x 5.5' x 5'
59	1	810 Sqft	6' x 5.5' x 5'
60	2	1,620 Sqft	6' x 5.5' x 5'
61	2	1,620 Sqft	6' x 5.5' x 5'
62	2	1,620 Sqft	6' x 5.5' x 5'
63	2	1,620 Sqft	6' x 5.5' x 5'
64	2	1,620 Sqft	6' x 5.5' x 5'
65	2	1,620 Sqft	6' x 5.5' x 5'
66	2	1,620 Sqft	6' x 5.5' x 5'
69	2	1,620 Sqft	6' x 5.5' x 5'
70	2	1,620 Sqft	6' x 5.5' x 5'
71	2	1,620 Sqft	6' x 5.5' x 5'
72	2	1,620 Sqft	6' x 5.5' x 5'

REV	DATE	BY	DESCRIPTION
2	11/20/18	BEI	REVISE SUBDIVISION NAME
1	11/20/18	BEI	REVISE SHEET NUMBER

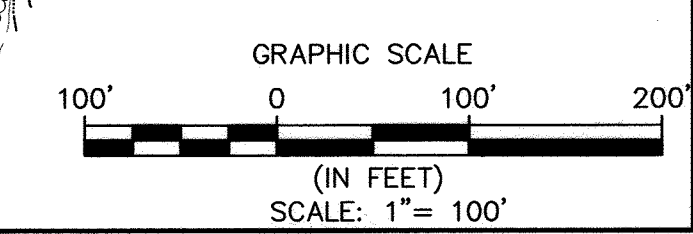
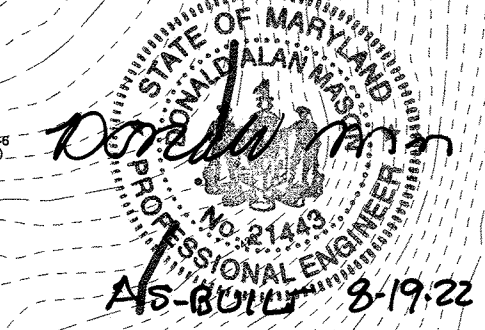
OWNER/DEVELOPER
 MANGIONE ENTERPRISES OF TURF VALLEY, LP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410.825.8400

