- 1. SUBJECT PROPERTY ZONED "R-20" PER 10/06/13 COMPREHENSIVE ZONING REGULATIONS
- 2. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS.
- 3. SITE ANALYSIS DATA:
- LOCATION: TAX MAP: 24 PARCEL: 696 LOT: 25 GRID: 23 ELECTION DISTRICT: SECOND
- ADDRESS: 4216 CLUB COURT, ELLICOTT CITY, MD, 21042 ZONING: R-20
- TOTAL AREA: 0.47 AC.±, 20,254 S.F.± AREA OF ROAD DEDICATION: LIMIT OF DISTURBED AREA: 0.31 AC.±, 13,500 S.F.±
- PROPOSED USE FOR SITE: RESIDENTIAL. TOTAL NUMBER OF UNITS: 1 TYPE OF PROPOSED UNIT: SFD
- COUNTY FILES: ECP-14-022, ECP-15014, SDP-14-050, F-15-057. 4. HORIZONTAL AND VERTICAL DATUMS ARE RELATED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM AS PROJECTED FROM HOWARD

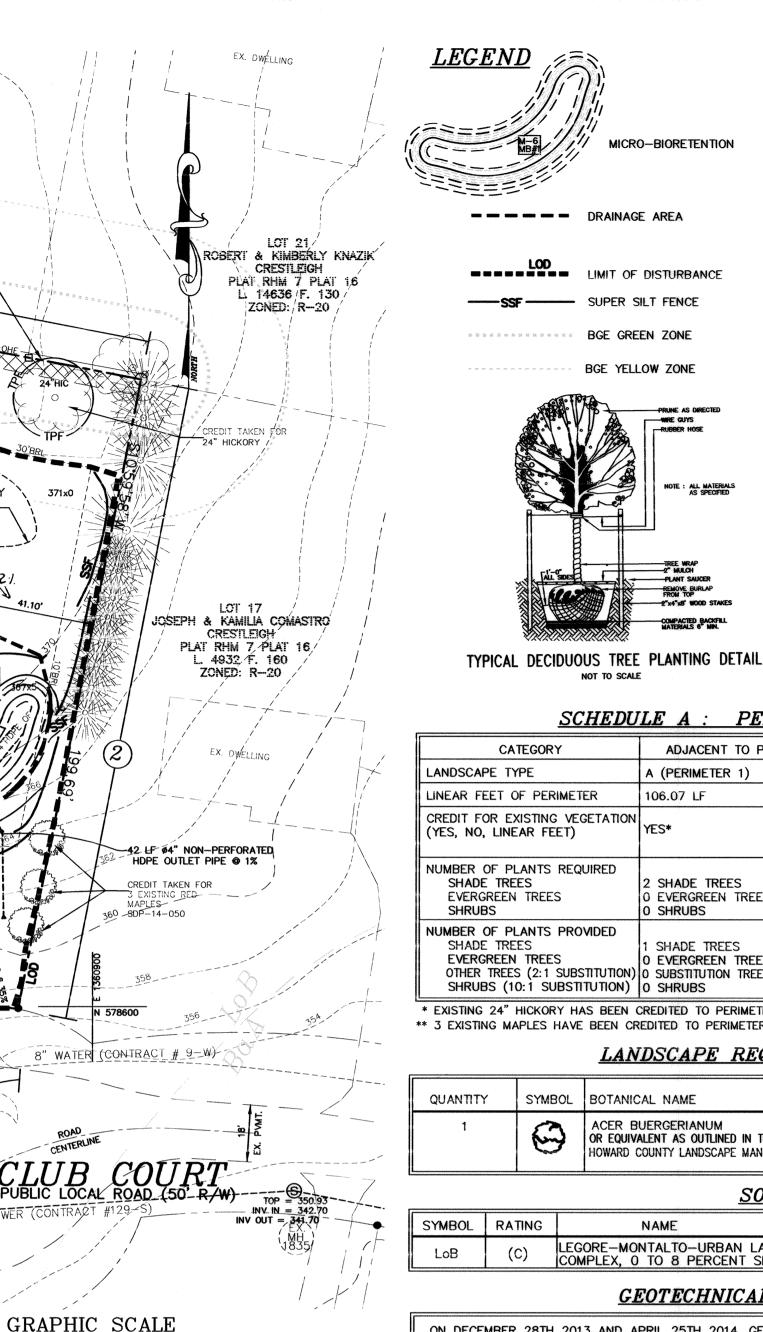
WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).

MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.

- COUNTY CONTROL STATIONS NO. 24IB AND 0010. N 578,753.5105, E 1,362,302.9147, ELEV. 390.5419 STA. No. 0010 N 579,167.0667, E 1,360,260.357, ELEV. 357.136
- 5. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY MILDENBERG, BOENDER AND ASSOC. INC. PERFORMED ON OR ABOUT MAY 2015.
- 6. THIS PLAN WAS PREPARED IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. FINANCIAL SURETY OF \$300.00 FOR 1 SHADE TREE WILL BE POSTED WITH THE GRADING PERMIT.
- 7. FOREST CONSERVATION OBLIGATIONS UNDER SECTION 16.1200 OF THE HOWARD COUNTY CODE WERE MET FOR THIS LOT UNDER
- 8. IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- 9. NO WETLANDS, FLOODPLAIN, STREAMS OR THEIR BUFFERS OR STEEP SLOPES EXIST ON OR IMPACT THIS PARCEL AS PER PLAT
- 10. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS
- SURFACE 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2 INCH MINIMUM) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS. STRUCTURES (CULVERT/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
- 11. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST 48 HOURS PRIOR TO EXCAVATION WORK BEING DONE. 800-257-7777 (410) 725-9976 VERIZON TELEPHONE COMPANY (410) 313-4900
- HOWARD COUNTY BUREAU OF UTILITIES (410) 393-3533 AT&T CABLE LOCATION DIVISION (410) 685-0123 BALTIMORE GAS & ELECTRIC STATE HIGHWAY ADMINISTRATION (410) 531-5533 12. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS AT (410) 313-1880 AT
- LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. 13. EXISTING UTILITIES ARE BASED ON ACTUAL FIELD LOCATIONS, IN COMBINATION WITH EXISTING WATER AND SEWER CONTRACTS.
- 14. ANY DAMAGE TO THE COUNTY RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 15. SEWER HOUSE CONNECTION ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE OR EASEMENT LINE. 16. FOR DRIVEWAY ENTRANCE DETAILS, REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.06.
- 17. NO CEMETERIES OR HISTORIC STRUCTURES EXIST ON SITE.
- 18. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED UNDER CONTRACT NUMBERS: 129-S 19. STORMWATER MANAGEMENT IS PROVIDED VIA MICRO-BIORETENTION FACILITY (M-6), IN ACCORDANCE WITH THE 2000 MDE STORMWATER DESIGN MANUAL REVISED MAY 2009, WHICH WILL BE PRIVATELY OWNED AND MAINTAINED. 2016 AND 100-year event managed.
- 20. THE PROPERTY IS LOCATED IN THE PLUMTREE BRANCH WATERSHED. AS PER HOWARD COUNTY RESOLUTION CR#123-2019 THE 24 HOUR 10

AND 100 YEAR STORMS, AS WELL AS THE 3.5 HOUR 6.6 INCH STORM MUST BE CONTROLLED. CALCULATIONS SHOWING THIS CONTROL WERE

- PERFORMED USING TR-20. 21. ENVIRONMENTAL CONCEPT PLAN, ECP-15-014, FOR THIS RESUBDIVISION WAS APPROVED ON SEPT 30, 2014. ESD PRACTICES HAVE BEEN CHANGED TO REFLECT REQUIRED CONTROL OF 24 HR 10 YR, 100 YR AND 3.5 YEAR 6 HR STORMS. THE OWNER, TENANT, AND/OR THEIR
- AGENTS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE MICRO-BIORETENTION FACILITY SHOWN IN THESE PLANS. A DECLARATION OF 22. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES, AND WALLS. ALL PLANTS MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN
- NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED. 23. 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 THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES. 24. SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER
- WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 2 1/2 TO 3 INCHES IN CALIPER AND INSTALLED AS
- 25. COMMUNITY MEETING REQUIREMENTS UNDER SECTION 16.147(B) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WERE MET UNDER F-15-057
- 26. MIHU AGREEMENT WAS RECORDED IN THE LAND RECORDS OF HOWARD COUNTY LIBER 19341 FOLIO 317.
- 27. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE OWNER / DEVELOPERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- 28. USE-IN-COMMON DRIVEWAY MAINTENANCE AGREEMENT FOR LOTS 24 AND 25 RECORDED WITH THE RECORDING OF PLAT 25406 IN THE LAND RECORDING OFFICE. LIBER 19341 FOLIO 313.



TTFICAL	SCHEDULE A: PERIMETER LANDSCAPE EDGE								
CA	TEGORY		ADJACENT TO PER	RIMETER PROPERTIES	ADJACENT TO	ROAD		TOTAL	
LANDSCAPE T	YPE		A (PERIMETER 1)	A (PERIMETER 2)	(PERIMETER 3)		danki mana acodica lanta d		
LINEAR FEET	OF PERIMET	ER	106.07 LF	199.69 LF	N/A		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)		YES*	YES**	N/A		etaria erra nio de recone en en el carto			
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS		2 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	3 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREE 0 EVERGREEN 0 SHRUBS			ade trees Rgreen trees Rubs		
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)			0 EVERGREEN TREES 0 SUBSTITUTION TREES	O SHADE TREES O EVERGREEN TREES O SUBSTITUTION TREES O SHRUBS	O SHADE TREE O EVERGREEN O SUBSTITUTION O SHRUBS	TREES	0 EVE	DE TREES RGREEN TREES STITUTION TREES RUBS	
	* EXISTING 24" HICKORY HAS BEEN CREDITED TO PERIMETER #1. ** 3 EXISTING MAPLES HAVE BEEN CREDITED TO PERIMETER #2.								
		LAN	DSCAPE REQU	JIREMENT PL	LANTING .	SCHE.	DULE	Z	
QUANTITY	SYMBOL	BOTANIC	CAL NAME	COMMON NAME		SIZE		TOTAL	
1	(2)	ACER BUERGERIANUM OR EQUIVALENT AS OUTLINED IN THE		TRIDENT MAPLE OR EQUIVALENT AS	OUTLINED IN THE	2.5"-3	" CAL.	1 SHADE TRE	

MICRO-BIORETENTION

BGE GREEN ZONE

BGE YELLOW ZONE

FROM TOP

~---

OUTLET PIPE

ROOF LEADER

TITITITITI EXISTING USE IN COMMON DRIVEWAY

BORING LOCATIONS

OVERFLOW

UNDERDRAIN

UTILITY AND STORM MANAGEMENT

DRIVEWAY IMPERVIOUS TO MB-1

BLOCK 23, CRESTLEIGH SECTION 2)

EXISTING 5' UTILITY EASEMENT

HOUSE IMPERVIOUS TO MB-1

OR EQUIVALENT AS OUTLINED IN THE | OR EQUIVALENT AS OUTLINED IN THE | 2.5"-3" CAL. | 1 SHADE TREE

	SOIL DESCRIPTION:						
SYMBOL	RATING	NAME	K FACTOR	MAP NO.	COMMENTS		
LoB		LEGORE-MONTALTO-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES		13			

<u>GEOTECHNICAL SUMMARY - BORINGS</u>

	ON DECEMBER 28TH 2013 AND APRIL 25TH 2014, GE&T PERFORMED THREE SOIL BORINGS AT THE LOCATIONS SHOWN. THE RESULTS ARE AS SHOWN BELOW.					
HAND AUGER NO.	DEPTH TO GROUNDWATER	DEPTH TO REFUSAL	BORING TERMINATION DEPTH	DATE		
HA-1	N/A	N/A	63 IN	12/28/2013		
HA-2	N/A	N/A	63 IN	04/25/2014		
HA-3	N/A	N/A	65 IN	04/25/2014		

SWM PRACTICE CHART

LOT	ADDRESS	MICRO-BIORETENTION M-6 (NUMBER OF)
25	4216 CLUB COURT	1

<u>ADDRESS CHART</u>

LOT	ADDRESS					
25	4216 CLUB COURT, ELLICOTT CITY, MD 21042					

MILITI TOACKING CHAPT

MIHU TRACKING CHART	
TOTAL NUMBER OF LOTS/UNITS	1
NUMBER OF MIHU REQUIRED	1
NUMBER OF MIHU PROVIDED ONSITE (EXEMPT FROM APFO ALLOCATIONS)	0
NUMBER OF APFO ALLOCATION REQUIRED (REMAINING LOTS/UNITS	1
MIHU FEE-IN-LIEU (INDICATE LOT/UNIT NUMBERS	LOT 25

OWNER/DEVELOPER

HARMONY BUILDERS INC. 4228 COLUMBIA ROAD ELLICOTT CITY, MARYLAND 21042 410-461-0833

DEVELOPER'S/OWNER'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 A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED

MICHAEL G. KRETSCH, P.E.

TO THE DEPARTMENT OF PLANNING AND ZONING.

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. 34027, EXP DATE 01/16/2021

PERMIT INFORMATION BLOCK SUBDIVISION NAME: SECTION/AREA: PARCEL: CRESTLEIGH PLAT NO. BLOCK(S) ZONING TAX MAP NO. ELECTION DISTRICT | CENSUS TRACT BLOCK 23 6023.06

TEMORA SCALE" 1"=30"

2 FT 1ST FLOOR EXTENSION

PROFILE

(1,800 S.F.)

<u>PLAN</u>

INDEX OF DRAWINGS

NO.	DESCRIPTION
1	SITE DEVELOPMENT PLAN
2	STORMWATER MANAGEMENT DETAILS
3	SEDIMENT CONTROL NOTES AND DETAIL

MAD!

EX. 5' UTILITY

30" HICKORY

EXISTING 16.5"

UNDERGROUND `

DEVELOPERS CERTIFICATE

CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE CCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONI INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED

PRINTED NAME OF DEVELOPER

REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

20W-

SOIL CONSERVATION DISTRICT.

EROSION AND SEDIMENT CONTROL BY THE HOWARD

RAINING 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.

ENGINEER'S CERTIFICATE

CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS

A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF

THE SITE CONDTIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE

AT&T EASEMENT

(NOTKIN USE) PLATIBOOK 7 PAGE 16

BOARD OF EDUCATION OF

HOWARD COUNTY

NORTHFIELD ELEMENTARY

477 F. 91

ZONED: R-20

TODD & STARLITE DOLBIER

PLAT RHM 7 PLAT 16

1111

1//// 4//// 1////

11/// 1111

RONALD J. MUTCHNIK

PLAT RHM 7 PLAT 16 L 5995 F. 237

ZONED: R-20

L. 14790 F. 177 ZONED: R-20

PETER & ANN GREEN

CRESTLEIGH

L. 785 F

16Z.97

USE-IN-COMMON DRIVEWAY, UTILIT

HARMONY BUILDERS, INC.

CRESTLEIGH -PLAT 25406

REC'D 5-4-2020

ZONED R-20

EXISTING

REMAIN

PLAT RHM 7 PLAT 16

ZONED: R-20\(\)

EX. 5' UTILITY

TEMPORARY

STOCKPILE -

(IN FEET

1 inch = 30 ft

EASEMENT

LOT 25

B.=363.33

20,254 SQ. FT.370x5

PLAT BOOK

EASEMENT PLAT BOOK 7

> LOT 25 IN THIS PROJECT IS SUBJECT TO THE MODERATE INCOME HOUSING UNIT (MIHU) FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID BY THE PERMIT APPLICANT TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE.

20

S

S

V

MILDENBERG, BOENDER & A

OF **3**

====== ø4" HDPE UNDERDRAIN AND OUTLET PIPE MICRO BIORETENTION TOP OF MULCH MICRO BIORETENTION TOP OF BERM ø4" NON-PERFORATED RISER PIPE TO 9" ABOVE MULCH LAYER WITH ATRIUM CAP - 10 MIL IMPERMEABLE LINER BURIED 12" INTO EXISTING GROUND ALONG ENTIRE EMBANKMENT **Ø4" PERFORATED RIGID HDPE PIPE** ø4" NON-PERFORATED _____ RISER PIPE TO 9" ABOVE MULCH LAYER WITH SOLID CAP FOR CLEANOUT Vø4" NON-PERFORATED RISER PIPE TO 9" ABOVE MULCH LAYER WITH SOLID CAP FOR CLEANOUT SEE OUTLET WEIR DETAIL ø4" DRAIN RATED AT 0.205 CFS IN DRAINAGE APPLICATION. ø4" NON-PERFORATED AS PER MANUFACTURER. OUTLET PIPE @ 1% -MB-1 PIPE AND UNDERDRAIN DETAIL SCALE: 1"=10'

TIME OF CONCENTRATION CALCULATION

TIME OF CONCENTRATION CALCULATIONS:	PRE DEVELOPMENT	POST DEVELOPMENT	
FLOW REGIME:	SHEET FLOW	SHEET FLOW	
Tt = 0.007(nL)^.8/((p2^.5)*(S^.4)) Tt = TRAVEL TIME IN HOURS n = MANNING'S n L = FLOW LENGTH IN FEET S = SLOPE IN FT/FT p2 = 24 HOUR 2 YEAR RAINFALL INCHES	0.347 0.15 55 0.011 3.19	.005 0.015 20 0.5 3.19	
ASSUMPTIONS MADE FOR SHALLOW CONCENT DEPTH OF FLOW IS 0.05 FT IN GRASS, $n = SHALLOW$ CONCENTRATED FLOW IN GRASS US MANNING EQUATION: $V = 1.49/n \times (Aw/Pw)$	0.15, GUTTER SLOPE IS 1%, n SING THE UNIT FLOW SECTION N	= 0.012	
FLOW REGIME:	SHALLOW CONCENTRATED	GUTTER (6 IN 'K' TYPE)	
Tt = TRAVEL TIME IN HOURS V = VELOCITY IN FT/SECOND n = MANNING'S n L = FLOW LENGTH IN FEET S = SLOPE IN FT/FT Aw = WETTED AREA Pw = WETTED PERIMETER	0.023 0.4 0.15 29 0.069 0.05	.002 3.3 0.012 25 .01 0.14 1.0	
ASSUMPTIONS MADE FOR SHALLOW CONCENT DEPTH OF FLOW IS 0.05 FT IN GRASS, n = SHALLOW CONCENTRATED FLOW IN GRASS US MANNING EQUATION: $V = 1.49/n \times (Aw/Pw)$	0.15, LEADER SLOPE IS 5%, n SING THE UNIT FLOW SECTION N	= 0.012 METHOD, Pw = 1, Aw = DEPTH	
FLOW REGIME:	SHALLOW CONCENTRATED	LEADER (ø4" HDPE PIPE)	
Tt = TRAVEL TIME IN HOURS V = VELOCITY IN FT/SECOND n = MANNING'S n L = FLOW LENGTH IN FEET S = SLOPE IN FT/FT Aw = WETTED AREA Pw = WETTED PERIMETER	0.004 0.64 0.15 9 0.22 0.05 1.0	.004 5.25 0.012 80 .05 0.09 1.05	
TOTAL TIME OF CONCENTRATION IN HOURS	0.374	0.012	

DRAINAGE AREA. To PATH AND MB-1 GRADING DETAIL SCALE: 1"=20'

SIGNATURE OF DEVELOPER

PRINTED NAME OF DEVELOPER

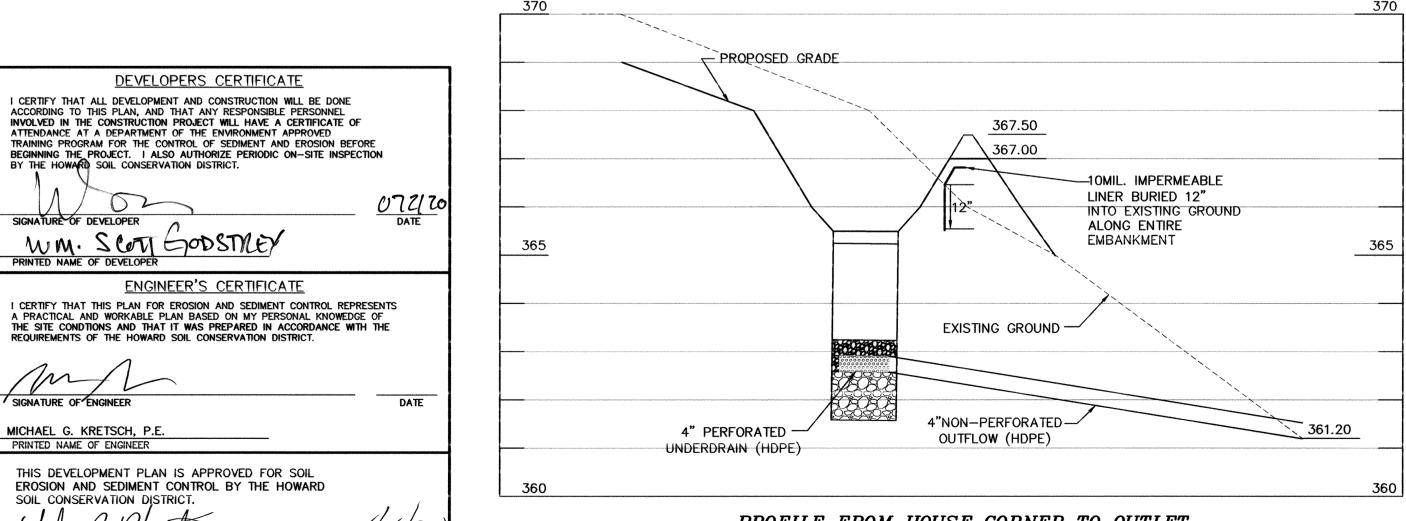
PRINTED NAME OF ENGINEER

SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

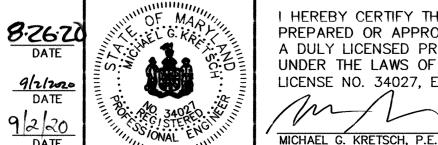
CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT



PROFILE FROM HOUSE CORNER TO OUTLET 1" = 2 FT VERTICAL, 1" = 10 FT HORIZONTAL

717 2010 DATE:



I HFREBY 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. 34027, EXP DATE 01/16/2021

OWNER/DEVELOPER HARMONY BUILDERS INC. 4228 COLUMBIA ROAD

ELLICOTT CITY, MARYLAND 21042

410-461-0833

TOP EL. (SURFACE) (PONDING) BERM EL.

PROPOSED PRACTICES

LOT 25 M-6, (#1) MICRO-BIORETENTION

FACILITY

DESIGN STORM	PRE-DEVELOPMENT Q PEAK	POST-DEVELOPMENT Q PEAK	POND VOLUME REQUIRED
24-HOUR 100 YR STORM	0.6 CFS	0.4 CFS	1413 CU.FT.
24-HOUR 10 YR STORM	0.2 CFS	0.2 CFS	1063 CU.FT.
3.5-HOUR 6.6 IN STORM	0.7 CFS	0.7 CFS	1551 CU.FT.

TR-20 STORM ANALYSIS SUMMARY

MICRO-BIORETENTION SCHEDULE

MB-1 365.50 367.00 367.50 362.58 361.20 336 S.F. 636 S.F. 6"

SWM PRACTICES SCHEDULE

UND.DRAIN UND.DRAIN SURFACE PONDING INV. IN INV. OUT AREA AREA

REQUIRED ESDV PROVIDED ESDV

364 C.F.

PONDING DEPTH

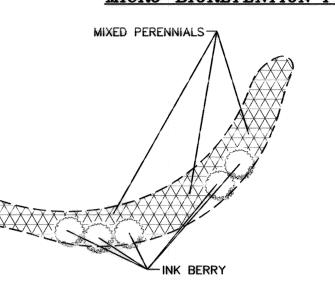
OPERATION AND MAINTENANCE SCHEDULE FOR $\underline{MICRO-BIORETENTION}$ $(\underline{M-6})$

- A. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF FROSION OR WASH OUT, ANY MUICH STABILIZED CONSTRUCTION ENTRANCE REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II,
 - B. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
 - C. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
 - D. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

MICRO-BIORETENTION PLANTING DETAILS

MICRO-BIORETENTION

TIME OF CONCENTRATION PATH



--- DRAINAGE AREA

POST DEV. To PATH

LIMIT OF DISTURBANCE

PRE DEV. To PATH

LEGEND

MIXED PERENNIALS (EXAMPLES) CUTLEAF CONEFLOWER (1.5 FT SPACING) (1.5 FT SPACING) CARDINAL FLOWER (1.5 FT SPACING) BLUE FLAG THREE SQUARE BULRUSH (1.5 FT SPACING) JOW-PYE-WEED (3.0 FT SPACING) -OR EQUIVALENT WET TOLERANT SPECIES-INK BERRY (LEAVE 16 SQ FT PER PLANT) -OR EQUIVALENT WET TOLERANT SHRUB-

OUTLET PIPE

ROOF LEADER

GABION BASKET AT END OF ROOF LEADER

BELOW EMBANKMENT

"NO WOODY VEGETATION ZONE"

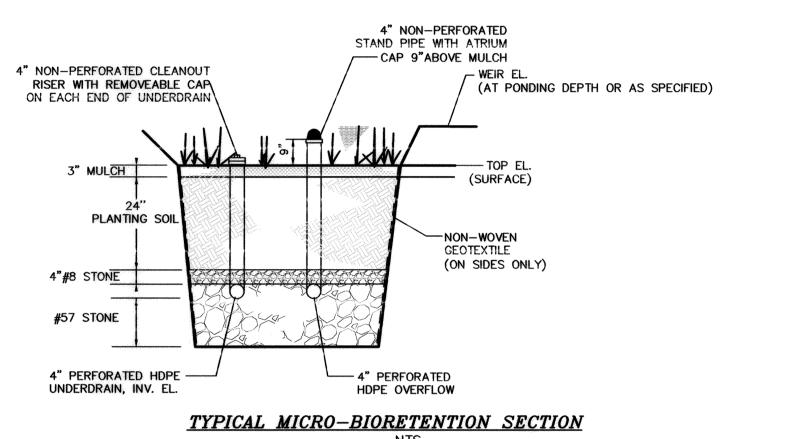
EQUIVALENT PLANT MATERIALS MAY BE FOUND IN THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4

WEIR CONSTRUCTED OF STACKED CONCRETE BLOCK, 4"X8"X16" NOMINAL

WEIR OUTFLOW CALCULATION ELEV 367.0 FLOW (CFS) 0.00 367.25 367.50

ELEVATION VIEW - NOT TO A SCALE

> OUTLET WEIR DETAIL
> PLAN VIEW - NOT TO A SCALE NOTE: OUTLET IS IN CUT



370 PROPOSED GRADE EXISTING GROUND -365 OUTLET WEIR SECTION 1" = 2 FT VERTICAL, 1" = 10 FT HORIZONTAL

10' MIN. SETBACK FROM HOUSE DOWNSPOUT 4" NON-PERFORATED STAND PIPE WITH ATRIUM - CAP 9"ABOVE MULCH -BERM EL. 4" NON-PERFORATED CLEANOUT WITH REMOVEABLE CAP (AT PONDING DEPTH) ON EACH END OF UNDERDRAIN 10MIL. IMPERMEABLE LINER BURIED 12" INTO EXISTING GROUND ALONG ENTIRE EMBANKMENT (SURFACE) (SEE PROFILE) 4" NON-PERFORATED HDPE OUTLET PIPE PLANTING SOIL -NON-WOVEN -INV.OUT EL. **GEOTEXTILE** (ON SIDES ONLY) 4" PERFORATED HDPE #57 STONE NON-PERFORATED HDPE CAP END - 4" PERFORATED HDPE 4" HDPE UNDERDRAIN, INV. EL.

NOTE- THE ENTIRE DRAINAGE AREA MUST BE FULLY STABILIZED BEFORE RUNOFF CAN BE DIRECTED TO THE FACILITY. TYPICAL MICRO-BIORETENTION PROFILE

<u>STAGE - DISCHARGE - STORAGE TABLE</u>

ELEVATION	STAGE	DISCHARGE (CFS)	STORAGE (CU.FT.)	STORAGE (AC.FT.)	REMARKS
365.5	0.00	0.00	0	0.000000	POND VOLUME ONLY
365.75	0.25	0.00	96	0.002204	
366.00	0.50	0.00	230	0.005269	
366.25	0.75	0.00	623	0.014378	1 YR VOLUME
366.50	1.00	0.190	826	0.018961	POND AND STONE VO
366.75	1.25	0.197	1054	0.024190	10 YR STORM
367.00	1.50	0.205	1310	0.033413	100 YR STORM
367.25	1.75	0.760	1597	0.036655	3.5HR 6.6IN STORM
367.50	2.00	1.774	1914	0.043936	

SOC.

S

V

MILDENBERG BOENDER &

PA ON

2 of 3

STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
- 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
- D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPEI THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE
- 6. SITE ANALYSIS: TOTAL AREA OF SITE ACRES AREA DISTURBED: ACRES AREA TO BE ROOFED OR PAVED: __0.06___ ___ACRES AREA TO BE VEGETATIVE STABILIZED: 0.25 ACRES TOTAL CUT 660 ___Cu. Yds ___660____CU. YDS. TOTAL FILL OFFSITE WASTE/BORROW AREA LOCATION:

-PHOTOGRAPHS

USE IV MARCH 1 - MAY 31

MICHAEL G. KRETSCH, P.E.

SOIL CONSERVATION DISTRICT

OWARD SOIL CONSERVATION DISTRICT

CHIEF, DIVISION OF LAND DEVELOPMENT

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DEVELOPMENT ENGINEERING DIVISION

EROSION AND SEDIMENT CONTROL BY THE HOWARD

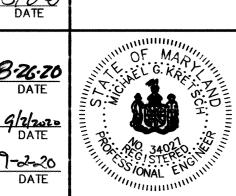
PRINTED NAME OF ENGINEER

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY: AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD
 - -INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) -NAME AND TITLE OF INSPECTOR -WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION
 - -BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR **CURRENT ACTIVITIES** -EVIDENCE OF SEDIMENT DISCHARGE
 - -IDENTIFICATION OF PLAN DEFICIENCIES -IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE -IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS -COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
 - -MONITORING/SAMPLING -MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED -OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY,
- 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR
- REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES. 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN
- STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME. 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES
- MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL
- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBERICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN
- 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): USE I AND IP MARCH 1 - JUNE 15 USE III AND IIIP OCTOBER 1 - APRIL 30
- 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.

DEVELOPERS CERTIFICATE	
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY 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 OF DEVELOPER DATE WM. SUGGESTION PRINTED NAME OF DEVELOPER	
ENGINEER'S CERTIFICATE I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.	

OWNER/DEVELOPER

HARMONY BUILDERS INC. 4228 COLUMBIA ROAD ELLICOTT CITY, MARYLAND 21042 410-461-0833



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. 34027, EXP DATE 01/16/2021 7212020 DATE:

MICHAEL G. KRETSCH, P.E.

(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.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA A. SOIL PREPARATION

- 1. TEMPORARY STABILIZATION a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED. IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE
- TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: I. SOIL PH BETWEEN 6.0 AND 7.0.
- II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM) III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS
- CLAY) WOULD BE ACCEPTABLE. IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE 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
- 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 SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN RREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY

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
- 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE
- b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH
- d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN
- 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 TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE
- FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER. b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
- 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 UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY
- IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

- 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.
- 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 MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
- 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

LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES

(B-4-8) STANDARDS AND SPECIFICATION FOR STOCKPILE AREA

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

- 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON
- THE EROSION AND SEDIMENT CONTROL PLAN. 2. THE FOOTPRINT OF STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- 3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- 5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVISE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER
- 6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILE MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS Standard B—4—1 incremental stabilization and standard B—4—4 temporary stabilization. 8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST COVERED WITH IMPERMEABLE
- THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN

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

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

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. A. SEEDING 1. SPECIFICATIONS
- d. 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 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS

- FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS. C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE
- d. Sod or seed must not be placed on soil which has been treated with soil sterilants or CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS. 2. APPLICATION
- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
- I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3. OR SITE-SPECIFIC SEEDING SUMMARIES. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL
- . DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOII I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- I. ÁPPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer)
- I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P_2 O_5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE. II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY IYDROSEEDING). NORMALLY, NOT MORE THAN 2 TON'S ARE APPLIED BY HYDROSEEDING AT ANY ONE
- TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING. III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

b. Wood cellulose fiber mulch (WCFM) consisting of specially prepared wood cellulose

B. MULCHING

PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE

- a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED
- I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION
- AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL
- V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM. APPLICATION
- a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE. c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER
- ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS
- PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WINI 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 DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS
- BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR. WOOD CELLULOSE FIRER MAY BE LISED FOR ANCHORING STRAW APPLY THE FIRER BINDER AT A NET DE WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- IV LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000

(B-4-4) STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

TO STABILIZE DISTURBED SOIL WITH VEGETATION FOR UP TO 6 MONTHS.

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURB SOIL. <u>CONDITIONS WHERE PRACTICE APPLIES</u>
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.

- 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY 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 FORTELIZER 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.1b, AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

BORING LOG

BORINGS PERFORMED BY GE&1

TEMPORARY SEEDING FOR SITE STABILIZATION RECOMMENDED SEEDING DATED BY PLANT HARDINESS ZONE PLANT SPECIES 1000SF (INCHES) 5B AND 6A 7A AND 7B COOL SEASON GRASSES MAR 15 TO MAY 31; | MAR 1 TO MAY 15; | FEB.15 TO APR 30; 40 | 1.0 | 0.5 (LOLIUM PERENNE SSP. MULTIFLORUM AUG 1 TO SEP 30 | AUG 1 TO OCT 15 | AUG 15 TO NOV 30 MAR 1 TO MAY 15; | FEB.15 TO APR 30 0.5 (HORDEUM VULGARE AUG 1 TO SEP 30 | AUG 1 TO OCT 15 | AUG 15 TO NOV 30 MAR 15 TO MAY 31; MAR 1 TO MAY 15; FEB.15 TO APR 30; 0.5 AUG 1 TO SEP 30 | AUG 1 TO OCT 15 | AUG 15 TO NOV 30 (AVENA SATIVA WHFAT MAR 15 TO MAY 31; | MAR 1 TO MAY 15; | FEB.15 TO APR 30; (TRITICUM AESTIVUM) AUG 1 TO SEP 30 | AUG 1 TO OCT 15 | AUG 15 TO NOV 30 MAR 15 TO MAY 31; MAR 1 TO MAY 15; FEB.15 TO APR 30; CEREAL RYE 0.5 AUG 1 TO OCT 31 | AUG 1 TO OCT 15 | AUG 15 TO DEC 15 (SECALE ITALICA) WARM SEASON GRASSES FOXTAIL MILLET JUN 1 TO JUL 31 | MAY 16 TO JUL 31 | MAY 1 TO AUG 14 (SETARIA ITALICA) PEARL MILLET 0.5 JUN 1 TO JUL 31 | MAY 16 TO JUL 31 | MAY 1 TO AUG 14 (PENNISETUM GLAUCUM)

(B-4-5) STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION

PURPOSE TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER OF DISTURBED CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE

CRITERIA

A. SEED MIXTURES

1. GENERAL USI

- A. SELECT ONE OR MORE OF THE SPIECES OF MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED IN THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY
- ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DINES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342-CRITICAL AREA PLANTING
- FOR SITES HAVING DISTURBAD AREA OVER 5 ACRES, USE AND SHOW RATES RECOMMENDED BY THE SOIL TESTING AGENCY. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZED (40-0-01) AT 3 1/2
- POUNDS PER 1000 S.F. (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY AREAS WHERE TURFGRASS MAY BE DESIRE INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL
- SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE SELECT ONE OR MORE OF THE SPECIES OF MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE
 - MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASRERN SHORE RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RETA: 1.5 TO 2.0 POUNDS PER 1000 S.F. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT. KENTUCKY BLUEGRASS/PERENIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY ABD WHEN TURF WILL RECEIVE MEDIUM TO INTENSUVE
 - MANAGEMENT. CERTIFIED PERENIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDINGRATE: 2 POUNDS MIXTURE PER 1000 S.F. SHOOSE A MINIMUM OF THREE KENTUCKYBLUEGRASS CULTIVARS EITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL MIXTURE: FOR USE IN DROUGHT AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED

MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 65 TO 100 PERCENT, CERTIFIED KENTUCKY

- BLUEGRASS CULTIVARS 0 TO 5 PERCENT, SEEDING RATE: 5 TO 8 PERCENT PER 1000 S.F. 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 TIRF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCANT AND CERTIFIES FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATES 1 1/2 TO 3 POUNDS PER
- 1000 S.F.
 IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURE <u>WESTERN MD:</u> MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B,6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD. EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 7A, 7B)
- D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEFORED. REMOVE STONE AND DERRIF OVER 1.5 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASS WILL POSE NO DIFFICULTY.
- E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH 0.5 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASON, OR ON ADVERSE SITES.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER 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 OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

<u>EROSION AND SEDIMENT CONTROL NOTES</u>

- 1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS. 2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF
- BUSINESS. 3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH. 4. EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE
- 5. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE ED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN
- 6. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN

7. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. TABLE B.4.1 MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS & LANDSCAPE INFILTRATION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE APPENDIX A. TABLE A.4.	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL [2" TO 4" DEEP]	LOAMY SAND (60 - 65%) & COMPOST (35 -40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
CURTAIN DRAIN	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2"TO 5"	
GEOTEXTILE		N/A	
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4"TO 6"RIGID SCHEDULE 40 PVC OR SDR35	
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'C = 3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND -DESIGN TO INCLUDE MEETING ACI CODE 350.R/89; VERTICAL LOADING [H-10 OR H-20]; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND	AASHTO-M-6 OR ASTM-C-33	0.02"TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST"

DETAIL B-1 STABILIZED CONSTRUCTION SCE **ENTRANCE** 200 **PROFILE** 50 FT MIN LENGTH * PLAN VIEW

STANDARD SYME

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 (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.

PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

DETAIL E-3 SUPER SILT FENCE -----SSF------I GALVANIZED CHAIN LINK FENCE WITH <u>ELEVATION</u> > woven slit film geotextile— FLOW

CONSTRUCTION SPECIFICATIONS

- . INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

CROSS SECTION

- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- 45 DEGREES TO THE MAIN 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 WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

GABION BASKETS

GABION BASKETS SHALL BE FABRICATED FROM 11 GA OR HEAVIER WIRE STONE SHALL BE FROM 4" TO 7" DIAMETER OVERALL SIZE AS SHOWN IN PLANS

SEQUENCE OF CONSTRUCTION

OBTAIN GRADING PERMIT. (1 DAY) 2. INSTALL PERIMETER CONTROLS: SILT FENCE, SUPER SILT FENCE, DIVERSION FENCE AS SHOWN ON PLAN. (1 DAY)

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION SHOWN (1 DAY)

4. GRADE SITE PER PLAN. (5 DAYS) 5. CONSTRUCT HOUSES (90-180 DAYS PER HOUSE) 5. COMPLETE FINE GRADING OF SITE TO GRADES INDICATED (2 DAYS) SEED AND MULCH ALL REMAINING DISTURBED AREAS. (1 DAY PER) B. CONSTRUCT MICRO-BIORETENTION FACILITIES. (5 DAYS)

WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS (1 DAY).

PERMANENT SEEDING SUMMARY HARDINESS ZONE (FROM FIGURE B.3): 6b SEED MIXTURE (FROM TABLE B.3): 8 (10-20-20)LIME RATE APPLICATION SEEDING SPECIES RATE (LB/AC) DATES DEPTHS PER ACRE (90 LBS / 1000 PER ACRE PER ACRE AUG 15-OCT 15 1/4"-1/2 (1 LB./1000 SF) (2 LB./1000 SF)(2 LB./1000 SF) MIXTURES 1, 4-7, 9, AND 10 FROM TABLE B.3 OF THE 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MAY BE USED.

CAN BE USED FOR SAND.

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