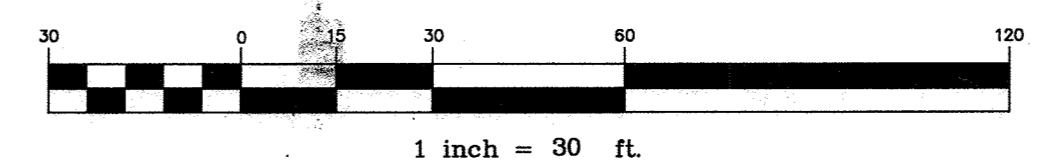


APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE 07/20/2017
[Signature]

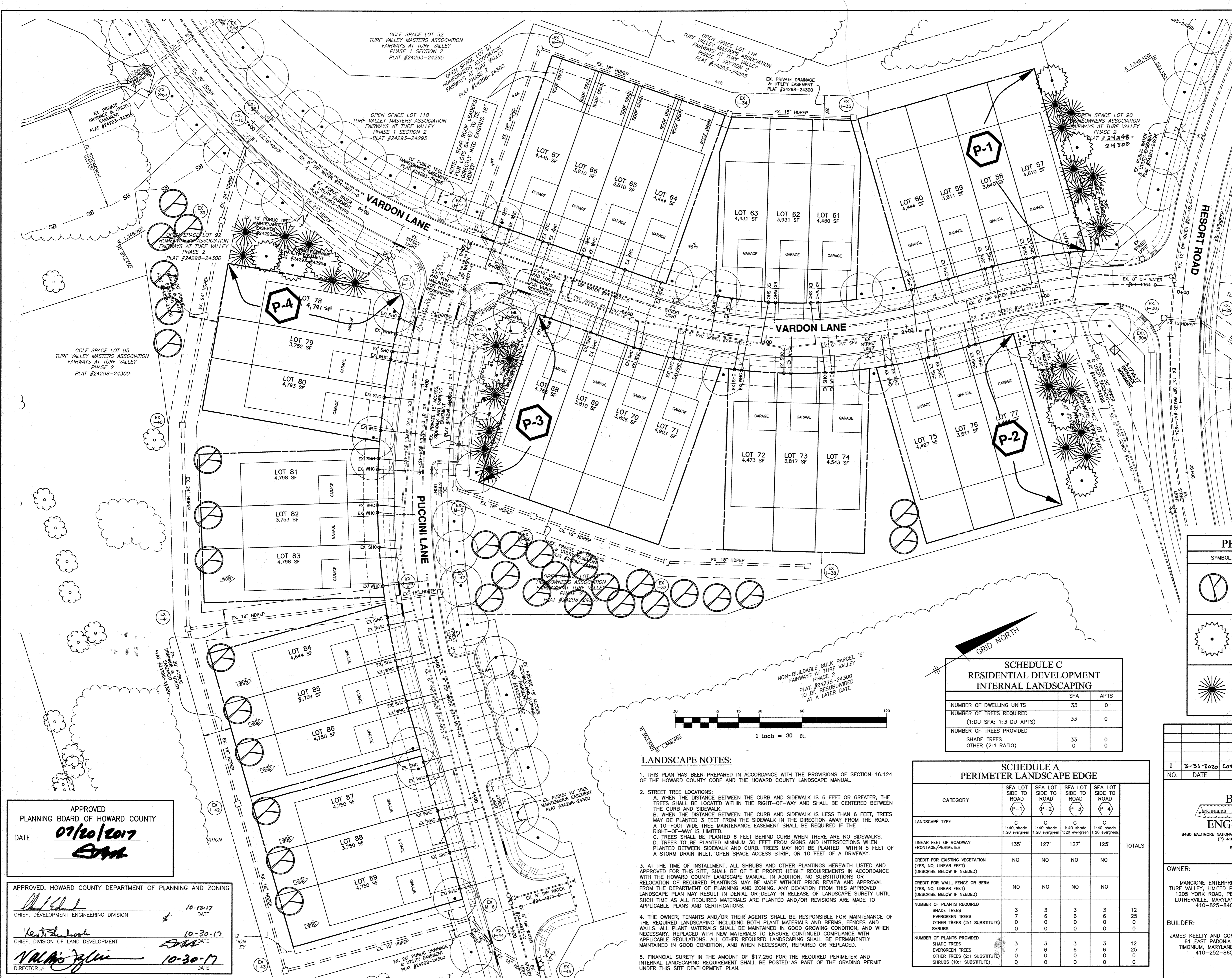
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 10-12-17 DATE
[Signature] 10-30-17 DATE
[Signature] 10-30-17 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

LEGEND

- - - - - EXISTING CONTOURS (F-15-079)
- - - - - EXISTING TREELINE
- - - - - EXISTING STREAM
- - - - - PROJECT BOUNDARY LINE
- - - - - INDICATES WALK-OUT BASEMENT
- FF=XXXX.XX FIRST FLOOR ELEVATION
- BF=XXXX.XX BASEMENT FLOOR ELEVATION
- MCE=XXXX.XX MINIMUM CELLAR ELEVATION
- ☀ EXISTING STREET LIGHT
- ⊕ EXISTING FIRE HYDRANT
- EX WHC - - - - EXISTING WATER HOUSE CONNECTION
- EX SHC - - - - EXISTING SEWER HOUSE CONNECTION



<p>2 3-31-2020 CORRECT SQUARE FOOTAGE OF LOTS 78 AND 85</p> <p>1 12-21-2017 REVISE LOTS 75-77 TO BE RIGHT HAND GARAGES</p>		
NO.	DATE	REVISION
<p>BENCHMARK ENGINEERS, LAND SURVEYORS & PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL, PRICE & SUITE 315 & ELLIOTT CITY, MARYLAND 21043 (P) 410-485-6105 (F) 410-485-6644 WWW.BEI-CIVILENGINEERING.COM</p>		
<p>OWNER: MANSONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-829-8400</p>		<p>RESIDENTIAL - SINGLE FAMILY ATTACHED FAIRWAYS AT TURF VALLEY PHASE 2 LOTS 57 thru 89</p>
<p>BUILDER: JAMES KEELY AND COMPANY, INC. 61 EAST PADONIA ROAD TIMONUM, MARYLAND 21093 410-252-8600</p>		<p>TAX MAP: 16, PARCEL: P/O 8 & 706, GRID: 16 ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC</p> <p>SITE DEVELOPMENT AND GRADING PLAN</p>
<p>DATE: SEPTEMBER 19, 2017</p>		<p>BEI PROJECT NO. 2833</p>
<p>SCALE: AS SHOWN</p>		<p>SHEET 2 OF 6</p>



DEVELOPER'S/BUILDER'S CERTIFICATE

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

MARK BUDA
JAMES KEELY AND COMPANY, INC.

9/19/17
DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 07/20/2017

[Signature]

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

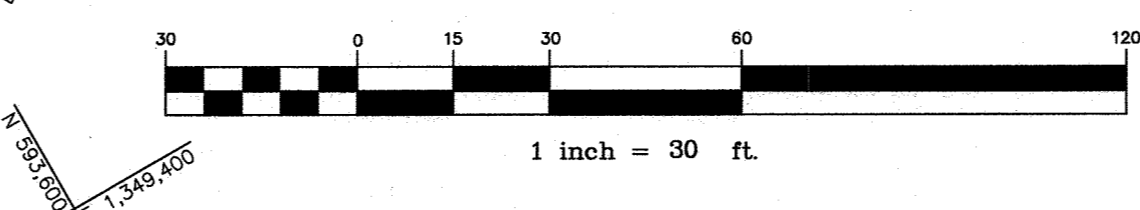
[Signature] 10-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 10-30-17
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 10-30-17
DIRECTOR

LANDSCAPE NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- STREET TREE LOCATIONS:
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS 6 FEET OR GREATER, THE TREES SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY AND SHALL BE CENTERED BETWEEN THE CURB AND SIDEWALK.
 - WHEN THE DISTANCE BETWEEN THE CURB AND SIDEWALK IS LESS THAN 6 FEET, TREES MAY BE PLANTED 3 FEET FROM THE SIDEWALK IN THE DIRECTION AWAY FROM THE ROAD. A 10-FOOT WIDE TREE MAINTENANCE EASEMENT SHALL BE REQUIRED IF THE RIGHT-OF-WAY IS LIMITED.
 - TREES SHALL BE PLANTED 6 FEET BEHIND CURB WHEN THERE ARE NO SIDEWALKS.
 - TREES TO BE PLANTED MINIMUM 30 FEET FROM SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB. TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A STORM DRAIN INLET, OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- FINANCIAL SURETY IN THE AMOUNT OF \$17,250 FOR THE REQUIRED PERIMETER AND INTERNAL LANDSCAPING REQUIREMENT SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THIS SITE DEVELOPMENT PLAN.



**SCHEDULE C
RESIDENTIAL DEVELOPMENT
INTERNAL LANDSCAPING**

	SFA	APTS
NUMBER OF DWELLING UNITS	33	0
NUMBER OF TREES REQUIRED (1:DU SFA; 1:3 DU APTS)	33	0
NUMBER OF TREES PROVIDED	33	0
SHADE TREES OTHER (2:1 RATIO)	0	0

PERIMETER LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	33	TILIA CORDATA "GREENSPIRE" (Greenspire Littleleaf Linden)	2.5" - 3" cal.	SHADE TREES TO SATISFY INTERNAL LANDSCAPE REQUIREMENT. TO BE PROVIDED BY THE BUILDER.
	12	ACER RUBRUM "RED SUBSET" (Red Sunset Red Maple)	2.5" - 3" cal.	SHADE TREES ALONG PERIMETER EDGES. TO BE PROVIDED BY THE BUILDER.
	25	CUPRESSOCYPARIS LEYLANDII (Leyland Cypress)	5' - 6' ht.	EVERGREEN TREES ALONG PERIMETER EDGES. TO BE PROVIDED BY THE BUILDER.

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	SFA LOT SIDE TO ROAD (P-1)	SFA LOT SIDE TO ROAD (P-2)	SFA LOT SIDE TO ROAD (P-3)	SFA LOT SIDE TO ROAD (P-4)	TOTALS
	C	C	C	C	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	135'	127'	127'	125'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED					
SHADE TREES	3	3	3	3	12
EVERGREEN TREES	7	6	6	6	25
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS	0	0	0	0	0
NUMBER OF PLANTS PROVIDED					
SHADE TREES	3	3	3	3	12
EVERGREEN TREES	7	6	6	6	25
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS (1:1 SUBSTITUTE)	0	0	0	0	0

1 3-31-2020 Correct square footage of lots 78 and 85

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PINE SUITE 315 ELLIOTT CTY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BE-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 22390, Expiration Date: 6-30-2019.

