Sheet Index

SHEET	DESCRIPTION
1	COVER SHEET
2	ROAD CONSTRUCTION PLAN
3	GRADING, EROSION & SEDIMENT CONTROL AND SWM PLAN
4	STORM DRAIN PROFILES
5	STORM DRAIN DRAINAGE AREA MAP
6	DETAILS
7	EROSION & SEDIMENT CONTROL DETAILS
8	SWM, EROSION & SEDIMENT CONTROL DETAILS
9	SWM SOIL BORINGS & SWM DETAILS
10	DETAILS & LOT 1 ESC PHASING
11	SWM FACILITY #1 & SEDIMENT BASIN #1 PLAN VIEW AND PROFILE
12	LANDSCAPE AND STREET TREE PLAN
13	LANDSCAPE AND STREET TREE DETAILS
14	FOREST CONSERVATION PLAN
15	SWM CREDIT PLAN, SWM DRAINAGE AREA MAP & WATER QUALITY PLAN
16	RAIN GARDEN DETAILS AND SPECIFICATIONS

General Notes

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.

2. 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.

3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.

4. 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.

5. 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.

6. The existing topography is taken from aerial survey with 2' contour intervals prepared by 3DI dated Feb. 3, 2001.

7. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 17 FA and 24C2 were used for this project.

8. Existing utilities are based on Existing Construction Plans

10. Sidewalk ramps shall meet current ADA requirements.

11. Project background information:

Subdivision Name: Chestnut Crest Section/Area: N/A

Lot./Parcel: 69 Zoning: R-20

and 33 Evergreen Trees).

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

12. All sidewalk ramps shall meet current ADA requirements. All

sidewalks at intersections to have handicap ramps.

13. Street trees shall be planted at least 5' from any inlet structure.

14. 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

15. The Stormwater management facility # 1 (Surface Sand Filter) shall be owned and maintained by the Home Owners Association (H.O.A.).

16. Maintenance responsibility, routine and non-routine schedule is shown on sheet 10.

17. 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. 8, 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.

18. Existing well to be abandoned per Health Dept. regulations before grading permit is issued.

19. 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 pald prior to the recording of the plat. Surety in the amount of \$17,685.36 for the existing forest conservation easements was posted with the forest conservation agreement for F-03-019.

20. 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. 21. 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

Final Plan

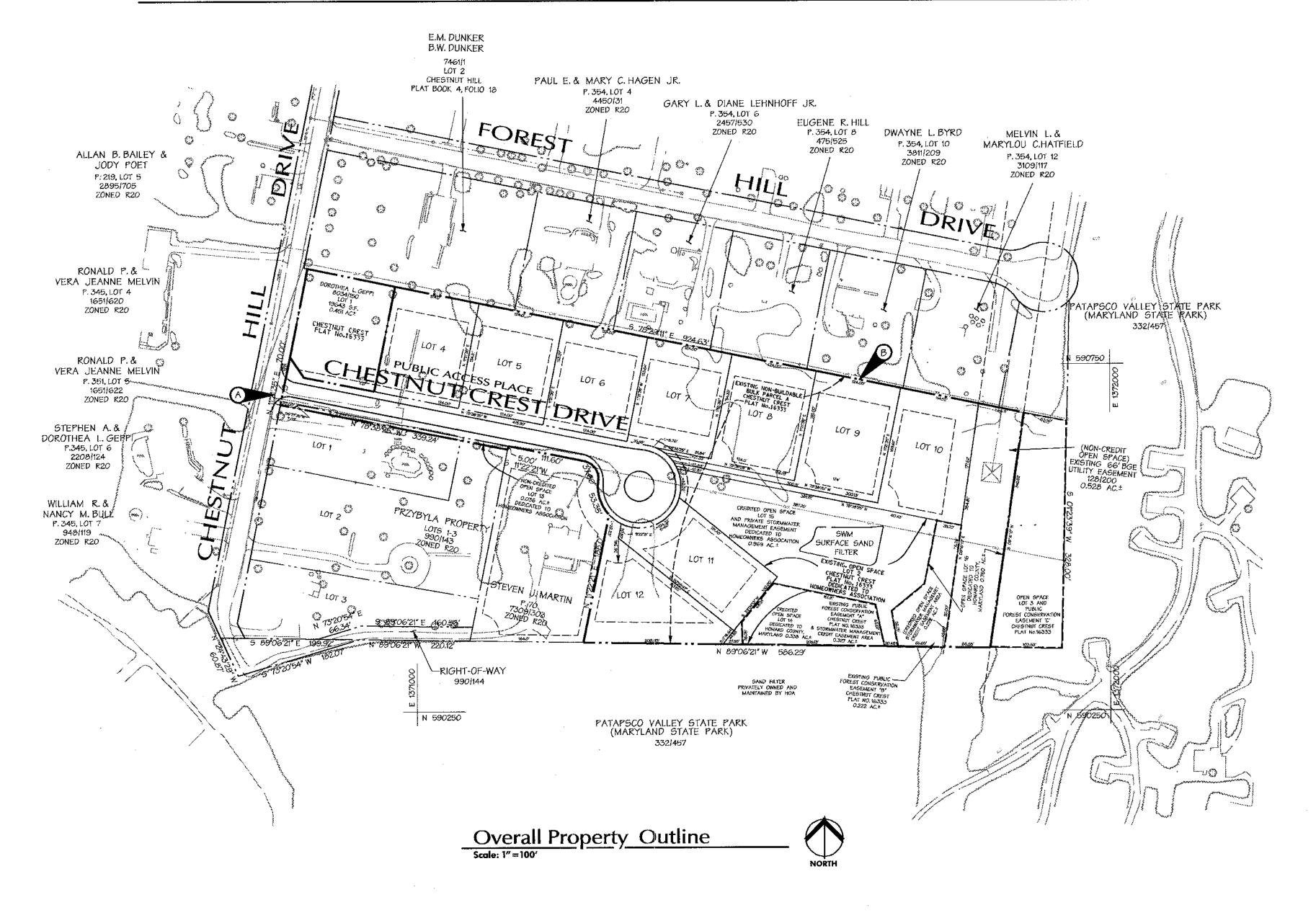
Chestnut Crest

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

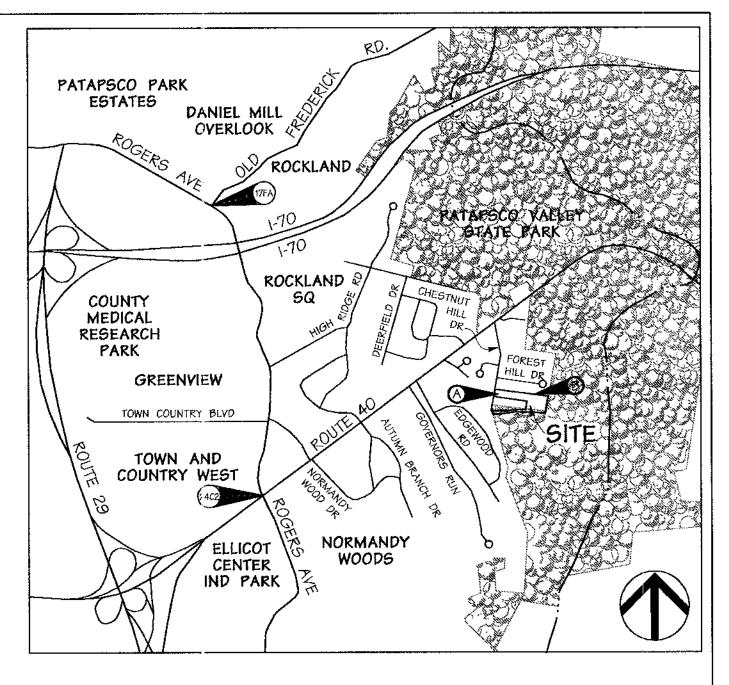
Maryland



Description of Road Design Waiver (WP-04-78) Road design walver Section 16.119(e)(5) was conditionally approved on January 15, 2004 by DPW. Standard walved includes: Section 16.119(e)(5) to not be required to provide the full 25' truncation at south corner of

The approval of WP-03-68 by letter dated Feb. 19, 2003 for this property granted to the following: Request to walve 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.

Intersection of two public roads, existing Chestnut Hill Drive and proposed Chestnut Crest Drive.



VICINITY MAP

SCALE: 1"=2000'

BENCHMARK

DESCRIPTION

COORDINATES IN MARYLAND NAD83(91) (HORIZONTAL) AND NGVD29 (VERTICAL) DATUMS.

SEE VICINITY MAP ABOVE

NORTHING: 594948.349 NORTHING: 588648.312 EASTING: 1364626.768 ELEVATION: 476.80'

EASTING: 1366038.195 SEE PLAN VIEW AT LEFT

A: R.R. SPIKE (NEAR CENTER OF CHESTNUT HILL, OPPOSITE PROP. CHESTNUT CREST DR.) NORTHING: 590716.655 EASTING: 1370778.113 ELEVATION: 426.18'

AND FIELD TOPO BY DMW DATED MARCH 2001.

B: REBAR & CAP (NORTH OF LOT 9) NORTHING: 590727.059 EASTING: 1371638.908 ELEVATION: 433.58'

DATA SOURCES:

1. EXISTING TOPO INFORMATION SHOWN IS FROM AERIAL TOPOGRAPHY, FLOWN BY 3DILLEC DATED JANUARY 13, 2001. 2. BOUNDARY LIMITS SHOWN FROM DMW SURVEY DATED MARCH 2001. 3. EXISTING UTILITIES SHOWN ARE FROM EXISTING HOWARD CO. RECORDS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

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:

CHESTNUT HILL PROPERTIES, LLC EXISTING OPEN SPACE LOT 2 946-A MARIMICH COURT ELDERSBURG, MD 21784

ASSOCIATION, INC. 946-A MARIMICH COURT RACHUBA HOME BUILDERS, LLC ELDERSBURG, MD 21784 946-A MARIMICH COURT ELDERSBURG, MD 21784