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 10/26/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 11-07-18

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-2-18

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: 12-21-22



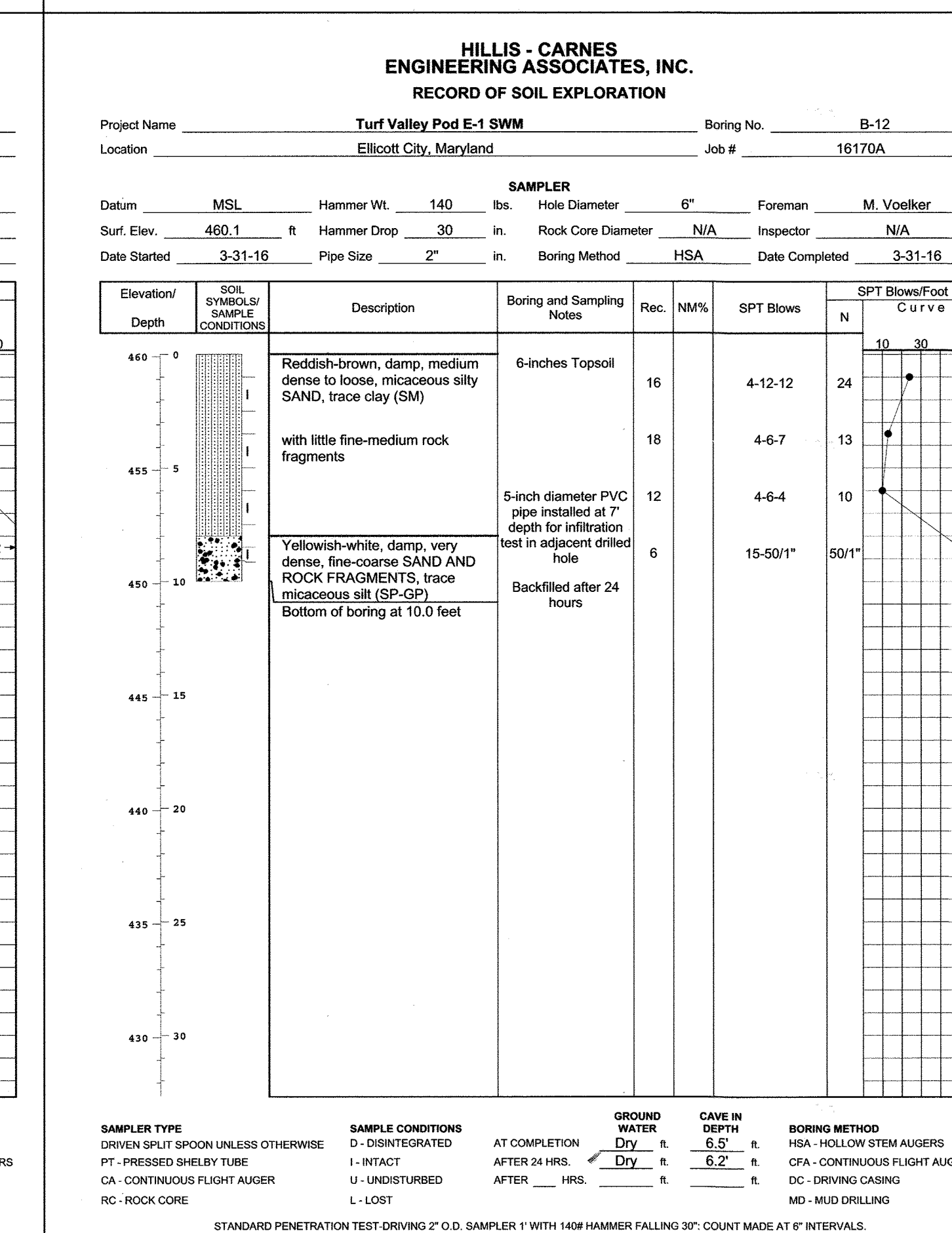
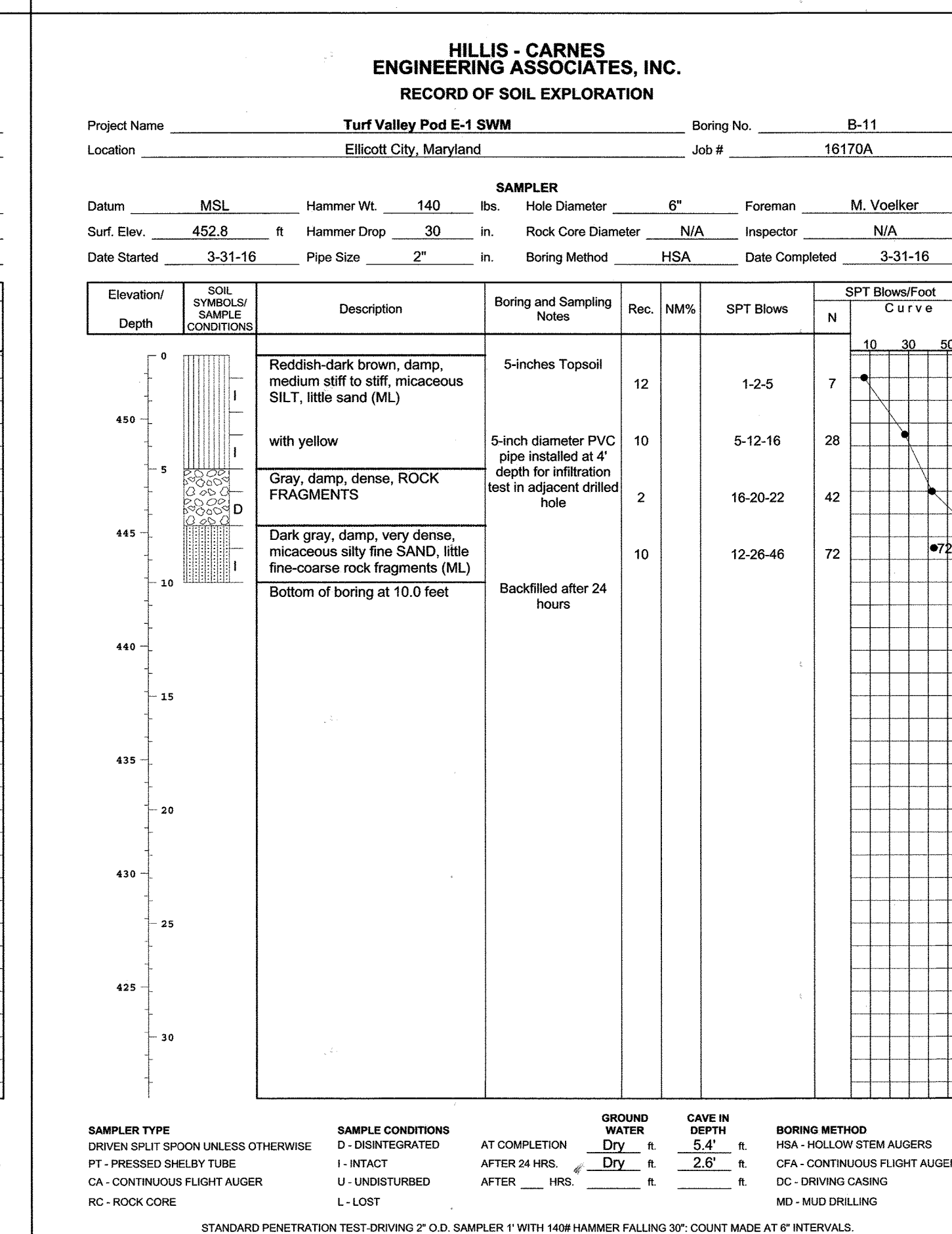
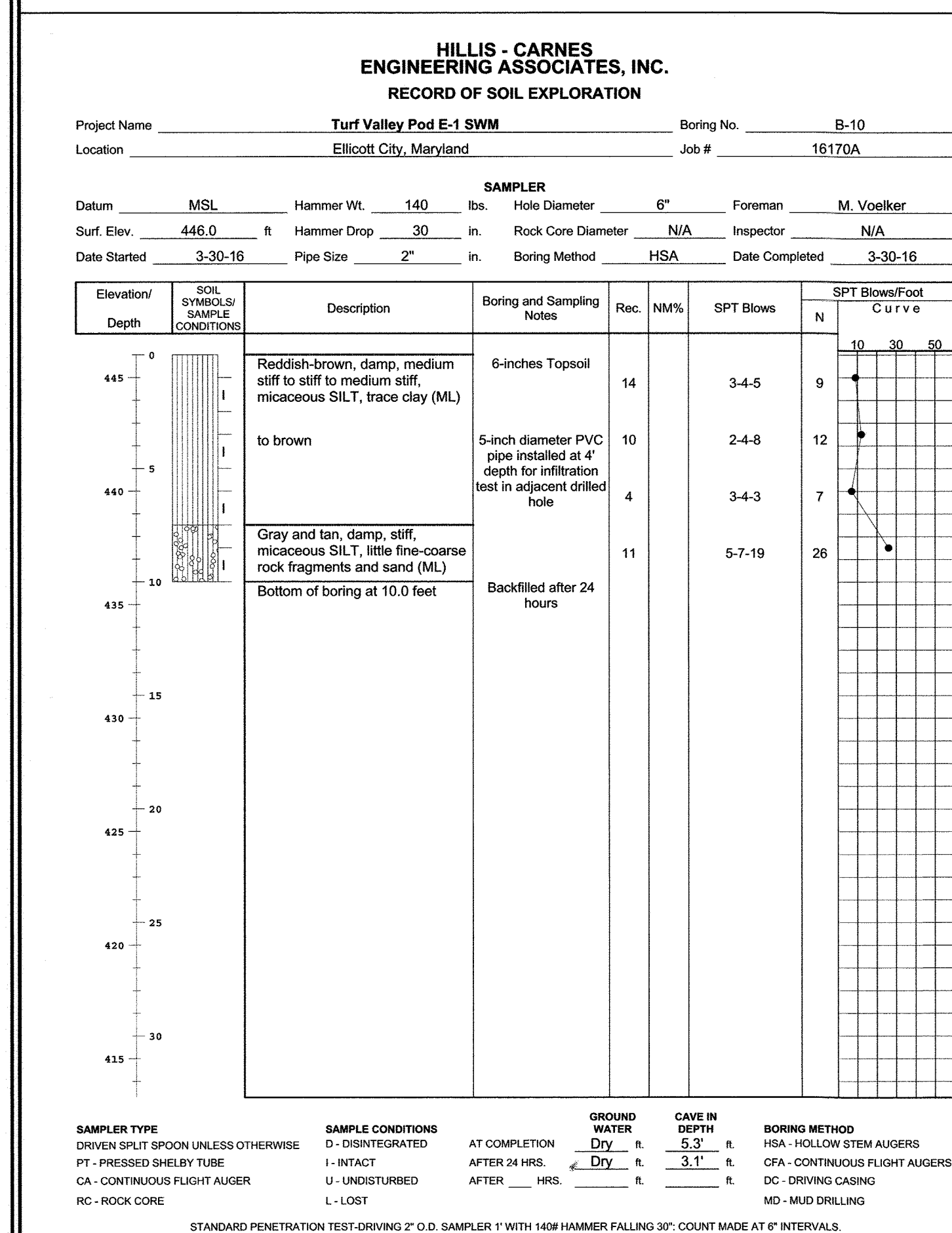
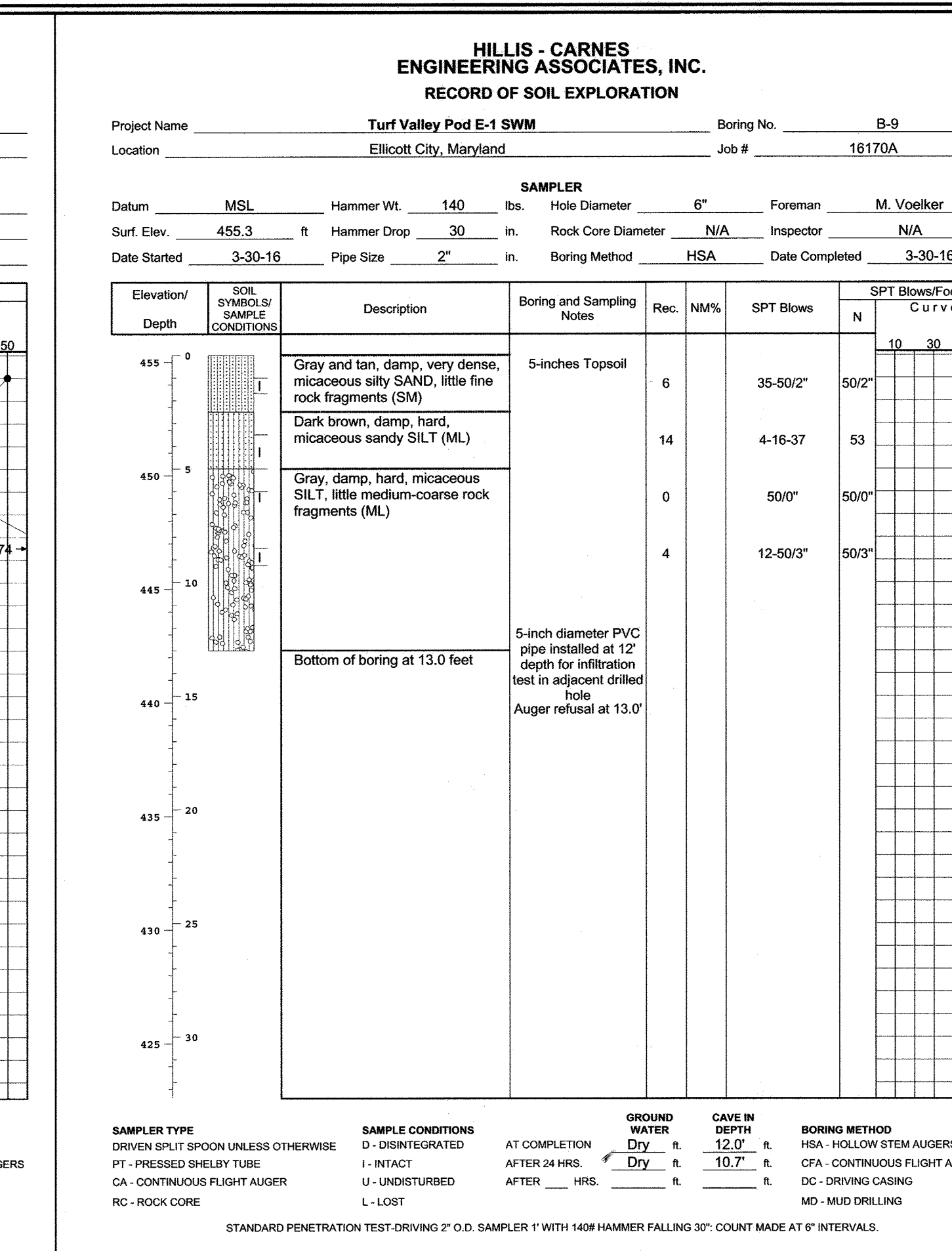
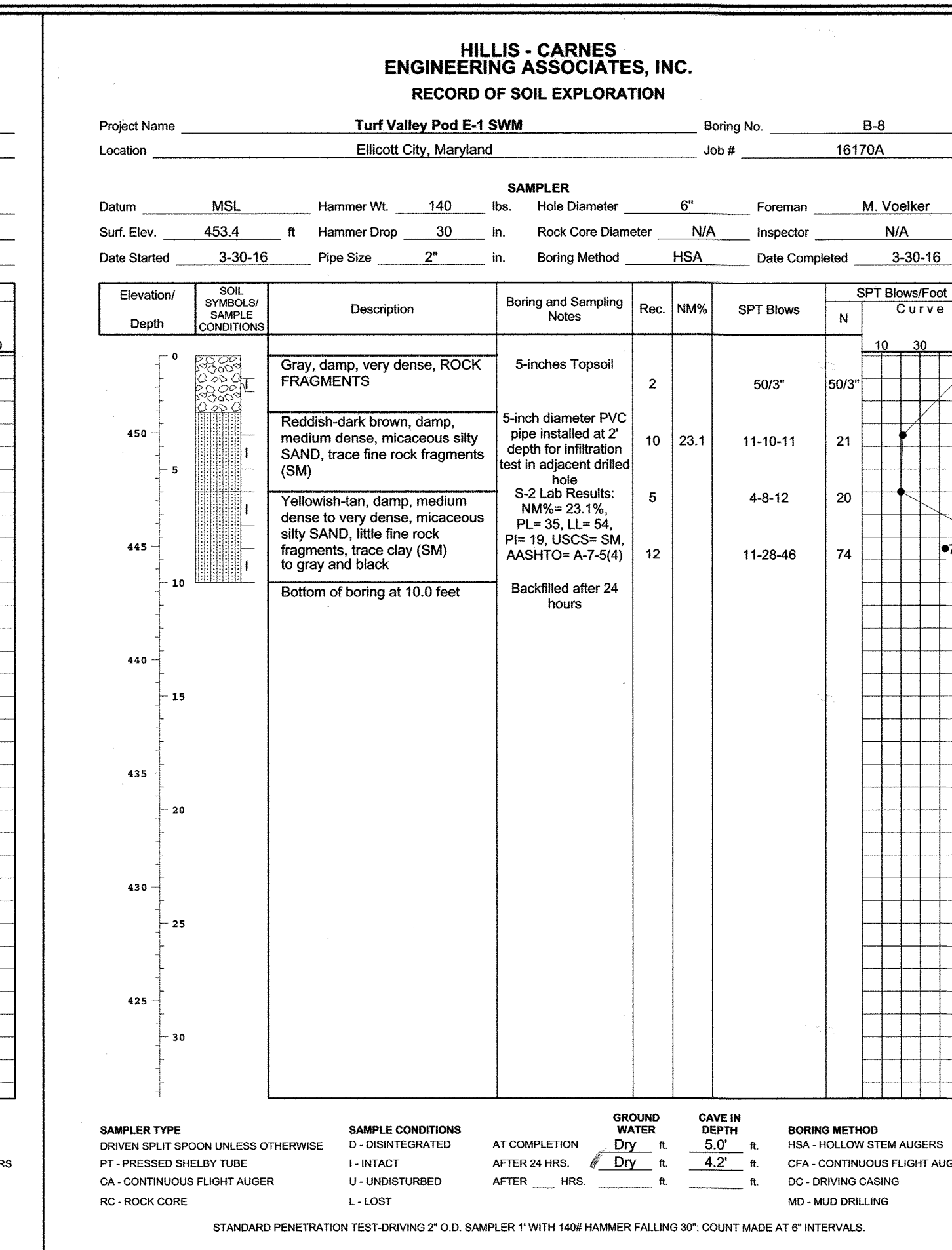
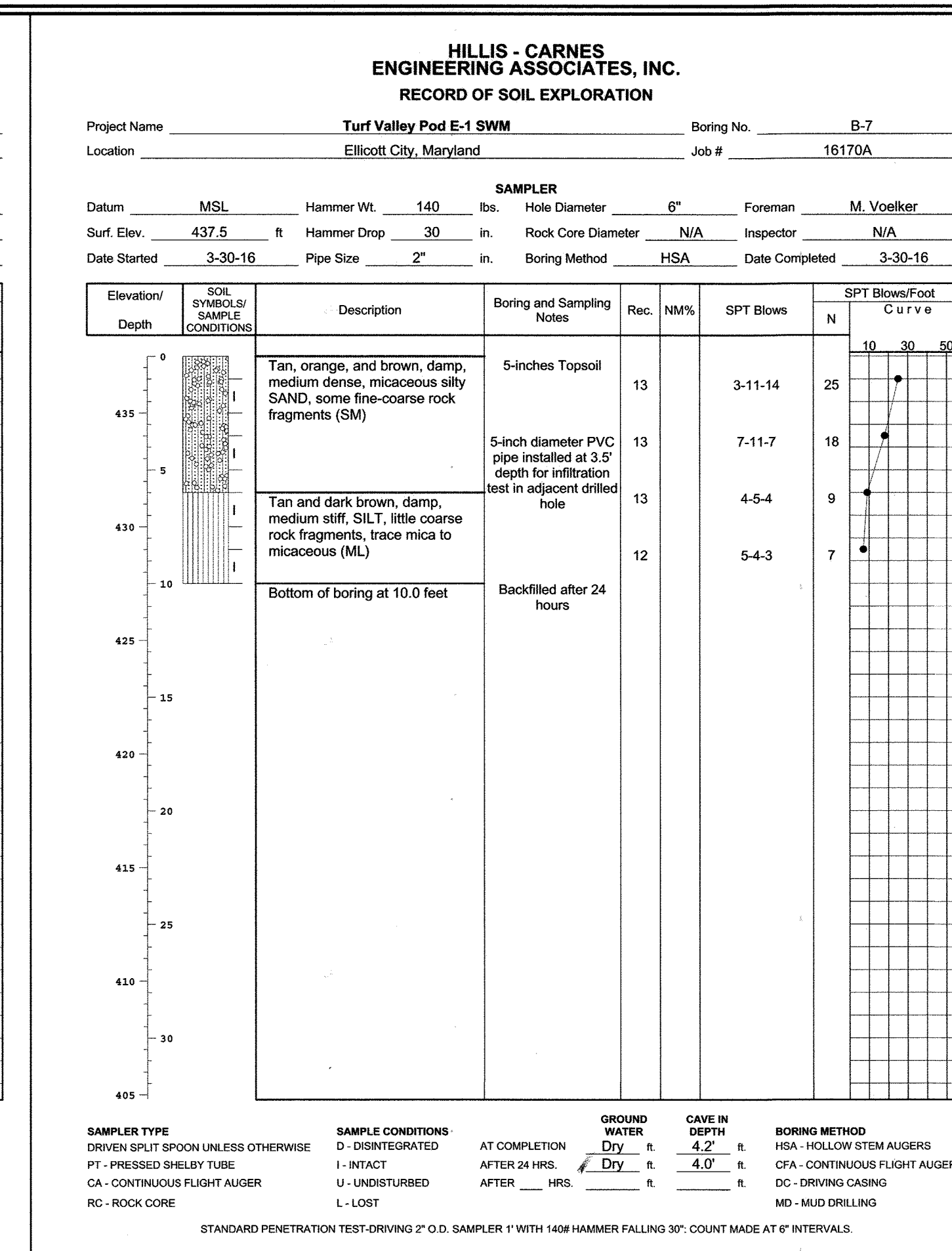
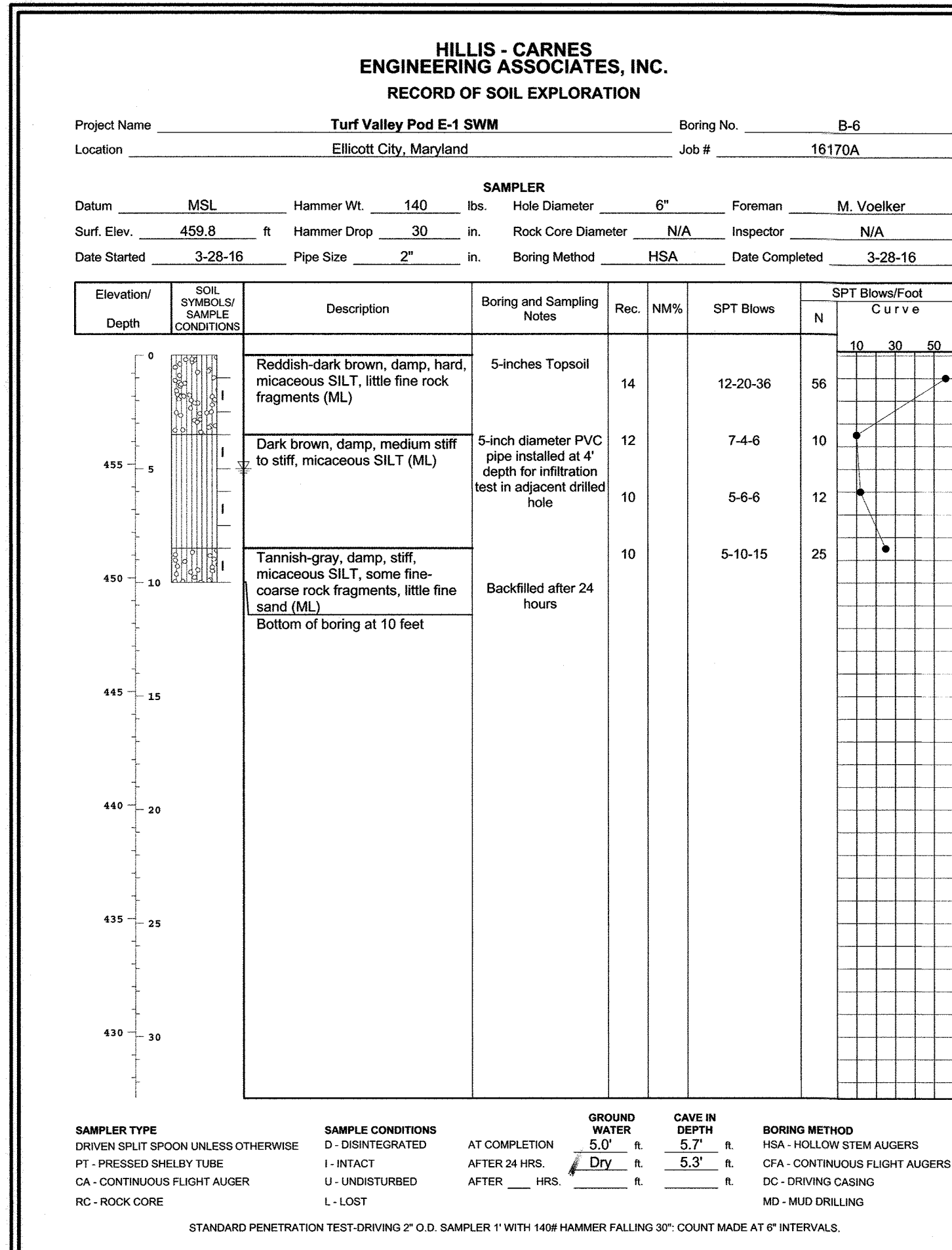
STORMWATER MANAGEMENT DRAINAGE AREA MAP
PARK VIEW AT TURF VALLEY
PHASE II
 LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
 AND NON-BUILDABLE BULK PARCEL 'J'
 POD 'E-1' SECTION IV RESIDENTIAL PHASE IV E
 A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

