### SHEET INDEX DESCRIPTION 1 SITE DEVELOPMENT AND GRADING PLAN 2 STORMWATER MANAGEMENT AND SEDIMENT & EROSION CONTROL PLAN 3 STORMWATER MANAGEMENT NOTES GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-SC PER 2/2/04 COMPREHENSIVE ZONING PLAN AND PER "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7/28/06. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD
- COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. 3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO
- 5. ALL ASPECTS OF THIS PROJECT SHALL BE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVER(S) HAVE BEEN APPROVED.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 29ID AND 0064 WERE USED FOR THIS PROJECT. THE EXISTING TOPOGRAPHY SHOWN HEREON ARE TAKEN FROM FIELD RUN SURVEY WITH 1 FEET CONTOUR INTERVALS BY KCE ENGINEERING, INC. DATED FEBRUARY, 2002. AND 2 FEET CONTOUR INTERVALS PREPARED Y BENCHMARK ENGINEERING, INC., DATED MARCH, 2009
- 8. EXISTING UTILITIES SHOWN HEREON ARE BASED ON FIELD LOCATIONS AND RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL
- ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN. 10. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT, WATER AND SEWER SHALL BE PUBLIC. DRAINAGE AREA IS WITHIN THE MIDDLE PATUXENT WATERSHED. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME. PUBLIC WATER AND SEWER CONTRACT NOS. ARE 44-0930 AND 831.
- FOREST STAND DELINEATION PLAN WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., IN APRIL, 2009. THE REPORT WAS REVIEWED UNDER F-09-116.
- 12. THERE ARE NO WETLANDS, STREAMS, THEIR BUFFERS, 100-YEAR FLOODPLAIN OR STEEP SLOPES (25% OR GREATER THAN) LOCATED ON THIS SITE.
- 13. NOISE STUDY WAS PREPARED BY THE BENCHMARK ENGINEERING, INC., DATED AUGUST 18, 2009. THE REPORT WAS APPROVED ON SEPTEMBER 16, 2009 AND REVIEWED UNDER F-09-116.
- 14. AN A.P.F.O. TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT AS IT IS A MINOR 15. THERE ARE NO HISTORIC FEATURES OR CEMETERIES ON THIS
- 16. THERE IS AN EXISTING DWELLING LOCATED ON LOT 3 TO REMAIN, NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
- 17. UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE
- 18. BRL INDICATES BUILDING RESTRICTION LINE.

DEPTH OVER DRIVEWAY SURFACE.

- 19. THIS PLAN IS SUBJECT TO THE 5th EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE AMENDED HOWARD COUNTY ZONING REGULATIONS.
- 20. 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
- 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

22. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW

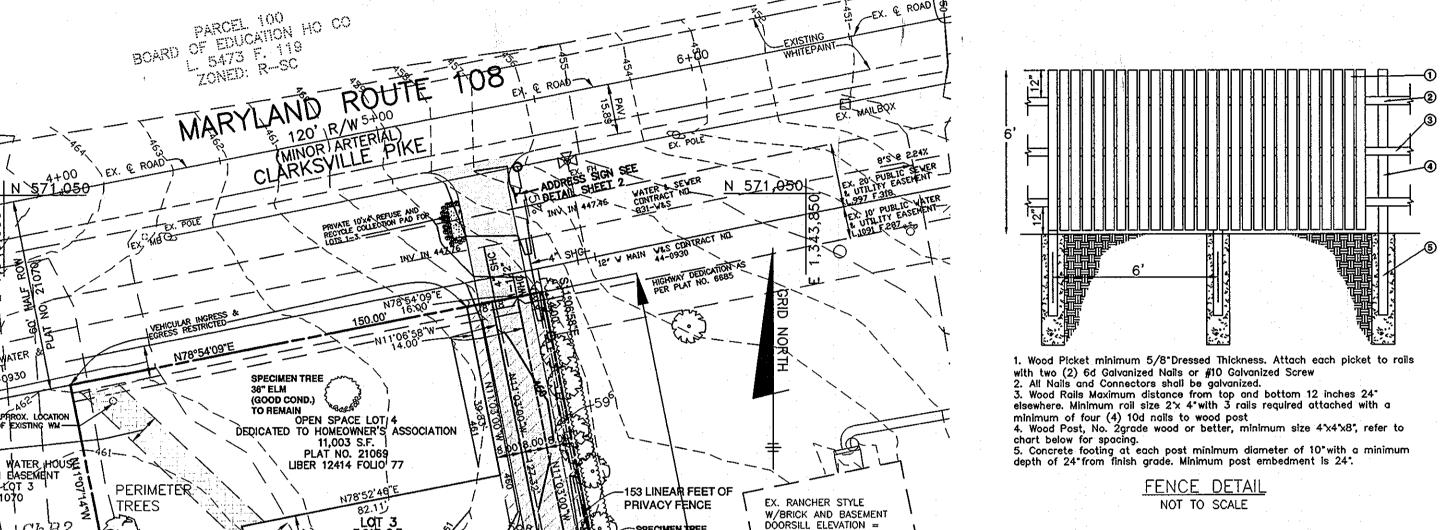
- DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM A) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE); B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2MIN"); C) GEOMETRY - MAX. 14% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS; STRUCTURES(CULVERTSRIDGES) — CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD); E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT
- F) MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE. 23. STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II. STORMWATER MANAGEMENT SHALL BE PROVIDED BY USE OF LANDSCAPE INFILTRATION (M-3) AND FILTER STRIP FOR ROOFTOP DISCONNECTION AND NON-ROOFTOP DISCONNECTION CREDITS. ALL SWM PRACTICES SHALL BE PRIVATELY OWNED.
- 24. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II. IT WAS DETERMINED THAT THE PROJECT MET THE CRITERIA OUTLINED IN THE MDE STORMWATER MANAGEMENT REGULATIONS GUIDELINES FOR IMPLEMENTATION FOR ACCEPTANCE OF THE 2000 DESIGN CRITERIA AND GRANTED A WAIVER. THIS PLAN RECEIVED FINAL PLAN APPROVAL (F-09-116) ON 4-14-10. THIS PLAN IS ALSO SUBJECT TO THE EXPIRATION OF THIS WAIVER UNLESS ALL STORMWATER MANAGEMENT IS CONSTRUCTED BY MAY 4, 2017."
- 25. THE TOTAL OPEN SPACE REQUIREMENT FOR THIS SUBDIMISION IS BASED ON THE SUBDIVISION OF PARCEL 30. THE OPEN SPACE REQUIREMENT IS 0.25 ACRES (25% OF 1.00 ACRE). OPEN SPACE BEING PROVIDED IS 11,003 S.F./0.25 AC.
- 26. THE FOREST CONSERVATION OBLIGATION OF 0.15 ACRES OF AFFORESTATION FOR THIS SUBDIVISION HAD BEEN MET BY A FEE-IN-LIEU PAYMENT OF \$4,900.50 MADE TO THE HOWARD COUNTY FOREST CONSERVATION FUND PAID UNDER F-09-116
- 27. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 O THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRE 8 SHADE TREES (\$2,400), 20 SHRUBS (\$600) AND 153 LINEAR FEET OF FENCING (\$1.530) IN THE AMOUNT OF \$4,530.00 SHALL BE POSTED AS PART OF THE BUILDERS GRADING PERMIT. 28. THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED
- BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA NOISE LINE ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENTS.
- 29. APPLICABLE DPZ FILE REFERENCE NUMBERS: F-07-057/DENIED 07-18-07, AND F-09-116.
- 30. THE 4'x10' CONCRETE REFUSE AND RECYCLE COLLECTION PAD WITHIN THE PUBLIC RIGHT-OF-WAY OF CLARKSVILLE PIKE SHALL BE MAINTAINED BY THE OWNERS OF LOTS 1-3 31. THE MAINTENANCE AGREEMENT FOR THE USE-IN-COMMON DRIVEWAY AND THE HOA DECLARATION OF COVENANTS WERE RECORDED CONCURRENT WITH THE RECORDING OF THE PLAT. LIBER 12414 FOLIO 84.
- 32. THE EXISTING DRIVEWAY FOR THE EXISTING STRUCTURE ON LOT 3 IS REQUIRED TO BE REMOVED AND REPLACED WITH THE USE-IN-COMMON DRIVEWAY UPON THE DEVELOPMENT OF ANY ONE OF MORE OF THE RESIDENTIAL LOTS.
- 33. THE HOMEOWNER ASSOCIATION DOCUMENTS HAVE BEEN FILED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENTS AND TAXATION AS RECORDING REFERENCE #D13265046 ON OCTOBER 14. 2009. A "DECLARATION OF COVENANTS AND EASEMENTS" HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY AS LIBER 12414 FOLIO 88.
- 34. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BA WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET 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
- 35. HOUSES/GARAGES WILL BE SITED ON LOTS SO THAT A SECOND CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PRIVATE ASSESS PLACE DRIVEWAY (18" MINIMUM
- 36. THE DEVELOPER HAS PAID A FEE-IN-LIEU OF CONSTRUCTION FOR ROAD IMPROVEMENTS AS PART OF THE DEVELOPER'S AGREEMENT. THE PAYMENT WAS CREDITED TO CAPITAL PROJECT NUMBER K-5061, ACCOUNT NUMBER OF \$4,800.00 PER HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING LETTER DATED

### SITE ANALYSIS DATA CHART

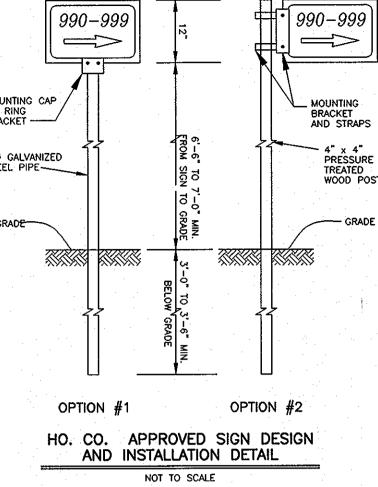
| GENERAL SITE DATA   | B-80                   |
|---|------------------------|
| 1.) PRESENT ZONING:   |                        |
| 2.) APPLICABLE DPZ FILE REFERENCES:                                     |                        |
|   | ON 07/18/07, F-09-116  |
| 3.) PROPOSED USE OF SITE:   | SINGLE FAMILY DETACHED |
| 4.) PROPOSED WATER AND SEWER SYSTEMS:                                   | PUBLIC                 |
| AREA TABULATION   |                        |
| 1.) GROSS TRACT AREA  | 0.86 AC.±              |
| 2.) AREA WITHIN 100-YEAR FLOODPLAIN                                     | 0.00 AC.±              |
| 3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES                           | 0.00 AC.±              |
| 4.) NET TRACT AREA  | 0.86 AC.±              |
| 5.) TOTAL NUMBER OF SFD RESIDENTIAL LOTS<br>PROPOSED ON THIS SUBMISSION | . 3                    |
| 6.) TOTAL NUMBER OF PARKING SPACING REQUIRED                            | 6                      |
|   |                        |
| APPROVED: DEPARTMENT OF PLANNING AND Z                                  | ONING                  |
| ALL MOVED. DELYMONIZATION IN PRINCIPLE AND E                            |                        |
| 10 A-P-D 0  | 1-1-                   |

# SITE DEVELOPMENT PLAN CEDAR VILLAGE LOTS 1 THRU 4

5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



THE FOLLOWING STANDARD SIGN DESIGN SPECIFICATIONS SHALL APPLY: 1. THE SIGN SIZE SHALL BE 12" x 18". 2. THE SIGN MATERIAL SHALL BE 0.080 GAUGE THICKNESS ANODIZED ALUMINUM 3. THE SIGN SHALL HAVE A GREEN BACKGROUND WITH 3" HIGH WHITE REFLECTIVE NUMBERS AND ARROW WITH A WHITE REFLECTIVE BORDER. 990-999 990-999 4. WHERE A PRIVATE ROAD NAME IS IN USE OR PART OF A PRIVATE HOMEOWNER'S ARTICLES OF INCORPORATION AGREEMENT THE SIGN SIZE WILL BE ENLARGED TO ACCOMODATE THE NECESSARY LETTERING BUT REMAIN PROPORTIONAL TO THE ABOVE  $\rightarrow$ 5. THE SIGN WILL BE INSTALLED WITHIN THE COMMON DRIVEWAY EASEMENT AREA AS 6. ADDRESS NUMBER IDENTIFICATION SIGNS ARE TO BE PROVIDED UNDER THE TENANTS OF THE HOMEOWNER'S ASSOCIATION INCORPORATION OR A PROPERTY MANAGEMENT COMPANY FOR INSTALLATION AND MAINTENANCE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND ZONING ADDRESS NUMBERING SYSTEM AND PER 2"ø GALVANIZED SECTION 3.503(a) OF THE HOWARD COUNTY CODE - PUBLIC SIGNS. MAINTENANCE/REPAIR AND REPLACEMENT OF THE ADDRESS NUMBER DIRECTIONAL SIGNS WILL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION OR A 7. COMPLIANCE REGARDING THE INSTALLATION OF THE NEW ADDRESS NUMBER DIRECTIONAL SIGNS WILL BE ENFORCED BY THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF FINAL APPROVAL FOR ISSUANCE OF THE



BENCH MARKS NAD'83 HORIZONTAL STAMPED (BRASS OR ALUMINIUM) DISC SET ON TOP OF A 3' DEEP COLUMN OF CONCRETE. USUALLY THE DISCS ARE SET 1" OR 2" BELOW TERRIAN SURFACE, AND HAVE A PIECE OF IRON TO FACILITATE MAGNETIC DETECTION. E 1343193.0782 STAMPED (BRASS OR ALUMINIUM) DISC SET ON TOP OF A 3' DEEP COLUMN OF CONCRETE. USUALLY THE DISCS ARE SET 1" OR 2" BELOW TERRIAN SURFACE, AND HAVE A PIECE OF IRON TO FACILITATE MAGNETIC DETECTION. E 1344516.0297 ADC MAP 4934 GRID H3

SOILS CLASSIFICATION

SOILS DELINEATION

EXISTING CONTOURS

SILT FENCE

TREES

SUPER SILT FENCE

ACCESS EASEMENT

EROSION CONTROL MATTING

PRIVATE USE-IN-COMMON

PRIVATE UTILITY EASEMENTS

PERIMETER LANDSCAPE

PROPOSED DRIVEWAY

GAR.

\_ \_ \_ \_

|              |                                 |   | · · · · · · · · · · · · · · · · · · ·  |                  |                    |  |
|--------------|---------------------------------|---|--|------------------|--------------------|--|
|              | STORMWATER MANAGEMENT PRACTICES |   |  |                  |                    |  |
| LOT<br>JMBER | ADDRESS                         | BMP - LANDSCAPE<br>INFILTRATION MDE<br>NOMENCLATURE M-3<br>(QUANTITY AND Rev) | BMP - NON-ROOFTOP<br>DISCONNECTION MDE<br>NOMENCLATURE N-2<br>(QUANTITY AND Rev) | BMP<br>OWNERSHIP | BMP<br>MAINTENANCE |  |
| 1            | 10861 CLARKSVILLE PIKE          | 1   |  | PRIVATE          | PRIVATE            |  |
| 2            | 10865 CLARKSVILLE PIKE          | 1   | · :  | PRIVATE          | PRIVATE            |  |
| 3            | 10871 CLARKSVILLE PIKE          |   | 1  | PRIVATE          | PRIVATE            |  |

| Bardalas <del>- 14.41   1</del> | HMA SUPERPAVE FINAL SURFACE        |
|---------------------------------|------------------------------------|
|                                 | HMA SUPERPAVE INTERMEDIATE SURFACE |
| •                               | HMA SUPERPAVE BASE                 |
|                                 | GRADED AGGREGATE BASE (GAB)        |
|                                 |                                    |

N 571234.3592

ELEV. = 473.92

HO. CO. #0064

N 571248.5442

ELEV. = 431.58

| SECTION | CALIFORNIA BEARING RATIO (CBR)                                 | 3 TO <5 | 5 TO <7  | <u>&gt;</u> 7 | 3 TO <5 | 5 TO <7  | <u>≥</u> 7 |
|---------|--|---------|----------|---------------|---------|----------|------------|
| NUMBER  | PAVEMENT MATERIAL (INCHES)                                     | MIN     | HMA WITH | GAB           | нма ип  | пн сомят | ANT GAB    |
|         | HMA SUPERPAVE FINAL SURFACE<br>9.5 MM PG 64-22, LEVEL 1 (ESAL) | 1.5     | 1.5      | 1.5           | 1.5     | 1.5      | 1.5        |
| P-1     | HMA SUPERPAVE INTERMEDIATE SURFACE N/A                         | N/A     | N/A      | N/A           | N/A     | N/A      | N/A        |
| •       | HMA SUPERPAVE BASE<br>19.0 MM PG 64-22, LEVEL 1 (ESAL)         | 2.0     | 2.0      | 2.0           | 3.5     | 3.0      | 2.5        |
|         | GRADED AGGREGATE BASE (GAB)                                    | 8.5     | 7.0      | 5.0           | 4.0     | 4.0      | 4.0        |

|   | PERIMETER LANDSCAPE PLANTING LIST |          |   |               |                            |  |  |  |  |
|---|-----------------------------------|----------|---|---------------|----------------------------|--|--|--|--|
| ľ | SYMBOL                            | QUANTITY | NAME  | SIZE          | COMMENTS                   |  |  |  |  |
|   | <b>A</b>                          | 4        | ACER RUBRUM 'RED SUNSET' / RED<br>SUNSET RED MAPLE                  | 2 1/2"-3" CAL | PLANT MIN. OF<br>40' APART |  |  |  |  |
|   |                                   | 3        | TILIA CORDATA "GREENSPIRE"<br>GREENSPIRE LITTLELEAF LINDEN          | 2 1/2"-3" CAL | *                          |  |  |  |  |
|   | <u>•</u>                          | 1        | ZELKOVA SERRATA "VILLAGE GREEN" /<br>VILLAGE GREEN JAPANESE ZELKOVA | 2 1/2°-3° CAL | ₩                          |  |  |  |  |
| ľ | °g°a                              | 20       | Juniperus chinensis 'Sargenti'/<br>SARGENT JUNIPER                  | 18"-24" sp.   |                            |  |  |  |  |

ACCORDING TO THE PLAN. SECTION 16.124 OF THE HOWARD COUNTY CODE AND

THE HOWARD COUNTY LANDSCAPE MANUAL I/WE FURTHER CERTIFY THAT UPON

EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO

COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN

DEVELOPER'S/BUILDER'S CERTIFICATE

THE DEPARTMENT OF PLANNING AND ZONING.

Nasiem Khan

| CATEGORY  | PERIM. PROP.                 | ADJACENT TO<br>TRASH PAD   | ADJACENT TO<br>DRIVEWAY  |
|---|------------------------------|----------------------------|--------------------------|
| PERIMETER DESIGNATION   | 1                            |                            | 2                        |
| LANDSCAPE TYPE  | Α                            | В                          | D                        |
| LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER   | 496 L.F.                     | 28 L.F.<br>(10'+10'+4'+4') | 153 L.F.                 |
| CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)  | NO                           | NO                         | NO                       |
| CREDIT FOR WALL, FENCE OR BERM<br>(YES, NO, LINEAR FEET)<br>(DESCRIBE BELOW IF NEEDED)  | NO                           | NO                         | YES<br>FENCE 153'        |
| NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS   | 496 L.F.<br>8<br>-<br>-<br>- | 28 L.F.<br>1<br>1<br>—     | 153 L.F.<br>3<br>15<br>- |
| NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED) | 8<br>-<br>-<br>-             | -<br>-<br>-<br>20*         | -<br>-<br>-<br>-         |

SUBDIVISION NAME:

PLAT No.

21069

21070

CEDAR V

| SECTION | CALIFORNIA BEARING RATIO (CBR)                                 | 3 TO <5 | 5 TO <7  | <u>≥</u> 7 | 3 TO <5 | 5 TO <7   | <u>≥</u> 7 |
|---------|--|---------|----------|------------|---------|-----------|------------|
| NUMBER  | PAVEMENT MATERIAL (INCHES)                                     | MIN     | HMA WITH | GAB        | нма ип  | TH CONSTA | NT GAB     |
|         | HMA SUPERPAVE FINAL SURFACE<br>9.5 MM PG 64-22, LEVEL 1 (ESAL) | 1.5     | 1.5      | 1.5        | 1.5     | 1.5       | 1.5        |
| P_1     | HMA SUPERPAVE INTERMEDIATE SURFACE                             | N/A     | N/A      | N/A        | N/A     | N/A       | N/A        |
| '       | HMA SUPERPAVE BASE<br>19.0 MM PG 64-22, LEVEL 1 (ESAL)         | 2.0     | 2.0      | 2.0        | 3.5     | 3.0       | 2.5        |
|         | GRADED AGGREGATE BASE (GAB)                                    | 8.5     | 7.0      | 5.0        | 4.0     | 4.0       | 4.0        |

| P-1  | Paving de          |
|--|--------------------|
| LANDSCAPING NOTES  |                    |
| 1.) PERIMETER LANDSCAPING SHALL BE PROVIDED BY VEGETATION TO REMAIN AND BY THE PLANTINGS AS PLANS. |                    |
| 2.) SEE TREE PLANTING DETAIL - THIS SHEET.   |                    |
| 3) THE DEVELOPER SHALL BE RESPONSIBLE FOR TH   | HE PRESERVATION OF |

THE PERIMETER VEGETATION AND FOR THE PERIMETER PLANTINGS AS SHOWN ON THESE PLANS. BONDING FOR PLANTINGS IS THE OBLIGATION OF THE DEVELOPER AS PART OF THE DEVELOPERS AGREEMENT. 4.) TREES MUST BE PLANTED A MINIMUM OF TEN (10) FEET FROM A DRIVEWAY AND MUST BE A MINIMUM OF FIVE (5) FEET FROM ANY STORM

5.) AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAP! MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.

6.) PERIMETER LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL, FINANCIAL SURETY IN THE AMOUNT OF \$4,530.00 (\$2,400 FOR 8 SHADE TREES, \$600 FOR THE 20 SHRUBS AND \$1,530 FOR THE 153' OF FENCE) SHALL BE POSTED WITH THE GRADING PERMIT.

7.) THERE ARE 2 SPECIMEN TREES ON THIS SITE AND ONE ON THE ADJACENT BEECH CREEK LOT. ALL EXISTING TREES TO BE REMOVED UNLESS NOTED "TO REMAIN".

|     | ADDRESS CHART          |  |
|-----|------------------------|--|
| LOT | STREET ADDRESS         |  |
| 1   | 10861 CLARKSVILLE PIKE |  |
| 2   | 10865 CLARKSVILLE PIKE |  |

|     | MINIMUM    | LOT SIZE      | CHART            |   |
|-----|------------|---------------|------------------|---|
| LOT | GROSS AREA | PIPESTEM AREA | MINIMUM LOT SIZE |   |
| 1   | 8,691 S.F. | 1,195 S.F.    | 7,496 S.F.       | П |
| 2   | 9,792 S.F. | 1,665 S.F.    | 8,127 S.F.       |   |
|     |            |               |                  | 1 |

|               |              |               |                             |                                       | 1 |
|---------------|--------------|---------------|-----------------------------|---------------------------------------|---|
| ERMI          | INFOR        | MATION C      | HART                        |                                       |   |
| ILLAGE        |              | SECTION/AREA: |                             | LOT/PARCEL #<br>PARCEL 30<br>LOTS 1-4 |   |
| RID No.<br>11 | ZONE<br>R-SC | TAX MAP<br>29 | ELECTION<br>DISTRICT<br>5th | CENSUS<br>TRACT<br>6055.03            |   |

| -T-0   |               |   |                  |          | <br> |
|--------|---------------|---|------------------|----------|------|
|        |               |   |                  |          | ,    |
|        |               |   | <u>FOOT</u> 1" = |          |      |
|        |               |   |                  | * i      |      |
|        |               | S | DILS LEGEN       | D        |      |
| MAP SO | IL SOIL GROUP |   | S                | OIL TYPE | -    |

|     | MAP SOIL | SOIL GROUP                 |                          |           | SOIL TYPE    |                  |        |
|-----|----------|----------------------------|--------------------------|-----------|--------------|------------------|--------|
|     | ChB2     | В                          | CHESTER SILT LO          | DAM, 3 TO | B PERCENT SL | OPES, MODERATELY | ERODED |
|     | Ва       | D                          | BAILE SILT LOA           | M         |              |                  |        |
| . : |          | HYDRIC SOIL<br>M SOILS SUR | LS<br>VEY, ISSUED JULY 1 | 968, MAP  | ٧٥. 30       |                  |        |
| · . |          |                            |                          |           |              |                  |        |

DATE NO. were prepared or approved by me, and that I am a duly licenses **BENCHMARK** ENGINEERS A LAND SURVEYORS A PLANNERS ENGINEERING, INC 60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3506 WWW.BEI-CMILENGINEERING.COM

| R/DEVELOPER:                                  | CEDAR VILLAGE LOTS 1 & 2 SINGLE FAMILY DETACHED DWELLINGS AND   |                      |  |  |  |
|---|---|----------------------|--|--|--|
| NASEEM KHAN<br>KHURRAN HANIF<br>P.O. BOX 6004 | DRIVEWAY IMPROVEMENTS ON LOT 3 AND OPEN SPACE LOT 4<br>F-07-057/DENIED 07-18-07 AND F-09-116.   |                      |  |  |  |
| OTT CITY, MARYLAND 21042<br>410-461-6111      | TAX MAP: 29 GRID: 11 PARCEL: 30  ZONED: R-SC ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND  SITE DEVELOPMENT PLAN  AND GRADING PLAN |                      |  |  |  |
|   |   |                      |  |  |  |
|   | DATE: DECEMBER, 2012  | BEI PROJECT NO. 2386 |  |  |  |
| DRAFT: EDD CHECK: -                           | SCALE: AS SHOWN   | SHEET 1 OF 3         |  |  |  |
|   |   | SDP-12-028           |  |  |  |

INTERVALS (EXCEPT EVERGREENS) -- GROUND LINE SAME AS IN NURSERY FLOOD WITH WATER FROM TOP OF BALL ----WITHIN 24 HOURS.

GRAPHIC SCALE

( IN FEET ) SHRUB PLANTING DETAIL 1 inch = 30 ft.

DISCONNECTION MDE M-3 LANDSCAPE INFILTRATION-152-D.A. = 0.20 AC.

PERIMETER

TREE PLANTING DETAIL

ROOFTOP & NON-ROOFTOP DISCONNECTION MDE M-3-LANDSCAPE INFILTRATION-2)

OPEN SPACE LOT

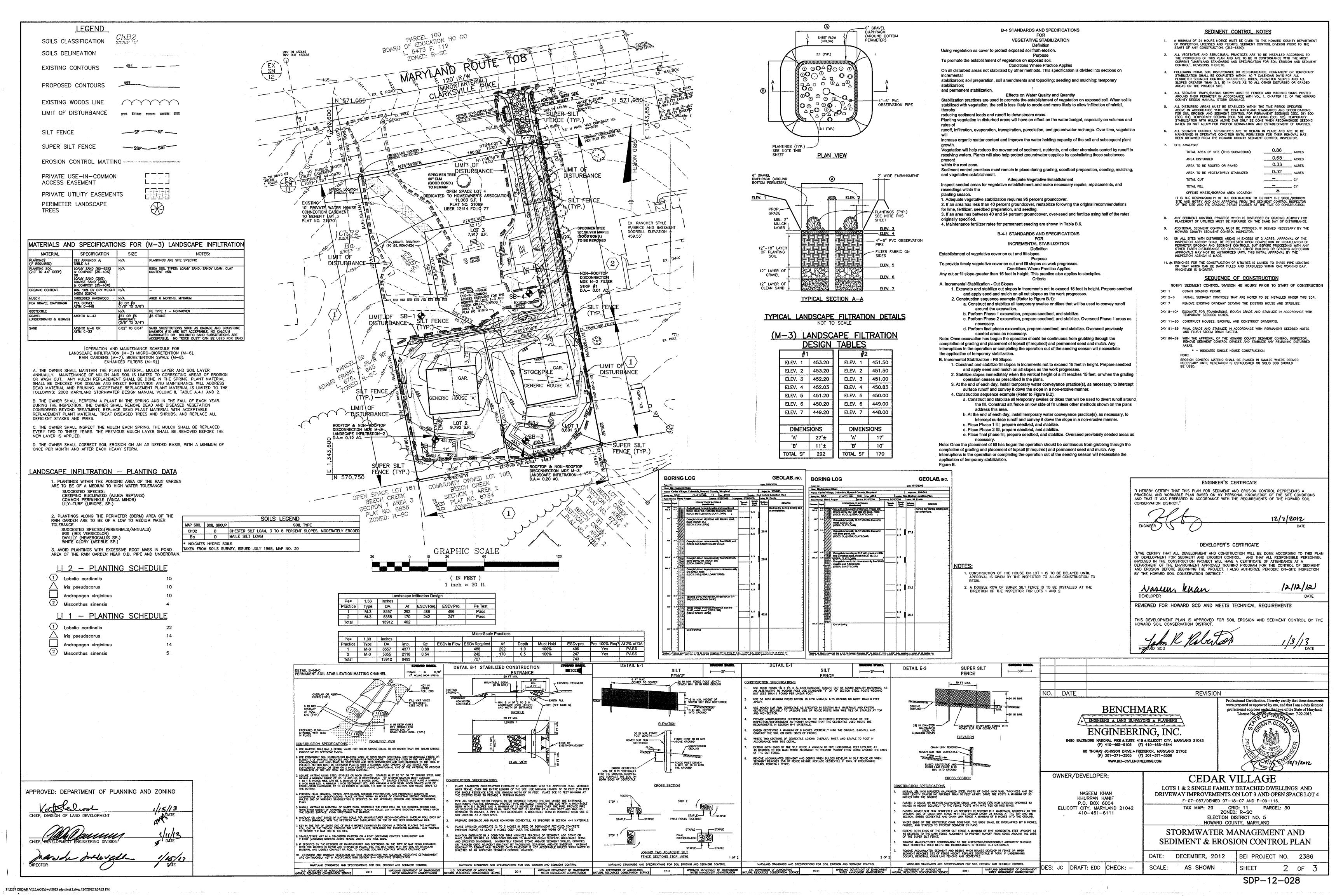
MANUFACTURERS STANDARDS.

-WRAP TRUNK AND LARGE

D.A.= 0.12 AC. -

2-2"x2" OAK STAKES, NOTCH

P:\2207 CEDAR VILLAGE\dwg\8000 sdp sheet 1.dwg, 12/6/2012 2:50:27 PM



### Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared. grubbed and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater nanagement ponds, a minimum of a 25—foot radius around the inlet structure shall be

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Material — The fill material shall be taken from approved designated borrow areas. If shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30 % passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

<u>Placement</u> — Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

<u>Compaction</u> — the movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with teh equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2 % of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

<u>Cut Off Trench</u> — The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be a least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density

Embankment Core — The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the cores shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistively of 2,000 ohm—cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding) over and, on the sided of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers o other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part o a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24' or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other emba

### Pipe Conduits

materials.

All pipes shall be circular in cross section

Corrugated Metal Pipe - all of the following criteria shall apply for corrugated metal pipe: I. Materials -- (Polymer Coated steel pipe) -- Steel pipes with polymeric coatings shall bave a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 &M-246 with watertight coupling bands or flanges

Maerials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M—274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zing chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe of barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connection shall use a rubber or neoprene asket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding — The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

Backfilling shall conform to "Structure Backfill". 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets

thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable

2. Bedding — Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50 % of its outside diameter with a minimum

bedding is not permitted. 3. Laying pipe — Bell and spigot pipe shall be places with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation form the original

line and grade of the pipe. The first joint must be located within 4 feet from the rise

fill may be used a described in the "Structure Backfill" section of this standard. Gravel

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings. <u>Plastic Pipe</u> — The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4' - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support. 4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings. <u>Drainage Diaphrogms</u> - When a drainage diaphrogm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414,

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials. Section 311

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the evacuations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way w operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation at such locations which may require

All horrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural urces Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

draining the water sumps from which the water shall be pumped.

### Erosion and Sediment Control

Construction operations will be corried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

# **B-4-2 STANDARDS AND SPECIFICATIONS**

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

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.

Soil Preparation 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 sultable means. 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. 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 scarfiled 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

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 eaving 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.

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

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

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 growth. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients. The original soil to be vegetated contains material toxic to plant growth

The soil is so acidic that treatment with limestone is not feasible. Areas having slopes steeper than 2:1 require special consideration and design. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.

 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 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,

 to proper grading and seedbed preparation Soil Amendments (Fertilizer and Lime Specifications) Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be

performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled

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

according to the applicable laws and must bear the name, trade name or trademark and

pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone

at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of

### B-4-3 STANDARDS AND SPECIFICATIONS

Criteria

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. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is

frozen. The appropriate seeding mixture must be applied when the ground thaws. c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less

d. Sod or seed must not be placed on soit 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.

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders. i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries. ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good

seed to soil contact. b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and

i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre. ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be

applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use bumt or hydrated lime when iii. Mix seed and fertilizer on site and seed immediately and without interruption iv. When hydroseeding do not incorporate seed into the soil.

1. Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired. b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry

ii. WCFM, including dye, must contain no germination or growth inhibiting

ill. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic. v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and

water holding capacity of 90 percent minimum. Application . Apply mulch to all seeded areas immediately after seeding b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth

so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre. c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending

upon the size of the area and erosion hazard: i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour. ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net

dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water. iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at

the edges where wind catches mulch, such as in yalleys 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 ecommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to

## **B-4-4 STANDARDS AND SPECIFICATIONS**

TEMPORARY STABLIZATION

To stabilize disturbed soils with vegetation for up to 6 months

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. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

> B-4-5 STANDARDS AND SPECIFICATIONS PERMANENT STABILIZATION

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

Conditions Where Practice Applies Exposed soils where ground cover is needed for 6 months or more.

1. General Use a Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting.

square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown

c For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency. d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000

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. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total

mixture by weight. ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent, Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate:

1 ½ to 3 pounds per 1000 square feet. Notes:Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line. c. Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD:March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b) d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level

and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose 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 tirmly e true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites. B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications a. Class of turigrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector. b. Sod must be machine cut at a uniform soil thickness of % inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and

or uneven ends will not be acceptable c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section. d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation. 2. Sod Installation a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the

subsoil immediately prior to laying the sod. b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface. d. Water the sod Immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and

irrigating for any piece of sod within eight hours. 3. Sod Maintenance a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to

b. After the first week, sod watering is required as necessary to maintain adequate moisture content. c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless

prevent wilting.

### **B-4-8 STANDARDS AND SPECIFICATIONS**

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 erosion, limentation, 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. Runoff from the stockpile area must drain to a suitable sediment control practice.

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/sedimen control practice must be used to intercept the discharge 7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as

Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization. 8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with Impermeable sheeting.

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

### H-5 STANDARDS AND SPECIFICATIONS

DUST CONTROL Controlling the suspension of dust particles from construction activities

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

Conditions Where Practice Applies Areas subject to dust blowing and movement where on and off-site damage is likely without treatment

Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to

Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must

prevent blowing. Vegetative Cover: See Section B-4-4 Temporary Stabilization. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

not be irrigated to the point that runoff occurs. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar naterial can be used to control air currents and soil blowing. <u>Chemical Treatment</u>: Use of chemical treatment requires approval by the appropriate plan

> ENGINEER'S CERTIFICATE I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL ONSERVATION DISTRIC

> > **DEVELOPER'S CERTIFICATE**

/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL NVOLVED 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.

Maseun Khan REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

REVISION

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

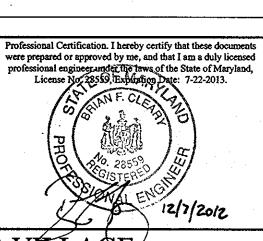
12/7/2012

NO. DATE BENCHMARK

OWNER/DEVELOPER:

ENGINEERS A LAND SURVEYORS A PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6844 60 THOMAS JOHNSON DRIVE ▲ FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3506

WWW.8EI-CIVILENGINEERING.COM



CEDAR VILLAGE LOTS 1 & 2 SINGLE FAMILY DETACHED DWELLINGS AND NASEEM KHAN DRIVEWAY IMPROVEMENTS ON LOT 3 AND OPEN SPACE LOT 4 KHURRAN HANIF F-07-057/DENIED 07-18-07 AND F-09-116. P.O. BOX 6004 ELLICOTT CITY, MARYLAND 21042 ZONED: R-SC 410-461-6111 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND STORMWATER MANAGEMENT NOTES DECEMBER, 2012 BEI PROJECT NO. 2386 DES: JC |DRAFT: EDD |CHECK: — SCALE: AS SHOWN of 3 SDP-12-028

APPROVED: DEPARTMENT OF PLANNING AND ZONING

P:\2207 CEDAR VILLAGE\dwg\8024 SDP SHEET 3.dwg, 12/7/2012 3:20:09 PM