Percent Impervious Cover for Project in the Chesapeake Bay Watershed

Structure Type	Length			Width			Area	
House	46	feet	X	26	feet	=	1196	square ft
Garage	26	feet	X	12	feet	=	312	square ft
Covered Porch	10	feet	X	5	feet	=	50	square ft
Patio	12	feet	X	12	feet	=	144	square ft
Deck	10	feet	X	10	feet	=	100	square ft
Shed/Other Buidings	10	feet	X	10	feet	=	100	square ft
Driveway	40	feet	X	10	feet	=	400	square ft
Other - House sidewalk	40	feet	X	4	feet	=	160	square ft
Total Impervious Area (in s.f.)							2463	square ft
Total Lot Size from Plat (acre or s.f.)							50.2	acres
Total Area to be cleared or disturbed for this project							**33.4**	**acres**

Chesapeake Bay Protection Act

Nutrient Reduction Calculations

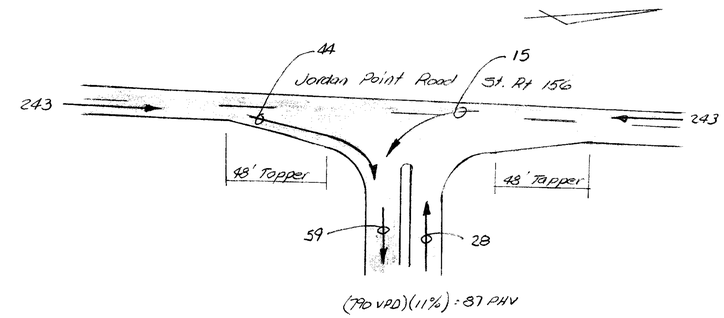
Sections	Homes Imp Acres	Road/SW Imp Acres	Total Imp	Accumulative Acreage	% Impervious	Comments
1	1.07	1.22	2.29	16.8	13.60%	Low Density Development
2	1.02	0.81	1.83	11.4	16.10%	BMD Required
3	1.07	0.99	2.06	8.3	24.80%	1.6 Acre Extended
4	1.36	1.03	2.39	13.7	17.50%	Retention Basin w/ 50% reduction
			Total	50.2	17.07%	

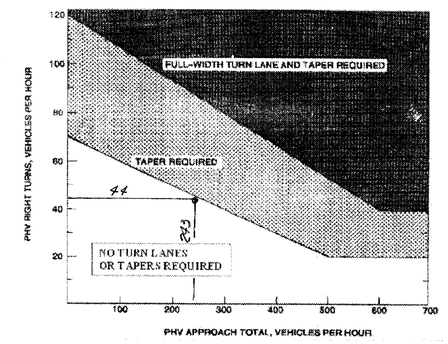
- Regulatory Allowance Phosphorus Release - $(45)(0.9)[0.05+(0.009)16](0.26)(50.2)(2.72)/12 = 23.25$ lbs/yr
- Developed P_h Release - $(45)(0.9)[0.05+(0.009)17.07](0.26)(50.2)(2.72)/12 = 24.32$ lbs/yr
- BMP Drain Area Release - $(45)(0.9)[0.05+(0.009)18.80](0.26)(17.86)(2.72)/12 = 9.34$ lbs/yr

Required P_h Reduction 24.32 lbs/yr - 23.25 lbs/yr = 1.07 lbs/yr
Provided BMP P_h Reduction (9.34 lbs/yr)(50%) = 4.67 lbs/yr } 436%

Required Basin - 4 × WQV = (4)(0.5")(17.86Ac)(43,560)/12 = 129,663 CF
Provided Basin 196,000 CF } 151%

Note: Basin Sizing Base on "Retention Basin II" per Virginia Stormwater Management Handbook for the Basin Design.





Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300:
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

FIGURE 3-23 GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

Left Turn Lane Calculations

year	AADT	K	D
2008	4300	.098	0.563
2009	4200	.098	0.563
2010	4400	.098	0.563
2011	4700	.092	0.56

AADT × K × D = PHV
(4700)(0.092)(0.563) = 243

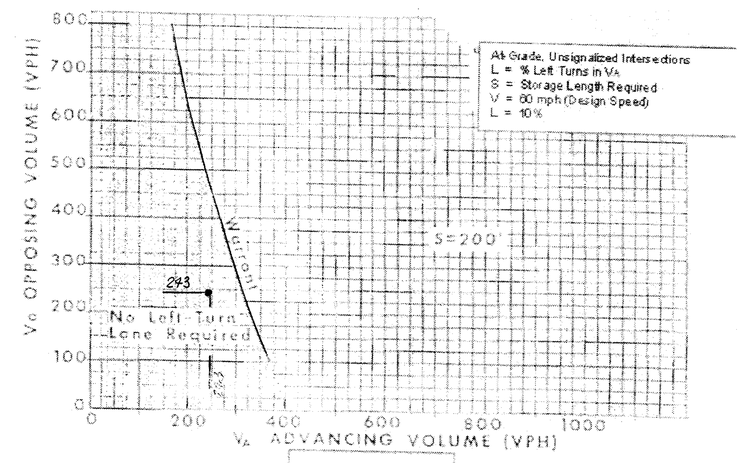


FIGURE 3-17

REVISIONS	BY
10-7-13	
12-4-13	
2-3-14	
4-24-14	

Architectural Graphics
6676 LAKESHORE DRIVE
QUINTON, VIRGINIA 23141
804-551-6944

CBPA AND TRAFFIC CALCULATIONS
EAGLE PRESERVE
AT JORDAN ON THR JAMES

SEAL
COMMONWEALTH OF VIRGINIA
Walter M. Altman III
WALTER M. ALTMAN III
No. 11039
4/24/14
PROFESSIONAL ENGINEER

DRAWN : PBM	CHECKED : WMA
DATE : 8-14-13	
SCALE : AS NOTED	
JOB NO. :	
SHEET C24	
OF 35 SHEETS	