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"=100'
 DATE: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 9 of 20

KCI TECHNOLOGIES
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 FAX: (410) 792-7419
 WWW.KCI.COM

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NOTE: BORING LOGS FOR BORING NUMBERS B-1 TO B-5 ARE SHOWN ON PHASE I PLANS (F-17-095)

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10/24/2018
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
11-07-18
CHIEF, DIVISION OF LAND DEVELOPMENT

11-2-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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License No. 21403, Expiration Date: 12-21-22

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

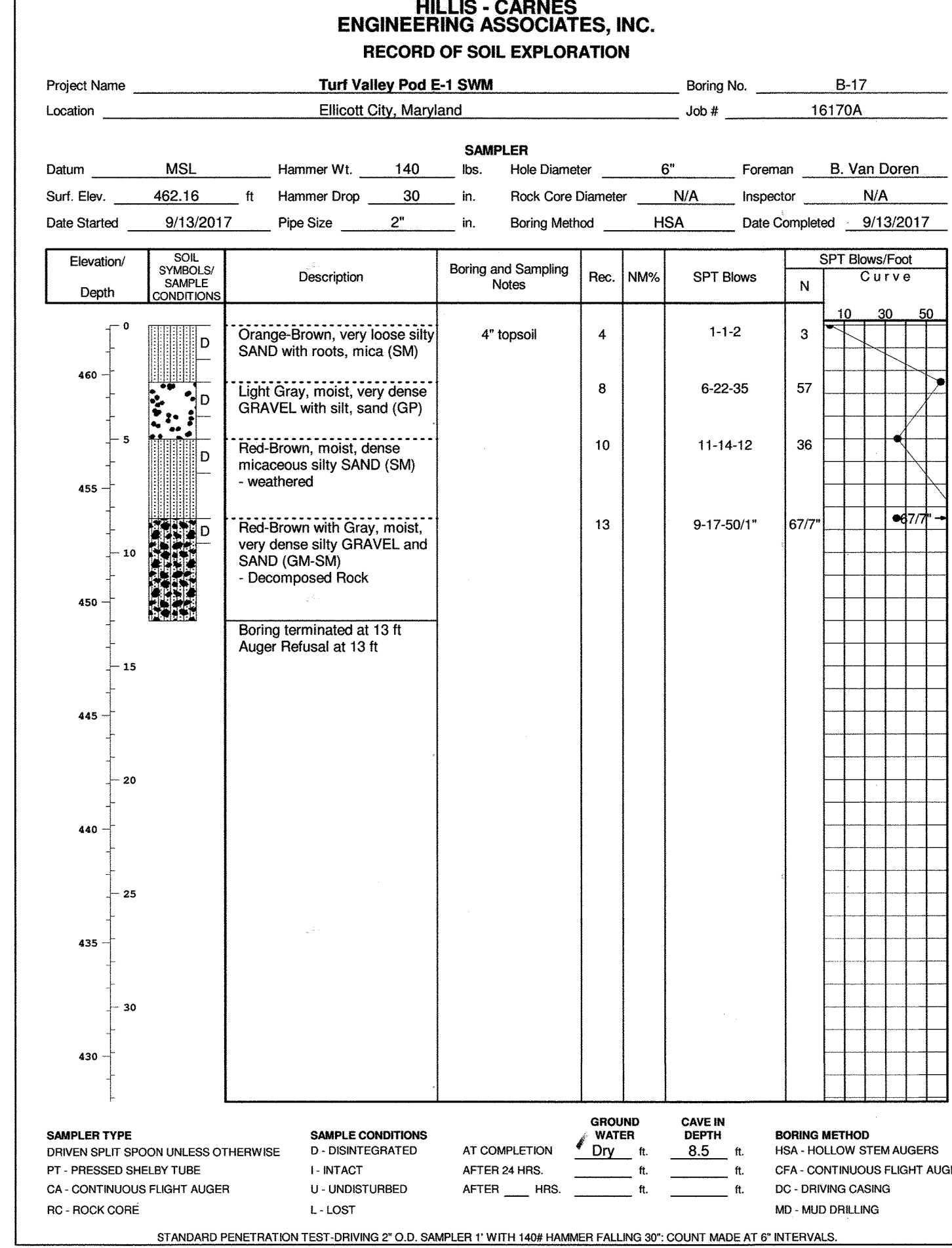
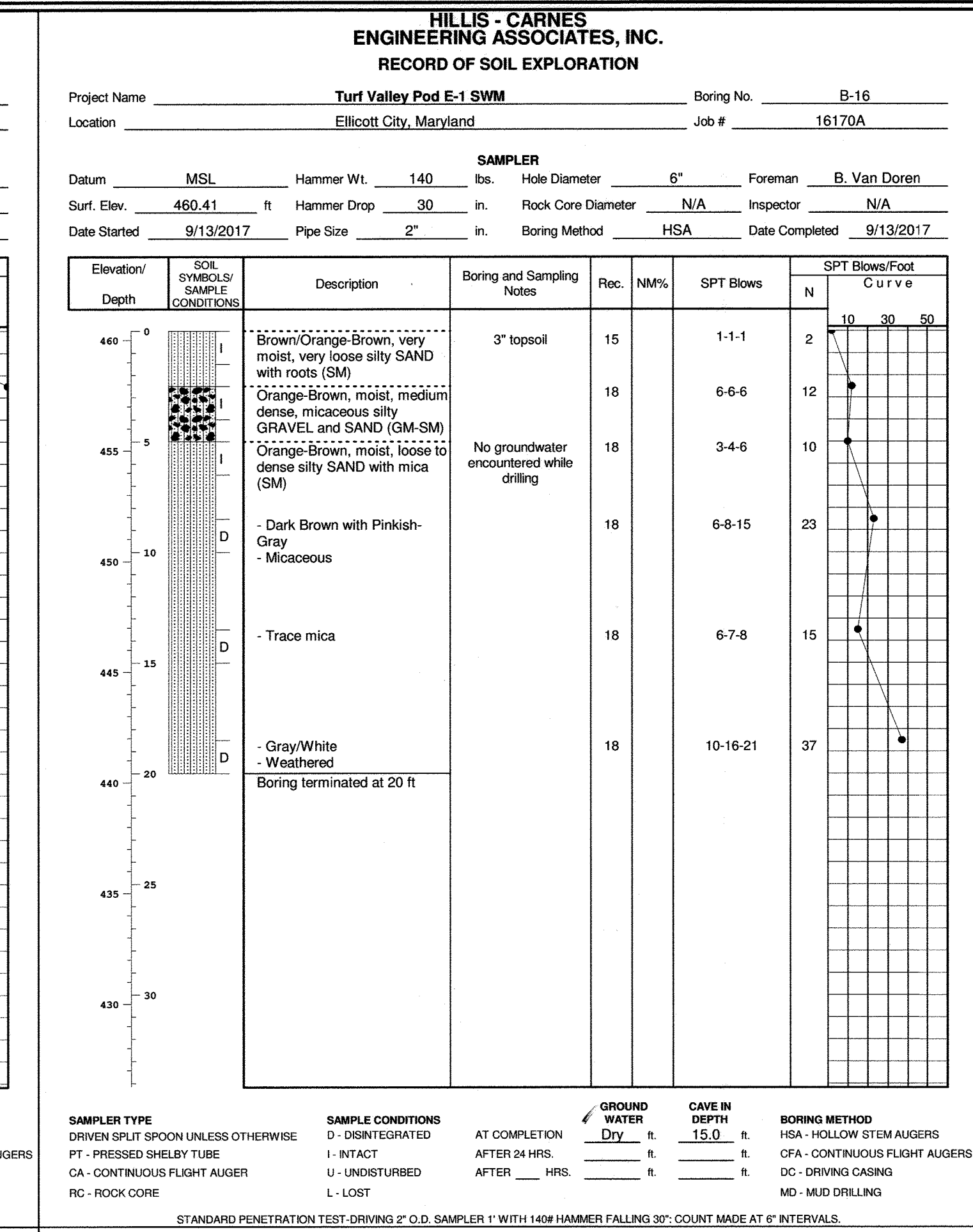
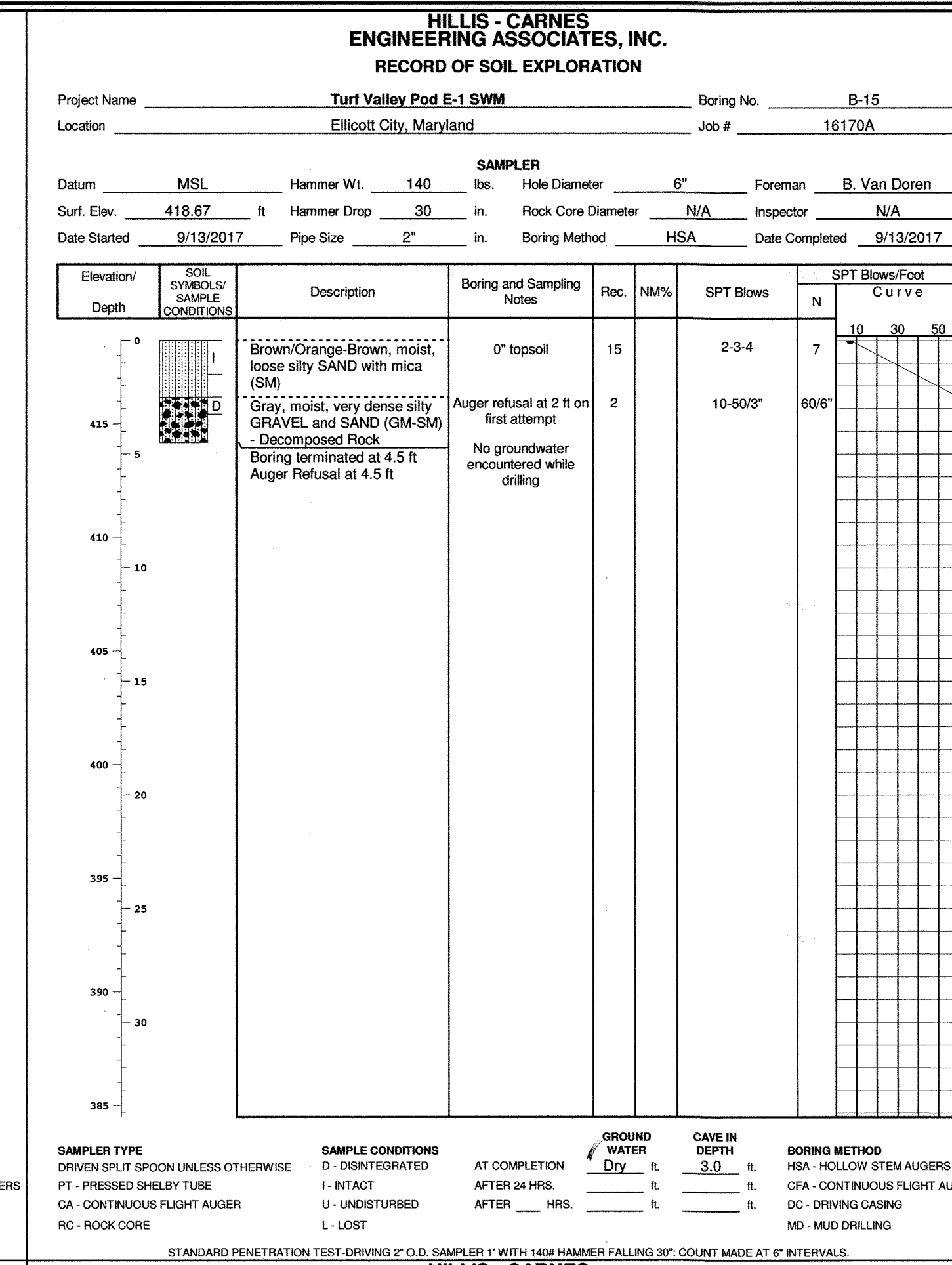
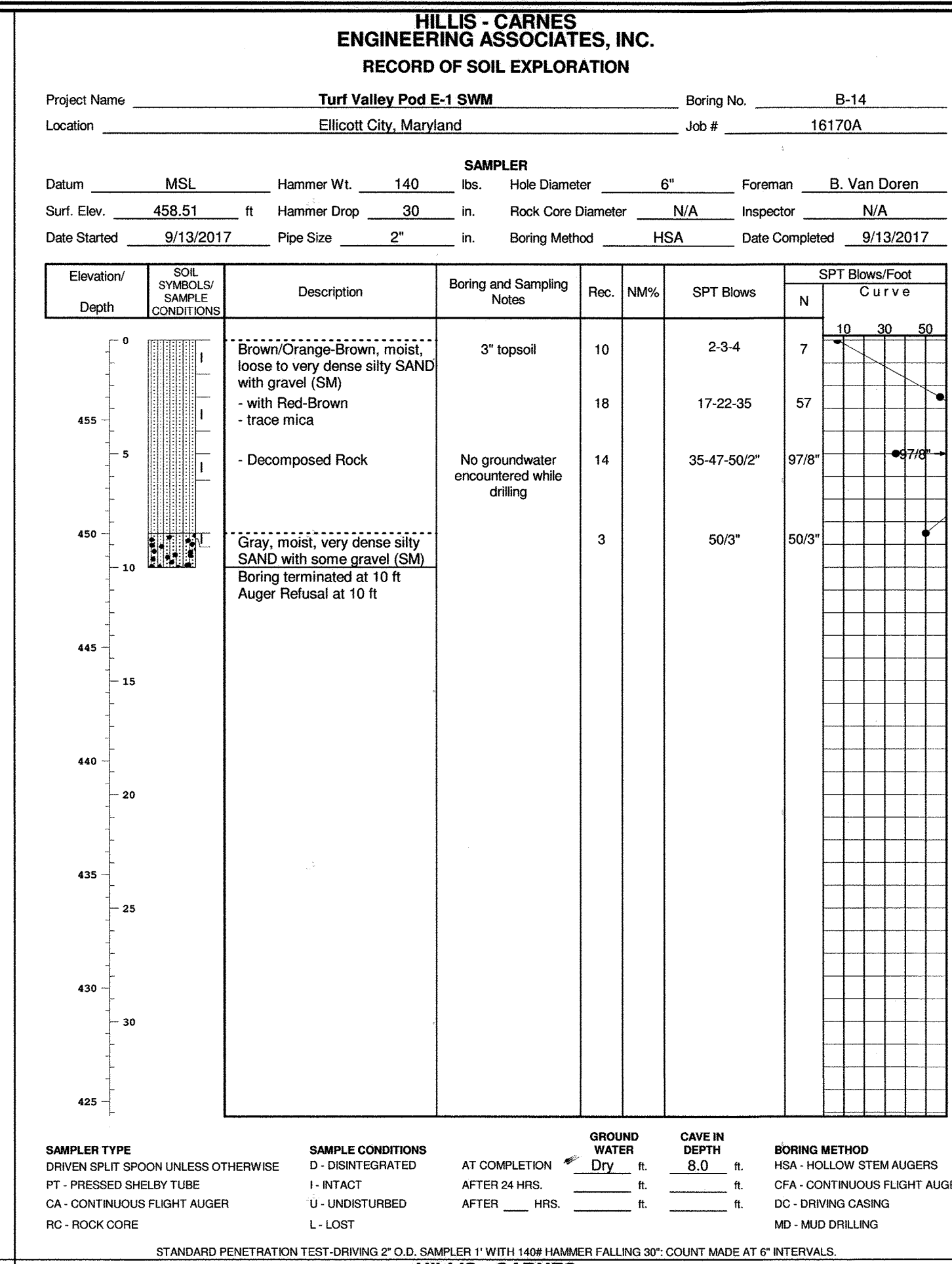
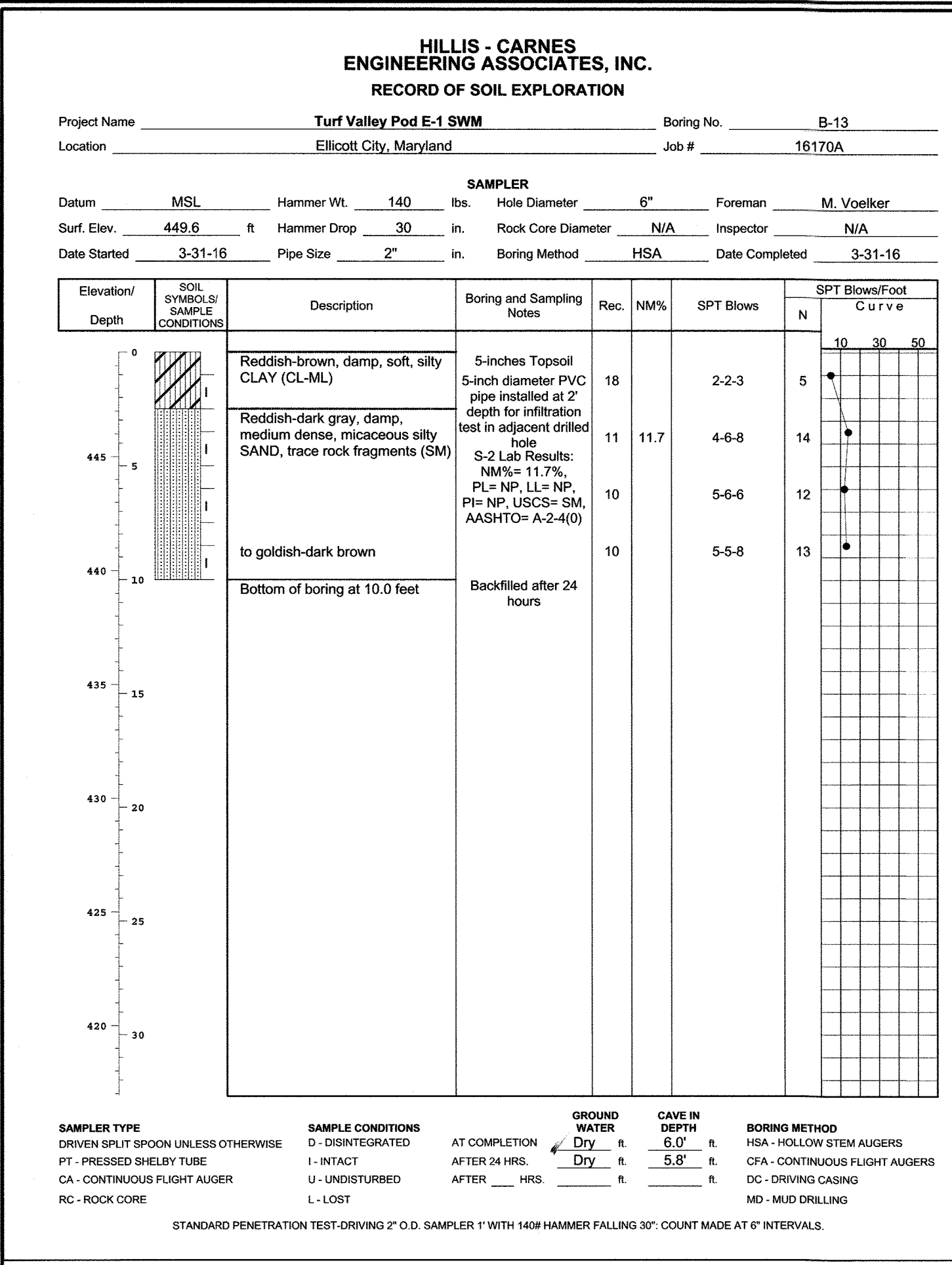
STATE OF MARYLAND
Professional Engineer
A.S. BUILT
11-19-22

STORMWATER MANAGEMENT BORING LOGS - 1
PARK VIEW AT TURF VALLEY
PHASE II
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
AND NON-BUILDABLE BULK PARCEL 'J'
POD 'E-1' SECTION IV/RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

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: AS SHOWN
DATE: OCTOBER 5, 2018
PROJECT #: 131701102
SHEET #: 10 of 20

REVISIONS:
2 11.5.20 BE1 REVISE SUBDIVISION NAME
1 11.13.19 BE1 REVISE SHEET NUMBER
REV DATE BY DESCRIPTION



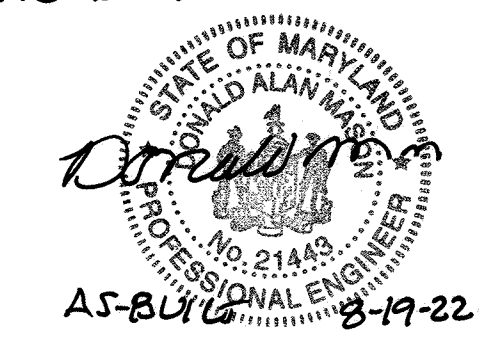
NOTE: BORING LOGS FOR BORING NUMBERS B-1 TO B-5 ARE SHOWN ON PHASE I PLANS (F-17-095)

APPROVED: DEPARTMENT OF PUBLIC WORKS
10/26/2018
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
11-07-18
CHIEF, DIVISION OF LAND DEVELOPMENT

11-2-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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License No. 21443, Expiration Date: 8-19-22

OWNER/DEVELOPER
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LUTHERVILLE, MARYLAND 21093
410.825.8400

STORMWATER MANAGEMENT BORING LOGS - 2
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PHASE II
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TAX MAP 17 GRID 13
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DESIGN BY: MG/SK
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SHEET #: 11 of 20

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REV	DATE	BY	DESCRIPTION
2	11.5.20	BEI	REVISE SUBDIVISION NAME
1	11.8.19	BEI	REVISE SHEET NUMBER

**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: 21.33 +/- Acres
 Area Disturbed: 16.6 +/- Acres
 Area to be roofed or paved: 7.3 +/- Acres
 Area to be vegetatively stabilized: 9.3 +/- Acres
 Total Cut: 8,800 Cu. Yds.
 Total Fill: 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 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. Seeded 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 is loessgrass 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. Seeded 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 1 1/2 inches in diameter.
 - b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
 - a. Erosion and sediment control practices must be maintained when applying topsoil.
 - b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

Baffle Board Design - Phase II

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	27.2	45	Y	44	11	55
ST#2	1,700	29.2	30	Y	42	28	70
ST#3	2,625	36.2	55	Y	35	48	83
ST#4	1,885	30.7	45	Y	45	20	65
ST#5	2,850	37.7	35	Y	37	50	87
ST#6	3,277	40.5	30	Y	42	40	82
ST#8	1,310	25.6	45	Y	34	20	54
ST#9	2,050	32.0	25	Y	63	20	83
ST#7	10,220	71.5	30	Y	73	75	148

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 loessgrass 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 1/4 inch in clayey soils and 1/2 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).
 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 tam soil 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.

