## PLANT LIST

| SYMBOL | QTY | BOTANICAL NAME | COMMON NAME | SIZE & REMARKS | SPACING |
|---|---|---|---|---|---|
| | | | ORNAMENTAL TREES | | |
| LI | 1 | ***LAGERSTROEMIA INDICA | CRAPE MYRTLE | 8'10' Ht. - B&B | SEE PLAN |
| | | | SHADE TREES | | |
| QP | 09 | ACER RUBRUM | RED MAPLE | 2"-3" Cal./B&B | SEE PLAN |

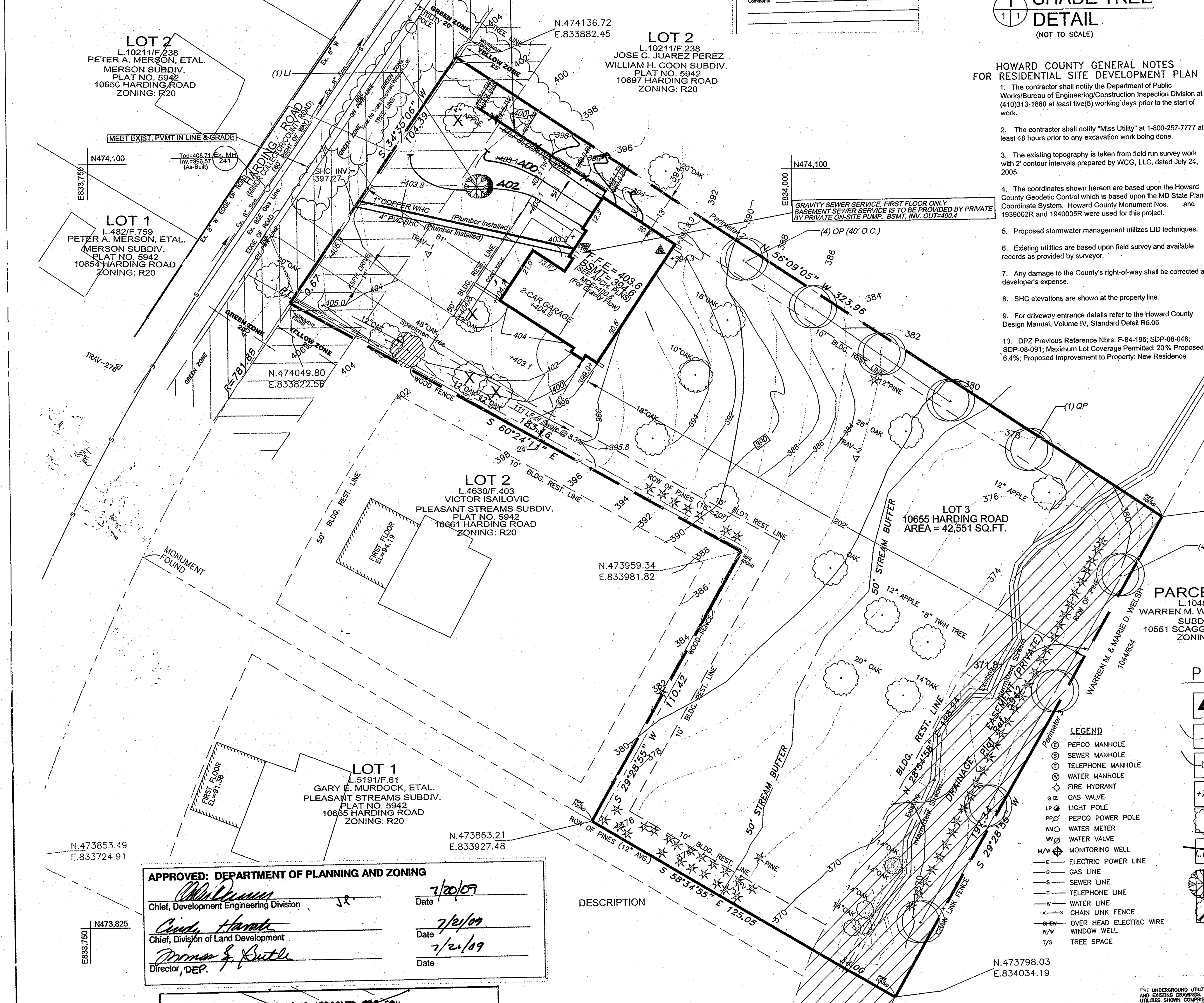
***LAGERSTROEMIA INDICA NOT PART OF LANDSCAPE REQUIREMENT BY HOWARD CO.

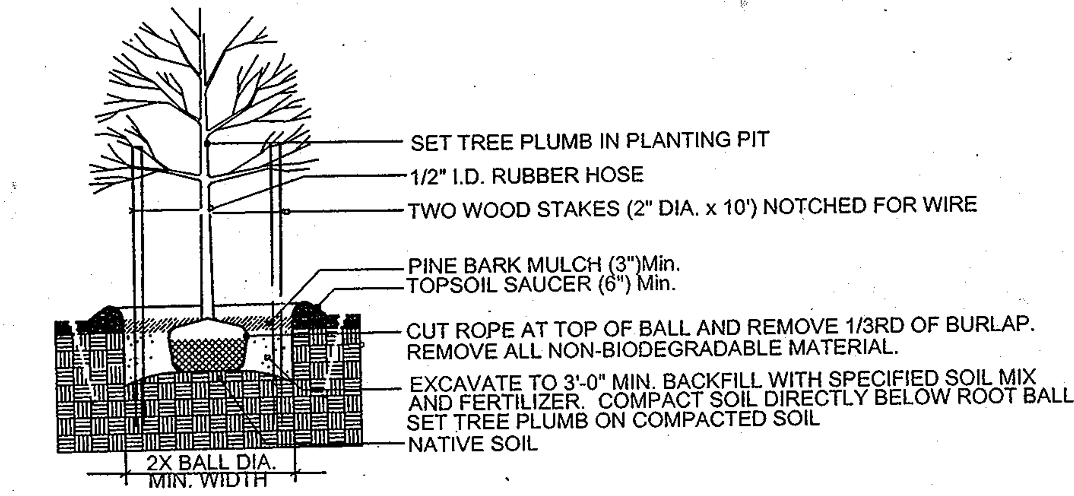
### SCHEDULE A
### PERIMETER LANDSCAPE EDGE

| | | |
|---|---|---|
| Landscape Type | | A |
| Linear Feet of Roadway Frontage/Perimeter | NO | 521 |
| Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed) | NO | NO |
| Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed) | NO | NO |
| Number of Plants Required: Shade Trees / Evergreen Trees / Shrubs | 0 | 9 |
| Number of Plants Provided: Shade Trees / Evergreen Trees / Other Trees (2:1 substitution) / Shrubs (10:1 substitution) (Describe plant substitution credits below if needed) | | 9 |

Comments

REMOVE PROPOSED WALL (5)

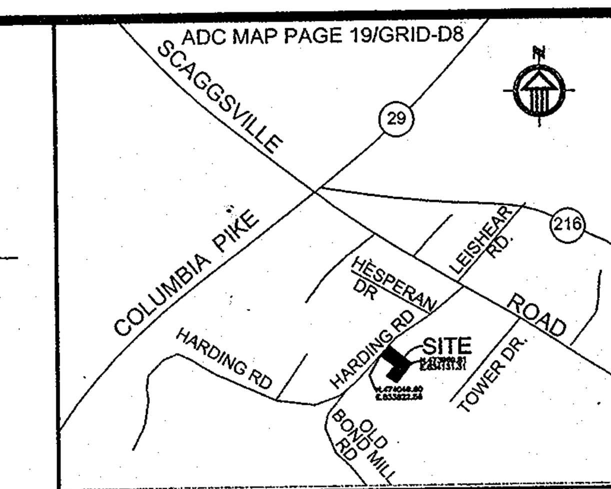



## 1 SHADE TREE DETAIL
(NOT TO SCALE)

## HOWARD COUNTY GENERAL NOTES FOR RESIDENTIAL SITE DEVELOPMENT PLAN

1. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410)313-1880 at least five(5) working days prior to the start of work.
2. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
3. The existing topography is taken from field run survey work with 2' contour intervals prepared by WCG, LLC, dated July 24, 2005.
4. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the MD State Plane Coordinate System. Howard County Monument Nos. and 1939002R and 1940005R were used for this project.
5. Proposed stormwater management utilizes LID techniques.
6. Existing utilities are based upon field survey and available records as provided by surveyor.
7. Any damage to the County's right-of-way shall be corrected at developer's expense.
8. SHC elevations are shown at the property line.
9. For driveway entrance details refer to the Howard County Design Manual, Volume IV, Standard Detail R6.06
10. DPZ Previous Reference Nbrs: F-84-196; SDP-08-048; SDP-08-091; Maximum Lot Coverage Permitted: 20% Proposed: 6.4%; Proposed Improvement to Property: New Residence




VICINITY MAP
Scale: 1" =2000'

## GENERAL NOTES

1. EXISTING SITE INFORMATION, INCLUDING TOPOGRAPHY AND UTILITY INFORMATION BASED ON SURVEY AS PERFORMED ON JULY 24, 2005, BY WCG INC., 4424 MONTGOMERY AVE., BETHESDA, MD. 20814. (301)665-7907.
2. PROPERTY ADDRESS: 10655 HARDING ROAD LIBER-4821/FOLIO-127
3. LOT AREA: 0.9777 AC. (42,551 sq.ft.)
   a. Max. Disturbed Area: 0.21 Ac. (9,191 sq.ft.)
   b. Undisturbed Area: 0.77 Ac. (33,360 sq.ft.)
   c. Vegetatively Stabilized Area 6,451 sq.ft. or 0.14ac.
4. ZONING INFORMATION:
   a. Lot Zoning: R20
   b. Subdivision: Pleasant Streams
   c. Tax Account Nbr: 1406485286
   d. Tax Map Grid:46/18
   e. Legal Description: Lot 3 .977 A Harding Road Pleasant Streams
   f. Election District: 6
   g. Public Water Available: Yes (8" on Harding Rd.)
   h. Public Sewer Available: Yes (8" on Harding Rd)
   i. Water & Sewer Envelope: Planned or Existing Community System
5. MINIMUM BUILDING RESTRICTION LINES:
   a. Front: 50'
   b. Side: 10'
   c. Rear: 35'
6. Existing Use on Site: Vacant Lot
7. All footings are to be placed on undisturbed earth.
8. All fill material under slab shall be Class 1; All fill material under driveways, walks, retaining walls, shall be Class 2. All remaining areas shall be filled using Class 3.
9. Plan prepared without the benefit of a Title Report and therefore may not indicate all existing encumbrances on the property.
10. New House Construction:
    a. Height: 30'-11"
    b. No. of Stories: 2
    b. Dimensions: See Architectural plans
11. An on-site wetland study was conducted on 11/17/07 and it was determined that no wetlands or floodplains exist on this site. Futhermore, it was determined that no hydric soils are present on this site. There is an intermittent stream that is located at the rear of the site. A 50-foot stream buffer is noted on the plan.
12. Recorded Record Plat: 5942, on 9/21/84 among Land Records of Howard County.
13. THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS, PER SECTION 16.1202(b)(2)(i) OF THE OF THE COUNTY CODE BECAUSE DEVELOPMENT IS OCCURING ON A SINGLE LOT AND THE PROPOSED CLEARING OF FOREST WILL BE 2000 SQ.FT. WITH THE FILING OF A DECLARATION OF INTENT.
14. This property was created by subdivision and was recorded among the Land Records of Howard County as plat no. 5942 on Sept. 21, 1984, under F-84-198, Pleasant Streams.
15. The SWM is applicable for this site and is limited to LID devices and will be maintained by the owner.
16. The contractor or developer shall contact the Construction Inspection Division 24 hours in advance of commencement of work at (301) 313-1880.
17. Development or construction on this parcel must comply with setback and buffer regulations in effect at the time of submission of the site development plan, waiver petition, or building/grading permit.
18. In accordance with Section 16.127(c)(2)(iii), a building must be located to minimize infringement on the privacy of adjoining residential properties. This new house will not infringe on the privacy of any existing building/homes and the perimeters will be buffered with landscape tree plantings.
19. Landscaping has been provided in accordance with Section 16.124 of the Subdivision and Land Development Regulations and the Landscape Manual. SURETY OF $2700.00 TO BE POSTED WITH BUILDER'S GRADING PERMIT.
20. Cemeteries and/or historic features do not exist on the site.
21. Developer shall be responsible for any damage to the public right-of-way.
22. The contractor or developer shall contact the Construction Inspection Division 24 hours in advance of commencement of work at (410) 313-1880.

RED LINE REVISION PREPARED BY: PGASSOCIATES, INC (DEAN PACKARD, P.E.)
16220 FREDERICK ROAD, SUITE #300
GAITHERSBURG, MD. 20877
301-208-0250 / PGAI@VERIZON.NET

DEAN PACKARD
REG. PROF. ENGINEER: 16518

[Seal: STATE OF MARYLAND, DEAN PACKARD, 16518, REGISTERED PROFESSIONAL ENGINEER]
[Seal: STATE OF MARYLAND, PROFESSIONAL ENGINEER, 11973]

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. 11973, Expiration Date: 5-10-2010."

## PLAN LEGEND

- INGRESS/EGRESS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- +76.7 PROPOSED SPOT ELEV.
- EXISTING TREE (TO REMAIN)
- L.O.D. LIMITS OF DISTURBANCE
- PROPOSED LANDSCAPE
- EXISTING TREE (TO BE REMOVED)

### ADDRESS CHART

| LOT/PARCEL # | STREET ADDRESS |
|---|---|
| Lot 3/Parcel 161 | 10655 HARDING ROAD |
| | |
| | |

### PERMIT INFORMATION CHART

| | | | |
|---|---|---|---|
| Subdivision Name: PLEASANT STREAMS | | Section/Area: N/A | Lot/Parcel No. 3 |
| Plat # or L/F: 5942 | Grid #: 18 / Zoning: R-20 | Tax Map No.: 46 / Elect Distr: 6 | Census Tract: 6068.02 |
| Water Code: N/A | | Sewer Code: N/A | |

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

[signature] J.R. — Chief, Development Engineering Division — Date 7/20/09

[signature] — Chief, Division of Land Development — Date 7/21/09

[signature] — Director, DEP. — Date 7/21/09

DESCRIPTION

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

**UTILITY DISCLAIMER**

THE UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

20 10 0 10 20
SCALE: 1"= 20'

SDP-09-015

| NO. | REVISION | DATE |
|---|---|---|
| 5 | REMOVE WALL / REVISE GRADING | 6/17/10 |
| 4 | REVISED PLAN PER HOWARD CO. DPZ | 7/6/09 |
| 3 | REVISED PLAN PER HOWARD CO. DPZ | 12/8/08 |
| 2 | REVISED PLAN PER HOWARD CO. DPZ | 10/6/08 |
| 1 | REVISED PLAN PER HOWARD CO. DPZ | 6/15/08 |

ELECTION DISTRICT 6, HOWARD COUNTY, MARYLAND

SHEET TITLE: **SITE & LANDSCAPE PLAN**

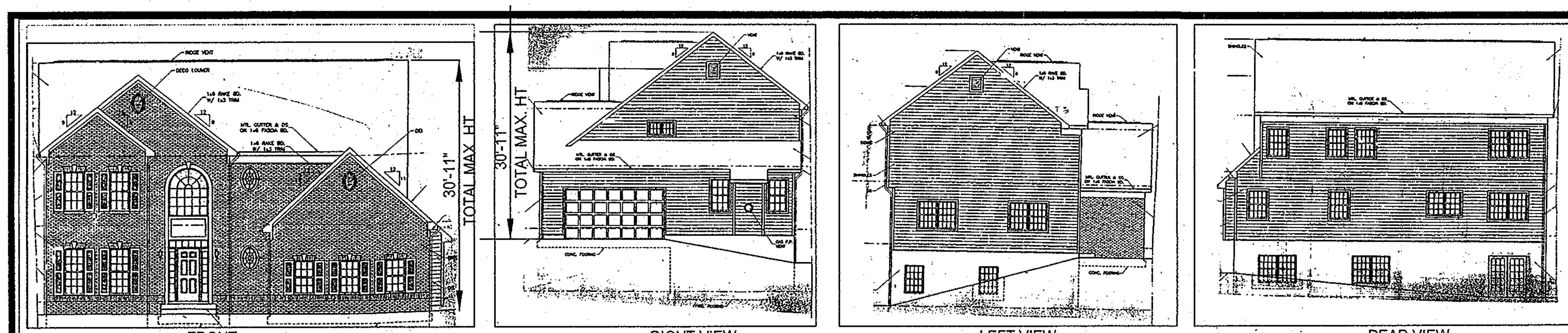
PROJECT TITLE: **DELGADO PROPERTY (PLEASANT STREAMS, LOT 3) PLAT NO.5942 TAX MAP 46, GRID 18, PARCEL 161 SINGLE FAMILY DETACHED DWELLING**

CLIENT: **RAUL AND JANET DELGADO 15720 COLUMBIA PIKE BURTONSVILLE, MARYLAND 20866**

DIGITERRA design LLC
LANDSCAPE ARCHITECTS SITE PLANNERS LAND DEVELOPMENT CONSULTANTS
8908 SIMPSON LANE - CLINTON, MD 20735
301.877.0271 301.877.3839 FAX WWW.DIGITERRADESIGN.COM
PROJECT NO. 28-0225 · DRAWN BY: CT · Q/C REVIEW BY: REM · DESIGNED BY: DVO · CHECKED BY: LTH · JURISDICTION: HOWARD

FILE: C:\28-0225\DWG
DATE: JULY 6, 2009
SCALE: 1"=20'
PLAN NUMBER: 1 of 3

SDP-09-015



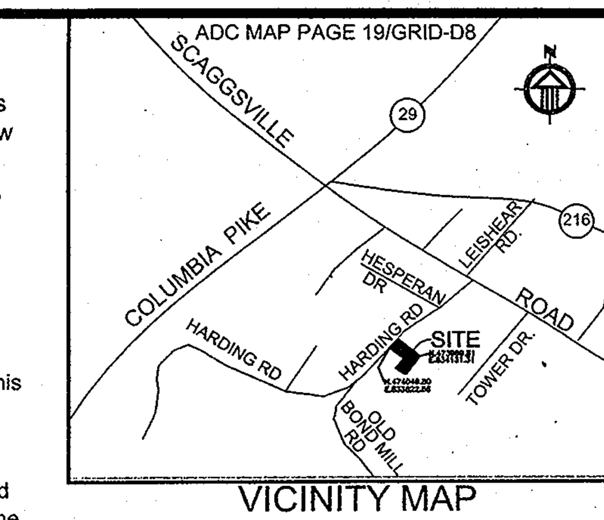

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan. Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion, a letter of notice, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

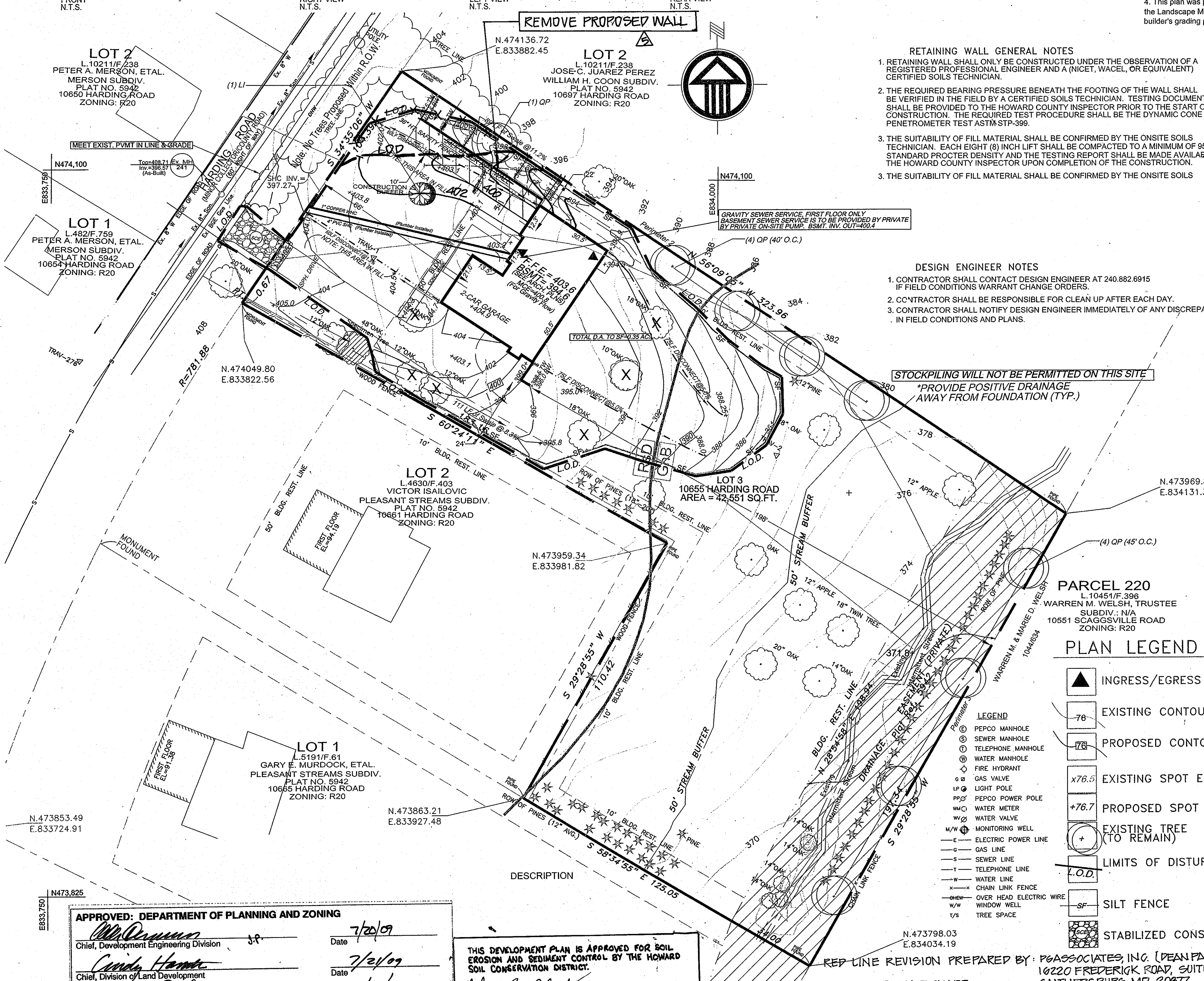
Raul Delgado — Developer/Builder     7/8/09 — Date

## LANDSCAPE NOTES

1. The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, plant materials, berms and 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 required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
2. No clearing of existing vegetation is permitted within the landscape edge for which credit is being taken; however, landscape maintenance is authorized.
3. At the time of installation, all trees and shrubs herewith listed and approved for this site shall be of the proper height requirements in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to applicable plans and certificates.
4. This plan was prepared in accordance with Section 16.124 of the Howard County Code and the Landscape Manual, requiring 5 shade trees in the amount of $1,000 to be provided with the builder's grading permit application or the DPW Developer's Agreement.




VICINITY MAP
Scale: 1" =2000'

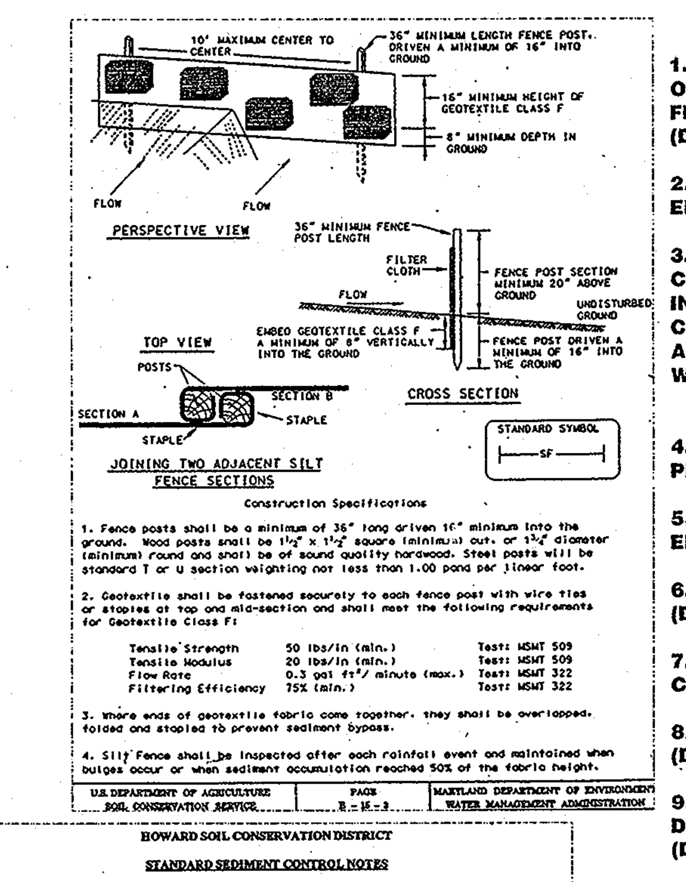



## RETAINING WALL GENERAL NOTES

1. RETAINING WALL SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
2. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
3. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ONSITE SOILS TECHNICIAN. EACH EIGHT (8) INCH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTER DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF THE CONSTRUCTION.
3. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ONSITE SOILS

## DESIGN ENGINEER NOTES

1. CONTRACTOR SHALL CONTACT DESIGN ENGINEER AT 240.882.6915 IF FIELD CONDITIONS WARRANT CHANGE ORDERS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP AFTER EACH DAY.
3. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER IMMEDIATELY OF ANY DISCREPANCIES IN FIELD CONDITIONS AND PLANS.




Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at 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 | 0.3 gal ft²/ minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.) | Test: MSMT 322 |

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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

## HOWARD SOIL CONSERVATION DISTRICT
### STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown 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.
5. 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 seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

| | |
|---|---|
| Total Area of Site | 0.97 Acres |
| Area Disturbed | 0.35 Acres |
| Area to be roofed or paved | 0.07 Acres |
| Area to be vegetatively stabilized | 0.28 Acres |
| Total Cut | 0.28 Cu. Yds. |
| Total Fill | 1675 Cu. Yds. |
| Offsite waste/borrow area location: | BORROW AREA TBD BY CONTRACTOR CHOSEN |

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. 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.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

Rev. 9/99

## SEQUENCE OF CONSTRUCTION

1. **CONTRACTOR SHALL OBTAIN AND HAVE ON-SITE COPIES OF ALL APPLICABLE FEDERAL, STATE, AND LOCAL PERMITS. (Day 1)**
2. **FLAG LIMITS OF DISTURBANCE (L.O.D.) FOR ENTIRE SITE. (Day 2)**
3. **SCHEDULE PRE-CONSTRUCTION MTG. BY CALLING HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION, A MINIMUM OF 48HRS IN ADVANCE AT 410.313.1855 PRIOR TO BEGINNING WORK. (Day 2-3)**
4. **CLEAR AND GRUB AS NECESSARY TO INSTALL PERIMETER SEDIMENT CONTROLS. (Day 3-5)**
5. **INSTALL STABILIZED CONSTRUCTION ENTRANCE (Day 6)**
6. **INSTALL SILT FENCE AS INDICATED PER PLAN. (Day 6-9):**
7. **INSTALL WATER AND SEWER HOUSE CONNECTIONS (Day 9-11)**
8. **CONSTRUCT HOUSE AND DRIVEWAY (Day 12-210)**
9. **PROVIDE PERMANENT STABILIZATION OF ALL DISTURBED AREAS PER SEEDING SCHEDULE. (Day 210-213)**
10. **PROVIDE PERMANENT SEEDING PER SEEDING SCHEDULE. (Day 213-215)**
11. **UPON APPROVAL FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROLS. (Day 215-218)**

## HOWARD SOIL CONSERVATION DISTRICT
### PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed 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:

1. Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/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/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.).
2. Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:
Option 1 -- Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
Option 2 -- Use sod. Option 3 -- Seed with 60 lbs/acre Kentucky 30 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 unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

### TEMPORARY SEEDING NOTES.

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed 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/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 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.

## PLAN LEGEND

- INGRESS/EGRESS
- 76 — EXISTING CONTOUR
- 76 — PROPOSED CONTOUR
- x76.5 — EXISTING SPOT ELEV.
- +76.7 — PROPOSED SPOT ELEV.
- EXISTING TREE (TO REMAIN)
- L.O.D. — LIMITS OF DISTURBANCE
- SF — SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE

### LEGEND

- E — PEPCO MANHOLE
- S — SEWER MANHOLE
- T — TELEPHONE MANHOLE
- W — WATER MANHOLE
- FIRE HYDRANT
- G — GAS VALVE
- LP — LIGHT POLE
- PP — PEPCO POWER POLE
- WM — WATER METER
- WV — WATER VALVE
- M/W — MONITORING WELL
- —E— ELECTRIC POWER LINE
- —G— GAS LINE
- —S— SEWER LINE
- —T— TELEPHONE LINE
- —W— WATER LINE
- x—x CHAIN LINK FENCE
- OHEW — OVER HEAD ELECTRIC WIRE
- W/W — WINDOW WELL
- T/S — TREE SPACE

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. 11973, Expiration Date: 5-10-2010."

### ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer (print name below signature)     Date 7/5/09

### DEVELOPER'S CERTIFICATE

"We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Raul Delgado / Janet Delgado     July 6, 2009
Signature of Developer (print name below signature)     Date

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

| | |
|---|---|
| Chief, Development Engineering Division J.P. | Date 7/20/09 |
| Chief, Division of Land Development | Date 7/21/09 |
| Director, DEP. | Date 7/21/09 |

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

HOWARD SOIL CONSERVATION DISTRICT     7/14/09 DATE

RED LINE REVISION PREPARED BY: PGASSOCIATES, INC. (DEAN PACKARD, P.E.)
16220 FREDERICK ROAD, SUITE #300
GAITHERSBURG, MD. 20877
301-208-0250/PGAI@VERIZON.NET

DEAN PACKARD
REG. PROF. ENGINEER: 16518

20 10 0 10 20
SCALE: 1"= 20'

SDP-09-015

| NO. | REVISION | DATE |
|---|---|---|
| 5 | REMOVE WALL/REVISE GRADING | 6/17/10 |
| 4 | REVISED PLAN PER HOWARD CO. DPZ | 7/6/09 |
| 3 | REVISED PLAN PER HOWARD CO. DPZ | 12/8/08 |
| 2 | REVISED PLAN PER HOWARD CO. DPZ | 10/6/08 |
| 1 | REVISED PLAN PER HOWARD CO. DPZ | 6/15/08 |

ELECTION DISTRICT 6, HOWARD COUNTY, MARYLAND

SHEET TITLE **STORMWATER MANAGEMENT & SEDIMENT CONTROL PLAN**

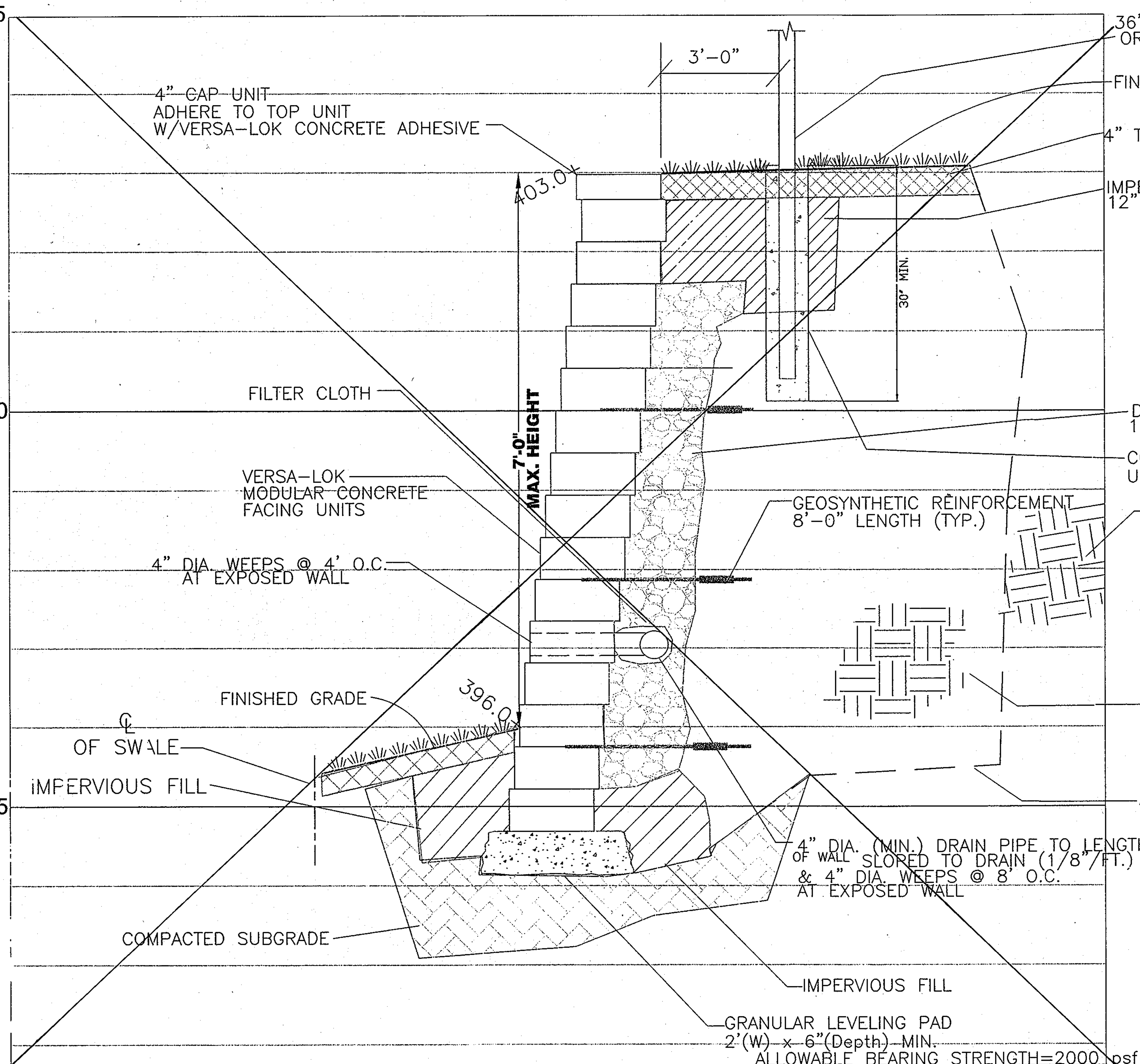
PROJECT TITLE **DELGADO PROPERTY (PLEASANT STREAMS, LOT 3) PLAT NO.5942 TAX MAP 46, GRID 16, PARCEL 161 SINGLE FAMILY DETACHED DWELLING**

CLIENT **RAUL AND JANET DELGADO 15720 COLUMBIA PIKE BURTONSVILLE, MARYLAND 20866**

DIGITERRA design LLC
LANDSCAPE ARCHITECTS SITE PLANNERS
LAND DEVELOPMENT CONSULTANTS
8908 SIMPSON LANE - CLINTON, MD 20735
301.877.0271 301.877.3839 FAX WWW.DIGITERRADESIGN.COM

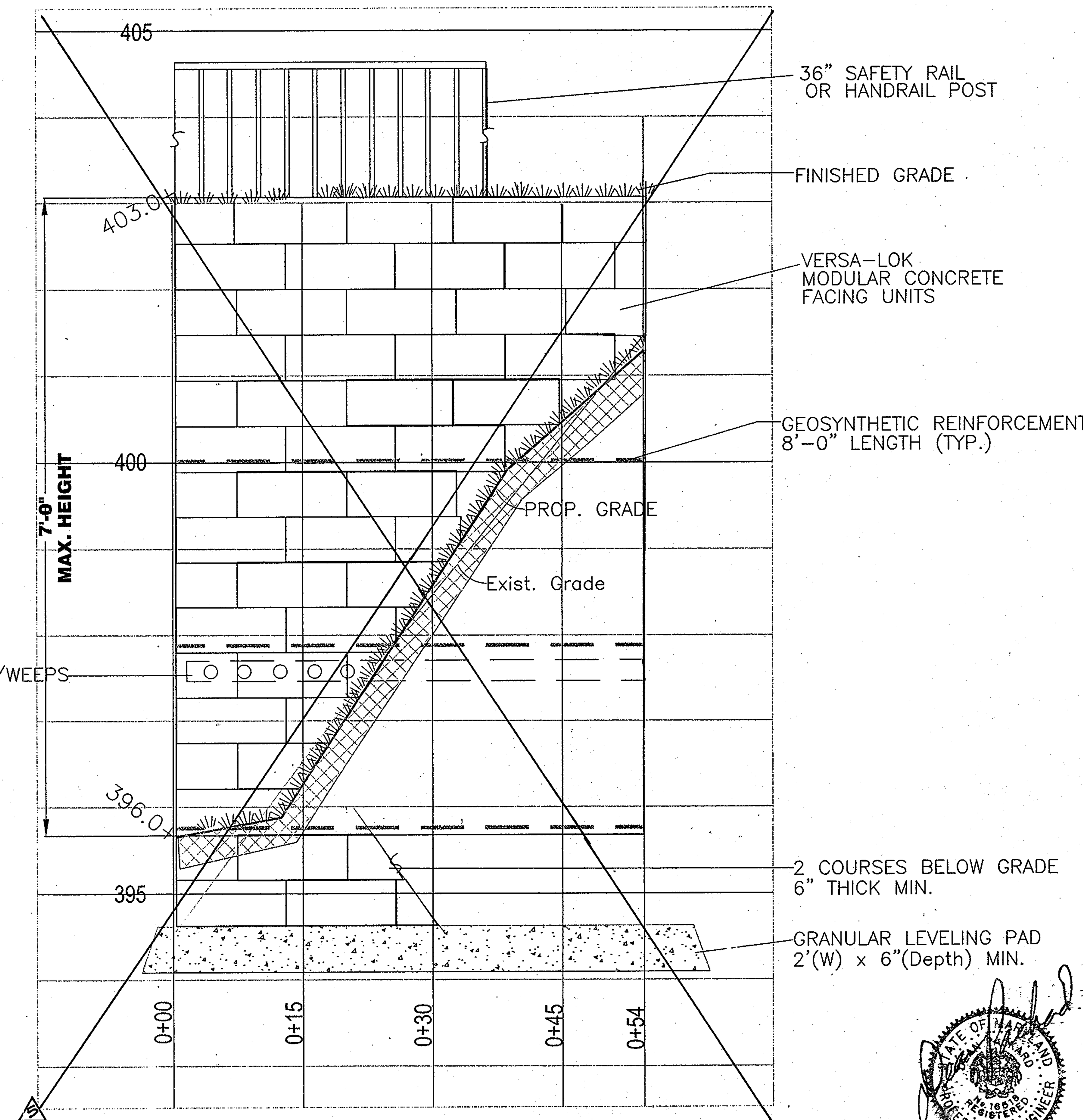
| PROJECT NO. | DRAWN BY: | Q/C REVIEW BY: |
|---|---|---|
| 28-0225 | CT | REM |
| DESIGNED BY: | CHECKED BY: | JURISDICTION: |
| DVO | LTH | HOWARD |

FILE C:\28-0225\DWG
DATE July 6, 2009
SCALE 1"=20'
PLAN NUMBER 2 of 3




## VERSA-LOC WALL SECTION AT MAXIMUM HEIGHT

Scale: 1"=10' Hor.
1"=5' Vert.




## VERSA-LOC WALL ELEVATION AT MAX. HEIGHT

Scale: 1"=10' Hor.
1"=5' Vert.

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. 11973, Expiration Date: 5-10-2010."

RED LINE REVISION PREPARED BY :
PG ASSOCIATES, INC.
16220 FREDERICK ROAD, SUITE #300
GAITHERSBURG, MD. 20877
301·208·0250 / PGAI@VERIZON.NET
DEAN PACKARD
REG. PROF. ENGINEER, 16518

| MAX. EXPOSED HEIGHT (FT.) (W/4" CAP) | TOTAL HEIGHT (FT.) | APPROXIMATE NO OF VERSA-LOK WALL COURSES | GRID LAYERS | GRID LENGTH | GRID NO./ELEVATION |
|---|---|---|---|---|---|
| 7'-0" | 8'-6" | 16 | 3 | 8'-0" | A/395.5 |
| | | | | | B/397.9 |
| | | | | | C/400.0 |

20 10 0 20 30

SCALE: 1"= 10'

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

[signature] J.P. — Chief, Development Engineering Division — Date 7/20/09

[signature] — Chief, Division of Land Development — Date 7/21/09

[signature] — Director, DEP. — Date 7/21/09

**SPECIFICATIONS FOR SEGMENTAL RETAINING WALL SYSTEMS**

**PART 1: GENERAL**

1.01 Description

A. Work includes furnishing and installing segmental retaining wall (SRW) units to the lines and grades designated on the construction drawings or as directed by the Architect/Engineer. Also included is furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.03 Submittals

A. Material Submittals: The Contractor shall submit manufacturers' certifications two weeks prior to start of work stating that the SRW units and geosynthetic reinforcement meet the requirements of Section 2 of this specification.

1.04 Delivery, Storage and Handling

A. Contractor shall check materials upon delivery to assure that specified type and grade of materials have been received and proper color and texture of SRW units have been received.
B. Contractor shall prevent excessive mud, wet concrete, epoxies, and like materials which may affix themselves, from coming in contact with materials.
C. Contractor shall store and handle materials in accordance with manufacturer's recommendations.
D. Contractor shall protect materials from damage. Damaged materials shall not be incorporated into the retaining wall.

**PART 2: MATERIALS**

2.01 Segmental Retaining Wall Units

A. SRW units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications. SRW units currently approved for this project are:

Versa-Lok Retaining Wall Units as manufactured by _Versa-Lok, Inc._(or Approved Equal_

B. Color of SRW units shall be _Sand_(or Approved Equal).
C. Finish of SRW units shall be split face.
D. SRW unit faces shall be of straight geometry.
E. SRW unit height shall be six inches.
F. SRW units (not including aggregate fill in unit voids) shall provide a minimum weight of 105 psf wall face area.
G. SRW units shall be solid through the full depth of the unit.
H. SRW units shall have a depth (front face to rear) to height ratio of 2:1, minimum.
I. SRW units shall be interlocked with connection pins, designed with proper setback to provide 8:1 vertical to horizontal batter (a 7 degree cant from vertical).
J. SRW units shall be capable of being erected with the horizontal gap between adjacent units not exceeding 1/8 inches.

2.02 Segmental Retaining Wall Unit Connection Pins

A. SRW units shall be interlocked with connection pins. The pins shall consist of glass-reinforced nylon made for the expressed use with the SRW units supplied.

2.03 Geosynthetic Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids or geotextiles manufactured as a soil reinforcement element. The manufacturers/suppliers of the geosynthetic reinforcement shall have demonstrated construction of similar size and types of segmental retaining walls on previous projects.

The geosynthetic type must be approved one week prior to bid opening. Geosynthetic types currently approved for this project are:

B. The type, strength, and placement location of the reinforcing geosynthetic shall be as shown on the final, sealed construction plans.

2.04 Leveling Pad

A. Material for leveling pad shall consist of compacted sand, gravel, or combination thereof and shall be a minimum of 6 inches in depth. Lean concrete with a strength of 200-300 psi and three inches thick maximum may also be used as a leveling pad material. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit.

2.05 Drainage Aggregate

A. Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D422

2.06 Drainage Pipe

A. The drainage collection pipe shall be a perforated or slotted PVC, or corrugated HDPE pipe. The drainage pipe may be wrapped with a geotextile to function as a filter.

B. Drainage pipe shall be manufactured in accordance with ASTM D 3034 and/or ASTM D 1248

**PART 3: INSTALLATION**

A. For constructability considerations, maximum vertical spacing between geogrid layers shall be 2.0 feet.

3.01 Geosynthetic Reinforcement Placement

A. All geosynthetic reinforcement shall be installed at the proper elevation and orientation as shown on the wall profiles and details on the final construction plans or as directed by the Engineer.

B. At the elevations shown on the final plans, the geosynthetic reinforcement shall be laid horizontally on compacted infill and on top of the concrete SRW units. Embedment of the geosynthetic in the SRW units shall be consistent with SRW manufacturer's recommendations. Correct orientation of the geosynthetic reinforcement shall be verified by the Contractor to be in accordance with the geosynthetic manufacturer's recommendations. The highest strength direction of the geosynthetic must be perpendicular to the wall face.

C. Geosynthetic reinforcement layers shall be one continuous piece for their entire embedment length. Overlap of the geosynthetic in the design strength direction (perpendicular to the wall face) shall not be permitted.

D. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum of 6 inches of backfill is required prior to operation of tracked vehicles over the geosynthetic. Turning should be kept to a minimum. Rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds (less than 5 mph).

E. The geosynthetic reinforcement shall be in tension and free of wrinkles prior to placement of soil fill. The nominal tension shall be applied to the reinforcement and secured in place with staples, stakes or by hand tensioning until reinforcement is covered by six inches of fill.

3.02 Drainage Materials

A. Drainage aggregate shall be installed to the line, grades, and sections shown on the final plans. Drainage fill shall be placed to the minimum thickness shown on the construction plans between and behind units.

B. Drainage collection pipes shall be installed to maintain gravity flow of water outside the reinforced soil zone. The drainage collection pipe shall daylight into a storm sewer manhole or along a slope at an elevation lower than the lowest point of the pipe within the aggregate drain.

3.03 Backfill Placement

A. The reinforced backfill shall be placed as shown in the construction plans in the maximum compacted lift thickness of 10 inches and shall be compacted to a minimum of 95% of standard Proctor density (ASTM D 698) at a moisture content within 2% of optimum. The backfill shall be placed and spread in such a manner as to eliminate wrinkles or movement of the geosynthetic reinforcement and the SRW units.

B. Only hand-operated compaction equipment shall be allowed within 3 feet of the front of the wall face. Compaction within the 3 feet behind the wall face shall be achieved by at least three (4) passes of a lightweight mechanical tamper, plate, or roller.

C. At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct water runoff away from the wall face.

D. At completion of wall construction, backfill shall be placed level with final top of wall elevation. If final grading, paving, landscaping, and/or storm drainage installation adjacent to the wall is not placed immediately after wall completion, temporary surface drainage shall be provided to ensure water runoff is not directed at the wall nor allowed to collect or pond behind the wall until final construction adjacent to the wall is completed.

3.04 SRW Caps

A. SRW caps shall be properly aligned and glued to underlying units with Versa-Lok concrete adhesive or an equivalent, flexible, high-strength concrete adhesive. Rigid adhesive or mortar are not acceptable.

B. Caps shall overhang the top course of units by 3/4 to 1 inch. Slight variation in overhang is allowed to correct alignment at the top of the wall.

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

[signature] — HOWARD SOIL CONSERVATION DISTRICT — DATE 7/14/09

**ENGINEER'S CERTIFICATE**

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

[signature] — Signature of Engineer (print name below signature) — Date 7/5/09

**DEVELOPER'S CERTIFICATE**

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Raul Delgado / Janet Delgado — Signature of Developer (print name below signature) — Date JULY 6, 2009

**SDP-09-015**

| NO. | REVISION | DATE |
|---|---|---|
| 1 | REVISED PLAN PER HOWARD CO. DPZ | 6/15/08 |
| 2 | REVISED PLAN PER HOWARD C.J. DPZ | 10/6/08 |
| 3 | REVISED PLAN PER HOWARD CO. DPZ | 12/8/08 |
| 4 | REMOVE WALL/REVISE GRADING | 6/17/10 |

ELECTION DISTRICT 6, HOWARD COUNTY, MARYLAND

SHEET TITLE **STORMWATER MANAGEMENT & SEDIMENT CONTROL PLAN**

PROJECT TITLE **DELGADO PROPERTY (PLEASANT STREAMS, LOT 3)**
**PLAT NO.5942**
**TAX MAP 46, GRID 18, PARCEL 161**
**SINGLE FAMILY DETACHED DWELLING**

CLIENT **RAUL AND JANET DELGADO**
**15720 COLUMBIA PIKE**
**BURTONSVILLE, MARYLAND 20866**

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PROJECT NO. 28-0225 | DRAWN BY: CT | Q/C REVIEW BY: REM
DESIGNED BY: DVO | CHECKED BY: LTH | JURISDICTION: HOWARD

FILE C:\28-0225\DWG

DATE DECEMBER. 8, 2008

SCALE 1"=20'

PLAN NUMBER **3** of **3**