GENERAL NOTES

1. SUBJECT PROPERTY IS ZONED "PGCC" PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
2. GROSS AREA OF SITE SUBJECT TO SUBDIVISION = 10.08 AC.±
3. AREA OF PROPOSED PUBLIC R/W: 0.61 AC±
4. NUMBER OF PROPOSED BUILDABLE LOTS: 33
5. AREA OF PROPOSED BUILDABLE LOTS: 3.26 AC±
6. NUMBER OF PROPOSED BULK PARCELS: 2
7. AREA OF PROPOSED BULK PARCEL: 2.50 AC±
8. NUMBER OF PROPOSED GOLF SPACE/OPEN SPACE LOTS: 6
9. OPEN SPACE REQUIRED (15% OF GROSS AREA OF SITE SUBJECT TO SUBDIVISION): 10.42 AC. x 15% = 1.56 AC.
   CREDITED OPEN SPACE PROVIDED: 3.26 AC.±
   NON-CREDITED OPEN SPACE PROVIDED: 0.44 AC.±
   TOTAL OPEN SPACE PROVIDED: 3.70 AC.±
10. OPEN SPACE LOTS 90-92 TO BE OWNED AND MAINTAINED BY THE FAIRWAYS AT TURF VALLEY NEIGHBORHOOD ASSOCIATION, INC. THE ARTICLES OF INCORPORATION WERE ACCEPTED BY THE STATE DEPARTMENT ASSESSMENT AND TAXATION ON 4-13-2010 ID #D1351399.
11. OPEN SPACE LOTS 89 AND 93 TO BE OWNED AND MAINTAINED BY THE TURF VALLEY MASTER HOMEOWNERS ASSOCIATION, INC. THE ARTICLES OF INCORPORATION WERE ACCEPTED BY THE STATE DEPARTMENT OF ASSESSMENT AND TAXATION ON 3-8-2013 ID #D13514013.
12. GOLF SPACE LOT 94 TO BE OWNED AND MAINTAINED BY MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP.
13. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
14. ~~THIS SUBDIVISION IS SUBJECT TO SECTION 16.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF EFFECTIVE ____________, ON WHICH DATE DEVELOPER AGREEMENT #24-4674-D WAS FILED AND ACCEPTED.~~
15. HOWARD COUNTY SOILS MAP 15.
16. TOPOGRAPHY IS BASED ON AN AERIAL TOPOGRAPHIC SURVEY BY WINGS AERIAL MAPPING CO., INC. ON OR ABOUT JANUARY, 2006.
17. BOUNDARY SURVEY PREPARED BY MILDENBERG, BOENDER & ASSOCIATES ON OR ABOUT MARCH, 2006.
18. THERE ARE NO WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, 100 YEAR FLOODPLAIN OR STEEP SLOPES LOCATED WITHIN THIS PROJECT'S BOUNDARY.
19. TO THE BEST OF OUR KNOWLEDGE, HERE ARE NO HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT'S BOUNDARY.
20. WETLAND LIMITS SHOWN ARE BASED ON A STUDY CONDUCTED BY EXPLORATION RESEARCH, INC. AND VERIFIED BY ECO-SCIENCE PROFESSIONALS, INC. ON OCTOBER 24, 2007.
21. 100-YEAR FLOODPLAIN LIMITS SHOWN ARE BASED ON A STUDY PREPARED BY MILDENBERG, MOCHI AND ASSOCIATES, INC. WETLAND AND 100-YEAR FLOODPLAIN LIMITS SHOWN ARE IN ACCORDANCE WITH THE FOURTH AMENDMENT TO THE TURF VALLEY COMPREHENSIVE SKETCH PLAN (S-86-13,PB 368), APPROVED JULY 28, 2006.
22. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	410.531.5533
BGE(CONTRACTOR SERVICES)	410.850.4620
BGE(UNDERGROUND DAMAGE CONTROL)	410.787.9068
MISS UTILITY	1.800.257.7777
COLONIAL PIPELINE COMPANY	410.795.1390
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES	410.313.4900
HOWARD COUNTY HEALTH DEPARTMENT	410.313.2640
AT&T	1.800.252.1133
VERIZON	1.800.743.0033/410.224.9210

23. PREVIOUS HOWARD COUNTY FILE NUMBERS: S-86-013; S-94-045; S-04-012; SP-97-012; SP-06-013; F-94-006; F-96-107; F-96-150; F-96-151; F-07-158; SDP-95-121; CONTR. #24-4354-D; PB-181; PB-294; PB-300; PB-351; PB-368; WP-09-048;WP-09-211; PLAT #20286 & 20287
24. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
25. ANY DAMAGE TO PUBLIC RIGHT-OF WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
26. 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.
27. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
28. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY IN ADDITION TO MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
29. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
30. 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.
31. ALL HDPE PIPE SPECIFICATION AND INSTALLATION SHALL MEET AASHTO M-252 TYPE S, M-294 TYPE S AND ASTM D2321, RESPECTIVELY.
32. 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.
33. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NUMBERS 16IA AND 16IB WERE USED FOR THIS PROJECT.
34. DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING REQUIREMENTS:
    1) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
    2) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MINIMUM);
    3) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
    4) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
    5) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
    6) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
35. 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.
36. ALL DITCHES AND SWALES WILL HAVE EROSION CONTROL MATTING.
37. STORMWATER MANAGEMENT FOR THIS PHASE IS PROVIDED BY A REGIONAL STORMWATER MANAGEMENT POND CONSTRUCTED UNDER SDP-95-121. WQv, REv AND CPv REQUIREMENTS ARE PROVIDED FOR THE AREAS THAT DRAIN TO THE REGIONAL STORMWATER MANAGEMENT FACILITY BY THAT FACILITY. THE AREAS NOT DRAINING TO THE REGIONAL SWM FACILITY CONTAIN LESS THAN 5,000 SF OF IMPERVIOUS AREA. THIS AREA HAS NOT BEEN TREATED UNDER THESE PLANS DUE TO THIS. THE UNTREATED AREA WILL BE COMBINED WITH FUTURE DEVELOPMENT AND WILL BE TREATED AT THAT TIME. CPv IS NOT REQUIRED FOR THIS AREA BECAUSE THE 1 YEAR PEAK RUNOFF IS LESS THAN 2 CFS. SEE THE STORMWATER MANAGEMENT REPORT FOR SDP-95-121 FOR DESIGN COMPUTATIONS FOR THE REGIONAL STORMWATER MANAGEMENT FACILITY.
38. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $9,600 (32 SHADE TREES @ $300.00 EACH). STREET TREES AND INTERNAL LANDSCAPE TREES WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING FOR LOTS 1 THRU 33 WILL BE PROVIDED FOR AT THE SITE DEVELOPMENT PLAN STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL.
39. 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.
40. PARKING FOR THIS DEVELOPMENT IS REQUIRED AT THE RATE OF 2.3 SPACES PER UNIT (TWO SPACES FOR EACH UNIT STANDARD AND 0.3 SPACES FOR EACH UNIT OVERFLOW).
    REQUIRED PARKING: 76 (33 LOTS X 2.3)
    PROPOSED PARKING: 85 (66 SPACES WITHIN GARAGES/ON DRIVEWAYS + 19 PARKING SPACES ALONG PUCCINI LANE.
41. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT SINCE IT IS MORE THAN FIVE HUNDRED FEET (500') FROM A PRINCIPAL OR INTERMEDIATE ARTERIAL HIGHWAY AND SINCE THE HEAVY TRUCK TRAFFIC ON INTERSTATE ROUTE 70 DOES NOT EXCEED AN ADT OF TEN THOUSAND (10,000) VEHICLES.
42. 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, THIS SHEET.
43. 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.
44. A WAIVER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME III, SECTION 2.3.A.3.f. WAS APPROVED ON JANUARY 18, 2008. THIS ALLOWS THE INTERSECTION OF PUCCINI LANE AND ROAD 'D' TO BE USED AS A TURNAROUND AREA RATHER THAN A TEMPORARY TEE TURNAROUND.
45. THE 1.12 ACRE OF REFORESTATION OBLIGATION REQUIRED FOR FAIRWAYS AT TURF VALLEY, PHASE II WILL BE MET USING 0.71 ACRES OF OFF-SITE REFORESTATION AND 0.82 ACRES OF OFFSITE RETENTION IN FCE #9 WHICH IS LOCATED ON OPEN SPACE LOT 104 OF THE VILLAGES OF TURF VALLEY PHASE 2 (F-08-084) AND WILL BE PLACED IN A FOREST CONSERVATION EASEMENT ON THE FINAL PLAT OF THE VILLAGES OF TURF VALLEY, PHASE 2 (F-08-084). THESE AREAS WILL BE POSTED WITH APPROPRIATE PROTECTIVE SIGNAGE.

APPROVED: DEPARTMENT OF PUBLIC WORKS

6/8/2016
CHIEF, BUREAU OF HIGHWAYS — DATE

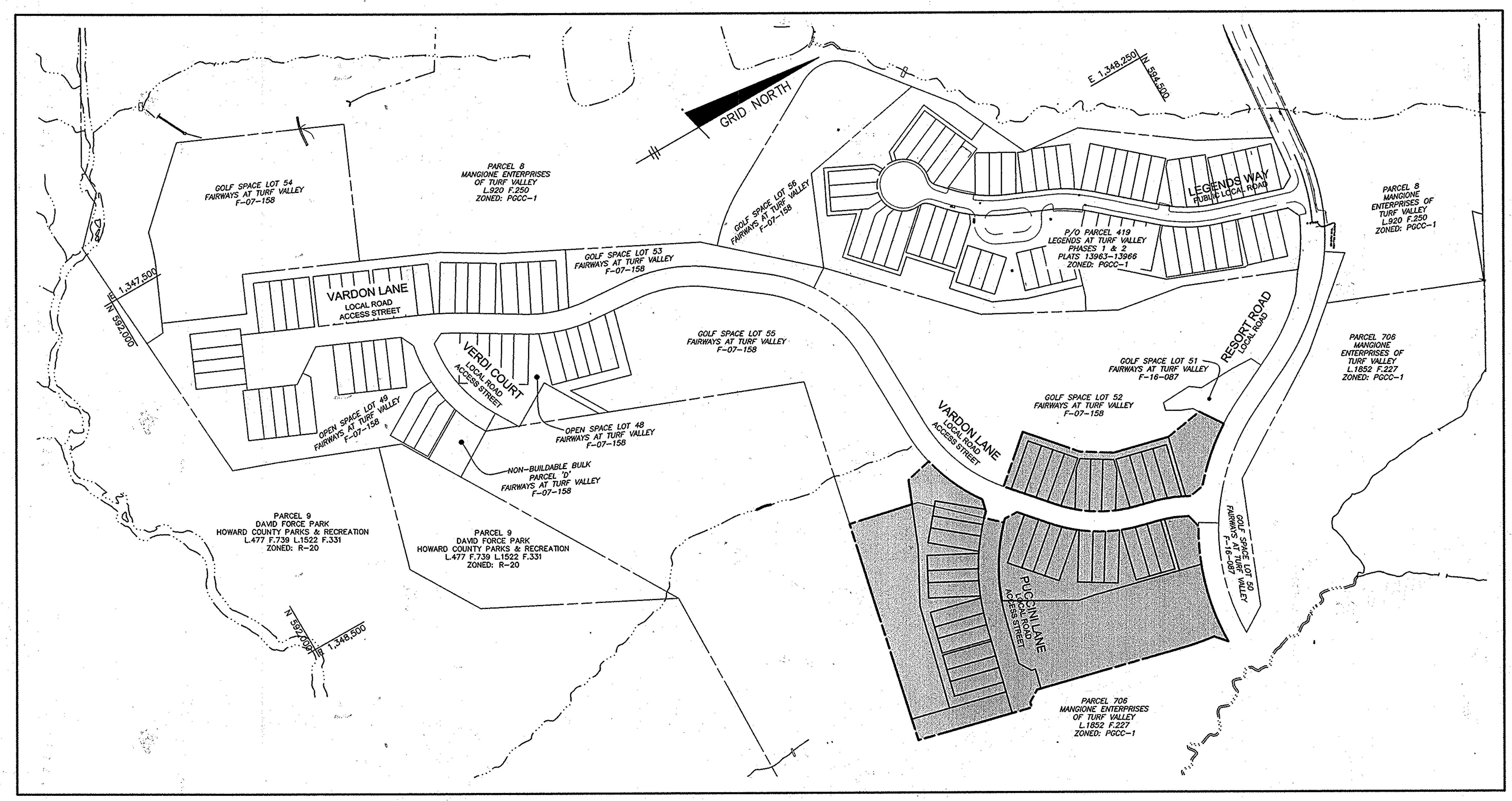
APPROVED: DEPARTMENT OF PLANNING AND ZONING

6/14/16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

6.13.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

FINAL ROAD CONSTRUCTION PLAN
FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95, AND NON-BUILDABLE BULK PARCELS E & F
A RESUBDIVISION OF PARCEL 706 AND FAIRWAYS AT TURF VALLEY NON-BUILDABLE BULK PARCELS A, B & C
POD 'E-1' SECTION IV: RESIDENTIAL PHASE IV E
HOWARD COUNTY, MARYLAND



LOCATION MAP

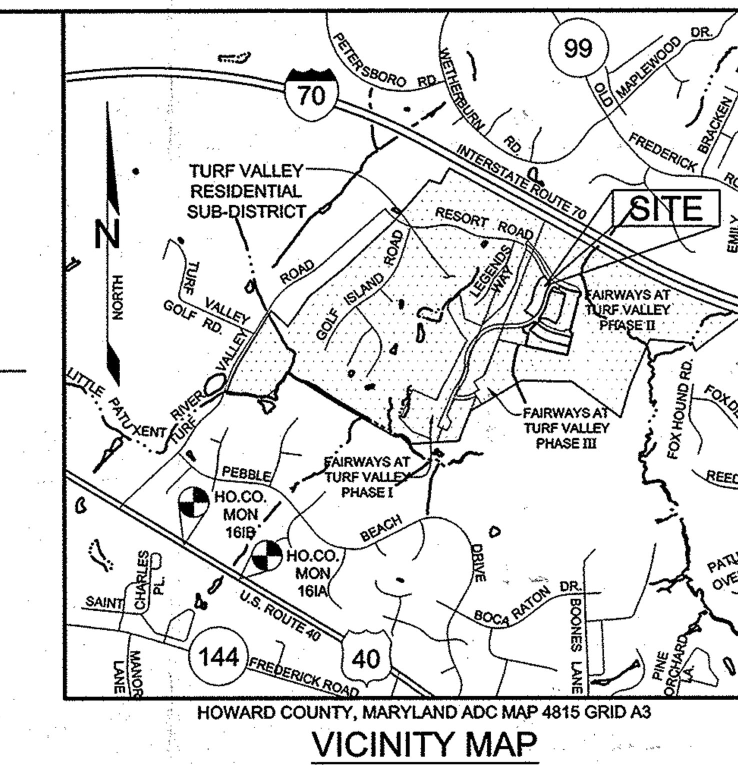
SCALE: 1"=200'

46. THIS PLAN IS SUBJECT TO WAIVER PETITION, WP-09-048, TO WAIVE SECTION 16.156(a)(1) OF THE HOWARD COUNTY CODE AND WAS APPROVED ON NOVEMBER 26, 2008, SUBJECT TO THE FOLLOWING CONDITIONS:
    1. WAIVER PETITION APPROVAL APPLIES ONLY TO TEMPORARY DEFERRAL FOR ESTABLISHING ON- OR OFF-SITE FOREST CONSERVATION EASEMENTS FOR DEVELOPMENT OF TURF VALLEY 4TH AMENDED CSP, PARCEL 706. EACH SUBSEQUENT PHASE OF DEVELOPMENT MUST ESTABLISH THE REQUIRED AREA OF FOREST CONSERVATION EASEMENTS AND PROVIDE THE NECESSARY AREA OF FOREST RETENTION AND AFFORESTATION PLANTING AS REQUIRED BY THE FOREST CONSERVATION WORKSHEET FOR THE DEVELOPMENT TO SATISFY IT'S OBLIGATION. THE ENTIRE AREA OF FOREST CONSERVATION OBLIGATION FOR PARCEL 706 MUST BE PROVIDED WITH THE PROCESSING AND RECORDING OF THE LAST PHASE OF DEVELOPMENT LOCATED ON PARCEL 706.
    2. PETITIONER MUST MEET ALL APPLICABLE DEADLINE AND MILESTONE DATES IN ACCORDANCE WITH SECTIONS 16.144 AND 16.156 OF THE HOWARD COUNTY CODE.
47. THE FAIRWAYS AT TURF VALLEY NEIGHBORHOOD ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF PARKING LOTS INCLUDING PAVEMENT, STRIPING, CURB, LITTER PICKUP AND SIDEWALKS.
48. TRAFFIC CONTROL DEVICES:
    A. THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
    B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
    C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
    D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("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.

LEGEND

PROJECT BOUNDARY

STREAMS



HOWARD COUNTY, MARYLAND ADC MAP 4815 GRID A3

VICINITY MAP

SCALE: 1"=2000'

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
16IB	590,475.2538	1,344,753.9350	469.892	11.5' SOUTHWEST OF WBL RT. 40, 20.8' WEST OF PK NAIL IN SHOULDER, 66.4' SOUTH OF LAST POST IN GUARDRAIL
17AB	598,435.249	1,348,615.2482	508.469	SE OF INTERSECTION OF RTE. 99 AND WETHERBURN ROAD, 14.8' WEST OF FENCE POST, 35' NE OF MANHOLE

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	ROAD PLAN AND PROFILE: PUCCINI LANE
3	SEDIMENT AND EROSION CONTROL DETAILS
4	GRADING, SEDIMENT AND EROSION CONTROL PLAN
5	GRADING, SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
6	STORM DRAIN DRAINAGE AREA MAP
7	STORM DRAIN PROFILES
8	LANDSCAPE PLAN
9	FOREST CONSERVATION PLAN AND DETAILS
10	FOREST CONSERVATION PLAN - NOTES AND DETAILS
11	FOREST CONSERVATION PLAN - OFFSITE EASEMENTS

NO.	DATE	REVISION
1	5-12-2016	REVISE LOCATION MAP BASED ON REVISED VARDON LANE ALIGNMENT AND LOT LAYOUT AND REMOVAL OF PRIVATE DRIVE. RELOCATE STREET LIGHT, CENTERLINE, FILLET, AND ROAD CLASSIFICATION CHARTS TO SHEET 2 UPDATE GENERAL NOTES BASED ON NEW LAYOUT.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22390, Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — No. 22390 — REGISTERED PROFESSIONAL ENGINEER

5/26/16

OWNER:

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

DEVELOPER:

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

FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

REVISED
COVER SHEET

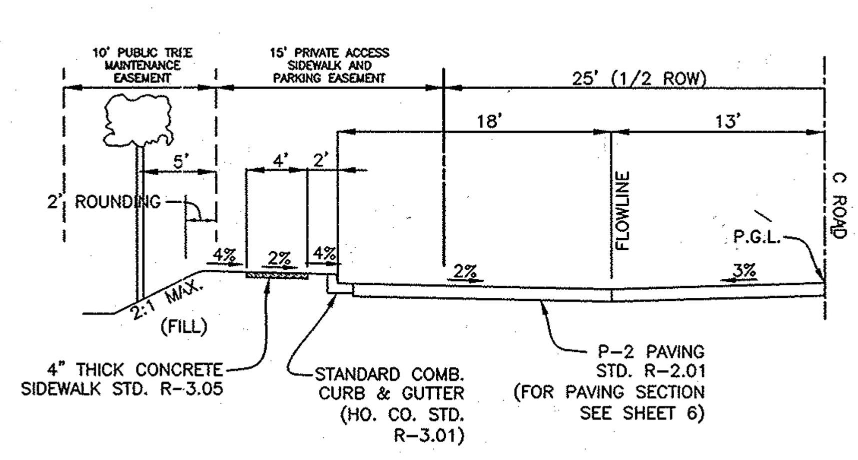
DATE:	MAY 12, 2016	BEI PROJECT NO.	2726
SCALE:	AS SHOWN	SHEET	1 OF 11

DESIGN: DBT | DRAFT: DBT

THIS SHEET REPLACES THE PREVIOUS SHEET 1 SIGNED ON 11-19-2010

F-10-084

J:\2726 Fairways at Turf Valley\dwg\Phase 2\F10084-7000_s1.dwg, 5/24/2016 10:48:27 AM



TYPICAL ROADWAY HALF PARKING SECTION

SCALE: 1" = 10'

ROAD CLASSIFICATION

ROAD NAME	CLASSIFICATION	PAVING TYPE	DESIGN SPEED	LIMITS OF CONSTRUCTION	R/W
PUCCINI LANE	ACCESS STREET	P-2	30	0+00 TO 5+47.32	50'

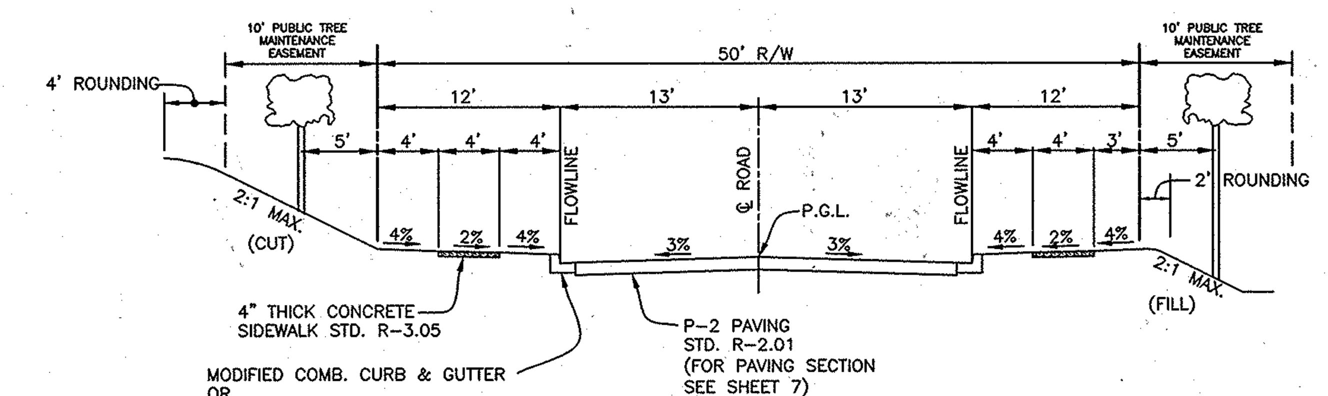
CENTERLINE ROAD CURVE DATA

CURVE	RADIUS	ARC LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	500'	303.01'	35°16'37"	S58°18'42"E	307.85'

STREET LIGHT CHART

FIXTURE TYPE	POLE TYPE	LOCATION	STREET
LED-100 COLONIAL POST TOP	14' BLACK FIBERGLASS	℄ STA. 1+60 15.33' LEFT	PUCCINI LANE
LED-100 COLONIAL POST TOP	14' BLACK FIBERGLASS	℄ STA. 2+95 15.33' LEFT	PUCCINI LANE
LED-100 COLONIAL POST TOP	14' BLACK FIBERGLASS	℄ STA. 3+97 15.33' LEFT	PUCCINI LANE
LED-100 COLONIAL POST TOP	14' BLACK FIBERGLASS	℄ STA. 5+27 15.33' LEFT	PUCCINI LANE

NOTE: LIGHT POLE LOCATION GIVEN AT CENTER OF BASE



PUCCINI LANE TYPICAL ROADWAY SECTION

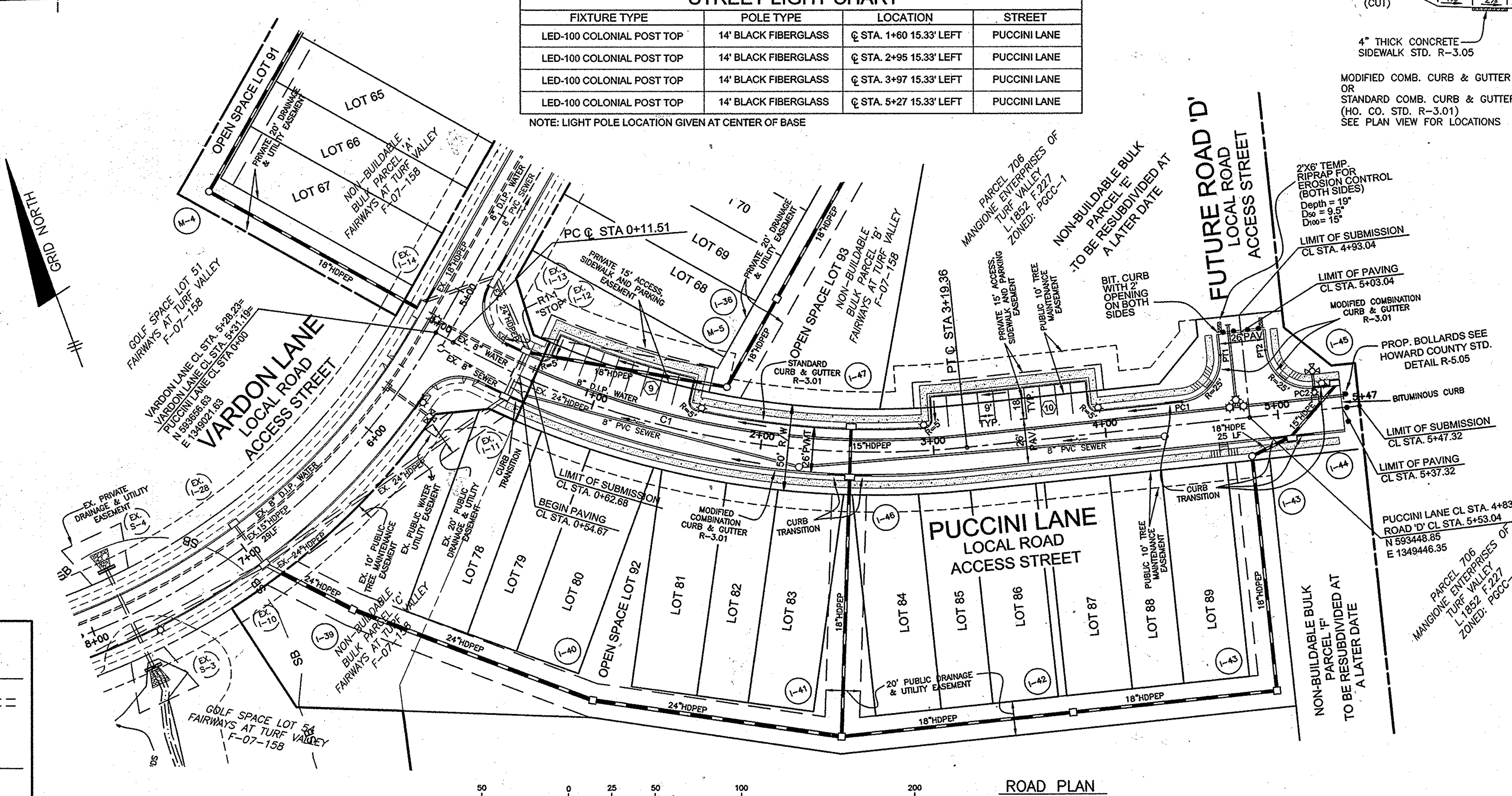
PUBLIC ACCESS STREET
STA. 0+00 TO STA. 5+43.65
DESIGN SPEED: 30 MPH
SCALE: 1" = 10'

PAVING SECTIONS

SEC. NO.	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
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	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	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	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 6" 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 APRONS 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 CRB VALUE FOR EACH ROADWAY.

Legend: HMA SUPERPAVE FINAL SURFACE; HMA SUPERPAVE INTERMEDIATE SURFACE; HMA SUPERPAVE BASE; GRADED AGGREGATE BASE (GAB)



ROAD PLAN

FILLET DATA

CURVE	ROAD NAME	℄ STA.	T/C ELEVATION
PC1	PUCCINI LANE	4+45.65	454.28
PT1	FUTURE ROAD D	5+15.04	454.91
PC2	PUCCINI LANE	5+21.65	456.56
PT2	FUTURE ROAD D	5+15.04	4545.91

*T/C ELEVATION BASED ON MODIFIED CURB

NO.	DATE	REVISION
1	5-12-2016	REVISE HALF PARKING SECTION. REVISE CURB TO STD 7" ON LEFT SIDE OF ROAD. REVISE PLAN VIEW PER REVISIONS MADE IN F-07-158 REDLINE. REMOVE THE PRIVATE DRIVE PARALLEL WITH RESORT ROAD. CORRECT FILLET PROFILE ELEVATIONS. ADD STREET LIGHT, ROAD, CL CURVE CHARTS TO THIS SHEET.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
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(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22930 Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MALLAGAR — PROFESSIONAL ENGINEER
5/26/16

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY LIMITED PARTNERSHIP
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410-825-8400

FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 AND NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

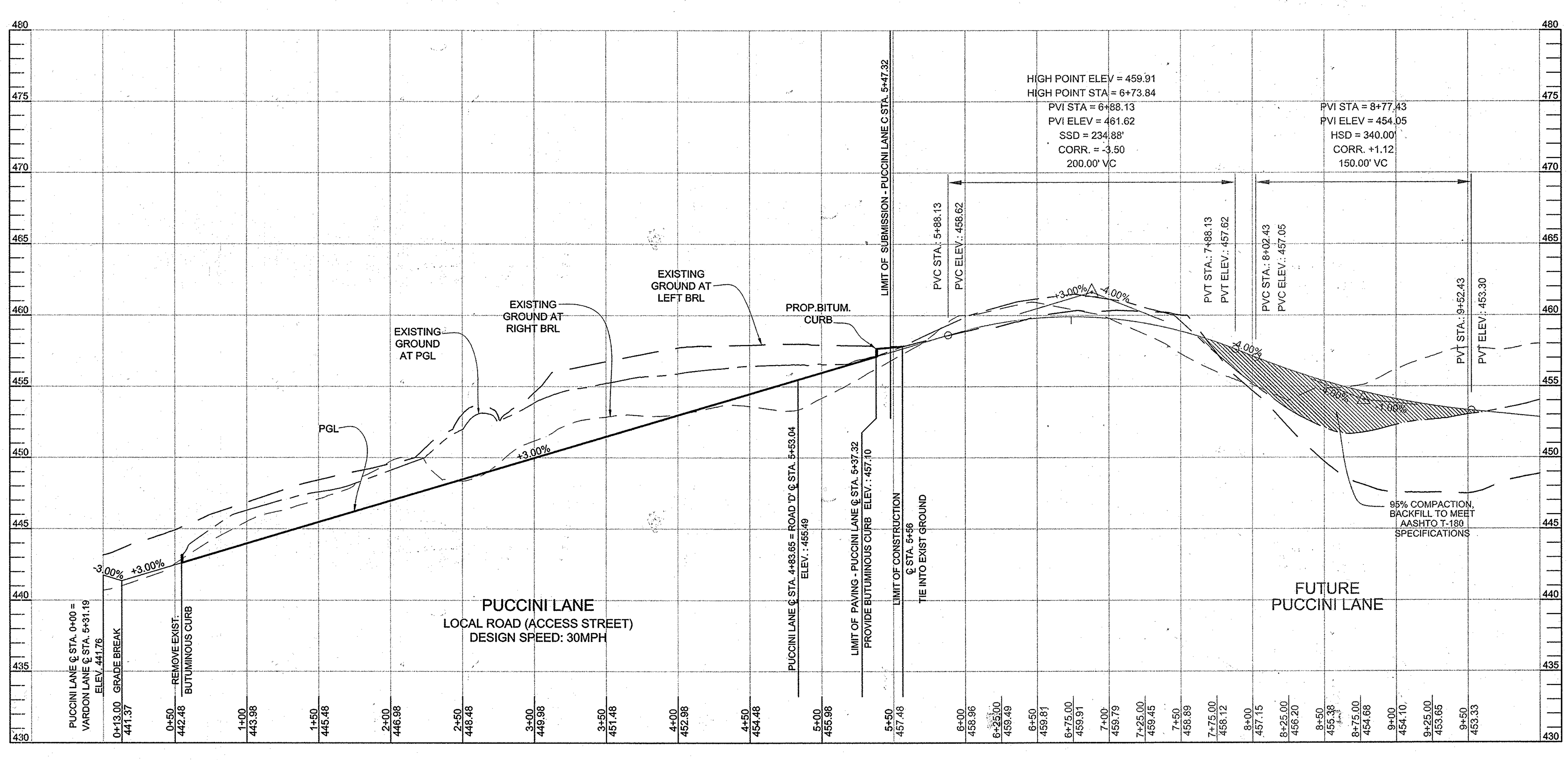
REVISED ROAD PLAN AND PROFILE PUCCINI LANE

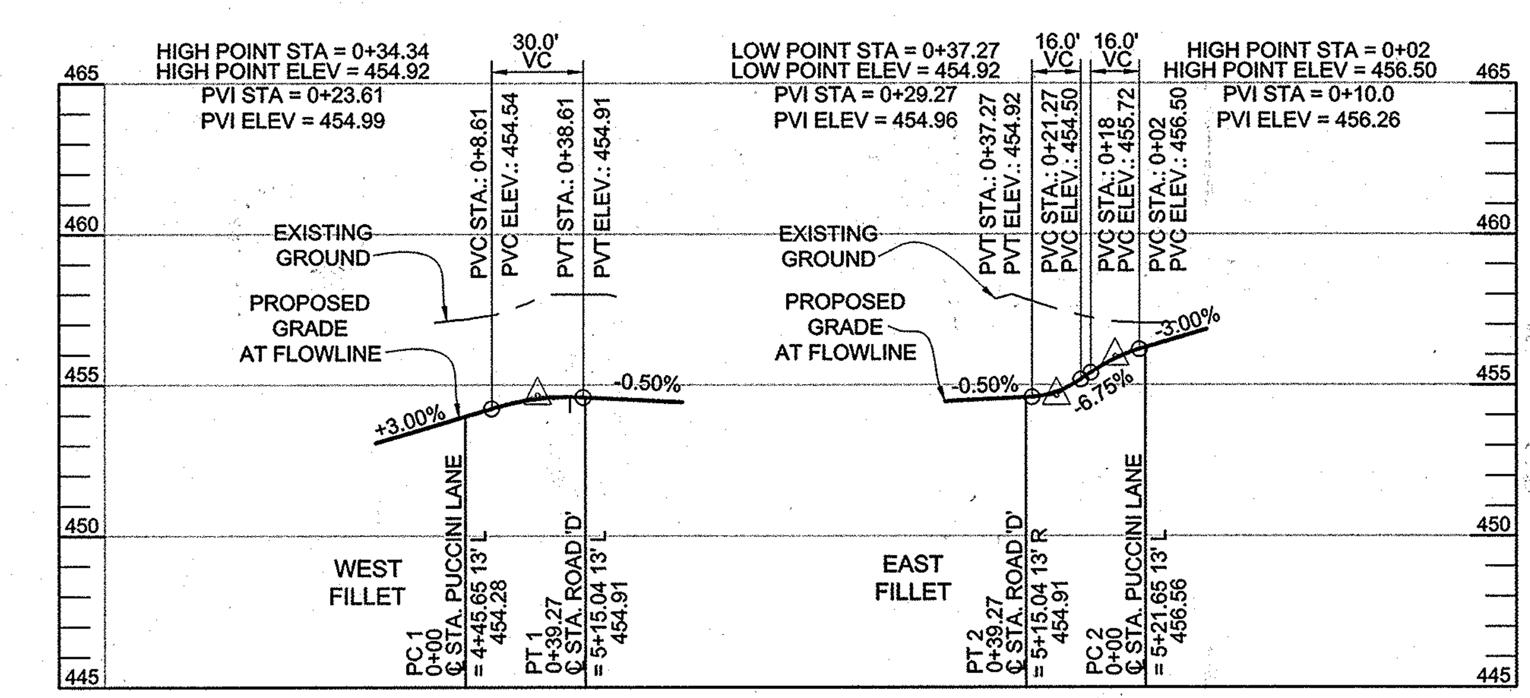
DATE: MAY 12, 2016	BEI PROJECT NO. 2726
DESIGN: DBT / DRAFT: DBT / SCALE: AS SHOWN	SHEET 2 OF 11