VEGETATIVE ESTABLISHMENT

SEQUENCE OF CONSTRUCTION (PHASE II CONSTRUCTION)

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. Construct sediment trap ST#7 and ST#9. Inspect existing sediment traps (ST#4, #5, #6, and #8) to verify they are functional. Clean out as necessary - 1 month
4. With Inspector's approvals, begin grading of the site. - 1 month
5. Construct sewer, storm drain, and water lines except water main "D". Provide inlet protection at inlet 0-7 - 2 months
6. Divert stream per details for construction. Construct water line "D". Restore streambed. - 1 week
7. Fine grade site and complete road construction. - 1 month
8. Stabilize all disturbed areas with seed and mulch - 2 weeks
9. Remove sediment trap #8. Convert sediment traps ST #4 to #7 and ST#9 to stormwater facilities as shown on plans. Construct micro-bioretenation facilities MBR-5 and MBR-6 and stabilize any disturbed area. - 1 month
10. On-lot stormwater facilities (Drywells) will be installed under SDP.
11. With approval of Inspector, remove super silt fence and stabilize. - 1 week

STOCKPILE AREA

PURPOSE

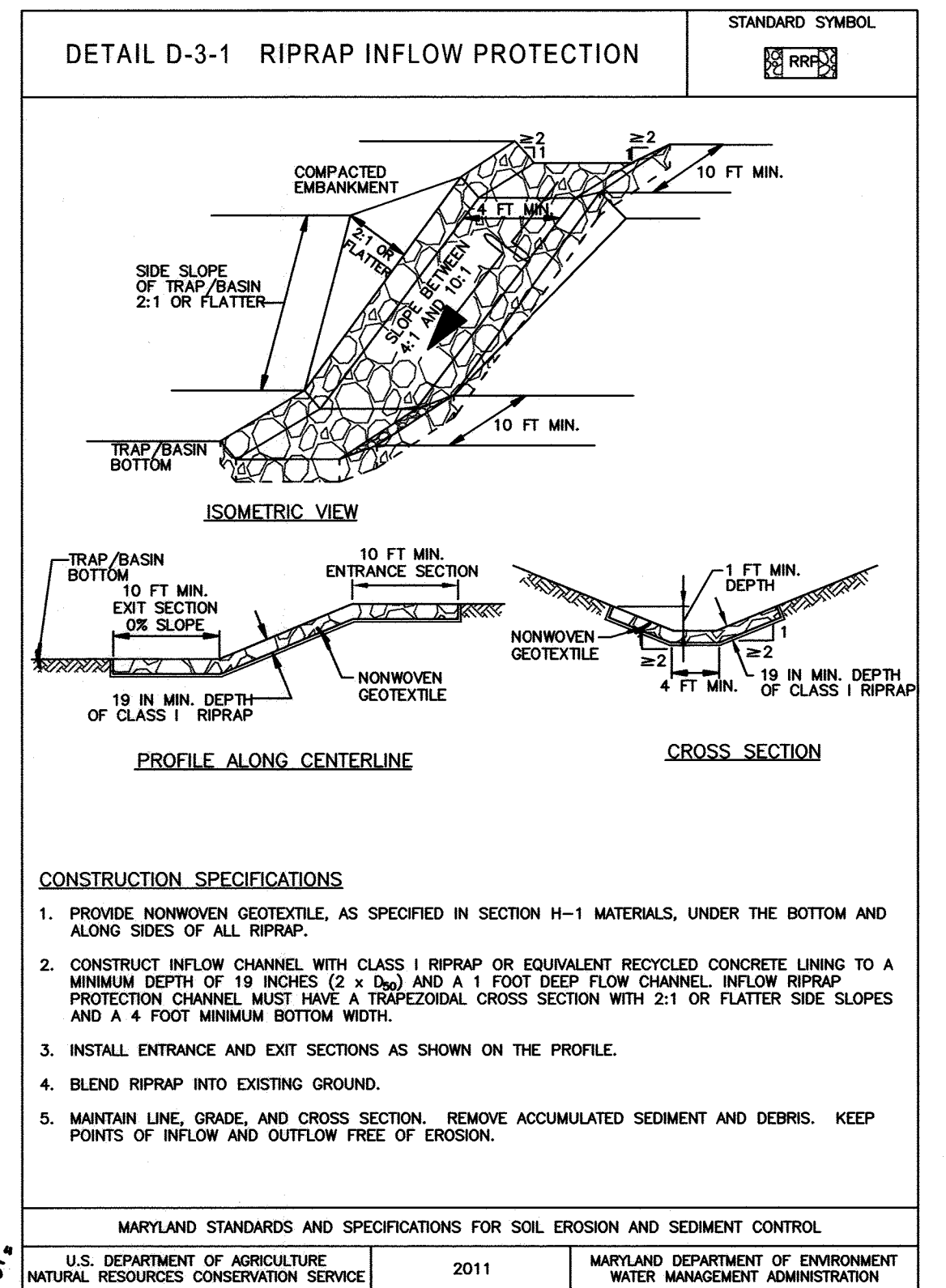
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

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 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.



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

NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 10/26/2018
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 11-07-18
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 11-2-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

REV	DATE	BY	DESCRIPTION
2	1.15.20	BEI	REVISE SUBDIVISION NAME
1	11.13.19	BEI	REVISE SHEET NUMBER

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

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: [Signature] Date: 10/11/18
 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.
 [Signature] Date: 10/11/18
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."
 [Signature] Date: 10/11/18
 Designer's Signature: [Signature] Date: 10/11/18
 Printed Name: NICK BARRICK Date: 10/11/18
 MD Registration No. 33772
 (P.E., R.L.S., or R.L.A. (circle one))

SEDIMENT AND EROSION CONTROL NOTES
PARK VIEW AT TURF VALLEY
PHASE II
 LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
 AND NON-BUILDABLE BULK PARCEL 'J'
 POD 'E-1' SECTION IV, RESIDENTIAL PHASE IV 'E'
 A SUBDIVISION OF BULK PARCEL 'I', TURF VALLEY POD E-1, PHASE I

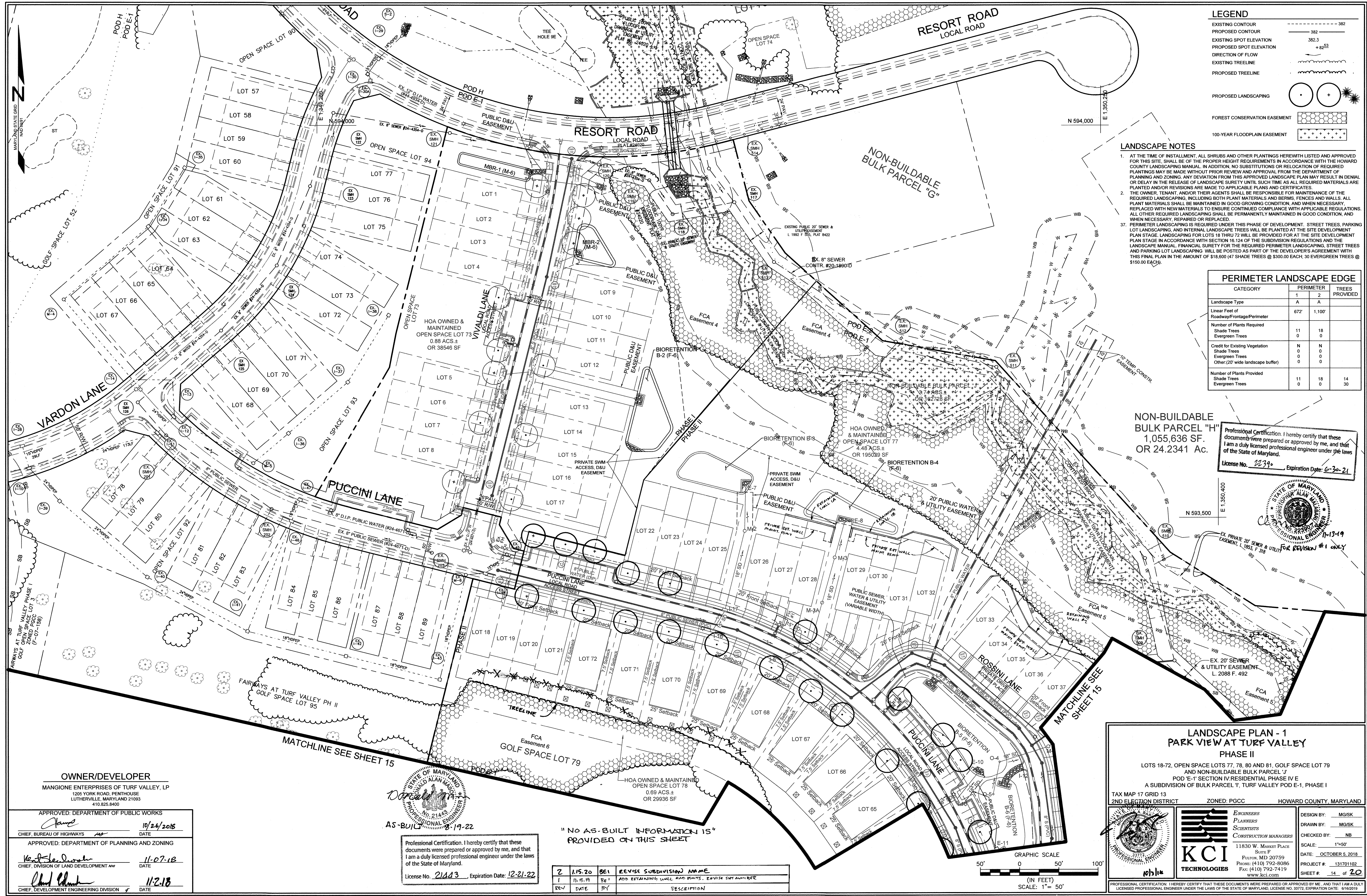
TAX MAP 17 GRID 13
 2ND ELECTION DISTRICT ZONED: PGCC HOWARD COUNTY, MARYLAND

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
 11830 W. MARKET PLACE SUITE F FULTON, MD 20759
 PHONE: (410) 752-8086 FAX: (410) 752-7419 www.kci.com

DESIGN BY: MG/SK
 DRAWN BY: MG/SK
 CHECKED BY: NB
 SCALE: AS SHOWN
 DATE: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 12 of 20

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



LEGEND

- EXISTING CONTOUR: --- 382
- PROPOSED CONTOUR: - - - 382
- EXISTING SPOT ELEVATION: 382.3
- PROPOSED SPOT ELEVATION: +82.53
- DIRECTION OF FLOW: [Symbol]
- EXISTING TREELINE: [Symbol]
- PROPOSED TREELINE: [Symbol]
- PROPOSED LANDSCAPING: [Symbol]
- FOREST CONSERVATION EASEMENT: [Symbol]
- 100-YEAR FLOODPLAIN EASEMENT: [Symbol]

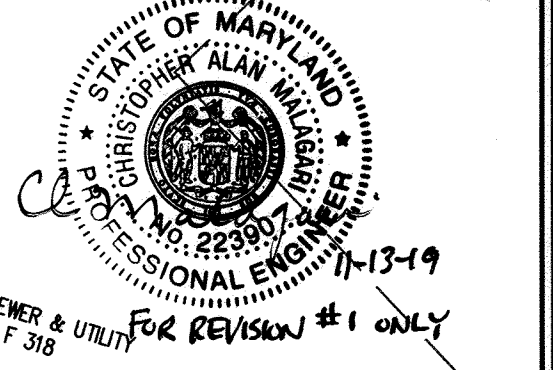
- LANDSCAPE NOTES**
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE 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.
 - PERIMETER LANDSCAPING IS REQUIRED UNDER THIS PHASE OF DEVELOPMENT. STREET TREES, PARKING LOT LANDSCAPING, AND INTERNAL LANDSCAPE TREES WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING FOR LOTS 18 THRU 72 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 PERIMETER LANDSCAPING, STREET TREES AND PARKING LOT LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT WITH THIS FINAL PLAN IN THE AMOUNT OF \$18,600 (47 SHADE TREES @ \$300.00 EACH, 30 EVERGREEN TREES @ \$150.00 EACH).

PERIMETER LANDSCAPE EDGE

CATEGORY	PERIMETER		TREES PROVIDED
	1	2	
Landscaping Type	A	A	
Linear Feet of Roadway/Frontage/Perimeter	672	1,100'	
Number of Plants Required			
Shade Trees	11	18	
Evergreen Trees	0	0	
Credit for Existing Vegetation	N	N	
Shade Trees	0	0	
Evergreen Trees	0	0	
Other (20' wide landscape buffer)	0	0	
Number of Plants Provided			
Shade Trees	11	18	14
Evergreen Trees	0	0	30

NON-BUILDABLE BULK PARCEL "H"
 1,055,636 SF.
 OR 24.2341 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. 22390 Expiration Date: 6-30-21



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

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 10/24/2018
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 11-07-18
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 11-2-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

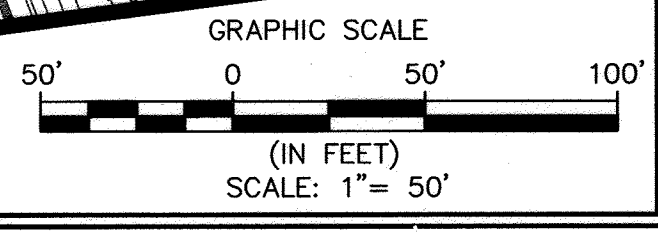


AS-BUILT 8-19-22

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

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

REV	DATE	BY	DESCRIPTION
2	11.15.20	BE1	REVISE SUBDIVISION NAME
1	11.15.19	BE1	ADD RETAINING WALL AND BRITS. REVISE SURF NUMBER



LANDSCAPE PLAN - 1
PARK VIEW AT TURF VALLEY
 PHASE II

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J' AND NON-BUILDABLE BULK PARCEL 'I' SECTION IV RESIDENTIAL PHASE I/E A SUBDIVISION OF BULK PARCEL 'T', TURF VALLEY POD E-1, PHASE I

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: OCTOBER 5, 2018
 PROJECT #: 131701102
 SHEET #: 14 OF 20

KCI TECHNOLOGIES
 11830 W. MARKET PLACE
 SUITE F
 FULFORD, 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

SCHEDULE C

**RESIDENTIAL DEVELOPMENT
INTERNAL LANDSCAPING**

Number of Dwelling Units	25 SFA
Number of trees required 1 Shade Trees per DU SFA: 1:3 DU APTS Shade Trees provided	25 0"

LANDSCAPE SCHEDULE (Perimeter Planting)

KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
⊙	14	QUERCUS RUBRA RED OAK	2 1/2"-3" CAL.	B & B
⊙	30	PINUS THUNBERGIANA JAPANESE BLACK PINE	6'-8" HT.	CONT.

