

**GENERAL NOTES**

- 1.) THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- 2.) BOUNDARY IS BASED ON RECORD PLAT NO. 23330-23333.
- 3.) THE SUBJECT PROPERTY IS ZONED PGCC PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
- 4.) THE EXISTING TOPOGRAPHY SHOWN ON THESE LOTS IS BASED ON AERIAL TOPO FLOWN BY WINGS AERIAL MAPPING CO., INC. IN JANUARY, 2006 AND GRADING SHOWN ON APPROVED F-08-060 PLANS.
- 5.) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 16E1 AND 0012 WERE USED FOR THIS PROJECT.
- 6.) WATER IS PUBLIC. THE CONTRACT NUMBER IS 24-4522-D.
- 7.) SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-4522-D.
- 8.) THIS PROJECT IS LOCATED WITHIN THE METROPOLITAN DISTRICT. THE DRAINAGE AREA IS THE LITTLE PATUXENT.
- 9.) EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS, AERIAL AND FIELD SURVEYED LOCATIONS.
- 10.) THERE ARE NO WETLANDS, STREAM, THEIR BUFFERS, 100YR FLOODPLAIN OR STEEP SLOPES 25% OR GREATER LOCATED ON THESE LOTS.
- 11.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
- 12.) STORMWATER MANAGEMENT FOR THESE LOTS IS PROVIDED WITHIN THE (P-1) EXTENDED DETENTION FACILITY WITH MICRO-POOL #2 AND RECHARGE CHAMBER #2, BOTH OF WHICH WERE CONSTRUCTED UNDER F-08-060. THE POND IS PRIVATELY OWNED AND JOINTLY MAINTAINED. THE RECHARGE CHAMBER IS PRIVATELY OWNED AND PRIVATELY MAINTAINED.
- 13.) A NOISE STUDY WAS PREPARED BY HUSH ACOUSTICS IN JULY, 2014. THESE LOTS DO NOT FALL WITHIN THE 65 dBA NOISE CONTOUR LINE. THE 65 dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- 14.) THE TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP, INC. UNDER S-86-13 WHICH WAS UPDATED IN MARCH 2004 AND LETTER PREPARED BY THE TRAFFIC GROUP, INC. DATED FEBRUARY, 2015 INDICATING THAT THIS RESUBDIVISION IS IN COMPLIANCE WITH THAT EARLIER STUDY.
- 15.) PERIMETER LANDSCAPING WAS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED IN THE F-08-060 ROAD CONSTRUCTION PLAN SET IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY WAS FOR THE REQUIRED LANDSCAPING WAS POSTED AS PART OF THE F-08-060 DPW DEVELOPERS AGREEMENT. THE RESIDENTIAL INTERNAL LANDSCAPING REQUIREMENT IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED IN THIS SITE DEVELOPMENT PLAN SET. FINANCIAL SURETY IN THE AMOUNT OF \$1,800.00 FOR THE INTERNAL LANDSCAPING SHALL BE POSTED AS PART OF THE BUILDERS GRADING PERMIT.
- 16.) THESE LOTS ARE EXEMPT FROM THE REQUIREMENT OF THE HOWARD COUNTY FOREST CONSERVATION ACT UNDER SECTION 16.120(b)(1)(iv) OF THE HOWARD COUNTY CODE SINCE IT IS A PLANNED UNIT DEVELOPMENT UNDER S-86-013.
- 17.) DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - A) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
  - B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.).
  - C) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
  - D) STRUCTURES/CULVERTS/BRIDGES - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD).
  - E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
  - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
  - G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- 18.) THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE 11-16-2009, ON WHICH DATE DEVELOPER AGREEMENT #F-08-060/24-4522-D WAS FILED AND ACCEPTED.
- 19.) THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE OCTOBER 6, 2013. PER SECTION 126.0.H.1.d AND THE TURF VALLEY MULTI-USE SUBDISTRICT FDP, THIRD AMENDMENT, PLANNING BOARD APPROVAL OF THIS SITE DEVELOPMENT PLAN IS REQUIRED.
- 20.) THE VILLAGES AT TURF VALLEY SUBDIVISION (PHASES 1-4) CONSTITUTED 241 TOTAL UNITS, WHICH MET THE SKETCH PLAN MILESTONE DATE OF JANUARY 1, 2001 THROUGH JUNE 30, 2002 FOR BOTH PHASE IVA (131 UNITS) & IVB (110 UNITS) AS ESTABLISHED BY THE REVISED PHASING PLAN DATED JUNE 21, 2000. UNDER P-06-013, 42 CONDOMINIUM UNITS THAT WERE APPROVED WERE USED FOR OAKMONT AT TURF VALLEY (F-02-082). THESE 42 CONDOMINIUM UNITS WERE NOT PREVIOUSLY INCLUDED WITH THE OAKMONT AT TURF VALLEY (F-02-82) PLANS. IN ORDER TO RECEIVE BUILDING ALLOCATIONS, THESE 42 CONDOMINIUM UNITS WERE SHOWN AND APPROVED ON THE PRELIMINARY PLAN FOR THE VILLAGES AT TURF VALLEY (P-06-013). THE SECOND AMENDMENT TO THE TURF VALLEY MULTI-USE FINAL DEVELOPMENT PLAN WAS RECORDED ON NOVEMBER 30, 2007, INCREASING THE PROJECTED UNITS IN THE OAKMONT AT TURF VALLEY AREA FROM 150 TO 200. AS A RESULT, THOSE 42 UNITS ARE NO LONGER A PART OF THE VILLAGES AT TURF VALLEY WHICH LEAVES UNIT TOTAL AT 199. HOWEVER, WITH THE APPROVAL OF WP-08-009 AN ADDITIONAL 21 UNITS WERE ADDED TO THE VILLAGES AT TURF VALLEY. THE FINAL UNIT TOTAL FOR THIS SUBDIVISION COMES TO 220.
- 21.) PRIOR TO GRADING PERMIT APPLICATION, THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 16.129 OF THE HOWARD COUNTY CODE.
- 22.) ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 23.) FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.03 AND R-6.05.
- 24.) THE PROPOSED ALLEY SERVING THESE LOTS IS PRIVATE. IT WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- 25.) FOR THE LOTS BEING SERVED BY THE ALLEY, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS PROVIDED TO THE JUNCTION OF THE ALLEY AND PUBLIC ROAD RIGHT-OF-WAY AND NOT ONTO THE ALLEY ITSELF.
- 26.) IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, WINDOW WELLS, ORIELS, VESTIBULES, BALCONIES, AND CHIMNEYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACK OR REQUIRED DISTANCE BETWEEN BUILDINGS. EXTERIOR STAIRWAYS OR RAMPS ABOVE OR BELOW GROUND LEVEL, EXCLUDING THOSE ATTACHED TO A PORCH OR DECK MAY PROJECT NOT MORE THAN 10 FEET INTO A FRONT OR PROJECT BOUNDARY SETBACK, 16 FEET INTO A REAR SETBACK AND 4 FEET INTO A SIDE SETBACK OR REQUIRED DISTANCE BETWEEN BUILDINGS. OPEN AND ENCLOSED PORCHES OR DECKS AND THE STAIRWAYS OR RAMPS ATTACHED THERETO MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK, A SETBACK FROM A PROJECT BOUNDARY, A SETBACK FROM A DIFFERENT ZONING DISTRICT, OR A REQUIRED DISTANCE BETWEEN BUILDINGS.
- 27.) THE 6 UNITS/LOTS PROPOSED ON THIS PLAN ARE BEING TRANSFERRED FROM THE 59 UNITS/LOTS PREVIOUSLY APPROVED FOR VILLAGES AT TURF VALLEY, PHASE 3, F-08-085.

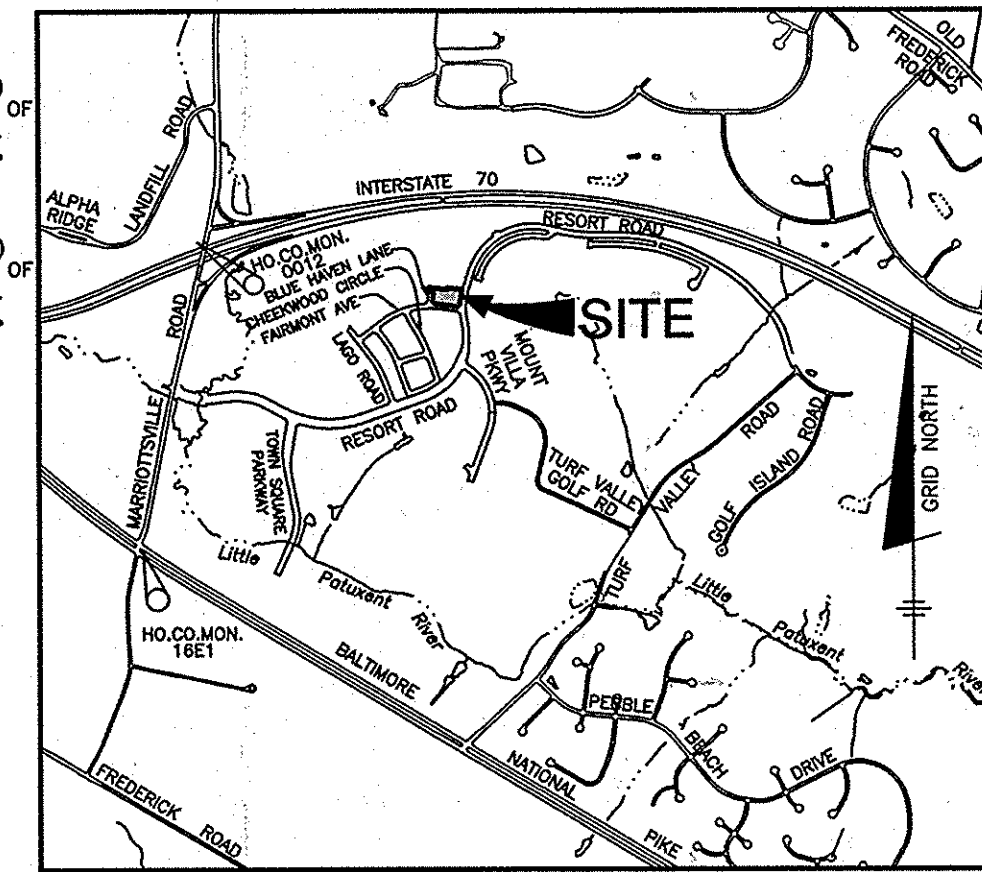
# RESIDENTIAL SITE DEVELOPMENT PLAN

## VILLAGES AT TURF VALLEY

### PHASE 1, SECTION 3

#### LOTS 300 thru 305 AND OPEN SPACE LOTS 306 thru 307

**BENCHMARKS**  
 NAD'83 HORIZONTAL  
 HO. CO. #16E1 (AKA 3439001)  
 STAMPED BRASS DISK SET ON TOP OF  
 A 3/8" DEEP COLUMN OF CONCRETE.  
 N 593250.960' E 1340192.70'  
 ELEVATION: 463.981'  
 HO. CO. #0012 (AKA 3439001)  
 STAMPED BRASS DISK SET ON TOP OF  
 A 3/8" DEEP COLUMN OF CONCRETE.  
 N 596502.760' E 1340864.37'  
 ELEVATION: 466.298'



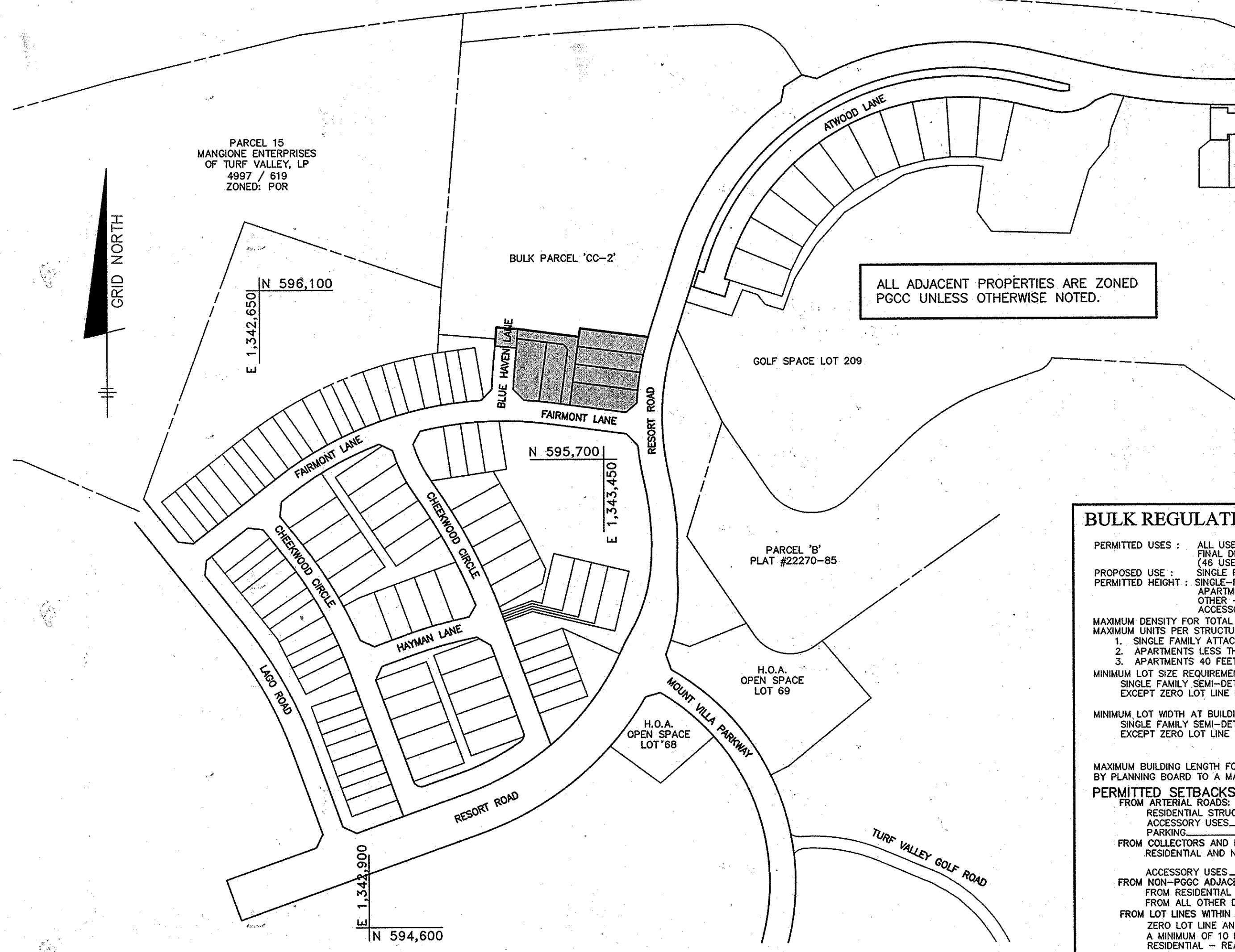
VICINITY MAP  
 SCALE: 1" = 2000'  
 ADC MAP: 19  
 GRID: D4

**LOT COVERAGE CHART**

LOT	AREA	COVERAGE	PERCENTAGE
300	9,103 SF	2,720 SF	29.9%
301	6,955 SF	2,720 SF	39.1%
302	8,164 SF	2,720 SF	33.3%
303	6,458 SF	2,720 SF	42.1%
304	6,506 SF	2,720 SF	41.8%
305	6,699 SF	2,720 SF	40.6%

**ADDRESS CHART**

LOT	STREET ADDRESS
300	10894 FAIRMONT LANE
301	10890 FAIRMONT LANE
302	10982 RESORT ROAD
303	10978 RESORT ROAD
304	10974 RESORT ROAD
305	10970 RESORT ROAD



ALL ADJACENT PROPERTIES ARE ZONED PGCC UNLESS OTHERWISE NOTED.

**BULK REGULATIONS :**

PERMITTED USES : ALL USES AS PER TURF VALLEY PGCC DISTRICT, MULTI-USE SUBDISTRICT FINAL DEVELOPMENT PLAN, THIRD AMENDMENT, PLATS 21029-21031 (48 USES) OUTLINED FROM RESIDENTIAL USES TO SPECIALTY STORES)  
 PROPOSED USE : SINGLE-FAMILY ATTACHED - 34 FEET  
 PERMITTED HEIGHT : SINGLE-FAMILY ATTACHED - 80 FEET  
 OTHER - 15 FEET  
 ACCESSORY STRUCTURES - 15 FEET  
 MAXIMUM DENSITY FOR TOTAL PGCC DISTRICT IS 2.0 DWELLING UNITS PER ACRE.  
 MAXIMUM UNITS PER STRUCTURE:  
 1. SINGLE FAMILY ATTACHED 8 UNITS PER STRUCTURE  
 2. APARTMENTS LESS THAN 40 FEET IN HEIGHT 24 UNITS PER STRUCTURE  
 3. APARTMENTS 40 FEET OR GREATER IN HEIGHT 120 UNITS PER STRUCTURE  
 MINIMUM LOT SIZE REQUIREMENTS :  
 SINGLE FAMILY SEMI-DETACHED 4,000 SQ.FT.  
 EXCEPT ZERO LOT LINE DWELLINGS 4,000 SQ.FT.  
 MINIMUM LOT WIDTH AT BUILDING RESTRICTION LINE:  
 SINGLE FAMILY SEMI-DETACHED 40 FEET  
 EXCEPT ZERO LOT LINE DWELLINGS 40 FEET  
 MAXIMUM BUILDING LENGTH FOR RESIDENTIAL STRUCTURE = 120 FEET, UNLESS APPROVED BY PLANNING BOARD TO A MAXIMUM OF 300 FEET.  
**PERMITTED SETBACKS:**  
 FROM ARTERIAL ROADS:  
 RESIDENTIAL STRUCTURES 50 FEET  
 ACCESSORY USES 30 FEET  
 PARKING 25 FEET  
 FROM COLLECTORS AND LOCAL STREETS:  
 RESIDENTIAL AND NON-RESIDENTIAL STRUCTURES 30 FEET FROM A 60 FT. ROW  
 20 FEET FROM A 50 FT. ROW  
 ACCESSORY USES 10 FEET  
 FROM NON-PGCC ADJACENT PROPERTIES:  
 FROM RESIDENTIAL DISTRICTS 75 FEET  
 FROM ALL OTHER DISTRICTS 30 FEET  
 FROM LOT LINES WITHIN PGCC MULTI-USE SUBDISTRICT:  
 ZERO LOT LINE AND ALL OTHER USES - SIDE 0 FEET  
 A MINIMUM OF 10 FEET MUST BE PROVIDED BETWEEN STRUCTURES  
 RESIDENTIAL - REAR 20 FEET  
 BETWEEN ATTACHED DWELLING UNITS AND APARTMENT BUILDINGS :  
 FACE TO FACE 30 FEET  
 FACE TO SIDE/REAR TO SIDE 30 FEET  
 SIDE TO SIDE 15 FEET  
 REAR TO REAR 60 FEET  
 REAR TO FACE 100 FEET  
 THERE IS A 60% MAXIMUM LOT COVERAGE REQUIREMENT FOR SFA LOTS AND NO SPECIFIED COVERAGE REQUIREMENT FOR APARTMENTS.

**VILLAGES AT TURF VALLEY PHASING CHART**

PHASE/SECTION	S.F.A.	S.F.D.	CONDOMINIUM	TOTAL
P1S1 (F-10-026)	0	0	0	0
P1S2 (F-08-060)	41	21	0	62
P1S3 (F-15-076)	6	0	0	6
P2S1 (F-08-084)	0	0	44 *	44
P2S2 (F-10-078)	0	48	0	48
P4 (F-08-088)	15	8	0	23
P5 (F-15-079)	36	0	0	36
MAINT SHOP (SDP-08-096)	0	0	1 (Access. Apt.)	1
<b>TOTAL</b>	<b>98</b>	<b>77</b>	<b>45</b>	<b>220</b>

\* FUTURE CONDO BUILDING ON LOT 203

**SITE ANALYSIS DATA CHART**

A.) TOTAL PROJECT AREA	1.20 acres
B.) AREA OF PLAN SUBMISSION	1.20 acres
C.) LIMIT OF DISTURBED AREA	1.44 acres
D.) PRESENT ZONING:	PGCC (MULTI-USE SUBDISTRICT)
E.) PROPOSED USE OF SITE:	RESIDENTIAL SINGLE FAMILY ATTACHED
F.) FLOOR SPACE ON EACH LEVEL OF BLDG PER USE	N/A
G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S)	6
H.) TOTAL NUMBER OF UNITS PROPOSED	6
I.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE	N/A
J.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGS AND/OR FDP CRITERIA	15 (6 UNITS x 2.5)
K.) NUMBER OF PARKING SPACES PROVIDED ON-SITE (INCLUDES HANDICAPPED SPACES)	24 (2 FOR EACH GARAGE AND 2 FOR EACH DRIVEWAY)
L.) OPEN SPACE ON-SITE	0.19 AC. (RECORDED UNDER PLAT 23330-23333)
M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED	N/A
N.) AREA OF RECREATIONAL OPEN SPACE PROVIDED	N/A
O.) BUILDING COVERAGE OF SITE	N/A
P.) PERCENTAGE OF GROSS AREA	N/A
Q.) APPLICABLE DPZ FILE REFERENCES:	S-03-01, WP-05-074, WP-08-009 S-88-13, P-06-13, F-08-060, F-08-084, F-09-022, F-10-026, F-14-026, F-15-076

THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.  
 THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

**SHEET INDEX**

SHEET	TITLE
1	TITLE SHEET
2	SITE DEVELOPMENT, GRADING & LANDSCAPE PLAN
3	SEDIMENT & EROSION CONTROL PLAN
4	SEDIMENT & EROSION CONTROL NOTES AND DETAILS

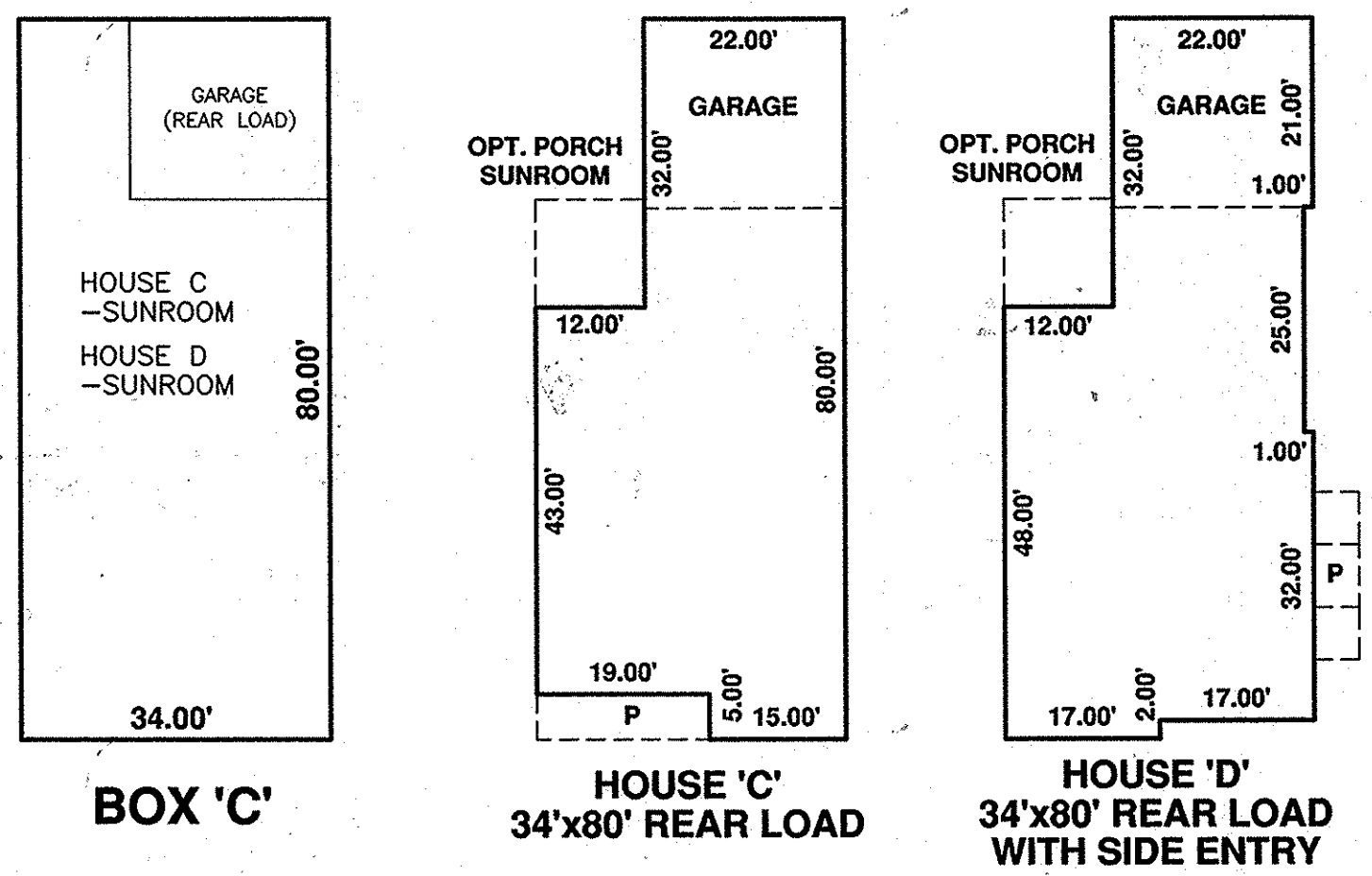
**PERMIT INFORMATION CHART**

SUBDIVISION NAME:		SECTION/AREA:	LOT/PARCEL #		
VILLAGES AT TURF VALLEY		PHASE 1 SECTION 3	LOTS 300 thru 305		
PLAT No.	GRID	ZONE	TAX MAP	ELECTION DISTRICT	CENSUS TRACT
23330-23333	11	PGCC-2	16	3rd	6030.00

APPROVED  
 PLANNING BOARD OF HOWARD COUNTY  
 AUGUST 20, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

9-30-15  
 10-5-15  
 10-5-15



**BOX 'C'**  
 SCALE: 1" = 20'

**HOUSE 'C'**  
 34'x80' REAR LOAD  
 SCALE: 1" = 20'

**HOUSE 'D'**  
 34'x80' REAR LOAD WITH SIDE ENTRY  
 SCALE: 1" = 20'

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23300, Expiration Date: 6-30-2017.

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 • ELLETTT CITY, MARYLAND 21043  
 (7) 410-465-8105 (7) 410-465-6644  
 WWW.BE-CVLENGINEERING.COM

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

BUILDER: VILLAGES AT TURF VALLEY, LLC c/o JAMES KEELY AND COMPANY, INC. 61 EAST PADONIA ROAD TIMONUM, MARYLAND 21093 410-252-8600

**VILLAGES AT TURF VALLEY PHASE 1, SECTION 3**  
 LOTS 300 thru 305 AND OPEN SPACE LOTS 306 thru 307

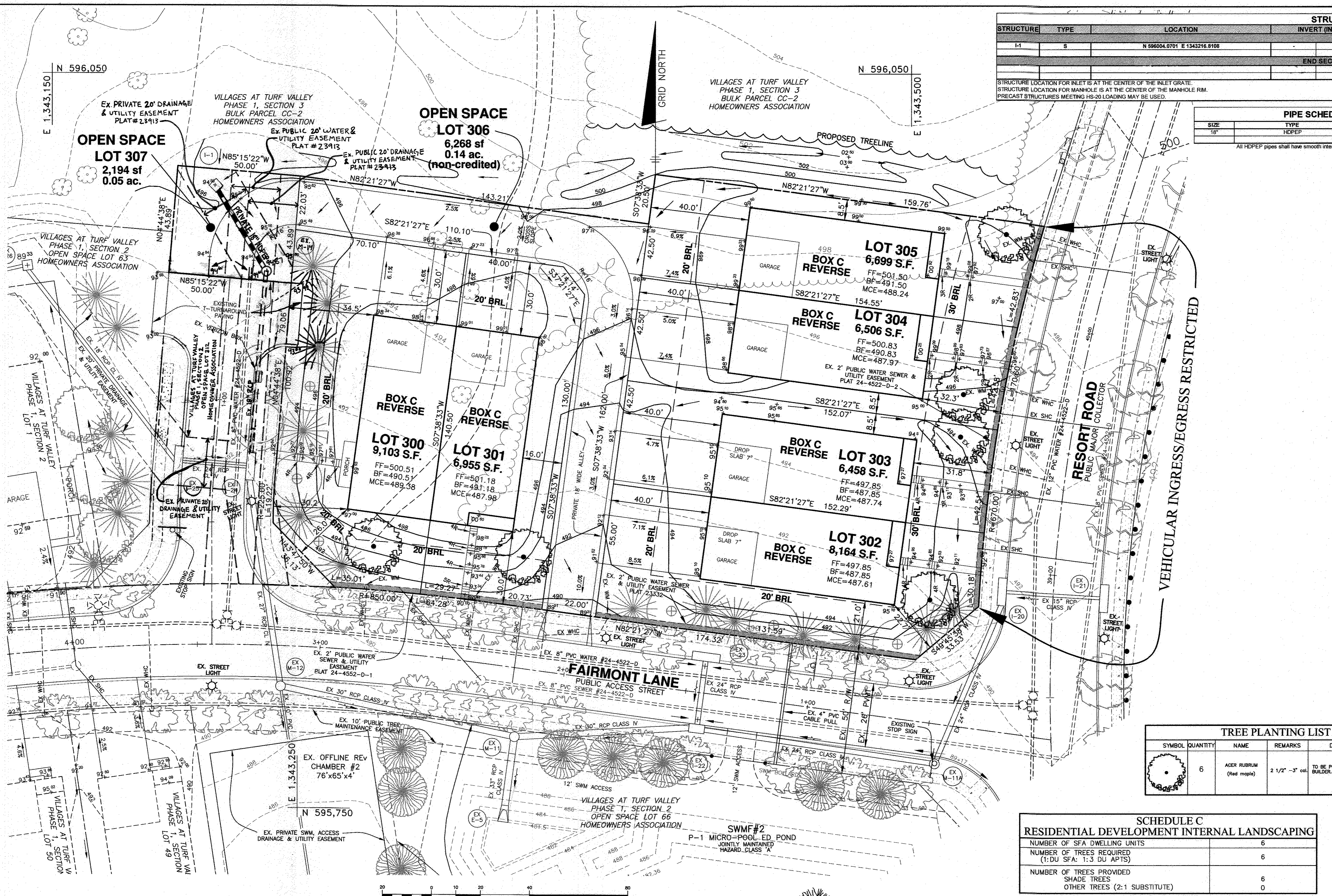
TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8  
 ZONED: PGCC (MULTI-USE SUBDISTRICT)  
 ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

**SITE DEVELOPMENT PLAN**

DATE: AUGUST, 2015  
 SCALE: AS SHOWN

BEI PROJECT NO. 2680  
 SHEET 1 OF 4

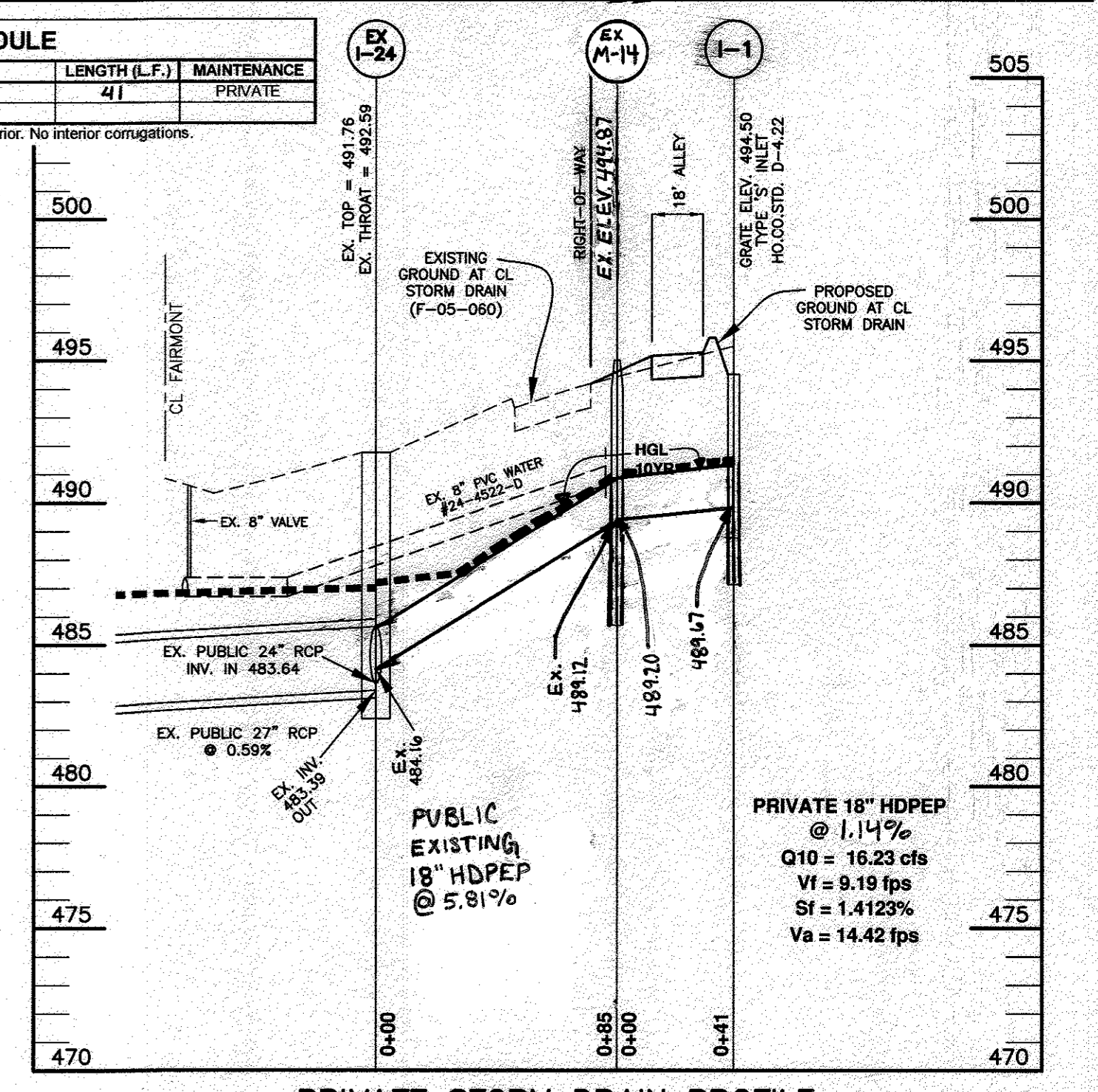




STRUCTURE		TYPE	LOCATION	INVERT (IN)	INVERT (OUT)	TOP ELEV.	THROAT ELEV.	STD. DETAIL	INLET NOTES	MAINTENANCE
I-1		S	N 596.050				483.67	494.50	NA	HO.CO.STD. D-4.22
END SECTIONS & HEADWALLS										

PIPE SCHEDULE			
SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
18"	HDPEP	41	PRIVATE

All HDPEP pipes shall have smooth interior. No interior corrugations.



PRIVATE STORM DRAIN PROFILE  
SCALE: 1" = 50' HORZ., 1" = 5' VERT.

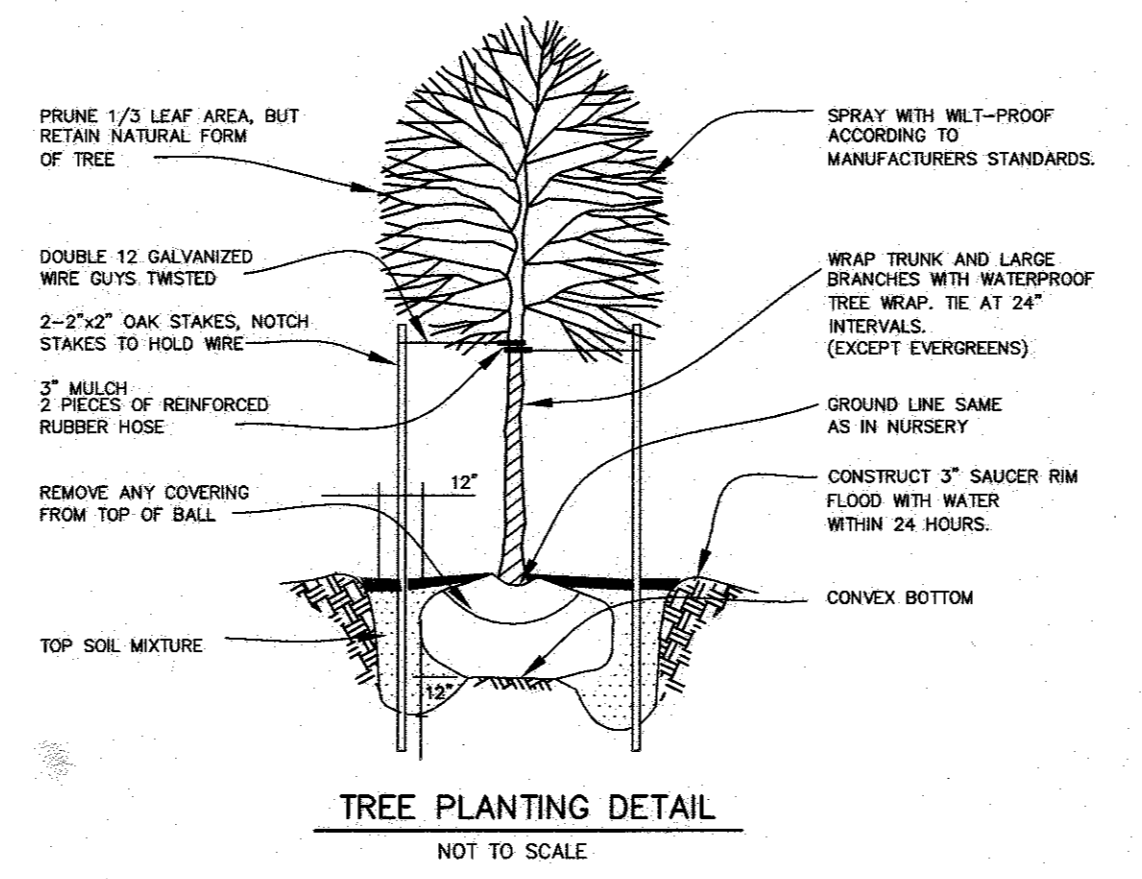
**LEGEND**

- EXISTING CONTOURS
- EXISTING STREET LIGHT
- EXISTING PERIMETER TREES INSTALLED UNDER F-08-060.
- EXISTING SIDEWALK
- PROJECT BOUNDARY
- INDICATES BUILDING RESTRICTION LINE
- EXISTING EASEMENTS
- FF=502.53 ← FIRST FLOOR ELEVATION
- BF=492.53 ← BASEMENT FLOOR ELEVATION
- MCE=487.13 ← MINIMUM CELLAR ELEVATION
- EX SHC ← EXISTING SEWER HOUSE CONNECTION
- EX WHC ← EXISTING WATER HOUSE CONNECTION

TREE PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
	6	ACER RUBRUM (Red maple)	2 1/2" - 3" cal. TO BE PROVIDED BY THE BUILDER.

SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING	
NUMBER OF SFA DWELLING UNITS	6
NUMBER OF TREES REQUIRED (1:DU SFA: 1:3 DU AP:1'S)	6
NUMBER OF TREES PROVIDED	6
SHADE TREES	6
OTHER TREES (2:1 SUBSTITUTE)	0

- LANDSCAPE NOTES:**
- TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A DRAIN INLET, 5 FEET OF AN OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
  - SEE TREE PLANTING DETAIL - THIS SHEET.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
  - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
  - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
  - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE BUILDERS GRADING PERMIT IN THE AMOUNT OF \$1,800.00.



**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 CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*Mark Buda* 9/1/15 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chief Development Engineering Division* 9-30-15 DATE

*Chief, Division of Land Development* 10-5-15 DATE

*Director* 10-5-15 DATE

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

AUGUST 20, 2015

1 3-30-2017 REVISE STORM DRAIN, EASEMENTS, OPEN SPACE LOT 312 BASED ON ASBUILT CONDITIONS OF F-08-060 AND PLAT #23913

NO. DATE REVISION

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

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

BUILDER: VILLAGES AT TURF VALLEY, LLC  
c/o JAMES KEELY AND COMPANY, INC.  
61 EAST PATONIA ROAD  
TIMONUM, MARYLAND 21093  
410-252-8800

**VILLAGES AT TURF VALLEY PHASE 1, SECTION 3**  
LOTS 300 thru 305 and OPEN SPACE LOTS 306 thru 307

TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8  
ZONED: PGCC (MULTI-USE SUBDISTRICT)  
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

**SITE DEVELOPMENT, GRADING & LANDSCAPE PLAN**

DATE: AUGUST, 2015 BEI PROJECT NO. 2680  
SCALE: AS SHOWN SHEET 2 OF 4







**B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**Definition**  
To promote the establishment of vegetation on exposed soil.

**Purpose**  
To stabilize disturbed soils with permanent vegetation.

**Criteria**  
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.**

**Adequate Vegetative Establishment**  
Sediment control practices must remain in place during grading, seeded preparation, seeding, mulching, and vegetative establishment.

**Inspect seeded areas for vegetative establishment and make necessary repairs, re-plantments, and reseeding within the planting season.**

**1. Adequate vegetative stabilization requires 95 percent groundcover.**  
2. If an area has less than 40 percent groundcover, reestablish following the original recommendations for lime, fertilizer, seeded preparation, and seeding.  
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates stipulated in this specification.  
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 out and fill slopes.

**Purpose**  
To provide timely vegetative cover on out 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**

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

- Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seeded and apply seed and mulch on all slopes as the work progresses.
- Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
- 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.
- Construction sequence example (Refer to Figure B.2):
  - 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.
  - 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.
  - Place Phase 1 fill, prepare seeded, and stabilize.
  - Place Phase 2 fill, prepare seeded, and stabilize.
  - Place final phase fill, prepare seeded, 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.

APPROVED  
PLANNING BOARD OF HOWARD COUNTY  
AUGUST 20, 2015

*[Signature]*

**ENGINEER'S CERTIFICATE**

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

*[Signature]* 8/28/15  
ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT HAVE CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEING CONDUCTED BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 9/1/15  
DEVELOPER DATE

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

*[Signature]* 9/1/15  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8.30.15  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 10-5-15  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]*  
DIRECTOR

**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**

- Temporary Stabilization**
  - Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripper 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.
  - Apply fertilizer and lime as prescribed on the plans.
- Permanent Stabilization**
  - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
    - Soil pH between 6.0 and 7.0.
    - Soluble salts less than 500 parts per million (ppm).
    - Soil contains less than 40 percent clay but enough of the graded material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: If loess will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
    - Soil contains 1.5 percent minimum organic matter by weight.
    - Soil contains sufficient pore space to permit adequate root penetration.
  - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
  - 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.
  - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
  - 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 seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded following must be unnecessary on newly disturbed areas.

**B. Topsoiling**

- 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.
- 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.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil material is not adequate to produce vegetative growth.
  - 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.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
  - Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
  - 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 subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
  - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or other grasses, species.
  - 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.
- Topsoil Application
  - Erosion and sediment control practices must be maintained when applying topsoil.
  - Apply topsoil to a depth of 4 to 6 inches 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.
  - 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 seeding preparation.

**Soil Amendments (Fertilizer and Lime Specifications)**

- 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.
- 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.
- Lime materials must be ground limestone (hydrated or burnt lime) but 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 95 to 100 percent will pass through a #200 mesh sieve. 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.
- 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.

**DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE**

**CONSTRUCTION SPECIFICATIONS**

- 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 (300 FEET SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIDE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED THROUGH THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM 6 INCHES HIGH AND A MINIMUM OF 12 INCHES WIDE. THE PIPE SHOULD BE PROTECTED 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- GRADE 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.
- MAINTAIN EVEREST GRADING AND SEEDING PREPARATION. CONDUCT REGULAR TRACKING OF SEDIMENT, AND OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN POSITIVE DRAINAGE. REMOVE STONES, BRUSH, AND SPECIFIED DEBRIS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY WASHING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAYS TO REMOVE MUD TRACKED ON 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  
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**B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

**Definition**  
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 conditions, slopes, and any disturbed area not under active grading.

**Criteria**

**A. Seeding**

- Specifications**
  - 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 equating of seed and seedling rates.
  - 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.
  - Inoculants: The inoculant for 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.
  - 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 phytotoxic materials.
- Application**
  - Dry Seeding:** This includes use of conventional drop or broadcast spreaders.
    - 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.
    - 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 soil to seed contact.
    - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
      - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
    - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
      - 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.
      - Mix seed and fertilizer on site and seed immediately and without interruption. When hydroseeding do not incorporate seed into the soil.

**B. Mulching**

- Mulch Materials (in order of preference)**
  - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Free of noxious weeds as specified in the Maryland State 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.
  - Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a uniform fibrous mat.
- WCFFM 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 uniformity of the matting.
- WCFFM, including dye, must contain no germination or growth inhibiting factors.
- WCFFM 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 green 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.
- WCFFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
- WCFFM 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**

- Apply mulch to all seeded areas immediately after seeding.
- 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 and as possible, lay sod with the surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
- 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**

- 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:
  - A mulch anchoring tool is a tractor draw 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.
  - 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.
  - Synthetic binders such as Acrylic DLR (Ago-Tack), DCA-70, Petrosol, Terra Tax II, Terra Tack AS or other approved equal weight binders 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.
  - 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.

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

**CONSTRUCTION SPECIFICATIONS**

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM SIZE AND SHAPE. THE MATTING SHOULD BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SOIL IF PRESENT SURFACE. AVOID USING MATTING WITH A MAXIMUM MESH OPENING OF 2 INCHES AND SUFFICIENTLY BLENDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE FIBERS FROM THE MATTING.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. 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 1/2 INCHES WIDE AND BE 1/2 INCH LONG. "T" SHAPED STAPLES MUST AVERAGE 1/2 INCH WIDE AND BE 1/2 INCH LONG. A MINIMUM 4 INCH HEAD, WOOD STAPLES MUST BE ROUND-SHAPE HARDWOOD, 1/2 TO 3/4 INCHES IN LENGTH, 1/2 INCH IN CIRCUMFERENCE, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOILING, SEEDING PREPARATION AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- 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 FRMLY TO PREVENT AIR TRAPPING UNDER THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 8 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSTREAM MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DOING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING MAT IN PLACE, REGARDING THE EXISTING MATERIAL, AND TAMPING TO STAKE THE MAT END TO THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) SPACES THROUGHOUT AND 2 FOOT (MAXIMUM) SPACES ALONG BEAMS, GUTTERS, AND OTHER STRUCTURAL MEMBERS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, OVERLAP MATTING AND STAPLE/STAKE IN PLACE. FILL THE MAT JOINTS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT ROLLS TO MAINTAIN POSITIVE DRAINAGE.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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**B-4-4 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**

- General Use**
  - 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 seed selection, species, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
  - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planning.
  - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
  - For areas requiring low maintenance, apply urea form fertilizer (46-0-0) at 3/4 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.
- Turfgrass Mixtures**
  - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
  - 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.
    - 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.
    - Gentle 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/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.
    - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management. Full sun to medium shade. Recommended mixtures include; Certified Tall Fescue Cultivars 55 to 100 percent, Certified Kentucky Bluegrass Cultivars to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
    - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

**B. Seeding**

- Soil to be seeded** must be prepared as described in this specification.
- General Specifications**
  - Class of turfgrasses must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
  - Sod must be machine cut to a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and trim or uneven ends will not be accepted. Intensively managed turf areas. Mixture includes Certified Kentucky Bluegrass Cultivars to 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.
  - Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
  - 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.
- Soil Installation**
  - During periods of excessively high temperature or in areas having dry soil, lightly irrigate the subsoil immediately prior to laying the sod.
  - 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.
  - Roll and tamp the sod so that the surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
  - 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.
- Sod Maintenance**
  - 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.
  - After the first week, soil watering is required as necessary to maintain adequate moisture content. DO NOT STOP WATERING UNTIL THE SOIL IS FIRMLY ROOTED. NO MORE THAN 15% 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.

**DETAIL C-1 EARTH DIKE**

DIKE TYPE	A	B
a - DIKE HEIGHT	18 IN. MIN.	30 IN. MIN.
b - DIKE WIDTH	24 IN. MIN.	36 IN. MIN.
c - FLOW WIDTH	4 FT. MIN.	6 FT. MIN.
d - FLOW DEPTH	12 IN. MIN.	24 IN. MIN.

**CONSTRUCTION SPECIFICATIONS**

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

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**B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION**

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

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

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

**Criteria**

- 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.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- 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.

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a site slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upslope side.
- 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.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 37 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- 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.

- Mulches:** See Section B-4-2 Soil Preparation, Specifications, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
- Vegetative Cover:** See Section B-4-4 Temporary Stabilization.
- Tillage:** Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-till water spaced about 12 inches apart, spring-toothed harrows, and similar plow examples of equipment that may produce the desired effect.
- 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.
- Barriers:** Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to reduce dust and soil blowing.
- Chemical Treatment:** Use of chemical treatment requires approval by the appropriate plan review authority.

**DETAIL E-3 SUPER SILT FENCE**

DIKE TYPE	A	B
a - DIKE HEIGHT	18 IN. MIN.	30 IN. MIN.
b - DIKE WIDTH	24 IN. MIN.	36 IN. MIN.
c - FLOW WIDTH	4 FT. MIN.	6 FT. MIN.
d - FLOW DEPTH	12 IN. MIN.	24 IN. MIN.

**CONSTRUCTION SPECIFICATIONS**

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 6005 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.
- FASTEN 8 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE 1/8 INCH RINGS.
- FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. ENDED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE LINE OF FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM BURYING DEBRIS IN FENCE OR WHEN SEDIMENT REACHES 20% 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 2011 MARYLAND DEPARTMENT OF ENVIRONMENT NATURAL RESOURCES CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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 PERMANENT SEEDING (SEC. B-4-4-1), TEMPORARY SEEDING (SEC. B-4-4-2), AND MULCHING (SEC. B-4-3-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN O