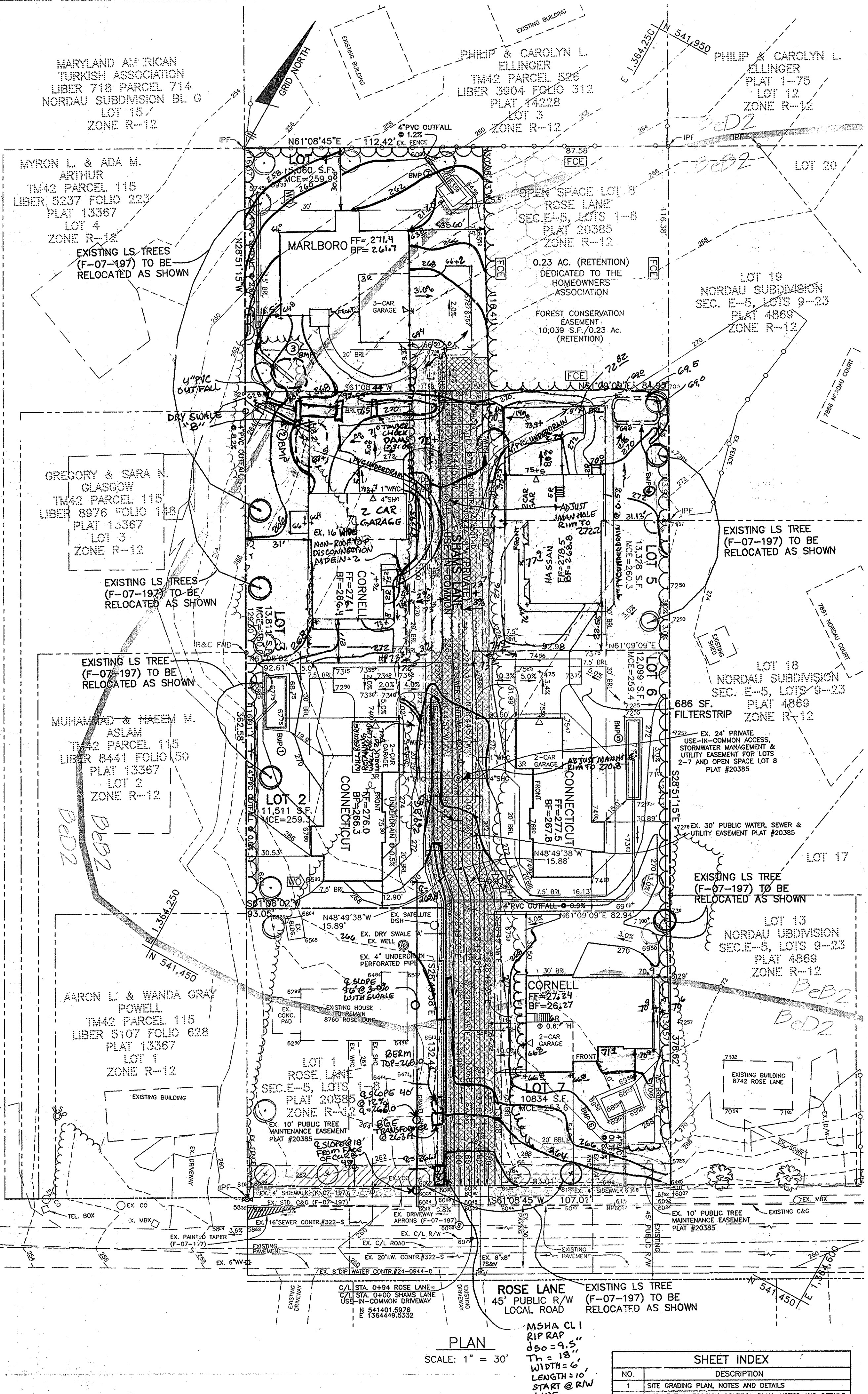
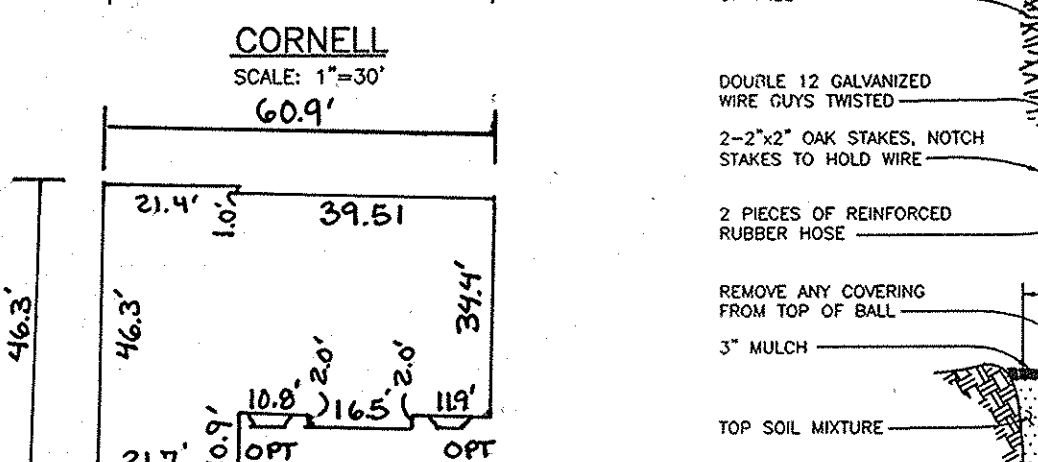
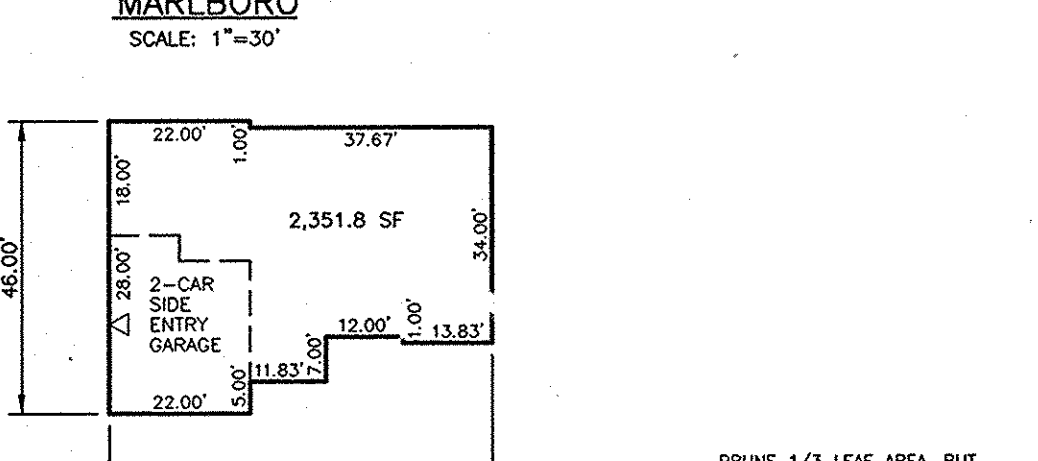
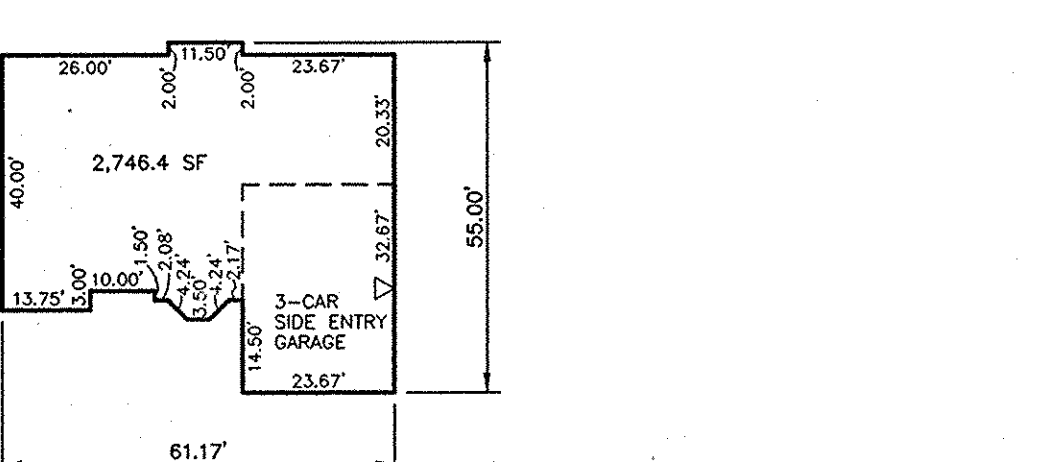
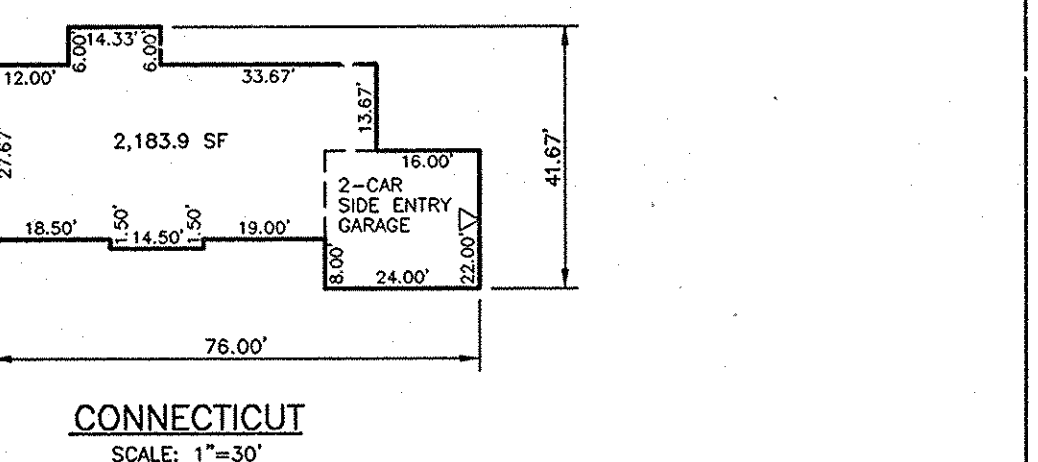
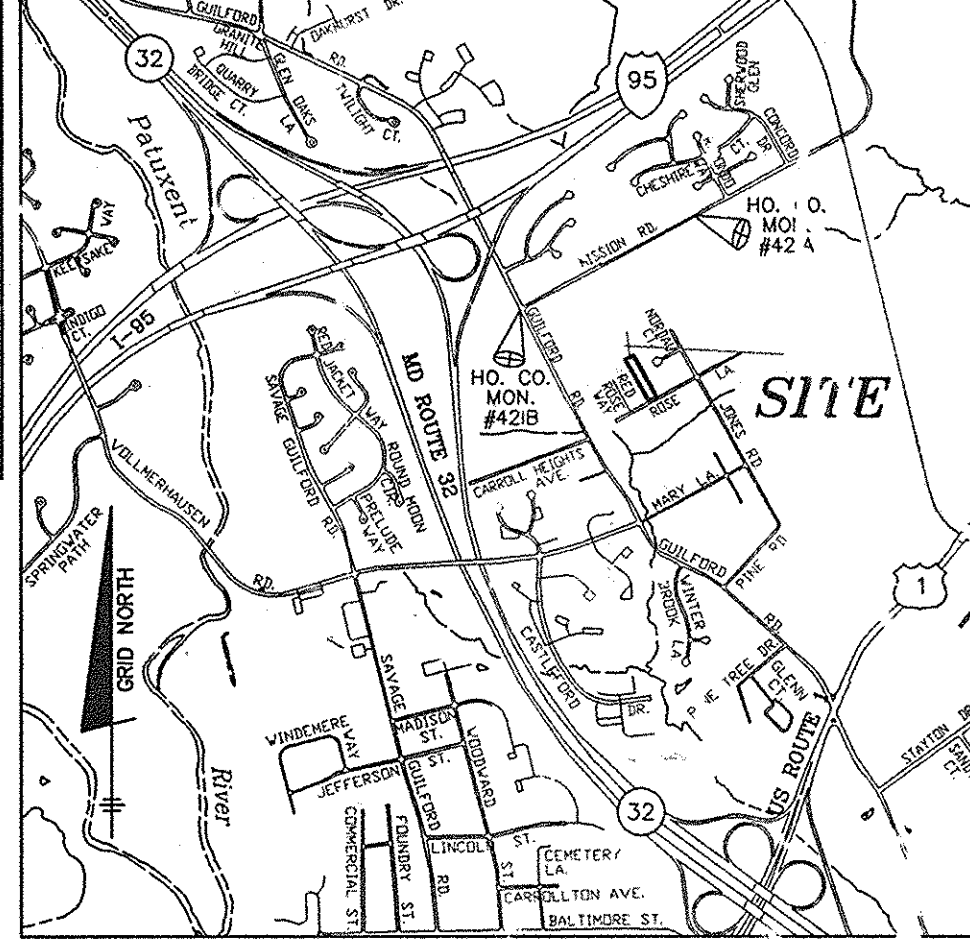


GENERAL NOTES:

- 1. THE SUBJECT PROPERTY IS ZONED R-12 PER THE LITE ZONING AMENDMENTS ADOPTED 7/28/08 AND PER COMP. LITE ZONING AMENDMENTS.
2. THIS PLAN IS SUBJECT TO THE AMENDED 6TH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE AMENDED HOWARD COUNTY ZONING REGULATIONS, LOCAL BILL 50-20-1.
3. PREVIOUS APPLICABLE HO. CO. DPZ FILE REFERENCES FOR THIS PROJECT INCLUDE: F-07-197 CONTR. #24-4501-D.
4. THE BOUNDARY SHOWN IS BASED ON A MONUMENTED FIELD-RUN BOUNDARY SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. ON OR ABOUT NOVEMBER, 2009 PER PLAT #20385 UNDER F-07-197.
5. THE COORDINATES SHOWN HEREON ARE BASED ON THE NAD 83 MARIAN COORDINATE SYSTEM AS PROJECTED BY HO. CO. GEODETIC CONTROL STATIONS MONUMENTS 421A & 421B, WHICH IS BASED ON THE MARYLAND STATE PLATE #20385 UNDER F-07-197.
6. EXISTING TOPOGRAPHY SHOWN HEREON WAS FIELD RUN BY BENCHMARK ENGINEERING, INC. DATED NOVEMBER, 2006 AS SHOWN ON F-07-197, CONT. INTERVAL IS 2 FEET.
7. THERE IS AN EXISTING DWELLING LOCATED ON LOT 1 TO REMAIN, NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIRE.
8. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERY LOCATIONS ON-SITE.
9. THERE ARE NO EXISTING WETLANDS, WETLAND BUFFERS, STREAMS, STREAM BUFFERS OR 100-YEAR FLOODPLAIN LOCATED ON-SITE PER F-07-197.
10. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 18.122.0 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, RESTORATION PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
11. FOR FC BEARINGS AND DISTANCES SEE PLAT #20385 RECORDED UNDER F-07-197 UNLESS NOTED AS "PRIVATE", ALL EASEMENTS ARE PUBLIC.
12. EXISTING UTILITIES SHOWN HEREON ARE BASED ON FIELD LOCATIONS AND RECORDED DRAWINGS.
13. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT, EXISTING WATER AND SEWER IS PUBLIC UNDER CONTRACT #24-4501-D, DRAINAGE AREA IS WITHIN THE MIDDLE PATUXENT AREA WATERSHED.
14. THIS SUBDIVISION IS SUBJECT TO SECTION 18.122.0 OF THE HOWARD COUNTY CODE, PUBLIC WATER AND PUBLIC SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS THEREOF, EFFECTIVE 11/14/08, ON WHICH DATE DEVELOPERS AGREEMENT #24-4501-D WAS FILED AND ACCEPTED.
15. STORMWATER MANAGEMENT SHALL BE PROVIDED TOP THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES 1 & 2. QUALITY CONTROL SHALL BE PROVIDED BY USE OF RAINGARDEN/BIORETENTION BMP'S AND NON-ROOFTOP DISCONNECTION CREDITS AS DETAILED HEREON UNDER F-07-197.
16. LANDSCAPE MAINTENANCE PROVIDED UNDER FINAL PLAN F-07-197 IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MAINTENANCE AND SECTION 6.124 OF THE HOWARD COUNTY CODE.
17. SPECIFICATIONS FOR PERMEABLE LANDSCAPING INDICATED ON THIS PLAN SHALL COMPLY WITH THE HOWARD COUNTY LANDSCAPE MAINTENANCE AND SECTION 6.124 OF THE HOWARD COUNTY CODE. MODIFICATIONS CONSIST OF PLANTING RELOCATIONS AND WILL NOT RESULT IN A REDUCTION IN THE NUMBER OF PLANTS PROVIDED.
18. FOREST CONSERVATION EASEMENT LOCATION IN ACCORDANCE WITH SECTION 18.122.0 OF THE HOWARD COUNTY CODE. FOREST CONSERVATION EASEMENT SHALL BE FULFILLED BY THE PLANTING OF 0.23 ACRES OF EXISTING FOREST IN A FOREST CONSERVATION EASEMENT AS RECORDED UNDER PLAT #20385. THE AMOUNT OF FOREST TO BE PLANTED SHALL BE POSITIVE WITH THE DEVELOPERS AGREEMENT UNDER F-07-197 AND BY THE PLANTING OF A FOREST IN THE AMOUNT OF 0.23 ACRES OF REQUIRED REFORESTATION. THE AMOUNT OF FOREST TO BE PLANTED SHALL BE POSITIVE WITH THE DEVELOPERS AGREEMENT UNDER F-07-197.
19. THE TRAILWAY FOR THIS PROJECT WAS PROVIDED BY THE MARS GROUP IN MARCH, 2006 AND REVISED IN JULY, 2007, AND WAS APPROVED ON AUG 14, 2007 UNDER F-07-197.
20. FOR FLAG PIPE SYSTEMS, REFUSE COLLECTION, SHOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE ADJACENT LOT OR PIPESTAKE AND ROAD RIGHT-OF-WAY AND NOT ONTO THE PIPESTAKE LOT DRIVEWAY.
21. DRIVEWAYS SHALL BE PROVIDED PRIOR TO THE COMMENCEMENT OF A USE AND OCCUPANCY PERMITS FOR ALL NEW DWELLINGS OR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
A) 12" MIN. (12" SERVICE MORE THAN ONE RESIDENCE),
1) 6" MIN. COMPACT CRUSHER RUN BASE WITH 1-1/2" MIN. CAR & CHIP COATING,
2) GEOMETRY - MAX. 1% GRADE, MAX. 10% GRADE CHANGE & MIN. 45' TURNING RADIUS,
D) TUBES (CLAY/STAINLESS) - 4" DIA. SUPPORTING 25 GROSS TONS (H25 LOAD),
E) DRAINAGE ELEMENTS - CAPABLE OF SAFE PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1" FOOT DEPTH OF WATER,
F) MAINTENANCE - SUFFICIENT TO ENSURE ALL OTHER USES.
22. USE-IN-COMMON ACCESS MAINTENANCE AGREEMENT FOR LOTS 2 TO 7 AND OPEN SPACE LOT 8 AS RECORDED SIMULTANEOUSLY WITH PLAT #20385 RECORDED UNDER F-07-197.
23. THE HOMEOWNERS ASSOCIATION DOCUMENTS HAVE BEEN FILED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENTS AND TAXATION AS RECORDING REFERENCE NUMBER D1264634 ON 7/25/08. DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES AND FOREST CONSERVATION (OPTIONAL) AS "FOREST CONSERVATION AREA", LOCATED ON OVER AND THROUGH LOTS/PARCELS. ANY CONVEYANCES OF THE FORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOTS/PARCELS. DEVELOPER SHALL EXECUTE AND DELIVER DEEDS FOR THE EASEMENTS RESERVED TO HOWARD COUNTY WITH A METES AND BOUNDS DESCRIPTION OF THE FOREST CONSERVATION AREA, UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, AND IN THE CASE OF THE FOREST CONSERVATION EASEMENT(S), UPON COMPLETION OF THE DEVELOPER'S OBLIGATIONS UNDER THE FOREST CONSERVATION INSTALLATION AND MAINTENANCE AGREEMENT EXECUTED BY THE DEVELOPER AND THE COUNTY, AND THE RELEASE OF DEVELOPER'S SURETY POSTED WITH SAID AGREEMENT. THE COUNTY SHALL ACCEPT THE EASEMENT AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.
24. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN LIMITS OF WETLANDS, STRIPES, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
25. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
26. PER INDICATED BUILDING RESTRICTION LINE.
27. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
28. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
29. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
30. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE(5) WORKING DAYS PRIOR TO THE START OF WORK.
31. SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
32. FOR DRIVEWAY FINISH DETAILS REFER TO HOWARD COUNTY DESIGN MANUAL VOLUME 4 STANDARD DETAIL R-6.01.
33. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, PORCHES, PORCHES OR DECKS, OPEN DECKS, OPEN DECKS, MAY PROJECT NOT MORE THAN 4 FEET INTO THE REAR YARD SETBACK.



BENCH MARKS table with columns for HO. CO., #421A, #421B, and elevation details.



LEGEND section containing symbols for soils classification, contours, and tree planting details. Includes a tree planting detail diagram with labels like 'PRUNE 1/3 LEAF AREA' and 'SPRAY WITH WILT-PROOF'.

NOTE: NO NEW AND/OR ADDITIONAL PLANTINGS ARE PROPOSED UNDER THESE PLANS, HOWEVER SOME PERIMETER LANDSCAPE TREES (F-07-197) WILL NEED TO BE RELOCATED AS SHOWN ON PLANS.

ADDRESS CHART table with columns for BLDG., STREET ADDRESS, and corresponding lot numbers.

MINIMUM LOT SIZE CHART table with columns for LOT NO., GROSS AREA, PIPESTEM AREA, and MIN. LOT SIZE.

PERMIT INFORMATION CHART table with columns for SUBDIVISION NAME, SECTION/AREA, and LOT/PARCEL.

P-2 PAVING DETAIL table with columns for SECTION NUMBER, ROAD AND STREET CLASSIFICATION, and PAVEMENT MATERIAL (INCHES).

REVISION table with columns for NO., DATE, and REVISION description.

PROJECT BACKGROUND INFORMATION including present zoning (R-12), location (Tax Map 42 - Grid 24), and deed reference (L10611/F122).

SITE ANALYSIS DATA CHART table with columns for item (A-M) and value (e.g., 1.76 AC, 0.00 AC).

PLAN SCALE: 1" = 30'. Includes a table for ADJUST UIC GRADING & SWM REVISION with columns for NO., DATE, and REVISION.

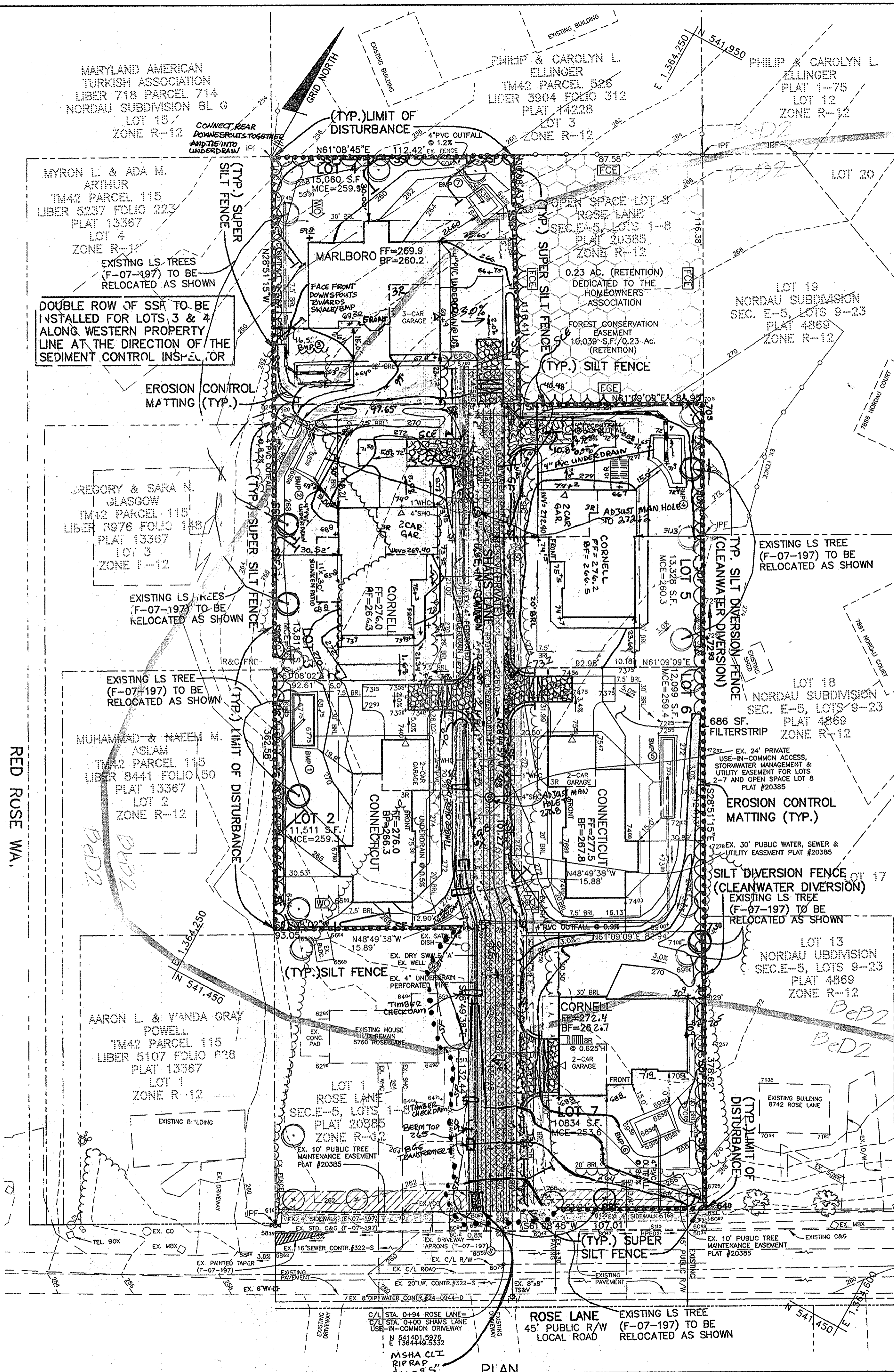
SHEET INDEX table with columns for NO. and DESCRIPTION.

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Includes signatures and dates for Chief, Development Engineering Division and Chief, Division of Land Development.

BENCHMARK ENGINEERING, INC. logo and contact information including address, phone, and email.

PROJECT: ROSE LANE SECTION E-5 LOTS 2 THRU 7. Includes owner information (SAYEL AND JONA HASSAN) and project details like date and scale.





**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (S13-1850)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RESTORATION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERMITS. TEMPORARY SEEDING (SEE SO) AND MULCHING (SEE SO). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE USED WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION OF SEEDS AND/OR FENCES.
- ALL SEDIMENT TRAPS/BASINS MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (S13-1850). TEMPORARY SEEDING (SEE SO) AND MULCHING (SEE SO). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE USED WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION OF SEEDS AND/OR FENCES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

|                                      |     |       |
|--------------------------------------|-----|-------|
| TOTAL AREA OF SITE (THIS SUBMISSION) | 1.8 | ACRES |
| AREA DISTURBED                       | 1.3 | ACRES |
| AREA TO BE REEDED OR PAVED           | 1.3 | ACRES |
| AREA TO BE VEGETATIVELY STABILIZED   | 1.3 | ACRES |
| TOTAL CUT                            | 674 | CY    |
| TOTAL FILL                           | 674 | CY    |

\*IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE SPILL/BORROW SITE AND NOTIFY AND GAIN APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL DIVISION OF THE SITE AND ITS GRADING PERMIT NUMBER AT THE TIME OF CONSTRUCTION.

**PERMANENT SEEDBED PREPARATIONS**

SCHEDULES: SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING:

- PREFERRED - APPLY 2 TONS PER ACRE DELOMITIC LIME (92 LBS/1000 SO FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (4 LBS/1000 SO FT) BEFORE SEEDING. HARBOR OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0 UREA-FORM FERTILIZER (2 LBS/1000 SO FT).
- ACCEPTABLE - APPLY 2 TONS PER ACRE DELOMITIC LIME (92 LBS/1000 SO FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SO FT) BEFORE SEEDING. HARBOR OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIOD MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SO FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SO FT) OF WHEATGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITES BY OPTION (2) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (3) USE SOO. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SO FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (8 GAL/1000 SO FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDBED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

**TOPSOIL SPECIFICATIONS**

- Topsoil salvaged from the existing site may be used provided that it meets the standards set forth in these specifications. Topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regrades, topsoils that are a mixture of contrasting texture substrates and shall consist of less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, trash, or other materials larger than 1-1/2" diameter.
  - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
  - Where the substrate is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic content or topsoil shall be not less than 1.5 percent by weight.
  - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - No seed or soil shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
  - Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate authority, may be used in lieu of natural topsoil.
- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

**Topsoil Application**

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 1" higher.
- Topsoil shall be uniformly distributed at a 4" - 8" layer and tightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that the topsoil is evenly spread with minimal compaction. Additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or substrate is in a frozen or muddy condition, when the substrate is excessively wet or so condition that may otherwise be detrimental to proper grading and seedbed preparation.
- Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
  - Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
    - Composted sludge shall be supplied by, or originate from, a person or Maryland Department of the Environment under COMAR 26.04.06.
    - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If a compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
    - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
    - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guidelines Specifications, Soil Preparation and Seeding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1973.

**TEMPORARY SEEDBED PREPARATIONS**

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RESTORED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (4 LBS/1000 SO FT).

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSSELS PER ACRE OF ANNUAL RYE (2 LBS/1000 SO FT) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WHEATGRASS (2.0 LBS/1000 SO FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROJECT SITES BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SO FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (8 GAL/1000 SO FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO FT) FOR ANCHORING.

REFFERS TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL DIVISION FOR RATE, AND METHODS NOT COVERED.

**SEQUENCE OF CONSTRUCTION**

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- INSTALL PERIMETER SEDIMENT CONTROLS THAT ARE NOTED TO BE INSTALLED UNDER THIS SDP.
- INSTALL SEDIMENT CONTROLS FOR INDIVIDUAL HOUSE.
- EXCAVATE FOR FOUNDATIONS, ROUGH GRADE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES.
- CONSTRUCT HOUSE, BACKFILL AND CONSTRUCT DRIVEWAY.
- FINAL GRADE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDBED NOTES.
- WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE INDIVIDUAL LOT SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS.
- WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE THE PERIMETER SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS.

INDICATES SINGLE HOUSE CONSTRUCTION.

**DETAIL 22 - SILT FENCE**

**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

- Fence posts shall be a minimum of 1/2" long, 1 1/2" diameter, 16" minimum into the ground. Posts shall be spaced at 12' on center. Posts shall be 1/2" diameter and shall be 1/2" thick. Posts shall be 1/2" thick and shall be 1/2" thick.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:
 

|                      |                   |                |
|----------------------|-------------------|----------------|
| Tensile Strength     | 50 lbs/in. (min.) | Test: MSMT 509 |
| Tensile Modulus      | 20 lbs/in. (min.) | Test: MSMT 509 |
| Flow Rate            | 100 in. (min.)    | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.)        | Test: MSMT 322 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation exceeds 200% of the fabric height.

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

**CONSTRUCTION SPECIFICATIONS**

- Length - a minimum of 50' for 10' wide entrance.
- Width - 10' minimum, should be based on the existing road to provide a turning radius.
- Construction - (After construction) shall be based on the existing ground prior to grading. The top surface shall be compacted and shall be 1/2" thick. The bottom surface shall be 1/2" thick. The top surface shall be 1/2" thick. The bottom surface shall be 1/2" thick.
- Stone - crushed aggregate (2" to 3") or retained or crushed aggregate. The stone shall be 1/2" thick. The bottom surface shall be 1/2" thick. The top surface shall be 1/2" thick. The bottom surface shall be 1/2" thick.
- Staples - Staples shall be 1/2" long and shall be 1/2" thick. The top surface shall be 1/2" thick. The bottom surface shall be 1/2" thick. The top surface shall be 1/2" thick. The bottom surface shall be 1/2" thick.
- Location - A stabilized construction entrance shall be located at every point where construction traffic will have access to a construction site. The entrance shall be 1/2" thick. The bottom surface shall be 1/2" thick. The top surface shall be 1/2" thick. The bottom surface shall be 1/2" thick.

**DETAIL 30 - EROSION CONTROL MATTING**

**CONSTRUCTION SPECIFICATIONS**

- KEY-IN THE MATTING BY PLACING THE TOP EDGE OF THE MATTING IN A MANNER THAT IT WILL REMAIN IN PLACE AND WILL NOT BE DISLOADED BY THE FORCE OF WATER OR WIND.
- STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" STAPLER BETWEEN STAPLES.
- BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
- WHEN ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4" OVERLAP. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
- THE DISCHARGE END OF THE MATTING LAYER SHOULD BE SECURELY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

**DETAIL 33 - SUPER SILT FENCE**

**CONSTRUCTION SPECIFICATIONS**

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6" length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and three posts drive anchors and post caps are not required on the ends of the fence.
- Diversion cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Maintenance shall be performed as needed and all buildings removed when "bulges" develop in the silt fence, or when all reaches 200% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples of top and mid section and shall meet the following requirements for Geotextile Class F:
 

|                      |                   |                |
|----------------------|-------------------|----------------|
| Tensile Strength     | 50 lbs/in. (min.) | Test: MSMT 509 |
| Tensile Modulus      | 20 lbs/in. (min.) | Test: MSMT 509 |
| Flow Rate            | 100 in. (min.)    | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.)        | Test: MSMT 322 |

**SUPER SILT FENCE DESIGN CRITERIA**

| Slope    | Slope Steepness | Slope Length (Maximum) | Fence Length (Minimum) |
|----------|-----------------|------------------------|------------------------|
| 0 - 10%  | 0 - 10:1        | Unlimited              | Unlimited              |
| 10 - 20% | 10:1 - 5:1      | 200 feet               | 150 feet               |
| 20 - 33% | 5:1 - 3:1       | 100 feet               | 100 feet               |
| 33 - 50% | 3:1 - 2:1       | 100 feet               | 500 feet               |
| 50% +    | 2:1 +           | 50 feet                | 250 feet               |

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

**OWNER:** Samuel Shuman, 7/31/09 DATE

**BY THE ENGINEER:**  
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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

**ENGINEER:** [Signature], 7/31/09 DATE

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

**APPROVED:** DEPARTMENT OF PLANNING AND ZONING

**CHIEF, DEVELOPMENT ENGINEERING DIVISION:** [Signature], 11/14/09 DATE

**CHIEF, DIVISION OF LAND DEVELOPMENT:** [Signature], 11/12/09 DATE

**DIRECTOR:** [Signature], 11/10/09 DATE

**SOILS LEGEND**

| MAP SYMBOL | SOIL TYPE | MAPPING UNIT   |
|------------|-----------|--|
| Ba2        | C         | DELTAVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED |
| Ba2        | C         | DELTAVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED |

INFORMATION TAKEN FROM SOILS SURVEY, ISSUED JULY 1988, MAP NO. 30

**ALL SEDIMENT & EROSION CONTROL FEATURES ARE TO BE REPAIRED IMMEDIATELY IF DISRUPTED BY UTILITY INSTALLATION.**

**SUPER SILT FENCE IS TO BE INSPECTED FREQUENTLY & CLEANED, REPAIRED AND/OR RE-INSTALLED IMMEDIATELY AS NECESSARY.**

**ALL SEDIMENT CONTROL FEATURES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARDS IN DETAILS SHOWN IN THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.**

**REVISIONS**

| NO. | DATE     | REVISION  |
|-----|----------|---|
| 2   | 6-27-14  | CHANGE GRADING ON LOT 3 & 4 FOR 30' W.M. INCLUDE USE IN COMMON ROADWAY & PART OF LOT 11A, 12D & 15C |
| 1   | 12-28-09 | REV. HOUSE SITTING ON LOTS 3, 4 & 5   |

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 418  
ELICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
E-MAIL: bob@bci-civilengineering.com

**PROFESSIONAL CERTIFICATION:**  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28539; Expiration Date: 7-23-2011

**OWNER:** SAYED AND SONA HASSAN, 9467 VOLLMERHAUSEN DRIVE, COLUMBIA, MARYLAND 21046, PHONE: 301-776-8264

**PROJECT:** ROSE LANE SECTION E-5 LOTS 2 THRU 7

**LOCATION:** TAX MAP 42 - GRID 24 PARCEL 240 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**TITLE:** SEDIMENT & EROSION CONTROL PLAN, NOTES, AND DETAILS

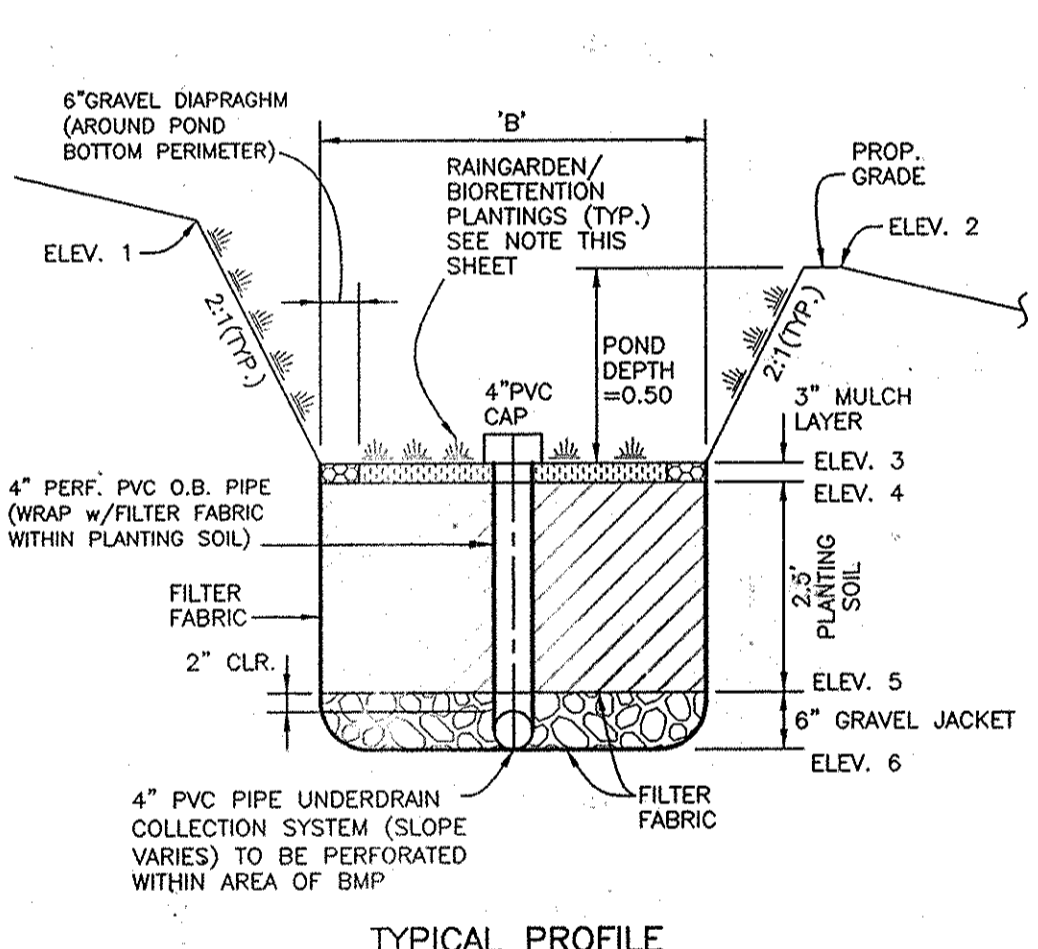
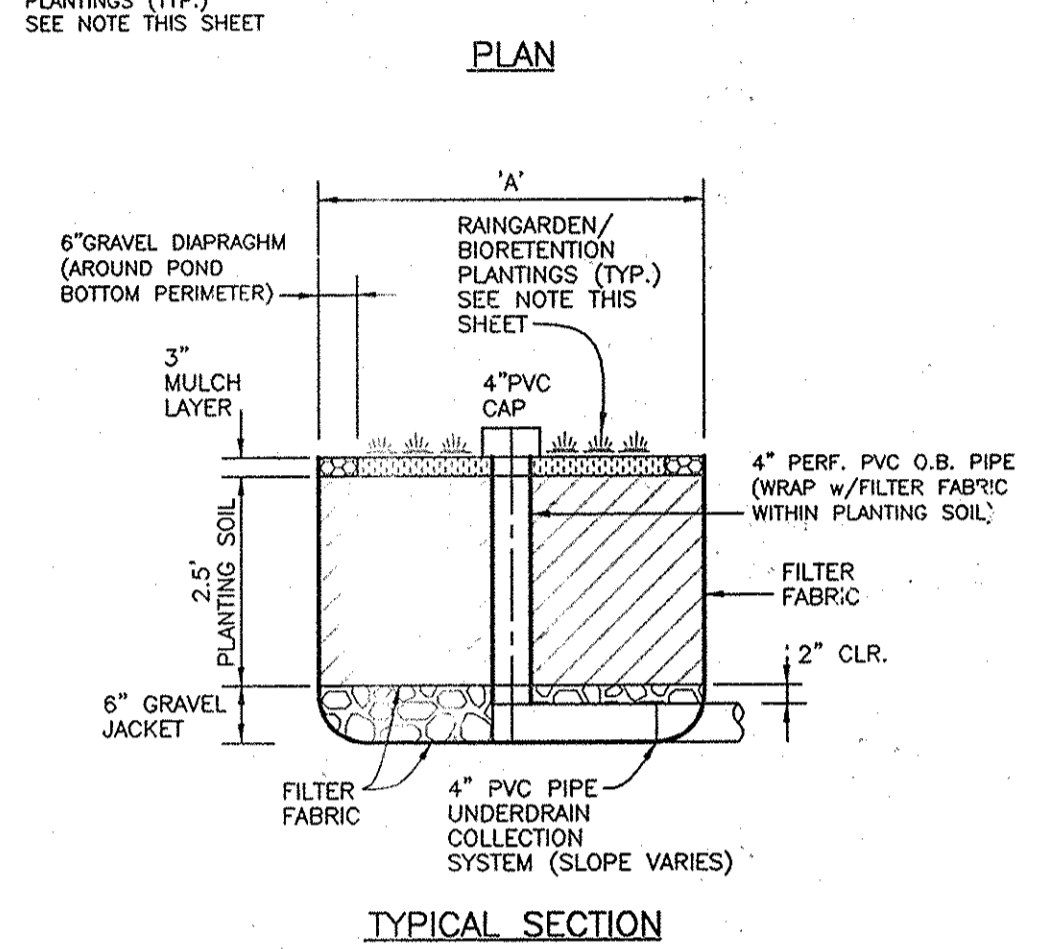
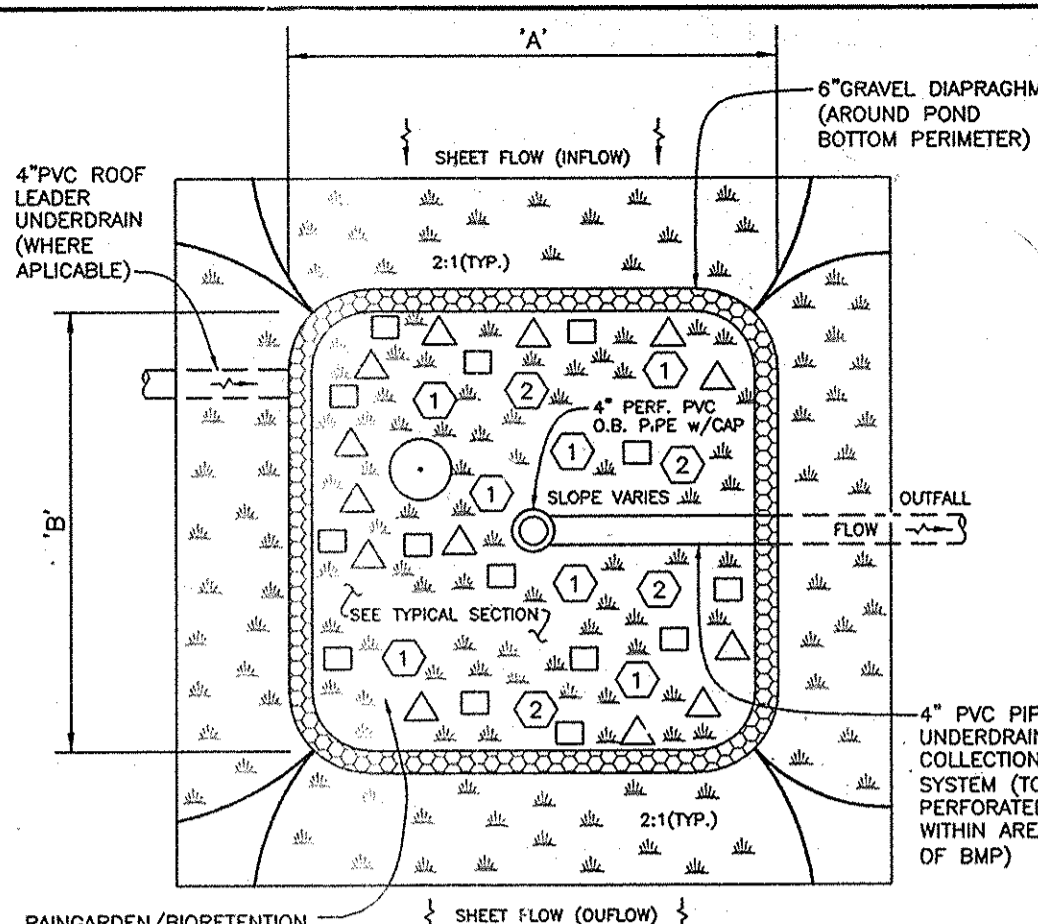
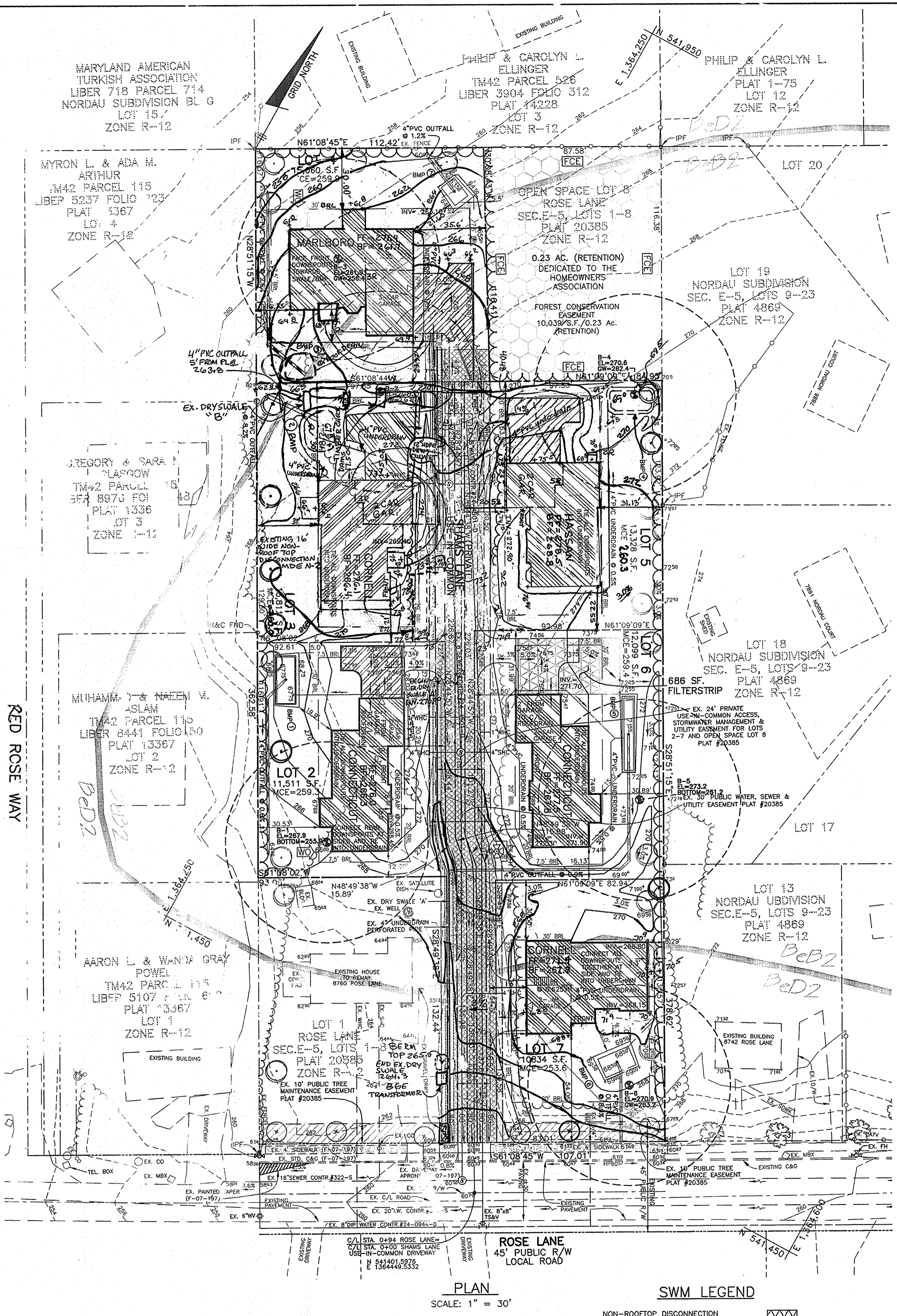
**DATE:** APRIL 8, 2009  
**SCALE:** AS SHOWN

**PROJECT NO.:** 2198  
**DRAWING NO.:** 2 OF 3

Design: MCR/DAM Draft: MCR/EDD Check: JMC

SDP-09-051





THESE DETAILS CONFORM TO HO.CO. STD. D-9.02  
TYPICAL RAINGARDEN/BIORETENTMENT BMP DETAILS  
NOT TO SCALE

| DESIGN TABLE |        | DESIGN TABLE |        |
|--------------|--------|--------------|--------|
| LOT 2        | BMP 1  | LOT 3        | BMP 2  |
| ELEV. 1      | 266.75 | ELEV. 1      | 268.50 |
| ELEV. 2      | 268.25 | ELEV. 2      | 269.00 |
| ELEV. 3      | 267.75 | ELEV. 3      | 267.50 |
| ELEV. 4      | 267.50 | ELEV. 4      | 267.25 |
| ELEV. 5      | 265.00 | ELEV. 5      | 264.75 |
| ELEV. 6      | 264.50 | ELEV. 6      | 264.25 |
| DIMENSIONS   |        | DIMENSIONS   |        |
| 'A'          | 23'-3" | 'A'          | 20'    |
| 'B'          | 9'-0"  | 'B'          | 12'    |

| DESIGN TABLE |        | DESIGN TABLE |        |
|--------------|--------|--------------|--------|
| LOT 4        | BMP 3  | LOT 5        | BMP 4  |
| ELEV. 1      | 264.00 | ELEV. 1      | 269.5  |
| ELEV. 2      | 263.50 | ELEV. 2      | 269.0  |
| ELEV. 3      | 263.00 | ELEV. 3      | 269.0  |
| ELEV. 4      | 262.75 | ELEV. 4      | 268.75 |
| ELEV. 5      | 260.25 | ELEV. 5      | 266.25 |
| ELEV. 6      | 259.75 | ELEV. 6      | 265.75 |
| DIMENSIONS   |        | DIMENSIONS   |        |
| 'A'          | 24'-9" | 'A'          | 10'-0" |
| 'B'          | 8'-3"  | 'B'          | 20'-2" |

| DESIGN TABLE |        | DESIGN TABLE |        |
|--------------|--------|--------------|--------|
| LOT 6        | BMP 5  | LOT 7        | BMP 6  |
| ELEV. 1      | 272.55 | ELEV. 1      | 269.50 |
| ELEV. 2      | 272.05 | ELEV. 2      | 269.00 |
| ELEV. 3      | 271.55 | ELEV. 3      | 268.50 |
| ELEV. 4      | 271.30 | ELEV. 4      | 268.25 |
| ELEV. 5      | 268.80 | ELEV. 5      | 265.75 |
| ELEV. 6      | 268.30 | ELEV. 6      | 265.25 |
| DIMENSIONS   |        | DIMENSIONS   |        |
| 'A'          | 36'-0" | 'A'          | 17'-3" |
| 'B'          | 4'-7"  | 'B'          | 10'-0" |

| DESIGN TABLE |        |
|--------------|--------|
| LOT 4        | BMP 7  |
| ELEV. 1      | 264.50 |
| ELEV. 2      | 264.00 |
| ELEV. 3      | 263.50 |
| ELEV. 4      | 263.25 |
| ELEV. 5      | 260.75 |
| ELEV. 6      | 260.25 |
| DIMENSIONS   |        |
| 'A'          | 11'-3" |
| 'B'          | 8'-0"  |

| NON-STRUCTURAL CREDITS TABLE       |                        |             |                 |
|------------------------------------|------------------------|-------------|-----------------|
| NON-STRUCTURAL CREDITS             | IMPERVIOUS AREA (S.F.) | FACILITY    | NOTES           |
| ROOFTOP DISCONNECTIONS - LOT 2     | 2184                   | BMP #1      | PROVIDE FOR WQV |
| ROOFTOP DISCONNECTIONS - LOT 3     | 2352                   | BMP #2      | PROVIDE FOR WQV |
| ROOFTOP DISCONNECTIONS - LOT 4     | 2747                   | BMP #3      | PROVIDE FOR WQV |
| ROOFTOP DISCONNECTIONS - LOT 5     | 2352                   | BMP #4      | PROVIDE FOR WQV |
| ROOFTOP DISCONNECTIONS - LOT 6     | 2184                   | BMP #5      | PROVIDE FOR WQV |
| ROOFTOP DISCONNECTIONS - LOT 7     | 2352                   | BMP #6      | PROVIDE FOR WQV |
| NON-ROOFTOP DISCONNECTIONS - LOT 2 | 646                    | BMP #1      | PROVIDE FOR WQV |
| NON-ROOFTOP DISCONNECTIONS - LOT 3 | 526                    | BMP #2      | PROVIDE FOR WQV |
| NON-ROOFTOP DISCONNECTIONS - LOT 4 | 1177                   | BMP #7      | PROVIDE FOR WQV |
| NON-ROOFTOP DISCONNECTIONS - LOT 5 | 521                    | BMP #4      | PROVIDE FOR WQV |
| NON-ROOFTOP DISCONNECTIONS - LOT 6 | 726                    | FILTERSTRIP | PROVIDE FOR WQV |

| DISCHARGE COMPARISON TABLE FOR DA#1 (F-07-197) |         |     |         |  |
|--|---------|-----|---------|--|
| CONDITION                                      | Tc (hr) | RCN | Q (cfs) | NOTES                                    |
| EXISTING                                       | 0.26    | 73  | 0.84    |  |
| DEVELOPED                                      | 0.3     | 83  | 1.76    | DEVELOPED IS SLIGHTLY MORE THAN EXISTING |
| WITH CREDITS                                   | 0.3     | 78  | 1.29    | DEVELOPED IS SLIGHTLY MORE THAN EXISTING |

| DISCHARGE COMPARISON TABLE FOR DA#2 (F-07-197) |         |     |         |  |
|--|---------|-----|---------|--|
| CONDITION                                      | Tc (hr) | RCN | Q (cfs) | NOTES                                    |
| EXISTING                                       | 0.22    | 71  | 0.88    |  |
| DEVELOPED                                      | 0.20    | 82  | 1.81    | DEVELOPED IS SLIGHTLY MORE THAN EXISTING |
| WITH CREDITS                                   | 0.20    | 74  | 1.00    | DEVELOPED IS SLIGHTLY MORE THAN EXISTING |

| SWM FACILITY SUMMARY DA#1 (F-07-197) |   |                 |                 |  |
|--------------------------------------|---|-----------------|-----------------|--|
| FACILITY                             | TYPE  | STORAGE VOLUMES | NOTES           |  |
| SWM#1                                | RAINGARDEN/BIORETENTMENT BMP AND NON-ROOFTOP RUNOFF DISCONNECTION | 0.048 ac-ft     | PROVIDE FOR WQV |  |
| SWM#2                                | DRY SWALE A   | 0.18 ac-ft      | PROVIDE FOR Rev |  |

| SWM FACILITY SUMMARY DA#2 (F-07-197) |   |                 |                 |  |
|--------------------------------------|---|-----------------|-----------------|--|
| FACILITY                             | TYPE  | STORAGE VOLUMES | NOTES           |  |
| SWM#1                                | RAINGARDEN/BIORETENTMENT BMP AND NON-ROOFTOP RUNOFF DISCONNECTION | 0.029 ac-ft     | PROVIDE FOR WQV |  |
| SWM#2                                | DRY SWALE B   | 0.18 ac-ft      | PROVIDE FOR Rev |  |

| MATERIALS & SPECIFICATIONS FOR RAINGARDEN/BIORETENTMENT BMP |  |  |   |                               |
|---|--|--|---|-------------------------------|
| MATERIAL  | SPECIFICATION  | SIZE                                     | PLANTINGS ARE   | NOTES                         |
| PLANTINGS   | SEE APPENDIX A, TABLE A.4  | N/A                                      | PLANTINGS ARE   | SPECIFIC                      |
| PLANTING SOIL (2.5' TO 4.0' DEEP)                           | SAND: 30-60%<br>SILT: 30-55%<br>CLAY: 0-25%  | N/A                                      | 1.5" SOIL TYPE  | MAY SAND, SANDY LOAM OR LOAM  |
| MULCH   | SHREDED HARDWOOD   | N/A                                      | AGED 6 MONTHS   | MINIMUM                       |
| GEOTEXTILE (CLASS "C")                                      | APPARENT OPENING SIZE: (ASTM D-4751)<br>GRAB TENSILE STRENGTH: (ASTM D-4632)<br>PUNCTURE RESISTANCE: (ASTM D-4833) | N/A                                      | FOR USE AS 1"   | BARY BENEATH UNDERDRAINS ONLY |
| UNDERDRAIN GRAVEL   | AASHTO M-43  | 0.375" TO 0.75"                          |   |                               |
| UNDERDRAIN PIPING   | F758, TYPE PS28 OR AASHTO M-278  | 4" TO 6" RIGID SCH 40 PVC, SDR35 OR HDPE | 3/8" PER 6" O/C, 4 HOLES PER ROW; MINIMUM OF 3" OF TRAVEL OVER PIPES; NOT NECESSARY UNDER PIPES |                               |

**OPERATION AND MAINTENANCE SCHEDULE FOR RAINGARDEN/BIORETENTMENT BMP (F-6)**

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOILS 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.
- 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 TREES 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.

| BMP #1 - PLANTING SCHEDULE |    | BMP #2 - PLANTING SCHEDULE |    |
|----------------------------|----|----------------------------|----|
| 1 LABELA CARDINALIS        | 16 | 1 LABELA CARDINALIS        | 14 |
| 2 IRIS PSEUDACORUS         | 10 | 2 IRIS PSEUDACORUS         | 6  |
| 3 ANDROPOGON VIRGINICUS    | 10 | 3 ANDROPOGON VIRGINICUS    | 6  |
| 4 MISCANTHUS SINENSIS      | 4  | 4 MISCANTHUS SINENSIS      | 3  |
| 5 ACER RUBRUM (RED MAPLE)  | 1  | 5 ACER RUBRUM (RED MAPLE)  | 1  |

| BMP #3 - PLANTING SCHEDULE |    | BMP #4 - PLANTING SCHEDULE |    |
|----------------------------|----|----------------------------|----|
| 1 LABELA CARDINALIS        | 16 | 1 LABELA CARDINALIS        | 9  |
| 2 IRIS PSEUDACORUS         | 10 | 2 IRIS PSEUDACORUS         | 7  |
| 3 ANDROPOGON VIRGINICUS    | 10 | 3 ANDROPOGON VIRGINICUS    | 12 |
| 4 MISCANTHUS SINENSIS      | 4  | 4 MISCANTHUS SINENSIS      | 5  |
| 5 ACER RUBRUM (RED MAPLE)  | 1  | 5 ACER RUBRUM (RED MAPLE)  | 1  |

| BMP #5 - PLANTING SCHEDULE |    | BMP #6 - PLANTING SCHEDULE |    |
|----------------------------|----|----------------------------|----|
| 1 LABELA CARDINALIS        | 13 | 1 LABELA CARDINALIS        | 15 |
| 2 IRIS PSEUDACORUS         | 8  | 2 IRIS PSEUDACORUS         | 10 |
| 3 ANDROPOGON VIRGINICUS    | 8  | 3 ANDROPOGON VIRGINICUS    | 10 |
| 4 MISCANTHUS SINENSIS      | 3  | 4 MISCANTHUS SINENSIS      | 4  |
| 5 ACER RUBRUM (RED MAPLE)  | 1  | 5 ACER RUBRUM (RED MAPLE)  | 1  |

| BMP #7 - PLANTING SCHEDULE |   | RAINGARDEN/BIORETENTMENT BMP PLANTING DATA   |  |
|----------------------------|---|--|--|
| 1 LABELA CARDINALIS        | 8 | 1. PLANTINGS WITHIN THE PONDING AREA OF THE RAINGARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE               |  |
| 2 IRIS PSEUDACORUS         | 5 | SUGGESTED SPECIES: CREEPING BUGLEWEED (JUGA REPTANS) COMMON PERIWINKLE (VIOLA MINOR) LILY-TURF (LIRIOPE, SP.)      |  |
| 3 ANDROPOGON VIRGINICUS    | 5 | 2. PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAINGARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE        |  |
| 4 MISCANTHUS SINENSIS      | 2 | SUGGESTED SPECIES: (PERENNIALS/ANNUALS) IRIS (IRIS VERSICOLOR) DAYLILY (HEMEROCALLIS SP.) WHITE GLORY (ASTILE SP.) |  |
| 5 ACER RUBRUM (RED MAPLE)  | 1 | 3. AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAINGARDEN NEAR PIPE AND UNDERDRAIN.               |  |

| SOILS LEGEND |  |
|--------------|--|
| MAP SYMBOL   | SOIL TYPE  |
| B#2          | C BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED   |
| B#2          | C BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED |

| SWM LEGEND  |          |
|---|----------|
| NON-ROOFTOP DISCONNECTION CREDIT - FILTERSTRIP                  | [Symbol] |
| NON-ROOFTOP DISCONNECTION CREDIT - RAINGARDEN/BIORETENTMENT BMP | [Symbol] |
| ROOFTOP DISCONNECTION CREDIT - RAINGARDEN/BIORETENTMENT BMP     | [Symbol] |

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*William J. ...* 11/4/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Walter ...* 11/12/09  
CHIEF, DIVISION OF LAND DEVELOPMENT

*James ...* 11/12/09  
DIRECTOR

**BENCHMARK ENGINEERING, INC.**

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PHONE: 410-465-8105 FAX: 410-465-6844  
E-mail: [be@civilengineering.com](mailto:be@civilengineering.com)

PROFESSIONAL CERTIFICATION:  
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28559; Expiration Date: 7-22-2011

**PROJECT: ROSE LANE SECTION E-5 LOTS 2 THRU 7**

**LOCATION:** TAX MAP 42 - GRID 24 PARCEL 240 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**TITLE: ON-LOT STORMWATER MANAGEMENT PLAN, NOTES, AND DETAILS**

**OWNER:** SAYED AND SONA HASSAN 9467 VOLLMERHAUSEN DRIVE COLUMBIA, MARYLAND 21046 PHONE: 301-776-8264

**DATE:** APRIL 8, 2009 PROJECT NO. 2198  
JUNE 25, 2009

**SCALE:** AS SHOWN DRAWING 3 OF 3