APPLICATION ACCEPTED: October 19, 2010
BOARD OF ZONING APPEALS: March 2, 2011
MOVED AT APPLICANT'S REQUEST
TIME: 9:00 a.m.

County of Fairfax, Virginia

February 9, 2011

STAFF REPORT **WSPOD**

SPECIAL PERMIT AMENDMENT APPLICATION SPA 78-SP-192-03

SPRINGFIELD DISTRICT

APPLICANT:	Greenbriar Civic Association and New Hope Fellowship Church
ZONING:	R-3, WS
LOCATION:	4615 Stringfellow Road
ZONING ORDINANCE PROVISION:	8-401
TAX MAP:	45-3 ((1)) 11
LOT SIZE:	1.52 acres
PLAN MAP:	Residential, 2 to 3 du/ac
SP PROPOSAL:	To amend SP 78-SP-192, previously approved for a community center and church, to permit an increase in parking and site modifications.

STAFF RECOMMENDATION:

Staff recommends approval of SPA 78-P-192-03 subject to the proposed development conditions contained in Appendix 2.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

Bob H. Katai

Department of Planning and Zoning
Zoning Evaluation Division
12055 Government Center Parkway, Suite 801
Fairfax, Virginia 22035-5509
Phone 703-324-1290 FAX 703-324-3924
www.fairfaxcounty.gov/dpz/

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Board of Zoning Appeals. A copy of the BZA's Resolution setting forth this decision will be mailed within five (5) days after the decision becomes final.

The approval of this special permit does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

For additional information, call Zoning Evaluation Division, Department of Planning and Zoning at 324-1280, 12055 Government Center Parkway, Suite 801, Fairfax, Virginia 22035. **Board of Zoning Appeals' meetings are held in the Board Room, Ground Level, Government Center Building, 12000 Government Center Parkway, Fairfax, Virginia 22035-5505.**

O:\\BKATAI\Pleast Valley Preschl SE 2010-SP-029 & Greenbrier Com Ctr SPA 78-SP-192-03\SP Cover for Greenbrier Community Center.doc

Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 7 days advance notice. For additional information on ADA call (703) 324-1334 or TTY 711 (Virginia Relay Center).

APPLICATION ACCEPTED: October 19, 2010
PLANNING COMMISSION: February 24, 2011
BOARD OF SUPERVISORS: March 8, 2011 @ 3:30 p.m.

County of Fairfax, Virginia

February 9, 2011

STAFF REPORT **WSPOD**

SPECIAL EXCEPTION APPLICATION SE 2010-SP-029

SPRINGFIELD DISTRICT

APPLICANT:	Pleasant Valley Preschool, Inc.
ZONING:	R-3, WS
PARCEL(S):	45-3 ((1)) 11
ACREAGE:	1.52 acres
FAR:	0.045
OPEN SPACE:	95%
PLAN MAP:	Residential, 2-3 du/ac
SE CATEGORY:	Category 3, Quasi-Public Uses
PROPOSAL:	To approve a special exception for a nursery school to permit an increase in parking on the Greenbriar Community Center site. In accordance with current zoning provisions, this special exception will replace the nursery school's previously approved special permit, S-80-S-053.

STAFF RECOMMENDATIONS:

Staff recommends approval of SE 2010-SP-029 subject to the proposed development conditions in Appendix 1.

Bob H. Katai

Department of Planning and Zoning
Zoning Evaluation Division
12055 Government Center Parkway, Suite 801
Fairfax, Virginia 22035-5509
Phone 703-324-1290 FAX 703-324-3924
www.fairfaxcounty.gov/dpz/

Staff recommends approval of modification of the transitional screening requirements and waiver of the barrier requirements in favor of the landscaping shown on the SE plat.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendation of staff; it does not reflect the position of the Board of Supervisors.

The approval of this application does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

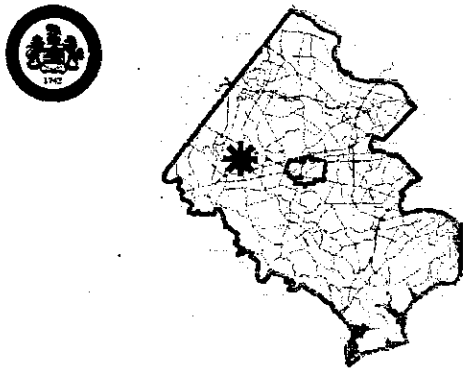
For information, contact the Zoning Evaluation Division, Department of Planning and Zoning, 12055 Government Center Parkway, Suite 801, Fairfax, Virginia 22035-5505, (703) 324-1290.

O:\\BKATAI\Pleast Valley Preschl SE 2010-SP-029 & Greenbrier Com Ctr SPA 78-SP-192-03\SE Cover for Pleasant Valley Pre-School.doc

Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 7 days advance notice. For additional information on ADA call (703) 324-1334 or TTY 711 (Virginia Relay Center).

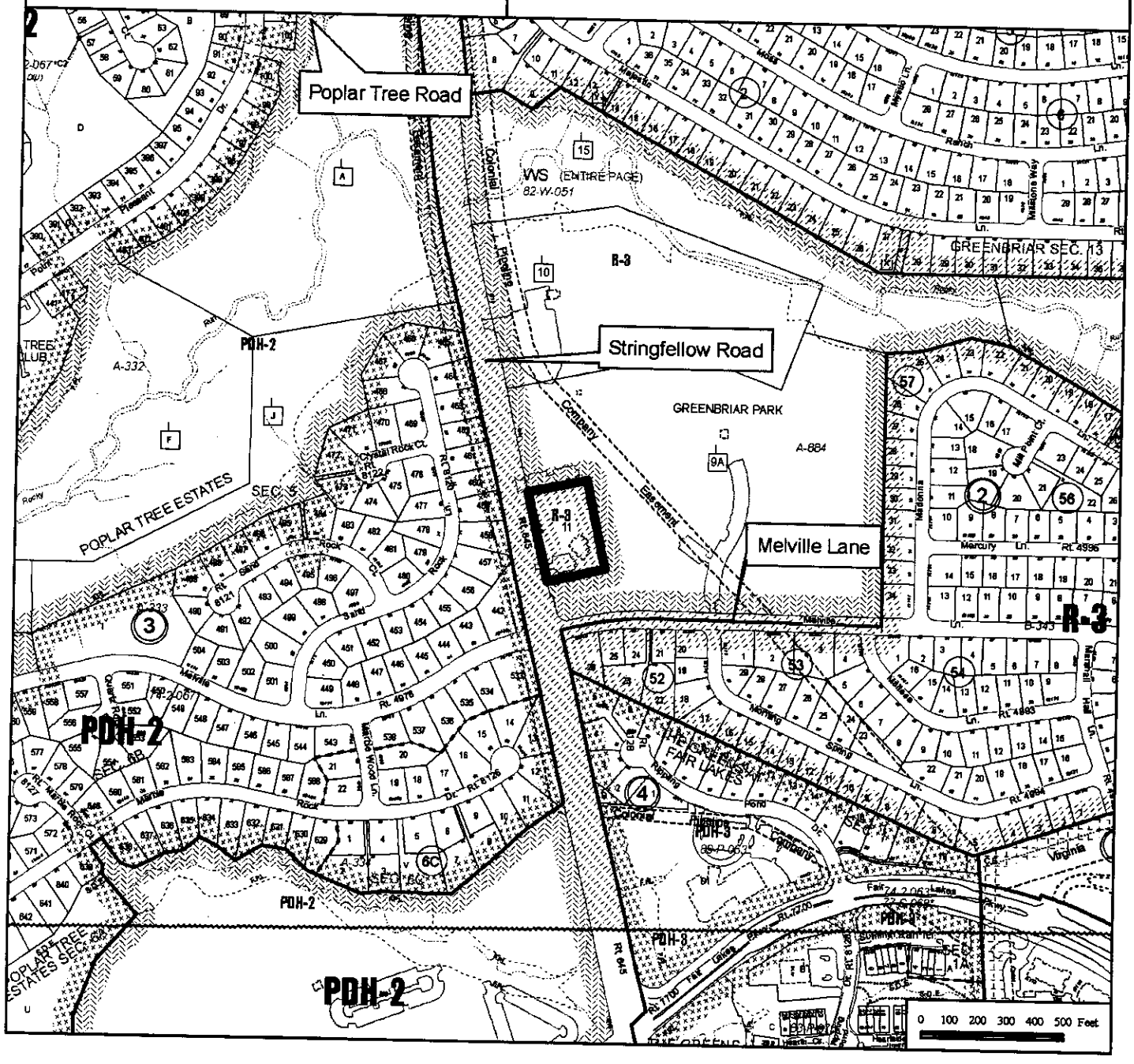
Special Exception

SE 2010-SP-029



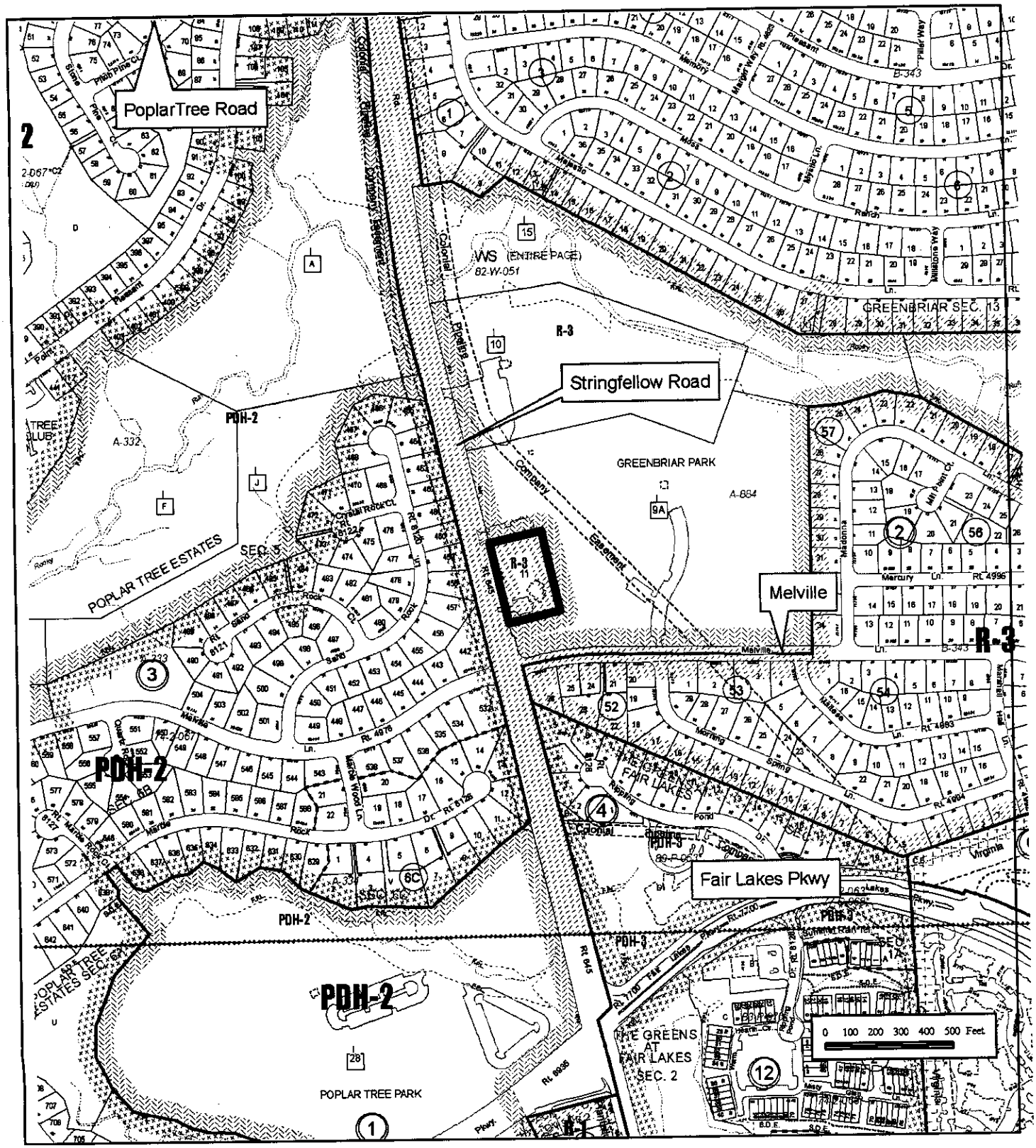
Applicant:	PLEASANT VALLEY PRESCHOOL, INC
Accepted:	10/19/2010
Proposed:	NURSERY SCHOOL
Area:	1.52 AC OF LAND; DISTRICT - SPRINGFIELD

Zoning Dist Sect:	03-0304
Art 9 Group and Use:	3-10
Located:	4615 STRINGFELLOW ROAD
Zoning:	R- 3
Plan Area:	3,
Overlay Dist:	WS
Map Ref Num:	045-3- /01/ /0011



Special Permit Amendment

SPA 78-P-192-03



VICINITY MAP

SCALE: 1" =500'

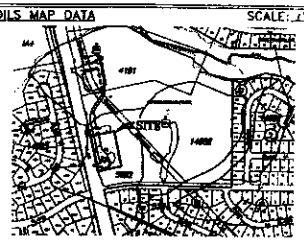
SIDEWALK MAINTENANCE: XXXX-VDOT, 0000-FFX CO
TRAIL MAINTENANCE: 0000-FFX CO
ALL OTHER WALKS/TRAILS TO BE OWNER MAINTAINED

TAX MAP REFERENCE NUMBER(S)

MAP PAGE #	DOUBLE CIRCLE #	BLOCK (SINGLE CIRCLE #)	LOT/PARCEL(S) #
45 - 3	1		11

SOILS MAP DATA

SCALE: 1" =500'



FORMAL SOILS REPORT TO BE APPROVED PRIOR TO SECOND SUBMISSION
SOILS MAP SOURCE: ☒ COUNTY MAP; ☐ PRIVATE SOILS SCIENTIST (FOR UNMAPPED SITES)

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	PROBLEM CLASS
5182	BEDELL - MECKLENBURG	MARGINAL-POOR	MARGINAL-GOOD	2-7%	MODERATE	A

SOILS WITH IDENTIFICATION NUMBERS 58, 86, 89, 141, 142, AND 152 MAY OVERLIE PARENT BEDROCK FORMATIONS WHICH HAVE BEEN FOUND TO CONTAIN NATURALLY OCCURRING ASBESTOS MINERALS. SPECIAL MINIMUM CONSTRUCTION MEASURES AND PRECAUTIONS ARE REQUIRED IN COMPLIANCE WITH HEALTH DEPARTMENT DIRECTIVES WITHIN THESE SOILS OR WITHIN FILL ORIGINATING FROM THESE SOILS.

TABULATIONS

SITE AREA

EXISTING	= 1.52 ACRES (66,150 SF)
PROPOSED	= 1.52 ACRES (66,150 SF)
(NO RIGHT-OF-WAY DEDICATION IS REQUIRED)	
MAXIMUM GROSS FLOOR AREA (0.25 FAR)	= 16537 SF
EXISTING GROSS FLOOR AREA (0.06 FAR)	= 3162 SF (PER ASSESSMENTS)
MAXIMUM BUILDING HEIGHT	= 60 FEET
EXISTING MAX. BUILDING HEIGHT	= 22 FEET

PARKING TABULATION

EXISTING PARKING	= 68 SPACES (62 OFFSITE* + 14 SPACES ONSITE)
PROPOSED PARKING	= 81 SPACES (53 OFFSITE* + 28 SPACES ONSITE) (2 SPACES SHALL BE ACCESSIBLE SPACES)

* A SHARED PARKING AGREEMENT DATED MARCH 16, 1987 WAS APPROVED BY THE BOARD OF SUPERVISORS ON JANUARY 10, 2002. THE AGREEMENT WAS REVISED TO ALLOW UP TO 62 PARKING SPACES TO BE USED BY THE GREENBRIAR CIVIC ASSOCIATION

REQUIRED PARKING	= 91 SPACES
- CIVIC ASSOCIATION	= 33 SPACES (1SP / 3 - OCCUPANCY OF 98) *
- CHURCH	= 25 SPACES (1 SP / 4 SEATS - 100 SEATS) *
- NURSERY SCHOOL	= 3 SPACES (0.18 PER CHILD - 16 CHILDREN)

MINIMUM YARDS

- FRONT	= 30' MIN (100 DEG ARP (<30'), BUT NOT <30')
- SIDE	= 10' MIN ((35 DEG ARP (<10'), BUT NOT <10'))
- REAR	= 25' MIN ((35 DEG ARP (<25'), BUT NOT <25'))

* CIVIC ASSOCIATION (COMMUNITY CENTER) AND CHURCH PER SEPARATE SPECIAL PERMIT

SWM/BMP NARRATIVE FOR SPECIAL EXCEPTION

THE CONSTRUCTION OF NEW PARKING IMPROVEMENTS AS SHOWN ON THESE SHEETS SHALL BE PERFORMED UNDER THE DIRECTION OF THE FAIRFAX COUNTY PARK AUTHORITY IN A JOINT PROJECT WITH THE GREENBRIAR COMMUNITY CENTER. A PLAN UNDER ARTICLE 17 OF THE Z.O. TO CONSTRUCT THESE IMPROVEMENTS IS BEING REVIEWED EITHER CONCURRENTLY OR FOLLOWING THE APPROVAL OF THIS SPECIAL EXCEPTION. ACCORDINGLY, SWM/BMP'S SHALL BE PROVIDED FOR THE ENTIRE JOINT PROJECT. STORMWATER MANAGEMENT MAY BE PROVIDED VIA UNDERGROUND RETENTION AND BMP'S MAY BE NOT INCLUDE A COMBINATION OF OPEN SPACE, POROUS PAVEMENT AND/OR VEGETATED SWALE IF NOT WAIVED BY SPWES. SPECIFICALLY, THE COMMUNITY CENTER SHALL PROVIDE OPEN SPACE TO BE MAINTAINED IN CONSERVATION EASEMENTS. NOTE THAT THE INFORMATION ON SHEET 5 IS NOT YET FORMALLY APPROVED (ARTICLE 17) AND IS SUBJECT TO THE REVIEW OF SUBSEQUENT PLANS. HENCE, THESE SHEETS HAVE BEEN LABELED "FOR INFORMATION ONLY".

LANDSCAPING NOTE:

THE FOLLOWING IS A LIST OF PREFERRED SPECIES OF PLANTS TO BE UTILIZED. THIS IS A LIST OF PREFERENCES, BUT THE FINAL PLANT SELECTION SHALL NOT BE LIMITED TO THIS LIST. ALL FINAL PLANT SELECTIONS SHOWN ON THE SITE PLAN SHALL BE SUBJECT TO APPROVAL BY FAIRFAX COUNTY.

CATEGORY II TREES – AMUR MAPLE & KOUSA DOGWOOD

CATEGORY III / IV TREES – WILLOW OAK, GINKGO, BLACK GUM & YOSHINO CHERRY

EVERGREEN SHRUBS – INKBERRY HOLLY, SCHIPKAENSIS CHERRY LAUREL, GLOSSY ABELIA, ARROWWOOD VIBURNUM

NOTES

1) THE CURRENT ZONING IS R-3C (WSPOD)

2) THIS SITE IS LOCATED ON FAIRFAX COUNTY TAX MAP 45-3 ((1)) PARCEL 11

3) THE CURRENT OWNER IS THE GREENBRIAR CIVIC ASSOCIATION

4) THE PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.

5) THE TOPOGRAPHY IS A RESULT OF A FIELD RUN SURVEY BY RINKER DESIGN ASSOCIATES, PC. (CONTOUR INTERVAL - 2' / U.S.G.S. DATUM)

6) THERE IS NO KNOWN RPA, FLOODPLAIN OR EQC FOUND ONSITE

7) THERE ARE NO KNOWN EXISTING UTILITY EASEMENTS WITH A WIDTH OF 25' FEET OR MORE ONSITE

8) TRAIL NOTE: A 10' WIDE CONCRETE WALKWAY SHALL BE PROVIDED AS PROPOSED WITH THE WIDENING OF STRINGFELLOW ROAD AS IS SHOWN ON SHEET 3

9) TO THE BEST OF THE KNOWLEDGE OF THE FIRM PREPARING THIS PLAT, THERE ARE NO KNOWN GRAVES, OBJECTS OR STRUCTURES MARKING A PLACE OF BURIAL FOUND ONSITE.

WAIVER REQUESTED

1) THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS WERE PREVIOUSLY WAIVED AND / OR MODIFIED BY THE BOARD OF ZONING APPEALS PURSUANT TO SPA 76-P-158-1. IN CONJUNCTION WITH THIS SPECIAL EXCEPTION, THE APPLICANT IS REQUESTING APPROVAL OF THE BARRIER WAIVER REQUEST AND MODIFICATION OF THE TRANSITIONAL SCREENING REQUIREMENT IN FAVOR OF THE LANDSCAPING AS SHOWN ON SHEET 3 OF THIS PLAT

SHEET INDEX

1	COVER SHEET & NOTES/TABULATIONS
2	EXISTING CONDITIONS
3	PROPOSED PLAN
4	PROPOSED PLAN
5	SHEET FOR INFORMATION ONLY - SWM/BMP
6	SHEET FOR INFORMATION ONLY - SWM/BMP
6A	SHEET FOR INFORMATION ONLY - COVER SHEET
6B	SHEET FOR INFORMATION ONLY - OUTFALL ANALYSIS
6C	SHEET FOR INFORMATION ONLY - BMP COMPUTATION
6D	SHEET FOR INFORMATION ONLY - DETAILS
6E	SHEET FOR INFORMATION ONLY - DETAILS
6F	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6G	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6H	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6I	SHEET FOR INFORMATION ONLY - SWM COMPUTATION

GREGORY J. RINKER
LIC. No. 20118
01-21-2011
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESTAFFING COMMENTS	12/20/10

REVISION BLOCK

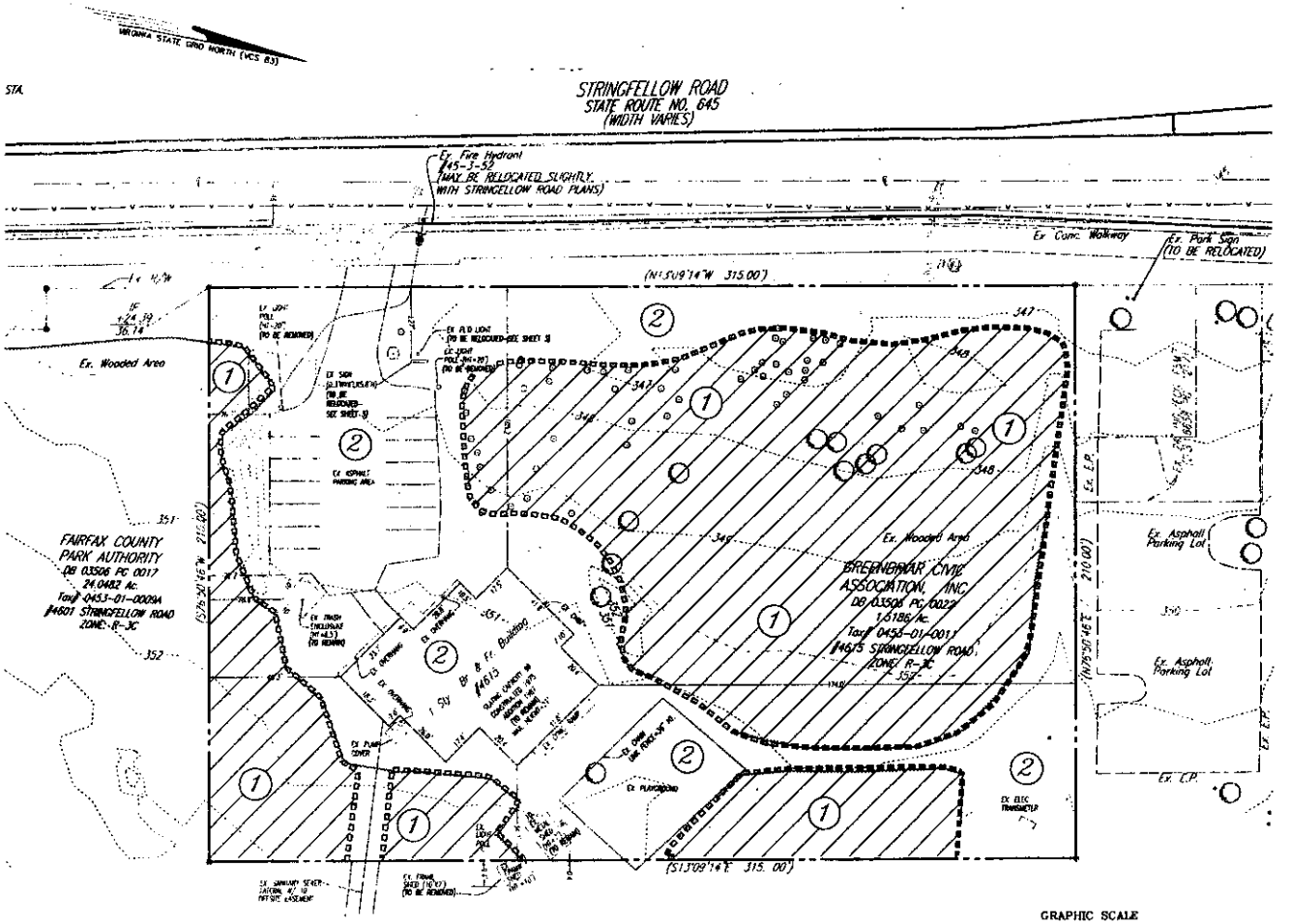
Community Association Engineering
a division of GJB Engineering, Inc.
P.O. Box 115, Virginia 22116
Phone: (703) 841-1800
Fax: (703) 841-1809
E-Mail: GJBengineering@aol.com

THE SUBMITTED DRAWINGS CERTIFIED THAT NO OTHER CONTRACTS HAVE BEEN MADE WITH THE ENGINEER EXCEPT THOSE PREVIOUSLY APPROVED

SPECIAL EXCEPTION PLAT
PLEASANT VALLEY PRESCHOOL

SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: AS SHOWN
DATE: SEPT. 28, 2010
GJB FILE NO: 758-SEP
SHEET: 1 OF 6



EVM TABULATION:

SITE AREA = 1.5186 ACRES (66,150 SF)

EXISTING VEGETATION COVER TYPES:

(1) = UPLAND FOREST = ±32,460

(2) = DEVELOPED LAND = ±33,690

TOTAL EXISTING TREE CANOPY = 49%

NOTE: EXISTING HARDWOODS INCLUDE OAK, YELLOW POPLAR AND VIRGINIA PINE. THE OVERALL CONDITION IS GOOD.

EXISTING FEATURES AND EXISTING VEGETATION MAP

1"=20'

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESTAFFING COMMENTS	12/21/10

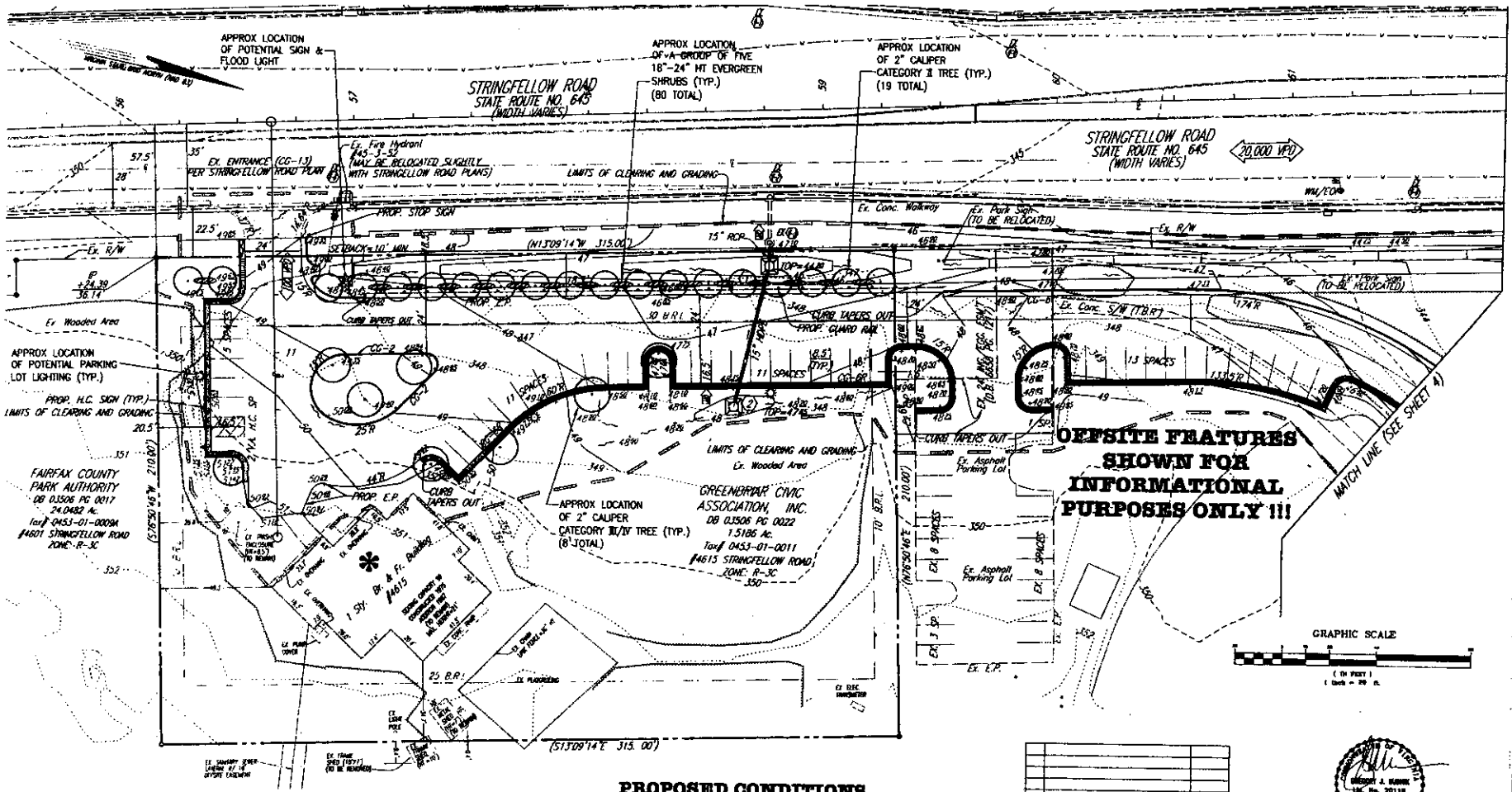
REVISION BLOCK

GREGORY J. BUONK
Lic. No. 20119
01-21-2011
PROFESSIONAL ENGINEER

Community Association Engineering
a division of GJB Engineering, Inc.
P.O. Box 1313
Springfield, Virginia 22150
703-866-0000
Email: info@gjbengineering.com

SPECIAL EXCEPTION PLAT
PLEASANT VALLEY PRESCHOOL
SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1=20'
DATE: SEPT. 28, 2010
GJB FILE NO. 756-SEP
SHEET: 2 OF 6



PROPOSED CONDITIONS

1"=20'

*** SEE SHEET 2 FOR INFORMATION REGARDING EXISTING FEATURES**

NOTE: BASED ON AN AGREEMENT TO THE REPORT OF GEOTECHNICAL FINDINGS AND RECOMMENDATIONS PREPARED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND DATED MAY 21, 2008, THE SUBBASE DEPTH IS BASED ON AN DESIGN CBR VALUE OF 3.4. SOIL TEST OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO SUBBASE PLACEMENT.

NOTE: GEOTECHNICAL ENGINEER TO DETERMINE THE ADEQUACY OF THESE RECOMMENDED TYPICAL SECTIONS AND PROVIDE SUBGRADE REPLACEMENTS BASED ON FIELD PLAN INFORMATION AFTER CLEARING HAS OCCURRED, IF NECESSARY PRIOR TO INSTALLATION.

NOTE: FOR PAVING WITHIN RIGHT OF WAY, IF NECESSARY, CONTRACTOR IS TO MATCH TO EXISTING TYPICAL SECTION.

NOTE: FILL TO BE COMPACTED TO USE OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D698) WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE CONTENT OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL RADII ARE 5.0' UNLESS OTHERWISE NOTED.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: REST PIPE SHALL BE REDUCED A MINIMUM OF 48 HOURS IN ADVANCE FOR THOSE UTILITIES REQUIRING THEM.

NOTE: FILL TO BE COMPACTED AS SPECIFIED IN THE SOILS REPORT.

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESENTING COMMENTS	12/27/10

REVISION BLOCK

ABBREVIATIONS

A=	- ARC LENGTH	F.H.	- FIRE HYDRANT	T.H.	- TEE WYE		
B.O.V.	- BLOW OFF VALVE	H.C.	- HANDICAPPED	TSWP	- SUNPORTS		
B.R.L.	- BUILDING RESTRICTION LINE	INV.	- INVERT	T.B.R.	- TO BE REMOVED		
℄	- CENTER LINE	LAT.	- LATERAL	TYP	- TYPICAL		
C.O.	- CLEAN OUT	M.H.	- MANHOLE	V.A.	- VAN ACCESSIBLE		
CONC	- CONCRETE	N/F	- NOW/FORMERLY	ELEV.	- ELEVATION		
CURB	- CURB AND GUTTER	PL	- PAGE	APPROX.	- APPROXIMATE		
D.B.	- DEED BOOK	PVC	- POLYVINYL CHLORIDE	PVMT.	- PAVEMENT		
DRN.	- DRAINAGE	RCP	- REINFORCED CONCRETE PIPE	P.I.N.	- PARCEL IDENTIFICATION NUMBER		
L.D.	- LOADING DOCK	RET. WALL	- RETAINING WALL	W/L	- WATERLINE		
D.I.P.	- DUCTILE IRON PIPE	R/W	- RIGHT OF WAY	INSTR.#	- INSTRUMENT NUMBER		
ESMT	- EASEMENT	SWK	- SIDEWALK	L.S.	- LOADING SPACE		
E.P.	- EDGE OF PAVEMENT	SEW	- SEWER	O.D.	- OVERHEAD DOOR		
ENT	- ENTRANCE	S/W	- SIDEWALK	H.H.	- HAND HOLE		
EX	- EXISTING	SF	- SQUARE FEET				
F/F	- FACE OF CURB BARRIS	SSW	- SOIL				

Community Association Engineering
a division of G.J.B. Engineering, Inc.
P.O. Box 1414, Springfield, Virginia 703-941-0500

THE SUBMITTING ENGINEER CERTIFIES THAT THE STORM SEWER, YARD, BLOCK AND DRAINAGE PLANS HAVE BEEN DESIGNED TO COMPLY WITH THE DRAINAGE PROVISIONS OF THE FAIRFAX COUNTY CODE.

GREGORY J. BUNNIK
LIC. No. 30118
01-21-2011
PROFESSIONAL ENGINEER

SPECIAL EXCEPTION PLAT
PLEASANT VALLEY PRESCHOOL

SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=20'
DATE: SEPT. 28, 2010
GJB FILE NO.: 756-SEP
SHEET: 3 of 6

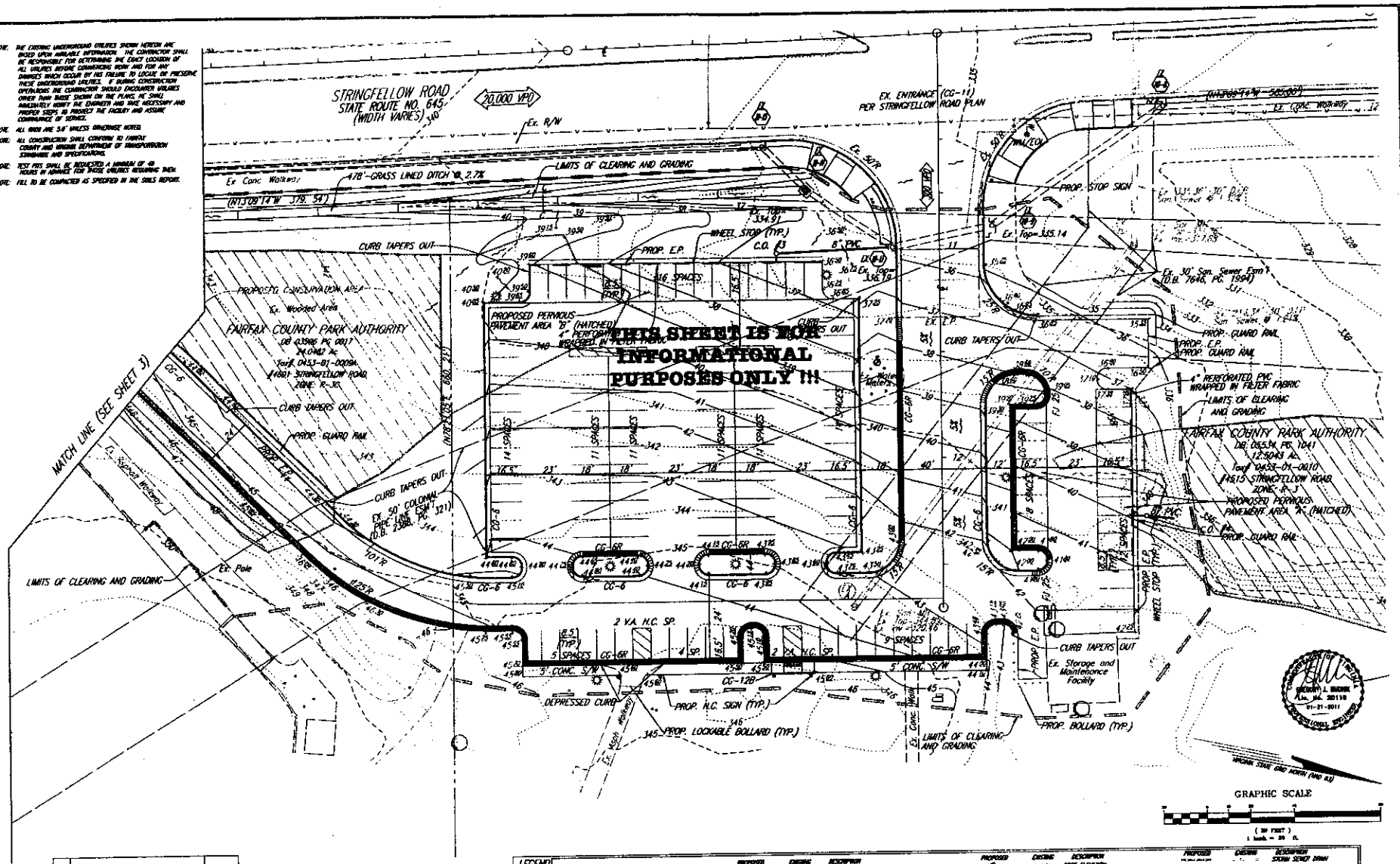
NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL GRADE ARE 3:4' UNLESS OTHERWISE NOTED.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: TEST PITS SHALL BE REQUESTED A MINIMUM OF 48 HOURS IN ADVANCE FOR THOSE UTILITIES REQUIRING THEM.

NOTE: FILL TO BE COMPACTED AS SPECIFIED IN THE SOILS REPORT.



NO	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESENTING COMMENTS	12/27/10

REVISION BLOCK

NOTE: THE EXISTING WATER METERS/VALVES LOCATED WITHIN THE COLONIAL EASEMENT SHOULD BE RESEARCHED TO DETERMINE IF THEY CAN BE REMOVED, IF THEY HAVE BEEN ABANDONED.

NOTE: VPD BASED ON COUNTY PARK (412) TRIPS CREATED PER ACRE ON SUNDAY CHART ON PAGE 841 OF 7TH EDITION OF ITE'S TRIP GENERATION MANUAL.

LEGEND

PROPOSED	EXISTING	DESCRIPTION
		SANITARY MANHOLE
		SANITARY STRUCTURE NUMBER
		SANITARY CLEAN OUT MANHOLE
		SANITARY CLEANOUT
		TELEPHONE MANHOLE
		ACCESSIBLE RAMP
		WATER VALVE
		FIRE HYDRANT
		WATER METER
		STREET SIGN
		BOLLARD
		STORM SEWER STRUCTURE NUMBER
		ROOF DRAIN
		CUT WIRE
		SPOT ELEVATION
		WATERLINE
		LIMITS OF CLEARING & GRADING
		EXISTING PROPERTY LINE
		EXISTING EDGE OF PAVEMENT
		CURB & GUTTER (CG-6)
		CURB & GUTTER (CG-6R)
		CURB & GUTTER (TRANSITION)
		STORM SEWER DRAIN
		TREE LINE
		UTILITY POLE
	230 VPD	VEHICLES PER DAY COUNT
		100 YR. FLOOD OVERLAND RELIEF PATH
		TEST PIT REQUIRED
		LIGHT POLE

Community Association Engineering
a division of G.T.B. Engineering, Inc.
P.O. Box 1314
Merrifield, Virginia 22116
Phone: 703-573-5500 Fax: 703-573-5501
Internet: www.gtbengineering.com

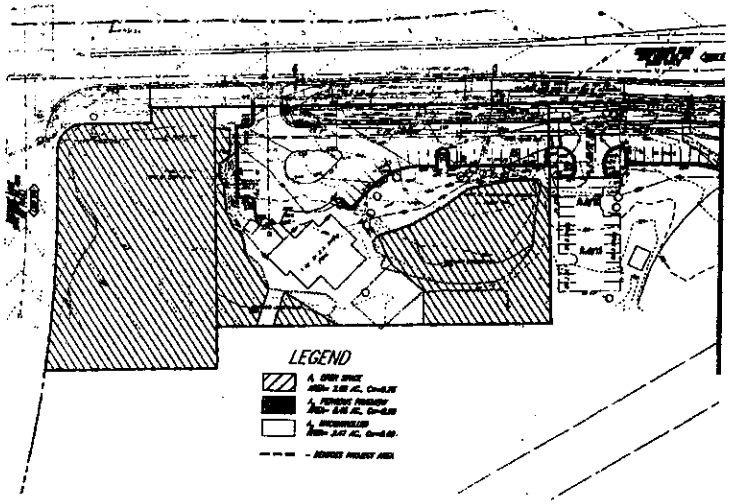
THE SIGNATURE BEARING DATE THIS DOCUMENT WAS SIGNED, HAS BEEN PLACED ON THE PLAN FOR RECORD PURPOSES ONLY.

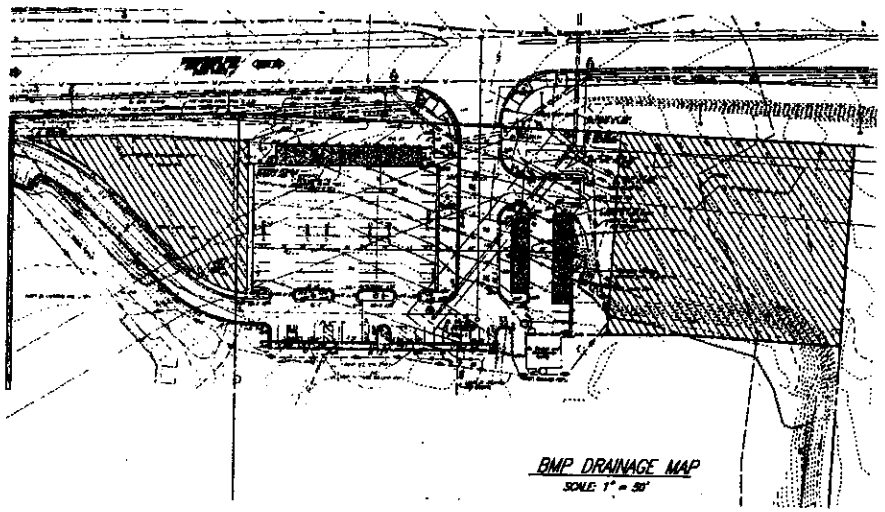
REVISIONS:
1. ADDRESS COUNTY PRESENTING COMMENTS 12/27/10

SPECIAL EXCEPTION PLAT
PLEASANT VALLEY PRESCHOOL
STRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=20'
DATE: SEPT. 28, 2010
G.T.B FILE NO.: 756-SEP
SHEET: 4 OF 6

05-126-H





BMP DRAINAGE MAP
SCALE: 1" = 50'

BMP FACILITY DESIGN CALCULATIONS

Part 1A: WATER QUALITY NARRATIVE

THE SITE IS LOCATED ALONG SPRINGFIELD ROAD IN FAIRFAX COUNTY TO THE NORTH OF THE INTERSECTION OF SPRINGFIELD ROAD AND MCNALLE DRIVE. THIS SITE IS PART OF GREENBRIAR PARK. IT IS PROPOSED TO CONSTRUCT A PERVIOUS LOT ALONG WITH ASSOCIATED PARKING LANES. WE HAVE PROVIDED ON SITE STRUCTURAL METHODS TO PROVIDE BMP FOR THE PROPOSED DEVELOPMENT. FOR THE PURPOSE OF BMP COMPUTATIONS THE SITE AREA IS 2.87 AC. DUE TO THE NATURE OF THE PROJECT, IT IS CLASSIFIED AS REDEVELOPMENT AND THE BMP REQUIREMENT IS NOT USING A COMBINATION OF CONSERVATION AREA, PERVIOUS PAVEMENT AND A WATER QUALITY SWALE. BY USING THE CONSERVATION AREA, PERVIOUS PAVEMENT AND THE WATER QUALITY SWALE WE HAVE ADOPTED A LOW IMPACT DEVELOPMENT APPROACH TO THE DEVELOPMENT IN ORDER TO MINIMIZE THE RUNOFF QUALITY IMPACTS. THE STRUCTURAL METHODS HAVE BEEN DESIGNED TO PROVIDE COMPREHENSIVE BMPS FOR THE PROPOSED DEVELOPMENT.

Part 1B: WATERSHED INFORMATION

LIST OF SUB AREAS AND "C" FACTORS USED

SUBAREA DESIGNATION AND DESCRIPTION	C	ACRES
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.80	0.45
(2) OPEN SPACE	0.35	2.68
(3) UNCONTROLLED AREA	0.80	2.81

Part 2: COMPUTE WEIGHTED AVERAGE "C" FACTOR FOR THE PROJECT

(A) TOTAL AREA OF THE PARCEL 2.82 AC (SEE BMP NARRATIVE)

(B) SUBAREA DESIGNATION

	C	X	ACRES	= PRODUCT
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.80		0.45	0.41
(2) OPEN SPACE	0.35		2.68	0.67
(3) UNCONTROLLED AREA	0.80		2.81	1.88
			TOTAL= 5.92	TOTAL= 2.77

(C) WEIGHTED AVERAGE "C" FACTOR FOR THE PARCEL= 2.77 / 5.92 = 0.47

Part 3: COMPUTE THE TOTAL PHOSPHOROUS REMOVAL FOR THE PARCEL

FOR COMPLIANCE WITH PARCEL PHOSPHORUS REMOVAL, THE PHOSPHORUS REMOVED NEEDS TO BE 40%

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFFICIENCY	OFF SITE	AREA RATIO	"C" FACTOR RATIO	PRODUCT
(1)	PERVIOUS PAVEMENT	40		0.45 / 5.92	0.80 / 0.47	3.09
(2)	OPEN SPACE	100		2.68 / 5.92		45.27
(3)	UNCONTROLLED	0		2.81 / 5.92	0.80 / 0.47	0.00
					(a) TOTAL SITE PHOSPHOROUS REMOVAL =	50.36

Part 4: DETERMINE COMPLIANCE WITH PHOSPHOROUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT FOR THE ENTIRE PARCEL: (a)= 50.00 %

(B) IF LINE 3(a) 50.36 >= Line 4(a) 50.00 then phosphorus removal requirement is satisfied.

Part 5: DETERMINE COMPLIANCE WITH SITE COVERAGE REQUIREMENT

SUM ALL THE UNCONTROLLED ONSITE AREAS AND COMPUTE A WEIGHTED AVERAGE "C" FACTOR. DO NOT INCLUDE QUALIFYING OPEN SPACE.

SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) UNCONTROLLED ONSITE AREA	0.80		2.81	1.88
			TOTAL= 2.81	TOTAL= 1.88

(A) TOTAL EQUIVALENT UNCONTROLLED AREA (a) TOTAL 1.88

(B) TOTAL UNCONTROLLED AREA (b) 2.1

(C) WEIGHTED AVERAGE C FACTOR (a)/(b)= (c) 0.90

If line 5(b) < 20% of site area, then site coverage requirement is satisfied.Line 5(c) is the equivalent offsite area for which coverage may be required.

(D) 100 X 2.81 / 5.92 = 47.47 %

Part 6: DETERMINE THE OFFSITE AREAS FOR WHICH COVERAGE IS REQUIRED

For the offsite areas listed in part 1 which flow to proposed onsite BMP's compute the equivalent areas

SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(a) N/A	0	X	X 0	= 0
(SEE PART 3)			(a) TOTAL 0	<b(a) = D

IF THE EQUIVALENT OFFSITE AREA LINE (a)(PRODUCT) TO ALL PROPOSED FACILITIES IS GREATER THAN THE EQUIVALENT UNCONTROLLED AREA OF THE SITE SHOWN IN LINE 5(b), THEN THE OFFSITE AREA CONTROLLED BY THE PROPOSED BMP FACILITIES MAY BE REDUCED. WHEN THE TWO ARE EQUAL, OTHERWISE, ALL UNCONTROLLED OFFSITE AREAS DRAINING TO THE PROPOSED BMP FACILITIES MUST BE INCLUDED. ALL OFFSITE AREAS THAT REMAIN SHOULD BE MARKED WITH AN "*" WHEREVER THEY APPEAR IN THIS COMPUTATIONS.

Part 7: COMPUTE THE WEIGHTED C FACTOR FOR THE PROPOSED BMP FACILITY

(A) LIST THE AREAS TO BE CONTROLLED BY THE PROPOSED BMP.

SUBAREA DESIGNATION	C		ACRES		PRODUCT
(1) OPEN SPACE	0.35	x	2.68	=	0.93
(2) IMPERVIOUS	0.80	=	0.85	=	0.77
			3.19	=	1.44

Part 8: WEIGHTED AVERAGE C FACTOR= 0.41

DETERMINE THE STORAGE REQUIRED

ALL STRUCTURAL BMP'S HAVE BEEN SIZED ACCORDING TO CONTRIBUTING DRAINAGE AREAS. PLEASE REFER TO COMPUTATIONS FOR DETAILS.

PHOSPHOROUS REMOVAL REQUIREMENT

PER SECTION 6-0401.1 OF THE FAIRFAX COUNTY PFM, THE TOTAL PHOSPHOROUS REMOVAL FOR THIS SITE IS 50% BECAUSE THIS SITE IS LOCATED WITHIN THE RPCB.

MAINTAINENCE NOTE: THE PROPOSED BMP FACILITIES ARE TO BE OWNED AND MAINTAINED BY THE OWNER.

Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
10411 Motor City Drive, Suite 750, Bethesda, MD 20817-1102
Telephone: (301) 948-4700 Fax: (301) 948-0183
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ADVANCE COPY

BMP COMPUTATIONS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

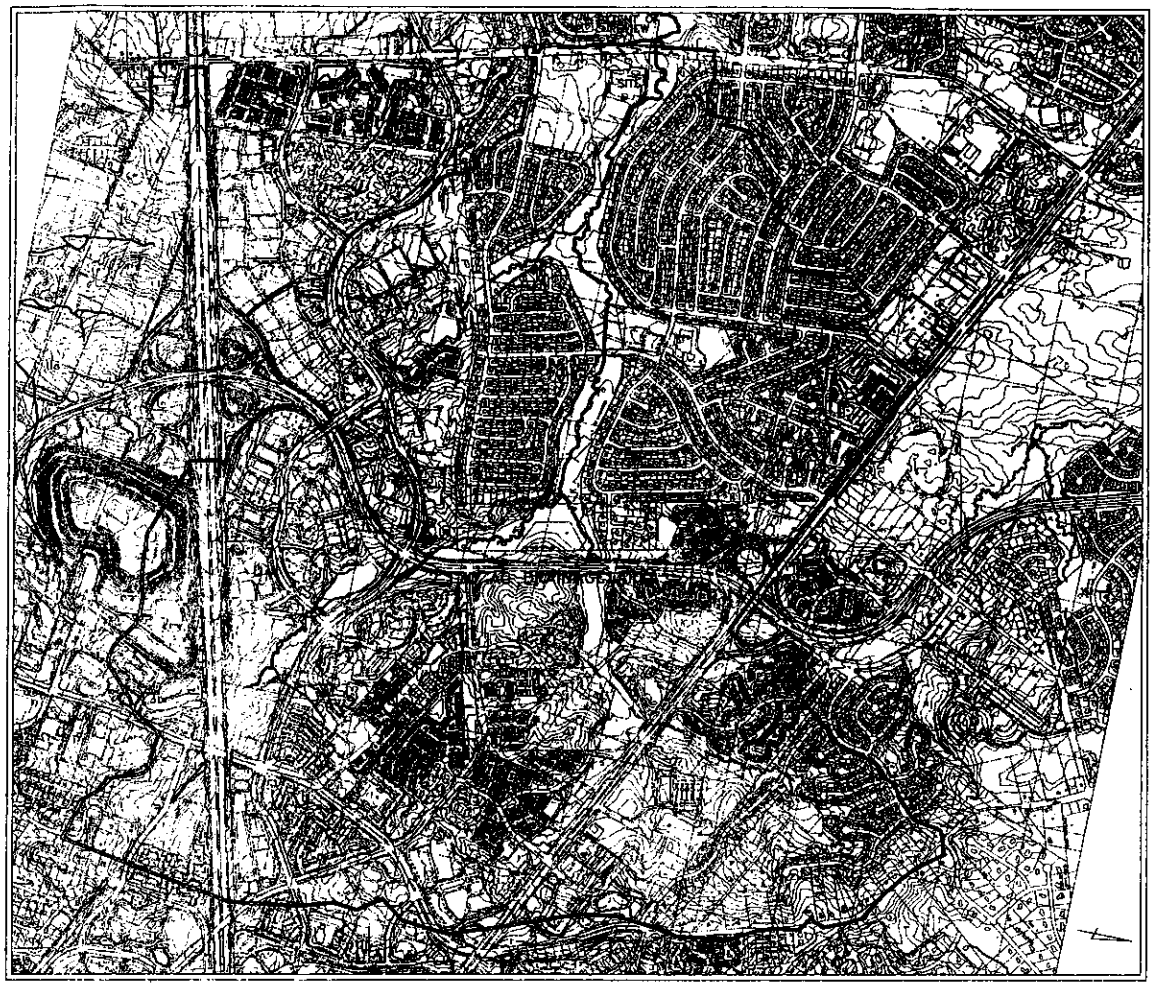
REVISIONS:

DATE: DECEMBER 15, 2008
SCALE: AS SHOWN
DESIGN: JDC/HVD
DRAFT: JDC/HVD
CHECKED BY: JDC
HRCH: N/A
JOB NUMBER: 05-126-H
SHEET: 11

DRAWING NAME:

NOTE FOR SPECIAL EXCEPTION PLAT (REVISED THROUGH 12-27-10)
CONSERVATION EASEMENTS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. EXACT LOCATION TO BE DETERMINED DURING ARTICLE 17 REVIEW OF SUBSEQUENT PLANS.

THIS SHEET IS FOR INFORMATION ONLY !!!



SCALE: 1"=750'

ADEQUATE OUTFALL NARRATIVE

PROJECT OVERVIEW:

THIS PROJECT PROPOSES ADDITIONS AND IMPROVEMENTS TO THE EXISTING PARKING LOT AT GREENBRIAR PARK. THE SITE IS LOCATED ADJACENT TO STRINGFELLOW ROAD (ROUTE 645), NORTH OF THE INTERSECTION OF STRINGFELLOW ROAD AND MELVILLE LANE. THE SITE IS LOCATED WITHIN THE CUB RUN WATERSHED. THERE ARE TWO EXISTING PARKING LOTS ON SITE, ONE OF WHICH IS GRAVEL. IT IS PROPOSED TO IMPROVE THIS GRAVEL PARKING LOT AND ALSO ADD ADDITIONAL PARKING SPACES. THIS PROJECT ALSO PROPOSES AN ACCESS WAY TO THE GREENBRIAR COMMUNITY CENTER. THE PROJECT ALSO PROPOSES ALL NECESSARY TEMPORARY AND PERMANENT EROSION CONTROL MEASURES TO MEET STATE AND LOCAL REGULATIONS, AS WELL AS A BMP FACILITY TO MEET REQUIREMENTS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE AND AN UNDERGROUND DETENTION FACILITY TO MEET ALL STATE AND COUNTY STORMWATER DETENTION REQUIREMENTS.

THE SITE CONSISTS OF ONE PRIMARY OUTFALLS (P1). PER SECTION 6-0200 OF THE PFM THIS OUTFALL HAS BEEN ANALYZED FOR ADEQUACY AND IS DESCRIBED AS FOLLOWS:

PRIMARY OUTFALLS

P1 (NORTH, CUB RUN)

THE SITE IS LOCATED WITHIN GREENBRIAR PARK. AS THE PROJECT DOES NOT INVOLVE THE ENTIRE AREA OF THE SITE, THE PROJECT AREA TAKES INTO ACCOUNT THE AREA THAT IS AFFECTED BY THE PROPOSED DEVELOPMENT. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE ENTIRE PROJECT AREA DRAINS WEST TOWARDS STRINGFELLOW ROAD. THE RUNOFF IS COLLECTED IN A DRAINAGE DITCH LOCATED ALONG STRINGFELLOW ROAD. THIS DITCH OUTFALLS INTO STORM STRUCTURES ALONG STRINGFELLOW ROAD. THIS STORM SYSTEM ULTIMATELY OUTFALLS INTO BIG ROCKY RUN. THE TOTAL CONTIBUTING DRAINAGE AREA FROM THE STORM SYSTEM AT THE OUTFALL POINT AT BIG ROCKY RUN IS APPROXIMATELY 11.52 AC. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE TOTAL DRAINAGE AREA TO ROCKY RUN AT THE INTERSECTION WITH STRINGFELLOW ROAD IS APPROXIMATELY 2,170 AC. AS THE TOTAL DRAINAGE AREA AT THE POINT OF ANALYSIS IS MORE THAN 100 TIMES GREATER THAN THE CONTIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.2B, THIS MARKS THE EXTENT OF REVIEW FOR OUTFALL P1. AS BIG ROCKY RUN IS A NATURAL WATERCOURSE AND THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHING CHANNEL IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.3A, THE OUTFALL IS ADEQUATE.

SUMMARY:

THIS PLAN WILL CONTINUE TO HONOR ALL EXISTING MAJOR DRAINAGE DIVIDES. NO DIVERSION OF WATER FROM ONE MAJOR WATERSHED TO ANOTHER IS PROPOSED WITH THIS PLAN. NO DETRIMENTAL EFFECTS TO THE DOWNSTREAM DRAINAGE SYSTEM WILL OCCUR FOLLOWING CONSTRUCTION OF THE IMPROVEMENTS PROPOSED UNDER THIS SITE PLAN. OVERLAND RELIEF IS PROVIDED ON-SITE THROUGH THE PROPOSED GRADING AND DRIVE AISLES IN THE EVENT THE STORM SYSTEM BECOMES CLOGGED. ALL SITE OUTFALLS HAVE BEEN ANALYZED PER SECTION 6-0200 OF THE PFM. IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT ALL OUTFALLS ARE ADEQUATE AND IN THE EVENT OF THE 100-YEAR STORM, THERE WILL BE NO FLOODING OF EXISTING DOWNSTREAM DWELLINGS OR BUILDINGS CONSTRUCTED UNDER AN APPROVED BUILDING PERMIT, NOR WILL THERE BE ANY AGGRAVATION TO AN EXISTING FLOODING CONDITION AS A RESULT OF THE DEVELOPMENT OF THIS SITE.

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESTAFFING COMMENTS	12/27/10

REVISION BLOCK

THIS SHEET IS FOR INFORMATION ONLY !!!

Community Association Engineering
a division of GJB Engineering, Inc.
P.O. Box 1814
Warrenton, Virginia 20188
Phone: (540) 347-4488 Fax: (540) 347-4499
Internet: www.gjbengineering.com

THE SURVEYING CHANGES CERTIFIED THAT THE PARKING CHANGES HAVE BEEN SURVEYED AND THE PARKING SURVEY HAS BEEN "PRELIMINARY" APPROVED.

THE ENGINEERING CHANGES CERTIFIED THAT THE PARKING CHANGES HAVE BEEN DESIGNED AND THE PARKING DESIGN HAS BEEN "PRELIMINARY" APPROVED.

SPECIAL EXCEPTION PLAT

PLEASANT VALLEY PRESCHOOL

SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=750'

DATE: SEPT. 28, 2010 REVISED DATE:

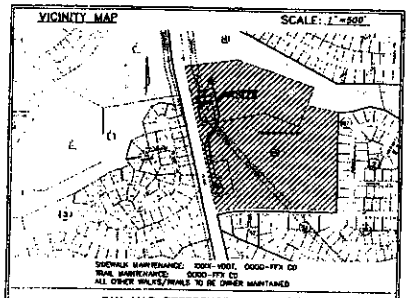
GJB FILE NO.: 756-SEP

SHEET: 6 OF 6

05-126-H

VICINITY MAP

SCALE: 1"=500'



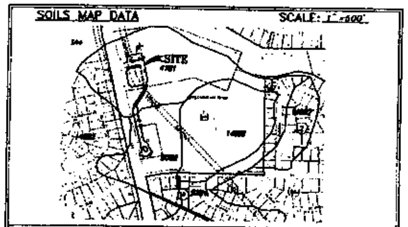
SIDEWALK MAINTENANCE: XXXX-VDOT, OOOO-FFX CO
TRAIL MAINTENANCE: OOOO-FFX CO
ALL OTHER WALKS/TRAILS TO BE OWNER MAINTAINED

TAX MAP REFERENCE NUMBER(S)

MAP PAGE #	DOUBLE CIRCLE #	BLOCK (SINGLE CIRCLE #)	LOT/PARCEL(S) #
46-3	1		9A
46-3	1		10
46-3	1		11

SOILS MAP DATA

SCALE: 1"=500'



FORMAL SOILS REPORT TO BE APPROVED PRIOR TO SECOND SUBMISSION
SOILS MAP SOURCE: ■ COUNTY MAP; □ PRIVATE SOILS SCIENTIST (FOR UNMAPPED SITES)

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODIBILITY	PROBLEM CLASS
1A+	MIXED ALLUVIAL	POOR-F,A,H	POOR-F,H	0-2%	LOW	A
41B+	ROCKY LAND-MEADVILLE	MARGINAL-BCP	MARGINAL-CPR	2-7%	LOW	A
59B2	MEADVILLE-MECKLENBURG	MARGINAL-BCP	MARGINAL-CPR	2-7%	MODERATE	A
148B2	MEADVILLE-MECKLENBURG	POOR-BCP	MARGINAL-CPR	2-7%	MODERATE	A

SOILS WITH IDENTIFICATION NUMBERS 59, 60, 88, 141, 142, AND 152 MAY OVERLIE PARENT BEDROCK FORMATIONS WHICH HAVE BEEN FOUND TO CONTAIN NATURALLY OCCURRING ASBESTOS MINERALS. SPECIAL MINIMUM CONSTRUCTION MEASURES AND PRECAUTIONS ARE REQUIRED IN COMPLIANCE WITH HEALTH DEPARTMENT DIRECTIVES WITHIN THESE SOILS OR WITHIN FILL ORIGINATING FROM THESE SOILS.

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES

SIGNATURE
OWNER/DEVELOPER JOHN R. CUMMINGS — NAME — OWNER'S AGENT — TITLE

NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

PROJECT OVERVIEW

EROSION AND SEDIMENT CONTROL

SOILS

TRAILS

BEST MANAGEMENT PRACTICES (BMP) / CHESAPEAKE BAY

STORMWATER DETENTION

DRAINAGE ANALYSIS

STREET LIGHTS

FRONTAGE/RIGHT-OF-WAY IMPROVEMENTS

TRANSITIONAL SCREENING AND BARRIERS

TREE COVER COMPUTATIONS

INTERIOR PARKING LOT LANDSCAPING

OUTFALL NARRATIVE

WATERSHED

DISTURBED AREA IN WATERSHED

WETLANDS

RPA CERTIFICATION

OVERLAND RELIEF STATEMENT

ARMY CORPS OF ENGINEERS NOTE

GENERAL NOTES

CONSTRUCTION NOTES

County of Fairfax, Virginia

SITE TABULATIONS

ZONE = R-3C, R-3
USE = RECREATION FACILITY, PARKS [illegible] – OUTDOOR BALL FIELDS

MAXIMUM BUILDING HEIGHT: NO PROPOSED BUILDING

GROSS FLOOR AREA: NO PROPOSED BUILDING

FLOOR AREA RATIO (FAR): NO PROPOSED BUILDING

OPEN SPACE:
REQUIRED [illegible] SQUARE FEET
PROPOSED [illegible] SQUARE FEET

YARD REQUIREMENTS: NO PROPOSED BUILDING

PARKING TABULATIONS

PARKING SHOWN IN THIS MINOR SITE PLAN IS FOR GREENBRIAR PARK

PARKING PROVIDED: 185 SPACES
HANDICAP SPACES REQUIRED: 6
HANDICAP SPACES PROVIDED: 6 (6 VAN ACCESSIBLE)
TOTAL SPACES PROVIDED: 191

LOADING SPACES REQUIRED: 0
LOADING SPACES PROVIDED: 0

~~SHEET INDEX~~

1 COVER SHEET & NOTES/TABULATIONS & DETAILS
2 OVERALL PLAN
3 EXISTING CONDITIONS
4 MINOR SITE PLAN
5 MINOR SITE PLAN
6 EROSION & SEDIMENT CONTROL NOTES & DETAILS
7 EROSION & SEDIMENT CONTROL NOTES & NARRATIVE
8 EROSION & SEDIMENT CONTROL PLAN – PHASE I
9 EROSION & SEDIMENT CONTROL PLAN – PHASE II & DRAINAGE DIVIDES
10 FIRE LANE PLAN
11 STORM SEWER & DITCH PROFILES & COMPUTATIONS
12 ADEQUATE OUTFALL ANALYSIS MAP & NARRATIVE
13 BMP COMPUTATIONS
14 PERVIOUS PAVEMENT DETAILS PERVIOUS PAVEMENT AREA A
15 PERVIOUS PAVEMENT DETAILS PERVIOUS PAVEMENT AREA B
16 SWM COMPUTATIONS PERVIOUS PAVEMENT AREA A
17 SWM COMPUTATIONS PERVIOUS PAVEMENT AREA A
18 SWM COMPUTATIONS PERVIOUS PAVEMENT AREA B
19 SWM COMPUTATIONS PERVIOUS PAVEMENT AREA B
20 LANDSCAPE PLAN
21 LANDSCAPE NOTES AND DETAILS
22 MISC. DETAILS
23 GEOTECHNICAL ADDENDUM

THESE SHEETS FROM VDOT PLAN ARE INCLUDED FOR INFORMATION PURPOSES ONLY!

Rinker Design Associates, P.C.
Engineering * Surveying * Land Planning * Transportation * Environmental Services
"Turning Challenges into Opportunities"

COVER SHEET & NOTES/TABULATIONS & DETAILS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT, FAIRFAX COUNTY, VIRGINIA
3230-MSP-03-2

REVISIONS:

DATE:	JANUARY 7, 2011
SCALE:	AS SHOWN
DESIGN:	JDC/HWD
DRAFT:	JDC/HWD
CHECKED BY:	JDC
ARCH:	N/A
JOB NUMBER:	05-126-H
SHEET	1

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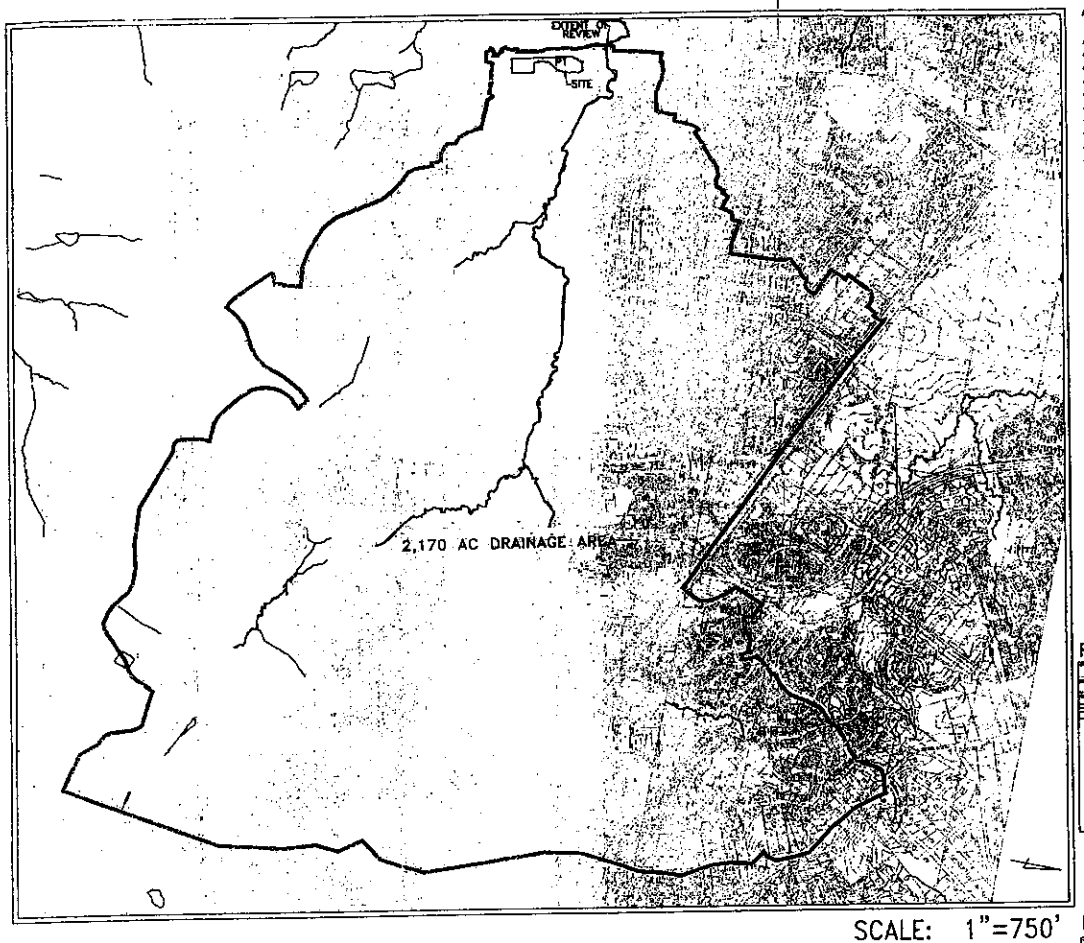
SHEET: SPECIAL EXCEPTION **6A** of 6

05-126-H



SCALE: 1"=750'

ADEQUATE OUTFALL NARRATIVE

PROJECT OVERVIEW:

THIS PROJECT PROPOSES ADDITIONS AND IMPROVEMENTS TO THE EXISTING PARKING LOT AT GREENBRIAR PARK. THE SITE IS LOCATED ADJACENT TO STRINGFELLOW ROAD (ROUTE 645), NORTH OF THE INTERSECTION OF STRINGFELLOW ROAD AND MELVILLE LANE. THE SITE IS LOCATED WITHIN THE CUB RUN WATERSHED. THERE ARE TWO EXISTING PARKING LOTS ON SITE, ONE OF WHICH IS GRAVEL. IT IS PROPOSED TO IMPROVE THIS GRAVEL PARKING LOT AND ALSO ADD ADDITIONAL PARKING SPACES. THIS PROJECT ALSO PROPOSES AN ACCESS WAY TO THE GREENBRIAR COMMUNITY CENTER. THE PROJECT ALSO PROPOSES ALL NECESSARY TEMPORARY AND PERMANENT EROSION CONTROL MEASURES TO MEET STATE AND LOCAL REGULATIONS, AS WELL AS A BMP FACILITY TO MEET REQUIREMENTS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE AND AN UNDERGROUND DETENTION FACILITY TO MEET ALL STATE AND COUNTY STORMWATER DETENTION REQUIREMENTS.

THE SITE CONSISTS OF ONE PRIMARY OUTFALL (P1). PER SECTION 6-0200 OF THE PFM THIS OUTFALL HAS BEEN ANALYZED FOR ADEQUACY AND IS DESCRIBED AS FOLLOWS:

PRIMARY OUTFALLS

P1 (NORTH, CUB RUN)

THE SITE IS LOCATED WITHIN GREENBRIAR PARK, SINCE THIS PROJECT DOES NOT INVOLVE THE ENTIRE AREA OF THE SITE, THE PROJECT AREA INCLUDES ONLY THE AREA THAT IS AFFECTED BY THE PROPOSED DEVELOPMENT. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE ENTIRE PROJECT AREA DRAINS WEST TOWARDS STRINGFELLOW ROAD. THE RUNOFF IS COLLECTED IN A DRAINAGE DITCH LOCATED ALONG STRINGFELLOW ROAD. THIS DITCH OUTFALLS INTO STORM STRUCTURES ALONG STRINGFELLOW ROAD. THESE STORM STRUCTURES WERE PROPOSED WITH VDOT'S STRINGFELLOW ROAD WIDENING/IMPROVEMENT PLAN (#0645020J04C501). THE CAPACITIES AND FLOWS WITHIN THE STORM SYSTEM ADJACENT TO THIS PROJECT CAN BE SEEN ON SHEET 11. THE OUTFALL FROM PERVIOUS PAVEMENT AREA "A" TIES DIRECTLY INTO THE VDOT STORM SYSTEM AT STRUCTURE 10-13. THE OUTFALL FROM PERVIOUS PAVEMENT SECTION "B" OUTFALLS FREELY INTO A GRASS SWALE. THE 10-YEAR FLOW OF 0.02 CFS SHOULD BE NON-EROSIVE TO THE EXISTING GRASS SECTION DRAINING INTO THE RPA AND THEN BIG ROCKY RUN. THE STORM SYSTEM ULTIMATELY OUTFALLS INTO BIG ROCKY RUN. THE TOTAL CONTRIBUTING DRAINAGE AREA FROM THE STORM SYSTEM AT THE OUTFALL POINT AT BIG ROCKY RUN IS APPROXIMATELY 11.52 AC. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE TOTAL DRAINAGE AREA TO ROCKY RUN AT THE INTERSECTION WITH STRINGFELLOW ROAD IS APPROXIMATELY 2,170 AC. SINCE THE TOTAL DRAINAGE AREA AT THE POINT OF ANALYSIS IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.2B, THIS MARKS THE EXTENT OF REVIEW FOR OUTFALL P1. BIG ROCKY RUN IS A NATURAL WATERCOURSE AND THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, THEREFORE PER 6-0203.3A, THE OUTFALL IS ADEQUATE.

SUMMARY:

THIS PLAN WILL CONTINUE TO HONOR ALL EXISTING MAJOR DRAINAGE DIVIDES. NO DIVERSION OF WATER FROM ONE MAJOR WATERSHED TO ANOTHER IS PROPOSED WITH THIS PLAN. NO DETRIMENTAL EFFECTS TO THE DOWNSTREAM DRAINAGE SYSTEM WILL OCCUR FOLLOWING CONSTRUCTION OF THE IMPROVEMENTS PROPOSED UNDER THIS SITE PLAN. OVERLAND RELIEF IS PROVIDED ON-SITE THROUGH THE PROPOSED GRADING AND DRIVE AISLES IN THE EVENT THE STORM SYSTEM BECOMES CLOGGED. ALL SITE OUTFALLS HAVE BEEN ANALYZED PER SECTION 6-0200 OF THE PFM. IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT ALL OUTFALLS ARE ADEQUATE AND IN THE EVENT OF THE 100-YEAR STORM, THERE WILL BE NO FLOODING OF EXISTING DOWNSTREAM DWELLINGS OR BUILDINGS CONSTRUCTED UNDER AN APPROVED BUILDING PERMIT, NOR WILL THERE BE ANY AGGRAVATION TO AN EXISTING FLOODING CONDITION AS A RESULT OF THE DEVELOPMENT OF THIS SITE.

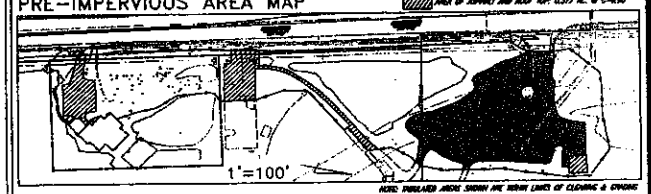
LEGEND

PRE-DEVELOPMENT IMPERVIOUS AREA = 1.353 AC. @ C=0.80

AREA OF GRAVEL: 0.516 AC. @ C=0.75

AREA OF ASPHALT AND ROOF TOP: 0.837 AC. @ C=0.90

PRE-IMPERVIOUS AREA MAP



NOTE: DASHED AREA SHOWN ARE WITHIN LIMITS OF CLEARING & GRADING

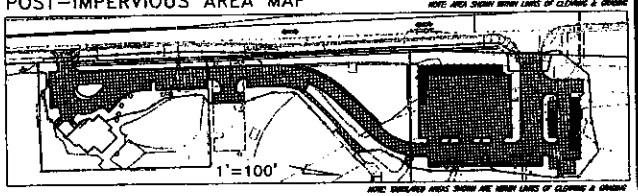
LEGEND

POST-DEVELOPMENT IMPERVIOUS AREA = 1.867 AC.

PERVIOUS PAVEMENT

POST-IMPERVIOUS AREA MAP

NOTE: AREA SHOWN WITHIN LIMITS OF CLEARING & GRADING



NOTE: DASHED AREAS SHOWN ARE WITHIN LIMITS OF CLEARING & GRADING

NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

PRE & POST RUNOFF CALCULATION

TOTAL SITE AREA = 3.893 AC. (WITHIN LIMITS OF CLEARING & GRADING)

PRE-DEVELOPMENT: Q2=[(1.353 AC. x 0.80)+(2.450 AC. x 0.30)] * 5.45 IN/HR = 9.90 CFS
Q10=[(1.353 AC. x 0.80)+(2.450 AC. x 0.30)] * 7.27 IN/HR = 13.21 CFS

POST-DEVELOPMENT: Q2=[((1.867 AC. - 0.52) x 0.90)+(1.836 AC. x 0.30)] * 5.45 IN/HR + 0.01 CFS + 0.01 CFS = 9.90 CFS
Q10=[((1.867 AC. - 0.52) x 0.90)+(1.836 AC. x 0.30)] * 7.27 IN/HR + 0.03 CFS + 0.02 CFS = 13.08 CFS

NOTE: ADDITIONAL FLOWS ADDED TO POST DEVELOPMENT EQUATIONS ARE FROM PERVIOUS PAVEMENT AREAS A AND B.

rda

Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
Site Development Consultants
Tel: (703) 327-2000 Fax: (703) 327-2003
"Turning Challenges Into Opportunities"

ADEQUATE OUTFALL ANALYSIS MAP & NARRATIVE

GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: SEPTEMBER 15, 2006
SCALE: AS SHOWN
DESIGN: JDC/MVD
DRAFT: JDC/MVD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 12

DRAWING: MAPCV\05126\63581\Stepian\Planset\017-ADEQUATE OUTFALL ANALYSIS.dwg 1/4/2011 10:10:41 AM EST

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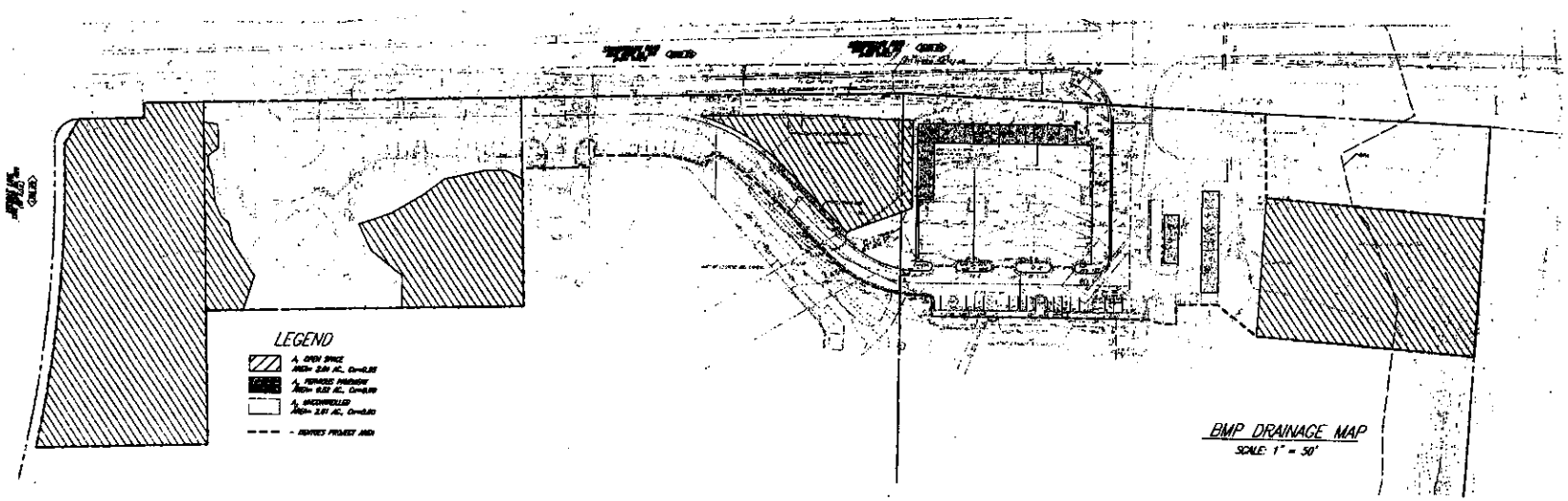
SHEET: SPECIAL EXCEPTION 6B OF 6

05-126-H



BMP FACILITY DESIGN CALCULATIONS

Part 1A: WATER QUALITY NARRATIVE

THE SITE IS LOCATED ALONG SPRINGFIELD ROAD IN FAIRFAX COUNTY TO THE NORTH OF THE INTERSECTION OF SPRINGFIELD ROAD AND METRO DRIVE. THE SITE IS PART OF GREENBRIAR PARK. IT IS PROPOSED TO CONSTRUCT A PARKING LOT ALONG WITH ASSOCIATED TRAVEL LANES. THE BMP PROVIDED ON SITE STRUCTURAL METHODS TO PROVIDE BMP FOR THE PROPOSED DEVELOPMENT. FOR THE PURPOSE OF BMP COMPUTATIONS THE SITE AREA IS 3.97 AC. DUE TO THE NATURE OF THE PROJECT, IT IS CLASSIFIED AS REDEVELOPMENT AND THE BMP REQUIREMENT IS NOT MORE A COMBINATION OF CONSERVATION AREA, PERVIOUS PAVEMENT AND A VEGETATED SWALE. BY USING THE CONSERVATION AREA, PERVIOUS PAVEMENT AND THE VEGETATED SWALE WE HAVE ADOPTED A LOW IMPACT DEVELOPMENT APPROACH TO THE DEVELOPMENT IN ORDER TO IMPROVE THE WATER QUALITY IMPACTS. THE STRUCTURAL METHODS HAVE BEEN DESIGNED TO PROVIDE COMPREHENSIVE BMPS FOR THE PROPOSED DEVELOPMENT.

Part 1B: WATERSHED DETERMINATION

LIST OF SUB AREAS AND "C" FACTORS USED

SUBAREA DESIGNATION AND DESCRIPTION	C	ACRES
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.90	0.52
(2) OPEN SPACE	0.35	2.64
(3) UNCONTROLLED AREA	0.80	2.81

Part 2: COMPUTE WEIGHTED AVERAGE "C" FACTOR FOR THE PROJECT

(A) TOTAL AREA OF THE PARCEL 5.92 AC (SEE BMP NARRATIVE)

(B) SUBAREA DESIGNATION

	C	X	ACRES	= PRODUCT
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.90		0.52	0.47
(2) OPEN SPACE	0.35		2.64	0.92
(3) UNCONTROLLED AREA	0.80		2.81	1.69
		TOTAL=	5.97	TOTAL= 2.82

(C) WEIGHTED AVERAGE "C" FACTOR FOR THE PARCEL= 2.82 / 5.97 = 0.47

Part 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE PARCEL

FOR COMPLIANCE WITH REPOR PHOSPHORUS REMOVAL, THE PHOSPHORUS REMOVAL NEEDS TO BE 50%

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFFICIENCY	OFF SITE	AREA RATIO	"C" FACTOR RATIO	PRODUCT
(1)	PERVIOUS PAVEMENT	35		0.52 / 5.97	0.90 / 0.47	3.34
(2)	OPEN SPACE	100		2.64 / 5.97		44.22
(3)	UNCONTROLLED	0		2.81 / 5.97	0.80 / 0.47	0.00
					(a) TOTAL SITE PHOSPHORUS REMOVAL =	50.06

Part 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT FOR THE ENTIRE PARCEL: (a)= 50.00 %

(B) IF LINE 3(A) 50.00 >= Line 4(a) 50.00 then phosphorus removal requirement is satisfied.

Part 5: DETERMINE COMPLIANCE WITH SITE COVERAGE REQUIREMENT

SUM ALL THE UNCONTROLLED ONSITE AREAS AND COMPUTE A WEIGHTED AVERAGE "C" FACTOR. DO NOT INCLUDE QUALIFYING OPEN SPACE.

SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) UNCONTROLLED ONSITE AREA	0.80		2.81	1.69
		TOTAL=	2.81	TOTAL= 1.69

(A) TOTAL EQUIVALENT UNCONTROLLED AREA (a) TOTAL 1.69

(B) TOTAL UNCONTROLLED AREA (b) 2.81

(C) WEIGHTED AVERAGE C FACTOR (a)/(b)= (c) 0.60

If line 5(b) < 20% of site area, then site coverage requirement is satisfied. Line 5(a) is the equivalent offsite area for which coverage may be required

(d) 100 X 2.81 / 5.97 = 47.07 %

Part 6: DETERMINE THE OFFSITE AREAS FOR WHICH COVERAGE IS REQUIRED

For the offsite areas listed in part 1 which flow to proposed onsite BMPs compute the equivalent areas

SUBAREA DESIGNATION C X ACRES = PRODUCT

(E) N/A 0 X 0 = 0

(SEE PART 3) (e) TOTAL 0 < 5(a) = 0

IF THE EQUIVALENT OFFSITE AREA, LINE 6(E) BELOW, TO ALL PROPOSED FACILITIES IS GREATER THAN THE EQUIVALENT UNCONTROLLED AREA OF THE SITE SHOWN IN LINE 5(A) ABOVE, THE OFFSITE AREA CONTROLLED BY THE PROPOSED BMP REQUIRED ONLY BE REDUCED WHEN THE TWO ARE EQUAL. OTHERWISE, ALL UNCONTROLLED OFFSITE AREAS DRAINING TO THE PROPOSED BMP FACILITIES MUST BE INCLUDED. ALL OFFSITE AREAS MUST BE REDUCED BASED ON DRAINED AREA AND "C" VALUE(S) THEY APPEAR IN THE COMPUTATIONS.

Part 7:

COMPUTE THE WEIGHTED C FACTOR FOR THE PROPOSED BMP FACILITY

(A) LIST THE AREAS TO BE CONTROLLED BY THE PROPOSED BMP.

SUBAREA DESIGNATION	C	X	ACRES	PRODUCT
(1) OPEN SPACE	0.25	X	2.64	= 0.66
(2) IMPERVIOUS	0.90	X	1.92	= 1.68
			4.48	= 2.34

Part 8: WEIGHTED AVERAGE C FACTOR= 0.52

DETERMINE THE STORAGE REQUIRED

ALL STRUCTURAL BMP'S HAVE BEEN SIZED ACCORDING TO CONTRIBUTING DRAINAGE AREAS. PLEASE REFER TO COMPUTATIONS FOR DETAILS.

PHOSPHORUS REMOVAL REQUIREMENT

PER SECTION 6-0401.1 OF THE FAIRFAX COUNTY PFM, THE TOTAL PHOSPHORUS REMOVAL FOR THIS SITE IS 50% BECAUSE THIS SITE IS LOCATED WITHIN THE WPCPA.

MAINTAINENCE NOTE: THE PROPOSED BMP FACILITIES ARE TO BE OWNED AND MAINTAINED BY THE OWNER.

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"Turning Challenges Into Opportunities"

BMP COMPUTATIONS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 7, 2011
SCALE: AS SHOWN
DESIGN: JOC/NVD
DRAFT: JOC/NVD
CHECKED BY: JOC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 13

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THIS SHEET IS FOR INFORMATION ONLY, NOT FOR CONSTRUCTION !!!

SPECIAL EXCEPTION

6C of 6

05-126-H

CONSTRUCTION REQUIREMENTS

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2. THE LICENSED PROFESSIONAL SHALL CERTIFY THAT THE FACILITY WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS.
3. THE LICENSED PROFESSIONAL'S CERTIFICATION ALONG WITH ANY MATERIAL DELIVERY TICKETS AND CERTIFICATIONS FROM THE MATERIAL SUPPLIERS SHALL BE SUBMITTED TO COUNTY PRIOR TO BOND RELEASE.
4. FOR PROJECTS REQUIRING AS-BUILT PLANS, THE REQUIRED CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH OR INCORPORATED IN THE AS-BUILT PLANS.
5. FOR PROJECTS THAT DO NOT REQUIRE AS-BUILT PLANS, THE CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH THE RUN OR NON-RUN REPORT.
6. PERVIOUS PAVEMENT FACILITIES SHALL BE CONSTRUCTED AFTER THE DRAINAGE AREA TO THE FACILITY IS COMPLETELY STABILIZED.
7. EROSION AND SEDIMENT CONTROLS FOR CONSTRUCTION OF THE FACILITY SHALL BE INSTALLED AS SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN.
8. PRELIMINARY GRADING OF THE AREA WHERE PERVIOUS PAVEMENT IS TO BE INSTALLED MAY BE PERFORMED AT THE TIME THE REST OF THE SITE IS MASS GRADED PROVIDED THAT POSITIVE DRAINAGE IS MAINTAINED AND THE AREA IS STABILIZED.
9. AREAS WHERE PERVIOUS PAVEMENT IS TO BE INSTALLED SHOULD NOT BE USED FOR TEMPORARY SEDIMENT BASINS.
10. WHERE UNAVOIDABLE, THE INVERT OF THE SEDIMENT BASIN SHALL BE A MINIMUM OF 2 FEET ABOVE THE FINAL DESIGN ELEVATION OF THE BOTTOM OF THE AGGREGATE BASE.
11. FOR FACILITIES DESIGNED FOR FULL OR PARTIAL EXFILTRATION, THE FLOOR OF THE FACILITY SHALL BE SMALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES TO REDUCE SOIL COMPACTION AND LOOSED BEFORE THE FILTER FABRIC AND STONE ARE PLACED.
12. ANY AREAS OF THE FACILITY WHERE A TEMPORARY SEDIMENT BASIN WAS LOCATED ALSO SHALL HAVE 2 TO 3 INCHES OF SAND INCORPORATED INTO THE IN-SITU SOILS.
13. FILTER FABRIC SHALL BE PLACED ON THE BOTTOM AND SIDES OF THE FACILITY. STRIPS OF FILTER FABRIC SHALL OVERLAP BY A MINIMUM OF 2 FEET. FABRIC SHALL BE SECURED MINIMUM OF 4 FEET BEYOND THE EDGE OF EXCAVATION.
14. FOLLOWING PLACEMENT OF THE AGGREGATE AND AGAIN AFTER PLACEMENT OF THE PAVEMENT, THE FILTER FABRIC SHOULD BE FOLDED ON/REPLACEMENT TO PROTECT INSTALLATION FROM SEDIMENT IMPACTS.
15. EXCESS FILTER FABRIC SHALL NOT BE TRIMMED UNTIL THE SITE IS FULLY STABILIZED.
16. AFTER INSTALLATION OF THE FILTER FABRIC OVER THE SOIL SUBGRADE, A 2 INCH LIFT OF AGGREGATE SHALL BE PLACED FOR THE UNDERDRAIN BEDDING.
17. UNDERDRAIN PIPING SHALL BE INSTALLED AND SUFFICIENT AGGREGATE SHALL BE PLACED AROUND AND OVER THE UNDERDRAIN PIPE TO PREVENT DAMAGE TO THE PIPE PRIOR TO COMPACTION.
18. AGGREGATE SHALL BE PLACED IN 4 TO 8 INCH LIFTS AND COMPACTED WITH A STATIC ROLLER.
19. AT LEAST 4 PASSES SHOULD BE MADE WITH A MINIMUM 10-TON STATIC ROLLER. THE INITIAL PASSES OF THE ROLLER CAN BE WITH VIBRATION TO CONSOLIDATE THE BASE MATERIAL.
20. THE FINAL PASSES OF THE ROLLER SHOULD BE WITHOUT VIBRATION. NO VISIBLE MOVEMENT SHOULD OCCUR IN THE BASE MATERIAL WHEN COMPACTION IS COMPLETE.

INSTALLATION OF POROUS ASPHALT PAVEMENT

1. THE CHOKER COURSE SHALL BE PLACED IN A SINGLE LIFT. THE CHOKER COURSE SHALL BE LEVELED AND PRESSED (CHORTED) INTO THE AGGREGATE BASE WITH AT LEAST 4 PASSES OF A 10 TON (9 T) STEEL DRUM STATIC ROLLER. THE CHOKER COURSE MATERIAL SHOULD BE MOIST TO FACILITATE MOVEMENT INTO THE AGGREGATE BASE.
2. POROUS ASPHALT PAVEMENT IS INSTALLED SIMILARLY TO REGULAR ASPHALT PAVEMENT. THE PAVEMENT SHALL BE LAID IN A SINGLE LIFT OVER THE CHOKER COURSE. THE LAYING TEMPERATURE SHALL BE BETWEEN 230°F AND 200°F, WITH A MINIMUM AIR TEMPERATURE OF 50°F, TO MAKE SURE THAT THE SURFACE DOES NOT STIFFEN BEFORE COMPACTION.
3. COMPACTION OF THE SURFACE COURSE SHOULD BE COMPLETED WHEN THE SURFACE IS COOL ENOUGH TO RESIST A 10-TON ROLLER. ONE OR TWO PASSES OF THE ROLLER ARE REQUIRED FOR PROPER COMPACTION. MORE ROLLING COULD CAUSE A REDUCTION IN THE POROSITY OF THE PAVEMENT.
4. THE MIXING PLANT SHALL CERTIFY TO THE AGGREGATE MIX, THE ABRASION LOSS FACTOR, AND THE ASPHALT CONTENT IN THE MIX. THE ASPHALT MIX SHALL BE TESTED FOR ITS RESISTANCE TO STRIPPING BY WATER USING ASTM 1664. IF THE ESTIMATED COATING AREA IS NOT ABOVE 90%, ADDITIONAL ANTISTRIPPING AGENTS SHALL BE ADDED TO THE MIX.
5. THE MIX SHALL BE TRANSPORTED TO THE SITE IN A CLEAN VEHICLE WITH SMOOTH DUMP BEDS SPRAYED WITH A NON-PETROLEUM RELEASE AGENT. THE MIX SHALL BE COVERED DURING TRANSPORTATION TO CONTROL COOLING.
6. THE FULL PERMEABILITY OF THE PAVEMENT SURFACE SHALL BE TESTED BY APPLICATION OF CLEAN WATER AT A RATE OF AT LEAST 5 GPM OVER THE SURFACE. ALL WATER MUST INFILTRATE DIRECTLY WITHOUT PUDDLE FORMATION OR SURFACE RUNOFF.
7. THE FACILITY SHALL BE INSPECTED AT 18-30 HOURS AFTER A SIGNIFICANT RAINFALL (0.5-1.0 INCH) OR ARTIFICIAL FLOODING TO DETERMINE THAT THE FACILITY IS DRAINING PROPERLY.

NO.	DESCRIPTION	REVISED BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

MATERIALS SPECIFICATIONS

1. POROUS ASPHALT PAVEMENT SHALL BE A MINIMUM OF 2.5 INCHES THICK AND CONFORM TO VDOT ROAD AND BRIDGE SPECIFICATIONS FOR ASPHALT MATERIALS (SECTION 210) AND ASPHALT CEMENT (SECTION 211) EXCEPT FOR AGGREGATE GRADATION. THE ASPHALT MIX SHALL BE 5.5% TO 6.0% OF DRY AGGREGATE BY WEIGHT. THE ASPHALT BINDER SHALL BE MODIFIED WITH AN ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22 (AASHTO MP-1) AND APPLIED AT A RATE OF 3.0% BY TOTAL WEIGHT OF THE BINDER. DRAIN DOWN OF THE ASPHALT BINDER SHALL BE NO GREATER THAN 0.1% (ASTM D 6390). THE AGGREGATE GRADATION SHALL BE AS SPECIFIED IN THE TABLE ON THIS SHEET. POROUS PAVEMENT SHALL HAVE A MINIMUM CONNECTED VOID SPACE OF 18%.

2. THE AGGREGATE BASE COURSE SHALL CONSIST OF WASHED VDOT #57 STONE. THE THICKNESS OF THE BASE COURSE IS DETERMINED BY RUNOFF STORAGE NEEDS, THE INFILTRATION RATE OF IN-SITU SOILS, STRUCTURAL REQUIREMENTS OF THE PAVEMENT SUB-BASE, DEPTH TO WATERTABLE AND BEDROCK, AND FROST DEPTH CONDITIONS. VDOT #2, OR #3 STONE MAY BE SUBSTITUTED AS THE BASE COURSE MATERIAL PROVIDED AN ADEQUATE CHOKER COURSE OF VDOT #57 STONE IS PROVIDED BETWEEN THE AGGREGATE BASE COURSE AND THE BEDDING COURSE. ALL STONE SHALL BE WASHED WITH LESS THAN 1.0% PASSING A #200 SIEVE.

3. UNDERDRAINS SHALL BE PVC PIPE CONFORMING TO THE REQUIREMENTS OF ASTM F758, TYPE PS 28 OR ASTM F949, HDPE PIPE CONFORMING TO THE REQUIREMENT OF AASHTO M252 OR M294, TYPE S, OR OTHER APPROVED RIGID PLASTIC PIPE WITH A SMOOTH INTERIOR. UNDERDRAINS SHALL BE PERFORATED WITH 4 ROWS OF 3/8 INCH HOLES WITH A HOLE SPACING OF 1.25 ± 0.25 INCHES OR A COMBINATION OF HOLE SIZE AND SPACING THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.76 SQUARE INCHES PER LINEAR FOOT OF PIPE OR BE PERFORATED WITH SLOTS 0.125 INCHES IN WIDTH THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.5 SQUARE INCHES PER LINEAR FOOT OF PIPE.

4. FILTER FABRIC SHALL BE A NEEDLED NON-WOVEN POLYPROPYLENE GEO-TEXTILE MEETING THE REQUIREMENTS LISTED IN THE TABLE ON THIS SHEET. HEAT SET TO HEAT-CALENDARED FABRICS ARE NOT PERMITTED.

PERVIOUS PAVEMENT DESIGN (AREA "A")

WATER QUALITY VOLUME
FOR FIRST 0.5 INCHES OF RUNOFF
IMPERVIOUS AREA DRAINING TO PERVIOUS PAVEMENT=0.682 AC.
BECAUSE OF THE PROXIMITY OF THE COLONIAL PIPE LINE EASEMENT, THE AREA OF PERVIOUS PAVEMENT IS LIMITED TO 3,995 SQUARE FEET WHICH WILL TREAT ONLY 0.311 OF THE 0.682 IMPERVIOUS ACRES DRAINING TO IT.
(INCLUDING AREA OF PERVIOUS PAVEMENT)
$WQv = 1,815$ cf/AC.
$= 1,815 \times 0.311$
$= 564.46$ cf

MINIMUM AREA OF PERVIOUS PAVEMENT
$Ap = (WQv)/[(Kp/12)x(Ts)]$
$Kp = 1.1$ in/hr
$Ts = 2$ hrs
$Ap = (564.46)/[(1.1/12)x(2)]$
$Ap = 3,078.90$ sq. ft.

PROVIDED AREA OF PERVIOUS PAVEMENT = 3,995 sq.ft.

PERVIOUS PAVEMENT AREA (As) = 3,995 sq.ft.
IMPERVIOUS AREA = 13,540 sq.ft.

13,540/3,995=3.39 THEREFORE RATIO = 3.39:1 < 3.4:1
HENCE AREA IS ACCEPTABLE AND ADEQUATE.

10 YEAR 2-HR. STORM VOLUME
$V10 = 10,890 \times 0.311$
$= 3,387$ cf.

REQUIRED DISCHARGE RATE
$Ou = (V10/Td)/3600$
$= (3,387/24)/3600$
$= 0.0392$ cfs.

STORAGE VOLUME
$Vs = Vot-[(Ks)x(As)x(Ts)/12]-[3600x(Ou)x(Ts)]$
$= 3,387-[3600x0.0392x2]$
$= 3,105$ cf.

STORAGE DEPTH
$dg = Vs/[(ng)x(As)] + 0.5$
$= 3,105/[0.4x3,995] + 0.5$
$= 2.44$ ft.
PROVIDE DEPTH OF 2.5 ft

FACILITY DRAIN TIME
$Td = Vs/[(Ks)x(As)/12 + 3,600x(Ou)]$
$Td = 3,105/[3,600 \times 0.0392]$
$= 22.00$ hrs.
DRAIN TIME IS LESS THAN 24 HRS. THEREFORE ACCEPTABLE.

SIZE OF REQUIRED ORIFICE
$A = Ou/Cx(2xgxHo)^{0.5}$
$= 0.0392/0.6x(2x32.2x2.5)^{0.5}$
$= 0.005$ sq. ft

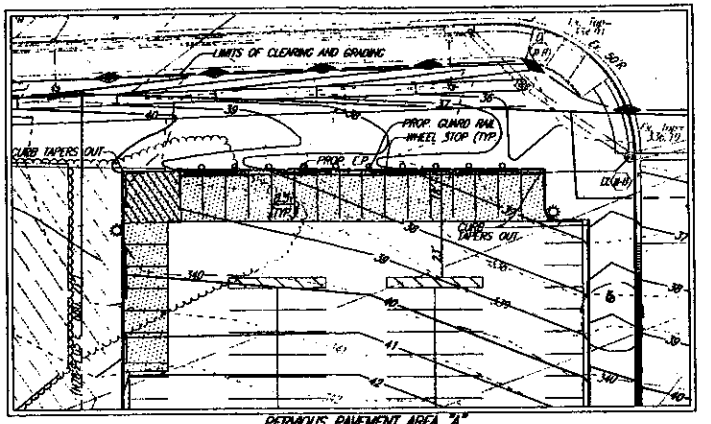
DIAMETER OF ORIFICE
$D = 2x(A/3.14)^{0.5}$
$= 2x(0.005/3.14)^{0.5}$
$= 0.080$ ft. $= 0.96$ in.

AGGREGATE GRADATION

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
1/2 in	100
3/8 in	92-98
#4	34-40
#8	14-20
#16	7-13
#30	0-4
#200	0-2

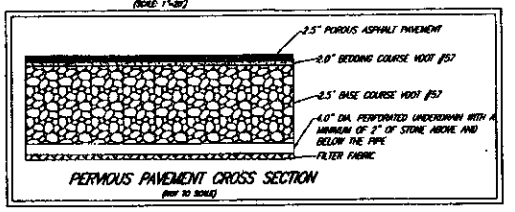
FILTER FABRIC SPECIFICATIONS

GRAB TENSILE STRENGTH (ASTM D4632)	≥ 120 lbs
MULLEN BURST STRENGTH (ASTM D3786)	≥ 225 lbs/in²
UV RESISTANCE (ASTM D4355)	70% strength after 500 hours
FLOW RATE (ASTM D4491)	≥ 125 gal/min/ft²
APPARENT OPENING SIZE (AOS) (ASTM D4751)	US #70 or #80 sieve

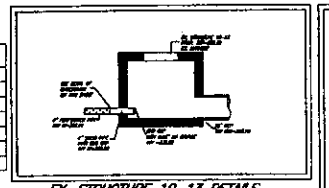


PERVIOUS PAVEMENT AREA "A" SITE PLAN
(SCALE: 1"=40')

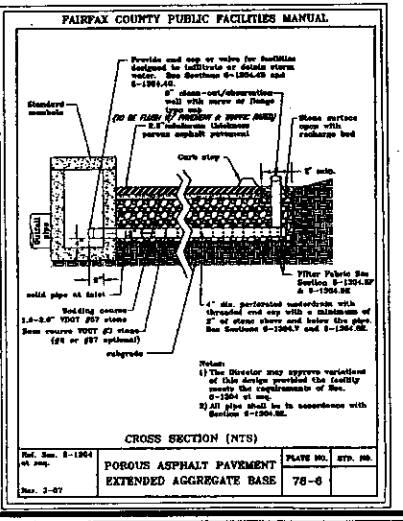
PERVIOUS PAVEMENT NOTES:
1. POROUS PAVEMENT TO BE LOCATED UNDER THE PARKING AREAS AS SHOWN.
2. EACH PERVIOUS PAVEMENT CELL SO HAVE A 2.5' GRAVEL STORAGE RESERVOIR TO PROVIDE SUBMARGIN STORAGE VOLUME.
3. THE UNDERDRAIN WILL CLEAN OUT SHALL BE TRAFFIC RATED AND FLUSH WITH PAVEMENT.
4. THE PERVIOUS PAVEMENT SHOULD BE CLEANED/VACUUMED ON AN ANNUAL BASIS TO PREVENT ORG/SAND/SILT FROM CLOGGING THE VOIDS.



PERVIOUS PAVEMENT CROSS SECTION
(NOT TO SCALE)



EX. STRUCTURE 10-13 DETAILS
(NTS)



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PERVIOUS PAVEMENT DETAILS
PERVIOUS PAVEMENT AREA "A"
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

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SHEET: SPECIAL EXCEPTION
6D OF 6

05-126-H

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11. FOR FACILITIES DESIGNED FOR FULL OR PARTIAL EXFILTRATION, THE FLOOR OF THE FACILITY SHALL OF SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES TO REDUCE SOIL COMPACTION AND LEVELED BEFORE THE FILTER FABRIC AND STONE ARE PLACED.
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13. FILTER FABRIC SHALL BE PLACED ON THE BOTTOM AND SIDES OF THE FACILITY. STRIPS OF FILTER FABRIC SHALL OVERLAP BY A MINIMUM OF 2 FEET. FABRIC SHALL BE SECURED MINIMUM OF 4 FEET BEYOND THE EDGE OF EXCAVATION.
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16. AFTER INSTALLATION OF THE FILTER FABRIC OVER THE SOIL SUBGRADE, A 2 INCH LIFT OF AGGREGATE SHALL BE PLACED FOR THE UNDERDRAIN BEDDING
17. UNDERDRAIN PIPING SHALL BE INSTALLED AND SUFFICIENT AGGREGATE SHALL BE PLACED AROUND AND OVER THE UNDERDRAIN PIPE TO PREVENT DAMAGE TO THE PIPE PRIOR TO COMPACTION.
18. AGGREGATE SHALL BE PLACED IN 4 TO 8 INCH LIFTS AND COMPACTED WITH A STATIC ROLLER
19. AT LEAST 4 PASSES SHOULD BE MADE WITH A MINIMUM 10-TON STATIC ROLLER. THE INITIAL PASS OF THE ROLLER CAN BE WITH VIBRATION TO CONSOLIDATE THE BASE MATERIAL
20. THE FINAL PASSES OF THE ROLLER SHOULD BE WITHOUT VIBRATION. NO VISIBLE MOVEMENT SHOULD OCCUR IN THE BASE MATERIAL WHEN COMPACTION IS COMPLETE.

INSTALLATION OF POROUS ASPHALT PAVEMENT

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2. POROUS ASPHALT PAVEMENT IS INSTALLED SIMILARLY TO REGULAR ASPHALT PAVEMENT. THE PAVEMENT SHALL BE LAID IN A SINGLE LIFT OVER THE CHOKER COURSE. THE LAYING TEMPERATURE SHALL BE BETWEEN 230°F AND 260°F, WITH A MINIMUM AIR TEMPERATURE OF 50°F, TO MAKE SURE THAT THE SURFACE DOES NOT STIFFEN BEFORE COMPACTION.

3. COMPACTION OF THE SURFACE COURSE SHOULD BE COMPLETED WHEN THE SURFACE IS COOL ENOUGH TO RESIST A 10-TON ROLLER. ONE OR TWO PASSES OF THE ROLLER ARE REQUIRED FOR PROPER COMPACTION. MORE ROLLING COULD CAUSE A REDUCTION IN THE POROSITY OF THE PAVEMENT.

4. THE MIXING PLANT SHALL CERTIFY TO THE AGGREGATE MIX, THE ABRASION LOSS FACTOR, AND THE ASPHALT CONTENT IN THE MIX. THE ASPHALT MIX SHALL BE TESTED FOR ITS RESISTANCE TO STRIPPING BY WATER USING ASTM 1664. IF THE ESTIMATED COATING AREA IS NOT ABOVE 95%, ADDITIONAL ANTISTRIPPING AGENTS SHALL BE ADDED TO THE MIX.

5. THE MIX SHALL BE TRANSPORTED TO THE SITE IN A CLEAN VEHICLE WITH SMOOTH DUMP BEDS SPRAYED WITH A NON-PETROLEUM RELEASE AGENT. THE MIX SHALL BE COVERED DURING TRANSPORTATION TO CONTROL COOLING.

6. THE FULL PERMEABILITY OF THE PAVEMENT SURFACE SHALL BE TESTED BY APPLICATION OF CLEAN WATER AT A RATE OF AT LEAST 5 GPM OVER THE SURFACE. ALL WATER MUST INFILTRATE DIRECTLY WITHOUT PUDDLE FORMATION OR SURFACE RUNOFF.

7. THE FACILITY SHALL BE INSPECTED AT 18-30 HOURS AFTER A SIGNIFICANT RAINFALL (0.5-1.0 INCH) OR ARTIFICIAL FLOODING TO DETERMINE THAT THE FACILITY IS DRAINING PROPERLY.

NO.	DESCRIPTION	APPR BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

MATERIALS SPECIFIC TIONS

1. POROUS ASPHALT PAVEMENT SHALL BE A MINIMUM OF 2.5 INCHES THICK AND CONFORM TO VDOT ROAD AND BRIDGE SPECIFICATIONS FOR ASPHALT MATERIALS (SECTION 210) AND ASPHALT CEMENT (SECTION 211) EXCEPT FOR AGGREGATE GRADATION. THE ASPHALT MIX SHALL BE 5.75% TO 6.0% OF DRY [illegible] ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22 (AASHTO MP-1) AND APPLIED AT A RATE OF 3.0% BY TOTAL WEIGHT OF THE BINDER. DRAIN DOWN OF THE ASPHALT BINDER SHALL BE NO GREATER THAN 0.3% (ASTM D 6390). THE AGGREGATE GRADATION SHALL BE AS SPECIFIED IN THE TABLE ON THIS SHEET. POROUS PAVEMENT SHALL HAVE A MINIMUM CONNECTED VOID SPACE OF 16%.

2. THE AGGREGATE BASE COURSE SHALL CONSIST OF WASHED VDOT #57 STONE. THE THICKNESS OF THE BASE COURSE IS DETERMINED BY RUNOFF STORAGE NEEDS, THE INFILTRATION RATE OF IN-SITU SOILS, STRUCTURAL REQUIREMENTS OF THE PAVEMENT SUB-BASE, DEPTH TO WATERTABLE AND BEDROCK, AND FROST DEPTH CONDITIONS. VDOT #2 OR #3 STONE MAY BE SUBSTITUTED AS THE BASE COURSE MATERIAL PROVIDED AN ADEQUATE CHOKER COURSE OF VDOT #57 STONE IS PROVIDED BETWEEN THE AGGREGATE BASE COURSE AND THE BEDDING COURSE. ALL STONE SHALL BE WASHED WITH LESS THAN 1% PASSING A #200 SIEVE.

3. UNDERDRAINS SHALL BE PVC PIPE CONFORMING TO THE REQUIREMENTS OF ASTM F758, TYPE PS 28 OR ASTM F949; HDPE PIPE CONFORMING TO THE REQUIREMENT OF AASHTO M252 OR M294, TYPE S; OR OTHER APPROVED RIGID PLASTIC PIPE WITH A SMOOTH INTERIOR. UNDERDRAINS SHALL BE PERFORATED WITH 4 ROWS OF 3/8 INCH HOLES WITH A HOLE SPACING OF 3.75 ± 0.25 INCHES OR A COMBINATION OF HOLE SIZE AND SPACING THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 3.78 SQUARE INCHES PER LINEAR FOOT OF PIPE OR BE PERFORATED WITH SLOTS 0.125 INCHES IN WIDTH THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.5 SQUARE INCHES PER LINEAR FOOT OF PIPE.

4. FILTER FABRIC SHALL BE A NEEDLED NON-WOVEN, POLYPROPYLENE GEO-TEXTILE MEETING THE REQUIREMENTS LISTED IN THE TABLE ON THIS SHEET. HEAT SET TO HEAT-CALENDARED FABRICS ARE NOT PERMITTED.

PERVIOUS PAVEMENT DESIGN (AREA "B")

WATER QUALITY VOLUME
FOR FIRST 0.5 INCHES OF RUNOFF
IMPERVIOUS AREA DRAINING TO PERVIOUS PAVEMENT=0.255 AC.
BECAUSE OF THE FINITE AREA OF PARKING IN THIS LOCATION, THE AREA OF PERVIOUS PAVEMENT IS LIMITED TO 2,682 SQUARE FEET WHICH WILL TREAT ONLY 0.209 OF THE 0.255 IMPERVIOUS ACRES DRAINING TO IT.
(INCLUDING AREA OF PERVIOUS PAVEMENT)
WQv = 1,815 cf/AC.
= 1,815 x 0.209
= 379.34 cf.

MINIMUM AREA OF PERVIOUS PAVEMENT
Ap = (WQv)/[(Kp/12)x(Ts)]
Kp = 1.1 in/hr
Ts = 2 hrs
Ap = (379.34)/[(1.1/12)x(2)]
Ap = 2,069.13 sq. ft.

PROVIDED AREA OF PERVIOUS PAVEMENT = 2,682 sq.ft.

PERVIOUS PAVEMENT AREA (As) = 2,682 sq.ft.
IMPERVIOUS AREA = 9,104 sq.ft.

9,104/2,682=3.39 THEREFORE RATIO = 3.39:1 < 3.4:1
HENCE AREA IS ACCEPTABLE AND ADEQUATE.

10 YEAR 2-HR. STORM VOLUME
V10 = 10,890 x 0.209
= 2,276 cf.

REQUIRED DISCHARGE RATE
Qu = (V10/Td)/3600
= (2,276/24)/3600
= 0.026 cfs.

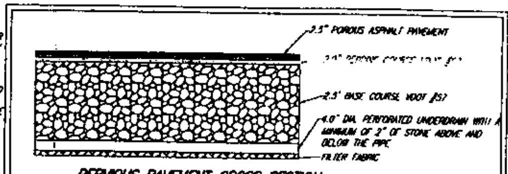
STORAGE VOLUME
Vs = Vns-[(Ks)x(As)x(Ts)/12]-[3600x(Qu)x(Ts)]
= 2,276-[3600x0.026x2]
= 2,089 cf.

STORAGE DEPTH
dg = Vs/[(ng)x(As)] + 0.5
= 2,089/[0.4x2,682] + 0.5
= 2.45 ft
PROVIDE DEPTH OF 2.5 ft.

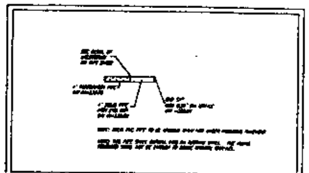
FACILITY DRAIN TIME
Td = Vs/ [(Ks)x(As)/12 + 3,600x(Qu)]
Td = 2,089/[3,600 x 0.026]
= 22.32 hrs
DRAIN TIME IS LESS THAN 24 HRS THEREFORE ACCEPTABLE.

SIZE OF REQUIRED ORIFICE
A = Qu/Cx(2xgxHo)^0.5
= 0.026/0.6x(2x32.2x2.5)^0.5
= 0.0034 sq. ft

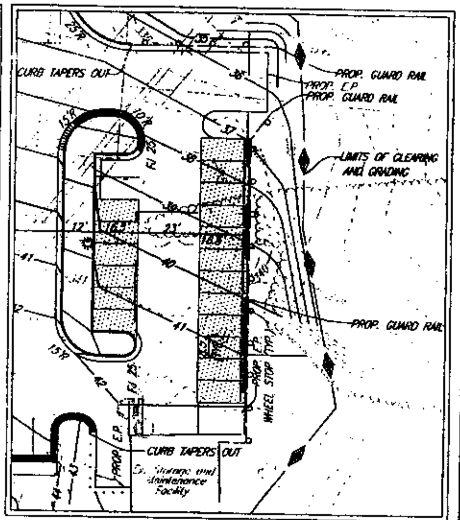
DIAMETER OF ORIFICE
D = 2x(A/3.14)^0.5
= 2x(0.0034/3.14)^0.5
= 0.066 ft. = 0.79 in.



PERVIOUS PAVEMENT CROSS SECTION
(NOT TO SCALE)



OUTLET DETAILS
(N.T.S)



PERVIOUS PAVEMENT AREA "B" SITE PLAN
(SCALE: 1"=30')

PERVIOUS PAVEMENT NOTES:

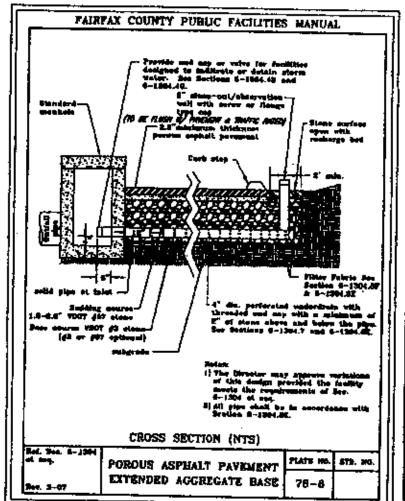
1. PERVIOUS PAVEMENT TO BE LOCATED UNDER THE PARKING AREAS AS SHOWN.
2. EACH PERVIOUS PAVEMENT CELL TO HAVE A 3' GRAVEL STORAGE RESERVOIR TO PROVIDE STORMWATER STORAGE VOLUME.
3. THE OBSERVATION WELL CLEAN OUT SHALL BE TRAFFIC RATED AND FLUSH WITH PAVEMENT.
4. THE PERVIOUS PAVEMENT SHOULD BE CLEANED/VACUUMED ON AN ANNUAL BASIS TO PREVENT CLAY/SAND/SILT FROM CLOGGING THE VOIDS.

AGGREGATE GRADATION

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
1/2 in	100
3/8 in	92-98
#4	34-40
#8	14-20
#16	7-13
#30	0-4
#200	0-2

FILTER FABRIC SPECIFICATIONS

GRAB TENSILE STRENGTH (ASTM D4632)	≥ 120 lbs
MULLEN BURST STRENGTH (ASTM D3786)	≥ 225 lbs/in²
UV RESISTANCE (ASTM D4355)	70% strength after 500 hours
FLOW RATE (ASTM D4491)	≥ 125 gal/min/ft²
APPARENT OPENING SIZE (AOS) (ASTM D4751)	US #70 or #80 sieve



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PERVIOUS PAVEMENT DETAILS
PERVIOUS PAVEMENT AREA "B"
GREENBRIAR PARK
IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE:	JANUARY 7, 2011
SCALE:	AS SHOWN
DESIGN:	JDC/NVD
DRAFT:	JDC/NVD
CHECKED BY:	JDC
ARCH.	N/A
JOB NUMBER:	05-126-11
SHEET	15

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6E of 6

05-126-H

INDIVIDUAL OUTLET RATING TABLES

Type . . Individual Outlet Curves
Name . . Outlet 1
Page 12.04

File. . . W:\05126\4338\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = OS (Orifice-Circular)
Upstream ID = (Pond Water Surface)
Downstream ID = CO (Culvert-Circular)

Pond WS Elev Ft	Device Q cfs	(Total) HW HGL Ft	Convergence BE HGL Ft	Next DS HGL Ft	DS HGL Error +/-Ft	Q Sum Error +/-cfs	DS Chan TW Ft	TW Error +/-Ft
333.29	.00							Free Outfall
333.54	.01	WS below an inverts no flow 333.54 H = 1.7	333.37	333.37	.000	.000	Free Outfall	
333.79	.01	333.79 H = 4.0	333.39	333.39	.000	.000	Free Outfall	
334.04	.02	334.04 H = 6.4	333.40	333.40	.000	.000	Free Outfall	
334.29	.02	334.29 H = 8.8	333.41	333.41	.000	.000	Free Outfall	
334.54	.03	334.54 H = 11.2	333.42	333.42	.000	.000	Free Outfall	
334.79	.03	334.79 H = 13.6	333.43	333.43	.000	.000	Free Outfall	
335.04	.03	335.04 H = 16.0	333.44	333.44	.000	.000	Free Outfall	
335.29	.03	335.29 H = 18.5	333.44	333.44	.000	.000	Free Outfall	
335.54	.03	335.54 H = 20.9	333.45	333.45	.000	.000	Free Outfall	
335.79	.04	335.79 H = 23.3	333.45	333.45	.000	.000	Free Outfall	
336.04	.04	336.04 H = 25.7	333.46	333.46	.000	.000	Free Outfall	
336.13	.04	336.13 H = 26.67	333.46	333.46	.000	.000	Free Outfall	

INDIVIDUAL OUTLET RATING TABLES CONT'D

Type. . . Individual Outlet Curves
Name. . Outlet 1
Page 12.05

File. . . W:\05126\4338\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = CO (Culvert-Circular)
Upstream ID = OS (Orifice-Circular)
Downstream ID = TW (Pond Outfall)

Upstream open channel maximum capacity . 10 cfs

Pond WS Elev Ft	Device Q cfs	(Total) HW HGL Ft	Convergence BE HGL Ft	Next DS HGL Ft	DS HGL Error +/-Ft	Q Sum Error +/-cfs	DS Chan TW Ft	TW Error +/-Ft
333.29	.00							Free Outfall
333.54	.01	WS below an inverts no flow 333.37 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
333.79	.01	333.39 CRIT.DEPTH CONTROL	Free	Free	.000	.001	Free Outfall	
334.04	.02	333.40 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
334.29	.02	333.41 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
334.54	.03	333.42 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
334.79	.03	333.43 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.04	.03	333.44 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.29	.03	333.44 CRIT.DEPTH CONTROL	Free	Free	.000	.001	Free Outfall	
335.54	.04	333.45 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.79	.04	333.45 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.04	.04	333.46 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.13	.04	333.46 CRIT.DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	

MASTER NETWORK SUMMARY

Type. . Master Network Summary
Name. . Subcatchment
File. . . W:\05126\4338\Comps\SWM-BMP\PondPack\Pervious Pavement Area A.ppw
Page 1.01

MASTER DESIGN STORM SUMMARY

Network Storm Collection Fairfax County-B

Return Event	Total Depth in	Rainfall Type	Ref ID
2	2.0000	Synthetic Curve	Type11 Defer
10	3.6000	Synthetic Curve	Type11 Defer

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(+Node=Outfall, +Node=Diversion)
(Trans MFG Transition Blank=Mean L,W,D% Rnfl% UH,Ex=UPD)

Node ID	Type	Return Event	HYG Hyd No.	From	Peak Inflow cfs	Peak Outflow cfs	Max WSEL Ft	Max Pond Storage Cu Ft
+Out 10	ICT	2	1473		12.9117	.02		
+Out 10	ICT	10	3980		12.8888	.03		
POND 10	IN POND	2	1394		11.9119	.67		
POND 10	IN POND	10	3780		11.9119	1.57		
POND 10	OUT POND	2	1476		12.9111	.02	333.94	1036
POND 10	OUT POND	10	3983		12.8888	.03	334.18	1119
SUBAREA 10	AREA	2	1391		11.9119	.69		
SUBAREA 10	AREA	10	3780		11.9119	1.57		

SWM COMPUTATIONS - INPUT DATA

Type . . . Outlet Input Data
Name . . Outlet 1
Page 12.01

File . . . W:\05126\4338\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

REQUESTED POND WS ELEVATIONS

Min. Elev = 333.29 Ft
Increment = .25 Ft
Max. Elev = 336.13 Ft

OUTLET CONNECTIVITY

---> Forward Flow Only (Upstream to Downstream)
<--- Reverse Flow Only (Downstream to Upstream)
<--> Forward and Reverse Both Allowed

Structure	ID		Outfall	El. Ft	El. Ft
Orifice-Circular	OS	--->	CO	333.290	336.125
Culvert-Circular	CO	--->	TW	333.290	336.125

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = OS
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev = 333.29 Ft
Diameter = .0800 Ft
Orifice Coeff = .600

OUTLET STRUCTURE INPUT DATA

Structure ID = CO
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = .3000 Ft
Upstream Invert = 333.29 Ft
Downstream Invert = 333.00 Ft
Horiz. Length = 34.00 Ft
Barrel Length = 34.00 Ft
Barrel Slope = .00853 Ft/Ft

OUTLET CONTROL DATA

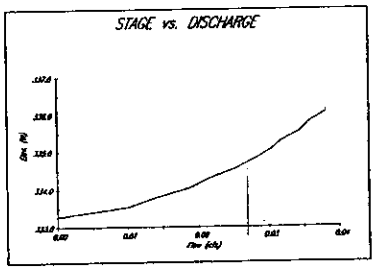
Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = 19139 (per Ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 Ft

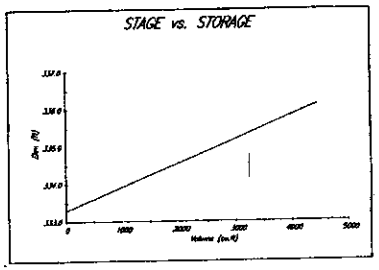
INLET CONTROL DATA

Equation Form = 1
Inlet Control K = .0398
Inlet Control M = 2.0000
Inlet Control c = .03980
Inlet Control Y = .6700
T1 ratio (HW/D) = 1.155
T2 ratio (HW/D) = 1.500
Slope Factor = -.500

Use unsubmerged inlet control Form 1 when below T1 elev.
Use submerged inlet control Form 1 when above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2.
At T1 Elev = 333.67 Ft ---> Flow = .19 cfs
At T2 Elev = 333.92 Ft ---> Flow = .20 cfs





NO.	DESCRIPTION	CHKD BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

COMPOSITE RATING CURVE

Type. . Composite Rating Curve
Name. . Outlet 1
Page 12.06

File. . . W:\05126\4338\Comps\SWM-BMP\PondPack\Pervious Pavement Area A.ppw

COMPOSITE OUTFLOW SUMMARY

WS Elev, Total Q

Elev Ft	Q cfs	TW Elev Ft	Convergence Error +/-Ft	Notes Contributing Structures
333.29	.00	Free Outfall		Cmp ID OS,CO
333.54	.01	Free Outfall		OS,CO
333.79	.01	Free Outfall		OS,CO
334.04	.02	Free Outfall		OS,CO
334.29	.02	Free Outfall		OS,CO
334.54	.03	Free Outfall		OS,CO
334.79	.03	Free Outfall		OS,CO
335.04	.03	Free Outfall		OS,CO
335.29	.03	Free Outfall		OS,CO
335.54	.03	Free Outfall		OS,CO
335.79	.04	Free Outfall		OS,CO
336.04	.04	Free Outfall		OS,CO
336.13	.04	Free Outfall		OS,CO

LEVEL POOL ROUTING DATA

Type . . . Pond C-I-O Table
Name. . POND 10
File . . . W:\05126\4338\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW
Page 13.01

LEVEL POOL ROUTING DATA

HYG Dir = W:\05126\4338\Comps\SWM-BMP\PondPack\
Inflow HYG File = work_pond.hyg - POND 10 ID 2
Outflow HYG File = work_pond.hyg - POND 10 ID 8

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 333.29 Ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infilt. = .00 cfs
Starting Total Outfl = .00 cfs
Time Increment = .0833 hrs

Elevation Ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
333.29	.00	0	3995	.00	.00	.00
333.54	.01	400	3995	.00	.01	2.67
333.79	.01	799	3995	.00	.01	5.34
334.04	.02	1199	3995	.00	.02	8.01
334.29	.02	1598	3995	.00	.02	10.68
334.54	.03	1998	3995	.00	.03	13.35
334.79	.03	2397	3995	.00	.03	16.01
335.04	.03	2797	3995	.00	.03	18.68
335.29	.03	3196	3995	.00	.03	21.35
335.54	.03	3596	3995	.00	.03	24.02
335.79	.04	3995	3995	.00	.04	26.69
336.04	.04	4395	3995	.00	.04	29.35
336.13	.04	4530	3995	.00	.04	30.25

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SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "A"
GREENBRIAR PARK
IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDC/MWD
DRAFT: JDC/MWD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET 18

SHEET: SPECIAL EXCEPTION
6F OF 6

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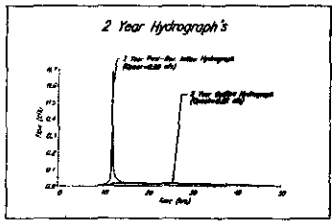
DRAWING NAME

2 YEAR STORM CALCULATIONS

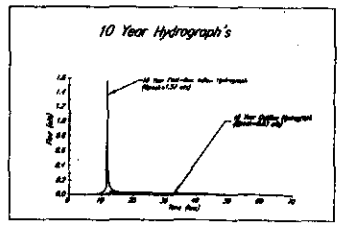


2 YEAR POND ROUTING SUMMARY

2 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

2 YEAR POST DEVELOPMENT OUTFLOW HYDROGRAPH

10 YEAR STORM CALCULATIONS



10 YEAR POND ROUTING SUMMARY

10 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

NO.	DESCRIPTION	BY	APPROVED	DATE

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SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "A"
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 3, 2011
SCALE: AS SHOWN
DESIGN: JDE/WVD
DRAFT: JDE/WVD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET 17

05-126-H

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6G of 6

05-126-H

INDIVIDUAL OUTLET RATING TABLES

Type . Individual Outlet Curves — Page 12.04
Name... Outlet 1
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = CO (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = CO (Culvert-Circular)

Pond WS Elev Ft	Service Q cfs	Total HW HGL Ft	Convergence WS HGL Ft	Heat WT HGL Ft	DS HGL Error +/-Ft	Q SUM Error +/-cfs	DS Chan. TW Ft	TW Error +/-Ft
333.80	.00	VS below or invert	no flow				...	Free Outfall
334.05	.01	334.05 H = .25	333.96	333.96	.000	.000	Free Outfall	
334.30	.01	334.30 H = .41	333.89	333.89	.000	.000	Free Outfall	
334.55	.01	334.55 H = .56	333.89	333.89	.000	.000	Free Outfall	
334.80	.01	334.80 H = .70	333.90	333.90	.000	.000	Free Outfall	
335.05	.02	335.05 H = .83	333.91	333.91	.000	.000	Free Outfall	
335.30	.02	335.30 H = .95	333.91	333.91	.000	.000	Free Outfall	
335.55	.02	335.55 H = 1.03	333.92	333.92	.000	.000	Free Outfall	
335.80	.02	335.80 H = 1.08	333.92	333.92	.000	.000	Free Outfall	
336.05	.02	336.05 H = 1.12	333.93	333.93	.000	.000	Free Outfall	
336.30	.03	336.30 H = 1.2	333.93	333.93	.000	.000	Free Outfall	
336.55	.03	336.55 H = 1.23	333.93	333.93	.000	.000	Free Outfall	
336.63	.03	336.63 H = 1.23	333.94	333.94	.000	.000	Free Outfall	

SWM COMPUTATIONS - INPUT DATA

Type... Outlet Input Data — Page 12.01
Name... Outlet 1
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

ASSESSED POND VS. ELEVATIONS

Min. Elev = 333.80 ft
Increment = .25 ft
Max. Elev = 336.63 ft

OUTLET CONNECTIVITY

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<--> Forward and Reverse Both Allowed

Structure	No.		Outfall	El. Ft	El. Ft
Orifice-Circular	CO	--->	CO	333.800	336.625
Culvert-Circular	CO	--->	TW	333.800	336.625

TW STAGE, VS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = CO
Structure Type = Orifice-Circular

No. of Openings = 1
Invert Elev = 333.80 ft
Diameter = .0660 ft
Orifice Coeff = .600

Structure ID = CO
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = .3300 ft
Upstream Invert = 333.80 ft
Downstream Invert = 333.07 ft
Horiz. Length = 40.00 ft
Barrel Length = 40.01 ft
Barrel Slope = .00000 ft/ft

OUTLET CONTROL DATA

Mannings n = .0120
Ke = .3000 (forward entrance loss)
Kb = 17.7129 (per ft of full flow)
Ki = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA

Equation Form = 1
Inlet Control K = .0298
Inlet Control M = 2.0000
Inlet Control c = .03980
Inlet Control Y = .6700
T1 ratio (HW/D) = .826
T2 ratio (HW/D) = 1.097
Slope Factor = -.500

Use unsubmerged inlet control Form 1 eqn. below t1 elev.
Use submerged inlet control Form 1 eqn. above t2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2.
At T1 Elev = 333.80 ft ---> Flow = .12 cfs
At T2 Elev = 334.23 ft ---> Flow = .20 cfs

INDIVIDUAL OUTLET RATING TABLES CONT'D

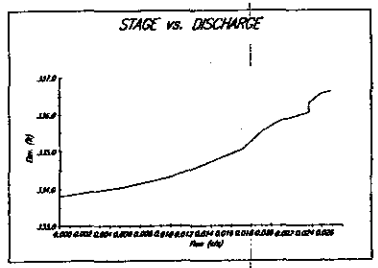
Type . Individual Outlet Curves — Page 12.03
Name... Outlet 1
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

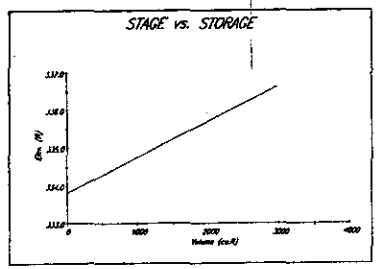
RATING TABLE FOR ONE OUTLET TYPE

Structure ID = CO (Culvert-Circular)

Hemmings open channel maximum capacity = .00 cfs
Upstream ID = CO (Orifice-Circular)
Downstream ID = TW (Pond Outfall)

Pond WS Elev Ft	Service Q cfs	Total HW HGL Ft	Convergence WS HGL Ft	Heat WT HGL Ft	DS HGL Error +/-Ft	Q SUM Error +/-cfs	DS Chan. TW Ft	TW Error +/-Ft
333.80	.00	VS below or invert	no flow				...	Free Outfall
334.05	.01	333.86 CRIT. DEPTH CONTROL	Free	Free	.000	.001	Free Outfall	
334.30	.01	333.89 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
334.55	.01	333.89 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
334.80	.02	333.90 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.05	.02	333.91 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.30	.02	333.91 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.55	.02	333.92 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
335.80	.02	333.92 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.05	.02	333.93 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.30	.03	333.93 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.55	.03	333.93 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	
336.63	.03	333.94 CRIT. DEPTH CONTROL	Free	Free	.000	.000	Free Outfall	





NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

MASTER NETWORK SUMMARY

Type . Master Network Summary — Page 1.01
Name... Watershed
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

MASTER DESIGN STORM SUMMARY

Network Storm Collection Fairfax County-B

Return Event	Total Depth in	Rainfall Type	Hyd ID	
2	2.6000	Synthetic Curve	Type II	24hr
10	3.6000	Synthetic Curve	Type II	24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method
(+Node=Outfall) (Node=Diversion)
(from HYG Truncation Blank=None) (+qpfg 24hr.+rcfg)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max VOL ft	Max Pond Storage cu.ft
HOLD 10	JCT	2	937		12.1614	.01		
HOLD 10	JCT	10	8255		12.4113	.02		
POND 10	IN POND	2	1070		11.9119	.46		
POND 10	IN POND	10	2490		11.9119	1.06		
POND 10	OUT POND	6	940		12.0785	.01	334.44	688.
POND 10	OUT POND	10	2339		12.0785	.01	335.44	1763

COMPOSITE RATING CURVE

Type . Composite Rating Curve — Page 18.06
Name... Outlet 1
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

COMPOSITE OUTFLOW SUMMARY

WS Elev. Ft	Total Q cfs	TW Elev Ft	Convergence Error +/-Ft	Notes Contributing Structures
333.80	.00	Free Outfall		Crv 8 OU.CO
334.05	.01	Free Outfall		OU.CO
334.30	.01	Free Outfall		OU.CO
334.55	.01	Free Outfall		OU.CO
334.80	.02	Free Outfall		OU.CO
335.05	.02	Free Outfall		OU.CO
335.30	.02	Free Outfall		OU.CO
335.55	.02	Free Outfall		OU.CO
335.80	.02	Free Outfall		OU.CO
336.05	.02	Free Outfall		OU.CO
336.30	.02	Free Outfall		OU.CO
336.55	.03	Free Outfall		OU.CO
336.63	.03	Free Outfall		OU.CO

LEVEL POOL ROUTING DATA

Type... Pond C-H-D Table — Page 13.01
Name... POND 10
File... P:\05126\4358\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA & PPV

LEVEL POOL ROUTING DATA

HYG Dir = W:\05126\CASSM\Comps\SWM-BMP\PondPack\
Inflow HYG File = work_pond.hyg - POND 10 IN 2
Outflow HYG File = work_pond.hyg - POND 10 OUT 2

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 333.86 ft
Starting Volume = 0 cu.ft
Starting Outflow = .08 cfs
Starting Infilt. = .00 cfs
Starting Total Stor = .00 cfs
Time Increment = .0833 hrs

Elevation Ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	O Total cfs	2S/t + O cfs
333.86	.08	0	2682	.00	.08	.00
334.03	.01	268	2682	.00	.01	1.79
334.30	.01	536	2682	.00	.01	3.59
334.53	.01	805	2682	.00	.01	5.38
334.80	.02	1073	2682	.00	.02	7.17
335.05	.02	1341	2682	.00	.02	8.96
335.30	.02	1609	2682	.00	.02	10.75
335.55	.02	1877	2682	.00	.02	12.54
335.80	.02	2146	2682	.00	.02	14.33
336.05	.02	2414	2682	.00	.02	16.12
336.30	.02	2682	2682	.00	.02	17.91
336.55	.03	2950	2682	.00	.03	19.70
336.63	.03	3021	2682	.00	.03	20.24

rda
Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
4084 Irving Overlooking Road, Sun Alto, Alexandria VA, 22310, ph 703-549-2000 www.rdaassociates.com
Telephone: (703) 549-7333 Fax: (703) 237-2442
"Turning Challenges into Opportunities"

SWM COMPUTATIONS "B"
PERVIOUS PAVEMENT AREA

GREENBRIAR PARK
IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDC/NVD
DRAFT: JDC/NVD
CHECKED BY: JDC
WRD#: N/A
JOB NUMBER: 05-126-H
SHEET: 18

DRAWING NAME:

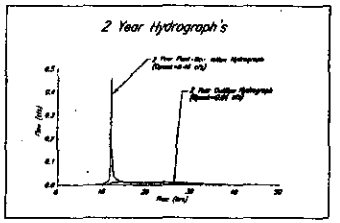
PLEASE RETURN TO COMMUNITY ASSOCIATION ENGINEERING
703-541-2000 www.cae.us.com

THIS SHEET IS FOR INFORMATION ONLY, NOT FOR CONSTRUCTION !!!

SHEET: SPECIAL EXCEPTION
6H OF 6

05-126-H

2 YEAR STORM CALCULATIONS

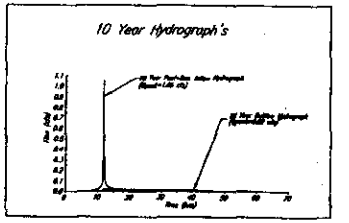


2 YEAR POND ROUTING SUMMARY

2 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

2 YEAR POST DEVELOPMENT OUTFLOW HYDROGRAPH

10 YEAR STORM CALCULATIONS



10 YEAR POND ROUTING SUMMARY

10 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
"Turning Challenges Into Opportunities"

SWM COMPUTATIONS PEVIOUS PAVEMENT AREA "B"

GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDC/MVD
DRAFT: JDC/MVD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET 19

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703-541-2000 www.cae.us.com

THIS SHEET IS FOR INFORMATION ONLY, NOT FOR CONSTRUCTION !!!

SHEET: SPECIAL EXCEPTION
6I of 6

DRAWING IMAGE

VICINITY MAP

SCALE: 1" =500

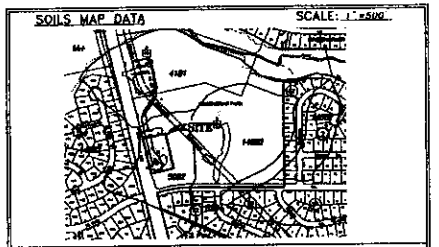
SIDEWALK MAINTENANCE: 0000-VDOT, 0000-FFX CO
TRAIL MAINTENANCE: 0000-FFX CO
ALL OTHER WALKS/TRAILS TO BE OWNER MAINTAINED

TAX MAP REFERENCE NUMBER(S)

MAP PAGE #	DOUBLE CIRCLE #	BLOCK (SINGLE CIRCLE #)	LOT/PARCEL(S) #
45-3	1		11

SOILS MAP DATA

SCALE: 1" =500



FORMAL SOILS REPORT TO BE APPROVED PRIOR TO SECOND SUBMISSION
SOILS MAP SOURCE: ☒COUNTY MAP: ☐PRIVATE SOILS SCIENTIST (FOR UNMAPPED SITES)

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODIBILITY	PROBLEM CLASS
3002	MUSKIE - MECKLENBURG	MARGINAL-BCF	MARGINAL-CPM	2-7%	MODERATE	A

SOILS WITH IDENTIFICATION NUMBERS 58, 66, 69, 141, 142, AND 152 MAY OVERLIE PARENT BEDROCK FORMATIONS WHICH HAVE BEEN FOUND TO CONTAIN NATURALLY OCCURRING ASBESTOS MINERALS. SPECIAL MINIMUM CONSTRUCTION MEASURES AND PRECAUTIONS ARE REQUIRED IN COMPLIANCE WITH HEALTH DEPARTMENT DIRECTIVES WITHIN THESE SOILS OR WITHIN FILL ORIGINATING FROM THESE SOILS.

TABULATIONS

SITE AREA

EXISTING	= 1.53 ACRES (66,166 SF)
PROPOSED	= 1.52 ACRES (66,166 SF)
(NO RIGHT-OF-WAY DEDICATION IS REQUIRED)	
MAXIMUM GROSS FLOOR AREA (0.25 FAR)	= 16637 SF
EXISTING GROSS FLOOR AREA (0.05 FAR)	= 3162 SF (PER ASSESSMENTS)
MAXIMUM BUILDING HEIGHT	= 60 FEET
EXISTING MAX BUILDING HEIGHT	= 22 FEET

PARKING TABULATION

EXISTING PARKING	= 66 SPACES (52 OFFSITE* + 14 SPACES ONSITE)
PROPOSED PARKING	= 61 SPACES (52 OFFSITE* + 26 SPACES ONSITE) (3 SPACES SHALL BE ACCESSIBLE SPACES)

* A SHARED PARKING AGREEMENT DATED MARCH 18, 1987 WAS APPROVED BY THE BOARD OF SUPERVISORS. ON JANUARY 10, 2002, THE AGREEMENT WAS REVISED TO ALLOW UP TO 52 PARKING SPACES TO BE USED BY THE GREENBRIAR CIVIC ASSOCIATION

REQUIRED PARKING	= 61 SPACES
- CIVIC ASSOCIATION	= 33 SPACES (100 / 3 - OCCUPANCY OF 50)
- CHURCH	= 25 SPACES (1 SP / 4 SEATS - 100 SEATS)
- NURSERY SCHOOL	= 3 SPACES (0.19 PER CHILD - 15 CHILDREN)*

MINIMUM YARDS

- FRONT	= 30' MIN (140 DEG ARP (<30°), BUT NOT <30')
- SIDE	= 10' MIN (325 DEG ARP (<10°), BUT NOT <10')
- REAR	= 25' MIN (325 DEG ARP (<25°), BUT NOW <25')

* NURSERY SCHOOL PER SEPARATE SPECIAL EXCEPTION

SWM/BMP NARRATIVE FOR SPECIAL PERMIT

THE CONSTRUCTION OF NEW PARKING IMPROVEMENTS AS SHOWN ON THESE SHEETS SHALL BE PERFORMED UNDER THE DIRECTION OF THE FAIRFAX COUNTY PARK AUTHORITY IN A JOINT PROJECT WITH THE GREENBRIAR COMMUNITY CENTER. A PLAN UNDER ARTICLE 17 OF THE Z.O. TO CONSTRUCT THESE IMPROVEMENTS IS BEING REVIEWED EITHER CONCURRENTLY OR FOLLOWING THE APPROVAL OF THIS SPECIAL PERMIT. ACCORDINGLY, SWM/BMP'S SHALL BE PROVIDED FOR THE OVERALL JOINT PROJECT. STORMWATER MANAGEMENT MAY BE PROVIDED VIA UNDERGROUND DETENTION AND BMP'S MAY BE MET THROUGH A COMBINATION OF OPEN SPACE, PERVIOUS PAVEMENT AND/OR VEGETATED SWALE IF NOT MADE BY SPECIAL. SPECIFICALLY, THE COMMUNITY CENTER SHALL PROVIDE OPEN SPACE TO BE MAINTAINED IN CONSERVATION EASEMENTS. NOTE THAT THE INFORMATION ON SHEET 5 IS NOT YET FORMALLY APPROVED (ARTICLE 17) AND IS SUBJECT TO THE REVIEW OF SUBSEQUENT PLANS. HENCE, THESE SHEETS HAVE BEEN LABELED "FOR INFORMATION ONLY".

LANDSCAPING NOTE:

THE FOLLOWING IS A LIST OF PREFFERED SPECIES OF PLANTS TO BE UTILIZED. THIS IS A LIST OF PREFERENCES, BUT THE FINAL PLANT SELECTION SHALL NOT BE LIMITED TO THIS LIST. ALL FINAL PLANT SELECTIONS SHOWN ON THE SITE PLAN SHALL BE SUBJECT TO APPROVAL BY FAIRFAX COUNTY.

CATEGORY I TREES - MAUR MAPLE & KOUSA DOGWOOD

CATEGORY II / IV TREES - WILLOW OAK, GINKGO, BLACK GUM & YOSHINO CHERRY

EVERGREEN SHRUBS - INKBERRY HOLLY, SCHIPKAENSIS CHERRY LAUREL, GLOSSY ABELIA, ARROWWOOD VIBURNUM

NOTES

1) THE CURRENT ZONING IS R-3C (WSPOD)
2) THIS SITE IS LOCATED ON FAIRFAX COUNTY TAX MAP 45-3 (11) PARCEL 11
3) THE CURRENT OWNER IS THE GREENBRIAR CIVIC ASSOCIATION.
4) THE PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
5) THE TOPOGRAPHY IS A RESULT OF A FIELD RUN SURVEY BY RINKER DESIGN ASSOCIATES, PC (CONTOUR INTERVAL - 2' / U.S.G.S. DATUM)
6) THERE IS NO KNOWN RPA, FLOODPLAIN OR EQC FOUND ONSITE.
7) THERE ARE NO KNOWN EXISTING UTILITY EASEMENTS WITH A WIDTH OF 20' FEET OR MORE ONSITE.
8) TRAIL NOTE: A 10' WIDE CONCRETE WALKWAY SHALL BE PROVIDED AS PROPOSED WITH THE WIDENING OF BTWN/OFELLOW ROAD AS IS SHOWN ON SHEET 3.
9) TO THE BEST OF THE KNOWLEDGE OF THE FIRM PREPARING THIS PLAT, THERE ARE NO KNOWN GRAVES, OBJECTS OR STRUCTURES MARKING A PLACE OF BURIAL FOUND ONSITE.

WAIVER REQUESTED

1) THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS WERE PREVIOUSLY WAIVED AND / OR MODIFIED BY THE BOARD OF ZONING APPEALS PURSUANT TO BPA 76-P-192-1. THE APPLICANT IS REQUESTING REAFFIRMATION OF THE BARRIER WAIVER REQUEST AND MODIFICATION OF THE TRANSITIONAL SCREENING REQUIREMENT IN FAVOR OF THE LANDSCAPING AS SHOWN ON SHEET 3 OF THIS PLAT.

SHEET INDEX

1	COVER SHEET & NOTES/TABULATIONS
2	EXISTING CONDITIONS
3	PROPOSED PLAN
4	PROPOSED PLAN
5	SHEET FOR INFORMATION ONLY - SWM/BMP
6	SHEET FOR INFORMATION ONLY - SWM/BMP
6A	SHEET FOR INFORMATION ONLY - COVER SHEET
6B	SHEET FOR INFORMATION ONLY - OUTFALL ANALYSIS
6C	SHEET FOR INFORMATION ONLY - BMP COMPUTATION
6D	SHEET FOR INFORMATION ONLY - DETAILS
6E	SHEET FOR INFORMATION ONLY - DETAILS
6F	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6G	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6H	SHEET FOR INFORMATION ONLY - SWM COMPUTATION
6I	SHEET FOR INFORMATION ONLY - SWM COMPUTATION

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESENTING COMMENTS	12/27/14

REVISION BLOCK

Community Association Engineering
a division of GJB Engineering, Inc.
P.O. Box 1814
Sperryville, Virginia 22740
Phone: 540-987-8810 Fax: 540-987-8811
Internet: www.gjbengineering.com

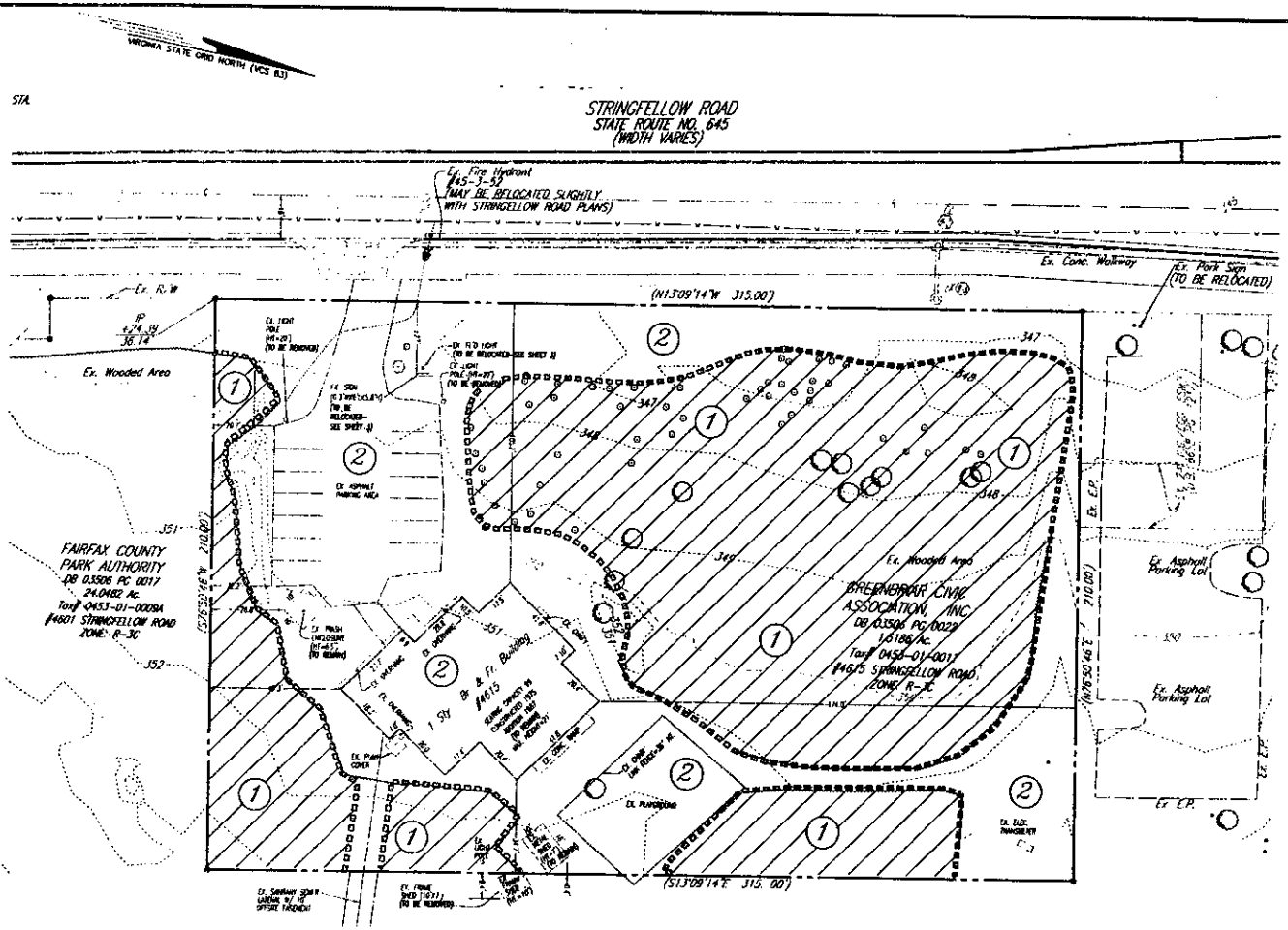
THE SUBMITTING ENGINEER CERTIFIES THAT NO OTHER CHANGES HAVE BEEN MADE TO THIS PLAN EXCEPT THOSE PREVIOUSLY APPROVED.

ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THE PLANS, SPECIFICATIONS AND ESTIMATES OF COST FOR THE PUBLIC IMPROVEMENTS SHOWN HEREON CONFORM TO THE REQUIREMENTS OF THE FAIRFAX COUNTY CODE AND THE PUBLIC FACILITIES MANUAL, AND THE ACCEPTABLE ENGINEERING PRACTICE. A.C.

SPECIAL PERMIT PLAT
GREENBRIAR COMMUNITY CENTER

SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: AS SHOWN
DATE: JUNE 14, 2010
GJB FILE NO.: 756-SPP
SHEET 1 OF 6



GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

EVM TABULATION:

SITE AREA = 1.5186 ACRES (66,150 SF)

EXISTING VEGETATION COVER TYPES:

(1) = UPLAND FOREST = ±32,460

(2) = DEVELOPED LAND = ±33,890

TOTAL EXISTING TREE CANOPY = 49%

NOTE: EXISTING HARDWOODS INCLUDE OAK, YELLOW POPLAR AND VIRGINIA PINE. THE OVERALL CONDITION IS GOOD.

EXISTING FEATURES AND EXISTING VEGETATION MAP

1"=20'

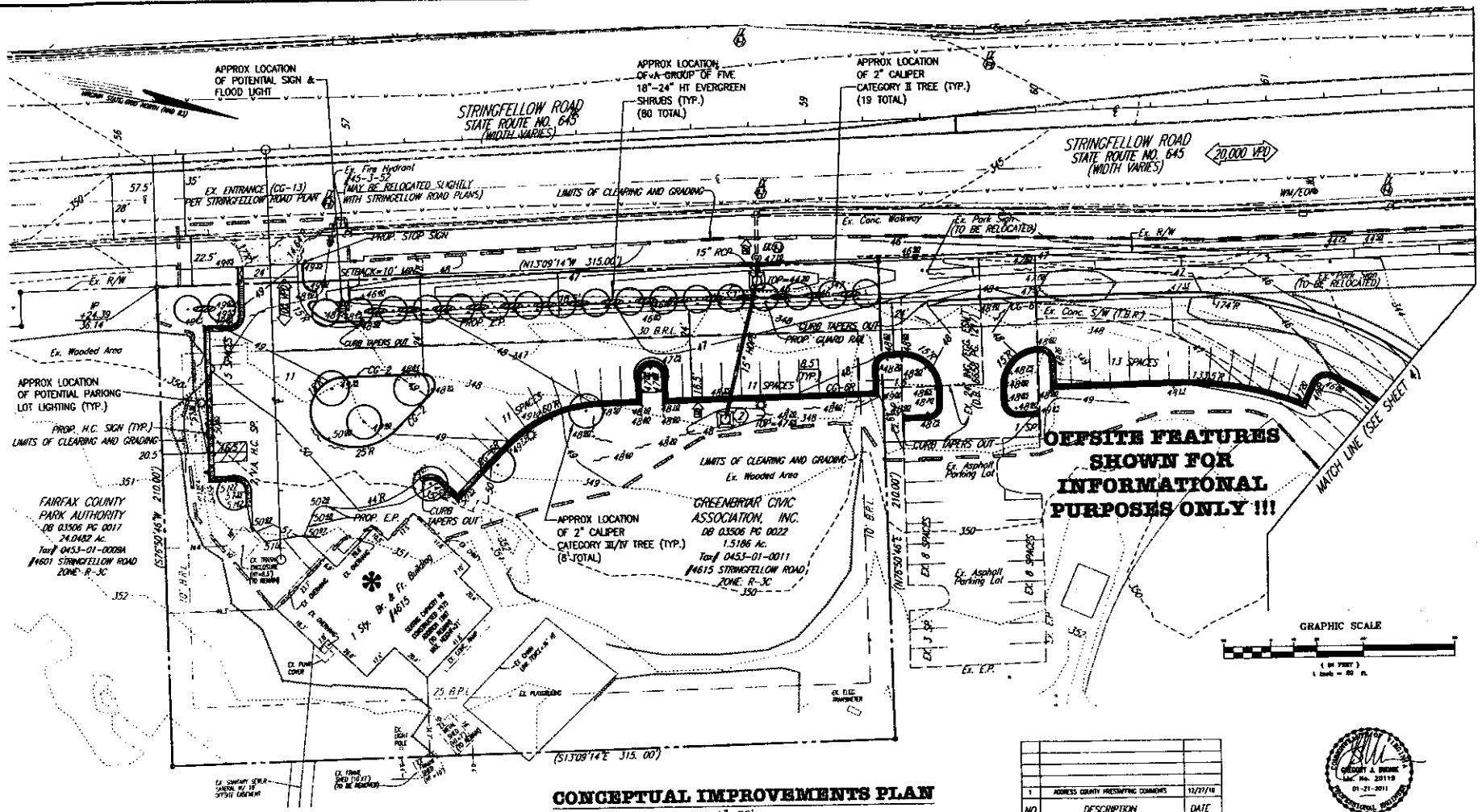
NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESENTING COMMENTS	12/27/10

REVISION BLOCK

Community Association Engineering
a division of GJB Engineering, Inc.

SPECIAL PERMIT PLAT
GREENBRIAR COMMUNITY CENTER
SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1=20'
DATE: JUNE 14, 2010
GJB FILE NO. 756-SPP
SHEET: 2 OF 6



CONCEPTUAL IMPROVEMENTS PLAN

1"=20'

*** SEE SHEET 2 FOR INFORMATION REGARDING EXISTING FEATURES**

NOTE: BASED ON AN ADDENDUM TO THE REPORT OF GEOTECHNICAL FINDINGS AND RECOMMENDATIONS PREPARED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND DATED MAY 21, 2008, THE SUBBASE DEPTH IS BASED ON AN DESIGN CBR VALUE OF 3.4. SOIL TEST OF SUBGRADE MUST BE SUBMITTED FOR ACTUAL DETERMINATION OF REQUIRED SUBBASE THICKNESS PRIOR TO SUBBASE PLACEMENT.

NOTE: GEOTECHNICAL ENGINEER TO DETERMINE THE ADEQUACY OF THESE RECOMMENDED TYPICAL SECTIONS AND PROVIDE SUITABLE REPLACEMENTS BASED ON FIELD RUN INFORMATION AFTER CLEARING HAS BEGUN, IF NECESSARY PRIOR TO INSTALLATION.

NOTE: FOR PAVING WITHIN RIGHT OF WAY, IF NECESSARY, CONTRACTOR IS TO MATCH TO EXISTING TYPICAL SECTION.

NOTE: FILL TO BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D698) WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE CONTENT OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL WORK ARE S.B. UNLESS OTHERWISE NOTED.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: TEST PITS SHALL BE REQUESTED A MINIMUM OF 48 HOURS IN ADVANCE FOR THOSE UTILITIES REQUIRING INSP.

NOTE: FILL TO BE COMPACTED AS SPECIFIED IN THE SOILS REPORT.

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESENTING COMMENTS	12/27/10

REVISION BLOCK

GREGORY J. BROWN
Lic. No. 20119
01-21-2011
PROFESSIONAL ENGINEER

ABBREVIATIONS

A=	- ARC LENGTH	F.H.	- FIRE HYDRANT	T.M.	- TAX MAP		
B.O.V.	- BLOW OFF VALVE	H.C.	- HANDICAPPED	TEMP	- TEMPORARY		
B.R.L.	- BUILDING RESTRICTION LINE	INV.	- INVERT	T.B.R.	- TO BE REMOVED		
E	- CENTER LINE	LAT.	- LATERAL	TYP.	- TYPICAL		
C.O.	- CLEAN OUT	M.H.	- MANHOLE	V.A.	- VAN ACCESSIBLE		
CONC.	- CONCRETE	N/F	- NOW/FORMERLY	ELEV.	- ELEVATION		
C&G	- CURB AND GUTTER	PC	- PVMT	APPROX.	- APPROXIMATE		
D.B.	- DEED BOOK	PVC	- POLYVINYL CHLORIDE	PVMT.	- PAVEMENT		
DWG	- DRAWING	RCP	- REINFORCED CONCRETE PIPE	P.I.N.	- PARCEL IDENTIFICATION NUMBER		
L.D.	- LOADING DOCK	RET. WALL	- RETAINING WALL	M/A	- MATERIAL		
D.I.P.	- DUCTILE IRON PIPE	R/W	- RIGHT OF WAY	INSTR.#	- INSTRUMENT NUMBER		
EASMT.	- EASEMENT	SAN.	- SANITARY	L.S.	- LOADING SPACE		
E.P.	- EDGE OF PAVEMENT	SEW.	- SEWER	O.D.	- OVERHEAD DOOR		
ENT.	- ENTRANCE	S/W	- SIDEWALK	H.H.	- HAND HOLE		
EX.	- EXISTING	S.F.	- SQUARE FEET				
S.R.	- FACE OF CURB RADIUS	STM.	- STORM				

Community Association Engineering
a division of G.J.B. Engineering, Inc.
P.O. Box 1314
Gainesville, Virginia 20155
Phone: 703-754-9500 Fax: 703-754-9501
Internet: www.gjbengineering.com

THE SUBSURFACE DRAINAGE SYSTEMS SHOWN ARE TO BE PLACED ALONG BOTH SIDES OF THE PARKING LOT PERIMETER.

THE SUBSURFACE DRAINAGE SYSTEMS SHOWN ARE TO BE PLACED ALONG BOTH SIDES OF THE PARKING LOT PERIMETER.

SPECIAL PERMIT PLAT
GREENBRIAR COMMUNITY CENTER

STRINGFIELD MAGISTERIAL DISTRICT — FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=20'
DATE: JUNE 14, 2010
G.J.B. FILE NO.: 756-SPP
SHEET: 3 OF 6

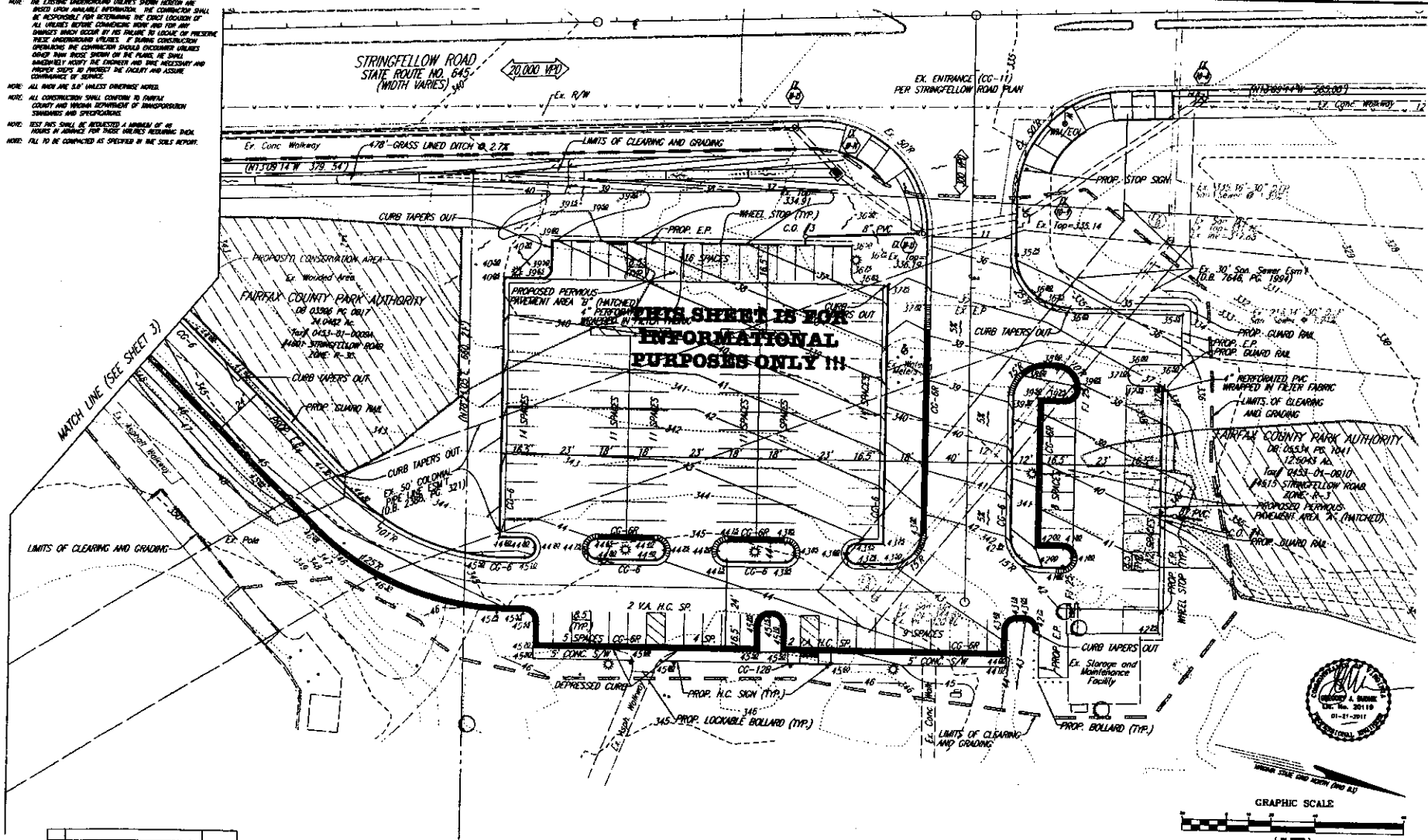
NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE INTEGRITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL WALKS ARE 5.0' UNLESS OTHERWISE NOTED.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: TEST PITS SHALL BE REQUESTED A MINIMUM OF 48 HOURS IN ADVANCE FOR THOSE VALVES REQUIRING THEM.

NOTE: FILL TO BE COMPACTED AS SPECIFIED IN THE SOILS REPORT.



NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESERVING COMMENTS	12/27/10

REVISION BLOCK

NOTE: THE EXISTING WATER METERS/VALVES LOCATED WITHIN THE COLONIAL EASEMENT SHOULD BE RESTRIPED TO DETERMINE IF THEY CAN BE REMOVED, IF THEY HAVE BEEN ABANDONED.

NOTE: VPD BASED ON COUNTY PARK (1/2) WAYS CREDITED PER ACRE ON SUNDRY CHART ON PAGE 641 OF 7TH EDITION OF ITE'S TRIP GENERATION MANUAL.

LEGEND

PROPOSED	EXISTING	DESCRIPTION
		SANITARY MANHOLE
		SANITARY STRUCTURE NUMBER
		SANITARY CLEAN OUT NUMBER
		SANITARY CLEANOUT
		TELEPHONE MANHOLE
		ACCESSIBLE RAMP
		CUT WIRE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
		STREET SIGN
		BOLLARD
		STORM SEWER STRUCTURE NUMBER
		ROOF DRAIN
		SPOT ELEVATION
		WATERLINE
		LIMITS OF CLEARING & GRADING
		EXISTING PROPERTY LINE
		EXISTING EDGE OF PAVEMENT
		CURB & GUTTER (CC-6)
		CURB & GUTTER (CG-6R)
		CURB & GUTTER (TRANSITION)
		STORM SEWER DRAIN
		TREE LINE
		UTILITY POLE
	230 VPD	VEHICLES PER DAY COUNT
		VDOT PR. 0.000 CHORLAND RELIEF PIPE
		TEST PIT REQUIRED
		LIGHT POLE

Community Association Engineering
a division of G.J.B. Engineering, Inc.
P.O. Box 1414
Springfield, Virginia 22150-1414
(703) 451-8400
(703) 451-8401 (FAX)
DESIGN • DEVELOPMENT • MANAGEMENT
(CIVIL • STRUCTURAL • MECHANICAL • ELECTRICAL • PLUMBING • FIRE PROTECTION • SITE DEVELOPMENT • SUBDIVISIONS • ROADWAYS • STORM DRAINAGE • SANITARY SEWER • WATER • SITE LIGHTING • PARKING LOTS • RECREATIONAL FACILITIES • COMMUNITY MANAGEMENT)

THE SURVEYING DATA SHOWN HEREON CONFORMS TO THE MINIMUM STANDARDS FOR PROPERTY MAPS AS ADOPTED BY THE VIRGINIA STATE BOARD OF ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS AND CERTIFIED LANDSCAPE ARCHITECTS.

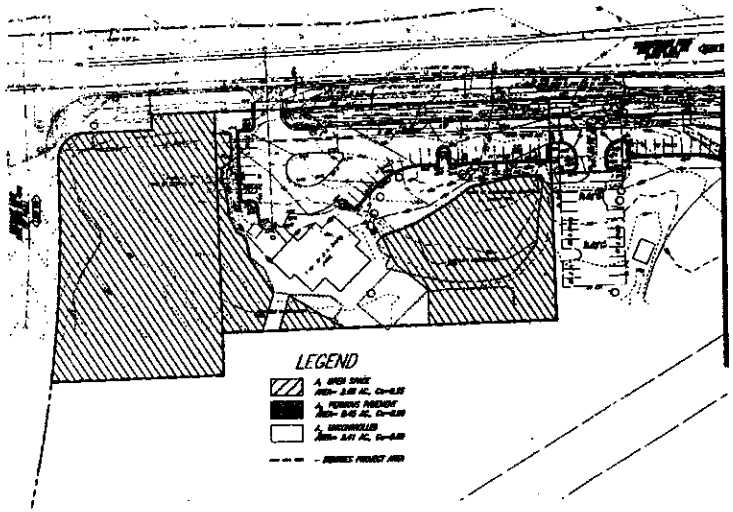
THE SURVEYING DATA SHOWN HEREON CONFORMS TO THE MINIMUM STANDARDS FOR PROPERTY MAPS AS ADOPTED BY THE VIRGINIA STATE BOARD OF ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS AND CERTIFIED LANDSCAPE ARCHITECTS.

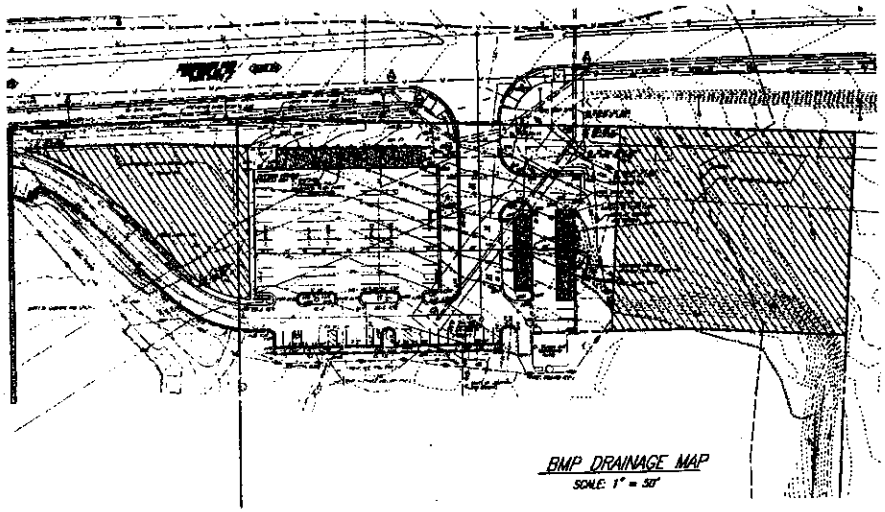
SPECIAL PERMIT PLAT
GREENBRIAR COMMUNITY CENTER

SPRINGFIELD MAGISTERIAL DISTRICT — FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=20'
DATE: JUNE 14, 2010
G.J.B. FILE NO.: 756-SPP
SHEET: 4 OF 6

05-126-H





BMP DRAINAGE MAP
SCALE: 1" = 50'

BMP FACILITY DESIGN CALCULATIONS

Part 1A: WATER QUALITY NARRATIVE

THE SITE IS LOCATED ALONG SPRINGFIELD ROAD IN FAIRFAX COUNTY TO THE NORTH OF THE INTERSECTION OF [illegible]. THE SITE IS PART OF GREENBRIAR PARK. IT IS PROPOSED TO CONSTRUCT A SOMEWHAT [illegible] AND REALIGN [illegible]. THE SITE IS PART OF [illegible] WITHIN THE PROPOSED BUILDINGS, FOR THE PURPOSE OF BMP COMPUTATIONS THE SITE AREA IS 5.92 AC. DUE TO [illegible] THE PROPOSED DEVELOPMENT. THE BMP REQUIREMENT IS MET USING 3 THE NATURE OF THE PROJECT, IT IS CONSIDERED AS REDEVELOPMENT. [illegible] THE CONSTRUCTION AREA, CONVERSION OF CONVENTIONAL AREA, PERVIOUS PAVEMENT AND A REDUCED SIZE. BY USING THE CONSTRUCTION AREA, PERVIOUS PAVEMENT AND THE WEIGHTED SHALL BE MORE PRACTICE A LOW IMPACT DEVELOPMENT APPROACH TO THE DEVELOPMENT IN ORDER TO MINIMIZE THE NEED QUALITY IMPACTS. THE STRUCTURAL METHODS HAVE BEEN SCHEMED TO PROVIDE COMPREHENSIVE BMPS FOR THE PROPOSED DEVELOPMENT.

Part 1B: WATERSHED INFORMATION

LIST OF SUB AREAS AND "C" FACTORS USED

SUBAREA DESIGNATION AND DESCRIPTION	C	ACRES
(1) BMP AREA TO PERVIOUS PAVEMENT	0.80	0.45
(2) OPEN SPACE	0.25	2.68
(3) UNCONTROLLED AREA	0.80	2.81

Part 2: COMPUTE WEIGHTED AVERAGE "C" FACTOR FOR THE PROJECT

(A) TOTAL AREA OF THE PARCEL 5.92 AC (SEE BMP NARRATIVE)

(B) SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) BMP AREA TO PERVIOUS PAVEMENT	0.80		0.45	0.41
(2) OPEN SPACE	0.25		2.68	0.67
(3) UNCONTROLLED AREA	0.80		2.81	1.69
			TOTAL= 5.92	TOTAL= 2.77

(C) WEIGHTED AVERAGE "C" FACTOR FOR THE PARCEL= 2.77 / 5.92 = 0.47

Part 3: COMPUTE THE TOTAL PHOSPHOROUS REMOVAL FOR THE PARCEL

FOR COMPLIANCE WITH PHASE PHOSPHOROUS REMOVAL THE PHOSPHORUS REQUIRED NEEDS TO BE 40%

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFFICIENCY	OFF SITE	AREA RATIO	"C" FACTOR RATIO	PRODUCT
(1)	PERVIOUS PAVEMENT	50		0.45 / 5.92	0.80 / 0.47	3.05
(2)	OPEN SPACE	100		2.68 / 5.92	1	45.27
(3)	UNCONTROLLED	0		2.81 / 5.92	0.80 / 0.47	0.00
					(a) TOTAL BMP PHOSPHOROUS REMOVAL =	50.36

Part 4: DETERMINE COMPLIANCE WITH PHOSPHOROUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT FOR THE ENTIRE PARCEL: (a)= 50.00 %

(B) IF LINE 3(A) (50.36) >= Line 4(a) (50.00) then phosphorus removal requirement is satisfied.

Part 5: DETERMINE COMPLIANCE WITH SITE COVERAGE REQUIREMENT

SUM ALL THE UNCONTROLLED ONSITE AREAS AND COMPUTE A WEIGHTED AVERAGE "C" FACTOR. DO NOT INCLUDE OUTLIFYING OPEN SPACE.

SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) UNCONTROLLED ONSITE AREA	0.80		2.81	1.69
			TOTAL= 2.81	TOTAL= 1.69

(A) TOTAL EQUIVALENT UNCONTROLLED AREA (a) TOTAL 1.69
(B) TOTAL UNCONTROLLED AREA (b) 2.1
(C) WEIGHTED AVERAGE C FACTOR (a)/(b)= (c) 0.80

If line 5(b) < 20% of site area, then site coverage requirement is satisfied.Line 5(a) is the equivalent offsite area for which coverage may be required.

(D) 100 X 2.81 / 5.92 = 47.47 %

Part 6: DETERMINE THE OFFSITE AREAS FOR WHICH COVERAGE IS REQUIRED

For the offsite areas listed in part 1 which flow to proposed onsite BMP's complete the equivalent areas

SUBAREA DESIGNATION	C	X		ACRES = PRODUCT
(E) N/A	0	X	X 0 = 0	
(SEE PART 3)			(a) TOTAL	0 <5(a) = 0

IF THE EQUIVALENT OFFSITE AREA LIKE DRAINAGE TO ALL PROPOSED FACILITIES IS GREATER THAN THE EQUIVALENT UNCONTROLLED AREA OF THE SITE SHOWN IN LINE 5(A), THEN THE OFFSITE AREA CONTROLLED BY THE PROPOSED BMP FACILITIES MAY BE REDUCED UNTIL THE TWO ARE EQUAL. ON-SITE, ALL UNCONTROLLED OFFSITE AREAS DRAINING TO THE PROPOSED BMP FACILITIES MUST BE INCLUDED. ALL OFFSITE AREAS THAT REDUCED SHOULD BE MARKED WITH AN "*" INDICATOR THAT APPEAR IN THE COMPUTATIONS.

Part 7:

COMPUTE THE WEIGHTED C FACTOR FOR THE PROPOSED BMP FACILITY

(A) LIST THE AREAS TO BE CONTROLLED BY THE PROPOSED BMP.

SUBAREA DESIGNATION	C		ACRES	= PRODUCT
(1) OPEN SPACE	0.25	=	2.68	= 0.67
(2) IMPERVIOUS	0.80	=	0.85	= 0.77
			3.19	= 1.44

Part 8: WEIGHTED AVERAGE C FACTOR= 0.41

DETERMINE THE STORAGE REQUIRED

ALL STRUCTURAL BMP'S HAVE BEEN SIZED ACCORDING TO CONVENIENCE DRAINAGE AREAS. PLEASE REFER TO COMPUTATIONS FOR DETAILS.

PHOSPHORUS REMOVAL REQUIREMENT

PER SECTION 6-0401.1 OF THE FAIRFAX COUNTY PFM, THE TOTAL PHOSPHORUS REMOVAL FOR THIS SITE IS 50% BECAUSE THIS SITE IS LOCATED WITHIN THE TEPOD.

MAINTAINENCE NOTE: THE PROPOSED BMP FACILITIES ARE TO BE OWNED AND MAINTAINED BY THE OWNER.

Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
8229 West Broad Street, Suite 200, Richmond, VA 23294 (804) 285-8151 FAX (804) 285-8155 www.rinkerdesign.com
"Turning Challenges into Opportunities"

ADVANCE COPY

BMP COMPUTATIONS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

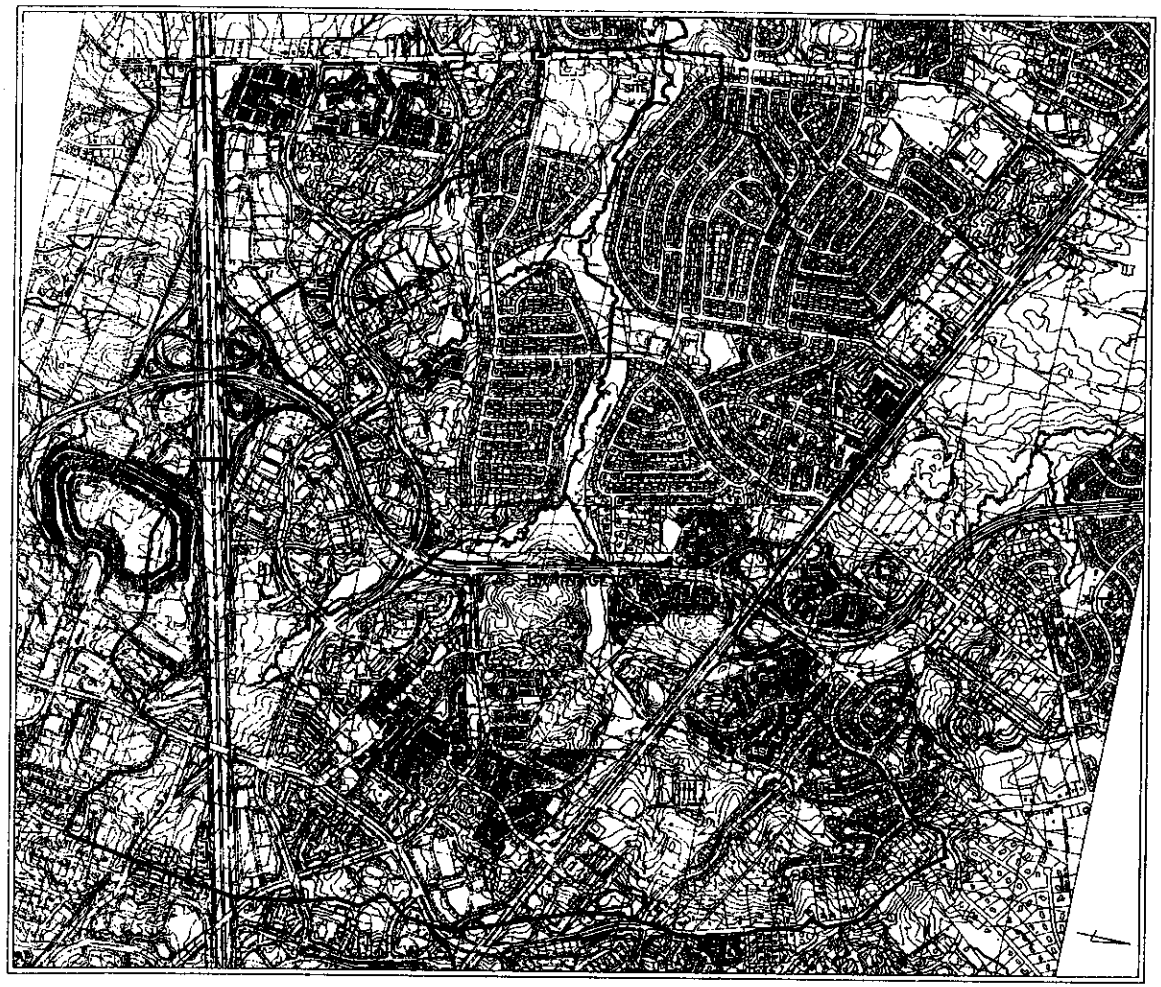
DATE: SEPTEMBER 15, 2009
SCALE: AS SHOWN
DESIGN: JDC/NVO
DRAFT: JDC/NVO
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 11

DRAWING NAME:

NOTE FOR SPECIAL PERMIT PLAT (REVISED THROUGH 12-27-10)
CONSERVATION EASEMENTS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. EXACT LOCATION TO BE DETERMINED DURING ARTICLE 17 REVIEW OF SUBSEQUENT PLANS.

THIS SHEET IS FOR INFORMATION ONLY !!!

SHEET SPECIAL PERMIT 5 OF 6



SCALE: 1"=750'

ADEQUATE OUTFALL NARRATIVE

PROJECT OVERVIEW:

THIS PROJECT PROPOSES ADDITIONS AND IMPROVEMENTS TO THE EXISTING PARKING LOT AT GREENBRIAR PARK. THE SITE IS LOCATED ADJACENT TO STRINGFELLOW ROAD (ROUTE 645), NORTH OF THE INTERSECTION OF STRINGFELLOW ROAD AND MELVILLE LANE. THE SITE IS LOCATED WITHIN THE CUB RUN WATERSHED. THERE ARE TWO EXISTING PARKING LOTS ON SITE, ONE OF WHICH IS GRAVEL. IT IS PROPOSED TO IMPROVE THIS GRAVEL PARKING LOT AND ALSO ADD ADDITIONAL PARKING SPACES. THIS PROJECT ALSO PROPOSES AN ACCESS WAY TO THE GREENBRIAR COMMUNITY CENTER. THE PROJECT ALSO PROPOSES ALL NECESSARY TEMPORARY AND PERMANENT EROSION CONTROL MEASURES TO MEET STATE AND LOCAL REGULATIONS, AS WELL AS A BMP FACILITY TO MEET REQUIREMENTS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE AND AN UNDERGROUND DETENTION FACILITY TO MEET ALL STATE AND COUNTY STORMWATER DETENTION REQUIREMENTS.

THE SITE CONSISTS OF ONE PRIMARY OUTFALLS (P1). PER SECTION 6-0200 OF THE PFM THIS OUTFALL HAS BEEN ANALYZED FOR ADEQUACY AND IS DESCRIBED AS FOLLOWS:

PRIMARY OUTFALLS

P1 (NORTH, CUB RUN)

THE SITE IS LOCATED WITHIN GREENBRIAR PARK. AS THE PROJECT DOES NOT INVOLVE THE ENTIRE AREA OF THE SITE, THE PROJECT AREA TAKES INTO ACCOUNT THE AREA THAT IS AFFECTED BY THE PROPOSED DEVELOPMENT. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE ENTIRE PROJECT AREA DRAINS WEST TOWARDS STRINGFELLOW ROAD. THE RUNOFF IS COLLECTED IN A DRAINAGE DITCH LOCATED ALONG STRINGFELLOW ROAD. THIS DITCH OUTFALLS INTO STORM STRUCTURES ALONG STRINGFELLOW ROAD. THIS STORM SYSTEM ULTIMATELY OUTFALLS INTO BIG ROCKY RUN. THE TOTAL CONTRIBUTING DRAINAGE AREA FROM THE STORM SYSTEM AT THE OUTFALL POINT AT BIG ROCKY RUN IS APPROXIMATELY 11.52 AC. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE TOTAL DRAINAGE AREA TO ROCKY RUN AT THE INTERSECTION WITH STRINGFELLOW ROAD IS APPROXIMATELY 2,170 AC. AS THE TOTAL DRAINAGE AREA AT THE POINT OF ANALYSIS IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.2B, THIS MARKS THE EXTENT OF REVIEW FOR OUTFALL P1. AS BIG ROCKY RUN IS A NATURAL WATERCOURSE AND THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHING CHANNEL IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.3A, THE OUTFALL IS ADEQUATE.

SUMMARY:

THIS PLAN WILL CONTINUE TO HONOR ALL EXISTING MAJOR DRAINAGE DIVIDES. NO DIVERSION OF WATER FROM ONE MAJOR WATERSHED TO ANOTHER IS PROPOSED WITH THIS PLAN. NO DETRIMENTAL EFFECTS TO THE DOWNSTREAM DRAINAGE SYSTEM WILL OCCUR FOLLOWING CONSTRUCTION OF THE IMPROVEMENTS PROPOSED UNDER THIS SITE PLAN. OVERLAND RELIEF IS PROVIDED ON-SITE THROUGH THE PROPOSED GRADING AND DRIVE AISLES IN THE EVENT THE STORM SYSTEM BECOMES CLOGGED. ALL SITE OUTFALLS HAVE BEEN ANALYZED PER SECTION 6-0200 OF THE PFM. IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT ALL OUTFALLS ARE ADEQUATE AND IN THE EVENT OF THE 100-YEAR STORM, THERE WILL BE NO FLOODING OF EXISTING DOWNSTREAM DWELLINGS OR BUILDINGS CONSTRUCTED UNDER AN APPROVED BUILDING PERMIT, NOR WILL THERE BE ANY AGGRAVATION TO AN EXISTING FLOODING CONDITION AS A RESULT OF THE DEVELOPMENT OF THIS SITE.

NO.	DESCRIPTION	DATE
1	ADDRESS COUNTY PRESTAFFING COMMENTS	12/27/10

REVISION BLOCK

THIS SHEET IS FOR INFORMATION ONLY !!!

Community Association Engineering
a division of CAE Engineering, Inc.
P.O. Box 1814
Fairfax, Virginia 22030
Phone: 703-591-5000
Fax: 703-591-5000
Internet: www.caeengineering.com

SPECIAL PERMIT PLAT

GREENBRIAR COMMUNITY CENTER

SPRINGFIELD MAGISTERIAL DISTRICT FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=750'

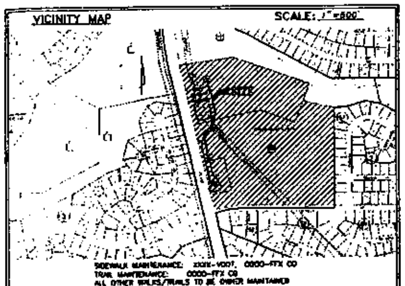
DATE: JUNE 14, 2010

CAE FILE NO.: 758-SPP

SHEET: 6 OF 6

05-126-H

VICINITY MAP SCALE: 1"=800'

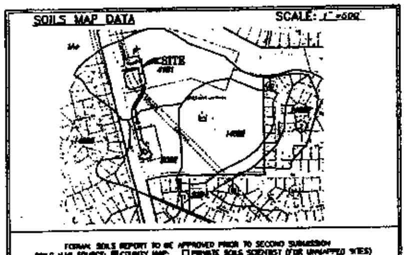


SIDEWALK MAINTENANCE: XXXX-VDOT, OOOO-FFX CO
TRAIL MAINTENANCE: OOOO-FFX CO
ALL OTHER WALKS/TRAILS TO BE OWNER MAINTAINED

TAX MAP REFERENCE NUMBER(S)

MAP PAGE #	DOUBLE CIRCLE #	BLOCK (SINGLE CIRCLE #)	LOT/PARCEL(S) #
46-3	1		8A
46-3	1		10
46-3	1		11

SOILS MAP DATA SCALE: 1"=500'



FORMAL SOILS REPORT TO BE APPROVED PRIOR TO SECOND SUBMISSION
SOILS MAP SOURCE: ■ COUNTY MAP; □ PRIVATE SOILS SCIENTIST (FOR UNMAPPED SITES)

SOIL ID NUMBERS	SOIL SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODIBILITY	PROBLEM CLASS
94	MIXED ALLUVIAL	POOR-C/P	POOR-F/P	0-8%	LOW	A
41B1	[illegible]	MARGINAL-B/P	MARGINAL-C/P	2-7%	LOW	A
58B2	[illegible]	MARGINAL-B/P	MARGINAL-C/P	2-7%	MODERATE	A
148B	[illegible]	POOR-B/P	MARGINAL-C/P	2-7%	MODERATE	A

SOILS WITH IDENTIFICATION NUMBERS 56, 68, 69, 141, 112, AND 152 MAY OVERLIE PARENT BEDROCK FORMATIONS WHICH HAVE BEEN FOUND TO CONTAIN NATURALLY OCCURRING ASBESTOS MINERALS. SPECIAL MINIMUM CONSTRUCTION MEASURES AND PRECAUTIONS ARE REQUIRED IN COMPLIANCE WITH HEALTH DEPARTMENT DIRECTIVES WITHIN THESE SOILS OR WITHIN FILL ORIGINATING FROM THESE SOILS.

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES.

SIGNATURE ______

OWNER/DEVELOPER: JOHN D. CUMMINGS — OWNER'S AGENT
NAME — TITLE

NO.	DESCRIPTION	REVIEW	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

PROJECT OVERVIEW

[illegible]

EROSION AND SEDIMENT CONTROL

[illegible]

SOILS

[illegible]

TRAILS

[illegible]

BEST MANAGEMENT PRACTICES (BMP) / CHESAPEAKE BAY

[illegible]

STORMWATER DETENTION

[illegible]

DRAINAGE ANALYSIS

[illegible]

STREET LIGHTS

[illegible]

FRONTAGE/RIGHT-OF-WAY IMPROVEMENTS

[illegible]

TRANSITIONAL SCREENING AND BARRIERS

[illegible]

TREE COVER COMPUTATIONS

[illegible]

INTERIOR PARKING LOT LANDSCAPING

[illegible]

OUTFALL NARRATIVE

[illegible]

WATERSHED

[illegible]

DISTURBED AREA IN WATERSHED

[illegible]

WETLANDS

[illegible]

RPA CERTIFICATION

[illegible]

OVERLAND RELIEF STATEMENT

[illegible]

ARMY CORPS OF ENGINEERS NOTE

[illegible]

GENERAL NOTES

[illegible]

CONSTRUCTION NOTES

[illegible]

County of Fairfax, Virginia

[illegible]

SITE TABULATIONS

ZONE = R-3C, R-3
USE = RECREATION FACILITY, PARKS (GOVERNMENT) - OUTDOOR BALL FIELDS
[illegible]

MAXIMUM BUILDING HEIGHT: NO PROPOSED BUILDING

GROSS FLOOR AREA: NO PROPOSED BUILDING

FLOOR AREA RATIO (FAR): NO PROPOSED BUILDING

OPEN SPACE:
[illegible]

YARD REQUIREMENTS: NO PROPOSED BUILDING

PARKING TABULATIONS

[illegible]

LOADING SPACES REQUIRED: 0
LOADING SPACES PROVIDED: 0

SHEET INDEX

1. COVER SHEET & NOTES/TABULATIONS & DETAILS
2. OVERALL PLAN
3. EXISTING CONDITIONS
4. MINOR SITE PLAN
5. MINOR SITE PLAN
6. EROSION & SEDIMENT CONTROL NOTES & DETAILS
7. EROSION & SEDIMENT CONTROL NOTES & NARRATIVE
8. EROSION & SEDIMENT CONTROL PLAN - PHASE I
9. EROSION & SEDIMENT CONTROL PLAN - PHASE II & DRAINAGE DIVIDE
10. TREE LANE PLAN
11. STORM SEWER & DITCH PROFILES & COMPUTATIONS
12. ADEQUATE OUTFALL ANALYSIS MAP & NARRATIVE
13. BMP COMPUTATIONS
14. PERVIOUS PAVEMENT DETAILS PERVIOUS PAVEMENT AREA A
15. PERVIOUS PAVEMENT DETAILS PERVIOUS PAVEMENT AREA B
16. SWM COMPUTATIONS PERVIOUS PAVEMENT AREA A
17. SWM COMPUTATIONS PERVIOUS PAVEMENT AREA A
18. SWM COMPUTATIONS PERVIOUS PAVEMENT AREA B
19. SWM COMPUTATIONS PERVIOUS PAVEMENT AREA B
20. LANDSCAPE PLAN
21. LANDSCAPE NOTES AND DETAILS
22. MISC. DETAILS
23. GEOTECHNICAL ADDENDUM

THE SHEETS FROM VDOT PLAN [illegible] HAVE BEEN INCLUDED FOR INFORMATION PURPOSES ONLY!

Rinker Design Associates, P.C.
Engineering * Surveying * Land Planning * Transportation * Environmental Services
[illegible]
"Turning Challenges into Opportunities"

COVER SHEET & NOTES/TABULATIONS & DETAILS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA
3230-MSP-03-2

REVISIONS:

DATE:	JANUARY 7, 2011
SCALE:	AS SHOWN
DESIGN:	JDC/NVD
DRAFT:	JDC/NVD
CHECKED BY:	JDC
ARCH:	N/A
JOB NUMBER:	05-126-H
SHEET:	1

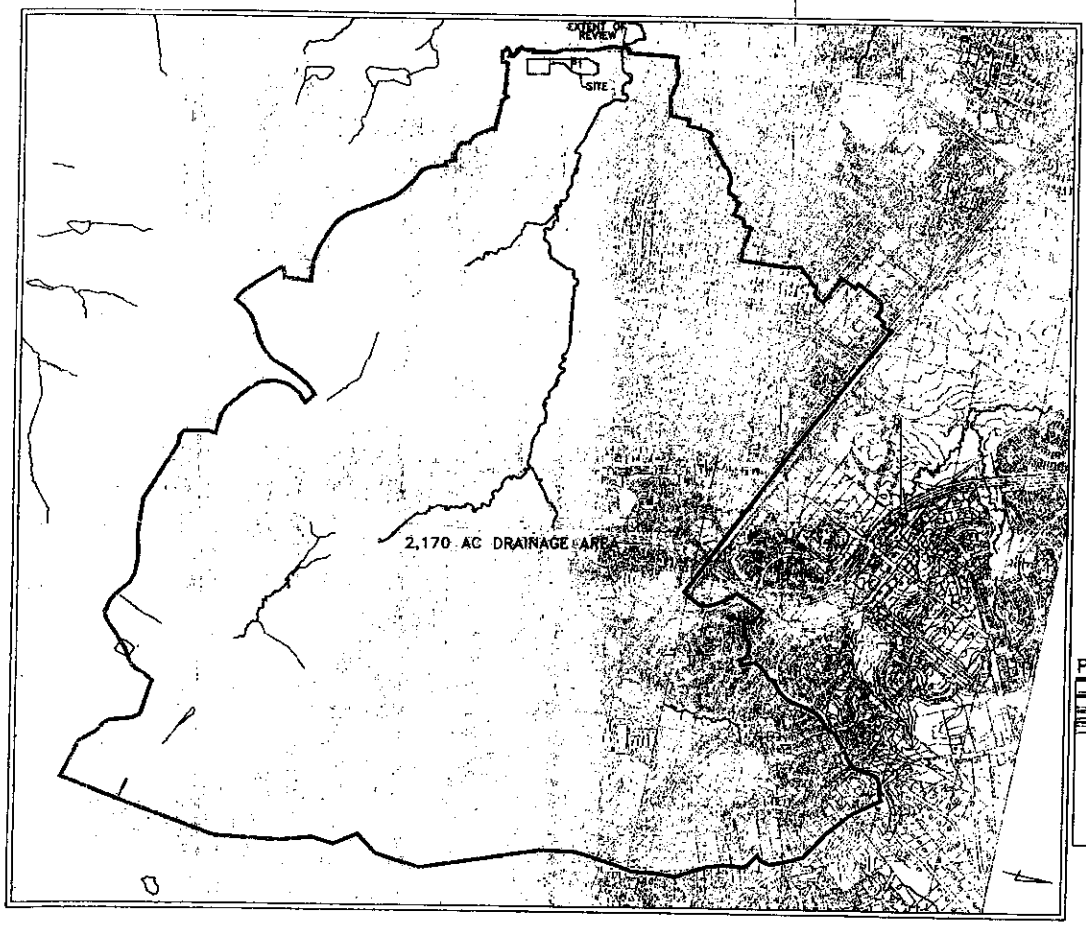
DRAWING NAME: H:\WORK\04030\04030-HC\Siteplan\MINOR SITE PLAN\001-NOTES.dwg 5/29/2007 9:24:15 AM EDT

PLEASE RETURN TO COMMUNITY ASSOCIATION ENGINEERING
703-541-2000 www.coe.us.com

THIS SHEET IS FOR INFORMATION ONLY- NOT FOR CONSTRUCTION !!!

SHEET: SPECIAL PERMIT **6A** of 6

05-126-H



SCALE: 1"=750'

ADEQUATE OUTFALL NARRATIVE

PROJECT OVERVIEW:

THIS PROJECT PROPOSES ADDITIONS AND IMPROVEMENTS TO THE EXISTING PARKING LOT AT GREENBRIAR PARK. THE SITE IS LOCATED ADJACENT TO STRINGFELLOW ROAD (ROUTE 645), NORTH OF THE INTERSECTION OF STRINGFELLOW ROAD AND MELVILLE LANE. THE SITE IS LOCATED WITHIN THE CUB RUN WATERSHED. THERE ARE TWO EXISTING PARKING LOTS ON SITE, ONE OF WHICH IS GRAVEL. IT IS PROPOSED TO IMPROVE THIS GRAVEL PARKING LOT AND ALSO ADD ADDITIONAL PARKING SPACES. THIS PROJECT ALSO PROPOSES AN ACCESS WAY TO THE GREENBRIAR COMMUNITY CENTER. THE PROJECT ALSO PROPOSES ALL NECESSARY TEMPORARY AND PERMANENT EROSION CONTROL MEASURES TO MEET STATE AND LOCAL REGULATIONS, AS WELL AS A BMP FACILITY TO MEET REQUIREMENTS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE AND AN UNDERGROUND DETENTION FACILITY TO MEET ALL STATE AND COUNTY STORMWATER DETENTION REQUIREMENTS.

THE SITE CONSISTS OF ONE PRIMARY OUTFALL (P1). PER SECTION 6-0200 OF THE PFM THIS OUTFALL HAS BEEN ANALYZED FOR ADEQUACY AND IS DESCRIBED AS FOLLOWS:

PRIMARY OUTFALLS

P1 (NORTH, CUB RUN)

THE SITE IS LOCATED WITHIN GREENBRIAR PARK, SINCE THIS PROJECT DOES NOT INVOLVE THE ENTIRE AREA OF THE SITE, THE PROJECT AREA INCLUDES ONLY THE AREA THAT IS AFFECTED BY THE PROPOSED DEVELOPMENT. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE ENTIRE PROJECT AREA DRAINS WEST TOWARDS STRINGFELLOW ROAD. THE RUNOFF IS COLLECTED IN A DRAINAGE DITCH LOCATED ALONG STRINGFELLOW ROAD. THIS DITCH OUTFALLS INTO STORM STRUCTURES ALONG STRINGFELLOW ROAD. THESE STORM STRUCTURES WERE PROPOSED WITH VDOT'S STRINGFELLOW ROAD WIDENING/IMPROVEMENT PLAN (#0645028384C501). THE CAPACITIES AND FLOWS WITHIN THE STORM SYSTEM ADJACENT TO THIS PROJECT CAN BE SEEN ON SHEET 11. THE OUTFALL FROM PERVIOUS PAVEMENT AREA "A" TIES DIRECTLY INTO THE VDOT STORM SYSTEM AT STRUCTURE 10-13. THE OUTFALL FROM PERVIOUS PAVEMENT SECTION "B" OUTFALLS FREELY INTO A GRASS SWALE. THE 10-YEAR FLOW OF 0.02 CFS SHOULD BE NON-EROSIVE TO THE EXISTING GRASS SECTION DRAINING INTO THE RPA AND THEN BIG ROCKY RUN. THE STORM SYSTEM ULTIMATELY OUTFALLS INTO BIG ROCKY RUN. THE TOTAL CONTIBUTING DRAINAGE AREA FROM THE STORM SYSTEM AT THE OUTFALL POINT AT BIG ROCKY RUN IS APPROXIMATELY 11.52 AC. AS SHOWN ON THE OVERALL DRAINAGE MAP ON THIS SHEET, THE TOTAL DRAINAGE AREA TO ROCKY RUN AT THE INTERSECTION WITH STRINGFELLOW ROAD IS APPROXIMATELY 2,170 AC. SINCE THE TOTAL DRAINAGE AREA AT THE POINT OF ANALYSIS IS MORE THAN 100 TIMES GREATER THAN THE CONTIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, PER 6-0203.2B, THIS MARKS THE EXTENT OF REVIEW FOR OUTFALL P1. BIG ROCKY RUN IS A NATURAL WATERCOURSE AND THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS MORE THAN 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE DEVELOPMENT SITE, THEREFORE PER 6-0203.3A, THE OUTFALL IS ADEQUATE.

SUMMARY:

THIS PLAN WILL CONTINUE TO HONOR ALL EXISTING MAJOR DRAINAGE DIVIDES. NO DIVERSION OF WATER FROM ONE MAJOR WATERSHED TO ANOTHER IS PROPOSED WITH THIS PLAN. NO DETRIMENTAL EFFECTS TO THE DOWNSTREAM DRAINAGE SYSTEM WILL OCCUR FOLLOWING CONSTRUCTION OF THE IMPROVEMENTS PROPOSED UNDER THIS SITE PLAN. OVERLAND RELIEF IS PROVIDED ON-SITE THROUGH THE PROPOSED GRADING AND DRAINAGE ASLES IN THE EVENT THE STORM SYSTEM BECOMES CLOGGED. ALL SITE OUTFALLS HAVE BEEN ANALYZED PER SECTION 6-0200 OF THE PFM. IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT ALL OUTFALLS ARE ADEQUATE AND IN THE EVENT OF THE 100-YEAR STORM, THERE WILL BE NO FLOODING OF EXISTING DOWNSTREAM DWELLINGS OR BUILDINGS CONSTRUCTED UNDER AN APPROVED BUILDING PERMIT, NOR WILL THERE BE ANY AGGRAVATION TO AN EXISTING FLOODING CONDITION AS A RESULT OF THE DEVELOPMENT OF THIS SITE.

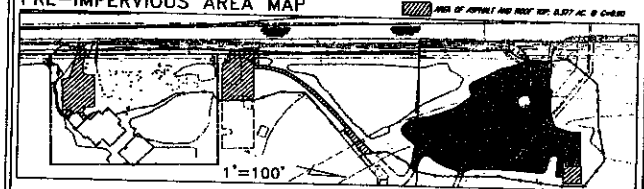
LEGEND

PRE-DEVELOPMENT IMPERVIOUS AREA = 1.351 AC. @ C=0.90

AREA OF GRAVEL: 0.824 AC. @ C=0.75

AREA OF ASPHALT AND ROOF TOP: 0.577 AC. @ C=0.90

PRE-IMPERVIOUS AREA MAP



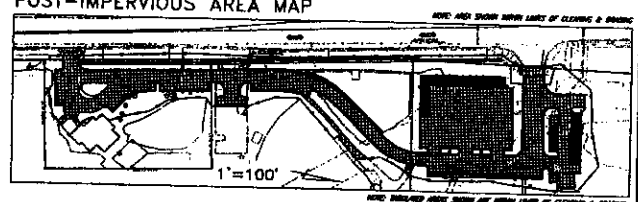
NOTE: SHADED AREAS SHOWN ARE WITHIN LIMITS OF CLEARING & GRADING

LEGEND

POST-DEVELOPMENT IMPERVIOUS AREA = 1.887 AC.

PERVIOUS PAVEMENT

POST-IMPERVIOUS AREA MAP



NOTE: AREA SHOWN WITHIN LIMITS OF CLEARING & GRADING

NOTE: SHADED AREAS SHOWN ARE WITHIN LIMITS OF CLEARING & GRADING

NO.	DESCRIPTION	BY	APPROVED	DATE

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PRE & POST RUNOFF CALCULATION

TOTAL SITE AREA = 3.863 AC. (WITHIN LIMITS OF CLEARING & GRADING)

PRE-DEVELOPMENT: Q2=[(1.353 AC. x 0.90)+(2.490 AC. x 0.30)] * 5.45 IN/HR = 8.90 CFS
Q10=[(1.353 AC. x 0.90)+(2.490 AC. x 0.30)] * 7.27 IN/HR = 13.21 CFS

POST-DEVELOPMENT: Q2=[(1.887 AC. - 0.02) x 0.90]+[(1.836 AC. x 0.30)] * 5.45 IN/HR + 0.02 CFS + 0.01 CFS = 8.90 CFS
Q10=[(1.887 AC. - 0.02) x 0.90]+[(1.836 AC. x 0.30)] * 7.27 IN/HR + 0.03 CFS + 0.02 CFS = 13.08 CFS

NOTE: ADDITIONAL FLOWS ADDED TO POST DEVELOPMENT EQUATIONS ARE FROM PERVIOUS PAVEMENT AREAS A AND B.

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ADEQUATE OUTFALL ANALYSIS AND NARRATIVE

GREENBRIAR PARK IMPROVEMENTS

SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: SEPTEMBER 15, 2006
SCALE: AS SHOWN
DESIGN: JDC/MWD
DRAFT: JDC/MWD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 13

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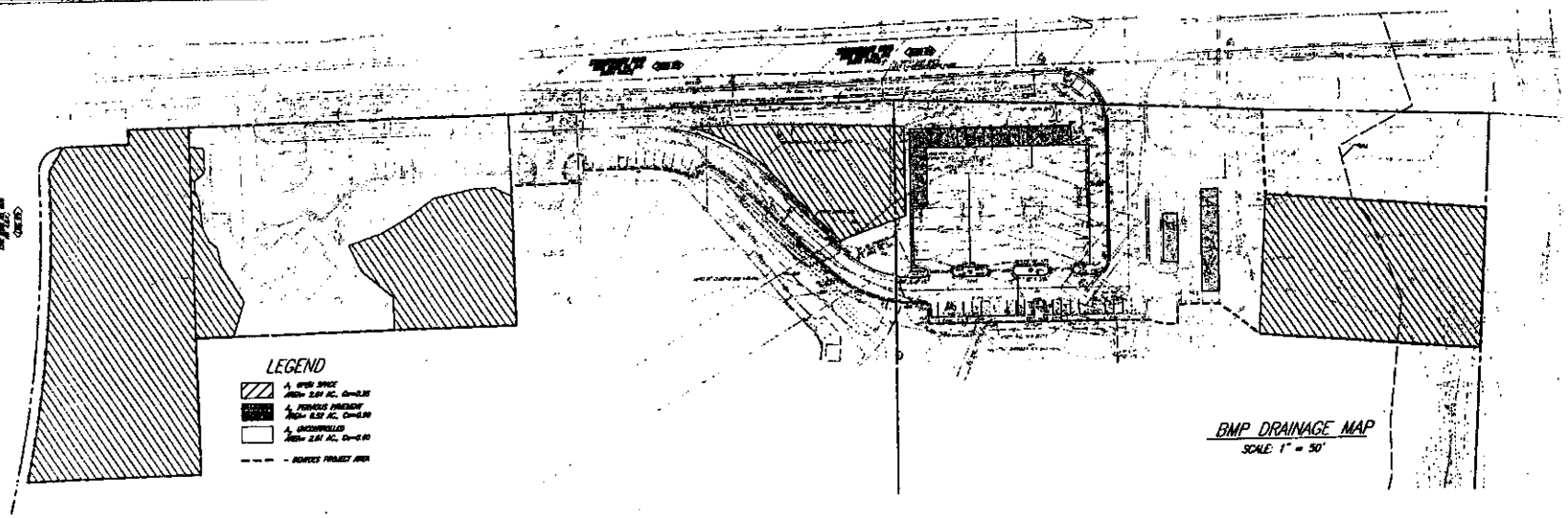
DRAWING NAME: V:\05126\G3581\Site plan\Planset\017-ADEQUATE OUTFALL ANALYSIS.dwg 1/4/2011 10:10:41 AM EST

05-126-H



BMP DRAINAGE MAP
SCALE: 1" = 50'

BMP FACILITY DESIGN CALCULATIONS

Part 1A: WATER QUALITY NARRATIVE

THE SITE IS LOCATED ALONG SPRINGFIELD ROAD IN FAIRFAX COUNTY TO THE NORTH OF THE INTERSECTION OF SPRINGFIELD ROAD AND WESTFIELD DRIVE. THIS SITE IS PART OF GREENBRIAR PARK. IT IS PROPOSED TO CONSTRUCT A PARKING LOT ALONG WITH ASSOCIATED BIKES LANES. WE HAVE PROVIDED ON SITE STRUCTURAL VEGETATED TO PROVIDE BMP FOR THE PROPOSED DEVELOPMENT. FOR THE PURPOSE OF BMP COMPUTATIONS THE SITE AREA IS 3.87 AC. DUE TO THE NATURE OF THE PROJECT, IT IS CLASSIFIED AS REDEVELOPMENT AND THE BMP REQUIREMENT IS NOT LIKELY A CONSIDERATION OF CONVERSION AREA, PERVIOUS PAVEMENT AND A WEIGHTED SUM. BY USING THE CONVERSION AREA, PERVIOUS PAVEMENT AND THE WEIGHTED SUMS WE HAVE ADOPTED A LOW IMPACT DEVELOPMENT APPROACH TO THE DEVELOPMENT IN ORDER TO ARRANGE THE WATER QUALITY PATHOLOGY. THE STRUCTURAL VEGETATED HAVE BEEN DESIGNED TO PROVIDE COMPREHENSIVE BMPS FOR THE PROPOSED DEVELOPMENT.

Part 1B: WATERSHED INFORMATION

LIST OF SUB AREAS AND "C" FACTORS USED

SUBAREA DESIGNATION AND DESCRIPTION	C	ACRES
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.90	0.52
(2) OPEN SPACE	0.25	2.84
(3) UNCONTROLLED AREA	0.60	2.81

Part 2: COMPUTE WEIGHTED AVERAGE "C" FACTOR FOR THE PROJECT

(A) TOTAL AREA OF THE PARCEL 3.92 AC. (SEE BMP NARRATIVE)

(B) SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) IMP. AREA TO PERVIOUS PAVEMENT	0.90		0.52	0.47
(2) OPEN SPACE	0.25		2.84	0.66
(3) UNCONTROLLED AREA	0.60		2.81	1.69
		TOTAL.=	3.37	TOTAL= 2.81

(C) WEIGHTED AVERAGE "C" FACTOR FOR THE PARCEL= 2.82 / 3.87 = 0.47

Part 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE PARCEL

FOR COMPLIANCE WITH RPMP PHOSPHORUS REMOVAL, THE PHOSPHORUS REMOVED NEEDS TO BE 50%

SUBAREA DESIGNATION	BMP TYPE	REMOVAL EFFICIENCY	OFF SITE	AREA RATIO	"C" FACTOR RATIO	PRODUCT
(1)	PERVIOUS PAVEMENT	35		0.52 / 3.87	0.90 / 0.47	5.64
(2)	OPEN SPACE	100		2.84 / 3.87		44.22
(3)	UNCONTROLLED	0		2.81 / 3.87	0.60 / 0.47	0.00
					(a) TOTAL SITE PHOSPHORUS REMOVAL =	50.06

Part 4: INTERMEDIATE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT FOR THE ENTIRE PARCEL: (a)= 50.00 %

(b) IF LINE 3(A) 50.00 >= Line 4(a) 50.00 then phosphorus removal requirement is satisfied.

Part 5: DETERMINE COMPLIANCE WITH SITE COVERAGE REQUIREMENT

SUM ALL THE UNCONTROLLED ONSITE AREAS AND COMPUTE A WEIGHTED AVERAGE "C" FACTOR. DO NOT INCLUDE QUALIFYING OPEN SPACE.

SUBAREA DESIGNATION	C	X	ACRES	= PRODUCT
(1) UNCONTROLLED ONSITE AREA	0.60		2.81	1.69
		TOTAL.=	2.81	TOTAL= 1.69

(A) TOTAL EQUIVALENT UNCONTROLLED AREA (e) TOTAL 1.69
(B) TOTAL UNCONTROLLED AREA (b) 2.81
(C) WEIGHTED AVERAGE C FACTOR (a)/(b)= (c) 0.60

If line 5(b) < 20% of site area, then site coverage requirement is satisfied.Line 5(e) is the equivalent offsite area for which coverage may be required.

(D) 100 x 2.81 / 3.87 =47.07 %

Part 6: DETERMINE THE OFFSITE AREAS FOR WHICH COVERAGE IS REQUIRED

For the offsite areas listed in part 1 which flow to proposed onsite BMPs compute the equivalent areas

SUBAREA DESIGNATION	C	X	D	ACRES = PRODUCT
(B) N/A	0	X	0	= 0
(SEE PART 3)			(d) TOTAL	0 <5(e) = 0

IF THE EQUIVALENT OFFSITE AREA, LINE 6(d)(BELOW) TO ALL PROPOSED FACILITIES IS GREATER THAN THE EQUIVALENT UNCONTROLLED AREA OF THE SITE SHOWN IN LINE 5(E) ABOVE, THE OFFSITE AREA CONTROLLED BY THE PROPOSED BMP FACILITIES MAY BE REDUCED UNTIL THE TWO ARE EQUAL. OTHERWISE, ALL UNCONTROLLED OFFSITE AREAS DRAINING TO THE PROPOSED BMP FACILITIES MUST BE INCLUDED. ALL OFFSITE AREAS THAT REDUCED SHOULD BE MARKED WITH AN "*" WHEREVER THEY APPEAR IN THE COMPUTATIONS.

Part 7:

COMPUTE THE WEIGHTED C FACTOR FOR THE PROPOSED BMP FACILITY

(A) LIST THE AREAS TO BE CONTROLLED BY THE PROPOSED BMP.

SUBAREA DESIGNATION	C		ACRES	PRODUCT
(1) OPEN SPACE	0.25	=	2.64	= 0.66
(2) IMPERVIOUS	0.90	=	1.87	= 1.68
			4.46	= 2.34

Part 8: WEIGHTED AVERAGE C FACTOR= 0.52

DETERMINE THE STORAGE REQUIRED

ALL STRUCTURAL BMP'S HAVE BEEN SIZED ACCORDING TO CONTRIBUTING DRAINAGE AREAS. PLEASE REFER TO COMPUTATIONS FOR DETAILS.

PHOSPHORUS REMOVAL REQUIREMENTS

PER SECTION 5-0401.1 OF THE FAIRFAX COUNTY PFM, THE TOTAL PHOSPHORUS REMOVAL FOR THIS SITE IS 50% BECAUSE THIS SITE IS LOCATED WITHIN THE RPMPD.

MAINTAINENCE NOTE: THE PROPOSED BMP FACILITIES ARE TO BE OWNED AND MAINTAINED BY THE OWNER.

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BMP COMPUTATIONS
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 7, 2011
SCALE: AS SHOWN
DESIGN: JDC/NVD
DRAFT: JDC/NVD
CHECKED BY: JDC
ARCH: N/A
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CONSTRUCTION REQUIREMENTS

1. THE OWNER SHALL PROVIDE FOR INSPECTION DURING CONSTRUCTION OF THE FACILITY BY A LICENSED PROFESSIONAL (IN ACCORDANCE WITH STANDARD PRACTICE. THE ACTUAL INSPECTIONS MAY BE PERFORMED BY AN INDIVIDUAL UNDER RESPONSIBLE CHARGE OF THE LICENSED PROFESSIONAL).
2. THE LICENSED PROFESSIONAL SHALL CERTIFY THAT THE FACILITY WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS.
3. THE LICENSED PROFESSIONAL'S CERTIFICATION ALONG WITH ANY MATERIAL DELIVERY TICKETS AND CERTIFICATIONS FROM THE MATERIAL SUPPLIERS SHALL BE SUBMITTED TO COUNTY PRIOR TO BOND RELEASE.
4. FOR PROJECTS REQUIRING AS-BUILT PLANS, THE REQUIRED CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH OR INCORPORATED IN THE AS-BUILT PLANS.
5. FOR PROJECTS THAT DO NOT REQUIRE AS-BUILT PLANS, THE CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH THE RUP OR NON-RUP REQUEST.
6. POROUS PAVEMENT FAILURES SHALL BE CONSTRUCTED AFTER THE DRAINAGE AREA TO THE FACILITY IS COMPLETELY STABILIZED.
7. EROSION AND SEDIMENT CONTROLS FOR CONSTRUCTION OF THE FACILITY SHALL BE INSTALLED AS SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN.
8. PRELIMINARY GRADING OF THE AREA WHERE POROUS PAVEMENT IS TO BE INSTALLED MAY BE PERFORMED AT THE TIME THE REST OF THE SITE IS MASS GRADED PROVIDED THAT POSITIVE DRAINAGE IS MAINTAINED AND THE AREA IS STABILIZED.
9. AREAS WHERE POROUS PAVEMENT IS TO BE INSTALLED SHOULD NOT BE USED FOR TEMPORARY SEDIMENT BASINS.
10. WHERE UNAVOIDABLE, THE INVERT OF THE SEDIMENT BASIN SHALL BE A MINIMUM OF 2 FEET ABOVE THE FINAL DESIGN ELEVATION OF THE BOTTOM OF THE AGGREGATE BASE.
11. FOR FACILITIES DESIGNED FOR FULL OR PARTIAL EXFILTRATION, THE FLOOR OF THE FACILITY SHALL BE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES TO REDUCE SOIL COMPACTION AND LEVELED BEFORE THE FILTER FABRIC AND STONE ARE PLACED.
12. ANY AREAS OF THE FACILITY WHERE A TEMPORARY SEDIMENT BASIN WAS LOCATED ALSO SHALL HAVE 2 TO 3 INCHES OF SAND INCORPORATED INTO THE IN-SITU SOILS.
13. FILTER FABRIC SHALL BE PLACED ON THE BOTTOM AND SIDES OF THE FACILITY. STRIPS OF FILTER FABRIC SHALL OVERLAP BY A MINIMUM OF 2 FEET. FABRIC SHALL BE SECURED MINIMUM OF 4 FEET BEYOND THE EDGE OF EXCAVATION.
14. FOLLOWING PLACEMENT OF THE AGGREGATE AND AGAIN AFTER PLACEMENT OF THE PAVEMENT, THE FILTER FABRIC SHOULD BE FOLDED OVERPLACEMENT TO PROTECT INSTALLATION FROM SEDIMENT INPUTS.
15. EXCESS FILTER FABRIC SHALL NOT BE TRIMMED UNTIL THE SITE IS FULLY STABILIZED.
16. AFTER INSTALLATION OF THE FILTER FABRIC OVER THE SOIL SUBGRADE, A 2 INCH LIFT OF AGGREGATE SHALL BE PLACED FOR THE UNDERDRAIN BEDDING.
17. UNDERDRAIN PIPING SHALL BE INSTALLED AND SUFFICIENT AGGREGATE SHALL BE PLACED AROUND AND OVER THE UNDERDRAIN PIPE TO PREVENT DAMAGE TO THE PIPE PRIOR TO COMPACTION.
18. AGGREGATE SHALL BE PLACED IN 4 TO 8 INCH LIFTS AND COMPACTED WITH A STATIC ROLLER.
19. AT LEAST 4 PASSES SHOULD BE MADE WITH A MINIMUM 10-TON STATIC ROLLER. THE INITIAL PASS OF THE ROLLER CAN BE WITH VIBRATION TO CONSOLIDATE THE BASE MATERIAL.
20. THE FINAL PASSES OF THE ROLLER SHOULD BE WITHOUT VIBRATION. NO VISIBLE MOVEMENT SHOULD OCCUR IN THE BASE MATERIAL WHEN COMPACTION IS COMPLETE.

INSTALLATION OF POROUS ASPHALT PAVEMENT

1. THE CHOKER COURSE SHALL BE PLACED IN A SINGLE LIFT. THE CHOKER COURSE SHALL BE LEVELED AND PRESSED (CHOKED) INTO THE AGGREGATE BASE WITH AT LEAST 4 PASSES OF A 10 TON (9 T) STEEL DRUM STATIC ROLLER. THE CHOKER COURSE MATERIAL SHOULD BE MOIST TO FACILITATE MOVEMENT INTO THE AGGREGATE BASE.
2. POROUS ASPHALT PAVEMENT IS INSTALLED SIMILARLY TO REGULAR ASPHALT PAVEMENT. THE PAVEMENT SHALL BE LAID IN A SINGLE LIFT OVER THE CHOKER COURSE. THE LAYING TEMPERATURE SHALL BE BETWEEN 230°F AND 260°F, WITH A MINIMUM AIR TEMPERATURE OF 50°F, TO MAKE SURE THAT THE SURFACE DOES NOT STIFFEN BEFORE COMPACTION.
3. COMPACTION OF THE SURFACE COURSE SHOULD BE COMPLETED WHEN THE SURFACE IS COOL ENOUGH TO RESIST A 10-TON ROLLER. ONE OR TWO PASSES OF THE ROLLER ARE REQUIRED FOR PROPER COMPACTION. MORE ROLLING COULD CAUSE A REDUCTION IN THE POROSITY OF THE PAVEMENT.
4. THE MIXING PLANT SHALL CERTIFY TO THE AGGREGATE MIX, THE ABRASION LOSS FACTOR, AND THE ASPHALT CONTENT IN THE MIX. THE ASPHALT MIX SHALL BE TESTED FOR ITS RESISTANCE TO STRIPPING BY WATER USING ASTM 1664. IF THE ESTIMATED COATING AREA IS NOT ABOVE 85%, ADDITIONAL ANTISTRIPPING AGENTS SHALL BE ADDED TO THE MIX.
5. THE MIX SHALL BE TRANSPORTED TO THE SITE IN A CLEAN VEHICLE WITH SMOOTH DUMP BEDS SPRAYED WITH A NON-PETROLEUM RELEASE AGENT. THE MIX SHALL BE COVERED DURING TRANSPORTATION TO CONTROL COOLING.
6. THE FULL PERMEABILITY OF THE PAVEMENT SURFACE SHALL BE TESTED BY APPLICATION OF CLEAN WATER AT A RATE OF AT LEAST 3 GPM OVER THE SURFACE. ALL WATER MUST INFILTRATE DIRECTLY WITHOUT PUDDLE FORMATION OR SURFACE RUNOFF.
7. THE FACILITY SHALL BE INSPECTED AT 18-30 HOURS AFTER A SIGNIFICANT RAINFALL (0.5-1.0 INCH) OR ARTIFICIAL FLOODING TO DETERMINE THAT THE FACILITY IS DRAINING PROPERLY.

NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

MATERIALS SPECIFICATIONS

1. POROUS ASPHALT PAVEMENT SHALL BE A MINIMUM OF 7.5 INCHES THICK AND CONFORM TO VDOT ROAD AND BRIDGE SPECIFICATIONS FOR ASPHALT MIXTURES (SECTION 210) AND ASPHALT CEMENT (SECTION 211) EXCEPT FOR AGGREGATE GRADATION. THE ASPHALT MIX SHALL BE 5.75% TO 6.00% OF DRY AGGREGATE BY WEIGHT. THE ASPHALT BINDER SHALL BE MODIFIED WITH AN ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22 (AASHTO MP-1) AND APPLIED AT A RATE OF 1.0% BY TOTAL WEIGHT OF THE BINDER. LIMEWASH OF THE ASPHALT BINDER SHALL BE NO GREATER THAN 0.3% (ASTM D 6390). THE AGGREGATE GRADATION SHALL BE AS SPECIFIED IN THE TABLE ON THIS SHEET. POROUS PAVEMENT SHALL HAVE A MINIMUM CONNECTED VOID SPACE OF 18%.
2. THE AGGREGATE BASE COURSE SHALL CONSIST OF WASHED VDOT #57 STONE. THE THICKNESS OF THE BASE COURSE IS DETERMINED BY RUNOFF STORAGE NEEDS, THE INFILTRATION RATE OF IN-SITU SOILS, STRUCTURAL REQUIREMENTS OF THE PAVEMENT, SUB-BASE DEPTH TO WATERTABLE AND BEDROCK, AND FROST DEPTH CONDITIONS. VDOT #2 OR #3 STONE MAY BE SUBSTITUTED AS THE BASE COURSE MATERIAL PROVIDED AN ADEQUATE CHOKER COURSE OF VDOT #57 STONE IS PROVIDED BETWEEN THE AGGREGATE BASE COURSE AND THE BEDDING COURSE. ALL STONE SHALL BE WASHED WITH LESS THAN 1%PASSING A #200 SIEVE.
3. UNDERDRAINS SHALL BE PVC PIPE CONFORMING TO THE REQUIREMENTS OF ASTM F758, TYPE PS 28 OR ASTM F949. HDPE PIPE CONFORMING TO THE REQUIREMENT OF AASHTO M252 OR M294, TYPE S, OR OTHER APPROVED RIGID PLASTIC PIPE WITH A SMOOTH INTERIOR. UNDERDRAINS SHALL BE PERFORATED WITH 4 ROWS OF 3/8 INCH HOLES WITH A HOLE SPACING OF 3.25 ± 0.25 INCHES OR A COMBINATION OF HOLE SIZE AND SPACING THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.76 SQUARE INCHES PER LINEAR FOOT OF PIPE OR BE PERFORATED WITH SLOTS 0.125 INCHES IN WIDTH THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.5 SQUARE INCHES PER LINEAR FOOT OF PIPE.
4. FILTER FABRIC SHALL BE A NEEDLED NON-WOVEN, POLYPROPYLENE GEO-TEXTILE MEETING THE REQUIREMENTS LISTED IN THE TABLE ON THIS SHEET. HEAT SET TO HEAT-CALENDARED FABRICS ARE NOT PERMITTED.

POROUS PAVEMENT DESIGN (AREA "A")

WATER QUALITY VOLUME

FOR FIRST 0.5 INCHES OF RUNOFF

IMPERVIOUS AREA DRAINING TO POROUS PAVEMENT=0.682 AC.

BECAUSE OF THE PROXIMITY OF THE COLONIAL PIPE LINE EASEMENT, THE AREA OF POROUS PAVEMENT IS LIMITED TO 3,995 SQUARE FEET WHICH WILL TREAT ONLY 0.311 OF THE 0.682 IMPERVIOUS ACRES DRAINING TO IT.

(INCLUDING AREA OF POROUS PAVEMENT)

$WQv = 1,815$ cf/AC.
$= 1,815 \times 0.311$
$= 564.46$ cf.

MINIMUM AREA OF POROUS PAVEMENT

$Ap = (WQv)/[(Kp/12)x(Ts)]$
$Kp = 1.1$ in/hr
$Ts = 2$ hrs
$Ap = (564.46)/[(1.1/12)x(2)]$
$Ap = 3,078.90$ sq. ft.

PROVIDED AREA OF POROUS PAVEMENT = 3,995 sq.ft.

POROUS PAVEMENT AREA (As) = 3,995 sq.ft.
IMPERVIOUS AREA = 13,540 sq.ft.

13,540/3,995=3.39 THEREFORE RATIO = 3.39:1 < 3.4:1
HENCE AREA IS ACCEPTABLE AND ADEQUATE.

10 YEAR 2-HR. STORM VOLUME

$V10 = 10,890 \times 0.311$
$= 3,387$ cf.

REQUIRED DISCHARGE RATE

$Ou = (V10/Ts)/3600$
$= (3,387/24)/3600$
$= 0.0392$ cfs.

STORAGE VOLUME

$Vs = Vas-[(Ks)x(As)x(Ts)/12]-[3600x(Ou)x(Ts)]$
$= 3,387-[3600x0.0392x2]$
$= 3,105$ cf

STORAGE DEPTH

$dq = Vs/[(ng)x(As)] + 0.5$
$= 3,105/[0.4x3,995] + 0.5$
$= 2.44$ ft.

PROVIDE DEPTH OF 2.5 ft.

FACILITY DRAIN TIME

$Td = Vs/ [(Ks)x(As)/12 + 3,600x(Ou)]$
$Td = 3,105/[3,600 \times 0.0392]$
$= 22.00$ hrs.

DRAIN TIME IS LESS THAN 24 HRS. THEREFORE ACCEPTABLE.

AGGREGATE GRADATION

U.S. STANDARD SIEVE SIZE	PERCENT PASSING
1/2 in	100
3/8 in	92-98
#4	34-40
#8	14-20
#16	7-13
#30	0-4
#200	0-2

FILTER FABRIC SPECIFICATIONS

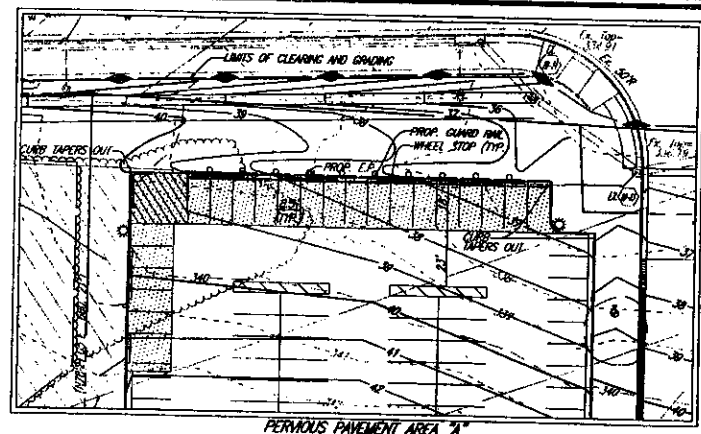
GRAB TENSILE STRENGTH (ASTM D4632)	≥ 120 lbs
MULLEN BURST STRENGTH (ASTM D3786)	≥ 225 lbs/in²
UV RESISTANCE (ASTM D4355)	70% strength after 500 hours
FLOW RATE (ASTM D4491)	≥ 125 gal/min/ft²
APPARENT OPENING SIZE (AOS) (ASTM D4751)	US #70 or #80 sieve

SIZE OF REQUIRED ORIFICE

$A = Ou/Cd(2xgxHo)^{0.5}$
$= 0.0392/0.6x(2x32.2x2.5)^{0.5}$
$= 0.005$ sq. ft

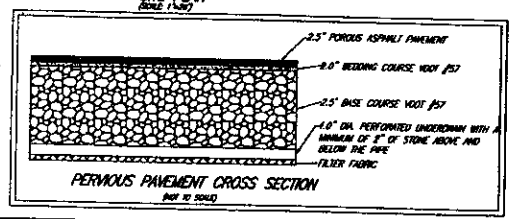
DIAMETER OF ORIFICE

$D = 2x(A/3.14)^{0.5}$
$= 2x(0.005/3.14)^{0.5}$
$= 0.080$ ft. $= 0.96$ in.

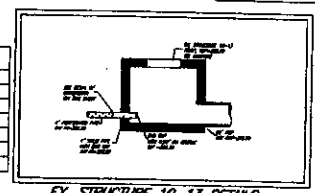


PERVIOUS PAVEMENT AREA "A" SITE PLAN
(SCALE: 1"=30')

PERVIOUS PAVEMENT NOTES:
1. POROUS PAVEMENT TO BE LOCATED UNDER THE PARKING AREA AS SHOWN.
2. EACH POROUS PAVEMENT CELL TO HAVE A 2.5' GRAVEL STORAGE RESERVOIR TO PROVIDE SUBSURFACE STORAGE VOLUME.
3. THE UNDERDRAIN WILL CLEAN OUT SHALL BE TRAFFIC RATED AND FLUSH WITH PAVEMENT.
4. THE POROUS PAVEMENT SHOULD BE CLEANED/VACUUMED ON AN ANNUAL BASIS TO PREVENT GRIT/SAND/SALT FROM CLOGGING THE VOIDS.

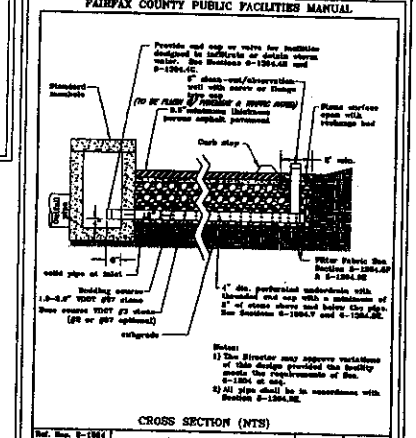


PERVIOUS PAVEMENT CROSS SECTION
(NOT TO SCALE)



EX. STRUCTURE 10-13 DETAILS
(N.T.S)

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



CROSS SECTION (NTS)

Ref. Sec. 6-1304 et seq.	POROUS ASPHALT PAVEMENT EXTENDED AGGREGATE BASE	PLATE NO. 76-6	REV. NO.
Rev. 3-07			

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GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

POROUS PAVEMENT DETAILS
PREVIOUS PAVEMENT AREA "A"

REVISIONS:

DATE: JANUARY 1, 2011
SCALE: AS SHOWN
DESIGN: JDC/MVD
DRAFT: JDC/MVD
CHECKED BY: JDC
AREA: N/A
JOB NUMBER: 05-126-H
SHEET 14

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SHEET: SPECIAL PERMIT
6D OF 6

CONSTRUCTION REQUIREMENTS

1. THE OWNER SHALL PROVIDE FULL INSPECTION DURING CONSTRUCTION OF THE FACILITY BY A LICENSED PROFESSIONAL (IN ACCORDANCE WITH STANDARD PRACTICE, THE ACTUAL INSPECTIONS MAY BE PERFORMED BY AN INDIVIDUAL UNDER RESPONSIBLE CHARGE OF THE LICENSED PROFESSIONAL).
2. [illegible] ACCORDANCE WITH THE APPROVED PLANS.
3. THE LICENSED PROFESSIONAL'S CERTIFICATION ALONG WITH ANY MATERIAL DELIVERY TICKETS AND CERTIFICATIONS FROM THE MATERIAL SUPPLIERS SHALL BE SUBMITTED TO COUNTY PRIOR TO BOND RELEASE.
4. FOR PROJECTS REQUIRING AS BUILT PLANS, THE REQUIRED CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH OR INCORPORATED IN THE AS-BUILT PLANS.
5. FOR PROJECTS THAT DO NOT REQUIRE AS-BUILT PLANS, THE CERTIFICATION AND SUPPORTING DOCUMENTS SHALL BE SUBMITTED WITH THE RUP OR NON-RUP REQUEST.
6. PERVIOUS PAVEMENT FACILITIES SHALL BE CONSTRUCTED AFTER THE DRAINAGE AREA TO THE FACILITY IS COMPLETELY STABILIZED.
7. EROSION AND SEDIMENT CONTROLS FOR CONSTRUCTION OF THE FACILITY SHALL BE INSTALLED AS SPECIFIED IN THE EROSION AND SEDIMENT CONTROL PLAN.
8. PRELIMINARY GRADING OF THE AREA WHERE PERVIOUS PAVEMENT IS TO BE INSTALLED MAY BE PERFORMED AT THE TIME THE REST OF THE SITE IS MASS GRADED PROVIDED THAT POSITIVE DRAINAGE IS MAINTAINED AND THE AREA IS STABILIZED.
9. AREAS WHERE PERVIOUS PAVEMENT IS TO BE INSTALLED SHOULD NOT BE USED FOR TEMPORARY SEDIMENT BASINS.
10. WHERE UNAVOIDABLE, THE INVERT OF THE SEDIMENT BASIN SHALL BE A MINIMUM OF 2 FEET ABOVE THE FINAL DESIGN ELEVATION OF THE BOTTOM OF THE AGGREGATE BASE.
11. FOR FACILITIES DESIGNED FOR FULL OR PARTIAL EXFILTRATION, THE FLOOR OF THE FACILITY SHALL BE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES TO REDUCE SOIL COMPACTION AND LEVELED BEFORE THE FILTER FABRIC AND STONE ARE PLACED.
12. ANY AREAS OF THE FACILITY WHERE A TEMPORARY SEDIMENT BASIN WAS LOCATED ALSO SHALL HAVE 2 TO 3 INCHES OF SAND INCORPORATED INTO THE IN-SITU SOILS.
13. FILTER FABRIC SHALL BE PLACED ON THE BOTTOM AND SIDES OF THE FACILITY. STRIPS OF FILTER FABRIC SHALL OVERLAP BY A MINIMUM OF 2 FEET. FABRIC SHALL BE SECURED MINIMUM OF 4 FEET BEYOND THE EDGE OF EXCAVATION.
14. FOLLOWING PLACEMENT OF THE AGGREGATE AND AGAIN AFTER PLACEMENT OF THE PAVEMENT, THE FILTER FABRIC SHOULD BE FOLDED OVER PLACEMENT TO PROTECT INSTALLATION FROM SEDIMENT INPUTS.
15. EXCESS FILTER FABRIC SHALL NOT BE TRIMMED UNTIL THE SITE IS FULLY STABILIZED.
16. AFTER INSTALLATION OF THE FILTER FABRIC OVER THE SOIL SUBGRADE, A 2 INCH LIFT OF AGGREGATE SHALL BE PLACED FOR THE UNDERDRAIN BEDDING.
17. UNDERDRAIN PIPING SHALL BE INSTALLED AND SUFFICIENT AGGREGATE SHALL BE PLACED AROUND AND OVER THE UNDERDRAIN PIPE TO PREVENT DAMAGE TO THE PIPE PRIOR TO COMPACTION.
18. AGGREGATE SHALL BE PLACED IN 4 TO 8 INCH LIFTS AND COMPACTED WITH A STATIC ROLLER.
19. AT LEAST 4 PASSES SHOULD BE MADE WITH A MINIMUM 10-TON STATIC ROLLER. THE INITIAL PASS OF THE ROLLER CAN BE WITH VIBRATION TO CONSOLIDATE THE BASE MATERIAL.
20. THE FINAL PASSES OF THE ROLLER SHOULD BE WITHOUT VIBRATION. NO VISIBLE MOVEMENT SHOULD OCCUR IN THE BASE MATERIAL WHEN COMPACTION IS COMPLETE.

INSTALLATION OF POROUS ASPHALT PAVEMENT

1. THE CHOKER COURSE SHALL BE PLACED IN A SINGLE LIFT. THE CHOKER COURSE SHALL BE LEVELED AND PRESSED (CHOKED) INTO THE AGGREGATE BASE WITH AT LEAST 4 PASSES OF A 10 TON (9 T) STEEL DRUM STATIC ROLLER. THE CHOKER COURSE MATERIAL SHOULD BE MOIST TO FACILITATE MOVEMENT INTO THE AGGREGATE BASE.

2. POROUS ASPHALT PAVEMENT IS INSTALLED SIMILARLY TO REGULAR ASPHALT PAVEMENT. THE PAVEMENT SHALL BE LAID IN A SINGLE LIFT OVER THE CHOKER COURSE. THE LAYING TEMPERATURE SHALL BE BETWEEN 230°F AND 260°F, WITH A MINIMUM AIR TEMPERATURE OF 50°F, TO MAKE SURE THAT THE SURFACE DOES NOT STIFFEN BEFORE COMPACTION.

3. COMPACTION OF THE SURFACE COURSE SHOULD BE COMPLETED WHEN THE SURFACE IS COOL ENOUGH TO RESIST A 10-TON ROLLER. ONE OR TWO PASSES OF THE ROLLER ARE REQUIRED FOR PROPER COMPACTION. MORE ROLLING COULD CAUSE A REDUCTION IN THE POROSITY OF THE PAVEMENT.

4. THE MIXING PLANT SHALL CERTIFY TO THE AGGREGATE MIX, THE ABRASION LOSS FACTOR, AND THE ASPHALT CONTENT IN THE MIX. THE ASPHALT MIX SHALL BE TESTED FOR ITS RESISTANCE TO STRIPPING BY WATER USING ASTM 1664. IF THE ESTIMATED COATING AREA IS NOT ABOVE 95%, ADDITIONAL ANTISTRIPPING AGENTS SHALL BE ADDED TO THE MIX.

5. THE MIX SHALL BE TRANSPORTED TO THE SITE IN A CLEAN VEHICLE WITH SMOOTH DUMP BEDS SPRAYED WITH A NON-PETROLEUM RELEASE AGENT. THE MIX SHALL BE COVERED DURING TRANSPORTATION TO CONTROL COOLING.

6. THE FULL PERMEABILITY OF THE PAVEMENT SURFACE SHALL BE TESTED BY APPLICATION OF CLEAN WATER AT A RATE OF AT LEAST 5 GPM OVER THE SURFACE. ALL WATER MUST INFILTRATE DIRECTLY WITHOUT PUDDLE FORMATION OR SURFACE RUNOFF.

7. THE FACILITY SHALL BE INSPECTED AT 18-30 HOURS AFTER A SIGNIFICANT RAINFALL (0.5-1.0 INCH) OR ARTIFICIAL FLOODING TO DETERMINE THAT THE FACILITY IS DRAINING PROPERLY.

NO.	DESCRIPTION	REV. #	APPROVED	DATE
REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW				

MATERIALS SPECIFICATIONS

1. POROUS ASPHALT PAVEMENT SHALL BE A MINIMUM OF 2.5 INCHES THICK AND CONFORM TO VDOT ROAD AND BRIDGE SPECIFICATIONS FOR ASPHALT MATERIALS (SECTION 210) AND ASPHALT CEMENT (SECTION 211) EXCEPT FOR AGGREGATE GRADATION. THE ASPHALT MIX SHALL BE 5.75% TO 6.0% OF DRY AGGREGATE [illegible] ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22 (AASHTO MP-1) AND APPLIED AT A RATE OF 3.0% BY TOTAL WEIGHT OF THE BINDER. DRAIN DOWN OF THE ASPHALT BINDER SHALL BE NO GREATER THAN 0.3% (ASTM D 6390). THE AGGREGATE GRADATION SHALL BE AS SPECIFIED IN THE TABLE ON THIS SHEET. POROUS PAVEMENT SHALL HAVE A MINIMUM CONNECTED VOID SPACE OF 18%.

2. THE AGGREGATE BASE COURSE SHALL CONSIST OF WASHED VDOT #57 STONE. THE THICKNESS OF THE BASE COURSE IS DETERMINED BY RUNOFF STORAGE NEEDS, THE INFILTRATION RATE OF IN-SITU SOILS, STRUCTURAL REQUIREMENTS OF THE PAVEMENT SUB-BASE, DEPTH TO WATERTABLE AND BEDROCK, AND FROST DEPTH CONDITIONS. VDOT #2 OR #3 STONE MAY BE SUBSTITUTED AS THE BASE COURSE MATERIAL PROVIDED AN ADEQUATE CHOKER COURSE OF VDOT #57 STONE IS PROVIDED BETWEEN THE AGGREGATE BASE COURSE AND THE BEDDING COURSE. ALL STONE SHALL BE WASHED WITH LESS THAN 1% PASSING A #200 SIEVE.

3. UNDERDRAINS SHALL BE PVC PIPE CONFORMING TO THE REQUIREMENTS OF ASTM F758, TYPE PS 28 OR ASTM F949; HDPE PIPE CONFORMING TO THE REQUIREMENT OF AASHTO M252 OR M294, TYPE S; OR OTHER APPROVED RIGID PLASTIC PIPE WITH A SMOOTH INTERIOR. UNDERDRAINS SHALL BE PERFORATED WITH 4 ROWS OF 3/8 INCH HOLES WITH A HOLE SPACING OF 3.75 ± 0.25 INCHES OR A COMBINATION OF HOLE SIZE AND SPACING THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.76 SQUARE INCHES PER LINEAR FOOT OF PIPE OR BE PERFORATED WITH SLOTS 0.125 INCHES IN WIDTH THAT PROVIDES A MINIMUM INLET AREA GREATER THAN OR EQUAL TO 1.5 SQUARE INCHES PER LINEAR FOOT OF PIPE.

4. FILTER FABRIC SHALL BE A NEEDLED NON-WOVEN, POLYPROPYLENE GEO-TEXTILE MEETING THE REQUIREMENTS LISTED IN THE TABLE ON THIS SHEET. HEAT SET TO HEAT-CALENDARED FABRICS ARE NOT PERMITTED.

PERVIOUS PAVEMENT DESIGN (AREA "B")
WATER QUALITY VOLUME
FOR FIRST 0.5 INCHES OF RUNOFF
IMPERVIOUS AREA DRAINING TO PERVIOUS PAVEMENT=0.255 AC.
BECAUSE OF THE FINITE AREA OF PARKING IN THIS LOCATION, THE AREA OF PERVIOUS PAVEMENT IS LIMITED TO 2,682 SQUARE FEET WHICH WILL TREAT ONLY 0.209 OF THE 0.255 IMPERVIOUS ACRES DRAINING TO IT.
(INCLUDING AREA OF PERVIOUS PAVEMENT)

WQv = 1,815 cf/AC.
= 1,815 x 0.209
= 379.34 cf.

MINIMUM AREA OF PERVIOUS PAVEMENT
$A_p = (WQ_v)/[(K_p/12)x(T_s)]$
$K_p = 1.1$ in/hr
$T_s = 2$ hrs
$A_p = (379.34)/[(1.1/12)x(2)]$
$A_p = 2{,}069.13$ sq. ft.

PROVIDED AREA OF PERVIOUS PAVEMENT = 2,682 sq.ft.

PERVIOUS PAVEMENT AREA (As) = 2,682 sq.ft.
IMPERVIOUS AREA = 9,104 sq.ft.

9,104/2,682=3.39 THEREFORE RATIO = 3.39:1 < 3.4:1
HENCE AREA IS ACCEPTABLE AND ADEQUATE

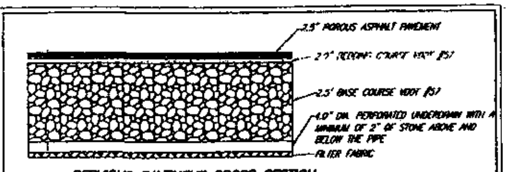
10 YEAR 2-HR. STORM VOLUME
V10 = 10,890 x 0.209
= 2,276 cf.

REQUIRED DISCHARGE RATE
Qu = (V10/Td)/3600
= (2,276/24)/3600
= 0.026 cfs.

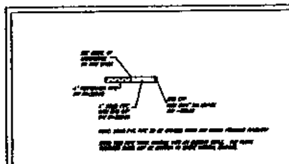
STORAGE VOLUME
Vs = Vws-[(Ks)x(As)x(Ts)/12]-[3600x(Qu)x(Ts)]
= 2,276-[3600x0.026x2]
= 2,089 cf.

STORAGE DEPTH
dg = Vs/[(ng)x(As)] + 0.5
= 2,089/[0.4x2,682] + 0.5
= 2.45 ft
PROVIDE DEPTH OF 2.5 ft.

FACILITY DRAIN TIME
Td = Vs/ [(Ks)x(As)/12 + 3,600x(Qu)]
Td = 2,089/[1,600 + 0.026]
= 22.32 hrs.
DRAIN TIME IS LESS THAN 24 HRS. THEREFORE ACCEPTABLE.



PERVIOUS PAVEMENT CROSS SECTION
(NOT TO SCALE)



OUTLET DETAILS
(N.T.S)

PERVIOUS PAVEMENT NOTES:
1. PERVIOUS PAVEMENT TO BE LOCATED UNDER THE PARKING AREAS AS SHOWN.
2. EACH PERVIOUS PAVEMENT CELL TO HAVE A 3' GRAVEL STORAGE RESERVOIR TO PROVIDE STORMWATER STORAGE VOLUME.
3. THE OBSERVATION WELL CLEAN OUT SHALL BE TRAFFIC RATED AND FLUSH WITH PAVEMENT.
4. THE PERVIOUS PAVEMENT SHOULD BE CLEANED/VACUUMED ON AN ANNUAL BASIS TO PREVENT DIRT/SAND/SILT FROM CLOGGING THE VOIDS.

AGGREGATE GRADATION

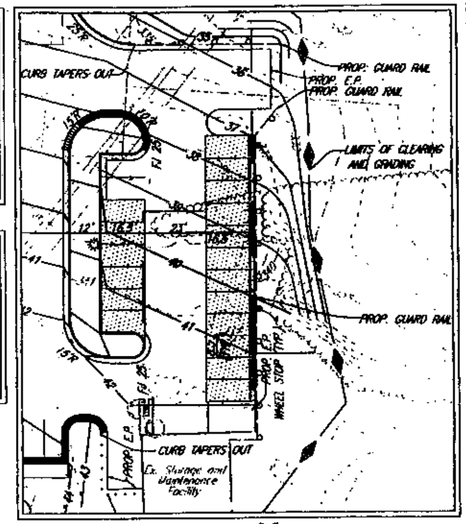
U.S. STANDARD SIEVE SIZE	PERCENT PASSING
1/2 in	100
3/8 in	92-98
#4	34-40
#8	14-20
#16	7-13
#30	0-4
#200	0-2

FILTER FABRIC SPECIFICATIONS

GRAB TENSILE STRENGTH (ASTM D4632)	≥ 120 lbs
MULLEN BURST STRENGTH (ASTM D3786)	≥ 225 lbs/in²
UV RESISTANCE (ASTM D4355)	70% strength after 500 hours
FLOW RATE (ASTM D4491)	≥ 125 gal/min/ft²
APPARENT OPENING SIZE (AOS) (ASTM D4751)	US #70 or #80 sieve

SIZE OF REQUIRED ORIFICE
A = Qu/Cx(2xgxHo)^0.5
= 0.026/0.6x(2x32.2x2.5)^0.5
= 0.0034 sq. ft

DIAMETER OF ORIFICE
D = 2x(A/3.14)^0.5
= 2x(0.0034/3.14)^0.5
= 0.066 ft. = 0.79 in.



PERVIOUS PAVEMENT AREA "B" SITE PLAN
(SCALE: 1"=20')

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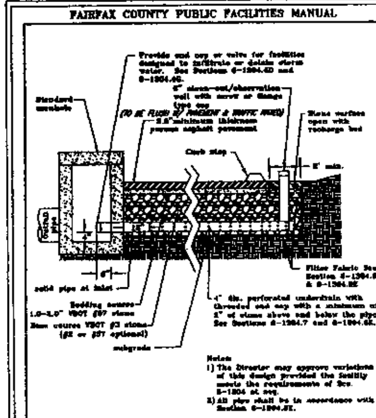

Notes
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1304 et seq.
2) All pipe shall be in accordance with Section 6-1304.8E.

CROSS SECTION (NTS)

Ref. Sec. 6-1304 et seq.	POROUS ASPHALT PAVEMENT EXTENDED AGGREGATE BASE	PLATE NO.	STD. NO.
Rev. 3-07		78-6	

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PERVIOUS PAVEMENT DETAILS
PERVIOUS PAVEMENT AREA "B"

GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 7, 2011
SCALE: AS SHOWN
DESIGN: JDC/NVU
DRAFT: JDC/NVD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-11
SHEET: 15

05-126-H

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6E of 6

05-126-H

INDIVIDUAL OUTLET RATING TABLES

Type.... Individual Outlet Curves   Page 12.04
Name.... Outlet 1

File.... P:\05126\63581\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 00 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Dnstream ID = CD (Culvert-Circular)

Pond WS. Elev. ft	Device Q cfs	(into) HW HGL ft	Converge DS HGL ft	Next DS HGL ft	DS HGL Error +/-ft	Q Sum Error +/-cfs	DS Chan. TW ft	TW Error +/-ft
333.29	.00	...	...	...	...	...	Free Outfall	
		WS below an invert; no flow.						
333.54	.01	333.54 H =.17	333.37	333.37	.000	.000	Free Outfall	
333.79	.02	333.79 H =.40	333.39	333.39	.000	.000	Free Outfall	
334.04	.02	334.04 H =.64	333.40	333.40	.000	.000	Free Outfall	
334.29	.02	334.29 H =.88	333.41	333.41	.000	.000	Free Outfall	
334.54	.03	334.54 H =1.12	333.42	333.42	.000	.000	Free Outfall	
334.79	.03	334.79 H =1.36	333.43	333.43	.000	.000	Free Outfall	
335.04	.03	335.04 H =1.60	333.44	333.44	.000	.000	Free Outfall	
335.29	.03	335.29 H =1.85	333.44	333.44	.000	.000	Free Outfall	
335.54	.03	335.54 H =2.09	333.45	333.45	.000	.000	Free Outfall	
335.79	.04	335.79 H =2.34	333.45	333.45	.000	.000	Free Outfall	
336.04	.04	336.04 H =2.58	333.46	333.46	.000	.000	Free Outfall	
336.13	.04	336.13 H =2.67	333.46	333.46	.000	.000	Free Outfall	

SWM COMPUTATIONS – INPUT DATA

Type.... Outlet Input Data   Page 12.01
Name.... Outlet 1

File.... P:\05126\63581\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 333.29 ft
Increment = .25 ft
Max. Elev.= 336.13 ft

OUTLET CONNECTIVITY

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Orifice-Circular	00	--->	CD	333.290	336.125
Culvert-Circular	CD	--->	TW	333.290	336.125
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = 00
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 333.29 ft
Diameter = .0800 ft
Orifice Coeff. = .600

OUTLET STRUCTURE INPUT DATA

Structure ID = CD
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = .3300 ft
Upstream Invert = 333.29 ft
Dnstream Invert = 333.00 ft
Horiz. Length = 34.00 ft
Barrel Length = 34.00 ft
Barrel Slope = .00853 ft/ft

OUTLET CONTROL DATA...
Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .137139 (per ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...
Equation form = 1
Inlet Control K = .0098
Inlet Control M = 2.0000
Inlet Control c = .03980
Inlet Control Y = .6700
T1 ratio (HW/D) = 1.155
T2 ratio (HW/D) = 1.302
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 333.67 ft ---> Flow = .17 cfs
At T2 Elev = 333.72 ft ---> Flow = .20 cfs

INDIVIDUAL OUTLET RATING TABLES CONT'D

Type.... Individual Outlet Curves   Page 12.05
Name.... Outlet 1

File.... P:\05126\63581\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

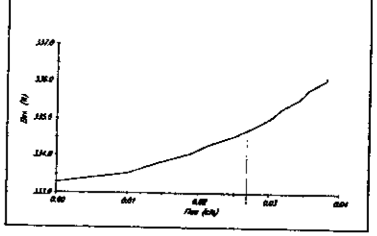
RATING TABLE FOR ONE OUTLET TYPE

Structure ID = CD (Culvert-Circular)

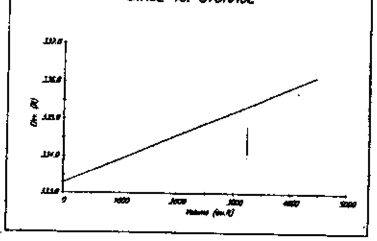
Mannings open channel maximum capacity: .18 cfs
Upstream ID = 00 (Orifice-Circular)
Dnstream ID = TW (Pond Outfall)

Pond WS. Elev. ft	Device Q cfs	(into) HW HGL ft	Converge DS HGL ft	Next DS HGL ft	DS HGL Error +/-ft	Q Sum Error +/-cfs	DS Chan. TW ft	TW Error +/-ft
333.29	.00	...	...	...	...	...	Free Outfall	
		WS below an invert; no flow.						
333.54	.01	333.37	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .008ft	Dcr= .057ft		CRIT. DEPTH Hev= .00ft	
333.79	.01	333.39	Free	Free	.000	.001	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .009ft	Dcr= .067ft		CRIT. DEPTH Hev= .00ft	
334.04	.02	333.40	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .026ft	Dcr= .075ft		CRIT. DEPTH Hev= .00ft	
334.29	.02	333.41	Free	Free	.000	.001	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .028ft	Dcr= .080ft		CRIT. DEPTH Hev= .00ft	
334.54	.03	333.42	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .031ft	Dcr= .088ft		H.JUMP IN PIPE Hev= .00ft	
334.79	.03	333.43	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .030ft	Dcr= .093ft		CRIT. DEPTH Hev= .00ft	
335.04	.03	333.44	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .034ft	Dcr= .095ft		CRIT. DEPTH Hev= .00ft	
335.29	.03	333.44	Free	Free	.000	.001	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .035ft	Dcr= .098ft		CRIT. DEPTH Hev= .00ft	
335.54	.04	333.45	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .037ft	Dcr= .103ft		H.JUMP IN PIPE Hev= .00ft	
335.79	.04	333.45	Free	Free	.000	.001	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .037ft	Dcr= .103ft		H.JUMP IN PIPE Hev= .00ft	
336.04	.04	333.46	Free	Free	.000	.000	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .039ft	Dcr= .108ft		CRIT. DEPTH Hev= .00ft	
336.13	.04	333.46	Free	Free	.000	.001	Free Outfall	
		CRIT. DEPTH CONTROL		Vh= .039ft	Dcr= .108ft		CRIT. DEPTH Hev= .00ft	

STAGE vs. DISCHARGE



STAGE vs. STORAGE



NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

MASTER NETWORK SUMMARY

Type.... Master Network Summary   Page 1.01
Name.... Watershed
File.... P:\05126\63581\Comps\SWM-BMP\PondPack\Pervious Pavement Area A.ppw

MASTER DESIGN STORM SUMMARY

Network Storm Collection: Fairfax County-8

Return Event	Total Depth in	Rainfall Type	RNF ID
2	2.8000	Synthetic Curve	TypeII 24hr
10	5.6000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu ft
*OUT 10	JCT	2	1473		12.9111	.02		
*OUT 10	JCT	10	2582		12.8000	.03		
POND 10	IN POND	2	1591		11.9119	.69		
POND 10	IN POND	10	3700		11.9119	1.57		
POND 10	OUT POND	2	1476		12.9111	.02	333.94	1406
POND 10	OUT POND	10	2585		12.8667	.03	334.92	2612
SUBAREA 10	AREA	2	1591		11.9119	.69		
SUBAREA 10	AREA	10	3700		11.9119	1.57		

COMPOSITE RATING CURVE

Type.... Composite Rating Curve   Page 12.06
Name.... Outlet 1

File.... P:\05126\63581\Comps\SWM-BMP\PondPack\Pervious Pavement Area A.ppw

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q Elev ft	Q cfs	Converge TW Elev ft	Converge Error +/-ft	Notes: Contributing Structures
333.29	.00	Free Outfall		(no Q: 00,CD)
333.54	.01	Free Outfall		00,CD
333.79	.01	Free Outfall		00,CD
334.04	.02	Free Outfall		00,CD
334.29	.02	Free Outfall		00,CD
334.54	.03	Free Outfall		00,CD
334.79	.03	Free Outfall		00,CD
335.04	.03	Free Outfall		00,CD
335.29	.03	Free Outfall		00,CD
335.54	.03	Free Outfall		00,CD
335.79	.04	Free Outfall		00,CD
336.04	.04	Free Outfall		00,CD
336.13	.04	Free Outfall		00,CD

LEVEL POOL ROUTING DATA

Type.... Pond C-V-W Table   Page 13.01
Name.... POND 10
File.... P:\05126\63581\Comps\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA A.PPW

LEVEL POOL ROUTING DATA

HYG Dir = P:\05126\63581\Comps\SWM-BMP\PondPack\
Inflow HYG file = work_pad.hyg - POND 10 IN 2
Outflow HYG file = work_pad.hyg - POND 10 OUT 2

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 333.29 ft
Starting Volume = 0 cu ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0833 hrs

Elevation ft	Outflow cfs	Storage cu ft	Area sq ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
333.29	.00	0	3995	.00	.00	.00
333.54	.01	400	3995	.00	.01	2.67
333.79	.01	799	3995	.00	.01	5.34
334.04	.02	1199	3995	.00	.02	8.01
334.29	.02	1598	3995	.00	.02	10.68
334.54	.03	1998	3995	.00	.03	13.35
334.79	.03	2397	3995	.00	.03	16.01
335.04	.03	2797	3995	.00	.03	18.68
335.29	.03	3196	3995	.00	.03	21.35
335.54	.03	3596	3995	.00	.03	24.01
335.79	.04	3995	3995	.00	.04	26.68
336.04	.04	4395	3995	.00	.04	29.35
336.13	.04	4530	3995	.00	.04	30.25

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SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "A"
GREENBRIAR PARK
IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDG/HWD
DRAFT: JDG/HWD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 16

DRAWING NAME

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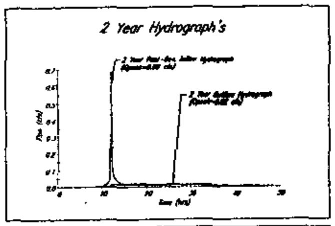
SHEET: SPECIAL PERMIT
6F of 6

05-126-H

2 YEAR STORM CALCULATIONS



2 YEAR POND ROUTING SUMMARY

Type.... Pond Routing Summary — Page 13.08
Name.... POND 10 OUT Tag 2 — Event: 2 yr
Storm... TypeII 24hr Tag 2

LEVEL POOL ROUTING SUMMARY

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	333.49 ft
Starting Volume	=	0 cu ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Dout	=	.00 cfs
Time Increment	=	.0833 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	.69 cfs	at	11.9119 hrs
Peak Outflow	=	.02 cfs	at	13.9111 hrs
Peak Elevation	=	333.94 ft		
Peak Storage	=	1026 cu ft		

MASS BALANCE (cu ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	1591
- Infiltration	=	0
- HYG Vol OUT	=	1476
- Retained Vol	=	116
Unrouted Vol	=	[illegible] cu ft 1.000% of Inflow Volume

2 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

Type.... Node: Pond Inflow Summary — Page 13.07
Name.... POND 10 IN — Event: 2 yr
Storm... TypeII 24hr Tag 2

TOTAL NODE INFLOW...

Peak Discharge = .69 cfs
Time to Peak = 11.9119 hrs
HYG Volume = 1591 cu ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

2 YEAR POST DEVELOPMENT OUTFLOW HYDROGRAPH

Type.... Pond Routed HYG (total out) — Page 13.09
Name.... POND 10 OUT Tag 2 — Event: 2 yr
Storm... TypeII 24hr Tag 2

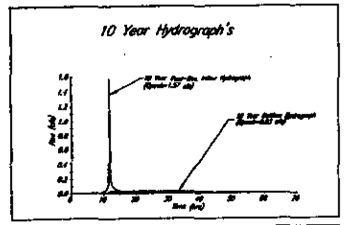
POND ROUTED TOTAL OUTFLOW HYG...

Peak Discharge = .02 cfs
Time to Peak = 13.9111 hrs
HYG Volume = 1476 cu ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

10 YEAR STORM CALCULATIONS



10 YEAR POND ROUTING SUMMARY

Type.... Pond Routing Summary — Page 13.12
Name.... POND 10 OUT Tag 10 — Event: 10 yr
Storm... TypeII 24hr Tag 10

LEVEL POOL ROUTING SUMMARY

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	333.49 ft
Starting Volume	=	0 cu ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0833 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	1.57 cfs	at	11.9119 hrs
Peak Outflow	=	.03 cfs	at	[illegible] hrs
Peak Elevation	=	334.92 ft		
Peak Storage	=	[illegible] cu ft		

MASS BALANCE (cu ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	3700
- Infiltration	=	0
- HYG Vol OUT	=	3585
- Retained Vol	=	115
Unrouted Vol	=	0 cu ft 1.000% of Inflow Volume

10 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

Type.... Node: Pond Inflow Summary — Page 13.06
Name.... POND 10 IN — Event: 10 yr
Storm... TypeII 24hr Tag 10

TOTAL NODE INFLOW...

Peak Discharge = 1.57 cfs
Time to Peak = 11.9119 hrs
HYG Volume = 3700 cu ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

10 YEAR POST DEVELOPMENT OUTFLOW HYDROGRAPH

Type.... Pond Routed HYG (total out) — Page 13.13
Name.... POND 10 OUT Tag 10 — Event: 10 yr
Storm... TypeII 24hr Tag 10

POND ROUTED TOTAL OUTFLOW HYG...

Peak Discharge = .03 cfs
Time to Peak = [illegible] hrs
HYG Volume = 3585 cu ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

NO.	DESCRIPTION	BY	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

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"Turning Challenges Into Opportunities"

SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "A"
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JOC/NVO
DRAFT: JOC/NVO
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET 17

SHEET: SPECIAL PERMIT 6G of 6

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05-126-H

INDIVIDUAL OUTLET RATING TABLES

Type.... Individual Outlet Curves Page 12.04
Name.... Outlet 1
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 00 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
DNstream ID = C0 (Culvert-Circular)

Pond WS. Elev. ft	Device Q cfs	(into) HW HGL ft	Converge DS HGL ft	Next DS HGL ft	DS HGL Error +/-ft	Q Sum Error +/-cfs	DS Chan. TW ft	TW Error +/-ft
333.80	.00						Free Outfall	
	WS below an invert; no flow							
334.05	.01	334.05 H =.19	333.86	333.86	.000	.000	Free Outfall	
334.30	.01	334.30 H =.41	333.89	333.89	.000	.000	Free Outfall	
334.55	.01	334.55 H =.66	333.89	333.89	.000	.000	Free Outfall	
334.80	.02	334.80 H =.90	333.90	333.90	.000	.000	Free Outfall	
335.05	.02	335.05 H =1.14	333.91	333.91	.000	.000	Free Outfall	
335.30	.02	335.30 H =1.39	333.91	333.91	.000	.000	Free Outfall	
335.55	.02	335.55 H =1.63	333.92	333.92	.000	.000	Free Outfall	
335.80	.02	335.80 H =1.88	333.92	333.92	.000	.000	Free Outfall	
336.05	.02	336.05 H =2.12	333.93	333.93	.000	.000	Free Outfall	
336.30	.03	336.30 H =2.37	333.93	333.93	.000	.000	Free Outfall	
336.55	.03	336.55 H =2.62	333.93	333.93	.000	.000	Free Outfall	
336.63	.03	336.63 H =2.69	333.94	333.94	.000	.000	Free Outfall	

SWM COMPUTATIONS - INPUT DATA

Type.... Outlet Input Data Page 12.01
Name.... Outlet 1
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

REQUESTED POND WS ELEVATIONS

Min. Elev.= 333.80 ft
Increment = .25 ft
Max. Elev.= 336.63 ft

OUTLET CONNECTIVITY

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Orifice-Circular	00	--->	C0	333.800	336.625
Culvert-Circular	C0	--->	TW	333.800	336.625
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = 00
Structure Type = Orifice-Circular
\# of Openings = 1
Invert Elev. = 333.80 ft
Diameter = .0660 ft
Orifice Coeff. = .600

Structure ID = C0
Structure Type = Culvert-Circular
No. Barrels = 1
Barrel Diameter = .3300 ft
Upstream Invert = 333.80 ft
Dnstream Invert = 333.00 ft
Horiz. Length = 40.00 ft
Barrel Length = 40.01 ft
Barrel Slope = .02000 ft/ft

OUTLET CONTROL DATA...
Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .137129 (per ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...
Equation form = 1
Inlet Control K = .0098
Inlet Control M = 2.0000
Inlet Control c = .03980
Inlet Control Y = .6700
T1 ratio (HW/D) = .000
T2 ratio (HW/D) = 1.297
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 333.80 ft ---> Flow = .17 cfs
At T2 Elev = 334.23 ft ---> Flow = .20 cfs

INDIVIDUAL OUTLET RATING TABLES CONT'D

Type.... Individual Outlet Curves Page 12.05
Name.... Outlet 1
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

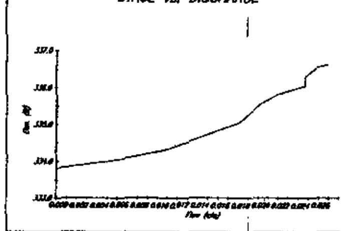
RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

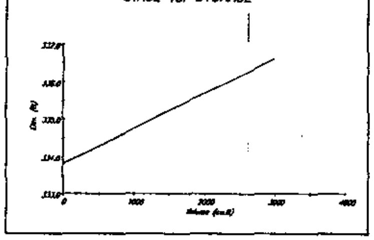
Mannings open channel maximum capacity: .20 cfs
Upstream ID = 00 (Orifice-Circular)
DNstream ID = TW (Pond Outfall)

Pond WS. Elev. ft	Device Q cfs	(into) HW HGL ft	Converge DS HGL ft	Next DS HGL ft	DS HGL Error +/-ft	Q Sum Error +/-cfs	DS Chan. TW ft	TW Error +/-ft
333.80	.00						Free Outfall	
	WS below an invert; no flow							
334.05	.01	333.86	Free	Free	.000	.001	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .014ft	Dcr= .041ft	CRIT. DEPTH Hev= .00ft			
334.30	.01	333.89	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .020ft	Dcr= .057ft	CRIT. DEPTH Hev= .00ft			
334.55	.01	333.89	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .022ft	Dcr= .066ft	CRIT. DEPTH Hev= .00ft			
334.80	.02	333.90	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .023ft	Dcr= .067ft	CRIT. DEPTH Hev= .00ft			
335.05	.02	333.91	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .025ft	Dcr= .072ft	CRIT. DEPTH Hev= .00ft			
335.30	.02	333.91	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .026ft	Dcr= .075ft	CRIT. DEPTH Hev= .00ft			
335.55	.02	333.92	Free	Free	.000	.001	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .027ft	Dcr= .079ft	CRIT. DEPTH Hev= .00ft			
335.80	.02	333.92	Free	Free	.000	.001	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .028ft	Dcr= .082ft	CRIT. DEPTH Hev= .00ft			
336.05	.02	333.93	Free	Free	.000	.001	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .029ft	Dcr= .085ft	CRIT. DEPTH Hev= .00ft			
336.30	.03	333.93	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .030ft	Dcr= .088ft	CRIT. DEPTH Hev= .00ft			
336.55	.03	333.93	Free	Free	.000	.001	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .031ft	Dcr= .090ft	CRIT. DEPTH Hev= .00ft			
336.63	.03	333.94	Free	Free	.000	.000	Free Outfall	
	CRIT. DEPTH CONTROL		Vh= .031ft	Dcr= .090ft	CRIT. DEPTH Hev= .00ft			

STAGE vs. DISCHARGE



STAGE vs. STORAGE



NO.	DESCRIPTION	BY	APPROVED	DATE
	REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW			

MASTER NETWORK SUMMARY

Type.... Master Network Summary Page 1.01
Name.... Watershed
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

MASTER DESIGN STORM SUMMARY

Network Storm Collection: Fairfax County-B

Return Event	Total Depth in	Rainfall Type	RNF ID
2	2.0000	Synthetic Curve	TypeII 24hr
10	3.0000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID		Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
*OUT 10		JCT	2	937		13.1614	.01		
*OUT 10		JCT	10	2355		13.4113	.02		
POND 10	IN	POND	2	1070		11.9119	.46		
POND 10	IN	POND	10	2490		11.9119	1.06		
POND 10	OUT	POND	2	940		12.0785	.01	334.44	688
POND 10	OUT	POND	10	2359		12.0785	.02	335.44	1763

COMPOSITE RATING CURVE

Type.... Composite Rating Curve Page 12.06
Name.... Outlet 1
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q Elev. ft	Q cfs	Converge TW Elev Ft	Error +/-ft	Notes Contributing Structures
333.80	.00	Free Outfall		(no Q: 00,C0)
334.05	.01	Free Outfall		00,C0
334.30	.01	Free Outfall		00,C0
334.55	.01	Free Outfall		00,C0
334.80	.02	Free Outfall		00,C0
335.05	.02	Free Outfall		00,C0
335.30	.02	Free Outfall		00,C0
335.55	.02	Free Outfall		00,C0
335.80	.02	Free Outfall		00,C0
336.05	.02	Free Outfall		00,C0
336.30	.02	Free Outfall		00,C0
336.55	.03	Free Outfall		00,C0
336.63	.03	Free Outfall		00,C0

LEVEL POOL ROUTING DATA

Type.... Pond E-V-Q Table Page 13.01
Name.... POND 10
File.... W:\05126\63381\Compo\SWM-BMP\PondPack\PERVIOUS PAVEMENT AREA B.PPW

LEVEL POOL ROUTING DATA

HYG Dir = W:\05126\63381\Compo\SWM-BMP\PondPack\
Inflow HYG file = work_pad.hyg - POND 10 IN 2
Outflow HYG file = work_pad.hyg - POND 10 OUT 2

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 333.80 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0833 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
333.80	.00	0	2682	.00	.00	.00
334.05	.01	268	2682	.00	.01	1.79
334.30	.01	536	2682	.00	.01	3.59
334.55	.01	805	2682	.00	.01	5.38
334.80	.02	1073	2682	.00	.02	7.17
335.05	.02	1341	2682	.00	.02	8.96
335.30	.02	1609	2682	.00	.02	10.75
335.55	.02	1877	2682	.00	.02	12.54
335.80	.02	2146	2682	.00	.02	14.33
336.05	.02	2414	2682	.00	.02	16.12
336.30	.02	2682	2682	.00	.02	17.91
336.55	.03	2950	2682	.00	.03	19.70
336.63	.03	3031	2682	.00	.03	20.24

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SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "B"
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDC/NWO
DRAFT: JDC/NWO
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-11
SHEET 18

DRAWING NAME:

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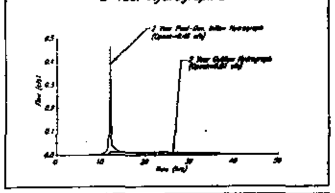
2 YEAR STORM CALCULATIONS

2 Year Hydrograph's



2 YEAR POND ROUTING SUMMARY

Type.... Pond Routing Summary — Page 13.08
Name.... POND 10 OUT Tag 2 — Event 2 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 2

LEVEL POOL ROUTING SUMMARY

HYG Dir = [illegible]
Inflow HYG file = work_pond.hyg - POND 10 IN 2
Outflow HYG file = work_pond.hyg - POND 10 OUT 2

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev =	333.80 ft
Starting Volume =	0 cu.ft
Starting Outflow =	.00 cfs
Starting Infiltr. =	.00 cfs
Starting Total Qout =	.00 cfs
Time Increment =	.0833 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow =	.46 cfs	at	11.9119 hrs
Peak Outflow =	.01 cfs	at	12.0083 hrs
Peak Elevation =	336.44 ft		
Peak Storage =	[illegible] cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol =	0
+ HYG Vol IN =	1070
- Infiltration =	0
- HYG Vol OUT =	940
- Retained Vol =	130

Unrouted Vol = - cu.ft (.001% of Inflow Volume)

2 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

Type.... Node: Pond Inflow Summary — Page 13.03
Name.... POND 10 IN — Event 2 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 2

TOTAL NODE INFLOW...
HYG file = [illegible] work_pond.hyg
HYG ID = POND 10 IN
HYG Tag = 2

Peak Discharge =	.46 cfs
Time to Peak =	11.9119 hrs
HYG Volume =	1070 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

2 YEAR POST DEVELOPMENT OUTFLOW HYDROGRAPH

Type.... Pond Routed HYG (total out) — Page 13.08
Name.... POND 10 OUT Tag 2 — Event 2 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 2

POND ROUTED TOTAL OUTFLOW HYG...
HYG file = [illegible] work_pond.hyg
HYG ID = POND 10 OUT
HYG Tag = 2

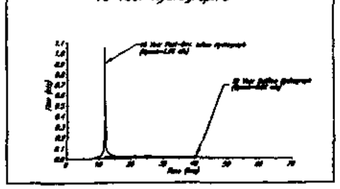
Peak Discharge =	.01 cfs
Time to Peak =	12.0083 hrs
HYG Volume =	940 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

10 YEAR STORM CALCULATIONS

10 Year Hydrograph's



10 YEAR POND ROUTING SUMMARY

Type.... Pond Routing Summary — Page 13.12
Name.... POND 10 OUT Tag 10 — Event 10 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 10

LEVEL POOL ROUTING SUMMARY

HYG Dir = [illegible]
Inflow HYG file = work_pond.hyg - POND 10 IN 10
Outflow HYG file = work_pond.hyg - POND 10 OUT 10

Pond Node Data = POND 10
Pond Volume Data = POND 10
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev =	333.80 ft
Starting Volume =	0 cu.ft
Starting Outflow =	.00 cfs
Starting Infiltr. =	.00 cfs
Starting Total Qout =	.00 cfs
Time Increment =	.0833 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow =	1.06 cfs	at	11.9119 hrs
Peak Outflow =	.08 cfs	at	18.6083 hrs
Peak Elevation =	335.44 ft		
Peak Storage =	1763 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol =	0
+ HYG Vol IN =	2490
- Infiltration =	0
- HYG Vol OUT =	2359
- Retained Vol =	130

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

10 YEAR POST DEVELOPMENT INFLOW HYDROGRAPH

Type.... Node: Pond Inflow Summary — Page 13.05
Name.... POND 10 IN — Event 10 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 10

TOTAL NODE INFLOW...
HYG file = [illegible] work_pond.hyg
HYG ID = POND 10 IN
HYG Tag = 10

Peak Discharge =	1.06 cfs
Time to Peak =	11.9119 hrs
HYG Volume =	2490 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

Type.... Pond Routed HYG (total out) — Page 13.13
Name.... POND 10 OUT Tag 10 — Event 10 yr
File.... [illegible] PERVIOUS PAVEMENT AREA B.PPW
Storm... TypeII 24hr Tag 10

POND ROUTED TOTAL OUTFLOW HYG...
HYG file = [illegible] work_pond.hyg
HYG ID = POND 10 OUT
HYG Tag = 10

Peak Discharge =	.08 cfs
Time to Peak =	18.6083 hrs
HYG Volume =	2359 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0833 hrs
Time on left represents time for first value in each row.

[illegible]

NO.	DESCRIPTION	REVIEW #	APPROVED	DATE

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

Rinker Design Associates, P.C.
Engineering • Surveying • Land Planning • Transportation • Environmental Services
"Turning Challenges Into Opportunities"

SWM COMPUTATIONS
PERVIOUS PAVEMENT AREA "B"
GREENBRIAR PARK IMPROVEMENTS
SPRINGFIELD MAGISTERIAL DISTRICT
FAIRFAX COUNTY, VIRGINIA

REVISIONS:

DATE: JANUARY 5, 2011
SCALE: AS SHOWN
DESIGN: JDC/NVD
DRAFT: JDC/NVD
CHECKED BY: JDC
ARCH: N/A
JOB NUMBER: 05-126-H
SHEET: 18

DRAWING NAME

PLEASE RETURN TO COMMUNITY ASSOCIATION ENGINEERING
703-541-2000 www.coe.us.com

THIS SHEET IS FOR INFORMATION ONLY, NOT FOR CONSTRUCTION !!!

SHEET: SPECIAL PERMIT
6I of 6

A GLOSSARY OF TERMS FREQUENTLY USED IN STAFF REPORTS WILL BE FOUND AT THE BACK OF THIS REPORT

DESCRIPTION OF THE APPLICATION

The applications represent a joint request by the Pleasant Valley Preschool, the Greenbriar Civic Association, and the New Hope Fellowship Church. The Pleasant Valley Preschool, Inc., requests approval of a Special Exception, SE 2010-SP-029, to replace Special Permit S 80-S-053 (which permitted a 15-student nursery school) to approve the nursery school as a special exception use and to facilitate expansion of the shared, on-site parking lot. The Greenbriar Civic Association and the New Hope Fellowship Church request a Special Permit Amendment, SPA 78-SP-192-03, to continue the existing community center and church uses and to facilitate expansion of the shared, on-site parking lot. Except for the expansion of on-site parking, no intensification of existing uses is being proposed as part of these applications.

Maximum Number Participants:

No changes are proposed to the existing permitted **of** capacity.

Community Center: 99 person building occupancy

Church: 100 seats

Nursery School: 15 students

Hours:

No changes are proposed to the existing hours of operation.

Community Center: 8:00 a.m. to 11:00 p.m. daily
(12 after hours parties, until 1:00 a.m., permitted per year with prior approval of the Zoning Administrator)

Church: 9:30 a.m. to 12:30 p.m. Sundays
6:00 p.m. to 9:30 p.m. Sundays
7:45 p.m. to 9:30 p.m. Wednesdays

Nursery School: 9:00 a.m. to 12:00 p.m., Monday – Friday

Employees:

No changes are proposed to the existing number of employees.

Community Center: 1 part-time employee

Church: No employees

Nursery School: 3 part-time employees

Waivers and Modifications:

Transitional screening and barrier requirements along Stringfellow Road, the site's western lot line, were previously modified and/or waived pursuant to SPA 78-P-192-1. The applicant is requesting reaffirmation of the barrier waiver request and modification of the transitional screening requirement in favor of the landscaping shown on the special exception/special permit plat, in accordance with Par.3 of Sect. 13-305 of the Zoning Ordinance.

LOCATION AND CHARACTER

Site Description:

The subject property is a 1.52-acre parcel that is surrounded on three sides by Greenbriar Park, a county facility. The property is developed with a community association building that also houses a church on Sundays and Wednesday nights and a nursery school on weekday mornings. The community association building accommodates Greenbriar Civic Association related functions and is available for rental to private parties. The building is a one-story brick and frame structure with 3,000 square feet of floor area. A fenced, 2,000-square foot outdoor play area is located immediately to the east of the building, in the rear yard of the parcel. A small out-building for storage and a trash enclosure are located in the vicinity of the main building.

The property is located on the east side of Stringfellow Road, north of Melville Lane. The site is accessed from a single driveway off of Stringfellow Road. The driveway leads to a 14-space, asphalt parking lot. The subject property is surrounded on three sides by Greenbriar Park, a county facility. Three gravel paths extend from the community association building to the surrounding parkland, to the north, east, and southeast. Across Stringfellow Road are the rear yards of single family residences. These homes are separated from the roadway by a strip of landscaping and rear yard fencing.

SURROUNDING AREA DESCRIPTION			
Direction	**Use**	**Zoning**	**Plan**
North	Public Park (Greenbriar Park)	R-3, WS	Public Park
South	Public Park (Greenbriar Park)	R-3, WS	Public Park
East	Public Park (Greenbriar Park)	R-3, WS	Public Park
West	Single Family Dwellings (Poplar Tree Estates, Section 6)	PDH-2, Overlay	Residential, 1-2 du/ac

BACKGROUND

Site History:

Application	Date	Use	BZA Action
S 39-74	5/8/74	Permit construction of a community center	Approve
S-121-76	7/13/76	Permit operation of a nursery school in the community center	Approve
S-192-78	9/26/78	Amend existing special permit to facilitate an addition to the community center	Approve
S-80-S-053	9/12/80	Permit the operation of a nursery school for 15 students within the community center	Approve
SPA 78-P-192-1 (concurrent with SP 86-P-053)	10/21/86	Amend existing special permit to facilitate an addition to the community center and modify transitional screening and waive barrier requirements along Stringfellow Road	Approve
SP 86-P-053 (concurrent with SPA 78-P-192-1)	10/21/86	Permit the operation of a church and related facilities, with the maximum number of seats limited to 100, within the community center	Approve
SPA 78-P-192-2	2/10/1997	Permit an increase of on-site parking, facilitate shared access with adjoining Greenbriar Park, construction of stormwater improve-ments.	Approve – A copy of the conditions of approval and special permit plat are attached as Appendix 5. Numerous additional time requests were granted. In March 2007, the BZA denied a request for additional time and the application expired.

SPA 78-P-192-1 approved expansion of the Greenbriar Community Center to its current configuration. Separate approvals of Special Permits S 80-S-053 and SP 86-P-053 subsequently permitted operation of a 15-student nursery school and a church,

respectively, within the community association building. In February 1997, the Greenbriar Civic Association requested SPA 78-P-192-2 to facilitate expansion of the parking lot and creation of a shared access with adjoining Greenbriar Park. The Board of Zoning Appeals conditionally approved that application. However, following the granting of numerous extension requests, SPA 78-P-192-2 expired prior to any construction. In June 2001, the Zoning Ordinance was amended and made nursery schools subject to approval of a special exception by the Board of Supervisors. To reflect this change in the ordinance, SE 2010-SP-029 is being requested to replace Special Permit S 80-S-053, the preschool related special permit.

As shown on the previous table, the parcel was involved with a number of past applications. The most recent application, SPA 78-P-192-2, was approved to permit a parking lot expansion similar to one currently under consideration. That application was approved in February 1997. However, following a number of extensions, the project was not constructed in a timely manner and the approval expired in 2007.

Since the expiration of the approval of the earlier special permit amendment, the Virginia Department of Transportation (VDOT) has commenced its efforts to expand Stringfellow Road to four lanes. As part of this effort, in exchange for right-of-way, VDOT has entered in an agreement with the Fairfax County Park Authority and the Greenbriar Civic Association regarding access other roadway improvements. This road reconstruction is the catalyst for the current applications.

COMPREHENSIVE PLAN PROVISIONS

Plan Area:	Area III
Planning District:	Bull Run Planning District
Planning Sector:	Stringfellow Community Planning Sector
Plan Map:	Public Park
Plan Text:	There is no site-specific plan text applicable to this property.

ANALYSIS

Special Exception/Special Permit Plats (Copy at front of staff report)

Title of Plats:	Special Exception Plat - Pleasant Valley Preschool; and Special Permit Amendment Plat - Greenbriar Community Center
Prepared By:	Community Association Engineering, a Division of GJB Engineering, Inc.
Original and Revision Dates:	September 28, 2010, as revised through December 27, 2000

The applications involve two separate, but identical plats. Both sets include 15 sheets as described below:

Sheet 1 is a title sheet and includes a vicinity map, sheet index, notes, tabulations, waiver requests, and a stormwater management narrative.

Sheet 2 depicts the existing site conditions, including the current parking lot, buildings, play area, and vegetated areas.

Sheet 3 shows the proposed layout, including the expanded parking lot and its driveway tie-in with parking lots of the adjoining Greenbriar Park. This sheet also depicts the proposed landscaping, including modified transitional screening along Stringfellow Road.

Sheet 4 is informational only and provides details of the Greenbriar Park circulation system.

Sheets 5, 6, and 6(A) through 6(I) contain stormwater details.

Land Use Analysis

The special exception and special permit amendments facilitate expansion of the site's parking lot from 14 to 29 spaces. This expansion, along with stormwater management improvements, is the result of agreements between the applicant, the Fairfax County Park Authority, and the Virginia Department of Transportation (VDOT), initiated by proposed improvements to Stringfellow Road, VDOT Project Number 0645-029-384. In exchange for right-of-way dedication, the site would be improved by VDOT as shown on the submitted application plats.

As designed, the enlarged, reconfigured parking lot will provide direct access to the Greenbriar Park property and the main entrance to Greenbriar Park, where left turn lane improvements are proposed. This access improvement will provide a legal, safer option for left turns entering and exiting the Greenbriar Civic Association property. In addition, stormwater improvements will be designed comprehensively for the subject property and the surrounding parklands. An existing asphalt trail along Stringfelllow Road will be retained, with portions being shifted as necessary to accommodate the road work.

***Issue**: Landscaping along Stringfellow Road*

Transitional screening and barriers are required along the site's Stringfellow Road frontage. In the past, these requirements had been modified, as most of the site improvements were located away from the road. The proposed parking lot expansion will be located along the front of the subject property. This location, although improving stormwater management and providing direct access to the adjoining parking lots, may create visual impacts for pedestrians and vehicles travelling on Stringfellow Road and for the residences along the west side of Stringfellow Road.

Resolution:

The application requests modification of the transitional screening and waiver of the barrier requirements in favor of the plantings shown on the SE/SPA plats. The revised plans depict a continuous row of low-growing trees and shrubs that will reduce the project's visual impacts. In addition, the conditions require that applicant secure tree selection approval from the utility easement holder so that vegetation does not conflict with the relatively low hanging overhead wires in the area. Also, realizing that the parking lot may be salted during the winter, the conditions require that the selected plants be salt-tolerant. At site plan, the Urban Forestry Management Division will need to approve the final plant selections that meet both the height and salt-tolerant criteria.

Transportation Analysis (Appendix 6)

Issue: *Revisions to Proposed Parking Lot*

Fairfax County Department of Transportation (FCDOT) is coordinating the Stringfellow Road re-construction with the improvements on the adjoining properties. FCDOT's project reviewers requested revision of the SE/SPA plats to improve turning movement safety. Due to time constraints, the applicant was not able modify the plats prior to publication of the Staff Report.

Resolution:

The specific FCDOT recommended changes are:

- The entrance radii should be increased to a minimum of 25 feet to facilitate turning movements or a taper should be considered.
- To promote safer circulation, the driveway surrounding the proposed landscape island should be demarcated for one-way traffic.
- The four existing parking spaces to the immediate south of the entrance should be removed to prevent vehicles from backing up into traffic entering the site.
- The driveway entrance should be widened to a minimum of 30 feet.

Staff has incorporated the FCDOT provisions into the recommended conditions contained in Appendices A and B. The applicant has submitted a scaled drawing detail reflecting the recommended changes. This diagram, attached to Appendices A and B as Exhibit 1, shows one-way traffic around the landscape island with the appropriate striping and signage. The diagram also shows how the four eliminated parking spaces will be relocated to the northeast side of the enlarged landscape island. In addition, the entrance radii and driveway width have been increased to comply with VDOT standards. It is anticipated that the applicant will submit revised SE/SPA plats that match the diagram prior to the public hearings for these applications.

Environmental Analysis (Appendix 7)

There are no environmental issues associated with this request.

Public Facilities Analysis

As the improvements were planned in coordination with the Park Authority and as the existing uses will not be expanded or intensified, there were no public facility issues noted during review, except for stormwater concerns and urban forestry comments.

Stormwater Analysis (Appendix 8)

Initially, the applicant indicated that the parking lot expansion constituted redevelopment and therefore was subject to lesser stormwater standards. The proposal also did not comply with Best Management Practices.

Subsequently, the applicant and the Park Authority jointly filed a minor site plan detailing the proposed stormwater improvements for the subject property and the surrounding parkland. This comprehensive stormwater plan appears to meet the County's Best Management Practices for quantity and quality, including over 50% phosphorous removal. Final determination will be made at the time of Site Plan approval.

Urban Forestry Management Analysis (Appendix 9)

Initially, the Urban Forestry Management (UFM) Division of the Department of Public Works and Environmental Services felt that removal of a portion of the site's existing vegetation would negate support for modifying the transitional screening along Stringfellow Road and that any parking lot expansion should occur towards the rear of the property. However, upon learning that the parking lot location was fixed by access and drainage factors, UFM felt that the transitional screening modification could be supported as long as the proposed screening vegetation took into account the overhead lines along the Stringfellow Road frontage and the need for salt tolerant vegetation due to proximity to the parking lot.

The applicant has worked with UFM to identify trees and shrubs that meet the height and salt-tolerance criteria and has modified the SE/SPA plats accordingly. In addition, staff is recommending that the applicant obtain approval from the utility easement holders prior to installation of the screening vegetation. Further, the condition requires that the applicant work with UFM to identify alternative plants and/or locations should the easement holders have concerns regarding the proposed planting.

ZONING ORDINANCE PROVISIONS

Zoning Ordinance Provisions R-3 District		
Standard	**Required**	**Provided**
Bulk Standards Lot Size	10,500 square feet	66,150 square feet
Lot Width	80 feet	315 feet
Building Height	60 feet maximum	22 feet
Front Yard	40° ABP, min 30' (30 ' minimum)	105 feet
Side Yard	35° ABP, min 10' (10 ' minimum)	49 feet
Rear Yard	35° ABP, min 25' (25 ' minimum)	35 feet
FAR	0.25 maximum	0.045
Open Space	N/A	95%
Parking Parking Spaces	61 spaces total (See parking discussion below.)	29 spaces on-site and 30 off-site per agreement with Park Authority
Loading Spaces	None	Drop-off circle
Transitional Screening (None required except along the west property line)		
West Property Line	Transition Screening 1: 25-foot wide open space planted with evergreen and/or deciduous trees	As shown on plat: 18-foot wide open space planted with trees and shrubs
Barrier Requirements (None required except along the west property line)		
West Property Line	Barrier D; E; or F: 42-48 inch chain link fence (supplemented with inserts or plants); 6-foot high brick or architectural block wall; or 6-foot high solid wood fence	Waiver requested

Parking

Article 11 of the Zoning Ordinance stipulates the amount of parking spaces required for different types of uses. Under these requirements, the preschool will require three spaces (0.19 spaces per child) and the church will require 25 spaces (one space for every four seats). The ordinance does not include a category specific for community centers. The closest category appears to be "Private, Civic, Fraternal Club or Lodge",

which requires one space per three members based on maximum anticipated membership. As the building has a maximum capacity of 99 people, the required parking for the community center use is determined to be 33 parking spaces. These calculations match those of past applications.

Par. 17 of Sect. 11-102 states that "Where a given use or building contains a combination of uses as set forth in the following Sections, parking shall be provided of the basis of the sum of the required spaces for each use, except as may be permitted by Par. 22 below." Therefore, total number of parking spaces required for the three uses is 61 spaces. The parking requirement was previously met primarily through a shared parking agreement and through a parking reduction. Both issues were approved by the Board at its February 9, 1987 meeting. That Board action approved the parking reduction to 45 spaces subject to the Civic Association executing a recordable agreement with the Fairfax County Park Authority to establish the joint use of parking between the Greenbriar Community Center and the adjacent Park Authority property for a period of not less than 30 years. On March 18, 1987, such an agreement was executed and recorded and therefore adequate parking was established. This agreement is still in effect. The Park Authority and Civic Association have stated their intent to enter into an updated agreement reflecting the new access and parking configurations following approval of these zoning applications. Therefore, staff is recommending execution and recordation of a new agreement prior to the Non-Residential Use Permit implementing these applications.

Waivers/Modifications

Waiver/Modification: The Transitional Screening and Barrier Matrix in Article 13 of the Zoning Ordinance requires that the property's Stringfellow Road frontage be improved with a 25-foot planting strip containing evergreen and/or deciduous trees. The matrix also requires a barrier such as a 42-48-inch high chain link fence interwoven with slats or plants or a six-foot high solid wall or fence. As shown on the revised plat, the applicant proposes an 18-foot wide planting strip with a mix of 2-inch caliper trees and groupings of 18-24-inch evergreen shrubs. No barrier is proposed.

Transitional screening and barrier requirements along Stringfellow Road were previously modified and/or waived pursuant to SPA 78-P-192-1. The applicant is requesting of the waiver of the barrier requirement and modification of the transitional screening requirement in favor of the landscaping shown on the special exception/special permit plat, in accordance with Par. 3 of Section 13-305 of the Zoning Ordinance.

Basis: Par. 3 of Sect. 13-305 states, in part, that transitional screening and barriers may be modified or waived where the land between the building (development) and the property boundary has been specifically designed to minimize adverse impact through a combination of architectural and landscaping techniques. Staff believes that the waiver of the barrier requirement is warranted as no new buildings are proposed.

Regarding modification of the transitional screening, staff notes that a portion of the existing vegetation will be removed in the area of the proposed parking lot expansion. However, in discussions with the Urban Forestry Management (UFM) Division, it appears that adequate screening can be provided within the 18-foot wide planting strip if the trees and shrubs are carefully selected to not conflict with the overhead utility lines and to not be sensitive to occasional salting of the parking lots. The applicant has worked with UFM staff to identify potential, suitable plants. Additionally, staff is recommending conditions regarding approval of the selected plants by the utility easement holders.

Other Zoning Ordinance Requirements:

Special Exception Requirements (Appendix 10)

General Standards for Special Exceptions (Sect. 9-006)
Standards for all Category 3 Uses (Sect. 9-304)
Additional Standards for Child Care Centers and Nursery Schools (Sect.9-309)

The existing uses, with the exception of the parking lot, will not be increased or intensified. The uses met the applicable standards during past reviews and continue to meet them.

Special Permit Requirements (Appendix 10)

General Standards for Special Permits (Sect.8-006)
Standards for all Group Three [Church} Uses (Sect.8-303)
Standards for all Group Four [Community Center] Uses (8-403)

The existing uses, with the exception of the parking lot, will not be increased or intensified. The uses met the applicable standards during past reviews and continue to meet them.

Overlay District Requirements

Water Supply Protection (WSPOD) (Sect. 7-800)

All applicable standards, including phosphorous removal, will be satisfied at the time of site plan review.

Summary of Zoning Ordinance Provisions

All applicable standards have been satisfied with the proposed development conditions.

CONCLUSIONS AND RECOMMENDATIONS

Staff Conclusions

Staff concludes that the requested Special Exception for the nursery school is in conformance with the Comprehensive Plan and the applicable Zoning Ordinance provisions.

Staff concludes that the requested Special Permit Amendment for the community center and church is in conformance with the Comprehensive Plan and the applicable Zoning Ordinance provisions.

Recommendation

Staff recommends approval of Special Exception SE 2010-SP-029 subject to the proposed development conditions listed in Appendix 1.

Staff recommends approval of modification of the transitional screening requirements and waiver of the barrier requirements in favor of the landscaping shown on the SE/SPA plat.

Staff recommends approval of Special Permit Amendment SPA 78-P-192-03 subject to the proposed development conditions listed in Appendix 2.

It should be noted that it is not the intent of staff to recommend that the County, in adopting any conditions, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

The approval of this special exception and this special permit amendment does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Planning Commission, Board of Zoning Appeals, or Board of Supervisors.

APPENDICES

1. Proposed Development Conditions for Special Exception SE 2010-SP-029
2. Proposed Development Conditions for Special Permit Amendment SPA 78-P-192-03
3. Affidavits for Special Exception SE 2010-SP-029 and Special Permit Amendment SPA 78-P-192-03
4. Statements of Justification for Special Exception SE 2010-SP-029 and Special Permit Amendment SPA 78-P-192-03 (including previously approved shared parking and access agreements)
5. Conditions and Plat Approved in Connection with SPA 78-P-192-2
6. Transportation Analysis

APPENDICES (Continued)

7. Environmental Analysis
8. Stormwater Analysis
9. Urban Forestry Management Analysis
10. Applicable Zoning Ordinance Provisions
11. Glossary

PROPOSED DEVELOPMENT CONDITIONS

SE 2010-SP-029

February 9, 2011

If it is the intent of the Board of Supervisors to approve SE 2010 SP-029 located at 4615 Stringfellow Road (Tax Map 45-3 ((1)) Parcel 11) to allow a nursery school pursuant to Sect. 9-309 of the Fairfax County Zoning Ordinance, staff recommends that the Board condition the approval by requiring conformance with the following development conditions.

1. This approval is granted for and runs with the land indicated in this application and is not transferable to other land.

2. This Special Exception is granted only for the purpose(s), structure(s), and/or use(s) indicated on the Special Exception Plat approved with the application, as qualified by these development conditions.

3. A copy of this special exception and the Non-Residential Use Permit SHALL BE POSTED in a conspicuous place on the property and shall be made available to all departments of the County of Fairfax during the hours of operation of the permitted uses.

4. This Special Exception is subject to the provisions of Article 17, Site Plans, as may be determined by the Director, Department of Public Works and Environmental Services. Any plan submitted pursuant to this special exception shall be in conformance with the approved Special Exception Plat entitled Special Exception Plat, Pleasant Valley Preschool, prepared by Community Association Engineering, a Division of GJB Engineering, Inc. and dated September 28, 2010 as revised through December 27, 2010 and these development conditions. Minor modifications to the approved Special Exception may be permitted pursuant to Par.4 of Sect. 9-004 of the Zoning Ordinance.

5. Prior to the issuance of the Non-Residential Use Permit implementing this special exception, the Greenbriar Civic Association and the Fairfax County Park Authority shall execute a shared parking and access agreement. In accordance with applicable code requirements, the agreement shall be reviewed and accepted by the Board of Supervisors.

6. The applicant shall verify that the existing playground is located entirely within the subject property.

7. Any lighting of the parking area shall be in accordance with Part 9 of Article 14 and shall not exceed 12 feet in height, as measured from the base to the top of the light standards.

8. All signage shall comply with the requirements of Article 12, Signs, of the Zoning Ordinance.

9. The maximum daily enrollment for the nursery school shall be limited to 15 students.

10. The hours of operation for the nursery school shall be limited to 9:00 a.m. to 12 noon, Monday through Friday.

11. The site plan shall depict the revisions listed below and as reflected on attached Exhibit 1.

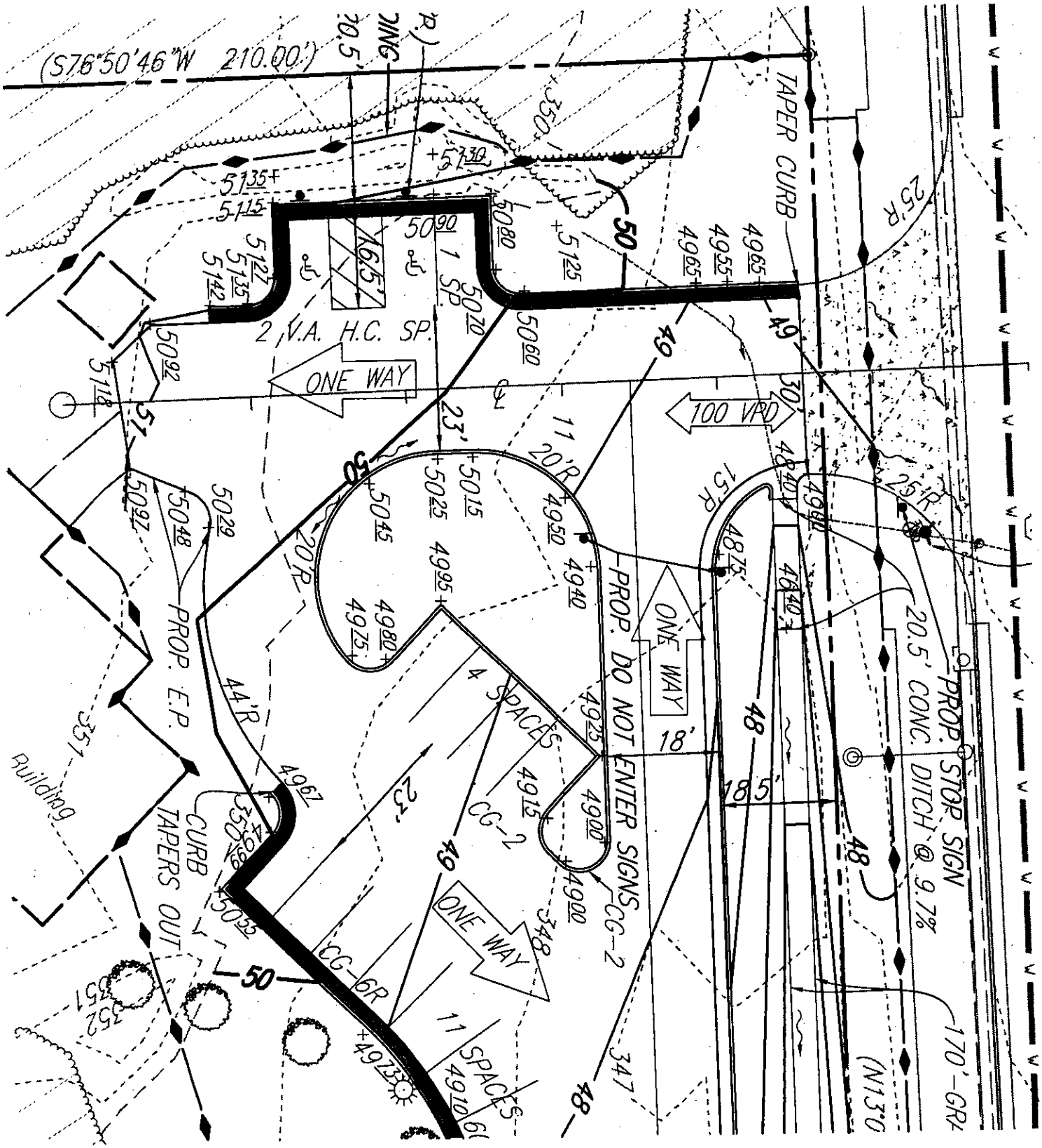
    A. The entrance radii shall be increased to a minimum of 25 feet.
    B. The driveway surrounding the proposed landscape island shall be demarcated for one-way traffic.
    C. The four existing parking spaces to the immediate south of the entrance shall be removed.
    D. The driveway entrance shall be widened to a minimum of 30 feet.

The above proposed conditions are staff recommendations and do not reflect the positions of the Board of Supervisors unless and until adopted

These development conditions incorporate and supersede all previous development conditions. This approval, contingent on the above noted conditions, shall not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards. The applicant shall be himself responsible for obtaining the required Non-Residential Use Permit through established procedures, and this special exception shall not be valid until this has been accomplished.

Pursuant to Section 9-015 of the Zoning Ordinance, this special exception shall automatically expire, without notice, 30 months after the date of approval unless the use has been established or construction has commenced and been diligently prosecuted. The Board of Supervisors may grant additional time to establish the use or to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the special exception. The request must specify the amount of additional time requested, the basis for the amount of time requested and an explanation of why additional time is required.

Exhibit 1



(S76°50'46"W 210.00')
TAPER CURB
2 V.A. H.C. SP.
ONE WAY
100 VPD
PROP. E.P.
PROP. DO NOT ENTER SIGNS
4 SPACES
CG-2
CG-6R
11 SPACES
CURB TAPERS OUT
Building
PROP. STOP SIGN
20.5' CONC. DITCH @ 9.7%
170'-GR

PROPOSED DEVELOPMENT CONDITIONS

SPA 78-P-192-03

February 9, 2011

If it is the intent of the Board of Zoning Appeals to approve SPA 78-P-192-03 located at Tax Map 45-3 ((1)) 11 to allow a community center and church pursuant to Sect. 8-301 and Sect. 8-401 of the Fairfax County Zoning Ordinance, staff recommends that the Board condition the approval by requiring conformance with the following development conditions. Those conditions carried forward from the previous special permit are marked with an asterisk. Minor edits have been made to these conditions to conform with current terminology and have been underlined.

1. This approval is granted to the applicant only (Greenbriar Civic Association and New Hope Fellowship Church) and is not transferable without further action of this Board, and is for the location indicated on the application, 4615 Stringfellow Road, 1.52 acres, and is not transferable to other land.*

2. This Special Permit is granted only for the purpose(s), structures and/or use(s) indicated on the special permit plat prepared by Community Association Engineering (a division of GJB Engineering, Inc. dated December 27, 2010, and approved with this application, as qualified by these development conditions.*

3. A copy of this Special Permit and the Non-Residential Use Permit SHALL BE POSTED in a conspicuous place on the property of the use and be made available to all departments of the County of Fairfax during the hours of operation of the permitted use.*

4. This Special Permit is subject to the provisions of Article 17, Site Plans, as may be determined by the Director, Department of Public Works and Environmental Services (DPWES). Any plan submitted pursuant to this special permit shall be in substantial conformance with these conditions. Minor modifications to the approved special permit may be permitted pursuant to Par. 4 of Sect. 8-004 of the Zoning Ordinance.*

5. The transitional screening requirement shall be modified to reflect the landscaping shown on the special exception plat and the following provisions:

   A. The site plan shall depict landscaping that is in substantial conformance with the approved special exception plat.

   B. Trees and shrubs planted along Stringfellow Road shall be an appropriate height so as to not conflict with the overhead utility lines and shall be salt-tolerant.

C. On the site plan, all proposed trees shall be at shown at least four feet from any restrictive barrier such as curbs.

D. The site plan shall depict and label existing utility easements and contain a note that reads, "Planting within utility easements shall be reviewed and approved by the easement holder(s). If the easement holder(s) does not grant permission to install the proposed plants, the applicant shall work with the Urban Forestry Management Division of the Public Works and Environmental Services Department to identify suitable alternative plants and/or alternative planting locations. The transitional screening requirement shall be considered satisfied if the latter situation needs to be utilized."

6. The barrier requirement along the western property boundary shall be waived.*

7. Prior to the issuance of a Non-Residential Use Permit implementing this special permit, the Greenbriar Civic Association and the Fairfax County Park Authority shall execute a shared parking and access agreement. In accordance with applicable code requirements, the agreement shall be reviewed and accepted by the Board of Supervisors.

8. Any lighting of the parking area shall be in accordance with Part 9 of Article 14 and shall not exceed 12 feet in height, as measured from the base to the top of the light standards.

9. All signage shall comply with the requirements of Article 12, Signs, of the Zoning Ordinance.*

10. The maximum hours of operation of the community center shall be from 8:00 a.m. to 11:00 p.m. daily. The applicant shall be allowed 12 after-hour parties per year until 1:00 a.m. with prior approval of the Zoning Administrator. The number of after hour parties may be increased with the approval of the Zoning Administrator.*

11. The maximum Hours of Operation of the church shall be from 9:30 a.m. to 12:30 p.m. and 6:00 p.m. to 9:30 p.m. on Sundays, and from 7:45 p.m. to 9:30 p.m. on Wednesdays.*

12. The maximum number of seats for the church shall be 100.*

13. The site plan shall depict the revisions listed below and as reflected on attached Exhibit 1.

    A. The entrance radii shall be increased to a minimum of 25 feet.
    B. The driveway surrounding the proposed landscape island shall be demarcated for one-way traffic.
    C. The four existing parking spaces to the immediate south of the entrance shall be removed.

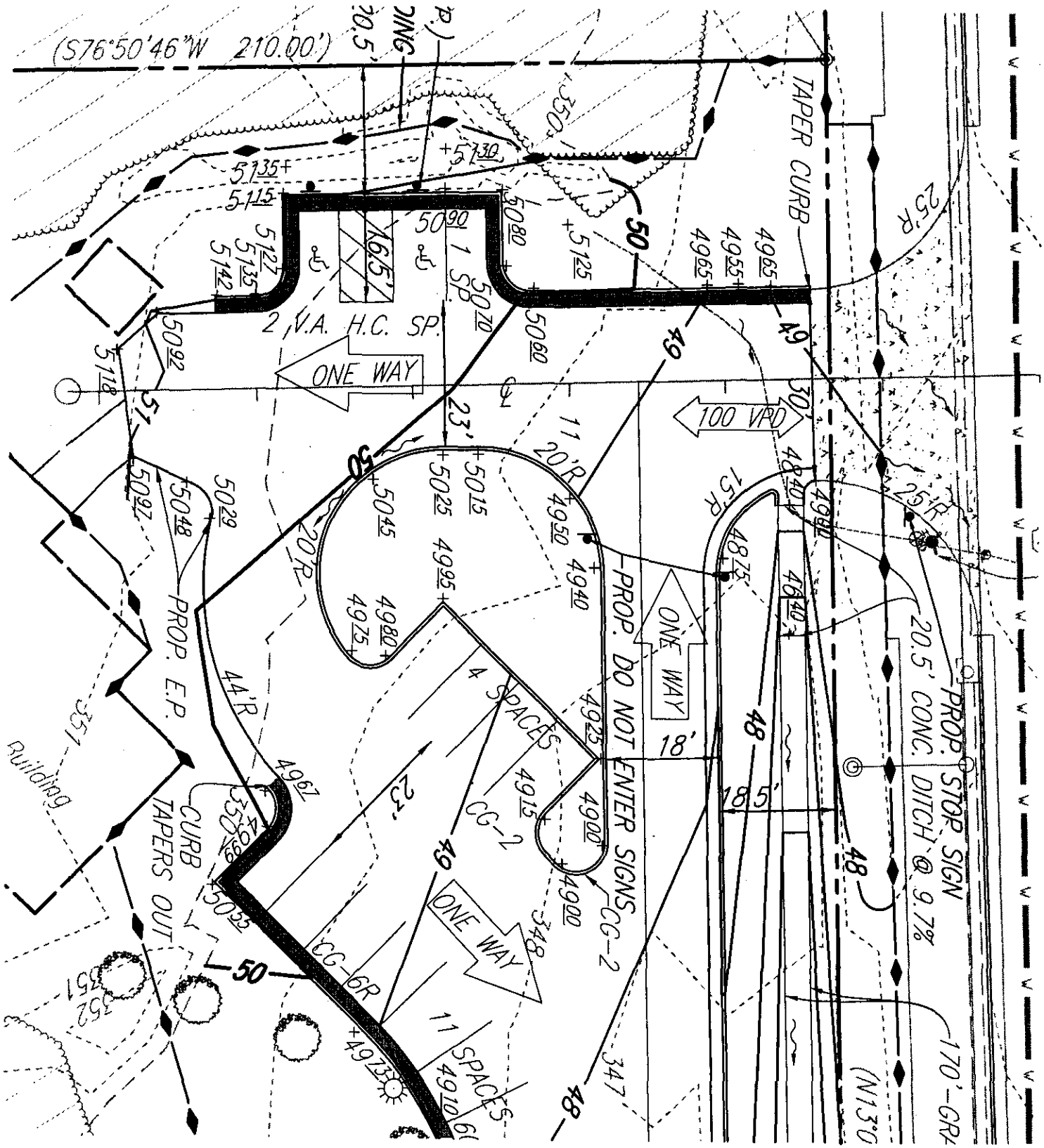
D. The driveway entrance shall be widened to a minimum of 30 feet.

These development conditions incorporate and supersede all previous development conditions imposed by the Zoning Board of Appeals.

This approval, contingent on the above-noted conditions, shall not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

Pursuant to Sect.8-015 of the Zoning Ordinance, this special permit shall automatically expire, without notice, 30 months after the date of approval unless construction has commenced and been diligently prosecuted. The Board of Zoning Appeals may grant additional time to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the special permit. The request must specify the amount of additional time requested, the basis for the amount of time requested and an explanation of why additional time is required.

Exhibit 1



(S76°50'46"W 210.00')
TAPER CURB
2 V.A. H.C. SP.
ONE WAY
100 VPD
PROP. DO NOT ENTER SIGNS
PROP. E.P.
CURB TAPERS OUT
4 SPACES
11 SPACES
CG-2
CG-6R
PROP. STOP SIGN
20.5' CONC. DITCH @ 9.7%
Building

SPECIAL EXCEPTION AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

I, Paul R. Jeannin, Jr., do hereby state that I am an
(enter name of applicant or authorized agent)

(check one) [ ] applicant
[X] applicant's authorized agent listed in Par. 1(a) below

110156a

in Application No.(s): SE 2010-SP-029
(enter County-assigned application number(s), e.g. SE 88-V-001)

and that, to the best of my knowledge and belief, the following information is true:

1(a). The following constitutes a listing of the names and addresses of all **APPLICANTS, TITLE OWNERS, CONTRACT PURCHASERS,** and **LESSEES** of the land described in the application,* and, if any of the foregoing is a **TRUSTEE,**** each **BENEFICIARY** of such trust, and all **ATTORNEYS** and **REAL ESTATE BROKERS,** and all **AGENTS** who have acted on behalf of any of the foregoing with respect to the application:

(**NOTE:** All relationships to the application listed above in **BOLD** print are to be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel(s) for each owner(s) in the Relationship column.)

NAME (enter first name, middle initial, and last name)	**ADDRESS** (enter number, street, city, state, and zip code)	**RELATIONSHIP(S)** (enter applicable relationships listed in **BOLD** above)
Pleasant Valley Preschool, Inc. AGENT: Tara Berglie	PO Box 220092, Chantilly, VA 20153	Applicant / Lessee
Greenbriar Civic Association AGENT: Emerson D. Cale	PO Box 220239, Chantilly, VA 20153	Title Owner
GJB Engineering, Inc. (d.b.a. Community Association Engineering) AGENTS: Gregory J Budnik, PE Patrick M. Kessler	PO Box 1214, Newington, VA 22122	Engineers / Agent for Applicant

(check if applicable) [X] There are more relationships to be listed and Par. 1(a) is continued on a "Special Exception Attachment to Par. 1(a)" form.

* In the case of a condominium, the title owner, contract purchaser, or lessee of 10% or more of the units in the condominium.

** List as follows: Name of trustee, Trustee for (name of trust, if applicable), for the benefit of: (state name of each beneficiary).

Special Exception Attachment to Par. 1(a)

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number (s))

(**NOTE**: All relationships to the application are to be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel (s) for each owner(s) in the Relationship column.)

NAME (enter first name, middle initial, and last name)	**ADDRESS** (enter number, street, city, state, and zip code)	**RELATIONSHIP(S)** (enter applicable relationships listed in **BOLD** above)
Planning & Development Services, Inc. AGENT: Paul R. Jeannin, Jr.	10012 Island Fog Court, Bristow VA 20136	Planner / Landscape Architect Agent for the Applicant
Rinker Design Associates, P.C. AGENT: John D. Cummings	9300 West Courthouse Rd, Suite 300 Manassas, VA 20110	Engineers / Surveyors Agent for the Applicant
New Hope Fellowship Church AGENT: Pat Deavers	PO Box 834,4190 Dawn Valley Court Chantilly, VA 20151	Lessee

(check if applicable) [ ] There are more relationships to be listed and Par. 1(a) is continued further on a "Special Exception Attachment to Par. 1(a)" form.

SPECIAL EXCEPTION AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number(s))

1(b). The following constitutes a listing*** of the **SHAREHOLDERS** of all corporations disclosed in this affidavit who own 10% or more of any class of stock issued by said corporation, and where such corporation has 10 or less shareholders, a listing of all of the shareholders:

(NOTE: Include **SOLE PROPRIETORSHIPS, LIMITED LIABILITY COMPANIES,** and **REAL ESTATE INVESTMENT TRUSTS** herein.)

CORPORATION INFORMATION

NAME & ADDRESS OF CORPORATION: (enter complete name and number, street, city, state, and zip code)

Greenbriar Civic Association
PO Box 220239
Chantilly, VA 20153

DESCRIPTION OF CORPORATION: (check one statement)

[ ] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF SHAREHOLDERS: (enter first name, middle initial and last name)

Greenbriar Civic Association is a 501 (C) (4) non-profit organization having no shareholders.

(check if applicable) [X] There is more corporation information and Par. 1(b) is continued on a "Special Exception Affidavit Attachment 1(b)" form.

*** All listings which include partnerships, corporations, or trusts, to include the names of beneficiaries, must be broken down successively until: (a) only individual persons are listed or (b) the listing for a corporation having more than 10 shareholders has no shareholder owning 10% or more of any class of stock. ***In the case of an APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land that is a partnership, corporation, or trust, such successive breakdown must include a listing and further breakdown of all of its partners, of its shareholders as required above, and of beneficiaries of any trusts. Such successive breakdown must also include breakdowns of any partnership, corporation, or trust owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land. Limited liability companies and real estate investment trusts and their equivalents are treated as corporations, with members being deemed the equivalent of shareholders; managing members shall also be listed.*** Use footnote numbers to designate partnerships or corporations, which have further listings on an attachment page, and reference the same footnote numbers on the attachment page.

Special Exception Attachment to Par. 1(b)

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number (s))

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Pleasant Valley Preschool, Inc.
PO Box 220092
Chantilly, VA 20153

DESCRIPTION OF CORPORATION: (check one statement)

[ ] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

This is a non-profit corporation having no shareholders.

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

DESCRIPTION OF CORPORATION: (check one statement)

[ ] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

(check if applicable) [X] There is more corporation information and Par. 1(b) is continued further on a "Special Exception Attachment to Par. 1(b)" form.

Special Exception Attachment to Par. 1(b)

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number (s))

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

GJB Engineering, Inc. (d.b.a. Community Association Engineering)
PO Box 1214
Newington, VA 22122

DESCRIPTION OF CORPORATION: (check one statement)

[x] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

Gregory J. Budnik - Sole Shareholder

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Planning & Development Services, Inc.
10012 Island Fog Court
Bristow, VA 20136

DESCRIPTION OF CORPORATION: (check one statement)

[x] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

Paul R. Jeannin, Jr. - Sole Shareholder

(check if applicable) [X] There is more corporation information and Par. 1(b) is continued further on a "Special Exception Attachment to Par. 1(b)" form.

Special Exception Attachment to Par. 1(b)

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number (s))

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Rinker Design Associates, P.C.
9300 West Courthouse Road, Suite 300
Manassas, VA 20110

DESCRIPTION OF CORPORATION: (check one statement)

[X] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

Edward B. Snyder, Jr.
Stephen M. Seay
C. Mo Kim
David S. Dwornik

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

DESCRIPTION OF CORPORATION: (check one statement)

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NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

(check if applicable) [ ] There is more corporation information and Par. 1(b) is continued further on a "Special Exception Attachment to Par. 1(b)" form.

SPECIAL EXCEPTION AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

110156a

for Application No. (s): SE 2010-SP-029
(enter County-assigned application number(s))

1(c). The following constitutes a listing*** of all of the **PARTNERS**, both **GENERAL** and **LIMITED**, in any partnership disclosed in this affidavit:

PARTNERSHIP INFORMATION

PARTNERSHIP NAME & ADDRESS: (enter complete name, and number, street, city, state, and zip code)

None

(check if applicable) [ ] The above-listed partnership has no limited partners

NAMES AND TITLE OF THE PARTNERS (enter first name, middle initial, last name, and title, e.g. **General Partner, Limited Partner, or General and Limited Partner)**

Does not apply

(check if applicable) [ ] There is more partnership information and Par. 1(c) is continued on a "Special Exception Affidavit Attachment to Par. 1(c)" form.

*** *All listings which include partnerships, corporations, or trusts, to include the names of beneficiaries, must be broken down successively until:* (a) only individual persons are listed or (b) the listing for a corporation having more than 10 shareholders has no shareholder owning 10% or more of any class of stock. ***In the case of an APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land that is a partnership, corporation, or trust, such successive breakdown must include a listing and further breakdown of all of its partners, of its shareholders as required above, and of beneficiaries of any trusts. Such successive breakdown must also include breakdowns of any partnership, corporation, or trust owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land. Limited liability companies and real estate investment trusts and their equivalents are treated as corporations, with members being deemed the equivalent of shareholders; managing members shall also be listed.*** Use footnote numbers to designate partnerships or corporations, which have further listings on an attachment page, and reference the same footnote numbers on the attachment page.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

SPECIAL PERMIT/VARIANCE AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

I, Paul R. Jeannin, Jr., do hereby state that I am an
(enter name of applicant or authorized agent)

(check one) [ ] applicant
[X] applicant's authorized agent listed in Par. 1(a) below 109047c

and that, to the best of my knowledge and belief, the following is true:

1(a). The following constitutes a listing of the names and addresses of all **APPLICANTS, TITLE OWNERS, CONTRACT PURCHASERS,** and **LESSEES** of the land described in the application,* and, if any of the foregoing is a **TRUSTEE,**** each **BENEFICIARY** of such trust, and all **ATTORNEYS** and **REAL ESTATE BROKERS,** and all **AGENTS** who have acted on behalf of any of the foregoing with respect to the application:

(**NOTE**: All relationships to the application listed above in **BOLD** print must be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel(s) for each owner(s) in the Relationship column.)

NAME (enter first name, middle initial, and last name)	**ADDRESS** (enter number, street, city, state, and zip code)	**RELATIONSHIP(S)** (enter applicable relationships listed in **BOLD** above)
Greenbriar Civic Association AGENT: Emerson D. Cale	PO Box 220239, Chantilly, VA 20153	Applicant / Title Owner
New Hope Fellowship Church AGENT: Pat Deavers	PO Box 834, 4190 Dawn Valley Court Chantilly, VA 20151	Applicant / Lessee
GJB Engineering, Inc. (d.b.a. Community Association Engineering) AGENTS: Gregory J Budnik, PE Patrick M. Kessler	PO Box 1214, Newington, VA 22122	Engineers / Agent for Applicants

(check if applicable) [X] There are more relationships to be listed and Par. 1(a) is continued on a "Special Permit/Variance Attachment to Par. 1(a)" form.

* In the case of a condominium, the title owner, contract purchaser, or lessee of 10% or more of the units in the condominium.
** List as follows: Name of trustee, Trustee for (name of trust, if applicable), for the benefit of: (state name of each beneficiary).

Application No.(s): SPA 78-P-192-03

(county-assigned application number(s), to be entered by County Staff)

Special Permit/Variance Attachment to Par. 1(a)

DATE: November 3, 2010

(enter date affidavit is notarized)

109047c

(**NOTE**: All relationships to the application are to be disclosed. Multiple relationships may be listed together, e.g., **Attorney/Agent, Contract Purchaser/Lessee, Applicant/Title Owner**, etc. For a multiparcel application, list the Tax Map Number(s) of the parcel (s) for each owner(s) in the Relationship column.)

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Rinker Design Associates, P.C. AGENT: John D. Cummings	9300 West Courthouse Rd, Suite 300 Manassas, VA 20110	Engineers / Surveyors Agent for the Applicants
Pleasant Valley Preschool, Inc. AGENT: Tara Berglie	PO Box 220092, Chantilly, VA 20153	Lessee

(check if applicable) [ ] There are more relationships to be listed and Par. 1(a) is continued further on a "Special Permit/Variance Attachment to Par. 1(a)" form.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

SPECIAL PERMIT/VARIANCE AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

109047c

1(b). The following constitutes a listing*** of the **SHAREHOLDERS** of all corporations disclosed in this affidavit who own 10% or more of any class of stock issued by said corporation, and where such corporation has 10 or less shareholders, a listing of all of the shareholders:

(**NOTE:** Include **SOLE PROPRIETORSHIPS, LIMITED LIABILITY COMPANIES,** and **REAL ESTATE INVESTMENT TRUSTS** herein.)

CORPORATION INFORMATION

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Greenbriar Civic Association
PO Box 220239
Chantilly, VA 20153

DESCRIPTION OF CORPORATION: (check one statement)

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[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF SHAREHOLDERS: (enter first name, middle initial, and last name)

Greenbriar Civic Association is a 501 (C) (4) non-profit organization having no shareholders.

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Application No.(s): SPA 78-P-192-03
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Special Permit/Variance Attachment to Par. 1(b)

DATE: November 3, 2010
(enter date affidavit is notarized)

109047c

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)
GJB Engineering, Inc. (d.b.a. Community Association Engineering)
PO Box 1214
Newington, VA 22122

DESCRIPTION OF CORPORATION: (check one statement)

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[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)
Gregory J. Budnik - Sole Shareholder

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)
Planning & Development Services, Inc.
10012 Island Fog Court
Bristow, VA 20136

DESCRIPTION OF CORPORATION: (check one statement)

[X] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)
Paul R. Jeannin, Jr. - Sole Shareholder

(check if applicable) [X] There is more corporation information and Par. 1(b) is continued further on a "Special Permit/Variance Attachment to Par. 1(b)" form.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

Special Permit/Variance Attachment to Par. 1(b)

DATE: November 3, 2010
(enter date affidavit is notarized)

109047c

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Rinker Design Associates, P.C.
9300 West Courthouse Road, Suite 300
Manassas, VA 20110

DESCRIPTION OF CORPORATION: (check one statement)

[ ] There are 10 or less shareholders, and all of the shareholders are listed below.
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[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

Edward B. Snyder, Jr.
Stephen M. Seay
C. Mo Kim
David S. Dwornik

NAME & ADDRESS OF CORPORATION: (enter complete name, number, street, city, state, and zip code)

Pleasant Valley Preschool, Inc.
PO Box 220092
Chantilly, VA 20153

DESCRIPTION OF CORPORATION: (check one statement)

[ ] There are 10 or less shareholders, and all of the shareholders are listed below.
[ ] There are more than 10 shareholders, and all of the shareholders owning 10% or more of any class of stock issued by said corporation are listed below.
[ ] There are more than 10 shareholders, but no shareholder owns 10% or more of any class of stock issued by said corporation, and no shareholders are listed below.

NAMES OF THE SHAREHOLDERS: (enter first name, middle initial, and last name)

This is a non-profit corporation having no shareholders.

(check if applicable) [ ] There is more corporation information and Par. 1(b) is continued further on a "Special Permit/Variance Attachment to Par. 1(b)" form.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

SPECIAL PERMIT/VARIANCE AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

109047c

1(c). The following constitutes a listing*** of all of the **PARTNERS**, both **GENERAL** and **LIMITED**, in any partnership disclosed in this affidavit:

PARTNERSHIP INFORMATION

PARTNERSHIP NAME & ADDRESS: (enter complete name, number, street, city, state, and zip code)

None

(check if applicable) [ ] The above-listed partnership has no limited partners.

NAMES AND TITLE OF THE PARTNERS (enter first name, middle initial, last name, and title, e.g. **General Partner, Limited Partner, or General and Limited Partner)**

Does not apply

(check if applicable) [ ] There is more partnership information and Par. 1(c) is continued on a "Special Permit/Variance Attachment to Par. 1(c)" form.

*** All listings which include partnerships, corporations, or trusts, to include the names of beneficiaries, must be broken down successively until: (a) only individual persons are listed or (b) the listing for a corporation having more than 10 shareholders has no shareholder owning 10% or more of any class of stock. ***In the case of an APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land that is a partnership, corporation, or trust, such successive breakdown must include a listing and further breakdown of all of its partners, of its shareholders as required above, and of beneficiaries of any trusts. Such successive breakdown must also include breakdowns of any partnership, corporation, or trust owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land. Limited liability companies and real estate investment trusts and their equivalents are treated as corporations, with members being deemed the equivalent of shareholders; managing members shall also be listed.*** Use footnote numbers to designate partnerships or corporations, which have further listings on an attachment page, and reference the same footnote numbers on the attachment page.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

SPECIAL PERMIT/VARIANCE AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

109047C

1(d). One of the following boxes **must** be checked:

[ ] In addition to the names listed in Paragraphs 1(a), 1(b), and 1(c) above, the following is a listing of any and all other individuals who own in the aggregate (directly and as a shareholder, partner, and beneficiary of a trust) 10% or more of the **APPLICANT, TITLE OWNER, CONTRACT PURCHASER,** or **LESSEE*** of the land:

[x] Other than the names listed in Paragraphs 1(a), 1(b), and 1(c) above, no individual owns in the aggregate (directly and as a shareholder, partner, and beneficiary of a trust) 10% or more of the **APPLICANT, TITLE OWNER, CONTRACT PURCHASER,** or **LESSEE*** of the land.

2. That no member of the Fairfax County Board of Zoning Appeals, Planning Commission, or any member of his or her immediate household owns or has any financial interest in the subject land either individually, by ownership of stock in a corporation owning such land, or through an interest in a partnership owning such land.

EXCEPT AS FOLLOWS: (**NOTE**: If answer is none, enter "NONE" on the line below.)

None

(check if applicable) [ ] There are more interests to be listed and Par. 2 is continued on a "Special Permit/Variance Attachment to Par. 2" form.

Application No.(s): SPA 78-P-192-03
(county-assigned application number(s), to be entered by County Staff)

SPECIAL PERMIT/VARIANCE AFFIDAVIT

DATE: November 3, 2010
(enter date affidavit is notarized)

109047C

3. That within the twelve-month period prior to the public hearing of this application, no member of the Fairfax County Board of Zoning Appeals, Planning Commission, or any member of his or her immediate household, either directly or by way of partnership in which any of them is a partner, employee, agent, or attorney, or through a partner of any of them, or through a corporation in which any of them is an officer, director, employee, agent, or attorney or holds 10% or more of the outstanding bonds or shares of stock of a particular class, has, or has had any business or financial relationship, other than any ordinary depositor or customer relationship with or by a retail establishment, public utility, or bank, including any gift or donation having a value of more than $100, singularly or in the aggregate, with any of those listed in Par. 1 above.

EXCEPT AS FOLLOWS: (**NOTE:** If answer is none, enter "**NONE**" on line below.)

None

(**NOTE: Business or financial relationships of the type described in this paragraph that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings. See Par. 4 below.)**

(check if applicable) [ ] There are more disclosures to be listed and Par. 3 is continued on a "Special Permit/Variance Attachment to Par. 3" form.

4. **That the information contained in this affidavit is complete, that all partnerships, corporations, and trusts owning 10% or more of the APPLICANT, TITLE OWNER, CONTRACT PURCHASER, or LESSEE* of the land have been listed and broken down, and that prior to each and every public hearing on this matter, I will reexamine this affidavit and provide any changed or supplemental information, including business or financial relationships of the type described in Paragraph 3 above, that arise on or after the date of this application.**

WITNESS the following signature:

(check one) [ ] Applicant [X] Applicant's Authorized Agent

Paul R, Jeannin, Jr Agent for the Applicants
(type or print first name, middle initial, last name, and title of signee)

Subscribed and sworn to before me this 3 day of November 2010 in the State/Comm. of Virginia, County/City of Prince William.

Joyce L Wells
Notary Public

My commission expires: 04/30/2012

JOYCE L. WELLS
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA
REG. #348084
MY COMMISSION EXPIRES APRIL 30, 2012

APPENDIX 4

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Zoning Evaluation Division

PLEASANT VALLEY PRESCHOOL
STATEMENT OF JUSTIFICATION

September 16, 2010

SUMMARY:

The Pleasant Valley Preschool currently operates within the Greenbriar Community Center as approved with Special Permit - S 80-S-053. This Application is submitted in order to permit an increase in parking on the Greenbriar Community Center site and site modifications: to include expansion and redesign of the parking lot, provision of conservation areas for SWM / BMP purposes, planting of shade trees and sharing parking / access with the adjacent Greenbriar Park.

BACKGROUND:

The development conditions approved with SPA 78-P-192-1 required that the Greenbriar Civic Association obtain approval of a shared parking agreement with the Fairfax County Park Authority to use one or both of the adjacent existing parking lots for Greenbriar Park. On February 9, 1987 the shared parking agreement was approved by the Board of Supervisors and was recorded on March 18, 1987. Subsequently, the Greenbriar Civic Association filed a new amendment seeking to improve the parking lot on their property by expanding it and connecting it to the adjacent park. This amendment was approved on August 13, 1997, but subsequent engineering and coordination issues delayed the project for a subsequent amount of time until no further extensions of the Special Permit were granted in 2007.

The Greenbriar Civic Association continued to work with the Fairfax County Park Authority and they have recently reached an agreement to work together toward the construction of parking on the Applicant's property as well as the Greenbriar Park in a joint project. This opportunity stems from the fact that the widening of Stringfellow Road required easements and other considerations from the Fairfax County Park Authority as well as the Greenbriar Civic Association. Repayment was in the form of a commitment to build the new parking lots discussed herein. The redesign would consolidate parking with the Park Authority as originally intended and desired. As a result of this improvement, Pleasant Valley Preschool hereby submits this Special Exception in order to remain in compliance with Fairfax County Zoning.

DESCRIPTION:

A. Type of Operation: Continued operation of a Nursery (Preschool) School

B. The Hours of Operation shall be from 9 am to 12 noon, Monday through Friday

C: The Nursery (Preschool) School has a maximum of 15 children.

D: The proposed number of onsite (part-time) employees is 3 for this use.

E: Trip Generation: Weekdays: Mornings - 30 trips (Pre-school)

Note: Expansion of the parking lot will not impact the present trip generation. However, the proposed change will improve safety and access to Stringfellow Road.

F: The general area served is the Greenbriar Subdivision.

G: No new buildings or additions are part of this application.

H: No hazardous or toxic substances are involved.

I: The Transitional Screening and Barrier requirements were previously waived and / or modified by the Board of Zoning Appeals pursuant to SPA 78-P-192-1. The Applicant is requesting reaffirmation of the barrier waiver request and modification of the transitional screening requirement in favor of the row of 2" caliper Red Maples (Acer rubrum "Red Sunset" as shown on Sheet 3 of this plat. The Applicant believes this waiver is justified since existing homes along the west side of Stringfellow Road are already well screened and buffered. In addition, the layout as proposed allows the Applicant to preserve the maximum amount of existing trees onsite as shown on the plat. In addition, the existing building will remain as is with no expansion proposed by this Application.

GREENBRIAR COMMUNITY CENTER
STATEMENT OF JUSTIFICATION

REVISED September 16, 2010

SUMMARY:

This Application is submitted in order to permit an increase in parking on the site and site modifications: to include expansion and redesign of the parking lot, provision of conservation areas for SWM / BMP purposes, planting of shade trees and sharing parking / access with the adjacent Greenbriar Park. In addition, this Special Permit request would incorporate (under one Special Permit) an existing use for a Church and related facilities that is currently operating within the Community Center Building. A separate Special Exception has been submitted to allow a Nursery (Pleasant Valley Preschool) School for 15 students (S 80-S-053), to also continue to operate in the building.

BACKGROUND:

The development conditions approved with SPA 78-P-192-1 required that the Applicant obtain approval of a shared parking agreement with the Fairfax County Park Authority to use one or both of the adjacent existing parking lots for Greenbriar Park. On February 9, 1987 the shared parking agreement was approved by the Board of Supervisors and was recorded on March 18, 1987. Subsequently, the Greenbriar Civic Association filed a new amendment seeking to improve the parking lot on their property by expanding it and connecting it to the adjacent park. This amendment was approved on August 13, 1997, but subsequent engineering and coordination issues delayed the project for a subsequent amount of time until no further extensions of the Special Permit were granted in 2007.

The Applicant continued to work with the Fairfax County Park Authority and they have recently reached an agreement to work together toward the construction of parking on the Applicant's property as well as the Greenbriar Park in a joint project. This opportunity stems from the fact that the widening of Stringfellow Road required easements and other considerations from the Fairfax County Park Authority as well as the Greenbriar Civic Association. Repayment was in the form of a commitment to build the new parking lots discussed herein. Approval of the Special Permit would consolidate parking with the Park Authority as originally intended and desired.

DESCRIPTION:

A. Type of Operation: Community Center to include a church, nursery (preschool)school (under separate Special Exception) and related facilities. Note that the Community Center is a non-profit operation created to provide a convenient and low cost meeting place for civic, community and social activities. As such, minor uses in addition to those listed above including but not limited to Exercise Classes, Club Meetings, Youth Association Meetings, Community Board of Directors meetings, etc... will continue to utilize the facility as well.

B. The hours of operation shall be from 8 am to 11 pm daily. The Applicant shall be allowed 12 after-hour parties per year until 1 am with prior approval of the Zoning Administrator. The number of after hours parties may be increased upon approval of the Zoning Administrator.

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Zoning Evaluation Division

GREENBRIAR COMMUNITY CENTER
STATEMENT OF JUSTIFICATION
Page Two

C: The Community Center has a maximum capacity of 99 persons. The average use of the Center is about 20 to 30 persons. The Church has a maximum of 100 seats. The Nursery School has a maximum of 15 children (as submitted under separate Special Exception).

D: The proposed number of onsite (part-time) employees is 1 for the Civic Association, 3 for the Preschool (as submitted under a separate Special Exception) and none for the Church.

E: Trip mode of visitors to the Community Center is roughly estimated to be 98%.

Trip Generation:	Weekdays:	Mornings	- 30 trips (Pre-school as per separate Special Exception)
		Afternoons	- 10 Trips (Low usage)
		Evening	- Up to 45 trips (Bingo, Parties, etc...)
	Saturday:		- Up to 50 trips, depending upon rental
	Sunday:		- 25 trips (Church use)

Note: Expansion of the parking lot will not impact the present trip generation. However, the proposed change will improve safety and access to Stringfellow Road.

F: The general area served is the Greenbriar Subdivision.

G: No new buildings or additions are part of this application.

H: No hazardous or toxic substances are involved.

I: The Transitional Screening and Barrier requirements were previously waived and / or modified by the Board of Zoning Appeals pursuant to SPA 78-P-192-1. The Applicant is requesting reaffirmation of the barrier waiver request and modification of the transitional screening requirement in favor of the row of 2" caliper Red Maples (Acer rubrum "Red Sunset" as shown on Sheet 3 of this plat. The Applicant believes this waiver is justified since existing homes along the west side of Stringfellow Road are already well screened and buffered. In addition, the layout as proposed allows the Applicant to preserve the maximum amount of existing trees onsite as shown on the plat. In addition, the existing building will remain as is with no expansion proposed by this Application.

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Zoning Evaluation Division

58. A-6 - REVISIONS TO THE PERSONNEL REGULATIONS (CHAPTER 17) REGARDING GRIEVANCE PROCEDURE (Tapes 7-8)

Supervisor Falck moved that the Board concur in the recommendation of staff and approve the proposed revisions to the Personnel Regulations (Chapter 17) regarding Grievance Procedure as contained in Attachments One and Three of the Memorandum to the Board dated February 9, 1987. This motion was seconded by Supervisor Hanley.

Supervisor Egge referred to Page Four of the amended Grievance Procedure contained in the Memorandum to the Board dated February 9, 1987 and called to the Board's attention the reduction of forty-five days to thirty days in which the Civil Service Commission would hear a case; he questioned whether this reduction was realistic given the time problems that the Civil Service Commission is presently experiencing.

The County Executive responded that additional staff had been authorized for the Civil Service Commission.

Supervisor Falck stated that some of the cases would not be heard by the full Commission but rather by Hearing Officers.

Following discussion with input from Cornelius J. O'Kane, Director, Office of Personnel, who stated that the revisions were necessary to bring the Regulations into line with the state law, the question was called on the motion which carried by a vote of eight, Supervisor Pennino being out of the room.

59. A-7 - REVISIONS TO THE PERSONNEL REGULATIONS (SECTION 7.10) REGARDING APPOINTMENT OF FAMILY MEMBERS (Tape 8)

On motion of Supervisor Falck, seconded by Supervisor Egge, and carried by a vote of seven, Supervisor Alexander and Supervisor Pennino being out of the room, the Board concurred in the recommendation of staff and approved the proposed revisions to the Personnel Regulations (Section 7.10) defining a County Policy regarding the appointment of family members as contained in the Memorandum to the Board dated February 9, 1987.

→ 60. A-8 - PARKING REDUCTION FOR THE GREENBRIAR CIVIC ASSOCIATION COMMUNITY CENTER (PROVIDENCE DISTRICT) (Tape 8)

On motion of Supervisor Hanley, seconded by Supervisor McConnell, and carried by a vote of seven, Supervisor Alexander and Supervisor Pennino being out of the room, the Board concurred in the recommendation of staff and approved the parking reduction for the Greenbriar Civic Association Community Center, Tax Map 45-3((1))11 pursuant to Paragraph 4, Section 11-102 of the Zoning Ordinance with the following conditions:

1) The applicant shall execute a recordable agreement with the Fairfax County Park Authority, subject to review by the County Attorney's Office, that will establish the joint use of parking between the Greenbriar Community Center and the adjacent Park Authority property, for a period of not less than thirty (30) years; and

2) Any addition or intensified use of either property shall render this approval null and void. This will cover not only those areas and uses subject to shared parking and not negate future expansion of other areas of the County park.

61. A-9 - SUPPORT FOR THE FAIRFAX COUNTY PARK AUTHORITY'S APPLICATION TO OBTAIN 35.2 ACRES OF SURPLUSED FEDERAL LAND KNOWN AS THE "UNITED STATES COAST GUARD REMOTE TRANSMITTING SITE" FOR PARK OR RECREATION PURPOSES (MOUNT VERNON DISTRICT) (Tape 8)

(NOTE: Earlier in the meeting, action was taken to adopt the Resolution (with amendments) in support of the Fairfax County Park Authority's application for the transfer of the United States Coast Guard Remote Transmitting Site located at Riverdale Road, VA-P-37 (U-VA-664) from the Federal Government to the Park Authority. See Clerk's Summary Item CL#27.)

62. A-10 - AUTHORIZATION FOR CONDEMNATION OF A CERTAIN PROPERTY NECESSARY FOR THE CONSTRUCTION OF THE ROUTE 50/WEST OX ROAD INTERCHANGE (CENTREVILLE DISTRICT) (Tape 8)

(R) On motion of Supervisor Hanley, seconded by Supervisor McConnell, and carried by a vote of seven, Supervisor Alexander and Supervisor Pennino being out of the room, the Board concurred in the recommendation of staff and adopted a Resolution authorizing the condemnation of a certain property necessary for the construction of the Route 50/West Ox Road Interchange.

63. A-11 - APPROVAL OF A GRANT APPLICATION FOR A CHRONIC OFFENDER PROGRAM FOR THE JUVENILE AND DOMESTIC RELATIONS DISTRICT COURT (Tape 8)

On motion of Supervisor Davis, seconded by Supervisor Falck, and carried by a vote of seven, Supervisor Alexander and Supervisor Pennino being out of the room, the Board concurred in the recommendation of staff and approved the submission of a grant application in the amount of $15,000 for the Chronic Offender Program (which is to be operated by the Juvenile and Domestic Relations District Court) to the Department of Criminal Justice Services of the Federal Government in Richmond, Virginia.

ATTACHMENT 1

AGREEMENT

THIS AGREEMENT, made this 18th day of MARCH, 1987, by and between the GREENBRIAR CIVIC ASSOCIATION, INC., hereinafter the "Association" and the FAIRFAX COUNTY PARK AUTHORITY; hereinafter the "Authority";

W I T N E S S E T H :

WHEREAS, the Association is the owner of certain land known as the Greenbriar Civic Center at Fairfax County Tax Map 45-3-((1))11, having acquired the land by a deed recorded in Deed Book 3506 at Page 22 among the land records of Fairfax County, Virginia, and

WHEREAS, the Authority is the owner of certain land known as Greenbriar Park at Fairfax County Tax Map 45-3((1))9A, having acquired the land by a deed recorded in Deed Book 3506 at Page 17 among the aforesaid land records, and

WHEREAS, the Authority has developed parking areas within Greenbriar Park adjacent to the Association property, and those parking areas are shared pursuant to a February 12, 1974, letter agreement, and

WHEREAS, the parties wish to amend the letter agreement in accordance with the requirements of Special Permit SPA 78-P-192-1, granted by the Fairfax County Board of Zoning Appeals on October 24, 1986; now, therefore,

FAIRFAX, VIRGINIA 22030

W I T N E S S E T H :

That the Authority hereby grants to the Association the right and privilege, for thirty (30) years from the date of this Agreement, to park vehicles on thirty (30) spaces in Greenbriar Park, as designated by the Authority on site, subject to the following conditions:

1. The Association will require the users of its facility to understand and to observe the Park Authority rules governing the Greenbriar Park, including those rules concerning joint use during park operation hours.

2. The Association shall provide to the Authority a minimum of ten days' written notice of all special events to be conducted at the Civic Center, and if there is a conflict, park parking may be denied to the Association.

3. If the entrances from Stringfellow Road into the Park and into the Civic Center are consolidated in the future, whether by agreement, or as required by a superior authority, the Authority will grant an access easement over the Park to the Association (in a location to be designated by the Authority), and the parties shall share equally the cost of improvements, if any, to the entrance.

4. Additional parking on Association land, for Association activities, shall be provided in accordance with the Fairfax County Public Facility Manual, at the time the new entrance is required.

5. Any additional or intensified use on either property shall negate this agreement, provided, however, that this provision shall cover only those Park areas and uses subject to shared parking hereunder.

6. The Association shall indemnify and hold the Authority harmless from any and all claims for injury to persons or to property arising out of the shared parking. The Association shall obtain, and shall maintain in full force and effect for the life of this Agreement, liability insurance to cover these risks in an amount satisfactory to the Authority.

WITNESS the following signatures and seals:

ATTEST:

GREENBRIAR CIVIC ASSOCIATION, INC.

By _____
President

ATTEST:

FAIRFAX COUNTY PARK AUTHORITY

_____

By _____
Director

STATE OF VIRGINIA :
: to-wit:
COUNTY OF FAIRFAX :

I, the undersigned, a Notary Public in and for the County of Fairfax, in the State of Virginia, do certify that James C. Jewell, whose name is signed to the above Deed, dated this 18th day

of MARCH, 1987, has acknowledged the same before me in my County and State aforesaid.

Given under my hand and Notarial Seal, this 18th day of MARCH, 1987.

Richard W Jones
Notary Public

My commission expires: 3-15-88

STATE OF VIRGINIA :
: to-wit:
COUNTY OF FAIRFAX :

I, the undersigned, a Notary Public in and for the County of Fairfax, in the State of Virginia, do certify that JOSEPH P. DOWNS, whose name is signed to the above Deed, dated this 18th day of MARCH, 1987, has acknowledged the same before me in my County and State aforesaid.

Given under my hand and Notarial Seal, this 18th day of MARCH, 1987.

Richard W Jones
Notary Public

My commission expires: 3-15-88

Tax Map Number
45-3-01-0011

INGRESS AND EGRESS EASEMENT AND AGREEMENT

THIS INGRESS AND EGRESS EASEMENT AND AGREEMENT, made this 10th day of JANUARY, 2002 by and between the GREENBRIAR CIVIC ASSOCIATON, INC., Grantor and Grantee, hereinafter the " Association" and the FAIRFAX COUNTY PARK AUTHORITY, Grantor and Grantee, hereinafter the "Authority";

WITNESSETH:

WHEREAS, the Association is the owner of certain land situated in Sully District, Fairfax County, Virginia, at 4615 Stringfellow Road, consisting of 1.5186 acres, more or less, and having a Tax Map Reference No. 45-3-01-0011 ("Property" or "Civic Center"), having acquired the Property by a deed recorded in Deed Book 3506 at Page 22 among the land records of Fairfax County, Virginia, and

WHEREAS, the Authority is the owner of certain land abutting the Property, being a portion of Greenbriar Park and having Tax Map References No. 45-3-01-0009-A, having acquired the land by a deed recorded in Deed Book 3506 at Page 17 among the aforesaid land records, and

WHEREAS, pursuant to a Letter Agreement dated February 12, 1 974 ("Exhibit A," attached) as modified by that Agreement dated March 18, 1987, and recorded in Deed Book 6658, at Page 1216 ("Exhibit B," attached) (collectively, "Agreement"), the Association has the right and privilege to park up to thirty motor vehicles in Greenbriar Park, subject to certain terms and conditions as set out therein, and

WHEREAS, the parties wish to modify the Agreement by increasing the number of permitted motor vehicles to fifty-two, subject to the terms and conditions of the Agreement, except as otherwise expressly modified herein, and

WHEREAS, the Authority desires to convey to the Association an Ingress-Egress Easement for the purpose of consolidating the Civic Center entrance with an existing Greenbriar Park entrance along Stringfellow Road and located immediately North of the Civic Center, and

NOW THEREFORE, for and in consideration of the premises and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

A. The Authority hereby grants to the Association the right and privilege, for thirty (30) years from the date of this Ingress and Egress Easement Agreement, to park up to fifty-two motor vehicles in Greenbriar Park.

B. The Authority grants to the Association, its successors and assigns, an Ingress-Egress Easement for the purpose of ingress and egress by the Association, and its agents, assigns, members, and invitees, over and across a portion of Greenbriar Park, more particularly described as "CL PROP. INGRESS-EGRESS EASEMENT HEREBY GRANTED," on the plat attached as "Exhibit C" dated September 28, 2001, prepared by Professional Design Group, Inc., entitled "PLAT SHOWING EGRESS AND INGRESS EASEMENT ON PROPERTY OF FAIRFAX COUNTY PARK AUTHORITY," said Plat being incorporated herein. This easement is subject to the following terms and conditions:

1. All improvements installed in the easement shall be and remain property of the Authority, which shall properly maintain such improvements.

2. The Association, and its agents, assigns, members, and invites, shall have full and free use of the easement for the purposes named and all rights and privileges reasonably necessary to the exercise of the easement.

WITNESS the following signatures and seals:

ATTEST: GREENBRIAR CIVIC ASSOCIATION, INC.

Ralph Willis By: Emerson D. Cole

President

State of Virginia

County of Fairfax

I, the undersigned, a Notary Public in and for the County of Fairfax, in the State of Virginia, do certify that Emerson D. Cole whose name is signed to the above agreement, dated this 10th day of JANUARY 2002 has acknowledged the same before me in my County and State aforesaid.

Given under my hand and Notarial Seal, this 10th day of JANUARY, 2002.

Ralph Willis

Notary Public

My commission expires: January 31, 2002

ATTEST:

FAIRFAX COUNTY PARK AUTHORITY

By: _____

Director

State of Virginia

County of Fairfax

I, the undersigned, a Notary Public in and for the County of Fairfax, in the State of Virginia, do certify that Paul L. Baldino whose name is signed to the above agreement, dated this 15th day of January 2002 has acknowledged the same before me in my County and State aforesaid.

Given under my hand and Notarial Seal, this 15th day of January, 2002.

_____

Notary Public

My commission expires: November 30, 2005

APPENDIX 5

COUNTY OF FAIRFAX, VIRGINIA

SPECIAL PERMIT RESOLUTION OF THE BOARD OF ZONING APPEALS

GREENBRIAR CIVIC ASSOCIATION, INC./AGAPE CHRISTIAN FELLOWSHIP CHURCH AND PLEASANT VALLEY PRESCHOOL, SPA 78-P-192-2, Appl. under Sect(s). 3-303 of the Zoning Ordinance to amend SP 78-P-192 for a community center, to include church and related facilities and nursery school, and to permit site modifications and increase in parking. Located at 4615 Stringfellow Rd. on approx. 1.52 ac. of land zoned R-3 and WS. Sully District. Tax Map 45-3((1))11. Mr. Pammel moved that the Board of Zoning Appeals adopt the following resolution:

WHEREAS, the captioned application has been properly filed in accordance with the requirements of all applicable State and County Codes and with the by-laws of the Fairfax County Board of Zoning Appeals; and

WHEREAS, following proper notice to the public, a public hearing was held by the Board on August 5, 1997; and

WHEREAS, the Board has made the following findings of fact:

1. The applicant is the owner of the land.
2. The present zoning is R-3 and WS.
3. The area of the lot is 1.52 acres.
4. The application is in conformance with the Comprehensive Plan.

AND WHEREAS, the Board of Zoning Appeals has reached the following conclusions of law:

THAT the applicant has presented testimony indicating compliance with the general standards for Special Permit Uses as set forth in Sect. 8-006 and the additional standards for this use as contained in Sections 8-305 and 8-403 of the Zoning Ordinance.

NOW, THEREFORE, BE IT RESOLVED that the subject application is **GRANTED** with the following limitations:

1. This approval is granted to the applicant only and is not transferable without further action of this Board, and is for the location indicated on the application, 4615 Stringfellow Road, 1.52 acres, and is not transferable to other land. This Special Permit is granted only for the purpose(s), structures and/or use(s) indicated on the special permit plat prepared by Laura Lee Scott Surveys Inc. dated July 8, 1996, as revised through May 19, 1997, and approved with this application, as qualified by these development conditions.

2. A copy of this Special Permit and the Non-Residential Use Permit SHALL BE POSTED in a conspicuous place on the property of the use and be made available to all departments of the County of Fairfax during the hours of operation of the permitted use.

3. This Special Permit is subject to the provisions of Article 17, Site Plans, as may be determined by the Director, Department of Environmental Management. Any plan submitted pursuant to this special permit shall be in conformance with the approved Special Permit plat and these development conditions.

4. Landscaping shall be provided along the western property boundary as generally shown on the special permit plat. The exact number, type and extent of landscape plantings are subject to the determination of the Urban Forestry Branch of DEM.

5. The Barrier requirement along the western property boundary shall be waived.

6. Prior to issuance of a Non-Residential Use Permit, the applicant shall obtain and record an ingress /egress easement and maintenance agreement through the existing parking lot for Greenbrier Park from the Fairfax County Park Authority, to ensure continuous unrestricted access to the subject property.

7. Prior to approval of a site plan, as may be determined by DEM, ancillary easements shall be granted to the Virginia Department of Transportation as necessary along the frontage of the property to accommodate the construction of improvements to Stringfellow Road.

8. Construction of the expanded parking lot for the property shall include the closure of the existing site entrance, which shall be scarified and restored with landscaping as shown on the approved plat.

9. All parking for any uses on the site shall be on-site or within the parking lot for Greenbrier Park, as shown on the special permit plat.

10. The southeast corner of the existing playground shall be reduced by three (3) feet so that the area of the playground is contained entirely within the application property.

11. Any proposed lighting of the parking areas shall be in accordance with the following:

    - The combined height of the light standards and fixtures shall not exceed twelve feet.
    - The lights shall be of a design which focuses the light directly onto the subject property and does not create glare or a nuisance off the property.
    - Shields shall be installed, if necessary, to prevent light or glare from projecting beyond the facility.

12. Parking shall be provided in accordance with the requirements of Article 11, Parking, of the Zoning Ordinance, and in compliance with the terms and conditions of the shared parking agreement between Greenbrier Civic Association and the Fairfax County Park Authority.

13. All signage provided on the subject property shall comply with the requirements of Article 12, Signs, of the Zoning Ordinance.

14. The maximum hours of operation of the community center shall be from 8:00 a.m. to 11:00 p.m. daily. The applicant shall be allowed 12 after-hour parties per year until 1:00 a.m. with

prior approval of the Zoning Administrator. The number of after hour parties may be increased with the approval of the Zoning Administrator.

15. The maximum number of seats for the church shall be 100.

16. The maximum hours of operation for the church shall be from 9:30 a.m. to 12:30 p.m. and 6:00 p.m. to 9:30 p.m. on Sundays, and from 7:45 p.m. to 9:30 p.m. on Wednesdays.

17. The maximum daily enrollment for the nursery school shall be limited to 15 students.

18. The hours of operation for the nursery school shall be limited to 9:00 a.m. to 12 noon, Monday through Friday.

These development conditions incorporate and supersede all previous development conditions. This approval, contingent on the above-noted conditions, shall not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards. The applicant shall be responsible for obtaining the required Non-Residential Use Permit through established procedures, and this special permit shall not be valid until this has been accomplished.

Pursuant to Sect. 8-015 of the Zoning Ordinance, this special permit shall automatically expire, without notice, thirty (30) months after the date of approval* unless the use has been established or construction has commenced and been diligently prosecuted. The Board of Zoning Appeals may grant additional time to establish the use or to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the special permit. The request must specify the amount of additional time requested, the basis for the amount of time requested and an explanation of why additional time is required.

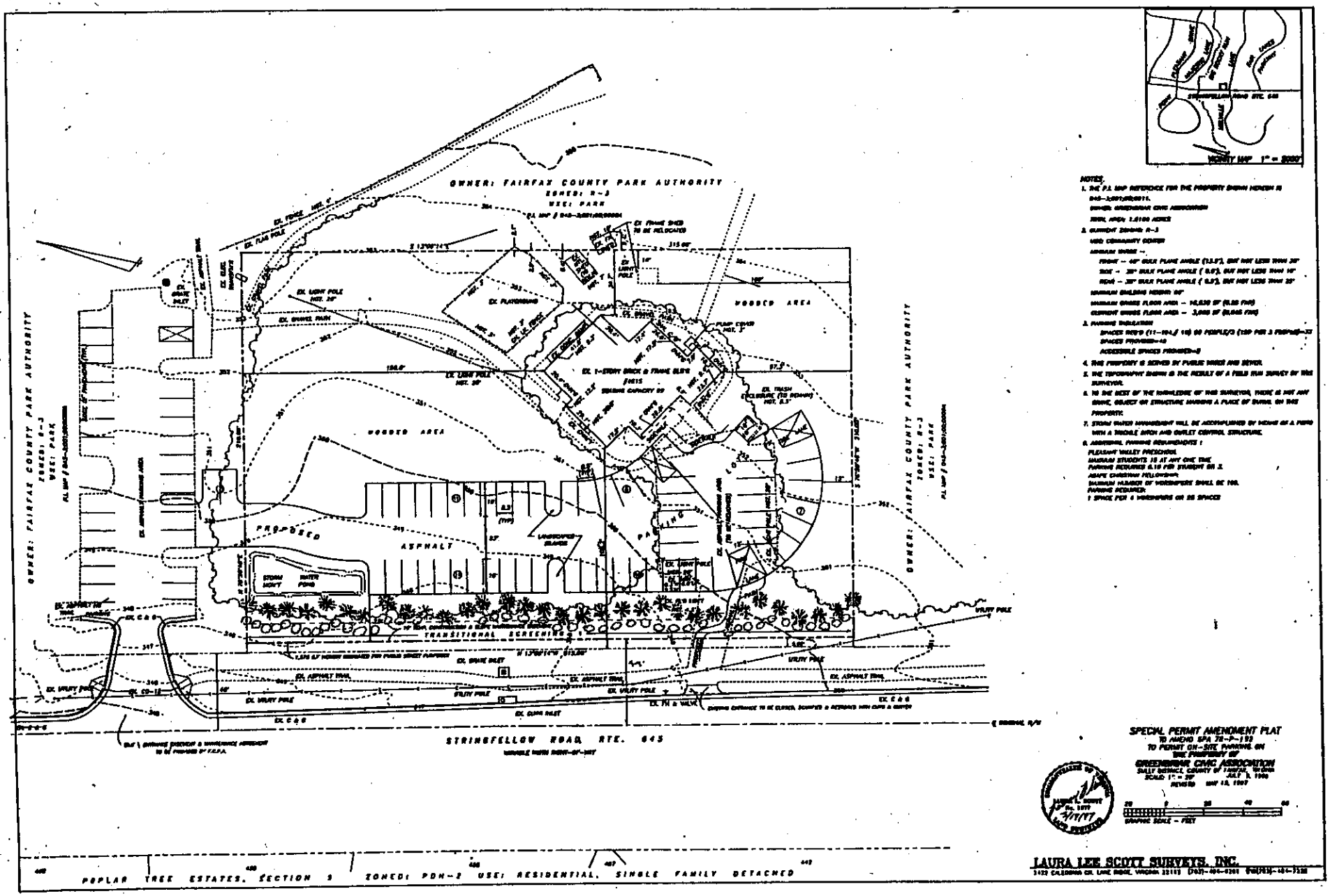
Mr. McPherson seconded the motion which carried by a unanimous vote of 7-0.

*This decision was officially filed in the office of the Board of Zoning Appeals and became final on August 13, 1997. This date shall be deemed to be the final approval date of this special permit.

A Copy Teste:

Paula A. McFarland

Paula A. McFarland, Substitute Clerk
Board of Zoning Appeals


OWNER: FAIRFAX COUNTY PARK AUTHORITY
ZONED: R-3
USE: PARK
WOODED AREA
PROPOSED ASPHALT PARKING
TRANSITIONAL SCREENING 1
STRINGFELLOW ROAD RTE. 645
POPLAR TREE ESTATES, SECTION 3 ZONED: PDH-2 USE: RESIDENTIAL, SINGLE FAMILY DETACHED
VICINITY MAP 1" = 2000'
NOTES:
SPECIAL PERMIT AMENDMENT PLAT
TO AMEND SPA 78-P-193
TO PERMIT ON-SITE PARKING ON
THE PROPERTY OF
GREENBRIAR CMC ASSOCIATION
SULLY DISTRICT, COUNTY OF FAIRFAX, VIRGINIA
SCALE: 1" = 30'
JULY 3, 1996
REVISED MAY 13, 1997
GRAPHIC SCALE - FEET
LAURA LEE SCOTT SURVEYS, INC.

County of Fairfax, Virginia

MEMORANDUM

DATE Janurary 14, 2011

TO: Regina Coyle
Zoning Evaluation Division
Department of Planning and Zoning

FROM: Angela Kadar Rodeheaver: AKR by CAH
Site Analysis Section
Department of Transportation

FILE: 3-5 (SE 2010-SP-029)
3-6 (SP 78-P-192)

SUBJECT: Transportation Impact

REFERENCE: SE 2010-SP-029 Pleasant Valley Preschool, Inc.
SPA 78-P-192-3
Traffic Zone: 1684
Land Identification Map: 45-3 ((1)) 11

Transmitted herewith are the comments from the Department of Transportation with respect to the referenced application. These comments are based on a plat made available to this office dated June 14, 2010. The applicant proposes to replace previously approved SP 80-S-052 related to the preschool with SE 2010-SP-029 to reflect current Zoning Ordinance provisions; to provide conservation areas for stormwater management purposes; and to expand and reconfigure the site's parking lot to facilitate shared parking/access with the adjacent Greenbriar Park. The parking changes are being done in conjunction with the Stringfellow Road widening project.

- Due to the speeds on Stringfellow Road, the entrance radii should be increased to at least 25 feet to provide better turning movements (see also VDOT comment), or a taper should be considered.
- To promote one-way circular movement around the island in front of the building, a south-pointing pavement arrow should be provided on the side parallel to Stringfellow Road, and signage erected denoting Do Not Enter on that side of the island.
- There should be no parking on the immediate right of the entrance; possibly three parking spaces could be added to a reconfigured traffic island.
- The entrance should be a minimum of 30 feet in width per VDOT standards.

AKR/LAH/lah

Fairfax County Department of Transportation
4050 Legato Road, Suite 400
Fairfax, VA 22033-2895
Phone: (703) 877-5600 TTY: 711
Fax: (703) 877 5723
www.fairfaxcounty.gov/fcdot

FCDOT
Serving Fairfax County for 25 Years and More

APPENDIX 7

County of Fairfax, Virginia

MEMORANDUM

DATE: January 28, 2011

TO: Barbara Berlin, Director
Zoning Evaluation Division, DPZ

FROM: Pamela G. Nee, Chief PGN
Environment and Development Review Branch, DPZ

SUBJECT: **ENVIRONMENTAL ASSESSMENT** for: **SE 2010-SP-029**
SPA 78-P-192-03
Pleasant Valley Preschool/Greenbriar Community Center

John R. Bell of the Environment and Development Review Branch has reviewed this application to permit parking changes to an existing childcare center and community center on the subject property. No significant environmental issues have been identified as a result of this evaluation.

PGN:JRB

Department of Planning and Zoning
Planning Division
12055 Government Center Parkway, Suite730
Fairfax, Virginia 22035-5509
Phone 703-324-1380
Fax 703-324-3056
www.fairfaxcounty.gov/dpz/

County of Fairfax, Virginia

MEMORANDUM

DATE: December 21, 2010

TO: Bobby Katai, Staff Coordinator
Zoning Evaluation Division
Department of Planning and Zoning

FROM: DK Durga Kharel, Site Review Engineer
Environmental and Site Review Division
Department of Public Works and Environmental Services

SUBJECT: Special Exception Application #SE 2010-SP-029, Pleasant Valley Preschool, Special Exception Plat dated October 26, 2010, LDS Project #1582-ZONA-001-1, Tax Map #045-3-01-0011, Springfield District

Special Permit Amendment Application #SPA 78-P-192-03, Greenbriar Civic Association & New Hope Fellowship Church, Special Permit Plat dated October 26, 2010, LDS Project #1582-ZONA-002-1, Tax Map #045-3-01-0011, Springfield District

We have reviewed the subject applications and offer the following stormwater management comments.

Chesapeake Bay Preservation Ordinance (CBPO)
There is no Resource Protection Area (RPA) on this subject property and also within the proposed limit of disturbance on the offsite property TM# 045-3-01-0009A (Fairfax County Park Authority).

The site is located in a Water Supply Protection Overlay District and 50% phosphorus removal will be required (redevelopment criterion does not apply as Northern Virginia BMP Handbook stipulates on page 4-13 that in situations where more than one of the phosphorus removal requirements applies, the most stringent requirement shall be used). All BMPs shall be designed per PFM requirements.The water quality BMPs shall be privately maintained and a private maintenance agreement will be required prior to the approval of the final construction plan.

Floodplain
There is no regulated floodplain on Tax Map #045-3-01-0011. There is a regulated floodplain on Tax Map #045-3-01-0009A (Fairfax County Park Authority) which is far off from the area of proposed development and should not ba a concern for these applications.

Department of Public Works and Environmental Services
Land Development Services, Environmental and Site Review Division
12055 Government Center Parkway, Suite 535
Fairfax, Virginia 22035-5503
Phone 703-324-1720 • TTY 711 • FAX 703-324-8359

Downstream Drainage Complaints
There are no downstream drainage complaints on file.

Stormwater Detention

Stormwater detention is required, if not waived (PFM 6-0301.3). SWM/BMP Narrative for Special Exception mentions that SWM shall be provided via underground detention. All SWM shall be designed per PFM requirements.The SWM facilities shall be privately maintained and a private maintenance agreement will be required prior to the approval of the final construction plan.

Site Outfall
An outfall narrative has been provided. A description of the outfall to 100 times the site's area has been provided, however, the narrative does not include any information on the condition or adequacy of the downstream drainage system from the development site to the outfall at intersection of Stringfellow Road with the Rocky Run. (Paragraph 2.J(2)(c) & (d) of ZO 9-011).

Please contact me at 703-324-1720 if you require additional information.

DK/

cc: Craig Carinci, Director, Stormwater Planning Division, DPWES
Jeremiah Stonefield, Chief, Stormwater & Geotechnical Section, ESRD, DPWES
Zoning Application File

County of Fairfax, Virginia

MEMORANDUM

January 5, 2011

TO: Bob Katai, Staff Coordinator
Zoning Evaluation Division, DPZ

FROM: Hugh C. Whitehead, Urban Forester II
Forest Conservation Branch, DPWES

SUBJECT: Pleasant Valley Preschool, SE 2010-SP-029

I have reviewed the above referenced Special Exception application, stamped as received by the Zoning Evaluation Division (ZED) on December 28, 2010. The following comments are based on this review and a site visit conducted during review of the first submission of this application.

1. **Comment:** Three trees proposed along the parking lot curb and one tree in the island are placed within four feet of a restrictive barrier as shown on the Special Exception Plat.

   Recommendation: Require that all proposed trees be shown at least four feet from any restrictive barrier.

2. **Comment:** Category II trees proposed along Stringfellow Road are located close to overhead utility lines.

   Recommendation: Require existing utility easements to be shown and labeled on the plan and provide a note on the Special Exception Plat that reads as follows: "Planting within utility easements shall be reviewed and approved by the easement holder."

3. **Comment:** A note regarding the Category III/IV trees proposed adjacent to the parking area indicates 19 trees. The Special Exception Plat does not propose 19 Category III/IV trees.

   Recommendation: Request correction of the number of Category III/IV trees indicated in the note.

If there are any questions, please contact me at (703)324-1770.

HCW/
UFMID #: 156282

cc: RA File
DPZ File

Department of Public Works and Environmental Services
Land Development Services, Urban Forest Management Division
12055 Government Center Parkway, Suite 518
Fairfax, Virginia 22035-5503
Phone 703-324-1770, TTY: 703-324-1877, Fax: 703-803-7769
www.fairfaxcounty.gov/dpwes

9-006 General Standards

In addition to the specific standards set forth hereinafter with regard to particular special exception uses, all such uses shall satisfy the following general standards: SPECIAL EXCEPTIONS 9-9

1. The proposed use at the specified location shall be in harmony with the adopted comprehensive plan.

2. The proposed use shall be in harmony with the general purpose and intent of the applicable zoning district regulations.

3. The proposed use shall be such that it will be harmonious with and will not adversely affect the use or development of neighboring properties in accordance with the applicable zoning district regulations and the adopted comprehensive plan. The location, size and height of buildings, structures, walls and fences, and the nature and extent of screening, buffering and landscaping shall be such that the use will not hinder or discourage the appropriate development and use of adjacent or nearby land and/or buildings or impair the value thereof.

4. The proposed use shall be such that pedestrian and vehicular traffic associated with such use will not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.

5. In addition to the standards which may be set forth in this Article for a particular category or use, the Board shall require landscaping and screening in accordance with the provisions of Article 13.

6. Open space shall be provided in an amount equivalent to that specified for the zoning district in which the proposed use is located.

7. Adequate utility, drainage, parking, loading and other necessary facilities to serve the proposed use shall be provided. Parking and loading requirements shall be in accordance with the provisions of Article 11.

8. Signs shall be regulated by the provisions of Article 12; however, the Board may impose more strict requirements for a given use than those set forth in this Ordinance.

9-304 Standards for all Category 3 Uses

In addition to the general standards set forth in Sect. 006 above, all Category 3 special exception uses shall satisfy the following standards:

1. For public uses, it shall be concluded that the proposed location of the special exception use is necessary for the rendering of efficient governmental services to residents of properties within the general area of the location.
2. Except as may be qualified in the following Sections, all uses shall comply with the lot size requirements of the zoning district in which located.
3. Except as may be qualified in the following Sections, all uses shall comply with the bulk regulations of the zoning district in which located; however, subject to the provisions of Sect. 9-607, the maximum building height for a Category 3 use may be increased.
4. All uses shall comply with the performance standards specified for the zoning district in which located, including the submission of a sports illumination plan as may be required by Part 9 of Article 14.
5. Before establishment, all uses, including modifications or alterations to existing uses, shall be subject to the provisions of Article 17, Site Plans.

8-006 General Standards

In addition to the specific standards set forth hereinafter with regard to particular special permit uses, all special permit uses shall satisfy the following general standards:

1. The proposed use at the specified location shall be in harmony with the adopted comprehensive plan.

2. The proposed use shall be in harmony with the general purpose and intent of the applicable zoning district regulations.

3. The proposed use shall be such that it will be harmonious with and will not adversely affect the use or development of neighboring properties in accordance with the applicable zoning district regulations and the adopted comprehensive plan. The location, size and height of buildings, structures, walls and fences, and the nature and extent of screening, buffering and landscaping shall be such that the use will not hinder or discourage the appropriate development and use of adjacent or nearby land and/or buildings or impair the value thereof.

4. The proposed use shall be such that pedestrian and vehicular traffic associated with such use will not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.

5. In addition to the standards which may be set forth in this Article for a particular group or use, the BZA shall require landscaping and screening in accordance with the provisions of Article 13.

6. Open space shall be provided in an amount equivalent to that specified for the zoning district in which the proposed use is located.

7. Adequate utility, drainage, parking, loading and other necessary facilities to serve the proposed use shall be provided. Parking and loading requirements shall be in accordance with the provisions of Article 11.

8. Signs shall be regulated by the provisions of Article 12; however, the BZA, under the authority presented in Sect. 007 below, may impose more strict requirements for a given use than those set forth in this Ordinance.

8-303 Standards for all Group 3 Uses

In addition to the general standards set forth in Sect. 006 above, all Group 3 special permit uses shall satisfy the following standards:

1. Except as may be qualified in the following Sections, all uses shall comply with the lot size and bulk regulations of the zoning district in which located; however, subject to the provisions of Sect. 9-607, the maximum building height for a Group 3 use may be increased.

2. All uses shall comply with the performance standards specified for the zoning district in which located.

3. Before establishment, all uses, including modifications or alterations to existing uses, except home child care facilities, shall be subject to the provisions of Article 17, Site Plans.

GLOSSARY

This Glossary is provided to assist the public in understanding
the staff evaluation and analysis of development proposals.
It should not be construed as representing legal definitions.
Refer to the Fairfax County Zoning Ordinance, Comprehensive Plan
or Public Facilities Manual for additional information.

ABANDONMENT: Refers to road or street abandonment, an action taken by the Board of Supervisors, usually through the public hearing process, to abolish the public's right-of-passage over a road or road right-of way. Upon abandonment, the right-of-way automatically reverts to the underlying fee owners. If the fee to the owner is unknown, Virginia law presumes that fee to the roadbed rests with the adjacent property owners if there is no evidence to the contrary

ACCESSORY DWELLING UNIT (OR APARTMENT): A secondary dwelling unit established in conjunction with and clearly subordinate to a single family detached dwelling unit. An accessory dwelling unit may be allowed if a special permit is granted by the Board of Zoning Appeals (BZA). Refer to Sect. 8-918 of the Zoning Ordinance.

AFFORDABLE DWELLING UNIT (ADU) DEVELOPMENT: Residential development to assist in the provision of affordable housing for persons of low and moderate income in accordance with the affordable dwelling unit program and in accordance with Zoning Ordinance regulations. Residential development which provides affordable dwelling units may result in a density bonus (see below) permitting the construction of additional housing units. See Part 8 of Article 2 of the Zoning Ordinance.

AGRICULTURAL AND FORESTAL DISTRICTS: A land use classification created under Chapter 114 or 115 of the Fairfax County Code for the purpose of qualifying landowners who wish to retain their property for agricultural or forestal use for use/value taxation pursuant to Chapter 58 of the Fairfax County Code.

BARRIER: A wall, fence, earthen berm, or plant materials which may be used to provide a physical separation between land uses. Refer to Article 13 of the Zoning Ordinance for specific barrier requirements.

BEST MANAGEMENT PRACTICES (BMPs): Stormwater management techniques or land use practices that are determined to be the most effective, practicable means of preventing and/or reducing the amount of pollution generated by nonpoint sources in order to improve water quality.

BUFFER: Graduated mix of land uses, building heights or intensities designed to mitigate potential conflicts between different types or intensities of land uses; may also provide for a transition between uses. A landscaped buffer may be an area of open, undeveloped land and may include a combination of fences, walls, berms, open space and/or landscape plantings. A buffer is not necessarily coincident with transitional screening.

CHESAPEAKE BAY PRESERVATION ORDINANCE: Regulations which the State has mandated must be adopted to protect the Chesapeake Bay and its tributaries. These regulations must be incorporated into the comprehensive plans, zoning ordinances and subdivision ordinances of the affected localities. Refer to Chesapeake Bay Preservation Act, Va. Code Section 10.1-2100 et seq and VR 173-02-01, Chesapeake Bay Preservation Area Designation and Management Regulations.

CLUSTER DEVELOPMENT: Residential development in which the lots are clustered on a portion of a site so that significant environmental/historical/cultural resources may be preserved or recreational amenities provided. While smaller lot sizes are permitted in a cluster subdivision to preserve open space, the overall density cannot exceed that permitted by the applicable zoning district. See Sect. 2-421 and Sect. 9-615 of the Zoning Ordinance.

COUNTY 2232 REVIEW PROCESS: A public hearing process pursuant to Sect. 15.2-2232 (Formerly Sect. 15.1-456) of the Virginia Code which is used to determine if a proposed public facility not shown on the adopted Comprehensive Plan is in substantial accord with the plan. Specifically, this process is used to determine if the general or approximate location, character and extent of a proposed facility is in substantial accord with the Plan.

dBA: The momentary magnitude of sound weighted to approximate the sensitivity of the human ear to certain frequencies; the dBA value describes a sound at a given instant, a maximum sound level or a steady state value. See also Ldn.

DENSITY: Number of dwelling units (du) divided by the gross acreage (ac) of a site being developed in residential use; or, the number of dwelling units per acre (du/ac) except in the PRC District when density refers to the number of persons per acre.

DENSITY BONUS: An increase in the density otherwise allowed in a given zoning district which may be granted under specific provisions of the Zoning Ordinance when a developer provides excess open space, recreation facilities, or affordable dwelling units (ADUs), etc.

DEVELOPMENT CONDITIONS: Terms or conditions imposed on a development by the Board of Supervisors (BOS) or the Board of Zoning Appeals (BZA) in connection with approval of a special exception, special permit or variance application or rezoning application in a "P" district. Conditions may be imposed to mitigate adverse impacts associated with a development as well as secure compliance with the Zoning Ordinance and/or conformance with the Comprehensive Plan. For example, development conditions may regulate hours of operation, number of employees, height of buildings, and intensity of development.

DEVELOPMENT PLAN: A graphic representation which depicts the nature and character of the development proposed for a specific land area: information such as topography, location and size of proposed structures, location of streets trails, utilities, and storm drainage are generally included on a development plan. A development plan is s submission requirement for rezoning to the PRC District. A GENERALIZED DEVELOPMENT PLAN (GDP) is a submission requirement for a rezoning application for all conventional zoning districts other than a P District. A development plan submitted in connection with a special exception (SE) or special permit (SP) is generally referred to as an SE or SP plat. A CONCEPTUAL DEVELOPMENT PLAN (CDP) is a submission requirement when filing a rezoning application for a P District other than the PRC District; a CDP characterizes in a general way the planned development of the site. A FINAL DEVELOPMENT PLAN (FDP) is a submission requirement following the approval of a conceptual development plan and rezoning application for a P District other than the PRC District; an FDP further details the planned development of the site. See Article 16 of the Zoning Ordinance.

EASEMENT: A right to or interest in property owned by another for a specific and limited purpose. Examples: access easement, utility easement, construction easement, etc. Easements may be for public or private purposes.

ENVIRONMENTAL QUALITY CORRIDORS (EQCs): An open space system designed to link and preserve natural resource areas, provide passive recreation and protect wildlife habitat. The system includes stream valleys, steep slopes and wetlands. For a complete definition of EQCs, refer to the Environmental section of the Policy Plan for Fairfax County contained in Vol. 1 of the Comprehensive Plan.

ERODIBLE SOILS: Soils that wash away easily, especially under conditions where stormwater runoff is inadequately controlled. Silt and sediment are washed into nearby streams, thereby degrading water quality.

FLOODPLAIN: Those land areas in and adjacent to streams and watercourses subject to periodic flooding; usually associated with environmental quality corridors. The 100 year floodplain drains 70 acres or more of land and has a one percent chance of flood occurrence in any given year.

FLOOR AREA RATIO (FAR): An expression of the amount of development intensity (typically, non-residential uses) on a specific parcel of land. FAR is determined by dividing the total square footage of gross floor area of buildings on a site by the total square footage of the site itself.

FUNCTIONAL CLASSIFICATION: A system for classifying roads in terms of the character of service that individual facilities are providing or are intended to provide, ranging from travel mobility to land access. Roadway system functional classification elements include Freeways or Expressways which are limited access highways, Other Principal (or Major) Arterials, Minor Arterials, Collector Streets, and Local Streets. Principal arterials are designed to accommodate travel; access to adjacent properties is discouraged. Minor arterials are designed to serve both through traffic and local trips. Collector roads and streets link local streets and properties with the arterial network. Local streets provide access to adjacent properties.

GEOTECHNICAL REVIEW: An engineering study of the geology and soils of a site which is submitted to determine the suitability of a site for development and recommends construction techniques designed to overcome development on problem soils, e.g., marine clay soils.

HYDROCARBON RUNOFF: Petroleum products, such as motor oil, gasoline or transmission fluid deposited by motor vehicles which are carried into the local storm sewer system with the stormwater runoff, and ultimately, into receiving streams; a major source of non-point source pollution. An oil-grit separator is a common hydrocarbon runoff reduction method.

IMPERVIOUS SURFACE: Any land area covered by buildings or paved with a hard surface such that water cannot seep through the surface into the ground.

INFILL: Development on vacant or underutilized sites within an area which is already mostly developed in an established development pattern or neighborhood.

INTENSITY: The magnitude of development usually measured in such terms as density, floor area ratio, building height, percentage of impervious surface, traffic generation, etc. Intensity is also based on a comparison of the development proposal against environmental constraints or other conditions which determine the carrying capacity of a specific land area to accommodate development without adverse impacts.

Ldn: Day night average sound level. It is the twenty-four hour average sound level expressed in A-weighted decibels; the measurement assigns a "penalty" to night time noise to account for night time sensitivity. Ldn represents the total noise environment which varies over time and correlates with the effects of noise on the public health, safety and welfare.

LEVEL OF SERVICE (LOS): An estimate of the effectiveness of a roadway to carry traffic, usually under anticipated peak traffic conditions. Level of Service efficiency is generally characterized by the letters A through F, with LOS-A describing free flow traffic conditions and LOS-F describing jammed or grid-lock conditions.

MARINE CLAY SOILS: Soils that occur in widespread areas of the County generally east of Interstate 95. Because of the abundance of shrink-swell clays in these soils, they tend to be highly unstable. Many areas of slope failure are evident on natural slopes. Construction on these soils may initiate or accelerate slope movement or slope failure. The shrink-swell soils can cause movement in structures, even in areas of flat topography, from dry to wet seasons resulting in cracked foundations, etc. Also known as slippage soils.

OPEN SPACE: That portion of a site which generally is not covered by buildings, streets, or parking areas. Open space is intended to provide light and air; open space may be function as a buffer between land uses or for scenic, environmental, or recreational purposes.

OPEN SPACE EASEMENT: An easement usually granted to the Board of Supervisors which preserves a tract of land in open space for some public benefit in perpetuity or for a specified period of time. Open space easements may be accepted by the Board of Supervisors, upon request of the land owner, after evaluation under criteria established by the Board. See Open Space Land Act, Code of Virginia, Sections 10.1-1700, et seq.

P DISTRICT: A "P" district refers to land that is planned and/or developed as a Planned Development Housing (PDH) District, a Planned Development Commercial (PDC) District or a Planned Residential Community (PRC) District. The PDH, PDC and PRC Zoning Districts are established to encourage innovative and creative design for land development; to provide ample and efficient use of open space; to promote a balance in the mix of land uses, housing types, and intensity of development; and to allow maximum flexibility in order to achieve excellence in physical, social and economic planning and development of a site. Refer to Articles 6 and 16 of the Zoning Ordinance.

PROFFER: A written condition, which, when offered voluntarily by a property owner and accepted by the Board of Supervisors in a rezoning action, becomes a legally binding condition which is in addition to the zoning district regulations applicable to a specific property. Proffers are submitted and signed by an owner prior to the Board of Supervisors public hearing on a rezoning application and run with the land. Once accepted by the Board, proffers may be modified only by a proffered condition amendment (PCA) application or other zoning action of the Board and the hearing process required for a rezoning application applies. See Sect. 15.2-2303 (formerly 15.1-491) of the Code of Virginia.

PUBLIC FACILITIES MANUAL (PFM): A technical text approved by the Board of Supervisors containing guidelines and standards which govern the design and construction of site improvements incorporating applicable Federal, State and County Codes, specific standards of the Virginia Department of Transportation and the County's Department of Public Works and Environmental Services.

RESOURCE MANAGEMENT AREA (RMA): That component of the Chesapeake Bay Preservation Area comprised of lands that, if improperly used or developed, have a potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. See Fairfax County Code, Ch. 118, Chesapeake Bay Preservation Ordinance.

RESOURCE PROTECTION AREA (RPA): That component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline or water's edge that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation of the quality of state waters. In their natural condition, these lands provide for the removal, reduction or assimilation of sediments from runoff entering the Bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources. New development is generally discouraged in an RPA. See Fairfax County Code, Ch. 118, Chesapeake Bay Preservation Ordinance.

SITE PLAN: A detailed engineering plan, to scale, depicting the development of a parcel of land and containing all information required by Article 17 of the Zoning Ordinance. Generally, submission of a site plan to DPWES for review and approval is required for all residential, commercial and industrial development except for development of single family detached dwellings. The site plan is required to assure that development complies with the Zoning Ordinance.

SPECIAL EXCEPTION (SE) / SPECIAL PERMIT (SP): Uses, which by their nature, can have an undue impact upon or can be incompatible with other land uses and therefore need a site specific review. After review, such uses may be allowed to locate within given designated zoning districts if appropriate and only under special controls, limitations, and regulations. A special exception is subject to public hearings by the Planning Commission and Board of Supervisors with approval by the Board of Supervisors; a special permit requires a public hearing and approval by the Board of Zoning Appeals. Unlike proffers which are voluntary, the Board of Supervisors or BZA may impose reasonable conditions to assure, for example, compatibility and safety. See Article 8, Special Permits and Article 9, Special Exceptions, of the Zoning Ordinance.

STORMWATER MANAGEMENT: Engineering practices that are incorporated into the design of a development in order to mitigate or abate adverse water quantity and water quality impacts resulting from development. Stormwater management systems are designed to slow down or retain runoff to re-create, as nearly as possible, the pre-development flow conditions.

SUBDIVISION PLAT: The engineering plan for a subdivision of land submitted to DPWES for review and approved pursuant to Chapter 101 of the County Code.

TRANSPORTATION DEMAND MANAGEMENT (TDM): Actions taken to reduce single occupant vehicle automobile trips or actions taken to manage or reduce overall transportation demand in a particular area.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) PROGRAMS: This term is used to describe a full spectrum of actions that may be applied to improve the overall efficiency of the transportation network. TSM programs usually consist of low-cost alternatives to major capital expenditures, and may include parking management measures, ridesharing programs, flexible or staggared work hours, transit promotion or operational improvements to the existing roadway system. TSM includes Transportation Demand Management (TDM) measures as well as H.O.V. use and other strategies associated with the operation of the street and transit systems.

URBAN DESIGN: An aspect of urban or suburban planning that focuses on creating a desirable environment in which to live, work and play. A well-designed urban or suburban environment demonstrates the four generally accepted principles of design: clearly identifiable function for the area; easily understood order; distinctive identity; and visual appeal.

VACATION: Refers to vacation of street or road as an action taken by the Board of Supervisors in order to abolish the public's right-of-passage over a road or road right-of-way dedicated by a plat of subdivision. Upon vacation, title to the road right-of-way transfers by operation of law to the owner(s) of the adjacent properties within the subdivision from whence the road/road right-of-way originated.

VARIANCE: An application to the Board of Zoning Appeals which seeks relief from a specific zoning regulation such as lot width, building height, or minimum yard requirements, among others. A variance may only be granted by the Board of Zoning Appeals through the public hearing process and upon a finding by the BZA that the variance application meets the required Standards for a Variance set forth in Sect. 18-404 of the Zoning Ordinance.

WETLANDS: Land characterized by wetness for a portion of the growing season. Wetlands are generally delineated on the basis of physical characteristics such as soil properties indicative of wetness, the presence of vegetation with an affinity for water, and the presence or evidence of surface wetness or soil saturation. Wetland environments provide water quality improvement benefits and are ecologically valuable. Development activity in wetlands is subject to permitting processes administered by the U.S. Army Corps of Engineers

TIDAL WETLANDS: Vegetated and nonvegetated wetlands as defined in Chapter 116 Wetlands Ordinance of the Fairfax County Code: includes tidal shores and tidally influenced embayments, creeks, and tributaries to the Occoquan and Potomac Rivers. Development activity in tidal wetlands may require approval from the Fairfax County Wetlands Board.

Abbreviations Commonly Used in Staff Reports

A&F	Agricultural & Forestal District
ADU	Affordable Dwelling Unit
ARB	Architectural Review Board
BMP	Best Management Practices
BOS	Board of Supervisors
BZA	Board of Zoning Appeals
COG	Council of Governments
CBC	Community Business Center
CDP	Conceptual Development Plan
CRD	Commercial Revitalization District
DOT	Department of Transportation
DP	Development Plan
DPWES	Department of Public Works and Environmental Services
DPZ	Department of Planning and Zoning
DU/AC	Dwelling Units Per Acre
EQC	Environmental Quality Corridor
FAR	Floor Area Ratio
FDP	Final Development Plan
GDP	Generalized Development Plan
GFA	Gross Floor Area
HC	Highway Corridor Overlay District
HCD	Housing and Community Development
LOS	Level of Service
Non-RUP	Non-Residential Use Permit
OSDS	Office of Site Development Services, DPWES
PCA	Proffered Condition Amendment
PD	Planning Division
PDC	Planned Development Commercial
PDH	Planned Development Housing
PFM	Public Facilities Manual
PRC	Planned Residential Community
RC	Residential-Conservation
RE	Residential Estate
RMA	Resource Management Area
RPA	Resource Protection Area
RUP	Residential Use Permit
RZ	Rezoning
SE	Special Exception
SEA	Special Exception Amendment
SP	Special Permit
TDM	Transportation Demand Management
TMA	Transportation Management Association
TSA	Transit Station Area
TSM	Transportation System Management
UP & DD	Utilities Planning and Design Division, DPWES
VC	Variance
VDOT	Virginia Dept. of Transportation
VPD	Vehicles Per Day
VPH	Vehicles per Hour
WMATA	Washington Metropolitan Area Transit Authority
WS	Water Supply Protection Overlay District
ZAD	Zoning Administration Division, DPZ
ZED	Zoning Evaluation Division, DPZ
ZPRB	Zoning Permit Review Branch