THIS SHEET REPLACES THE PREVIOUS SHEET 2 SIGNED ON 11-19-2010

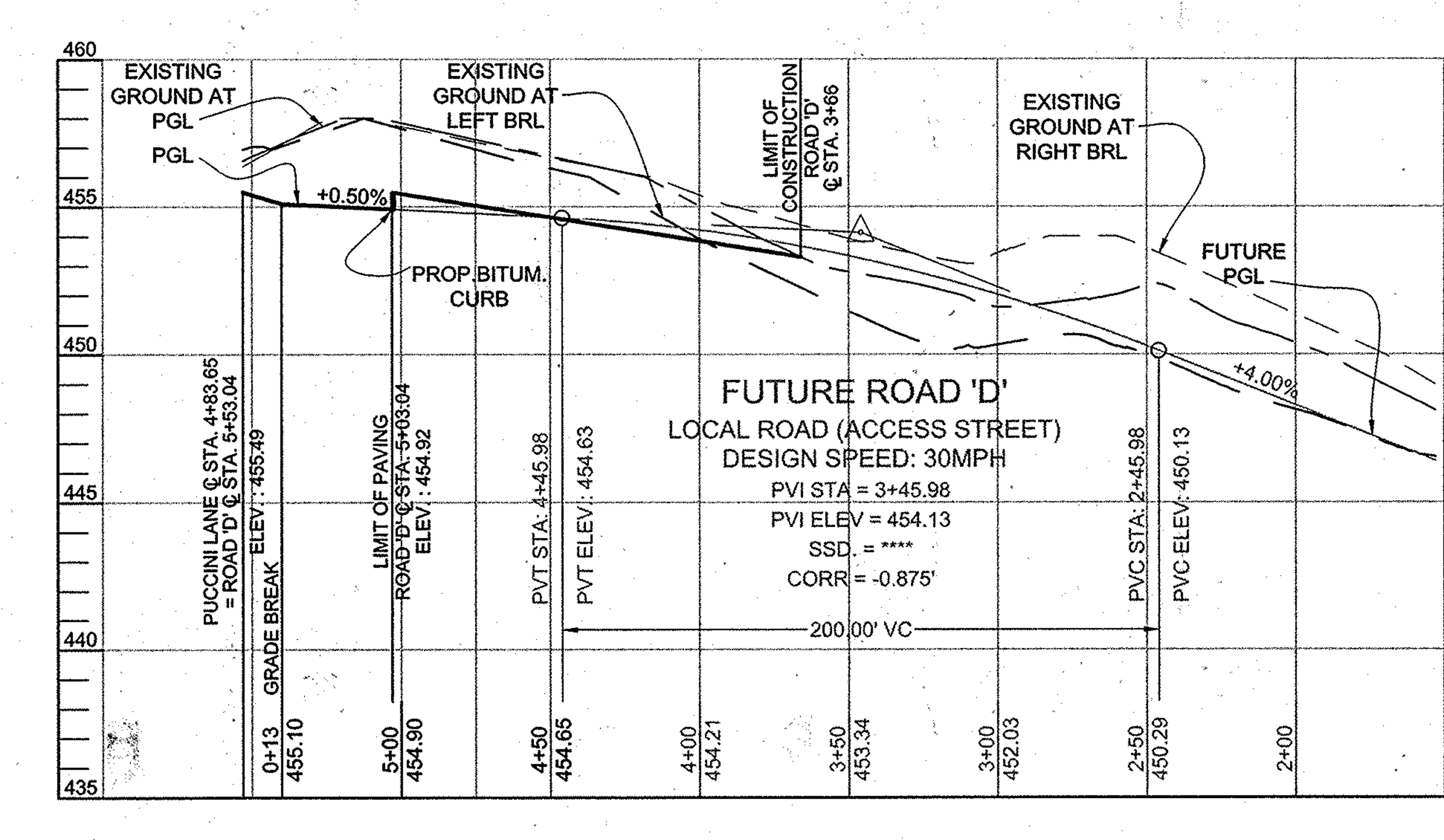
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 6/8/2016 — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 6/14/16 — DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 6.13.16 — DATE





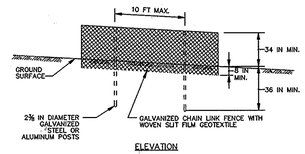
NOTE: FILLET PROFILE ELEVATIONS ARE ALL TOP OF CURB (MODIFIED CURB)



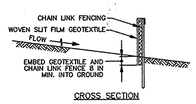
J:\2726 Fairways at Turf Valley\dwg\Phase 2\F10084-7000_s2.dwg, 5/24/2016 10:56:32 AM

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL —SSF—



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

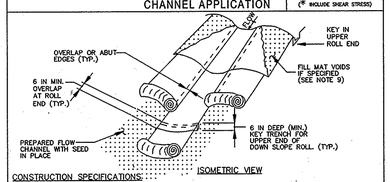
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

STANDARD SYMBOL PSSMC – # lb/ft² (# INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW. CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

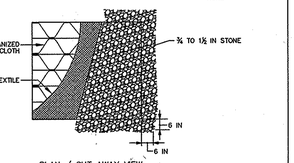
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

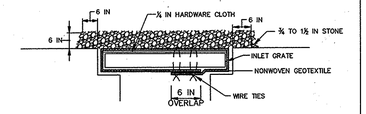
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. 14FT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

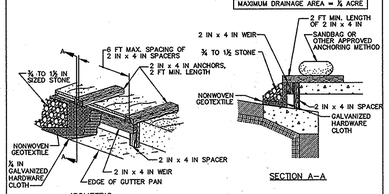
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



ISOMETRIC

SECTION A–A

CONSTRUCTION SPECIFICATIONS

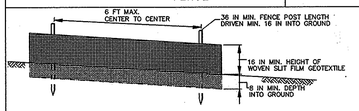
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

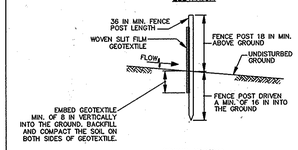
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

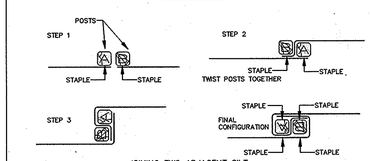
STANDARD SYMBOL —SF—



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

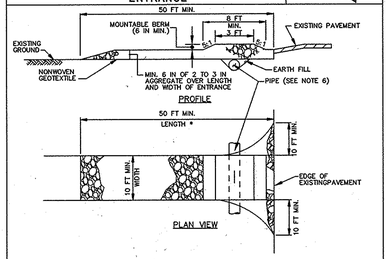
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

ENGINEER'S CERTIFICATE

"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."

ENGINEER — DATE 5/26/16

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 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."

DEVELOPER — DATE 5/26/16

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/1/16

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/14/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.13.16

THIS SHEET REPLACES THE PREVIOUS SHEET 3 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	REMOVE PRIVATE DRIVE PLAN, PROFILE AND DETAILS. ADD UPDATED SEDIMENT AND EROSION CONTROL DETAILS PER MDE 2011 STD'S AND SPECS.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 19431, Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGAN — No. 19431 — PROFESSIONAL ENGINEER — 5/26/16

OWNER:

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

DEVELOPER:

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

FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

REVISED SEDIMENT AND EROSION CONTROL DETAILS

DESIGN: DBT	DRAFT: DBT	DATE: MAY 12, 2016	BEI PROJECT NO. 2726
		SCALE: AS SHOWN	SHEET 3 OF 11

F-10-084

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SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
Ba	BAILE SILT LOAM	D
BrB2	BRANDYWINE LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
BrC3	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	C
Co	CODORUS SILT LOAM	C
CuB	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
ElkB2	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ElC3	ELIOAK SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
GlB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GlC3	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
MgB2	MANOR GRAVELY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MgC3	MANOR GRAVELY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
MIA	MANOR LOAM, 0 TO 3 PERCENT SLOPES	B
MlB2	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MlC2	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
MlC3	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
MlD2	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	B
MlD3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOILS LINE
- MIC3 — SOILS TYPE
- EXISTING TREELINE
- PROPOSED TREELINE
- STORM DRAINS
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- AGIP — AT-GRADE INLET PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE

ENGINEER'S CERTIFICATE

"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."

ENGINEER — DATE 5/20/16

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 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."

DEVELOPER — DATE 5/26/16

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 6/1/16

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/28/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6.13.16

THIS SHEET REPLACES THE PREVIOUS SHEET 4 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	REVISE LAYOUT BASED ON REALIGNMENT OF VARDON LANE BETWEEN PUCCINI LANE AND RESORT ROAD PER F-07-158. ELIMINATE THE PRIVATE DRIVE AND PARKING SPACES PARALLEL TO VARDON LANE. REVISE MASS GRADES AND ADJUST SEDIMENT CONTROL LOD, SF, AND SSF ACCORDINGLY.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
6480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
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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: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN DELL — REGISTERED PROFESSIONAL ENGINEER — 5/26/16

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

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

FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 56-88, OPEN SPACE LOTS 89-93, GOLF SPACE LOT 94 AND NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

REVISED GRADING, SEDIMENT AND EROSION CONTROL PLAN

DESIGN: DBT	DRAFT: DBT	DATE: MAY 12, 2016	BEI PROJECT NO. 2726
		SCALE: AS SHOWN	SHEET 4 OF 11

F-10-084

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B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes
   1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
   2. Construction sequence example (Refer to Figure B.1):
      a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
      b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
      c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

B. Incremental Stabilization - Fill Slopes
   1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
   2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
   3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   4. Construction sequence example (Refer to Figure B.2):
      a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
      b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
      c. Place Phase 1 fill, prepare seedbed, and stabilize.
      d. Place Phase 2 fill, prepare seedbed, and stabilize.
      e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

Figure B.

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

Definition

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

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation
   1. Temporary Stabilization
      a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
   2. Permanent Stabilization
      a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
         i. Soil pH between 6.0 and 7.0.
         ii. Soluble salts less than 500 parts per million (ppm).
         iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
         iv. Soil contains 1.5 percent minimum organic matter by weight.
         v. Soil contains sufficient pore space to permit adequate root penetration.
      b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
      c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
      d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
      e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
   1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
   2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
   3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
      a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
      b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
      c. The original soil to be vegetated contains material toxic to plant growth.
      d. The soil is so acidic that treatment with limestone is not feasible.
   4. Areas having slopes steeper than 2:1 require special consideration and design.
   5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
      a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
      b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
      c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
   6. Topsoil Application
      a. Erosion and sediment control practices must be maintained when applying topsoil.
      b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
      c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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

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

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

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

Conditions Where Practice Applies

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

Criteria

A. Seeding
   1. Specifications
      a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
      b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
      c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
      d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
   2. Application
      a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
         i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
      b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
         i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
      c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
         i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
         ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
         iii. Mix seed and fertilizer on site and seed immediately and without interruption.
         iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
   1. Mulch Materials (in order of preference)
      a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
      b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
         i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
         ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
         iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
         iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
         v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
   2. Application
      a. Apply mulch to all seeded areas immediately after seeding.
      b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
      c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   3. Anchoring
      a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
         i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
         ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
         iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
         iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

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

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures
1. General Use
   a Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting.
   c For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
   d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.
      Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
   c. Ideal Times of Seeding for Turf Grass Mixtures
      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
   a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and tom or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABLIZATION

Definition

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

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition

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

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

Maintenance

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

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

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), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours 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.

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 feet 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:	10.95	Acres
Area Disturbed:	6.46	Acres
Area to be roofed or paved:	0.75	Acres
Area to be vegetatively stabilized:	5.70	Acres
Total cut:	18,600*	Cu Yds
Total fill:	530 *	Cu Yds
Off-site waste/borrow area location:	SITE WITH AN ACTIVE GRADING PERMIT	

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 an=mount 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 work day, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, 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.

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

ENGINEER'S CERTIFICATE

"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."

ENGINEER [signature] — DATE 5/26/16

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 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."

DEVELOPER [signature] — DATE 5/26/16

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

HOWARD SOIL CONSERVATION DISTRICT [signature] — DATE 6/1/16

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS [signature] — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT [signature] — DATE 6/14/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION [signature] — DATE 6-13-16

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b
Seed Misture (from Table B.3): Tall Fescue/Kentucky Bluegrass

No.	Species	Application Rate (lb/ac.)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20) N	P2O5	K2O	Lime Rate
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (1.0 lb/ 100 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac 2 lb/ 1000 sf)	2 tons/ac (90lb/ 1000 sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				
				1/4 - 1/2 in				

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/ 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5		Mar 1 to May 15; Aug 1 to Oct 31	
Barley (Hordeum vulgare)	96	2.2	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Oats (Avena sativa)	72	1.7	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Wheat (Triticum aestivum)	120	2.8	1.0		Mar 1 to May 15; Aug 1 to Oct 31	
Cereal Rye (Secale cereale)	112	2.8	1.0		Mar 1 to May 15; Aug 1 to Nov 15	
Warm-Season Grasses						
Foxtail Millet (Serataria italica)	30	0.7	0.5		May 16 to Jul 31	
Pearl Millet (Pennisetum glaucum	20	0.5	0.5		May 16 to Jul 31	

Notes:

1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

1. Obtain grading permit. Notify D.I.L.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)

2. Hold on-site pre-construction meeting. (1 day)

3. Install stabilized construction entrance, silt fences, super silt fences and inlet protection to existing inlets I-13 and I-14. (1 week).

4. Rough grade site and begin road construction. (3 weeks)

5. Construct storm drain system, water and sewer. Add inlet protection to all inlets as constructed. Inlets 34-38 to be wrapped with super silt fence. (2 months)

6. Fine grade site and complete road construction (1 month).

7. Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seedbed notes. (1 week)

Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:
A. 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
B. 7 calendar days for all other disturbed areas.
During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.

THIS SHEET REPLACES THE PREVIOUS SHEET 5 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	UPDATE SEDIMENT CONTROL NOTES TO THE LATEST HSCD REQUIREMENTS.

BENCHMARK ENGINEERING, INC.
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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: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — REG. 22390 — PROFESSIONAL ENGINEER [signature] 5/26/16

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

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

FAIRWAYS AT TURF VALLEY

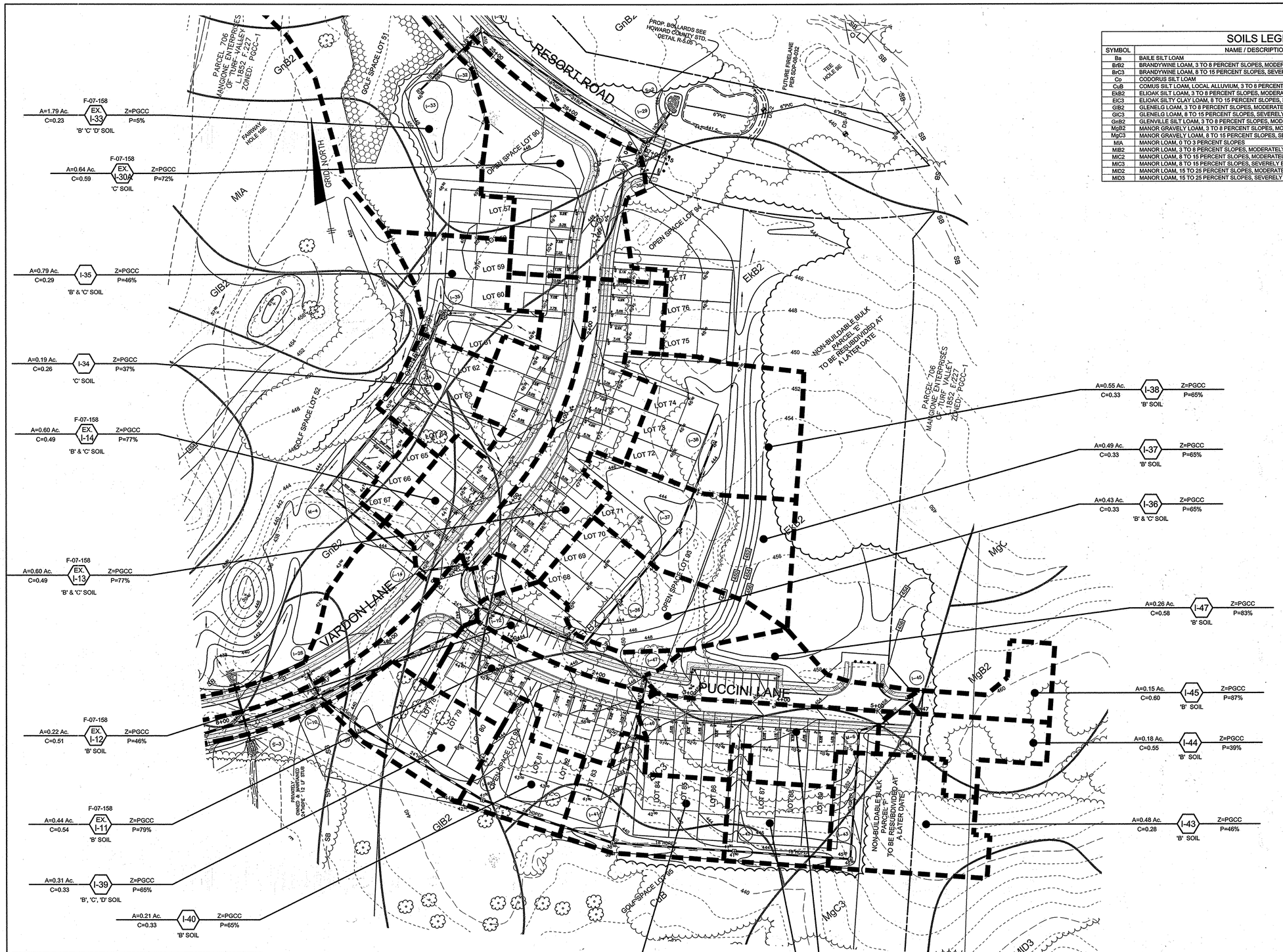
PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 - GRID: 16 - PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND

REVISED SEDIMENT AND EROSION CONTROL NOTES

DATE: MAY 12, 2016		BEI PROJECT NO. 2726	
DESIGN: DBT	DRAFT: DBT	SCALE: AS SHOWN	SHEET 5 OF 11

F-10-084



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
Ba	BAILE SILT LOAM	D
BrB2	BRANDYWINE LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
BrC3	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	C
Co	CODORUS SILT LOAM	C
CuB	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
ElkB2	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ElC3	ELIOAK SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
GlB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GlC3	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
MgB2	MANOR GRAVELY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MgC3	MANOR GRAVELY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
MlA	MANOR LOAM, 0 TO 3 PERCENT SLOPES	B
MlB2	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MlC2	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
MlC3	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
MlD2	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	B
MlD3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- SOILS LINE
- DRAINAGE DIVIDE
- STORM DRAINS

NOTE:

INLETS I-11, I-12, I-13, I-14, I-30A, AND I-33 WHICH WILL RECEIVE RUNOFF FROM FAIRWAYS AT TURF VALLEY, PHASE 2 WERE ALL PREVIOUSLY DESIGNED AND CONSTRUCTED UNDER FAIRWAYS AT TURF VALLEY, PHASE 1 SECTIONS 1 AND 2, F-07-158.

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/14/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-13-16

THIS SHEET REPLACES THE PREVIOUS SHEET 6 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	UPDATE LAYOUT, GRADING, DRAINAGE AREAS BASED ON REALIGNMENT OF VARDON LANE BETWEEN PUCCINI LANE AND RESORT ROAD PER F-07-158. UPDATE A, C, AND P NUMBERS WHERE NECESSARY.

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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. 15822, Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MALAKAI — PROFESSIONAL ENGINEER — 5/26/16

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

DEVELOPER:
MANGIONE ENTERPRISES OF TURF VALLEY LIMITED PARTNERSHIP
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FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

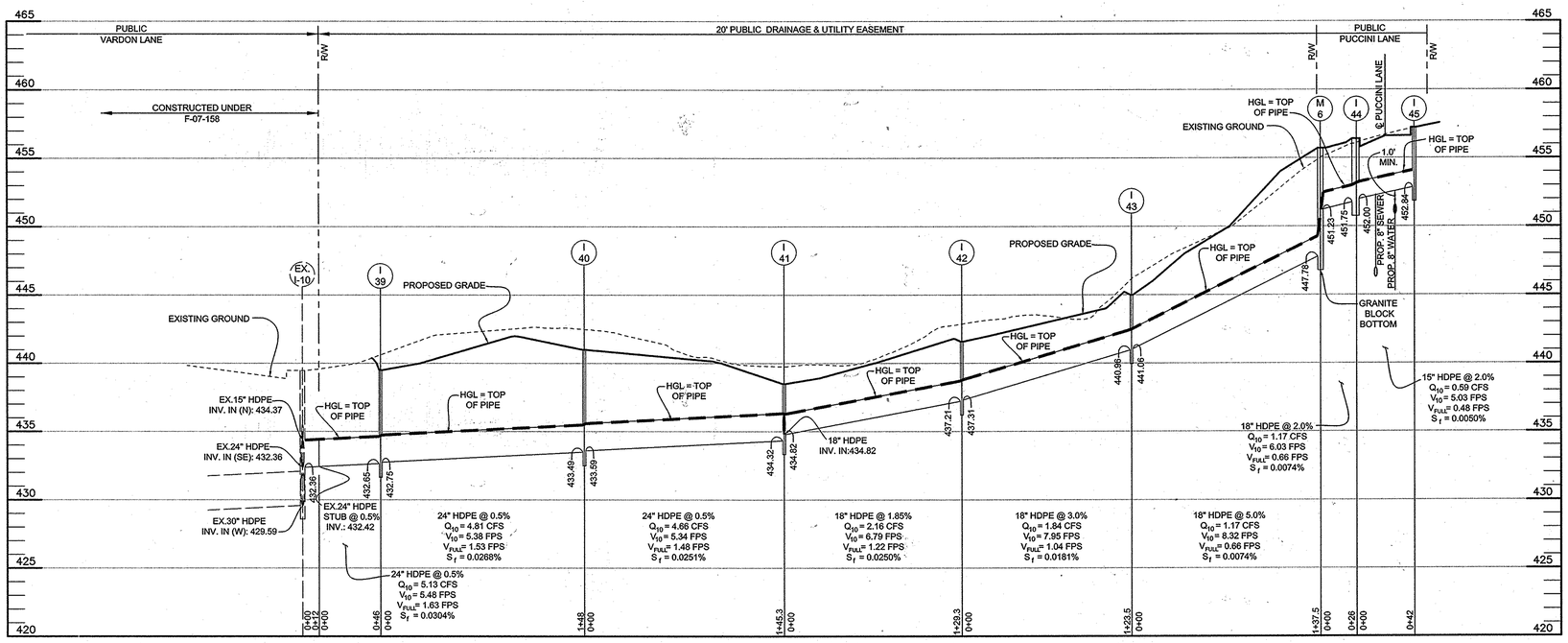
TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

REVISED STORM DRAIN DRAINAGE AREA MAP

DESIGN: DBT	DRAFT: DBT	DATE: MAY 12, 2016	BEI PROJECT NO. 2726
		SCALE: AS SHOWN	SHEET 6 OF 11

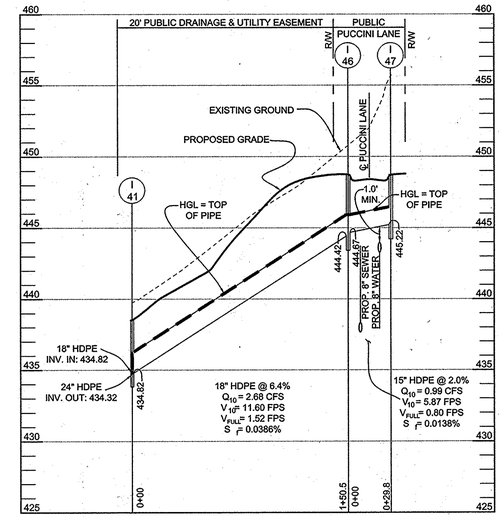
F-10-084

J:\2726 Fairways at Turf Valley\dwg\Phase 2\F10084 7025_s6-7.dwg, 5/24/2016 11:10:13 AM



STORM DRAIN PROFILE

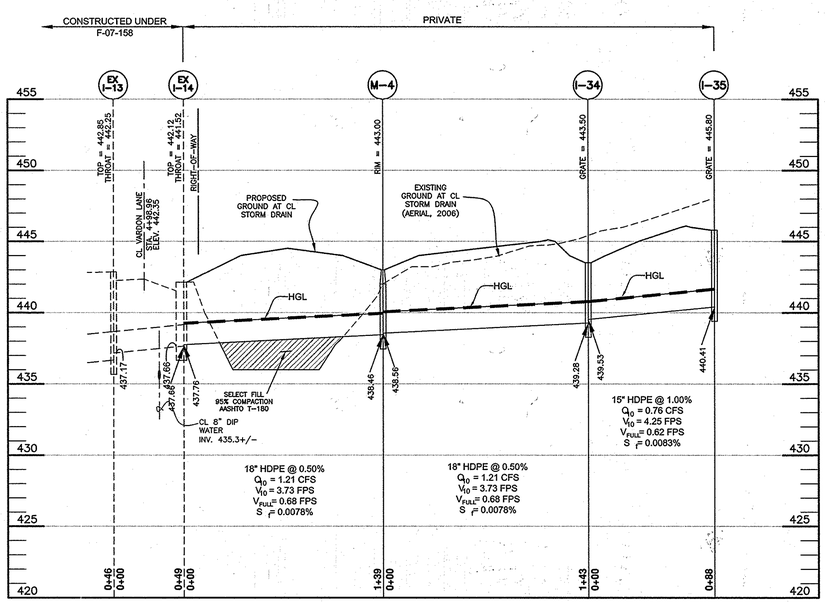
SCALE: 1" = 50' HORZ., 1" = 5' VERT.



STORM DRAIN PROFILE

SCALE: 1" = 50' HORZ., 1" = 5' VERT.

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
15" PRIVATE	HDPE	55 LF
15" PUBLIC	HDPE	30 LF
18" PRIVATE	HDPE	39 LF
18" PUBLIC	HDPE	26 LF
24" PUBLIC	HDPE	45 LF



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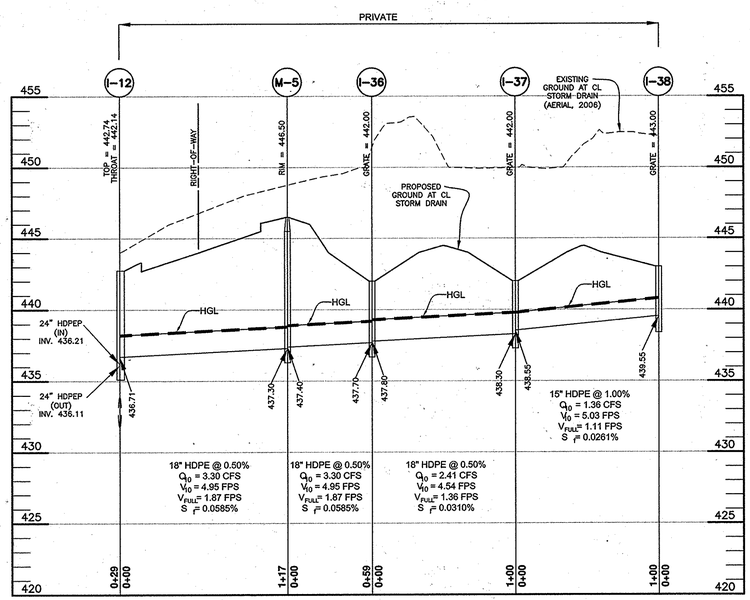
SCALE: 1" = 50' HORZ., 1" = 5' VERT.



STORM DRAIN PROFILE

SCALE: 1" = 50' HORZ., 1" = 5' VERT.

STRUCTURE SCHEDULE

NO.	TYPE & OWNERSHIP	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
I-34	YARD INLET PRIVATE	N 593,871.04 E 1,349,034.85	443.50	439.53	439.28	D-4.14
I-35	YARD INLET PRIVATE	N 593,945.69 E 1,349,081.22	445.80	-	440.41	D-4.14
I-36	YARD INLET PRIVATE	N 593,607.85 E 1,349,213.43	442.00	437.80	437.70	D-4.14
I-37	YARD INLET PRIVATE	N 593,673.03 E 1,349,289.28	442.00	438.55	438.30	D-4.14
I-38	YARD INLET PRIVATE	N 593,758.24 E 1,349,341.61	443.00	-	439.55	D-4.14
I-39	YARD INLET PUBLIC	N 593,521.35 E 1,348,921.32	439.50	432.75	432.65	D-4.14
I-40	YARD INLET PUBLIC	N 593,424.40 E 1,349,033.37	441.00	433.59	433.49	D-4.14
I-41	YARD INLET PUBLIC	N 593,355.28 E 1,349,161.19	438.50	434.82 18" 434.82 18"	434.32	D-4.14
I-42	YARD INLET PUBLIC	N 593,323.87 E 1,349,286.68	441.60	437.31	437.21	D-4.14
I-43	YARD INLET PUBLIC	N 593,293.88 E 1,349,406.54	445.00	441.06	440.96	D-4.14
I-44	TYPE 'A-5' INLET PUBLIC	PUCCINI LANE - ℄ STA. 5+06.64 - 13.0' RT	455.80	452.00	451.75	D-4.01
I-45	TYPE 'A-5' INLET PUBLIC	PUCCINI LANE - ℄ STA. 5+34.48 - 13.0' LT	456.62	---	452.84	D-4.01
I-46	TYPE 'A-5' INLET PUBLIC	PUCCINI LANE - ℄ STA. 2+51.88 - 13.0' RT	448.14	444.67	444.42	D-4.01
I-47	TYPE 'A-5' INLET PUBLIC	PUCCINI LANE - ℄ STA. 2+51.88 - 13.0' LT	448.14	---	445.22	D-4.01
M-6	STD. PRECAST MANHOLE (4') PUBLIC	PUCCINI LANE - ℄ STA. 4+82.65 - 22.5' RT	455.70	451.23	447.78	G-5.13
M-5	STD. PRECAST MANHOLE (4') PRIVATE	N 593,569.37 E 1,349,168.65	446.50	437.40	437.30	G-5.13
M-4	STD. PRECAST MANHOLE (4') PRIVATE	N 593,778.13 E 1,348,926.69	443.00	438.56	438.46	G-5.13

NOTES :
1. TOP ELEVATIONS FOR YARD INLET ARE TO THE CENTER TOP OF GRATE.
2. TOP ELEVATIONS FOR TYPE 'A-5' INLETS ARE TO THE CENTER OF INLET, TOP OF FACE OF CURB.
3. TOP ELEVATIONS FOR PRECAST MANHOLES ARE TO THE CENTER TOP OF MANHOLE COVER.
4. TOP SLOPE OF STRUCTURES TO CONFORM TO SLOPE OF PAVING.

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/14/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-13-16

THIS SHEET REPLACES THE PREVIOUS SHEET 7 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	REVISE PROFILES TO MATCH REVISE LAYOUT AND SO STRUCTURE NUMBERS MATCH THAT UNDER F-07-158. UPDATE THE STORM DRAIN COMPUTATION INFO AS NECESSARY. UPDATE STRUCTURE SCHEDULE AND PIPE SCHEDULE ACCORDINGLY.

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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. 20506, Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN MACKENZIE — PROFESSIONAL ENGINEER — 5/26/16

OWNER:
MANGIONE ENTERPRISES OF TURF VALLEY LIMITED PARTNERSHIP
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FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

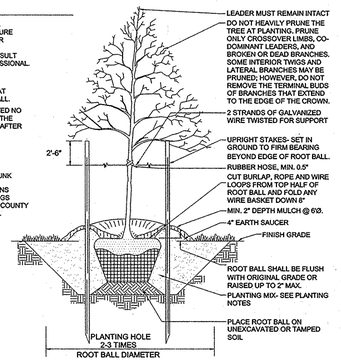
REVISED
STORM DRAIN PROFILES, DETAILS AND CHARTS

DESIGN: DBT | DRAFT: DBT | DATE: MAY 12, 2016 | BEI PROJECT NO. 2601 | SCALE: AS SHOWN | SHEET 7 OF 11

F-10-084

NOTES

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



TYPICAL TREE PLANTING AND STAKING

DECIDUOUS TREES UP TO 2-1/2" CALIPER — NOT TO SCALE

LEGEND

- FIRE HYDRANT
- STREET LIGHT
- EXISTING TREELINE
- PROPOSED TREELINE
- STORM DRAINS
- EXISTING STREET TREE (F-07-158)
- PROPOSED STREET TREE

LANDSCAPE NOTES

1. 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.
2. 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.
3. THE STREET TREES SHOWN ON THIS PLAN WILL BE PLANTED AT THE SITE DEVELOPMENT PLAN STAGE. LANDSCAPING FOR LOTS 56 THRU 88 WILL BE PROVIDED FOR AT THE SITE DEVELOPMENT PLAN STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL.
4. INTERNAL AND SIDE LOT BUFFER LANDSCAPING WILL BE DESIGNED AND ACCOMPANY AT THE SITE DEVELOPMENT PLAN

LANDSCAPE SCHEDULE

KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
	29	ACER RUBRUM (STREET TREES) OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B

STREET TREE SCHEDULE

STREET NAME	LF REQUIRED	TREES REQUIRED	TREES PROVIDED
PUCCINI LANE	882	22	22

DEVELOPER'S/BUILDER'S CERTIFICATE

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

DEVELOPER — DATE 5/26/16

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6/8/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/08/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-13-16

THIS SHEET REPLACES THE PREVIOUS SHEET 8 SIGNED ON 11-19-2010

NO.	DATE	REVISION
1	5-12-2016	UPDATE LAYOUT BASED ON REALIGNMENT OF VARDON LANE BETWEEN PUCCINI LANE AND RESORT ROAD PER F-07-158. REVISE STREET TREE LOCATIONS. REMOVE PARKING LOT LANDSCAPING CALCULATIONS. REMOVE CONTOURS AND FUTURE DEVELOPMENT LINES. REVISE STREET TREE REQUIRED BASED ON ROW PERIMETER.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 315 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22818, Expiration Date: 6-30-2017

STATE OF MARYLAND — CHRISTOPHER ALAN KALLAGHER — No. 22818 — PROFESSIONAL ENGINEER — 5/26/16

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

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

FAIRWAYS AT TURF VALLEY

PHASE 2: LOTS 57-89, OPEN SPACE LOTS 90-94, GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F

TAX MAP: 16 – GRID: 16 – PARCEL: P/O 8 & 706
ZONED: PGCC (RESIDENTIAL SUBDISTRICT)
ELECTION DISTRICT NO. 2 – HOWARD COUNTY, MARYLAND

REVISED LANDSCAPE PLAN

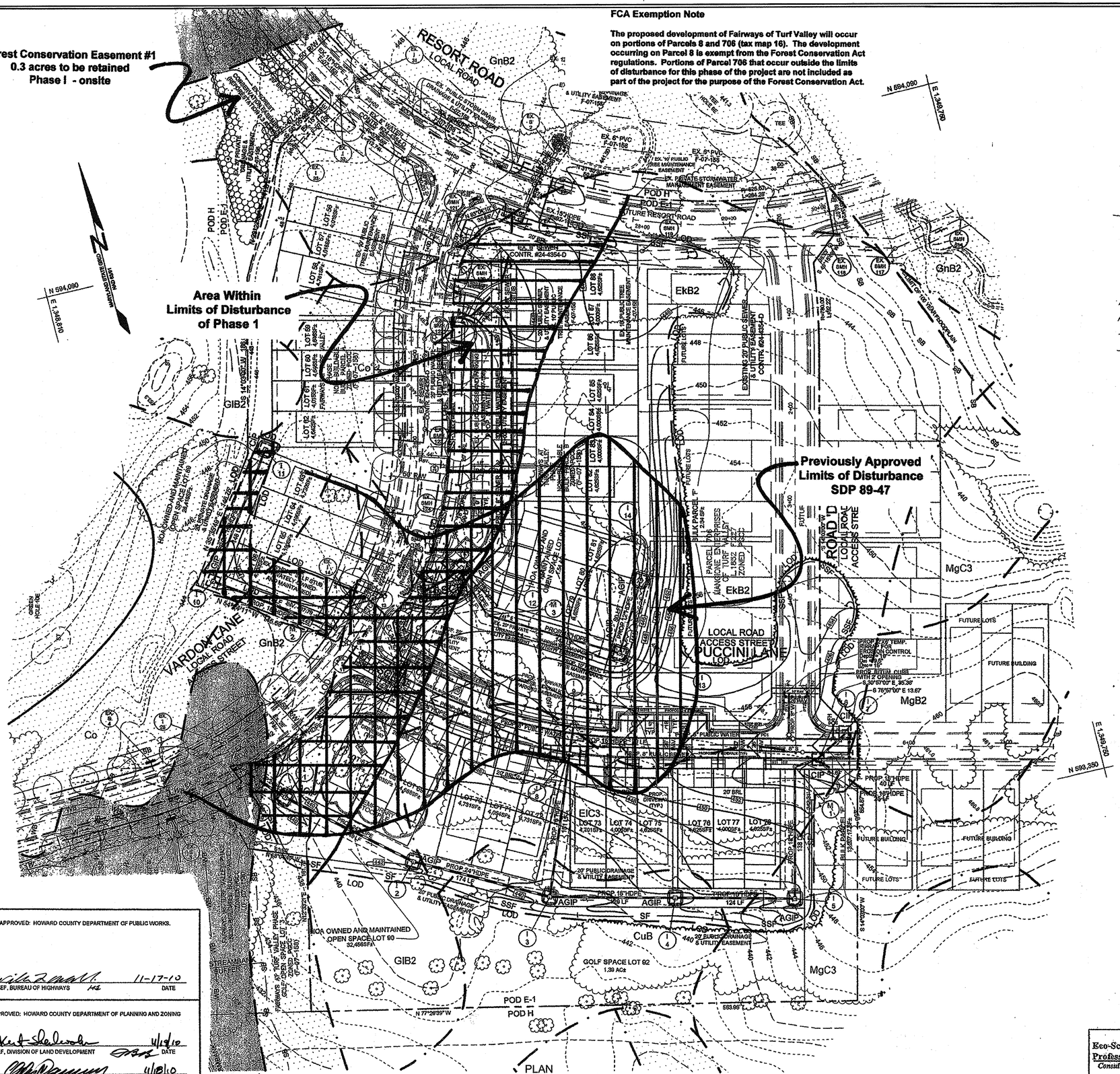
DESIGN: DBT | DRAFT: DBT | DATE: MAY 12, 2016 | SCALE: AS SHOWN | BEI PROJECT NO. 2726 | SHEET 8 OF 11

F-10-084

J:\2726 Fairways at Turf Valley\dwg\Phase 2\F10084-7022_s8.dwg, 5/24/2016 11:15:06 AM

FCA Exemption Note

The proposed development of Fairways of Turf Valley will occur on portions of Parcels 8 and 706 (tax map 16). The development occurring on Parcel 8 is exempt from the Forest Conservation Act regulations. Portions of Parcel 706 that occur outside the limits of disturbance for this phase of the project are not included as part of the project for the purpose of the Forest Conservation Act.



'B' SOIL GROUP

'C' SOIL GROUP

'D' SOIL GROUP

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
Ba	BAILE SILT LOAM	D
Co	CODORUS SILT LOAM	C
CuB	CONUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
ElB2	ELIDAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ElC3	ELIDAK SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
GlB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GsB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
MgB2	MANOR GRAVELY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MgC3	MANOR GRAVELY LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
M/A	MANOR LOAM, 0 TO 3 PERCENT SLOPES	B

Legend

- Limits of Subject Phase
- Limits of Previous Development - SDP 89-47
- Limits of subject phase included in Fairways at Turf Valley Phase I
- Existing Contours
- Proposed Contours
- Existing Forest Limits
- Proposed Forest Limits/FCE
- Wetlands
- Wetland/Stream Buffer

FOREST CONSERVATION WORKSHEET

Version 1.0

Project: Fairways at Turf Valley Phase II
Date: July 23, 2010

NET TRACT AREA		Acres
A. Total tract area -		93.0
B. Area within 100 Year Floodplain and future development areas		87.1
C. Area within limits of disturbance associated with Phase I & SDP 89-47		3.2
D. Net Tract Area - LOD not previously addressed by FCA		2.7
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR MPD CIA X		
E. Afforestation Threshold (percentage)	0.15	0.4
F. Conservation Threshold (percentage)	0.15	0.4
EXISTING FOREST COVER:		
G. Existing forest cover (excluding floodplain)		1.7
H. Area of forest above afforestation threshold		1.3
I. Area of forest above conservation threshold		1.3
BREAK EVEN POINT:		
J. Forest retention above threshold with no mitigation		0.26
Break-Even Point		0.68
K. Clearing permitted without mitigation		1.04
PROPOSED FOREST CLEARING		
L. Total area of forest to be Cleared or Retained Outside FCE		1.7
M. Total area of forest to be Retained in FCE		0
PLANTING REQUIREMENTS		
N. Reforestation for clearing above Conservation Threshold		0.325
P. Reforestation for clearing below Conservation Threshold		0.8
Q. Credit for retention above conservation threshold		0
R. Total reforestation required		1.12
S. Total afforestation required		0
T. Total reforestation and afforestation required		1.12

FCP NOTES

1. The forest resources have been reported in the forest stand delineation for the Fairways at Turf Valley, Phase II (SP-08-006)
2. Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
3. Limits of disturbance (LOD) shown on this plan represent the limits of this phase of the project. Future phases of the project will be addressed as they are proposed. Portions of this phase of the development have been cleared/graded for Phase I of the development. The FCA obligation for these areas was addressed in the FCP for Phase I. Portions of this phase of the development occur
4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
5. Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along the approved limits of disturbance occurring within 50 feet of the approved FCE limits.
6. Permanent signage will be posted a at 50-100 foot intervals along all approved FCE limits.
7. It is proposed that the 1.12 acre Forest Conservation Act reforestation obligation be met by providing 0.71 acres of offsite reforestation and 0.82 acres of offsite retention. The offsite retention areas will be on parcel D and will be placed in a Forest Conservation Easement shown on the final plat of the Open Space Lot 72, Villages of Turf Valley Phase 2 (F-08-084). The retained areas will be posted with appropriate protective signage

OWNER/DEVELOPER

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-17-10

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/18/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/18/10

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93M06100044B2
John P. Canoles 10/28/10

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 832-2489 Fax (410) 832-2498

FOREST CONSERVATION PLAN AND DETAILS
FAIRWAYS AT TURF VALLEY

PHASE II LOTS 57-89 OPEN SPACE LOTS 90-94 GOLF SPACE LOT 95 & NON-BUILDABLE BULK PARCELS E & F, POD 'E-1' SECTION IV : RESIDENTIAL PHASE IV E
A SUBDIVISION OF PARCEL 706 & A RESUBDIVISION OF FAIRWAYS AT TURF VALLEY, PHASE I, NON-BUILDABLE BULK PARCELS A, B, & C

TAX MAP 17 GRID 9 — PART OF PARCEL 706
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

1	5-12-2016 UPDATE LOT NUMBERS IN TITLE BLOCK.

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: JPC
DRAWN BY: JPC
CHECKED BY: JPC
SCALE: AS SHOWN
DATE: OCTOBER 29, 2010
PROJECT #: 08-025
SHEET #: 9 of 11

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. 32025, EXPIRATION DATE: JUNE 30, 2011

F-10-084

Planting/Soil Specifications

1. Planting of nursery stock shall take place between March 15th and April 30th or September 15th - November 15th.
2. A twelve (12) inch layer of topsoil shall be spread over all forestation areas impacted by site grading to assure a suitable planting area. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. All bareroot planting stock shall have their root systems dipped into an anti-desiccant gel prior to planting.
4. Plants shall be installed so that the top of root mass is level with the top of existing grade. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
5. Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications.
6. A two (2) inch layer of hardwood mulch shall be placed over the root area of all plantings.
7. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
8. All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

1. Sediment control and tree protection devices shall be installed in accordance with general construction plan for site. Site shall be graded in accordance with general construction plans.
2. Proposed forestation areas impacted by site grading shall be topsoiled and stabilized as per #2 of Planting/Soil Specifications for project.
3. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
4. Upon completion of the planting, signage shall be installed as per the Forest Protection Devices shown on the Forest Conservation Plan.
5. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of 24 months.
2. All plant material shall be watered twice a month during the 1st growing season. Watering may be more or less frequent depending on weather conditions. During second growing season, once a month during May-September, if needed.
3. Invasive exotics and noxious weeds will be removed from forestation areas. Old field successional species will be retained.
4. Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

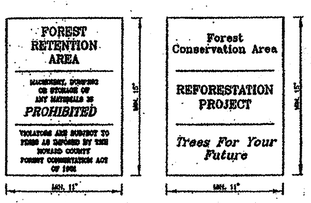
1. A 75 percent survival rate of forestation plantings will be required at the end of the 24 month maintenance period. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season.

Surety for Forestation

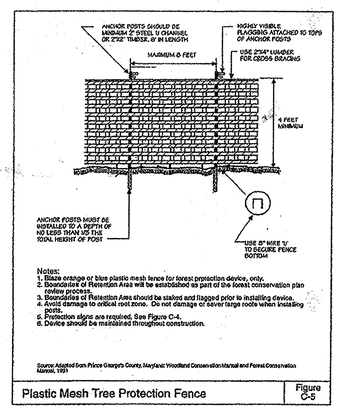
1. The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. Upon acceptance of the plantings by the County, the bond shall be released.

Multiflora Rose Control Note

Multiflora rose is prevalent in certain areas to be planted. Prior to planting all multiflora rose shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all top growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturers specifications. Care should be taken not to spray planted trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.



SIGNAGE
NOT TO SCALE



Notes:
1. Blaze orange or blue plastic mesh fence for forest protection device, only.
2. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Avoid damage to critical root zone. Do not damage or sever large roots when installing posts.
5. Protection signs are required. See Figure C-4.
6. Device should be maintained throughout construction.

Source: Adapted from Prince George's County, Maryland Woodland Conservation Manual and Forest Conservation Manual, 1991

Plastic Mesh Tree Protection Fence — Figure C-5

PLANTING SCHEDULE

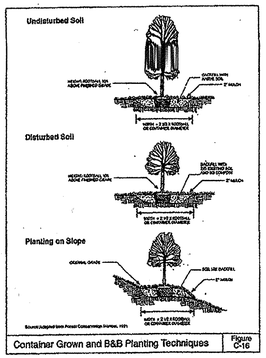
Offsite Planting Location:
FCE # 14 Villages of Turf Valley Phase 2, Open Space Lot 72 = 0.71 acres

Planting Units Required: 497
Planting Units Provided: 500

Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum - Red maple	2-3' whip	11' o.c.	
15	Diospyros virginiana - Persimmon **	2-3' whip	11' o.c.	
50	Liriodendron tulipifera - Tulip poplar **	2-3' whip	11' o.c.	
15	Nyssa sylvatica - Black gum	2-3' whip	11' o.c.	
25	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.	
50	Prunus serotina - Black cherry **	2-3' whip	11' o.c.	
20	Quercus alba - White oak	2-3' whip	11' o.c.	
10	Ulmus rubra - Slippery Elm	2-3' whip	11' o.c.	
15	Viburnum prunifolium - Blackhaw **	2-3' whip	11' o.c.	
250	Total whip plantings x 2 units /tree = FCA unit credit			500
			Total Unit Credit	500

Planting Notes:

- **Planting density based on 700 planting units per acre. 2" caliper trees = 7 planting units, 1" caliper trees = 3.5 planting units, whips with shelter = 2 planting units.**
- **** - These species should not be planted within the wetland limits.**
- **1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 foot spacing.**
- **Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance**
- **Multiflora rose/heavy brush removal/control may be required prior to installation of planting.**
- **All whips are required to be installed with tree shelters per Howard County FCA requirements.**



Container Grown and B&B Planting Techniques — Figure C-16

Fairways at Turf Valley
Forest Conservation Credit Calculations

Phase	Proposed onsite Retention	Reforestation/ Afforestation Required	Reforestation/ Afforestation Credit Provided Offsite*	FCE Credit Recorded but not Utilized by Phase and location of FCE easement**
Phase 1	0.3 acres	2.8 acres	3.52 acres	0.22 acres reforestation 1.0 acres retained forest Plat of Revision Parcel D - F-09-22
Phase 2	0 acres	1.12 acres	1.12 acres	0 acres
Phase 3	0 acres	0.22 acres	0.22 acres	0.48 acres retained forest Open Space Lot 72, Villages of Turf Valley Phase 2
Total FCE credit not yet utilized for project				0.96 acres FCE credit

* this credit may be obtained through 1:1 planting or 2:1 offsite retention
** Retention acreage reflects actual easement area and not 0.5 retention credit

Forest Conservation Notes

1. The 1.12 acres of reforestation obligation required for Fairways at Turf Valley, Phase II will be met by providing 0.71 acres of reforestation and 0.82 acres of offsite retention in FCE # 14 which is located on Villages of Turf Valley, Phase 2, Open Space Lot 72 and will be placed in a Forest Conservation Easement shown on the final plat of the Villages Phase 2 (F-08-084).
2. Development on Parcel 8 is exempt from Howard County Forest Conservation requirements under section 16.1202 (b) of the County code since it is a Planned Unit Development under S-86-13.
3. Any Forest Conservation Easement (FCE) area shown hereon is subject to the protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
4. The Forest Conservation Easements shown hereon have been established to fulfill the requirements of section 16.1200 of the Howard County Code, Forest Conservation Area. No clearing, grading, or construction is permitted within the Forest Conservation Easements; however, Forest Management Practices as defined in the Deed of Forest Conservation Easement are allowed.
5. Limits of disturbance shall be restricted to areas outside the limits of temporary fencing or the FCE boundary, whichever is greater.
6. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
7. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
8. Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along the approved limits of disturbance occurring within 50 feet of the approved FCE limits.
9. Permanent signage will be posted at 50-100 foot intervals along the boundaries of all areas included in Forest Conservation Easements.
10. Portions of the site occurring within the 100 year floodplain are not included as part of the net tract area of the site. Areas of floodplain forest occurring within the limits of a Forest Conservation Easement may be protected by the easement restrictions but have not/will not be credited toward the project's FCA obligation.
11. The site is located in the Little Patuxent River (upper) #1131105A watershed.
12. There are no rare, threatened, or endangered species located no this site. There are not specimen or champion trees located on this site. To the best of our knowledge there are no historic structures located on the site.
13. The protective signage shall stay on-site in perpetuity.

OFFSITE FCE NOTES:

All or a portion of the FCA obligations for Phases II and III of the Fairways at Turf Valley developments will be met within Forest Conservation Easement #14. FCE # 14 is located on Open Space Lot 72 of the Villages of Turf Valley Phase 2 and will be placed in a Forest Conservation Easement shown on the final plat of the Villages Phase 2 (F-08-084).

FCE #14 has 0.48 acres of retention (0.24 acres of offsite retention credit) that is not being utilized by Fairways at Turf Valley II and III

The FCA obligations for each phase will be met as follows:

Fairways at Turf Valley, Phase II

Note the 1.12 acre reforestation obligation for Fairways at Turf Valley, Phase II will be met in FCE #14. This obligation will be met by 0.71 acres of reforestation and 0.82 acres of offsite retention.

Fairways at Turf Valley, Phase III

The 0.22 acre reforestation obligation for Fairways at Turf Valley, Phase III will be met by retaining 0.44 acres of offsite retention in FCE #14.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/19/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/18/10

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 11-17-10

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDEP93MD0610044B2
10/29/10
John P. Canoles

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5004 Glen Arm, Maryland 21057 Telephone (410) 832-2450 Fax (410) 832-2488

1	5-12-2016	REVISE LOT NUMBERS IN TITLE BLOCK

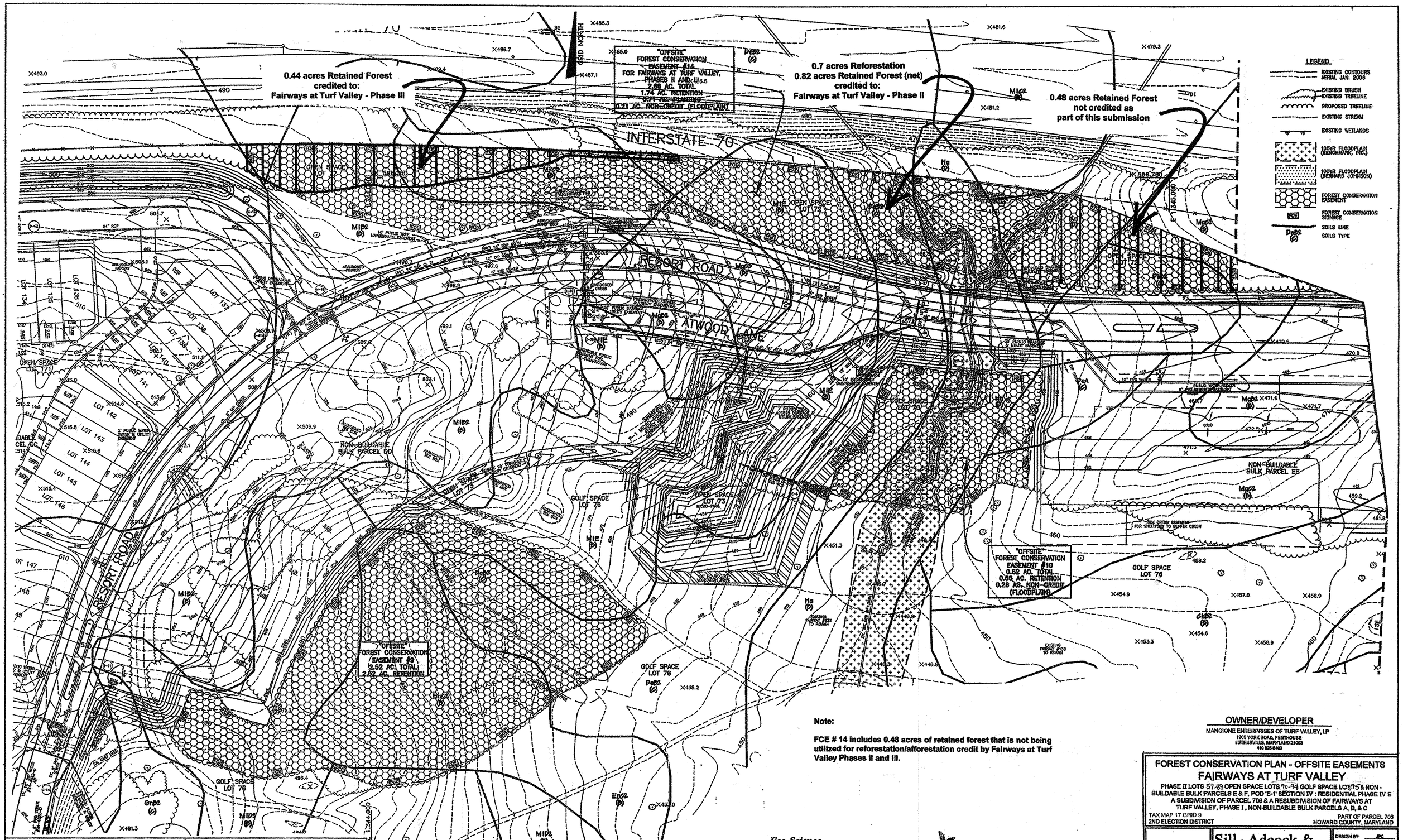
FOREST CONSERVATION PLAN - NOTES AND DETAILS
FAIRWAYS AT TURF VALLEY
PHASE II LOTS 57-89 OPEN SPACE LOTS 90-94 GOLF SPACE LOT 95 & NON - BUILDABLE BULK PARCELS E & F, POD 'E-1' SECTION IV ; RESIDENTIAL PHASE IV E A SUBDIVISION OF PARCEL 706 & A RESUBDIVISION OF FAIRWAYS AT TURF VALLEY, PHASE I , NON-BUILDABLE BULK PARCELS A, B, & C
TAX MAP 17 GRID 9 — PART OF PARCEL 708
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@sasland.com

DESIGN BY: JPC
DRAWN BY: JPC
CHECKED BY: JPC
SCALE: AS SHOWN
DATE: OCTOBER 29, 2010
PROJECT #: 08-026
SHEET #: 10 of 11

PROFESSIONAL CERTIFICATE: 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. 32038, EXPIRATION DATE: JUNE 30, 2011

F-10-084



Note:

FCE # 14 includes 0.48 acres of retained forest that is not being utilized for reforestation/afforestation credit by Fairways at Turf Valley Phases II and III.

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410 625 6400

APPROVED. HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks — 11/19/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

11/18/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

11-17-10
CHIEF, BUREAU OF HIGHWAYS — DATE

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
P.O Box 5006 Glen Arm, Maryland 21057 (410) 832-2480

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WTCP94-0060610044B2
10/18/10
John P. Canoles

1	5-12-2010	REVISE LOT NUMBERS IN TITLE BLOCK

FOREST CONSERVATION PLAN - OFFSITE EASEMENTS
FAIRWAYS AT TURF VALLEY

PHASE II LOTS 57-69 OPEN SPACE LOTS 90-94 GOLF SPACE LOTS 75 & NON-BUILDABLE BULK PARCELS E & F, POD 'E-1' SECTION IV : RESIDENTIAL PHASE IV E
A SUBDIVISION OF PARCEL 708 & A RESUBDIVISION OF FAIRWAYS AT TURF VALLEY, PHASE I, NON-BUILDABLE BULK PARCELS A, B, & C

TAX MAP 17 GRID 9 — PART OF PARCEL 708
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
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Phone: 443.325.7682 Fax: 443.325.7685
Email: info@sealand.com

DESIGN BY: JPC
DRAWN BY: JPC
CHECKED BY: JPC
SCALE: AS SHOWN
DATE: OCTOBER 29, 2010
PROJECT #: 08-025
SHEET # 11 of 11

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 32025, EXPIRATION DATE JUNE 30, 2011

1510\dwg\Phase 2 Section IV\003-1_52_s31-34.dwg, 2/9/2010 9:50:23 AM

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