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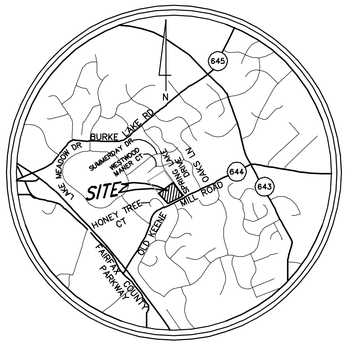
CALVARY CHRISTIAN CHURCH

SPECIAL PERMIT AMENDMENT

SPRINGFIELD DISTRICT

FAIRFAX COUNTY, VIRGINIA

JANUARY, 2013



VICINITY MAP
SCALE: 1" = 2,000'

OWNER/APPLICANT

TRUSTEES OF THE CALVARY
CHRISTIAN CHURCH
9800 Old Keene Mill Road
Burke, VA 22105

ATTORNEY/AGENT

WALSH COLUCCI LUBELY EMRICH & WALSH, P.C.
Courthouse Plaza
2200 Clarendon Boulevard
Thirteenth Floor
Arlington, VA 22201
Telephone: 703.528.4700

SHEET INDEX

Sheet List Table

Sheet Number	Sheet Title
1	COVER SHEET
2	SPECIAL PERMIT PLAN
3	GENERAL NOTES
4	EXISTING CONDITION AND VEGETATION MAP
5	PHOTOS
6	BMP CALCULATIONS- INFORMATIONAL
7	STORMWATER CALCULATIONS-INFORMATIONAL
8	LANDSCAPE PLAN-INFORMATIONAL
9	TREE PRESERVATION PLAN- INFORMATIONAL
10	TREE INVENTORY AND CONDITION ANALYSIS- INFORMATIONAL

ENGINEER/LANDSCAPE ARCHITECT/PLANNER

THE BC CONSULTANTS
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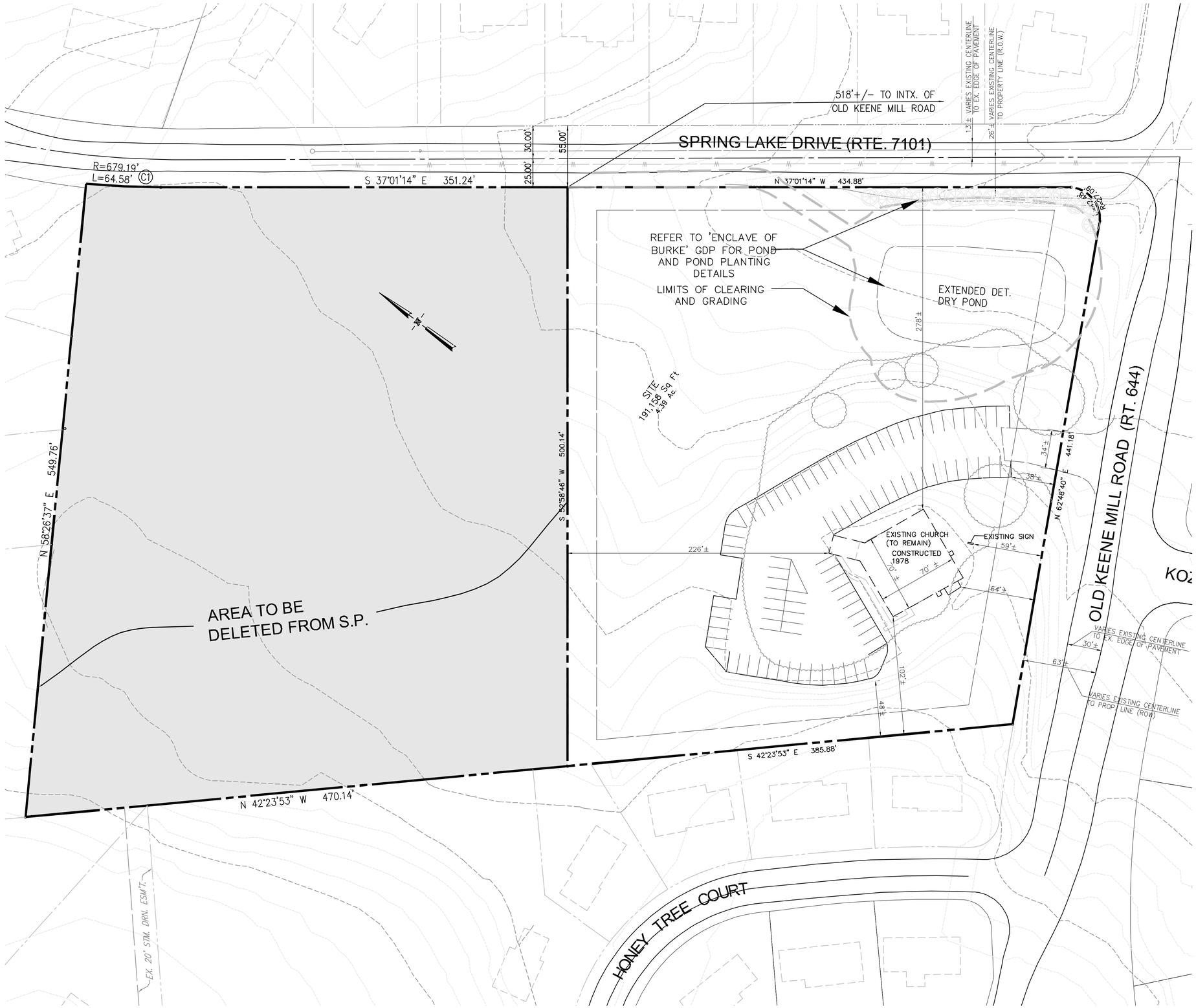
COMMONWEALTH OF VIRGINIA
PETER L. RINEK
Lic. No. 388
LANDSCAPE ARCHITECT

PROJECT # 11562.01



SITE TABULATIONS:

GROSS SITE AREA (G.S.A.):	9.675 Ac.± or 421,470 s.f.±
PROPOSED GROSS SITE AREA (G.S.A.) AFTER DELETION OF PARCEL B:	4.3884 Ac.± or 191,158 s.f.±
EXISTING ZONE:	R-1
PROPOSED ZONE:	R-1
PROPOSED USE:	RELIGIOUS INSTITUTION
MAXIMUM F.A.R.:	.15
PROPOSED F.A.R.:	.021
MAXIMUM BUILDING HEIGHT ALLOWED:	60'
MAXIMUM BUILDING HEIGHT PROPOSED:	45'
PARKING REQUIRED	75 SPACES
SANCTUARY (300 SEATS)	75 SPACES (1 SP/ 4 SEATS)
PARKING PROVIDED	86 SPACES

GROSS FLOOR AREA (G.F.A.):

EXISTING STRUCTURES	BUILDING MATERIAL	SIZE ±	HEIGHT ±	YEAR BUILT
PARISH CHURCH	BRICK	4,130	45'	1978

OPERATING HOURS:
SUNDAY MORNING: 8:00 AM TO 12 NOON
SUNDAY EVENING: 5:00 PM TO 8:00 PM
WEDNESDAY EVENING: 6:30 PM TO 9:00 PM

40' 20' 0' 40' 80'
SCALE: 1"= 40'

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COMMONWEALTH OF VIRGINIA
PETER L. RINEK
Lic. No. 388
LANDSCAPE ARCHITECT

SPECIAL PERMIT AMENDMENT
SPECIAL PERMIT PLAN

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS

APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JANUARY 2013
SCALE: HOR. 1"= 40'
VERT. N/A

SHEET 2 OF 10

CO. NO.
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LAYOUT: SUP
FILE NO. 11562.01-00

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XREFS:

GENERAL NOTES:

1. THE PROPERTIES DELINEATED ON THIS SPECIAL PERMIT AMENDMENT (SP) ARE LOCATED ON FAIRFAX COUNTY TAX ASSESSMENT MAP 88-1-((2)), PARCEL 8 AND 10, AND ARE ZONED R-1.

2. .THE PURPOSE OF THIS SPECIAL PERMIT AMENDMENT APPLICATION IS TO:
   1: DELETE PARCEL 8 FROM THE APPROVED SPECIAL PERMIT, AND
   2: PERMIT CONSTRUCTION OF AN EXTENDED DETENTION STORMWATER MANAGEMENT POND TO SERVE PARCEL 10 AND PROPOSED RESIDENTIAL DEVELOPMENT ON PARCEL 8.

3. THE BOUNDARY INFORMATION SHOWN HEREON IS FROM THE DEED OD RECORD. NO TITLE REPORT WAS FURNISHED.

4. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS COMPILED FROM LOW ALTITUDE AERIAL SURVEY. THE TOPOGRAPHY IS SHOWN AT A TWO FOOT CONTOUR INTERVAL. THE BC CONSULTANTS ASSUMES NO RESPONSIBILITY FOR DESIGN OR CONSTRUCTION CHANGES DUE TO INACCURACIES IN TOPOGRAPHIC INFORMATION SHOWN HEREON.

5. THE PROPERTY DELINEATED ON THIS PLAT IS IN THE SPRINGFIELD MAGISTERIAL DISTRICT, LOWER POTOMAC SANITARY SEWER SHED AND THE POHICK CREEK WATERSHED.

6. TO THE BEST OF OUR KNOWLEDGE, THIS DEVELOPMENT IS IN CONFORMANCE WITH THE FAIRFAX COUNTY COMPREHENSIVE PLAN AND WILL CONFORM TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS AND CONDITIONS WITH THE EXCEPTION OF THE FOLLOWING:
   1) WE ARE REQUESTING A WAIVER OF THE FAIRFAX COUNTY COUNTYWIDE TRAILS PLAN REQUIREMENT FOR AN ON-ROAD BIKE TRAIL ALONG THE NORTHERN SIDE OF OLD KEENE MILL ROAD.

7. ACCORDING TO THE FAIRFAX COUNTY-COUNTYWIDE TRAILS PLAN (ADOPTED BY THE BOARD OF SUPERVISORS ON JUNE 17, 2002) THERE IS AN ON-ROAD BIKE TRAIL REQUIREMENT ALONG THE NORTHERN SIDE OF OLD KEENE MILL ROAD.

8. THE COUNTY OF FAIRFAX IS THE PUBLIC WATER AND SANITARY SEWER SUPPLY AGENCY FOR THIS DEVELOPMENT.

9. THERE ARE NO KNOWN HAZARDOUS OR TOXIC SUBSTANCES ON THIS SITE. IF ANY SUBSTANCES ARE FOUND, THE METHODS FOR DISPOSAL SHALL ADHERE TO COUNTY, STATE OR FEDERAL LAW.

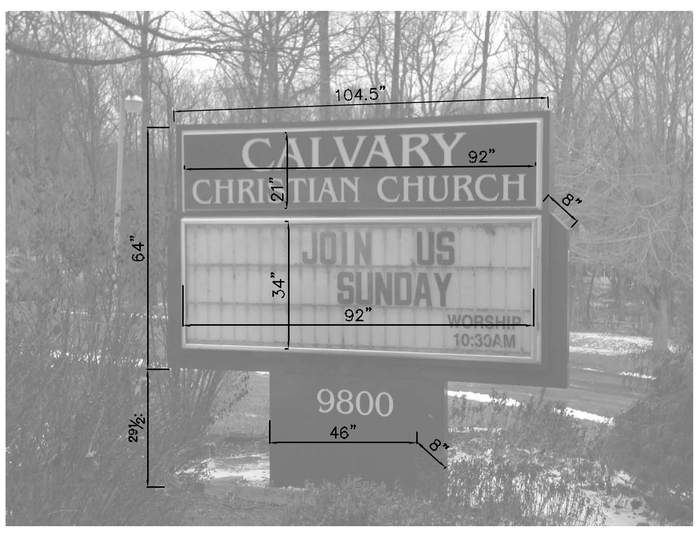
10. THIS PLAN DOES NOT SHOW PROPOSED UTILITIES. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE.

11. THERE ARE NO KNOWN CEMETERIES OR PLACES OF BURIAL ON SITE

12. DRIVE AISLES AND PARKING SPACES SHALL CONFORM TO THE STANDARDS SET BY THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL.

13. PARKING WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 11 OF THE FAIRFAX COUNTY ZONING ORDINANCE. THE APPLICANT RESERVES THE RIGHT TO PROVIDE MORE THAN THE MINIMUM REQUIRED PARKING.

14. THE DISTANCE FROM THE BUILDING TO AN INDIVIDUAL PROPERTY LINE HAS BEEN SHOWN ON THE PLAN. ALL DIMENSIONS EXCEED THE MINIMUM DISTANCE REQUIRED BY THE ANGLE OF BULK PLANE.



EXISTING SIGN
NOT TO SCALE

ZONING ORDINANCE - ARTICLE 8-011 COMMENTS:

SUBMISSION REQUIREMENTS (FOR A SPECIAL PERMIT)

1. APPLICATION TO BE SUBMITTED WITH THIS PLAN.

2. A. SHOWN ON PLAN. THE BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A CURRENT FIELD RUN SURVEY.

   B. THE TOTAL AREA OF THE PROPERTY DELINEATED ON THIS PLAN IS 9.6756 ac (421,470 sf.) BASED ON A FIELD RUN SURVEY. PROPERTY IS ZONED R-1

   C. SHOWN ON PLAN.

   D. DIMENSIONS OF THE EXISTING BUILDING ARE SHOWN ON THE PLAN. REFER TO SHEET 2 FOR HEIGHTS OF STRUCTURES.

   E. SHOWN ON PLAN. SEE BELOW FOR BULK PLANE REQUIREMENTS.

   F. SHOWN ON PLAN.

   G. SHOWN ON PLAN.

   H. SHOWN ON PLAN. REFER TO THE SITE TABULATIONS ON SHEET 2 FOR PARKING REQUIREMENTS.

   I. THE SITE IS SERVED BY PUBLIC SEWER AND WATER.

   J. REFER TO SEPARATE GDP SUBMISSION FOR INFORMATION REGARDING STORM WATER MANAGEMENT.

   K. REFER TO SITE TABULATIONS ON SHEET 2.

   L. THE TOPOGRAPHIC INFORMATION SHOWN ON THIS GDP IS OBTAINED FROM FAIRFAX COUNTY GIS DATA AND HAS BEEN INTERPOLATED INTO TWO FOOT INTERVALS.

   M. N/A

   N. THERE ARE NO FLOOD PLAINS (AS DESIGNATED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, U.S. GEOLOGICAL SURVEY OR FAIRFAX COUNTY), RESOURCE MANAGEMENT AREAS, RESOURCE PROTECTION AREAS, OR ENVIRONMENTAL QUALITY CORRIDORS.

   O. SHOWN ON PLAN.

   P. N/A, SEE NOTE 20

   Q. ACCORDING TO THE FAIRFAX COUNTY-COUNTYWIDE TRAILS PLAN (ADOPTED BY THE BOARD OF SUPERVISORS ON JUNE 17, 2002) THERE IS AN ON-ROAD BIKE TRAIL REQUIREMENT ALONG THE NORTHERN SIDE OF OLD KEENE MILL ROAD. (SEE GENERAL NOTE 6)

   R. THERE ARE NO KNOWN CEMETERIES OR PLACES OF BURIAL ON SITE.

   S. SHOWN ON PLAN.

3. SUBMITTED WITH THIS PLAN.

4. PROVIDED ON SHEET 5

5. SUBMITTED WITH THIS PLAN.

6. PROVIDED SEPARATELY IN THE LETTER OF JUSTIFICATION

7. SEE NOTE BELOW

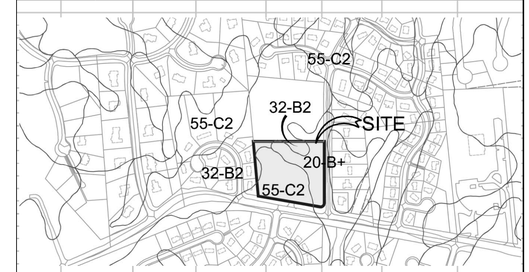
8. N/A

9. SUBMITTED WITH THIS PLAN.

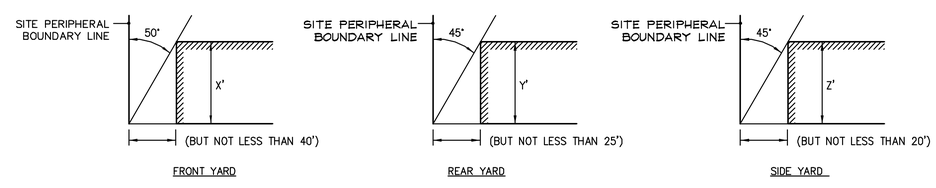
OWNER'S/APPLICANT'S INFORMATION:

OWNER: TRUSTEES OF THE CALVARY CHRISTIAN CHURCH
ADDRESS: 9800 OLD KEENE MILL ROAD
BURKE, VA 22105
DB. 4517 PG. 38

SOILS MAP/DATA — SCALE 1"= 500'



SOIL I.D. NUMBERS	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	GEOTECHNICAL REPORT REQD	NEW SOIL PROBLEM CLAS
55	GLENELG	GOOD	GOOD	GOOD	SEVERE	NO	C
32	FAIRFAX (SILL)	GOOD-P	FAIR-P	GOOD	GOOD	SEVERE	B
20	MEADOWVILLE	FAIR-B,W	MARGINAL-W	GOOD	MODERATE	B	B



ANGLE OF BULK PLANE
NOT TO SCALE

NOTE:
X = BLDG. HEIGHT; MAX. X=60'
Y = BLDG. HEIGHT; MAX. Y=60'
Z = BLDG. HEIGHT; MAX. Z=60'

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COMMONWEALTH OF VIRGINIA
PETER L. PINCK
Lic. No. 368
LANDSCAPE ARCHITECT

SPECIAL PERMIT AMENDMENT
GENERAL NOTES
CALVARY CHRISTIAN CHURCH
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JANUARY 2013
SCALE: HOR. 1"= 40' VERT. N/A
SHEET 3 OF 10
CO. NO.
CAD NAME: G11562NOT
LAYOUT: NOT
FILE NO. 11562.01-00

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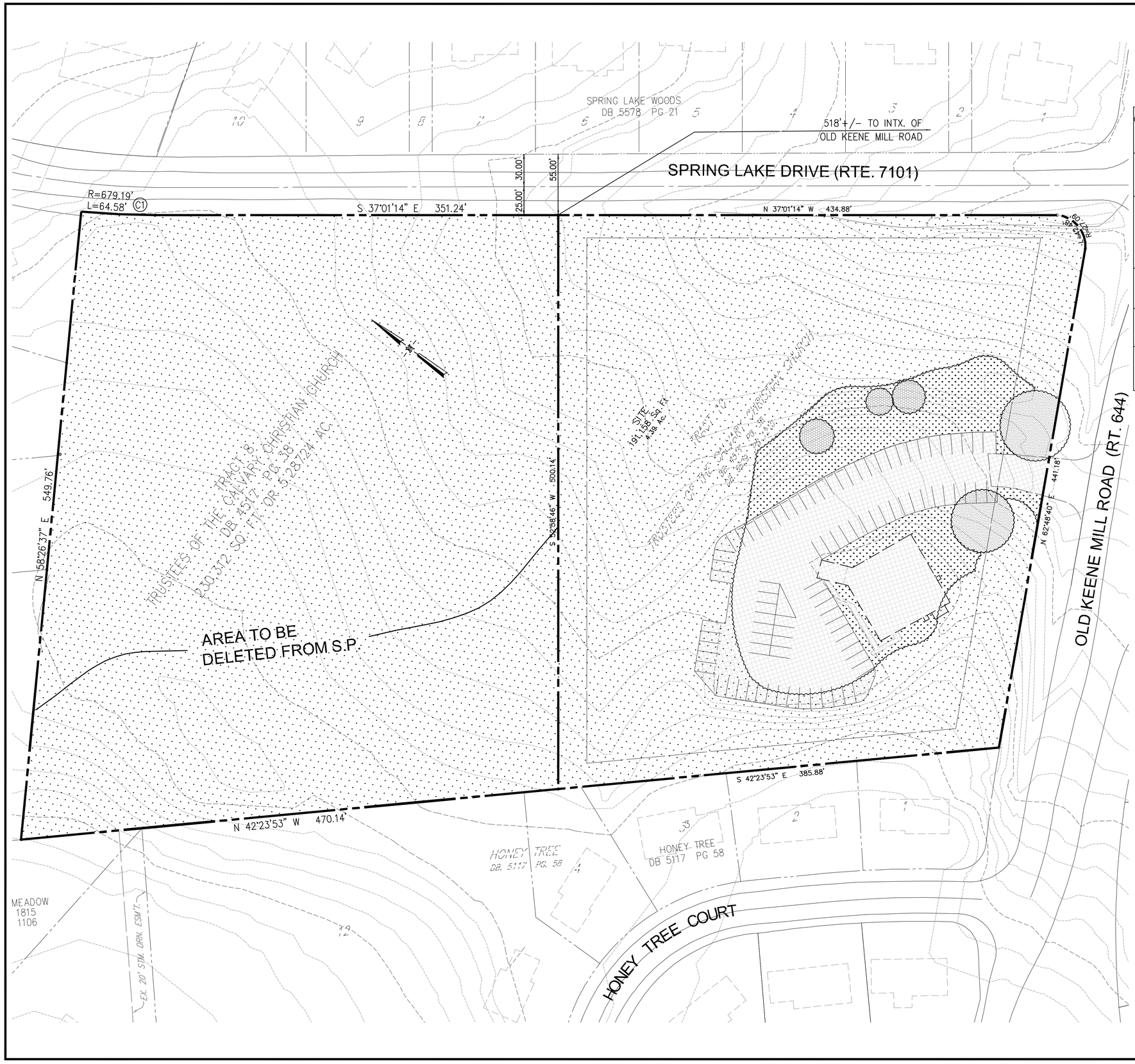

EXISTING VEGETATION MAP SUMMARY AND NARRATIVE

COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	CONDITION	AREA (Ac.±)	NARRATIVE
2	N/A	UPLAND FOREST	N/A	8.27	UPLAND HARDWOODS: OAK, HICKORY AND YELLOW–POPLAR UPLAND SOFTWOODS: VIRGINIA PINE.
3	NONE DOMINATE	EARLY SUCCESSIONAL FOREST COMMUNITY	N/A	0.03	AREAS OF OF VERY SUCCESSIONAL TREE CANOPY DOMINATED BY JUVENILE PIONEER SPECIES SUCH AS VIRGINIA PINE, RED CEDAR, TULIP POPLAR, BLACK LOCUST, BOX ELDER, SWEETGUM, BLACK WILLOW, AILANTHUS, ETC. THESE AREAS MAY CONTAIN SIGNIFICANT LEVELS OF TURFGRASS AND OTHER HERBACEOUS PLANT MATERIALS.
5	N/A	DEVELOPED LAND	N/A	0.83	AREAS OF CONSTRUCTED FEATURES INCLUDING BUILDINGS, PARKING, SIDEWALKS AND ROADWAYS.
6	N/A	MAINTAINED GRASSLAND	N/A	0.44	GRASSED AND LANDSCAPE AREAS, ATHLETIC FIELDS OR OTHER GREEN AREAS DEVOID OF NATURAL VEGETATION
9	N/A	LANDSCAPE TREE CANOPY	N/A	0.10	TREE CANOPY ESTABLISHED THROUGH TREE PLANTING OF NURSERY STOCK TREES THAT IS NOT PART OF A NATURAL FOREST COMMUNITY

Total: 9.67 Ac.±

EXISTING BUILDING INVENTORY

STRUCTURE	TYPE	HEIGHT	DATE OF CONSTRUCTION	STATUS
BUILDING	SINGLE STORY + BASEMENT BRICK FRAME STRUCTURE	45'±	1978	REMAIN

EXISTING VEGETATION MAP LEGEND

- COVER TYPE 2 (UPLAND FOREST)
- COVER TYPE 3 (EARLY SUCCESSIONAL FOREST COMMUNITY)
- COVER TYPE 5 (DEVELOPED AREA)
- COVER TYPE 6 (MAINTAINED AND SEMI–MAINTAINED GRASSLAND)
- COVER TYPE 9 (LANDSCAPE TREE CANOPY)

40' 20' 0' 40' 80'
SCALE: 1"= 40'

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COMMONWEALTH OF VIRGINIA
PETER L. RINK
Lic. No. 368
LANDSCAPE ARCHITECT

SPECIAL PERMIT AMENDMENT
EXISTING CONDITION AND VEGETATION MAP

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS

APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JANUARY 2013
SCALE: HOR. 1"= 40'
VERT. N/A

SHEET 4 OF 10

CO. NO.
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LAYOUT: EVM
FILE NO. 11562.01–00

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1 NTS

2 NTS

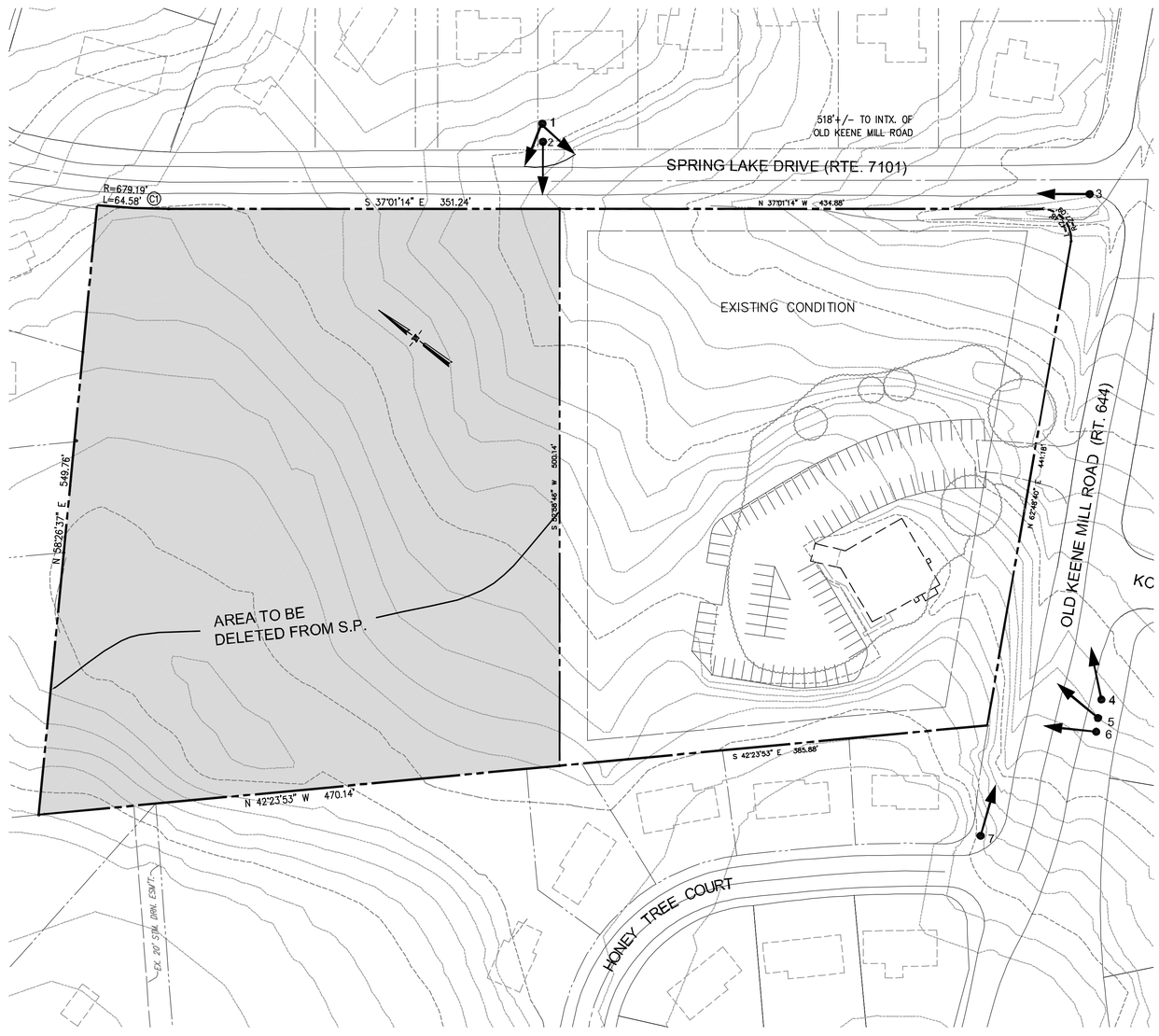
3 NTS

7 NTS

4 NTS

6 NTS

5 NTS



60' 30' 0' 60' 120'

SCALE: 1"= 60'

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COMMONWEALTH OF VIRGINIA
PETER L. PINK
Lic. No. 368
LANDSCAPE ARCHITECT

SPECIAL PERMIT AMENDMENT

PHOTOS

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT

FAIRFAX COUNTY, VIRGINIA

BC REVISIONS

APPLICANT:

DESIGNED BY: PLR

DRAFTED BY: CAD

CHECKED BY: PLR

DATE: JANUARY 2013

SCALE: HOR. AS SHOWN
VERT. N/A

SHEET 5 OF 10

CO. NO.

CAD NAME: S11562PHOTO

LAYOUT: PHOTOS

FILE NO. 11562.01-00

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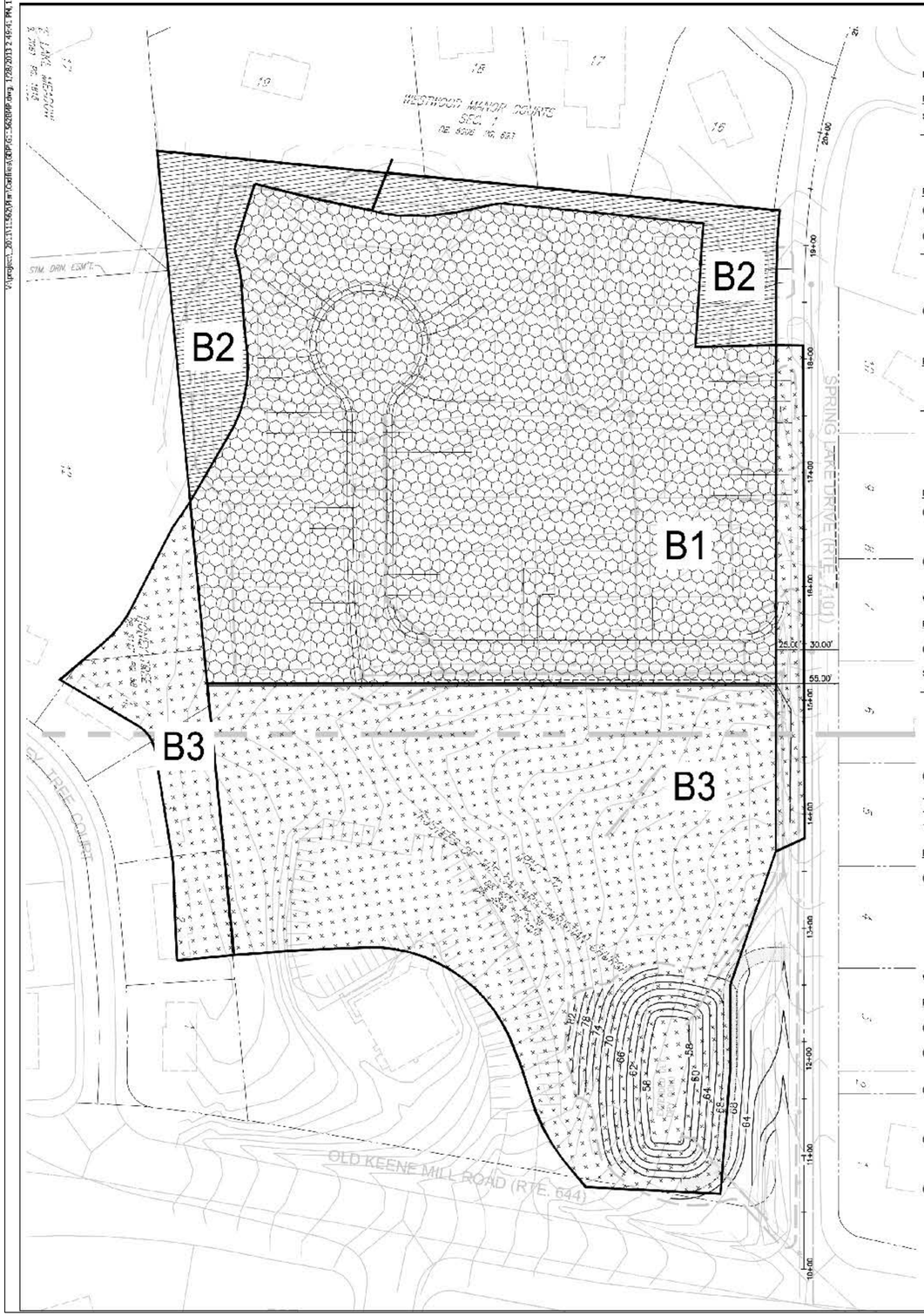

BMP FACILITY DESIGN CALCULATIONS

Plan Name: Calvary Church Subdivision
Co. Plan #: Rezoning Application

II. WATERSHED INFORMATION

PART 1: LIST ALL OF THE SUBAREAS AND "C" FACTORS USED IN THE BMP COMPUTATIONS

SUBAREA DESIGNATION & DESCRIPTION (1)		"C" (2)	AREA (AC.) (3)
B1	Onsite to Extended Detention	0.55	4.48
B2	Onsite Untreated	0.41	0.80
B3	Offsite to Extended Detention (20% credit)	0.44	4.27

PART 2: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR THE SITE

(A) AREA OF THE SITE (a) 5.28 ACRES

(B) SUBAREA DESIGNATION

(1)		"C" (2)		AREA (AC.) (3)		PRODUCT (4)
B1	Onsite to Extended Detention	0.55	X	4.48	=	2.46
B2	Onsite Untreated	0.41	X	0.80	=	0.33
				(b) TOTAL	=	2.79

(C) WEIGHTED AVERAGE "C" FACTOR (b) / (a) = (c) 0.53

PART 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE

SUBAREA DESIGNATION (1)	BMP TYPE (2)	REMOVAL EFF. (%) (3)		AREA RATIO (4)		"C" FACTOR RATIO (5)		PRODUCT (6)
B1	Onsite to Extended Detention	40	X	0.85	X	1.04	=	35.30
B2	Onsite Untreated	0	X	0.15	X	0.78	=	0.00
B3	Offsite to Extended Detention (20% credit)	40	X	0.81		0.83	=	5.38
						(a) TOTAL	=	40.68 %

PART 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT: (a) 40.0 %
(FAIRFAX COUNTY CHESAPEAKE BAY PRESERVATION AREA - 40%)
OR (FAIRFAX COUNTY WATER SUPPLY OVERLAY DISTRICT - 50%)

(B) IF LINE 3 (a) 40.68 % > LINE 4(a) 40.0 %
THEN PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED.

V. STORAGE

PART 7: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR EACH PROPOSED BMP FACILITY

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

SUBAREA DESIGNATION (1)		"C" (2)		AREA (AC.) (3)		PRODUCT (4)
B1	Onsite to Extended Detention	0.55	X	4.48	=	2.46
B3	Offsite to Extended Detention (20% credit)	0.44	X	4.27	=	1.88
				(a) 8.75		(b) 4.34

(C) WEIGHTED AVERAGE "C" FACTOR (b) / (a) = (c) 0.50

TOTAL IMPERVIOUS AREA TO EXTENDED DETENTION DRY POND 1.94 AC
TOTAL PROPOSED AREA TO EXTENDED DETENTION DRY POND 8.75 AC
TOTAL % IMPERVIOUS TO EXTENDED DETENTION DRY POND 22.17 %

PART 8: DETERMINE THE STORAGE REQUIRED FOR EACH PROPOSED FACILITY

(A) EXTENDED DETENTION DRY POND
CHART A6-40 VALUE (APPENDIX 4-3) FOR BMP STORAGE PER ACRE
[(.4375 x "C") - .875] OR [3.25 x % IMP.] = (a) 693 CF/AC

DESIGN 1 (48 HOUR DRAWDOWN)
LINE 7(a) 8.75 X LINE 8(a) 693 = 6,062.5 CF

VI. OUTLET COMPUTATION

PART 9: DETERMINE THE REQUIRED ORIFICE SIZE FOR EACH EXTENDED DETENTION FACILITY

(A) BMP STORAGE REQUIREMENT (S) FROM PART 8. (a) 6,063 CF

(B) MAXIMUM HEAD (h) AT THE REQUIRED BMP STORAGE FROM THE ELEVATION STORAGE CURVE FOR THE FACILITY. (b) 1.3 FT.

(C) PEAK OUTFLOW RATE (Qp) AT THE MAXIMUM HEAD FOR DRAWDOWN TIME OF 48 HOURS
[Qp = S / (0.5 x 3600 x 48)]
0.0000116 x LINE 9 (a) 6,063 = (c) 0.07 CFS

(D) REQUIRED ORIFICE AREA (A) [A = Qp / (0.6 x(64.4 x h)^0.5)]
LINE 9(c) 0.07 /(0.60 x (64.4 x LINE 9(b) 1.32)^0.5]
= (d) 0.01 SQ. FT.
OR 1.8 SQ. IN.

(E) DIAMETER OF CIRCULAR ORIFICE
2.0 x (LINE 9(d) 0.01 / 3.1415927)^0.5 = (e) 0.13 FT.
OR 1.5 IN.

WATER QUALITY NARRATIVE

THE USE OF AN EXTENDED DETENTION DRY POND IS PROPOSED TO MEET WATER QUALITY REQUIREMENTS. THE EXTENDED DETENTION DRY POND WILL COLLECT 4.47 ACRES OF ONSITE AND 4.28 ACRES OF OFFSITE RUNOFF. THE EXTENDED DETENTION DRY POND WILL PROVIDE 40% PHOSPHORUS REMOVAL EFFICIENCY. ONLY 20% CREDIT HAS BEEN USED FOR ALL OFFSITE AREAS DRAINING TO THE EXTENDED DETENTION DRY POND. UTILIZING THIS METHOD OF WATER QUALITY TREATMENT IT WILL RESULT IN A TOTAL PHOSPHORUS REMOVAL FOR THE ENTIRE SITE OF 41.00%. SINCE THIS SITE IS LOCATED IN CHESAPEAKE BAY RESOURCE MANAGEMENT AREA (RMA), A REMOVAL EFFICIENCY OF 40% IS REQUIRED AND MET.

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required subarea on information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:
Special Permits (6-011 2L & 2L) — Special Exceptions (6-011 2U & 2L)
Cluster Subdivision (9-615 1G & 1N) — Commercial Revitalization Districts (9-622 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L) — PRD Plans (16-505 1E & 1O)
FDP Districts (except PRC) (16-502 1F & 1O) — Amendments (16-402 10F & 10)

[x] 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').

[x] 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outfall protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 12.

[x] 3. Provide:

Facility Name/ Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
Dry Pond 1	4.47	4.28	8.75	43,959	28,358	13.0'
Totals						

[x] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 2 / 12. Pond inlet and outlet pipe systems are shown on Sheet 12.

[N] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 12. Type of maintenance access road surface noted on the plat is gravel (asphalt, gravel, grass, etc).

[x] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 5

[N] 7. A "stormwater management narrative" which contains a description of how detention and best management practices requirements will be met is provided on Sheet 11 / 12.

[x] 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 12.

[x] 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual, will be satisfied is provided on Sheet 12.

[x] 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 2 / 12.

[ ] 11. A submission waiver is requested for n/a

[ ] 12. Stormwater management is not required because n/a

B1– ONSITE TREATED = 4.47 Ac.

B2–ONSITE UNTREATED = 0.75 Ac.

B3–OFFSITE TREATED = 4.28 Ac.

50' 25' 0' 50' 100'
SCALE: 1"= 50'

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COMMONWEALTH OF VIRGINIA
PETER L. PINCK
Lic. No. 368
LANDSCAPE ARCHITECT

BMP COMPUTATIONS
GENERALIZED DEVELOPMENT PLAN
ENCLAVE OF BURKE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: DECEMBER 2012
SCALE: HOR. 1"= 50' VERT. N/A
SHEET 11 OF 13
CO. NO.
CAD NAME: S11562BMP
LAYOUT: BMP
FILE NO. 11562.01-00

SPECIAL PERMIT AMENDMENT
BMP CALCULATIONS– INFORMATIONAL

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JANUARY 2013
SCALE: HOR. AS SHOWN VERT. N/A
SHEET 6 OF 10
CO. NO.
CAD NAME: S11562PHOTO
LAYOUT: BMP COMPS
FILE NO. 11562.01-00

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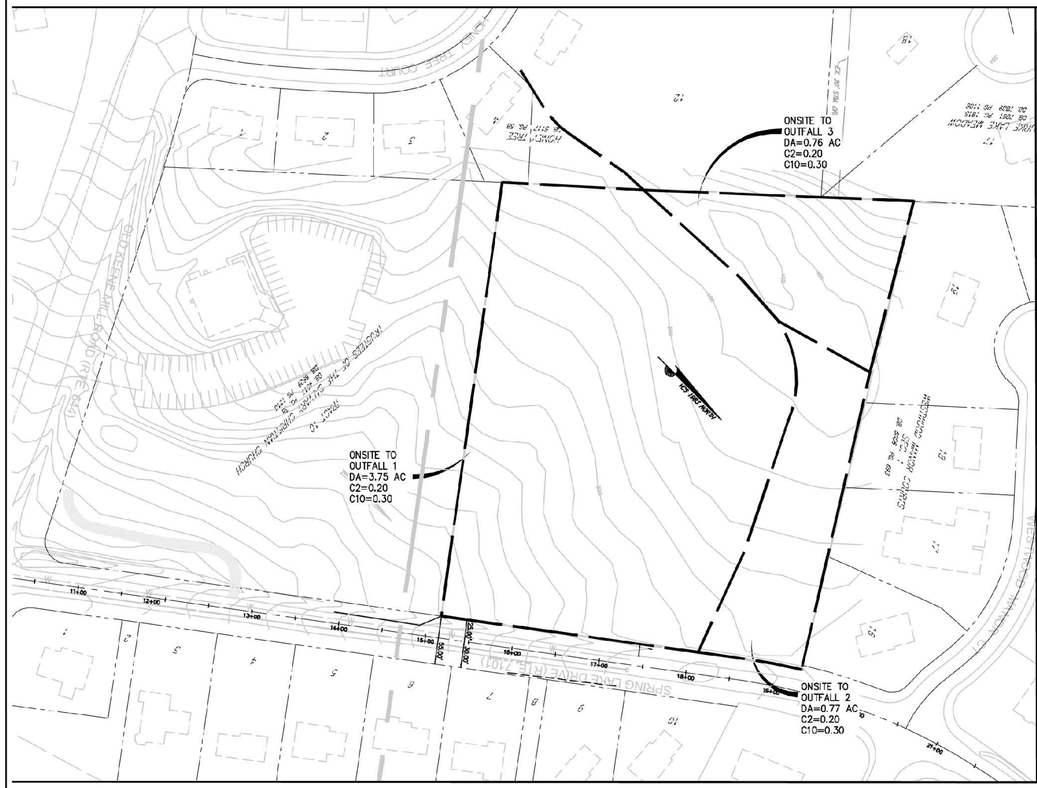
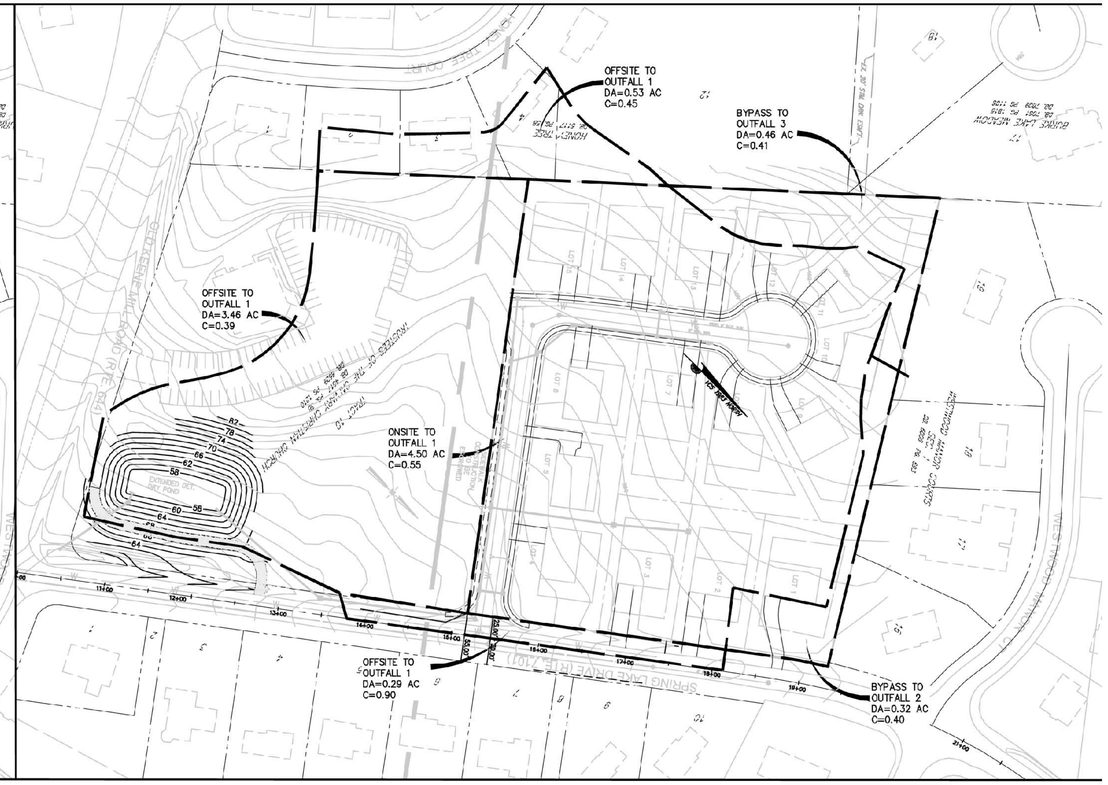
PRE-DEVELOPMENT DRAINAGE DIVIDES

1"=75'



POST-DEVELOPMENT DRAINAGE DIVIDES

1"=75'



OUTFALL ANALYSIS COMPUTATIONS

OUTFALL 1

PART 1: LIST ALL OF THE SUBAREAS WITH CN NUMBERS AND COMPUTE THE AVERAGE CN FOR THE OUTFALL

GOOD FORESTED CONDITION

	SUBAREA & DESCRIPTION	CN		AREA (AC.)		PRODUCT
(A)	A1 Woods: Soil B	55	X	5.28	=	290.40
			TOTAL	5.28		290.40
(B)	WEIGHTED AVERAGE CN		TOTAL = AREA / PRODUCT =			55

POST DEVELOPMENT

	SUBAREA & DESCRIPTION	CN		AREA (AC.)		PRODUCT
(C)	A4 Impervious: Soil B	98	X	1.40	=	137.20
	A5 Lawn: Soil B	61	X	3.88		236.68
			TOTAL	5.28		373.88
(D)	WEIGHTED AVERAGE CN		TOTAL = AREA / PRODUCT =			71

PART 2: COMPUTE THE DEPTH OF RAINFALL AT OUTFALL

(A) CALCULATE THE RAINFALL AMOUNT (P) FOR THE 1-, 2-, AND 10-YEAR, 24-HOUR STORM. (FROM TABLE 6.19 OF THE PFM)

P_1 = 2.7" P_2 = 3.2" P_{10} = 5.2"

(B) DETERMINE THE RUNOFF DEPTH (d) IN INCHES

$$S = \frac{1000}{CN} - 10$$

$$d = \frac{(P - 0.2S)^2}{P + 0.8S}$$

	GOOD FORESTED CONDITION	POST DEVELOPMENT
S =	8.18	4.08
d_1 =	0.12"	0.80"
d_2 =	0.25"	0.88"
d_{10} =	1.03"	2.27"

PART 3: CALCULATE THE 1-YEAR POST DEVELOPMENT VOLUME

(A) DETERMINE TOTAL VOLUME OF WATER TO BE DETAINED FOR 1-YEAR STORM

V_1 = DRAINAGE AREA (ACRES) x d (INCHES) / 12 (INCHES/FOOT) V_1 = 0.2640 ac.-ft. = 11,500 cu.-ft.

(B) SUBTRACT VOLUME DETAINED IN BMP VOLUME (FROM BMP COMPUTATIONS)

$V_{1\text{-}YR} = V_1 - V_{WQ}$ V_{WQ} = 6,063 cu.-ft. $V_{1\text{-}YR}$ = 5,437 cu.-ft.

PART 4: DETERMINE ORIFICE SIZE FOR 1-YEAR STORM

(A) MAXIMUM HEAD (h) AT THE REQUIRED 1-YEAR STORAGE FROM THE ELEVATION STORAGE CURVE FOR THE FACILITY. h = 2.00 ft

(B) PEAK OUTFLOW RATE (Qp) AT THE MAXIMUM HEAD FOR DRAWDOWN TIME OF 24 HOURS.

$$Q_p = \frac{V_{1\ YR}}{0.5x3{,}600x24}$$

Q_p = 0.1259 cfs

(C) REQUIRED ORIFICE AREA

$$A_{1-YR} = \frac{Q_p}{0.6\sqrt{64.4h}}$$

$A_{1\text{-}YR}$ = 0.0185 sq. ft.

(D) MAXIMUM DIAMETER OF CIRCULAR ORIFICE MAXIMUM DIAMETER = 1.84"

PART 8: DETERMINE ALLOWABLE RELEASE

(A) DETERMINE THE VOLUME OF RUNOFF FOR EACH STORM TO BE ANALYZED

V = DRAINAGE AREA (ACRES) x d (INCHES) / 12 (INCHES/FOOT)

GOOD FORESTED CONDITION	POST DEVELOPMENT
V_2 = 4,792 cu.-ft.	V_2 = 16,866 cu.-ft.
V_{10} = 20,700 cu.-ft.	V_{10} = 43,508 cu.-ft.

(B) DETERMINE THE PROPORTIONAL IMPROVEMENTS FOR EACH STORM TO BE ANALYZED

$$R_i = \left[1 - \frac{V_i}{V_d}\right] x100$$

R_2 = 71.59%
R_{10} = 52.42%

(C) DETERMINE THE ALLOWABLE PEAK RELEASES

GOOD FORESTED CONDITION RELEASE	PROPORTIONAL IMPROVEMENT RELEASE
Q_2 = 0.76 cfs	Q_2 = 0.22 cfs = 1.23 x (1 - R_2)
Q_{10} = 6.50 cfs	Q_{10} = 3.09 cfs = 10.45 x (1 - R_{10})

PART 9: MAXIMUM ALLOWABLE OUTFALL

STORM FREQUENCY	PROPORTIONAL IMPROVEMENT RELEASE (CFS)	-	UNDETAINED TO OUTFALL #1 (CFS)	+	* OFFSITE DETAINED (CFS)	=	MAX. ALLOWABLE OUTFLOW (CFS)
Q_2 =	0.22	-	0.58	+	3.17	=	**2.81**
Q_{10} =	3.09	-	1.91	+	11.11	=	**12.29**

STORMWATER DETENTION COMPUTATIONS

Old Keene Mill - Pond 1

Pre-Development: Flow Calculations, Tc = 5 min

Storm Frequency	Cf	C	i	A	Peak Flow
2-Year (Site Area)	1.00	0.200	5.45	5.28	5.76
10-Year (Site Area)	1.00	0.300	7.27	5.28	11.52

Post-Development: Controlled/Uncontrolled Areas Tc = 5 min

Description:	Weighted "C2"	Weighted "C10"	Area (ac.):	C2*A	C10*A	Q-2	Q-10
To Dry Pond 1 - Onsite	0.55	0.55	4.50	2.48	2.48	13.52	18.03
To Dry Pond 1 - Offsite	0.43	0.43	4.28	1.84	1.84	10.03	13.38
Uncontrolled	0.41	0.41	0.78	0.32	0.32	1.74	2.33
Total to Pond 1			8.78	4.32	4.32		
Composite "C" to Pond				0.49	0.49		

Post-Development: Pond 1 Inflow Hydrograph Peaks

Storm Frequency	Cf	C	i	A	Peak Inflow
2-Year	1.00	0.49	5.45	8.78	23.45
10-Year	1.00	0.49	7.27	8.78	31.28

Post-Development: Maximum Allowable Outflow from Pond 1

Storm Frequency	Pre-Dev.	+	Offsite to Pond	-	Uncon. Lots		Allowable Release
2-Year	5.76	+	10.03	-	1.74	=	14.05
10-Year	11.52	+	13.38	-	2.33	=	22.57

Post-Development: Actual Flow from Site

Storm Frequency	Actual Release From Facility	+	Post-Uncon. Release	=	Actual Release for Site (cfs)	≤	Pre-Develop. Peak Flow (cfs)
2-Year	0.52	+	1.74	=	2.26	≤	15.79
10-Year	5.81	+	2.33	=	8.14	≤	24.90

STORMWATER MANAGEMENT NARRATIVE

PRE-DEVELOPMENT CONDITIONS

THIS 5.28 ACRE SITE IS CURRENTLY A VACANT LOT THAT IS WOODS COVERED. THE PROPERTY IS CURRENTLY ZONED R-1. THE ADJACENT PARCELS TO THE NORTH, EAST AND WEST ARE SINGLE FAMILY HOUSES AND A RELIGIOUS FACILITY LOCATED TO THE SOUTH. SPRING LAKE DRIVE BORDERS THE PROPERTY TO THE EAST. THE SITE HAS THREE (3) OUTFALLS WHICH ARE OVERLAND. THE FIRST OUTFALL, WHICH IS 3.75 ACRES, FLOWS TO THE EAST CORNER OF THE PROPERTY AND THEN BY A STORM SEWER SYSTEM ACROSS OLD KEENE MILL ROAD. THE SECOND OUTFALL, WHICH IS 0.77 ACRES FLOWS TO THE NORTH CORNER OF THE PROPERTY. THE THIRD OUTFALL, WHICH IS 0.76 ACRES FLOWS TO THE WEST CORNER OF THE PROPERTY. THE OFFSITE WATER MAINLY COMES FROM THE SUBDIVISION TO THE WEST AND FROM SPRING LAKE DRIVE.

POST-DEVELOPMENT CONDITIONS

THE PROPOSED CONDITIONS FOR THE SITE IS FOR 15 SINGLE FAMILY HOMES. AN EXTENDED DETENTION DRY POND WILL BE CONSTRUCTED OFFSITE AND WILL COLLECT WATER FROM THE COMBINATION OF OVERLAND FLOW AND A PROPOSED STORM SEWER SYSTEM. ROUGHLY 4.50 ACRES ONSITE AND 4.28 ACRES OFFSITE ARE DETAINED IN THIS STORMWATER MANAGEMENT FACILITY. THE EXTENDED DETENTION FACILITY DETAINS THE 1-YEAR 24 HOUR STORM EVENT IN ORDER TO MEET THE PFM (SECTION 6-0203) ADEQUATE OUTFALL REQUIREMENTS. REFER TO THE ALLOWABLE RELEASE COMPUTATIONS, OUTFLOW COMPUTATIONS, AND VOLUME SHOWN ON "THIS SHEET SHEET". THE SWM FACILITY THEN OUTFALLS INTO AN EXISTING STORM SEWER SYSTEM THAT EXTENDS ACROSS OLD KEENE MILL ROAD AND INTO THE EXISTING FLOODPLAIN. STORMWATER MANAGEMENT REQUIREMENTS HAVE BEEN MET, AS THE POST-DEVELOPMENT PEAK RELEASE RATES FOR THE 1-YEAR, 2-YEAR AND 10-YEAR STORMS ARE LESS THAN PRE-DEVELOPMENT WOODS GOOD CONDITIONS. SEE THE TABLE ON THIS SHEET FOR A SUMMARY OF FLOWS DEMONSTRATING THE REDUCTION IN PEAK FLOW RATES FOR THE SITE.

THE 1-YEAR, 24 HOUR DETENTION METHOD WAS USED DUE TO THE EXISTING OUTFALL NOT BEING ANALYZED FOR ADEQUACY. STANDARD DETENTION FOR THE 2-YEAR AND 10-YEAR STORM WILL BE USED IF IT IS DETERMINED THAT THE EXISTING OUTFALL IS ADEQUATE.

30' 15' 0' 30' 60'

SCALE: 1"= 30'

THIS SHEET FOR INFORMATION ONLY

STORMWATER CALCULATIONS
GENERALIZED DEVELOPMENT PLAN
ENCLAVE OF BURKE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: DECEMBER 2012
SCALE: HOR. AS SHOWN VERT. AS SHOWN
SHEET 12 OF 13
CO. NO.
CAD NAME: OKLMBAS.DWG
LAYOUT: LAYOUT
FILE NO. 11562.01-00

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SPECIAL PERMIT AMENDMENT
STORMWATER CALCULATIONS-INFORMATIONAL

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
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SHEET 7 OF 10
CO. NO.
CAD NAME: S11562PHOTO
LAYOUT: STORMWATER CALC
FILE NO. 11562.01-00

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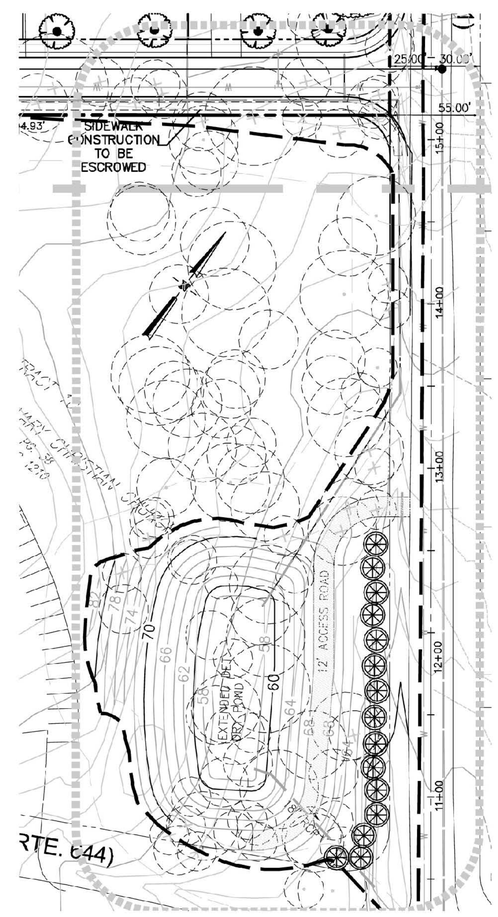
LEGEND:

- CATEGORY IV (2" CAL.) DECIDUOUS (OVERSTORY) TREES
- CATEGORY II (8' HT.) EVERGREEN (UNDERSTORY) TREES
- POST DEVELOPMENT 10-YEAR TREE CANOPY CREDIT AREA (46,349 s.f.±)
- EXISTING BUILDING
- ENTIRE SITE IS WOODED
- EXISTING TREELINE
- PROPOSED TREELINE
- LIMITS OF CLEARING AND GRADING



THIS PLAN FOR LANDSCAPING PURPOSES ONLY

40' 20' 0' 40' 80'
SCALE: 1"= 40'

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SPECIAL PERMIT AMENDMENT
LANDSCAPE PLAN-INFORMATIONAL

CALVARY CHRISTIAN CHURCH

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LANDSCAPE PLAN
GENERALIZED DEVELOPMENT PLAN

ENCLAVE OF BURKE

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS

APPLICANT:

DESIGNED BY: PLR	
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DATE: JANUARY 2013	
SCALE:	HOR. 1"= 40' VERT. N/A
SHEET 5 OF 13	
CO. NO.	
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FILE NO. 11562.01-00	

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DATE: JANUARY 2013	
SCALE:	HOR. AS SHOWN VERT. N/A
SHEET 8 OF 10	
CO. NO.	
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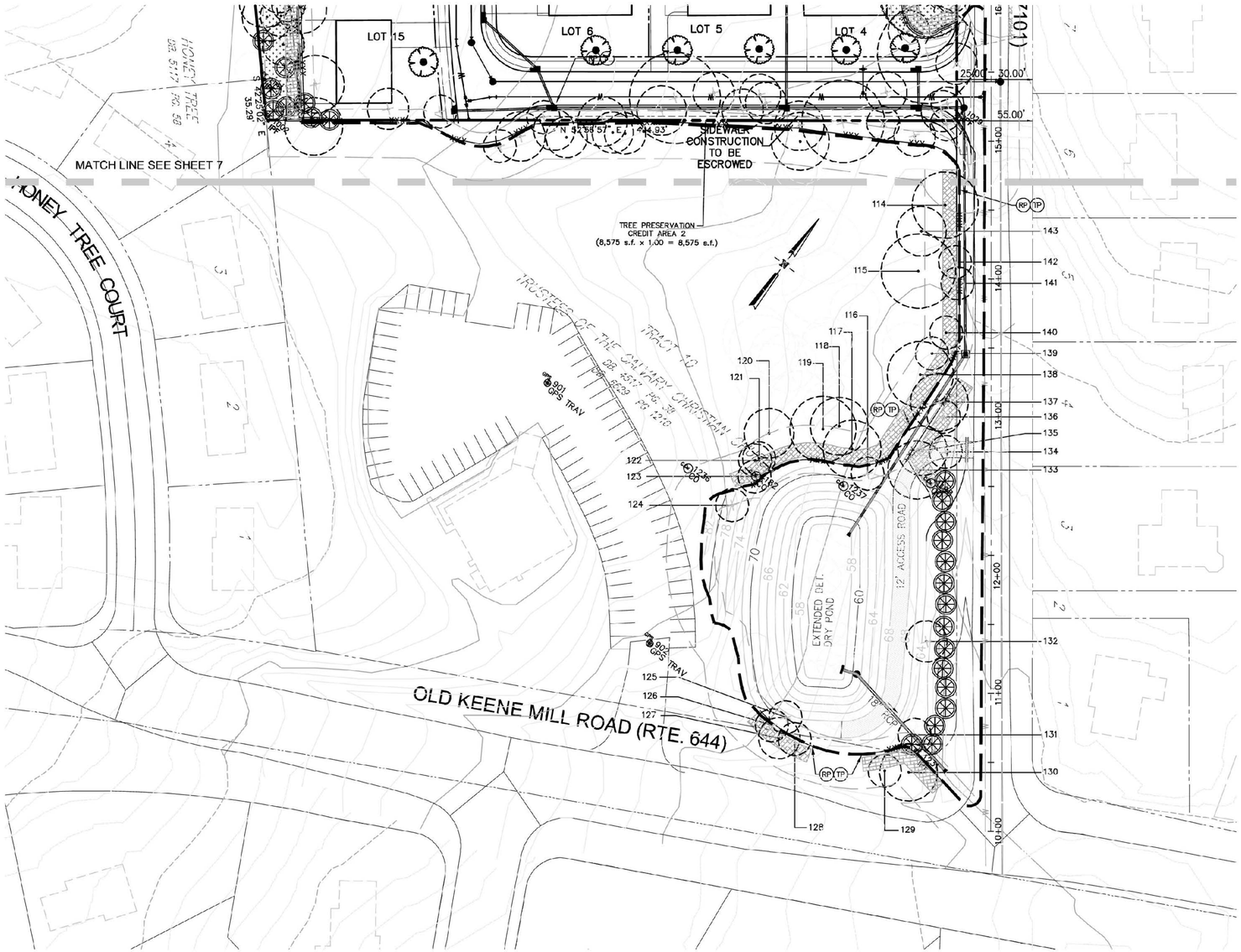
LEGEND:

- LIMITS OF CRITICAL ROOT ZONE (CRZ)
- (CRZ) EXISTING TREE TO BE PRESERVED
- (CRZ) EXISTING TREE TO BE REMOVED
- MULCH AREA (3/10)
- POST DEVELOPMENT 10-YEAR TREE CANOPY CREDIT AREA (57,578 s.f.±)
- RP TP XXX — ROOT PRUNE (RP) (2/10) AND/OR TREE PROTECTION FENCE (TP) (1/10)
- LIMITS OF CLEARING AND GRADING
- EXISTING TREELINE
- PROPOSED TREELINE

SEE SHEET 9 FOR TREE INVENTORY AND CONDITION ANALYSIS, AND SHEET 10 FOR TREE PRESERVATION DETAILS.



40' 20' 0' 40' 80'

SCALE: 1"= 40'

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TREE PRESERVATION PLAN
GENERALIZED DEVELOPMENT PLAN

ENCLAVE OF BURKE

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS

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CHECKED BY: PLR
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SCALE: HOR. 1"= 40' VERT. N/A
SHEET 8 OF 13
CO. NO.
CAD NAME: G11562TPP
LAYOUT: TPP (2)
FILE NO. 11562.01-00

SPECIAL PERMIT AMENDMENT
TREE PRESERVATION PLAN- INFORMATIONAL

CALVARY CHRISTIAN CHURCH

SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

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CHECKED BY: PLR
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SCALE: HOR. AS SHOWN VERT. N/A
SHEET 9 OF 10
CO. NO.
CAD NAME: S11562PHOTO
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FILE NO. 11562.01-00

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TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME/COMMON NAME	SIZE DBH (IN.)*	CRZ** RADIUS (FT.)	CONDITION % ***	CANOPY POSITION	CROWN DENSITY %	AVERAGE CROWN SPREAD D (FT.)	FINAL STATUS	ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
1	Quercus spp./Oak	15	15					R		X						Good condition
2	Acer rubrum/Red Maple.	12	12					R		X						Good condition
3	Dead							R								
4	Quercus spp./Oak	36	36					R							Few dead branches	Very good;
4A	Pinus vrginiana/Virginia Pine/Virginia Pine	12	12		Co-dominant	30	20	P							Many dead branches;	Very Poor
5	Quercus spp./Oak	15	15					R								Good condition
5A	Dead	12	12					R								
5B	Quercus spp./Oak	33	33					P								Good condition
5C	Quercus spp./Oak	12	12		Co-dominant	40	24	P							One sided branches;	Fair condition
5D	Quercus spp./Oak	24	24					P								
6	Quercus spp./Oak	21	21					R								Excellent condition
7	Quercus spp./Oak	18	18		Co-dominant			R							Some broken branches	Good condition
7A	Quercus spp./Oak	27	27					P								Good condition
8	Quercus spp./Oak	12	12					R								Good condition
9	Quercus spp./Oak	12	12					R								Good condition
10	Quercus spp./Oak	15	15					R								Good condition
11	Quercus spp./Oak	15	15					R		X						Good condition
12	Dead							R								
12A	Quercus spp./Oak	18	18					P								Excellent condition
13	Quercus spp./Oak	15	15		Co-dominant			P		X					Some broken branches	Fair condition
14	Quercus spp./Oak	12	12		Co-dominant			P							Top main leader broken; some broken branches	Fair condition
15	Quercus spp./Oak	15	15		Dominant			P		X					Branches at top part only; trunk damage with scars	Poor condition
16	Quercus spp./Oak	12	12		Dominant			R							Crooked leader on top; no lower branches; one sided branches	Fair condition
17	Quercus spp./Oak	18	18					P								Good condition
17A	Acer rubrum/Red Maple.	12	12					P								Good condition
18	Liriodendron tuilipera/Tulip Poplar	18	18					P		X						Good condition
18A	Quercus spp./Oak	18	18					P		X						Good condition
19	Quercus spp./Oak	15	15					P		X						Good condition
20	Quercus spp./Oak	21	21					P								Good condition
21	Quercus spp./Oak	12	12					R								Good condition
22	Liriodendron tuilipera/Tulip Poplar	24	24					P								Good condition
23	Quercus spp./Oak	18	18					P								Good condition
24	Carya spp./Hickory.	12	12		Co-dominant	10	10	P								Poor Condition
25	Quercus spp./Oak	27	27					P								Good condition
26	Quercus spp./Oak	12	12					R								Excellent condition
27	Liquidamabar styraciflua/Sweet Gum	12	12					R								Good condition
28	Quercus spp./Oak	12	12					P								Good condition
29	Dead	15	15					R								
29A	Quercus spp./Oak	21	21		Co-dominant	40	40	R							No lower and middle branches	Fair Condition
30	Quercus spp./Oak	18	18					P		X						Good condition
31	Quercus spp./Oak	12	12		Co-dominant	50	20	R							Short/stunted branches along trunk	Fair condition
32	Quercus spp./Oak	15	15		Co-dominant	70	20	R							Rotten trunk cavity	Fair condition
33	Quercus spp./Oak	15	15					R								Good condition
34	Dead							R		X						
35	Dead							R								
36	Quercus spp./Oak	18	18					P								Good condition
37	Dead							R								
38	Quercus spp./Oak	12	12					R								Good condition
39	Liriodendron tuilipera/Tulip Poplar	18	18					P								Good condition
40	Liriodendron tuilipera/Tulip Poplar	12	12					P								Good condition
41	Quercus spp./Oak	18	18					P								Good condition
42	Quercus spp./Oak	21	18					P								Good condition
43	Quercus spp./Oak	18	18					P							-	Good condition
44	Quercus spp./Oak	21	21					P								Excellent condition
45	Quercus spp./Oak	12	12		Co-dominant			P							Crooked leader on top; no lower branches	Good condition
46	Quercus spp./Oak	12	12					R							Some broken branches	Good condition
48	Quercus spp./Oak	18	18					P								Good condition
49	Liriodendron tuilipera/Tulip Poplar	18	18					P								Good condition
50	Pinus vrginiana/Virginia Pine/Virginia Pine	12	12					R								Good condition
50A	Quercus spp./Oak	15	15		Co-dominant			R								Good condition
50B	Dead	12	12					R								
50C	Quercus spp./Oak	6	6		Co-dominant			R								Good condition
50D	Pinus vrginiana/Virginia Pine/Virginia Pine	12	12		Co-dominant	20	15	R							Flaking bark; crooked trunk; one side branches	Dying
50E	Quercus spp./Oak	15	15					R								Good condition
51	Quercus spp./Oak	15	15					R								Good condition
52	Pinus vrginiana/Virginia Pine/Virginia Pine	12	12					P								Good condition
52A	Quercus spp./Oak	18	18					R							Twin	Good condition
52B	Quercus spp./Oak	15	15					R							Multi	Good condition
53	Dead							R								
53A	Pinus vrginiana/Virginia Pine/Virginia Pine	12	12					R								
53B	Quercus spp./Oak	21	21					P								
53C	Quercus spp./Oak	12	12					P								
54	Quercus spp./Oak	18	18		Co-dominant			P		X					Crooked trunk; one sided branches	Fair condition
55	Quercus spp./Oak	12	12					P							Lower broken branches	Good condition
56	Dead							R								
57	Quercus spp./Oak	18	18					P							One sided branches	Good condition
58	Liriodendron tuilipera/Tulip Poplar	18	18					P		X						Good condition
59	Robina pseudoacacia/Black Locust	15	15					P								Good condition
60	Quercus spp./Oak	21	21					P								Good condition
61	Liriodendron tuilipera/Tulip Poplar	18	18					P								Good condition
62	Quercus spp./Oak	15	15					P								Good condition
63	Quercus spp./Oak	15	15					P								Good condition
64	Quercus spp./Oak	18	18		Co-dominant			P							Co-dominant trunk	Excellent condition
65	Liriodendron tuilipera/Tulip Poplar	18	18					P		X						Good condition
66	Quercus spp./Oak	12	12					P								Good condition
67	Liriodendron tuilipera/Tulip Poplar	18	18					P								Good condition
68	Dead							R								Good condition
69	Liriodendron tuilipera/Tulip Poplar	12	12					P		X						Good condition
69A	Quercus spp./Oak	18	18					P								Good condition
70	Quercus spp./Oak	15	15					R								Good condition
71	Quercus spp./Oak	12	12		Co-dominant			R							No lower branches	Fair condition
71A	Quercus spp./Oak															Good condition
72	Quercus spp./Oak	15	15					P								Good condition
73	Quercus spp./Oak	12	12					R								Good condition
73A	Quercus spp./Oak															
74	Quercus spp./Oak	12	12			70	15	R							Split; half trunk broke off; trunk cavity decay;	Fair condition
75	Quercus spp./Oak	24	24					R								Good condition
76	Quercus spp./Oak	18	18					P							Twin	Good condition
77	Quercus spp./Oak	12	12					P							Crooked leader	Excellent condition
77A	Quercus spp./Oak	15	15					P								Good condition
78	Quercus spp./Oak	21	21					R							Co-dominant trunk; leaning	Excellent condition
78A	Quercus spp./Oak	15	15					P							Twin	Good condition
78B	Quercus spp./Oak	12	12					P								Good condition
78C	Liriodendron tuilipera/Tulip Poplar	15	15					P								Good condition
79	Dead	18	18					R		X						Good condition
80	Pinus vrginiana/Virginia Pine/Virginia Pine	18	18					P								Good condition
81	Quercus spp./Oak	18	18					P								
82	Prunus spp./Cherry	12	12					R								Good condition
83	Quercus spp./Oak	12	12					R								Good condition
84	Liriodendron tuilipera/Tulip Poplar	15	18			30	20	P								Fair condition
84A	Quercus spp./Oak	18	18					P								Good condition
85	Quercus spp./Oak	12	12					P		X						Good condition
86	Quercus spp./Oak	18	18					P								Good condition
87	Quercus spp./Oak	15	15					P							Broken lower branches; one side branches	Good condition
88	Quercus spp./Oak	18	18					P								Good condition
89	Liriodendron tuilipera/Tulip Poplar	15	15					P								Good condition
90	Liriodendron tuilipera/Tulip Poplar	21	21					R								Good condition
92	Liriodendron tuilipera/Tulip Poplar	21	21					P							No lower branches; some upper broken branches;	Good condition

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME/COMMON NAME	SIZE DBH (IN.)*	CRZ** RADIUS (FT.)	CONDITION % ***	CANOPY POSITION	CROWN DENSITY %	AVERAGE CROWN SPREAD D (FT.)	FINAL STATUS	ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
93	Quercus spp./Oak	15	15		Co-dominant			R								Good condition
94	Acer rubrum/Red Maple.	12	12					R								Good condition
95	Quercus spp./Oak	12	12		Co-dominant			R								Good condition
96	Quercus spp./Oak	18	18		Co-dominant			R							Co-dominant leader; crooked leader	Good condition
97	Quercus spp./Oak	12	12					R		X						Good condition
98	Liriodendron tuilipera/Tulip Poplar	15	15					P								Good condition
99	Liriodendron tuilipera/Tulip Poplar	15	15					P								Good condition
100	Quercus spp./Oak	18	18					P								Good condition
101	Quercus spp./Oak	15	15					P								Good condition
102	Liriodendron tuilipera/Tulip Poplar	15	15					P								Good condition
103	Quercus spp./Oak	18	18					R								Good condition
104	Quercus spp./Oak	33	33					P								Good condition
105	Quercus spp./Oak	15	15					R								Good condition
106	Quercus spp./Oak	15	15		Co-dominant			P		X						Good condition
107	Dead							R								
108	Quercus spp./Oak	15	15					P		X						Good condition
109	Quercus spp./Oak	18	15					R								Good condition
110	Quercus spp./Oak	21	21					P								Good condition
111	Quercus spp./Oak	30	30					P								Excellent condition
112	Acer rubrum/Red Maple.	12	12					P								
113	Liriodendron tuilipera/Tulip Poplar	15	15					R								Good condition
114	Quercus spp./Oak	24	24					P		X					One sided branches; some broken branches	Good condition
115	Quercus spp./Oak	27	27					P								Excellent condition
116	Quercus spp./Oak	12	12					R								Good condition
117	Quercus spp./Oak	21	21		Dominant			P		X					Some lower broken branches	Excellent condition
118	Quercus spp./Oak	21	21					P								Good condition
119	Quercus spp./Oak	24	24					P								Good condition
120	Quercus spp./Oak	18	18					P								Good condition
121	Liriodendron tuilipera/Tulip Poplar	12	12					P		X						Good condition
122	Liriodendron tuilipera/Tulip Poplar	12	12					P		X						Good condition
123	Liriodendron tuilipera/Tulip Poplar	12	12					R								Good condition
124	Liquidamabar styraciflua/Sweet Gum	12	12					R								Good condition
125	Quercus spp./Oak	12	12					R								Good condition
126	Prunus spp./Black Cherry	12	12		Co-dominant			R							Leaning;	Good condition
127	Quercus spp./Oak	15	15		Co-dominant			P		X					One sided branches; some lower broken branches	Good condition
128	Liriodendron tuilipera/Tulip Poplar	12	12					R								Good condition
129	Quercus spp./Oak	12	12					P								Good condition
130	Quercus spp./Oak	21	21					P								Good condition
131	Quercus spp./Oak	12	12					R								Good condition
132	Quercus spp./Oak	15	15					R								Good condition
133	Quercus spp./Oak	21	21					R								Good condition
134	Quercus spp./Oak	12	12					R								Good condition
135	Quercus spp./Oak	18	18					R								Good condition
136	Liquidamabar styraciflua/Sweet Gum	12	12					R								Good condition
137	Quercus spp./Oak	21	21					R								Good condition
138	Quercus spp./Oak	24	24					P								Good condition
139	Acer rubrum/Red Maple.	12	12					P								Good condition
140	Quercus spp./Oak	12	12					P		X						Good condition
141	Quercus spp./Oak	12	12		Co-dominant			R							One sided branches; some lower broken branches	Fair condition
142	Liriodendron tuilipera/Tulip Poplar	12	12		Co-dominant			R							One sided branches;	Good condition
143	Quercus spp./Oak	18	18		Co-dominant			P							Crooked leader	Fair condition
144	Acer rubrum/Red Maple.	12	12					P		X						Good condition

LEGEND:

TBD :POTENTIAL HAZARD. STATUS TO BE DETERMINED IN CONSULTATION WITH THE UFMD.
P :PRESERVE
R :REMOVE
POS :PRESERVE OFF-SITE
RWP :REMOVE WITH PERMISSION FROM THE UFMD. TREE IS WITHIN UNDISTURBED AREA BUT CONDITIONS WARRANT ITS REMOVAL.
X :CONDUCT ACTIVITY INDICATED
* :DBH/DIAMETER BREAST HEIGHT AS MEASURED 4.5 FEET ABOVE GROUND.
** :CRZ/CRITICAL ROOT ZONE (ONE FOOT OF RADIUS FOR EVERY INCH OF TREE DIAMETER. CRZ FOR TREES WITH MULTIPLE STEMS ARE CALCULATED BASED ON THE DIAMETER OF A TREE WITH A BASAL AREA EQUIVALENT TO THE SUM OF THE BASAL AREAS FOR ALL STEMS MEASURED.
*** :CONDITION RATINGS ARE PROVIDED AS PERCENTAGES BASED ON METHODS OUTLINED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.

THIS SHEET FOR INFORMATION ONLY

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COMMONWEALTH OF VIRGINIA
PETER L. RINEK
Lic. No. 388
LANDSCAPE ARCHITECT

TREE INVENTORY AND CONDITION ANALYSIS
GENERALIZED DEVELOPMENT PLAN
ENCLAVE OF BURKE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:
DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JANUARY 2013
SCALE: HOR. N/A VERT. N/A
SHEET 9 OF 13
CO. NO.
CAD NAME: G11562TPP-INV
LAYOUT: TPP-IVN
FILE NO. 11562.01-00

SPECIAL PERMIT AMENDMENT
TREE INVENTORY AND CONDITION ANALYSIS- INFORMATIONAL
CALVARY CHRISTIAN CHURCH
SPRINGFIELS DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
APPLICANT:

DESIGNED BY: PLR	
DRAFTED BY: CAD	
CHECKED BY: PLR	
DATE: JANUARY 2013	
SCALE: HOR. AS SHOWN VERT. N/A	
SHEET 10 OF 10	
CO. NO.	
CAD NAME: S11562PHOTO	
LAYOUT: TREE INVENTORY	
FILE NO. 11562.01-00	

XREFS: