

ADDRESS CHART	
LOT NO.	STREET ADDRESS
2	8480 OAK RUN WAY
3	8484 OAK RUN WAY
4	8480 OAK RUN WAY

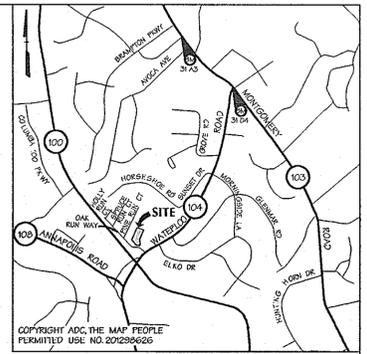
SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	SITE PLAN
3	GRADING, SEDIMENT & EROSION CONTROL AND STORMWATER MANAGEMENT PLAN
4	SEDIMENT & EROSION CONTROL DETAILS
5	LANDSCAPE PLAN AND DETAILS
6	SEDIMENT & EROSION CONTROL AND STORM WATER MANAGEMENT DETAILS
7	RETAINING WALL DETAILS

# SITE DEVELOPMENT PLAN

# SPRINGER PROPERTY

## LOTS 2, 3, & 4

## HOWARD COUNTY, MARYLAND



**LOCATION MAP**  
SCALE: 1" = 2000'

BENCHMARK			
DESCRIPTION			
COORDINATES AND BEARINGS SHOWN HEREON REFER TO THE HOWARD COUNTY GEODETIC CONTROL SYSTEM (NAD 83) BASED ON THE FOLLOWING TRAVERSE STATION:			
DESCRIPTION	NORTH	WEST	ELEV.
3143 3104	57527.876 57700.660	126927.663 126906.261	494.848 494.477

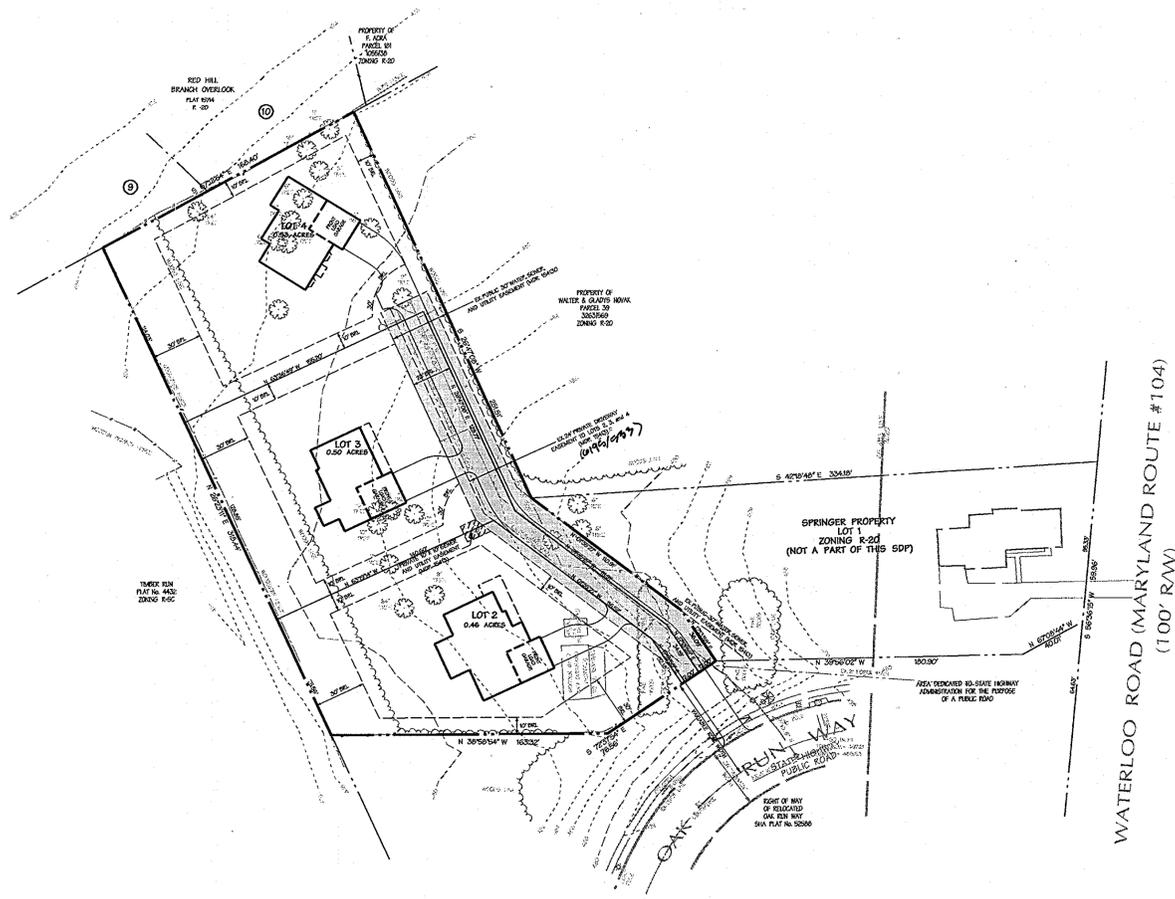
**SITE ANALYSIS DATA CHART**

- General Site Data
  - Present Zoning: R-20
  - Applicable DPZ File References: F-97-31, 24-3604-D, SDP-03-38
  - Proposed Use of Site or Structure(s): 3 Single Family Detached Residences
  - Proposed Water and Sewer Systems are public
  - Any Other Information Which May be Relevant:

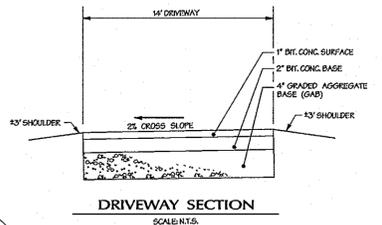
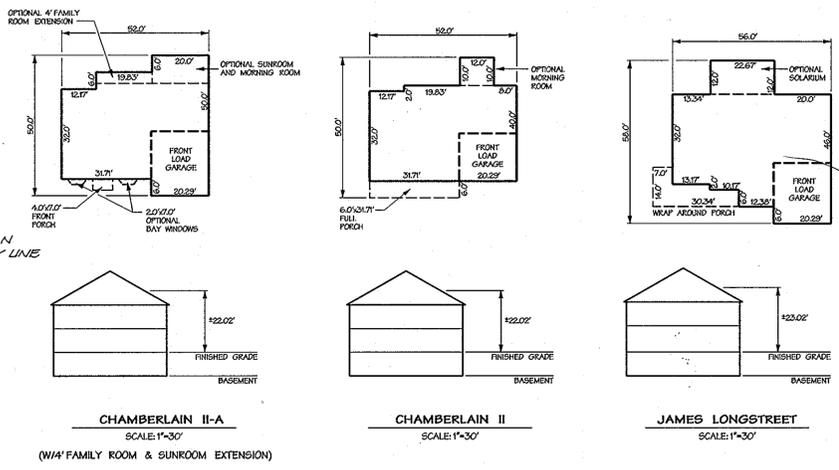
- Area Tabulation
  - Total Project Area: 31.49 Acres
  - Area of This Plan Submission: 31.49 Acres
  - Limit of Disturbed Area: 100 Acres
  - Building Coverage of Site: 2026 Ac and 33% % of Gross Area (Proposed)

**GENERAL NOTES**

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2 FOOT CONTOUR INTERVALS, PREPARED BY DMW, INC. ON JUNE, 2002.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT 31A3 AND 31D4 WERE USED FOR THIS PROJECT.
- SINCE THE SQUARE FOOTAGE OF THE HOUSES EXCEED THE MAXIMUM LIMIT AS A CONDITION OF THE WAIVER, STORM WATER MANAGEMENT IS MET BY FEE-IN-LIEU OF STORMWATER MANAGEMENT (CITY & COUNTY) APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION ON NOVEMBER 22, 1996 (F-97-31). WATER QUALITY MANAGEMENT IS PROVIDED BY DISCONNECTION OF ROOFTOP AND NON ROOFTOP RUNOFF SUPPLEMENTED WITH RAIN GARDERS AS REQUIRED.
- EXISTING UTILITIES ARE BASED ON CONTRACT NO. 24-3604-D
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- SHC ELEVATIONS ARE LOCATED AT THE PROPERTY LINE.
- FOR DRIVEWAY ENTRANCE DETAILS, REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.01.
- THE PROPERTY IS ZONED R-20 PER THE 1993 COMPREHENSIVE ZONING PLAN.
  - IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS. OPEN OR CLOSED, MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK (APPLIES FOR RESIDENTIAL SDP'S).
  - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    - WIDTH -- 12' (14' SERVING MORE THAN ONE RESIDENCE);
    - SURFACE -- 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.);
    - GEOMETRY -- MAX 15% GRADE, MAX 10% GRADE CHANGE AND MIN. 45' TURNING RAD; DRIVEWAY TO BE CONSTRUCTED IN ACCORDANCE WITH THE PLAN AND TYPICAL SECTION PROVIDED ON THIS SITE DEVELOPMENT PLAN.
    - STRUCTURES (CULVERTS/BRIDGES) -- CAPABLE OF SUPPORTING 25 GROSS TONS (1-25 LOADING);
    - DRAINAGE ELEMENTS -- CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
    - MAINTENANCE -- SUFFICIENT TO INSURE ALL WEATHER USE.
- THIS PROJECT COMPLIES WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PAYMENT OF FEE IN LIEU, \$7840.80 FOR 0.36 ACRES OF AFFORESTATION (F-97-31).
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HO. CO. CODE. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$3,750.00 MUST BE POSTED AS PART OF THE BUILDERS GRADING PERMIT APPLICATION (10 SHADE TREES, 5 EVERGREEN TREES REQUIRED).
- THERE ARE NO KNOWN CEMETERIES ON SITE.
- THERE ARE NO WETLANDS, STREAMS, STEEP SLOPES, AND/OR FLOODPLAINS LOCATED ON OR WITHIN 100 FEET OF THE SPRINGER PROPERTY. PER DMW, INC. ENVIRONMENTAL SPECIALIST FIELD VISIT AND SITE INVESTIGATION
- SECTION 18.122B OF HOWARD COUNTY CODE, PUBLIC WATER AND PUBLIC SEWER ALLOCATIONS WILL BE GRANTED AT THE TIME OF THE ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- EXISTING ACCESSORY STRUCTURES ON LOT 2, SHALL BE REMOVED PRIOR TO CONSTRUCTION.
- APPLICABLE DPZ FILE REFERENCES: F-97-31, 24-3604-D, SDP-03-38.
- THIS SDP IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.



**LOCATION MAP**  
SCALE: 1" = 50'



LOT	INV. AT R	MIN. C*	PROP. LL
2	475.7	480.5	482.6
3	475.7	479.7	479.7
4	475.8	478.2	478.2

\* MIN. C is minimum floor elevation of unit that can be served by proposed sanitary connection.

3-24-04  
Date

Professional Engr. No. 1057

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
Chief, Development Engineering Division	4/2/04
Chief, Division of Land Development	4/14/04
Director	4/15/04

**SPRINGER PROPERTY - LOTS 2, 3, 4**  
**SITE DEVELOPMENT PLAN**  
**"SINGLE FAMILY DETACHED"**

OWNER/DEVELOPER:  
DORSEY FAMILY HOMES  
9926 CYPRESSEME DRIVE  
ELLCOTT CITY, MD 21042  
(410) 781-3400

**DMW**  
Daft-McCune-Walker, Inc.  
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

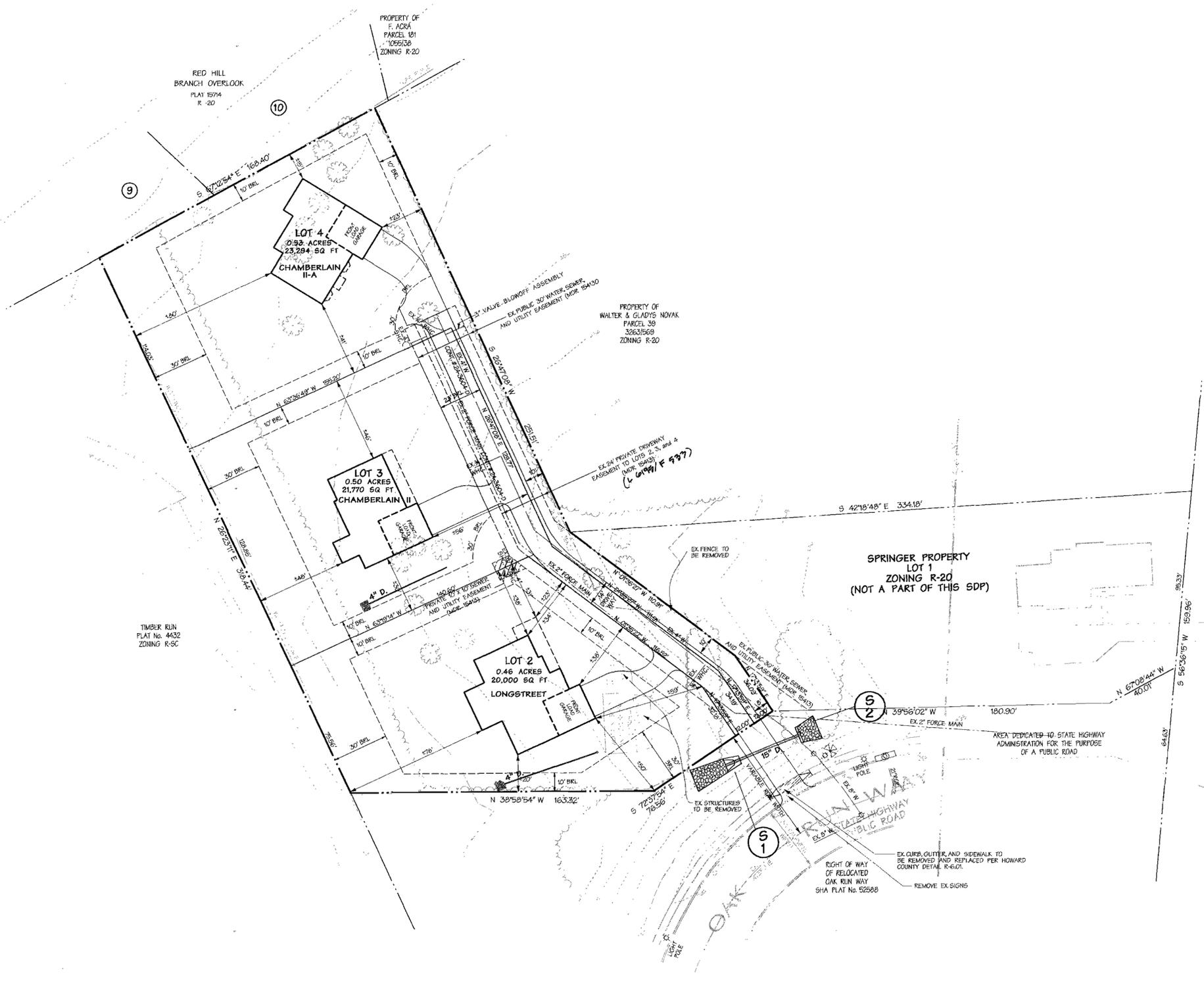
SECTION NAME	SECTION AREA	DATE	BY	NO.
SPRINGER PROPERTY	N/A	12/9/09	R	02067.C

**COVER SHEET**

Drn By: BKJCRH	Scale: AS NOTED	Proj. No. 02067.C
Des By: BFC	Date: 3-22-04	
Chk By: R.H.	Approved:	1 of 7

**LEGEND**

- EX. CURB & GUTTER
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. SEWER
- EX. WATER
- EX. TREE
- EX. WOODS
- PROPERTY BOUNDARY LINE
- BUILDING SETBACK
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- LIMIT OF DISTURBANCE
- END-SECTION/HEADWALL REFERENCE
- GRINDER PUMP



**NOTES:**

THERE ARE NO WETLANDS, STREAMS, AND/OR FLOODPLAINS LOCATED ON OR WITHIN 100 FEET OF THE SPRINGER PROPERTY. PER DRAWING ENVIRONMENTAL SPECIALIST FIELD VISIT AND SITE INVESTIGATION.

THERE ARE NO SLOPES 15% - 24.99% OR SLOPES 25% AND GREATER LOCATED ON THE SITE.

**DATA SOURCES:**

TOPOGRAPHY AND EXISTING UTILITIES ARE BASED ON FIELD SURVEY BY DMW, INC. DATED JUNE 2002 AND SUPPLEMENTED WITH HOWARD COUNTY GIS 2000.

BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON THE PLAT "SPRINGER PROPERTY, LOTS 1-4", PREPARED BY "RIEMER MUEGGE AND ASSOCIATES, INC."

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*[Signature]* 4/2/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 4/16/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 4/15/04  
 DIRECTOR DATE

Date No. Revision Description

**SPRINGER PROPERTY - LOTS 2, 3, 4  
 SITE DEVELOPMENT PLAN  
 "SINGLE FAMILY DETACHED"**

OWNER/ DEVELOPER:  
 DORSEY FAMILY HOMES  
 9926 CYPRESSMEDE DRIVE  
 ELLICOTT CITY, MD 21042  
 (410) 781-3400

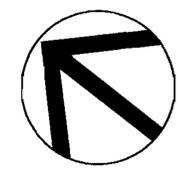
**DMW**  
 Daft-McCune-Walker, Inc.  
 A Team of Land Planners, Landscape Architects, Towns, Maryland 21286, Engineers, Surveyors & Environmental Professionals

200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3333  
 Fax 296-4705

SUBDIVISION NAME	SECTION AREA	LOT/FACILITY #
SPRINGER PROPERTY	N/A	F 66
PLAT OF L.P.	BOOK #	TAZING MAP
15-413	13	R-20 31
WATER CODE	SEWER CODE	OWNER TRACT
G-02	5750591	6023.02

TITLE: **SITE PLAN**

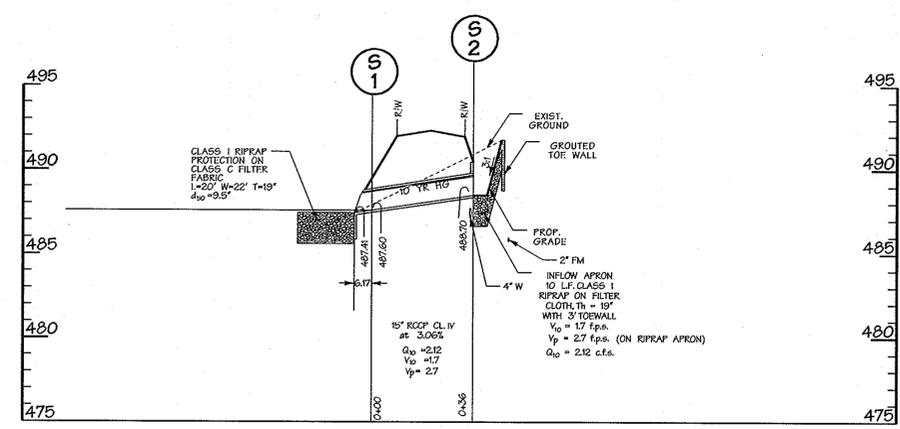
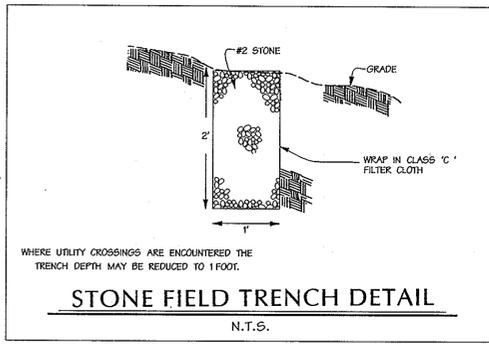
Drn By: BKG Scale: 1"=30' Proj. No. 02067C  
 Des By: BKG Date: 3-22-04  
 CH: RLH Approved: 2 of 6



3-24-04  
 Date

*[Signature]*

Professional Engr. No. 10551

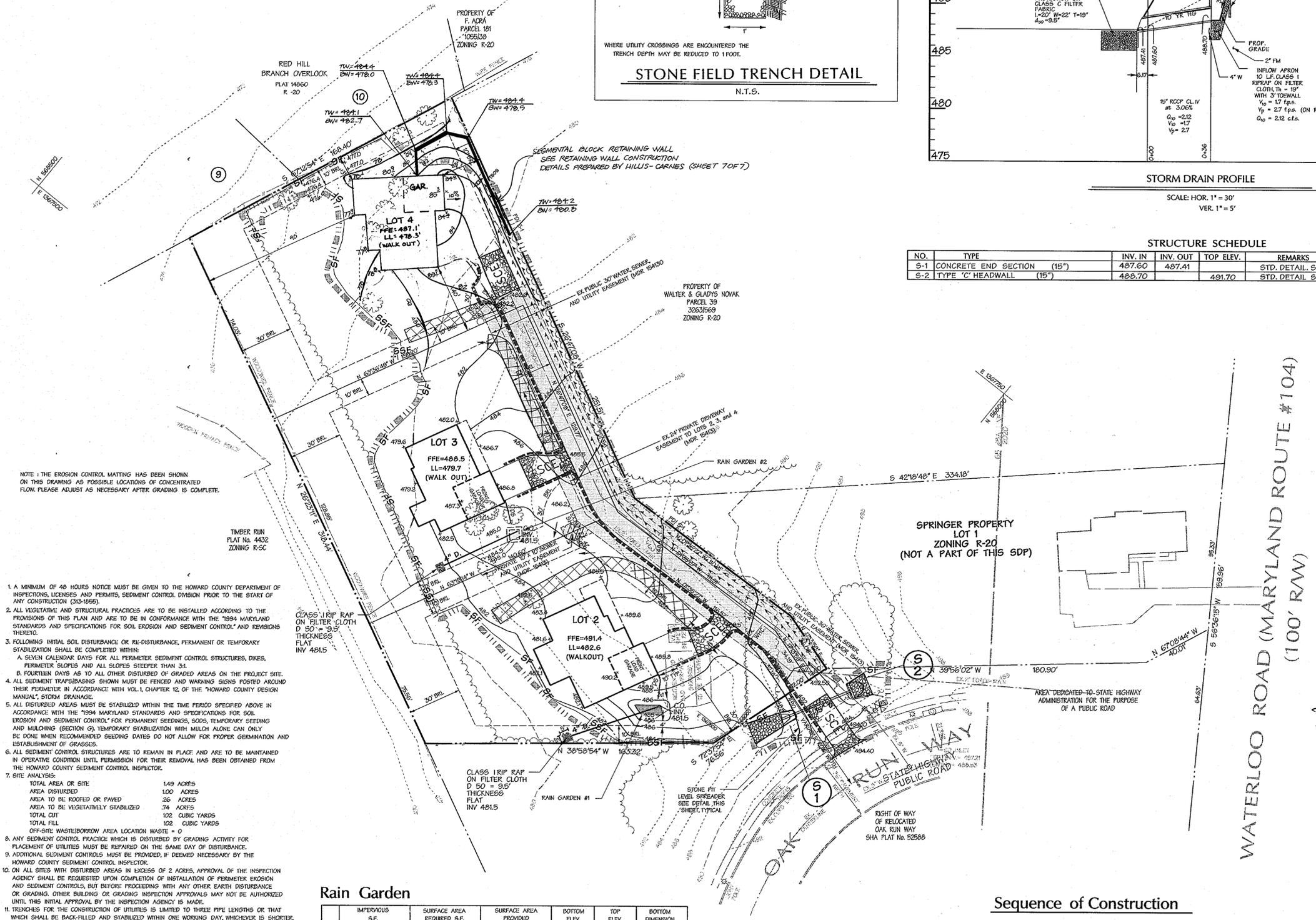


STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	REMARKS	LOCATION
S-1	CONCRETE END SECTION (15')	487.60	487.41		STD. DETAIL. SD.5.51	
S-2	TYPE 'C' HEADWALL (15')	488.70	487.41	481.70	STD. DETAIL. SD.5.21	

LEGEND

- EX. CURB & GUTTER
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. SEWER
- EX. WATER
- EX. TREE
- EX. WOODS
- PROPERTY BOUNDARY LINE
- BUILDING SETBACK
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- LIMIT OF DISTURBANCE
- SILT FENCE
- EROSION CONTROL MATTING
- END SECTION REFERENCE
- STONE FIELD TRENCH
- DOWN SPOUTS
- STONE OUTLET STRUCTURE
- SUPER SILT FENCE
- PERIMETER DIKE/SWALE
- SURFACE AREA OF RAIN GARDEN



NOTE: THE EROSION CONTROL MATTING HAS BEEN SHOWN ON THIS DRAWING AS POSSIBLE LOCATIONS OF CONCENTRATED FLOW. PLEASE ADJUST AS NECESSARY AFTER GRADING IS COMPLETE.

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (243-1995).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - A SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
  - FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPPING AREAS 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 FOR PERMANENT SEEDINGS, SODS, TEMPORARY SEEDING AND MULCHING (SECTION G); TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OR SITE	149 ACRES
AREA DISTURBED	100 ACRES
AREA TO BE ROOFED OR PAVED	.26 ACRES
AREA TO BE VEGETATIVELY STABILIZED	.74 ACRES
TOTAL CUT	102 CUBIC YARDS
TOTAL FILL	102 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION WASTE	+ 0
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Rain Garden

	IMPERVIOUS S.F.	SURFACE AREA REQUIRED S.F.	SURFACE AREA PROVIDED	BOTTOM ELEV.	TOP ELEV.	BOTTOM DIMENSION
1	700	36	71.5	485.0	486.0	15' x 5.5'
2	465	24	25	484.5	485.0	5' x 5'

Sediment Control General Notes

OWNER'S CERTIFICATION:  
I HEREBY 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 COUNTY SEDIMENT CONTROL DISTRICT.  
*Robert L. Doeser Jr.*  
3-24-04  
DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS  
*Jim Mays*  
4/10/04  
U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SEDIMENT CONTROL DISTRICT.  
*John W. Ransochia Sr.*  
4/10/04  
DATE

ENGINEER'S CERTIFICATION:  
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 COUNTY SEDIMENT CONTROL DISTRICT.  
*John W. Ransochia Sr.*  
3/24/04  
DATE

Sequence of Construction

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	2
3. WHILE CONSTRUCTING UTILITIES THE LIMIT-OF-DISTURBANCE SHALL INCLUDE ONLY THOSE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORK DAY. BUILD CULVERT S-1 TO S-2.	14
4. WITH PERMISSION FROM THE COUNTY INSPECTOR TO PROCEED CONSTRUCT HOUSES, ADJACENT TO USE IN COMMON DRIVEWAY.	120
5. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
6. INSTALL STONE FIELD TRENCH AND RAIN GARDENS.	2
7. UPON APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	7

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*John W. Ransochia Sr.*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
4/2/04  
DATE

*John W. Ransochia Sr.*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
4/12/04  
DATE

*John W. Ransochia Sr.*  
DIRECTOR  
4/12/04  
DATE

Date	No.	Revision Description
12/9/09	2	ADD RETAINING WALL - LOT 4
9/28/04	1	REVISE HOUSE LOCATION & GRADING - LOT 4

SPRINGER PROPERTY - LOTS 2, 3, 4  
SITE DEVELOPMENT PLAN  
"SINGLE FAMILY DETACHED"  
OWNER/DEVELOPER:  
DORSEY FAMILY HOMES  
9926 CYPRESSMEDE DRIVE  
ELLCOTT CITY, MD 21042  
(410) 781-3400

**DMW**  
Daft-McCune-Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax 296-4705

A Team of Land Planners,  
Landscape Architects,  
Golf Course Architects,  
Engineers, Surveyors &  
Environmental Professionals

PROFESSIONAL ENGINEER  
STATE OF MARYLAND  
NO. 15937  
EXPIRES 12/31/04

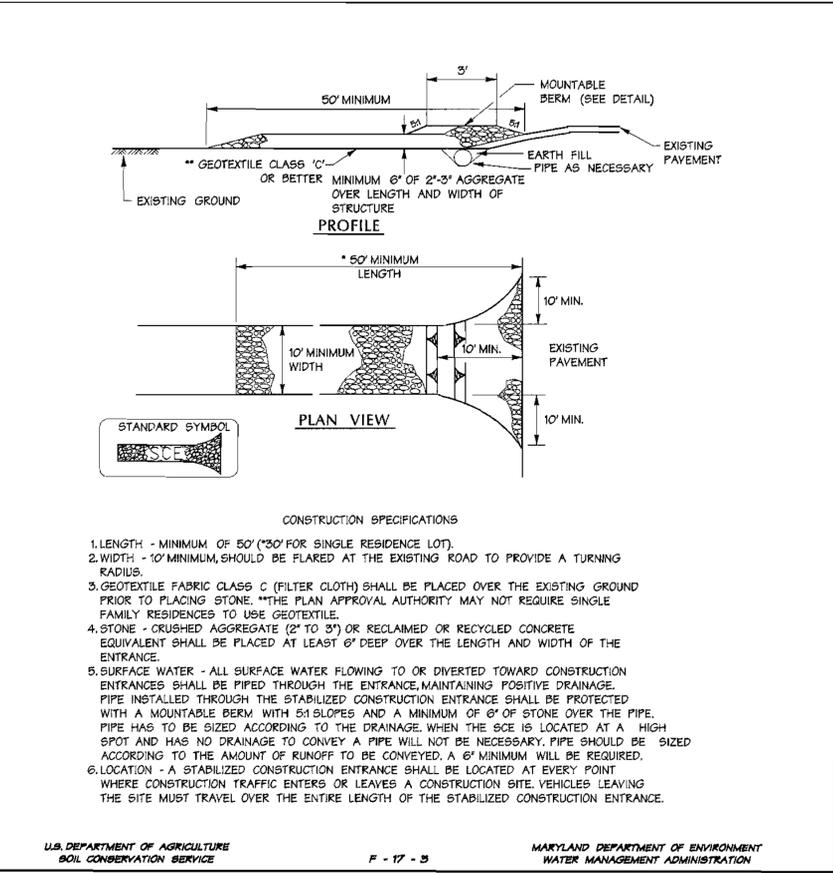
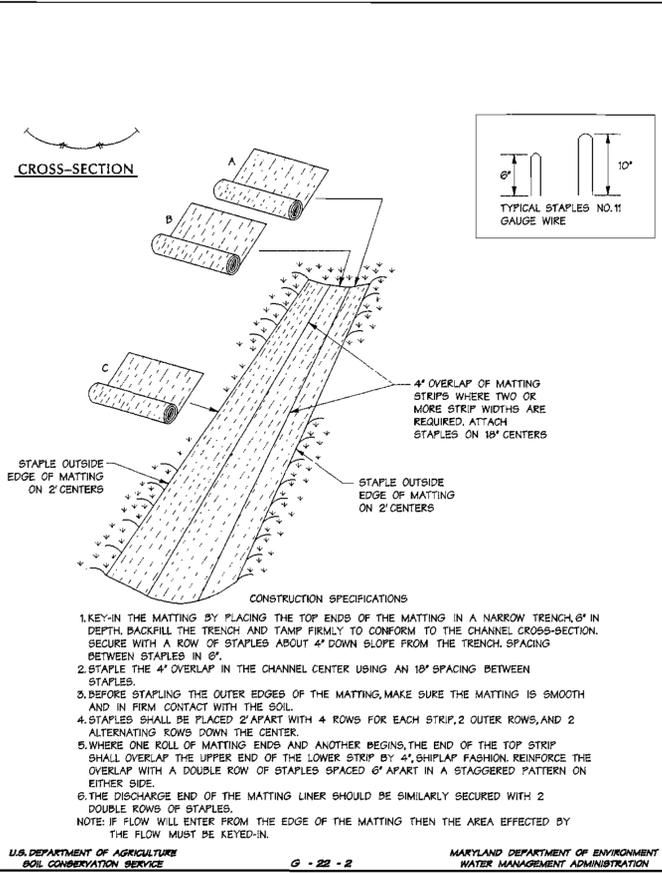
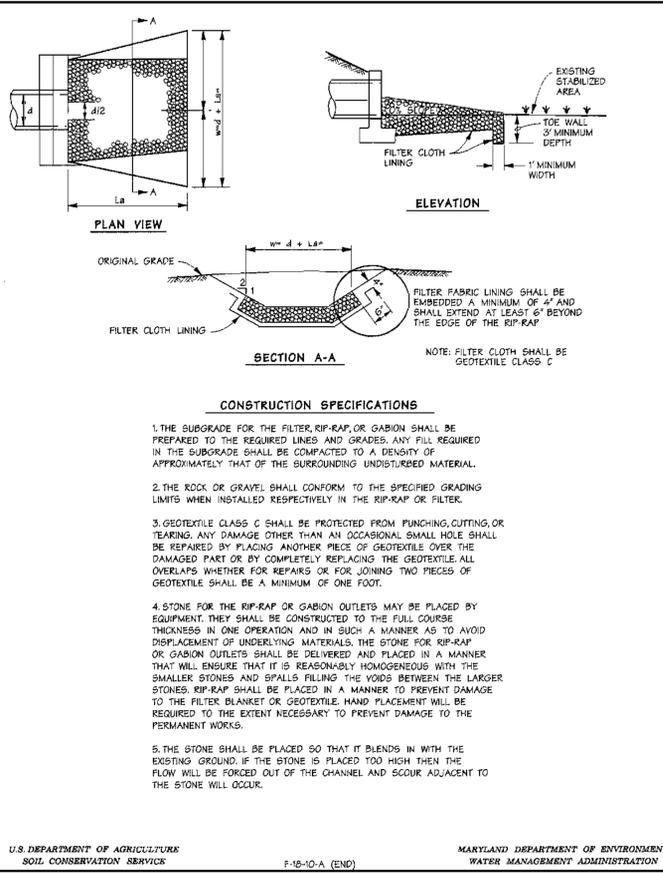
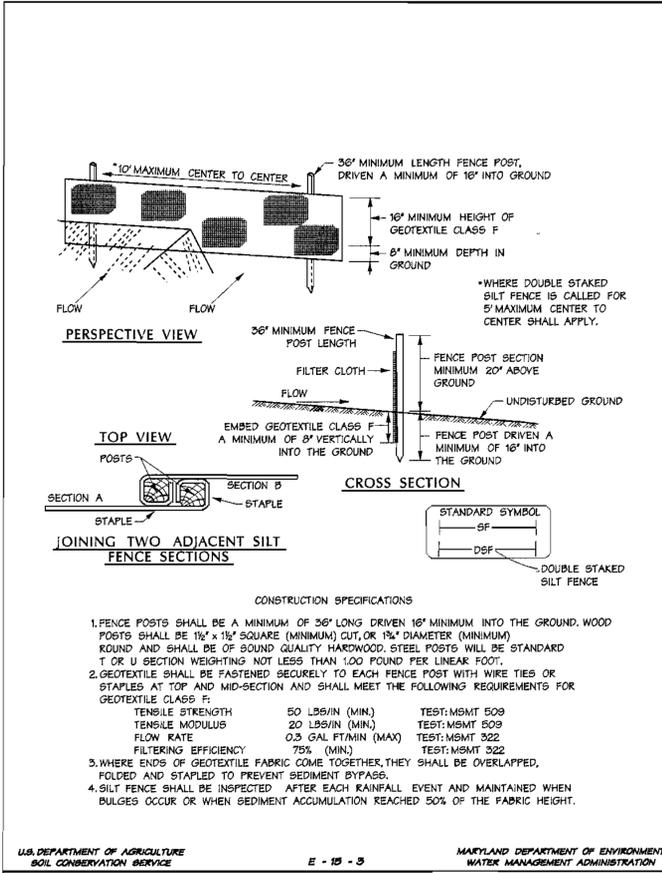
DATE: 3-24-04

SPRINGER PROPERTY	SECTION AREA	N/A	LOT/FRAME #	P 66
PLAT OR LOT	BLOCK #	ZONE	TAZ/ZONE MAP	ELECT. DISTRICT
15415	15	R-20	31	6th
WATER CODE	ORDER CODE	ORDER CODE	ORDER CODE	ORDER CODE
G-02	5750681			

TITLE: GRADING, SEDIMENT & EROSION, STORMWATER MANAGEMENT PLAN

Drn By: BKC	Scale: 1"=30'	Proj. No. 02067.C
Des By: BKC	Date: 3-22-04	
Chk By: RLH	Approved:	3 of 7

Professional Engr. No. 0557



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F-15-10-A (END) MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE G - 22 - 2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE F - 17 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**Silt Fence** Not To Scale

**PERMANENT SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LEIVED VEGETATIVE COVER IS NEEDED.

**SEEDING PREPARATION** - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

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

- PREFERRED - APPLY 2 TONS PER ACRE OF DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREA FORM FERTILIZER (9 LBS/1000 SQ.FT.)
- ACCEPTABLE - APPLY 2 TONS PER ACRE OF DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (20 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

**SEEDING** - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THRU JULY 31 SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (20 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 29, PROTECT SITE BY OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE 500.0 OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

**MULCHING** - APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNWROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS USING MULCH ANCHORING TOOL OR 200 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 340 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

**MAINTENANCE** - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.

**TEMPORARY SEEDING NOTES**

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

**SEEDING PREPARATION** - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

**SOIL AMENDMENTS** - APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.)

**SEEDING** - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2 1/2 BUHSEL PER ACRE OF ANNUAL RYE (32 LBS/1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 2 LBS. PER ACRE OF WEEPING LOVEGRASS (27 LBS/1000 SQ.FT.) FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 29, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE 500.

**MULCHING** - APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNWROTTED WEEP FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 200 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT. OR HIGHER, USE 340 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

**ROCK OUTLET PROTECTION III** NOT TO SCALE

**DUST CONTROL SPECIFICATIONS**

**TEMPORARY METHODS:**

- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
- VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
- TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
- IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
- BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
- CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

**PERMANENT METHODS:**

- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
- TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
- STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

**Erosion Control Matting** Not To Scale

**Topsoil Specifications**

FOR SEDIMENT CONTROL / STABILIZATION PURPOSES

**21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**

**Definition**

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose**

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications**

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt 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. Regardless, topsoil shall not be mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger than 1 1/2 inch in diameter.
  - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnson grass, nutcase, poison ivy, thistle, or others as specified.
  - Where the subsoil 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 I - Vegetative Stabilization Methods and Materials.

iii. 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 contents of 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 sod or seed 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 approval 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 I - 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, albeit 4% - 8% higher in elevation.
  - Topsoil shall be uniformly distributed in a 4% - 8% layer and lightly compacted to a minimum thickness of 4%. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

**Stabilized Construction Entrance** Not To Scale

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*[Signature]* 4/2/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 4/1/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 4/1/04  
DIRECTOR DATE

Date	No.	Revision Description
		SPRINGER PROPERTY - LOTS 2, 3, 4 SITE DEVELOPMENT PLAN "SINGLE FAMILY DETACHED"

OWNER/DEVELOPER: DORSEY FAMILY HOMES  
9926 CYPRESSMEDE DRIVE  
ELLICOTT CITY, MD 21042  
(410) 781-3400

**DMW**  
Daft-McCune-Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax: 296-4706

A Team of Land Planners, Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

3-24-04  
Date

Professional Engr. No. 1557

**TEMPORARY AND PERMANENT SEEDING NOTES**

OWNER'S CERTIFICATION:  
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/WE ALSO AUTHORIZE PERSONS ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3-24-04  
SIGNATURE OF DEVELOPER DATE  
PRINT NAME BELOW SIGNATURE  
ROBERT L. DORSEY JR.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

*[Signature]* 4/1/04  
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*[Signature]* 4/1/04  
HOWARD S.C.D. DATE

**Dust Control Specifications** Not To Scale

ENGINEER'S CERTIFICATION:  
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]* 4/1/04  
SIGNATURE OF ENGINEER DATE  
PRINT NAME BELOW SIGNATURE  
John W. Rancocchia

**Sediment & Erosion Control Details**

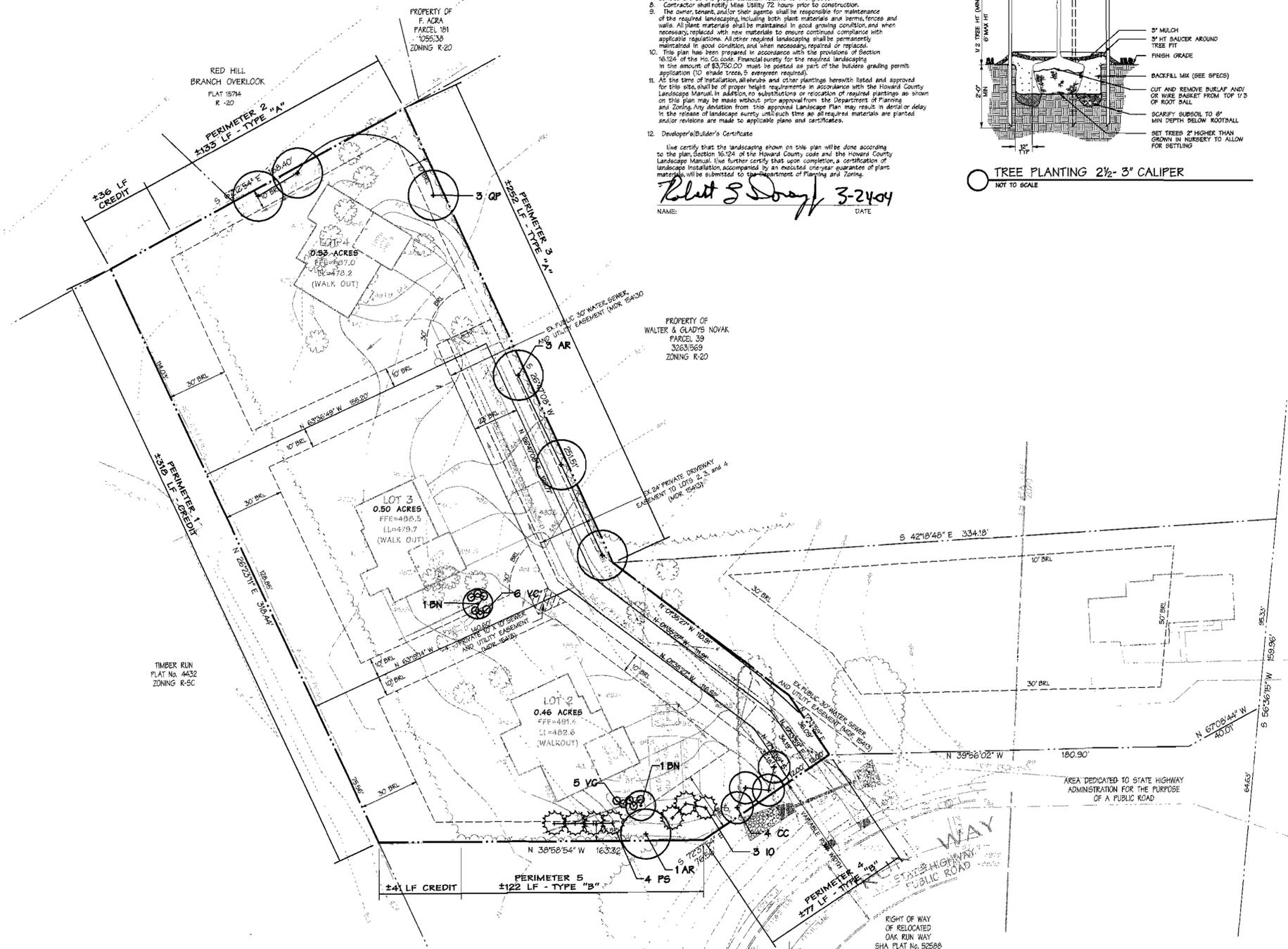
Supervision Title: ENGINEER PROPERTY SECTION AREA: N/A LOT/FACILITY # 66  
PLAT OR LOT: 25415 BLOCK # 15 ZONE: R-20 TAXZONE MAY: 31 ELEC. DISTRICT: 6th CENSUS TRACT: 6023.02  
WATER CODE: G-02 SEWER CODE: 5750691

TITLE: SEDIMENT & EROSION CONTROL DETAILS

Dwn By: BKC Scale: 1"=30' Proj. No.: 02067C  
Des By: BKC Date: 3-22-04  
Ckx By: RLH Approved: 4 of 6

**SDP-04-53**

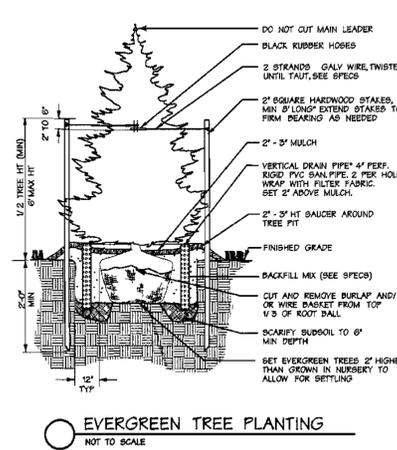
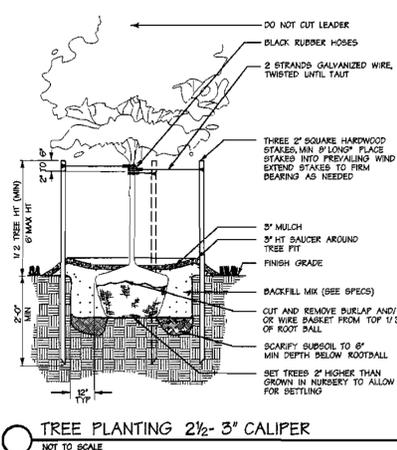
Wed Mar 24 10:05:26 2004 \h02067\sheet 11tes\02067.dwg



**General Planting Notes**

- All plant material to meet A.A.N. Standards.
- Landscape Contractor to follow landscape specification guidelines for Baltimore Washington Metro area approved by LCA/MW.
- No substitutions to be made without consent of Landscape Architect or Owner.
- All trees to be spaced with three inches of handwood mulch.
- Landscape Contractor to verify location of utilities with Owner before planting.
- Landscape Architect/Owner shall select, verify and approve all plant material. As Owner's discretion, specimen and other plant material will be selected.
- Landscape Contractor shall coordinate plant bed filling operations and plant material installation with General Contractor and Utility Contractor. At the time of final inspection with acceptance, all electric, water, drainage, and fountain utilities, as well as all plant materials, shall remain undamaged. Likewise, Landscape Contractor and Utility Contractor shall coordinate efforts to ensure that surface utilities are at the proper elevation relative to final grades.
- Contractor shall notify Miss Utility 72 hours prior to construction.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and terms, 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.
- This plan has been prepared in accordance with the provisions of Section 16.024 of the Md. Code, Financial surety for the required landscaping in the amount of \$3,750.00 must be posted as part of the building grading permit application (to shade trees, 5% estoppel required).
- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of proper height requirements in accordance with the Howard County Landscape Manual. In addition, no substitutions or reduction of required plantings as shown on this plan may be made without prior approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and revisions are made to applicable plans and certificates.
- Developer/Builder's Certificate  
I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.024 of the Howard County code and the Howard County Landscape Manual. I/we further certify that upon completion, a certification of landscape installation, accompanied by an executed one-year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

*Robert S. Dwyer* 3-24-04  
NAME: DATE



**LEGEND**

- EX. CURB & GUTTER
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- EX. SEWER
- EX. WATER
- EX. TREE
- EX. WOODS
- PROPERTY BOUNDARY LINE
- BUILDING SETBACK
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- LIMIT OF DISTURBANCE
- PROPOSED SHADE TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN TREE

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT to ROADWAYS			ADJACENT to PERIMETER PROPERTIES		
	P 1	P 2	P 3	P 4	P 5	P 6
LANDSCAPE TYPE "A"						
LINEAR FEET OF PERIMETER	310 LF.	100 LF.	252 LF.			
LANDSCAPE TYPE "B"						
LINEAR FEET OF PERIMETER	77 LF.	100 LF.				
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	N/A	41 LF.	310 LF.	36 LF.	N/A	
LINEAR FEET OF PERIMETER REMAINING	N/A	122 LF.	0 LF.	133 LF.	N/A	
NUMBER OF PLANTS REQUIRED						
SHADE TREES	2	2	0	2	4	
EVERGREEN TREES	2	3	0	0	0	
SHRUBS	0	0	0	0	0	
NUMBER OF PLANTS PROVIDED						
SHADE TREES	0	1	0	2	4	
EVERGREEN TREES	2	0	0	0	0	
OTHER TREES (2:1 SUBSTITUTION)	4*	0	0	0	0	
SHRUBS (2:1 SUBSTITUTION)						
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)						

\* 4 ORNAMENTAL TREES HAVE BEEN SUBSTITUTED FOR 2 SHADE TREES  
\*\* 2 EVERGREEN TREES HAVE BEEN SUBSTITUTED FOR 1 SHADE TREE

**PLANT LIST**

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
<b>SHADE TREES</b>				
4	AR	AZER. RUBRUM / October Glory	2 1/2' - 3' CAL. 12" - 14" HT.	D & B FULL HEAD
5	QP	QUERCUS PHellos / Willow Oak	2 1/2' - 3' CAL. 12" - 14" HT.	D & B FULL HEAD
<b>ORNAMENTAL TREES</b>				
4	CC	CERIS CANADENSIS / Kofu	6' - 8' HT.	D & B
<b>EVERGREEN TREES</b>				
3	IO	ALEX. OPACA / American Holly	6' - 8' HT.	D & B ONE MALE
4	PS	PINUS STROBUS / Eastern White Pine	6' - 8' HT.	D & B

**WATER QUALITY PLANT LIST**

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
<b>ORNAMENTAL TREES</b>				
2	IN	BETULA NIGRA / River Birch	6' - 8' HT.	D & B
<b>SHRUBS</b>				
11	VC	VIBURNUM CASSINOIDES / Withered Viburnum	2' HT.	D & B

**NOTES:**

THERE ARE NO WETLANDS, STREAMS, AND/OR FLOODPLAINS LOCATED ON OR WITHIN 100 FEET OF THE SPRINGER PROPERTY. PER DMW, INC. ENVIRONMENTAL SPECIALIST FIELD VISIT AND SITE INVESTIGATION.

THERE ARE NO SLOPES 15% - 24.99% OR SLOPES 25% AND GREATER LOCATED ON THE SITE.

**DATA SOURCES:**

TOPOGRAPHY AND EXISTING UTILITIES ARE BASED ON FIELD SURVEY BY DMW, INC. DATED JUNE 2002 AND SUPPLEMENTED WITH HOWARD COUNTY GIS 2000 BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON THE PLAT "SPRINGER PROPERTY, LOTS 1-4", PREPARED BY "RIEMER WUEGGLE AND ASSOCIATES, INC."

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*[Signature]* 4/2/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 4/14/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 3/15/04  
DIRECTOR DATE

Date No. Revision Description

SPRINGER PROPERTY - LOTS 2, 3, 4  
SITE DEVELOPMENT PLAN  
"SINGLE FAMILY DETACHED"

OWNER/DEVELOPER:  
DORSEY FAMILY HOMES  
9926 CYPRESSMEDE DRIVE  
ELLICOTT CITY, MD 21042  
(410) 781-3400

**DMW**  
Daft-McCune-Walker, Inc. A Team of Land Planners.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax 296-4706  
Landscape Architects, Engineers, Surveyors & Environmental Professionals

SECTION NAME: SPRINGER PROPERTY SECTION AREA: N/A LOT/FACIL # P 66  
PLAT OR L.P. 15413 BLOCK # 15 ZONING MAP R-20 DISTRICT # 31 DISTRICT # 6th CONDUIT TRACT # 8023.02  
WATER CODE G-02 OWNER CODE 575069H

TITLE: **LANDSCAPE PLAN AND DETAILS**

Drawn By: BKC Scale: 1"=30' Proj. No. 02067.C  
Desk By: BKC Date: 3-22-04  
Chk By: RLW Approved: 5 of 6



**MODULAR CONCRETE BLOCK RETAINING WALL**

**PART 1: GENERAL**

**1.01 Description**

- A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with those specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
- B. Installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

**1.02 Delivery, Storage and Handling**

- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
- B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

**PART 2: PRODUCTS**

**2.01 Modular Concrete Retaining Wall Units**

- A. Modular concrete units shall conform to the following architectural requirements:
  - face color - concrete gray - standard manufacturers' color may be specified by the Owner.
  - face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
  - bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
  - exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
- B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
- C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
  - compressive strength = 3000 psi minimum;
  - absorption = 8% maximum (6% in northern states) for standard weight aggregates;
  - dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ± 1/16" unit height - top and bottom planes;
  - unit size - 8" (H) x 18" (W) x 12" (D) minimum;
  - unit weight - 75 lbs/unit minimum for standard weight

- aggregates:
  - inter-unit shear strength - 1000 pcf minimum at 2 psi normal pressure;
  - geogrid/unit peak connection strength - 1000 pcf minimum at 2 psi normal force.
- D. Modular concrete units shall conform to the following constructability requirements: (if applicable)
  - vertical setback = 1/8" per course (near vertical) or 1" per course per the design;
  - alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
  - maximum horizontal gap between erected units shall be 1/2 inch.

**2.02 Shear Connectors (if applicable)**

- A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protuded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to +100 degrees F.
- B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

**2.03 Base Leveling Pad Material**

- A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

**2.04 Unit Drainage Fill**

- A. Unit drainage fill shall consist of #57 crushed stone

**2.05 Reinforced Backfill**

- A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:
 

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-40

 Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.
- B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

**2.06 Geogrid Soil Reinforcement**

- A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

**2.07 Drainage Pipe**

- A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

**PART 3 EXECUTION**

**3.01 Excavation**

- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

**3.02 Base Leveling Pad**

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6' in front and behind the modular wall unit.
- B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

**3.03 Modular Unit Installation**

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
- C. Install shear/connecting devices per manufacturer's recommendations.
- D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
- E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

**3.04 Structural Geogrid Installation**

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
- C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to

- backfill placement on the geogrid.
- D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

**3.05 Reinforced Backfill Placement**

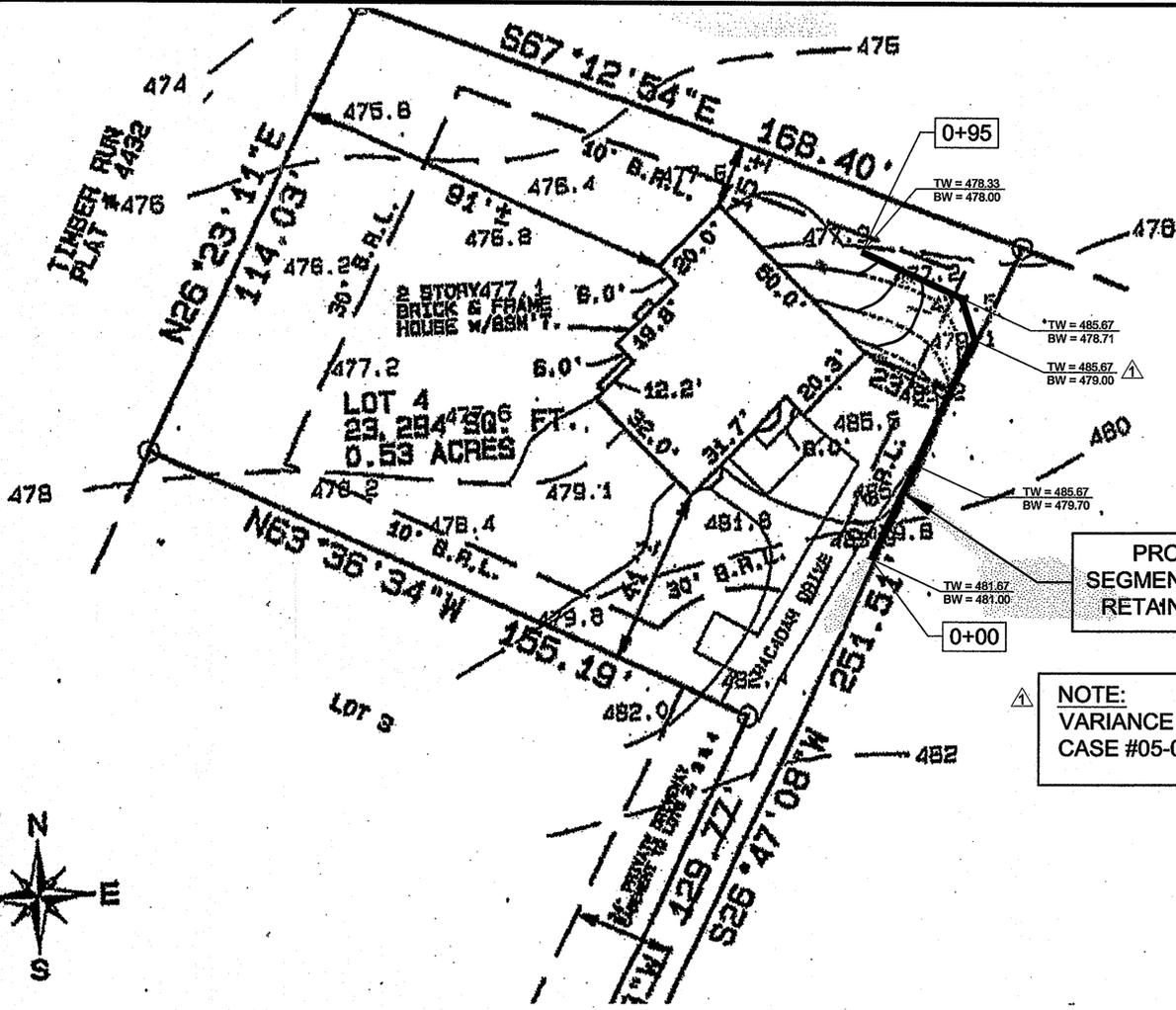
- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
- C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be +3% to -3% of optimum.
- D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
- E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
- G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

**3.06 Cap Installation**

- A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

**3.07 Field Quality Control**

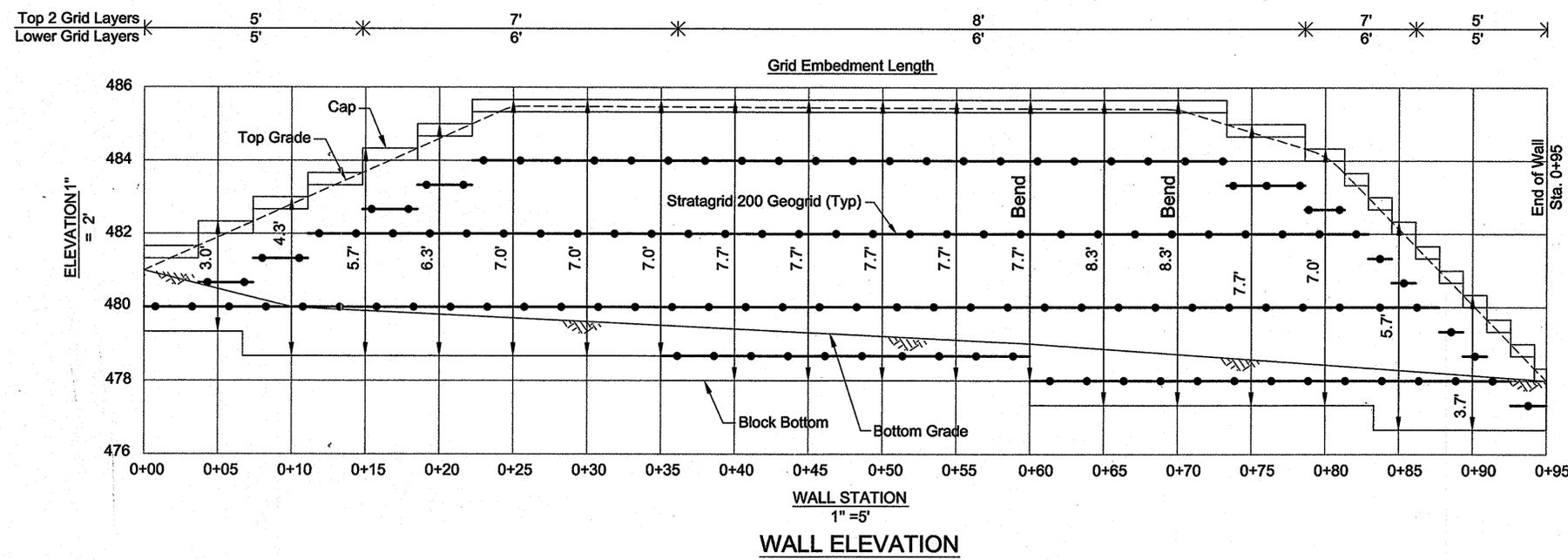
- A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
- B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.



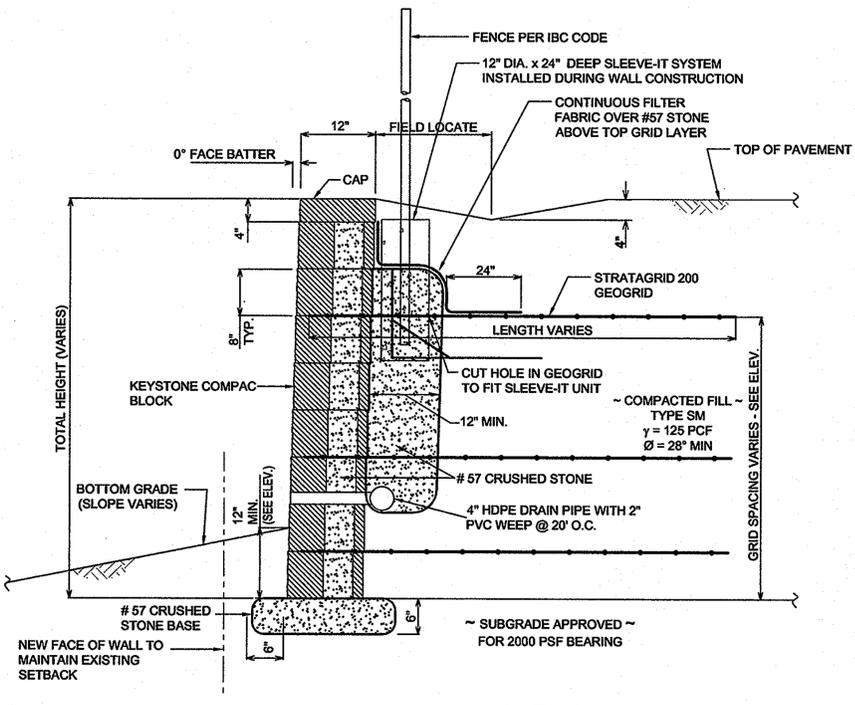
**PROPOSED SEGMENTAL BLOCK RETAINING WALL**

**NOTE: VARIANCE FOR WALL CASE #05-04-0V**

**WALL LOCATION PLAN**  
1"=20'



**WALL ELEVATION**  
1"=5'



**TYPICAL WALL SECTION**  
N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 DATE: 1/29/10

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS 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. 14434  
 EXPIRATION DATE: 09/13/11



**HILLIS-CARNES ENGINEERING ASSOCIATES**  
 10975 Guilford Road, Suite A  
 Annapolis Junction, MD  
 (410) 880-4788 Fax (410) 880-4098

**RETAINING WALL CONSTRUCTION DETAILS**  
**STEVENS PROPERTY (SPRINGER) HOWARD COUNTY, MD**

REVISIONS:	
ADD WALL SPOT ELEVATIONS AND WALL VARIANCE NOTE PER COUNTY REVIEW COMMENTS	8/19/08

JOB NUMBER: 07430-D	DESIGNED BY: HM
SCALE: AS SHOWN	DRAWN BY: HM
DATE: 08/01/08	APPROVED BY: RWS