

| project | date      | description  | revisions |
|---------|-----------|--------------|-----------|
| 15-003  | NOV. 2017 | illustration | MMM       |
|         |           | engineering  | MMM       |
|         |           | scale        | MMM       |
|         |           | approval     | AS SHOWN  |

| no. | description | revisions |
|-----|-------------|-----------|
|     |             |           |

**ROBERT'S CROSSING**  
 LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 HOWARD COUNTY, MARYLAND  
 FIRST ELECTION DISTRICT  
 COVER SHEET

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 7850-B Grace Drive, Columbia, MD 21044  
 (410) 997-0296 Tel. (410) 997-0296 Fax.

**GENERAL NOTES:**

- THIS SUBJECT PROPERTY IS ZONED R-12 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN SURVEY PERFORMED BY MILDENBERG, BOENDER & ASSOC., INC. ON OR ABOUT MARCH 2015.
- BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT MARCH 2015 BY MILDENBERG, BOENDER & ASSOC.
- HORIZONTAL AND VERTICAL DATUMS ARE RELATED TO THE MARYLAND STATE PLANE SYSTEM AS PROJECTED FROM HOWARD COUNTY CONTROL STATIONS NO. 38GA AND 38DA  
 STA. No. 38GA N 555,897.324 E 1N390,132.094 ELEV. 80.85  
 STA. No. 38DA N 556,796.309 E 1,390,221.433 ELEV. 126.15
- PROJECT BACKGROUND:**  
 ADDRESS: 6467 HANOVER ROAD, HANOVER, MD 21076  
 LOCATION: TAX MAP : 38 PARCEL: 273 AND 1009 GRID: 15  
 ELECTION DISTRICT: FIRST  
 DEED REFERENCE : PARCEL 273- 16042/00122, PARCEL 1009- 16042/00222  
 PREVIOUS PROJECT NUMBERS: ECP-15-081, WP-16-066
- SITE AREA TABULATION**  
 AREA OF PARCEL 273: 1.17 AC±  
 AREA OF PARCEL 1009: 4.62 AC±  
 TOTAL AREA: 5.79AC±  
 AREA OF 100 YEAR FLOODPLAIN: 0 AC±  
 MINIMUM LOT SIZE PROPOSED: 8,400 S.F.(PER SECTION 16.121 OF SUBDIVISION REGULATIONS)  
 NUMBER OF BUILDABLE LOTS: 15  
 NUMBER OF OPEN SPACE LOTS: 2  
 TYPE OF PROPOSED UNIT: SFD  
 AREA OF BUILDABLE LOTS: 3.09 AC±  
 AREA OF ROAD ROW: 0.69 AC±  
 AREA OF ROAD DEDICATION: 0.01 AC±  
 AREA OF CREDITED OPEN SPACE REQUIRED: (30% GROSS AREA) 1.73 AC±  
 AREA OF CREDITED OPEN SPACE PROVIDED: (34% GROSS AREA) 1.97 AC±  
 AREA OF NON-CREDITED OPEN SPACE PROVIDED: (0.68% GROSS AREA) 0.05 AC±  
 TOTAL AREA OF OPEN SPACE PROVIDED: (34.9% GROSS AREA) 2.02 AC±  
 AREA OF PASSIVE RECREATIONAL OPEN SPACE REQUIRED: (200 S.F./UNIT) 3,000 S.F.  
 AREA OF PASSIVE RECREATIONAL OPEN SPACE PROVIDED: 3,000 S.F. (4% OF THE REQUIRED OPEN SPACE)
- THIS PROPERTY IS IN THE METROPOLITAN DISTRICT, WATER AND SEWER ARE PUBLIC.
- STORMWATER MANAGEMENT IS PROVIDED BY M-6 MICRO-BIORETENTION FACILITIES AND M-5 DRYWELLS IN ACCORDANCE WITH THE 2007 MARYLAND STORMWATER DESIGN MANUAL.
- NO FLOODPLAIN EXISTS ON SITE.
- WETLANDS AND ITS BUFFER EXIST ON SITE AS CERTIFIED IN THE WETLAND REPORT PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. IN JUNE 2015.
- FOREST STAND DELINEATION WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN MARCH, 2015. TOTAL OF 3 SPECIMEN TREES EXIST ON SITE. ALL THREE SPECIMEN TREES ARE TO BE REMOVED.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE RETENTION OF 0.64 ACRES ON EASEMENT "A" AND OFF-SITE CONSERVATION EASEMENT FOR 2.94 ACRES OF RETENTION AT AMBEREN WOODS (F-17-036). NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT.
- IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, ALL LANDSCAPING REQUIREMENTS ARE PROVIDED IN A CERTIFIED LANDSCAPE PLAN WHICH IS INCLUDED WITH THIS FINAL ROAD CONSTRUCTION PLAN SET.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (22 SHADE TREES, 33 EVERGREENS) AND AN ADDITIONAL 6 SHADE TREES PROVIDED IN LIEU OF REMOVING 3 SPECIMEN TREES AS A CONDITION OF THE APPROVED WAIVER WP-16-066 IN THE AMOUNT OF \$13,350.00 IS TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
- A SURETY IN THE AMOUNT \$9,300.00 FOR (31 SHADE TREES) PUBLIC STREET TREES WILL BE ADDRESSED UNDER DED'S COST ESTIMATE.
- PER SECTION 16.121(g) OF THE HOWARD COUNTY SUBDIVISION AND LAND USE REGULATIONS, OPEN SPACE FOR THIS SUBDIVISION HAS BEEN PROVIDED THROUGH THE CREATION OF OPEN SPACE LOTS 16 AND 17.
- A PRE-SUBMISSION COMMUNITY MEETING FOR THIS PROJECT WAS HELD ON MARCH 11, 2015 AT 6:00 PM AT THE ELKRIDGE LIBRARY.
- THIS DEVELOPMENT PLAN IS SUBJECT TO 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 LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING / GRADING PERMIT.
- ALL EXISTING STRUCTURES ARE TO BE REMOVED PRIOR TO RECORDATION OF THE FINAL SUBDIVISION PLAN.
- APFO ROAD TEST WAS PREPARED BY THE TRAFFIC GROUP ON AUGUST 14, 2015, APPROVED ON AUGUST 16, 2016.
- PHASE I NOISE ANALYSIS WAS PREPARED BY PHOENIX NOISE & VIBRATION ON JUNE 30, 2015, REVISED ON MAY 10, 2017.
- THIS PROJECT IS LOCATED WITHIN THE BW AIRPORT ZONING DISTRICT. APPROVAL BY THE MARYLAND AVIATION ADMINISTRATION IS REQUIRED.
- NO BURIAL GROUNDS OR CEMETERIES EXIST ON SITE.
- SITE IS NOT ADJACENT TO A DESIGNATED SCENIC ROAD.
- ALL RESIDENTIAL LOTS IN THIS SUBDIVISION ARE SUBJECT TO THE MHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.
- STEEP SLOPES EXIST ON SITE; HOWEVER, THERE ARE NO REGULATED AREAS OF STEEP SLOPES WHICH ARE DEFINED AS BEING SLOPES THAT ARE GREATER THAN 25% WITH AN ON-SITE AND/OR OFF-SITE CONTIGUOUS AREA OF 20,000 SQUARE FEET OR GREATER.
- NO GRADING OR REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S), OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS, 100 YEAR FLOODPLAIN AND AREAS OF STEEP SLOPES GREATER THAN 25% WITH CONTIGUOUS AREAS OF 20,000 SQUARE FEET OR GREATER UNLESS A FORMAL WAIVER PETITION IS GRANTED OR HAS BEEN DETERMINED TO BE A NECESSARY OR ESSENTIAL DISTURBANCE.
- THIS PLAN IS SUBJECT TO WP-16-066, SEEKING AN ALTERNATIVE COMPLIANCE TO SECTIONS 16.1205(a)(97) AND 16.1205(a)(10) WHICH REQUIRES THE RETENTION OF SPECIMEN TREES (30" dbh OR GREATER) THAT ARE NOT CONTAINED WITHIN OTHER PRIORITY FOREST RETENTION AREAS AS OUTLINED IN SECTION 16.1205(a)(1-10). THIS ALTERNATIVE COMPLIANCE WAS APPROVED ON DECEMBER 17, 2015 SUBJECT TO THE FOLLOWING CONDITIONS:  
 1. THE DEVELOPER/BUILDER SHALL PLANT A TOTAL OF SIX (6) 2 1/2" INCH CALIPER SHADE TREES (OR EQUIVALENT) AS REPLACEMENT MITIGATION FOR THE REMOVAL OF THE THREE (3) SPECIMEN TREES WHICH EXIST ON THIS SITE. IF THE SITE DESIGN ALLOWS, THESE MITIGATION TREES SHOULD BE PLANTED ALONG THE PERIMETER OF THIS PROJECT IN ORDER TO PROVIDE ENHANCED SCREENING FOR THE EXISTING ADJACENT DEVELOPED PROPERTIES. REVIEW FOR COMPLIANCE WITH THIS MITIGATION REQUIREMENT WILL BE CONDUCTED AT THE TIME OF REVIEW OF THE PERIMETER LANDSCAPE DESIGN ASSOCIATED WITH THE SUBDIVISION AND DEVELOPMENT OF THIS SITE.  
 2. FINANCIAL SURETY AND PAYMENT OF AN INSPECTION FEE FOR THE INSTALLATION OF THESE MITIGATION TREES WILL BE INCLUDED IN THE PERIMETER LANDSCAPE ESTIMATE AT THE FINAL PLAN STAGE.  
 3. ON ALL SUBSEQUENT PLANS AND PLATS, ADD A GENERAL NOTE WHICH PROVIDES A DESCRIPTION OF THIS WAIVER PETITION, WP-16-066, WHICH INCLUDES THE REQUEST, SECTION OF THE REGULATIONS, ACTION TAKEN, DATE AND CONDITIONS OF APPROVAL.
- THE 656BA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY HOWARD COUNTY DESIGN MANUAL, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 656BA NOISE EXPOSURE. THE 656BA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- PROPOSED HOMES NEAREST TO THE RAILROAD REQUIRE AN EVALUATION OF ARCHITECTURE TO DETERMINE WHETHER MODIFICATIONS OF WALL CONSTRUCTION OR INCREASE OF SDI RATINGS FOR WINDOWS AND DOORS ARE NECESSARY TO MAINTAIN INDOOR NOISE LEVEL AT 45 dBA AS REQUIRED BY HOWARD COUNTY.
- THIS PROPERTY CURRENTLY CONTAINS A HISTORIC HOUSE THAT DATES TO 1939. AS SUCH, THE PLAN CAN BE BEFORE THE HISTORIC PRESERVATION COMMISSION FOR ADVISORY COMMENTS IN DECEMBER 2015. RECOMMENDATIONS: SAVE A HISTORIC HOUSE FACING A PUBLIC ROAD. EXISTING HOUSE WILL BE REMOVED.
- THIS PLAN IS SUBJECT TO WP-17-062, SEEKING AN ALTERNATIVE COMPLIANCE 16.144(k)(3)(i) WHICH REQUIRES SUBMISSION OF FINAL PLAN WITHIN 4 MONTHS FROM PRELIMINARY PLAN APPROVAL. THIS ALTERNATIVE COMPLIANCE WAS APPROVED ON FEBRUARY 1, 2017, SUBJECT TO THE FOLLOWING CONDITION:  
 THE DEVELOPER SHALL SUBMIT FINAL PLAN TO DEPARTMENT OF PLANNING AND ZONING FOR REVIEW WITHIN 1 YEAR OF THE PREVIOUS DEADLINE DATE OF FEBRUARY 3, 2017 (OR UNTIL FEBRUARY 3, 2018) AS INDICATED WITHIN THE DPZ "ORIGINAL MYLAR SIGNED" LETTER DATED OCTOBER 3, 2016.
- PRIVATE RANGE OF ADDRESSES SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2130 FOR DETAILS AND COST ESTIMATES.
- TRAFFIC CONTROL DEVICES:  
 A. THE R1-1 ("STOP") SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.  
 B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.  
 C. ALL TRAFFIC CONTROL DEVICE LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES"(MDMUTCD).  
 D. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2.5" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE)-3" LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- DURING DEVELOPMENT PHASE, IF AN OLD WELL OR SEPTIC SYSTEM IS DISCOVERED, THE HEALTH DEPARTMENT MUST BE NOTIFIED IMMEDIATELY.

# FINAL ROAD CONSTRUCTION PLAN

## ROBERT'S CROSSING

### LOTS 1 THRU 15

### AND OPEN SPACE LOTS 16 AND 17

### FIRST ELECTION DISTRICT

### HOWARD COUNTY, MARYLAND

**SHEET INDEX**

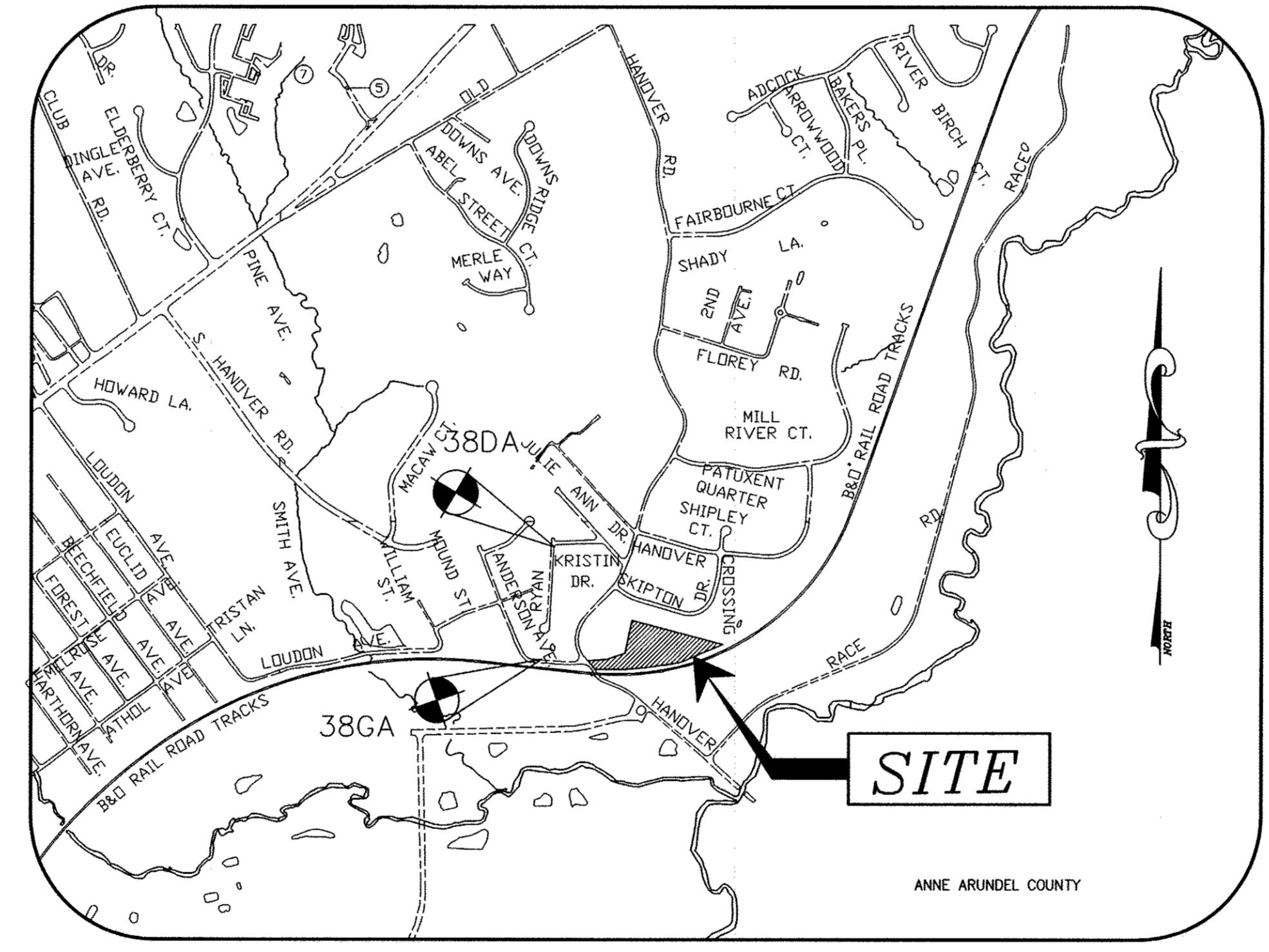
| NO | TITLE  |
|----|--|
| 1  | COVER SHEET  |
| 2  | ROAD PLAN, PROFILES AND TYPICAL SECTIONS           |
| 3  | GRADING AND SEDIMENT CONTROL PLAN (STAGE 1)        |
| 4  | FINAL GRADING AND SEDIMENT CONTROL PLAN            |
| 5  | SEDIMENT CONTROL NOTES AND DETAILS                 |
| 6  | DRAINAGE AREA MAP, STORM DRAIN PROFILE AND DETAILS |
| 7  | STORMWATER MANAGEMENT PLAN AND DETAILS             |
| 8  | FINAL LANDSCAPING PLAN                             |
| 9  | FINAL FOREST CONSERVATION PLAN                     |

**MINIMUM LOT SIZE CHART**

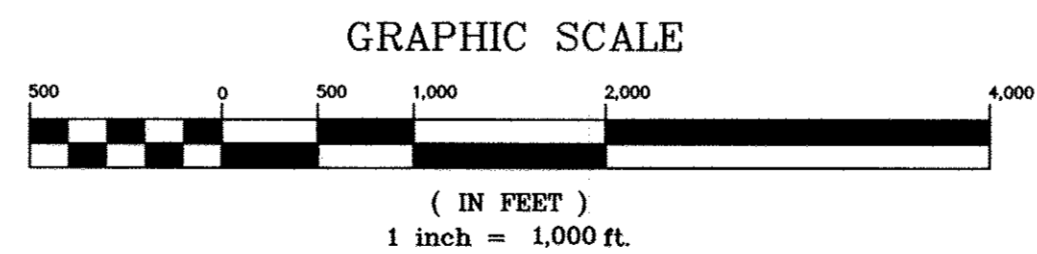
| LOT NO. | GROSS AREA   | PIPESTEM AREA | MINIMUM LOT SIZE |
|---------|--------------|---------------|------------------|
| 5       | 9,689 SQ.FT. | 677 SQ.FT.    | 9,012 SQ.FT.     |
| 6       | 9,299 SQ.FT. | 879 SQ.FT.    | 8,402 SQ.FT.     |
| 7       | 8,984 SQ.FT. | 584 SQ.FT.    | 8,400 SQ.FT.     |
| 8       | 8,638 SQ.FT. | 238 SQ.FT.    | 8,400 SQ.FT.     |
| 11      | 8,700 SQ.FT. | 298 SQ.FT.    | 8,402 SQ.FT.     |
| 12      | 9,080 SQ.FT. | 677 SQ.FT.    | 8,403 SQ.FT.     |
| 13      | 9,370 SQ.FT. | 967 SQ.FT.    | 8,403 SQ.FT.     |
| 14      | 9,694 SQ.FT. | 1,291 SQ.FT.  | 8,403 SQ.FT.     |
| 15      | 9,985 SQ.FT. | 1,580 SQ.FT.  | 8,403 SQ.FT.     |

**LEGEND**

|  |                             |  |                                 |
|--|-----------------------------|--|---------------------------------|
|  | DRY-WELL (M-5)              |  | SUPER SILT FENCE                |
|  | EX. TREE LINE               |  | DIVERSION FENCE                 |
|  | PR. TREE LINE               |  | AREA TREATED BY DRY WELLS (M-5) |
|  | SPECIMEN TREE TO BE REMOVED |  | AREA TREATED BY MICRO-BIO (M-6) |
|  | LIMIT OF DISTURBANCE        |  | AREA OF WETLANDS                |
|  | PR. 8" SEWER MAIN           |  | AREA OF SLOPES GREATER THAN 25% |
|  | PR. MANHOLE                 |  | AREA OF SLOPES 15-24.9%         |
|  | PR. 8" WATER MAIN           |  |                                 |
|  | PR. STORM DRAIN PIPE        |  |                                 |
|  | PR. STORM DRAIN INLET       |  |                                 |



**VICINITY MAP**  
 ADC MAP: 35 GRID: E-4



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

11/17/17  
 SIGNATURE OF ENGINEER  
 R. JACOB HIKMAT, PE  
 PRINTED NAME OF ENGINEER

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

11/07/17  
 SIGNATURE OF DEVELOPER  
 W.M. Scott ODSTREY  
 PRINTED NAME OF DEVELOPER

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

4/31/17  
 JOHN R. ROBERTSON  
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 12/12/2017  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 12-21-17  
 DATE

1-2-18  
 DATE

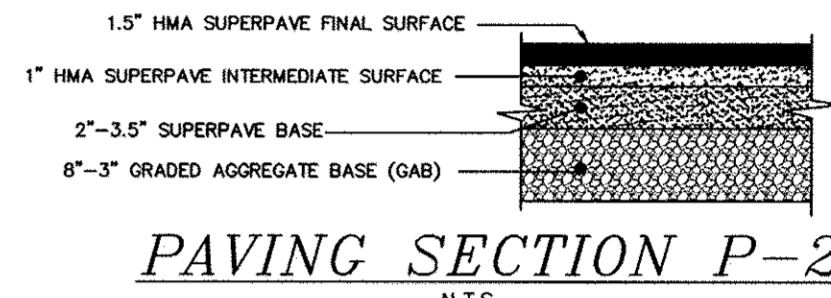
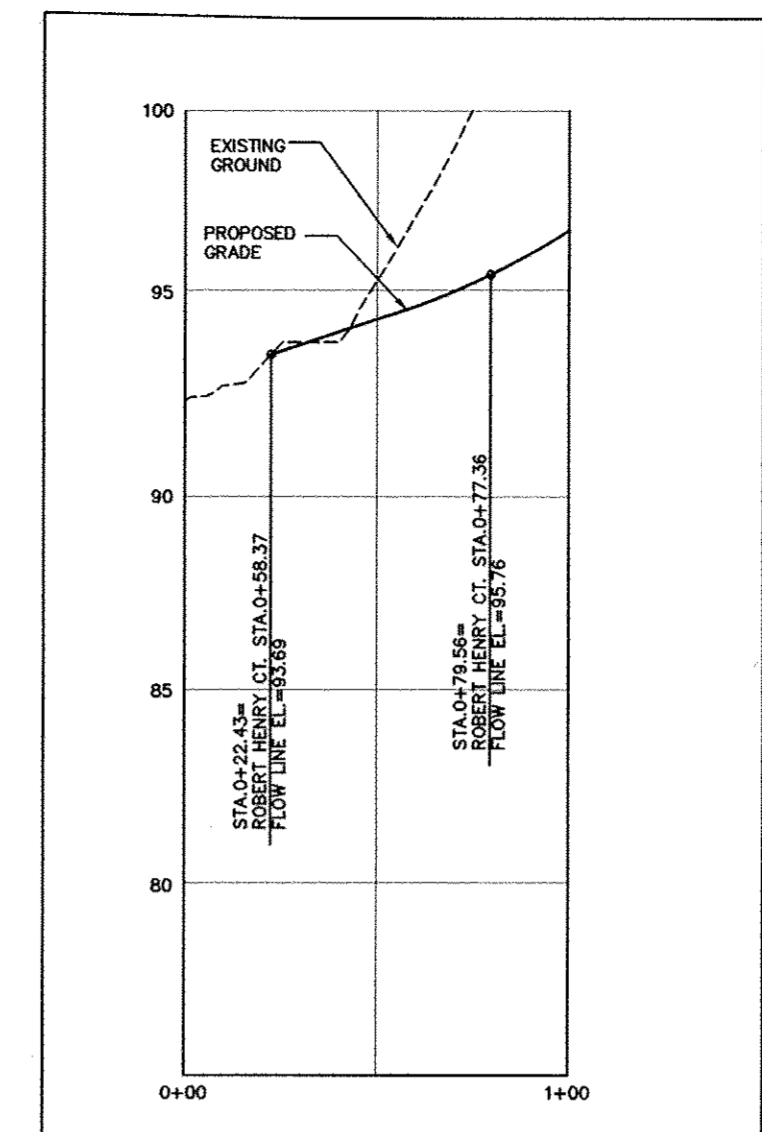
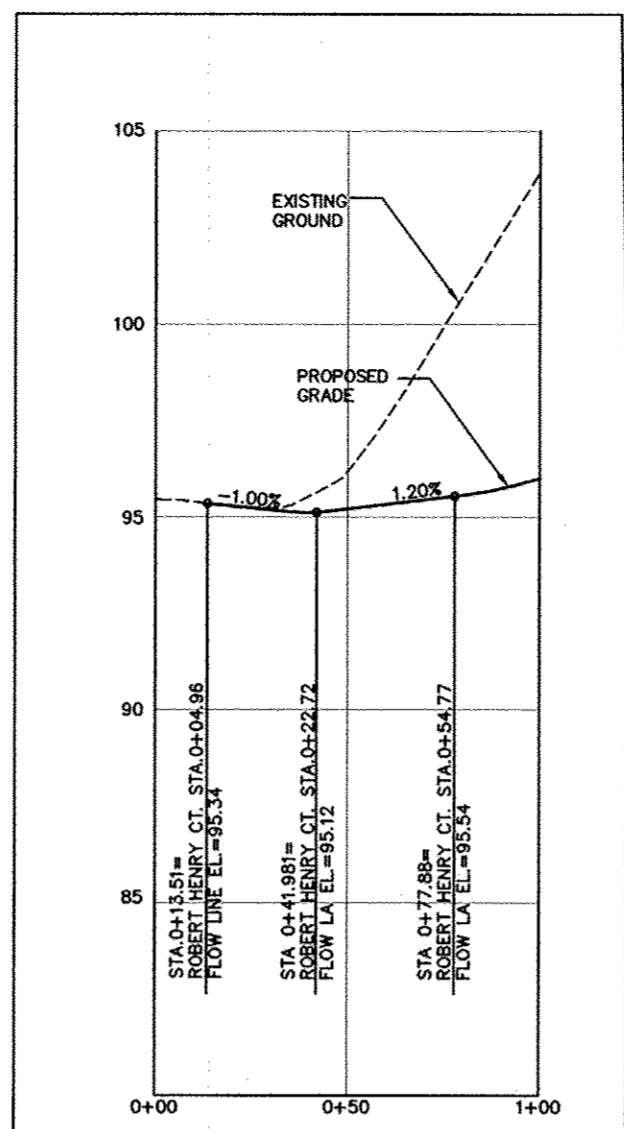
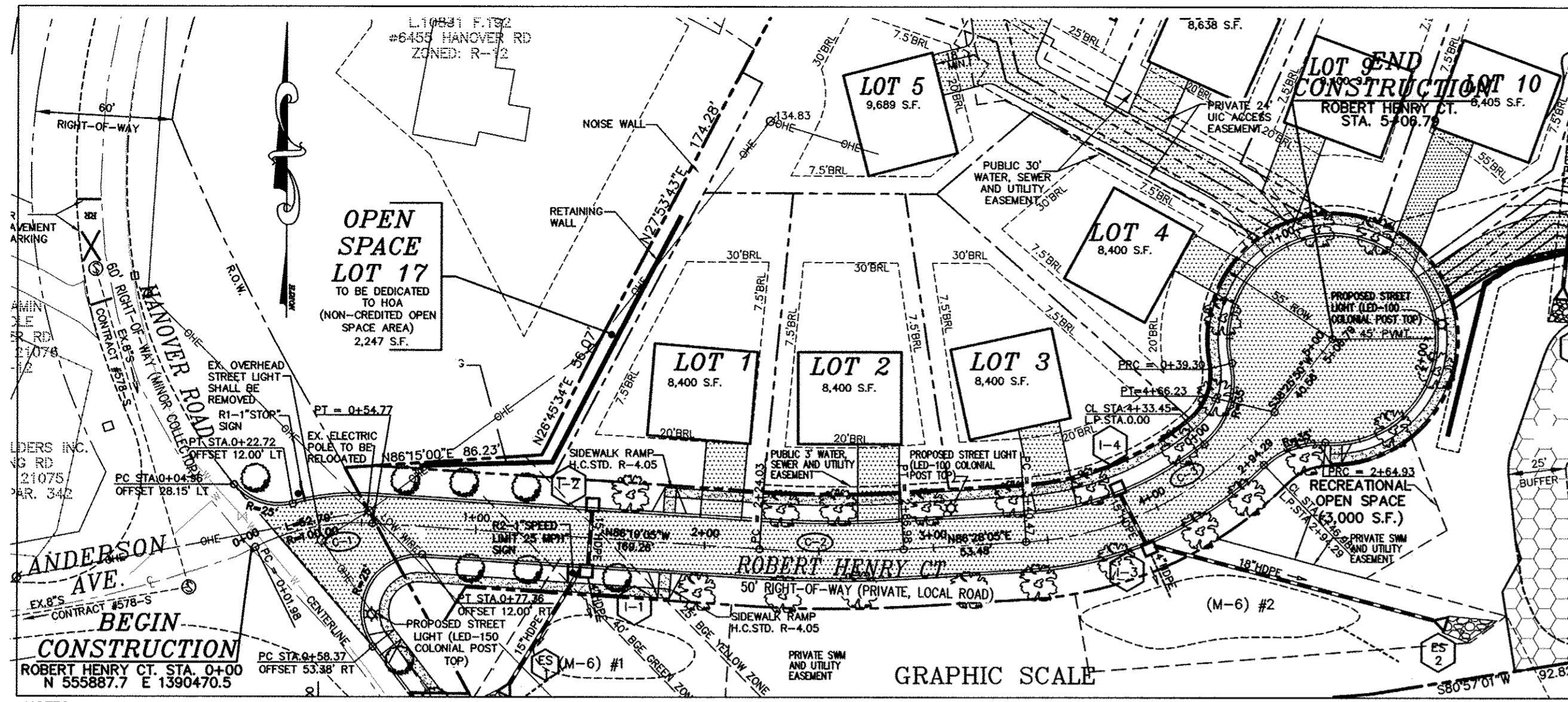
**OWNER**  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/18

11/17/17  
 DATE:  
 R. JACOB HIKMAT, P.E.



F:\2004\15-003\Roberts Crossing\DWG\FINAL PLANS\FINAL PLAN-2009-1.DWG



NOTE: DEPTH OF SUPERPAVE BASE AND GRADED AGGREGATE BASE DEPEND ON CBR.

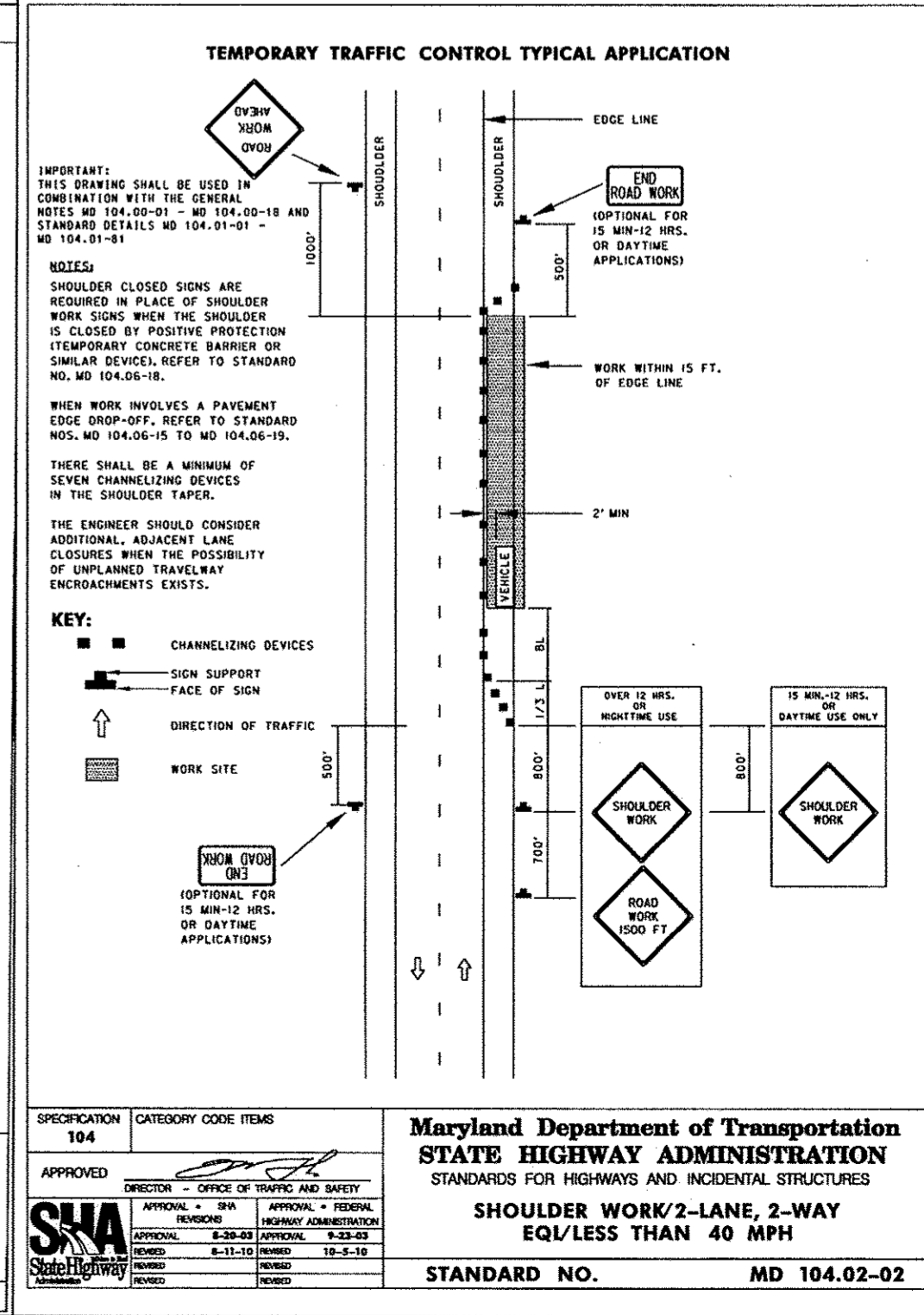
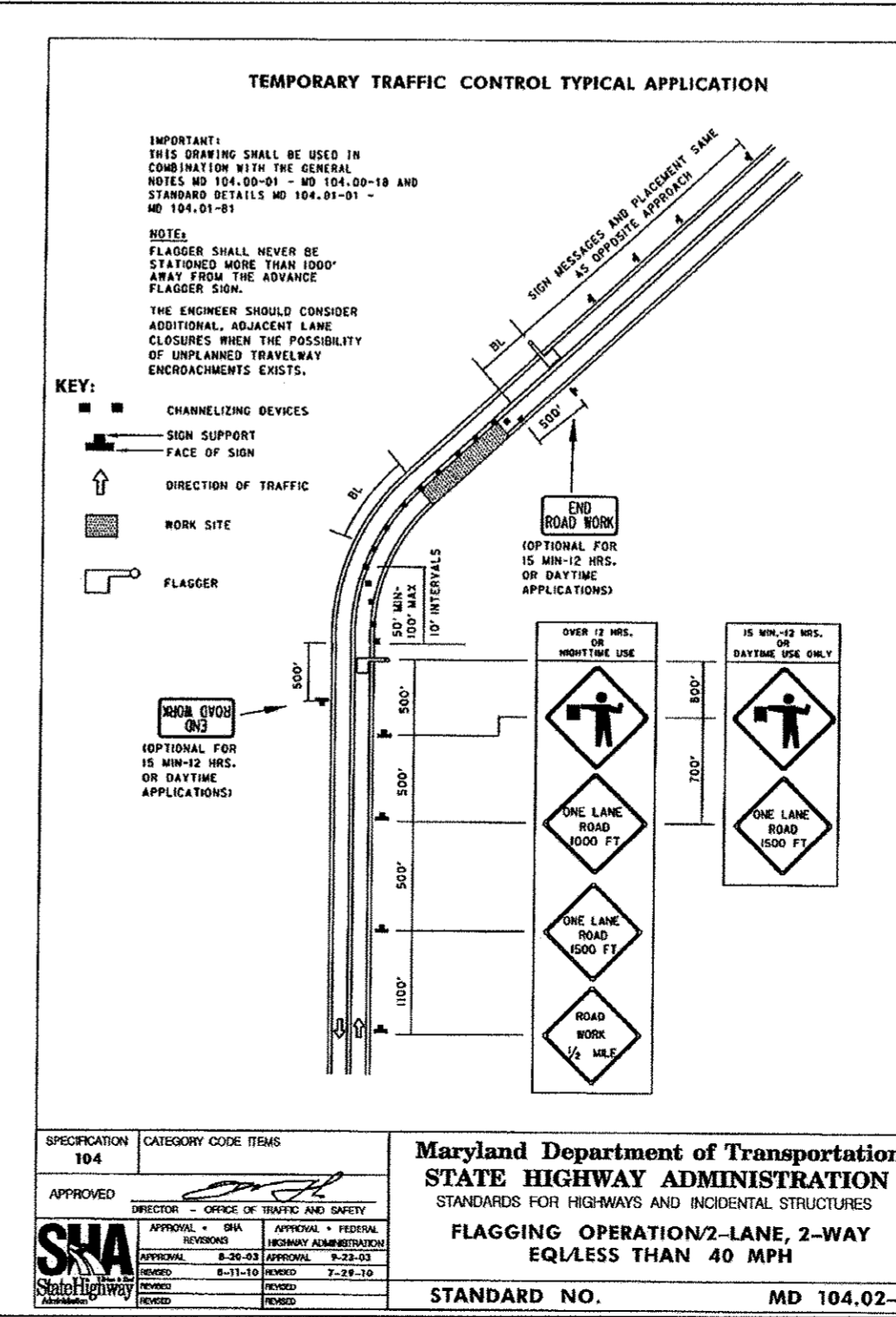
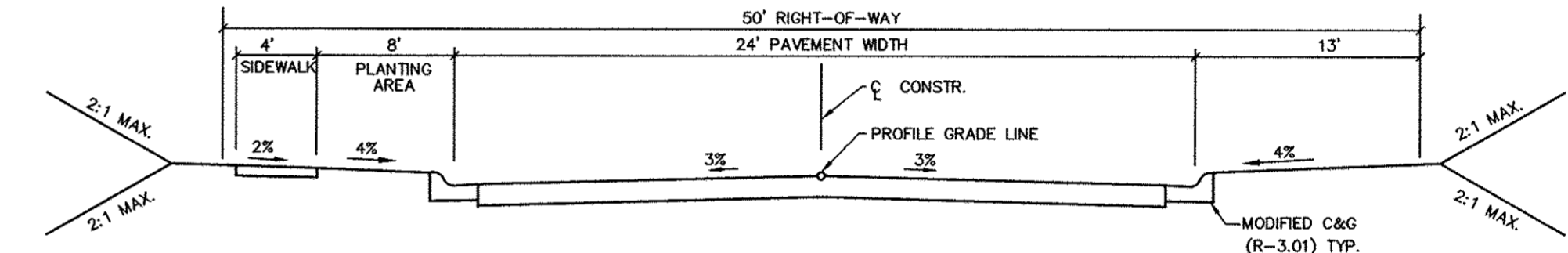
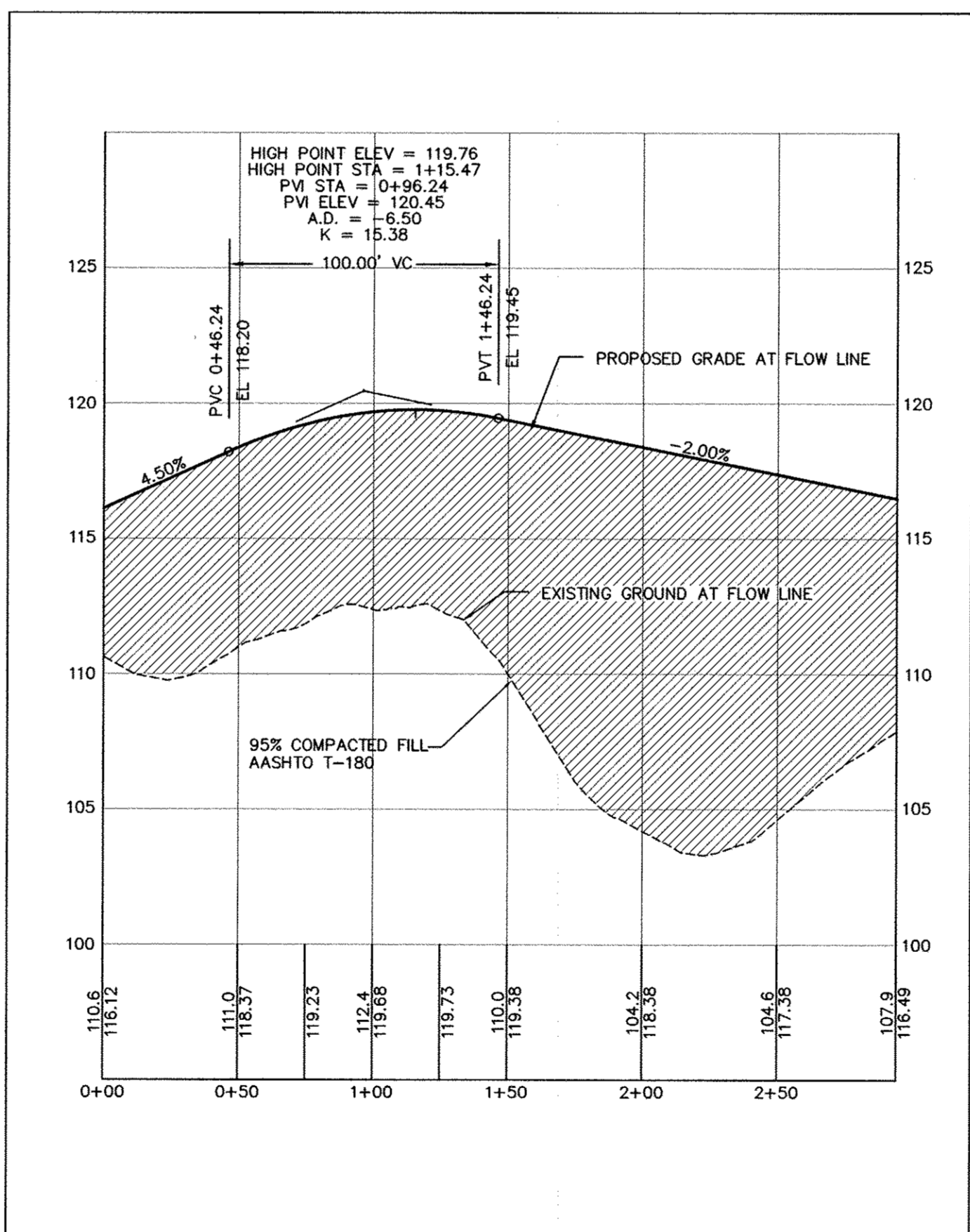
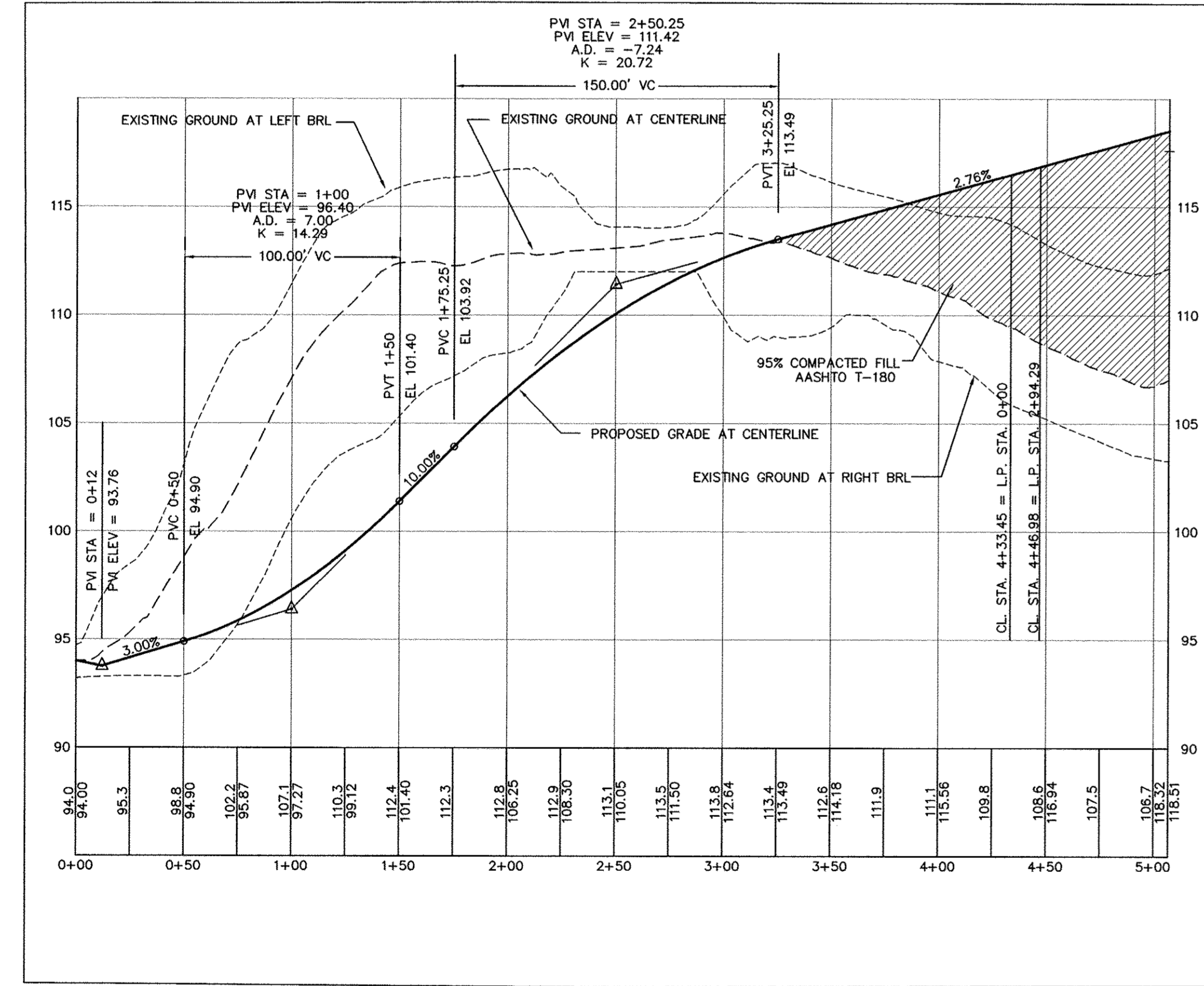
STREET LIGHT CHART

| TYPE                                | LOCATION                                     |
|-------------------------------------|--|
| LED 150 "COLONIAL" POST TOP FIXTURE | ROBERT HENRY CT. STA. 0+57, OFFSET 39.0' RT. |
| LED 100 "COLONIAL" POST TOP FIXTURE | ROBERT HENRY CT. STA. 3+08, OFFSET 16.0' IT. |
| LED 100 "COLONIAL" POST TOP FIXTURE | CUL-DE-SAC STA. 1+85, OFFSET 3.0' LT.        |

CENTERLINE CURVE TABLE

| CURVE | LENGTH (FT) | RADIUS (FT) | DELTA     | TANGENT (FT) | CHORD LENGTH (FT) | CHORD DIR   |
|-------|-------------|-------------|-----------|--------------|-------------------|-------------|
| C1    | 52.79       | 100.00      | 30'14"49" | 27.03        | 52.18             | N78°33'30"E |
| C2    | 62.98       | 500.00      | 07'12"50" | 31.52        | 62.91             | S89°55'30"E |
| C3    | 125.76      | 150.00      | 48°02'15" | 66.84        | 122.11            | N62°26'57"E |

NOTE: ALL STREET LIGHT TO BE MOUNTED ON A 14' BLACK FIBERGLASS POLE.



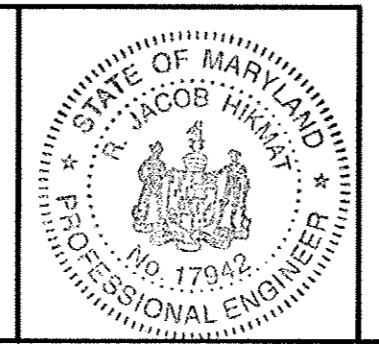
APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 12/17/2017  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 12-21-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 1-2-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT

OWNER/ DEVELOPER  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21044  
 410-461-0833

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/18



Maryland Department of Transportation  
 STATE HIGHWAY ADMINISTRATION  
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES  
 FLAGGING OPERATION/2-LANE, 2-WAY  
 EQU/LESS THAN 40 MPH  
 STANDARD NO. MD 104.02-10

Maryland Department of Transportation  
 STATE HIGHWAY ADMINISTRATION  
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES  
 SHOULDER WORK/2-LANE, 2-WAY  
 EQU/LESS THAN 40 MPH  
 STANDARD NO. MD 104.02-02

|         |           |              |        |          |
|---------|-----------|--------------|--------|----------|
| project | date      | description  | scale  | revision |
| 15-003  | NOV. 2017 | illustration | 1"=50' |          |
| MMM     | MMM       | MMM          |        |          |

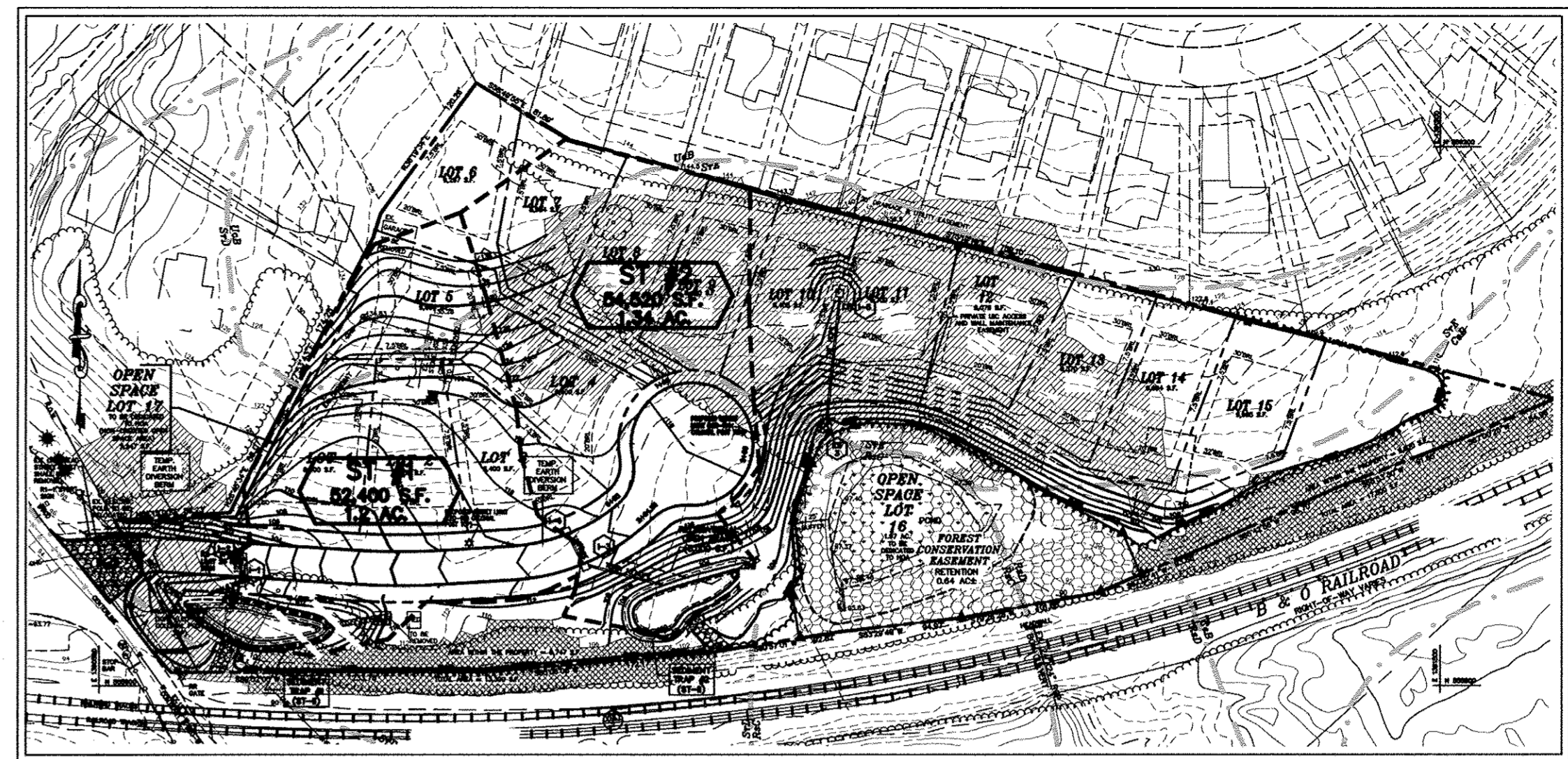
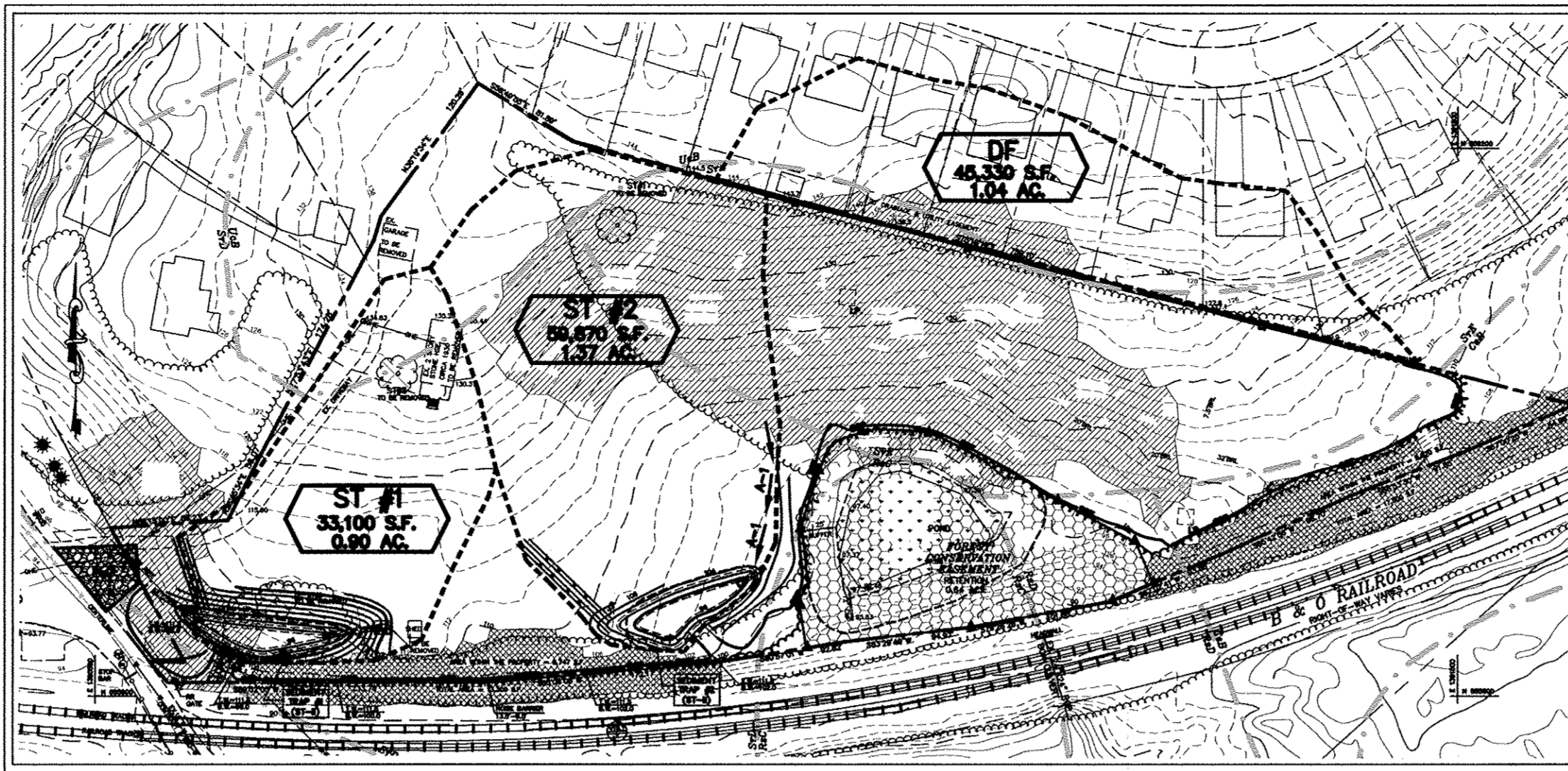
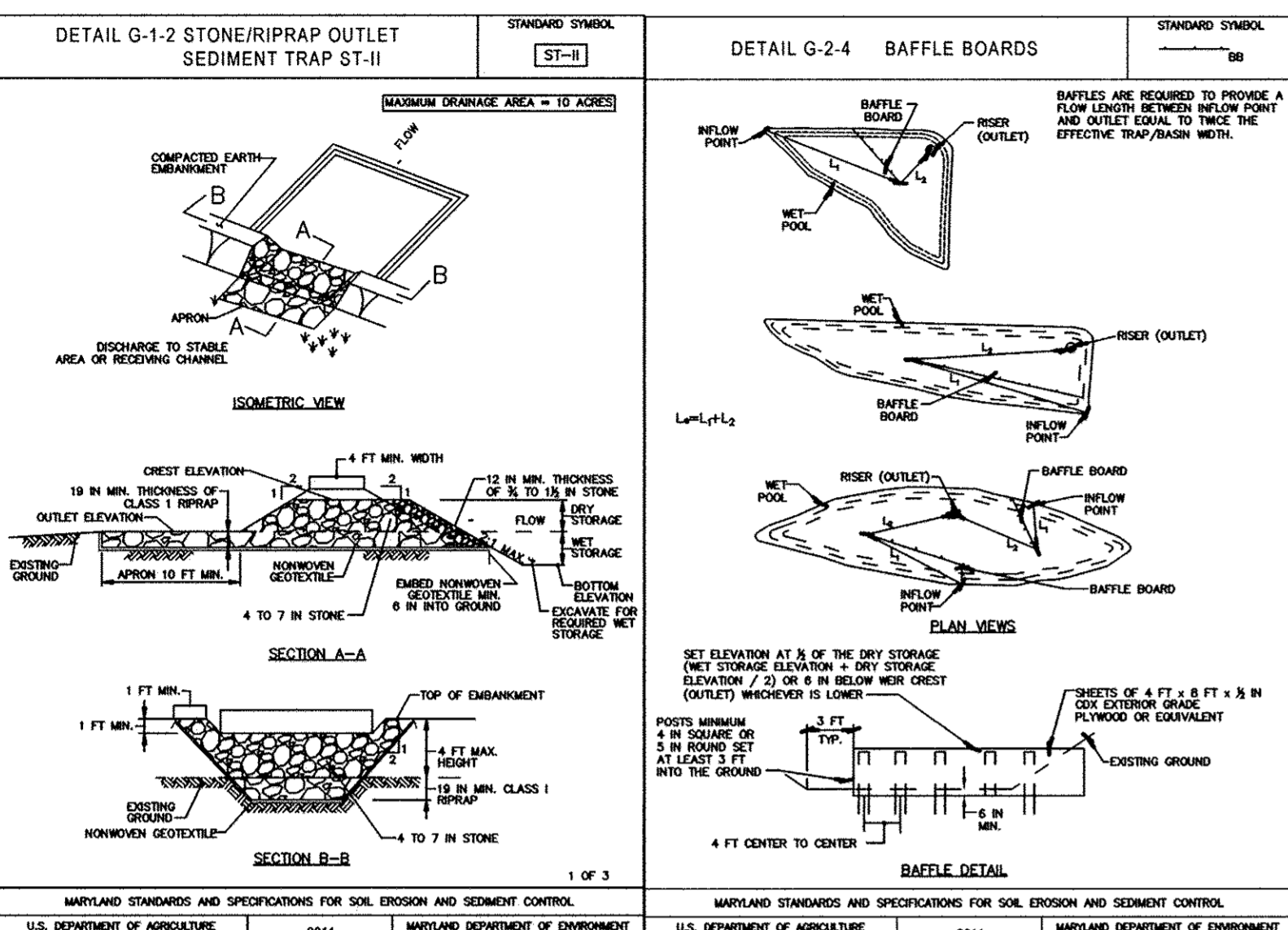
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|-----|------|-------------|
| no. | date | description |
|     |      |             |

ROBERT'S CROSSING  
 LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 HOWARD COUNTY, MARYLAND  
 FIRST ELECTION DISTRICT  
 ROAD PLAN, PROFILES AND TYPICAL SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.  
 Engineers Planners Surveyors  
 7350-B Grace Drive, Columbia, MD 21044  
 (410) 997-0296 Tel. (410) 997-0298 Fax.

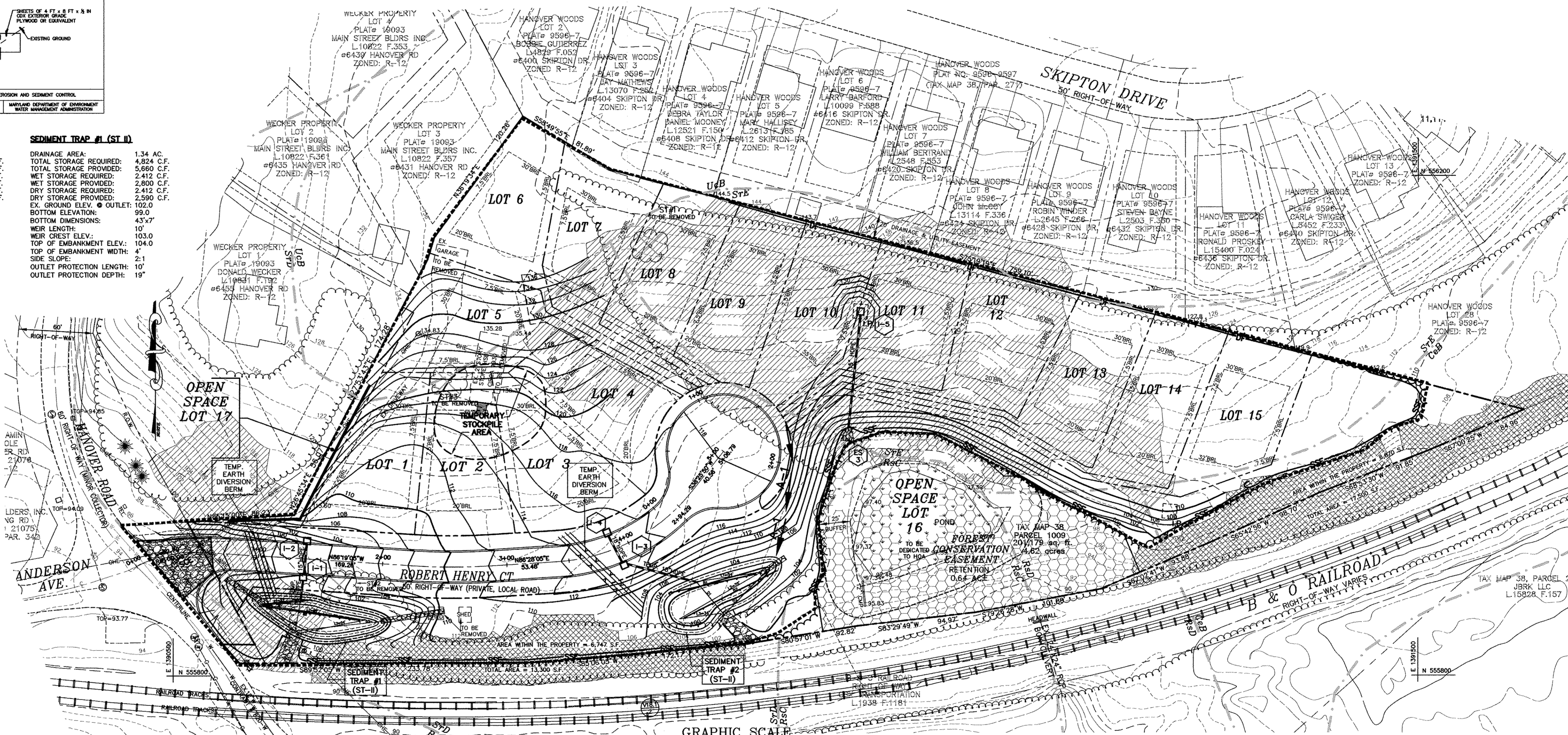
**SOILS TABLE**

| SYMBOL | RATING | NAME                                       | K FACTOR | MAP # | COMMENTS        |
|--------|--------|--|----------|-------|-----------------|
| RaC    | (C)    | RUSSETT FINE SANDY LOAM, 5-10% SLOPES.     | .24      | 20    | ----            |
| RaD    | (C)    | RUSSETT FINE SANDY LOAM, 10-15% SLOPES.    | .24      | 20    | ----            |
| SrD    | (B)    | SASSAFRAS & CROOM SOILS, 10-15% SLOPES     | .35      | 20    | HIGHLY ERODIBLE |
| SrE    | (B)    | SASSAFRAS & CROOM SOILS, 15-25% SLOPES     | .35      | 20    | HIGHLY ERODIBLE |
| UcB    | (D)    | URBAN LAND-CHILLUM-BELTVILLE COMPLEX, 0-5% | ----     | 20    | ----            |
| CeB    | (B)    | CHILLUM LOAM 2-5% SLOPES                   | ----     | 20    | ----            |



EXISTING DRAINAGE AREA MAP TO SEDIMENT TRAPS AND DIVERSION FENCE

PROPOSED DRAINAGE AREA MAP TO SEDIMENT TRAPS



**SEDIMENT TRAP #1 (ST I)**

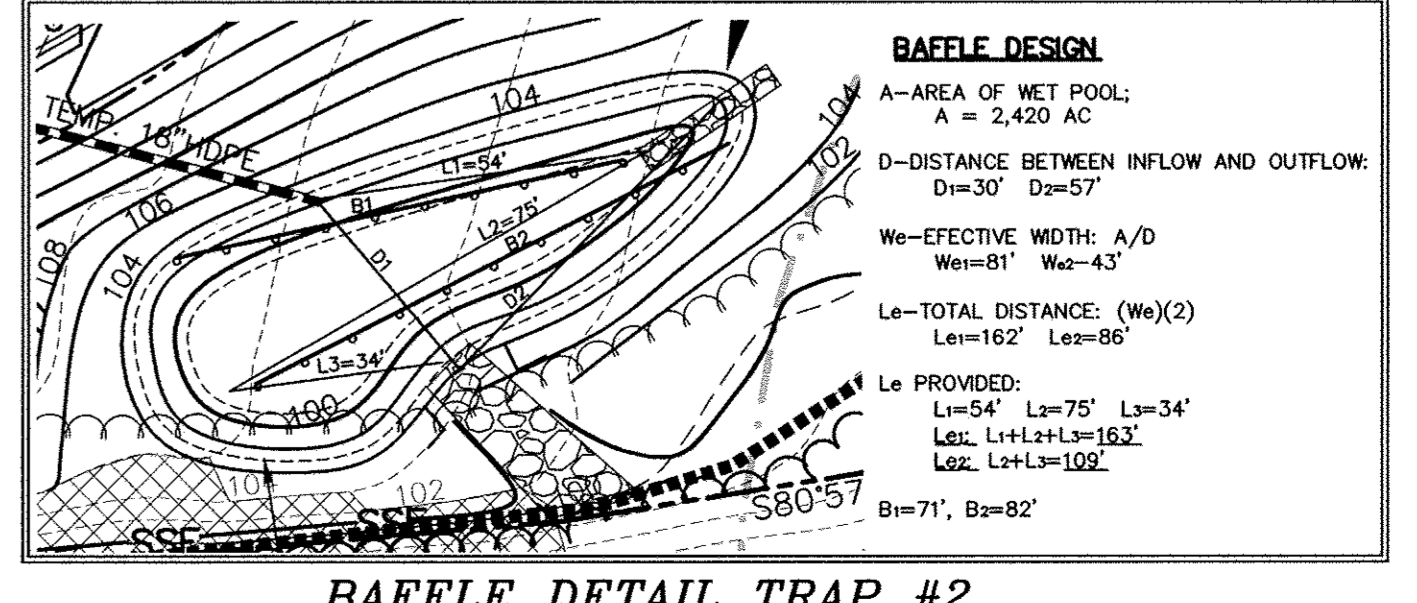
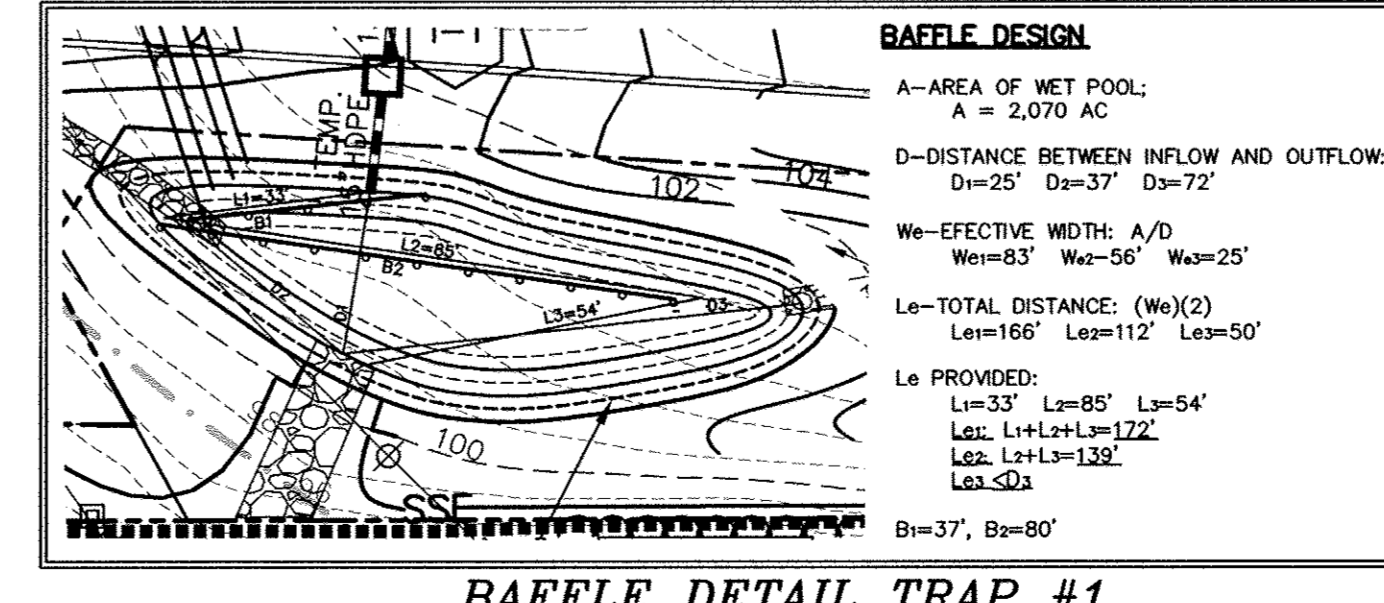
Drainage Area: 1.2 AC  
 Total Storage Required: 4,320 C.F.  
 Total Storage Provided: 5,660 C.F.  
 Wet Storage Required: 2,160 C.F.  
 Wet Storage Provided: 2,800 C.F.  
 Dry Storage Required: 2,160 C.F.  
 Dry Storage Provided: 2,860 C.F.

**SEDIMENT TRAP #2 (ST II)**

Drainage Area: 1.34 AC  
 Total Storage Required: 4,824 C.F.  
 Total Storage Provided: 5,660 C.F.  
 Wet Storage Required: 2,412 C.F.  
 Wet Storage Provided: 2,800 C.F.  
 Dry Storage Required: 2,412 C.F.  
 Dry Storage Provided: 2,860 C.F.

**LEGEND**

- EX TREE LINE
- PR TREE LINE
- SPECIMEN TREE TO BE REMOVED
- LIMIT OF DISTURBANCE
- PR STORM DRAIN PIPE
- PR STORM DRAIN INLET
- SUPER SILT FENCE
- DIVERSION FENCE
- AREA OF WETLANDS
- AREA OF SLOPES GREATER THAN 25%
- AREA OF SLOPES 15-24.9%



**ENGINEER'S CERTIFICATE**

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

Signature: *Jacob Hikmat* Date: 11/17/17  
 Name: JACOB HIKMAT, P.E.  
 PRINTED NAME OF ENGINEER

**DEVELOPERS CERTIFICATE**

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

Signature: *John R. Blueton* Date: 11/21/17  
 Name: JOHN R. BLUETON  
 PRINTED NAME OF DEVELOPER

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Signature: *Paul* Date: 12/12/2017  
 Name: CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Signature: *John* Date: 12-22-17  
 Name: CHIEF, DEVELOPMENT ENGINEERING DIVISION

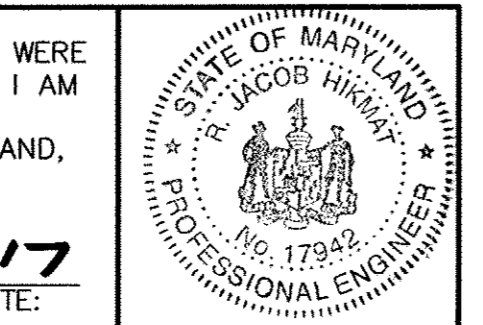
Signature: *John* Date: 1-2-18  
 Name: CHIEF, DIVISION OF LAND DEVELOPMENT

**OWNER/ DEVELOPER**

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

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/18

Signature: *John* Date: 11/17/17  
 Name: R. JACOB HIKMAT P.E.



Project: 15-003  
 Date: OCT. 2017  
 Illustration: engineering  
 Scale: MAM  
 Approval: MAM  
 Revisions: 1"=50'  
 Date: RH

Project: 15-003  
 Date: OCT. 2017  
 Illustration: engineering  
 Scale: MAM  
 Approval: MAM  
 Revisions: 1"=50'  
 Date: RH

**ROBERT'S CROSSING**

LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

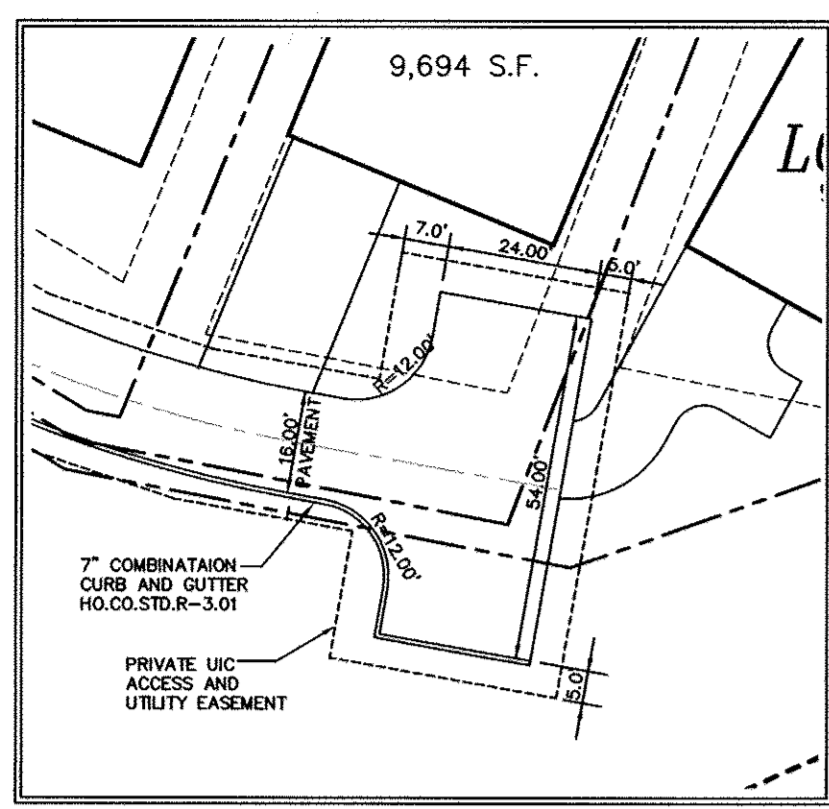
**INITIAL GRADING AND SEDIMENT CONTROL PLAN (STAGE 1)**

**MILDENBERG, BOENDER & ASSOC., INC.**

Engineers Planners Surveyors  
 7050-B Crace Drive, Columbia, MD 21044  
 (410) 997-0286 Tel. (410) 997-0286 Fax.

**SOILS TABLE**

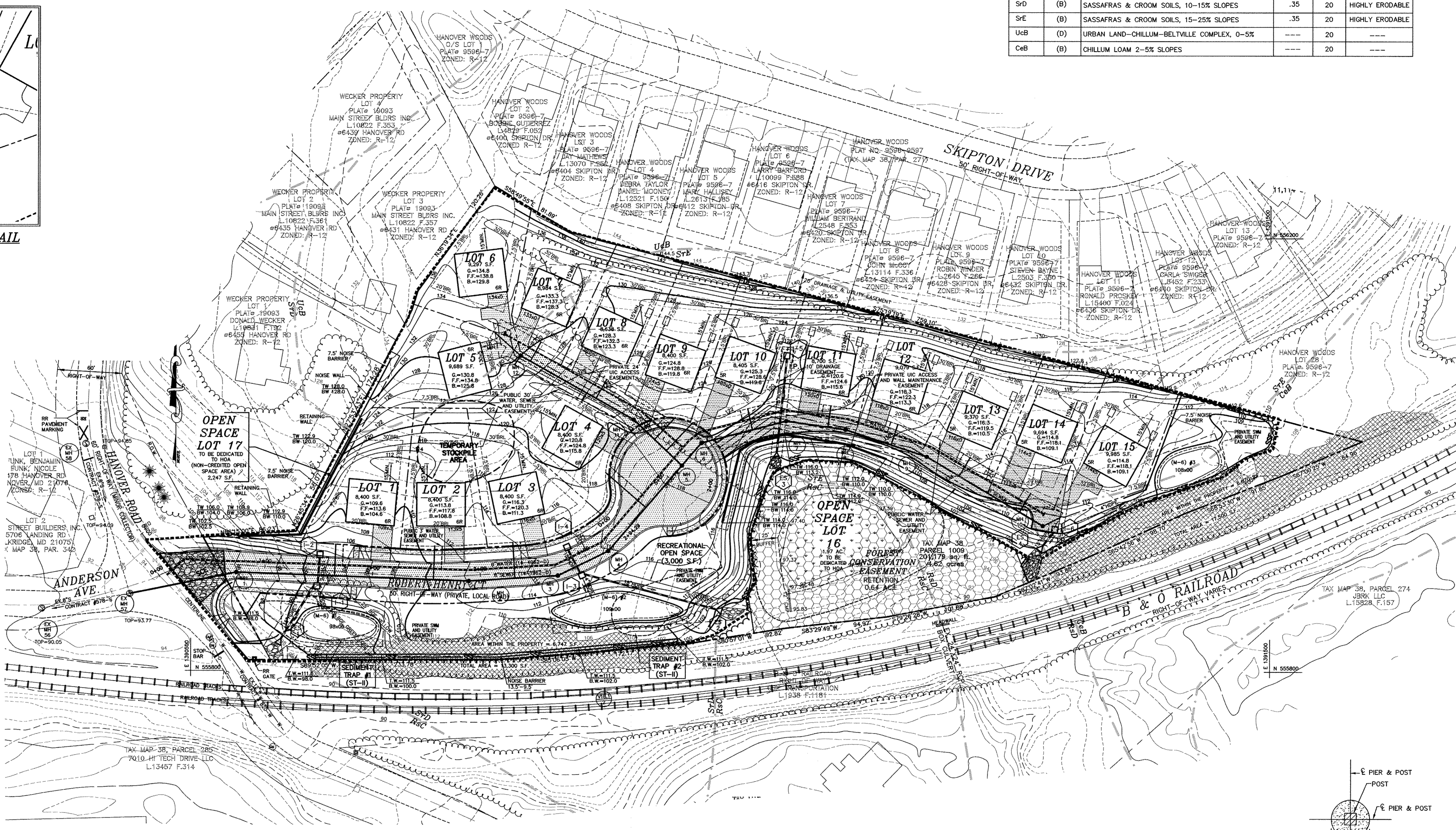
| SYMBOL | RATING | NAME                                       | K FACTOR | MAP # | COMMENTS        |
|--------|--------|--|----------|-------|-----------------|
| RcC    | (C)    | RUSSETT FINE SANDY LOAM, 5-10% SLOPES.     | .24      | 20    | ----            |
| RdD    | (C)    | RUSSETT FINE SANDY LOAM, 10-15% SLOPES.    | .24      | 20    | ----            |
| SrD    | (B)    | SASSAFRAS & CROOM SOILS, 10-15% SLOPES     | .35      | 20    | HIGHLY ERODABLE |
| SrE    | (B)    | SASSAFRAS & CROOM SOILS, 15-25% SLOPES     | .35      | 20    | HIGHLY ERODABLE |
| UcB    | (D)    | URBAN LAND-CHILLUM-BELTVILLE COMPLEX, 0-5% | ----     | 20    | ----            |
| CeB    | (B)    | CHILLUM LOAM 2-5% SLOPES                   | ----     | 20    | ----            |



**T-TURNAROUND DETAIL**  
SCALE: 1"=30'

**LEGEND**

- DRY-WELL (M-5)
- EX. TREE LINE
- PR. TREE LINE
- SPECIMEN TREE TO BE REMOVED
- LIMIT OF DISTURBANCE
- 8" SEWER MAIN
- 8" WATER MAIN
- 8" STORM DRAIN PIPE
- 8" STORM DRAIN INLET
- SUPER SILT FENCE
- DIVERSION FENCE
- AREA OF WETLANDS
- AREA OF SLOPES GREATER THAN 25%
- AREA OF SLOPES 15-24.9%
- MITIGATED NOISE LINE



**ENGINEER'S CERTIFICATE**

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

DATE: 11/21/17  
SIGNATURE OF ENGINEER: R. JACOB HIKMAT, PE  
PRINTED NAME OF ENGINEER: R. JACOB HIKMAT, PE

**DEVELOPERS CERTIFICATE**

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

DATE: 11/17/17  
SIGNATURE OF DEVELOPER: WM. SCOTT BOEDNER  
PRINTED NAME OF DEVELOPER: WM. SCOTT BOEDNER

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

DATE: 4/21/17  
SIGNATURE OF HOWARD SOIL CONSERVATION DISTRICT: John C. Blanton

APPROVED: DEPARTMENT OF PUBLIC WORKS  
DATE: 12/12/2017  
SIGNATURE: [Signature]

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DATE: 12-27-17  
SIGNATURE: [Signature]

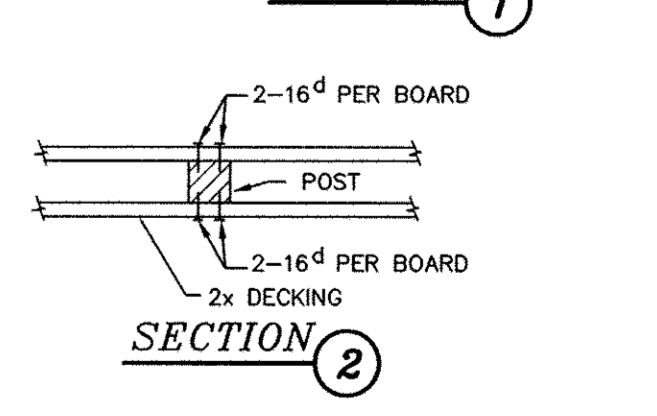
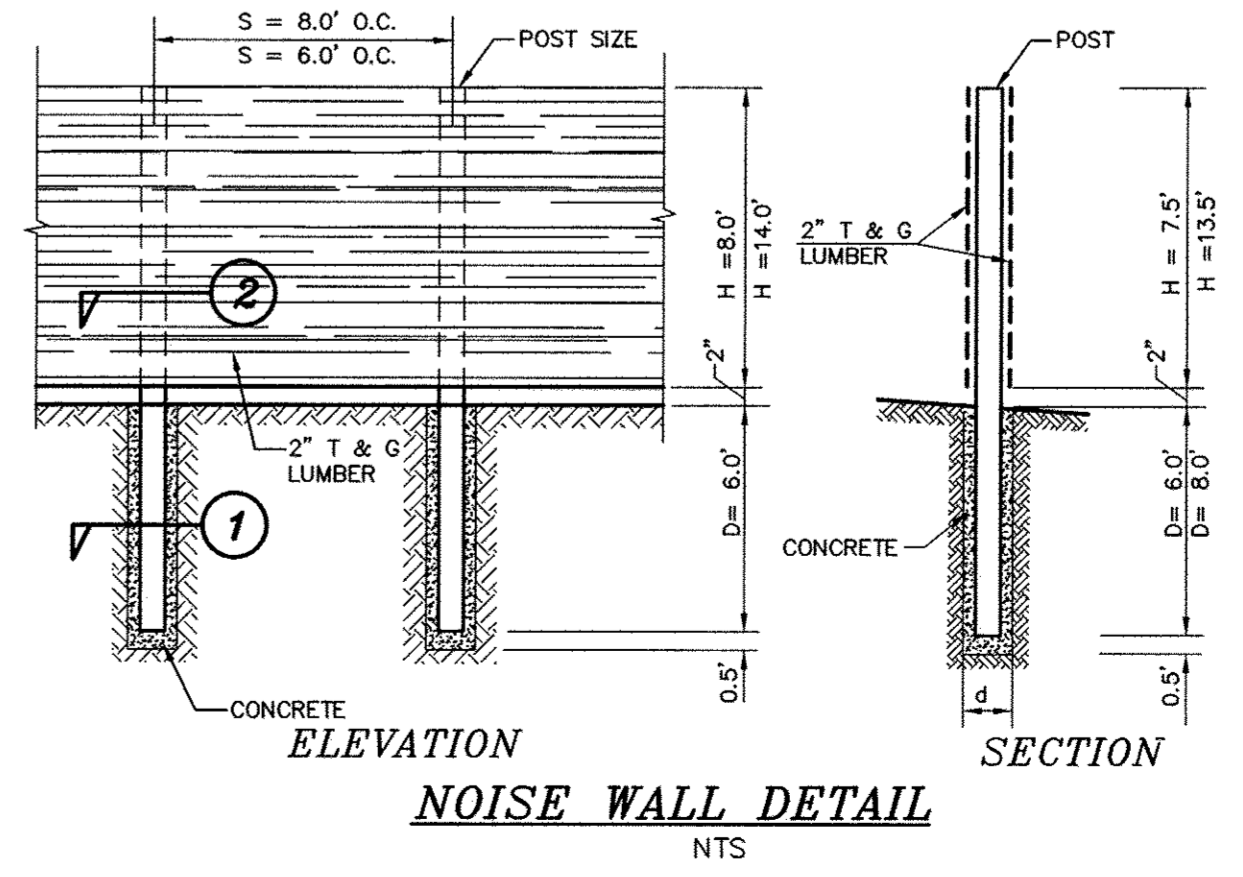
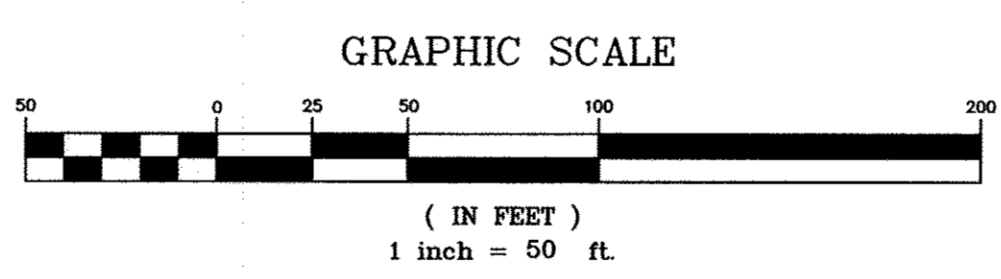
DATE: 1-2-18  
SIGNATURE: [Signature]

**OWNER/ DEVELOPER**

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

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17842, EXP DATE 09/03/18

DATE: 11/21/17  
SIGNATURE: R. JACOB HIKMAT, P.E.



**SCHEDULE**

| H     | D    | d   | S    | POST SIZE |
|-------|------|-----|------|-----------|
| 7.5'  | 6.0' | 16" | 8.0' | 8"x8"     |
| 13.5' | 8.0' | 18" | 6.0' | 6"x12"    |

- NOISE WALL NOTES:**
1. CONCRETE SHALL BE MSHA MIX. NO. 2 (f=3500 PSI)
  2. ALL WOODEN MEMBERS SHALL BE PRESSURE TREATED
  3. PRESSURE TREATMENT SHALL CONSIST OF CCA IN ACCORDANCE WITH AMPS LP-22.
  4. PROVIDE 2" OPENING AT BOTTOM OF NOISE WALL.

Project: 15-003  
Date: NOV. 2017  
Illustration: MMM  
Approval: RJH

Scale: 1"=50'  
Description: [Blank]  
Revisions: [Blank]

**ROBERT'S CROSSING**  
LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
TAX MAP 36, GRID 15, PARCEL 273 & 1009  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
FINAL GRADING AND SEDIMENT CONTROL PLAN

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
7350-B Grace Drive, Columbia, MD 21044  
(410) 997-0296 Tel. (410) 997-0298 Fax

**(B-4-2) STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

**DEFINITION**  
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

**PURPOSE**  
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

**CONDITIONS WHERE PRACTICE APPLIES**  
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

**CRITERIA**

**A. SOIL PREPARATION**

1. **TEMPORARY STABILIZATION**

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. EQUIPMENT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE WORKED WITH RIDGES RUNNING THE LENGTH 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: SOILS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

b. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

c. VENTILATE SURFACE SOIL TO PROMOTE AERATION AND ROOT PENETRATION.

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

e. 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.

f. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF SOIL TESTS.

g. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREA TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEEDING. DISKING AND RAKING ARE NOT PERMITTED 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 OPEN BREATH CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

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

**DEFINITION**  
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

**PURPOSE**  
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

**CONDITIONS WHERE PRACTICE APPLIES**  
TO THE SURFACE OF ALL PERMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**CRITERIA**

**A. SEEDING**

1. **SPECIFICATIONS**

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 MUST HAVE BEEN TESTED WITHIN 18 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 APPLICATION RATES.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

d. SOIL MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DISPERSION OF PHYTO-TOXIC MATERIALS.

2. **APPLICATION**

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

b. HYDROSEEDING: NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

d. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P<sub>2</sub>O<sub>5</sub>(PHOSPHORUS), 200 POUNDS PER ACRE; K<sub>2</sub>O (POTASSIUM), 200 POUNDS PER ACRE.

e. LIME: USE ONLY GRADE AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE) MAY BE APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

f. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

g. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

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

**DEFINITION**  
TO STABILIZE DISTURBED SOIL WITH PERMANENT VEGETATION.

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

**CONDITIONS WHERE PRACTICE APPLIES**  
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

**CRITERIA**

**A. SEED MIXTURES**

1. **GENERAL USE**

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

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

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

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZED (40-0-01) AT 3 1/2 POUNDS PER 1000 SF, (100 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 DESIRE INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES.

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

ii. KENTUCKY BLUEGRASS/PERENIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE SOIL AREAS RECEIVING LOW TO MEDIUM MAINTENANCE IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MANAGEMENT: CERTIFIED PERENIAL RYEGRASS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SF. SHOOTS 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 MIXTURE: FOR USE IN DROUGHT AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MAINTENANCE IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 65 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 PERCENT PER 1000 SF. 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 TRAFFIC AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIES FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATES 1 1/2 TO 3 POUNDS PER 1000 SF.

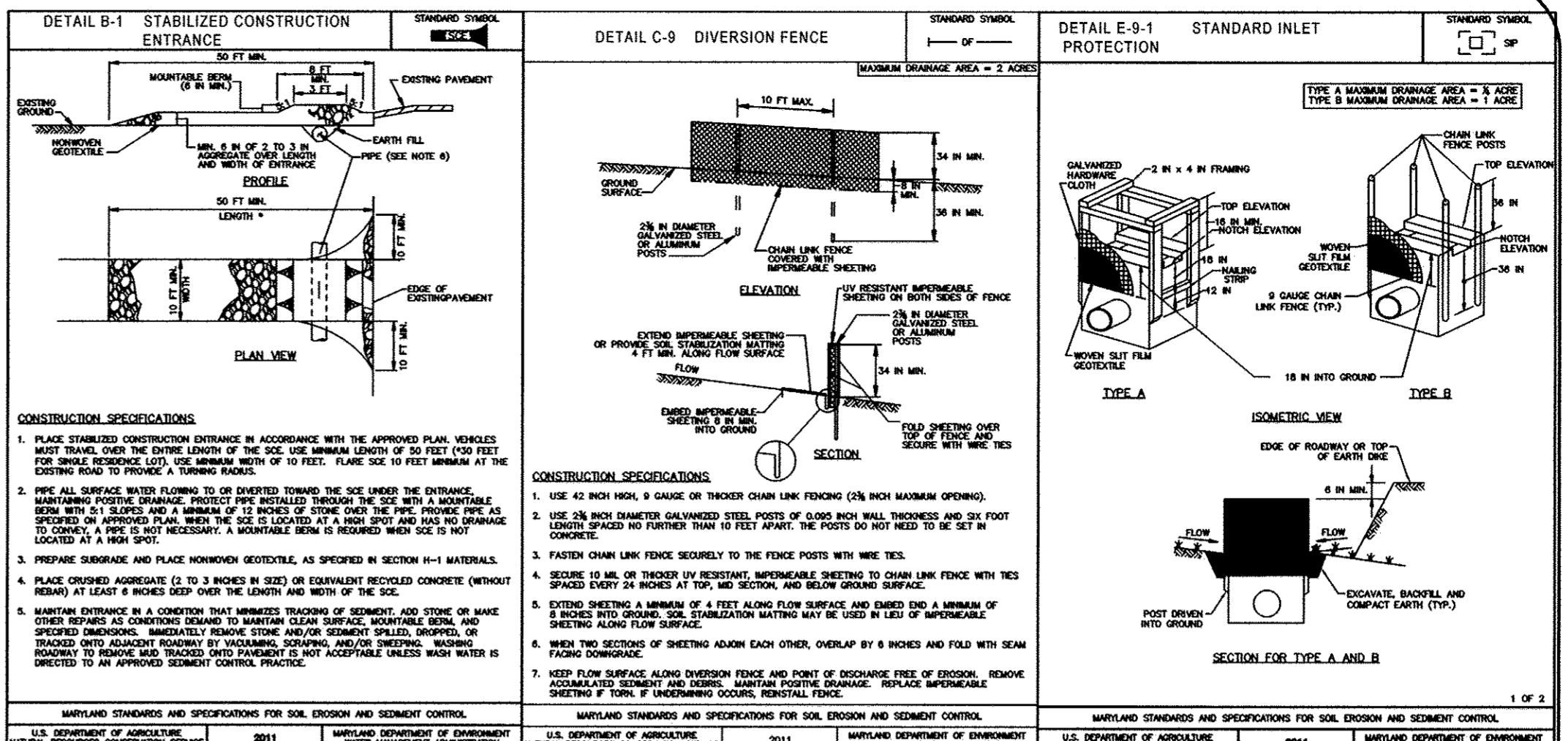
c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURE

WESTERN MD. MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDNESS ZONES: 5B, 6A)  
CENTRAL MD. MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 6B)  
SOUTHERN MD. EASTERN SHORE, MARCH 15 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONE: 7A, 7B)

d. FILL 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 STONE AND DEBRIS OVER 1.5 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASS WILL POSE NO DIFFICULTY.

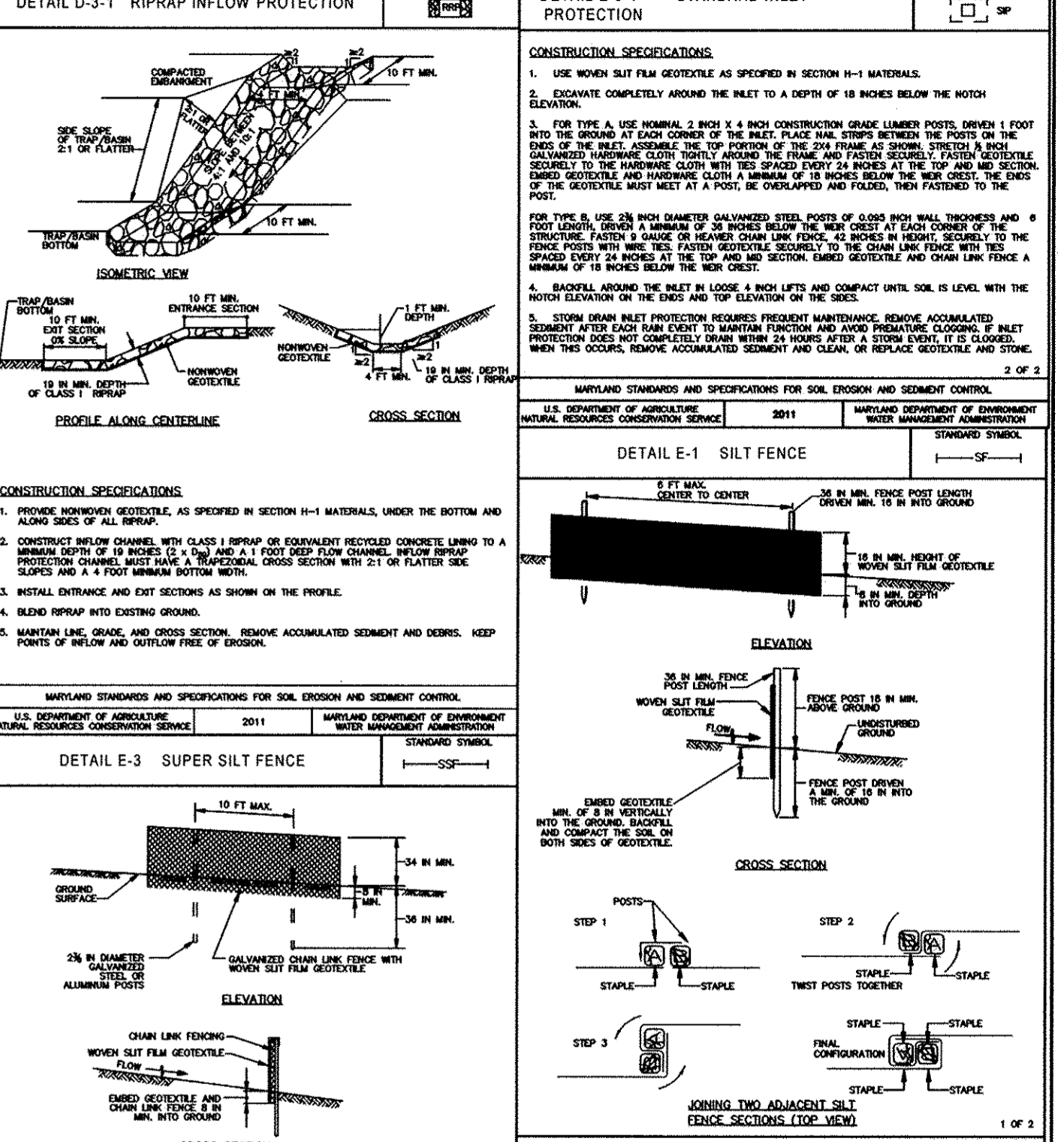
e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY FRESH SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH.

f. 0.5 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASON, OR ON ADVERSE SITES.



**SEQUENCE OF CONSTRUCTION:**

- OBTAIN GRADING PERMIT (1 DAY).
- PERFORM CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERMETER CONTROLS (5 DAYS)
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT LOCATION INDICATED (1 DAY).
- CONSTRUCT DIVERSION FENCE (DFT), SILT FENCES (SF) AND SUPER SILT FENCES (SSF) (5 DAYS)
- CONSTRUCT SEDIMENT TRAPS (10 DAYS).
- CLEAR AND GRUB SITE (5 DAYS).
- CONSTRUCT TEMPORARY DIVERSION BERMS (1 DAY).
- GRADE SITE AS SHOWN ON GRADING AND SEDIMENT CONTROL PLAN - STAGE 1 (10 DAYS).
- CONSTRUCT STORM DRAIN SYSTEM (1-2 TO 1-1 AND 1-4 TO 1-3) WITH DIVERSION PIPES OUTLETTING ONTO SEDIMENT TRAPS; AND 1-5 TO E-5.
- CONSTRUCT PUBLIC ROAD AND USE-IN-COMMON DRIVEWAYS (14 DAYS).
- CONSTRUCT STORM DRAIN SYSTEM (1-6 TO E-5-4) INSTALL INLET PROTECTION FOR 1-5 (5 DAYS).
- CONSTRUCT MICRO-BIOTENTION FACILITY MB #3 (5 DAYS).
- COMPLETE FINAL GRADING AS SHOWN ON THE FINAL SEDIMENT CONTROL PLAN (5 DAYS).
- STABILIZE ALL DISTURBED AREAS (2 DAYS).
- WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, CONVERT SEDIMENT TRAP #1 AND #2 INTO MICRO-BIOTENTION FACILITIES MB #1 AND MB-2.
- WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTOR REMOVE SEDIMENT CONTROL DEVICES (2 DAYS).



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

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

**PURPOSE**  
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

**CONDITIONS WHERE PRACTICE APPLIES**  
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

**CRITERIA**

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A MAXIMUM 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.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVISE SUCH AS AN EARTH DIKE, TEMPORARY SILE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE, FILL AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILE MUST BE STABILIZED WITHIN THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST COVERED WITH IMPERMEABLE LINER.

**MAINTENANCE**  
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN 2:1 RATIO. A 2:1 RATIO IS REQUIRED FOR 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.

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

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

**PURPOSE**  
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURB SOIL.

**CONDITIONS WHERE PRACTICE APPLIES**  
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

**CRITERIA**

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

**TEMPORARY SEEDING FOR SITE STABILIZATION**

| PLANT SPECIES                                     | SEEDING RATE (LB/AC) | SEEDING DEPTH (INCHES) | RECOMMENDED SEEDING DATED BY PLANT HARDNESS ZONE |                                  |                                    |  |
|---|----------------------|------------------------|--|----------------------------------|------------------------------------|--|
|   |                      |                        | 5B AND 6A  | 6B                               | 7A AND 7B                          |  |
| <b>COOL SEASON GRASSES</b>                        |                      |                        |  |                                  |                                    |  |
| ANNUAL RYEGRASS (LULIUM PERENNE SSP. MULTIFLORUM) | 40                   | 1.0                    | MAR 15 TO MAY 31; AUG 1 TO SEP 30                | MAR 1 TO MAY 15; AUG 1 TO OCT 15 | FEB 15 TO APR 30; AUG 15 TO NOV 30 |  |
| BARLEY (HORDEUM VULGARE)                          | 96                   | 2.2                    | MAR 15 TO MAY 31; AUG 1 TO SEP 30                | MAR 1 TO MAY 15; AUG 1 TO OCT 15 | FEB 15 TO APR 30; AUG 15 TO NOV 30 |  |
| OATS (AVENA SATIVA)                               | 72                   | 2.0                    | MAR 15 TO MAY 31; AUG 1 TO SEP 30                | MAR 1 TO MAY 15; AUG 1 TO OCT 15 | FEB 15 TO APR 30; AUG 15 TO NOV 30 |  |
| WHEAT (TRITICUM AESTIVUM)                         | 120                  | 2.8                    | MAR 15 TO MAY 31; AUG 1 TO SEP 30                | MAR 1 TO MAY 15; AUG 1 TO OCT 15 | FEB 15 TO APR 30; AUG 15 TO NOV 30 |  |
| CERIAL RYE (SECALE ITALICA)                       | 112                  | 2.8                    | MAR 15 TO MAY 31; AUG 1 TO SEP 30                | MAR 1 TO MAY 15; AUG 1 TO OCT 15 | FEB 15 TO APR 30; AUG 15 TO DEC 15 |  |
| <b>WARM SEASON GRASSES</b>                        |                      |                        |  |                                  |                                    |  |
| FOXTAIL MILLET (SETARIA ITALICA)                  | 30                   | 0.7                    | JUN 1 TO JUL 31                                  | MAY 16 TO JUL 31                 | MAY 1 TO AUG 14                    |  |
| PEARL MILLET (PENNISETUM GLAUCUM)                 | 20                   | 0.5                    | JUN 1 TO JUL 31                                  | MAY 16 TO JUL 31                 | MAY 1 TO AUG 14                    |  |

**PERMANENT SEEDING SUMMARY**

| NO. | SPECIES     | APPLICATION RATE (LB/AC) | SEEDING DATES                   | SEEDING DEPTHS | FERTILIZER RATE (10-20-20)       |                                  |                                     | LIME RATE  |
|-----|-------------|--------------------------|---------------------------------|----------------|----------------------------------|----------------------------------|-------------------------------------|--|
|     |             |                          |                                 |                | N                                | P <sub>2</sub> O <sub>5</sub>    | K <sub>2</sub> O                    |  |
| 1   | TALL FESCUE | 100                      | MARCH 1-MAY 15<br>AUG 15-OCT 15 | 1/4"-1/2"      | 45 LBS. PER ACRE (1 LB./1000 SF) | 90 LBS. PER ACRE (2 LB./1000 SF) | 90 LBS. PER ACRE (2 TONS / 1000 SF) | MIXTURES 1, 4-7, 9 AND 10 FROM TABLE B.3 OF THE 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MAY BE USED. |

**ENGINEER'S CERTIFICATE**

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

11/7/17

DATE

12/11/2017

DATE

**DEVELOPER'S CERTIFICATE**

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

11/7/17

DATE

4/21/17

DATE

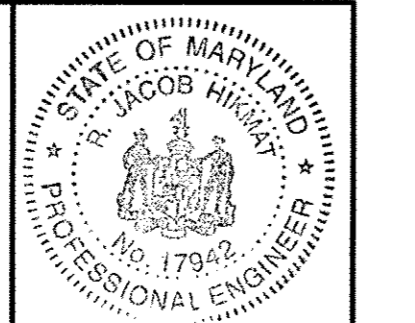
**STANDARD SEDIMENT CONTROL NOTES**

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:  
A. PRIOR TO THE START OF EARTH DISTURBANCE.  
B. UPON COMPLETION OF THE INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.  
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.  
D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERMETER CONTROLS, DIKES, SWALES, DITCHES, PERMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1). TEMPORARY STABILIZATION SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. SLOPES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHMARKED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
- SITE ANALYSIS:  
TOTAL AREA OF SITE: 5.79 ACRES  
AREA DISTURBED: 0.60 ACRES  
AREA TO BE ROOFED OR PAVED: 0.60 ACRES  
AREA TO BE VEGETATIVE STABILIZED: 4.46 ACRES  
TOTAL CUT: -1,250 CU. YDS.  
TOTAL FILL: 1,850 CU. YDS.  
OFFSITE WASTE/BORROW AREA LOCATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17949, EXP DATE 09/03/18

11/7/17

DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

12-4-18

DATE

1-2-18

DATE

project date NOV. 2017  
15-003 illustration MAM approval RHH

scale 1"=50'

description

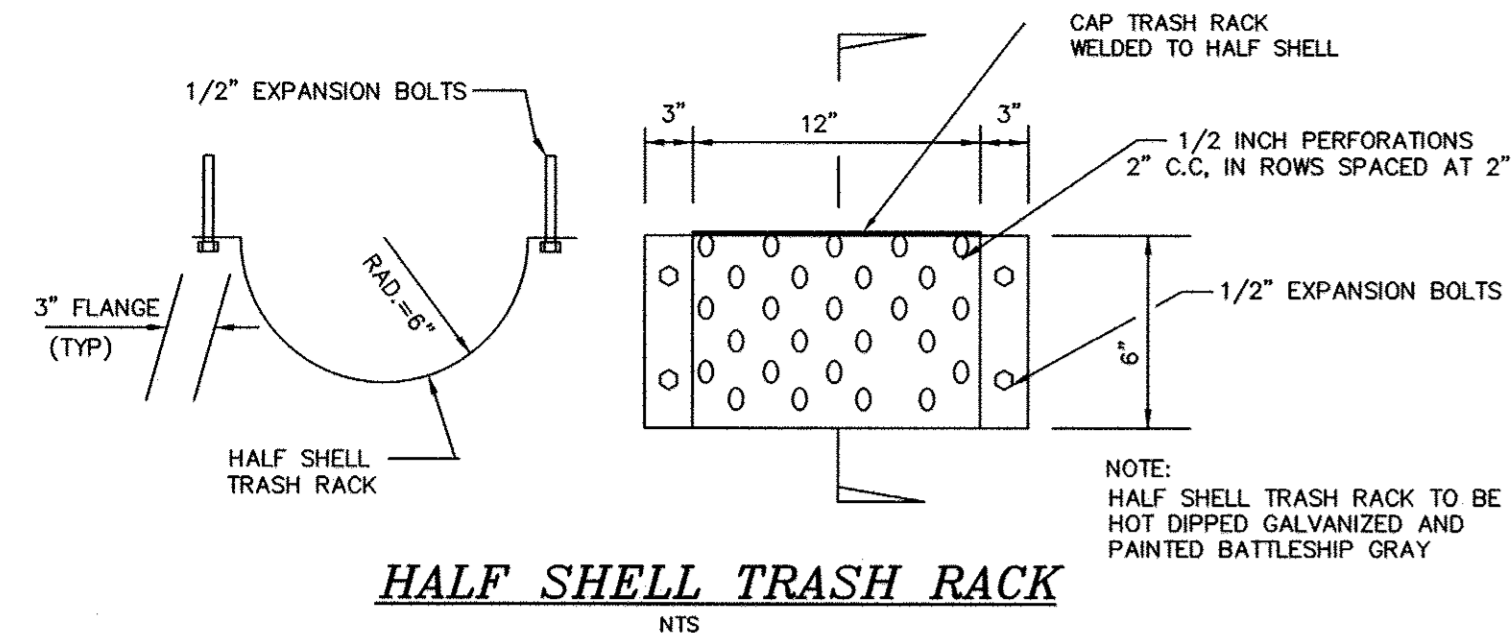
NO

ROBERT'S CROSSING  
LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
TAX MAP 38, GRID 15, PARCEL 273 & 1009  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SEDIMENT CONTROL NOTES AND DETAILS

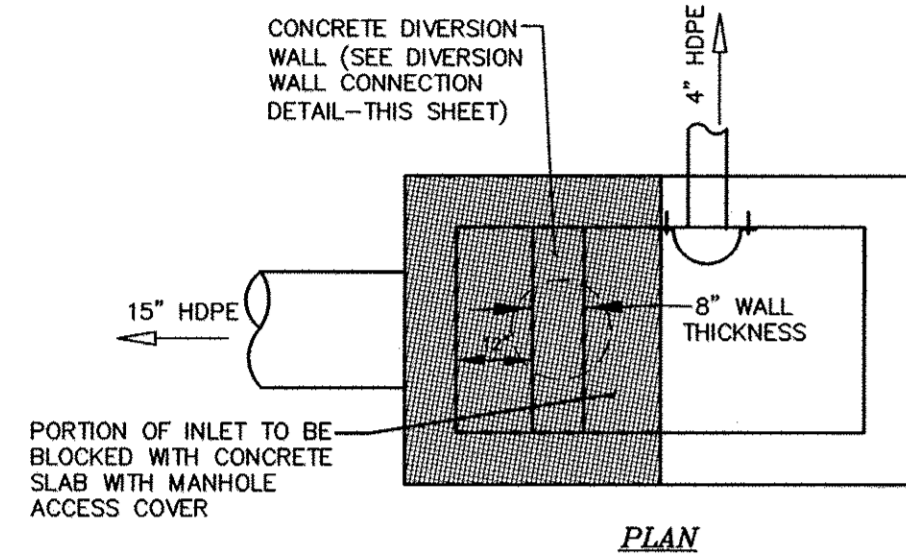
MILDENBERG, BOENDER & ASSOC., INC.  
Planners Surveyors  
7850-B Grace Drive, Columbia, MD 21044  
(410) 997-0296 Fax: (410) 997-0298 Fax

5 OF 9

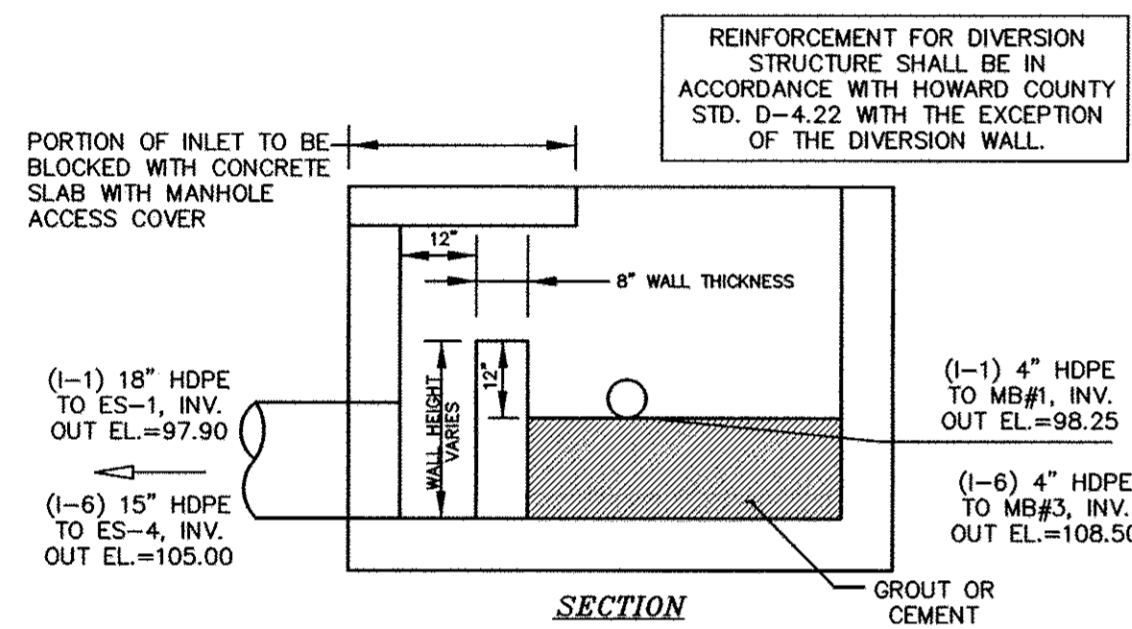
F-17-98



**HALF SHELL TRASH RACK**



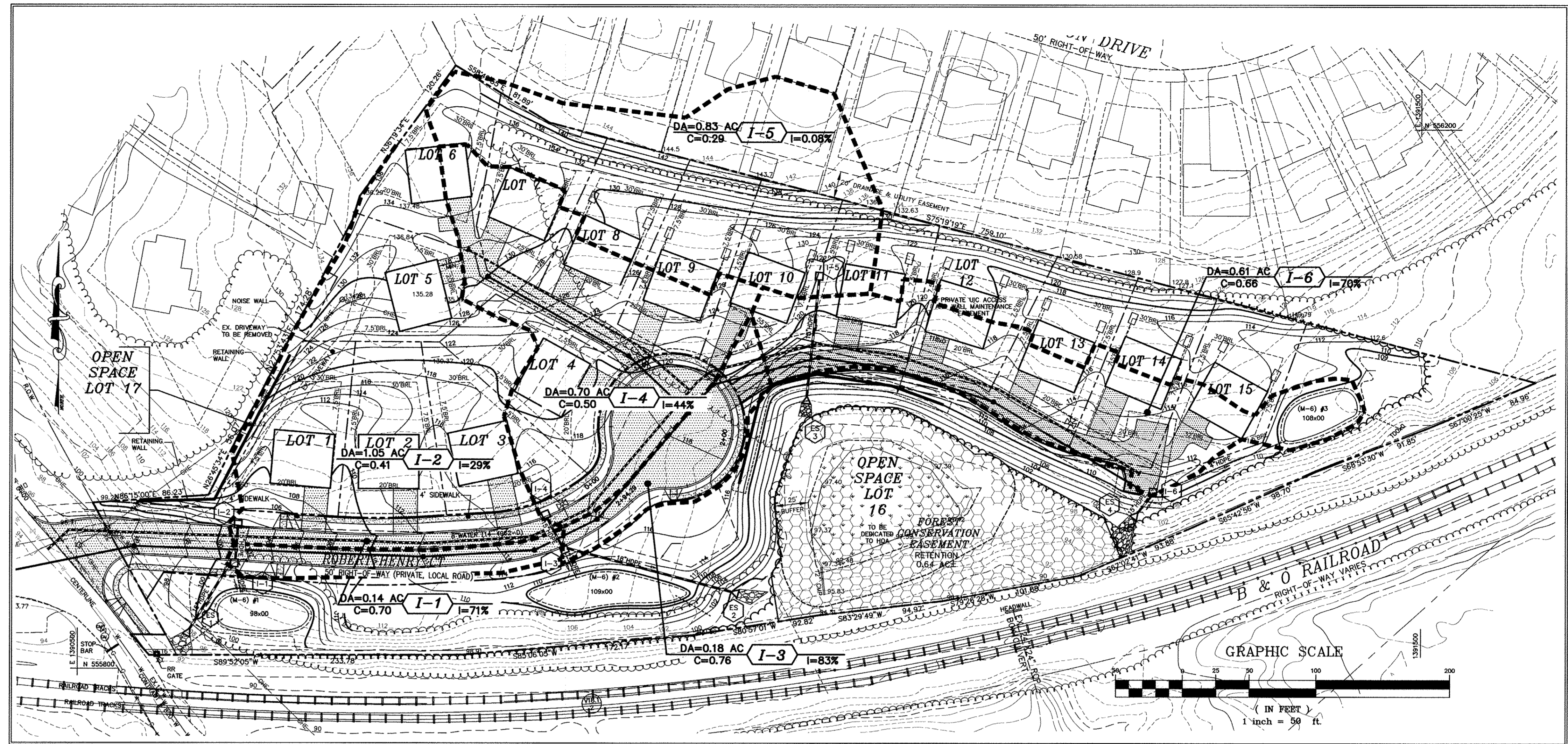
**PLAN**



**SECTION**

**DIVERSION STRUCTURE DETAIL: I-3 AND I-6**

NOT TO SCALE



**STORM DRAIN DRAINAGE AREA MAP**

**PIPE SCHEDULE**

| PIPE SIZE | QUANTITY |
|-----------|----------|
| 15" HDPE  | 173 L.F. |
| 18" HDPE  | 188 L.F. |

**STRUCTURE SCHEDULE**

| NO.  | LOCATION*                                     | TOP**  | INV. IN | INV. OUT | COMMENTS                                      |
|------|---|--------|---------|----------|---|
| ES-1 | N 555,838.25 E 1,390,579.79                   | -      | 96.00   | -        | 18" HDPE END SECTION                          |
| ES-2 | N 555,857.23 E 1,390,978.15                   | -      | 98.50   | -        | 18" HDPE END SECTION                          |
| ES-3 | N 556,001.56 E 1,391,042.98                   | -      | 102.00  | -        | 15" HDPE END SECTION                          |
| ES-4 | N 555,918.95 E 1,391,284.36                   | -      | 100.00  | -        | 15" HDPE END SECTION                          |
| I-1  | ROBERT HENRY CT. STA. 1+50, OFFSET 12.43' LT. | 101.36 | 98.25   | 98.25    | TYPE A-5 INLET (HO. CO. STD D-4.01)           |
| I-2  | ROBERT HENRY CT. STA. 1+50, OFFSET 12.43' LT. | 101.36 | -       | 98.60    | TYPE A-10 INLET (HO. CO. STD D-4.03)          |
| I-3  | ROBERT HENRY CT. STA. 3+87, OFFSET 12.43' LT. | 115.18 | 111.86  | 111.51   | TYPE A-10 INLET (HO. CO. STD D-4.03)          |
| I-4  | ROBERT HENRY CT. STA. 3+87, OFFSET 12.43' LT. | 115.18 | -       | 112.16   | TYPE A-10 INLET (HO. CO. STD D-4.03)          |
| I-5  | N 556,090.90 E 1,391,052.01                   | 121.50 | -       | 115.60   | YARD INLET (HO. CO. STD D-4.14)               |
| I-6  | N 555,930.21 E 1,391,299.30                   | 111.00 | -       | 105.00   | TYPE S COMBINATION INLET (HO. CO. STD D-4.32) |

- NOTES: 1. STATIONS GIVEN TO CENTERLINE FACE OF INLET AT TOP OF CURB FOR INLETS LOCATED WITHIN THE ROAD RIGHT-OF-WAY.  
 2. STATIONS FOR YARD INLETS TO CL OF INLET.  
 4. LOCATION OF END SECTION GIVEN TO THE CENTERLINE OF PIPE AT THE CONNECTION OF THE STORM DRAIN PIPE TO THE END SECTION.  
 5. ELEVATIONS MEASURED TO CENTER OF ALL INLETS.

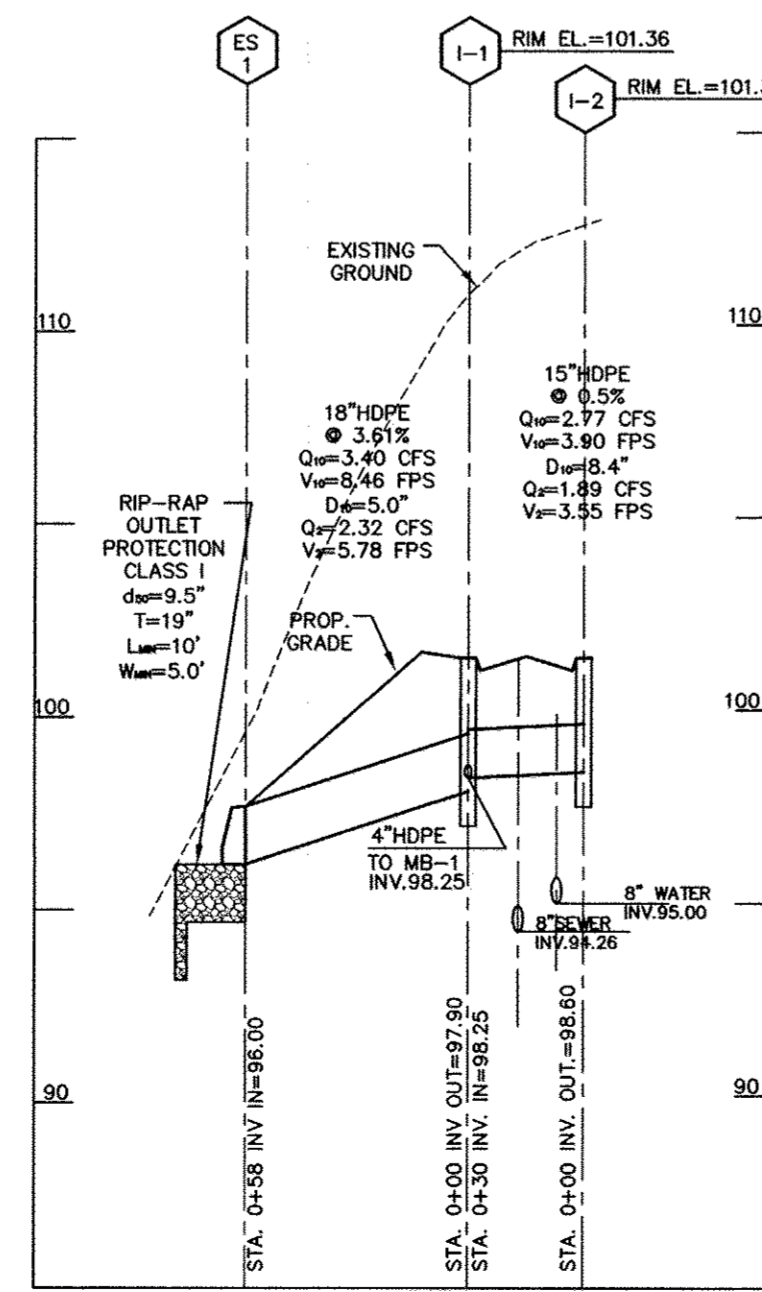
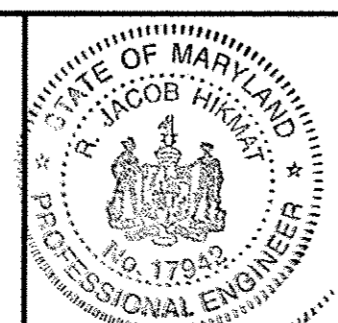
**OWNER/ DEVELOPER**

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

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 12/12/2017  
 CHIEF, BUREAU OF HIGHWAYS DATE

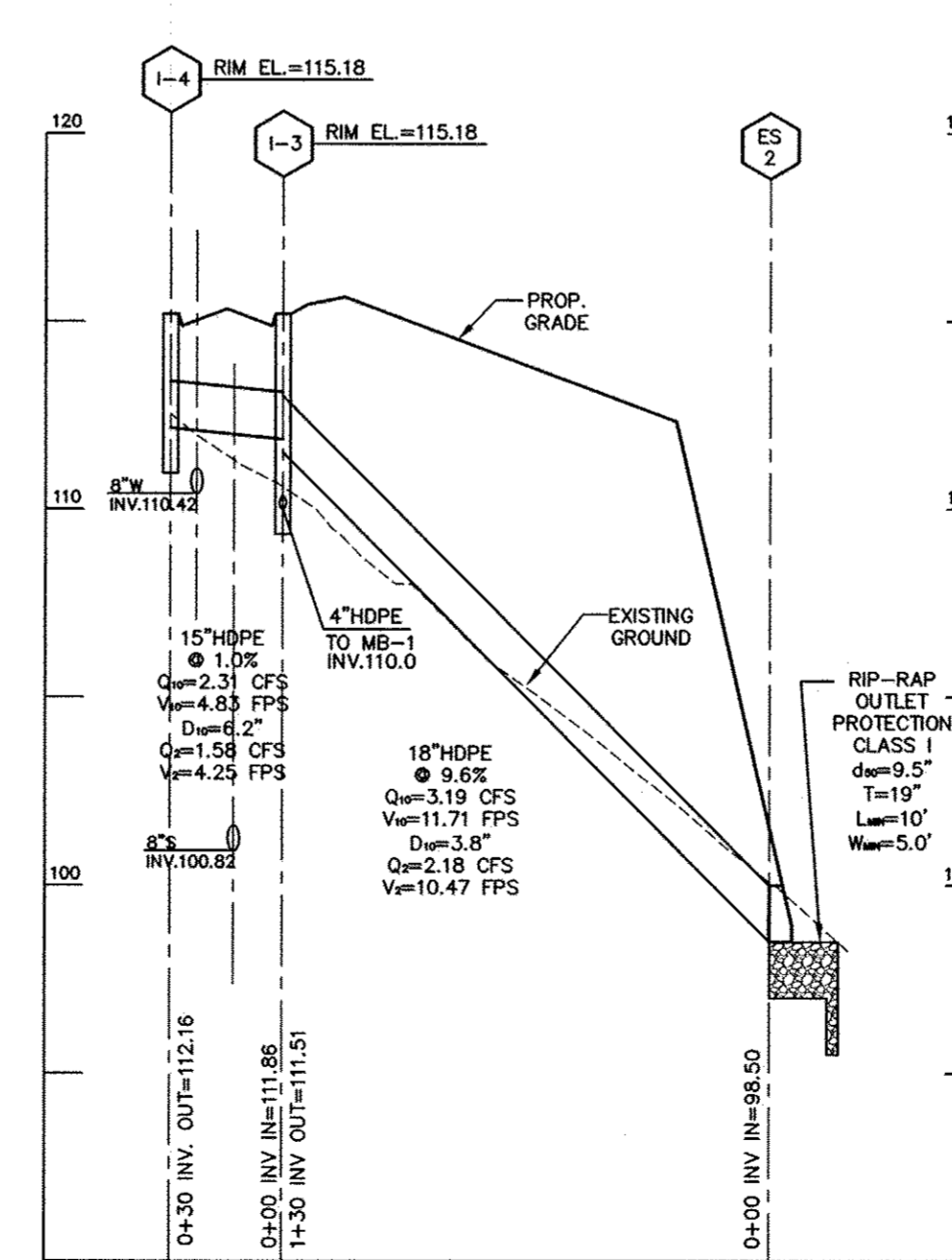
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 12-22-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 1-2-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17947, EXP DATE 09/03/18  
 [Signature] 11/7/17  
 R. JACOB HIKMAT P.E. DATE:



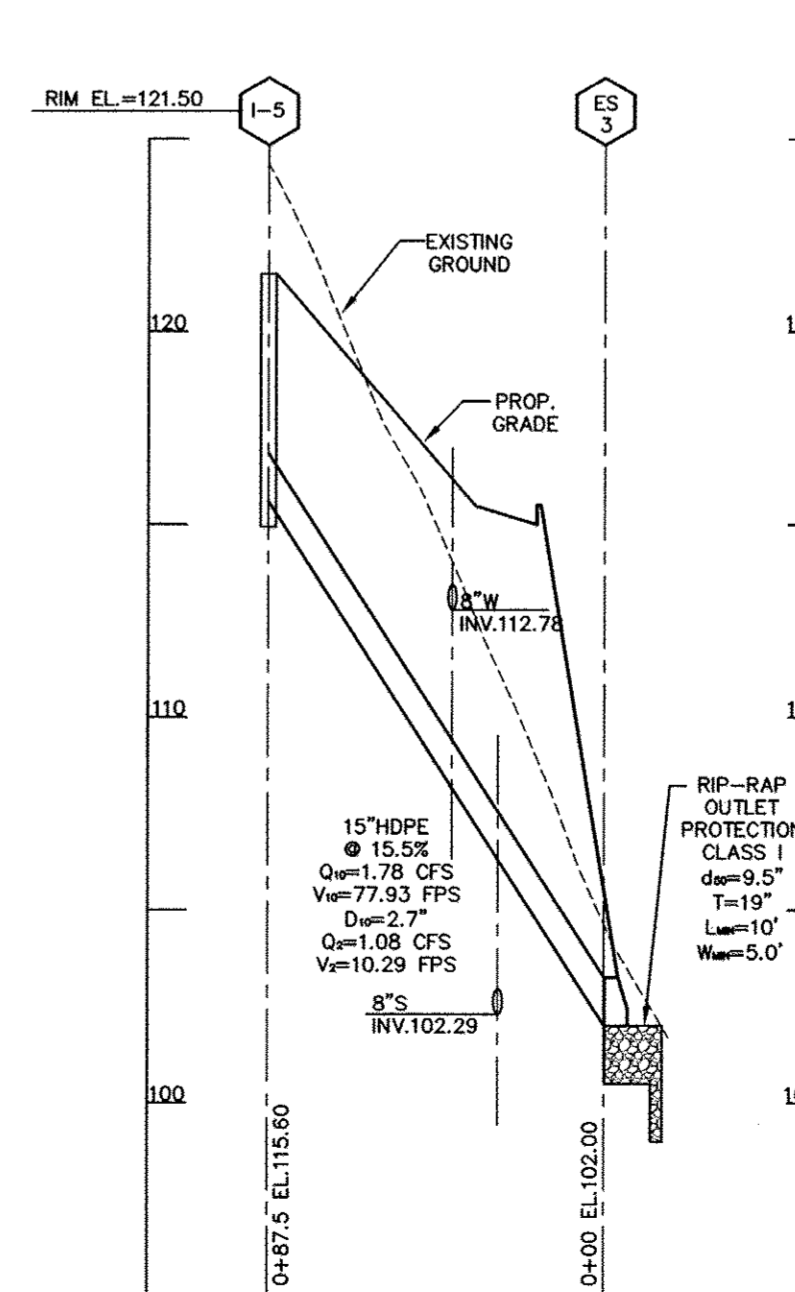
**STORM DRAIN PROFILE (I-2 TO ES-1)**

SCALE: HOR. 1"=50'  
 VER. 1"=5'



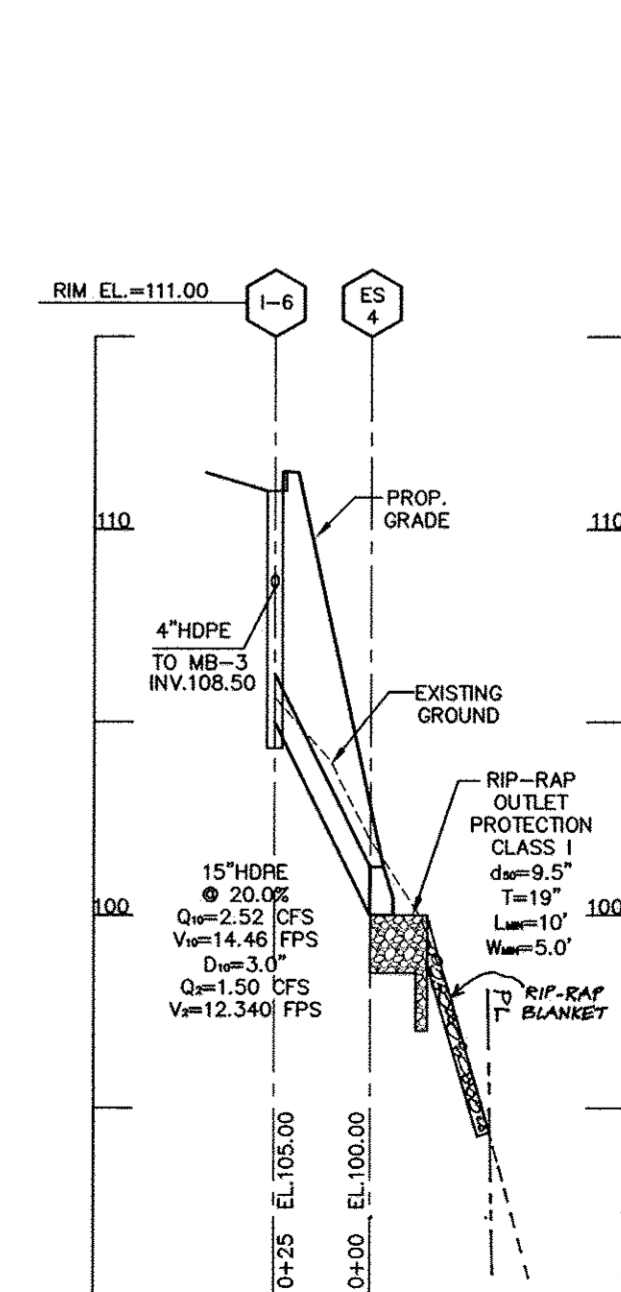
**STORM DRAIN PROFILE (I-4 TO ES-2)**

SCALE: HOR. 1"=50'  
 VER. 1"=5'



**STORM DRAIN PROFILE (I-5 TO ES-3)**

SCALE: HOR. 1"=50'  
 VER. 1"=5'



**STORM DRAIN PROFILE (I-6 TO ES-4)**

SCALE: HOR. 1"=50'  
 VER. 1"=5'

Please Use Std. Detail D-4-1 2011 Std. + Specs for Rock outlet protection

|              |           |
|--------------|-----------|
| date         | NOV. 2017 |
| project      | 15-003    |
| illustration | MMM       |
| scale        | 1"=60'    |
| approval     | MMM       |
| revisions    | R/JH      |

|             |  |
|-------------|--|
| description |  |
| revisions   |  |
| no.         |  |
| date        |  |

**ROBERT'S CROSSING**  
 LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DRAINAGE AREA MAP, STORM DRAIN PROFILES AND DETAILS

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 7550-B Grace Drive, Columbia, MD 21044  
 (410) 997-0236 Tel. (410) 997-0238 Fax

**SOILS TABLE**

| SYMBOL | RATING | NAME                                       | K FACTOR | MAP # | COMMENTS        |
|--------|--------|--|----------|-------|-----------------|
| Rsc    | (C)    | RUSSETT FINE SANDY LOAM, 5-10% SLOPES.     | .24      | 20    | ---             |
| Rsd    | (C)    | RUSSETT FINE SANDY LOAM, 10-15% SLOPES.    | .24      | 20    | ---             |
| Sd     | (B)    | SASSAFRAS & CROOM SOILS, 10-15% SLOPES     | .35      | 20    | HIGHLY ERODABLE |
| Se     | (B)    | SASSAFRAS & CROOM SOILS, 15-25% SLOPES     | .35      | 20    | HIGHLY ERODABLE |
| UcB    | (D)    | URBAN LAND-CHILLUM-BELTVILLE COMPLEX, 0-5% | ---      | 20    | ---             |
| CeB    | (B)    | CHILLUM LOAM 2-5% SLOPES                   | ---      | 20    | ---             |

**SITE ANALYSIS DATA:**

1. AREA OF THE SITE = 5.79 AC ±
2. AREA OF WETLANDS AND ITS BUFFERS = 0.44 AC ±
3. AREA OF FLOODPLAIN = 0
4. AREA OF EXISTING FOREST = 3.0 AC ±
5. AREA OF STREAM BUFFER = 0
6. AREA OF STEEP SLOPES 15% OR GREATER = 1.84 AC ±; 80,157 S.F.
7. AREA OF STEEP SLOPES 25% OR GREATER = 0.31 AC ±; 13,617 S.F.
8. AREA OF ERODABLE SOILS = 4.2 AC ±
9. LIMIT OF DISTURBANCE AREA = 4.8 AC ±
10. 15 NEW SINGLE FAMILY DETACHED LOTS ARE PROPOSED.
11. GREEN OPEN AREA (PERVIOUS) = 4.41 AC ±
12. PROPOSED IMPERVIOUS AREA = 1.38 AC ±

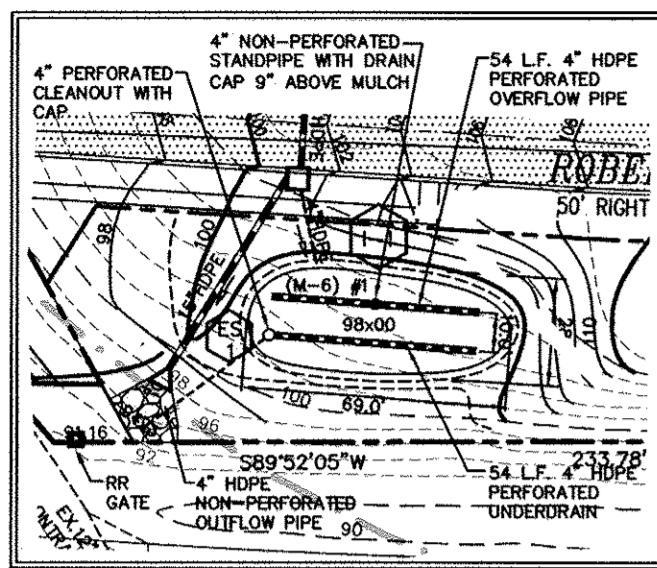
**SWM PRACTICES SCHEDULE**

| PROPOSED PRACTICES | AREA                           | REQUIRED ESDV | PROVIDED ESDV |
|--------------------|--------------------------------|---------------|---------------|
| MB#1               | LOT: 1-3, P/O LOT 4-6, P/O ROW | 2,116 CF      | 2,265 CF      |
| MB#2               | P/O LOT 4-10, P/O ROW          | 2,457 CF      | 3,115 CF      |
| MB#3               | P/O LOT 8-15                   | 1,460 CF      | 1,965 CF      |
| DRYWELLS           | P/O LOT 8-15                   | 2,367 C.F.    | 1,200 C.F.    |
| TOTAL              |                                | 8,400 C.F.    | 8,545 C.F.    |

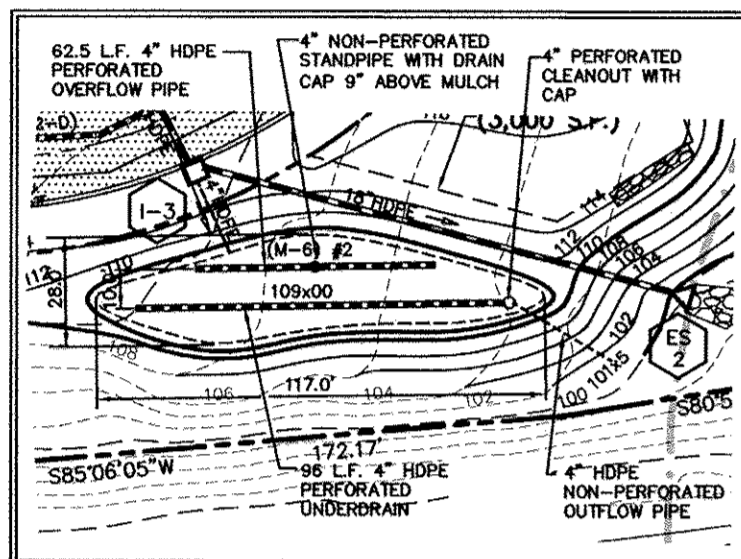
\* BY DESIGNING ESDV MEASURES FOR "WOODS IN GOOD CONDITION", WQ, R<sub>0</sub>, AND C<sub>p</sub> REQUIREMENTS ARE MET.  
 \* STORMWATER MANAGEMENT QUANTITY CONTROL FOR THE 10- AND 100-YEAR (Q<sub>10</sub>, Q<sub>100</sub>) STORM EVENTS IS NOT REQUIRED.

**LEGEND**

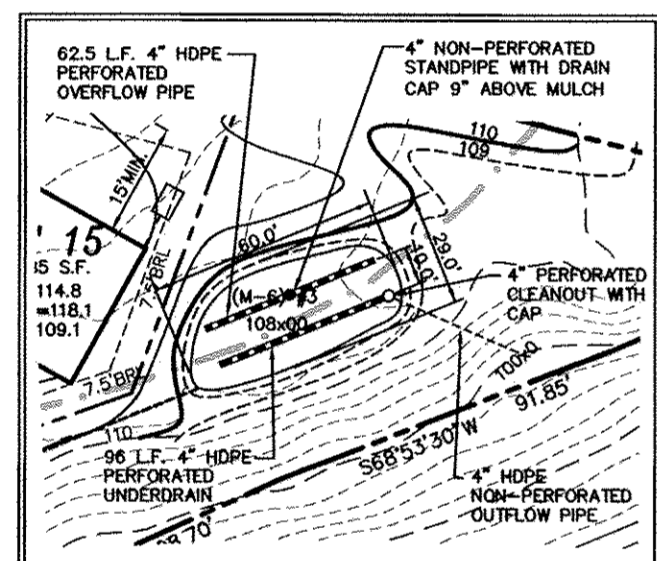
- DRY-WELL (M-5)
- EX. TREE LINE
- SPECIMEN TREE TO BE REMOVED
- 8" SEWER
- 8" SEWER MAIN
- 8" MANHOLE
- 8" WATER MAIN
- PR. STORM DRAIN PIPE
- PR. STORM DRAIN INLET
- AREA TREATED BY
- ▨ AREA OF WETLANDS
- ▩ AREA OF SLOPES GREATER THAN 25%
- ▧ AREA OF SLOPES 15-24.9%
- ▦ AREA OF FOREST CONSERVATION EASEMENT
- DRY WELLS (M-5)
- ▨ AREA TREATED BY MICRO-BIO. (M-6)



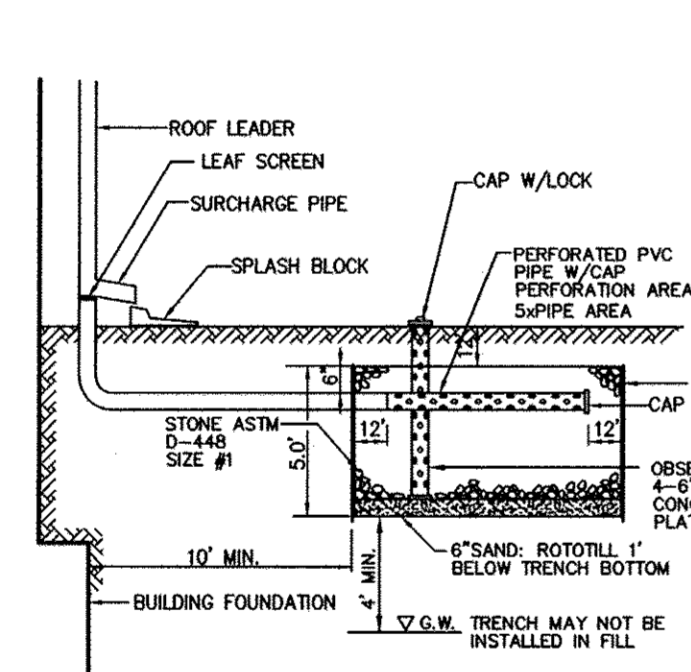
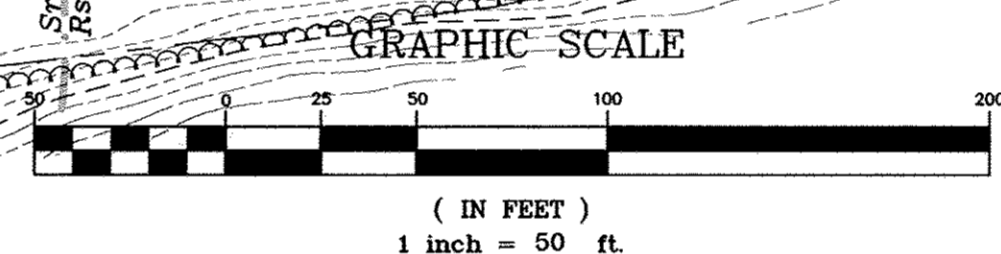
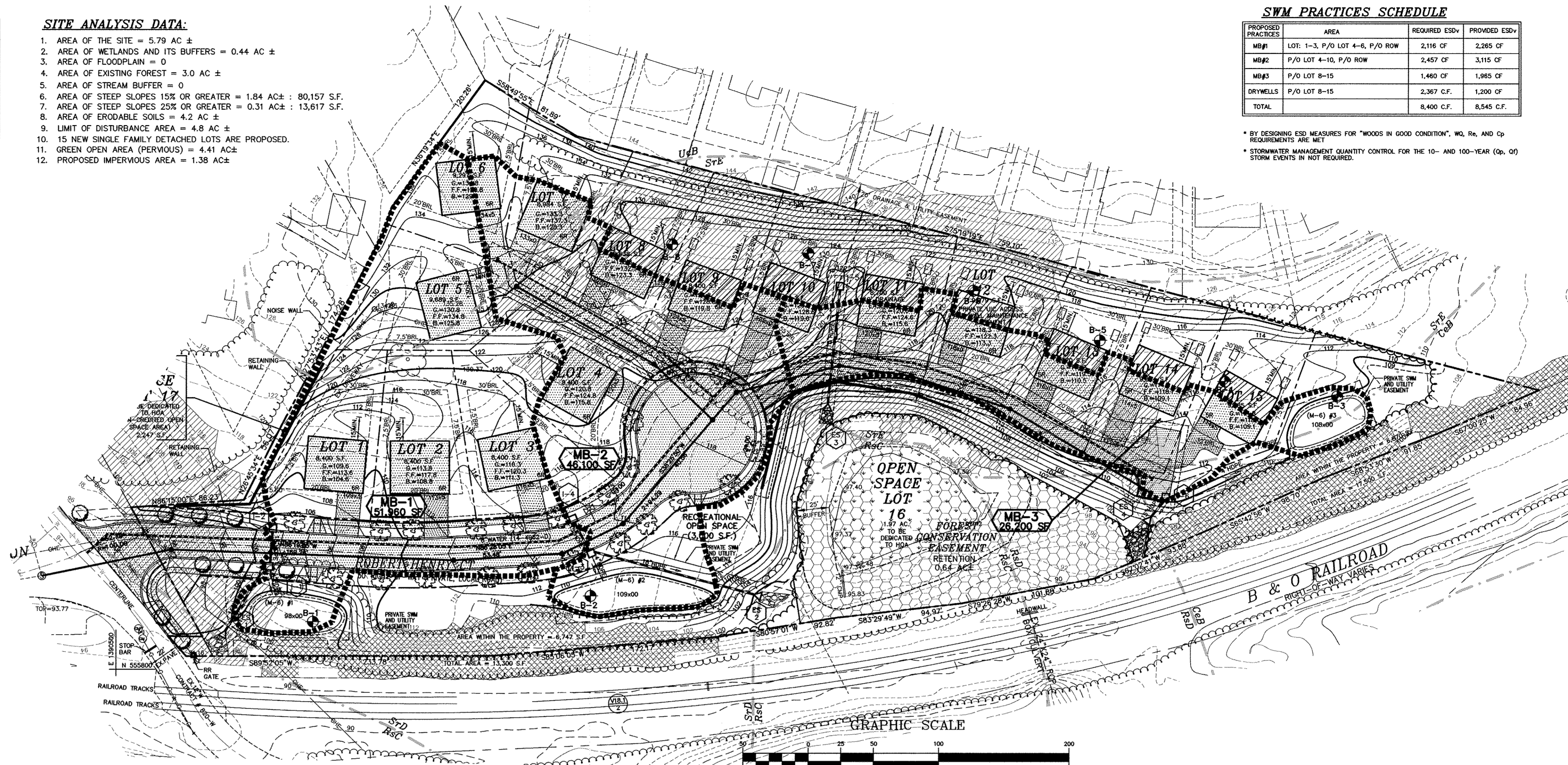
**MICRO-BIORETENTION #1 PLAN**  
SCALE: 1"=50'



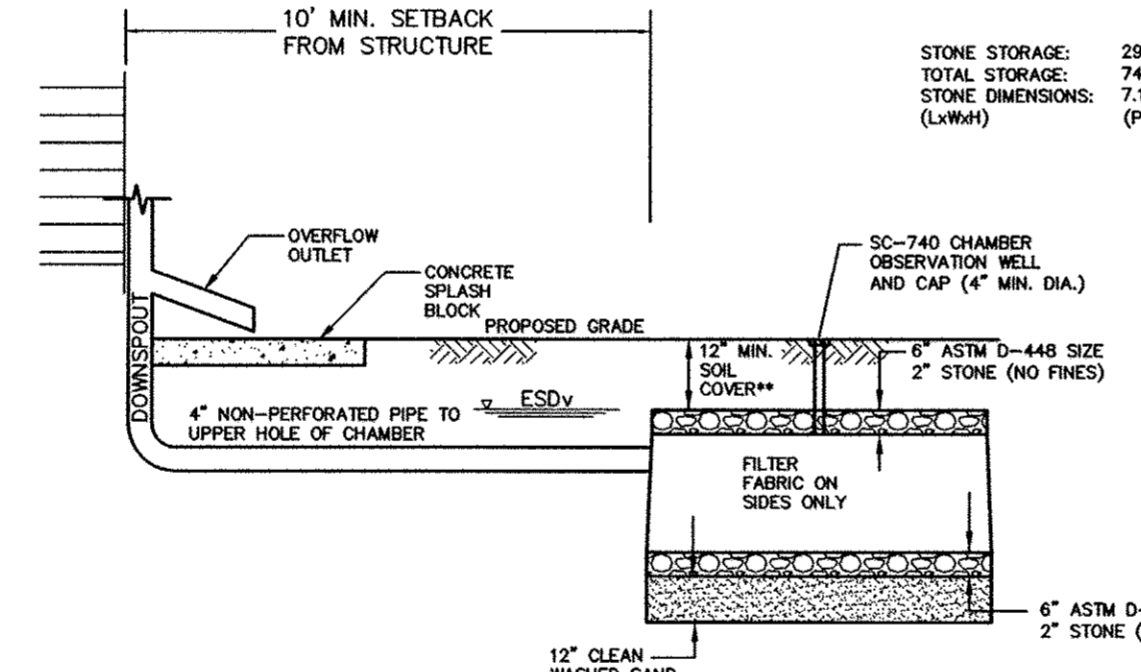
**MICRO-BIORETENTION #2 PLAN**  
SCALE: 1"=50'



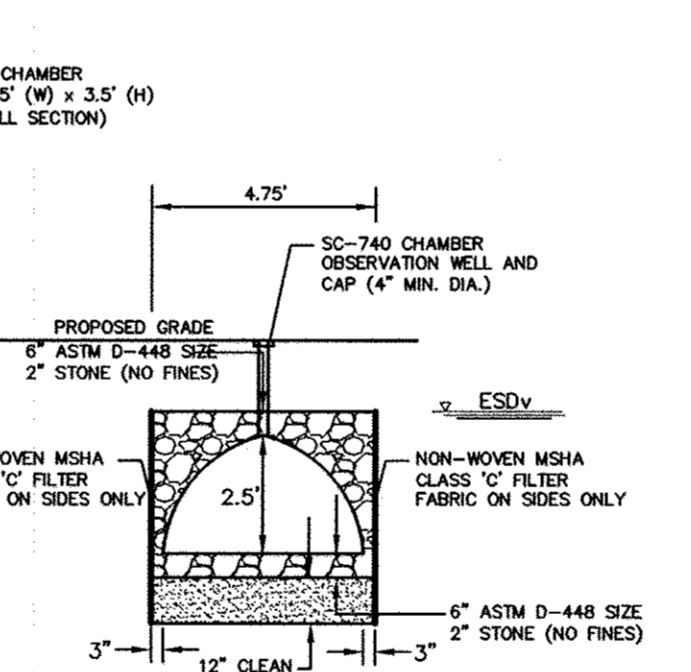
**MICRO-BIORETENTION #3 PLAN**  
SCALE: 1"=50'



**DRYWELL TYP. DETAIL**  
NOT TO SCALE



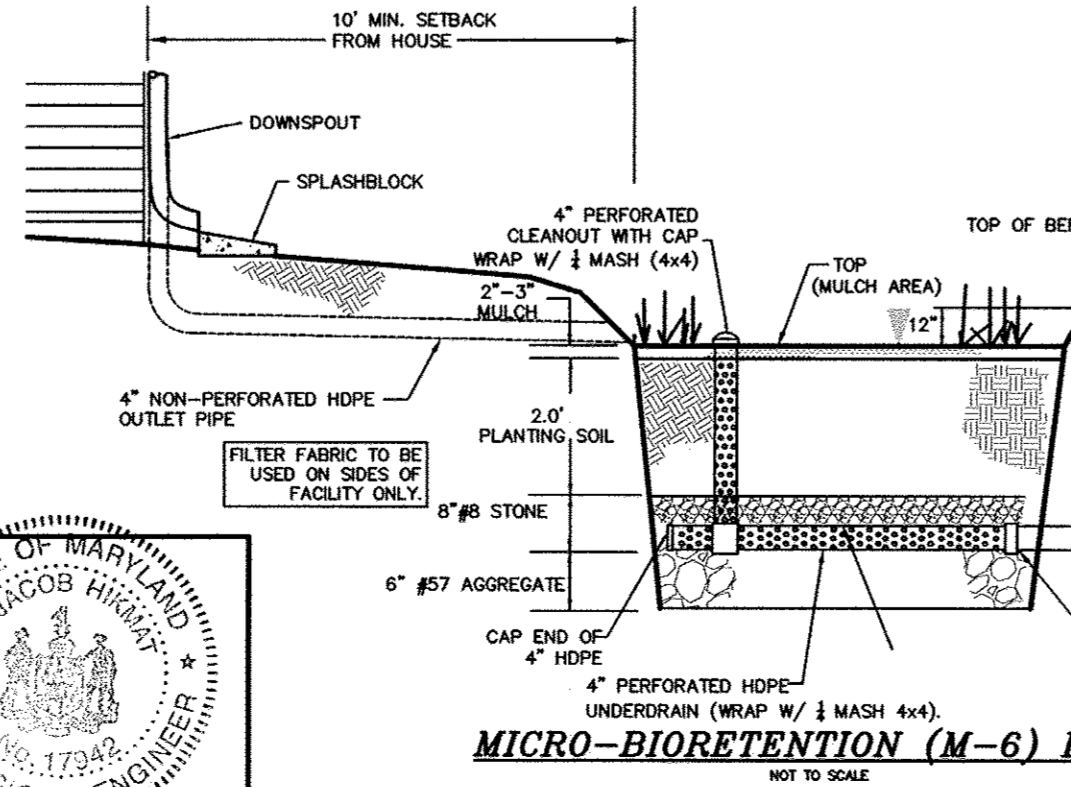
**MODIFIED DRYWELL (M-5) DETAIL**  
NOT TO SCALE



**MICRO-BIORETENTION (M-6) SECTION**  
NOT TO SCALE

**MICRO-BIORETENTION SCHEDULE**

| FACILITY | TOP EL. | TOP OF BERM | INV. IN | INV. OUT | AREA AT TOP EL. |
|----------|---------|-------------|---------|----------|-----------------|
| MB #1    | 97.50   | 98.50       | 94.58   | 94.30    | 1,500 SF        |
| MB #2    | 109.00  | 110.00      | 106.08  | 101.50   | 2,050 SF        |
| MB #3    | 108.00  | 109.00      | 105.08  | 100.00   | 1,300 SF        |



**MICRO-BIORETENTION (M-6) DETAIL**  
NOT TO SCALE

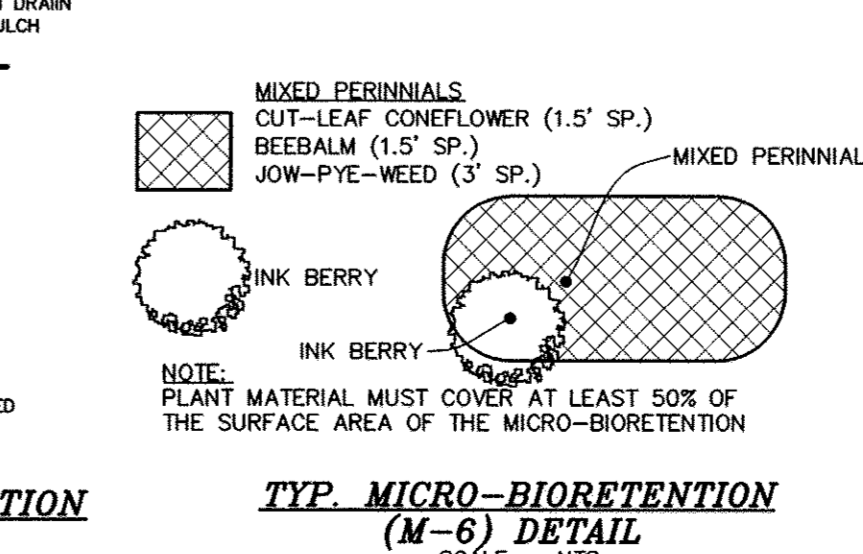
**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)**

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO ENSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- 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 INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)**

ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF 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. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.

SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



**TYP. MICRO-BIORETENTION (M-6) DETAIL**  
SCALE: NTS

**GE&T CONSULTANTS, INC.**  
 P.O. Box 2071  
 Columbia, MD 21045-2071  
 Phone: (410) 381-6330  
 Fax: (410) 381-1064  
 e-mail: mmain@geandt.com

November 15, 2015  
 Mildenberg, Boender & Associates, Inc.  
 7350-B Grace Drive  
 Columbia, Maryland 21044  
 Attn: Mr. Maysa M. Mildenberg  
 Vice President  
 Ref: Limited Subsurface Exploration  
 Proposed Developments  
 Robert's Crossing  
 6467 Hanover Road  
 Ellicott City  
 Tax Map 38, Grid 15, Parcel 273 & 1009  
 Howard County, Maryland  
 GE&T Project No. G-244

On November 13, 2015, GE&T Consultants, Inc. utilized a Geoprobe (6620 DT) to bore eight (8) soil borings at the locations shown on the attached Borings Location Map. The purpose of the borings was to evaluate the presence/absence of bedrock and local geology at the locations shown. The number, location, and depth of the borings were determined by the Civil Engineer and the borings were staked-out in the field by others.

Our field observations are summarized in Table 1 below:

| Boring No. | Depth to Groundwater (ft) | Depth to Refusal (ft) | Boring Termination Depth (ft) | Remarks |
|------------|---------------------------|-----------------------|-------------------------------|---------|
| B-1        | N/A                       | N/A                   | 16.0                          |         |
| B-2        | N/A                       | N/A                   | 7.0                           |         |
| B-3        | N/A                       | N/A                   | 12.0                          |         |
| B-4        | N/A                       | N/A                   | 18.0                          |         |
| B-5        | N/A                       | N/A                   | 18.0                          |         |
| B-6        | N/A                       | N/A                   | 14.0                          |         |
| B-7        | N/A                       | N/A                   | 20.0                          |         |
| B-8        | N/A                       | N/A                   | 20.0                          |         |

Note: All depths are below existing site grades.  
 It should be noted that the actual level of groundwater and the amount and level of perched water should be anticipated to fluctuate through the year, depending on variations in precipitation, surface run-off, infiltration, site topography, drainage, and other factors not evident at the time of our exploration. GE&T can not be responsible for changes in groundwater conditions at the site due to seasonal variations and changes caused by other factors such as grading operations at the site.

GE&T appreciates the opportunity to provide this geotechnical engineering service to you. Should you have any questions regarding this letter report, or require additional services, please feel free to contact our office.  
 Sincerely,  
 GE&T Consultants, Inc.  
 Mousir Aboukham, PE

**ENGINEER'S CERTIFICATE**

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE OF ENGINEER: R. JACOB HIKMAT, PE  
 DATE: 11/19/17

**DEVELOPER'S CERTIFICATE**

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. HOWARD SOIL CONSERVATION DISTRICT IS AUTHORIZED TO CONDUCT PERIODIC ON-SITE INSPECTION.  
 SIGNATURE OF DEVELOPER: W.M. SCOTT GODFREY  
 DATE: 11/07/17

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

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 12/12/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 12-22-17  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 1-2-18

**OWNER**  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/18  
 SIGNATURE: R. JACOB HIKMAT, PE  
 DATE: 11/19/17



|              |              |  |
|--------------|--------------|--|
| Project      | date         | NOV. 2017                              |
| Illustration | illustration | MM                                     |
| scale        | scale        | 1"=50'                                 |
| description  | description  | STORMWATER MANAGEMENT PLAN AND DETAILS |
| revisions    | revisions    |  |

|              |              |  |
|--------------|--------------|--|
| Project      | date         | NOV. 2017                              |
| Illustration | illustration | MM                                     |
| scale        | scale        | 1"=50'                                 |
| description  | description  | STORMWATER MANAGEMENT PLAN AND DETAILS |
| revisions    | revisions    |  |

**ROBERT'S CROSSING**  
 LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 HOWARD COUNTY  
 FIRST ELECTION DISTRICT  
 STORMWATER MANAGEMENT PLAN AND DETAILS

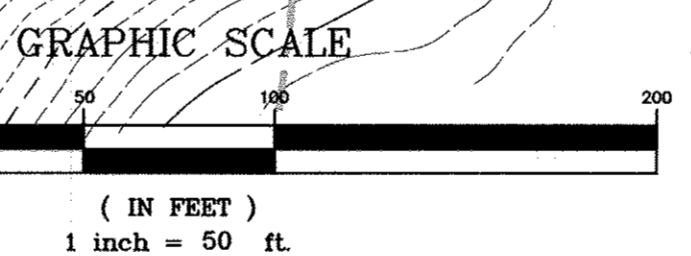
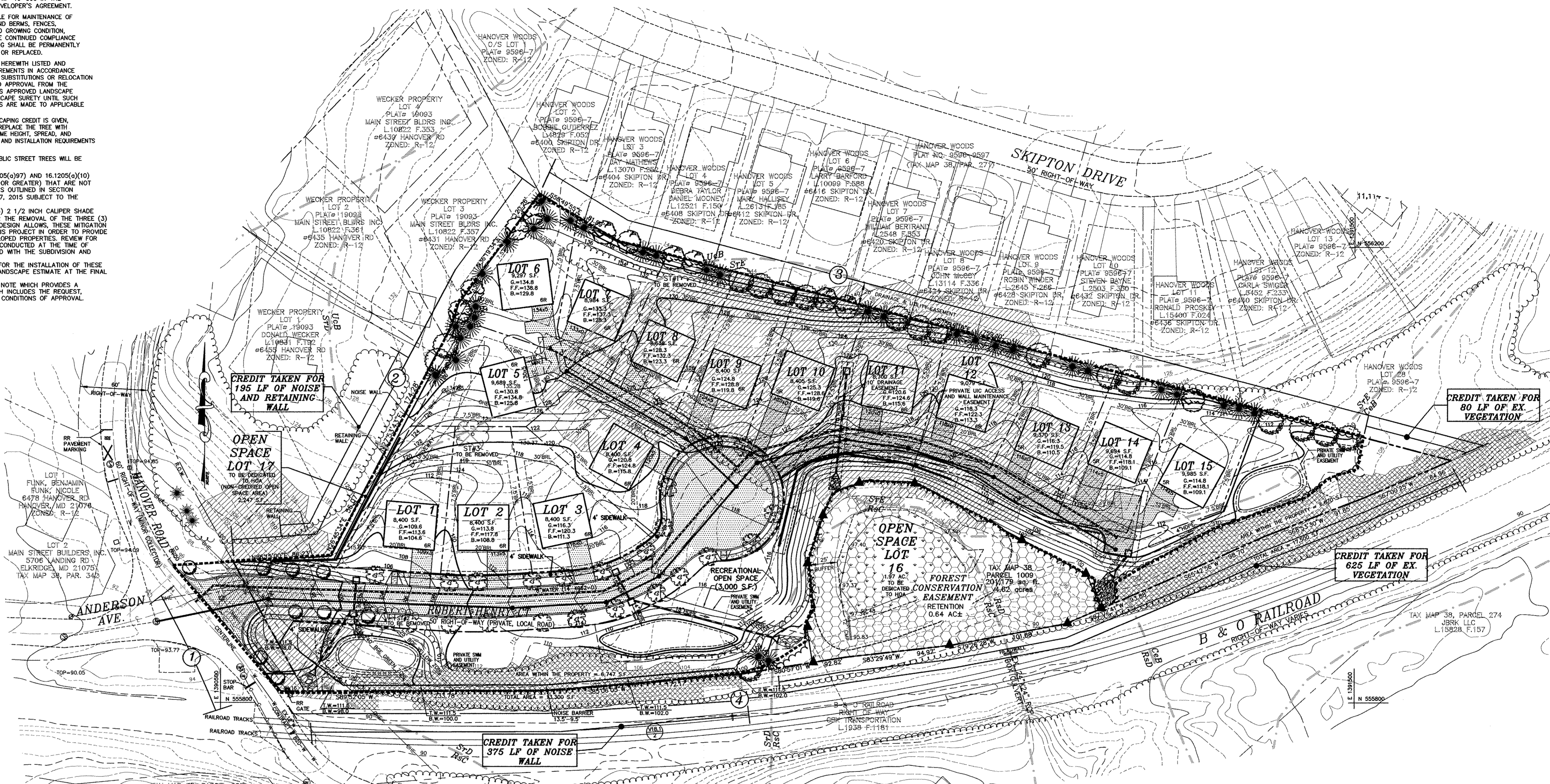
**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 7350-B Grace Drive, Columbia, MD 21044  
 (410) 997-0298 Tel.  
 (410) 997-0296 Tel.

**NOTES:**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (22 SHADE TREES, 33 EVERGREENS) AND AN ADDITIONAL (6 SHADE TREES) PROVIDED IN LIEU OF REMOVING 3 SPECIMEN TREES AS A CONDITION OF THE APPROVED WAIVER WP-16-066 IN THE AMOUNT OF \$13,350.00 IS TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN PENAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST MEET SIZE AND INSTALLATION REQUIREMENTS AS SPECIFIED IN THE LANDSCAPE MANUAL.
- A SURETY IN THE AMOUNT OF \$ 9,300 FOR (31 SHADE TREES) PUBLIC STREET TREES WILL BE ADDED UNDER CDD'S COST ESTIMATE.
- THIS PLAN IS SUBJECT TO WP-16-066, WAIVING SECTIONS 16.1205(c)(97) AND 16.1205(c)(10) WHICH REQUIRES THE RETENTION OF SPECIMEN TREES (30" DBH OR GREATER) THAT ARE NOT CONTAINED WITHIN OTHER PRIORITY FOREST RETENTION AREAS AS OUTLINED IN SECTION 16.1205(k)-(10). THIS WAIVER WAS APPROVED ON DECEMBER 17, 2015 SUBJECT TO THE FOLLOWING CONDITIONS:
  - THE DEVELOPER/BUILDER SHALL PLANT A TOTAL OF SIX (6) 2 1/2" INCH CALIPER SHADE TREES (OR EQUIVALENT) AS REPLACEMENT MITIGATION FOR THE REMOVAL OF THE THREE (3) SPECIMEN TREES WHICH EXIST ON THIS SITE. IF THE SITE DESIGN ALLOWS, THESE MITIGATION TREES SHOULD BE PLANTED ALONG THE PERIMETER OF THIS PROJECT IN ORDER TO PROVIDE ENHANCED SCREENING FOR THE EXISTING ADJACENT DEVELOPED PROPERTY. REVIEW FOR COMPLIANCE WITH THIS MITIGATION REQUIREMENT WILL BE CONDUCTED AT THE TIME OF REVIEW OF THE PERIMETER LANDSCAPE DESIGN ASSOCIATED WITH THE SUBDIVISION AND DEVELOPMENT OF THIS SITE.
  - FINANCIAL SURETY AND PAYMENT OF AN INSPECTION FEE FOR THE INSTALLATION OF THESE MITIGATION TREES WILL BE INCLUDED IN THE PERIMETER LANDSCAPE ESTIMATE AT THE FINAL PLAN STAGE.
  - ON ALL SUBSEQUENT PLANS AND PLATS, ADD A GENERAL NOTE WHICH PROVIDES A DESCRIPTION OF THE MITIGATION, WP-16-066, WHICH INCLUDES THE REQUEST, SECTION OF THE REGULATIONS, ACTION TAKEN, DATE AND CONDITIONS OF APPROVAL.

**LEGEND**

- DRY WELL (M-5)
- EX. TREE LINE
- PR. TREE LINE
- SPECIMEN TREE TO BE REMOVED
- LIMIT OF DISTURBANCE
- 8" SEWER MAIN
- MANHOLE
- 8" WATER MAIN
- STORM DRAIN PIPE
- STORM DRAIN INLET
- SUPER SILT FENCE
- DIVERSION FENCE
- AREA OF WETLANDS
- AREA OF SLOPES GREATER THAN 25%
- AREA OF SLOPES 15-24.9%
- AREA OF FOREST CONSERVATION EASEMENT



**STREET TREE PLANTING SCHEDULE**

| ROAD NAME                 | ROBERT HENRY CT.     | HANOVER ROAD         | TOTAL                |
|---------------------------|----------------------|----------------------|----------------------|
| ROAD LENGTH               | (500')(2)=1,000 L.F. | 85 L.F.              |                      |
| NUMBER OF PLANTS REQUIRED |                      |                      |                      |
| LARGE SHADE TREES         | 25 LARGE SHADE TREES | 0 LARGE SHADE TREES  | 27 LARGE SHADE TREES |
| SMALL SHADE TREES         | 0 SMALL SHADE TREES  | 33 SMALL SHADE TREES | 33 SMALL SHADE TREES |
| NUMBER OF PLANTS PROVIDED |                      |                      |                      |
| LARGE SHADE TREES         | 22 LARGE SHADE TREES | 0 LARGE SHADE TREES  | 22 LARGE SHADE TREES |
| SMALL SHADE TREES         | 6 SMALL SHADE TREES  | 3 SMALL SHADE TREES  | 9 SMALL SHADE TREES  |

\* AS PER BGE'S REQUIREMENT SMALLER TREES HAVE BEEN PROVIDED ALONG HANOVER ROAD AND NEAR POWER LINES ALONG ROBERT HENRY CT.

**STREET TREE PLANTING SCHEDULE**

| QUANTITY | SYMBOL | BOTANICAL NAME               | COMMON NAME                | SIZE             |
|----------|--------|------------------------------|----------------------------|------------------|
| 9        |        | ACER GINNALA OR EQUIVALENT   | AMUR MAPLE OR EQUIVALENT   | 2 1/2" - 3" CAL. |
| 22       |        | PRUNUS 'OKAME' OR EQUIVALENT | OKAME CHERRY OR EQUIVALENT | 2 1/2" - 3" CAL. |
| TOTAL    |        |                              |                            |                  |
| 31       |        |                              | STREET TREES               |                  |

**SCHEDULE A - PERIMETER LANDSCAPED EDGE**

| CATEGORY   | ADJACENT TO ROADWAYS | ADJACENT TO PERIMETER PROPERTIES       |                    |                            | TOTAL              |
|--|----------------------|--|--------------------|----------------------------|--------------------|
|  |                      | C (PERIMETER 2)**                      | B (PERIMETER 3)*** | B (PERIMETER 4)***         |                    |
| LINEAR FEET OF PERIMETER                               | 129 LF               | 436.84 LF                              | 840.99 LF          | 1,085.01 LF                |                    |
| CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)  | N/A                  | NO                                     | YES, 80 LF.        | YES, 625 LF.               |                    |
| CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET) | N/A                  | YES, 195 LF. OF NOISE & RETAINING WALL | NO                 | YES, 374 LF. OF NOISE WALL |                    |
| NUMBER OF PLANTS REQUIRED                              |                      |  |                    |                            |                    |
| SHADE TREES  | 0 SHADE TREES        | 6 SHADE TREES                          | 15 SHADE TREES     | 1 SHADE TREES              | 22 SHADE TREES     |
| EVERGREEN TREES  | 0 EVERGREEN TREES    | 12 EVERGREEN TREES                     | 19 EVERGREEN TREES | 2 EVERGREEN TREES          | 33 EVERGREEN TREES |
| SHRUBS   | 0 SHRUBS             | 0 SHRUBS                               | 0 SHRUBS           | 0 SHRUBS                   | 0 SHRUBS           |
| NUMBER OF PLANTS PROVIDED                              |                      |  |                    |                            |                    |
| SHADE TREES  | 0 SHADE TREES        | 6 SHADE TREES                          | 21 SHADE TREES     | 1 SHADE TREES              | 28 SHADE TREES     |
| EVERGREEN TREES  | 0 EVERGREEN TREES    | 12 EVERGREEN TREES                     | 19 EVERGREEN TREES | 2 EVERGREEN TREES          | 33 EVERGREEN TREES |
| SHRUBS   | 0 SHRUBS             | 0 SHRUBS                               | 0 SHRUBS           | 0 SHRUBS                   | 0 SHRUBS           |

\*\* PERIMETER 1 IS EXEMPT FROM LANDSCAPING BECAUSE IT IS ADJACENT TO A ROADWAY.  
 \*\*\* PERIMETER 2- CREDIT IS BEING TAKEN FOR 195 LF OF PROPOSED NOISE WALL. IF NOISE WALL DOES NOT HAVE ARCHITECTURAL ARTICULATION, ADDITIONAL SHRUBS OR TREES WILL BE PROVIDED.  
 \*\*\*\* PERIMETER 3- THE ADDITIONAL 6 SHADE TREES PROVIDED IN LIEU OF REMOVAL OF 3 SPECIMEN TREES HAVE BEEN ADDED TO PERIMETER 3.  
 \*\*\*\*\* PERIMETER 4- CREDIT IS BEING TAKEN FOR 374 LF OF PROPOSED NOISE WALL AND 625 LF OF EXISTING VEGETATION.

**PERIMETER LANDSCAPE REQUIREMENT PLANTING SCHEDULE**

| QUANTITY | SYMBOL | BOTANICAL NAME  | COMMON NAME   | SIZE                                     |
|----------|--------|---|---|--|
| 11       |        | ACER RUBRUM 'RED SUNSET' OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL.           | RED SUNSET RED MAPLE OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL.     | 2 1/2" - 3" CAL.                         |
| 11       |        | PRUNUS SARGENTII OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL.                   | SARGENT CHERRY OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL.           | 2 1/2" - 3" CAL.                         |
| 33       |        | THUJA OCCIDENTALIS 'ELEGANTISSIMA' OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL. | ELEGANTISSIMA ARBORVITAE OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL. | 2'- 2 1/2' HGT.                          |
| TOTAL    |        |   |   |  |
| 55       |        |   |   | 55 TREES (22 SHADE TREES, 33 EVERGREENS) |

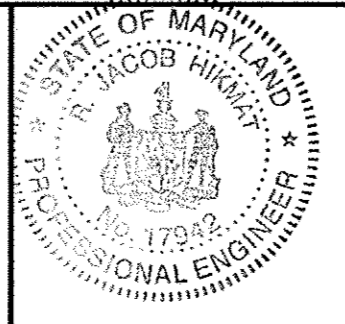
| QUANTITY  | SYMBOL | BOTANICAL NAME  | COMMON NAME   | SIZE                                     |
|---|--------|---|---|--|
| 6   |        | ACER RUBRUM 'RED SUNSET' OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL. | RED SUNSET RED MAPLE OR EQUIVALENT AS OUTLINED IN THE HOWARD COUNTY LANDSCAPE MANUAL. | 2 1/2" - 3" CAL.                         |
| TOTAL   |        |   |   |  |
| 6   |        |   |   | 6 TREES (6 SHADE TREES)                  |
| NOTE- AN ADDITIONAL 6 SHADE TREES HAVE BEEN PROVIDED IN LIEU OF 3 SPECIMEN TREES REMOVED. |        |   |   |  |
| TOTAL FOR THE PROJECT   |        |   |   |  |
| 61  |        |   |   | 61 TREES (28 SHADE TREES, 33 EVERGREENS) |

**OWNER**  
 HARMONY BUILDERS INC  
 4228 COLUMBIA ROAD  
 ELLICOTT CITY, MD 21042  
 410-461-0833

**DEVELOPER'S/OWNER'S CERTIFICATE**

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

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 09/03/18



APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] DATE: 12/12/17  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] DATE: 12-22-17  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] DATE: 1-2-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT

|              |        |          |           |
|--------------|--------|----------|-----------|
| Project      | 15-003 | date     | NOV. 2017 |
| Illustration | MMM    | approval | MMM       |
| Scale        | 1"=50' | revision |           |

|     |             |      |
|-----|-------------|------|
| no. | description | date |
|     |             |      |

**ROBERT'S CROSSING**  
 LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
 TAX MAP 38, GRID 15, PARCEL 273 & 1009  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
**FINAL LANDSCAPING PLAN**

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 7850-B Grace Drive, Columbia, MD 21044  
 (410) 997-0296 Fax  
 (410) 997-0296 Tel.



**CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**

- ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED, BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY AND AROUND ISOLATED POTENTIAL SPECIMEN TREES PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- SUPER SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLAN. BLAZE ORANGE PLASTIC FENCING SHALL BE INSTALLED ALONG THE REFORESTATION BOUNDARY WHERE THERE IS NO SUPER SILT FENCE PROPOSED, AFTER THE PLANTING OF THE EASEMENT.
- THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES. IT IS UNDERSTOOD THAT THE INSTALLATION OF THE FENCING IN THIS MANNER WILL CREATE AN IRREGULAR EDGE.
- ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL FORESTED AREAS. PLEASE REFER TO ROOT PRUNING DETAIL, THIS SHEET.

- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
  - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
  - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
  - MAKE ALL NECESSARY ADJUSTMENTS;
  - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.
- CONSTRUCTION MONITORING
  - THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR BROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
  - LIMITS OF WORK  
THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

**POST CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**

- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD
- ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
- VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
- REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
- REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
- A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTING MAY BE REQUIRED TO ACHIEVE THIS GOAL.

**SUPERVISION**

ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

STANDARD SPECIMEN TREE NON-DISTURBANCE NOTE:  
"THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY HOWARD COUNTY"

**TREE AND FOREST REMOVAL JUSTIFICATION**

THIS PROPERTY IS 5.79 ACRES LOCATED ON HANOVER ROAD. THE SURROUNDING LAND USE IS HIGH DENSITY RESIDENTIAL. OUR PROPOSED SUBDIVISION CONSISTS OF 15 BUILDABLE LOTS AND 2 OPEN SPACE LOTS. OPEN SPACE LOT 16 WILL INCLUDE A FOREST CONSERVATION RETENTION EASEMENT AND WILL BE DEDICATED TO THE HOA. ALL THE ENVIRONMENTALLY SENSITIVE FEATURES ON SITE SUCH AS WETLANDS AND THEIR BUFFERS EXISTS ON THIS OPEN SPACE LOT. WE ARE ALSO RETAINING 0.64 ACRES OF THE EXISTING FOREST ON THIS LOT. IN THE PROCESS OF THIS DEVELOPMENT, SOME PORTIONS OF THE EXISTING FOREST, ALONG WITH SEVERAL SPECIMEN TREES HAVE TO BE REMOVED. WE HAVE DESIGNED THIS PROJECT WITH CONSIDERATION IN SAVING AS MANY TREES AND FOREST AREAS AS POSSIBLE. THIS LAYOUT WILL ENSURE THE MAXIMUM PROTECTION FOR ALL THE ENVIRONMENTALLY SENSITIVE AREAS AND PRIORITY AREAS AS POSSIBLE.

**FOREST CONSERVATION WORKSHEET**

NET TRACT AREA:

|  |       |
|--|-------|
| A. Total tract area                          | =5.79 |
| B. Area within 100 year floodplain           | =0.00 |
| C. Area to remain in agricultural production | =0.00 |
| D. Net tract area                            | =5.79 |

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)  
Input the number "1" under the appropriate land use zoning, and limit to only one entry.

|     |     |     |    |     |    |
|-----|-----|-----|----|-----|----|
| ARA | MOR | IDA | HR | MFD | CA |
| 0   | 0   | 0   | 1  | 0   | 0  |

E. Afforestation Threshold: 15% x D = 0.87  
F. Conservation Threshold: 20% x D = 1.16

EXISTING FOREST COVER:

|   |       |
|---|-------|
| G. Existing forest cover (excluding floodplain) | =2.90 |
| H. Area of forest above afforestation threshold | =2.03 |
| I. Area of forest above conservation threshold  | =1.74 |

BREAK EVEN POINT:

|  |        |
|--|--------|
| J. Forest retention above threshold with no mitigation | =-1.51 |
| K. Clearing permitted without mitigation               | =-1.39 |

PROPOSED FOREST CLEARING:

|  |       |
|--|-------|
| L. Total area of forest to be cleared  | =0.26 |
| M. Total area of forest to be retained | =2.44 |

PLANTING REQUIREMENTS:

|  |        |
|--|--------|
| N. Reforestation for clearing above conservation threshold | =-0.44 |
| P. Reforestation for clearing below conservation threshold | =-1.04 |
| Q. Credit for retention above conservation threshold       | =0.00  |
| R. Total reforestation required                            | =-1.48 |
| S. Total afforestation required                            | =-0.00 |
| T. Total reforestation and afforestation required          | =-1.47 |

NOTE: OBLIGATIONS IS BEING MET BY ON-SITE RETENTION EASEMENT AND AN OFF-SITE BANK.

**SPECIMEN TREE CHART**

| KEY | SPECIES      | IN. DBH | HT. (FEET) | TRUNK RADIUS | COMMENTS                           |
|-----|--------------|---------|------------|--------------|------------------------------------|
| 1   | WHITE OAK    | 31.5    | 47.25      |              | GOOD CONDITION                     |
| 2   | WHITE OAK    | 41      | 61.5       |              | GOOD CONDITION                     |
| 3   | SILVER MAPLE | 52      | 78         |              | FAIR CONDITION, LIMB DIEBACK NOTED |

NOTE: THREE (3) SPECIMEN TREES ARE TO BE REMOVED. THE REMOVAL OF THESE TREES WAS GRANTED UNDER THE CONDITIONS OF APPROVAL OF W-16-006 OUTLINED IN GENERAL NOTE #2.

**NOTES:**

- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE RETENTION OF 0.64 ACRES ON EASEMENT "A" AND AN OFF-SITE RETENTION EASEMENT AT AMBERWOODS LOTS 1 THRU 3, FOREST BANK (F-17-036) FOR 2.94 ACRES OF RETENTION. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT.
- SIGNAGE SHALL BE PLACED FOR PERPETUITY.

**FOREST STAND DATA**

| KEY | COMMUNITY TYPE | ACREAGE (NET) | DOMINANT VEGETATION  | GENERAL CONDITION | PRIORITY ACREAGE         |
|-----|----------------|---------------|--|-------------------|--------------------------|
| F1  | OAK-PINE       | 2.9           | QUERUS FALCATA, PINUS VIRGINIANA, FRAXINUS AMERLOANA, PRUNUS SEROTINA, ACER RUBRUM, CARYA GLABRA | GOOD              | 0.5 ± WETLANDS, BUFFERS. |

**WETLAND DATA**

| WETLAND SYSTEM | COWARDIN CLASSIFICATION | DOMINANT VEGETATION  |
|----------------|-------------------------|--|
| A              | PFO1A                   | AGER RUBRUM, QUERUS PALUSTRIS, PLATANUS OCCIDENTALIS, BETULA NIGRA |

**FSD NOTES:**

- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
- SURROUNDING LAND USE IS PRIMARILY HIGH DENSITY RESIDENTIAL DEVELOPMENT.
- APPROXIMATELY 0.25 ACRES OF FOREST IS PRESENT WITHIN 100 FEET OF THE SUBJECT PROPERTY.
- THE SITE IS LOCATED WITHIN DEEP RUN WATERSHED. THIS IS A USE 1 TRIBUTARY TO THE PATAPSCO RIVER (02-13-09).
- THERE ARE 3 SPECIMEN TREES ON THE PROPERTY. THERE ARE NO KNOWN TREES THAT ARE STATE CHAMPION TREES AND OR TREES 75% OF THE SIZE OF THE STATE CHAMPION TREE ON THE PROPERTY.
- NO 100 YEAR FLOODPLAIN IS PRESENT ON THE PROPERTY.
- APPROXIMATELY 0.3 ACRES OF STEEP SLOPES (25% AND GREATER) ARE PRESENT ON THE SITE.



**FOREST RETENTION AREA**

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS PROHIBITED.

VOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE WETLANDS AND FOREST CONSERVATION ACT OF 1991.

**SIGNAGE DETAILS**

NOT TO SCALE

SIGNAGE SHALL BE PLACED FOR PERPETUITY.

**LEGEND**

- DRY-WELL (M-5)
- EX. TREE LINE
- PR. TREE LINE
- ☼ SPECIMEN TREE TO BE REMOVED
- LIMIT OF DISTURBANCE
- PR. 8" SEWER MAIN
- PR. MANHOLE
- PR. 8" WATER MAIN
- PR. STORM DRAIN PIPE
- PR. STORM DRAIN INLET
- ▲ FOREST CONSERVATION SIGNAGE
- SUPER SILT FENCE
- DIVERSION FENCE
- ▨ AREA TREATED BY DRY WELLS (M-5)
- ▩ AREA TREATED BY MICRO-BIO. (M-6)
- ▧ AREA OF WETLANDS
- ▦ AREA OF SLOPES GREATER THAN 25%
- ▤ AREA OF SLOPES 15-24.9%

APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* 12/12/2017  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 12-22-17  
DATE

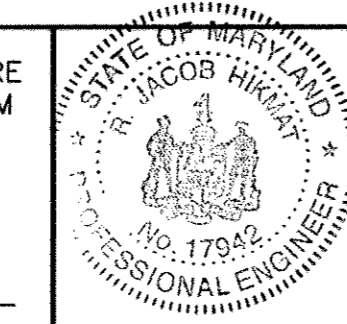
*[Signature]* 1-2-19  
DATE

**OWNER**  
HARMONY BUILDERS INC  
4228 COLUMBIA ROAD  
ELLCOTT CITY, MD 21042  
410-461-0833

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 17942, EXP DATE 09/03/18

*[Signature]* 12/11/17  
DATE

R. JAY HIKMAT P.E.



|         |              |             |
|---------|--------------|-------------|
| Project | date         | NOV 2017    |
| 15-003  | illustration | engineering |
|         | scale        | MMM         |
|         | approval     | MMM         |
|         | no.          | 1"          |
|         | revisions    | 60"         |
|         | date         |             |
|         | description  |             |
|         | no.          |             |

|         |              |             |
|---------|--------------|-------------|
| Project | date         | NOV 2017    |
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|         | scale        | MMM         |
|         | approval     | MMM         |
|         | no.          | 1"          |
|         | revisions    | 60"         |
|         | date         |             |
|         | description  |             |
|         | no.          |             |

**ROBERT'S CROSSING**  
LOTS 1 THRU 15 AND OPEN SPACE LOTS 16 AND 17  
TAX MAP 38, GRID 15, PARCEL 273 & 1009  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
FINAL FOREST CONSERVATION PLAN

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
7850-B Grace Drive, Columbia, MD 21044  
(410) 997-0286 Fax  
(410) 997-0288 Fax

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F-17-098