[Signature] 9/20/17

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

RESIDENTIAL - SINGLE FAMILY ATTACHED
FAIRWAYS AT TURF VALLEY
PHASE 2
LOTS 57 thru 89

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

BUILDER: JAMES KEELY AND COMPANY, INC.
61 EAST PADONIA ROAD
TIMONUM, MARYLAND 21093
410-252-8500

LANDSCAPE PLAN

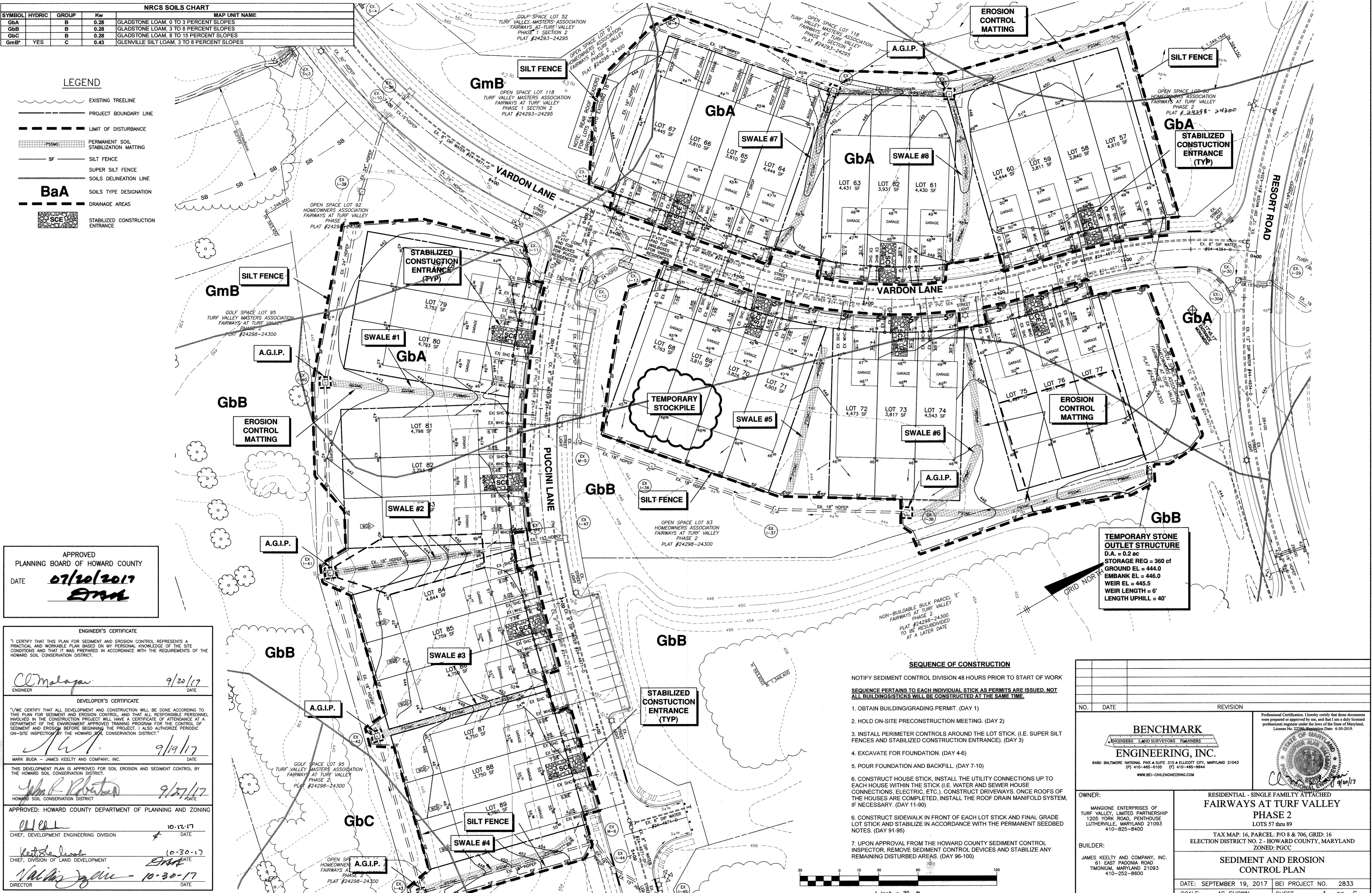
DATE: SEPTEMBER 19, 2017 BEI PROJECT NO. 2833
SCALE: AS SHOWN SHEET 3 OF 6

SDP-17-057

NRCS SOILS CHART			
SYMBOL	HYDRIC	GROUP	MAP UNIT NAME
GbA	B	0.2B	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES
GbB	B	0.2B	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES
GbC	B	0.2B	GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES
GmB*	YES	0.43	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES

LEGEND

- EXISTING TREELINE
- PROJECT BOUNDARY LINE
- LIMIT OF DISTURBANCE
- PERMANENT SOIL STABILIZATION MATTING
- SILT FENCE
- SUPER SILT FENCE
- SOILS DELINEATION LINE
- SOILS TYPE DESIGNATION
- DRAINAGE AREAS
- STABILIZED CONSTRUCTION ENTRANCE



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE **07/20/2017**
EMM

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
C. Malagan 9/20/17
ENGINEER DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
M. A. Buda 9/19/17
MARK BUDA - JAMES KEELY AND COMPANY, INC. DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
W. R. Roberts 9/27/17
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Ch. Clark 10-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith Leavelle 10-30-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

N. Malagan 10-30-17
DIRECTOR DATE

TEMPORARY STONE OUTLET STRUCTURE
D.A. = 0.2 ac
STORAGE REQ = 360 cf
GROUND EL = 444.0
EMBANK EL = 446.0
WEIR EL = 445.5
WEIR LENGTH = 6'
LENGTH UPHILL = 40'

- SEQUENCE OF CONSTRUCTION**
- NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK
 - SEQUENCE PERTAINS TO EACH INDIVIDUAL STICK AS PERMITS ARE ISSUED. NOT ALL BUILDINGS/STICKS WILL BE CONSTRUCTED AT THE SAME TIME.
 - OBTAIN BUILDING/GRADING PERMIT. (DAY 1)
 - HOLD ON-SITE PRECONSTRUCTION MEETING. (DAY 2)
 - INSTALL PERIMETER CONTROLS AROUND THE LOT STICK. (I.E. SUPER SILT FENCES AND STABILIZED CONSTRUCTION ENTRANCE). (DAY 3)
 - EXCAVATE FOR FOUNDATION. (DAY 4-6)
 - POUR FOUNDATION AND BACKFILL. (DAY 7-10)
 - CONSTRUCT HOUSE STICK, INSTALL THE UTILITY CONNECTIONS UP TO EACH HOUSE WITHIN THE STICK (I.E. WATER AND SEWER HOUSE CONNECTIONS, ELECTRIC, ETC.). CONSTRUCT DRIVEWAYS, ONCE ROOFS OF THE HOUSES ARE COMPLETED, INSTALL THE ROOF DRAIN MANIFOLD SYSTEM, IF NECESSARY. (DAY 11-90)
 - CONSTRUCT SIDEWALK IN FRONT OF EACH LOT STICK AND FINAL GRADE LOT STICK AND STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 91-95)
 - UPON APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS. (DAY 96-100)

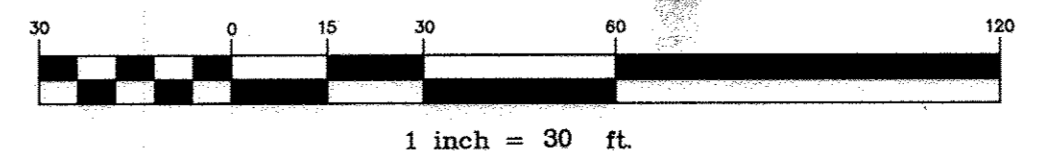
NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS LAND SURVEYORS PLANNERS
8480 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043
(P) 410-485-8105 (F) 410-485-8844
WWW.BE-CIVILENGINEERING.COM

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 22398, Expiration Date: 6-30-2019.