STREET TREE SCHEDULE

STREET NAME	LF REQUIRED	TREES REQUIRED	TREES PROVIDED
PUCCINI LANE	1,206	30 (1 per 40 LF)	30

LANDSCAPE SCHEDULE (Street Planting)

KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
⊙	23	ACER RUBRUM OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
⊙	7	QUERCUS RUBRA RED OAK	2 1/2"-3" CAL.	B & B

**RESIDENTIAL DEVELOPMENT
PARKING LOT LANDSCAPING**

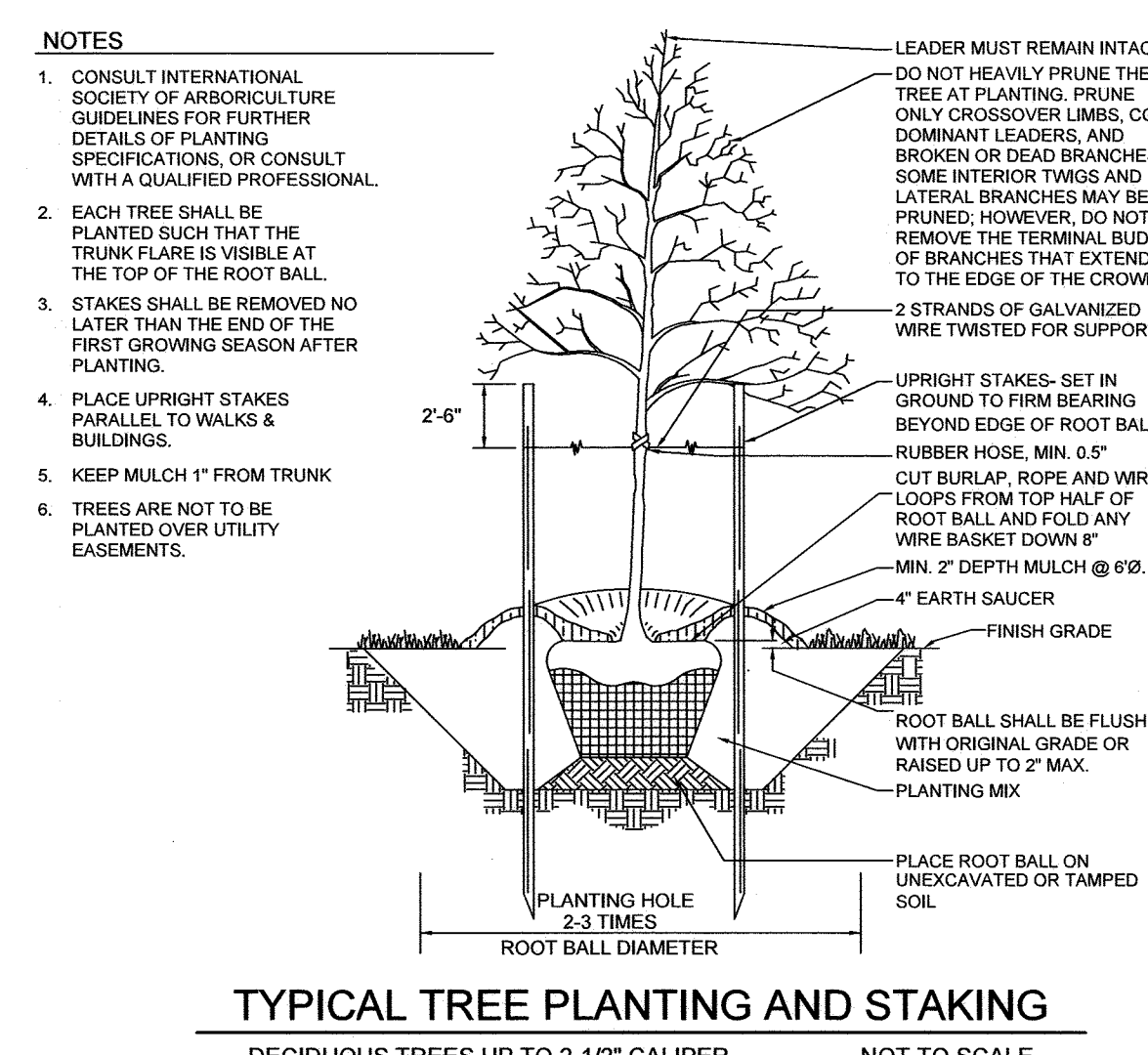
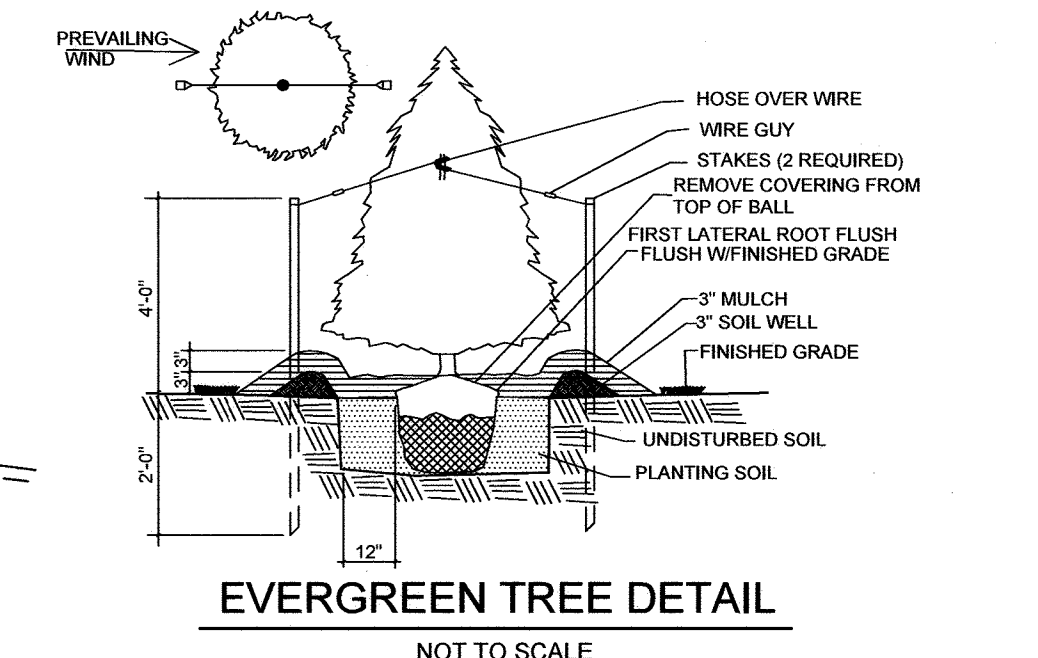
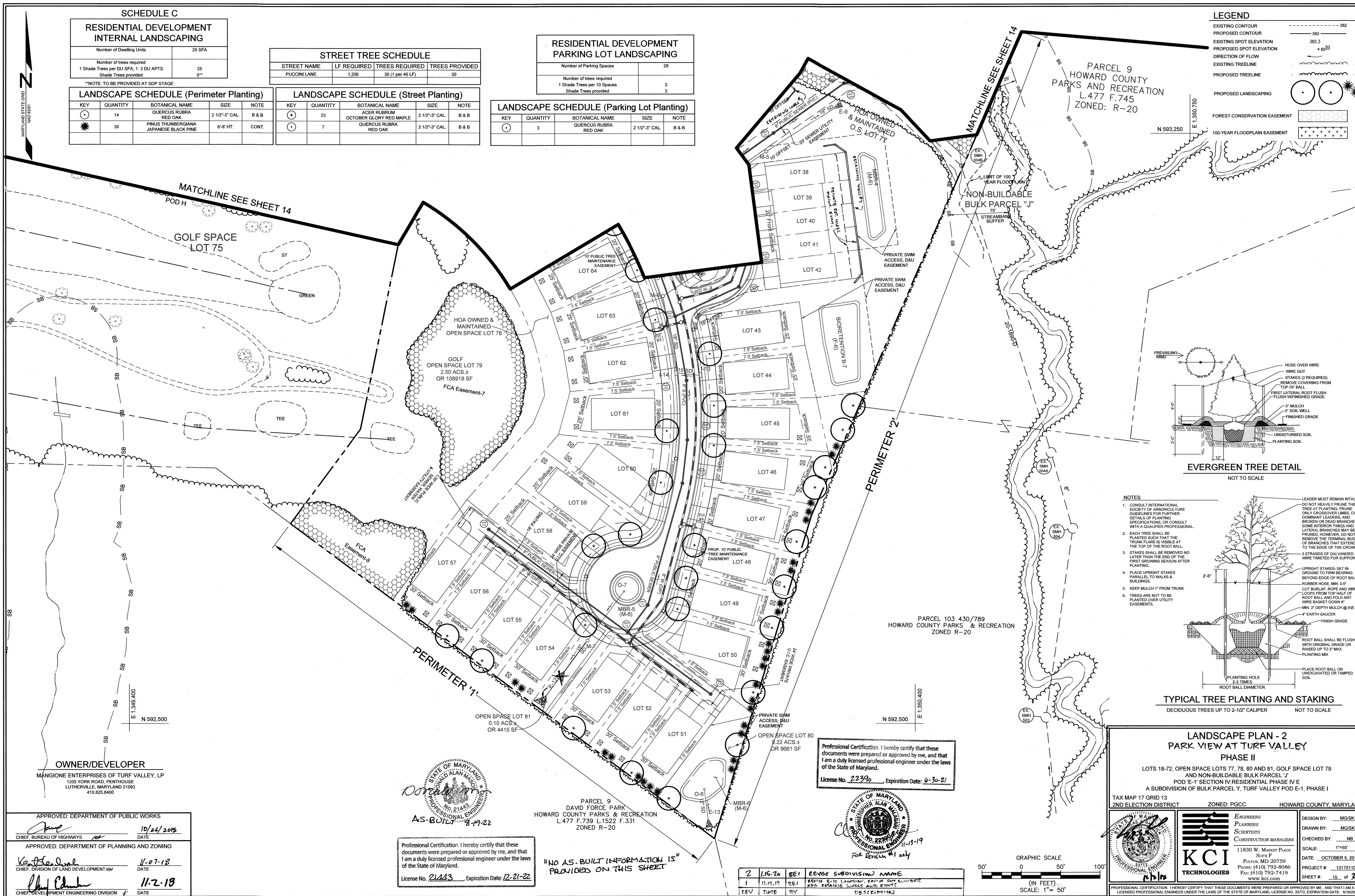
Number of Parking Spaces	28
Number of trees required 1 Shade Trees per 10 Spaces Shade Trees provided	3 3

LANDSCAPE SCHEDULE (Parking Lot Planting)

KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
⊙	3	QUERCUS RUBRA RED OAK	2 1/2"-3" CAL.	B & B

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED LANDSCAPING
- FOREST CONSERVATION EASEMENT
- 100-YEAR FLOODPLAIN EASEMENT



**LANDSCAPE PLAN - 2
PARK VIEW AT TURF VALLEY
PHASE II**

LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
AND NON-BUILDABLE BULK PARCEL 'J'
POD 'E-1' SECTION IV/RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL 'T', TURF VALLEY POD E-1, PHASE I

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

KCI TECHNOLOGIES
11830 W. MARKET PLACE
SUITE F
FURNER, MD 20759
PHONE: (410) 752-8086
FAX: (410) 752-7419
WWW.KCI.COM

DESIGN BY: MG/SK
DRAWN BY: MG/SK
CHECKED BY: NB
SCALE: 1"=50'
DATE: OCTOBER 5, 2018
PROJECT #: 131701102
SHEET #: 15 of 20

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
10/26/2018
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
11-07-18
CHIEF, DIVISION OF LAND DEVELOPMENT

11-7-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

STATE OF MARYLAND
PROFESSIONAL ENGINEER
ALAN MASCO
NO. 21443
A-S-BUILT 11-19-22

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

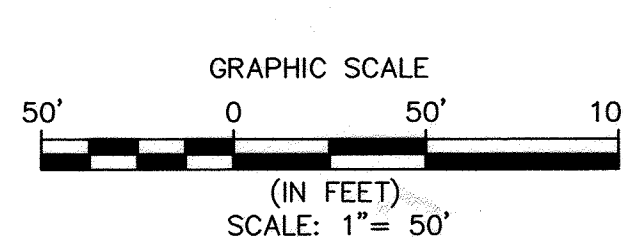
PARCEL 9
DAVID FORCE PARK
HOWARD COUNTY PARKS & RECREATION
L.477 F.739 L.1522 F.331
ZONED R-20

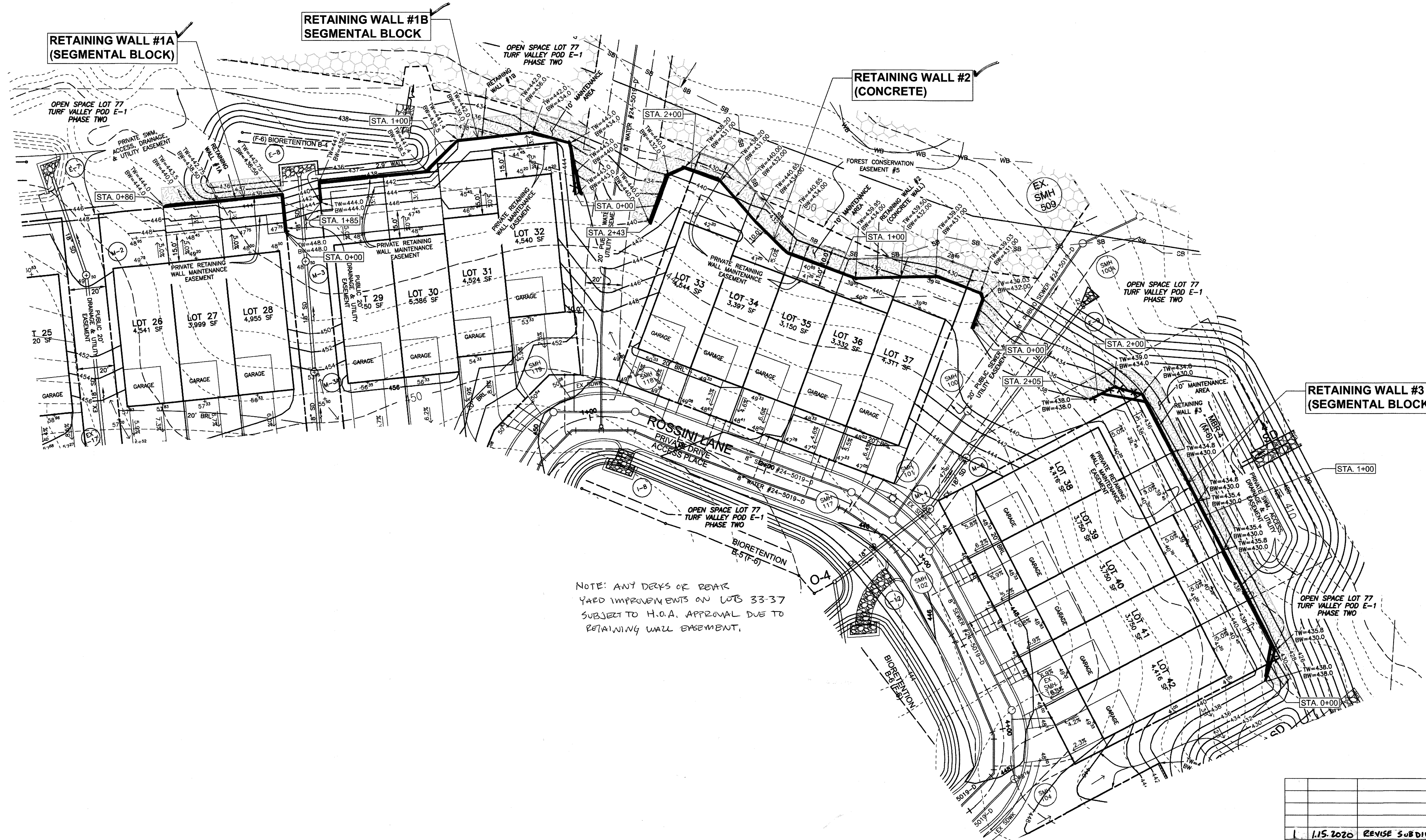
"NO A-S-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

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. 22390 Expiration Date: 6-30-21

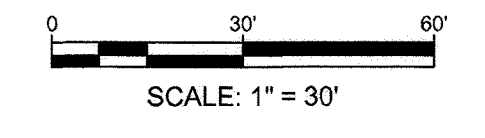
STATE OF MARYLAND
PROFESSIONAL ENGINEER
ALAN MASCO
NO. 22390
11-15-19
FOR REVISION #1 ONLY

REV	DATE	BY	DESCRIPTION
2	11.5.20	EE1	REVISE SUBDIVISION NAME
1	11.15.19	EE1	REVISE E.T. LOCATION, EXISTING CURB NUMBER AND EXISTING WALKS AND DRIVE



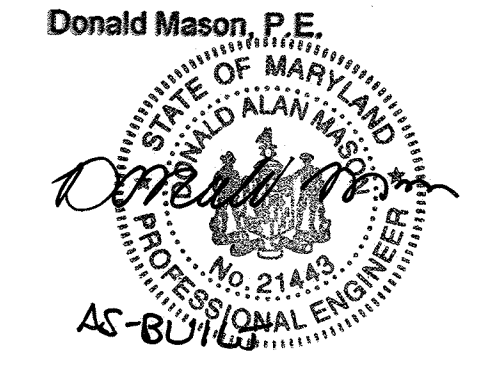


NOTE: ANY DECKS OR BEAK YARD IMPROVEMENTS ON LOTS 33-37 SUBJECT TO H.O.A. APPROVAL DUE TO RETAINING WALL EASEMENT.



