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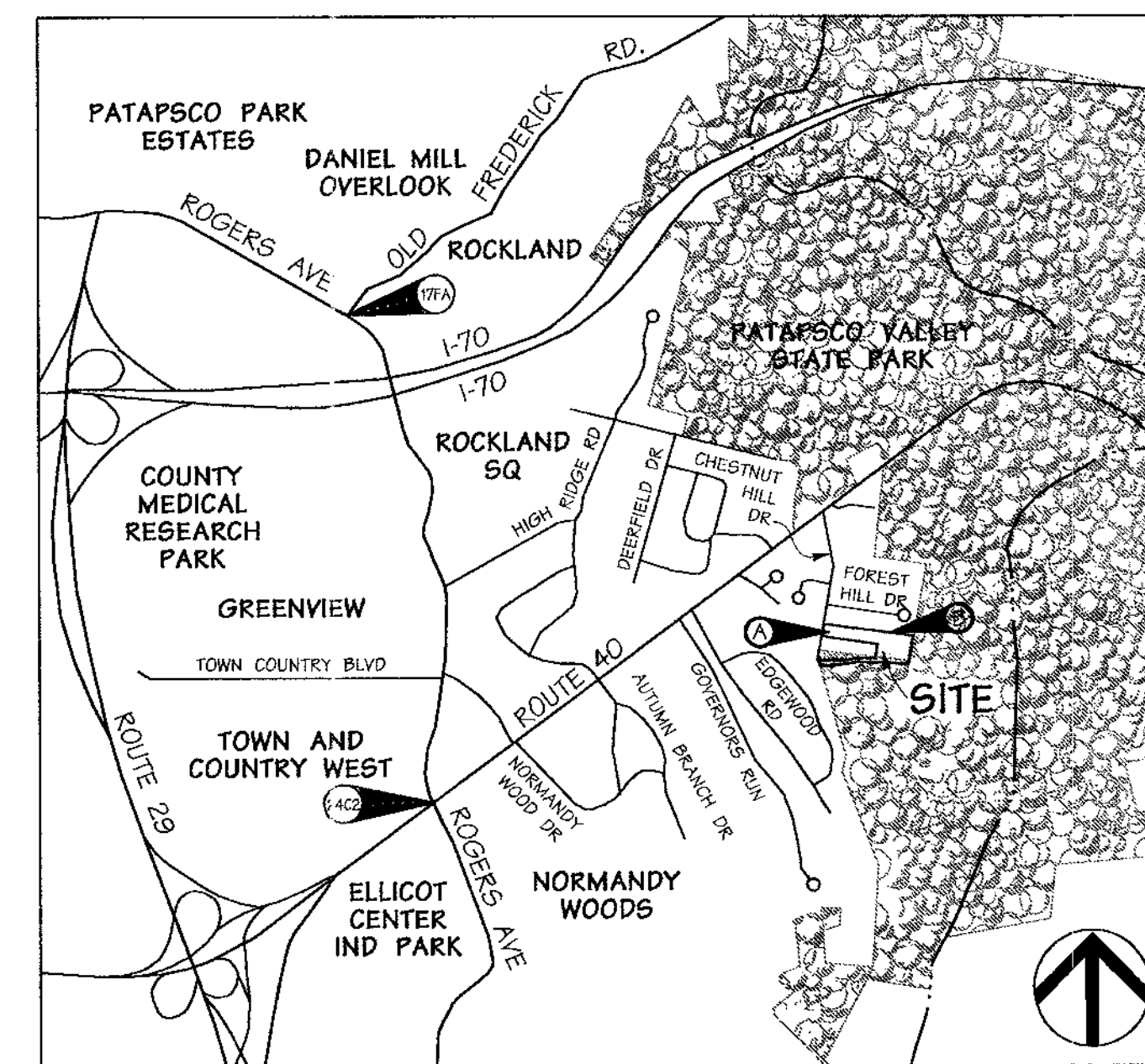
# Final Plan for Chestnut Crest

LOTS 4 - 12, OPEN SPACE LOTS 13 - 16

A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL A AND LOT 2 AND A REVISION TO LOT 1

Howard County

Maryland



VICINITY MAP

SCALE: 1"=2000'

BENCHMARK

DESCRIPTION

COORDINATES IN MARYLAND NAD83(9) (HORIZONTAL) AND NGVD29 (VERTICAL) DATUMS	
SEE VICINITY MAP ABOVE	
17FA: NORTHING: 550486.245 EASTING: 1356455.169 ELEVATION: 476.80'	24C2: NORTHING: 180648.312 EASTING: 1366035.193 ELEVATION: 354.08'
SEE PLAN VIEW AT LEFT	
A: S.E. CORNER (NEAR CENTER OF CHESTNUT HILL OPPOSITE PROPOSED CHESTNUT CREST DR.) NORTHING: 590716.656 EASTING: 1370778.133 ELEVATION: 426.18'	
B: REBAR & CAP (NORTH OF LOT 9) NORTHING: 590727.059 EASTING: 137638.909 ELEVATION: 433.52'	

DATA SOURCES:

- EXISTING TOPO INFORMATION SHOWN IS FROM AERIAL TOPOGRAPHY, FLOWN BY JDL LLC DATED JANUARY 13, 2001.
- BOUNDARY LIMITS SHOWN FROM SWM SURVEY DATED MARCH 2001.
- EXISTING UTILITIES SHOWN ARE FROM EXISTING HOWARD COUNTY RECORDS AND FIELD TOPD BY DMW DATED MARCH 2001.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*William E. McHugh* 12-6-04  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Carole K. Hatcher* 12/17/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John D. Williams* 12/15/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Revision Description

Date	No.	Revision Description
		<b>CHESTNUT CREST</b> LOTS 4 - 12 OPEN SPACE LOTS 13-16 A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL A & LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:

OWNER:	CHESTNUT HILL PROPERTIES, LLC	EXISTING OPEN SPACE LOT 2
	946-A MARMICH COURT	CHESTNUT CREST COMMUNITY ASSOCIATION, INC.
	ELDELSBURG, MD 21784	946-A MARMICH COURT
DEVELOPER:	RACHUBA HOME BUILDERS, LLC	ELDELSBURG, MD 21784
	946-A MARMICH COURT	
	ELDELSBURG, MD 21784	

**DMW**  
Drew McCaskey Walker, Inc.  
300 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 298-3333  
Fax: 298-4708

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

AREA TAX MAP 18 PARCEL 69

2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE

**COVER SHEET**

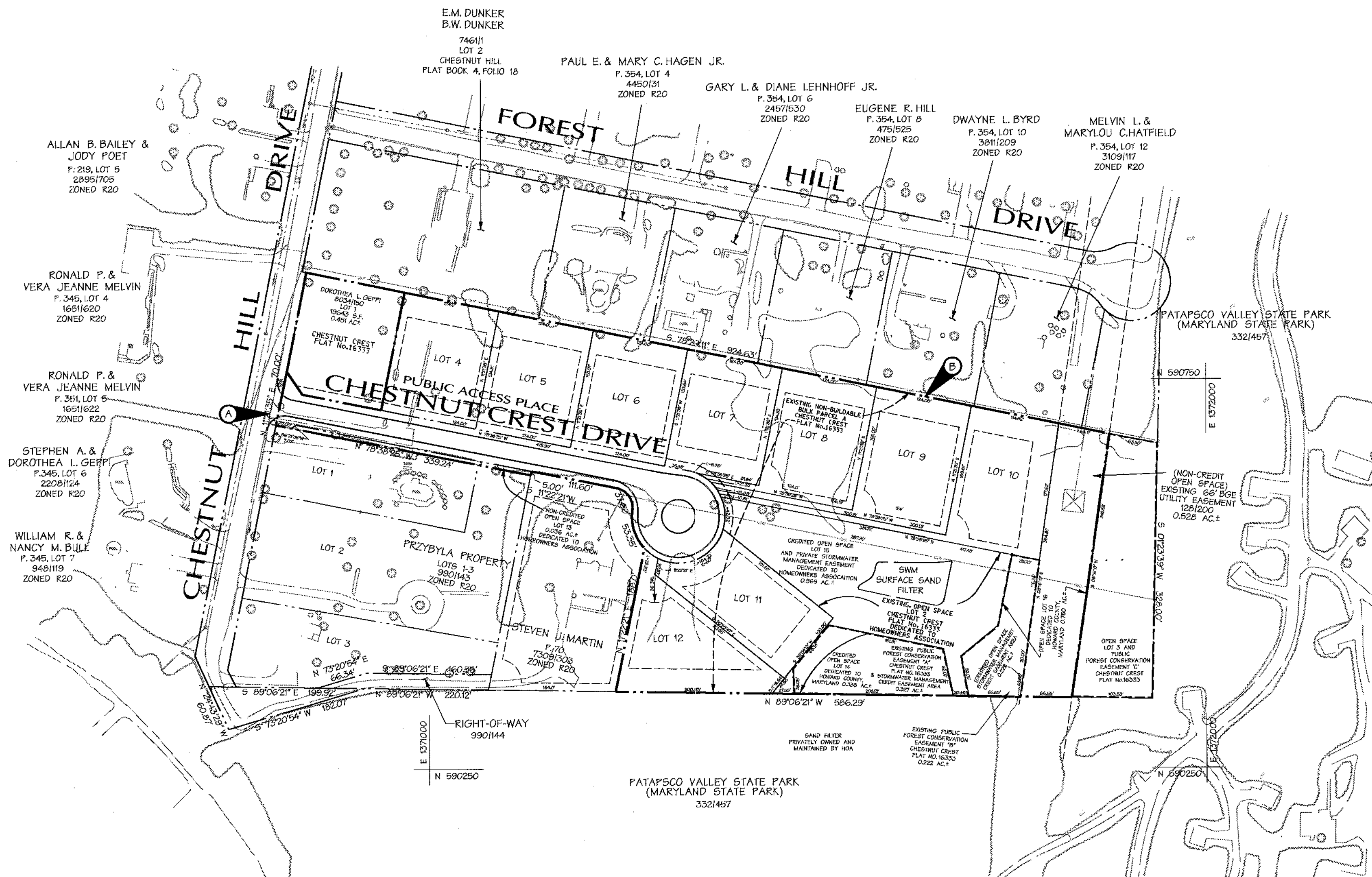
Des. By RLH Scale 1"=100' Proj. No. 00091D

Drn. By KDE Date 9-30-04

Chk. By Approved RLH 1 of 16

General Notes

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at 410-313-1030 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.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs be in place prior to the placement of any asphalt. See sheet 11 for sign detail.
- Street light placement shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." A minimum spacing of 20 feet shall be strictly observed between the light and any tree.
- The existing topography is taken from aerial survey with 2' contour intervals prepared by JDI dated Feb. 3, 2001.
- The coordinates shown herein are based upon the Howard County Geodetic Control which is based upon the Maryland State Plans Coordinate System, Howard County Monument Nos. 17 FA and 24C2 were used for this project.
- Existing utilities are based on Existing Construction Plans
- Sidewalk ramps shall meet current ADA requirements.
- Project background information:  
Subdivision Name: Chestnut Crest  
Tax Map: 18  
Section/Area: N/A  
Lot/Parcel: 69  
Zoning: R-20  
Election District: 2  
Total Tract Area: 8.113 Ac.  
Preliminary Plan Approval Date: 3-01-02  
Open Space Lots: 4  
File Numbers: SP-01-10, SDP-03-69, WP-03-68, F-03-19, WP-04-078
- All sidewalk ramps shall meet current ADA requirements. All sidewalks at intersections to have handicap ramps.
- Street trees shall be planted at least 5' from any utility structure.
- Stormwater Management for this project will be addressed with the installation of one Stormwater Management Facility (surface sand filter) which will control the runoff per the latest approved Design Standards. The following credits are being utilized to meet the Stormwater Management requirements: Natural Area Conservation Credit, Sheet flow to buffer credit and Rooftop and Non-rooftop disconnection credit (with rain gardens). Rain gardens are conceptually shown and will be final designed with the SDP drawings. Rain gardens will be built by the builder and owned and maintained by the property owner.
- The Stormwater management facility # 1 (Surface Sand Filter) shall be owned and maintained by the Home Owners Association (H.O.A.).
- Maintenance responsibility, routine and non-routine schedule is shown on sheet 10.
- As a result of the Preliminary Plan being submitted to the county prior to Nov. 15, 2001 (on June 5, 2001), this subdivision is subject to compliance with the Fourth Edition of the Subdivision and Land Development Regulations. In addition, because the Preliminary Plan did not obtain signature approval prior to Nov. 1, 2001, it is subject to compliance with Bill 50-2001 which amends the Zoning Regulations, and the amended Zoning Regulations which became effective on Jan. 5, 2002. Development or construction on these lots must comply with the setback and buffer regulations in effect at the time of the submission of the site development plan, waiver petition or building/grading permit.
- Existing well to be abandoned per Health Dept. regulations before grading permit is issued.
- The forest conservation obligation for this project has been met by F-03-019, Chestnut Crest, Lots 1-3 and Non-buildable Bulk Parcel A, which created onsite Forest Conservation Easements A-C that collectively contain 0.63 acre of retention and 0.56 acre of reforestation, and by this resubdivision, F-04-080, by a fee-in-lieu payment of \$28,314.00 for 1.3 acres of reforestation to the Ho. Co. Forest Conservation Fund that shall be paid prior to the recording of the plat. Surety in the amount of \$77,655.36 for the existing forest conservation easements was posted with the forest conservation agreement for F-03-019.
- Existing overhead electric lines to be removed (or relocated by BGE). BGE is to maintain service to parcel 70 (the Martin residence) until new service is installed.
- This plan has been prepared in accordance with the provisions Section 16.124 of the Ho. Co. code and the Ho. Co. Landscape Manual. Financial surety for the required landscaping will be posted as a part of the DPW Developers Agreement in the amount of \$29,550 (82 Shade trees and 33 Evergreen trees).



Overall Property Outline

Scale: 1"=100'



Description of Road Design Waiver (WP-04-79)

Road design waiver Section 16.119(e)(5) was conditionally approved on January 15, 2004 by DPW. Standards waived includes:

Section 16.119(e)(5) to not be required to provide the full 25' truncation at south corner of intersection of two public roads, existing Chestnut Hill Drive and proposed Chestnut Crest Drive.

The approval of WP-03-68 by letter dated Feb. 19, 2003 for this property granted to the following: Request to waive section 16.121(e)(1) to permit the required minimum open space frontage on a public road of 40 feet to be reduced to zero feet for the "Minor Subdivision" stage of this Major Subdivision. The approval is subject to the Department of Land Development conditions described in the comments dated Feb. 3, 2003.

10/25/04  
Date

Professional Engr. No. 10551

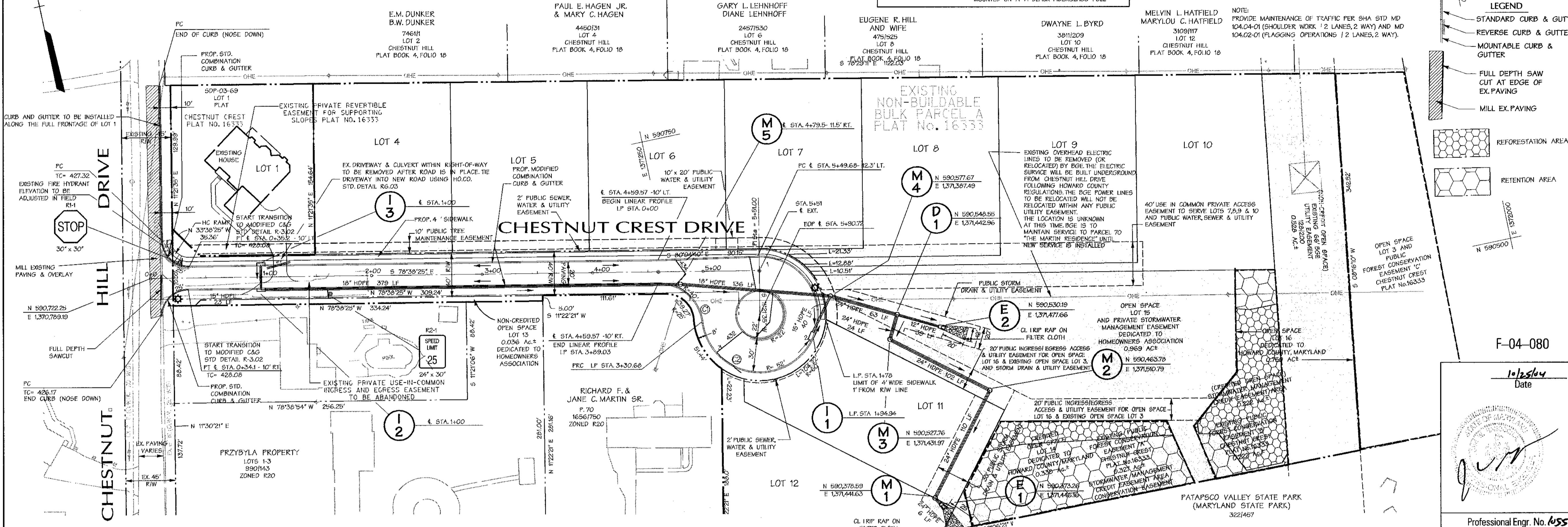


CURB CURVE DATA						
ROAD	NUMBER	DELTA	RADIUS	LENGTH	TANGENT	CHORD
CHESTNUT CREST DR.	C1	83°36'08"	40.00	58.35	35.76	S 36°50'51" E 53.32
CHESTNUT CREST DR.	C2	265°01'24"	52.00	240.53	-56.72	N 52°26'02" E 76.66

STREET LIGHT TABLE	
ROAD STA. & OFFSET	DESCRIPTION
0+25 - 19' RT.	100-WATT HPS VAPOR COLONIAL POST TOP FIXTURE MOUNTED ON A 1" BLACK FIBERGLASS POLE *
L.P. 1+50 - 3' LT.	100-WATT HPS VAPOR COLONIAL POST TOP FIXTURE MOUNTED ON A 1" BLACK FIBERGLASS POLE *

CONSTRUCTION NOTES:  
 1. CONTRACTOR TO MAINTAIN ACCESS TO LOT 1 DURING CONSTRUCTION.  
 2. FULL DEPTH SAW CUT AT LEAST ONE FOOT ONTO PAVING CHESTNUT HILL DRIVE TO FORM A SMOOTH TIE-IN. IMPROVEMENTS ALONG CHESTNUT HILL DRIVE ARE TO BE IN ACCORDANCE WITH H-202 SID. DETAIL R-10.01. EXTEND AT LEAST ONE FOOT BEYOND EX. PAVING.  
 3. SEE SHEET 12 FOR STREET TREE LOCATIONS AND QUANTITIES.

\*M/F FACILITY # 1 - SURFACE SAND FILTER SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION (H.O.A.).



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 [Signature] 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 [Signature] 12/17/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12/15/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**CHESTNUT CREST**  
 LOTS 4 - 12  
 OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF  
 NON-BUILDABLE BULK PARCEL A  
 & LOT 2 AND A REVISION TO LOT 1  
 OWNER/DEVELOPER:  
 CHESTNUT HILL PROPERTIES, LLC  
 946-A MARIMICH COURT  
 ELDERSBURG, MD 21784  
 DEVELOPER: KACHUBA HOME BUILDERS, LLC  
 946-A MARIMICH COURT  
 ELDERSBURG, MD 21784

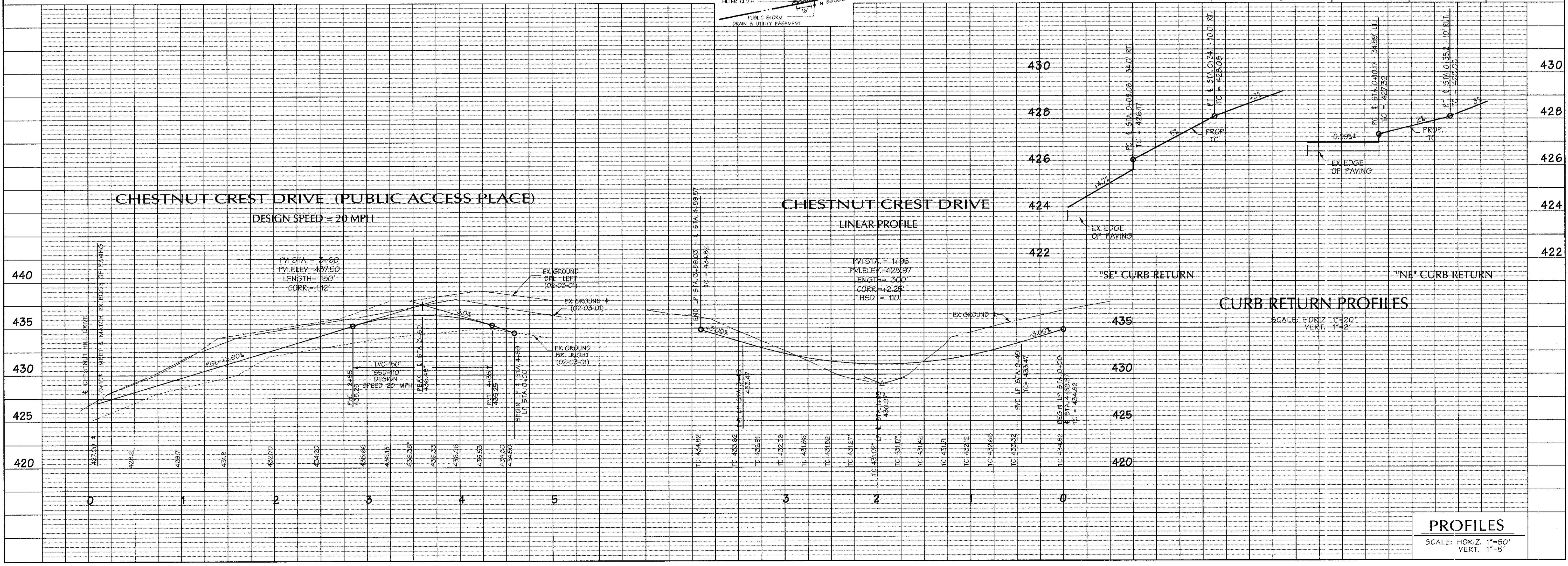
**DMW**  
 DeWitt-McCune-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3833  
 Fax 296-4705  
 A Team of Land Planners,  
 Landscape Architects,  
 Golf Course Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

Date	No.	Revision Description

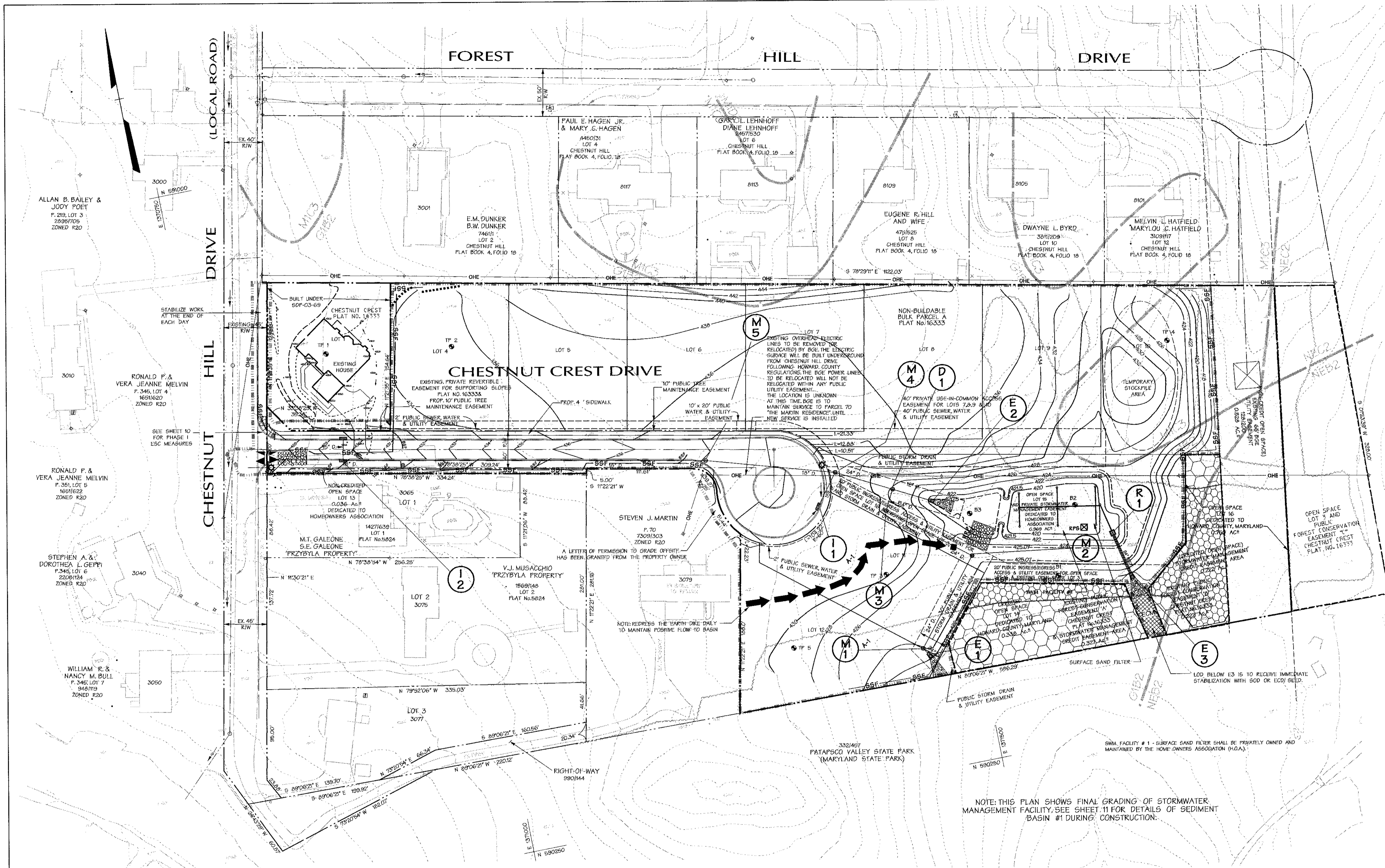
TAX MAP 18 PARCEL 69  
 2nd ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

**TITLE**  
 CHESTNUT CREST  
 ROAD CONSTRUCTION PLAN

Des. By	RLH	Scale	1"=50'	Proj. No.	00091.D
Drn. By	KDE	Date	9-30-04		
Chk. By	RLH	Approved			2 of 16





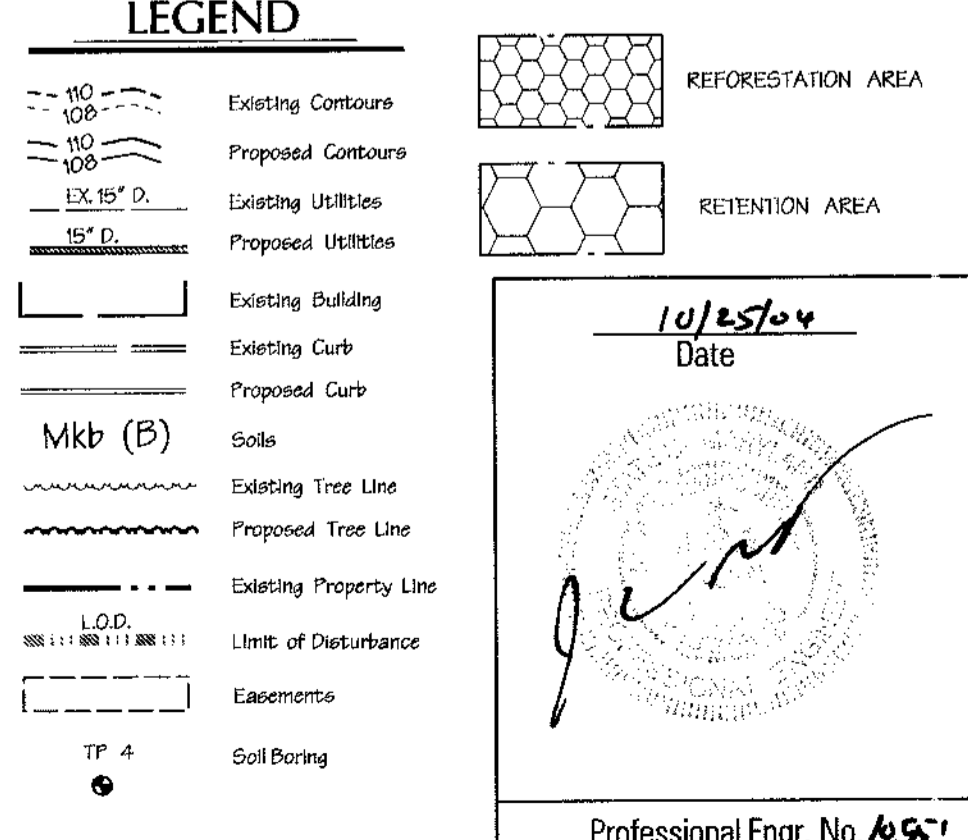
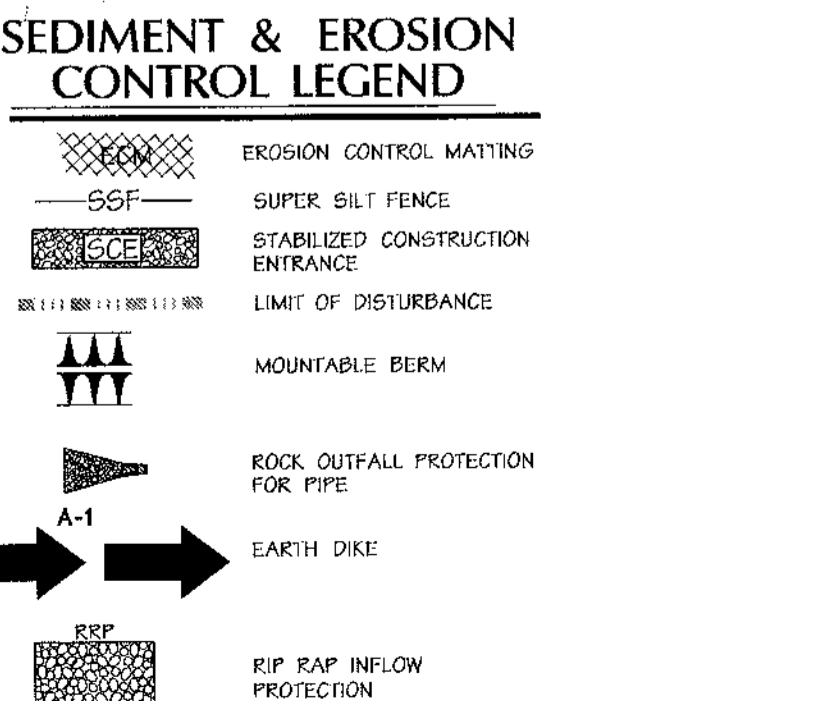


### BASIN TABLE

BASIN NUMBER	1	
EXISTING DRAINAGE AREA: ACRES	0.98	
INTERIM DRAINAGE AREA: ACRES	3.35	
PROPOSED DRAINAGE AREA: ACRES	4.57	
STORAGE REQUIRED: CUBIC FEET	WET	8226
	DRY	8226
	TOTAL	16452
STORAGE PROVIDED: CUBIC FEET	WET	8441
	DRY	8969
	TOTAL	17410
EXISTING GROUND ELEVATION	419.0	
TOP EMBANKMENT ELEVATION	425.07	
EMERGENCY SPILLWAY CREST ELEVATION	N/A	
RISER CREST ELEVATION	422.6	
WET STORAGE ELEVATION	419.85	
CLEANOUT ELEVATION	442.0	
BOTTOM ELEVATION	418.5	
Q EXISTING (C.F.S.)	0.17	
Q INTO BASIN (C.F.S.)	7.87	
Q OUT BASIN (C.F.S.)	0.16	
Q OUT EMERGENCY SPILLWAY	N/A	
3321457	WET	1.35
	DRY	1.15
	TOTAL	2.50
BASIN DEPTH	2.50	
DESIGN HIGHWATER	423.07	
FREEBOARD PROVIDED	2.03	
BARREL DIAMETER	24 IN.	
RISER DIAMETER	4' x 4'	
EMERGENCY SPILLWAY WIDTH	N/A	
WET STORAGE ZONE ELEVATION	419.85-419.85	
DRY STORAGE ZONE ELEVATION	419.85-421.0	
BOTTOM DIMENSIONS	145'x41'	
BEC CONTROL PLATE ORIFICE SIZE	2.25 IN.	

### SUMMARY TABLE

DESIGN POINT	TOTAL ONSITE DA AC.	NAC AREA AC.	SWM #	TOTAL DA BMP AC.	TYPE OF FACILITY	WQV ACR BEFORE CREDIT	WQV ACR AFTER CREDIT	REV AREA BEFORE CREDIT AC.	REV AREA AFTER CREDIT AC.	Cpv	Qp10	Qp100	Q1yr	Q10yr	Q100yr
A	5.23	0.36	SWM FACILITY #1	4.59	1" SURFACE SAND FILTER	0.129	0.109	0.37	0.033	0.126	0.011	0.143	N/A	17.06	10.016.8
B	1.36*	0.20	N/A	N/A	N/A	0.072	0	0.026	0.003	0.000	0.000	0.000	N/A	2.01	5.32.9
C	0.24	0	N/A	N/A	N/A	0.008	0.008**	0.026	0.002	0.004	0.001	0.008	0.002	54.09	54.159



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*William F. Mahler* 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Andy Hamilton* 12/12/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Drummer* 12/13/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**CHESTNUT CREST**  
 LOTS 4 - 12  
 OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF  
 NON-BUILDABLE BULK PARCEL A  
 & LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
 OWNER: CHESTNUT HILL PROPERTIES, LLC  
 946-A MARINICH COURT  
 ELDBERSBURG, MD 21784  
 DEVELOPER: RACHUBA HOME BUILDERS, LLC  
 946-A MARINICH COURT  
 ELDBERSBURG, MD 21784

EXISTING OPEN SPACE LOT 2  
 CHESTNUT CREST COMMUNITY  
 ASSOCIATION, INC.  
 946-A MARINICH COURT  
 ELDBERSBURG, MD 21784

**DMW**  
 Deak McCune-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-4335  
 Fax 296-4705

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

AREA: TAX MAP 18 PARCEL 69  
 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: GRADING, EROSION & SEDIMENT CONTROL PLAN & STORMWATER MANAGEMENT PLAN

Des. By: RLH Scale: 1"=50' Proj. No.: 00091D  
 Dwn. By: KDE Date: 9-30-04  
 Chk. By: R-H Approved

Professional Engr. No. 10571

10/25/04 Date

3 of 16

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

*Jim Mays* 11/30/04  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *John W. Rancich, Jr.* 10/27/04  
 HOWARD SOIL CONSERVATION DISTRICT DATE

PLAN NUMBER: \_\_\_\_\_

DEVELOPERS CERTIFICATE:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John W. Rancich, Jr.* 10/27/04  
 SIGNATURE OF DEVELOPER DATE  
 PRINT NAME BELOW SIGNATURE

ENGINEERS CERTIFICATE:  
 I/WE CERTIFY THAT THIS PLAN FOR FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION.

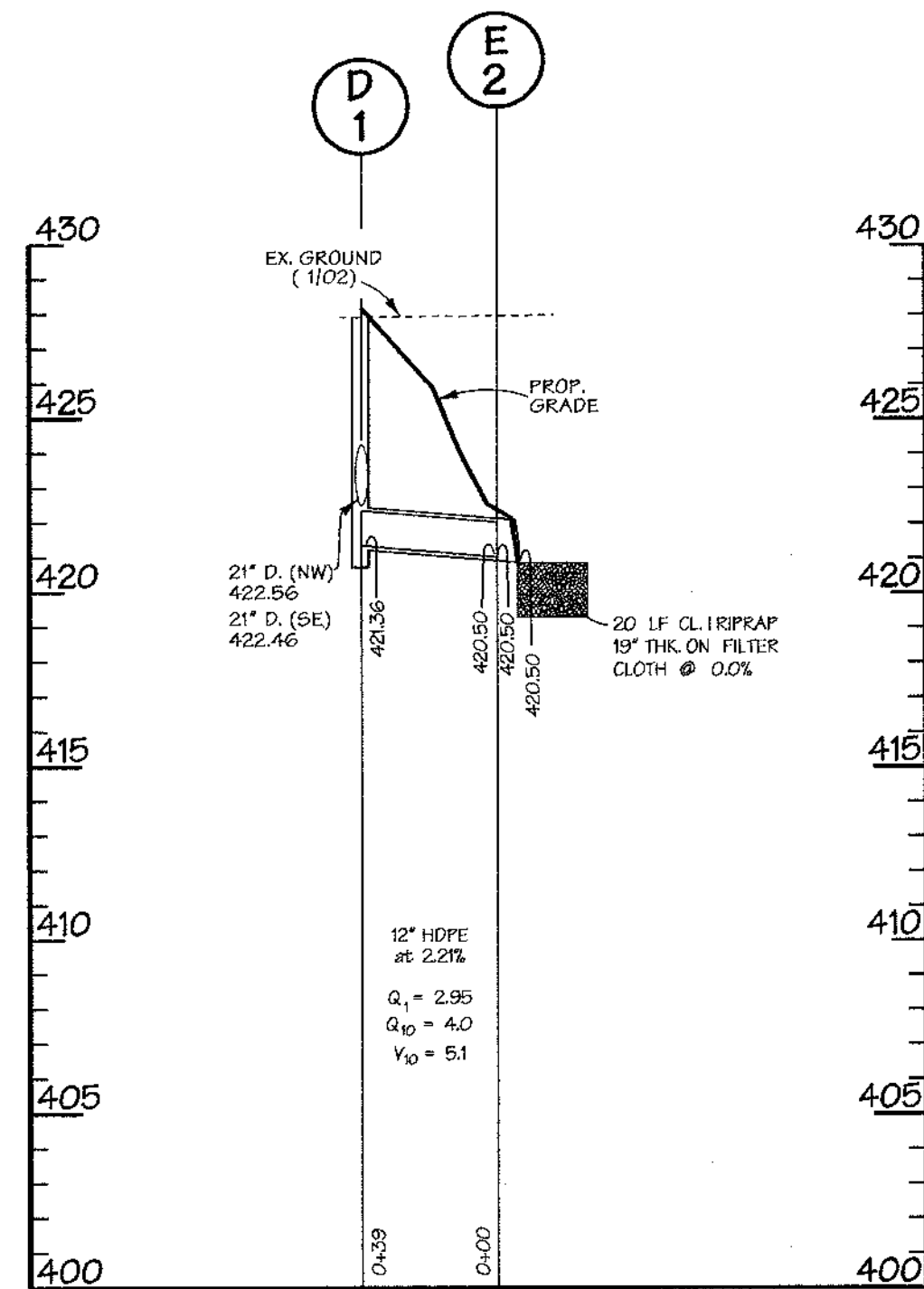
*John W. Rancich, Jr.* 10/27/04  
 SIGNATURE OF ENGINEER REG. NO. DATE  
 PRINT NAME BELOW SIGNATURE

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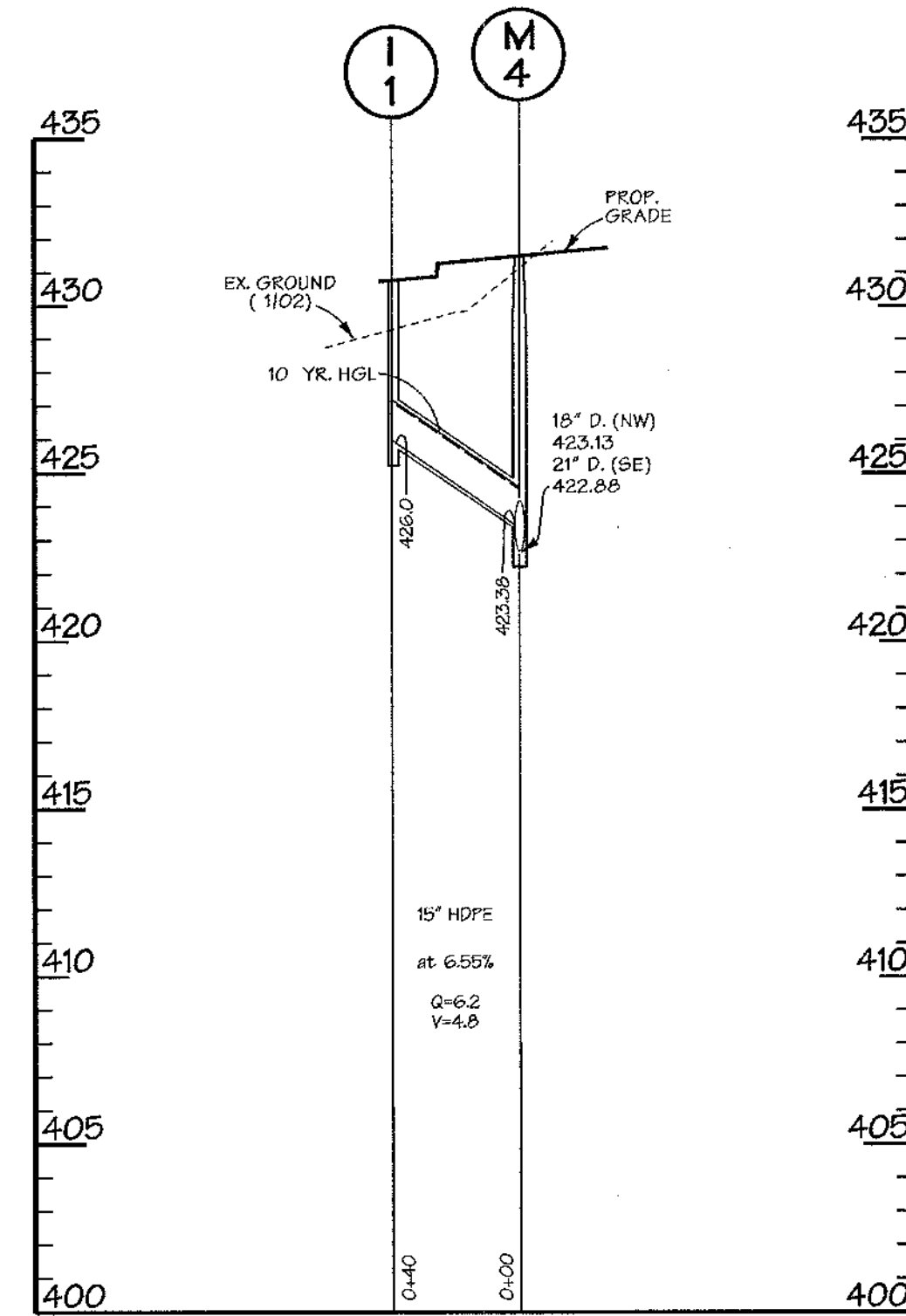
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**STORM DRAIN & UTILITY EASEMENT**



**CHESTNUT CREST DRIVE**



**MANHOLE SCHEDULE**

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION
1	SHALLOW MH G5.12	48"	419.07	424.0	SEE SHEET 2
2	SHALLOW MH G5.12	48"	419.74	424.00	SEE SHEET 2
3	STD. MANHOLE G5.12	48"	420.4	430.00	SEE SHEET 2
4	STD. MANHOLE G5.12	48"	422.88	431.5	SEE SHEET 2
5	STD. MANHOLE G5.12	48"	423.81	433.8	SEE SHEET 2

**PIPE SCHEDULE**

NO.	TYPE & CLASS	LENGTH
SWM 6"	PERFORATED PVC	210'
SWM 6"	NON-PERFORATED PVC	36'
12"	HDPE	39'
15"	HDPE	63'
18"	HDPE	515'
24"	HDPE	305'
SWM 24"	RCCP C 361 B-25	46'

**INLET SCHEDULE**

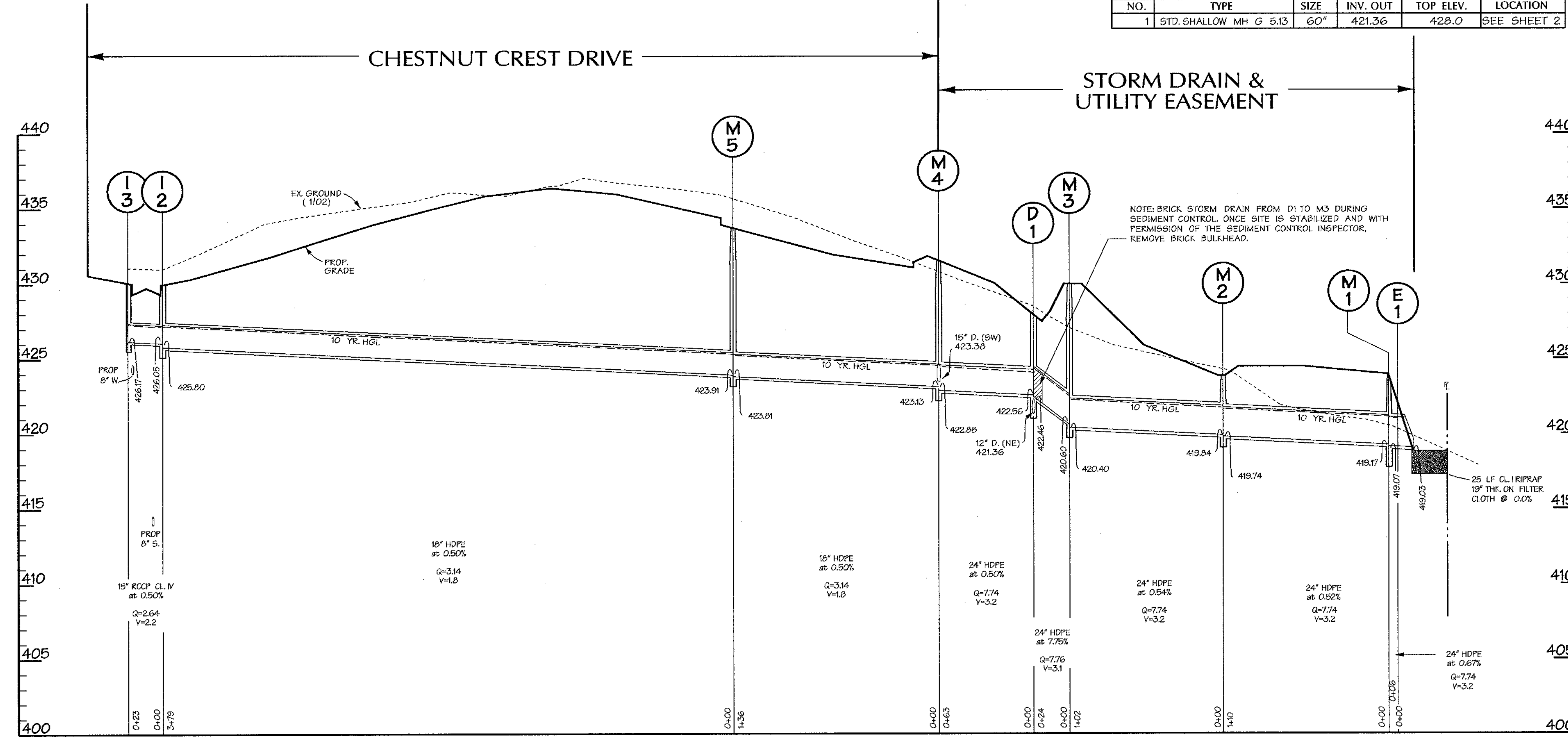
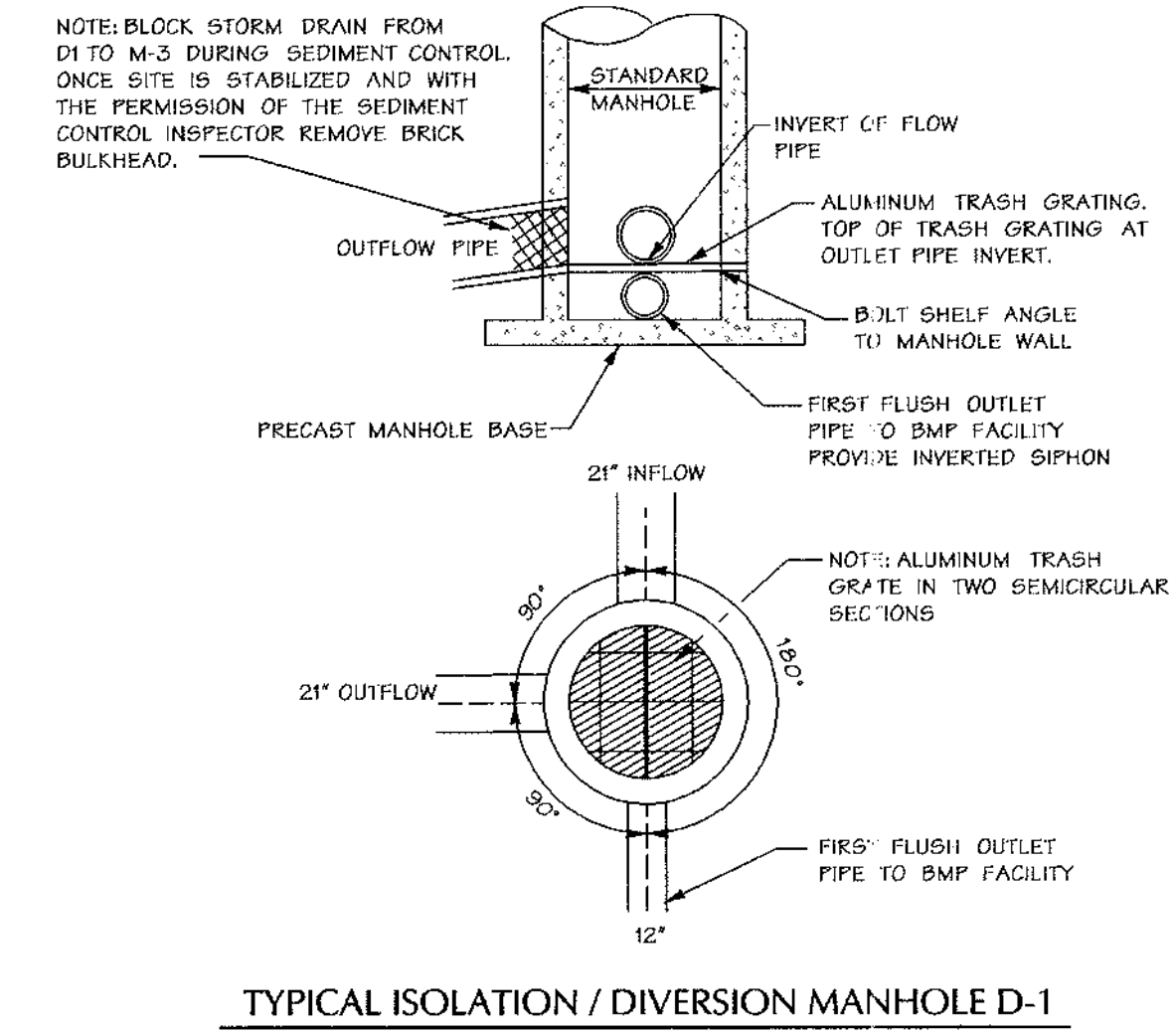
NO.	TYPE	SIZE	INV. OUT	THROAT ELEV.	LOCATION
1	A-10, 2'-6" WIDE SD	4.02	426.0	430.65	SEE SHEET 2
2	A-5, 2'-6" WIDE SD	4.01	425.8	429.40	SEE SHEET 2
3	A-10, 2'-6" WIDE SD	4.02	426.17	429.40	SEE SHEET 2

**END SECTION SCHEDULE**

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION
1	END SECTION	24"	419.03		SEE SHEET 2
2	END SECTION	12"	420.5		SEE SHEET 2

**DIVERSION STRUCTURE SCHEDULE**

NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION
1	STD. SHALLOW MH G 5.13	60"	421.36	428.0	SEE SHEET 2



**STORM DRAIN PROFILES**

SCALE: HORIZ. 1"=50'  
VERT. 1"=5'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*William J. Whelan* 12-6-04  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Cindy Hamblet* 12/17/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mike Dammann* 12/18/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Revision Description

**CHESTNUT CREST**  
LOTS 4 - 12  
OPEN SPACE LOTS 13-16  
A RESUBDIVISION OF  
NON-BUILDABLE BULK PARCEL A  
& LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
OWNER: CHESTNUT HILL PROPERTIES, LLC EXISTING OPEN SPACE LOT 2  
346-A MARMICH COURT CHESTNUT CREST COMMUNITY  
ELDERSBURG, MD 21784 ASSOCIATION, INC.  
DEVELOPER: RACHUBA HOME BUILDERS, LLC 346-A MARMICH COURT  
ELDERSBURG, MD 21784

**DMW**  
Dart-McCune-Walker, Inc. A Team of Land Planners,  
200 East Pennsylvania Avenue Landscape Architects,  
Fountain, Maryland 21786 Golf Course Architects,  
(410) 296-3333 Engineers, Surveyors &  
Fax 296-4705 Environmental Professionals

AREA TAX MAP 18 PARCEL 69  
2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

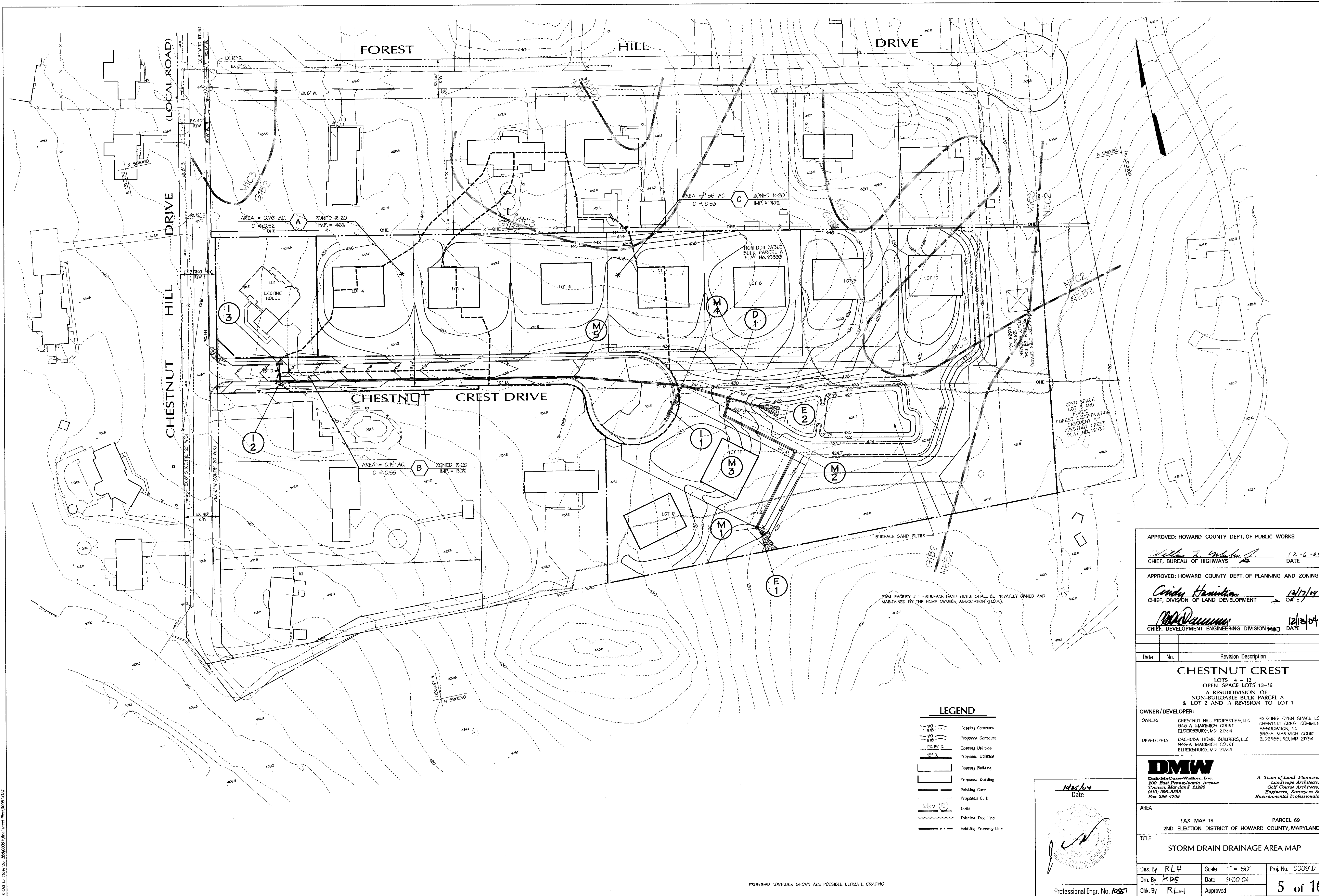
Des. By RLH Scale AS SHOWN Proj. No. 00091D  
Dm. By KDE Date 9-30-04  
Chk. By RLH Approved

10/25/04  
Date

Professional Engr. No. 4551

Pl. Oct 13, 10:40:37, 2009/09/07 (Final sheet files) (00091.D) 2009/09/07

Pl. Oct 15, 10:40:25, 2004/ 2009/09/07



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*William J. ...* 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Andy Hamilton* 12/17/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*MD ...* 12/15/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
		<b>CHESTNUT CREST</b> LOTS 4 - 12 OPEN SPACE LOTS 13-16 A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL A & LOT 2 AND A REVISION TO LOT 1

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 EXISTING OPEN SPACE LOT 2 CHESTNUT CREST COMMUNITY ASSOCIATION, INC. 946-A MARMICH COURT ELDBERSBURG, MD 21764  
 DEVELOPER: RACHUBA HOME BUILDERS, LLC 946-A MARMICH COURT ELDBERSBURG, MD 21764

**DMW**  
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 Towson, Maryland 21286  
 (410) 296-8833  
 Fax 296-4705

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

AREA	TAX MAP 18	PARCEL 69
TITLE	2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
	STORM DRAIN DRAINAGE AREA MAP	
Des. By	RLH	Scale " = 50'
Drn. By	KDE	Date 9-30-04
Chk. By	RLH	Approved
Professional Engr. No.	1057	5 of 16

- LEGEND**
- - - - - Existing Contours
  - - - - - Proposed Contours
  - - - - - Existing Utilities
  - - - - - Proposed Utilities
  - - - - - Existing Building
  - - - - - Proposed Building
  - - - - - Existing Curb
  - - - - - Proposed Curb
  - - - - - Sole
  - - - - - Existing Tree Line
  - - - - - Existing Property Line

*Hesby*  
 Date

PROPOSED CONTOURS SHOWN ARE POSSIBLE ULTIMATE GRADING

Pl. Oct. 15, 16, 41, 25, 28, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000















HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: B-1, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown moist medium to coarse silty fine to medium SAND (SM)	3-3-3.4			1	14"		No groundwater encountered at 13.0' while casing.
	SANDY LOAM	2-3-3.3			2	18"		Caved in at 12.2' at Completion
		9-14-19-19			3	22"		
		7-8-8-9			4	18"		
	Gray wet silty fine SAND (SM)	12.0						
	SANDY LOAM	28-50.3			5	6"		
	Bottom of Test Hole at 15.0'	15.0						

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: B-2, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown moist silty fine SAND (SM)	5.7-5.5			1	18"		No groundwater encountered while drilling
	SANDY LOAM	6-12-28-44			2	20"		
	Brown to gray moist silty fine SAND and decomposed rock (SM)	4.5						
	SANDY LOAM	50.5"			3	6"		Caved in at 12.1' at Completion
		50.5"			4	6"		
		50.5"			5	5"		
	Bottom of Test Hole at 15.0'	15.0						

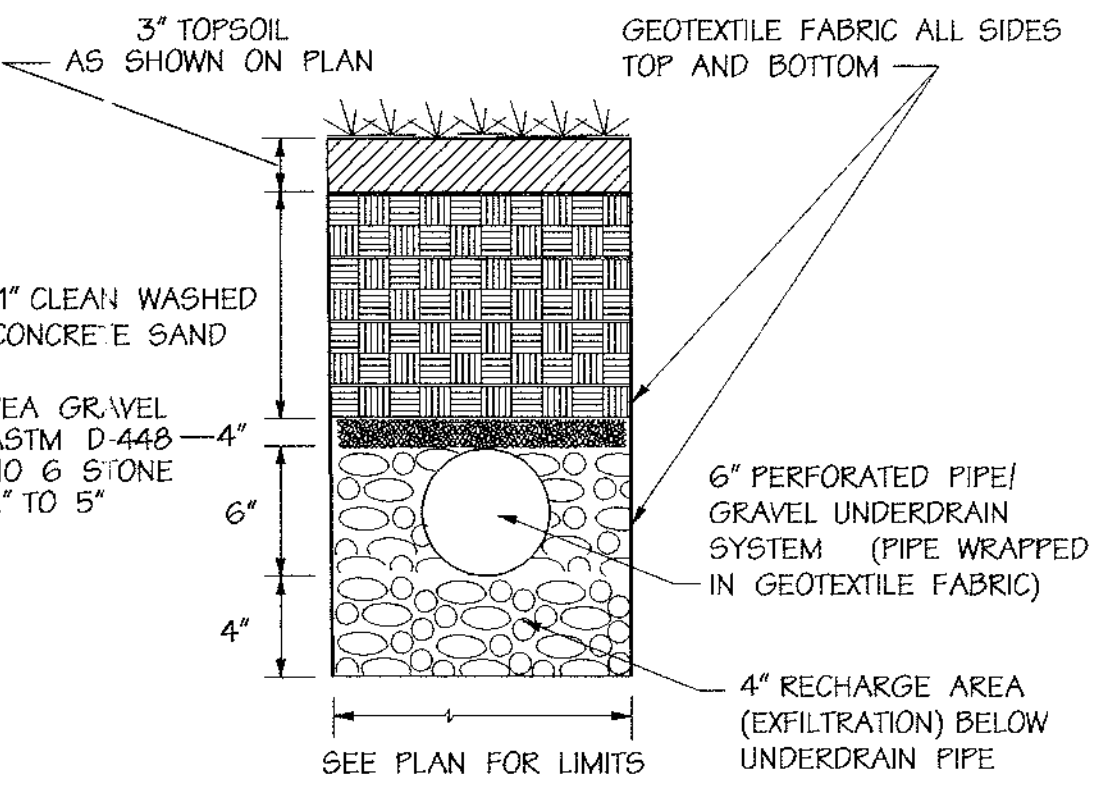
HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: B-3, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown moist silty fine SAND (SM)	5-5-5			1	14"		No groundwater encountered while drilling
	SANDY LOAM	4-6-6-7			2	21"		Caved in at 11.7' at Completion
		5-5-5			3	19"		
		6-5-7			4	24"		
	Bottom of Test Hole at 15.0'	15.0						

Table B.3.1 Material Specifications for Sand Filters

Material	Specification/Test Method	Size	Notes
sand	clean AASHTO M-6 or ASTM C-33 concrete sand	0.075" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No rock class can be used for sand.
peat	ash content <15 percent pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	n/a	The material must be red-oxide hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost	n/a	n/a	n/a
undersize gravel	AASHTO M-43	0.375" to 0.75"	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles means to separate said filter layers.
impermeable liner (if required)	ASTM D-4833 (thickness) ASTM D-412 (tear strength) 1,100 lb., elongation 200% ASTM D-624 (Tear resistance - 150 lb./in) ASTM D-471 (water absorption: +8 to 2 percent mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
undersize piping	F 758, Type FG 2B or AASHTO M-27B	4" - 6" rigid schedule 40 PVC or SDR35	20' per 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes.
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained, re-inforcing to meet ASTM 615 G6	n/a	On-site testing of poured-in-place concrete required: 28 day strength and slump test all concrete design (cast-in-place or precast) must be approved by State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland.
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM-A-123



TYPICAL SAND FILTER DETAIL  
NOT TO SCALE

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: TP-2, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown, moist, loose to medium dense silty sand with mica SANDY LOAM (SM)	1-2-2			1	13"		
		6-6-5			2	14"		No groundwater encountered while drilling
		8-8-11			3	12"		
		4-8-10			4	11"		
	Bottom of Hole at 16.5'	16.5						

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: TP-3, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown, moist, medium dense silty sand with mica SANDY LOAM (SM)	1-2-4			1	6"		
		6-6-7			2	16"		
		3-4-5			3	6"		Caved in at 14.0' at Completion
		4-7-10			4	12"		Groundwater encountered at 15.0' while drilling
	Bottom of Hole at 16.5'	16.5						

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: TP-4, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown, moist, loose silty sand with mica SANDY LOAM (SM)	1-2-2			1	15"		
		20-35-61/6"			2	16"		No groundwater encountered while drilling
		13-15-17			3	13"		
		51/2"			4	2"		
	Bottom of Hole at 15.2'	15.2						

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Chestnut Hill Lane, Location: Howard County, Maryland, Boring Number: TP-5, Job #: 01178A

ELEV.	SOIL DESCRIPTION	DEPTH	SCALE	CON.	SAMPLE BLOWS	NO.	REC.	BORING & SAMPLING NOTES
SURFACE	SURFACE	0.0						3" Topsoil
	Brown, moist, loose to medium dense silty sand with mica SANDY LOAM (SM)	1-1-1			1	12"		
		4-4			2	18"		No groundwater encountered while drilling
		5-6-7			3	14"		Caved in at 13.0' at Completion
		6-6-8			4	18"		
	Bottom of Hole at 18.3'	18.3						

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. BORING METHOD: HSA-HOLLOW STEM AUGERS. STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
 12/17/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT

12/18/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

REVISION DESCRIPTION

**CHESTNUT CREST**  
 LOTS 4 - 12, OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL A & LOT 2 AND A REVISION TO LOT 1

OWNER: CHESTNUT HILL PROPERTIES, LLC  
 946-A MARIMICH COURT  
 ELDERSBURG, MD 21784

DEVELOPER: RACHUBA HOME BUILDERS, LLC  
 946-A MARIMICH COURT  
 ELDERSBURG, MD 21784

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

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

APPROVED: 11/30/04

DEVELOPERS CERTIFICATE:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

10-27-04  
 SIGNATURE OF DEVELOPER: Christopher L. Rachuba

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION.

10/25/04  
 SIGNATURE OF ENGINEER: John W. Democich

10/25/04  
 Date

AREA: TAX MAP 18, PARCEL 69, 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: SOIL BORINGS & SWM DETAILS

Des. By: RLH, Scale: AS SHOWN, Proj. No.: 00091D  
 Dwn. By: KDE, Date: 9-30-04  
 Chk. By: JZL, Approved

9 of 16



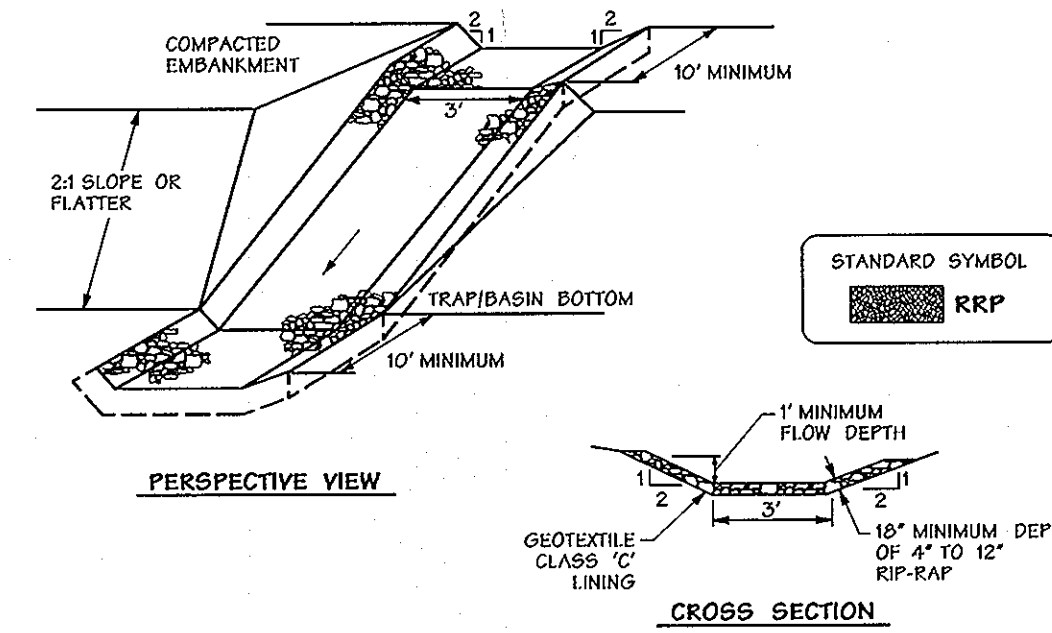
**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED & MAINTAINED STORMWATER FACILITY- SURFACE SAND FILTER**

**ROUTINE MAINTENANCE:**

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF FACILITY IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR. ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS & LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

**NON-ROUTINE MAINTENANCE:**

1. STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE DAM, THE RISER AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM FACILITY AND FOREBAY NO LATER THAN WHEN CAPACITY OF THE POND OR FOREBAY IS HALF FULL OF SEDIMENT OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
3. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID MUST BE FOLLOWED BY THE OWNER.
4. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
5. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



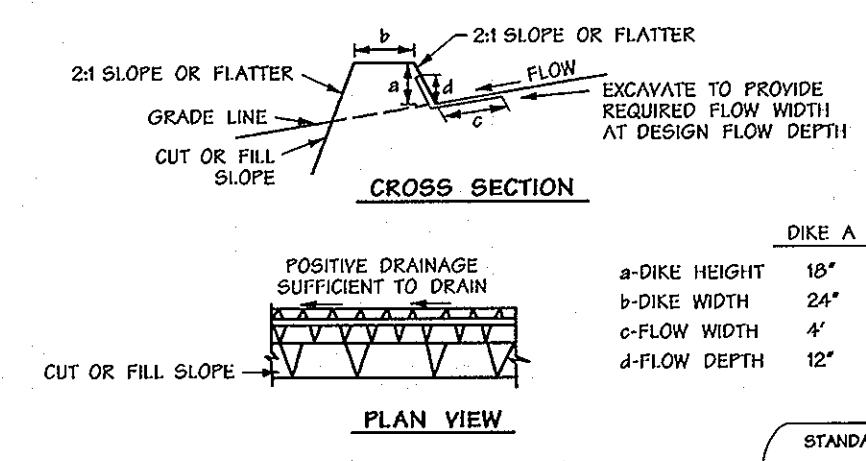
**CONSTRUCTION SPECIFICATIONS**

1. RIP-RAP LINED INFLOW CHANNELS SHALL BE 1/2 IN. DEPTH, HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND 3' (MIN) BOTTOM WIDTH. THE CHANNEL SHALL BE LINED WITH 4" TO 12" RIP-RAP TO A DEPTH OF 10".
2. FILTER CLOTH SHALL BE INSTALLED UNDER ALL RIP-RAP. FILTER CLOTH SHALL BE GEOTEXTILE CLASS C.
3. ENTRANCE AND EXIT SECTIONS SHALL BE INSTALLED AS SHOWN ON THE DETAIL SECTION.
4. RIP-RAP USED FOR THE LINING MAY BE RECYCLED FOR PERMANENT OUTLET PROTECTION IF THE BASIN IS TO BE CONVERTED TO A STORMWATER MANAGEMENT FACILITY.
5. GABION INFLOW PROTECTION MAY BE USED IN LIEU OF RIP-RAP INFLOW PROTECTION.
6. RIP-RAP SHOULD BLEND INTO EXISTING GROUND.
7. RIP-RAP INFLOW PROTECTION SHALL BE USED WHERE THE SLOPE IS BETWEEN 4:1 AND 10:1. FOR SLOPES FLATTER THAN 10:1 USE EARTH DIKE OR TEMPORARY SWALE LINING CRITERIA.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE B-6-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

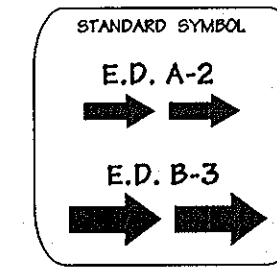
**RipRap Inflow Protection**

Not To Scale



**FLOW CHANNEL STABILIZATION**

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LIME WITH SOO.
3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM.

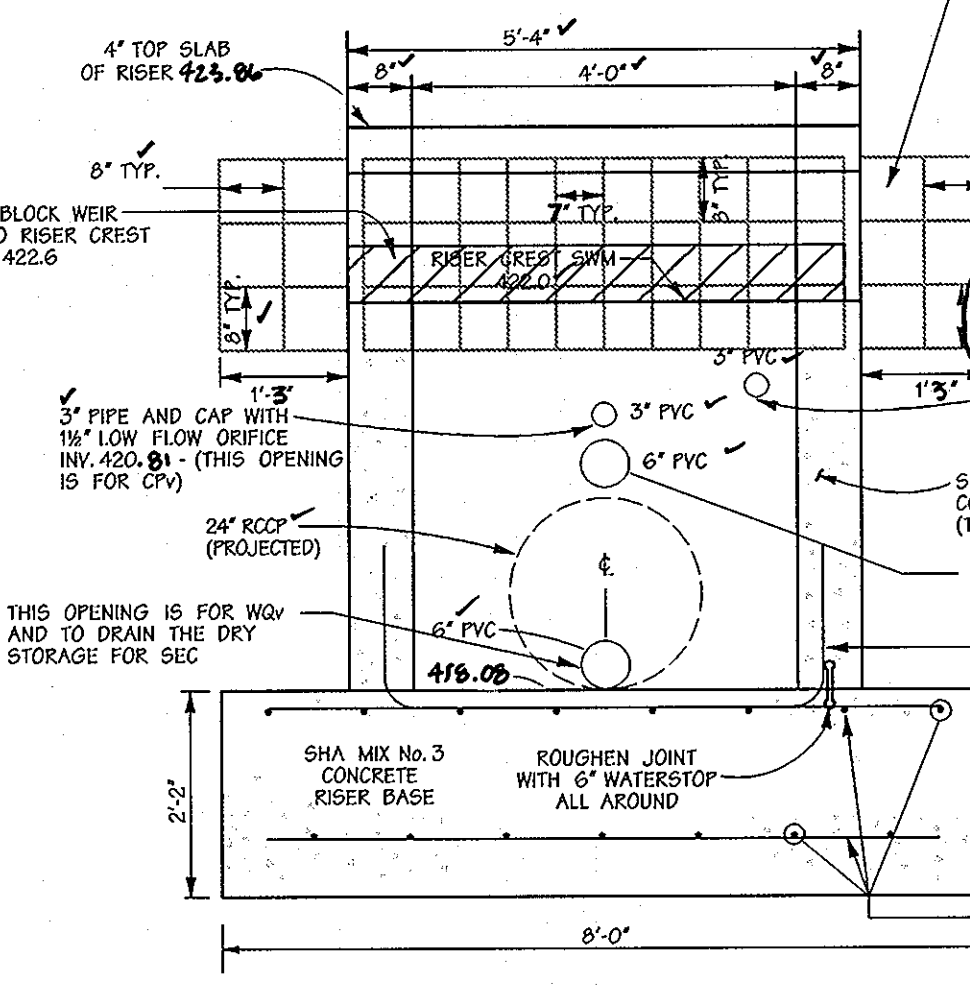


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE A-1-6 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**Earth Dike**

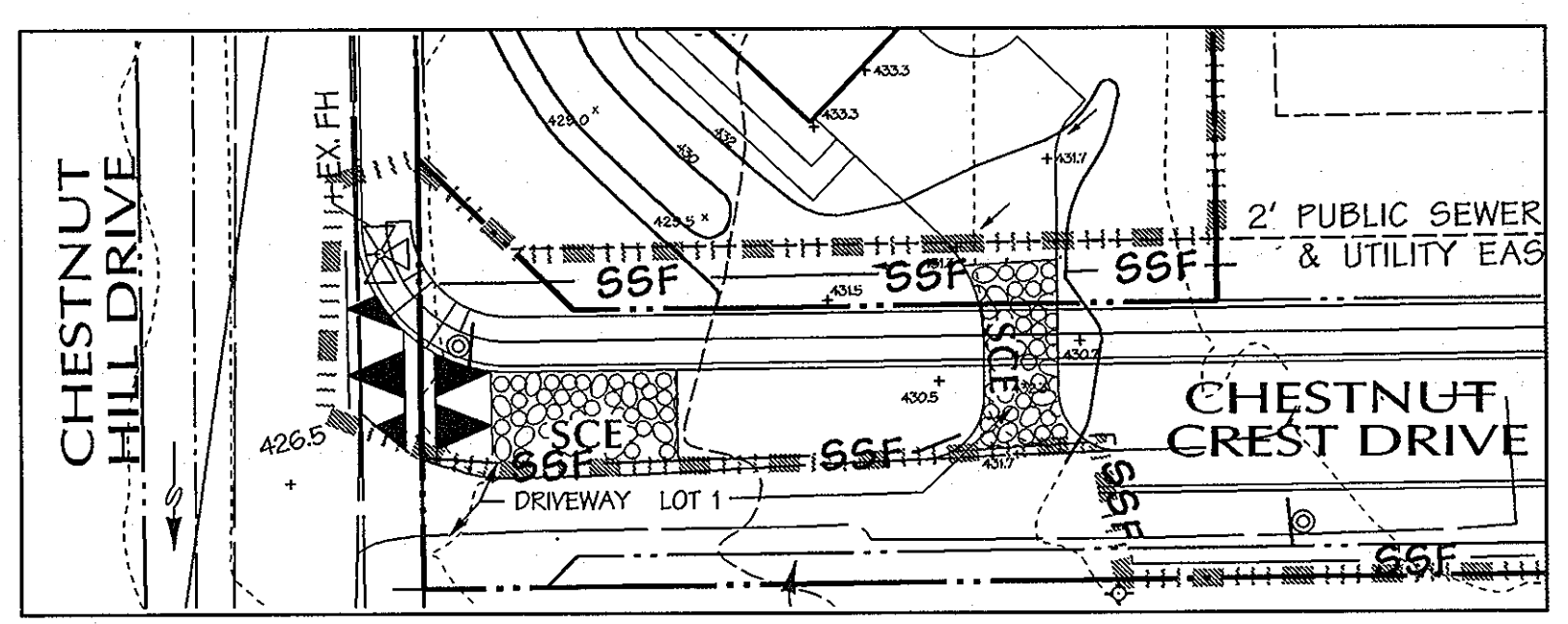
Not To Scale

TRASH RACK 2'-0" x 4'-8" (OUTSIDE DIMENSION) x 1'-6" DEEP #8 BENT BARS. TRASH RACK SHALL EXTEND A MINIMUM OF 2' BELOW WEIR INVERTS. TRASH RACK TO BE WELDED TO 2" x 2" L-BRACKETS, THEN FASTENED TO TOP SLAB & WALLS WITH TEN 1/2" x 6" LG. HERSELD GALVANIZED BOLTS. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.



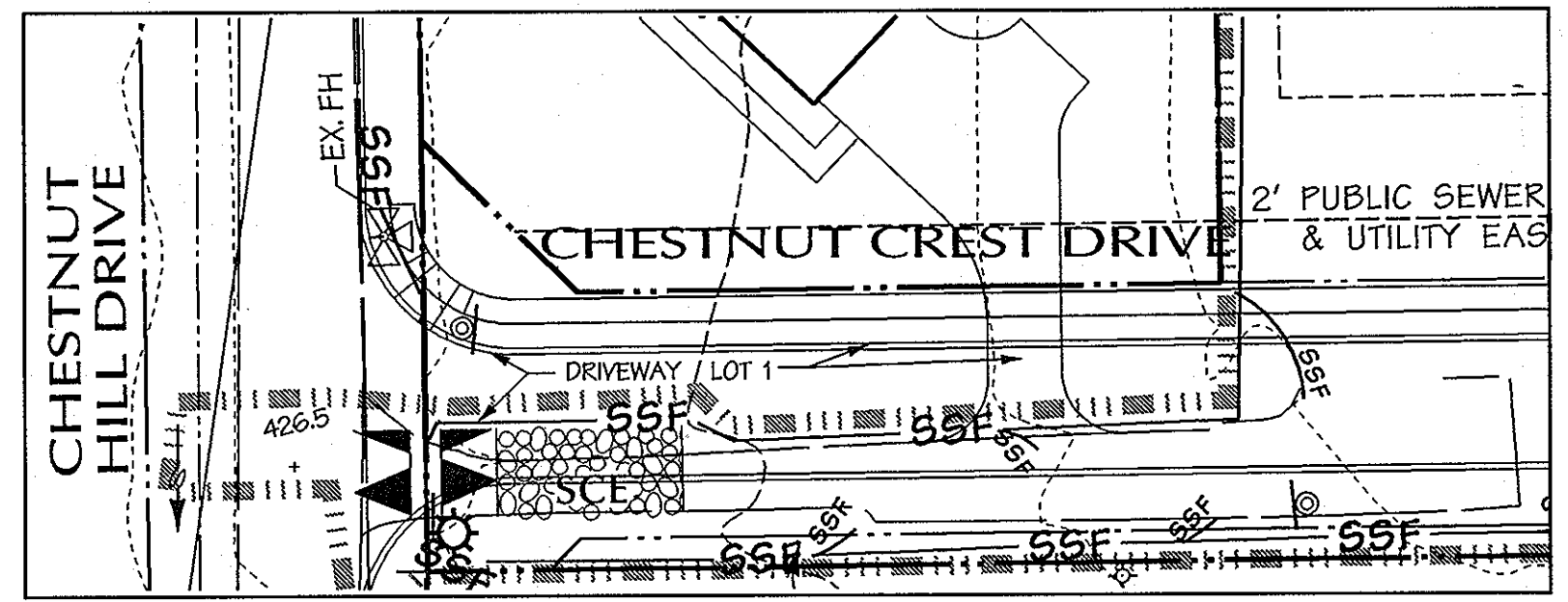
**SECTION A**

Not To Scale



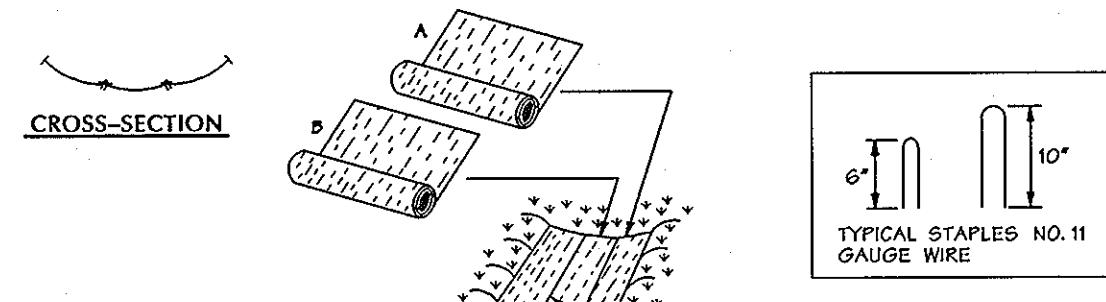
**PHASE I SEDIMENT CONTROL**

1"=30'



**PHASE II SEDIMENT CONTROL**

1"=30'



**CONSTRUCTION SPECIFICATIONS**

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 6" IN DEPTH. BACKFILL THE TRENCH AND TAMPER TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE 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" SHIP-LAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

**Erosion Control Matting**

Not To Scale

**DEVELOPER'S CERTIFICATION:**

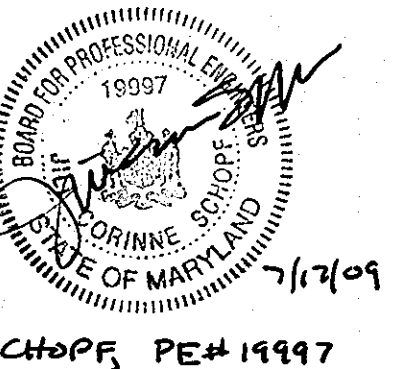
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Christopher L. Ruchie  
Date: 10-27-07

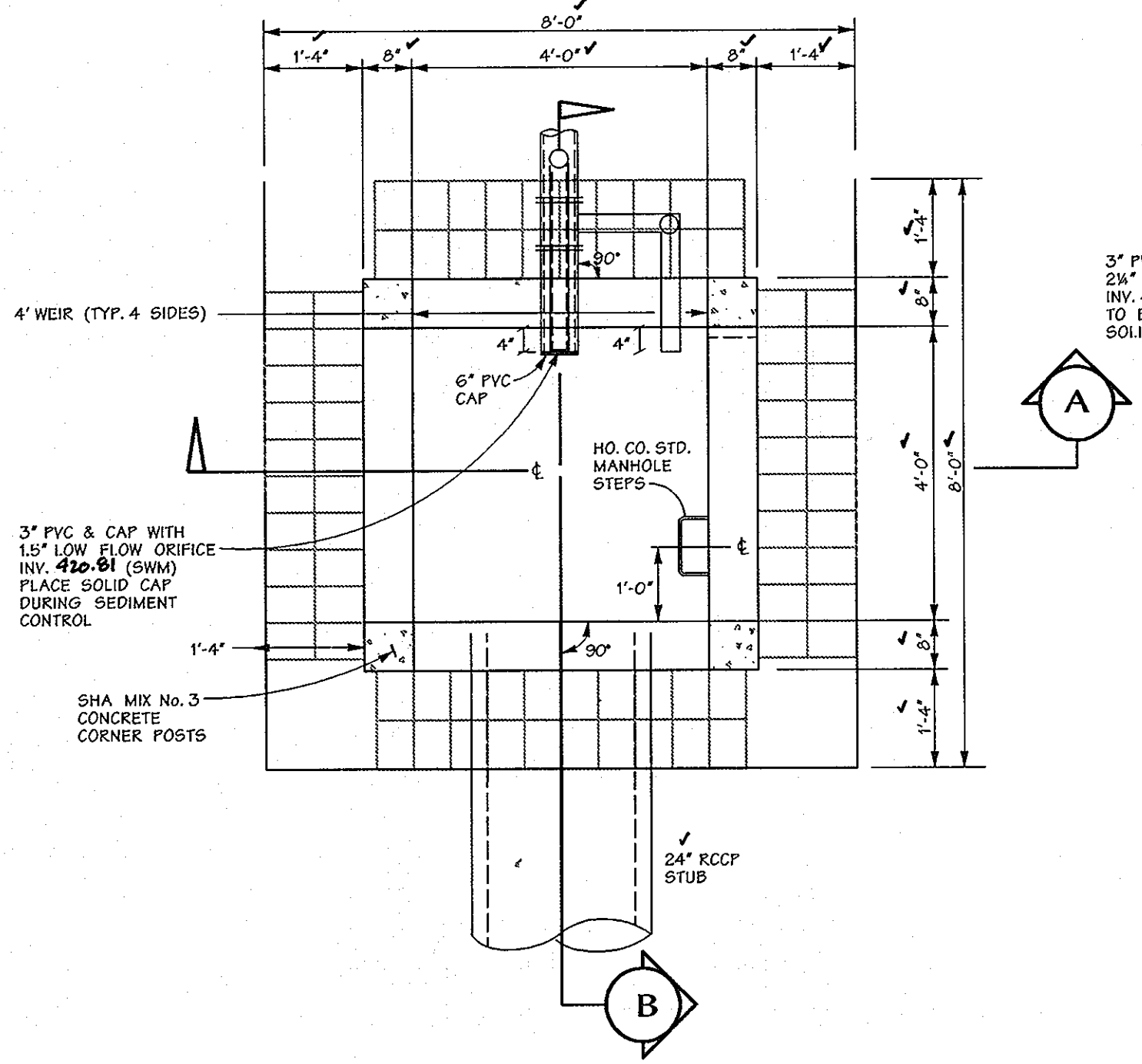
**ENGINEER'S CERTIFICATION:**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLAN AND MEET THE APPROVED PLANS AND SPECIFICATIONS.

Signature: John W. Ranachie, Jr.  
Date: 10/25/07

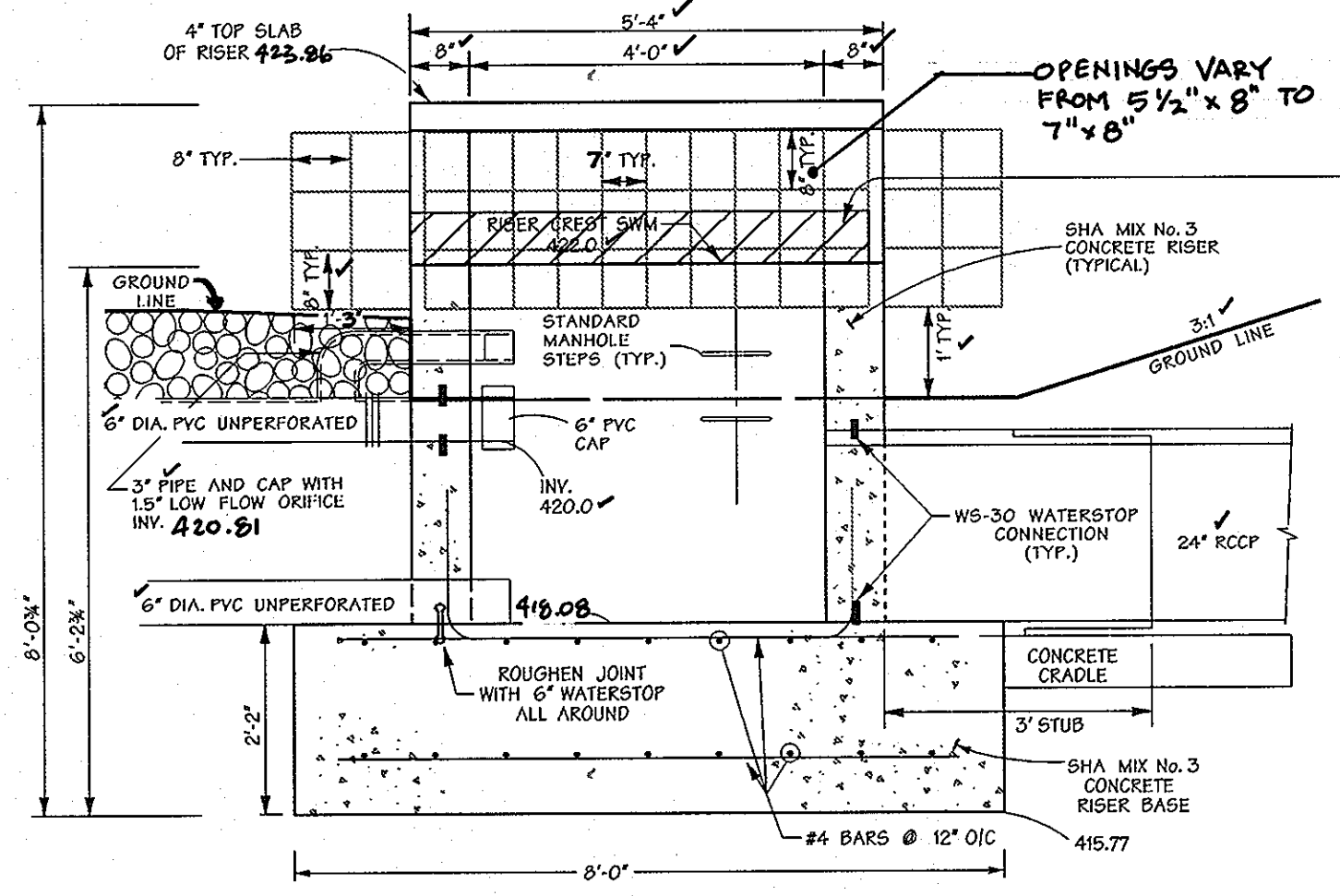


SWM FACILITY # 1 - SURFACE SAND FILTER SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION (H.O.A.).



**R-1 RISER PLAN (TOP SLAB REMOVED)**

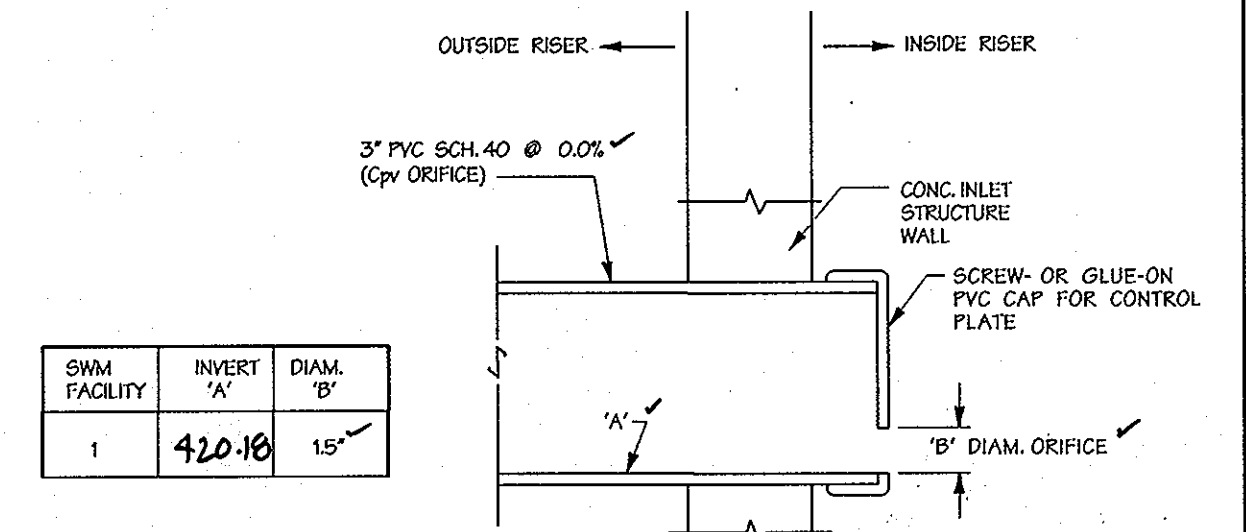
Scale: 1/2" = 1'-0" CAST IN PLACE



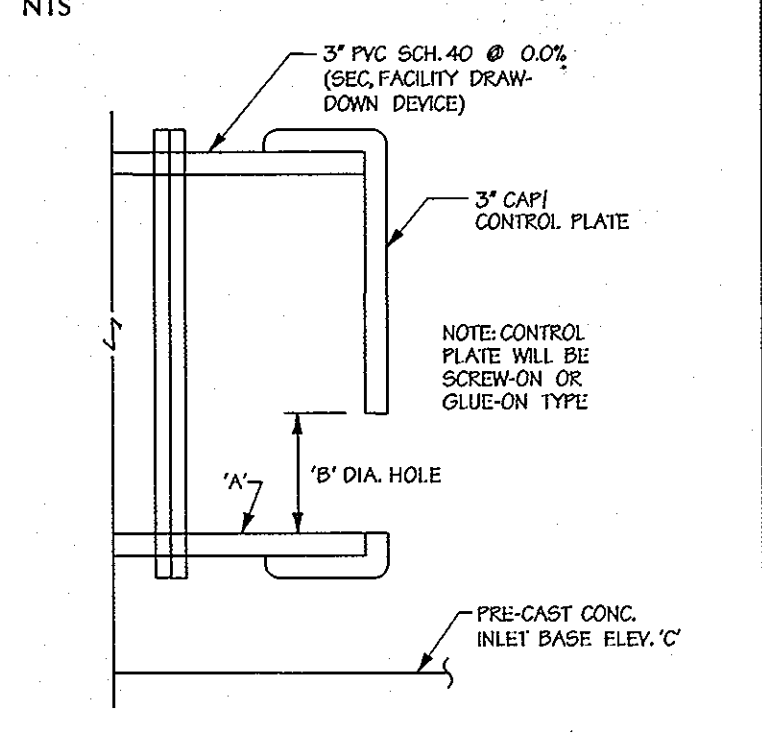
**SECTION B**

**R-1 RISER DETAIL**

Scale: 1/2" = 1'-0" CAST IN PLACE



**CHANNEL PROTECTION (Cpv) CONTROL PLATE DETAIL**



SEC BASIN	'A'	'B'	'C'
1	421.0	2'K	417.94

**SEC 3" CAP/CONTROL PLATE DETAIL**

NTS N/A

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

Signature: [Signature]  
DATE: 4/20/04

S.O. NATURAL RESOURCE CONSERVATION SERVICE

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

Signature: [Signature]  
DATE: 11/20/04

HOWARD G.C.D.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Signature: [Signature]  
DATE: 12-6-07

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Signature: [Signature]  
DATE: 12/17/07

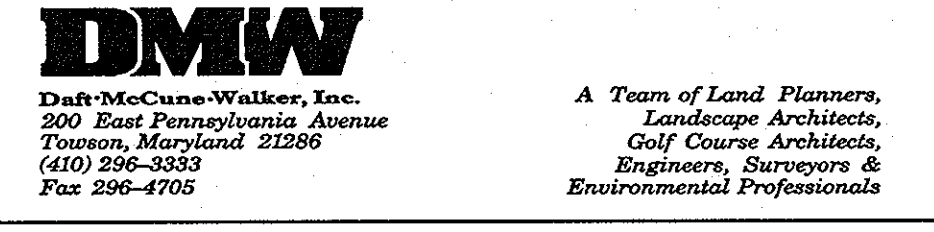
Signature: [Signature]  
DATE: 12/13/07

Date	No.	Revision Description

**CHESTNUT CREST**

LOTS 4 - 12, OPEN SPACE LOTS 13-16  
A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL A & LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
OWNER: CHESTNUT HILL PROPERTIES, LLC  
DEVELOPER: RACHUBA HOME BUILDERS, LLC



AREA: TAX MAP 18 PARCEL 69  
2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

**DETAILS & LOT 1 ESC PHASING**

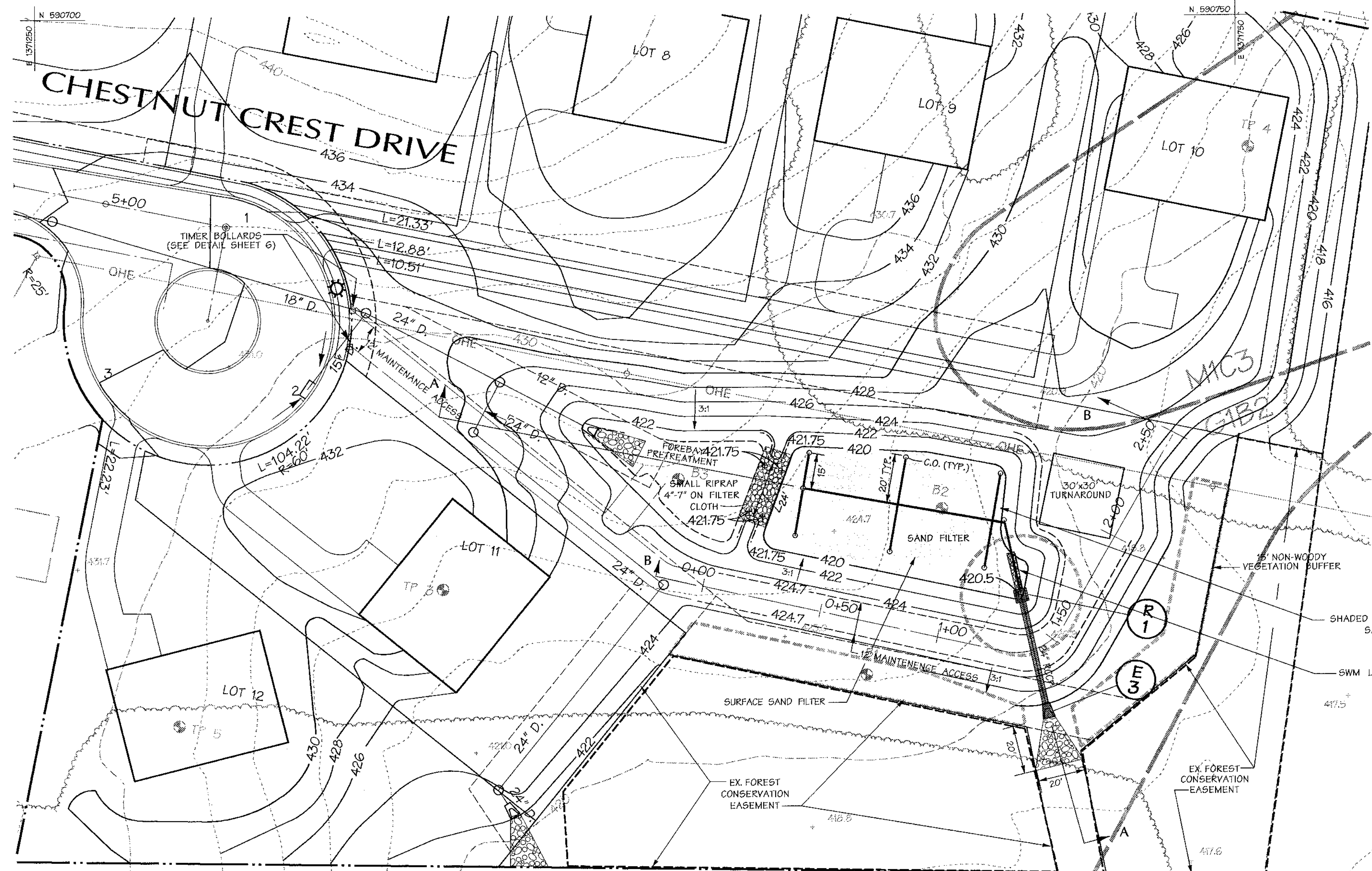
Des. By	RLH	Scale	AS SHOWN	Proj. No.	00091.D
Dwn. By	KDE	Date	9-30-04		
Chk. By	RLH	Approved			10 of 16

REVISED 5/7/2010

AS-BUILT

F-04-080





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

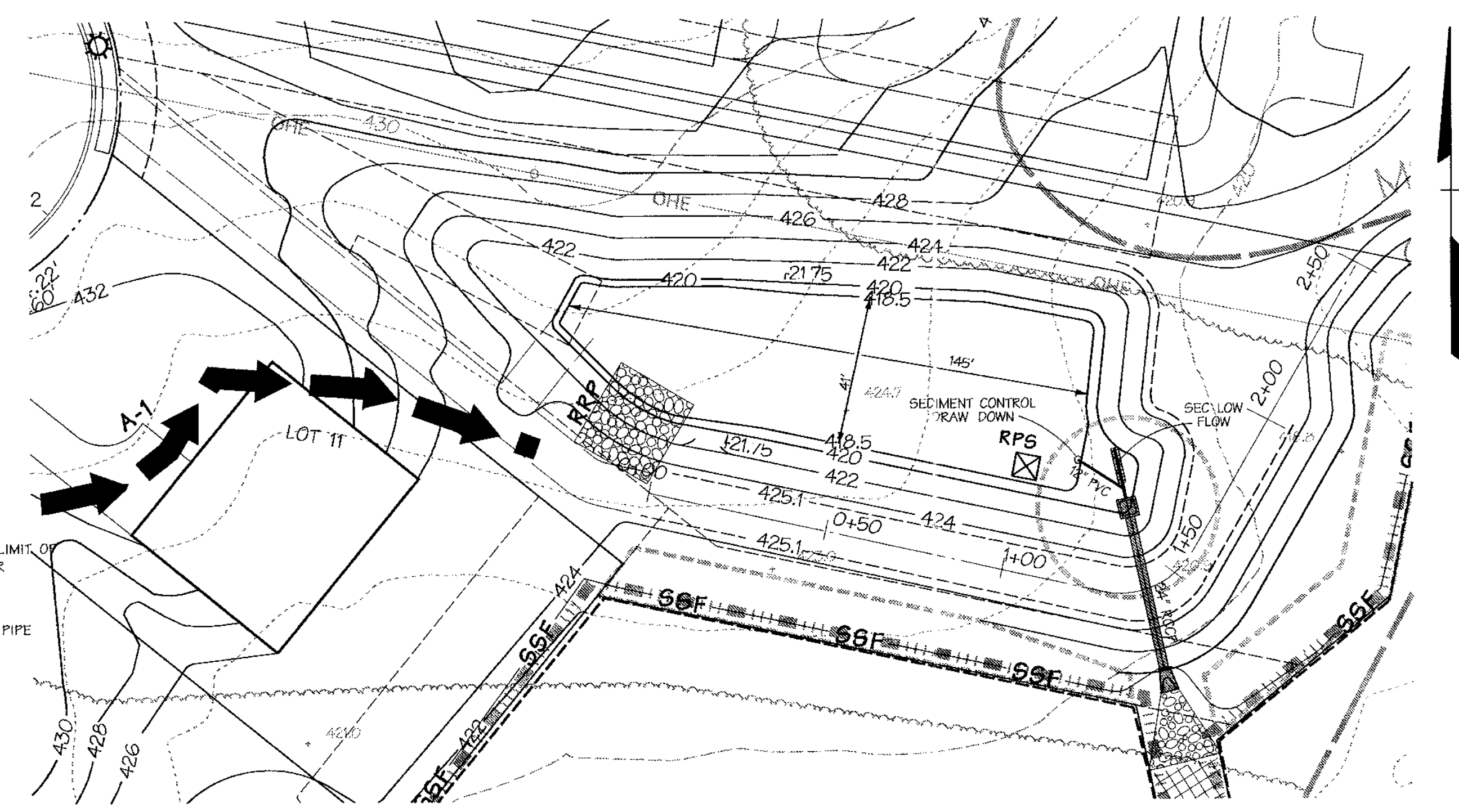
DEVELOPERS CERTIFICATE:  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

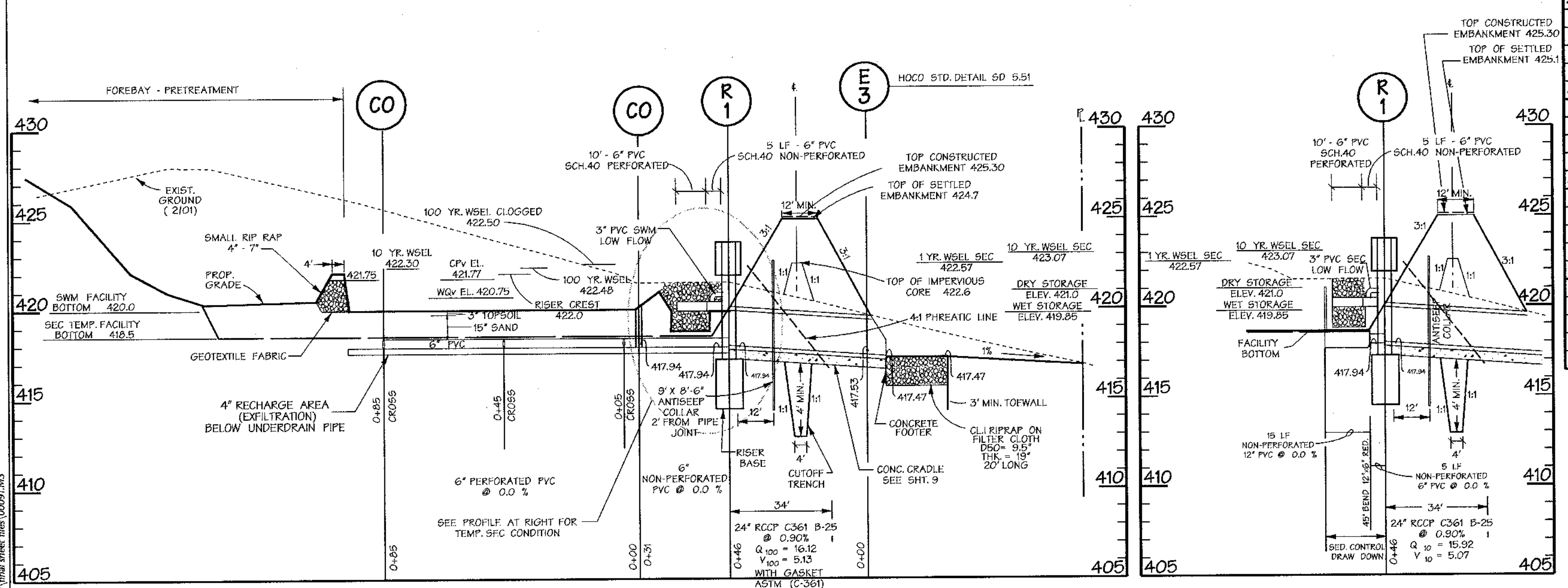
APPROVED: *Christopher L. Rachuba* DATE 10-27-04  
SIGNATURE OF DEVELOPER  
PRINT NAME BELOW SIGNATURE

PLAN NUMBER



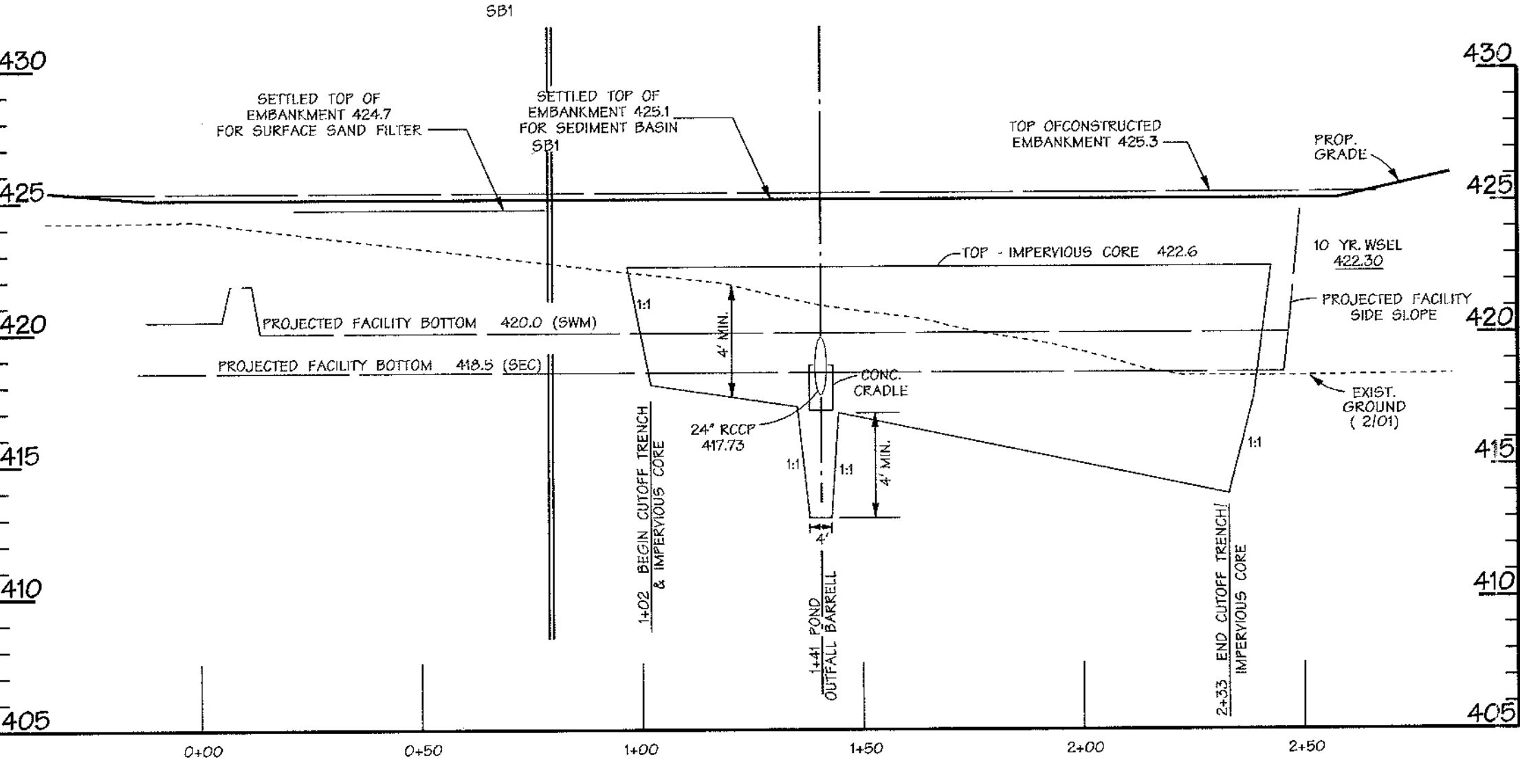
FINAL STORMWATER MANAGEMENT PLAN

SCALE: 1" = 30'



PARTIAL PROFILE THRU PRINCIPAL SPILLWAY (SEDIMENT CONTROL ONLY)

SCALE: HORIZ. 1" = 30'  
VERT. 1" = 5'



ENGINEERS CERTIFICATE:  
I CERTIFY THAT THIS PLAN FOR FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER  
PRINT NAME BELOW SIGNATURE

DATE 10/25/04

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*William F. Mahan* 12-6-04  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Sandy Hamilton* 12/12/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Dammann* 12/13/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description

CHESTNUT CREST  
LOTS 4 - 12  
OPEN SPACE LOTS 13-16  
A RESUBDIVISION OF  
NON-BUILDABLE BULK PARCEL A  
& LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
OWNER: CHESTNUT HILL PROPERTIES, LLC  
394-A MARIMICH COURT  
ELDERSBURG, MD 21784  
EXISTING OPEN SPACE LOT 2  
CHESTNUT CREST COMMUNITY  
ASSOCIATION, INC.  
394-A MARIMICH COURT  
ELDERSBURG, MD 21784

DEVELOPER: RACHUBA HOME BUILDERS, LLC  
394-A MARIMICH COURT  
ELDERSBURG, MD 21784

DMW  
Dale McCune-Walkers, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3325  
Fax 296-4705

A Team of Land Planners,  
Landscape Architects,  
Civil Engineers,  
Professional Surveyors &  
Environmental Professionals

AREA: TAX MAP 18 PARCEL 69  
2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: SWM FACILITY #1 & SEDIMENT BASIN #1 PLAN  
VIEW AND PROFILE

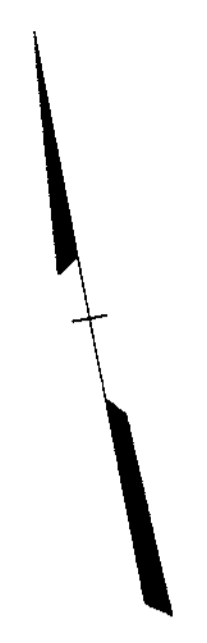
Des. By	RLH	Scale	AS SHOWN	Proj. No.	00091.D
Drn. By	KDE	Date	9-30-04		
Chk. By	RLH	Approved			11 of 16

Professional Engr. No. 4557









**SCHEDULE A  
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES			
	P 1	P 2	P 3	P 4
LANDSCAPE TYPE 'B'				
LINEAR FEET OF PERIMETER				541 LF.
LANDSCAPE TYPE 'A'				
LINEAR FEET OF PERIMETER	990 LF.	328 LF.	877 LF.	
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	N/A	328 LF.	438 LF.	N/A
CREDIT FOR BERM (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED				
SHADE TREES	17	0	7	11
EVERGREEN TREES	0	0	0	14
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED				
SHADE TREES	10	0	3	5
EVERGREEN TREES	14**	0	8**	19**
OTHER TREES (2:1 SUBSTITUTION)	0	0	0	0
SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	0	0	0	25**

\* NOTE: STREET TREES WILL BE PROVIDED @ 1/40 LF OF PUBLIC ROAD.  
 \*\*SUBSTITUTION NOTES:  
 PERIMETER 1: 14 EVERGREEN TREES ARE SUBSTITUTED FOR 7 SHADE TREES.  
 PERIMETER 3: 8 EVERGREEN TREES ARE SUBSTITUTED FOR 4 SHADE TREES.  
 PERIMETER 4: 5 EVERGREEN TREES AND 25 SHRUBS ARE SUBSTITUTED FOR 6 SHADE TREES.

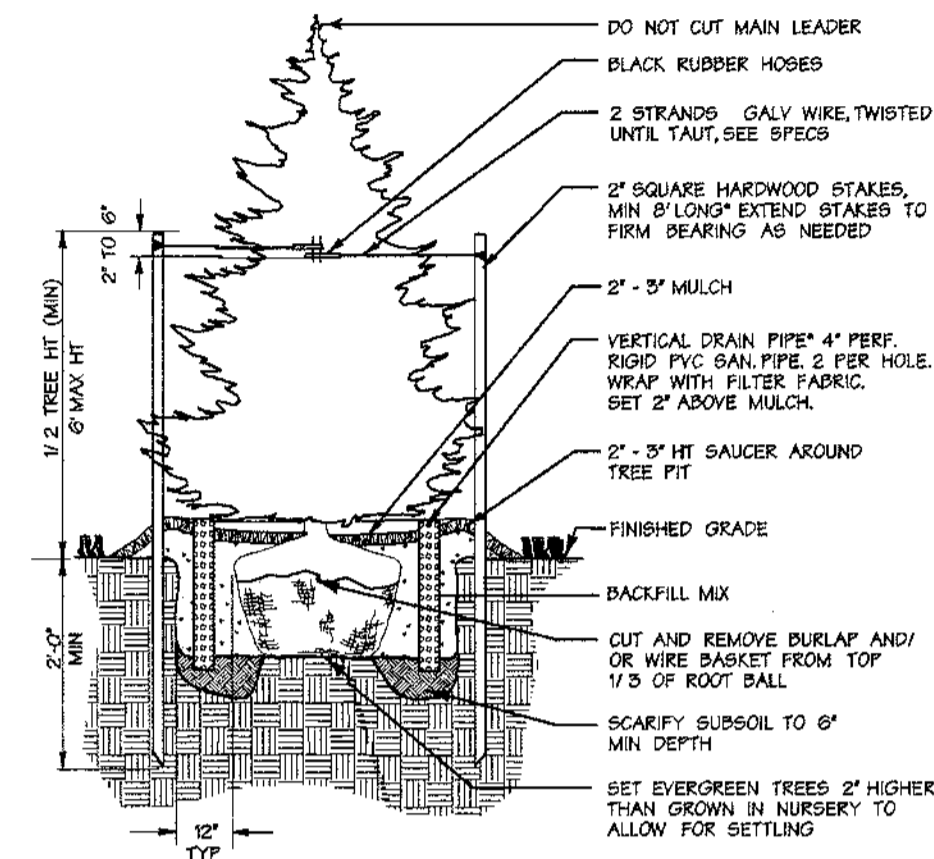
**SCHEDULE D  
STORMWATER MANAGEMENT  
AREA LANDSCAPING**

LINEAR FT OF PERIMETER (TYPE 'B')	903 LF
NUMBER OF TREES REQUIRED	
SHADE TREES @ 1/60 LF.	15
EVERGREEN TREES @ 1/40 LF.	19
CREDIT FOR EXISTING VEGETATION	152 LF
CREDIT FOR OTHER LANDSCAPING	NA
NUMBER OF TREES PROVIDED	
SHADE TREES	14*
EVERGREEN TREES	21
SHRUBS	0

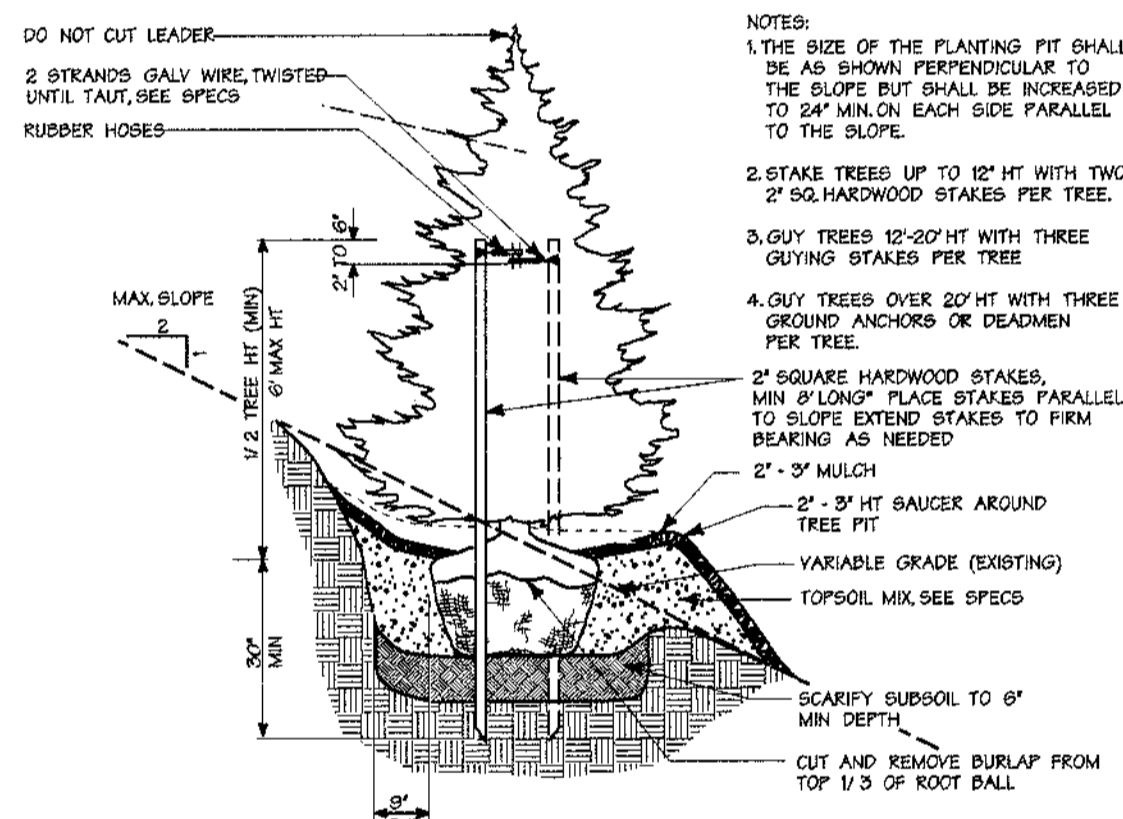
\*SUBSTITUTION NOTES:  
 2 EVERGREEN TREES ARE SUBSTITUTED FOR 1 SHADE TREE.

**PLANT LIST**

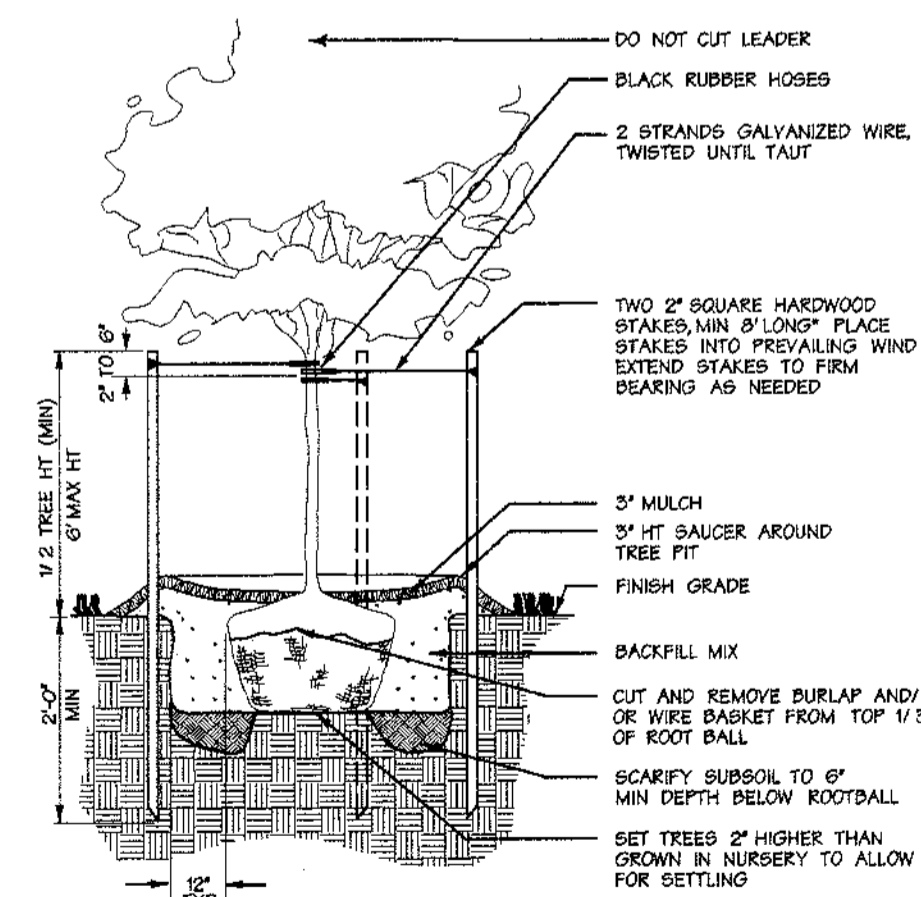
QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
<b>SHADE TREES</b>				
19	AR	ACER RUBRUM 'OCTOBER GLORY' October Glory Red Maple	2 1/2" - 3" CAL. 12' - 14' HT.	B & B FULL HEAD
13	AS	ACER SACCHARUM 'GREEN MOUNTAIN' Sugar Maple	2 1/2" - 3" CAL. 12' - 14' HT.	B & B FULL HEAD
36	QP	QUERCUS PHELLOS Willow Oak	2 1/2" - 3" CAL. 12' - 14' HT.	B & B FULL HEAD
<b>EVERGREEN TREES</b>				
3	IO	ILEX OPACA American Holly	5' - 6' HT.	B & B
22	LC	CUPPRESSOCYPARIS LEYLANDII Leyland Cypress	5' - 6' HT.	B & B
17	PA	PICEA ABIES Norway Spruce	6' - 8' HT.	B & B
20	PS	PINUS STROBUS Eastern White Pine	6' - 8' HT.	B & B
<b>SHRUBS</b>				
24	AG	ABELIA X GRANDIFLORA Glossy Abelia	2-1/2' x 3' HT.	B & B OR CONTAINER
11	VPM	VIBURNUM X FRAGENSE Prague Viburnum	2-1/2' x 3' HT.	B & B OR CONTAINER



**EVERGREEN TREE PLANTING**  
NOT TO SCALE



**EVERGREEN TREE PLANTING ON SLOPE**  
NOT TO SCALE



**SHADE TREE PLANTING 1/2 - 3" CALIPER**  
NOT TO SCALE

**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 LCAMM.
- No substitutions to be made without consent of Landscape Architect or Owner.
- All beds to be topped with three inches of hardwood mulch.
- Landscape Contractor to verify location of utilities with Owner before planting.
- Landscape Architect/Owner shall select, verify and/or approve all plant material. At 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 Utilities 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 Utilities 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 berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- This plan has been prepared in accordance with the provisions Section 16.124 of the Ho.Co. Code and the Ho.Co. Landscape Manual. Financial surety for the required landscaping will be posted as a part of the DFW Developers Agreement in the amount of \$50,750 (86 Shade trees and 33 Evergreen Trees).
- 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 relocation 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/or revisions are made to applicable plans and certificates.
- Developer's/Builder's Certificate

I hereby certify that the landscaping shown on this plan will be done according to the plan, Section 16.24 of the Howard County code and the Howard County Landscape Manual. I 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.

Chris R. R... 10-27-04  
 NAME: Chris R. R... DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

With 2... 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Condy Hamilton 12/17/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

12/13/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ DATE

Date No. Revision Description

**CHESTNUT CREST**

LOTS 4 - 12  
 OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF  
 NON-BUILDABLE BULK PARCEL A  
 & LOT 2 AND A REVISION TO LOT 1

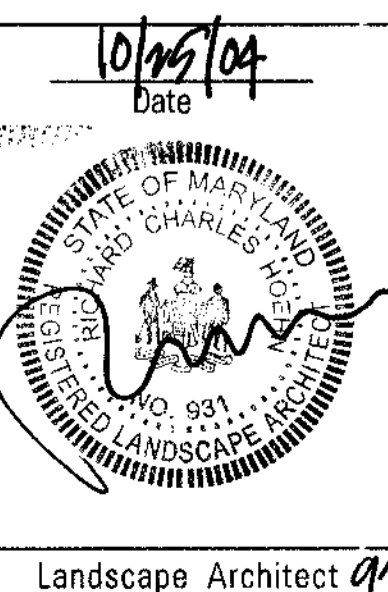
OWNER/DEVELOPER:  
 OWNER: CHESTNUT HILL PROPERTIES, LLC EXISTING OPEN SPACE LOT 2  
 346-A MARIMICH COURT CHESTNUT CREST COMMUNITY  
 ELDELSBURG, MD 21784 ASSOCIATION, INC.  
 DEVELOPER: KACHUBA HOME BUILDERS, LLC 346-A MARIMICH COURT  
 ELDELSBURG, MD 21784

**DMW**  
 DeWitt-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

AREA  
 TAX MAP 18 PARCEL 69  
 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

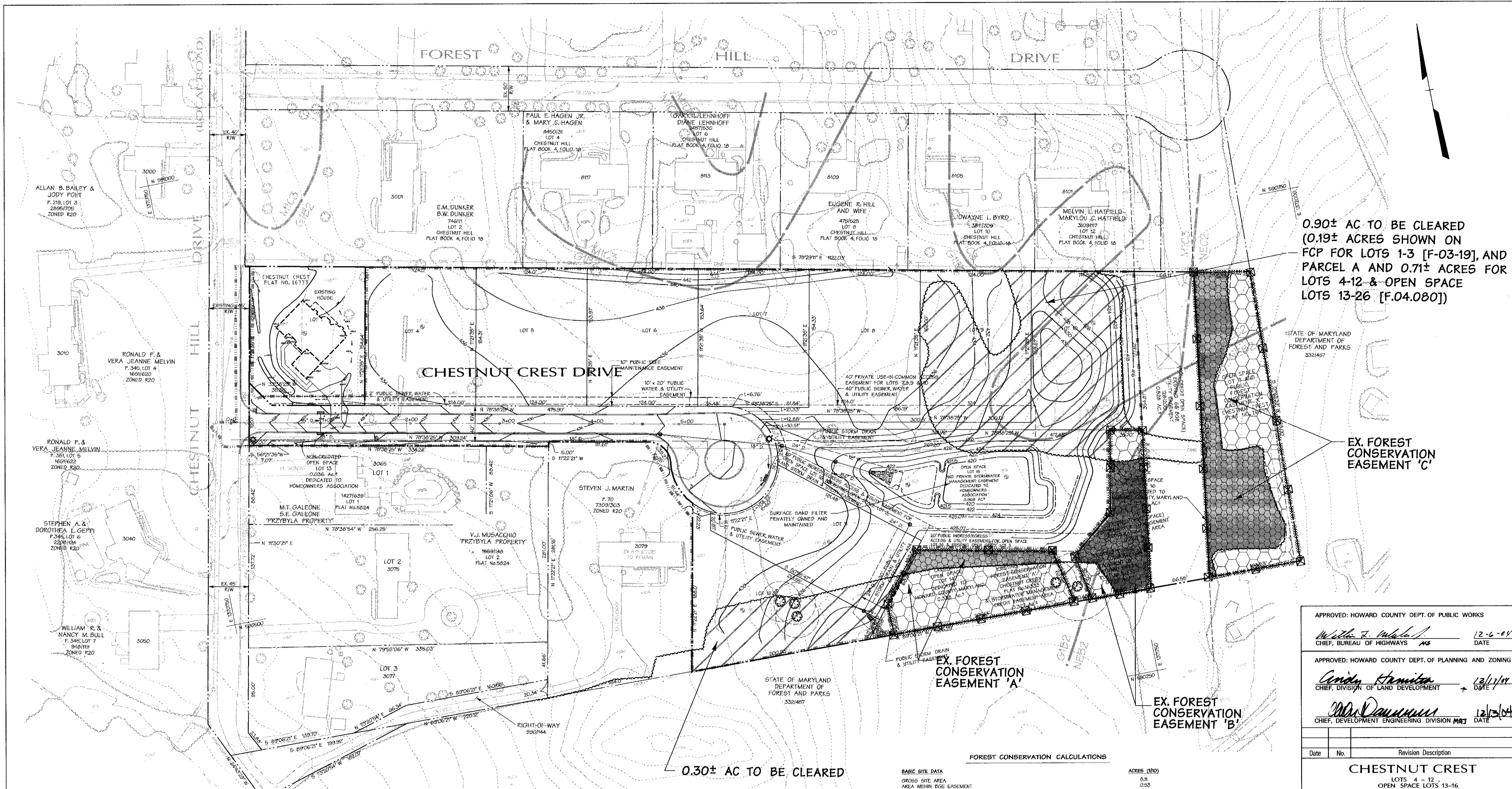
TITLE  
 LANDSCAPE DETAILS

Des. By	CRH	Scale	1"=50'	Proj. No.	00091.D
Dwn. By	CRH	Date	9-30-04		
Chk. By	MJP	Approved			13 of 16



Landscape Architect am





0.90± AC TO BE CLEARED  
(0.19± ACRES SHOWN ON  
FCP FOR LOTS 1-3 [F-03-19], AND  
PARCEL A AND 0.71± ACRES FOR  
LOTS 4-12 & OPEN SPACE  
LOTS 13-26 [F.04.080])

EX. FOREST  
CONSERVATION  
EASEMENT 'C'

EX. FOREST  
CONSERVATION  
EASEMENT 'A'

EX. FOREST  
CONSERVATION  
EASEMENT 'B'

0.30± AC TO BE CLEARED

**FOREST CONSERVATION CALCULATIONS**

BASIC SITE DATA	ACRES (±10)
GROSS SITE AREA	8.11
AREA WITHIN EGE EASEMENT	0.53
NET TRACT AREA	7.58
LAND USE CATEGORY	HR

INFORMATION FOR CALCULATIONS	ACRES
A. NET TRACT AREA	7.58
B. REFORESTATION THRESHOLD (20% x A)	1.52
C. AFFORESTATION MINIMUM (8% x A)	1.14
D. EXISTING FOREST ON NET TRACT AREA	1.83
E. FOREST AREAS TO BE CLEARED	1.20
F. FOREST AREAS TO BE RETAINED	0.63

REFORESTATION CALCULATIONS	ACRES
A. NET TRACT AREA	7.58
B. REFORESTATION THRESHOLD (20% x A)	1.52
C. EXISTING FOREST ON NET TRACT AREA	1.83
D. FOREST AREAS TO BE CLEARED	1.20
E. FOREST AREAS TO BE RETAINED	0.63
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	0.21
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.89
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00

CLEARING BELOW THE THRESHOLD	ACRES
IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF E IS LESS THAN D), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD	0.08
REFORESTATION FOR CLEARING BELOW THRESHOLD	1.78
TOTAL REFORESTATION REQUIRED (F1+4) + (G+2)	1.86
CREDIT FOR RETENTION ABOVE THRESHOLD	0.00
TOTAL REFORESTATION REQUIRED	1.86
TOTAL REFORESTATION PROVIDED	0.56
FEES-IN-LIEU TO BE PROVIDED	1.30

NOTE: ALL FOREST CONSERVATION EASEMENTS ARE SHOWN PER F-03-19 AND WERE RECORDED ON PLAT 16333. THE FOREST CONSERVATION CALCULATIONS HAVE BEEN REVISED PER THE PLAN.

THE FOREST CONSERVATION OBLIGATION FOR THIS PROJECT HAS BEEN MET BY F-03-09, CHESTNUT CREST LOTS 1-3 AND NON-BUILDABLE BULK PARCEL A, WHICH CREATED ON-SITE FOREST CONSERVATION EASEMENTS A-C THAT COLLECTIVELY CONTAINS 0.63 ACRES OF RETENTION AND 0.56 ACRES OF REFORESTATION, AND BY THE RESUBDIVISION F-04-080, BY A FEES-IN-LIEU PAYMENT OF \$28,214.00 FOR 1.3 ACRES OF REFORESTATION TO THE HO. CO. FOREST CONSERVATION FUND THAT SHALL BE PAID PRIOR TO THE RECORDING OF THE PLAT. SURETY IN THE AMOUNT OF \$176,682.36 FOR THE EXISTING FOREST CONSERVATION EASEMENTS WAS FORFEIT WITH THE FOREST CONSERVATION AGREEMENT FOR F-03-09.

A FOREST CONSERVATION PLAN (F-03-19) HAS PREVIOUSLY BEEN APPROVED FOR LOTS 12 AND 13. THIS FOREST CONSERVATION PLAN IS SPECIFIC TO THE REMAINDER OF THE PROPERTY, DEFINED AS LOTS 4 THROUGH 13. FOREST CONSERVATION EASEMENTS WERE RECORDED ON PLAT 16333.

THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO ACCOUNT FOR FOREST CLEARING ASSOCIATED WITH THE CHESTNUT CREST SUBDIVISION, LOTS 4 - 12 AND OPEN SPACE LOTS 13-16, TO PROTECT FOREST TO BE RETAINED, AND TO SATISFY REFORESTATION OBLIGATIONS GENERATED BY THIS PROJECT. APPROXIMATELY 1.01 ACRES OF CLEARING AND NO NEW RETENTION OR REFORESTATION EASEMENTS ARE PROPOSED UNDER THIS PHASE. CUMULATIVELY, 1.20 ACRES OF FOREST CLEARING IS PROPOSED, GENERATING A TOTAL REFORESTATION OBLIGATION OF 1.86 ACRES, APPROXIMATELY 0.63 ACRES OF RETENTION AND 0.56 ACRES OF REFORESTATION HAVE BEEN PROVIDED ON-SITE. THE REMAINING 1.30 ACRES OF REFORESTATION WILL BE SATISFIED BY PAYING A FEES-IN-LIEU IN THE AMOUNT OF \$28,214.00, IN ACCORDANCE WITH THIS APPROVED PRELIMINARY FOREST CONSERVATION PLAN FOR THIS DEVELOPMENT.

FOREST CONSERVATION EASEMENT	RETENTION	REFORESTATION	TOTAL
A	0.26 Ac.	0.07 Ac.	0.33 Ac.
B	0.05 Ac.	0.17 Ac.	0.22 Ac.
C	0.32 Ac.	0.32 Ac.	0.64 Ac.
TOTAL	0.63 Ac.	0.56 Ac.	1.19 Ac.

**Legend**

- EXISTING FOREST EDGE
- SCRUB/SHRUB AND LANDSCAPE TREE GROUPS
- SOILS
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT WITH PERMANENT FOREST PROTECTION SIGNS AT 50' TO 100' INTERVALS
- FOREST CLEARING
- REFORESTATION
- FOREST RETENTION
- PERMANENT FOREST PROTECTION SIGNS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Walter F. ...* 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Condy Hamilton* 12/11/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mr. ...* 12/13/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MHT DATE

Date	No.	Revision Description

**CHESTNUT CREST**  
 LOTS 4 - 12 - 16  
 OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF  
 NON-BUILDABLE BULK PARCEL A  
 & LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
 OWNER: CHESTNUT HILL PROPERTIES, LLC  
 946-A MARMICH COURT  
 ELDBERSBURG, MD 21724  
 EXISTING OPEN SPACE LOT 2  
 CHESTNUT CREST COMMUNITY  
 ASSOCIATION, INC.  
 946-A MARMICH COURT  
 ELDBERSBURG, MD 21724

DEVELOPER:  
 RACHUSA HOME BUILDERS, LLC  
 946-A MARMICH COURT  
 ELDBERSBURG, MD 21724

**DMW**  
 Dan McCune-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 286-8333  
 Fax: 286-4765  
 A Team of Land Planners,  
 Landscape Architects,  
 Golf Course Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

AREA: TAX MAP 18 PARCEL 69  
 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: FINAL FOREST CONSERVATION PLAN

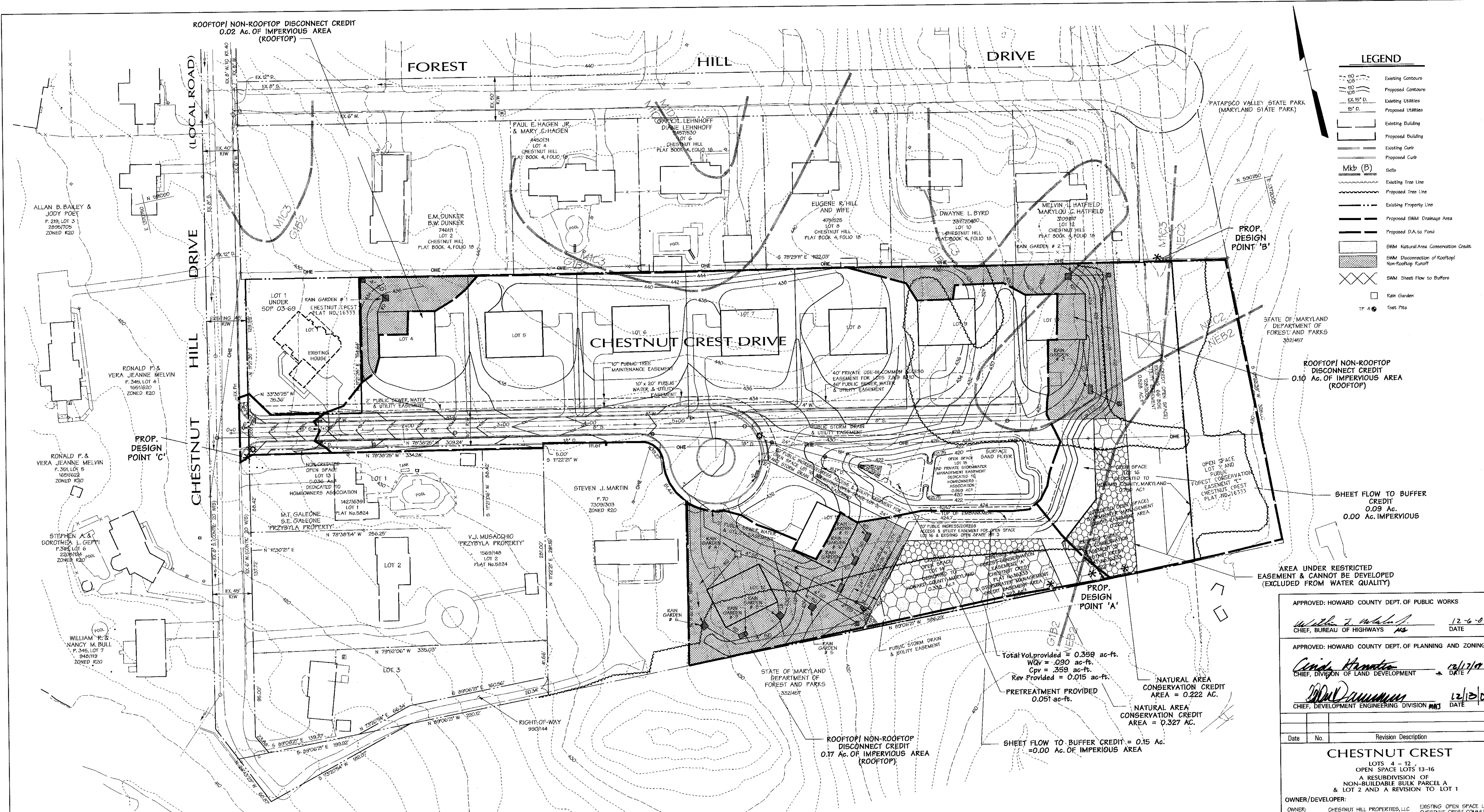
Des. By: SH Scale: 1"=50' Proj. No. 00091D  
 Dim. By: CRH Date: 9-30-04  
 Chk. By: RLW/MJP Approved: RLH 14 of 16



ROOFTOP/ NON-ROOFTOP DISCONNECT CREDIT  
0.02 Ac. OF IMPERVIOUS AREA  
(ROOFTOP)

**LEGEND**

- - - Existing Contours
- - - Proposed Contours
- - - Existing Utilities
- - - Existing Utilities
- - - Existing Building
- - - Proposed Building
- - - Existing Curb
- - - Proposed Curb
- Mkb (B)
- - - Existing Tree Line
- - - Proposed Tree Line
- - - Existing Property Line
- - - Proposed SWM Drainage Area
- - - Proposed D.A. to Pond
- - - SWM Natural Area Conservation Credit
- - - SWM Disconnection of Rooftop/ Non-Rooftop Runoff
- - - SWM Sheet Flow to Buffer
- Rain Garden
- TP 4



Total Vol. provided = 0.359 ac-ft.  
WCR = .090 ac-ft.  
Cpv = 359 ac-ft.  
Rev Provided = 0.015 ac-ft.

PRETREATMENT PROVIDED  
0.051 ac-ft.

NATURAL AREA CONSERVATION CREDIT AREA = 0.222 AC.

NATURAL AREA CONSERVATION CREDIT AREA = 0.327 AC.

ROOFTOP/ NON-ROOFTOP DISCONNECT CREDIT  
0.17 Ac. OF IMPERVIOUS AREA  
(ROOFTOP)

SHEET FLOW TO BUFFER CREDIT  
0.09 Ac.  
0.00 Ac. IMPERVIOUS

AREA UNDER RESTRICTED EASEMENT & CANNOT BE DEVELOPED (EXCLUDED FROM WATER QUALITY)

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*With 7. Michael* 12-6-04  
CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Cinda Hamata* 12/17/04  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*David Dammann* 12/13/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION MSJ DATE

Date	No.	Revision Description

**CHESTNUT CREST**

LOTS 4 - 12  
OPEN SPACE LOTS 13-16  
A RESUBDIVISION OF  
NON-BUILDABLE BULK PARCEL A  
& LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
OWNER: CHESTNUT HILL PROPERTIES, LLC  
946-A MARMICH COURT  
ELDERSBURG, MD 21784  
EXISTING OPEN SPACE LOT 2  
CHESTNUT CREST COMMUNITY  
ASSOCIATION, INC.  
946-A MARMICH COURT  
ELDERSBURG, MD 21784

DEVELOPER: RACHUBA HOME BUILDERS, LLC  
946-A MARMICH COURT  
ELDERSBURG, MD 21784



*Draft* McCase Walker, Inc.  
200 East Pennsylvania Avenue  
Towson, Maryland 21286  
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A Team of Land Planners,  
Landscape Architects,  
Golf Course Architects,  
Engineers, Surveyors &  
Environmental Professionals

AREA  
TAX MAP 18 PARCEL 69  
2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE  
SWM CREDIT PLAN,  
SWM DRAINAGE AREA MAP  
& WATER QUALITY PLAN

Des. By RLH Scale 1" = 50'  
Dn. By KDE Date 9-30-04  
Chk. By RLH Approved

Proj. No. 00091.D  
15 of 16

**Rain Garden** (RAIN GARDENS ARE CONCEPTUALLY SHOWN AND WILL BE FINAL DESIGNED WITH THE SDP DRAWINGS)

IMPERVIOUS S.F.	SURFACE AREA REQUIRED S.F.	SURFACE AREA PROVIDED	BOTTOM DIMENSION	SIDE SLOPES
1	886	46	49	7.0' x 7.0'
2	832	42	48	7.0' x 7.0'
3	832	42	50	10.0' x 5.0'
4	886	46	49	7.0' x 7.0'
5	886	46	49	7.0' x 7.0'
6	1000	50	50.4	7.1' x 7.1'
7	886	46	50	10.0' x 5.0'
8	886	46	49	7.0' x 7.0'
9	1000	50	50	10.0' x 5.0'
10	832	42	50	10.0' x 5.0'
11	832	42	50	10.0' x 5.0'

10/25/04  
Date

*[Signature]*

Professional Engr. No. 1051



B.3.B Specifications for Raingardens

1. Material Specifications  
 The allowable materials to be used in raingarden area are detailed in Table B.3.2.

2. Planting Soil  
 The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two-inches. No other materials or substances shall be mixed or dumped within the raingarden area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations.  
 The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.06.01.05.

The planting soil shall be tested and shall meet the following criteria:

pH range	5.2 - 7.0
organic matter	1.5 - 4% (by weight)
magnesium	35 lb./ac
phosphorus (phosphate - P2O5)	75 lb./ac
potassium (potash - K2O)	85 lb./ac
soluble salts	not to exceed 500 ppm

All raingarden areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

3. Compaction  
 It is very important to minimize compaction of both the base of the raingarden area and the required backfill. When possible, use excavation hoes to remove original soil. If raingarden areas are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the raingarden facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12-inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill two to three-inches of sand into the base of the raingarden facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place three to four-inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the raingarden facility, place soil in lifts 12-inches to 18-inches. Do not use heavy equipment within the raingarden basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade raingarden materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material  
 Recommended plant material for raingarden areas can be found in Appendix A, Section A.2.3.

5. Plant Installation  
 Mulch should be placed to a uniform thickness of two to three-inches. Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six-inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using two-inch by two-inch stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one-inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the raingarden structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of two pounds per 1,000 square feet.

6. Underdrains  
 Underdrains are to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

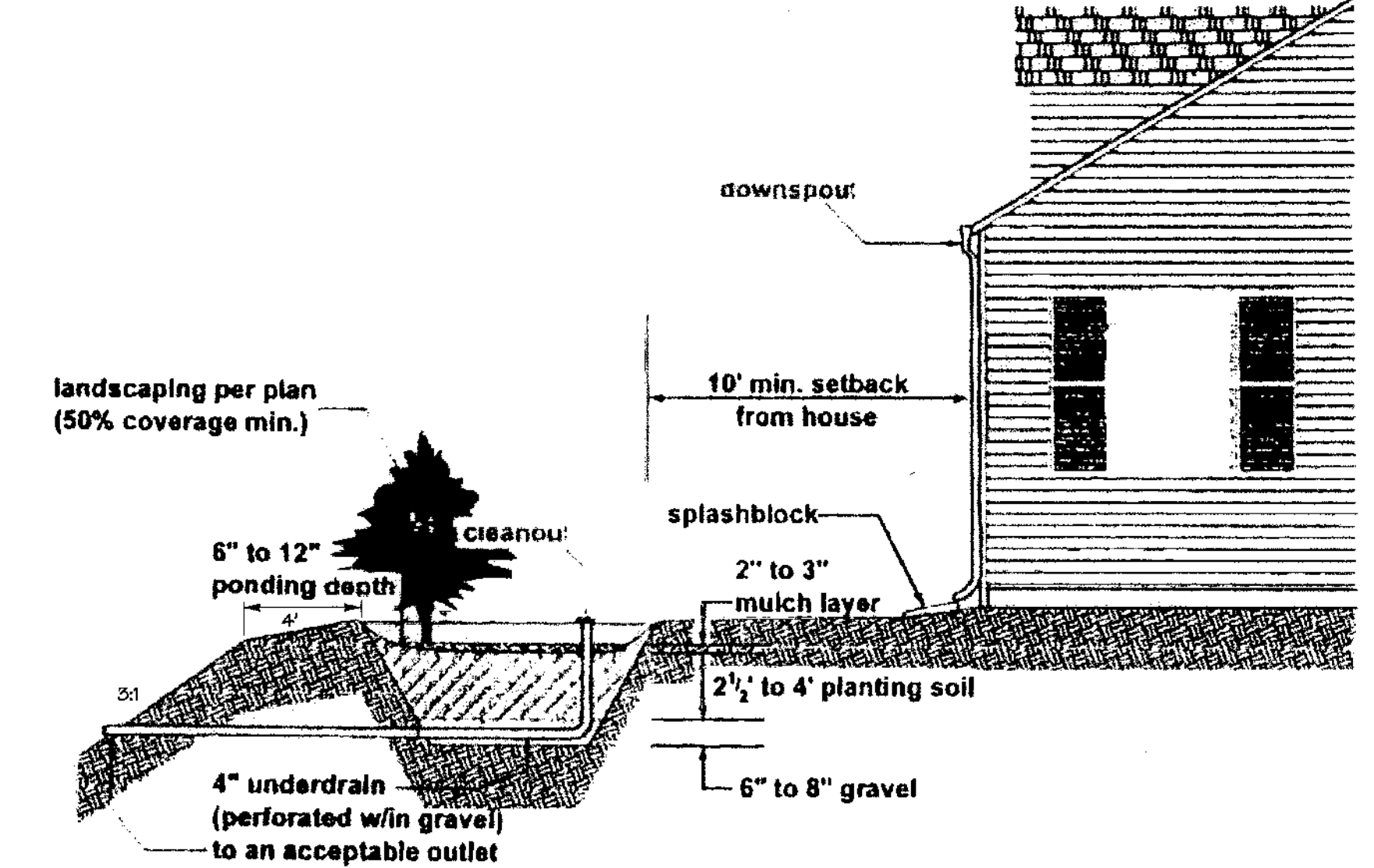
The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5 percent. Observation wells and/or clean-out pipes must be provided (one minimum per every 1,000 square feet of surface area).

7. Miscellaneous  
 The raingarden facility may not be constructed until all contributing drainage area has been stabilized.

OPERATION AND MAINTENANCE SCHEDULE FOR RAINGARDEN AREAS (F-6)

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING & FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES & WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2-3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

RAINGARDEN - PROFILE



NOTE: SEE RAINGARDEN TABLE ON SHEET 15 FOR SURFACE AREA AND APPROPRIATE ELEVATIONS FOR EACH RAINGARDEN.

Raingarden - Profile

Not To Scale

Table B.3.2 Materials Specifications for Raingarden

Material	Specification	Size	Notes
plantings	see sheet 11	n/a	see sheet 11
planting soil [2.5' to 4' deep]	sand 35-60% silt 30-35% clay 0-12%	n/a	USDA soil types loamy sand, sandy loam or loam
mulch	shredded hardwood	n/a	aged 6 months, minimum
geotextile	Class 'C' - apparent opening size (ASTM-D-4751) grab tensile strength (ASTM-D-4632) puncture resistance (ASTM-D-4633)	n/a	for use beneath underdrains ONLY
underdrain gravel	AASHTO M-43 #57 or #67	0.375" to 0.75"	
underdrain piping	F 758, type PS 2B or AASHTO M-278	4" to 6" rigid sched. 40 PVC or SDR35 or HDPE	3/8" perf @ 6" on center, 4 holes per row minimum of 3" gravel over pipes, gravel not necessary beneath pipes

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*William J. Williams* 12-6-04  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Cindy Hamant* 12/17/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mark J. Williams* 12/13/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ DATE

Revision Description

**CHESTNUT CREST**  
 LOTS 4 - 12  
 OPEN SPACE LOTS 13-16  
 A RESUBDIVISION OF  
 NON-BUILDABLE BULK PARCEL A  
 & LOT 2 AND A REVISION TO LOT 1

OWNER/DEVELOPER:  
 OWNER: CHESTNUT HILL PROPERTIES, LLC  
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 ELDERSBURG, MD 21784  
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A Team of Land Planners,  
 Landscape Architects,  
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 Environmental Professionals

12/25/04  
 Date

*[Signature]*

Professional Engr. No. 14557

AREA  
 TAX MAP 18 PARCEL 69  
 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE  
 RAIN GARDEN DETAILS AND SPECIFICATIONS

Des. By	R.L.H.	Scale	Proj. No.	00091D
Dim. By	R.L.H.	Date	9-30-04	16 of 16
Chk. By	R.L.H.	Approved		