C. Malagan 9/20/17

OWNER: MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	RESIDENTIAL - SINGLE FAMILY ATTACHED FAIRWAYS AT TURF VALLEY PHASE 2 LOTS 57 thru 89
BUILDER: JAMES KEELY AND COMPANY, INC. 61 EAST PADONIA ROAD TIMONIUM, MARYLAND 21093 410-252-8600	TAX MAP: 16, PARCEL: P/O 8 & 706, GRID: 16 ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND ZONED: PGCC
SEDIMENT AND EROSION CONTROL PLAN	
DATE: SEPTEMBER 19, 2017	BEI PROJECT NO. 2833
SCALE: AS SHOWN	SHEET 4 OF 6



HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LUD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:
 - Prior to the start of earth disturbance,
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
 - Prior to the start of another phase of construction or opening of another grading,
 - Prior to the removal or modification of sediment control practices.
- 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.
- 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.
- 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 permanent stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-6) in excess of 20 feet must be benches with stable outlet. All concentrated flow, steep slopes, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- 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:	3.26 Acres
Area Disturbed:	4.74 Acres
Area to be roofed or paved:	2.15 Acres
Area to be vegetatively stabilized:	2.59 Acres
Total cut:	12,466 Cu Yds
Total fill:	4,117 Cu Yds

Off-site waste/borrow area location: **SITE WITH AN ACTIVE GRADING PERMIT**

- The stockpile area 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 side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
 - Runoff from the stockpile areas must drain to a suitable sediment control practice.
 - Clear water runoff into the stockpile areas 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.
- 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 inspection event. A written report by the contractor, made available upon request, is part of every inspection and should include:**
- Inspection date
 - Inspection title (route, pre-storm event, during rain event)
 - Name and title of inspector
 - Weather information (current conditions as well as time and amount of last recorded precipitation)
 - Brief description of project's status (e.g. percent complete) and/or current activities
 - 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 (MDCS, MDC).
- 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.
 - 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.
 - 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 on 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.
 - Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
 - Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
 - All fill and super silt fence shall be placed on- and down-contour, and be imbricated at 25' minimum intervals, with lower ends curled up by 2' in elevation.
 - Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - Use I and IP March 1 – June 15
 - Use III and IIP October 1 – April 30
 - Use IV March 1 – May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

B-4-4 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-4-3 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

- General Mixtures
 - 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.
 - Additional planting specifications for aesthetic 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 Planting.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (50 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.

B-4-2 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 side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile areas must drain to a suitable sediment control practice.
- Clear water runoff into the stockpile areas 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.

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, 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.
- Vegetative Cover: See Section B-4-4 Temporary Stabilization.
- Tillage: Till to rough surface and bring clods to the surface. Begin plowing on windward side of pile. Chisel-type plows spaced about 12 inches apart, spring-tooled harrows, and similar sites are examples of equipment that may produce the desired effect.
- Grass: 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, burst fences, straw bales, and similar material can be used to control air currents and soil blowing.
- Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

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

- Application
 - Soil seed must meet the requirements of the Maryland State Seed Law. All seed must be subjected 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.
 - 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 treating legume seeds 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 seed to soil contact.
 - Drill or Outdragger Seeding: Mechanized seeders that apply and cover seed with soil.
 - Outdragger 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.
 - 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 of soluble nitrogen; P2O5 (phosphorus), 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-4-3 STANDARDS AND SPECIFICATIONS FOR MULCHING

Materials (in order of preference)

- 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 be 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 physical state.
 - 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 uniformly spread slurry.
 - 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 better-like ground cover, on application, having moisture absorption and retention 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 so that the soil 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. 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, wet watering is required as necessary to maintain adequate moisture content.
- 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.

4. Notes:

- 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, up to 1/3 of the seed 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.
- For sandy soils, plant seeds at twice the depth listed above.
- The planting dates listed are averages for each zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/		Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/		
	lb/ac	lb/1000 ft ²		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		

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, seeded 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.

- Adequate vegetative stabilization requires 95 percent groundcover.
- If an area has less than 40 percent groundcover, re-stabilize following the original recommendations for lime, fertilizer, seeded preparation, and seeding.
- If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- 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

- 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.
- 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 seedbed, and stabilize. Overseed Phase 1 areas as necessary.
 - 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

- 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.
- Stabilize slopes immediately when the vertical height of a fill 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 slope 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 seedbed, and stabilize.
 - Place Phase 2 fill, prepare seedbed, and stabilize.
 - 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.

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 07/20/2017
[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] 9/20/17
ENGINEER DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