WALL LOCATION PLAN
1" = 30'

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



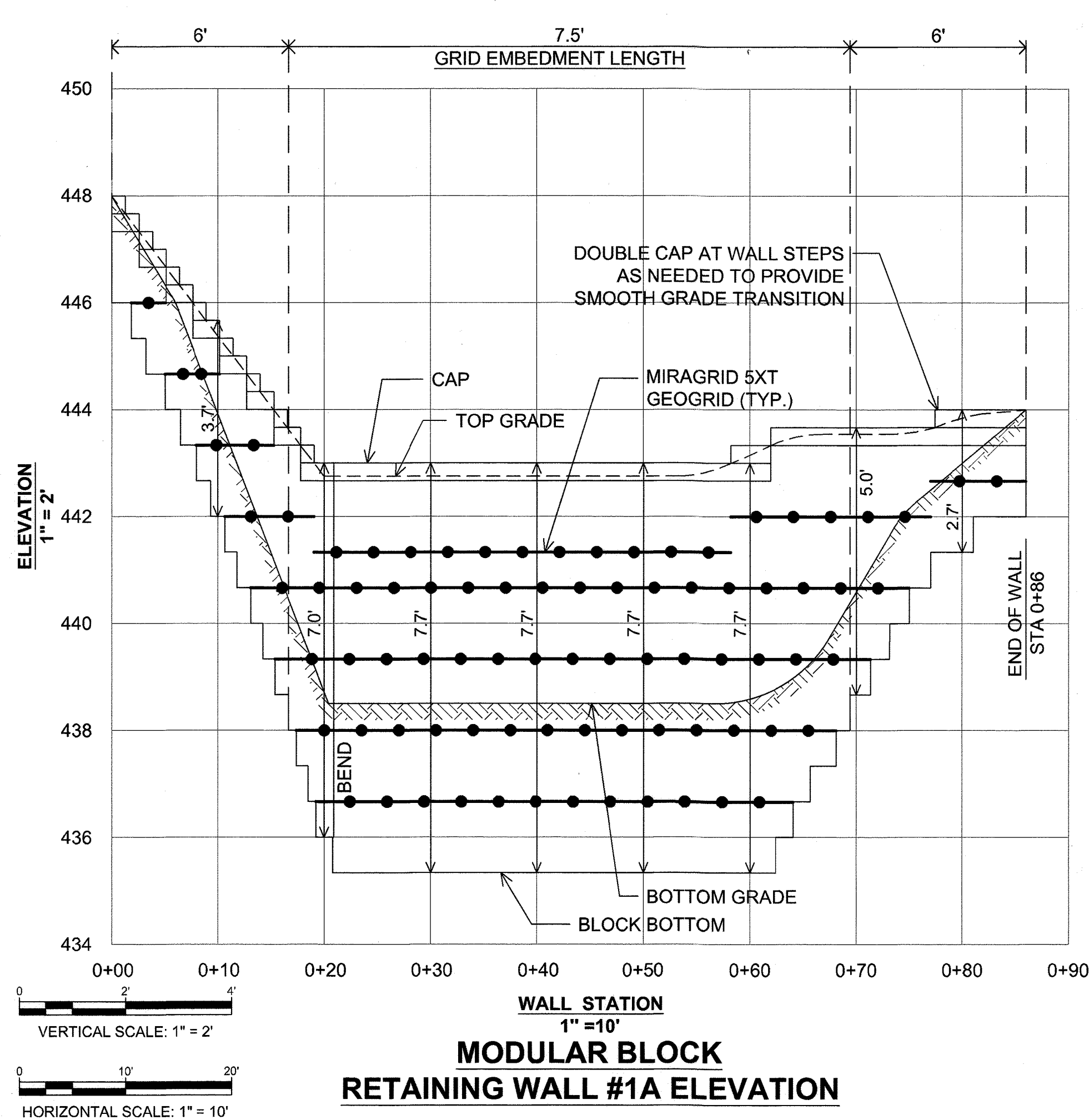
OWNER/DEVELOPER:
MANGIONE ENTERPRISES OF
TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-6400

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

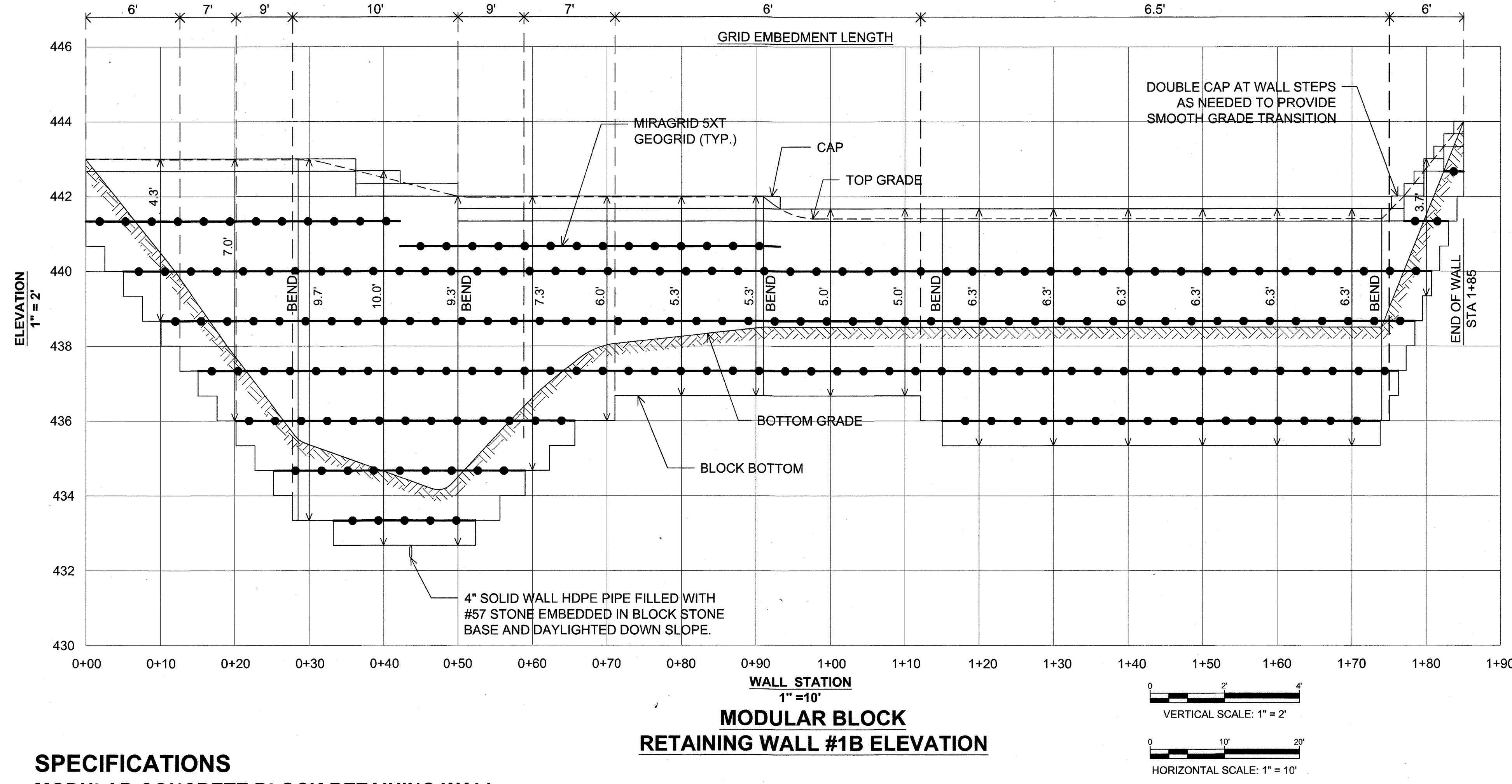
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434, EXPIRATION DATE: 05/13/21.

NO.		115.2020		REVISE SUBDIVISION NAME	
DATE				REVISION	
HILLIS-CARNES ENGINEERING ASSOCIATES 10975 Gullford Road, Suite A Annapolis Junction, Maryland Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098					
PARK VIEW AT TURF VALLEY PHASE II LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'T' POD 'E-1' SECTION IV: RESIDENTIAL PHASE IV A SUBDIVISION OF BULK PARCEL 'T', TURF VALLEY POD E-1, PHASE I TAX MAP: 17, PARCEL: 706, GRID: 13 ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC					
RETAINING WALL PLAN					
DATE:		SEPTEMBER, 2019		HCEA PROJECT NO. 19431A	
SCALE:		AS SHOWN		SHEET 16 OF 20	

APPROVED: DEPARTMENT OF PUBLIC WORKS	
	12/10/2019
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	12-17-19
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	12-13-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE



**MODULAR BLOCK
RETAINING WALL #1A ELEVATION**



**MODULAR BLOCK
RETAINING WALL #1B ELEVATION**

- NOTES:**
- NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
 - RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIV.) CERTIFIED SOILS TECHNICIAN.
 - ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL. COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
 - THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM SPT-399.
 - THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8' LIFT MUST BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
 - WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
 - WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD CO. RIGHT-OF-WAY OR EASEMENT.

**SPECIFICATIONS
MODULAR CONCRETE BLOCK RETAINING WALL**

- PART 1: GENERAL**
- 1.01 DESCRIPTION**
- WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A MODULAR RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS.
 - WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT FACING SYSTEM, UNIT DRAINAGE FILL AND REINFORCED BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
 - WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.
- 1.02 DELIVERY, STORAGE AND HANDLING**
- CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
 - CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

- PART 2: PRODUCTS**
- 2.01 MODULAR CONCRETE RETAINING WALL UNITS**
- MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:
FACE FINISH - COLOR MAY BE SPECIFIED BY THE OWNER.
FACE FINISH - HARD SPLIT IN ANGULAR TRI-PLANE OR STRAIGHT FACE CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.
BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT IN VERTICALLY ADJACENT UNITS. IN BOTH STRAIGHT AND CURVED ALIGNMENTS.
EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 20 FEET UNDER DIFFUSED LIGHTING.
 - MODULAR CONCRETE UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
 - MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING & TESTING CONCRETE MASONRY UNITS.
COMPRESSIVE STRENGTH = 3000 PSI MINIMUM.
ABSORPTION = 8% MAXIMUM (8% MAXIMUM IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES.
DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE ± 3/16" FROM NOMINAL UNIT HEIGHT. UNIT SIZE - 8" (H) X 18" (W) X 12" (D) MINIMUM FOR COMPAC III UNITS; UNIT SIZE - 8" (H) X 18" (W) X 18" (D) MINIMUM FOR STANDARD UNITS.
INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE.
[GEOGRID] UNIT PEAK CONNECTION STRENGTH - 1000 PLF MINIMUM.]
 - MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTION REQUIREMENTS:

2.02 SHEAR AND REINFORCEMENT PIN CONNECTORS

- SHEAR AND REINFORCEMENT PIN CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN PULTRUDED FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS AND GEOSYNTHETIC REINFORCEMENT WITH THE FOLLOWING REQUIREMENTS: FLEXURAL STRENGTH IN ACCORDANCE WITH ASTM D4476; 128,000 PSI MINIMUM; SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475; 6,400 PSI MINIMUM.
- SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

2.03 BASE LEVELING PAD MATERIAL

- MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED STONE BASE OR CONCRETE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

2.04 UNIT DRAINAGE FILL

- UNIT DRAINAGE FILL SHALL CONSIST OF #57 CRUSHED STONE.

2.05 REINFORCED BACKFILL

- REINFORCED BACKFILL SHALL BE TYPE SM, FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D422 AND MEET OTHER PROPERTIES SHOWN ON THE PLAN:

SIEVE SIZE	PERCENT PASSING
1 1/2 INCH	100
3/4 INCH	100-75
NO. 40	0-60
NO. 200	0-35

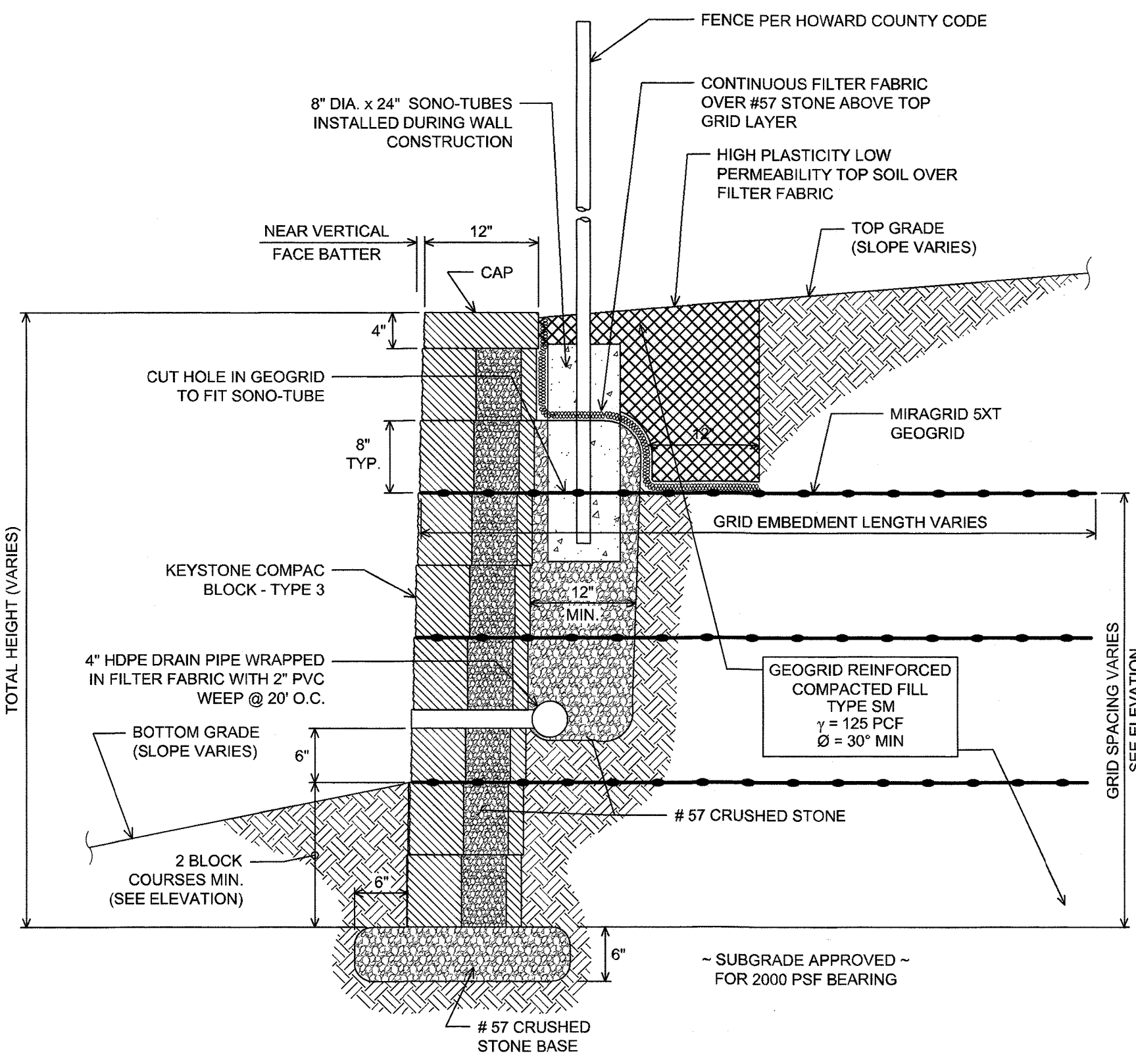
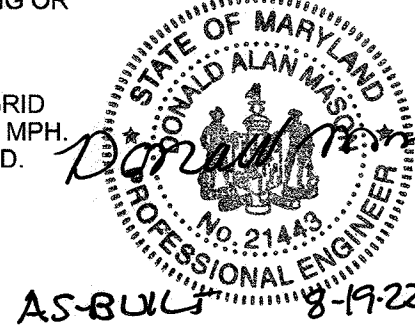
PLASTICITY INDEX (PI) <15 AND LIQUID LIMIT <40, PER ASTM D4318.

- PART 3 EXECUTION**
- 3.01 EXCAVATION**
- CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTING AND APPROVING THE SUBGRADE. PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.
- 3.02 BASE LEVELING PAD**
- LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND Laterally A MINIMUM OF 6' IN FRONT AND BEHIND THE MODULAR WALL UNIT.
 - LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE UNITS.
 - COMPACT TO MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM D698.
- 3.03 MODULAR UNIT INSTALLATION**
- FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
 - PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
 - PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. NOT LESS THAN 1.3 CU. FT. OF DRAINAGE FILL SHALL BE USED FOR EACH SQ. FT. OF WALL FACE, UNLESS NOTED OTHERWISE.
 - PLACE AND COMPACT REINFORCED BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH BACKFILL.
 - MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACT, SHALL NOT EXCEED TWO COURSES.
- 3.04 STRUCTURAL GEOGRID INSTALLATION**
- GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.
 - GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER.
 - THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNIT PINS AND WITHIN 1 INCH OF THE FACE OF THE UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.
 - GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS GREATER THAN 2 INCHES BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

- 3.05 REINFORCED BACKFILL PLACEMENT**
- REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE TO GEOGRID.
 - REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
 - REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE - 0% TO - 3% OF OPTIMUM.
 - ONLY LIGHTWEIGHT HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE BACK OF THE MODULAR CONCRETE UNIT.
 - TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING OR DISPLACING THE MODULAR CONCRETE UNITS OR GEOGRID.
 - RUBBER TIERED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND TURNING SHALL BE AVOIDED.

- AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.
 - REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE TO GEOGRID.
 - REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
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 - RUBBER TIERED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND TURNING SHALL BE AVOIDED.
- 3.06 CAP INSTALLATION**
- PRIOR TO PLACEMENT OF CAP UNITS, THE UPPER SURFACE OF THE TOP COURSE WALL UNITS SHALL BE CLEANED OF SOIL AND ANY OTHER MATERIAL.
 - CAP UNITS SHALL BE GLOUED TO UNDERLYING UNITS WITH AN ALL-WEATHER EXTERIOR CONSTRUCTION ADHESIVE RECOMMENDED BY THE MANUFACTURER.
- 3.07 FIELD QUALITY CONTROL**
- THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.
 - AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, RETAINED SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND SPECIFICATIONS.

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



**TYPICAL WALL SECTION
N.T.S.**

APPROVED: DEPARTMENT OF PUBLIC WORKS
12/10/2019
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
12-17-19
CHIEF, DIVISION OF LAND DEVELOPMENT
12-13-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

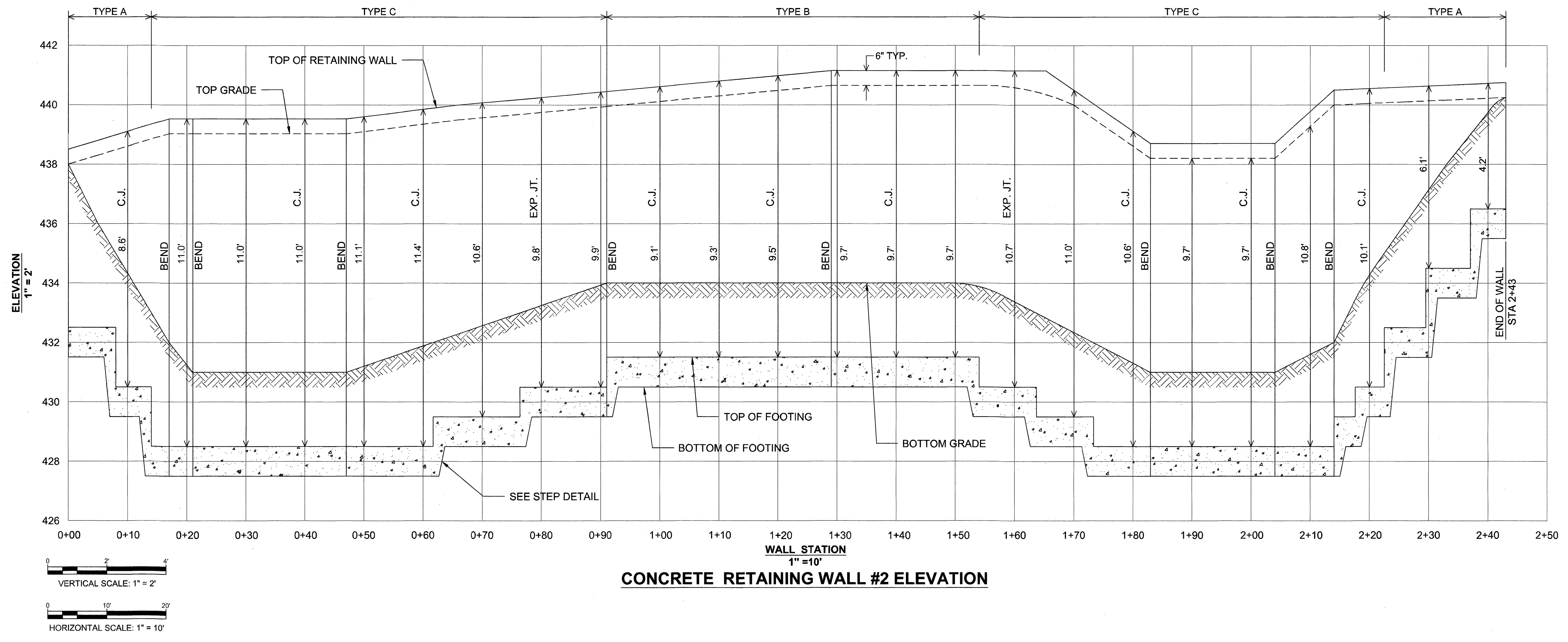
**HILLIS-CARNES
ENGINEERING ASSOCIATES**
10975 Guilford Road, Suite A Annapolis Junction, Maryland
Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098

**PARK VIEW AT TURF VALLEY
PHASE II**
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
AND NON-BUILDABLE BULK PARCEL 7
POD E-1 SECTION IV; RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL 7, TURF VALLEY POD E-1, PHASE I
TAX MAP: 17, PARCEL: 706, GRID: 13
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC

**RETAINING WALL #1A & #1B ELEVATIONS
AND WALL CONSTRUCTION DETAILS**
DATE: SEPTEMBER, 2019 HCEA PROJECT NO. 19431A
SCALE: AS SHOWN SHEET 17 OF 20

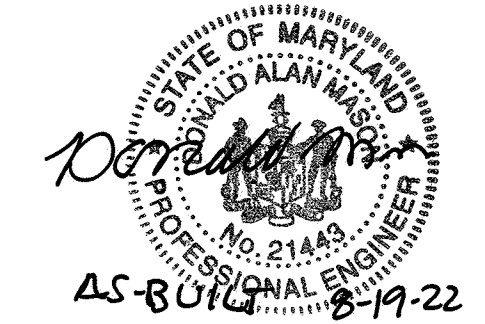
OWNER/DEVELOPER:
MANGIONE ENTERPRISES OF
TURF VALLEY, LIMITED PARTNERSHIP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS
WERE PREPARED OR APPROVED BY
ME, AND THAT I AM A DULY
LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NO. 14434.
EXPIRATION DATE: 05/13/21.



CONCRETE RETAINING WALL #2 ELEVATION

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



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

NO.	DATE	REVISION
1	1/5/2020	REVISE SUBDIVISION NAME

HILLIS-CARNES
ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098



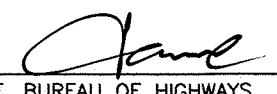
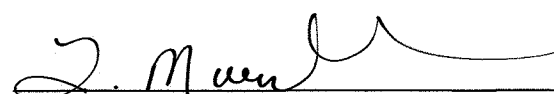

Thomas J. Calvert

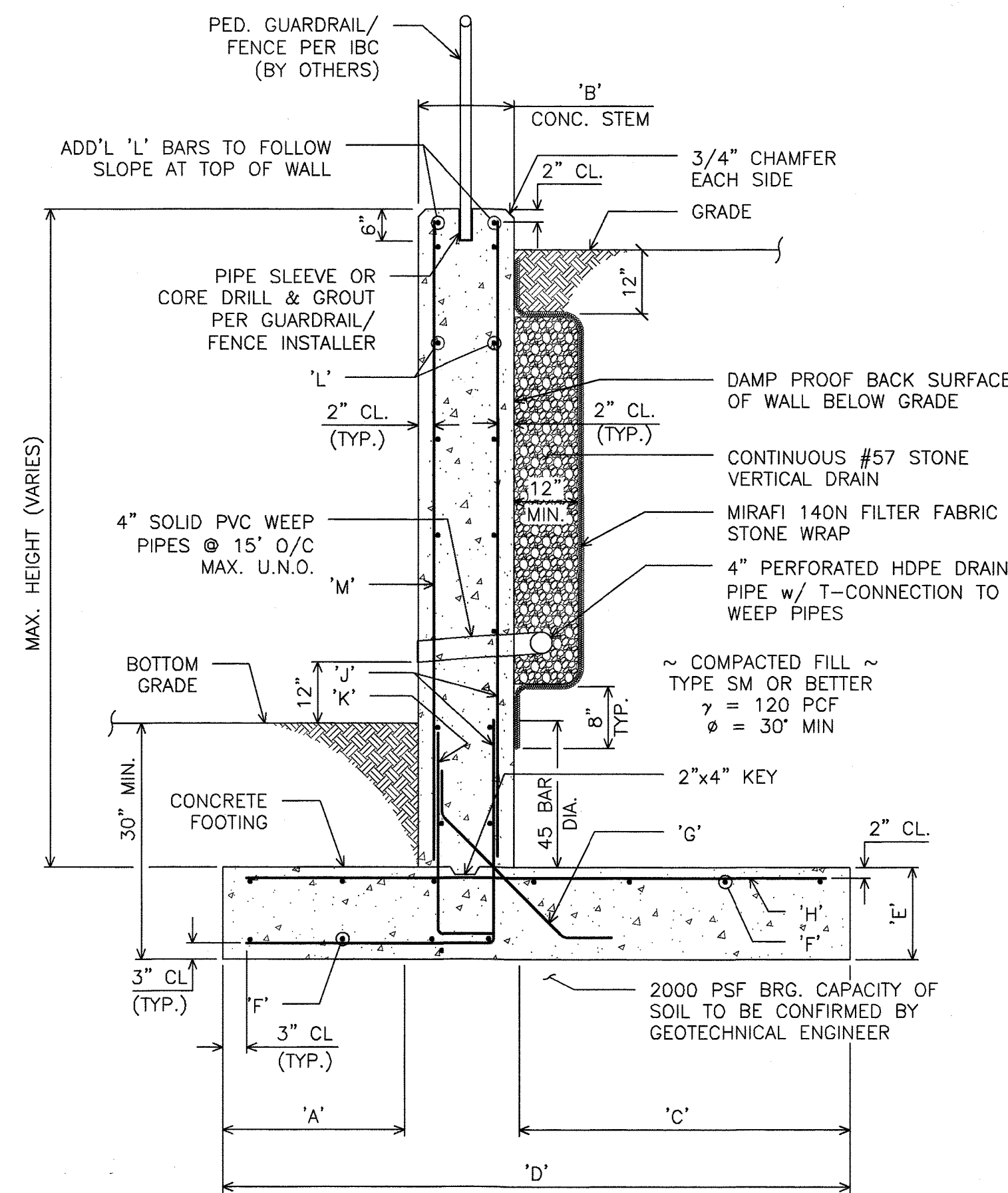
OWNER/DEVELOPER:
 MANGIONE ENTERPRISES OF
 TURF VALLEY, LIMITED PARTNERSHIP
 1205 YORK ROAD, PENTHOUSE
 LUTHERVILLE, MARYLAND 21093
 410-825-8400

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS
 WERE PREPARED OR APPROVED BY
 ME, AND THAT I AM A DULY
 LICENSED PROFESSIONAL ENGINEER
 UNDER THE LAWS OF THE STATE OF
 MARYLAND, LICENSE NO. 13491,
 EXPIRATION DATE: 06/16/21.

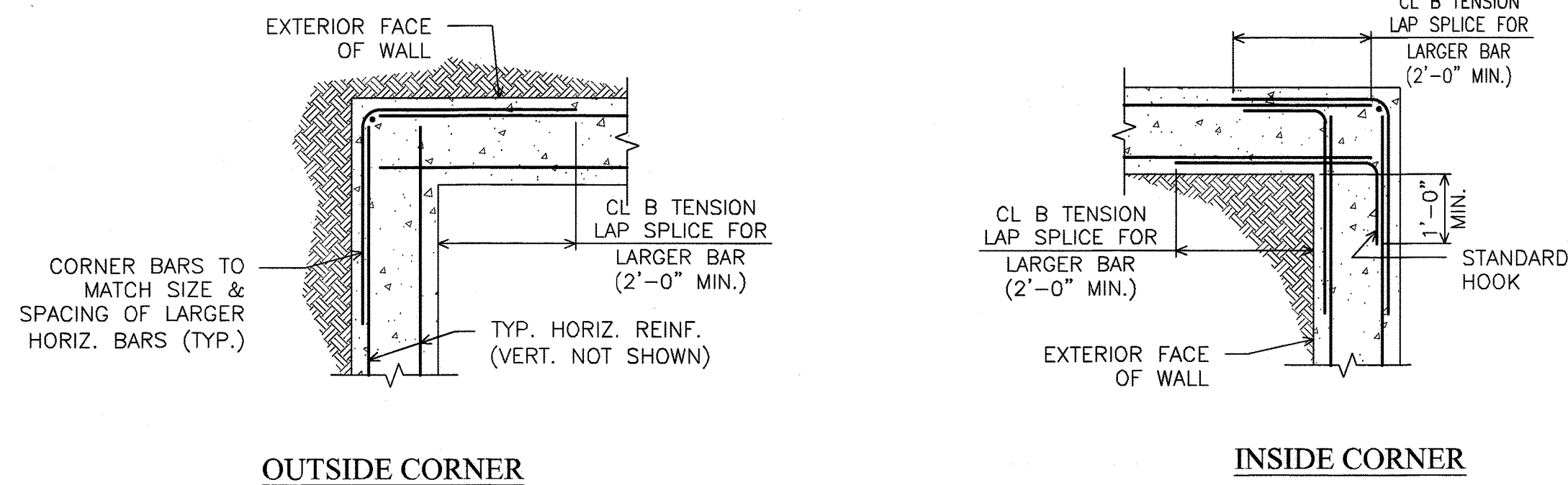
PARK VIEW AT TURF VALLEY
PHASE II
 LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
 AND NON-BUILDABLE BULK PARCEL J
 POD 'E-1' SECTION IV: RESIDENTIAL PHASE IV E
 A SUBDIVISION OF BULK PARCEL T, TURF VALLEY POD E-1, PHASE I
 TAX MAP: 17, PARCEL: 706, GRID: 13
 ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC

CONCRETE RETAINING WALL #2 ELEVATION
 DATE: SEPTEMBER, 2019 HCEA PROJECT NO. 19431A
 SCALE: AS SHOWN SHEET 18 OF 20

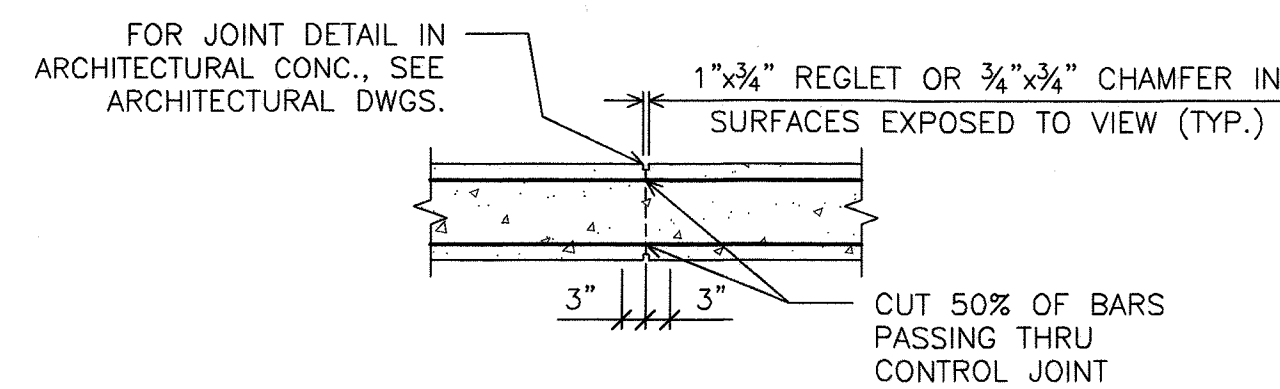
APPROVED: DEPARTMENT OF PUBLIC WORKS
 12/10/2019
 CHIEF, BUREAU OF HIGHWAYS MK DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12-17-19
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 12.13.19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



