STATION NO. 31A3 NORTH 573,217,9149 EAST 1,368,237,7247 STATION NO. 3104 NORTH 571,700,7034 EAST 1,369,606,3509

- 3. THIS PLAT IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JANUARY, 2012, BY FISHER, COLLINS & CARTER, INC. 4. B.R.L. DENOTES BUILDING RESTRICTION LINE. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR
- PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS

A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE); B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. $(1 - 1/2^n)$ MINIMUM);

C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS:

D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);

E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE; F) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.

DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '83 GRID MEASUREMENT.

7. ALL LOT AREAS ARE MORE OR LESS (±).

LOCATED ON THE INDIVIDUAL LOTS AS FOLLOWS:

STORMWATER MANAGEMENT REQUIREMENTS FOR LOTS 1 THRU 5 WILL BE MET USING ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT POSSIBLE IN ACCORDANCE WITH THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, EFFECTIVE IN MAY OF 2010. THE PROPOSED PRACTICES WILL BE

LOT 1: MICRO-BIORETENTION (M-6) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND A BIO-SWALE (M-8) FOR THE PROPOSED DRIVEWAY. LOT 2: NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY. THE EXISTING HOUSE WILL REMAIN FOR WHICH SWM IS NOT

LOT 3: DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY. LOT 4: ROOFTOP DISCONNECTION (N-1) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE

LOT 5: ROOFTOP DISCONNECTION (N-1) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOPDISCONNECTION (N-2) FOR THE

THESE PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH INDIVIDUAL DECLARATIONS OF COVENANTS.

10. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP, DATED SEPTEMBER, 2012 AND APPROVED OCTOBER 31TH, 2012. 11. NO CEMETERIES EXISTS ON THIS SITE BASED ON A BY VISUAL SITE VISIT AND BASED ON A EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP AND NO HISTORIC STRUCTURES SITES OR FEATURES EXIST.

12. THE FOREST CONSERVATION REQUIREMENTS FEE-IN-LIEU PAYMENT WAS PAID UNDER F-13-021

13. LANDSCAPING FOR LOTS 1, 3, 4 AND 5 IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN FOR F-13-021. IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL A LANDSCAPE SURETY IN THE AMOUNT OF \$14.250.00 IS BONDED WITH THE WATER & SEWER DEVELOPER'S AGREEMENT.

LOT 1: SURETY (4 SHADE TREE @ \$300/SHADE TREE) & (17 EVER GREENS @ \$150/EVER GREEN TREE) = \$3,750.00

LOT 2: SURETY (5 SHADE TREE @ \$300/SHADE TREE) = \$1,500.00 LOT 3: SURETY (7 SHADE TREE @ \$300/SHADE TREE) = \$2,100.00

LOT 4: SURETY (2 SHADE TREE @ \$300/SHADE TREE) & (6 EVER GREENS @ \$150/EVER GREEN TREE) = \$1,500.00 LOT 5: SURETY (15 SHADE TREE @ \$300/SHADE TREE) & (6 EVER GREENS @ \$150/EVER GREEN TREE) = \$5,4000,00

14. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.1228 OF THE HOWARD COUNTY CODE 15. PUBLIC WATER AND SEWAGE ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME. 16. APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF ALL RESIDENTIAL LOTS WITHIN THIS SUBDIVISION PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

17. PROPERTY SUBJECT TO DEPARTMENT OF PLANNING AND ZONING FILE NOS. ECP-12-052, WP-12-156 AND F-13-021.

16. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND WILL BE SERVED BY PUBLIC WATER AND SEWER UNDER CONTRACT 14-4745-D. 19. THERE IS AN EXISTING DWELLING/STRUCTURE(S) LOCATED ON LOT 2 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING(S) ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REQUIATION REQUIREMENTS.

20. THERE ARE NO DISTURBANCES TO ENVIRONMENTAL FEATURES AS THERE ARE NO ENVIRONMENTAL FEATURES LOCATED ON THIS PROPERTY 21. THIS PLAT IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY

WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT AND PER THE COMP-LITE ZONING REGULATIONS DATED JULY 20, 2006. 22. PLAT SUBJECT TO WP-12-156 WHICH THE PLANNING DIRECTOR ON JUNE 27, 2012 APPROVED A WAIVER FROM SECTION 16.1205(A)(7) TO ALLOW REMOVAL OF THE THREE (3) TREES 30" IN DIAMETER OR LARGER. THE PLANNING DIRECTOR ALSO APPROVED A REQUEST TO WAIVE SECTION 16.120(B)(6)(V)(C) TO ALLOW PIPESTEM LOTS TO BE CREATED ON BOTH SIDES OF A FRONTAGE LOT IN THE SAME SUBDIVISION. FINALLY, THE PLANNING DIRECTOR APPROVED A REQUEST TO WAIVE SECTION 16.145 TO ALLOW SUBMISSION OF A FINAL SUBDIVISION PLAN WITHOUT FIRST SUBMITTING A

SKETCH PLAN OR PRELIMINARY EQUIVALENT SKETCH PLAN, SUBJECT TO THE FOLLOWING CONDITIONS: 1) REMOVAL OF THE THREE (3) SPECIMEN TREES WILL REQUIRE REPLACEMENT MITIGATION AT A RATIO OF TWO (2) LARGER CALIPER TREES (AT LEAST FOUR (4) INCHES 08H) FOR EACH SPECIMEN TREE REMOVED. THE MITIGATION PLANTING CAN BE PROVIDED AS PART OF THE REQUIRED PERIMETER LANDSCAPING FOR THIS PROJECT. YOU MUST SUBMIT A SUPPLEMENTAL PLAN WITH YOUR FINAL SUBDIVISION PLAN FOR

THIS PROPERTY THAT SHOWS HOW YOU PLAN TO ADDRESS THIS ALTERNATIVE LANDSCAPE MITIGATION.

2) SUBMISSION OF A FINAL PLAN APPLICATION, INCLUDING A FINAL SUBDIVISION PLAT AND A SUPPLEMENTAL PLAN. 3) THE PROPOSED DRIVEWAY TO SERVE NEW LOT 1 SHALL COMPLY WITH SECTION 16.120(B)(VI) OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND CAN BE LOCATED AT LEAST 10 FEET FROM THE PROJECT BOUNDARY AT ALL POINTS TO PROVIDE ADEQUATE ROOM FOR PERIMETER LANDSCAPING. THE APPLICANT MUST PROVIDE A LANDSCAPING BUFFER ALONG THE ENTIRE PROJECT BOUNDARY LINE BETWEEN THE DRIVEWAY AND THE ADJOINING SATING PROPERTY. PARCEL 351, LOT 35, WITH A SINGLE ROW OF LEYLAND CYPRESS TREES, OR AN EQUIVALENT SPECIES, AT A SPACING OF 15 FEET ON CENTER (TOTAL OF 15 TREES).

23. THE 36' PRIVATE USE-IN-COMMON DRIVEWAY MAINTENANCE AGREEMENTS FOR LOT 1 THRU 5, THE 36' PRIVATE USE-IN-COMMON DRIVEWAY RECORDED IN THE HOWARD COUNTY LAND RECORDS OFFICE SIMULTANEOUSLY WITH THE RECORDING OF THIS SUBDIVISION PLAT.

24. OPEN SPACE REQUIREMENTS ARE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$6,000.00 UNDER F-13-021. 25. THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127-RESIDENTIAL INFILL DEVELOPMENT -OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED

26. NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT PER HOWARD COUNTY DESIGN MANUAL, VOLUME III, SECTION 5.2.(F). 27. A COMMUNITY MEETING WAS CONDUCTED ON JANUARY 4, 2012 FOR THE PURPOSE OF THE DEVELOPER TO PROVIDE INFORMATION TO THE COMMUNITY REGARDING THE PROPOSED RESIDENTIAL DEVELOPMENT AND TO ALLOW THE COMMUNITY TO ASK QUESTIONS AND TO MAKE COMMENTS. PER SECTION

16.120(D), OF THE SUBDIVISION REGULATIONS. 28. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.

29. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1000 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

30. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-600-257-7777 AT LEAST 40 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE. 31. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF TRAFFIC CONTROL

DEVICES (MUTCO). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT. 32. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH CONTOUR NTERVALS PREPARED BY FISHER, COLLINS AND CARTER, INC. DATED FEB. 15, 2012 AND SUPPLEMENTED WITH HOWARD COUNTY GIS INFORMATION. 33. EXISTING UTILITIES SHOWN ARE BASED ON AVAILABLE CONSTRUCTION DRAWINGS.

34. A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430-FOR DETAILS AND COST ESTIMATE.

35. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GUAGE) - 3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. 36. THERE IS NO FLOODPLAIN ON THIS SITE.

37. THERE ARE NO WETLANDS ON THIS SITE.

FISHER, COLLINS & CARTER, INC.

ELLICOTT CITY, MARYLAND 21042

ouare office park — 10272 Baltimore National Pi

39. STREET LIGHT PLACEMENT AND TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III. SECTION 5.5.A. A MINIMUM OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. 39. IN ACCORDANCE WITH SECTION 128 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 SETBACK. 40. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.

41. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE. 42. FOR DRIVEWAY ENTRANCE DETAILS, REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV. STANDARD DETAIL R-6.01.

43. ALTHOUGH THE PLAT INDICATES VEHICULAR ACCESS RESTRICTIONS TO MONTGOMERY ROAD, THE EXISTING HOUSE MAY ACCESS MONTGOMERY ROAD

UNTIL THE PROPOSED DRIVEWAY IS CONSTRUCTED WITH THIS SOP.

REV. LOT 1 TO CW-1 HOUSETYPE, GRADING, & SWM

Rev. Lot Z to CW-Z Housetype & Assoc. Grading & SWM

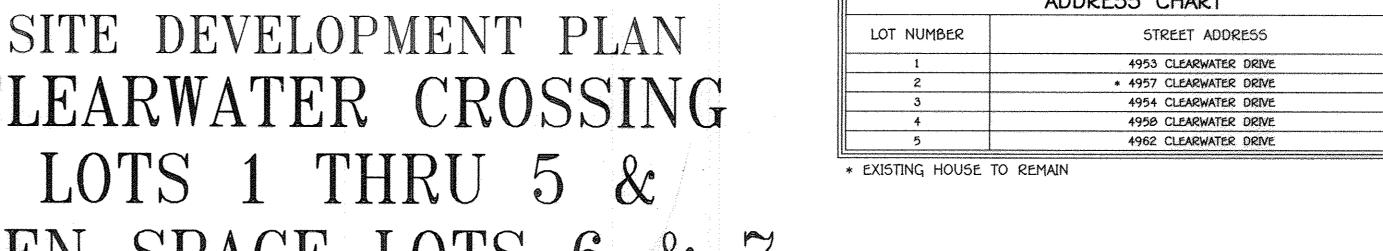
REV. LOTS TO CW-5 HOUSETYPE ASSOC, GRADING & SWM

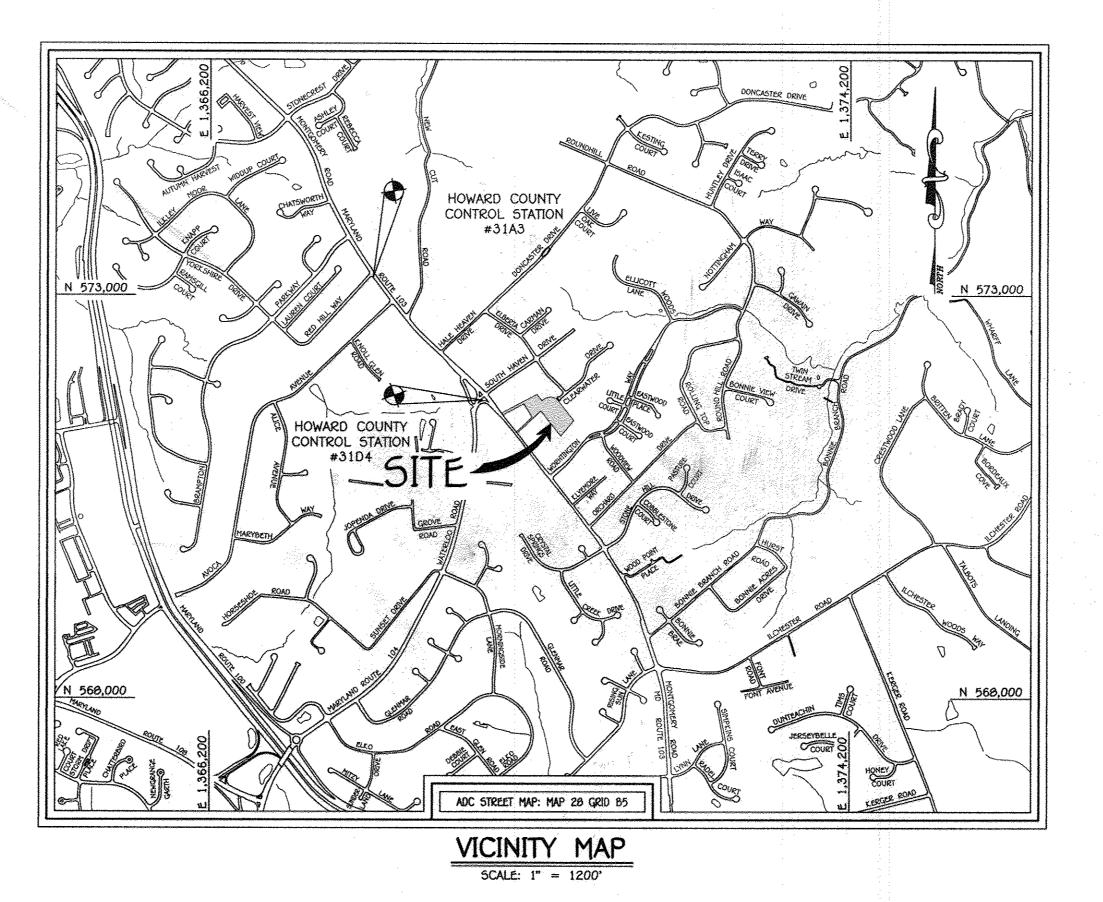
Added CW-3 & CW-4 Housetypes for Lots 3 & 4; Rev. SWM Chart

REVISION

44. OPEN SPACE LOTS 6 AND 7 ARE OWNED AND MAINTAINED BY THE CLEARWATER CROSSING HOMEOWNERS ASSOCIATION, INC. 45. ARTICLES OF INCORPORATION FOR THE CLEARWATER CROSSING HOMEOWNERS ASSOCIATION, INC. ARE FILED WITH THE MARYLAND STATE DEPARTMENT OF TAXATION AND ASSESSMENTS ON JULY 24, 2013 HAVING RECEIPT NO. D15364128.

CLEARWATER CROSSING LOTS 1 THRU 5 & OPEN SPACE LOTS 6 & 7





ADDRESS CHART	
STREET ADDRESS	
4953 CLEARWATER DRIVE	and the state of t
* 4957 CLEARWATER DRIVE	il i
4954 CLEARWATER DRIVE	
4958 CLEARWATER DRIVE	
4962 CLEARWATER DRIVE	

	SHEET INDEX	
SHEET NO.	DESCRIPTION	
1	TITLE SHEET	
2	SITE DEVELOPMENT PLAN	
3	SEDIMENT AND EROSION CONTROL PLAN	
4	STORMWATER MANAGEMENT NOTES, CHARTS AND DETAILS	
7	SEDIMENT AND EROSION CONTROL DETAILS	
6	SEDIMENT AND EROSION CONTROL NOTES	
7	ORAINAGE AREA MAP	

	STREET NAME	NORTHING	EASTING	FIXTURE/POL	E TYPE	
	CLEARWATER DRIVE	571,698.19	1,370,550.37	100-WATT H.P.S. COL MOUNTED ON A 14 FIBERGLASS	-FOOT BLACK	
	DISCONNECTION OF ROOFTOP RUN-OFF	DISCONNECTION OF NON-ROOFTOP RUN-OF	DRY WELLS	MICRO- BIO-RETENTION	SWALE5	1
NDDRE55	N-1	N-2	M-5	M-6	M-8	

STREET LIGHT CHART

LOT NUMBER	ADDRESS	DISCONNECTION OF ROOFTOP RUN-OFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFFOP RUN-OFF N-2 (Y/N)	DRY WELLS M-5 (NUMBER)	MICRO- BIO-RETENTION M-6 (NUMBER)	SWALES M-0 (NUMBER)
1	4953 CLEARWATER DRIVE	N/A	N/A	2	1	1
2*	4957 CLEARWATER DRIVE	N/A	Y	N/A	N/A	N/A
3	4954 CLEARWATER DRIVE	N/A	Y	3	N/A	N/A
4	4958 CLEARWATER DRIVE	4	Y :	2	N/A	N/A
5	4962 CLEARWATER DRIVE	4	Y	4	N/A	N/A

* EXISTING HOUSE TO REMAIN

SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 3.765540 AC. ±

B. LIMIT OF DISTURBED AREA = L.O.D. ASSOCIATED WITH THE BUILDING SITE: LO.D. ASSOCIATED WITH THE REMOVAL OF EXISTING DRIVEWAY: 6,557 SqFT. or 0.15 Ac+ TOTAL L.O.D. = 115,265 or 2.65 Ac*

C. PRESENT ZONING DESIGNATION = R-20(PER 2/04/2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING

AMENDMENTS DATED 7/20/2006) D. PROPOSED USE: RESIDENTIAL

E. BUILDING COVERAGE OF SITE: 14,15% PREVIOUS HOWARD COUNTY FILES: ECP-12-052 & WP-12-156, F-13-021.

G. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.00 AC+ 1. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC+

I. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.00 AC+ J. NET TRACT AREA = 3.765540 AC. ±.

(TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPES AREA) . TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC.+

L. TOTAL AREA OF FOREST = 0 AC* M. TOTAL GREEN OPEN AREA = 2.97 AC+

N. TOTAL IMPERVIOUS AREA = 0.80 AC+ O. TOTAL AREA OF SEVERELY ERODIBLE SOILS = 0.014 AC. *

BENCHMARK INFORMATION

8.M.#31D4 - HOWARD COUNTY CONTROL STATION - HORIZONTAL - NAD '83) LUCATED IN THE ISLAND AT THE INTERSECTION OF ROUTE 103; MONTGOMERY ROAD AND ROUTE 104, APPROX. 16.5' FROM THE EDGE OF CURB) E 1.369.606.3509

ELEVATION = 494.406 - VERTICAL - (NAVD '88)

ELEVATION = 486.869 - VERTICAL - (NAVD '88)

- OPT. BAY WINDOWS

-OPT. FIREPLACE

B.M.#31A3 - HOWARD COUNTY CONTROL STATION - HORIZONTAL - (NAD '83)
(LOCATED ALONG ROUTE 103; MONTGOMERY ROAD, SOUTH EAST FROM RED HILL WAY. APPROX. 15.2' BEHIND THE EDGE OF PAVING) N 573,217.9149 E 1,368,237.7247

EXISTING GRAVEL AREA TO BE REMOVED PROPOSED PEA GRAVEL EXISTING GRAVEL EXISTING CONCRETE WALK PROPOSED CONCRETE WALK EXISTING DRIVEWAY TO BE REMOVED DISCONNECTION IMPERVIOUS AREA DISCONNECTION RECEIVING AREA DRAINAGE AREA ACCESS EASEMENT PUBLIC STORMDRAIN EASEMENT
PRIVATE STORMDRAIN EASEMENT

LEGEND

-55F-56F- SUPER SILT PENCE

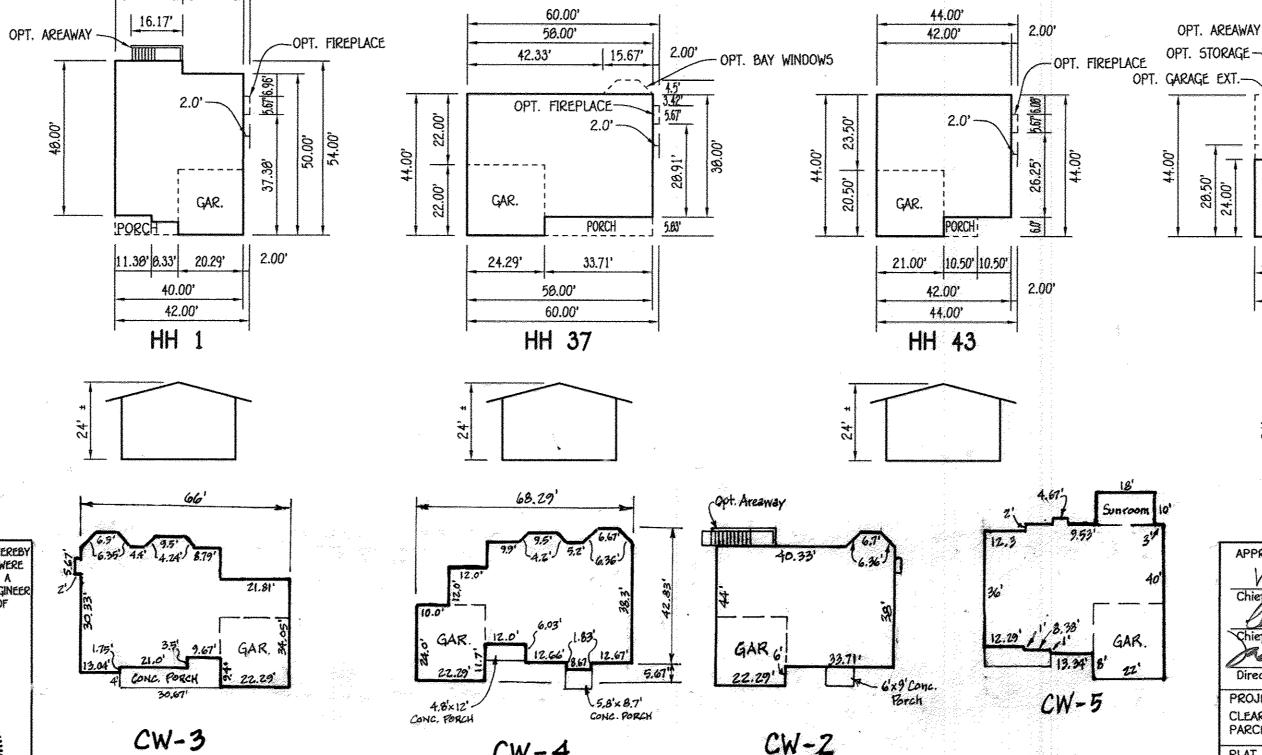
_____ umit of disturbance

LILLINGT OF TREES AND FOREST

PROPOSED LANDSCAPING

PROPOSED CONTOUR 2' INTERVAL

DESCRIPTION



42.00'

40.00'

"PROFESSIONAL CERTIFICATION. I HEREBI

CERTIFY THAT THESE DOCUMENTS WERE

PREPARED BY ME, AND THAT I AM A

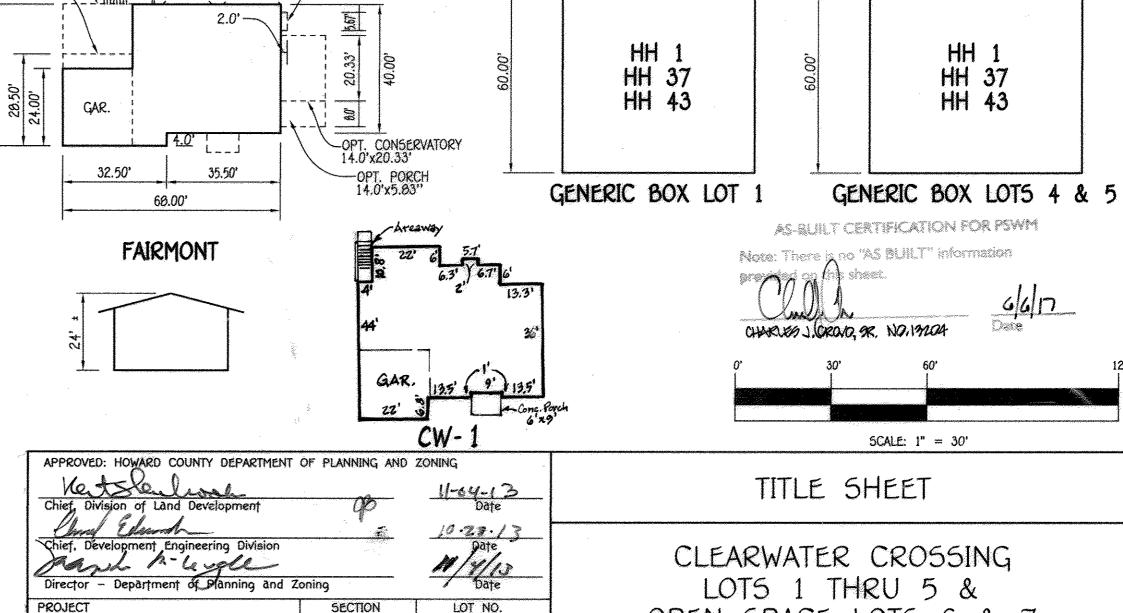
DULY LICENSED PROFESSIONAL ENGINEE

under the laws of the state of MARYLAND, LICENSE NO. 20748, EXPIRATION DATE 2-22-15."

9/09/15

DATE

21.00' | 19.00' || 2.00'



LOT NO.

1 THRU 5

CENSUS TR.

6027

SECTION

TAX/ZONE | ELEC. DIST.

SECOND

CLEARWATER CROSSING

ECP-12-052, WP-12-156

F-13-021, GP-14-008

BLOCK NO.

ZONE

R-20

PARCEL 593

2560-

22562

OWNER/DEVELOPER

COLUMBIA BUILDERS GROUP, LLC B. JAMES GREENFIELD 6420 AUTUMN SKY WAY

COLUMBIA, MD 21044 443-324-4732

OPEN SPACE LOTS 6 & 7

ZONED R-20 TAX MAP NO.: 31 GRID NO.: 8

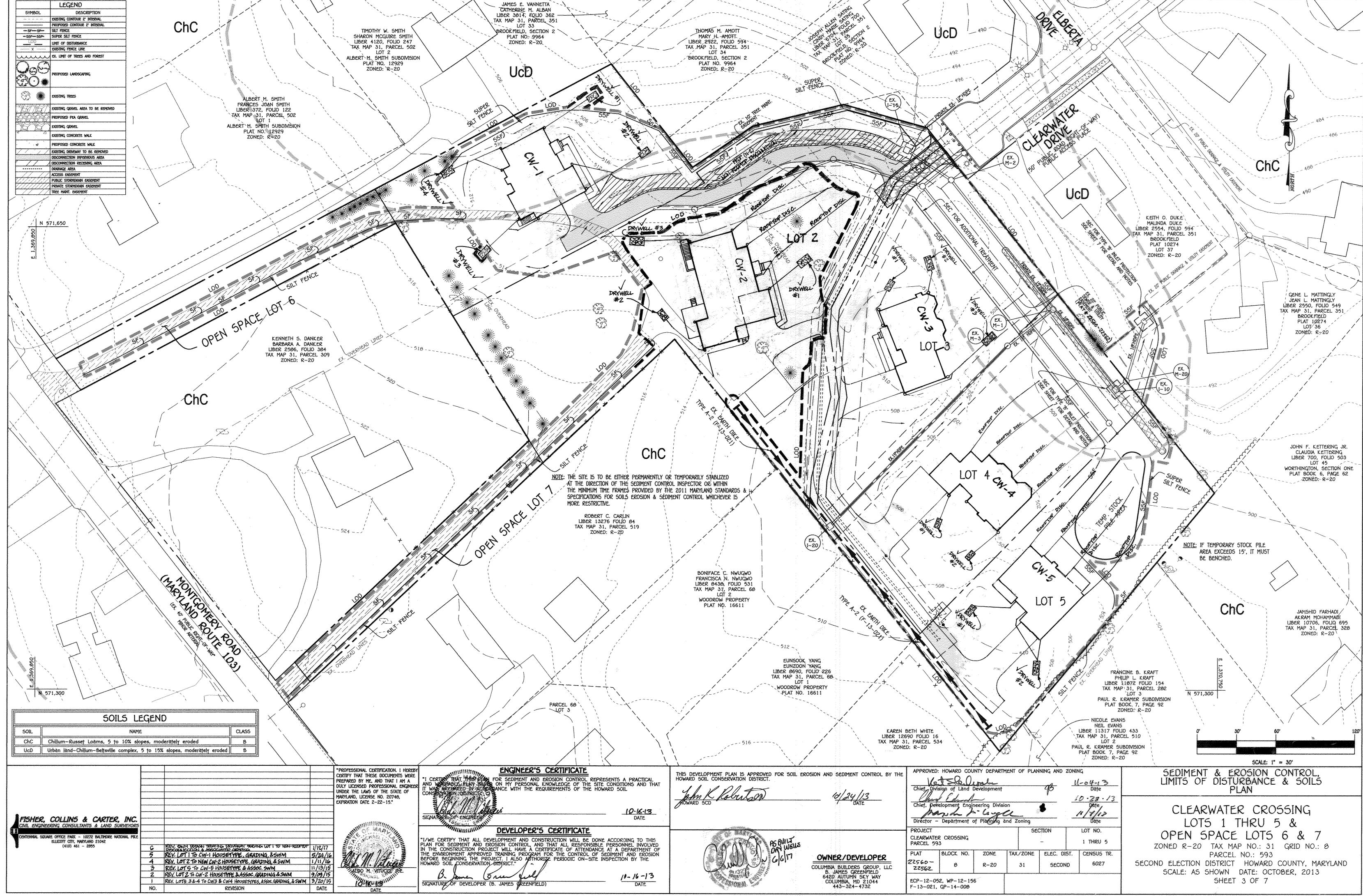
PARCEL NO.: 593

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: OCTOBER, 2013

SHEET 1 OF 7

AS BUILT 50P-13-075



AS BUILT

5DP-13-075

C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.

D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO

E. THE MUNITENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE

F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED. THE

MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA

DRY WELL CHART

LOT DRYWELL AREA OF ROOF VOLUME VOLUME AREA OF *L D W

3 1 223 & 444 S.F. 64. C.F. 68 C.F. 100% 9'x5'x5'

3 2 405&4935.F 86 CF. 91 CF. 100% 11'x5'x55'

3 3 193,261,4945.F. 91 C.F. 95 C.F. 100% 11.5'x 5'x 55'

4 1 266 & 439 S.F. 67 C.F. 68 C.F. 100% 9.7'x 5'x 4.7'

4 Z 465 50. FT. 45 C.F. 48 C.F. 100% 8'x 5'x 4'
5 1 220\$210 50. FT. 41 C.F. 60 C.F. 100% 8'x 5'x 5'

5 2 328\$48050. FT. 78 CF 83 CF. 100% 11'x5'x5'

8 500 5Q, FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x 4'

9 500 5Q, FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4'

10 500 SQ. FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x 4'

14 500 5Q, FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4'

15 500 SQ. FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4' 16 500 SQ. FT. 45.52 C.F. 57.6 C.F. 100% 0' x 6' x4'

500 5Q FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4'

500 SQ. FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4'

500 SQ. FT. 45.52 C.F. 57.6 C.F. 100% 8' x 6' x4'

(72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.

COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA

INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

FISHER, COLLINS & CARTER, INC.

ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055

SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PI

CONCRETE -FOOT PLATE

O-BIORETENTION PLANT MATE

4" PVC PIPE
UNDERDRAIN COLLECTION SYSTEM

1% MIN

VATED WITH*

to be preforated within area -of the Micro-Bioretention

INFLOW & ---

FILTER FABRIC

OBS PIPE

KEV, SUM SUMMARY CHART

NO.

REV. LOT I TO CW-IHOUSETYPE, GRADING, & SWM

REV. LOT 2 TO NEW CW-2 HOUSETYPE, GRADING, & SWIM

REY, SWM SUMMARY CHART & DRY WELL CHART FOR LOTS 3&4

REVISION

MAXIMUM

SOIL BORING SUMMARY

Soil Boring excavation was performed on August 3, 2012 in the location of the proposed Bio-retention facilities at the "Clearwater Crossing" site. Attendees included Mr. Brandon Ripple of Fisher Collins and Carter Inc. and Mr. Ron Tash of Columbia Builders Group. The existing elevations of Boring #1 is approximately 512.14 and the proposed elevation will be approximately PRESSURE TREATED

513.00. There was no rock or water encountered in the excavation. The proposed facility in this area is

The existing elevations of Boring #2 is approximately 508.19 and the proposed elevation will be approximately

507.50. There was no rock or water encountered in the excavation. The proposed facility in this area is approximately 3.5 in depth.

The existing elevations of Boring #3 is approximately 509.40 and the proposed elevation will be approximately 3' REBAR ANCHOR-509.75. There was no rock or water encountered in the excavation. The proposed facility in this area is A The existing elevations of Boring #4 is approximately 505.32 and the proposed elevation will be approximately

504.00. There was no rock or water encountered in the excavation. The proposed facility in this area is approximately 3.5 in depth. A The existing elevations of Boring #5 is approximately 505.37 and the proposed elevation will be approximately 506.00. There was no rock or water encountered in the excavation. The proposed facility in this area is

approximately 5.0 in depth. A The existing elevations of Boring #6 is approximately 503.73 and the proposed elevation will be approximately 509.46. There was no rock or water encountered in the excavation. The proposed facility in this area is approximately 5.0 in depth.

4ICRO-BIORETENTION

50 507.50 506.50 506.25 503.75 503.00 502.80

WIGAP

BIORETENTION FILTER

* * Mrlow _

2 2 2 2

INFLOW

NOT TO SCALE

DRYWELL AREA OF ROOF VOLUME VOLUME AREA OF NO. PER DOWNSPOUT REQUIRED PROVIDED TREATMENT

DRY WELL CHART

2 1 727 5.F. 70 C.F. 83 C.F. 100% 10' x 5' x 5.4' 2 2 613 S.F 59 C.F. 61 C.F. 100% 9' x 5' x 4.5'

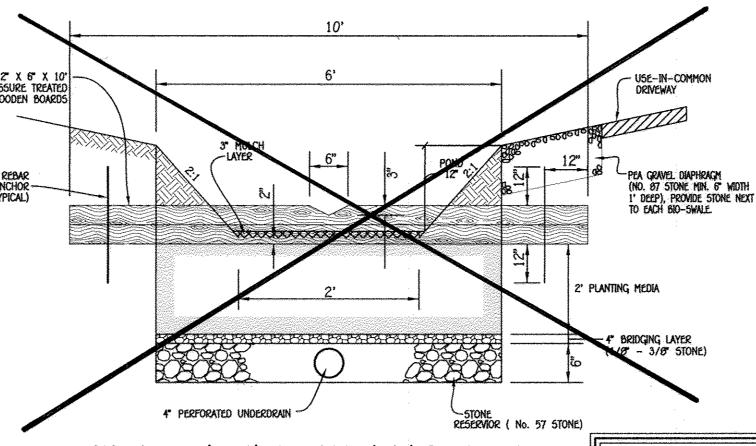
Z 3 952 S.F 91 C.F. 92 C.F. 100% 11' × 5' × 5.6'

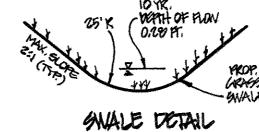
/11/16

/20/19

DATE

* The existing elevations of Boring #7 is approximately 507.71 and the proposed elevation will be approximately 510.50. There was no rock or water encountered in the excavation. The proposed facility in this area is approximately 5.0 in depth.





ALONG DRIVENAY DISCONNECTION AREA WITI

REMARKS

NO GROUNDWATER OR ROCK ENCOUNTERED

NO GROUNDWATER OR ROCK ENCOUNTERED

NO GROUNDWATER OR ROCK ENCOUNTERED

NO GROLINDWATER OR ROCK ENCOUNTERED

NO GROUNDWATER OR ROCK ENCOUNTERED

NO GROUNDWATER OR ROCK ENCOUNTERED

10.5 FT. NO GROUNDWATER OR ROCK ENCOUNTERED

NOT TO SCALE

BORING CHART

10.7 FT.

SECTION "A-A" NOT TO SCALE 5% MAX -ON-SITE P-1 PAVING SECTION ENTRANCE

NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

STORMWATER MANAGEMENT SUMMARY CHART

ESDV REQ. cu.f

474

426

477

3326

drywell area of roof yolume yolume area of No. Per donnstout required provided treatment $L \times D \times W$

CALCULATE THE PE PROVIDED AS FOLLOWS:

PE PROVIDED = $\frac{650 \times 12}{\text{RV x A}}$ = $\frac{3720 \times 12}{0.23 \times (3.32 \text{ acres})}$ = $\frac{56.450}{43,560}$

AS SUCH, 112% (1.34"/1.2") OF THE REQUIRED ESD VOLUME HAS BEEN PROVIDED.

1 1 255 & 336 57 C.F. 57.C.F. 100 % 85'x5'x4.5'
1 2 320 & 319 61 C.F. 64 C.F. 100 % 85'x5'x5'
1 3 216 & 499 69 C.F. 70 C.F. 100 % 9.3'x5'x5'
1 4 390 & 283 64 C.F. 68 C.F. 100 % 9'x5'x5'

AREA = 3.32 ACRE5

RCN = 55TARGET PE = 1.2*

area id

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

TOTAL5

4 PYC _

obs fipe

NOT TO SCALE

*PROFESSIONAL CERTIFICATION, I HEREBY

CERTIFY THAT THESE DOCUMENTS WERE

PREPARED BY ME. AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEE

UNDER THE LAWS OF THE STATE OF

MARYLAND, LICENSE NO. 20748. EXPIRATION DATE 2-22-15."

TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL

SWM SUMMARY CHART

ESDV PVd. cu.f

435

495

478

3720

OUTFLOW

*AND DRY WELLS (M-5)

CONNECTION, DRYWELLS (M-5)

REMARKS

NON-PROPETOR DISCONNECTION (N-2)

DRY WELLS (M-5) & NON-ROOFTOP

DISCONNECTION (N-2)

DRY WELLS (M-5), ROOFTOP DISCONECTION (N-1)

& NON-ROOFTOP DISCONNECTION (N-2)

DRY WELLS (M-5), ROOFTOP DISCONECTION (N-1)

& NON-ROOFTOP DISCONNECTION (N-2)

NON-ROOFTOP (N-Z) DIS-

B.4.C Specifications for Micro-Bioretention. Rain Gardens. Landscape Infiltration & Infiltration Berms

EASTING

1370230.00

1370303.90

1370494.91

1370522.54

1370544.80

1370588.72

1. Material Specifications The allowable materials to be used in these practices are detailed in Table B.4.1 2. Filtering Media or Planting Soil

NORTHING

571664.25

571711.06

571705.38

571704.70

571566.07

571448.42

571338.50

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria: Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

Organic Content - Minimum 10% by dry weight (ASTM 0 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%). Clay Content - Media shall have a clay content of less than 5%.

pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated. 3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices

B.4.5 Supp. 1 excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction

will significantly contribute to design failure. Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base. When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the

sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade. When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material

Recommended plant material for micro-bioretention practices can be found in Appendix A. Section A.2.3. 5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance. Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be

larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications. The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary

function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer it wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet. 6. Underdrains

Underdrains should meet the following criteria:

Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 750, Type P5 20, or AASHTO-M-270) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be "" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth. Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain. The main collector pipe shall be at a minimum 0.5% slope.

A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to provide a clean-out port and monitor performance of the filter. A 4" layer of pea gravel (1/4" to 1/4" stone) shall be located between the filter media and underdrain to prevent migration of

fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24". The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development

BLOCK NO.

CLEARWATER CROSSING

ECP-12-052, WP-12-156

F-13-021, GP-14-008

PARCEL 593

PLAT

22560 -

22562

Chief, Dévelopment Engineering Division

Director - Department of Planning and Zoning

ZONE

R-20

clean-out pipes must be provided (one minimum per every 1000 square feet of surface area). 7. Miscellaneous

These practices may not be constructed until all contributing drainage area has been stabilized

OWNER/DEVELOPER

COLUMBIA BUILDERS GROUP, LLC

B. JAMES GREENFIELD 6420 AUTUMN SKY WAY

COLUMBIA, MD 21044 443-324-4732

PARAMETER PH RANGE ORGANIC MATTER

1.5 TO 4.0% (BY WEIGHT) MAGNESIUM 35 LBS. PER ACRE, MINIMUM PHOSPHORUS (PHOSPHATE - P205) 75 LBS. PER ACRE, MINIMUM POTASSIUM (POTASH -1(K20) 85 LBS. PER ACRE, MINIMUM 500 PPM **50LUBLE SALTS** 10 TO 25 % 30 TO 55 %

INFILTRATION AND FILTER SYSTEM CONSTRUCTION

WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

REACHING THE FACILITY, THEREBY REDUCING THE POSSIBILITY OF CLOGGING.

> TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY.

> STABILIZE HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SOO.

BIO-RETENTION SOIL BED CHARACTERISTICS

> PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.

> TEMPORARILY DIVERT FLOWS FROM SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED.

> PLANTING BUFFER STRIPS OF AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE

> DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGY WILL BE SIMILAR TO BIORETENTION FACILITIES. SEE FIGURE A.5

> PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER FABRIC

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY

LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER

THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE

ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

VOLUME CENVIRONMENTAL QUALITY RESOURCES (EQR), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC.

(ETAB). 1993]. SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION

0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER

VALUE

COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC

5.2 TO 7.00

35 TO 60%

SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY 0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF

WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUGWORT,

NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.) SHOULD NOT

BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 18 LIFTS THAT ARE LOOSELY

the planting soil should be a sandy loam, loamy sand, loam (usda), or a loam/sand mix (should contain A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY

COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS

DESIGN CONSTRAINTS:

15 USED AS PART OF FACILITY DESIGN.

CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

TABLE A.3 PLANTING SOIL CHARACTERISTICS

AND TABLE A.4 FOR PLANTING MATERIAL GUIDANCE).

> SEE TABLE A.5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH

PRE-TREATMENT BUFFERS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS, VEGETATION PLANTED IN

AS SAND FOR WC), AND RE V. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR QP AS

WELL. THE MOST COMMON SYSTEMS INCLUDE INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS.

WHEN PROPERLY PLANTED, VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE,

THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE ARTERIES FOR STORMWATER TO PERMEATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND

MULCH LAYER

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS, THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS). UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

PLANTING GUIDANCE

11-04-13 Date

10-23-13

LOT NO.

1 THRU 5

CENSUS TR.

6027

SECTION

TAX/ZONE | ELEC. DIST.

SECOND

31

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES, BIORETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY DIVERSE, DENSE PLANT COVER, A BIORETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE. THE PROPER SELECTION and installation of plant materials is key to a successful system.ere are essentially three zones within A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS. BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRYER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A RANDOM, AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTOR AND SCHUELER, 1997.

OPERATION & MAINTENANCE SCEDULE FOR MICRO-BIORETENTION (M-6) AND BIORETENTIO SWALE (M-8)

MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING. 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II. TABLE A.4.1 AND 2 B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION,

THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES. C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE

YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED. D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND

> ASSURET CERTIFICATION FOR FSVM Note: There is no "AS BUILT" information CHARLES J. CKOVO, 9K. NO. 19204 5CALE: 1" = 30'

STORMWATER MANAGEMENT NOTES, CHARTS & DETAILS

CLEARWATER CROSSING LOTS 1 THRU 5 &

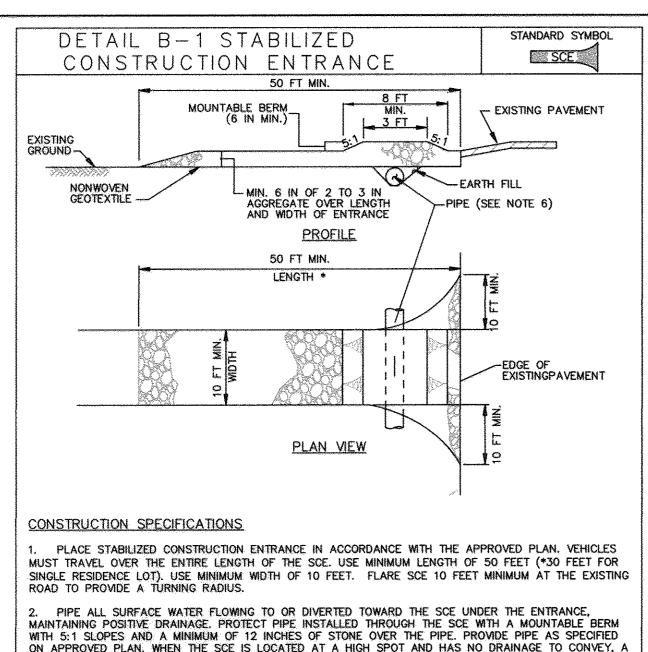
OPEN SPACE LOTS 6 & 7 ZONED R-20 TAX MAP NO .: 31 GRID NO .: 8

PARCEL NO.: 593 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER, 2013

SHEET 4 OF 7

50P-13-075





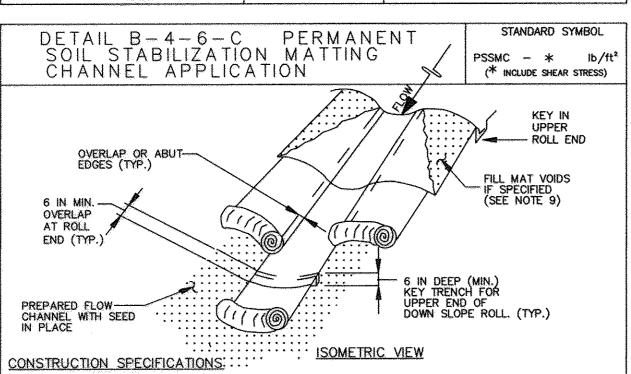
ON APPROVED PLAN, WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.

PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS. 4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE

(WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.

2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.

3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE

4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS, PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS. UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. 5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON

6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT. 7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.

STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. 9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR

MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.). ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NO.

STANDARD SYMBOL A-1 DETAIL C-1EARTH DIKE PLACE DESIGNATION (a.g. A-1)
ON FLOW CHANNEL SIDE OF DIKE ___2:1 SLOPE OR FLATTER 2:1 SLOPE OR FLATTER GROUND CROSS SECTION DIKE TYPE a – DIKE HEIGHT 30 IN MIN. 18 IN MIN. 36 IN MIN. c - FLOW WIDTH 6 FT MIN 4 FT MIN. d - FLOW DEPTH 12 IN MIN. 24 IN MIN. PLAN VIEW FLOW CHANNEL STABILIZATION SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)

SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE. 2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.

4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.

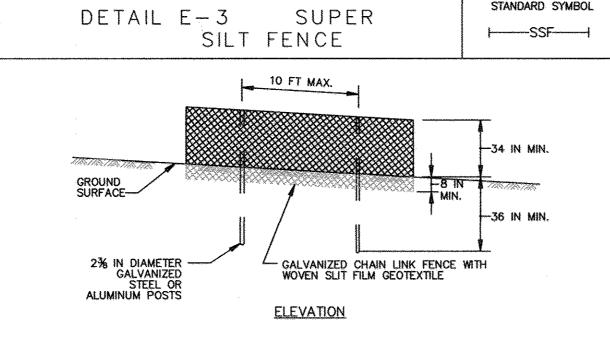
PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.

6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

MAINTAIN LINE, GRADE, AND CROSS SECTION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE, KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT NATURAL RESOURCES CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION



CHAIN LINK FENCING -WOVEN SLIT FILM GEOTEXTILE— EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN CROSS SECTION

CONSTRUCTION SPECIFICATIONS

DATE

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

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.

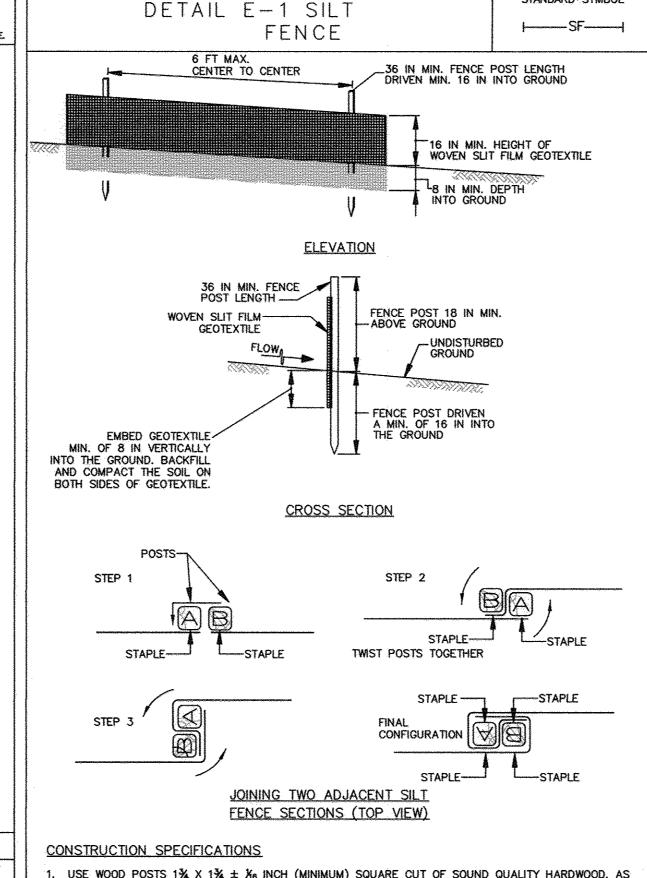
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT NATURAL RESOURCES CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION



STANDARD SYMBOL

USE WOOD POSTS $1\frac{\pi}{4}$ X $1\frac{\pi}{4}$ \pm $\frac{\pi}{16}$ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.

2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.

USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT IF SOIL ON BOTH SIDES OF FABRIC

6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL

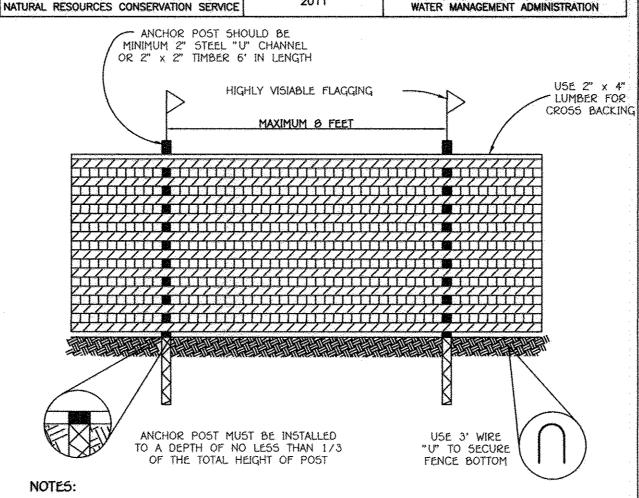
OF THE SILT FENCE.

U.S. DEPARTMENT OF AGRICULTURE

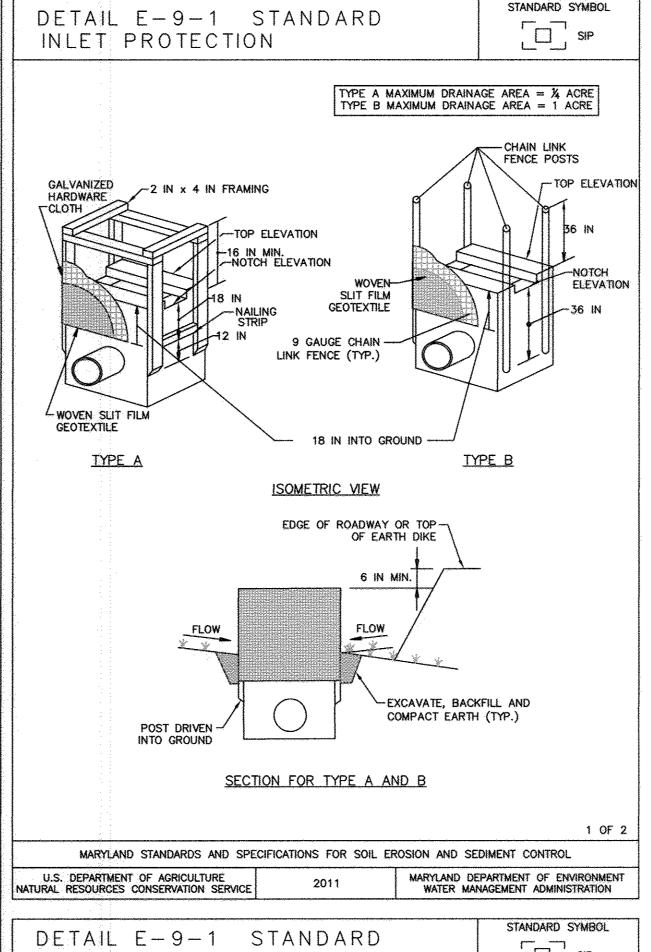
EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS

8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL



FOREST PROTECTION DEVICE ONLY. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. ROOT DAMAGE SHOULD BE AVOIDED. PROTECTIVE SIGNAGE MAY ALSO BE USED. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.



SIP INLET PROTECTION CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

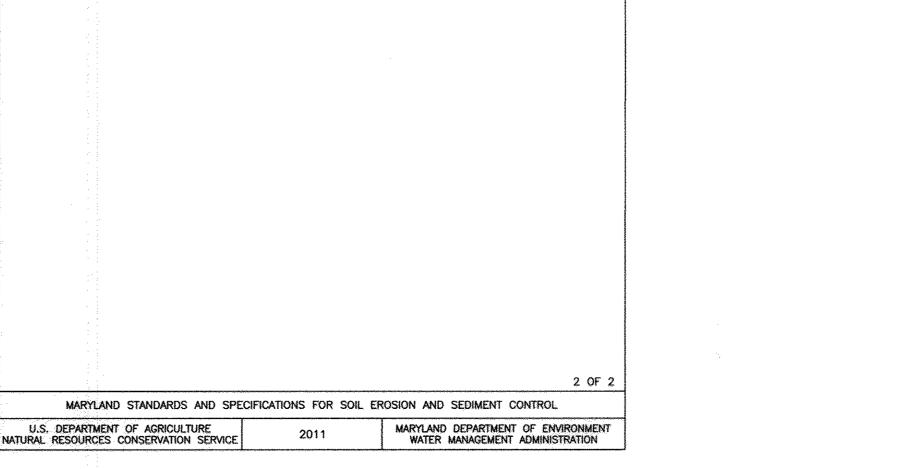
EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE

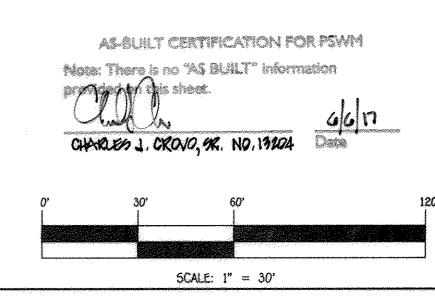
ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN, STRETCH X INCH GALVANIZED HARDWARE CLOTH, TIGHTLY AROUND THE FRAME AND FASTEN SECURELY, FASTEN GEOTES SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE

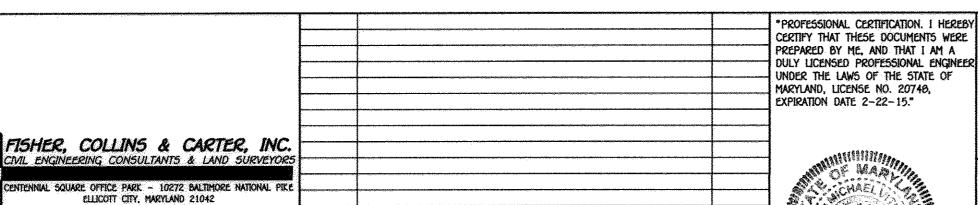
FOR TYPE B, USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A

BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

F-13-021, GP-14-008



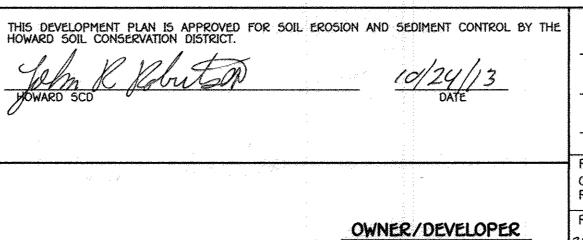




REVISION

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORABLE PLAN BASES ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS DEPARTED BY ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL

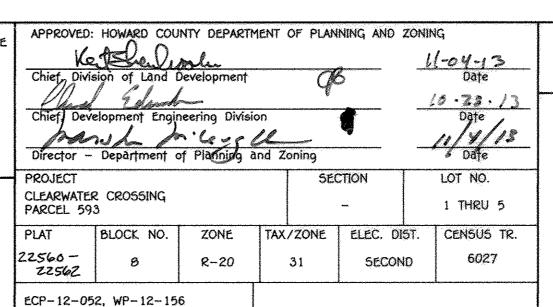
developer's certificate "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON—SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRIPT." SIGNATURE OF DEVELOPER (B. JAMES GREENFIELD)



COLUMBIA BUILDERS GROUP, LLC

B. JAMES GREENFIELD 6420 AUTUMN SKY WAY

COLUMBIA, MD 21044 443-324-4732



SEDIMENT & EROSION CONTROL DETAILS

CLEARWATER CROSSING LOTS 1 THRU 5 & OPEN SPACE LOTS 6 & 7

ZONED R-20 TAX MAP NO.: 31 GRID NO.: 8 PARCEL NO.: 593

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND 5CALE: AS SHOWN DATE: OCTOBER, 2013 SHEET 5 OF 7

. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED. IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM). III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED. THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES. D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS, RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

RESULTS OF A SOIL TEST

. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

), TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.

3. 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

6. TOPSOIL APPLICATION

A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL

3. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO Ø 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.

. FERTILIZERS MUST BE UNIFORM IN COMPOSITION. FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

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

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL

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

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

<u>PERMANENT SEEDING NOTES (B-4-5)</u> A. SEED MIXTURES

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(5), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE:

FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE:

FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS:

FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE, RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE:

SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR

CHOOSE CERTIFIED MATERIAL CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE. TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1. AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 58, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 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 SEASONS, OR ON ADVERSE SITES.

Permanent Seeding Summary

	e (from Figure B. (from Table B.3):			Fertilizer Rate (10-20-20)			Lime Rate
Species	Application Rate (lb/ac)	Seeding Dațes	Seeding Depths	N	P ₂ O ₅	K20	
TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. per acre	90 lb/ac (2 lb/	(2 lb/	2 tons/ac (90 lb/
				(1.0 lb/ 1000 sf)	1000 sf)	1000 sf)	1000 sf)

TEMPORARY SEEDING NOTES (B-4-4)

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.

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION 8-4-3,A.1,B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

Temporary Seeding Summary

	ne (from Figure B. (from Table B.1):	914		Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		: -
BARLEY	96	3/1 - 5/15.	1"	436 lb/ac	2 tons/ac
OAT5	72	8/15 - 10/15	1"	(10 lb/ 1000 sf)	(90 lb/ 1000 sf)
RYE	112		1"	, see	

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

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.

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. 2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.

5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.

6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. 7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD 8-4-1 INCREMENTAL STABILIZATION AND STANDARD 8-4-4 TEMPORARY STABILIZATION. 8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE

MAINTENANCE

STOCK PILE TO FACILITATE CLEANUP. STOCK PILES CONTAINING CONTAININATED MATERIAL MUST BE COVERED

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION 8-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY

CONSTRUCTION (410-313-1055). 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. b) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-4), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6) SITE ANALYSIS:

WITH IMPERMEABLE SHEETING.

TOTAL AREA OF SITE 3.77 ACRES AREA DISTURBED 2.60 ACRES AREA TO BE ROOFED OR PAVED 0.66 ACRES AREA TO BE VEGETATIVELY STABILIZED 1.94 ACRES TOTAL CUT O CU.YDS. TOTAL FILL 0 CU.YD5. OFFSITE WASTE/BORROW AREA LOCATION

7) ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF

UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

6) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 9) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND

SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

10) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS

11) ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND

APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION. 12) A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 ACRE 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 PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY. NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

SEQUENCE OF CONSTRUCTION

OBTAIN GRADING PERMIT. (7 DAYS)

2. NOTIFY 'MISS UTILITY' AT 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 48 HOURS BEFORE

3. REQUEST FOR A PRE-CONSTRUTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY. (1 DAY)

4. CONTRACTOR SHALL VERIFY EXISTING SEDIMENT CONTROL MEASURES PER F-13-021 & GP-14-000 ARE IN PLACE PRIOR TO CONSTRUCTION OF REMAINING SWM MEASURES, HOMES & DRIVEWAYS.

5. CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS.

7. INSTALLATION OF STORMWATER MANAGEMENT MEASURES. (2 WEEK)

8. FINAL GRADING, INSTALL LANDSCAPING AND PERMANENT SEEDING. (1 WEEK)

6. CONSTRUCTION OF HOUSES, DRIVEWAYS, AND OTHER CONSTRUCTION. (90 DAYS)

9. APPROVAL OF THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF SEDIMENT CONTROLS. (1 DAYS)

10. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS. (7 DAYS)

AS-BUILT CERTIFICATION FOR FORM Note: There is go "AS BUILT" information CHARLEY 1. CROAD, 9R. NO. 131.04

5CALE: 1" = 30'

FISHER. COLLINS & CARTER. INC VIL ENGINEERING CONSULTANTS & LAND SURVEYOR Square office park — 10272 Baltimore National Pl ELLICOTT CITY, MARYLAND 21042

NO.

ENGINEER'S CERTIFICATE CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL ID WAR ABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL IN SECURIFICATION DISTRICT 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."

ame Gar

SIGNATURE OF DEVELOPER (B. JAMES GREENFIELD)

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

10-16-13

10-16-13

PARCEL 593 OWNER/DEVELOPER 12560-COLUMBIA BUILDERS GROUP, LLC 22562

B. JAMES GREENFIELD 6420 AUTUMN SKY WAY

COLUMBIA, MD 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 1-04-13 livision of Land Development Development Engineering Division Director - Department of Planning and Zoning 11/4/13 **SECTION** LOT NO. CLEARWATER CROSSING 1 THRU 5 ZONE TAX/ZONE ELEC. DIST. BLOCK NO. CENSUS TR. 6027 R-20 SECOND ECP-12-052, WP-12-156 F-13-021, GP-14-008

SEDIMENT & EROSION CONTROL NOTES

CLEARWATER CROSSING LOTS 1 THRU 5 & OPEN SPACE LOTS 6 & 7

SHEET 6 OF 7

ZONED R-20 TAX MAP NO.: 31 GRID NO.: 8 PARCEL NO.: 593 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER, 2013

DATE

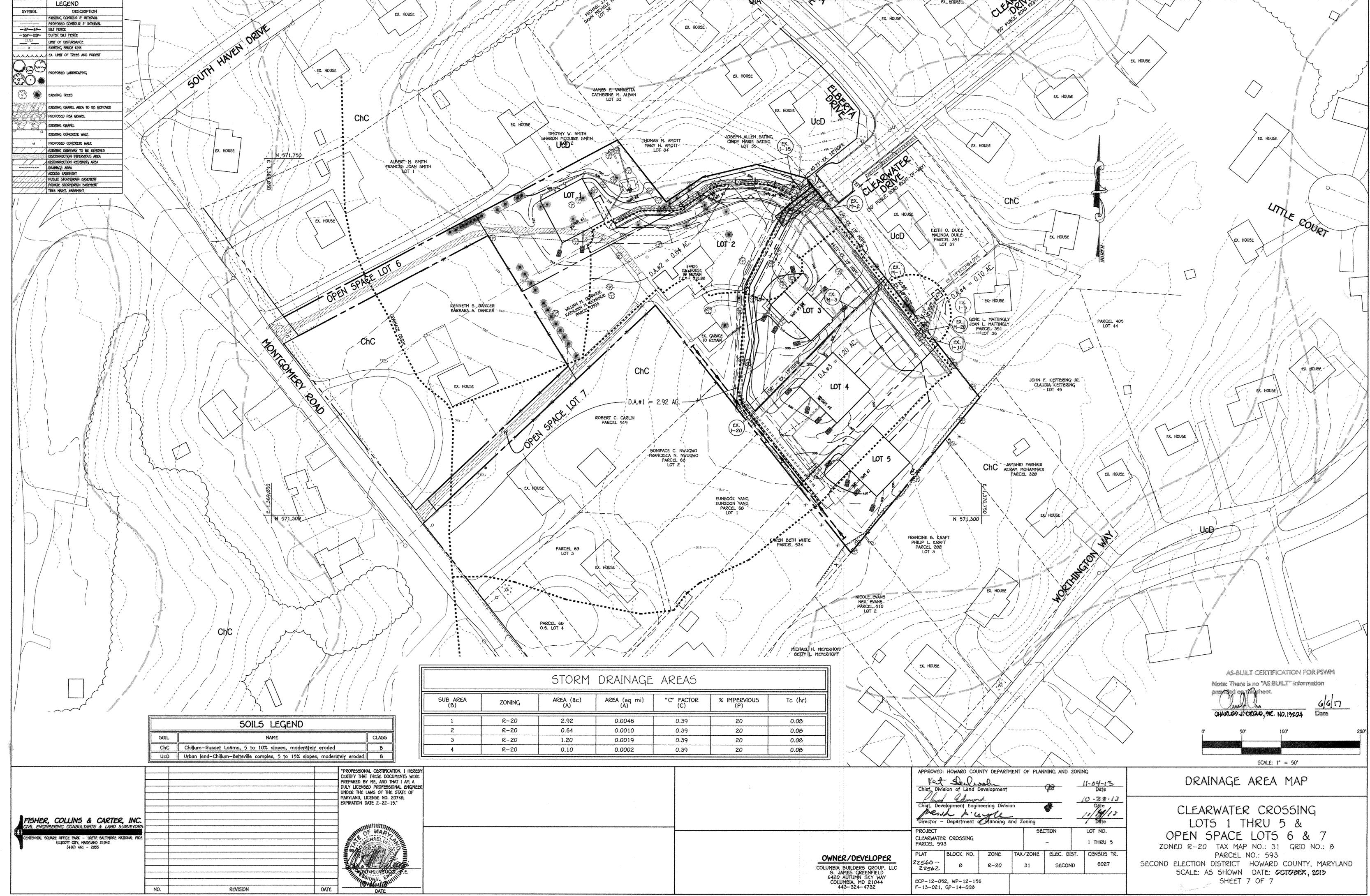
REVISION

PROFESSIONAL CERTIFICATION. I HEREB

CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME. AND THAT I AM A

DULY LICENSED PROFESSIONAL ENGINEE

UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748. EXPIRATION DATE 2-22-15."



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