[Signature] 9/19/17
MARK BUDA - JAMES KEELY AND COMPANY, INC. DATE

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

[Signature] 9/27/17
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

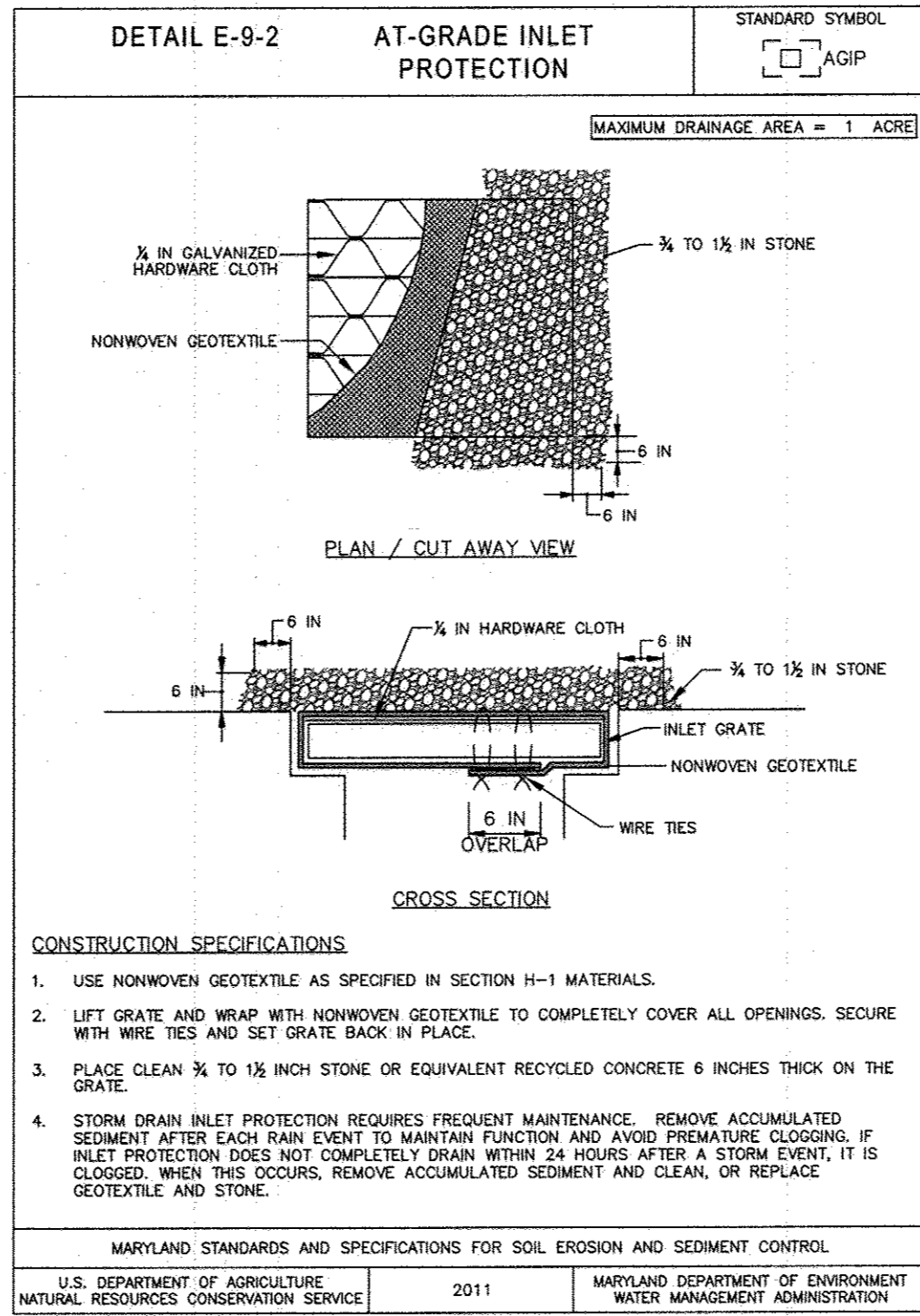
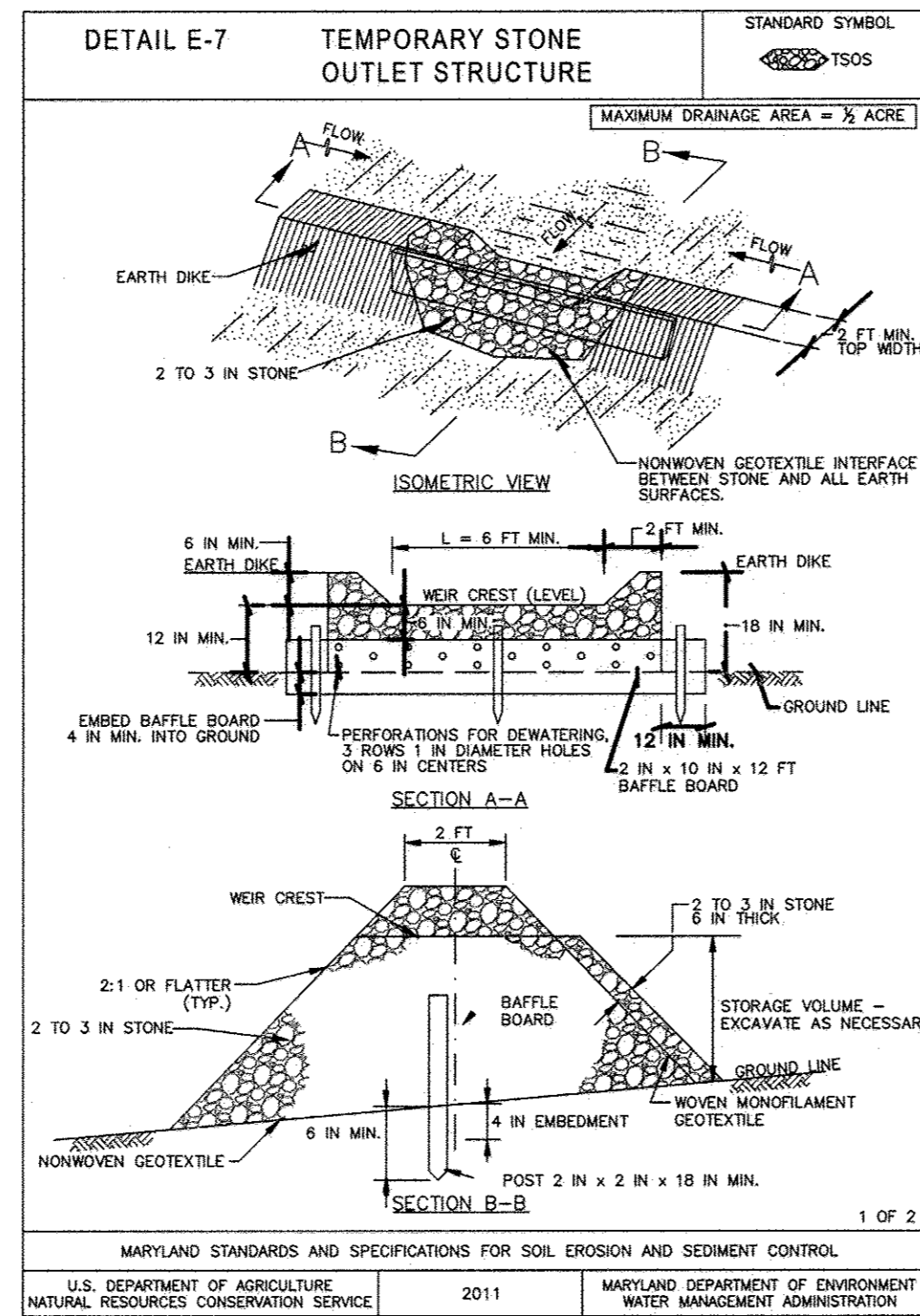
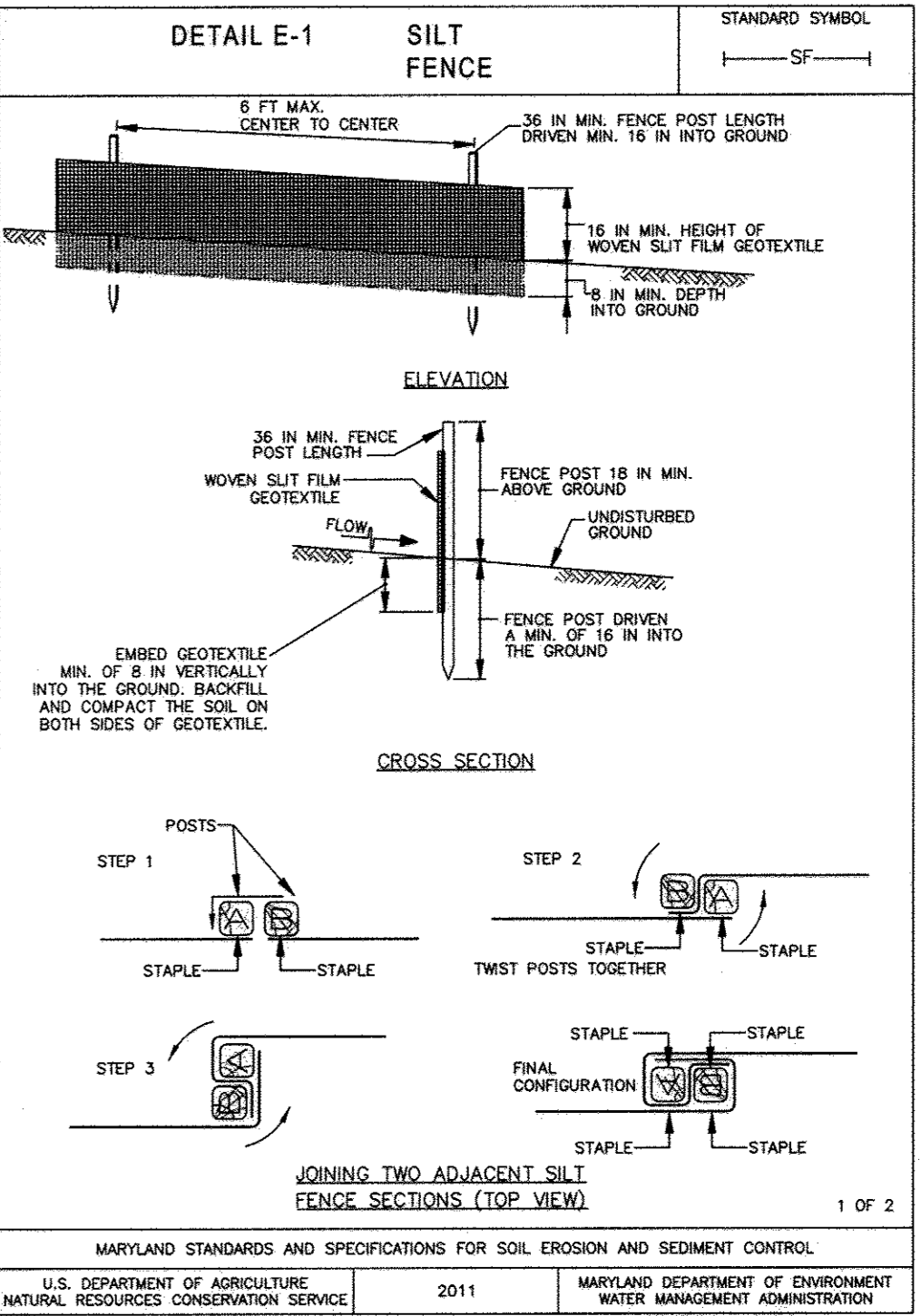
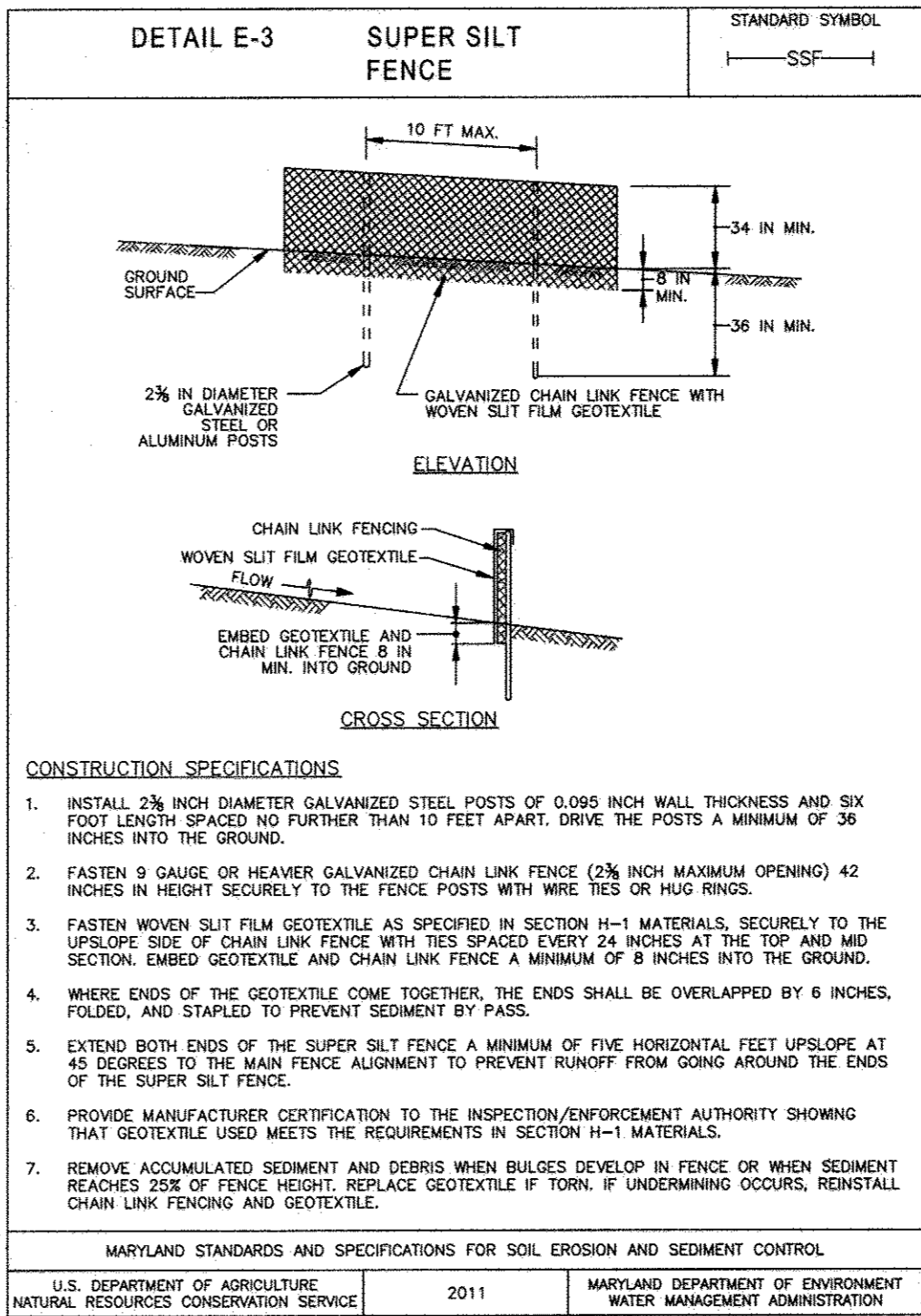
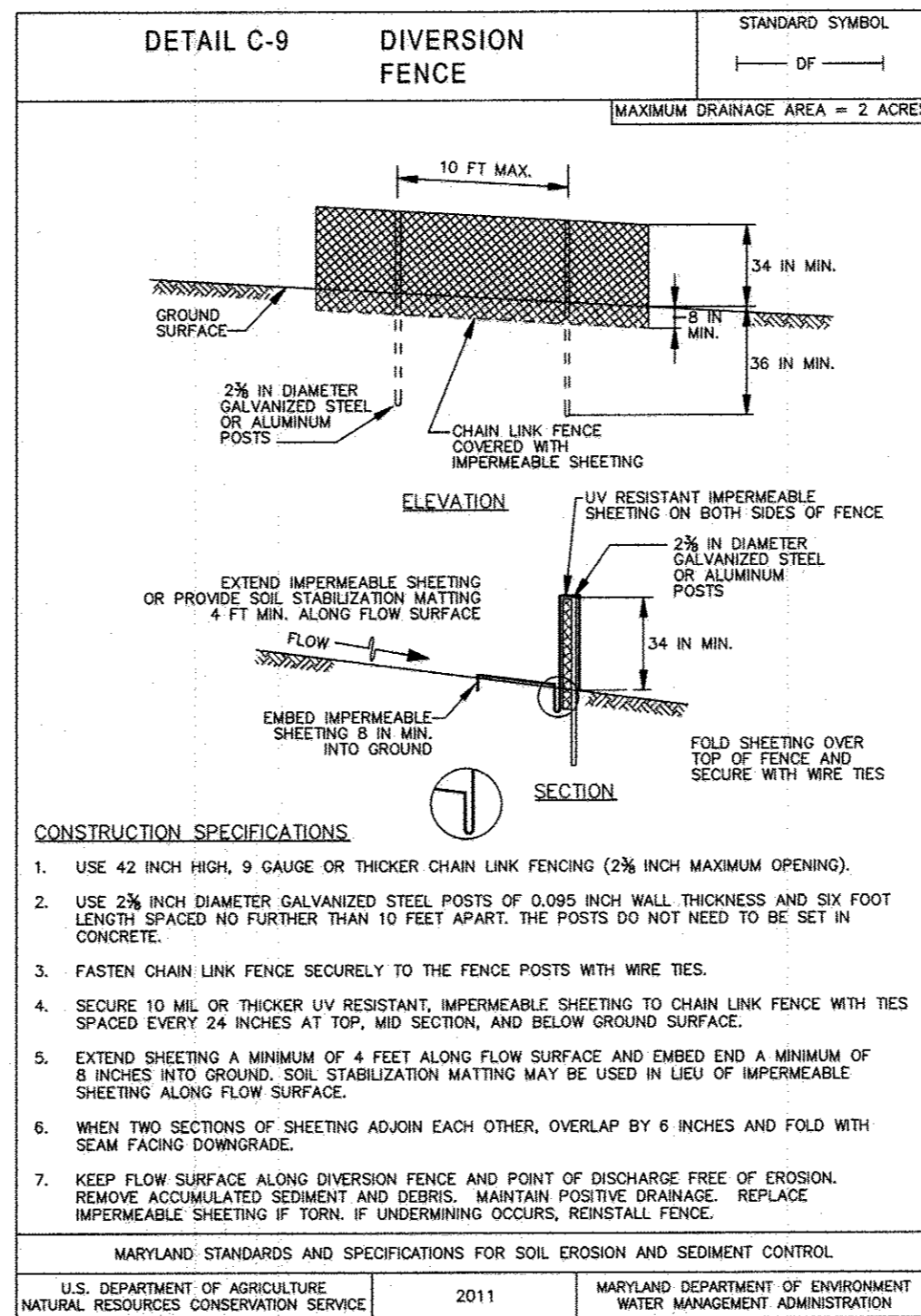
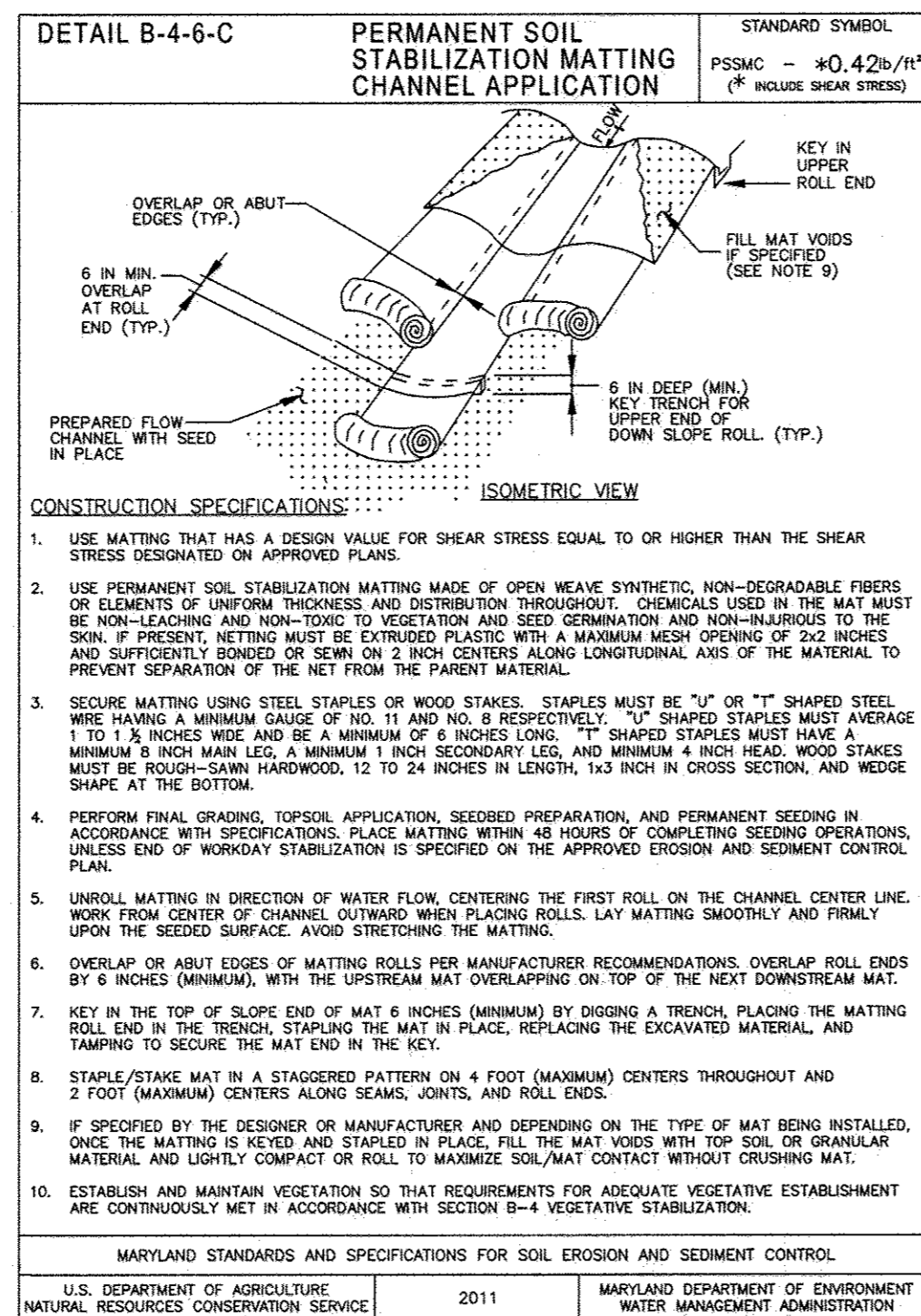
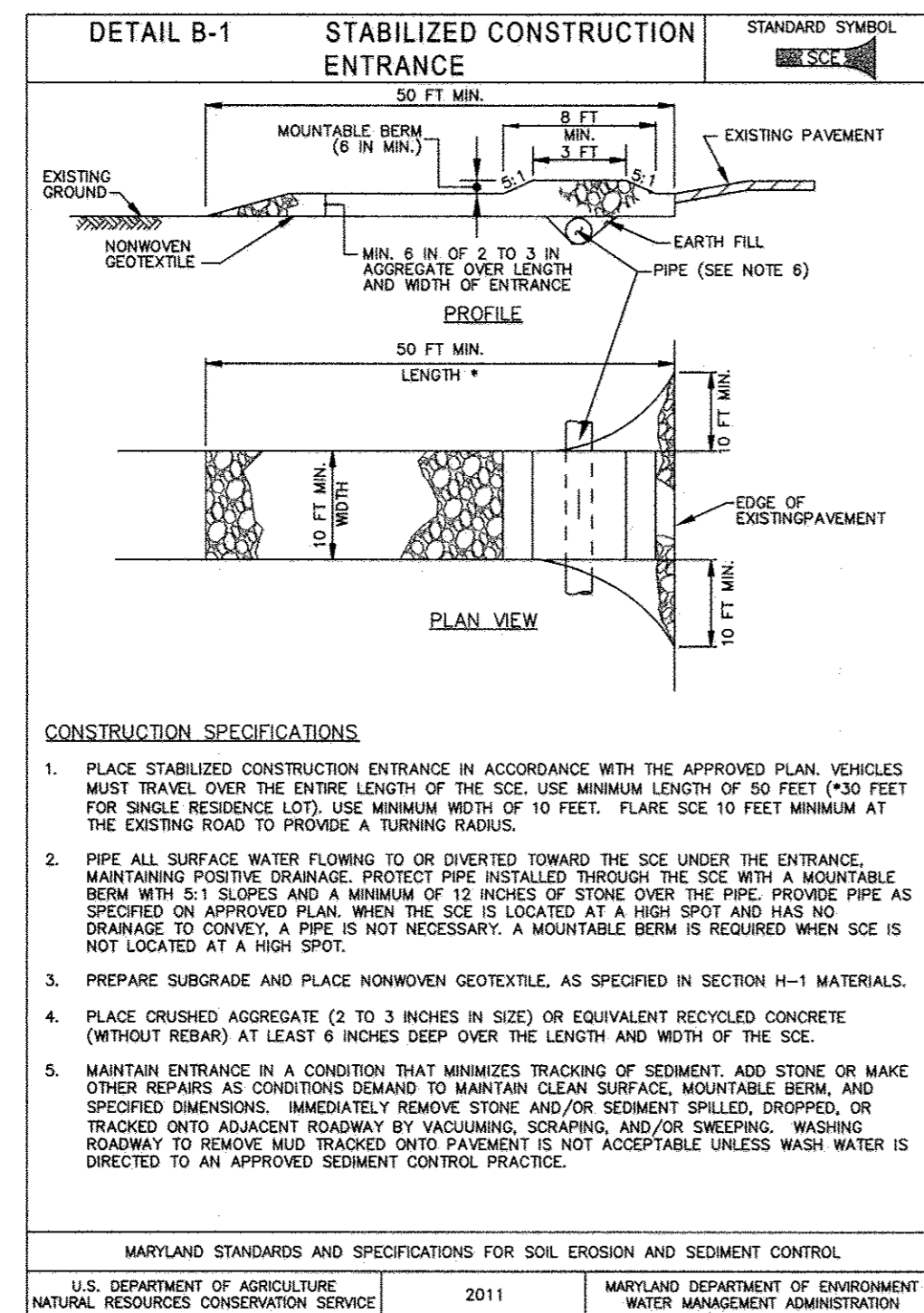
[Signature] 10-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 10-30-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10-30-17
DIRECTOR DATE

Permanent Seeding Summary

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)				Lime Rate
					N	P2O5	K2O		
	Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.3): Tall Fescue/Kentucky Bluegrass								
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre	90 lb/ac (21lb/100sf)	90 lb/ac (21lb/100sf)	2 tons/ac (50lb/100sf)	
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in					



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 07/20/2017
ATMA

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.
CC Malaga 9/20/17
ENGINEER DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Mark Buda 9/19/17
MARK BUDA - JAMES KEELY AND COMPANY, INC. DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John K. Robertson 9/27/17
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chad Chubb 10-12-17
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Vent Sealsow 10-30-17
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Nal Singh 10-30-17
DIRECTOR DATE

NO.	DATE	REVISION
BENCHMARK ENGINEERS, LAND SURVEYORS, PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-8644 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. 1502-0019. <u>[Signature]</u> 9/20/17		
OWNER:	RESIDENTIAL - SINGLE FAMILY ATTACHED FAIRWAYS AT TURF VALLEY PHASE 2 LOTS 57 thru 89	
BUILDER:	MANGIONE ENTERPRISES OF TURF VALLEY, LIMITED PARTNERSHIP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	
JAMES KEELY AND COMPANY, INC. 61 EAST FAIRMONT ROAD TIMONIUM, MARYLAND 21093 410-252-8600		
DATE: SEPTEMBER 19, 2017 SCALE: AS SHOWN		BEI PROJECT NO. 2833 SHEET 6 OF 6