Daft McCune Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296–3333

Fax 296-4705

A Team of Land Planners, Landscape Architects, Golf Course Architects

CHESTNUT CREST COMMUNITY

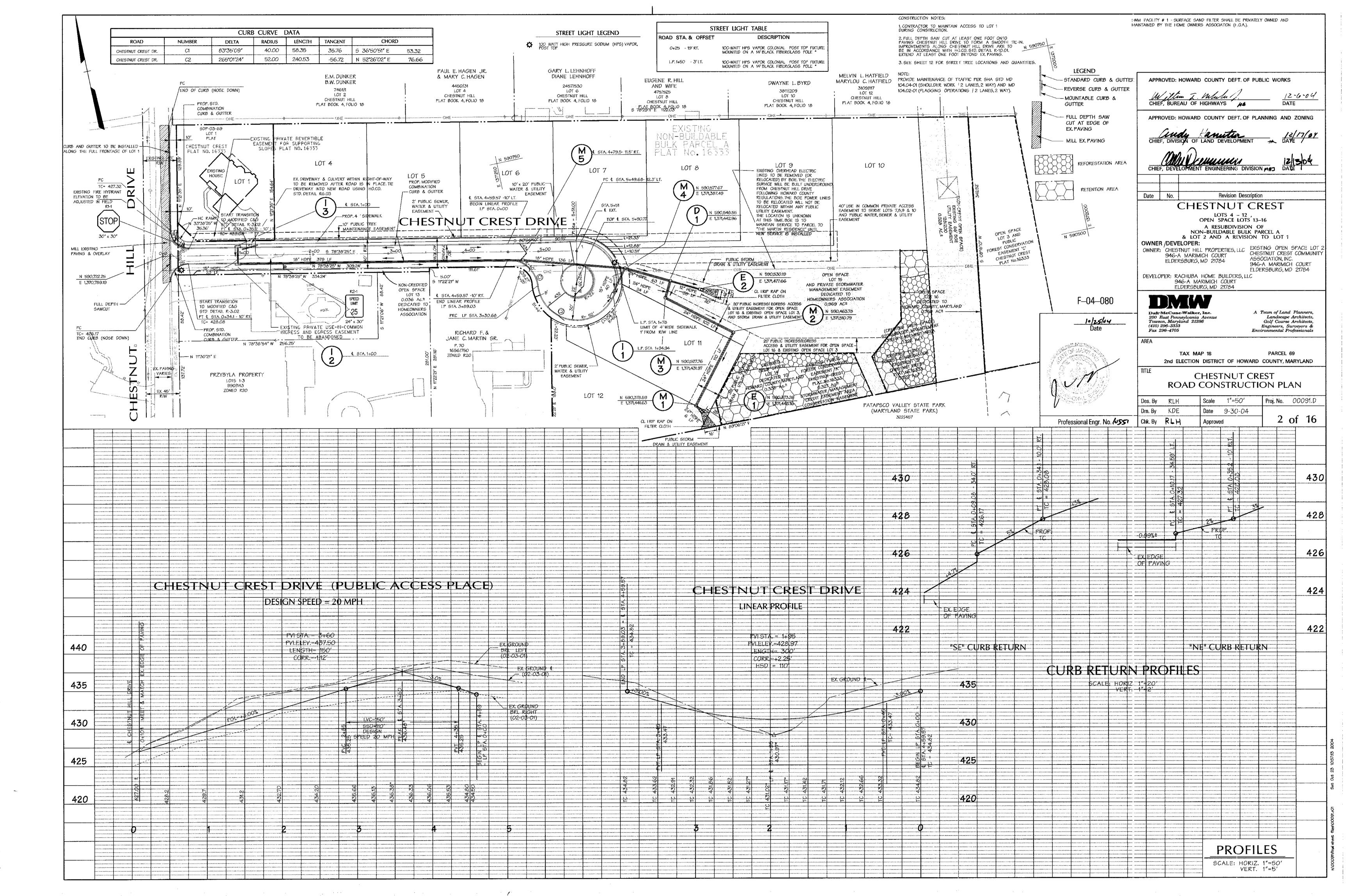
area

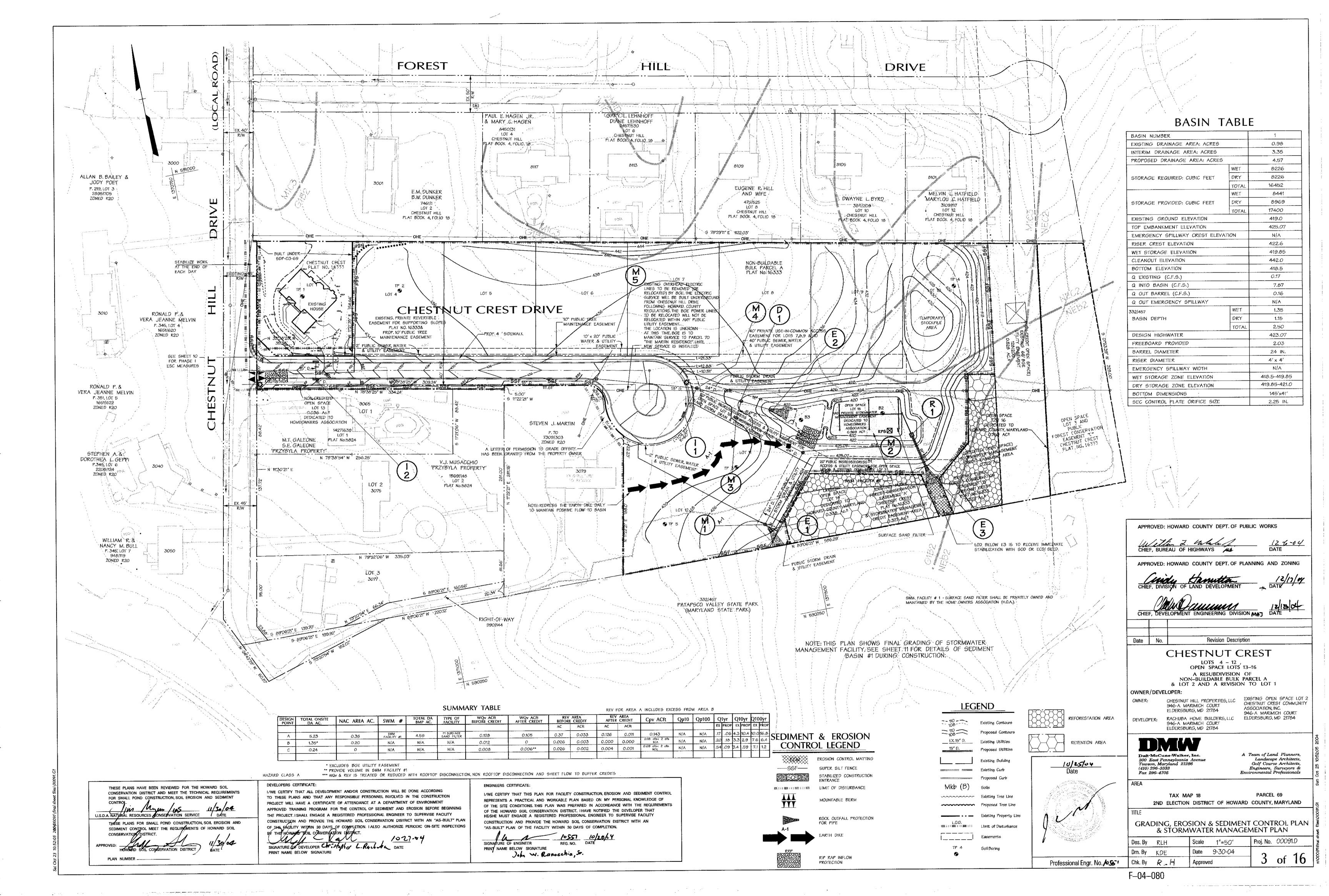
PARCEL 69 2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

COVER SHEET

Proj. No. 00091.D Scale 1"=100' Des. By RLH Dm. By KDE Date 9-30-04 of 16 Approved RLH Chk. By

Professional Engr. No. 10551







19" THK. ON FILTER

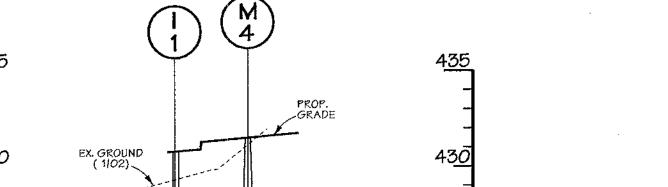
EX. GROUND

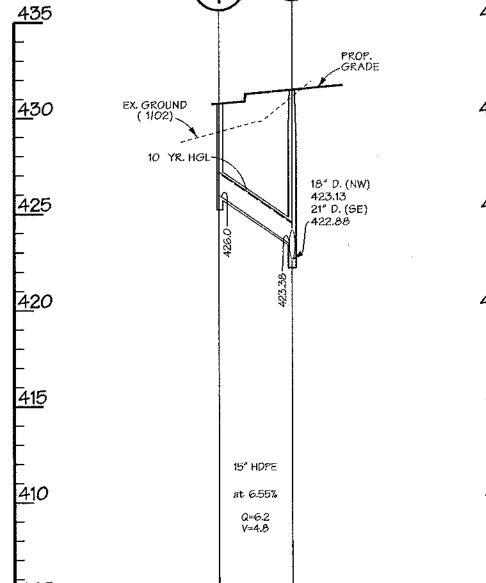
21" D. (NW) 422.56 21" D. (SE) 422.46

12" HDPE at 2.21%

 $Q_1 = 2.95$ $Q_{10} = 4.0$ $V_{10} = 5.1$







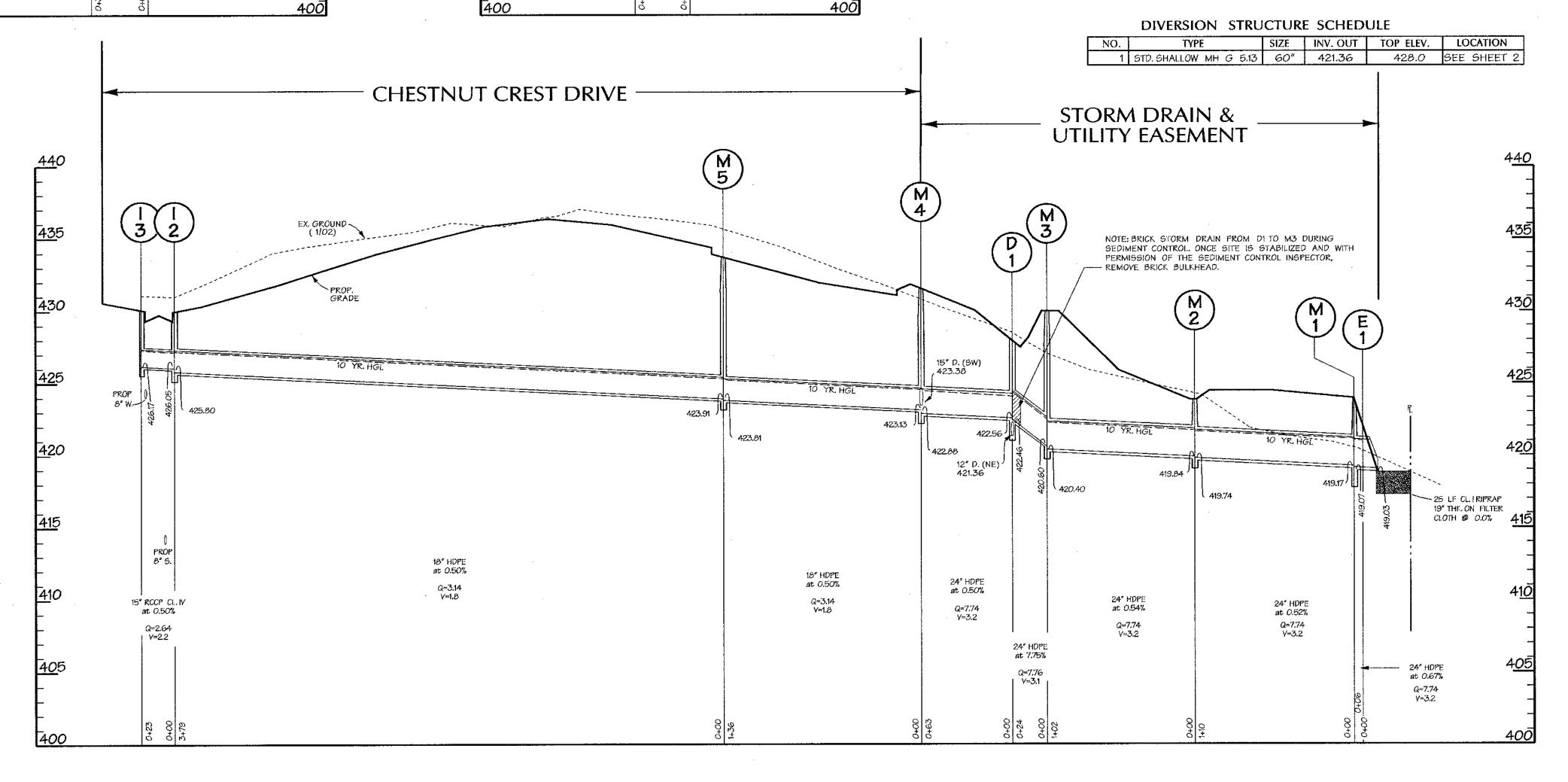
	MANHOLE	SCH	IEDULE		
).	TYPE	SIZE	INV. OUT	TOP ELEV.	LOCATION
	SHALLOW MH G5.12	48"	419.07	424.0	SEE SHEET 2
	SHALLOW MH G5.12	48"	419.74	424.00	SEE SHEET 2
	STD. MANHOLE G5.12	48"	420.4	430.00	SEE SHEET 2
	STD. MANHOLE G5.12	48"	422.88	431.5	SEE SHEET 2
	STD. MANHOLE G5.12	48"	423.81	433.8	SEE SHEET 2

NO.	1176	3146	וויעי, טטו	TOP LLEV.	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
	" 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				

		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							
ТҮРЕ	INV. OUT	THROAT ELEV.	LOCATION				
 A-10, 2'-6" WIDE SD 4.02	426.0	430.65	SEE SHEET 2				
A-5, 2'-6" WIDE SD 4.01	425.8	429.40	SEE SHEET 2				
A-10, 2'-6" WIDE 5D 4.02	426.17	429.40	SEE SHEET 2				
	i i		1				

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



NOTE: BLOCK STORM DRAIN FROM DI TO M-3 DURING SEDIMENT CONTROL. ONCE SITE IS STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT -INVERT OF FLOW CONTROL INSPECTOR REMOVE BRICK BULKHEAD. - ALUMINUM TRASH GRATING. TOP OF TRASH GRATING AT OUTLET PIPE INVERT. BOLT SHELF ANGLE TO MANHOLE WALL --- FIRST FLUSH OUTLET PRECAST MANHOLE BASE-PIPE TO BMP FACILITY PROVIDE INVERTED SIPHON - NOTE: ALUMINUM TRASH GRATE IN TWO SEMICIRCULAR SECTIONS FIRS FLUSH OUTLET PIPE TO BMP FACILITY TYPICAL ISOLATION / DIVERSION MANHOLE D-1 N.T.S.

> 12-6-04 DATE CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING Revision Description Date No. **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:

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

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

10/25/04 Date

Daft McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296–3333

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

ASSOCIATION, INC. 946-A MARIMICH COURT

AREA

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

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

EXISTING OPEN SPACE LOT 2
CHESTNUT CREST COMMUNITY
ASSOCIATION, INC.

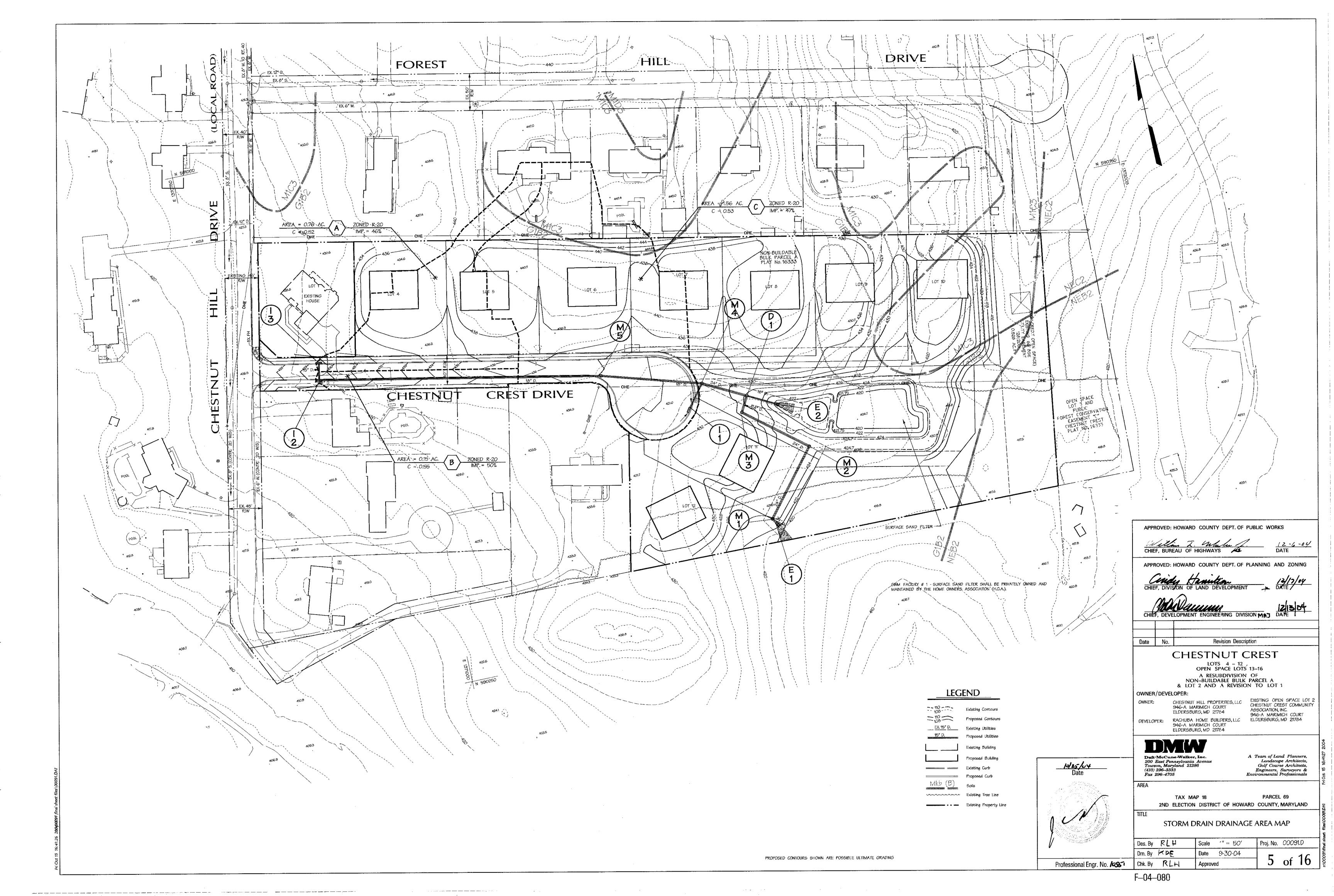
STORM DRAIN PROFILES

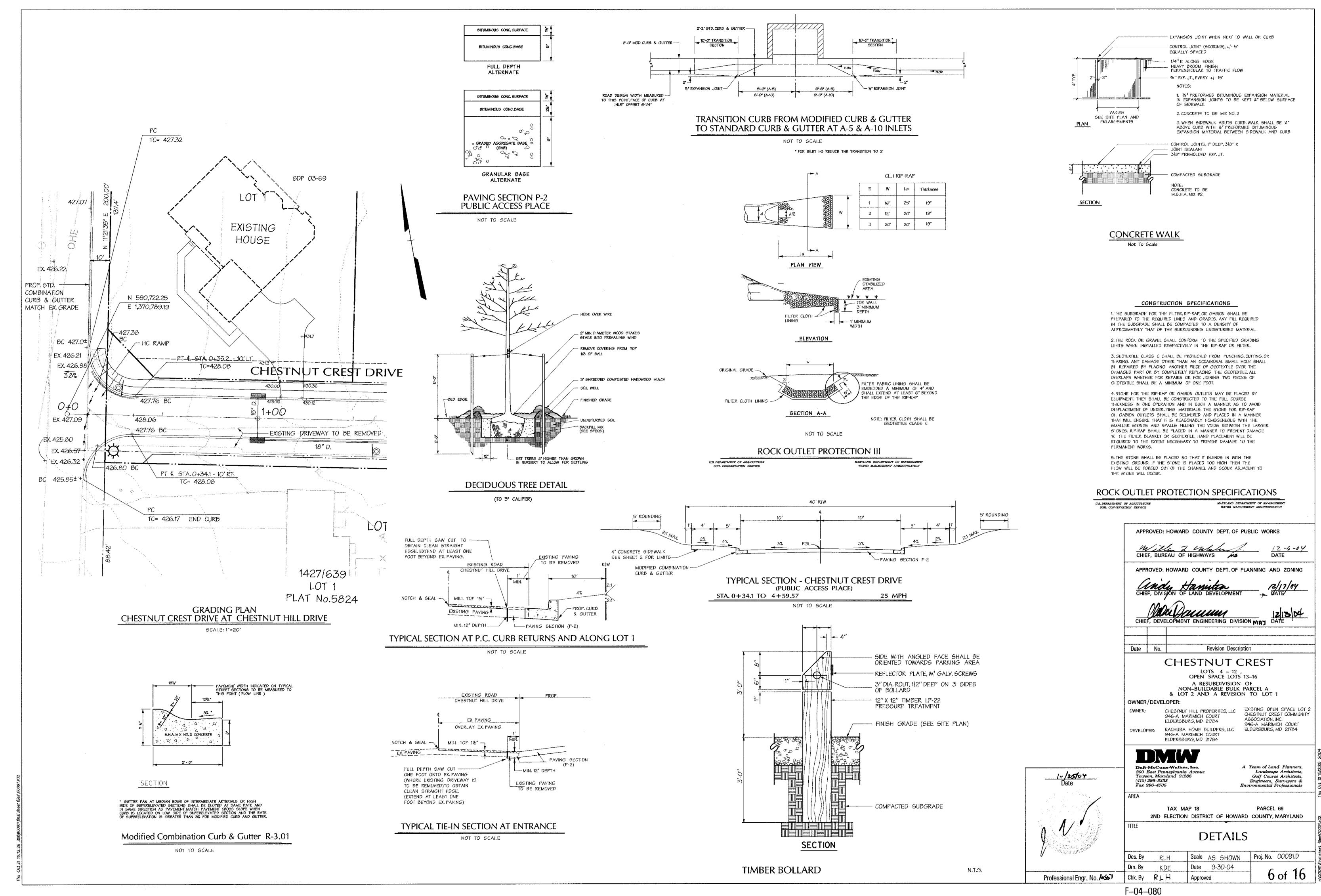
Proj. No. 00091.D Scale AS SHOWN Dm. By KDE Date 9-30-04 4 of 16 Chk. By RLH Approved

STORM DRAIN PROFILES

Professional Engr. No. 155" F-04-080

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





21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

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

Conditions Where Practice Applies

unacceptable soil gradation.

1. This practice is limited to areas having 2:1 or flatter slopes where: a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rootina zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization.

Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger 11/2 inch in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and

III. For sites having disturbed areas over 5 acres:

I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a, pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.

b. Organic contents of topsoil shall be not less than 1.5 percent by weight c. Topsoil having soluble salt content greater than 500 parts per million shall not be

or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization- Section I-Vegetative Stabilization Methods and

V. Topsoil Application

i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slop Silt Fence and Sediment Traps and Basins.

ii. Grades on the areas to be topsolled, which have been previously established, shall be maintained, albeit 4* - 8* higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4* - 8* layer and lightly compacted to a minimum thickness of 4*. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or

iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Topsoil Specifications

INSPECTIONS, 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 SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. B. FOURTEEN DAYS AS TO ALL OTHER DISTURBED OF GRADED AREAS ON THE PROJECT SITE. 4, ALL SEDIMENT TRAPS/BASING SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL.1, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF

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 SEEDINGS (SEC. 51), SODS (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: 7.02 ACRES

TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAYED AREA TO BE VEGETATIVELY STABILIZED

6.0 ACRES 0.60 ACRES 5.40 ACRES 13.400 CUBIC YARDS 13,400 CUBIC YARDS

OFF-SITE WASTE/BORROW AREA LOCATION WASTE = N/A 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 CONTROLS 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 WITHIN ONE WORKING DAY, WHICHEYER IS SHORTER.

Sediment Control General 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

1. Preferred - Apply 2 tons per acres Dolomitic Limestone (92 lbs/1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 Ureaform Fertilizer (9 lbs./1000 sa.ft.)

2. Acceptable - Apply 2 tons per acre Dolomitic Limestone (92 ibs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000sq.ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000sq.ft.) of Kentucky 31 tall feecue. For the period May 1 thru July 31 seed with 60 lbs. Kentucky 31 tall fescue per acre and 2 lbs. per acre (.05 lbs./1000sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) - Use sod. Option (3) seed with 60 lbs./acre Kentucky 31 tall fescue and mulch with 2 tons/acre well

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

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

Permanent Seeding Notes

Apply to graded or cleared areas likely to be redisturbed 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, per acre 10-10-10 fertilizer (14 lbs./1000sq.ft.)

Seeding - For the periods March 1 thru April 30, and August 15 thru October 15, seed with 2-1/2 bushelper acre of annual rye (3.2 lbs./1000eg.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per 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 per acre (70 - 90 lbs./1000sq.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 slopes 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

Temporary Seeding Notes

1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY, MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING. 2 VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER 3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE, THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS, BEGIN PLOWING ON WINDWARD SIDE OF SITE, CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT

WHICH MAY PRODUCE THE DESIRED EFFECT. 4. IRRIGATION - THIS IS GENERALLY DONE AS AN AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST, REPEAT AS NEEDED, AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW. 5. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND

SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE AFFECTIVE IN CONTROLLING SOIL BLOWING. 6. CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST, MAY NEED RETREATMENT.

PERMANENT METHODS:

1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE. 2 TOPSOILING - COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR

DEVELOPERS CERTIFICATE:

THE HOWARD SOIL CONSERVATION DISTRICT.

JIWE 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

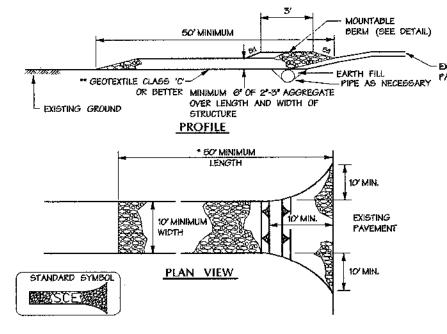
SIGNATURE OF DEVELOPER Christopher L. Rachuba

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

3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAYEL.

Dust Control Specifications



CONSTRUCTION SPECIFICATION

1. LENGTH - MINIMUM OF 50' ("30" FOR SINGLE RESIDENCE LOT). 2 WIDTH - 10 MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING 3, GEOTEXTILE FABRIC CLASS C (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE, "THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.

4. STONE - CRUSHED AGGREGATE (2° TO 3°) OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6' DEEP OVER THE LENGTH AND WIDTH OF THE 5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 51 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE, WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY, PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED. 6.LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT

WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE, VEHICLES LEAVING

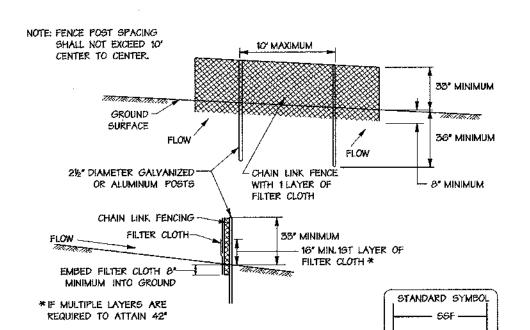
THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION BERVICE

MARYLAND DEPARTMENT OF ENVIRONMENT

Stabilized Construction Entrance

Not To Scale



CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY (SHA) DETAILS FOR CHAIN LINK FENCING, THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS 2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE. 3. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER. 4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION. 5. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8' INTO THE GROUND. 6. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. 7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE BOIL CONSERVATION SERVICE Super Silt Fence

DIVERSION PIPE BLOCKING. -

10-27-07

ENGINEERS CERTIFICATE:

(ARYLAND DEPARTMENT OF ENVIRONME Not To Scale

Sequence Of Construction NUMBER OF DAYS SEQUENCE 1, OBTAIN A GRADING PERMIT. . 2 INSTALL SEDIMENT AND EROSION CONTROL DEVICES, INSTALL STABILIZED CONSTRUCTION ENTRANCE ON PROPOSED ROAD ADJACENT TO EX DRIVEWAY FOR LOT 1. KEEP DRIVEWAY OPEN AT ALL TIMES. L.O.D. BELOW E-3 IS TO RECEIVE IMMEDIATE STABILIZATION WITH SOD OR ECM! SEED. SEE SHEET 11 FOR THE GRADING OF THE SEDIMENT BASIN CONTRACTOR TO COORDINATE GRADING OF BASIN WITH BGE RELATIVE TO POWER POLE REMOVAL (OR RELOCATION). BGE TO PROVIDE BRACING OF POLE(S) IF NECESSARY DURING GRADING UNTIL RELOCATION (OR REMOVAL) OF POWER LINE IN COMPLETE. 3. WITH PERMISSION FROM THE INSPECTOR TO PROCEED, ROUGH GRADE SITE. ____ 4. FINE GRADE SITE, ____ 5. INSTALL CURB & GUTTER PAYING, UTILITIES, SIDE WALKS AND DIVERSION INLET. BUILD 1/2 OF ROAD ADJACENT TO EXISTING DRIVEWAY (PHASE 1 SEE SHEET 10), KEEP DRIVEWAY TO LOT 1 OPEN AT A.I. TIMES, ONCE ROAD IS PAYED CONNECT EXISTING DRIVEWAY INTO NEW HALF OF THE ROAD BUILD OTHER HALF OF ROAD (PHASE 2 SEE SHEET 1)). WHEN STORM DRAINS ARE CONSTRUCTED, THE UPPER PIPE OUT OF DIVERSION MANHOLE (DI) SHALL BE BLOCKED SO THAT ALL FLOWS DRAIN INTO THE SEDIMENT BASIN, SEE SHEET 4. ... 6. STABILIZE ALL AREAS IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS, 7. UPON APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR REMOVE ALL EROSION CONTROL MEASURES, ONCE ALL AREAS DRAINING INTO FACILITY ARE STABILIZED, REMOVE DOWNSTREAM PIPE BLOCK IN DIVERSION MH AND BLOCK DIVERSION PIPE INTO FACILITY.INSTALL SWM BMP SAND FILTER, EXCAVATE TO INVERT OF RECHARGE AREA INSTALL UNDER DRAIN GRAYEL AND 6" PERFORATED PIPE INSTALL GEOTEXTILE

AND CLEAN WASHED CONCRETE SAND, INSTALL 3" TOP SOIL AS SHOWN ON PLAN, INSTALL RIPRAP BETWEEN

PRETREATMENT AND SAND FILTER, STABILIZE ALL DISTURBED AREA, ONCE EVERYTHING IS STABILIZED, REMOVE

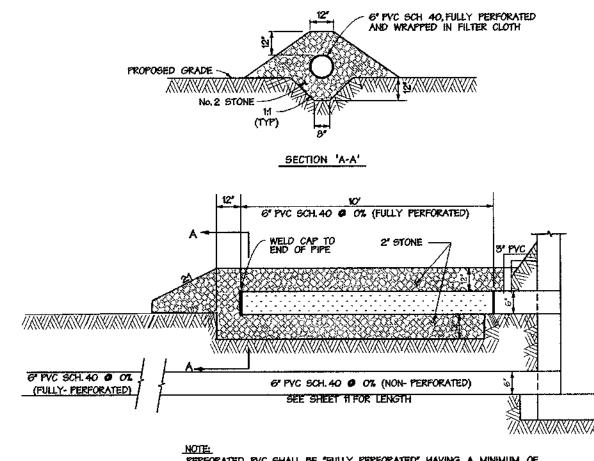
CERTIFY THAT THIS PLAN FOR FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL

REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS

HEISHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY

OF THE HOWARD SOIL CONSERVATION DISTRICT, I HAVE NOTIFIED THE DEVELOPER THAT

CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION.



PERFORATED PVC SHALL BE "FULLY PERFORATED", HAVING A MINIMUM OF 16, 1" DIAMETER HOLES PER LINEAR FOOT. PERFORATIONS SHALL BE EVENLY DISTRIBUTED AROUND THE FULL PERIPHERY OF THE PIPE.

LOW FLOW PIPE DETAIL NO SCALE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

10/25/04 Professional Engr. No. /0551

200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296–3333 Fax 296-4705 area Des. By RLH

Date

OWNER:

DEVELOPER:

OWNER/DEVELOPER:

Proj. No. 00091.D Scale AS SHOWN Date 9-30-04

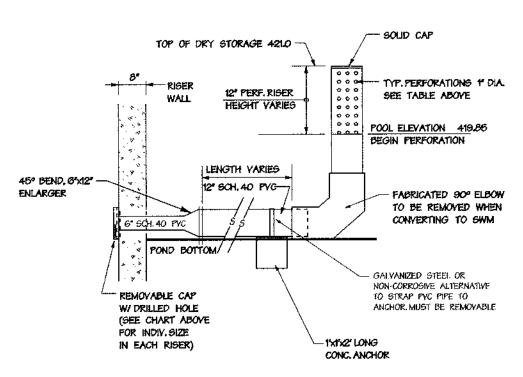
 PERMANENT "DRY" STORAGE **POOL ELEVATION** "WET" STORAGE -INTERNAL ORIFICE ---- SEE NOTE 4 --- PRINCIPAL SPILLWA TRASH RACK ANTI-VORTEX DEVICE -- RISER BASE SEE BELOW FOR DETAIL OF SEDIMENT - PRINCIPAL SPILLWAY SEE SHEET 10 FOR ESC CONTROL PLATE DETAIL. - TRASH RACI - LIMIT OF DRY STORAGE ---- LIMIT OF WET STORAGE YERTICAL DRAW-DOWN DEVICE ---PLAN VIEW CONSTRUCTION SPECIFICATIONS LPERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE 2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.

3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2.* HARDWARE CLOTH AND GEOTEXTILE FABRIC THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOTATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF THE DRAW-DOWN DEVICE WITH 1'STEEL ANGLE, OR 2' BY 2" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE Not To Scale Basin Drawdown Schematic Vertical Drawdown Device WET POOL PERF. RISER | ORIFICE DRILLED PERFORATION PERFORATIONS HOLE SIZE PER VERT. F ELEV. HEIGHT SPACING

- VERTICAL DRAW-DOWN DEVICE,

- TOP OF DAM

BASIN 1 419.85 1.15 2.5* 20 CENTER TO CENTER



SEE THIS SHEET FOR BASIN DRAWDOWN DEVICE SPECIFICATIONS SEE SHEET 10 FOR ESC CONTROL PLATE DETAIL

Sediment Control Draw–Down

Not to Scale

STORMWATER MANAGEMENT

Daft McCune Walker, Inc

2ND ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL DETAILS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

DEVELOPMENT ENGINEERING DIVISION MAD

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

CHESTNUT HILL PROPERTIES, LLC

RACHUBA HOME BUILDERS, LLC

946-A MARIMICH COURT

ELDERSBURG, MD 21784

946-A MARIMICH COURT

ELDERSBURG, MD 21784

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

12-6-04

EXISTING OPEN SPACE LOT 2

CHESTNUT CREST COMMUNITY

946-A MARIMICH COURT

A Team of Land Planners,

PARCEL 69

Landscape Architects,

Golf Course Architects,

Engineers, Surveyors &

ELDERSBURG, MD 21784

ASSOCIATION, INC.

Wellin I. Whele

CHIEF, BUREAU OF HIGHWAYS 🛚 🔑 🗲

Dm. By KDE of 16 Chk. By RLH Approved

STORMWATER MANAGEMENT FACILITY GENERAL CONSTRUCTION SPECIFICATIONS

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY'S "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (1985)" AND THE N.R.C.S. MARYLAND "STANDARDS AND SPECIFICATIONS FOR FACILITIES" (MD-378, 2000). THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE

STANDARD PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO

SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL ALL TREES, YEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED, CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 11. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT. AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS, IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6' FROZEN OR OTHER OBJECTIONABLE MATERIALS, FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC. SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THI PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED, THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENGITY SHALL NOT BE LEGS THAN 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTER CONTENT WITHIN +/- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY HE ENGINEER AT THE TIME OF CONSTRUCTION, ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD 1-99 (STANDARD PROCTOR).

CUT OFF TRENCH - THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS, THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET SHALL GOVERN THE BOTTOM WIDTH OF THE RENCH. THE DEPTH SHALL BE AT LEAST 4 FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS, THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET, THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS, THE SIDE SLOPES SHALL BE 110 10R FLATTER THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 4 INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT O THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN 4 FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE, UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE, WHEN IGING FLOWARIE FILL ALL METAL PIPE SHALL BE BITUMINOUS COATED, ANY ADJOINIT PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FIL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE, AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN 4 FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24' OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL

FILL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITY OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED ACCEPTABLE RANGE OF MOISTURE CONTENT OR OTHERWISE NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE REWORKED TO MEET THE REQUIREMENTS OR REMOVED AND REPLACED BY ACCEPTABLE FILL THE BOTTOMS OF SUCH EXCAVATIONS SHALL BE FINISHED FLAT OR GENTLY CURVING AND AT THE SIDES OF SUCH EXCAVATIONS THE ADJACENT SOUND FILL SHALL BE TRIMMED TO A SLOPE NOT STEEPER THAN 3 FEET HORIZONTALLY TO 1 FOOT VERTICALLY EXTENDING FROM THE BOTTOM OF THE EXCAVATION TO THE FILL SURFACE.

6. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION, ALL PERFORATED PIPES SHALL HAVE A MINIMUM OF 3.31 SQUARE INCHES OF OPENING PER SQUARE FOOT OF PIPE SURFACE (EX. 30 3/8-INCH HOLES PER SQUARE FOOT), PERFORATIONS ARE TO BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE, ANY HOLES BLOCKED OR PARTIALLY BLOCKED BY BITUMINOUS COATING SHALL BE OPENED PRIOR TO INSTALLATION. REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361. 2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH, THIS BEDDING / CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50 PERCENT OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE CONCRETE CRADLE IS NOT

NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN TI

"STRUCTURE BACKFILL" SECTION OF THIS STANDARD, GRAVEL BEDDING IS NOT PERMITTED.

MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH

LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM, JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED 50 THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".
- 5. CONNECTIONS ALL CONNECTIONS (TO ANTI-SEEP COLLARS, RISER, ETC.) SHALL BE WATERTIGHT.
- 6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS. PLASTIC PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241, CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE), COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" - 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE 5, AND 12" THROUGH 24" SHALL MEET THE REQUIREMENTS OF

- AASHTO M294 TYPE 5. 2 JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.
 - 3. BEDDING THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT IT'S ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL. SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE
 - 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".
 - 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

7. CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION

CAST-IN-PLACE CONCRETE STRUCTURES

1. SPECIFICATIONS: MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. LATEST

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION, FOR DESIGN. CONCRETE DESIGN BY THE "SERVICE LOAD DESIGN METHOD".

- 2. CONCRETE: SHALL MEET THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF PRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR
- CONSTRUCTION AND MATERIALS, SECTION 414 AND 902, MIX NO. 3. 3. CONTRACTOR MAY ADD COLOR MIX AT PLANT IN ACCORDANCE WITH MANUFACTURES RECOMMENDATION "C-12 MESA BEIGE" AS MANUFACTURED BY L. M. SCOFIELD COMPANY
- CONTRACTOR SHALL SUPPLY MIX DESIGN FOR APPROVAL PRIOR TO APPLICATION, LOAD AND MIX TICKETS SHALL BE SUPPLIED FOR EACH TRUCK DELIVERY. NO PARTIAL FIELD MIXES SHALL BE
- ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS, DESIGN FC = 1,200 PSI. ALL EXPOSED EDGES SHALL BE CHAMFEREDYA" XYA". ALL CONSTRUCTION KEYS ARE
- 4. REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. WHERE NOT INDICATED, BAR LAP SPLICES SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS. THE MINIMUM CONCRETE COVER SHALL BE 2 INCHES UNLESS OTHERWISE NOTED, DESIGN FS =
- 5. FOUNDATION: PRESUMED SOIL BEARING CAPACITY = 2,500 PSF. THE ENGINEER MUST APPROVE ALL FOUNDATIONS PRIOR TO CONCRETE PLACEMENT, IF UNSUITABLE MATERIAL IS
- ENCOUNTERED, THE MATERIAL SHALL BE UNDERCUT AND BACKFILLED WITH STRUCTURAL BACKFILL. 6. STRUCTURAL BACKFILL: CAST-IN-PLACE CONCRETE STRUCTURES AND PIPE SHALL BE BACKFILLED WITH SELECT GRANULAR BACKFILL MEETING THE REQUIREMENTS OF SHA GRADED AGGREGATE-SUBBASE. STRUCTURAL FILL SHALL BE PLACED IN LOOSE LIFTS OF APPROXIMATELY 6 INCHES, AND COMPACTED TO 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T=180. THE STATIC WEIGHT OF EQUIPMENT USED ADJACENT TO WALLS SHALL NOT EXCEED 3,000 POUNDS, NO BACKFILL SHALL BE PLACED AGAINST THE CAST-IN-PLACE WALLS UNTIL THE CONCRETE HAS ATTAINED THE SPECIFIED 28 DAY STRENGTH.

PRE-CAST CONCRETE STRUCTURES

SHOWN NOMINAL SIZE.

SHOP DRAWINGS FOR PRE-CAST STRUCTURES WITH SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER) MEETING ASTM REQUIREMENTS FOR PRE-CAST STRUCTURES MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGENCY (HOWARD COUNTY DEVELOPMENT ENGINEERING DIVISION) FOR APPROVAL PRIOR TO FABRICATION.

8. ROCK RIP-RAP

ROCK RIP-RAP SHALL MEET THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF TRANSPORTATION. STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIP-RAP AND SHALL MEET THE REQUIREMENTS OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C. THE RIP-RAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE

DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIP-RAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS.

9. CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS, THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK, AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEYELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS, THE REMOVAL OF WATER FROM THE REQUIRED EXCAYATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE

10. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

11. EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

ALL DISTURBED AREAS SHALL BE CONTROLLED BY AN EROSION AND SEDIMENT CONTROL PLAN WHICH HAS BEEN APPROVED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

12. SEEDING

1'-3"

SEEDING. FERTILIZING AND MULCHING SHALL BE AS FOLLOWS: SEED MIX: 50% KENBLUF KENTUCKY BLUEGRASS 40% PENNLAWN CREEPING RED FESCUE

10% STREAKER REDTOP APPLIED AT A RATE OF 150 LBS. PER ACRE. (OR)
REBEL II TALL FESCUE (125 LBS. PER ACRE) PENNFINE PERENNIAL RYEGRASS (15 LBS. PER ACRE)

KENBLUE KENTUCKY BLUEGRASS (10 LBS. PER ACRE) PENNLAWN CREEPING RED FESCUE (70 LBS. PER ACRE) AURORA HARD FESCUE (50 LBS.PER ACRE) COMMON WHITE CLOVER (6 LBS.PER ACRE)

WINTER RYE (45 LBS. PER ACRE) 70% FORAGER TALL FESCUE 30% CHEMUNG CROWNVETCH, INOCULATED

APPLIED AT A RATE OF 55 LBS. PER ACRE OPTIMUM SEEDING DATES: MARCH 1 TO APRIL 30.

MULCH: STRAW AT 4.000 LBS. PER ACRE.

RECOMMENDED BY THE MANUFACTURER.

LIME: 2 TONS/ACRE DOLOMITIC LIMESTONE. FERTILIZER: 600 LBS. (ACRE 10-10-10 FERTILIZER BEFORE SEEDING.

400 LBS. JACRE 30-0-0 UREAFORM FERTILIZER AT TIME OF SEEDING.

ANCHORING: MULCHING TOOL OR WOO CELLULOSE FIBER BINDER AT A NET DRY BINDER RATE OF 750 POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GAILONS OF WATER OR AT RATES

U.S. DEPARTMENT OF AGRICULTURE

13. FILTER CLOTH

16. INSPECTION SCHEDULE

ALL FILTER CLOTH SHALL CONFORM TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL

ALL GABIONS SHALL BE PYC COATED WOVEN WIRE BASKETS, STONE SIZE SHALL BE 4 INCHES 10 7 INCHES.

EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE PLANS SHALL BE UNDER THE SUPERVISION OF A

THE CONSTRUCTION OF THE FACILITY AND EMBANKMENT, AND CERTIFICATION THAT THE FACILITY AND

BEDDING. (2) INSPECTION OF RISER AND ANTI-SEEP COLLARS AND (3) SUPERVISION OF EMBANKMENT

FOR UNUSUAL SOIL CONDITIONS, AND THE REMOVAL AND REPLACEMENT OF DEFECTIVE FILL.

1. PRIOR NOTIFICATION SHALL BE GIVEN TO THE ENGINEER SO THAT INSPECTIONS MAY

CORE TRENCHES FOR STRUCTURAL EMBANKMENTS.

CONNECTORS ON PIPES AND

(III) TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES.

E) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF

NO WORK SHALL PROCEED UNTIL THE ENGINEER INSPECTS AND APPROVES THE WORK

2 GEOTECHNICAL COMPACTION TESTING OF THE FACILITY EMBANKMENT IS REQUIRED.

3. A COPY OF ALL MATERIAL SUPPLY TICKETS MUST BE GIVEN TO THE DESIGNATED

1, THE FACILITY SHALL BE INSPECTED TWICE ANNUALLY, MARCH AND SEPTEMBER, IN

ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA,

OF THE FACILITY AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND

MAINTENANCE THEREOF. THE FACILITY OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL

3. RILLS ON THE SLOPES OF THE DAM AND WASHED IN THE EARTH SPILLWAY SHALL BE FILLED WITH SUITABLE MATERIAL AND THOROUGHLY COMPACTED, THESE AREAS

5. SEDIMENT SHALL BE REMOVED FROM FOREBAYS WHEN THE DEPTH EXCEEDS 1'.

VEGETATION ON EMBANKMENT AND ACCESS BENCH SHALL NOT EXCEED 18" IN HEIGHT

8. TOP AND OUTSIDE SIDE SLOPE OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF

TWO (2) TIMES A YEAR ONCE IN JUNE AND ONCE IN SEPTEMBER INSIDE SIDE SLOPE, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED. CARE SHALL BE TAKEN NOT

TO MOW ANY OF THE WETLAND PLANTINGS IN THE VICINITY OF THE 5' SAFETY BENCH.

INSPECTION OF FACILITY SHOWN HEREON SHALL BE PERFORMED AT LEAST TWICE ANNUALLY,

STANDARDS AND SPECIFICATIONS FOR FACILITY" (MD-378), THE FACILITY OWNER(S) AND ANY

HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE FACILITY

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ELEVATION

CONSTRUCTION SPECIFICATIONS

2. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 2' AGGREGATE

3. THE INSIDE STAND PIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING A

BE 16" x 6" SLITS OR 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE

4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE

CORRUGATED OR PVC PIPE BETWEEN 12' AND 36' IN DIAMETER, THE PERFORATIONS SHALL

WRAPPED WITH 1/2" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH GEOTEXTILE CLASS E.

CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS

ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

1. THE OUTER PIPE SHOULD BE 48" DIAMETER OR SHALL, IN ANY CASE, BE AT LEAST 4" GREATER

IN DIAMETER THAN THE CENTER PIPE THE OUTER PIPE SHALL BE WRAPPED WITH 12" HARDWARE

- HOOK AND CHAIN FOR REMOVAL

CLASS 'E'

CLEAN GRAVEL

OR #57 STONE

- PERFORATED (REMOVABLE)

12' - 36' PIPE WRAPPED WITH 1/2'

HARDWARE CLOTH AND GEOTEXTILE

PERFORATED 48" PIPE

BOTTOM PLATE FOR EACH

PIPE WITH WATERTIGHT

WRAPPED WITH 1/2"

HARDWARE CLOTH

CONNECTION

IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCA

AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE

NO UTILITIES MAY BE CONSTRUCTED WITHIN/ALONG ANY MD-378 EMBANKMENT.

THE FACILITY OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY

SHALL BE RESEEDED OR RESODDED, LIMED, AND FERTILIZED AS NEEDED.

CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

SCS "STANDARDS AND SPECIFICATIONS FOR FACILITY" (MD-378). THE FACILITY OWNER(S)

AND ANY HEIRS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY

CERTIFICATION MUST BE PROVIDED TO THE DEGIGNATED ENGINEER IN CHARGE OF

INSTALLATION OF PIPING AND CATCH BASINS

(3) DURING BACKFILL OF FOUNDATIONS AND TRENCHES

VEGETATED COVER SHALL BE MAINTAINED AT ALL TIMES.

5. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.

4. ALL APPURTENANCES SHALL BE KEPT FREE OF TRASIL

OPERATION, MAINTENANCE AND INSPECTION

SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

DURING EMBANKMENT CONSTRUCTION AND

(1) UPON COMPLETION OF EXCAVATION TO SUBFOUNDATION AND WHERE REQUIRED.

(2) DURING PLACEMENT OF STRUCTURAL FILL, REINFORCING AND CONCRETE, AND

INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES,

II) INLET-OUTLET STRUCTURES AND ANTI-SEEP STRUCTURES, WATERTIGHT

REGISTERED PROFESSIONAL ENGINEER THE ENGINEER SHALL BE NOTIFIED SUFFICIENTLY IN ADVANCE OF

CONSTRUCTION IN ORDER THAT ARRANGEMENTS CAN BE MADE FOR (1) INSPECTION OF PIPE TRENCH AND

CONSTRUCTION AND COMPACTION TESTING, THE ENGINEER SHALL DIRECT THE HANDLING OF WATER DURING

CONSTRUCTION, MINOR CHANGES NOT AFFECTING THE INTEGRITY OF THE DAM IN ORDER TO COMPENSATE

EROSION AND SEDIMENT CONTROL, OR THE LATEST EDITION.

15. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS

INCLUDING BUT NOT LIMITED TO

PERMANENT STABILIZATION.

ENGINEER IN CHARGE OF THE AS-BUILT.

17. MAINTENANCE SCHEDULE

STANDARD SYMBOL

🔀 RPS

ANTICIPATED WATER -

SURFACE ELEV.

WEIGHT AS NECESSARY

TO PREVENT FLOTATION

OF CENTER PIPE

OR CLEAN GRAVEL.

WARYLAND DEPARTMENT OF ENVIRONMEN

Removable Pumping Station

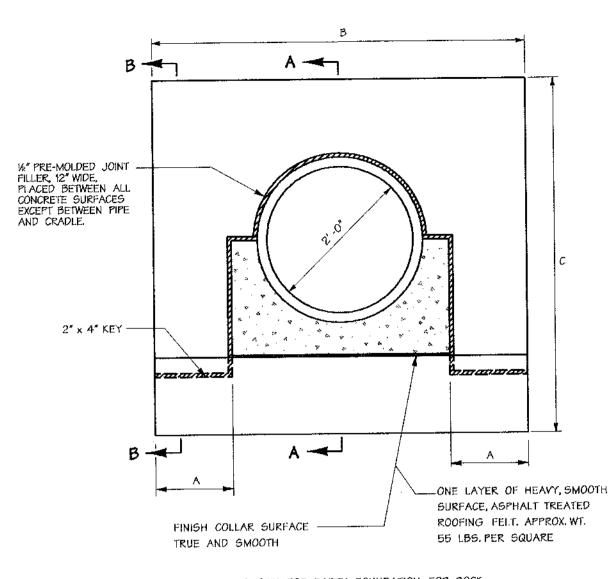
Not To Scale

LCERTIFY 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

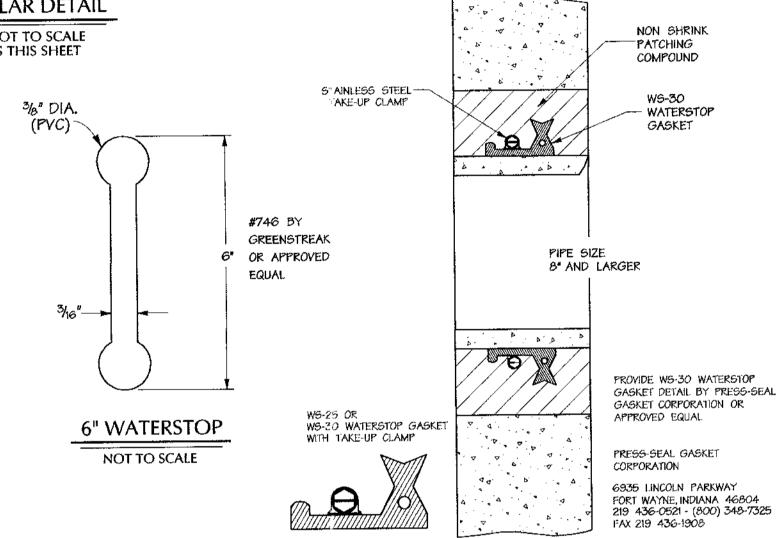
EIGHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE FACILITY



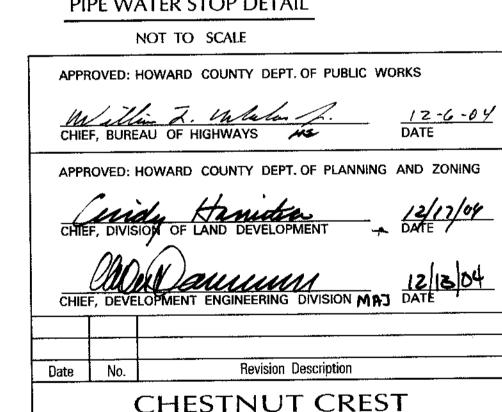
DETAIL SHOWN FOR EARTH FOUNDATION. FOR ROCK FOUNDATION, FOUND BOTTOM OF CRADLE ON ROCK LINE AND KEY COLLAR 6" INTO ROCK.

#4 @ 12" EACH WAY 1/2" PRE-MOLDED -BOTTOM OF — 2" x 4" KEY **SECTION A-A** SECTION B-B 'A' 'B' FACILITY 1 2'-9" 9'-0" 8'-6"

ANTI - SEEP COLLAR DETAIL CAST IN PLACE - NOT TO SCALE SEE SPECIFICATIONS THIS SHEET



PIPE WATER STOP DETAIL



CHESTNUT CREST

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 DEVELOPER:

CHESTNUT CREST COMMUNITY 946-A MARIMICH COURT ASSOCIATION, INC. ELDERSBURG, MD 21784 946-A MARIMICH COURT RACHUBA HOME BUILDERS, LLC ELDERSBURG, MD 21784 946-A MARIMICH COURT ELDERSBURG, MD 21784

Daft McCune Walker, Inc. 200 East Pennsylvania Avenu Towson, Maryland 21286 Fax 296-4705

Landscape Architects, Golf Course Architects, Engineers, Surveyors & Environmental Professionals

A Team of Land Planners

EXISTING OPEN SPACE LOT 2

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

SWM, EROSION AND SEDIMENT CONTROL

DETAILS & SWM SPECIFICATIONS Proj. No. 00091.D Scale AS SHOWN

Chk. By RLH

Professional Engr. No. 655

NOT TO SCALE

3'-10"

COMPRESSIVE STRENGTH, MIN. pH 4.0, MIN. RESISTIVITY 2,000 ohm-om, 7" SLUMP, PER

MD-378 SPECIFICATIONS AND MD-SHA.

FLOWABLE FILE SHALL BE 100-200 psi 28-DAY

CONCRETE CRADLE DETAIL

DEVELOPERS CERTIFICATE:

INVECERTIFY 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 ISHALL 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 16-27-04 BIGNATURE OF DEVELOPER PRINT NAME BELOW SIGNATURE Christopher LRaches

CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEERS CERTIFICATE:

Approved

U.S. NATURAL RESOURCE CONSERVATION SERVICE

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

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND

SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

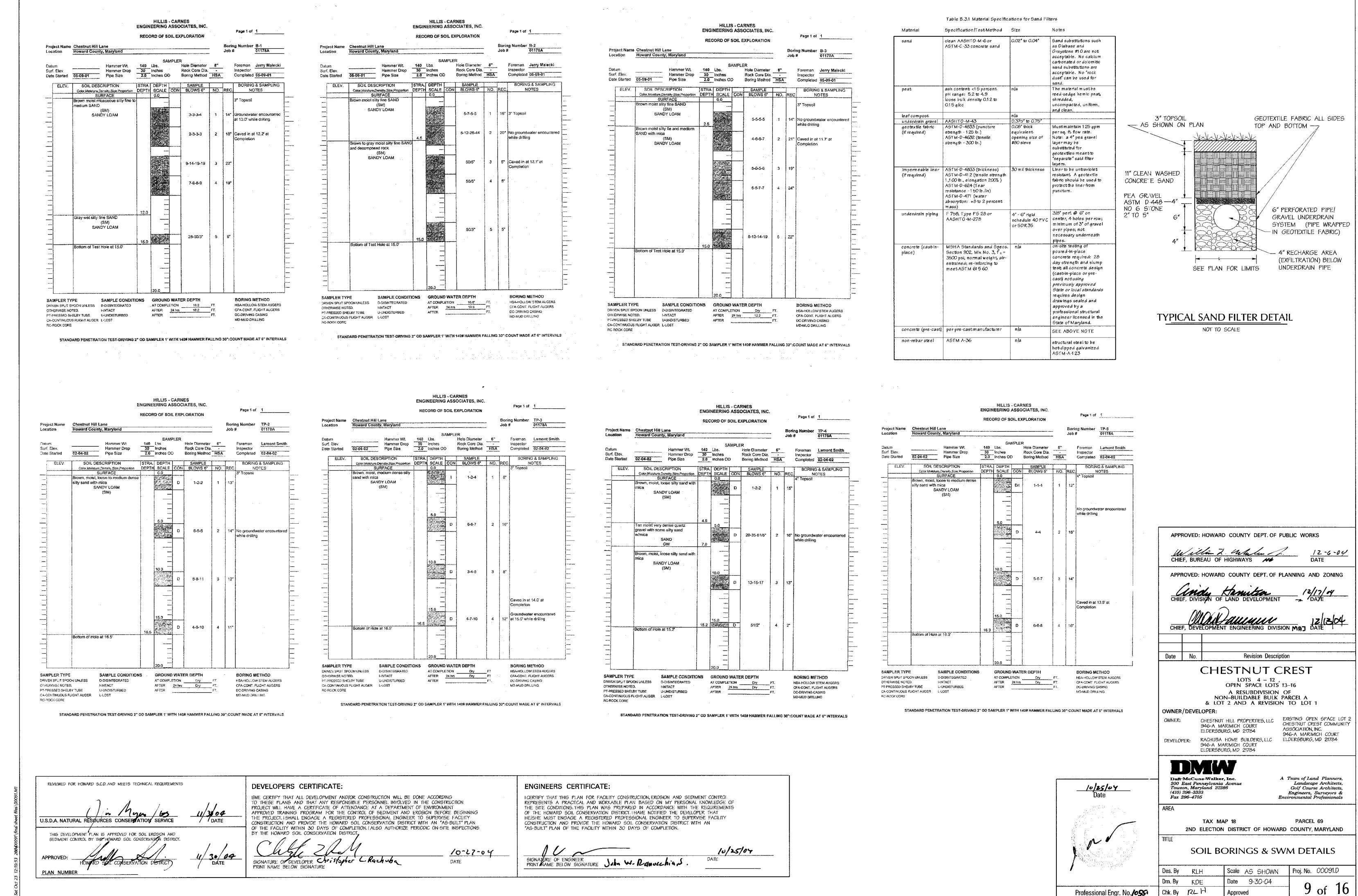
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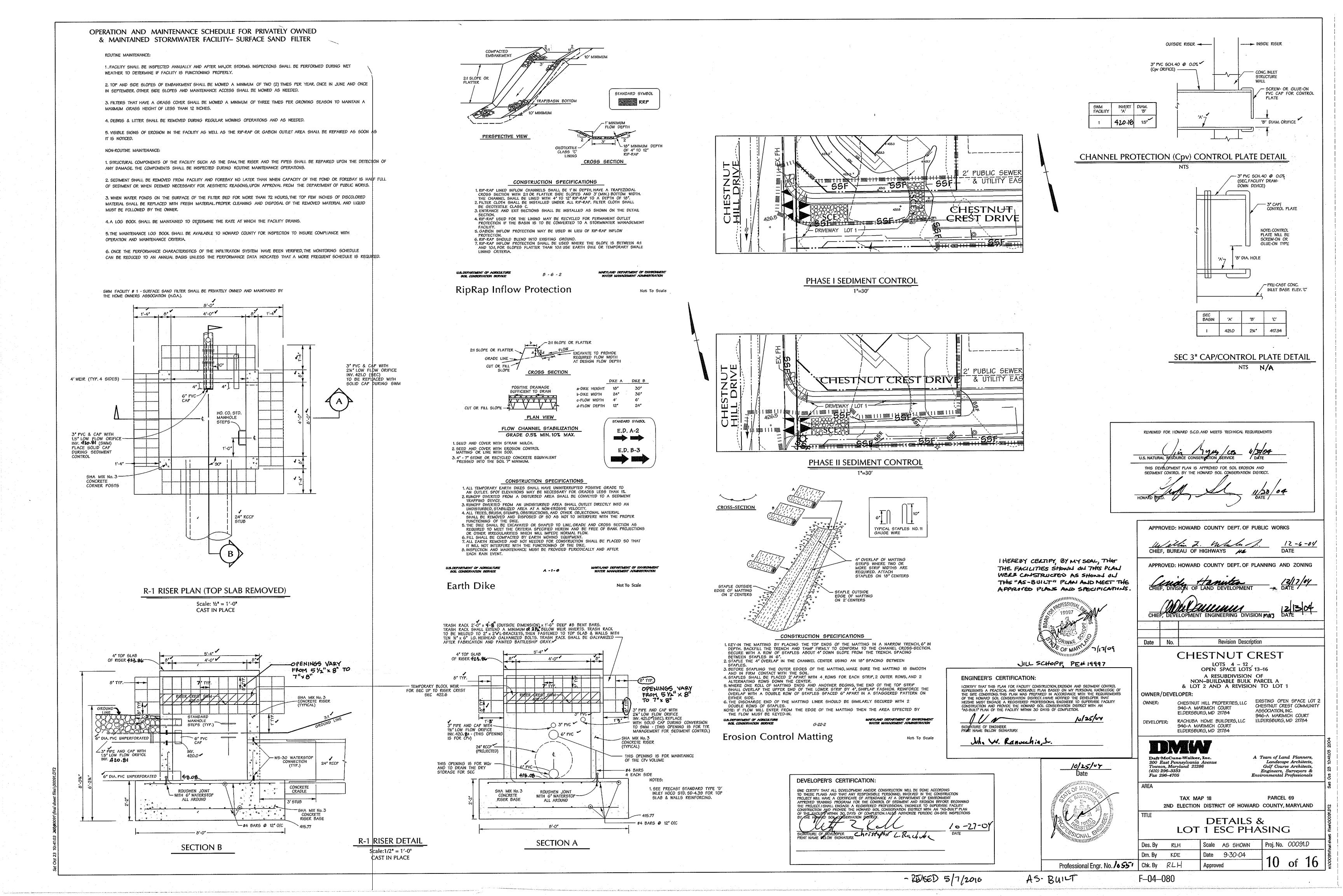
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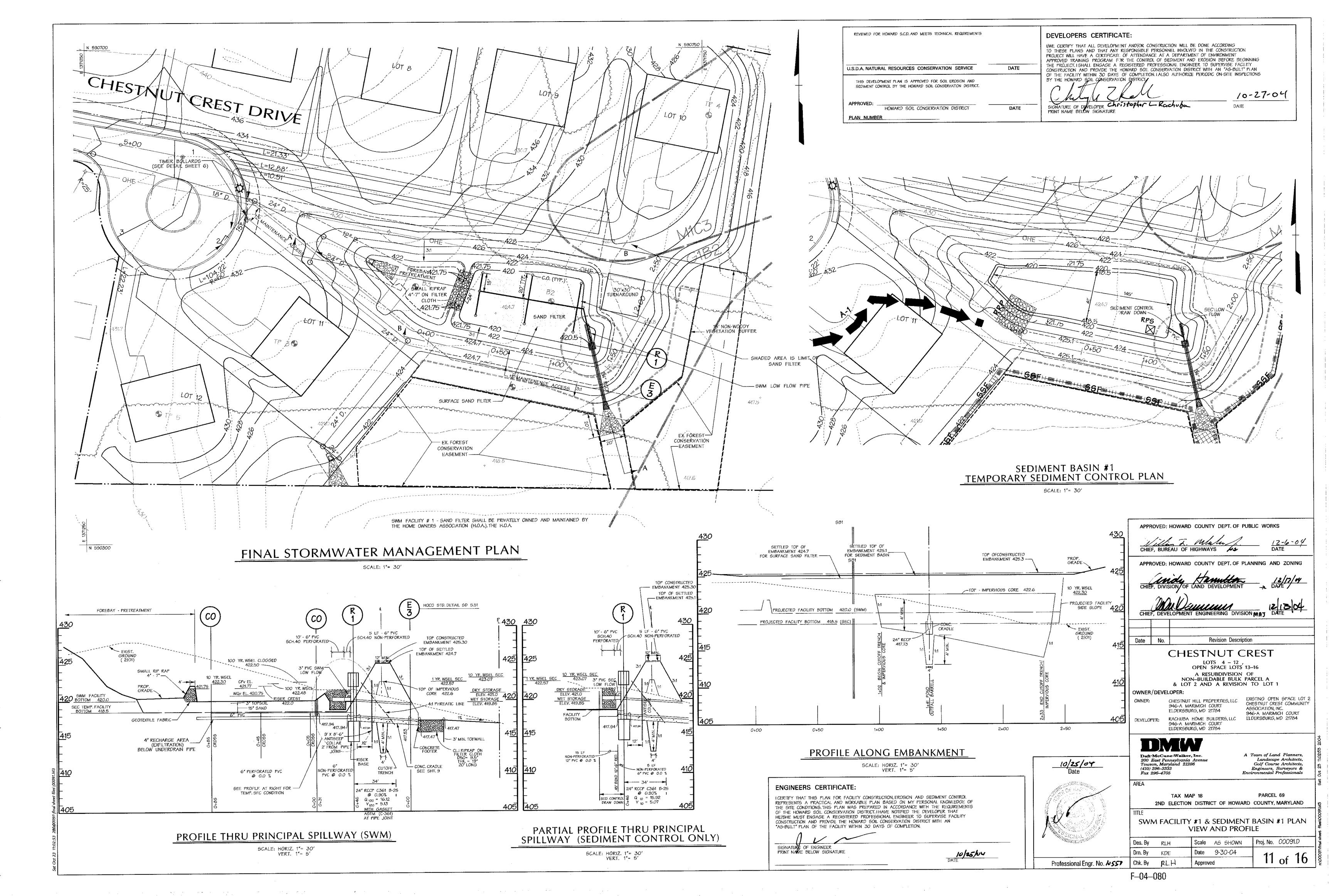
Date 9-30-04

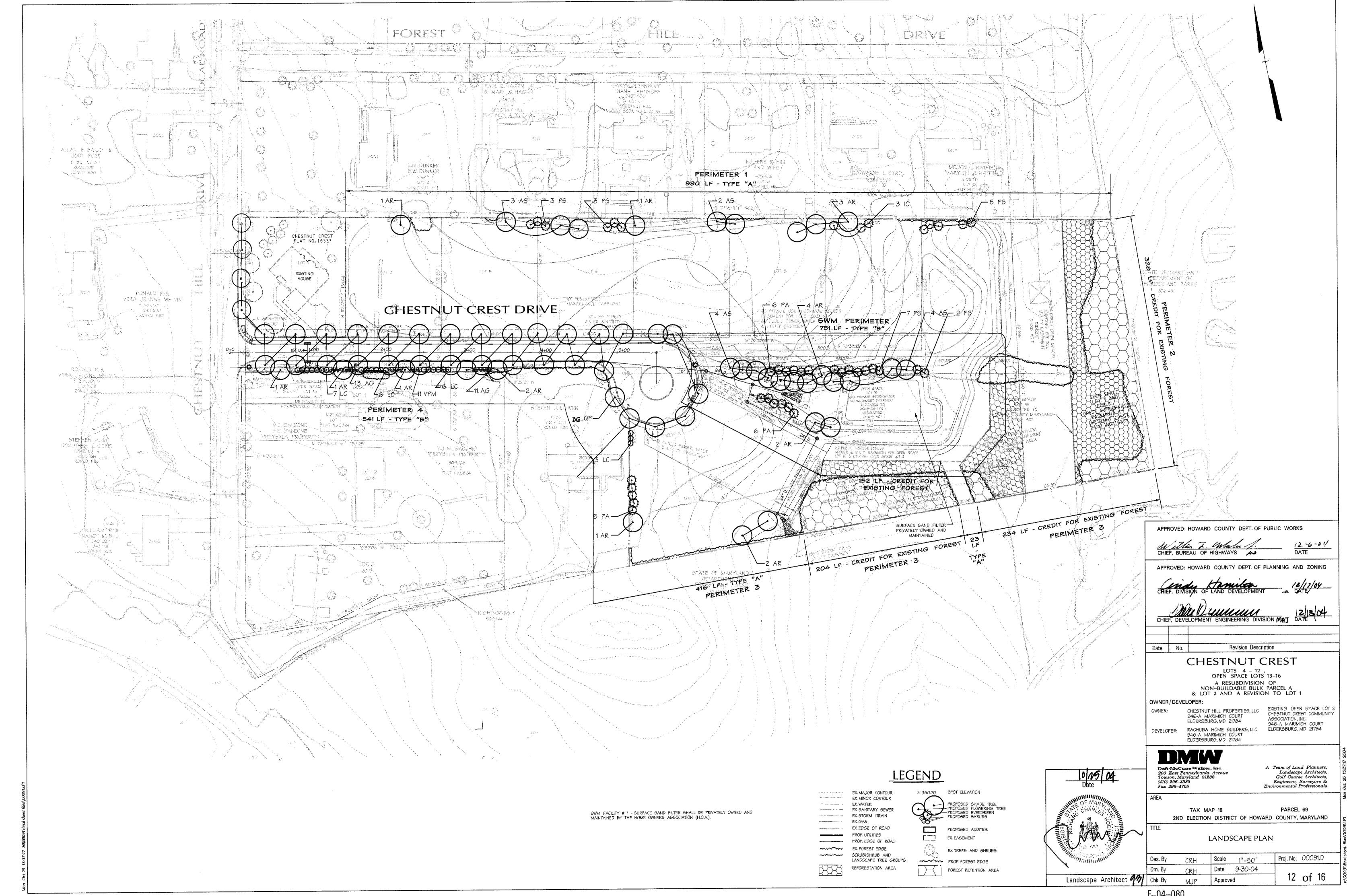
8 of 16

AREA



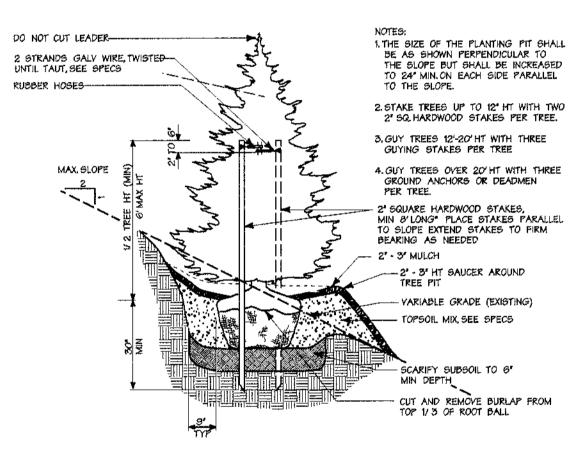




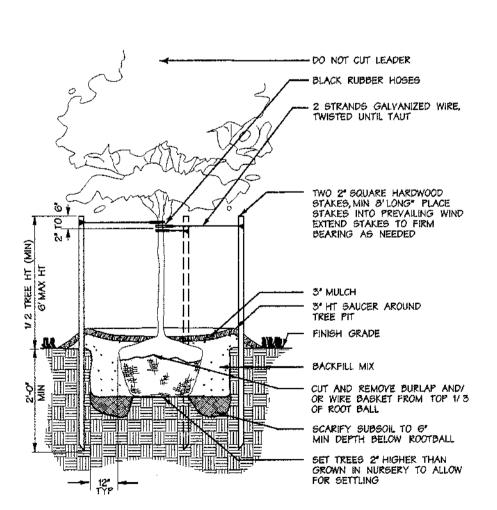


- DO NOT CUT MAIN LEADER - BLACK RUBBER HOSES 2 STRANDS GALV WIRE, TWISTED UNTIL TAUT, SEE SPECS 2" SQUARE HARDWOOD STAKES. MIN 8'LONG" EXTEND STAKES TO FIRM BEARING AS NEEDED 2" - 3" MULCH VERTICAL DRAIN PIPE* 4" PERF. RIGID PVC GAN PIPE 2 PER HOLE. WRAP WITH FILTER FABRIC. SET 2" ABOVE MULCH. 2" - 3" HT SAUCER AROUND -- FINISHED GRADE - CUT AND REMOVE BURLAP AND/ OR WIRE BASKET FROM TOP 1/3 OF ROOT BALL SCARIFY SUBSOIL TO 6" SET EVERGREEN TREES 2" HIGHER THAN GROWN IN NURSERY TO ALLOW FOR SETTLING

EVERGREEN TREE PLANTING







SHADE TREE PLANTING 21/2- 3" CALIPER

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	t		ENT to PROPERTIE	<u>=</u> 5
LANDSCAPE TYPE "B"				P 4
LINEAR FEET OF PERIMETER				541 LF.
LANDSCAPE TYPE "A"	P 1	P 2	P 3	
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 EVERGREEN TREES SHRUBS	17 0 0	000	7 0 0	11 14 O
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	10 14** 0 0	0000	3 8** O O	5 19** 0 35**

* NOTE: STREET TREES WILL BE PROVIDED @ 1/40 LF OF PUBLIC ROAD. 36 STREET TREES ARE SHOWN ON THIS PLAN.

**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 35 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 @ 1/50 L.F. EVERGREEN TREES @ 1/40 L.F.	15 19
CREDIT FOR EXISTING VEGETATION	152 LF
CREDIT FOR OTHER LANDSCAPING	NA
NUMBER OF TREES PROVIDED SHADE TREES EYERGREEN TREES SHRUBS	14* 21 0

*SUBSTITUTION NOTES:

2 EVERGREEN TREES ARE SUBSTITUTED FOR 1 SHADE TREE.

Prague Viburnum

PLANT LIST

<u> </u>	4171	LIST		
QTY	sүм	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
SHAD	E TRE	E6		
19	AR	ACER RUBRUM 'OCTOBER GLORY' October Glory Red Maple	2 1 / 2" - 3" CAL. 12' - 14' HT.	B & B FULL HEAI
13	A5	ACER SACCHARUM 'GREEN MOUNTAIN' Sugar Maple	2 1 / 2" - 3" CAL. 12' - 14' HT.	B&B FULL HEA
36	QP	QUERCUS PHELLOS Willow Oak	2 1 / 2" - 3" CAL. 12' - 14' HT.	B & B FULL HEA
EVER	GREEN	TREES		
3	Ю	ILEX OPACA American Holly	5' - 6' HT.	8 & B
22	LC	CUPPRESSOCYPARIS LEYLANDII Leyland Cypress	5' - 6' HT.	В & В
17	PA	PICEA ABIES Norway Spruce	6' - 8' HT.	В & В
20	P S	PINUS STROBUS Eastern White Pine	6' - 8' HT.	B & B
SHRU	B S			
24	AG	ABELIA X GRANDIFLORA Glossy Abelia	2-1/2' x 3' HT.	B & B CONTAIN
11	VPM	VIBURNUM X PRAGENSE	2-1/2' x 3' HT.	B & B CONTAIN

General Planting Notes

1. All plant material to meet A.A.N. Standards. 2. Landscape Contractor to follow landscape specification auidelines for

Baltimore Washington Metro area approved by LCAMW. 3. No substitutions to be made without consent of Landscape Architect or Owner.

4. All beds to be topped with three inches of hardwood mulch. b. Landscape Contractor to verify location of utilities with Owner before planting. 6. Landscape Architect/ Owner shall select, verify and/or approve all plant

material. At Owner's discretion, specimen and other plant material will be selected. 7. 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. 3. Contractor shall notify Miss Utility 72 hours prior to construction. 9. 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. 10. 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 \$30,750 (86 Shade trees

and 33 Evergreen Trees). 11. 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.

12. Developer's Bullder's Certificate

I/we 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/we further certify that upon completion, a certification of landscape installation, accompanied by an executed one-year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

APP	ROVED:	HOWARD COUNTY DEPT. OF PUBLIC	WORKS
CHIE	F, BUR	Z. Whales f.	12-6-04 DATE
APPI	ROVED:	HOWARD COUNTY DEPT. OF PLANNI	NG AND ZONING
CHIE	M F, DIVIS	SION OF LAND DEVELOPMENT	13/17/04 DATE
CHIE	OU F, DEVE	LOPMENT ENGINEERING DIVISION M	DATE 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:

CHESTNUT HILL PROPERTIES, LLC 946-A MARIMICH COURT EXISTING OPEN SPACE LOT 2 CHESTNUT CREST COMMUNITY

ASSOCIATION, INC. ELDERSBURG, MD 21784 DEVELOPER: RACHUBA HOME BUILDERS, LLC SUBSPINION 21784 946-A MARIMICH COURT ELDERSBURG, MD 21784

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

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

Fax 296-4705 AREA

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

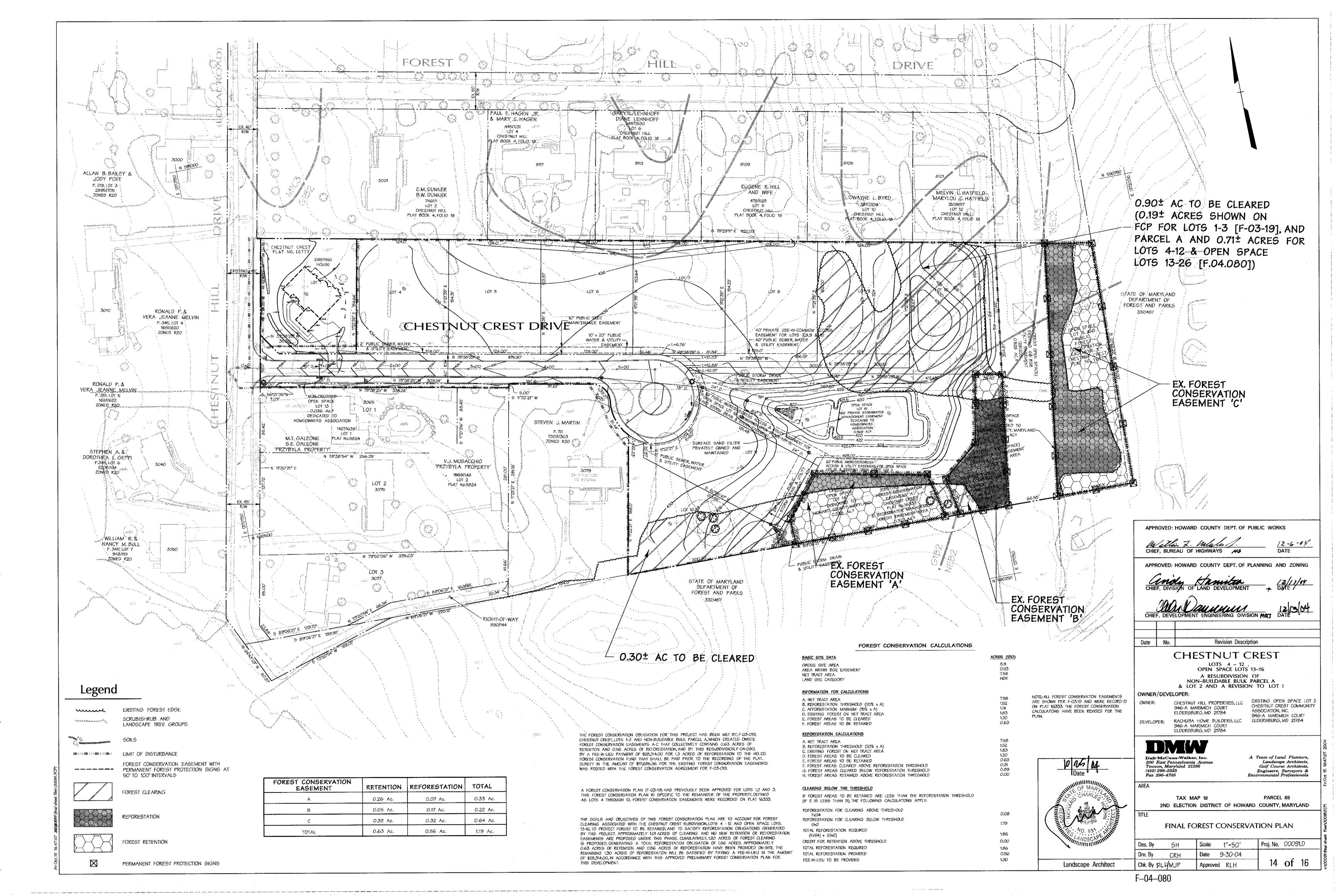
LANDSCAPE DETAILS

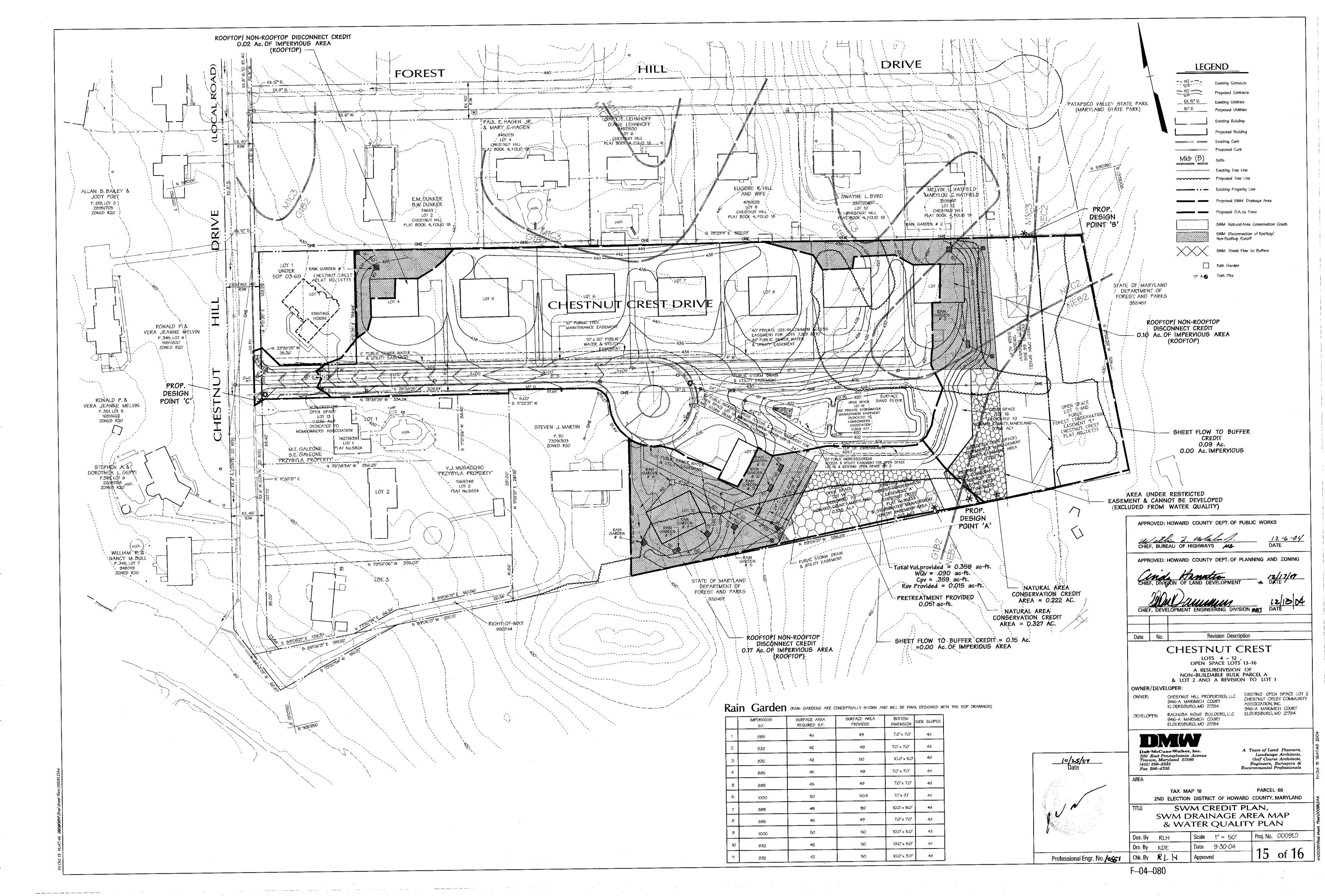
Proj. No. 00091.D Des. By CRH Scale 1"=50' Drn. By CRH Date 9-30-04 13 of 16 Approved

Chk. By MJP

Landscape Architect (97)

Barray dayar





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 The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

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

organic matter magnesium potassium (potash - K20) soluble salts

1.5 - 4% (by weight) 35 lb.lac phosphorus (phosphate - P205) 75 lb.lac 85 b.lac 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 saits. 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 flow, ripper, or subsoiler. These tilling operations are to refracture 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.

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

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

6. Underdrains

square feet.

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

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

OPERATION AND MAINTENANCE SCHEDULE FOR RAINGARDEN AREAS

(F-6)

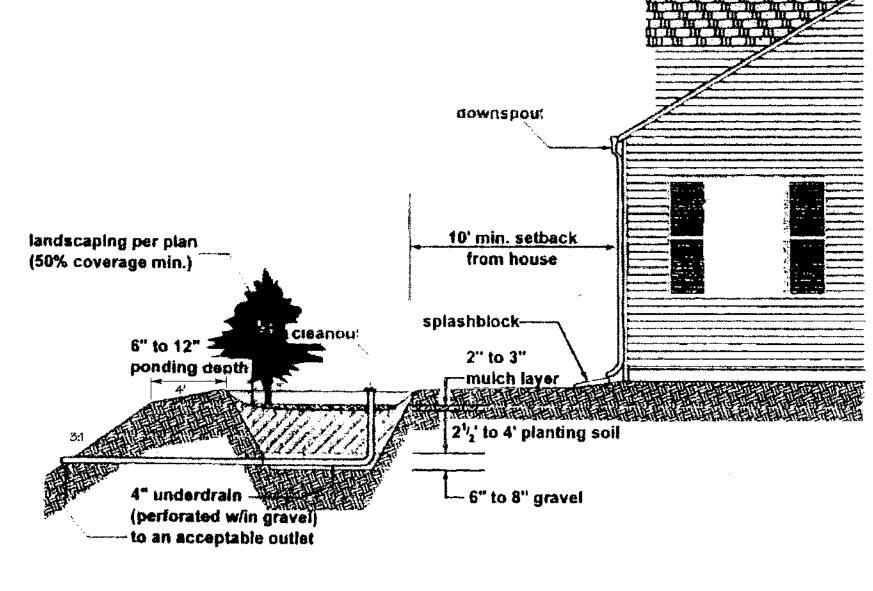
I. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING, PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.

2. 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.

3. MULCH SHALL BE INSPECTED EACH SPRING, REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2-3 YEARS.

4. 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	nla	see sheet 11
planting soil [2.5' to 4' deep]	sand 35-60% slit 30-55% clay 0-12%	nla	USDA soil types loamy sand, sandy loam or loam
mulch	shredded hardwood	nla	aged 6 months, minimum
geotextile	Class 'C' - apparent opening size (ASTM-D-4751) grab tensile strength (ASTM-D-4632) puncture resistance (ASTM-D-4833)	nla	for use beneath underdrains <u>ONLY</u>
underdrain gravel	AASHTO M-43 #57 or #67	0.375" to 0.75"	
underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid sched 40 PVC or SDR35 or HDPE	36" 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

12-6-04 CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Revision Description Date No.

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 2 946-A MARIMICH COURT ELDERSBURG, MD 21784

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

Daft McCune Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296–3333

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

ASSOCIATION, INC.

CHESTNUT CREST COMMUNITY

946-A MARIMICH COURT

Fax 296-4705 area

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

RAIN GARDEN DETAILS AND SPECIFICATIONS

Des. By RLH Proj. No. 00091.D Dm. By 12LH Date 9-30-04 16 of 16 Approved

F-04-080

10/25/04

Professional Engr. No. /2557 | Chk. By RLH