Notice of Water Drainage Plan Submission

To: **Residents Abutting and Confronting 7402 Ridgewood Avenue**
Fr: **Dave Walton, Town of Chevy Chase**
Date: **April 9, 2015**
Re: **Water Drainage Plan Submission**

The Town of Chevy Chase has received a water drainage plan and report for the construction of a new house at 7402 Ridgewood Avenue. Chapter 28 of the Town Code requires that a water drainage plan be submitted if new impervious surface created by a development activity and all other development activities within the 2 year period prior to filing an application exceeds 700 square feet. According to the application, the new house and associated improvements will result in 5,480 square feet of impervious area.

If approved, the proposed on-site drainage facilities will consist of six drywells, as shown on the attached site plan. The drywells are designed to collect water runoff from the downspouts and driveway and store it below the ground until it is absorbed into the subsoils. The system will provide a total storage volume of 823 cubic feet. According to calculations provided with the application, the total volume required to be infiltrated is 474.9 cubic feet. The calculations are under review by the Town's consulting engineer.

Residents are free to submit comments regarding the proposed water drainage plan. Please submit any comments on the proposed plan by Thursday, April 16. The Town will provide these comments to the Town engineer. The Town Attorney has advised that the engineer is not obligated to incorporate these comments into his review if the plan otherwise meets the requirements of the water drainage ordinance; however, staff has instructed the engineer to give due consideration to any comments received.

The plan and report are available for public inspection in the Town Office between 8:30 a.m. and 5:00 p.m. Monday through Friday (please call ahead if you would like to review them).

Attachment: Water Drainage Plan

Sent To: 7400, 7401, 7402, 7403, 7404, 7405 Ridgewood Avenue
7307, 7309, 7311 Maple Avenue

CC: Town Council

CAS ENGINEERING

Experience you can build on.

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10 south bentz street
frederick, maryland 21701
office 301.607.8031
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www.casengineering.com

civil • surveying • land planning

WATER DRAINAGE COMPUTATIONS

The Town of
Chevy Chase

7402 RIDGEWOOD AVENUE
LOT 30, BLOCK 4
CHEVY CHASE PARK

PREPARED FOR:

Chase Builders
Attn: Carlos Fernandes
8750 Brookville Road
Silver Spring, MD 20910
(301) 588-4747 Phone
(301) 588-4757 Fax

PREPARED BY:

CAS Engineering
108 West Ridgeville Boulevard, Suite 101
Mount Airy, Maryland 21771
(301) 607-8031 phone
(301) 607-8045 fax
Attn: Brent D. Allgood

SUBMITTED TO:

The Town of Chevy Chase
4301 Willow Lane
Chevy Chase, Maryland 20815
Attn: William Bissell, P.E.
301-654-7144

March, 2015

CGS ENGINEERING

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CAS ENGINEERING

NARRATIVE

The subject property, 7402 Ridgewood Avenue, Chevy Chase is shown on Tax Map HN342 as Lot 30, Block 4, Chevy Chase Park. The 12,834.5 square foot lot is currently zoned R-60. The property lies along the west side of Ridgewood Avenue approximately 490-feet north of Thornapple Street. The lot currently slopes from south to north.

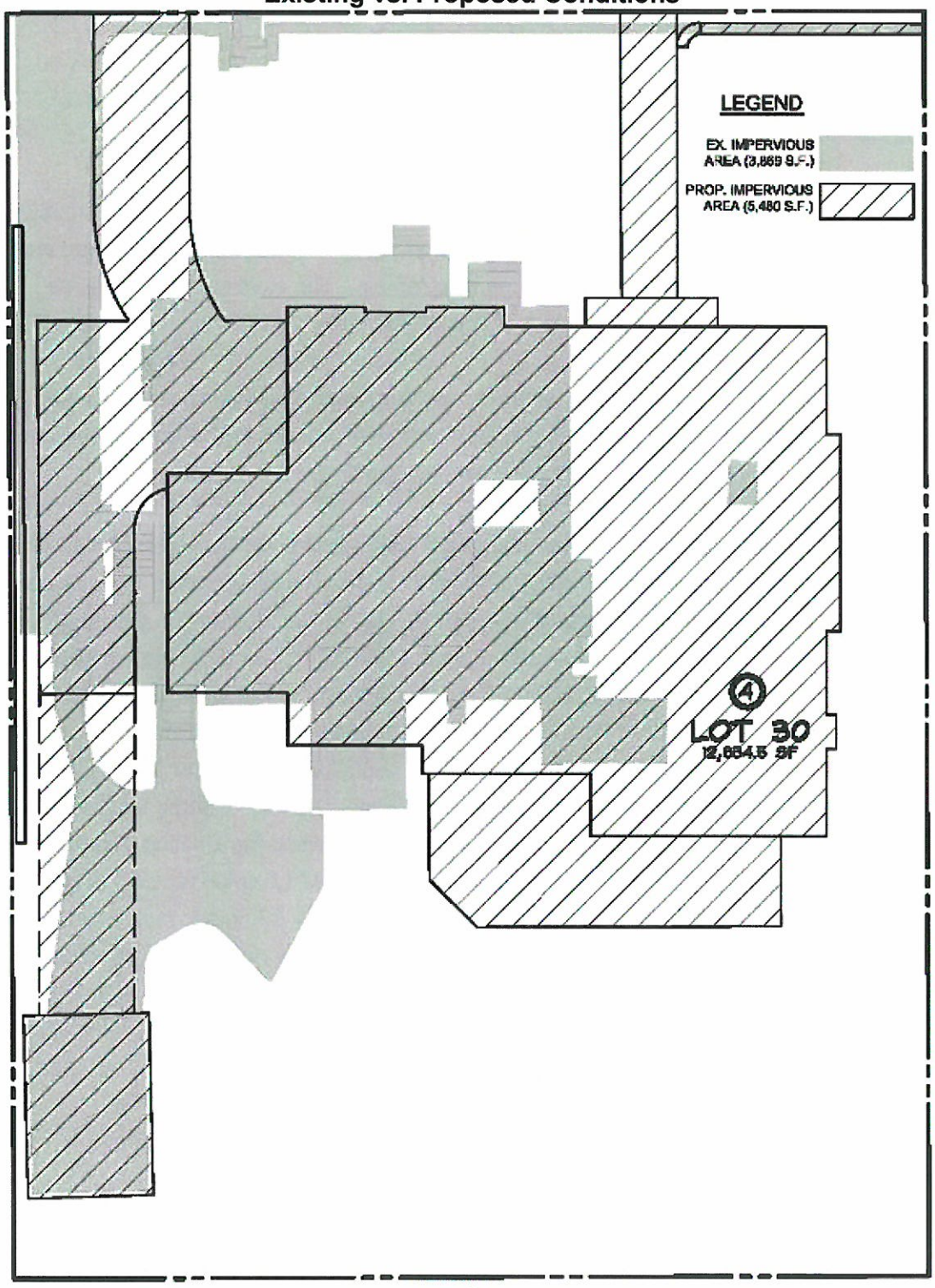
Existing improvements include a single-family detached dwelling, detached garage, retaining walls, and a gravel driveway. The existing house and portions of the existing retaining walls are to be removed. The existing detached garage is to remain. The existing improvements constitute approximately 3,869 square feet of impervious area.

Proposed improvements include a new single family detached dwelling, covered porches, patios and driveway. The proposed improvements constitute 5,480 square feet of impervious area and include portions of the existing retaining walls and garage that are to remain.

The following calculations along with the soils report (attached hereto as Appendix A) will support the proposed water drainage design. All of the proposed downspouts will be piped directly to the proposed Water Drainage Systems "A", "B", "C", "D", "E" or "F". Drainage systems "A", "B" and "F" are located in the front yard, while "C", "D" and "E" are located in the rear yard. Drainage systems "A", "B", "C" and "D" will consist of gravel drywells. Drainage systems "E" and "F" will consist of RainTank™ Triple Modules. Each system will include a pop-up emitter which will serve as the overflow release for rainfall events greater than the 3-month storm (Q3-month). These drywells will provide the necessary storage volume for the proposed 3-month storm, which is greater than the runoff difference between the existing and proposed 10-year storms. Total storage volume required by the town is 474.9 cubic feet. As designed, water drainage systems "A", "B", "C", "D", "E" and "F" will provide 823 cubic feet, thus exceeding the minimum Town requirements. Additionally, other impervious surfaces are hydraulically disconnected and cannot be treated. These Best Management practices along with the placement of topsoil on all disturbed areas, prior to seeding or sodding, will provide control for the 3-month runoff.

ANALYSIS OF ON-SITE DRAINAGE AREAS

Existing vs. Proposed Conditions



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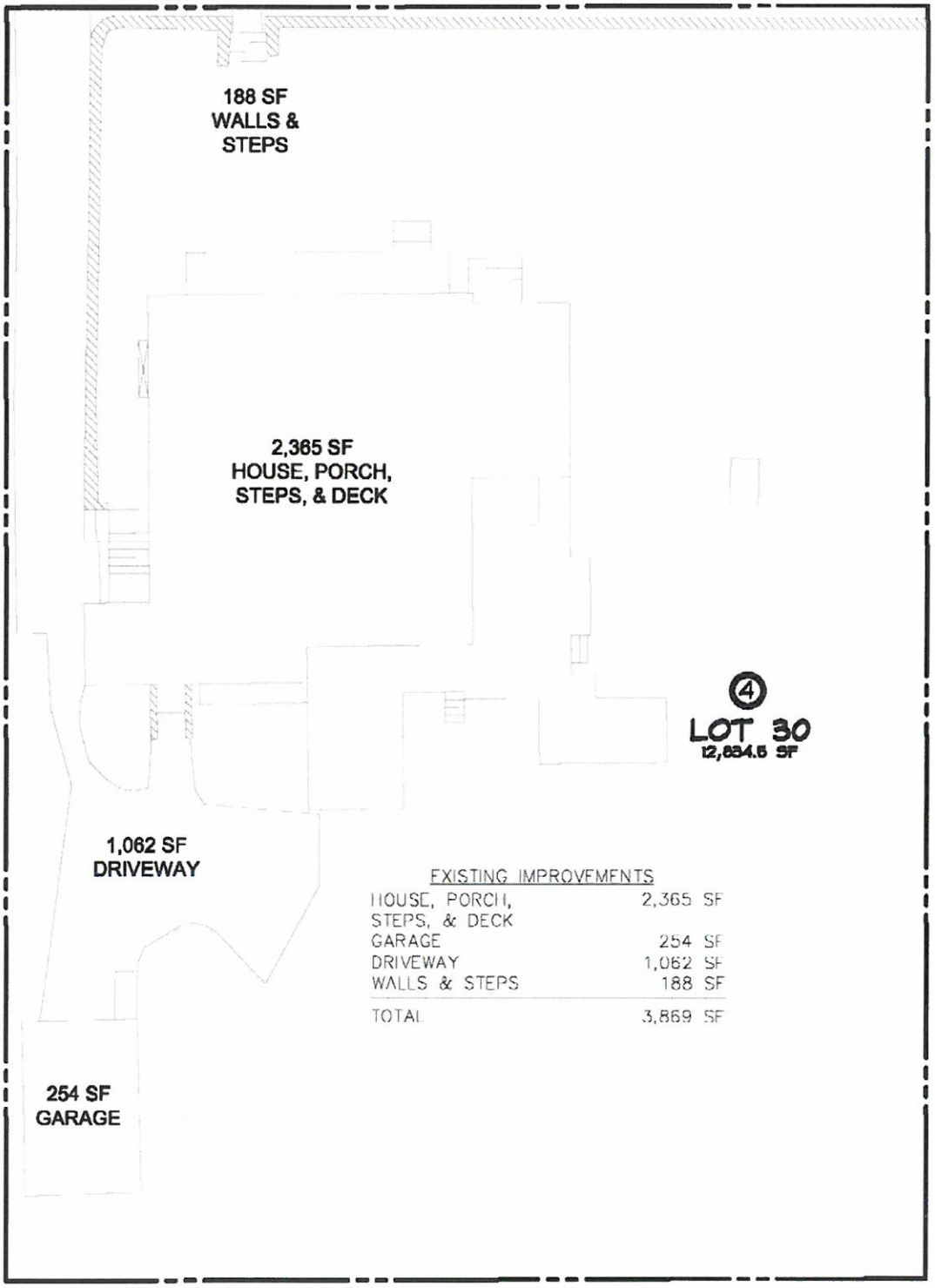
ANALYSIS OF ON-SITE DRAINAGE AREAS

Existing Conditions



EXISTING IMPROVEMENTS

HOUSE, PORCH, STEPS, & DECK	2,365 SF
GARAGE	254 SF
DRIVEWAY	1,062 SF
WALLS & STEPS	188 SF
TOTAL	3,869 SF

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ANALYSIS OF ON-SITE DRAINAGE AREAS

Existing Conditions

IMPROVEMENT/ AREA	AREA (Square Feet)	CURVE NUMBER (CN)
House, Porch, Steps & Deck	2,365 SF	98
Garage	254 SF	98
Driveway	1,062 SF	98
Walls & Steps	188 SF	98
Green Space	1,611 SF *	75
TOTAL	**IMPERVIOUS AREA 3,869 SQUARE FEET**	

* Green space area equates to difference between existing and proposed impervious areas

DETERMINE $Q_{10\text{-year}}$, given P = 5.1 inches

$$Q_{10\text{-year}} = \frac{(P - 0.2S)^2}{(P + 0.8S)} \qquad S = \frac{1000}{CN} - 10 = (1000/98) - 10 = 0.20$$

$$Q_{10\text{-year}} = \frac{((5.1 - 0.2(0.20))^2}{((5.1 + 0.8(0.20))} = 4.87 \text{ INCHES}$$

$Q_{10\text{-year}}$ = 4.87 INCHES (from impervious areas)

$$Q_{10\text{-year}} = \frac{(P - 0.2S)^2}{(P + 0.8S)} \qquad S = \frac{1000}{CN} - 10 = (1000/75) - 10 = 3.33$$

$$Q_{10\text{-year}} = \frac{((5.1 - 0.2(3.33))^2}{((5.1 + 0.8(3.33))} = 2.53 \text{ INCHES}$$

$Q_{10\text{-year}}$ = 2.53 INCHES (from grass areas)

DETERMINE REQUIRED RETENTION VOLUME, $V_{10\text{-year}}$

$V_{10\text{-year}} = Q_{10\text{-year}}$ x IMPERVIOUS AREA

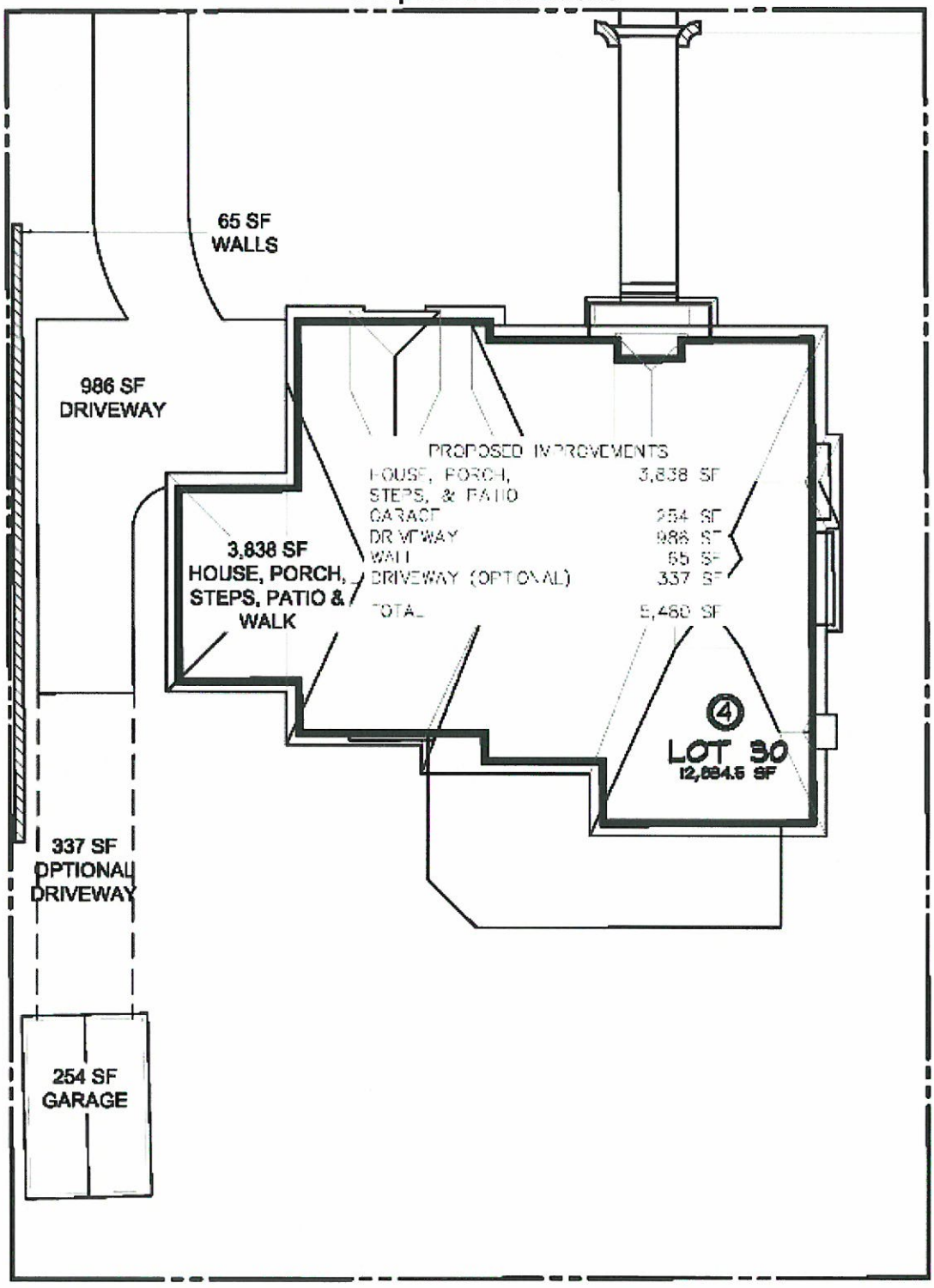
= 4.87 INCHES x 3,869 SF x 1 FT/ 12 INCHES = 1,570.2 CF

= 2.53 INCHES x 1,611 SF x 1 FT/ 12 INCHES = 339.7 CF

$V_{10\text{-year(total)}}$ = **1,909.9 CUBIC FEET**

ANALYSIS OF ON-SITE DRAINAGE AREAS

Proposed Conditions



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ANALYSIS OF ON-SITE DRAINAGE AREAS

Proposed Conditions

IMPROVEMENT/ AREA	AREA (Square Feet)	CURVE NUMBER (CN)
House, Porch, Steps & Patio	3,838 SF	98
Garage	254 SF	98
Driveway	986 SF	98
Walls & Steps	65 SF	98
Driveway (optional)	337 SF	98
TOTAL	**IMPERVIOUS AREA 5,480 SQUARE FEET**	**98**

DETERMINE $Q_{3\text{-Month}}$, given P = 1.25 inches

$$Q_{3\text{-Month}} = \frac{(P - 0.2S)^2}{(P + 0.8S)} \qquad S = \frac{1000}{CN} - 10 = (1000/98) - 10 = 0.20$$

$$Q_{3\text{-Month}} = \frac{((1.25 - 0.2(0.20))^2}{((1.25 + 0.8(0.20))} = 1.04 \text{ INCHES}$$

$Q_{3\text{-Month}}$ = 1.04 INCHES

DETERMINE $Q_{10\text{-year}}$, given P = 5.1 inches

$$Q_{10\text{-year}} = \frac{(P - 0.2S)^2}{(P + 0.8S)} \qquad S = \frac{1000}{CN} - 10 = (1000/98) - 10 = 0.20$$

$$Q_{10\text{-year}} = \frac{((5.1 - 0.2(0.20))^2}{((5.1 + 0.8(0.20))} = 4.87 \text{ INCHES}$$

$Q_{10\text{-year}}$ = 4.87 INCHES

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ANALYSIS OF ON-SITE DRAINAGE AREAS

Proposed Conditions

DETERMINE REQUIRED RETENTION VOLUME, $V_{3\text{-Month}}$ & $V_{10\text{-year}}$

$V_{3\text{-Month}}$ = **Q** $_{3\text{-Month}}$ x IMPERVIOUS AREA

= 1.04 INCHES x 5,480 SF x 1 FT/ 12 INCHES = 474.9 CF

$V_{3\text{-Month}}$ = **474.9 CUBIC FEET**

$V_{10\text{-year}}$ = **Q** $_{10\text{-year}}$ x IMPERVIOUS AREA

= 4.87 INCHES x 5,480 SF x 1 FT/ 12 INCHES = 2,224.0 CF

$V_{10\text{-year}}$ = **2,224.0 CUBIC FEET**

DETERMINE INCREASE IN RUNOFF FOR 10-YEAR STORM

$V_{10\text{-year(EX)}}$ =**1,909.9 CUBIC FEET**

$V_{10\text{-year(PROP)}}$ = **2,224.0 CUBIC FEET**

$V_{10\text{-year(PROP)}}$ - $V_{10\text{-year(EX)}}$ = 2,224.0 – 1,909.9 = 314.1 CUBIC FEET

DESIGN VOLUME TO RETAIN

Retain the larger of **474.9 cubic feet ($V_{3\text{-Month}}$)** or 314.1 cubic feet ($V_{10\text{-year Difference}}$).

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STORM DRAINAGE FACILITY DESIGN

DETERMINE VOLUME TO BE RETAINED BY GRAVEL DRYWELLS AND RAINTANK™ TRIPLE MODULES

Design Storage Volume = V_{DESIGN} = 474.9 CUBIC FEET

Soil report prepared by ECS Mid-Atlantic, LLC (See Attached)

Soil Test Location "B-1" has an infiltration rate of 0.48 in/hour at 7.0-feet deep, Soil Test Location "B-2" has an infiltration rate of 0.6 in/hour at 6.4-feet deep.

Two gravel drywells and nine RankTankTM Triple Modules will be located in the front yard that corresponds to infiltration test "B-1".

Drywell A
15.3' (L) x 4.8' (W) x 4.8' (H) x 0.40 (void ratio)
Storage Provided = **141 C.F.**

Drywell B
19.1' (L) x 4.3' (W) x 4.8' (H) x 0.40 (void ratio)
Storage Provided = **158 C.F.**

Drywell F
9 Triple Modules x 12.28 cubic feet / module
Storage Provided **= 110 C.F.**

Total Storage Provided by Drywells A, B & F = $V_{PROVIDED}$ = 409 C.F.

Two gravel drywells and thirteen RankTankTM Triple Modules will be located in the rear yard that corresponds to infiltration test "B-2".

Drywell C
8.9' (L) x 8.0' (W) x 5.0' (H) x 0.40 (void ratio)
Storage Provided = **142 C.F.**

Drywell D
16.6' (L) x 6.0' (W) x 5.0' (H) x 0.40 (void ratio)
Storage Provided = **199 C.F.**

Drywell E
10 Triple Modules x 12.28 cubic feet / module
Storage Provided **= 122 C.F.**

Total Storage Provided by Drywells C, D & E = $V_{PROVIDED}$ = 463 C.F.

Total Storage Provided by all devices= $V_{PROVIDED}$ = 872 C.F.
Refer to Civil Plans for additional information.

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STORM DRAIN PIPE DESIGN

Use the Rational Method to determine Q_{10} for roof drain pipe

$Q_{10} = C \times I_{10} \times A$

Assume time of concentration, T_c = 5 minutes

I_{10} = 7.07 in /hour

C = 0.90 (roof surface, 100% impervious)

A= 969 square feet = 0.0222 acres (largest combined roof area conveyed to drywell)

$Q_{10} = C \times I_{10} \times A = 0.9 \times 7.07 \times 0.0222 = 0.141$ CFS

Q_{10} = 0.14 CFS

The runoff from largest roof surface generated from the 10-year storm is 0.14 CFS.

Design roof drain pipe to convey **Q_{10} = 0.14 CFS**. Assume a minimum slope of 2%.

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FlowMaster™ Computation

CIRCULAR CHANNEL ANALYSIS & DESIGN
SOLVED WITH MANNING'S EQUATION

OPEN CHANNEL – UNIFORM FLOW

Worksheet Name: 7402 Ridgewood Avenue

Comment: 4" Schedule 40 PVC roof drains

Solve for Actual Depth

Given Input Data:

Diameter	0.33 ft (4" PVC)
Slope	0.02 ft/ft (2% Min. Slope)
Manning's n	0.011
Discharge	0.14 cfs (see Q_{10} calculation, page 10)

Computed Results:

Depth	0.16 ft
Velocity	3.53 fps
Flow Area	0.04 sf
Critical Slope	0.0075 ft/ft
Critical Depth	0.21 ft
Percent Full	47.15%
Froude Number	1.79
Full Capacity	0.31 cfs
QMAX @ .94D	0.33 cfs

Open Channel Flow Module, Version 3.12 (c) 1990
Haestad Methods, Inc. * 37 Brookside Road, Waterbury, Ct 06708

A 4" schedule 40 PVC pipe will be sufficient to convey the 10-year runoff from the largest combined roof area.

Provide 4" PVC for individual downspouts.

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MAINTENANCE

Drywell Maintenance

Drywells will be installed with an observation well which should be monitored quarterly for the first year and annually thereafter.

Contributing runoff originates from roofed surfaces. All gutters will be equipped with gutter drain filters (or similar device) to prevent leaves from entering the drywells. Additionally, cleanouts will be provided along longer pipe runs. All upstream structures access points must be monitored for accumulation of sediment and debris on the same schedule as stated above. All accumulation of sediment and debris should be removed promptly.

Drywell Maintenance Schedule

During the first year after construction of the drywells, the system(s) should be monitored on a quarterly basis as well as after significant storms. A log book shall be maintained and shall indicate: date, time, and depth of water in the observation well at 8 to 12 hour intervals for a 48-hour period. Once the performance characteristics of the system have been verified, and warranted, the monitoring schedule can be reduced to an annual basis.

Sediment build-up inside the drywell and in all upstream storm drain structures should be monitored on the same schedule as described above. Sediment deposits shall be removed on a quarterly basis from all upstream structures including gutters. Once the performance characteristics of the system have been verified, and warranted, the sediment removal schedule can be reduced to an annual basis.

Ponding, standing water, or algal growth on the top of a drywell may indicate failure due to sedimentation in the gravel media. If water ponds for more than 48 hours after a major storm or more than six inches of sediment has accumulated the gravel media should be excavated and replaced.

Repair and / or replacement of drywells to be in accordance with Town, County and State requirements applicable at the time of the inspection.

STORM DRAINAGE COST ESTIMATE

7402 Ridgewood Avenue

CONSTRUCTION COST ESTIMATE FOR

STORMWATER DRAINAGE SYSTEM

ITEM	QUANTITY	UNIT COST INSTALLED	TOTAL COST
SWM Facility			
GRAVEL DRYWELLS	4	$400.00 EA	$1,600.00
RAINTANK TRIPLE MODULES	15	$80.00 EA	$1,200.00
		TOTAL	**$2,800.00**

APPENDIX - SOILS REPORT

August 21, 2014

Mr. Jeffrey Robertson
CAS Engineering
108 West Ridgeville Boulevard
Suite 101
Mount Airy, Maryland 21771

ECS Job No.: 13-6404

Reference: Report of Subsurface Exploration and Infiltration Test Results, CAS Project No. 14-211C, 7402 Ridgewood Avenue, Chevy Chase, Maryland

Dear Mr. Robertson:

As requested, ECS Mid-Atlantic, LLC (ECS) has completed the soil boring and infiltration testing for the proposed stormwater management (SWM) facilities at the above referenced project.

Soil Conditions

Subsurface conditions within the proposed stormwater management areas were evaluated with two (2) soil test borings drilled to a maximum depth of fifteen (15) feet below the existing ground surface.

Natural soils were encountered at the ground surface at the boring locations. The natural soils extended to depths of fifteen feet below existing grades, the maximum depths explored. The natural soils were identified as Sandy SILT (ML) and Silty SAND (SM) and contained varying amounts of mica and trace amounts of gravel. Based on Standard Penetration Test (SPT) results, the natural cohesionless soils encountered ranged from loose to very dense. The color of these natural materials was grayish brown to brown and the moisture content of these soils was characterized as moist.

More detailed descriptions of the soils encountered are provided on the boring log attached to this letter.

Groundwater Observations

Groundwater was not encountered during drilling of the soil borings. Observations for groundwater were made during sampling and upon completion of the drilling operations at the boring locations. In auger drilling operations, water is not introduced into the boreholes, and the groundwater position can often be determined by observing water flowing into or out of the borehole. Furthermore, visual observation of the soil samples retrieved during the auger drilling exploration can often be used in evaluating the groundwater conditions.

The highest groundwater observations are normally encountered in winter and early spring. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at

the time of this exploration. Perched water may also be encountered at the interface of coarse and fine-grained soils.

Infiltration Testing

In order to evaluate potential infiltration at this property, two in-situ infiltration tests were performed on August 14, 2014. The tests were conducted between 6.4 and 7.0 feet below existing grades. The test locations were selected and located in the field by ECS.

The in-situ infiltration testing consisted of auguring a soil probe down to the test depth and installing a solid length of five inch diameter PVC pipe. The pipe was then presoaked for 24 hours by filling the pipe with approximately two feet of water. After the initial filling of the pipe, infiltration testing was completed by monitoring the drop in the water level at 60-minute intervals for four hours. The rate of drop over the four total hours is considered the infiltration rate. The test results are as shown in the table on the following page.

Test Location	Test Depth (ft)	Approximate Test Elevation (ft)	Soil Encountered at Test Depth	Field Infiltration Rate (in/hr)
B-1	7.0	315	Loose Sandy SILT (ML)	0.48
B-2	6.4	314.6	Medium Dense to Loose Silty SAND (SM)	0.6

The results reported above are based on field measurements. We recommend that the design rate be calculated as 2/3 of the field rate to account for siltation over time.

This report has been prepared to aid in the evaluation of this site and to assist the design team with the design of the on-site stormwater management facilities. The report scope is limited to this specific project and the location described. The project description represents our current understanding of the significant aspects of the proposed improvements relevant to the geotechnical considerations.

We appreciate the opportunity to have provided geotechnical engineering services on this project. Should you have questions regarding our findings or need additional consultations, please do not hesitate to contact our office.

Respectfully,

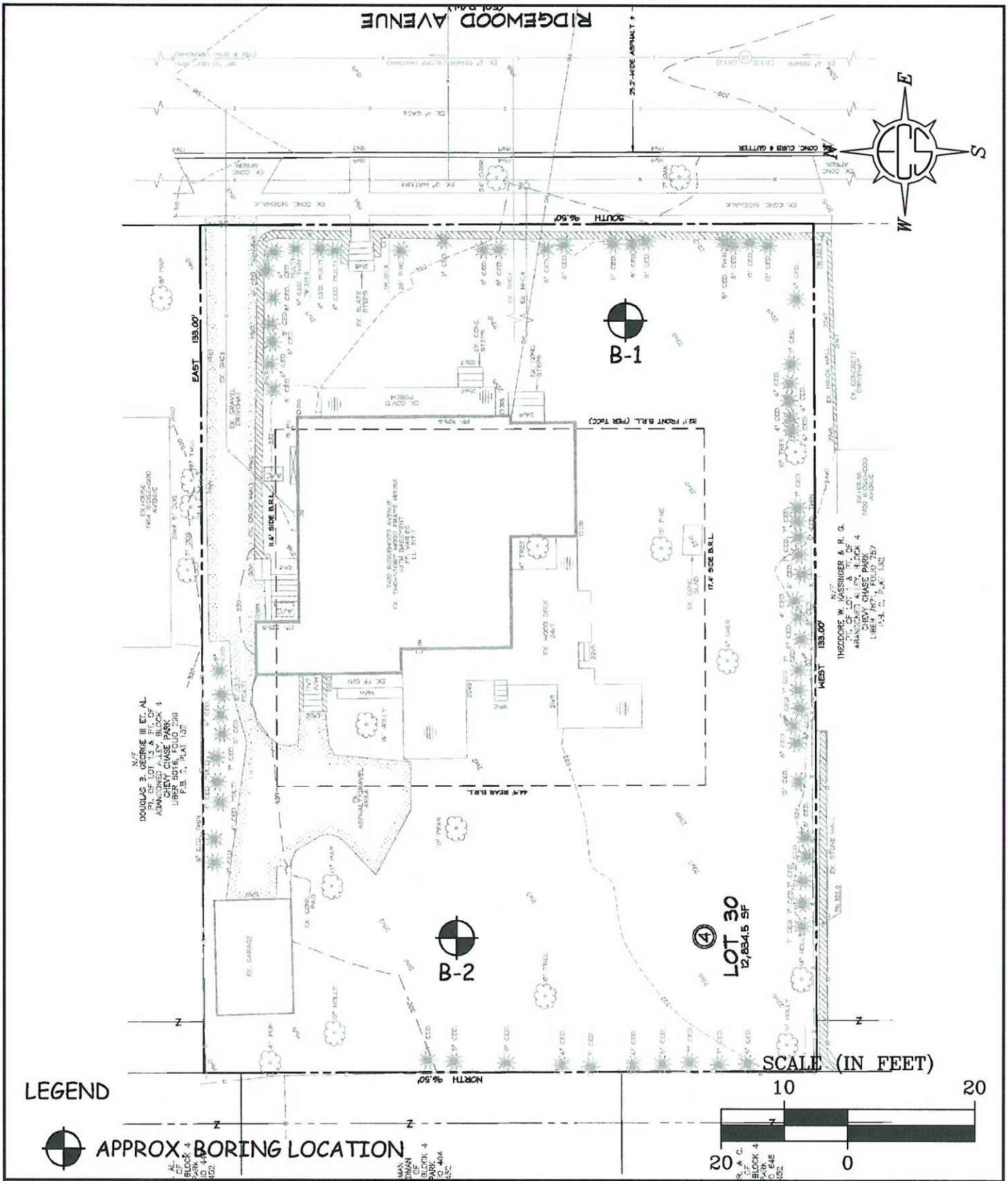
ECS MID-ATLANTIC, LLC

Brian A. Meley, P.G.
Geotechnical Project Manager

Jeffrey A. McGregor, P.E.
Principal Engineer

Enclosure: Boring Location Diagram (1 page)
Boring Logs (2 pages)

I:\Department 3 Geotechnical\GEOTECHNICAL\PROJECTS\6400's\13-6404 7402 Ridgewood Avenue SWM\13-6404 7402 Ridgewood Ave SWM Report.doc



BORING LOCATION DIAGRAM **CAS ENGINEERING**	ECS	**7402 RIDGEWOOD AVENUE SWM** **CHEVY CHASE, MARYLAND**	ENGINEER BAM DRAFTSMAN AMH REVISIONS	SCALE 1" = 20' PROJECT NO. 13-6404 SHEET 1 OF 1 DATE 08-14-14

CLIENT	JOB #	BORING #	SHEET
CAS Engineering	6404	B-1	1 OF 1

PROJECT NAME: 7402 Ridgewood Avenue SWM

ARCHITECT-ENGINEER:

SITE LOCATION: 7402 Ridgewood Avenue, Chevy Chase,

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - - - REC% ——

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

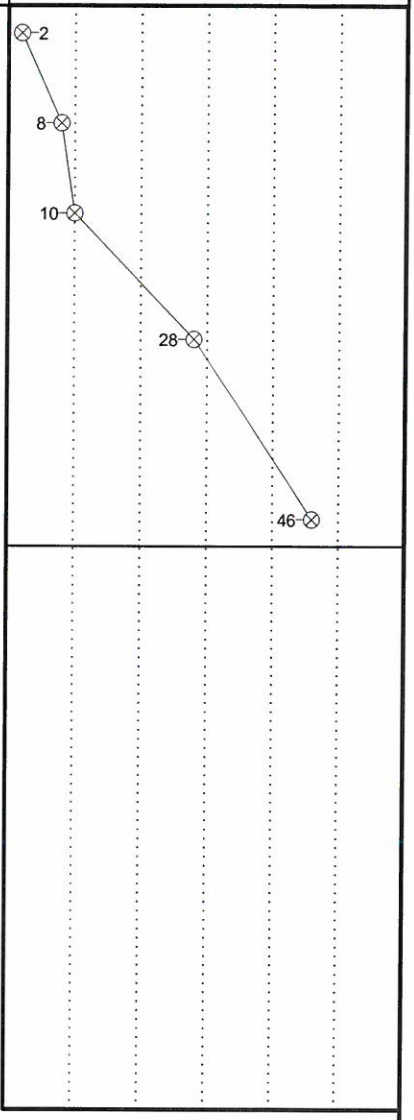
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	18	6	Topsoil Depth [18"]			1 1 1
	S-2	SS	18	15	(ML) SANDY SILT, Contains Significant Mica, Brown, Moist, Loose			2 3 5
5	S-3	SS	18	15				2 4 6
	S-4	SS	18	18	(ML) SANDY SILT, Contains Significant Mica, Grayish Brown, Moist, Medium Dense			10 14 14
10	S-5	SS	18	18	(SM) SILTY SAND, Contains Mica, Grayish Brown, Moist, Dense			13 14 32
15					END OF BORING @ 15.00'			
20								
25								
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS☐ WD☐	BORING STARTED 08/13/14	
WL(BCR) WL(ACR)	BORING COMPLETED 08/13/14	CAVE IN DEPTH @ 10.00'
WL	RIG 550 ATV FOREMAN Zack	DRILLING METHOD HSA

CLIENT	JOB #	BORING #	SHEET
CAS Engineering	6404	B-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
7402 Ridgewood Avenue SWM	

SITE LOCATION: 7402 Ridgewood Avenue, Chevy Chase,

NORTHING | EASTING | STATION

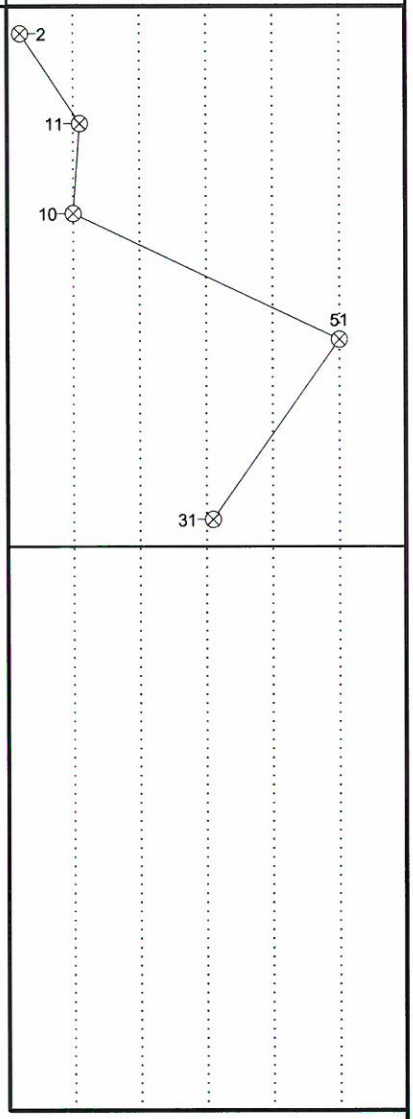
CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - — - REC% ——

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

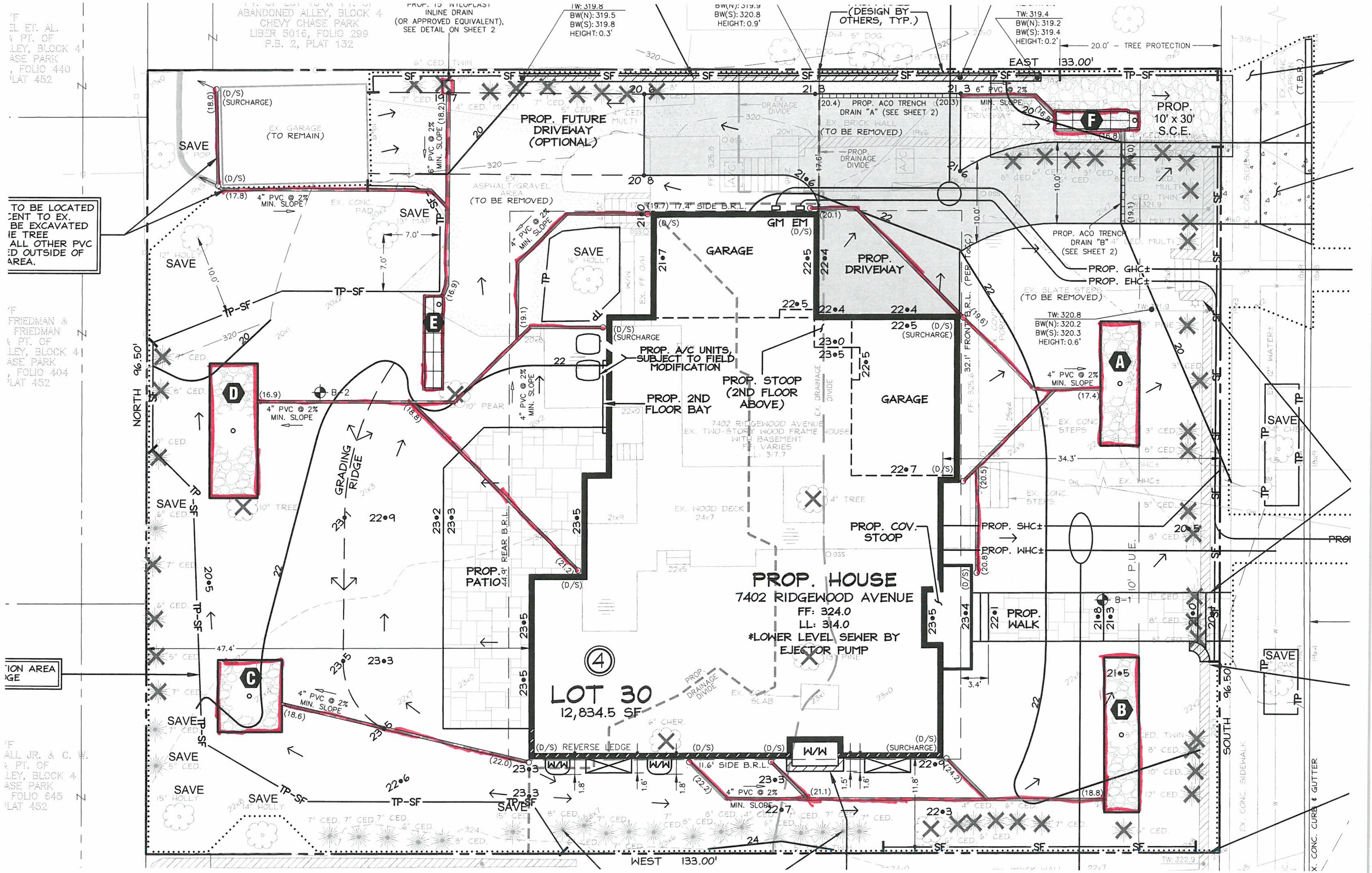
STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS; BOTTOM OF CASING; LOSS OF CIRCULATION; SURFACE ELEVATION)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	18	6	Topsoil Depth [18"]			1 1 1
					(SM) SILTY SAND, Contains Slight Mica, Brown, Moist, Medium Dense to Loose			
	S-2	SS	18	10				3 6 5
5	S-3	SS	18	16				2 4 6
	S-4	SS	18	18	(SM) SILTY SAND, Trace Gravel, Contains Slight Mica, Grayish Brown, Moist, Very Dense			22 23 28
10	S-5	SS	18	15	(ML) SANDY SILT, Trace Gravel, Contains Mica, Brown, Moist, Dense			6 12 19
15					END OF BORING @ 15.00'			
20								
25								
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL WS☐ WD☐	BORING STARTED 08/07/14	
WL(BCR) WL(ACR)	BORING COMPLETED 08/07/14	CAVE IN DEPTH
WL	RIG 550 ATV FOREMAN Zack	DRILLING METHOD HSA


PROP. HOUSE
7402 RIDGEWOOD AVENUE
FF: 324.0
LL: 314.0
*LOWER LEVEL SEWER BY EJECTOR PUMP
LOT 30
12,834.5 SF
PROP. FUTURE DRIVEWAY (OPTIONAL)
EX. GARAGE (TO REMAIN)
GARAGE
PROP. DRIVEWAY
PROP. A/C UNITS, SUBJECT TO FIELD MODIFICATION
PROP. STOOP (2ND FLOOR ABOVE)
PROP. 2ND FLOOR BAY
PROP. PATIO
PROP. COV. STOOP
PROP. WALK
PROP. 10' x 30' S.C.E.
PROP. ACO TRENCH DRAIN "A" (SEE SHEET 2)
PROP. ACO TRENCH DRAIN "B" (SEE SHEET 2)
PROP. 15" NYLOPLAST INLINE DRAIN (OR APPROVED EQUIVALENT), SEE DETAIL ON SHEET 2
(DESIGN BY OTHERS, TYP.)
EX. ASPHALT/GRAVEL AREA (TO BE REMOVED)
EX. SLATE STEPS (TO BE REMOVED)
EX. BRICK WALL (TO BE REMOVED)
GRADING RIDGE
PROP. GHC±
PROP. EHC±
PROP. SHC±
PROP. WHC±
4" PVC @ 2% MIN. SLOPE
17.4' SIDE B.R.L.
11.6' SIDE B.R.L.
32.1' FRONT B.R.L. (PER TOPO)
44.9' REAR B.R.L.
20.0' - TREE PROTECTION
10' P.U.E.
EAST 133.00'
WEST 133.00'
NORTH 96.50'
SOUTH 96.50'
EX. CONC. SIDEWALK
EX. CONC. CURB & GUTTER
SAVE
TP-SF
A
B
C
D
E
F
B-1
B-2
GM
EM
W/M
(D/S)
(SURCHARGE)
REVERSE LEDGE
TW: 320.8
BW(N): 320.2
BW(S): 320.3
HEIGHT: 0.6'
TW: 319.4
BW(N): 319.2
BW(S): 319.4
HEIGHT: 0.2'
TW: 319.8
BW(N): 319.5
BW(S): 319.8
HEIGHT: 0.3'
BW(N): 319.9
BW(S): 320.8
HEIGHT: 0.9'
ABANDONED ALLEY, BLOCK 4
CHEVY CHASE PARK
LIBER 5016, FOLIO 299
P.B. 2, PLAT 132
7402 RIDGEWOOD AVENUE
EX. TWO-STORY WOOD FRAME HOUSE
WITH BASEMENT
FF: VARIES
LL: 317.7
EX. WOOD DECK 24x7
TO BE LOCATED
CENT TO EX.
BE EXCAVATED
HE TREE
ALL OTHER PVC
ED OUTSIDE OF
AREA.
TION AREA
GE

GENERAL NOTES

1) BOUNDARY INFORMATION AND TWO-FOOT CONTOUR DATA ARE BASED UPON SURVEYS PERFORMED BY CAS ENGINEERING, DATED JULY, 2014.
2) TOTAL LOT AREA: LOT 30 = 12,834.5 SQ. FT. (0.295 ACRES)
3) PROPERTY IS LOCATED ON TAX MAP MN 342, LOT 30, BLOCK 4, CHEVY CHASE PARK.
4) PROPERTY IS LOCATED ON WSSC 200' SHEET 209 NW 04.
5) PROPERTY IS LOCATED ON MONTGOMERY COUNTY SOILS SURVEY MAP No. 27. SOIL TYPE(S): 2KC GLENELG SILT LOAM.
6) PROPERTY IS LOCATED IN HYDROLOGIC SOIL GROUP "B".
7) FLOOD ZONE "X-A" PER TOWN OF CHEVY CHASE, F.E.T.A. FIRM MAPS, COMMUNITY PANEL NUMBER 240316 0495D.
8) PROPERTY IS LOCATED IN THE LOWER ROCK CREEK WATERSHED.
9) WATER CATEGORY - 1 SEWER CATEGORY - 1
10) LOCAL UTILITIES INCLUDE:
WATER & SEWER - WASHINGTON SUBURBAN SANITARY COMMISSION
ELECTRIC - PEPCO
TELEPHONE - VERIZON
GAS - WASHINGTON GAS
11) PROPERTY IS LOCATED IN THE INCORPORATED MUNICIPALITY OF THE TOWN OF CHEVY CHASE.
12) THIS PLAN CREATED WITHOUT THE BENEFIT OF A TITLE REPORT.

ZONING DATA

1) ZONING: R-60
MIN. LOT AREA = 6,000 SQ FT
MIN. LOT WIDTH AT R/W = 25 FT.
MIN. LOT WIDTH AT B.R.L. = 60 FT
FRONT B.R.L. = 32.1 FT (PER TxCC)
REAR B.R.L. = 44.9 FT MIN. (PER TxCC)
SIDE B.R.L. = 11.6 FT MIN., 29.0 FT TOTAL (PER TxCC)

2) LOT COVERAGE REQUIREMENTS

A) IN ACCORDANCE WITH SECTION 59-C-1.328 OF THE MONTGOMERY COUNTY ZONING ORDINANCE. LOT AREA EQUAL TO OR GREATER THAN 6,000 SQ. FT. BUT LESS THAN 18,000 SQ. FT.

LOT COVERAGE INCLUDES THE MAIN BUILDING, ANY ACCESSORY BUILDING, AND ANY WEATHERPROOFED FLOOR AREA ABOVE A PORCH, BUT NOT INCLUDING ANY BAY WINDOW, CHIMNEY, PORCH, OR UP TO 240 SQUARE FEET OF A DETACHED GARAGE, IF THE GARAGE IS LESS THAN 350 SQUARE FEET OF FLOOR AREA AND LESS THAN 20 FEET IN HEIGHT.

ALLOWABLE LOT COVERAGE 30% OF TOTAL LOT AREA, LESS 0.001 PERCENT FOR EVERY SQUARE FOOT OF LOT AREA EXCEEDING 6,000 SQUARE FEET.

LOT 30 = 12,834.50 SQUARE FEET (PER PLAT)
12,834.50 - 6,000 = 6,834.50 SQUARE FEET
6,834.50 X 0.001 = 6.83
30% + 6.83% = 23.17%

ALLOWABLE AREA TO BE COVERED BY BUILDINGS, (INCL. ACC. BUILDINGS) = 2,973.75 SQ. FT.

TOTAL AREA COVERED BY BUILDINGS = 2,864.4 SQ. FT.

B) VERIFY ACCESSORY STRUCTURE LOT COVERAGE IN ACCORDANCE WITH SECTION 59-C-1.326(a)(1) OF MONTGOMERY COUNTY ZONING ORDINANCE. (SEE REAR YARD LOT COVERAGE ILLUSTRATION ON SHEET 2)

ACCESSORY STRUCTURE MUST BE LOCATED IN THE REAR YARD AND MAY OCCUPY NO MORE THAN 20% OF THE REAR YARD AREA.

REAR YARD AREA (PER MONTGOMERY COUNTY DEFINITION) = 5,307.0 SQUARE FEET
5,307.0 X 20% = 1,061.4 SQUARE FEET

ALLOWABLE REAR YARD AREA TO BE COVERED BY ACCESSORY BUILDINGS = 1,061.4 SF

REAR YARD AREA COVERED BY ACCESSORY BUILDINGS = 222.0 SF (4.2%)

C) VERIFY ACCESSORY STRUCTURE LOT COVERAGE IN ACCORDANCE WITH SECTION 4-5(b)(2) OF TOWN OF CHEVY CHASE CODE OF ORDINANCE. (SEE REAR YARD LOT COVERAGE ILLUSTRATION ON SHEET 2)

ACCESSORY STRUCTURE MUST BE LOCATED IN THE REAR YARD AND MAY OCCUPY NO MORE THAN 25% OF THE REAR YARD AREA.

REAR YARD AREA (PER TOWN OF CHEVY CHASE DEFINITION) = 5,307.0 SQUARE FEET
5,307.0 X 0.25 = 1,326.8 SQUARE FEET

ALLOWABLE REAR YARD AREA TO BE COVERED BY ACCESSORY BUILDINGS = 1,326.8 SF

REAR YARD AREA COVERED BY ACCESSORY BUILDINGS = 222.0 SF (4.2%)

3) BUILDING HEIGHT REQUIREMENTS

A) MONTGOMERY COUNTY MEAN HEIGHT METHOD - IN ACCORDANCE WITH SECTION 59-C-1.327 OF MONTGOMERY COUNTY ZONING ORDINANCE.

MEAN HEIGHT OF BUILDING FROM FIRST FLOOR = 26'-1 3/4" FT (PER ARCHITECT)

FIRST FLOOR ELEVATION 324.00 FT
MEAN HEIGHT OF BUILDING 26.25 FT
ELEVATION AT MEAN POINT OF BUILDING 350.15 FT

AVERAGE GRADE ELEVATION ALONG FRONT OF BUILDING = 322.46 FT

HEIGHT OF BUILDING = 350.15 - 322.46 = 27.67 FEET
ALLOWABLE MEAN HEIGHT OF BUILDING PER MONTGOMERY COUNTY = 30 FEET

PROPOSED MEAN HEIGHT OF BUILDING = 27.67 FEET

B) TOWN OF CHEVY CHASE MEAN HEIGHT METHOD - IN ACCORDANCE WITH SECTION 4-3(b)(1)(b) OF TOWN OF CHEVY CHASE CODE OF ORDINANCES.

(SEE CALCULATIONS ABOVE)
ALLOWABLE MEAN HEIGHT OF BUILDING PER TOWN OF CHEVY CHASE = 28 FEET

PROPOSED HEIGHT OF MAIN BUILDING = 27.67 FEET

C) TOWN OF CHEVY CHASE PEAK HEIGHT METHOD - IN ACCORDANCE WITH SECTION 4-3(b)(1)(a) OF TOWN OF CHEVY CHASE CODE OF ORDINANCES.

PEAK HEIGHT OF BUILDING FROM FIRST FLOOR = 32'-10 3/4" FT (PER ARCHITECT)

FIRST FLOOR ELEVATION 324.00 FT
PEAK HEIGHT OF BUILDING 30.96 FT
ELEVATION AT PEAK POINT OF BUILDING 354.96 FT

AVERAGE GRADE ELEVATION ALONG FRONT OF BUILDING = 322.46 FT

HEIGHT OF BUILDING = 354.96 - 322.46 = 32.42 FEET
ALLOWABLE PEAK HEIGHT OF BUILDING PER TOWN OF CHEVY CHASE = 33 FEET

PROPOSED PEAK HEIGHT OF BUILDING = 32.4 FEET

4) FRONT YARD NON-VEGETATIVE COVER:

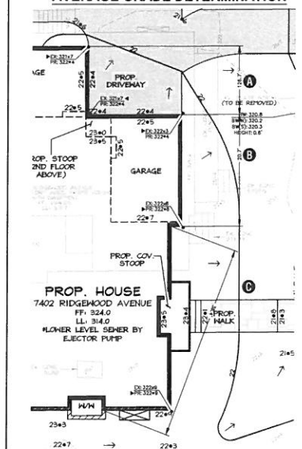
TOWN OF CHEVY CHASE NON-VEGETATIVE COVER - IN ACCORDANCE WITH SECTION 4-3(e)(2) OF TOWN OF CHEVY CHASE CODE OF ORDINANCES. (SEE FRONT YARD NON-VEGETATIVE SURFACE COVERAGE ILLUSTRATION ON SHEET 2)

FRONT YARD AREA = 3,731.4 SF
3,731.4 X 35% = 1,151.0 SF

ALLOWABLE NON-VEGETATIVE AREA = 1,151.0

PROPOSED FRONT YARD NON-VEGETATIVE COVERAGE = 608.9 SF (16.8%)

AVERAGE GRADE DETERMINATION



TOTAL LENGTH ALONG FRONT OF BUILDING = 67.4'

	ELEV @ POINT 1	ELEV @ POINT 2	AVERAGE GRADE	SECTION LENGTH	% LENGTH	AVERAGE GRADE x % LENGTH
Section A	321.70	321.70	321.70	12.7	18.84%	60.61
Section B	322.30	322.60	322.45	20.7	30.71%	99.02
Section C	322.60	322.90	322.75	34.0	50.45%	162.83

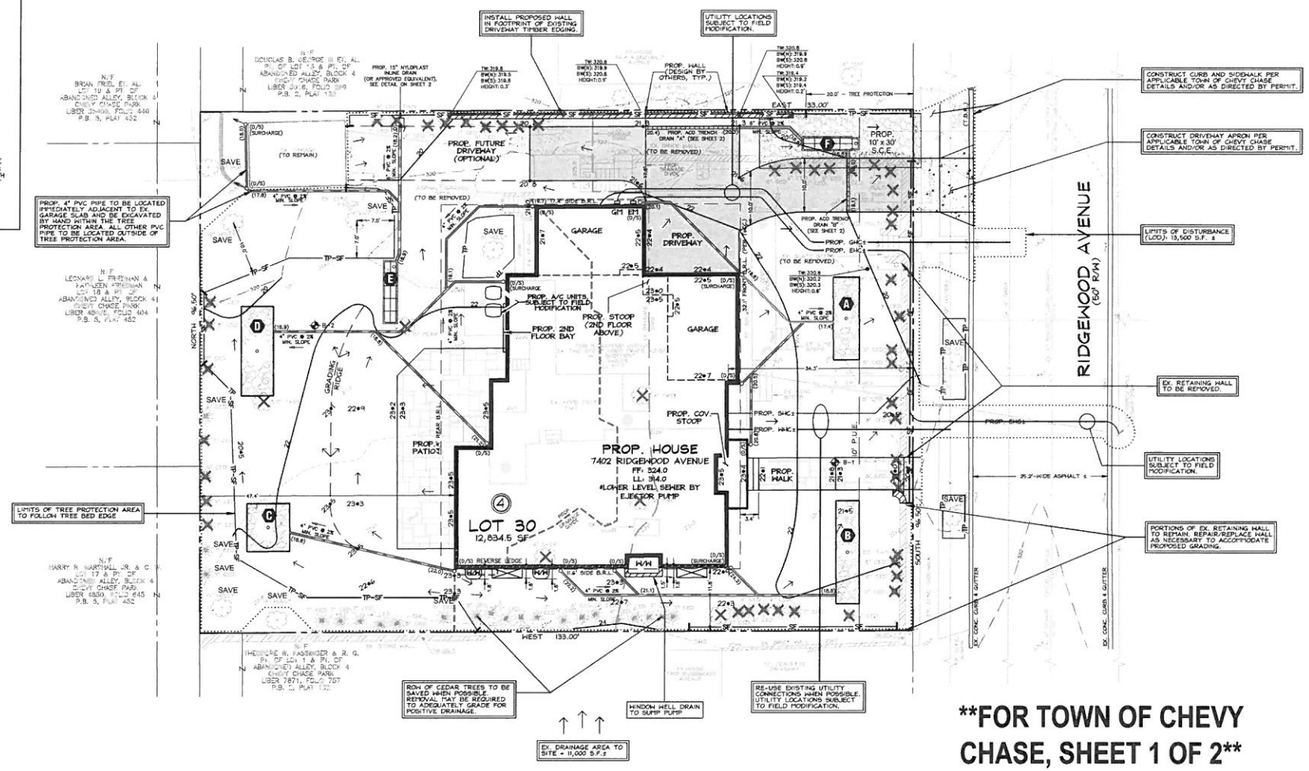
AVERAGE GRADE = 322.46

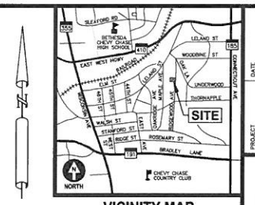
LEGEND

EXISTING FEATURES		PROPOSED FEATURES	
	EX. STORM DRAIN WITH MANHOLE		LIMITS OF DISTURBANCE (L.O.D.)
	EX. SEWER LINE WITH CLEANOUT	PROP. WHC	PROP. WATER-HOUSE CONNECTION
	EX. SEWER MANHOLE AND INVERT	PROP. SHC	PROP. SEWER-HOUSE CONNECTION
	EX. WATER LINE WITH VALVE	PROP. GHC	PROP. GAS-HOUSE CONNECTION
	EX. GAS LINE WITH VALVE	PROP. EHC	PROP. ELECTRIC-HOUSE CONNECTION
	EX. OVERHEAD UTILITY WITH POLE	16	PROP. CONTOUR WITH ELEVATION
	EX. DRAIN PIPE AND INLET	29x0	PROP. SPOT ELEVATION
	EX. UNDERGROUND UTILITY LINE		PROP. RETAINING WALL
	EX. TWO- AND TEN-FOOT CONTOURS		PROP. 4" & 6" PVC DRAIN PIPE
	EX. SPOT ELEVATION		PROP. DOWNSPOUT DISCONNECT WITH FLOWSTAR AND FLOW DIRECTION
	EX. CHAIN LINK OR WIRE FENCE		PROP. DRAINAGE DIVIDE
	EX. HEDGE OR STOCKADE FENCE		PROP. SURFACE FLOW DIRECTION
	EX. METAL OR IRON FENCE		PROP. PIPE FLOW DIRECTION
	EX. RETAINING HALL	SF	PROP. SILT FENCE
	EX. DRAINAGE DIVIDE	TP	PROP. TREE PROTECTION (6' CHAIN LINK FENCE W/ STEEL POLES PER T.C.C.)
35	EX. TREE	TP-SF	PROP. COMBINED TREE PROTECTION & SILT FENCE (6' CHAIN LINK FENCE W/ STEEL POLES PER T.C.C.)
X X	EX. TREE TO BE REMOVED		PROP. STABILIZED CONSTRUCTION ENTRANCE
S-1	EX. SOIL TYPING LOCATION		PROP. GRAVEL DRYWELL WITH OBSERVATION WELL & POP-UP EMITTER FOR OVERFLOW

SEQUENCE OF CONSTRUCTION

1) PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR, 240-777-0311 (48 HOURS NOTICE), THE OWNER'S REPRESENTATIVE, AND THE SITE ENGINEER.
2) THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES. INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.
3) CLEAR AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.
4) INSTALL SEDIMENT CONTROL DEVICES.
5) ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.
6) RAZE EXISTING STRUCTURE(S).
7) INSTALL BASE COURSES FOR DRIVEWAY AND CONSTRUCT HOUSE, ETC.
8) INSTALL STORMWATER MANAGEMENT DEVICES AND ASSOCIATED PIPING BUT DO NOT CONNECT TO DOWNSPOUTS AT THIS TIME.
9) INSTALL DRIVEWAY RETAINING HALL, PAVE DRIVEWAY, PERMANENTLY STABILIZE ALL RETAINING AREAS.
10) CONNECT DOWNSPOUTS TO ROOF DRAIN PIPING AND STORMWATER MANAGEMENT DEVICES.
11) PROVIDE SIGNED RECORD SET OF PLANS TO THE SEDIMENT CONTROL INSPECTOR.
12) OBTAIN WRITTEN APPROVAL FROM MCDPS INSPECTOR, PRIOR TO THE REMOVAL OF ANY AND ALL REMAINING SEDIMENT CONTROL DEVICES.





VICINITY MAP
ADC MAP 5407, GRID G-3, SCALE: 1" = 2000'

CONSTRUCTION INSPECTION CHECK-OFF LIST FOR DRY WELL/RECHARGE CHAMBER

January 2013

STAGE	MCDPS INSPECTOR	OWNER/ DEVELOPER
MANDATORY NOTIFICATION: Inspection and approval of each practice is required at these points prior to proceeding with construction. The permittee is required to give the MCDPS inspector twenty-four (24) hours notice (DPS telephone 240-777-0311). The DPS inspector may waive an inspection, and allow the owner/developer to make the required inspection per a prior scheduled arrangement which has been confirmed with the DPS inspector in writing. Work completed without MCDPS approval may result in the permittee having to remove and reconstruct the unapproved work. **Upon completion of the project, a formal Stormwater Management As-Built must be submitted to MCDPS unless a Record Drawing Certification has been allowed instead.** Each of the steps listed below must be verified by either the MCDPS Inspector OR the Owner/Developer:	INITIALS/DATE	INITIALS/DATE
1. Excavation for Dry Well conforms to approved plans		
2. Placement of backfill, perforated inlet pipe and observation well conforms to approved plans		
3. Placement of geotextiles and filter media conforms to approved plans		
4. Connecting pipes, including connection to downspout, constructed per the approved plans		
5. Final grading and permanent stabilization conforms to approved plans		
TOTAL NUMBER OF DRY WELLS INSTALLED PER THIS PERMIT: APPROVED _____ CONSTRUCTED _____		

NON-ROOFTOP DISCONNECTION

January 2013

"The constructed Non-Rooftop Disconnections meet the conditions specified on the approved plans."

Owner/Developer Signature _____ Date _____

ROOFTOP DISCONNECTION

January 2013

"The constructed Rooftop Disconnections meet the conditions specified on the approved plans."

Owner/Developer Signature _____ Date _____

RECORD DRAWING CERTIFICATION

February 2014

A record set of approved Sediment Control/Stormwater Management plans must be maintained onsite at all times. In addition to stormwater management items, these plans must include the number and location of all trees proposed to be planted to comply with the Tree Canopy Law. Any approved modifications or deletions of stormwater practices or tree canopy plantings or information must be shown on this record set of plans and on the "As-Built" plans submitted to the MCDPS Inspector. At the completion of the project, the record set of plans, reflecting these changes and the signed Record Drawing Certification, must be submitted to the MCDPS Inspector. A formal Stormwater Management As-Built submission is not required for this project.

"This record drawing accurately and completely represents the stormwater management practices and tree canopy plantings as they were constructed or planted. All stormwater management practices were constructed per the approved Sediment Control / Stormwater Management plans or subsequent approved revisions."

Owner/Developer Signature _____ Date _____

FIELD CHECK OF RECORD DRAWING BY MCDPS INSPECTOR: INITIALS _____ DATE _____

UTILITY INFORMATION

EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED. UTILITY LOCATIONS ARE BASED UPON AVAILABLE RECORDS AND ARE SHOWN TO THE BEST OF OUR ABILITY.

UTILITY CO.	REQUEST DATE	BY	INFO. RECEIVED	PLAN REVISED	BY
AT&T	06/27/2014	BCB	07/16/2014	NO FACILITIES	JSC
COMCAST	06/27/2014	BCB	06/28/2014	OVERHEAD LINES	BCB
WG	06/27/2014	BCB	-	-	-
PEPCO	06/27/2014	BCB	-	-	-
VERIZON	06/27/2014	BCB	07/16/2014	NO FACILITIES	EST
WASH. GAS	06/27/2014	BCB	06/30/2014	07/16/2014	JSC
W.S.S.C.					
SEWER CONTRACT DRAWING			06/27/2014	07/16/2014	JSC
WATER CONTRACT DRAWING			06/27/2014	07/16/2014	JSC
HOUSE-CONNECTION PLUMBING CARDS			06/27/2014	07/16/2014	JSC

MISS UTILITY

FOR LOCATION OF UTILITIES, CALL "MISS UTILITY AT 1-800-257-7777, OR LOG ON TO WWW.MISSUTILITY.NET/TIC/ 48 HOURS IN ADVANCE OF ANY WORK IN THIS VICINITY. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDER GROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES OR THEIR AGENTS BEFORE BEGINNING WORK. ALL EXCAVATION MUST BE IN COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

ROADSIDE TREE REQUIREMENTS

THIS PROPERTY IS LOCATED WITHIN A MONTGOMERY COUNTY INCORPORATED MUNICIPALITY, THEREFORE IT IS NOT SUBJECT TO THE ROADSIDE TREE LAW.

FRONT YARD PARKING AREA COVERAGE

R-60: 35% MAXIMUM

FRONT YARD PARKING AREA: 323.4 SF
FRONT YARD AREA: 3,231.4 SF
COVERAGE: 10.0% (< 35%)

TOPSOIL NOTE

TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH NOTE "STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS".

RELATED REQUIRED PERMITS

June 2014

TO BE COMPLETED BY THE CONSULTANT AND PLACED ON THE FIRST SHEET OF THE SEDIMENT CONTROL/STORMWATER MANAGEMENT PLAN SET FOR ALL PROJECTS.

IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL PERMIT:

TYPE OF PERMIT	REQ'D	NOT REQ'D	PERMIT NUMBER	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS Floodplain District		X			
WATERWAYS/WETLAND(S)		X			
a. Corps of Engineers		X			
b. MDE		X			
c. MDE Water Quality Certification		X			
MDE Dam Safety		X			
DNR Roadside Tree Care Permit		X		Approval Date	
DPS Roadside Tree Protection Plan		X		Approval Date	
N.P.D.E.S. NOTICE OF INTENT		X	N/A	N/A	Date Filed
OTHERS (Please List)					

TREE CANOPY REQUIREMENTS TABLE

To be completed by the owner, architect, landscape architect, or other qualified professional responsible for the preparation of the tree canopy plan.

Exempt: Yes ☐ No ☐ If exempt under Section 59-6 of the Code, please check the applicable exemption category below.

Total Property Area	Total Disturbed Area
12,834.5 S.F. square feet	13,500 S.F. square feet

Shade Trees Required	Shade Trees Proposed to be Planted
0	0

Fee-in-Lieu
(Trees Required - Trees Planted) x $258 = $ 0.00

Required Number of Shade Trees

Area (sq. ft.) of the Limits of Disturbance	Number of Shade Trees Required
1TO 5,000	5
5,001 - 8,000	8
8,001 - 12,000	9
12,001 - 14,999	12
15,000 - 19,999	15

If the square footage of the limits of disturbance is more than 40,000, then the number of shade trees required must be calculated using the following formula:

(Number of Square Feet in Limits of Disturbance ÷ 40,000) × 15

EXEMPTION CATEGORIES:

☐ 59-6.2.1 Any activity that is subject to Article IV of Chapter 22A.
☐ 59-6.2.2 Any construction staging or storage that is associated with an approved exemption listed in Section 5.3 or Chapter 22A.
☐ 59-6.2.3 Any activity conducted by the County Parks Department.
☐ 59-6.2.4 Installation or emergency maintenance of an existing stormwater management facility, including an existing access road, if the person performing the
☐ 59-6.2.5 Any activity conducted on exempt property.
☐ 59-6.2.6 Any stream restoration project if the person performing the work has obtained all necessary permits.
☐ 59-6.2.7 Any activity conducted by the Montgomery County Revenue Authority.
☐ 59-6.2.8 Any utility project conducted under the exemption granted in Section 22A-5(s)(1) of the Code.
☐ 59-6.2.9 Any agricultural activity that is subject to a Forest Conservation Management Agreement approved by the Montgomery County Department of Permitting Services.
☐ 59-6.2.10 Any activity undertaken after December 31, 2009 that is subject to a preliminary forest conservation plan approved before January 1, 2009 and that will remain valid for at least 2 years after that date.

Explanation is required on all exempted parcels.
☐ 59-6.2.1: Any stream restoration project if the person performing the work has obtained all necessary permits.
☐ 59-6.2.2: Installation or cleaning any road to comply with applicable provisions of any ordinance, rule, or road law governing stormwater management.
☐ 59-6.2.3: Roads and Bridges. All of the Code. This property is located within a Montgomery County Incorporated Municipality, therefore it is not subject to the Tree Canopy Law.

0 5 10 15 20 30
GRAPHIC SCALE
1 INCH = 10 FEET

PROFESSIONAL ENGINEER CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19565, EXPIRATION DATE 3/5/2016, AND THAT THIS PLAN MEETS MCDPS CRITERIA FOR BUILDING AND SEDIMENT CONTROL PERMIT APPLICATIONS.

03/31/2015 DATE

Curt A. Schreffler CURT A. SCHREFFLER, PE

STATE OF MARYLAND CURT A. SCHREFFLER No. 19565 PROFESSIONAL ENGINEER

****FOR TOWN OF CHEVY CHASE, SHEET 1 OF 2****

APPLICANT
CHASE BUILDERS
8780 BROOKVILLE ROAD
SILVER SPRING, MARYLAND 20910
(301) 588-4747 PHONE
(301) 588-4757 FAX
ATTN: CARLOS FERNANDES
carlos@chasebuilders.com

ARCHITECT
STUDIO Z DESIGN CONCEPTS
9120 WOODMONT AVE, SUITE 450
BETHESDA, MARYLAND 20814
(301) 951-4191 PHONE
(301) 951-1983 FAX
ATTN: PAUL DAVEY
pauld@studioz.com

REVISED

7402 RIDGEWOOD AVENUE
LOT 30, BLOCK 4
CHEVY CHASE PARK
–TOWN OF CHEVY CHASE–
BUILDING PERMIT SITE PLAN,
STORMWATER MANAGEMENT PLAN,
AND SEDIMENT CONTROL PLAN

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:		NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT.
STORMWATER MANAGEMENT:	SEDIMENT CONTROL TECHNICAL REQUIREMENTS:	ADMINISTRATIVE REQUIREMENTS:
	REVIEWED DATE	REVIEWED DATE
	APPROVED DATE	270295
REVIEWED DATE		SEDIMENT CONTROL PERMIT NUMBER
APPROVED DATE	MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.	
S.M. FILE NO.	DPS approval of a sediment control or stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not create or imply any right to divert or concentrate runoff onto any adjacent property without that property owner's permission. It does not relieve the design engineer or other responsible person of professional liability or ethical responsibility for the adequacy of the drainage design as it affects uphill or downhill properties.	

DATE	BY	REVISION
11/04/14	BDA	INITIAL SUBMITTAL TO MCDPS
12/29/14	BDA	TO MCDPS FOR APPROVAL
01/08/15	BDA	TREE CANOPY TABLE UPDATED - SHEET 1 ONLY
2/2/15	BDA	ZONING REVISIONS - SOUTH SIDE OF HOUSE
3/2/15	BDA	TOWN OF CHEVY CHASE PERMIT SET
3/31/15	BDA	TOWN OF CHEVY CHASE PERMIT SET - TREE # UNIT REVISED

PROJECT 14-211C
DATE 3/2015
ILLUSTRATION BDA
ENGINEERING BDA
SCALE 1" = 10'
APPROVAL CAS

CHEVY CHASE PARK
LOT 30, BLOCK 4
BETHESDA (7TH) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND
BUILDING PERMIT SITE PLAN,
STORMWATER MANAGEMENT PLAN,
AND SEDIMENT CONTROL PLAN
7402 RIDGEWOOD AVENUE, CHEVY CHASE, MD 20815
PLAT NO. 24490

CAS ENGINEERING
Experience you can build on.
108 West Ridgeville Blvd., Suite 101
Mount Airy, Maryland 21771
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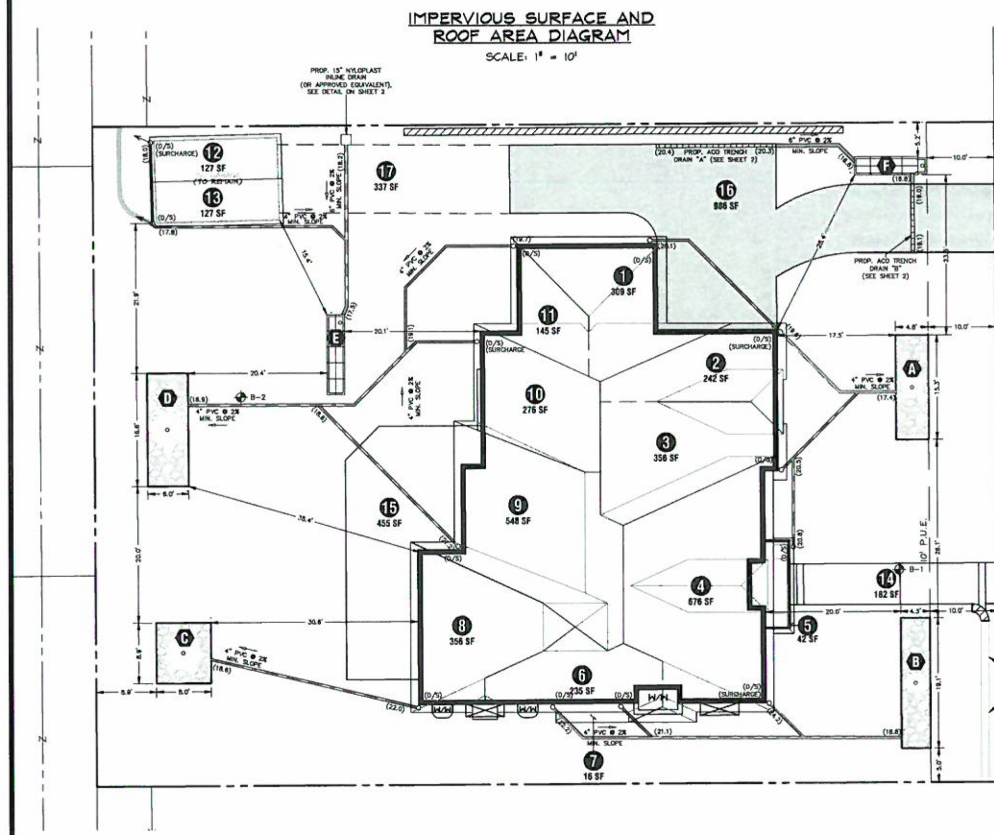
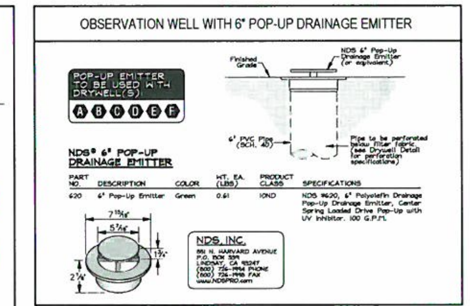




ESD COMPUTATIONS - 7402 RIDGEWOOD AVENUE

TOTAL LOT AREA FOR P_E DETERMINATION	PROPOSED LOT IMPERVIOUS AREA FOR P_E DETERMINATION	LOT IMPERVIOUS AREA PERCENTAGE FOR P_E DETERMINATION	P_E = RAINFALL TARGET APPLY IMPERVIOUS COVER PERCENTAGE TO TABLE 5.3 - SOIL GROUP B	PER SECTION 5.2.3, THE SIZE OF ANY PRACTICE IS LIMITED TO THE RUNOFF FROM THE 1-YR STORM (Q_E)VOLUME = (2.6 in)(R_V)(DA)/12
12,835 S.F.	5,415 S.F.	42.2 %	1.8 IN.	
LOT IS < 40,000 SF, USE TOTAL L.O.D. ON SITE AND IN R/W AREA TO DETERMINE TARGET ESD_V		I = PROPOSED IMPERVIOUS COVER FOR R_V & ESD_V COMPUTATIONS (%)		
13,500 S.F.		42.2		
DETERMINE ESD_V REQUIRED FOR PROPOSED IMPERVIOUS AREAS	P_E = RAINFALL TARGET (from above): 1.8 IN. / R_V = RUNOFF VOLUME 0.05+.009(I): 0.43	TARGET ESD_V = $(P_E)(R_V)(A)/12$ BASED ON LIMIT OF DISTURBANCE	TOTAL SITE ESD VOLUME REQUIRED: 870.8 CF	

DRYWELL STRUCTURE	IMPERVIOUS AREA NO.	DRAINAGE AREA (SQ. FT.)	MIN. ESD (CU. FT.)	SIZE OF DRYWELL (L x W x D) FT	SURFACE AREA (S.F.)	PROVIDED DRYWELL VOLUME	Q_E MAXIMUM VOLUME CHECK (1-YEAR STORM)	VOLUME PROV. VIA DRYWELLS
A ROOF	1	309	135 C.F.	15.3 (LENGTH) 4.8 (WIDTH) 4.8 (DEPTH)	73 S.F.	141 C.F.	195 C.F.	141 C.F.
	2	242						
	3	356						
	5	42						
	TOTAL	949						
B ROOF	4	676	132 C.F.	19.1 (LENGTH) 4.3 (WIDTH) 4.8 (DEPTH)	82 S.F.	158 C.F.	191 C.F.	158 C.F.
	6	235						
	7	16						
	TOTAL	927						
C ROOF	8	356	51 C.F.	8.9 (LENGTH) 8.0 (WIDTH) 5.0 (DEPTH)	71 S.F.	142 C.F.	73 C.F.	142 C.F.
	18	0						
	TOTAL	356						
D ROOF	9	548	138 C.F.	16.6 (LENGTH) 6.0 (WIDTH) 5.0 (DEPTH)	100 S.F.	199 C.F.	199 C.F.	199 C.F.
	10	276						
	11	145						
	TOTAL	969						

ROOFTOP DISCONNECTS	IMPERVIOUS AREA NO.	DRAINAGE AREA (SQ. FT.)	MIN. ESD (CU. FT.)	ROOFTOP DISCONNECT LENGTH (FT.)	P_E PROVIDED BY ROOFTOP DISCONNECT (IN.)	ESD_V PROVIDED BY ROOFTOP DISCONNECT	Q_E VOLUME CHECK	VOLUME PROV. VIA ROOFTOP DISCONNECT
	13	127	18 C.F.	15 FEET	0.2 IN	2.0 C.F.	26 C.F.	2.0 C.F.
	TOTAL	127						

NOT TREATED	12	127	0.00	NOT ABLE TO BE TREATED
	14	182		
	15	455		
	16	985		
	17	337		
	TOTAL	2,087		

TOTAL SITE IMPERVIOUS AREA 5,415 S.F.	ESD_V PROVIDED BY DRYWELLS	ESD_V PROVIDED BY DISCONNECTS	
TOTAL ESD_V PROVIDED	640.29 C.F.	2.0 C.F.	
IS ESD_V ADEQUATE	642.31 C.F. ★	870.8 C.F.	ESDv TO THE M.E.P.
IS P_E ADEQUATE	1.33 IN ★	1.80 IN	ESDv TO THE M.E.P.

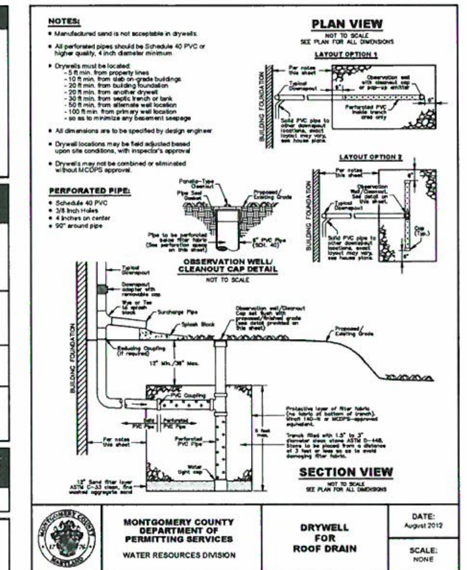
★ ESD volume has been provided to the Maximum Extent Practicable (M.E.P.) through the use of disconnects and gravel drywells.

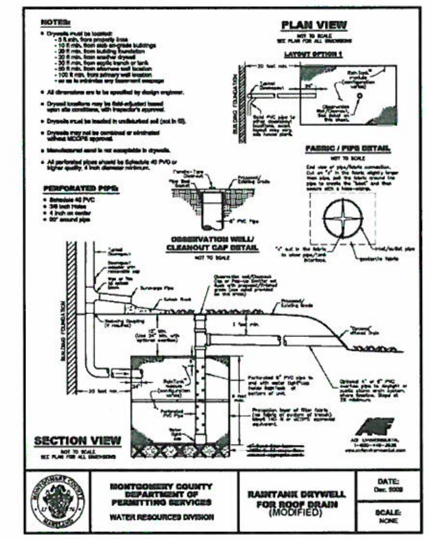
The use of other Environmental Site Design (E.S.D.) practices, specifically landscape infiltration, was explored but is not feasible due to the limited feasible locations in regards to grading and the proximity of proposed devices to the subject building, property lines, utilites and retaining walls. Additionally, permeable pavers are not feasible due to slopes greater than 6% and the proximity to the subject building, retaining walls, etc.

For the reasons noted above we have not been able to provide a Pe of 1.8". We hereby request a stormwater management quantity waiver. All appropriate fees will be paid at the time of sediment control permit issuance.

GRAVEL DRYWELL SCHEDULE - 7402 RIDGEWOOD AVENUE

DRYWELL STRUCTURE (GRAVEL)	FINISHED GRADE (LOW SIDE)	FINISHED GRADE (HIGH SIDE)	ELEVATION AT TOP OF GRAVEL (1'-3' cover)	PIPE INVERT IN FROM DOWNSPOUTS	TOTAL DEPTH OF GRAVEL (4' max. depth)	ELEVATION AT BOTTOM OF GRAVEL	TOTAL DEPTH OF SAND	ELEVATION AT BOTTOM OF SAND	TOTAL DEPTH OF DRYWELL (gravel + sand, 5' max. depth)	TOTAL DEPTH OF DRYWELL FROM GRADE (8' max. depth)	RECOMMENDED OVERFLOW
A	320.4	320.8	318.4	317.4	3.8 ft	314.6	1.0 ft	313.6	4.8 ft	7.2 ft	POP UP EMITTER AT DRYWELL CLEANOUTS AND A SURCHARGE PIPE AT THE LOWEST DOWNSPOUT PER DRYWELL
B	321.8	322.7	319.8	318.8	3.8 ft	316.0	1.0 ft	315.0	4.8 ft	7.7 ft	
C	321.6	322.2	319.6	318.6	4.0 ft	315.6	1.0 ft	314.6	5.0 ft	7.6 ft	
D	319.9	320.3	317.9	316.9	4.0 ft	313.9	1.0 ft	312.9	5.0 ft	7.4 ft	





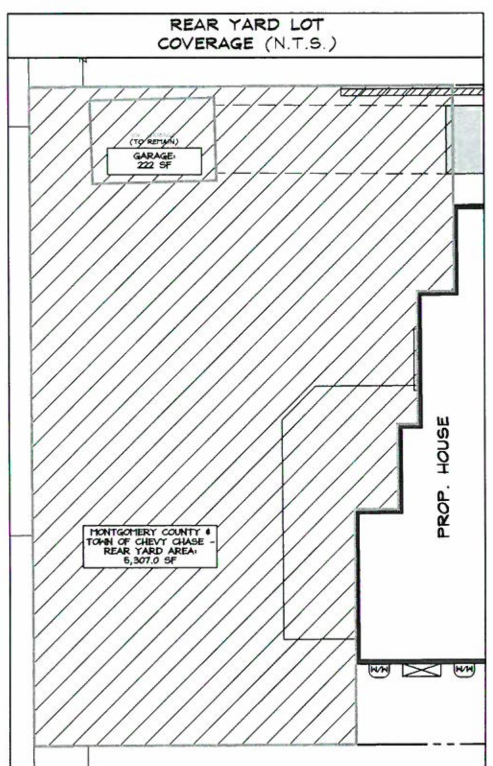
SAND SPECIFICATIONS

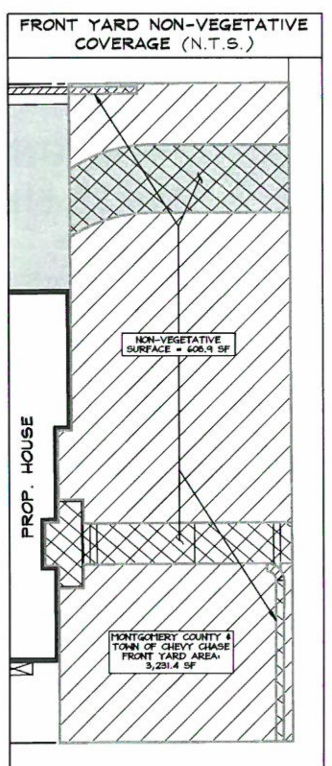
WASHED ASTM C33 FINE AGGREGATE CONCRETE SAND IS UTILIZED FOR STORMWATER MANAGEMENT APPLICATIONS IN MONTGOMERY COUNTY. IN ADDITION TO THE ASTM C33 SPECIFICATION, SAND MUST MEET ALL OF THE FOLLOWING CONDITIONS:

1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also acceptable.
2. Sand must be silica-based...no limestone based products may be used. If the material is white or gray in color, it is probably not acceptable.
3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has become contaminated by improper storage or installation practices will be rejected.
4. Manufactured sand or stone dust is not acceptable under any circumstance.

STORM DRAIN NOTES

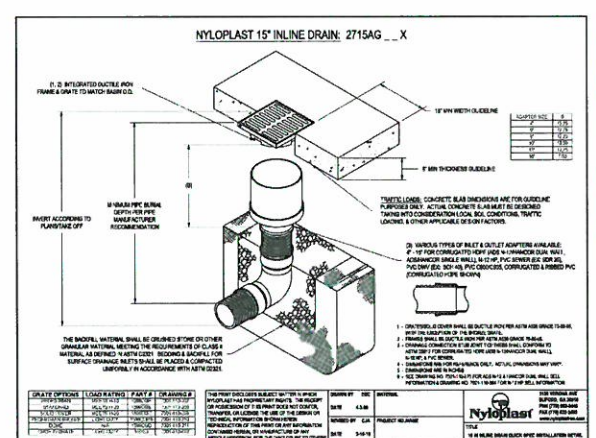
1. ALL STORM DRAIN PIPE TO BE SCHEDULE 40 PVC OR OF HIGHER QUALITY (I.E. CAST IRON).
2. DOWNSPOUT LEADERS ORIGINATING DIRECTLY FROM DOWNSPOUTS TO BE 4" DIA PVC, UNLESS NOTED OTHERWISE.
3. PROVIDE CLEANOUTS, AS SHOWN ON PLAN AT A MINIMUM, OR AS REQUIRED BY PLUMBING CODE.
4. MAINTAIN MINIMUM 12" COVER OVER ALL PIPE. PIPE SLOPE TO BE 2% MINIMUM.
5. ALL STORM DRAIN UNDER DRIVEWAY OR PAVED AREAS TO BE BEDDED IN GRAVEL AND TO HAVE A MINIMUM OF 12" OF COVER, OR BE CAST IRON.
6. ALL GUTTERS TO BE EQUIPPED WITH GUTTER DRAIN FILTERS (OR EQUIVALENT) TO PREVENT LEAVES FROM ENTERING THE STORMWATER MANAGEMENT SYSTEMS.
7. SUMP PUMP DISCHARGE TO BE LOCATED SO AS TO AVOID IMPACT TO THE NEIGHBORING PROPERTIES AND TO AVOID RECIRCULATION OF WATER.
8. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT.

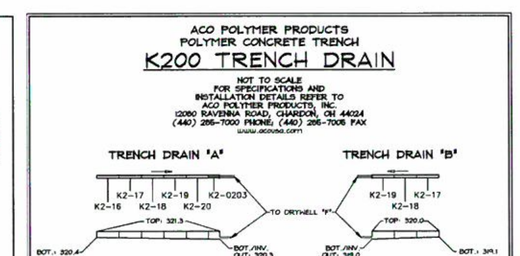




RAINTANK™ DRYWELL SCHEDULE - 7402 RIDGEWOOD AVENUE

DRYWELL STRUCTURE (RAINTANK)	FINISHED GRADE (LOW SIDE)	FINISHED GRADE (HIGH SIDE)	ELEVATION AT TOP OF RAINTANK (1'-3' cover)	PIPE INVERT IN FROM DOWNSPOUTS	ELEVATION AT BOTTOM OF RAINTANK (TRIPLE)	TOTAL DEPTH OF DRYWELL FROM GRADE	# OF RAINTANKS (TRIPLE)	RECOMMENDED OVERFLOW
E	320.4	321.7	317.9	316.9	313.7	6.7 ft	10	POP UP EMITTER AT DRYWELL CLEANOUTS AND A SURCHARGE PIPE AT THE LOWEST DOWNSPOUT PER DRYWELL
F	319.5	320.2	317.5	316.8	313.3	6.2 ft	9	





FOR TOWN OF CHEVY CHASE, SHEET 2 OF 2

APPLICANT
CHASE BUILDERS
8750 BROOKVILLE ROAD
SILVER SPRING, MARYLAND 20910
(301) 588-4747 PHONE
(301) 588-4757 FAX
ATTN: CARLOS FERNANDES
carlos@chasebuilders.com

ARCHITECT
STUDIO Z DESIGN CONCEPTS
8120 WOODMONT AVE, SUITE 950
BETHESDA, MARYLAND 20814
(301) 951-4391 PHONE
(301) 951-1913 FAX
ATTN: PAUL DAVEY
pauld@studiozdc.com

7402 RIDGEWOOD AVENUE
LOT 30, BLOCK 4
CHEVY CHASE PARK
–TOWN OF CHEVY CHASE–
BUILDING PERMIT SITE PLAN,
STORMWATER MANAGEMENT PLAN,
AND SEDIMENT CONTROL PLAN

PROFESSIONAL ENGINEER CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19568, EXPIRATION DATE 3/8/2016, AND THAT THIS PLAN MEETS MCDPS CRITERIA FOR BUILDING AND SEDIMENT CONTROL PERMIT APPLICATIONS.

03/31/2015 — DATE
CURT A. SCHREFFLER, PE

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT.

STORMWATER MANAGEMENT: REVIEWED / DATE; APPROVED / DATE; S.M. FILE NO.

SEDIMENT CONTROL TECHNICAL REQUIREMENTS: REVIEWED / DATE; APPROVED / DATE

ADMINISTRATIVE REQUIREMENTS: REVIEWED / DATE

270295
SEDIMENT CONTROL PERMIT NUMBER

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.

DPS approval of a sediment control or stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not create or imply any right to divert or concentrate runoff onto any adjacent property without that property owner's permission. It does not relieve the design engineer or other responsible person of professional liability or ethical responsibility for the adequacy of the drainage design as it affects uphill or downhill properties.

7402 RIDGEWOOD AVENUE, CHEVY CHASE, MD 20815
LOT 30, BLOCK 4
CHEVY CHASE PARK
BETHESDA (7TH) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND
BUILDING PERMIT SITE PLAN, STORMWATER MANAGEMENT PLAN, AND SEDIMENT CONTROL PLAN

PROJECT 14-211C; DATE 3/2015; ENGINEERING BDA; ILLUSTRATION BDA; APPROVAL CAS; SCALE 1" = 10'

CAS ENGINEERING
108 West Ridgeville Blvd., Suite 101
Mount Airy, Maryland 21771

STANDARD EROSION AND SEDIMENT CONTROL NOTES

MAY 2013

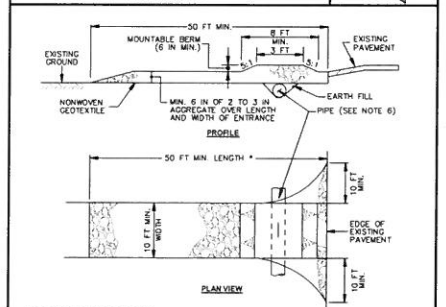
1. THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY-EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.
2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:
   - A. AT THE REQUIRED PRE-CONSTRUCTION MEETING.
   - B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
   - C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
   - D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
   - E. PRIOR TO FINAL ACCEPTANCE.
3. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.
4. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.
5. THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.
6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
   - A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
   - B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

   ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.
8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.
9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SC/SM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.
10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.
12. SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON- MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
14. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.
15. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.
16. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20 FEET OF A SEDIMENT TRAP OR BASIN.
17. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.
18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.
19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.
20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO THE POINT OF ONE-HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST-III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.
22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.
23. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THE TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
24. NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.
25. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.
26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:
   - A. PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON-SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS OF SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR
   - B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR
   - C. THE PUMP INTAKE MAY BE FLOATED AND DISCHARGE INTO A DIRT BAG (12 OZ. NON-WOVEN FABRIC), OR APPROVED EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.

   REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.
27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.
28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE "STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS".

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



PLAN VIEW

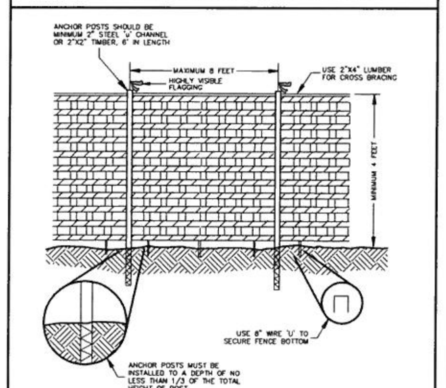
CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY BLAZE-ORANGE CONSTRUCTION FENCE

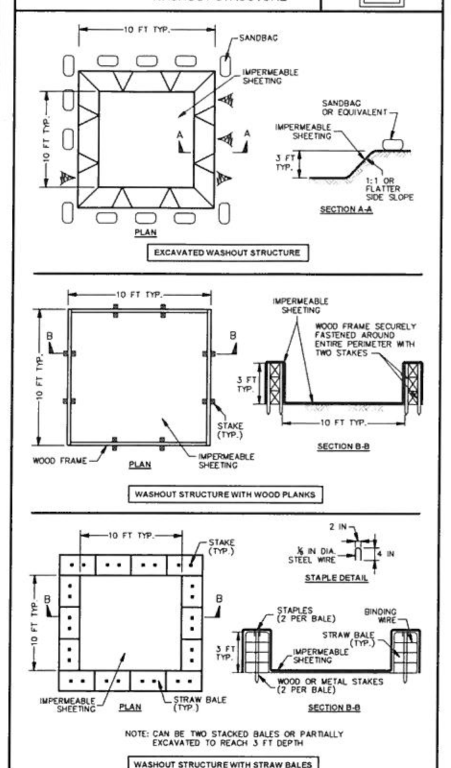


NOTES

1. FOREST PROTECTION DEVICE ONLY.
2. FOREST AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE IS REQUIRED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
7. TEMPORARY FENCE RECEIVES THE TEMPORARY SIGNAGE.

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



EXCAVATED WASHOUT STRUCTURE

WASHOUT STRUCTURE WITH WOOD PLANKS

NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

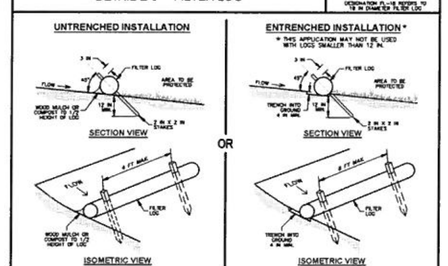
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18 (DESIGNATION FL-18 REFERS TO 18 IN DIAMETER FILTER LOG)

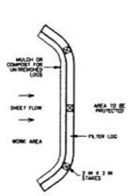
UNTRENCHED INSTALLATION — OR — ENTRENCHED INSTALLATION*

* THIS APPLICATION MAY NOT BE USED WITH LOGS SMALLER THAN 12 IN.



CONSTRUCTION SPECIFICATIONS

1. Prior to installation, clear all obstructions including rocks, clods, and debris greater than one inch that may interfere with proper function of filter log.
2. Fill log netting uniformly with compost (in accordance with section H-1 materials), or other approved biodegradable material to desired length such that logs do not deform.
3. Install filter logs perpendicular to the flow direction and parallel to the slope with the beginning and end of the installation pointing slightly up the slope creating a "J" shape at each end to prevent bypass.
4. For untrenched installation blow or hand place mulch or compost on uphill side of the slope along log.
5. Stake filter log every 4 feet or closer along entire length of log or trench log into ground a minimum of 4 inches and stake log every 8 feet or closer.
6. Use stakes with a minimum nominal cross section of 2x2 inch and of sufficient length to attain a minimum of 12 inches into the ground and 3 inches protruding above log.
7. When more than one log is needed, overlap ends 12 inches minimum and stake.
8. Remove sediment when it has accumulated to a depth of 1/2 the exposed height of log and replace mulch. Replace filter log if torn. Reinstall filter log if undermining or dislodging occurs. Replace clogged filter logs. For permanent applications, establish and continuously meet requirements for adequate vegetative establishment in accordance with section B-4 vegetative stabilization.



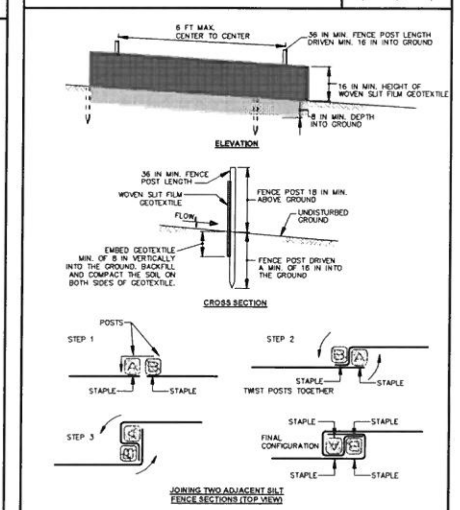
PLAN VIEW

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DESIGN CERTIFICATION

I hereby certify that this plan has been prepared in accordance with the "2011 Maryland Standards and Specification for Soil Erosion and Sediment Control," Montgomery County Department of Permitting Services Executive Regulations 5-90, 7-02AM and 36-90, and Montgomery County Department of Public Works and Transportation "Storm Drain Design Criteria" dated August 1988.

Curt A. Schreffler — 03/23/2015
DESIGN ENGINEER SIGNATURE — DATE
CURT A. SCHREFFLER, P.E. — No. 19568
PRINTED NAME AND TITLE — REGISTRATION NUMBER

CERTIFICATION OF THE QUANTITIES

I hereby certify that the estimated total amount of excavation and fill as shown on these plans has been computed to 550 cubic yards of excavation, 25 cubic yards of fill and the total area to be disturbed as shown on these plans has been determined to be 13,500 square feet.

Curt A. Schreffler — 03/23/2015
DESIGN ENGINEER SIGNATURE — DATE
CURT A. SCHREFFLER, P.E. — No. 19568
PRINTED NAME AND TITLE — REGISTRATION NUMBER

OWNER/DEVELOPER CERTIFICATION

I/We hereby certify that all clearing, grading, construction, and or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project.

SIGNATURE — DATE

CHASE BUILDERS
ATTN: JULIO FERNANDES
8750 BROOKVILLE ROAD
SILVER SPRING, MD 20910
(301) 588-4747

APPLICANT
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paul@studiozdc.com

7402 RIDGEWOOD AVENUE
LOT 30, BLOCK 4
CHEVY CHASE PARK
—TOWN OF CHEVY CHASE—
BUILDING PERMIT SITE PLAN,
STORMWATER MANAGEMENT PLAN,
AND SEDIMENT CONTROL PLAN

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:		NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED FOR A MCDPS ACCESS PERMIT.
STORMWATER MANAGEMENT:	SEDIMENT CONTROL TECHNICAL REQUIREMENTS:	ADMINISTRATIVE REQUIREMENTS:
REVIEWED / DATE	REVIEWED / DATE	REVIEWED / DATE
APPROVED / DATE	APPROVED / DATE	270295 SEDIMENT CONTROL PERMIT NUMBER
S.M. FILE NO.	MCDPS APPROVAL OF THIS PLAN WILL EXPIRE TWO YEARS FROM THE DATE OF APPROVAL IF THE PROJECT HAS NOT STARTED.	

DPS approval of a sediment control or stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not create or imply any right to divert or concentrate runoff onto any adjacent property without that property owner's permission. It does not relieve the design engineer or other responsible person of professional liability or ethical responsibility for the adequacy of the drainage design as it affects uphill or downhill properties.

7402 RIDGEWOOD AVENUE, CHEVY CHASE, MD 20815
LOT 30, BLOCK 4
PLAT NO. 24900

CHEVY CHASE PARK
BETHESDA (7TH) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND
BUILDING PERMIT SITE PLAN, STORMWATER MANAGEMENT PLAN, AND SEDIMENT CONTROL PLAN

DATE	BY	REVISION
11/26/14	BDA	INITIAL SUBMITTAL TO MCDPS
12/23/14	BDA	TO MCDPS FOR APPROVAL
	BDA	TREE CANOPY TABLE UPDATED - SHEET 1 ONLY
	BDA	ZONING REVISIONS - SOUTH SIDE OF HOUSE
	BDA	TOWN OF CHEVY CHASE PERMIT SET
	BDA	TOWN OF CHEVY CHASE PERMIT SET - TREE & SWM REVISED

PROJECT 14-211C | DATE 3/2015 | ENGINEERING BDA | APPROVAL CAS | SCALE 1"=10'

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