WALHAVEN WOODS

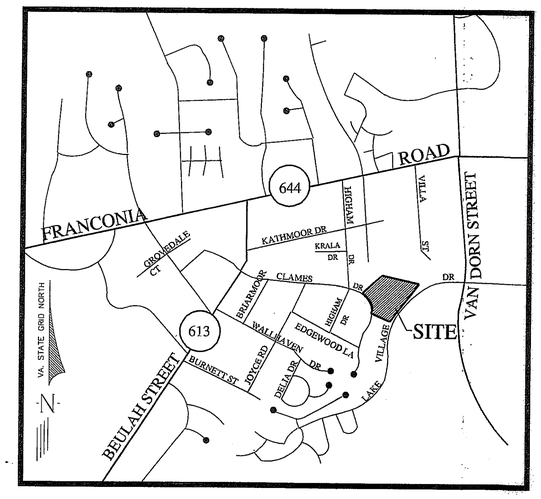
SPECIAL EXCEPTION PLAT

Lee District

Fairfax County, Virginia

OCTOBER 2008

REVISED
APRIL 9, 2009
MAY 28, 2009
JUNE 19, 2009
AUGUST 03, 2009



VICINITY MAP
SCALE : 1"= 1000'

SHEET INDEX

SHEET #	TITLE
1.	COVER SHEET
2.	PROPERTY MAP
3.	EXISTING VEGETATION MAP
4.	NOTES AND DETAILS
5.	SPECIAL EXCEPTION PLAT
6.	LANDSCAPE PLAN
7.	PRELIMINARY STORM WATER MANAGEMENT PLAN AND NARRATIVE
8.	SIGHT DISTANCE PROFILE

plication No. SE 2009-LE-001 Staff S.CJ
APPROVED (SE) SP PLAN
SEE DEV CONDS DATED November 16, 2009
Date of (BOS) (BZA) approval November 16, 2009
Sheet 1 of 8

PREPARED FOR:

Nazir A. Bhagat and
Ashraf N. Bhagat

CIVIL ENGINEER:

URBAN, LTD.
7712 LITTLE RIVER TURNPIKE
ANNANDALE, VIRGINIA 22003 (703) 642-8080

ATTORNEY:

McGuireWoods, LLP
1750 TYSONS BOULEVARD, SUITE 1800
MCLEAN, VIRGINIA 22102-4215
(703) 712-5000 FAX: (703) 712-5050

ARCHITECT:

Lessard Group, Inc.
8521 LEESBURG PIKE, SUITE 700
VIENNA, VIRGINIA 22182
(703) 760-9344 FAX: (703) 356-0126

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10-21-08
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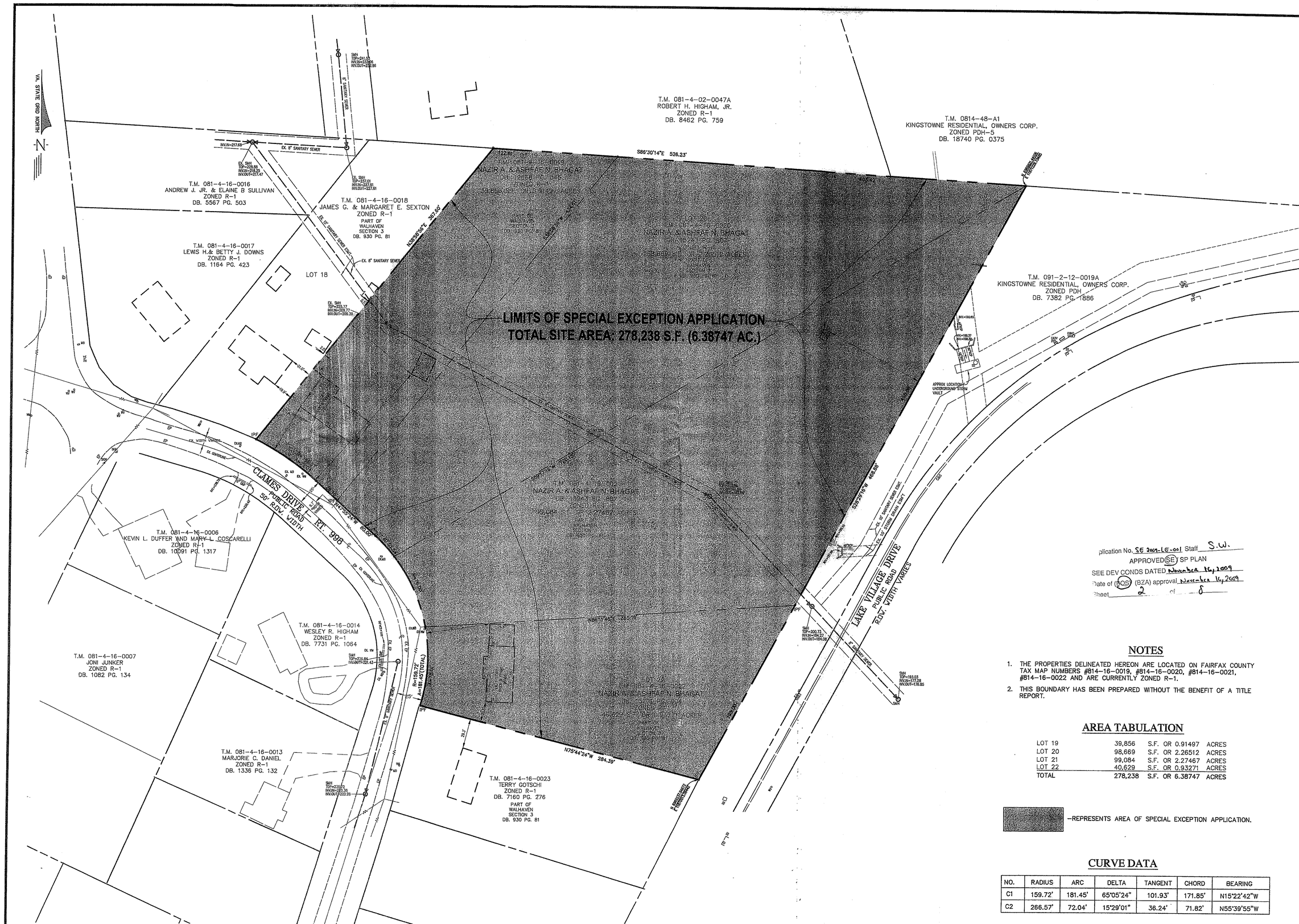
DAVID T. McELHANEY
Lic. No. 022048
9/29/09
PROFESSIONAL ENGINEER

COVER SHEET
WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: AS SHOWN
C.L: N/A
DATE: OCTOBER 2008

SHEET 1 OF 8

FILE No.
MISC 1734



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APPROVED (SE) SP PLAN

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Sheet 2 of 8

NOTES

1. THE PROPERTIES DELINEATED HEREON ARE LOCATED ON FAIRFAX COUNTY TAX MAP NUMBERS #814-16-0019, #814-16-0020, #814-16-0021, #814-16-0022 AND ARE CURRENTLY ZONED R-1.
2. THIS BOUNDARY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT.

AREA TABULATION

LOT 19	39,856	S.F. OR 0.91497	ACRES
LOT 20	98,669	S.F. OR 2.26512	ACRES
LOT 21	99,084	S.F. OR 2.27467	ACRES
LOT 22	40,629	S.F. OR 0.93271	ACRES
TOTAL	278,238	S.F. OR 6.38747	ACRES

—REPRESENTS AREA OF SPECIAL EXCEPTION APPLICATION.

CURVE DATA

NO.	RADIUS	ARC	DELTA	TANGENT	CHORD	BEARING
C1	159.72'	181.45'	65°05'24"	101.93'	171.85'	N15°22'42"W
C2	266.57'	72.04'	15°29'01"	36.24'	71.82'	N55°39'55"W

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8/20/09

PROPERTY MAP

WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1" = 40' C.I.: N/A DATE: OCTOBER 2008

SHEET 2 OF 8

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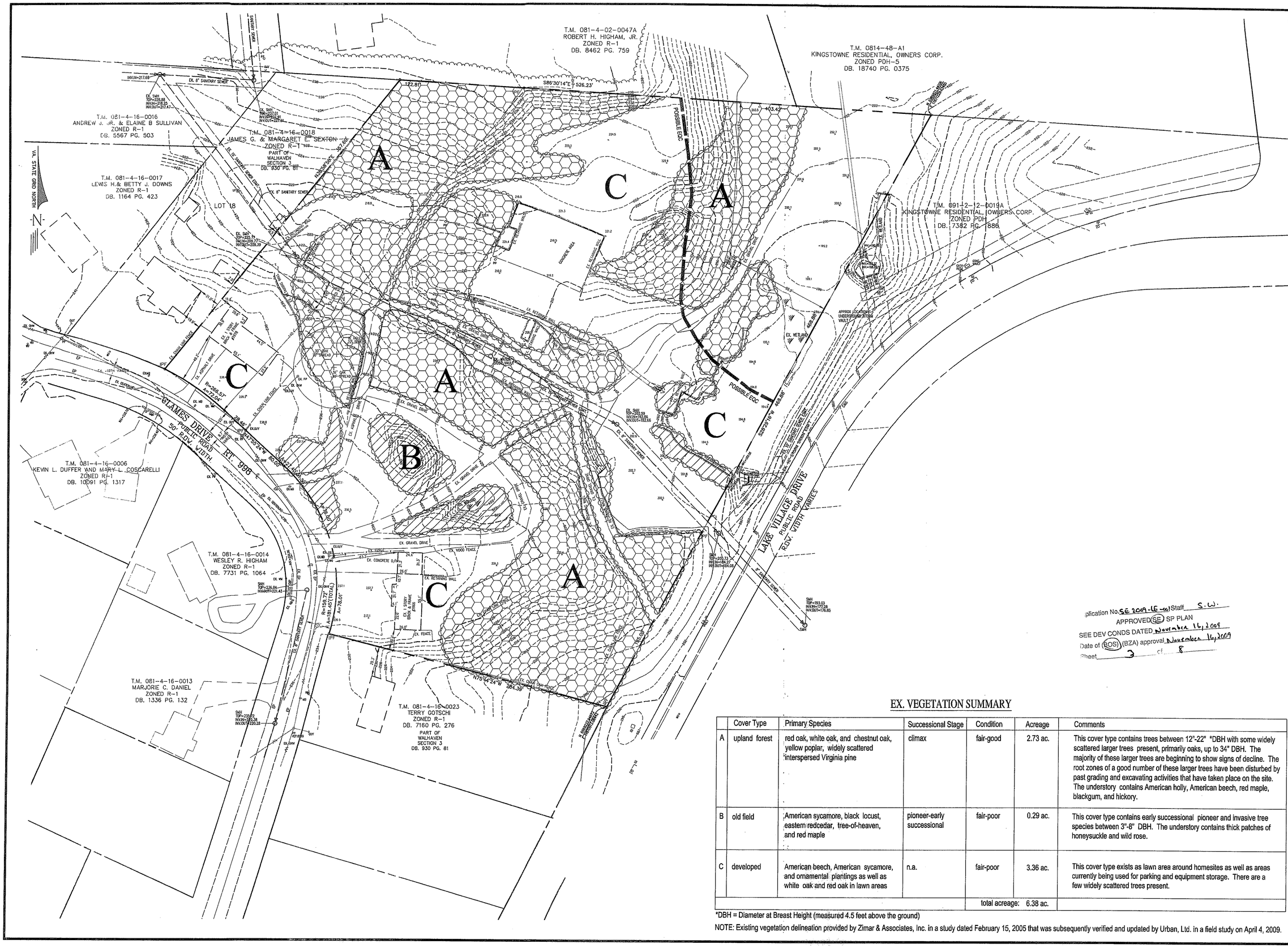

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Sheet 3 of 8

EX. VEGETATION SUMMARY

	Cover Type	Primary Species	Successional Stage	Condition	Acreage	Comments
A	upland forest	red oak, white oak, and chestnut oak, yellow poplar, widely scattered interspersed Virginia pine	climax	fair-good	2.73 ac.	This cover type contains trees between 12"-22" *DBH with some widely scattered larger trees present, primarily oaks, up to 34" DBH. The majority of these larger trees are beginning to show signs of decline. The root zones of a good number of these larger trees have been disturbed by past grading and excavating activities that have taken place on the site. The understory contains American holly, American beech, red maple, blackgum, and hickory.
B	old field	American sycamore, black locust, eastern redcedar, tree-of-heaven, and red maple	pioneer-early successional	fair-poor	0.29 ac.	This cover type contains early successional pioneer and invasive tree species between 3"-8" DBH. The understory contains thick patches of honeysuckle and wild rose.
C	developed	American beech, American sycamore, and ornamental plantings as well as white oak and red oak in lawn areas	n.a.	fair-poor	3.36 ac.	This cover type exists as lawn area around homesites as well as areas currently being used for parking and equipment storage. There are a few widely scattered trees present.
				total acreage:	6.38 ac.	

*DBH = Diameter at Breast Height (measured 4.5 feet above the ground)

NOTE: Existing vegetation delineation provided by Zimar & Associates, Inc. in a study dated February 15, 2005 that was subsequently verified and updated by Urban, Ltd. in a field study on April 4, 2009.

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Annandale, Virginia 22003
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www.urban-ltd.com

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EXISTING VEGETATION MAP

WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1" = 40' C.I.: 2' DATE: OCTOBER 2008

SHEET 3 OF 8

FILE No. MISC 1734

NOTES

1. ALL REFERENCES HEREIN TO ZONING ORDINANCE SHALL REFER TO THE ZONING ORDINANCE OF FAIRFAX COUNTY, VIRGINIA.

2. THE SUBJECT PROPERTY IS IDENTIFIED ON FAIRFAX COUNTY TAX MAPS AS #081-4-16-0019, #081-4-16-0020, #081-4-16-0021 AND #081-4-16-0022.

3. THE ENTIRE 6.387 ACRE SUBJECT PROPERTY IS CURRENTLY ZONED R-1 AND IS OWNED BY NAZIR A. & ASHFAF N. BHAGAT.

4. THE SOURCE OF BOUNDARY AND TOPOGRAPHY (2 FOOT CONTOUR INTERVALS) IS FROM A FIELD RUN SURVEY BY URBAN, LTD. IN APRIL, 2004.

5. THE PROPERTY SHOWN HEREON IS LOCATED IN A ZONE "X" FLOOD DESIGNATION AREA, WHICH IS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOOD PLAIN AREA, IN ACCORDANCE WITH FLOOD INSURANCE RATE MAP 515525-0150-D, REVISED MARCH 5, 1990.

6. A PHASE II ENVIRONMENTAL SITE ASSESSMENT HAS BEEN PREPARED FOR THIS SITE, DATED AUGUST 6, 2002, BY ENGINEERING CONSULTING SERVICES, LTD. THERE ARE NO RECOGNIZED ENVIRONMENTAL CONDITIONS THAT PRESENT A MAJOR RISK OF HARM TO THE PUBLIC HEALTH OR ENVIRONMENT. THE RECOGNIZED ENVIRONMENTAL CONDITIONS ON SITE ARE LIMITED TO A SMALL AMOUNT OF METAL DEBRIS AND AN EMPTY 1000 GALLON SEPTIC TANK. THERE ARE NO KNOWN HAZARDOUS OR TOXIC SUBSTANCES LOCATED ON THIS SITE AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PARTS 116.4, 302.4 AND 355; ALL HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1- VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280.

7. THERE ARE NO KNOWN EXISTING EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THE PROPERTY.

8. THERE ARE NO GRAVE SITES KNOWN TO EXIST WITHIN THE BOUNDARIES OF THE SUBJECT PROPERTY.

9. THERE ARE 4 EXISTING STRUCTURES LOCATED ON THE SUBJECT PROPERTY; A RESIDENTIAL DWELLING STRUCTURE ON LOT 19, A SHED ON LOT 19, A SHED ON LOT 21 AND A RESIDENTIAL DWELLING STRUCTURE ON LOT 22. THE DATE OF CONSTRUCTION OF THE EXISTING RESIDENTIAL DWELLING STRUCTURE ON LOT 19 IS 1957. THE DATE OF CONSTRUCTION OF THE EXISTING RESIDENTIAL DWELLING STRUCTURE ON LOT 22 IS 1963.

10. ALL EXISTING STRUCTURES LOCATED ONSITE ARE TO BE REMOVED WITH THE DEVELOPMENT OF THIS PROPERTY. ALL EXISTING ONSITE DRIVEWAYS, WALLS, AND FENCES WILL BE REMOVED AT TIME OF DEVELOPMENT. ALL EXISTING EASEMENTS THAT CONFLICT WITH THE PROPOSED RESIDENTIAL USES DEPICTED ON THIS PLAN WILL BE VACATED AS NECESSARY.

11. THIS DEVELOPMENT WILL CONFORM TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS EXCEPT AS SPECIFIED BELOW.

12. PRIVATE STREETS SHALL HAVE AN INGRESS/EGRESS EASEMENT FOR PUBLIC ACCESS TO THE PROPERTY FROM CONNECTING PUBLIC STREETS.

13. AN ENTRY FEATURE MAY CONSIST OF SPECIAL PAVING, LANDSCAPING, MASONRY PIERS OR WALLS AND SIGNAGE.

14. THE SITE IS TO BE SERVED BY PUBLIC WATER AND SEWER. ALL OTHER PUBLIC UTILITIES SHALL BE PROVIDED TO THE SITE BY EXTENSION OF EXISTING SERVICE IN THE AREA. SOLID WASTE REMOVAL SHALL BE PROVIDED BY PRIVATE CONTRACTOR.

15. FINAL LOCATION OF SIDEWALK AND TRAIL TO BE DETERMINED AT TIME OF FINAL ENGINEERING. THE SIDEWALK MAY BE RELOCATED ADJACENT TO UNITS A11-12.

16. THE BUILDING FOOTPRINTS REPRESENTED ARE APPROXIMATE. THE SIZE OF THE BUILDING FOOTPRINTS MAY BE INCREASED OR DECREASED AND/OR THE THE NUMBER OF RESIDENTIAL LOTS MAY BE DECREASED SO LONG AS THE OPEN SPACE PROVIDED IN THE TABULATION, THE MINIMUM DIMENSIONS TO THE PERIPHERAL LOT LINES, AND REFERENCED MINIMUM SETBACKS FOR THE RESIDENTIAL UNITS AS SHOWN ON THIS PLAN ARE NOT DIMINISHED.

17. IN ACCORDANCE WITH SECTION 9-004 OF THE ZONING ORDINANCE, MINOR MODIFICATIONS TO THE SIZES, DIMENSIONS, AND/OR FOOTPRINTS AND LOCATIONS OF BUILDINGS, SIDEWALKS, TRAILS AND UTILITIES MAY OCCUR WITH FINAL ENGINEERING AND DESIGN WITHOUT REQUIRING AN AMENDMENT TO THIS SPECIAL EXCEPTION.

18. PURSUANT TO SECTIONS 9-004 OF THE ZONING ORDINÃNCE, THE LIMITS OF CLEARING AND GRADING AND THE LANDSCAPED OPEN SPACE AREA REPRESENTED ON THE PLANS ARE PRELIMINARY AND SUBJECT TO MINOR MODIFICATION AT THE TIME OF FINAL ENGINEERING AND DESIGN. LANDSCAPING AND TREE COVER CONSISTING OF A COMBINATION OF EVERGREEN AND DECIDUOUS TREES WILL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF ARTICLE 13.

19. RETAINING WALLS TO BE GEO-BLOCK GRAVITY WALLS OR SIMILAR.

20. THE STORM WATER MANAGEMENT (SWM) FACILITY SHOWN ON THE PLAN IS CONCEPTUAL WITH RESPECT TO LOCATION AND SIZE. ITS FINAL DESIGN AND CONFIGURATION WILL BE DETERMINED AT TIME OF FINAL ENGINEERING. FURTHERMORE, STORM WATER MANAGEMENT MAY BE PROVIDED OFF-SITE IN WHICH CASE THE PROPOSED SWM FACILITY AREA WILL REMAIN AS LANDSCAPED OPEN SPACE AND THE TRAIL SHOWN ADJACENT TO IT WILL BE RE-ALIGNED.

REQUESTED WAIVERS / MODIFICATIONS

1. MODIFICATION OF PFM 9-0202.2J (FIRE DEPARTMENT ACCESS), TO PERMIT A MODIFIED "HAMMER-HEAD" TURN-AROUND CONFIGURATION TO ENABLE LIMITS OF CLEARING AND GRADING TO BE ADJUSTED IN ORDER TO REDUCE IMPACT ON ADJACENT OFF-SITE TREES. IF MODIFICATION IS NOT GRANTED, AN ALTERNATIVE DESIGN AS REQUIRED BY THE FIRE DEPARTMENT SHALL BE PROVIDED AND LIMITS OF CLEARING AND GRADING SHALL BE MODIFIED.

2. WAIVER OF SECTION 9-306-5 OF THE ZONING ORDINANCE WHICH REQUIRES ANY SUCH USE TO BE ON A PARCEL OF LAND FRONTING ON, AND WITH DIRECT ACCESS TO, A COLLECTOR STREET OR MAJOR THOROUGHFARE.

3. WAIVER OR MODIFICATION OF SECTION 13-300, TRANSITIONAL SCREENING AND BARRIERS TO PERMIT THE INSTALLATION OF PLANT MATERIALS AS GENERALLY DEPICTED ON THE LANDSCAPE PLAN SHEET. SUCH WAIVER OR MODIFICATION IS REQUESTED PURSUANT TO SECTION 13-305 WHICH ALLOWS FOR SCREENING AND BARRIERS TO BE WAIVED OR MODIFIED FOR THE FOLLOWING REASONS:

   - WHERE THE BUILDING, A BARRIER AND/OR THE LAND BETWEEN THAT BUILDING AND THE PROPERTY LINE HAS BEEN SPECIFICALLY DESIGNED TO MINIMIZE ADVERSE IMPACT THROUGH A COMBINATION OF ARCHITECTURAL AND LANDSCAPING TECHNIQUES.

   -WHERE THE ADJACENT PROPERTY IS ZONED TO ALLOW A USE SIMILAR TO THAT OF THE PARCEL UNDER SITE PLAN.

WALHAVEN WOODS

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 submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:
Special Permits (8-011 2J & 2L) — Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-615 1G & 1N) — Commercial Revitalization Districts (9-622 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L) — PRC Plan (16-303 1E & 1O)
FDP P Districts (except PRC) (16-502 1F & 1Q) — Amendments (18-202 10F & 10I)

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

☑ 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 outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 5.

☑ 3. Provide:

Facility Name/ Type & No. (e.g. dry pond A, inf. trench, underground vault, etc.)	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 A	± 3.5 Ac	± 26 Ac	±30 Ac	±9,090 sf	± 19,640	± 6
Totals						

☑ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 5. Pond inlet and outlet pipe systems are shown on Sheet 5.

☑ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 5. Type of maintenance access road surface noted on the plat is asphalt or geoblock (asphalt, geoblock, gravel, etc.).

☑ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 6.

☑ 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 7.

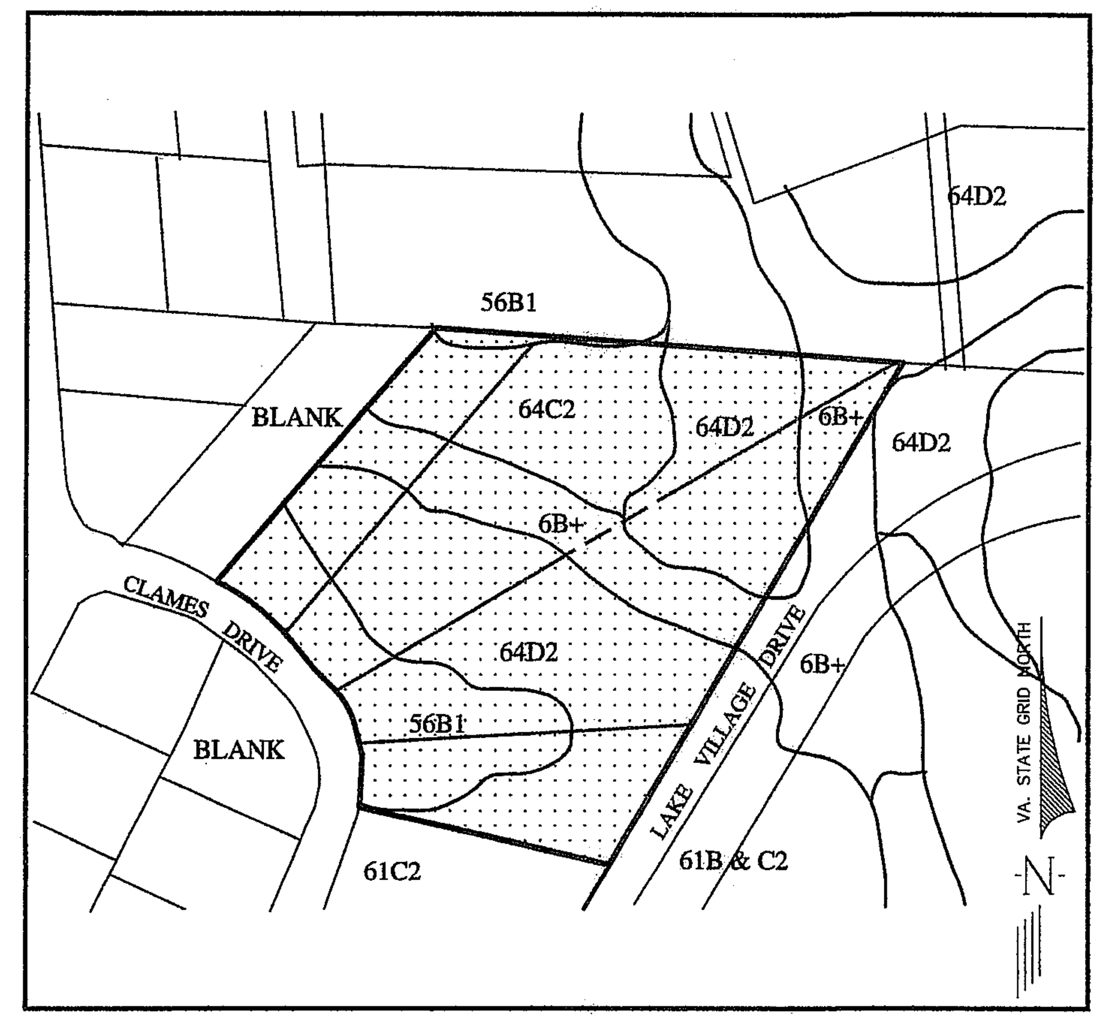
☑ 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 7.

☑ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 7.

☑ 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 4, NOTE 4.

☐ 11. A submission waiver is requested for ____

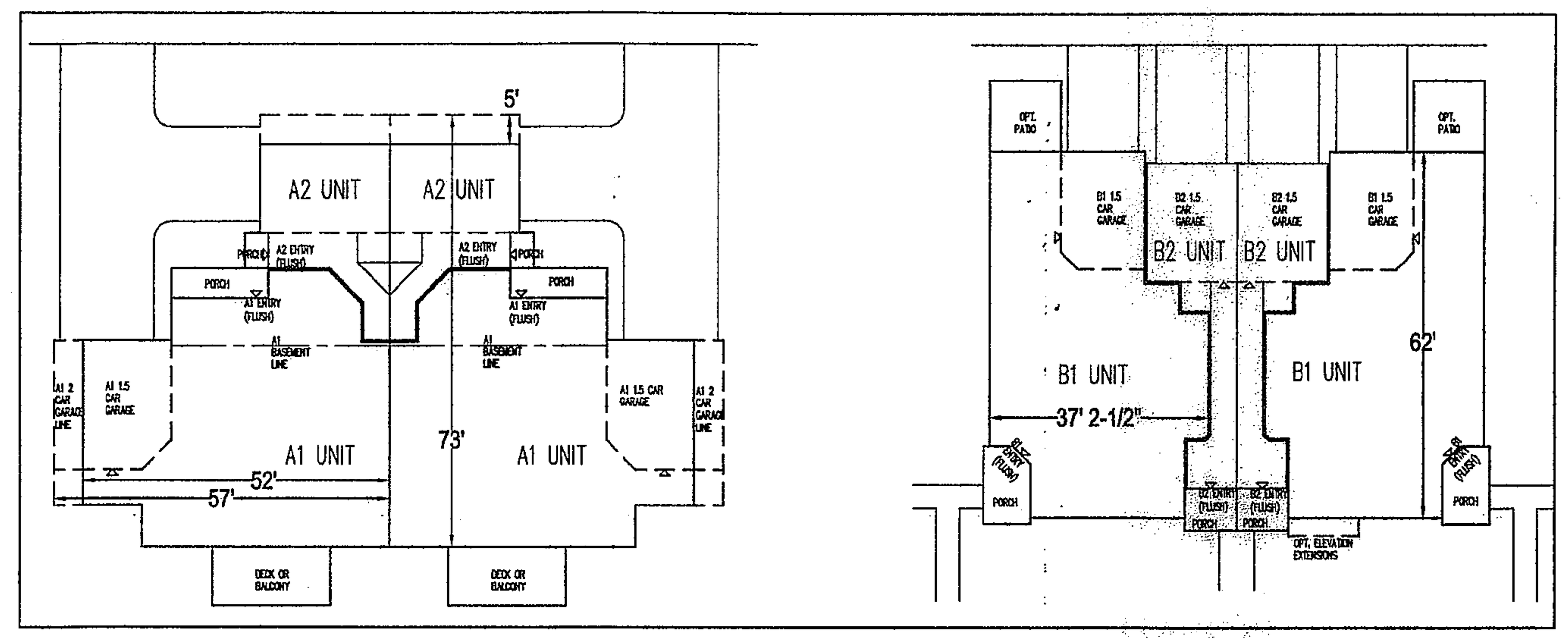
☐ 12. Stormwater management is not required because ____



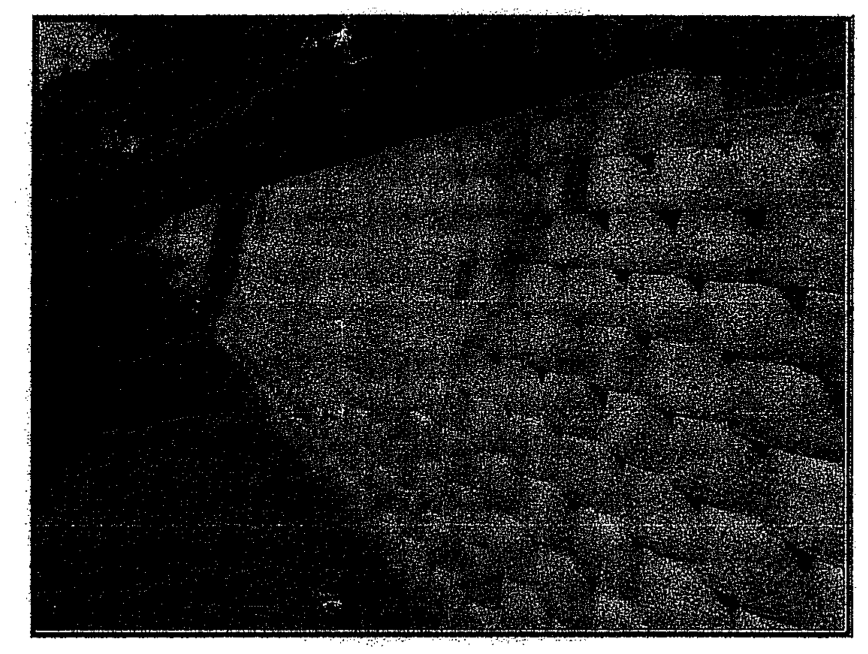
SOILS MAP
SCALE : 1"= 100'

SOIL I.D. NUMBERS	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	EROSION POTENTIAL	GEOTECHNICAL REPORT REQ'D	PROBLEM SOIL CLASS
64C2	SILTY/CLAYEY	MARGINAL	MARGINAL	MODERATE	MODERATE	NO	C
64D2	SILTY/CLAYEY	MARGINAL	MARGINAL	MODERATE	MODERATE	NO	C
56B1	KEMPSVILLE	GOOD	FAIR	LOW	LOW	MAYBE	B
6B+	HYATTSVILLE	FAIR	MARGINAL	LOW	LOW	MAYBE	B

NOTE: SOIL INFORMATION IS FROM CURRENT FAIRFAX COUNTY SOIL MAPS.



TYPICAL LOT/UNIT DETAIL
NOT TO SCALE



NOTE: RETAINING WALL PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY. RETAINING WALL MATERIAL COMPONENTS, HEIGHT, AND LENGTH MAY BE REVISED DURING FINAL ENGINEERING.

TYPICAL RETAINING WALL
NOT TO SCALE

ILLUSTRATIVE ARCHITECTURAL ELEVATIONS
(NOT TO SCALE)

NOTE: ARCHITECTURAL ELEVATIONS ARE ILLUSTRATIVE AND ARE INTENDED TO REPRESENT THE GENERAL DESIGN CHARACTER. DETAILS AND SPECIFIC MATERIALS MAY BE REVISED AT TIME OF FINAL ENGINEERING. AMENITIES AND ENTRY FEATURES SHOWN ARE ILLUSTRATIVE AND INTENDED TO REPRESENT THE GENERAL LOCATION, DESIGN CHARACTER AND QUALITY OF DESIGN. AMENITIES ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING.

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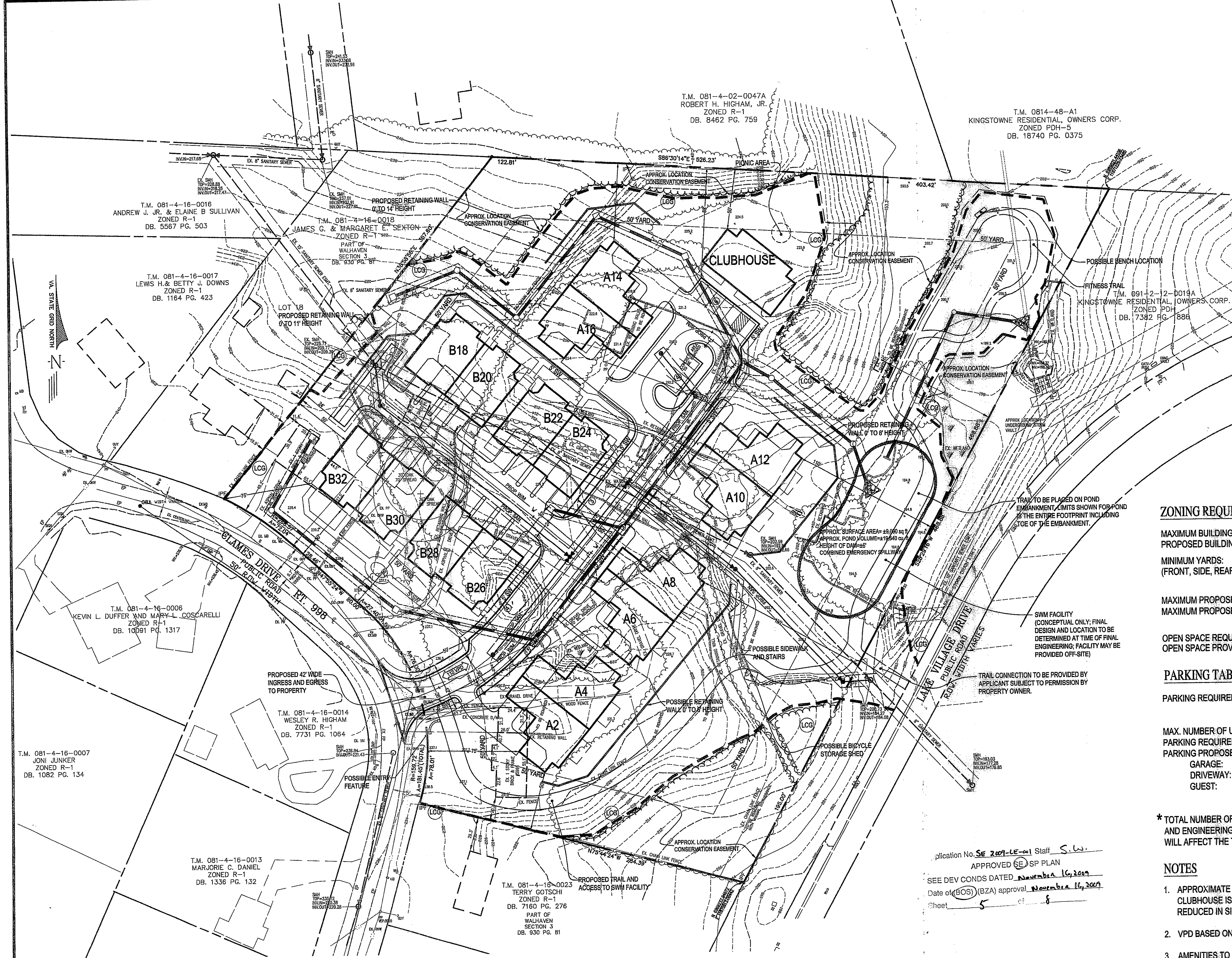

PLAN LEGEND:

- EXISTING CONTOUR
- EXISTING STORM DRAIN
- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING SAN. SEWER
- PROPOSED STREET CENTERLINE
- PROPOSED INGRESS / EGRESS ESMT.
- PROPOSED SAN. SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- LIMITS OF CLEARING AND GRADING
- PROPOSED TREELINE
- PROPOSED 6' TO 12' WIDE TRAIL

ZONING REQUIREMENTS (R-1 WITH SPECIAL EXCEPTION)

MAXIMUM BUILDING HEIGHT:	50 FT.
PROPOSED BUILDING HEIGHT:	35 FT.
MINIMUM YARDS: (FRONT, SIDE, REAR)	50 FT. WHERE YARD ABUTS OR IS ACROSS STREET FROM AN AREA ADOPTED IN THE COMPREHENSIVE PLAN FOR 0.2 TO 8 DWELLINGS UNITS PER ACRE.
MAXIMUM PROPOSED UNITS:	32 UNITS
MAXIMUM PROPOSED DENSITY:	32 / 6.387AC. = 5.01 UNITS/AC.
OPEN SPACE REQUIRED:	60% (3.83 AC.)
OPEN SPACE PROVIDED:	64% (4.08 AC.)

PARKING TABULATIONS

PARKING REQUIREMENT: 1 SPACE PER 4 DWELLING UNITS, PLUS 1 SPACE PER EMPLOYEE OR STAFF MEMBER ON DUTY

MAX. NUMBER OF UNITS:	32		
PARKING REQUIRED:	8		
PARKING PROPOSED:			
GARAGE:	40	to	56 SPACES
DRIVEWAY:	40	to	64 SPACES
GUEST:	17	to	17 SPACES
	*97	to	137 SPACES

* TOTAL NUMBER OF PROPOSED SPACES SUBJECT TO CHANGE WITH FINAL DESIGN AND ENGINEERING. SOME UNITS MAY HAVE AN OPTION FOR A 2-CAR GARAGE WHICH WILL AFFECT THE TOTAL NUMBER OF PARKING SPACES.

NOTES

1. APPROXIMATE SIZE OF CLUBHOUSE IS 45' x 70'. MAXIMUM HEIGHT OF CLUBHOUSE IS 35 FEET. CLUBHOUSE FOOTPRINT MAY BE MODIFIED OR REDUCED IN SIZE.
2. VPD BASED ON ITE MANUAL NUMBER OF 3.48 FOR SENIOR ADULT HOUSING.
3. AMENITIES TO CONSIST OF A CLUBHOUSE, PICNIC AREA, FITNESS TRAIL AND BENCHES. BICYCLE STORAGE MAY BE PROVIDED WITHIN A STAND-ALONE STRUCTURE OR MAY BE INCORPORATED WITHIN THE CLUBHOUSE.
4. MAINTENANCE ACCESS TO THE STORM WATER MANAGEMENT FACILITY MAY BE PROVIDED BY A 12 FOOT WIDE ASPHALT TRAIL OR A COMBINATION OF ASPHALT AND GEOBLOCK (GRASSCRETE), WITH A MINIMUM ASPHALT TRAIL WIDTH OF 6 FEET.

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SPECIAL EXCEPTION PLAT

WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION

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FAIRFAX COUNTY, VIRGINIA

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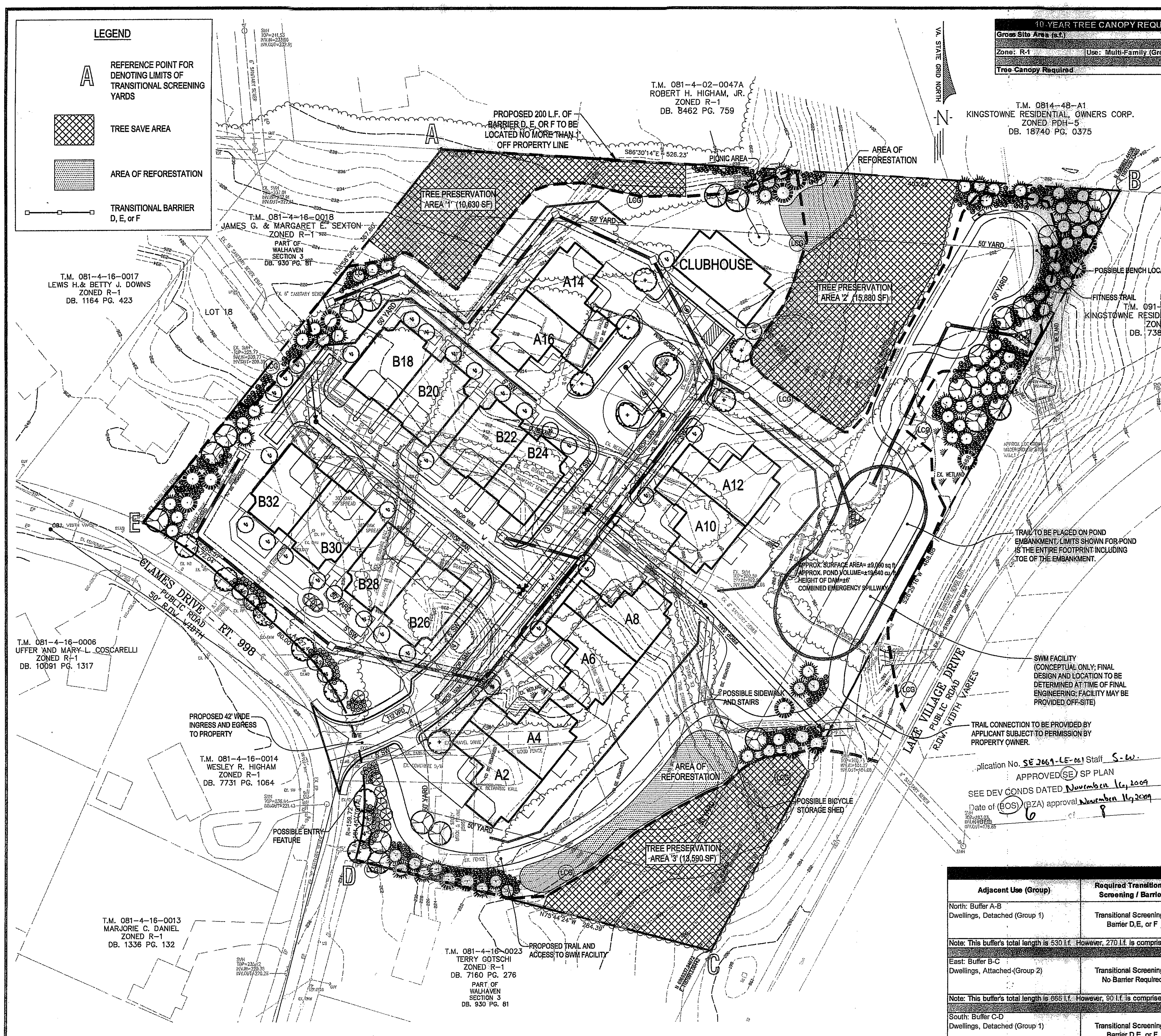

10-YEAR TREE CANOPY REQUIREMENT CALCULATIONS		
Gross Site Area (s.f.)		278,238
Zone: R-1	Use: Multi-Family (Group 3)	
Tree Canopy Required	30%	83,471

10-YEAR TREE CANOPY PROVIDED	
Total Canopy Area Provided Through Tree Preservation (s.f.)	50,125
Total Proposed Canopy Area (s.f.)	35,088
Total Tree Canopy Provided (s.f.)	85,213

TREE PRESERVATION TARGET CALCULATIONS			
Gross Site Area (s.f.)			278,238
Pre-Development Area of Existing Tree Canopy (s.f.)			131,396
Percentage of Gross Site Area Covered by Existing Tree Canopy			47%
Tree Preservation Target			
10-Year Tree Canopy Requirement Percentage			30%
10-Year Tree Canopy Required (s.f.) (See "10-Year Tree Canopy Calculations" Table)			83,471
Percentage of the 10-Year Tree Canopy Requirement that Should be Met Through Tree Preservation (This is the "Tree Preservation Target")			47%
Area of the 10-Year Tree Canopy Requirement that Should be Met Through Tree Preservation (s.f.)			39,232
Area of the 10-Year Tree Canopy Requirement that Will be Met Through Tree Preservation (s.f.) (See "Tree Preservation Calculations" Table)			50,125
Proposed Percentage of 10-Year Tree Canopy Requirement that Will be Met Through Tree Preservation			60%
Tree Preservation Target met (%)...	60%	is greater than...	47%
Tree Preservation Target met (s.f.)...	50,125	is greater than...	39,232

TREE PRESERVATION CALCULATIONS				
Tree Preservation Target (%)				47%
Tree Preservation Target (s.f.)				39,232
Tree Preservation:				
Tree Preservation Areas	Cover Type	S.F.	Credit Factor	Total
Area '1'	Type 'A'	10,630	1.25	13,288
Area '2'	Type 'A'	15,880	1.25	19,850
Area '3'	Type 'A'	13,590	1.25	16,988
Total Tree Preservation Provided (s.f.)				50,125

PLANT SCHEDULE

Key	Qty.	Botanical Name	Common Name	Size	Type	Remarks
		Cat. IV Deciduous Trees				
	37	Acer rubrum 'October Glory'	October Glory Red Maple	3" Cal.	B & B	Uniform branching pattern
		Platanus occidentalis	Sycamore		B & B	Uniform branching pattern
		Liriodendron tulipifera	Tulip Poplar		B & B	Uniform branching pattern
		Quercus phellos	Willow Oak		B & B	Uniform branching pattern
		Cat. II Deciduous Trees				
	36	Amelanchier arborea	Downey Serviceberry	3" Cal.	B & B	Multi-stem, Min. 3 heavy stems
		Cercis canadensis	Eastern Redbud		B & B	Multi-stem, Min. 3 heavy stems
		Magnolia virginiana	Sweetbay Magnolia		B & B	Multi-stem, Min. 3 heavy stems
		Cat. I Deciduous Trees				
	8	Acer rubrum 'Columnare'	Columnar Red Maple	3" Cal.	B & B	Multi-stem, Min. 3 heavy stems
		Fagus sylvatica 'Fastigiata'	Fastigate European Beech		B & B	Multi-stem, Min. 3 heavy stems
		Cat. III Evergreen Trees				
	16	Pinus echinata	Short-Leaf Pine	10' Ht.	B & B	Full to ground, Dense
		Cat. II Evergreen Trees				
	66	Ilex opaca	American Holly	10' Ht.	B & B	Full to ground, Dense
		Juniperus virginiana	Eastern Red Cedar		B & B	Full to ground, Dense
		Taxus cuspidata 'Capitata'	Pyramidal Japanese Yew		B & B	Full to ground, Dense
		Shrubs				
	481	Aronia arbutifolia	Red Chokecherry	18-36" Ht.	B & B	Dense
		Cephalanthus occidentalis	Buttonbush		B & B	Dense
		Cornus sericea	Redosier Dogwood		B & B	Dense
		Ilex glabra	Inkberry		B & B	Dense
		Lindera benzoin	Spicebush		B & B	Dense
		Myrica cerifera	Wax Myrtle		B & B	Dense
		Osmanthus americanus	Devilwood Osmanthus		B & B	Dense
		Pieris floribunda	Evergreen Mountain Fetterbush		B & B	Dense
		Rhododenron maximum	Rosebay Rhododendron		B & B	Dense
		Spiraea x Vanhouttei	Vanhouttei Spirea		B & B	Dense
		Taxus canadensis	Canadian Yew		B & B	Dense
		Viburnum dentatum	Arrowwood Viburnum		B & B	Dense

TRANSITIONAL SCREENING AND BARRIER CALCULATIONS

Adjacent Use (Group)	Required Transitional Screening / Barrier	Width (l.f.)	Length (l.f.)	Area (s.f.)	Required 10-Year Canopy Cover (75%)	Provided Trees and Shrubs			Total Canopy
North: Buffer A-B Dwellings, Detached (Group 1)	Transitional Screening 1 Barrier D,E, or F	25	260	6,500	4,875	2	Lg. Evergreen @	262.50 s.f.	525 s.f.
						16	Md. Evergreen @	187.50 s.f.	3,000 s.f.
						4	Lg. Deciduous @	375.00 s.f.	1,500 s.f.
					3 Shrubs /10 l.f. (78 required)	78	Evergreen Shrubs		
Note: This buffer's total length is 530 l.f. However, 270 l.f. is comprised of tree preservation area. Therefore, remaining 260 l.f. is used to compute screening requirements.								Total	5,025 s.f.
East: Buffer B-C Dwellings, Attached (Group 2)	Transitional Screening 1 No Barrier Required	25	575	14,375	10,781	8	Lg. Evergreen @	262.50 s.f.	2,100 s.f.
						29	Md. Evergreen @	187.50 s.f.	5,438 s.f.
						9	Lg. Deciduous @	375.00 s.f.	3,375 s.f.
					3 Shrubs /10 l.f. (173 required)	173	Evergreen Shrubs		
Note: This buffer's total length is 665 l.f. However, 90 l.f. is comprised of tree preservation area. Therefore, remaining 575 l.f. is used to compute screening requirements.								Total	10,913 s.f.
South: Buffer C-D Dwellings, Detached (Group 1)	Transitional Screening 1 Barrier D,E, or F	25	145	3,625	2,719	2	Lg. Evergreen @	262.50 s.f.	525 s.f.
						8	Md. Evergreen @	187.50 s.f.	1,500 s.f.
						2	Lg. Deciduous @	375.00 s.f.	750 s.f.
					3 Shrubs /10 l.f. (44 required)	44	Evergreen Shrubs		
Note: This buffer's total length is 285 l.f. However, 140 l.f. is comprised of tree preservation area. Therefore, remaining 145 l.f. is used to compute screening requirements.								Total	2,775 s.f.
Southwest: Buffer D-E Dwellings, Detached (Group 1)	Transitional Screening 1 Barrier D,E, or F	25	340	8,500	4,250	7	Lg. Deciduous @	375.00 s.f.	2,625 s.f.
					(Per Modification Request)	6	Md. Deciduous @	187.50 s.f.	1,125 s.f.
						6	Sm. Deciduous @	93.75 s.f.	563 s.f.
					3 Shrubs /10 l.f. (102 required)	102	Shrubs		
Note: See Buffer Modification Request								Total	4,313 s.f.
West: Buffer E-A Dwellings, Detached (Group 1)	Transitional Screening 1 Barrier D,E, or F	25	280	7,000	5,250	4	Lg. Evergreen @	262.50 s.f.	1,050 s.f.
						13	Md. Evergreen @	187.50 s.f.	2,438 s.f.
						5	Lg. Deciduous @	375.00 s.f.	1,875 s.f.
					3 Shrubs /10 l.f. (84 required)	84	Evergreen Shrubs		
Note: This buffer's total length is 370 l.f. However, 90 l.f. is comprised of tree preservation area. Therefore, remaining 280 l.f. is used to compute screening requirements.								Total	5,363 s.f.

NOTES:

1. LANDSCAPING SHOWN IS CONCEPTUAL AND PRESENTED ONLY TO ILLUSTRATE CHARACTER AND QUALITY OF DESIGN. TREESAVE AREA, PLANT LOCATIONS, SPECIES AND QUANTITIES MAY BE ADJUSTED WITH FINAL DESIGN AND ENGINEERING.

2. SITE CANOPY COVERAGE PROVIDED AT TIME OF SITE PLAN WILL MEET MINIMUM REQUIREMENTS IN PFM.

TRANSITIONAL SCREENING YARD MODIFICATIONS

Transitional Screening Yard	Planting Modification	Justification	Barrier Modification	Justification
North: Buffer A-B	None	N/A	Length reduction to 200 l.f.	Due to slope, remaining barrier would be ineffective
East: Buffer B-C	None	N/A	None	N/A
South: Buffer C-D	None	N/A	Barrier waiver requested	Tree preservation, dense evergreen planting, and retaining wall provide adequate screening
Southwest: Buffer D-E	Canopy cover reduction from 75% to 50%; Evergreen planting waiver requested	Excessive evergreen planting would be inconsistent with the existing community design	Barrier waiver requested	Barrier would be inconsistent with the existing community design
West: Buffer E-A	None	N/A	Barrier waiver requested	Tree preservation, dense evergreen planting, and retaining wall provide adequate screening

No.	DATE	DESCRIPTION	REV.BY	APPROVED	DATE

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COMMONWEALTH OF VIRGINIA
DAVID T. McELHANEY
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8/03/09
PROFESSIONAL ENGINEER

LANDSCAPE PLAN

WALHAVEN WOODS PLAT OF SPECIAL EXCEPTION

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE: OCTOBER 2008

SCALE: 1" = 40'   C.I.: 2'

SHEET 6 OF 8

FILE No. MISC 1734

BMP PHOSPHOROUS REMOVAL COMPUTATIONS

Plan Name: Clames Drive Date: 09/22/08

Plan Number: Engineer: MJG

Watershed Data

Part 1 List All of the Subareas and "C" Factors Used in the BMP Computations.

	Subarea Designation and Description (1)			"C" (2)	Acres (3)
1	Onsite	Residential SFA	DryPond	0.65	2.60
2	Onsite	Residential SFA	Uncontrolled	0.50	2.57
3	Onsite	Open Space	OpenSpace	0.20	1.22

NOTE: "C" Factors developed using % Imperviousness for existing and proposed conditions. "C" Factors for future uses were developed using PFM Table 6.6.

Phosphorus Removal

Part 2 Compute the Weighted Average "C" Factor For the Site.

(A) Area of Site (a) 6.39 acres

(B)

	Subarea Designation and Description (1)			"C" (2)	x	Acres (3)	=	Product (4)
1	Onsite	Residential SFA	DryPond	0.65	x	2.60	=	1.69
2	Onsite	Residential SFA	Uncontrolled	0.50	x	2.57	=	1.29
3	Onsite	Open Space	OpenSpace	0.20	x	1.22	=	0.24
					(b)	Total	=	3.22

(C) Weighted average "C" factor (b) / (a) = (c) 0.50

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)
1	SFA	DryPond	40.0	x	0.41	x	1.29	=	21.0
2	SFA	Uncontrolled	0.0	x	0.40	x	0.99	=	0.0
3	Open Space	OpenSpace	100.0	x	0.19	x	1.00	=	19.1

(A) Total Phosphorus Removal (a) Total 40.1%

Part 4 Determine Compliance with Phosphorus Removal Requirement.

(A) Select Requirement (a) 40%

Water Supply Overlay District (Occoquan) 50 %
Chesapeake Bay Resource Preservation Area (New Development) 40 %
Chesapeake Bay Resource Preservation Area (Redevelopment) %
[1-0.9 x ("l"pre / "l"post)] x 100

(B) If Line 3 (a) is greater than or equal to Line 4 (a), then the Phosphorus removal requirement is satisfied.

Line 3 (a)		Line 4 (a)
40.1%	>	40%

Storage Volume

Part 7 Compute the Weighted Average "C" Factor for Each Proposed BMP Facility.

(A) List the areas to be controlled by the proposed BMP

	Subarea Designation (1)			"C" (2)	x	Acres (3)	=	Product (4)
1	Onsite	Residential SFA	DryPond	0.65	x	2.60	=	1.69
					(a)	2.60	(b)	1.69

(C) Weighted average "C" factor (b) / (a) = (c) 0.65

Part 8 Determine the Storage Required for SWM/BMP Ponds

(A) **Extended Detention Dry Pond**
Chart A6-40 value (Appendix 4-3) for BMP storage per acre
[(4375 * "C") - 875] or [31.25 x %Imp.] (a) 1968.75 cf/ac

Design 1 (48 hour drawdown)
Line 7 (a) 2.60 x Line 8 (a) 1968.8 = 5,119 cf

(B) **Wet Pond**
Volume of Runoff per acre from mean storm
[1452 * "C"] = 1452 X Line 7c 0.65 = (b) 943.8 cf/ac

Design 1 (2.5 x Volume of runoff from mean storm event in wet storage with extended detention above permanent pool)
Wet Storage
2.5 x Line 7(a) 6.50 x Line 8(b) 943.8 = 6,135 cf
Extended Detention
Line 7(a) 2.60 x Line 8(a) 1968.75 = 5,119 cf

Design 2 (4.0 x Volume of runoff from mean storm)
4.0 x Line 7(a) 10.4 x Line 8(b) 943.8 = 9,816 cf

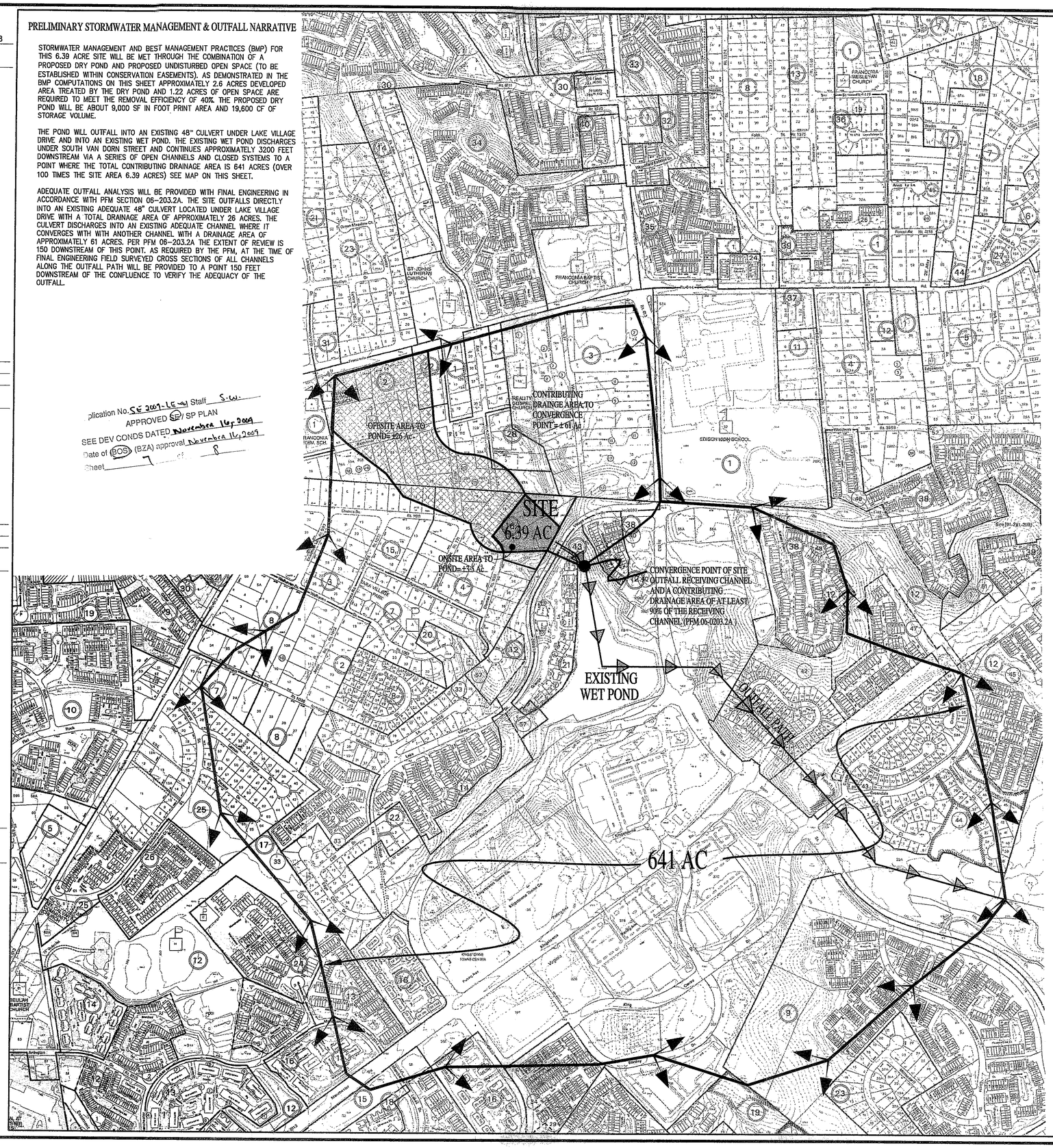
PRELIMINARY STORMWATER MANAGEMENT & OUTFALL NARRATIVE

STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES (BMP) FOR THIS 6.39 ACRE SITE WILL BE MET THROUGH THE COMBINATION OF A PROPOSED DRY POND AND PROPOSED UNDISTURBED OPEN SPACE (TO BE ESTABLISHED WITHIN CONSERVATION EASEMENTS). AS DEMONSTRATED IN THE BMP COMPUTATIONS ON THIS SHEET APPROXIMATELY 2.6 ACRES DEVELOPED AREA TREATED BY THE DRY POND AND 1.22 ACRES OF OPEN SPACE ARE REQUIRED TO MEET THE REMOVAL EFFICIENCY OF 40%. THE PROPOSED DRY POND WILL BE ABOUT 9,000 SF IN FOOT PRINT AREA AND 19,600 CF OF STORAGE VOLUME.

THE POND WILL OUTFALL INTO AN EXISTING 48" CULVERT UNDER LAKE VILLAGE DRIVE AND INTO AN EXISTING WET POND. THE EXISTING WET POND DISCHARGES UNDER SOUTH VAN DORN STREET AND CONTINUES APPROXIMATELY 3200 FEET DOWNSTREAM VIA A SERIES OF OPEN CHANNELS AND CLOSED SYSTEMS TO A POINT WHERE THE TOTAL CONTRIBUTING DRAINAGE AREA IS 641 ACRES (OVER 100 TIMES THE SITE AREA 6.39 ACRES) SEE MAP ON THIS SHEET.

ADEQUATE OUTFALL ANALYSIS WILL BE PROVIDED WITH FINAL ENGINEERING IN ACCORDANCE WITH PFM SECTION 06-203.2A. THE SITE OUTFALLS DIRECTLY INTO AN EXISTING ADEQUATE 48" CULVERT LOCATED UNDER LAKE VILLAGE DRIVE WITH A TOTAL DRAINAGE AREA OF APPROXIMATELY 26 ACRES. THE CULVERT DISCHARGES INTO AN EXISTING ADEQUATE CHANNEL WHERE IT CONVERGES WITH WITH ANOTHER CHANNEL WITH A DRAINAGE AREA OF APPROXIMATELY 61 ACRES. PER PFM 06-203.2A THE EXTENT OF REVIEW IS 150 DOWNSTREAM OF THIS POINT. AS REQUIRED BY THE PFM, AT THE TIME OF FINAL ENGINEERING FIELD SURVEYED CROSS SECTIONS OF ALL CHANNELS ALONG THE OUTFALL PATH WILL BE PROVIDED TO A POINT 150 FEET DOWNSTREAM OF THE CONFLUENCE TO VERIFY THE ADEQUACY OF THE OUTFALL.

Application No. SE 2007-LE-041 Staff S.W.
APPROVED SP / SP PLAN
SEE DEV CONDS DATED November 16, 2009
Date of BOS (BZA) approval November 16, 2009
Sheet 7 of 8



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COMMONWEALTH OF VIRGINIA
DAVID T. McKELDIN
Lic. No. 022048
8/29/08
PROFESSIONAL ENGINEER

PRELIMINARY SWM PLAN AND NARRATIVE

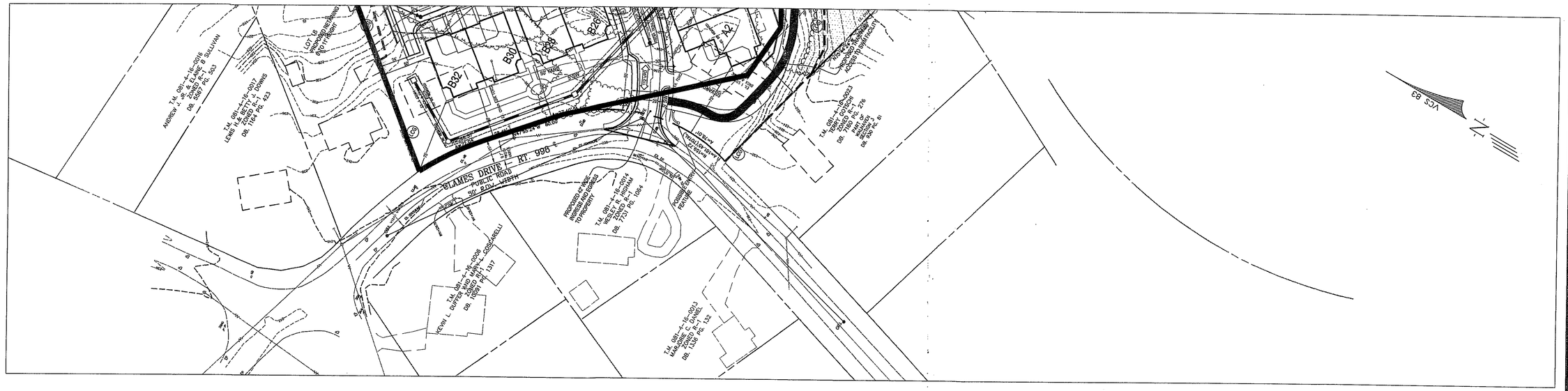
WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION

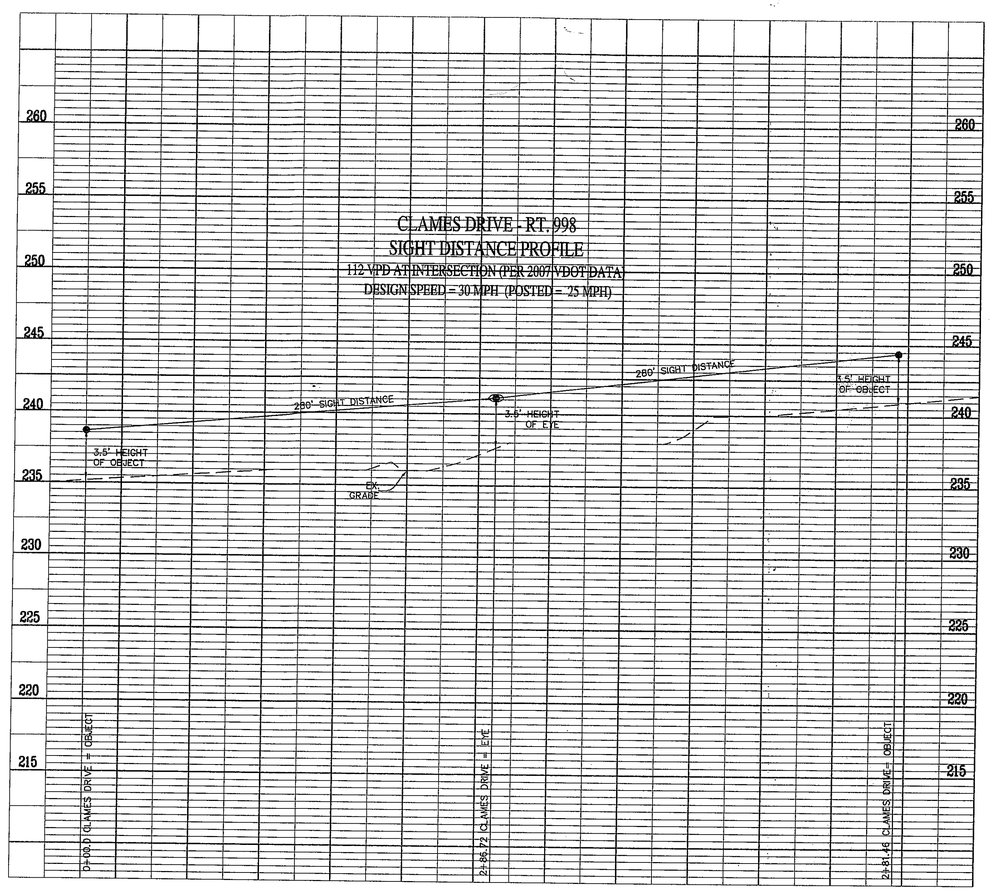
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=400' C.I.: 5' DATE: OCTOBER 2008

SHEET 7 OF 8

FILE No. MISC 1734





plication No. SE 2009-LE-001 Staff S.W.
APPROVED (SE) SP PLAN
SEE DEV CONDS DATED November 16, 2009
Date of (BOS) (BZA) approval November 16, 2009
Sheet 8 of 8

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DAVID T. McELHANEY
Lic. No. 022048
8/10/09
PROFESSIONAL ENGINEER

SIGHT DISTANCE PROFILE

WALHAVEN WOODS
PLAT OF SPECIAL EXCEPTION

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SCALE: 1"= 50'
C.I.: 5'
DATE: OCTOBER 2008

SHEET
8
OF
8

FILE No.
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