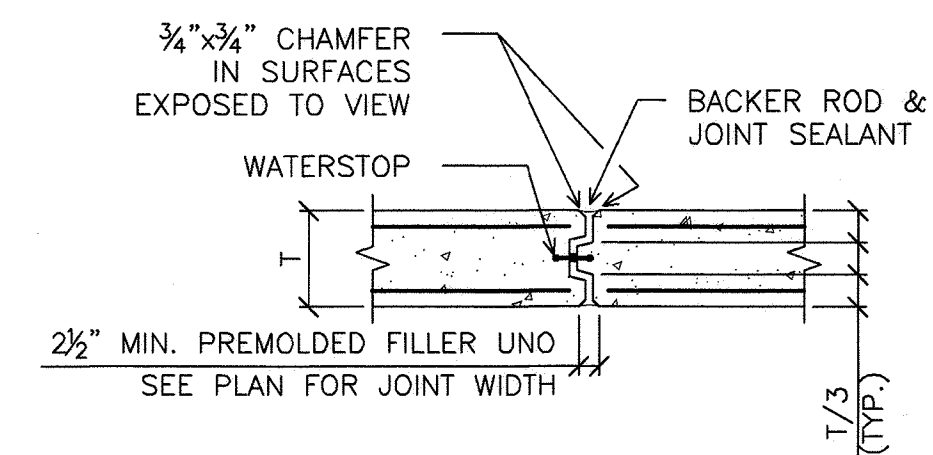
TYPICAL CONCRETE WALL SECTION
NOT TO SCALE



CONCRETE WALL BAR BENDING DETAIL
NOT TO SCALE

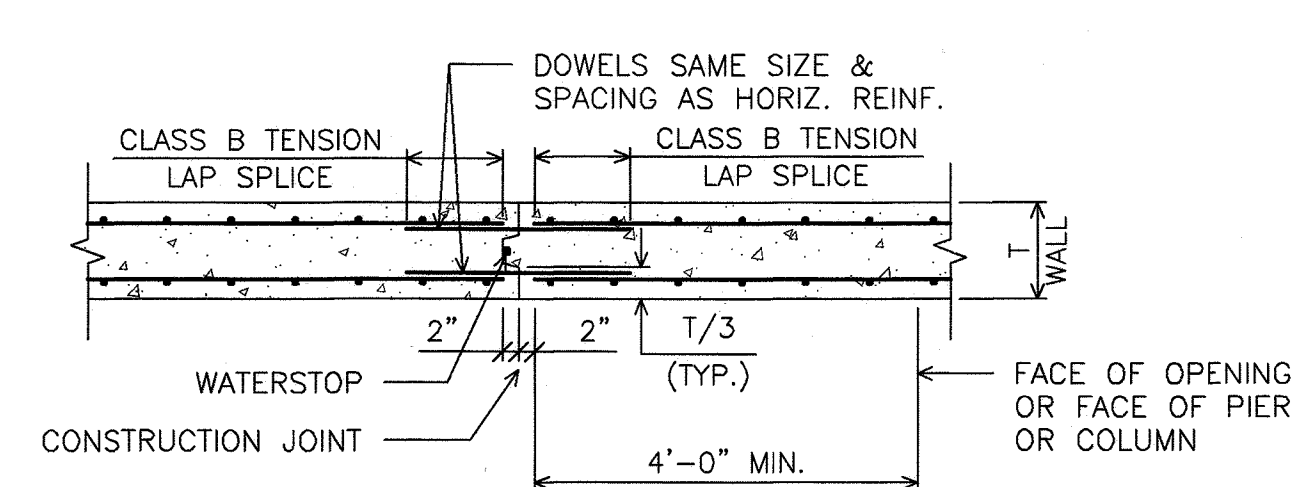


VERTICAL CONTROL JOINT IN CONCRETE WALL
NOT TO SCALE

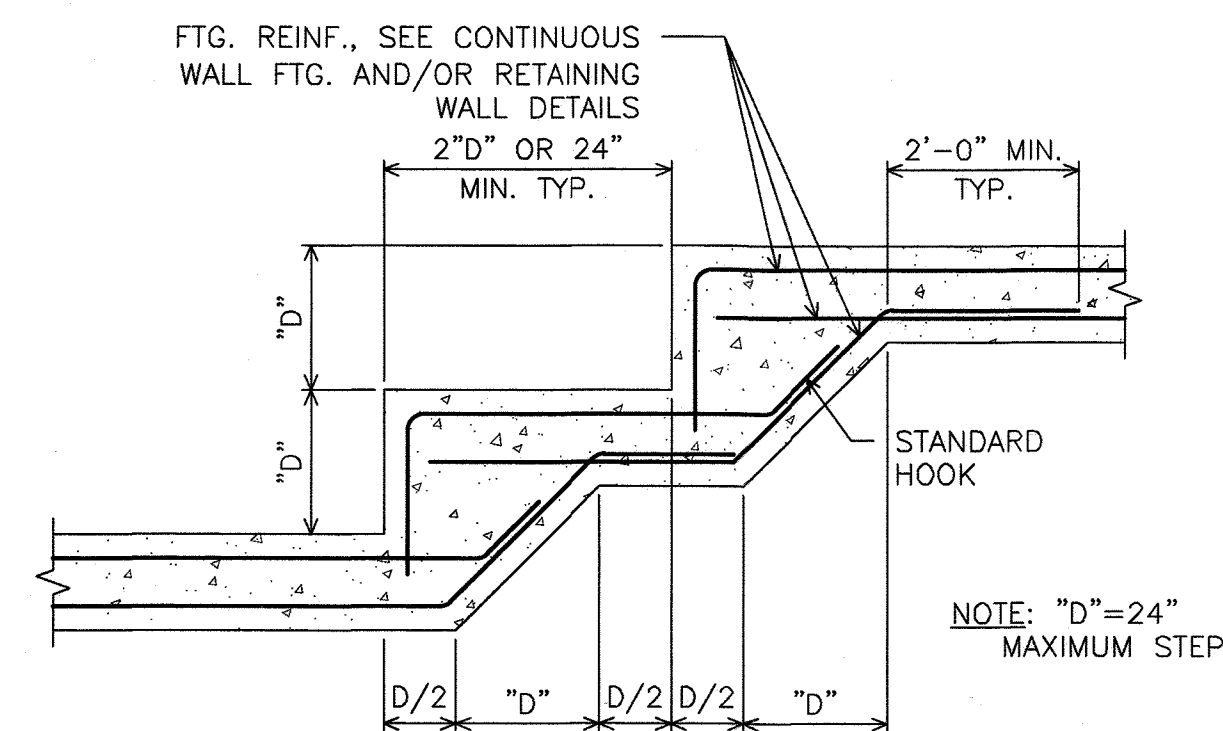


EXPANSION JOINT IN CONCRETE WALL
NOT TO SCALE

CONCRETE WALL SCHEDULE													
WALL TYPE	WALL MAX. HT.	WALL STEM & FOOTING DIMENSION					FOOTING REINF.				STEM REINF.		
		TOE 'A'	STEM 'B'	HEEL 'C'	WIDTH 'D'	THICK 'E'	'F'	'G'	'H'	'J'	'K'	'L'	'M'
A	8'-6"	1'-3"	12"	2'-0"	4'-3"	12"	#4@9"	#4@9"	#5@16"	#5@12"	#4@16"	#4@16"	#4@16"
B	10'-0"	1'-6"	12"	3'-3"	5'-9"	12"	#4@9"	#4@9"	#5@12"	#5@12"	#4@16"	#4@16"	#4@16"
C	11'-6"	2'-0"	12"	4'-3"	7'-3"	14"	#5@12"	#4@9"	#6@15"	#6@12"	#4@16"	#4@16"	#4@16"



TYPICAL VERTICAL CONSTRUCTION JOINT IN WALL
NOT TO SCALE



FOOTING STEP DETAIL
NOT TO SCALE

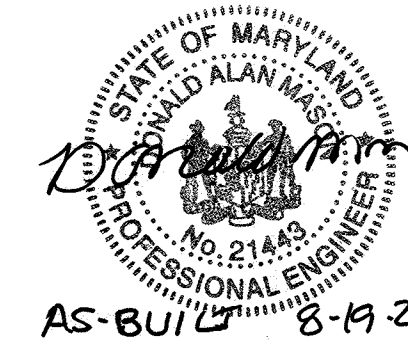
GENERAL NOTES:

- CONCRETE:**
- CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE.
 - CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 600 POUNDS PER CUBIC YARD.
 - ALL CONCRETE SHALL HAVE A SLUMP OF NO GREATER THAN 4" TO WITHIN A TOLERANCE OF 1".
 - ALL EXPOSED CONCRETE SHALL BE AIR-ENTRAINED 6% (WITHIN 1% TOLERANCE), CONFORMING TO ASTM C260.
 - ALL EXPOSED CONCRETE CORNERS SHALL BE FORMED WITH 3/4 INCH BY 3/4 INCH MILLED CHAMFERED STRIPS.
 - REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
 - ALL REINFORCING STEEL LAP SPLICES NOT SHOWN SHALL BE A MINIMUM OF 45 BAR DIAMETERS.

SOILS:

- FOOTING DESIGN BASED ON ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF. BEARING CAPACITY OF SUBGRADE SHALL BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF SOIL BEARING CAPACITY IS NOT ADEQUATE AT FOOTING ELEVATIONS INDICATED.
- SUBGRADE TO BE FREE OF ORGANICS AND BE SUITABLE COMPACTED MATERIAL.
- BACKFILL SHALL BE PERFORMED IN 8" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS COMPACTION TEST (ASTM D698).
- BACKFILL MATERIAL SHALL BE 5M OR MORE GRANULAR IN ACCORDANCE WITH ASTM D2487.

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



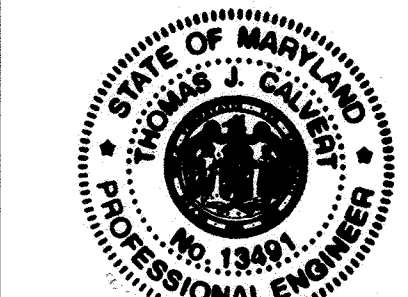
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21443, Expiration Date: 8-19-22

APPROVED: DEPARTMENT OF PUBLIC WORKS
12/10/2019
MK
DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING
12-17-19
DATE
12-13-19
DATE

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13491, EXPIRATION DATE: 06/16/21.

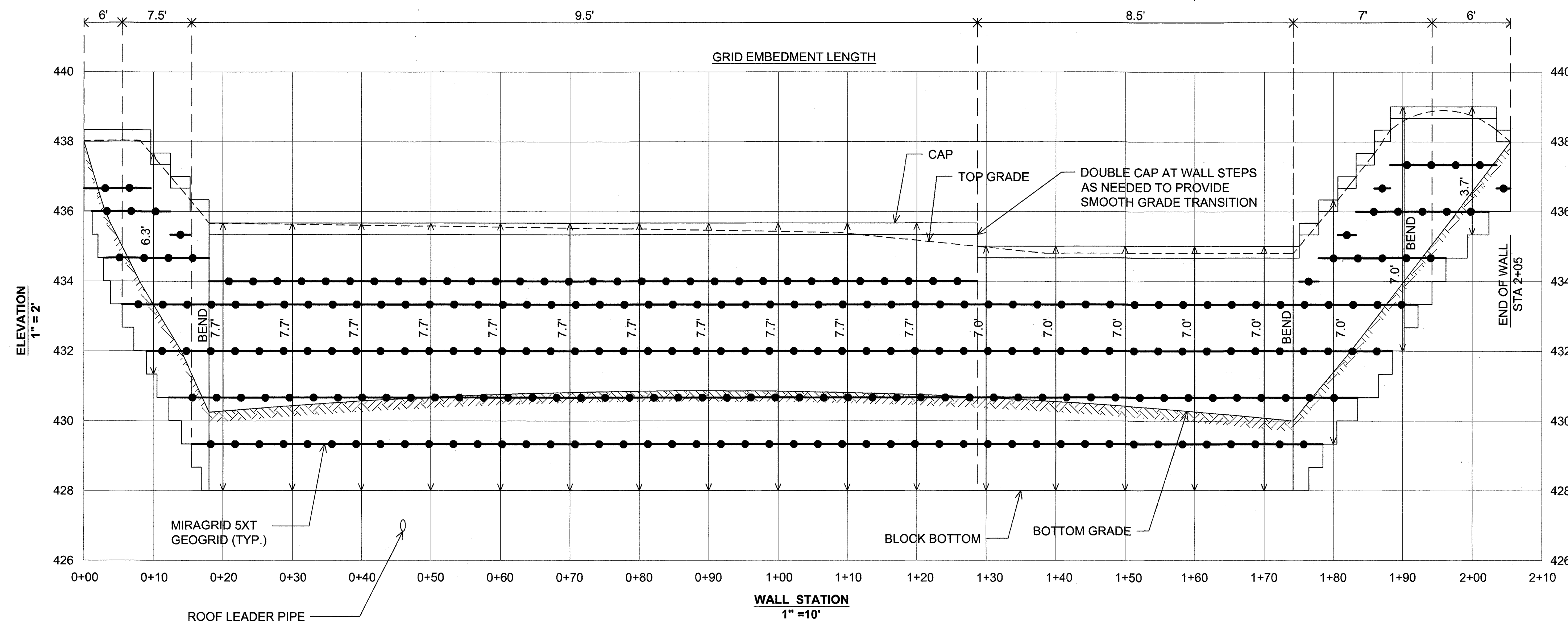


PARK VIEW AT TURF VALLEY

PHASE II
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79 AND NON-BUILDABLE BULK PARCEL 'J'
POD E-1 SECTION IV: RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL T, TURF VALLEY POD E-1, PHASE I
TAX MAP: 17, PARCEL: 706, GRID: 13
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC

CONCRETE RETAINING WALL CONSTRUCTION DETAILS

DATE: SEPTEMBER, 2019 HCEA PROJECT NO. 19431A
SCALE: AS SHOWN SHEET 19 OF 20



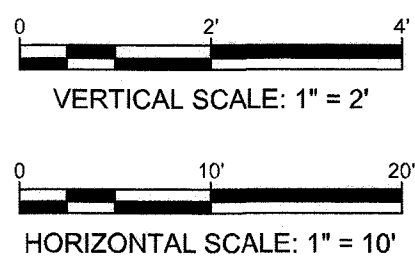
MODULAR BLOCK RETAINING WALL #3 ELEVATION

NOTE:
INSTALL ROOF LEADER PIPES
OUTSIDE OF GEOGRID ZONE
DURING WALL CONSTRUCTION.

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



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 21443, Expiration Date: 8-19-22



NO.	DATE	REVISION
1	1.15.2020	REVISE SUBDIVISION NAME

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098

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

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS
WERE PREPARED OR APPROVED BY
ME, AND THAT I AM A DULY
LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NO. 14434.
EXPIRATION DATE: 05/13/21.



PARK VIEW AT TURF VALLEY
PHASE II
LOTS 18-72, OPEN SPACE LOTS 77, 78, 80 AND 81, GOLF SPACE LOT 79
AND NON-BUILDABLE BULK PARCEL 7
POD E-1 SECTION IV: RESIDENTIAL PHASE IV E
A SUBDIVISION OF BULK PARCEL 7, TURF VALLEY POD E-1, PHASE I
TAX MAP: 17, PARCEL: 706, GRID: 13
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC

RETAINING WALL #3 ELEVATION

DATE: SEPTEMBER, 2019 HCEA PROJECT NO. 19431A
SCALE: AS SHOWN SHEET 20 OF 20

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 12/10/2019
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 12-17-19
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 12-17-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION