

# 11928 WAPLES MILL ROAD

OAKTON, VIRGINIA

## SPECIAL EXCEPTION PLAN

### SULLY DISTRICT FAIRFAX COUNTY, VIRGINIA

APRIL 4, 2007  
 REV. AUGUST 27, 2007  
 REV. SEPTEMBER 25, 2007  
 REV. OCTOBER 22, 2007  
 REV. NOVEMBER 09, 2007

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#### APPLICANT/OWNER/AGENT

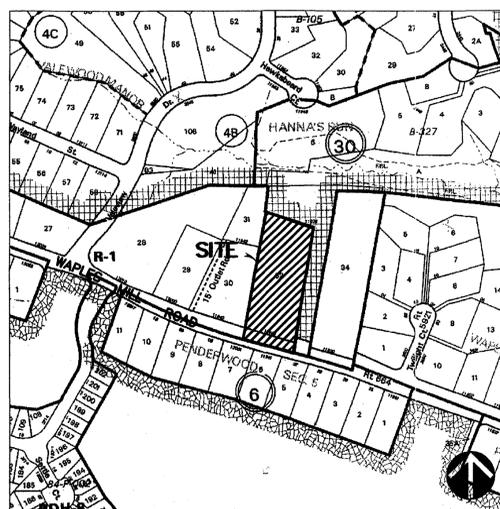
MS. PATRICE MCGINN  
 11928 WAPLES MILL ROAD  
 OAKTON, VIRGINIA 22030  
 FAIRFAX COUNTY

#### ATTORNEY

SACK, HARRIS & MARTIN  
 8270 GREENSBORO DRIVE  
 SUITE 630  
 MCLEAN, VIRGINIA 22102  
 CONTACT: KEITH C. MARTIN  
 (703) 883-0102

#### ENGINEER/LANDSCAPE ARCHITECT

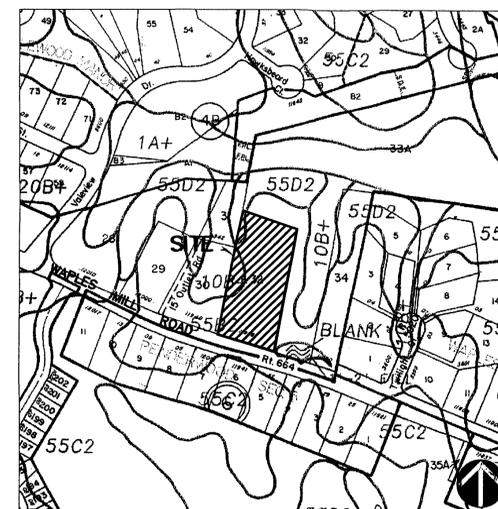
VIKA INC.  
 8180 GREENSBORO DRIVE  
 SUITE 200  
 MCLEAN, VIRGINIA 22102  
 CONTACT: BOB COCHRAN  
 (703) 442-7800



**VICINITY MAP**

SCALE: 1"=300'

TM NO. 46-1 ((1)) 0032



**SOILS MAP**

SCALE: 1"=300'

TM NO. 46-1 ((1)) 0032

SE 2007-30-02  
 APPROVED SPECIAL EXCEPTION PLAN  
 DEV CONDS DATED February 21, 2008  
 (Signature)



RECEIVED  
 Department of Planning  
 NOV 09 2007  
 Zoning Evaluation Division

**NOTES**

1. THE PROPERTY THAT IS THE SUBJECT OF THE SPECIAL EXCEPTION IS IDENTIFIED ON THE FAIRFAX COUNTY TAX ASSESSMENT MAP AS 046-1-01-0032. THE PROPERTY IS OWNED BY PATRICE E. MCGINN BY DEED BOOK 1584 AT PG. 1501 AND IS CURRENTLY ZONED R-1
2. THE HORIZONTAL DATUM IS DEED NORTH.
3. THE TOPOGRAPHY SHOWN HEREON HAS BEEN TAKEN FROM EXISTING RECORDS AND DOES NOT REPRESENT A FIELD RUN SURVEY BY VIKI INC. THE CONTOUR INTERVAL IS TWO (2) FEET.
4. THE BOUNDARY INFORMATION SHOWN HEREON HAS BEEN TAKEN FROM EXISTING RECORDS AND DOES NOT REPRESENT A FIELD RUN SURVEY BY VIKI INC.
5. THE PROPERTY IS LOCATED ON LAND UNIT F4 - FOX LAKE COMMUNITY PLANNING SECTOR OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN.
6. PUBLIC WATER IS AVAILABLE TO SERVE THE DEVELOPMENT. SANITARY SEWER WILL BE PROVIDED IN TRENCHES AT THE REAR OF THE SITE.
7. STORMWATER MANAGEMENT SHALL BE PROVIDED IN TWO INFILTRATION/PERCOLATION TRENCHES. (ONE TRENCH PER EACH LOT).
8. TO THE BEST OF OUR KNOWLEDGE, NO GRAVE SITES OR STRUCTURES MARKING A BURIAL SITE ARE PRESENT ON THE SUBJECT PROPERTY.
9. TO THE BEST OF OUR KNOWLEDGE, NO HAZARDOUS OR TOXIC SUBSTANCES ARE KNOWN TO EXIST ON THE SUBJECT PROPERTY.
10. THE SINGLE FAMILY DWELLING THAT CURRENTLY EXISTS ON THE PARCEL AND WAS CONSTRUCTED IN APPROXIMATELY 1938. THE EXISTING SINGLE FAMILY DETACHED STRUCTURE IS TO REMAIN.
11. THE ENTIRE SUBJECT PROPERTY IS LOCATED WITHIN AN RMA ZONE. NO FLOODPLAIN, R.P.A. OR ENVIRONMENTAL QUALITY CORRIDOR CURRENTLY EXIST ON THIS PROPERTY.
12. THERE IS A PROPOSED TRAIL INDICATED ON THE SOUTHSIDE OF WAPLES MILL ROAD, STATE ROUTE #664 AS SHOWN ON THE FAIRFAX COUNTY COMPREHENSIVE PLAN.
13. LIMITS OF CLEARING AND GRADING WILL BE DETERMINED WITH THE FINAL LOT GRADING PLAN. THE FINAL LIMITS OF CLEARING AND GRADING SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE SE PLAT.
14. DEVELOPMENT WILL COMMENCE UPON COMPLETION OF REQUIRED FAIRFAX COUNTY PLAN PROCESSING AND APPROVALS.
15. THE DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE STANDARDS AND OF THE ADOPTED COMPREHENSIVE PLAN.
16. MINOR MODIFICATIONS MAY BE MADE TO THE SITE PLAN PER SECTION 18-204 OF THE ZONING ORDINANCE. ANY MODIFICATIONS SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE SE PLAT.
17. ADDITIONAL SITE FEATURES SUCH AS DECKS, BAY WINDOWS, GAZEBOS, FENCING, RETAINING WALLS, CORNICES, TRELLISES, ENTRANCE SIGNS, LIGHTS AND/OR WALLS NOT REPRESENTED HEREON MAY BE PROVIDED.
18. THE PROPOSED DEVELOPMENT ON THE SUBJECT PROPERTY WILL NOT POSE ANY ADVERSE EFFECT ON ADJACENT OR NEIGHBORING PROPERTIES.
19. THE PROJECT WILL MEET THE PARKING REQUIREMENTS SET FORTH IN THE R-1 ZONE PER ARTICLE 11 OF THE CURRENT ZONING ORDINANCE.
20. THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES ON THIS SITE WORTHY OF DELINEATION.
21. THERE ARE NO EXISTING UTILITY EASEMENTS HAVING A WIDTH OF TWENTY FIVE (25) FEET OR MORE, NOR ANY MAJOR UNDERGROUND UTILITY EASEMENTS LOCATED ON THIS SITE.
22. SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 12 OF THE ZONING ORDINANCE UNLESS WAIVED OR MODIFIED BY THE BOARD.
23. BOTH PROPOSED LOTS MEET THE SHAPE FACTOR LIMITATIONS FOR LOTS IN THE R-2 DISTRICT OF SF=(P2/A)
24. EXISTING TREES HAVE BEEN FIELD SURVEYED. UPON APPROVAL OF SPECIAL EXCEPTION, DOCUMENTS WILL REFLECT FIELD SURVEYED LOCATIONS OF ALL TREES TO BE SAVED.
25. THE PROPOSED FOOTPRINTS REPRESENTED HEREON ARE CONCEPTUAL AND MAY CHANGE IN SIZE AND SHAPE. THE APPLICANT RESERVES THE RIGHT TO CONSTRUCT IMPROVEMENTS NOT SHOWN HEREON WHICH ARE CONSISTENT WITH THE R-1 ZONE. TO INCLUDE ACCESSORY STRUCTURES; THE CONCEPTUAL BUILDING FOOTPRINT SHALL RESIDE WITHIN THE RESULTING AREA THAT IS OUTSIDE OF THE TREE PRESERVATION AREA AND WITHIN THE SIDE SETBACKS. IN THE EVENT THAT CONCEPTUAL BUILDING FOOTPRINT CHANGES FOR ANY REASON, REQUIREMENT OF THIS NOTE WILL REMAIN IN FORCE.
26. FINAL BUILDING FOOTPRINT WILL BE PROVIDED UPON SUBDIVISION SUBMISSION.

**SITE TABULATIONS**

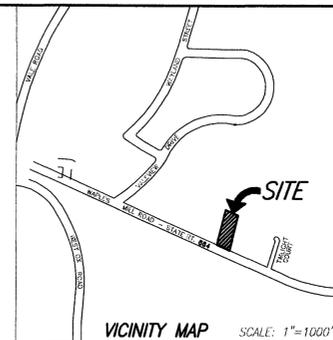
EXISTING ZONING: R-1 PROPOSED ZONE: R-1  
 TOTAL SITE AREA: 87,122 S.F. OR 2.00 ACRES

MINIMUM LOT AREA REQUIRED: 36,000 SQ. FT.  
 MINIMUM LOT WIDTH: 150'  
 MAXIMUM BUILDING HEIGHT ALLOWED: 35'  
 MAXIMUM BUILDING HEIGHT PROPOSED: 35'

YARD REQUIRED  
 FRONT: 40'  
 REAR: 25'  
 SIDE: 20'

PARKING REQUIRED: 2 PER UNIT  
 PARKING PROVIDED: 2 PER UNIT

MAXIMUM DENSITY PER R-1: ONE (1) DWELLING UNIT PER ACRE  
 PROPOSED DENSITY: ONE (1) DWELLING UNIT PER ACRE



APPROVED SP PLAN  
 DEV CONDS DATED February 21, 2007  
 LIB OF 008 (E23) APPROVED February 21, 2007  
 2 8

**RPA LINE (FROM FAIRFAX COUNTY PROPERTY MAP 46-1)**

**PROPOSED DRAINFIELD LOCATION LOT 32A**

046-1-01-0031  
 JOHN P. AND LUCY S. CARLSON  
 D.B. 7167 PG. 052  
 ZONE: R-1  
 USE: VACANT LAND

**ALTERNATE DEFAULT DRAINFIELD LOCATION LOT 32B (IF REQUIRED)**

**EXISTING SHED TO BE REMOVED**

**EXISTING SHOP TO REMAIN HEIGHT: APPROX. 16'**

APPROXIMATE LOCATION OF INFILTRATION/PERCOLATION TRENCH. DESIGN, LOCATION, AND SIZE TO BE COMPLETED AT TIME OF FINAL ENGINEERING

APPROXIMATE LOCATION OF INFILTRATION/PERCOLATION TRENCH. DESIGN, LOCATION, AND SIZE TO BE COMPLETED AT TIME OF FINAL ENGINEERING

**EXISTING SEPTIC**

**EXISTING DETACHED GARAGE TO BE REMOVED**

046-1-01-0030  
 KATHRYN D. LUCAS  
 D.B. 15970 PG. 1463  
 ZONE: R-1  
 USE: SINGLE FAMILY- DETACHED

**PROPOSED SINGLE FAMILY DETACHED DWELLING HT. = 35' (SEE NOTES 17 & 18)**

**PROPOSED GARAGE**

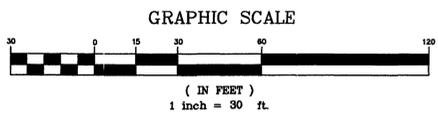
**EXISTING SINGLE FAMILY DETACHED DWELLING TO REMAIN HEIGHT: APPROX. 27'**

**REFERENCE VARIANCE VC2001Y106**

**NEW 12' DRIVEWAY (TO BE PERVIOUS SURFACE)**

**PROPOSED LOT 32A 43,561 SQ. FT. OR 1.0 ACRE**

**EXISTING SEPTIC**



**WAPLES MILL ROAD - STATE ROUTE 664**

ASPHALT PAVEMENT (WIDTH VARIES-PUBLIC R/W) ASPHALT PAVEMENT

**ABBREVIATIONS**

- EX. .... EXISTING
- CONC. .... CONCRETE
- C.B. .... CATCH BASIN
- C&G .... CURB AND GUTTER
- INV. .... INVERT OF PIPE
- S/W .... SIDEWALK
- BLDG. .... BUILDING
- STY. .... STORY
- DWH. .... STORM DRAIN MANHOLE
- SMH. .... SANITARY SEWER MANHOLE
- TRN. .... ELECTRICAL TRANSFORMER
- DR. .... DEED BOOK
- PG. .... PAGE
- ASPH. .... ASPHALT
- F.F. .... FINISHED FLOOR ELEVATION
- ESMT. .... EASEMENT
- RCF. .... REINFORCED CONCRETE PIPE
- CMP. .... CORRUGATED METAL PIPE
- SAN. SEW. .... SANITARY SEWER
- STM. DRN. .... STORM DRAIN
- BRL. .... BUILDING RESTRICTION LINE
- R/W. .... RIGHT-OF-WAY
- RT. .... ROUTE
- REC. .... RECORD DIMENSION
- MEAS. .... MEASURED DIMENSION
- P.L.L. .... PERMANENT UNDERGROUND
- CO. .... CLEAN OUT

**SYMBOLS**

- Storm Drain Manhole
- Electrical Manhole
- Fire Hydrant
- Gas Manhole
- Guy Pole
- Phone Manhole
- Utility Pole
- Sanitary Manhole
- Water Meter
- Water Manhole
- Water Valve
- Catch Basin Rim
- Sign Post
- Utility Manhole
- Existing Tree to be Removed



**LINE TYPES**

- Building Line
- Building Restriction Line
- Cable Television Conduit
- Electrical Conduit
- Edge of Pavement
- Fence Line
- Index Contour
- Intermediate Contour
- Natural Gas Conduit
- Overhead Wires
- Tele/Comm Conduit
- Property Lines
- Public Utilities Easements
- Sanitary Sewer Conduit
- Storm Drain Conduit
- Water Conduit
- Tree Line

**WAIVERS/MODIFICATIONS REQUESTED**

1. MODIFICATION TO THE PFM REQUIREMENT 6-1303 TO ALLOW A BIORETENTION FACILITY ON INDIVIDUAL LOT (NOT IN COMMON AREA) PER DIRECTORS APPROVAL.

**TREE NOTE**

1. IT IS THE APPLICANT'S INTENT TO PRESERVE ALL EXISTING VEGETATION TO THE GREATEST EXTENT POSSIBLE AS SHOWN ON SHEET 2 OF 8. HOWEVER, THE APPLICANT RESERVES THE RIGHT TO REQUEST REEVALUATION OF THE INDIVIDUAL TREES SHOWN ON THE "SPECIAL EXCEPTION PLAN" WITH THE COUNTY ARBORIST AT THE TIME OF LOT GRADING PLAN FOR THE SINGLE FAMILY DETACHED DWELLING, NEW 12' DRIVEWAY AND INFILTRATION/PERCOLATION TRENCH PROPOSED ADJACENT TO SAID TREES IN ORDER TO DETERMINE THE HEALTH AND CONDITIONS OF THE INDIVIDUAL TREES AT THAT TIME. IF AT THAT TIME IT IS DETERMINED THAT THE TREE IS HEALTHY AND IS TO BE PRESERVED, THE RECOMMENDATIONS OF THE COUNTY ARBORIST FOR TREE PROTECTION MEASURES SHALL BE INCORPORATED INTO THE LOT GRADING PLAN. HOWEVER, IF THE HEALTH OR CONDITION OF THE TREE IS DETERMINED TO POSE A THREAT TO THE HEALTH, SAFETY OR WELFARE OF THE OWNERS OR THE GENERAL PUBLIC, THEN SAID TREE MAY BE REMOVED UPON CONCURRENCE OF THE COUNTY ARBORIST.
- A. THE FOLLOWING TREES, IDENTIFIED ON THE SPECIAL EXCEPTION PLAN, TO BE REMOVED. TREE NUMBERS: 317, 319, 320, 321, 408, 421, 424
- B. THE FOLLOWING TREES TO POTENTIALLY BE REMOVED FOR THE INFILTRATION/PERCOLATION TRENCH AS DETERMINED BY DPWES. TREE NUMBERS: 343, 344

2. THE APPLICANT WILL WORK WITH THE FAIRFAX COUNTY ARBORIST TO MINIMIZE EXISTING TREE REMOVAL FOR INSTALLATION OF THE PROPOSED DRAINFIELD AND ASSOCIATED SERVICE LINES.

**Vika**  
 ENGINEERS ■ PLANNERS ■ LANDSCAPE ARCHITECTS ■ SURVEYORS ■ GPS SERVICES

11928 WAPLES MILL ROAD  
 LOT 32  
 DEED BOOK 15848 PAGE 1501

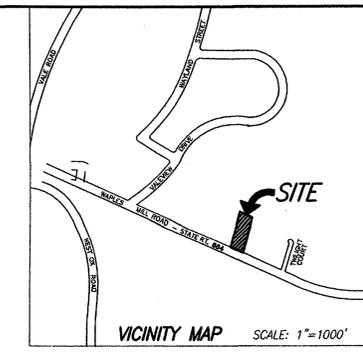
**SPECIAL EXCEPTION PLAN**

Vika Revisions

REV: 11-09-07	DES. BC	DWN. NK
REV: 10-22-07		
DATE: APRIL 4, 2007		
SCALE: 1"=30'		
PROJECT/FILE NO. 6933		
SHEET NO. 2 OF 8		

PA LDD33 Projects 6933.dwg (6933-spl) 11/9/2007 8:36:35 AM EST

TREE NUMBER	CALIBER	DRIP
301	32"	25'
302	40"	20'
303	26"	30'
304	53"	39'
305	28"	28'
306	47"	30'
307	28"	21'
308	36"	30'
309	30"	22'
312	25"	16'
313	36"	20'
314	32"	32'
315	31"	30'
317	30"	28'
318	22"	18'
319	16"	6'
320	15"	8'
321	13"	6'
322	42"	27'
323	44"	40'
324	37"	32'
327	21"	16'
328	24"	15'
329	13"	6'
330	36"	25'
331	42"	30'
332	34"	28'
333	18"	8'
334	26"	20'
335	31"	18'
336	19"	12'
337	20"	18'
338	26"	15'
339	20"	20'
340	29"	25'
341	26"	25'
342	27"	20'
343	27"	25'
344	36"	30'
345	42"	35'
346	42"	35'
347	26"	26'
348	16"	15'
349	30"	18'
350	21"	20'
351	24"	15'
352	26"	25'
353	20"	18'
354	30"	20'
355	15"	12'
356	33"	25'
357	20"	15'
358	20"	20'
359	19"	15'
360	15"	5'
361	33"	22'
362	31"	12'
366	18"	14'
367	19"	DEAD
369	29"	25'
370	21"	20'
371	25"	20'
372	18"	15'
373	22"	20'
374	31"	26'
375	32"	22'
376	30"	20'
377	25"	18'
379	25"	20'
380	38"	25'
383	23"	20'
384	23"	20'
387	22"	20'
388	15"	15'
389	28"	12'
390	31"	30'
391	36"	30'
393	13"	7'
394	37"	30'
395	28"	25'
396	36"	35'
397	14"	8'
403	24"	20'
404	24"	20'
405	26"	22'
406	21"	20'
407	18"	10'
408	17"	10'
409	17"	12'
410	17"	12'
411	14"	10'
416	26"	22'
420	18"	12'
421	25"	22'
422	34"	20'
423	18"	10'
424	18"	10'
425	38"	25'
426	17"	15'



APPROVED SP PLAN  
 DEV CONDS DATED February 21, 2007  
 to of (2007) (2007) February 27, 2007  
 3 8

046-1-30-0001  
 LEE J. NELSON  
 D.B. 9604 PG. 1664  
 ZONE: R-2  
 USE: VACANT LAND

046-1-01-0031  
 JOHN P. AND LUCY S. CARLSON  
 D.B. 7167 PG. 052  
 ZONE: R-1  
 USE: VACANT LAND

046-1-01-0030  
 KATHRYN D. LUCAS  
 D.B. 15970 PG. 1463  
 ZONE: R-1  
 USE: SINGLE FAMILY- DETACHED

046-1-30-0001  
 LEE J. NELSON  
 D.B. 9604 PG. 1664  
 ZONE: R-2  
 USE: VACANT LAND

**EXISTING VEGETATION TABLE**

EVM INDEX	COVER TYPE	SUCCESSIONAL STAGE	AREA	COVER CONDITION	PRIMARY SPECIES	COMMENTS
"A"	OLD FIELD	N/A	56,473 SF	GENERALLY GOOD	(SEE VEG TYPE COVERS)	FROM 8" THROUGH 48" CAL AT BH
"B"	DEVELOPED/ MAINTAINED	N/A	930 SF	GENERALLY GOOD	(SEE VEG TYPE COVERS)	PLANTED LANDSCAPE AREA
"C"	DEVELOPED/ MAINTAINED	N/A	19,047 SF	GENERALLY GOOD	LAWN	MAINTAINED LAWN AREA
"D"	DEVELOPED/ MAINTAINED	N/A	405 SF	GENERALLY GOOD	PLANTED LANDSCAPE MATERIAL	FOUNDATION PLANTING
"E"	PAVED ASPH OR GRAVEL	N/A	5,149 SF	IMPERV & GRAVEL PAVMT	N/A	EXISTING CONDITION
"F"	EXISTING BUILDING	N/A	5,118 SF	IMPERVIOUS PAVEMENT	N/A	EXISTING CONDITION
<b>TOTAL AREA</b>	-	-	87,122 SF (2.00 AC)	-	-	-

**VEGETATION COVER TYPES**

**"A" PRIMARY SPECIES**

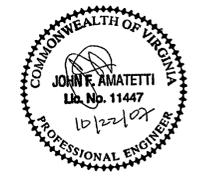
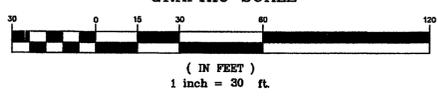
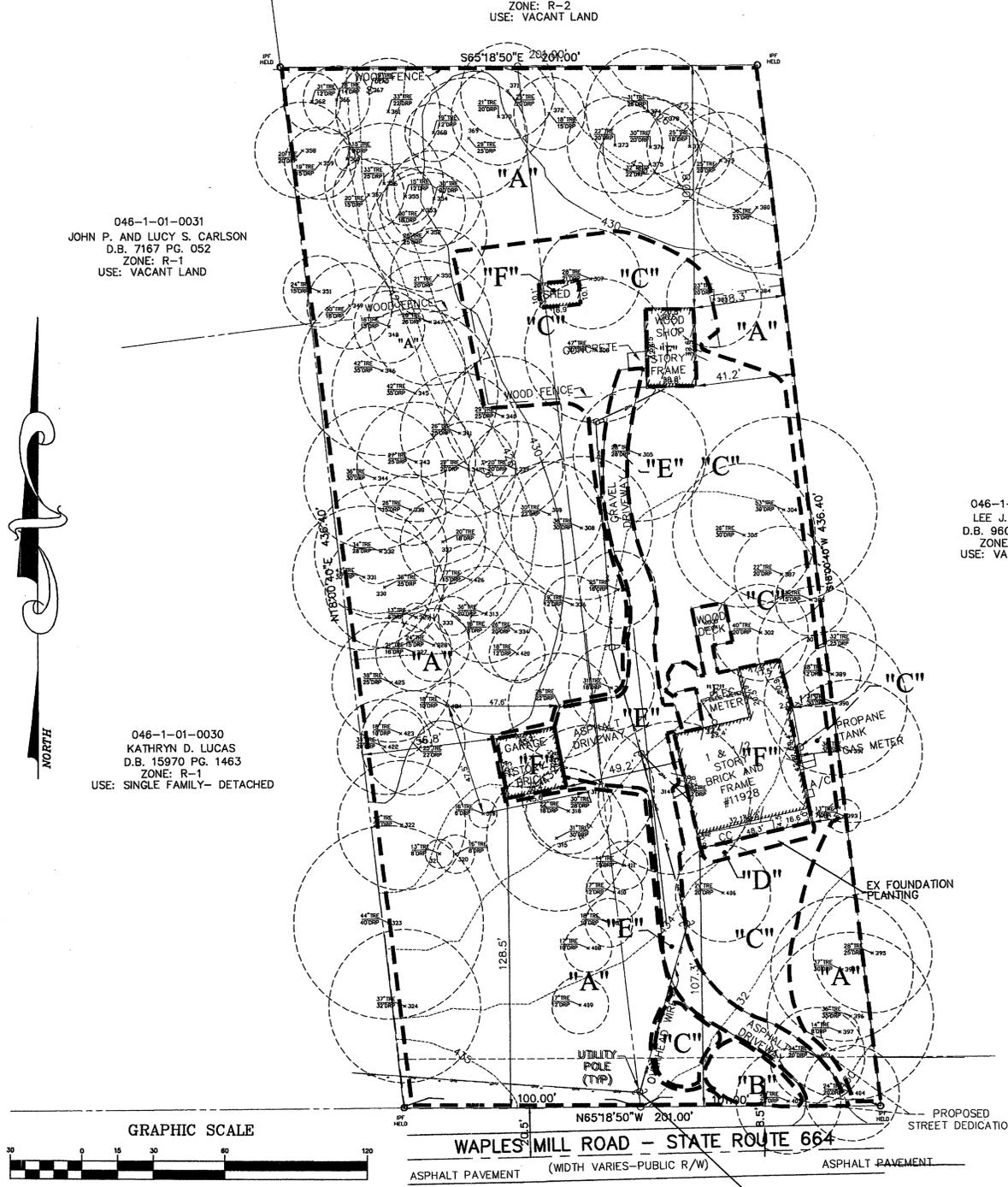
- ACER - MAPLE
- CORNUS - DOGWOOD
- GLEDITSIA - LOCUST
- ILEX - HOLLY
- JUNIPERUS - CEDAR
- LIRIODENDRON - YELLOW POPLAR
- MAGNOLIA - MAGNOLIA
- PECEA - SPRUCE
- PINUS - VIRGINIA PINE
- QUERCUS - OAK (WHITE, PIN CHESTNUT)

**"B" PRIMARY SPECIES**

- AZALEA - HYBRIDS
- EUONYMUS ALATA - WINGED EUONYMUS
- ILEX FOSTERI - FOSTER HOLLY

**EXISTING CONDITIONS NARRATIVE**

AREA "A" IS CLASSIFIED AS AN OLD FIELD WOODED AREA AND CONSIST PRIMARILY OF HARDWOOD DECIDUOUS TREES WITH A MIX PERCENTAGE OF YELLOW POPLAR, OAK VARIETIES AND VIRGINIA PINE. THE TREE CALIPER RANGE IS FROM 9" TO 36" AT BREAST HEIGHT. THE EXISTING STRUCTURES USES ON THIS SITE ARE A SINGLE FAMILY RESIDENCE, GARAGE, WOOD SHOP AND SHED. THE EXISTING VEHICLE ACCESS IS AN ASPHALT AND GRAVEL SURFACE. THE LANDSCAPED AREAS "B" AND "D" ARE PLANTED AS A DRIVEWAY ENTRY FEATURE AND FOUNDATION PLANTINGS AT THE RESIDENCE. AREA "C" IS MAINTAINED LAWN AREA. AREA "E" IS THE ASPHALT AND GRAVEL DRIVEWAY. AREA "F" IS THE FOOTPRINT AREA OF THE EXISTING BUILDINGS ON-SITE (HOUSE, GARAGE, WOOD SHOP AND SHED).



**VKA**  
 ENGINEERS ■ PLANNERS ■ LANDSCAPE ARCHITECTS ■ SURVEYORS ■ GPS SERVICES  
 VKA INCORPORATED  
 8180 GREENSBORO DRIVE ■ SUITE 200 ■ MCLEAN, VIRGINIA 22102  
 (703)442-7800 ■ FAX (703)781-2787  
 MCLEAN, VA ■ GERMANTOWN, MD

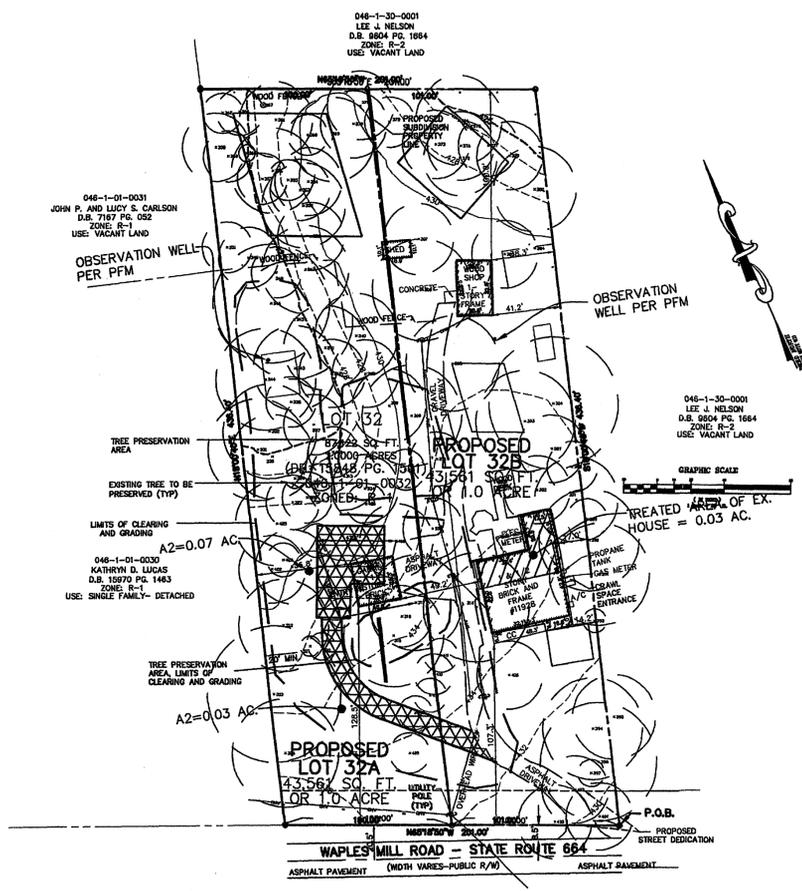
11928 WAPLES MILL ROAD  
 LOT 32  
 DEED BOOK 15848 PAGE 1501  
 SULLY DISTRICT  
 FAIRFAX COUNTY, VIRGINIA

**EXISTING VEGETATION MAP**

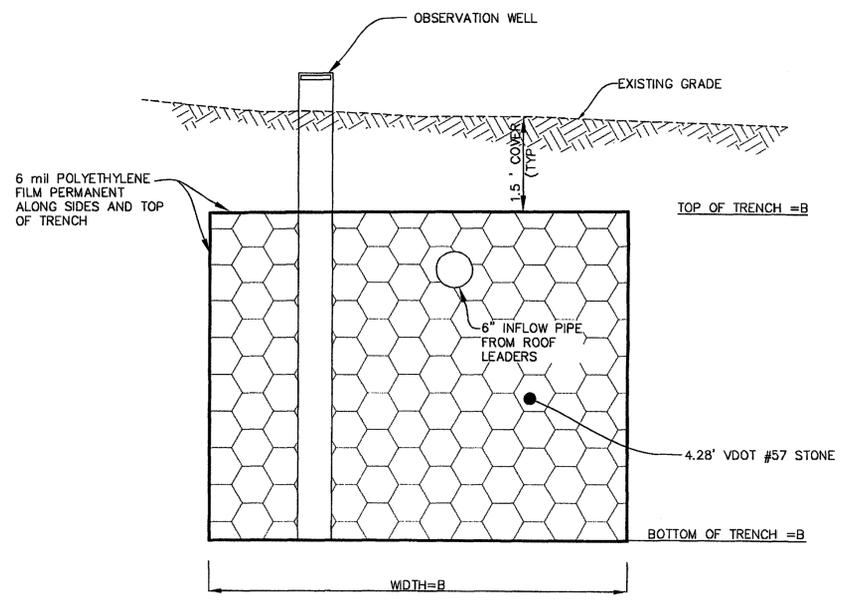
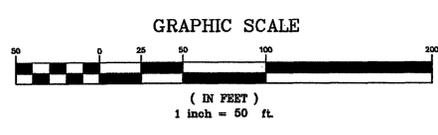
VKA REVISIONS

REV 11-9-2007  
 REV 10-21-07  
 DATE: APRIL 4, 2007  
 DES. BC DWN. NK  
 SCALE: 1"=30'  
 PROJECT/FILE NO. 6933  
 SHEET NO. 3 OF 8

P:\LDS3\Projects\6933\veg\6933-vegetation.dwg 10/22/2007 2:55:07 PM EJT



SWM MAP



TRENCH #	32	32B
A	417.50	426.00
B	421.5	429.50
C (WIDTH)	20'	10'
LENGTH	25'	20'
DEPTH	4'	3.5

CROSS-SECTION PERCOLATION/INFILTRATION TRENCH  
 NOT TO SCALE

INFILTRATION/PERCOLATION TRENCH CROSS SECTION  
 NOT TO SCALE

APPROVED SE SP PLAN  
 DEV CONDS DATED February 21, 2008  
 to (ICB) (PZ) approved February 21, 2008  
 4

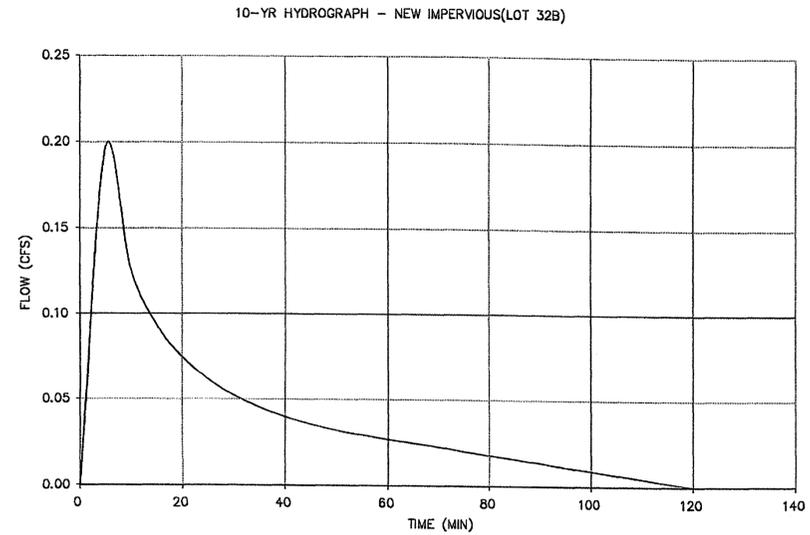


NOTE: ALL SIZES, LOCATIONS, AND ROUTING RESULTS SHOWN ON THE SUBJECT SPECIAL EXCEPTION ARE PRELIMINARY, AND BASED UPON AN INFILTRATION RATE OF 0.52 IN/HR. ACTUAL INFILTRATION RATES OF 2.33 IN/HR AND GREATER HAVE BEEN MEASURED ON THE SITE. AT THE TIME OF FINAL ENGINEERING, AND FOLLOWING SOIL BORINGS TO DETERMINE THE ACTUAL SOIL INFILTRATION RATES, THE SIZE, LOCATION, AND OTHER ASPECTS OF THE PROPOSED INFILTRATION TRENCH ARE SUBJECT TO CHANGE. THE USE OF 0.52 IN/HR FOR THE DESIGN IS CONSERVATIVE AND RESULTS IN THE MOST CONSERVATIVE INFILTRATION TRENCH DESIGN.

INFILTRATION/PERCOLATION TRENCH (LOT32B)

INFILTRATION TRENCH DESIGN-LOT 32B			
1. Given the infiltration rate, calculate the design infiltration rate: $fd = 0.5 * f$			
<b>f =</b>	<b>0.52</b>	in/hr	
<b>fd =</b>	<b>0.022</b>	ft/hr	
2. Calculate the maximum ponding depth for the infiltration trench: $dmax = fd * Tmax / Vr$			
<b>Tmax =</b>	<b>48</b>	hr	
<b>Vr =</b>	<b>0.4</b>		
<b>dmax =</b>	<b>2.6</b>	ft	
3. Calculate the water quality volume requirements for the trench: $VOLwq = ImpArea * first\ flush\ depth$			
<b>Drainage Area =</b>	<b>0.03</b>	Ac	
<b>C-Value =</b>	<b>0.9</b>		
<b>First Flush Depth =</b>	<b>1.0</b>	in	
<b>VOLwq =</b>	<b>108.9</b>	cf	
4. Calculate the minimum surface area for the bottom of the infiltration trench: $S_{Amin} = VOLwq / (fd * Tmax)$			
<b>S<sub>Amin</sub> =</b>	<b>106</b>	sf	
<b>Design Length =</b>	<b>8</b>	ft	
<b>Design Width =</b>	<b>16</b>	ft	
<b>Design SA =</b>	<b>120</b>	sf	
<b>Actual Depth of Trench =</b>	<b>2.3</b>	ft	

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.00	426.00	0.00	0.00
0.08	0.20	0.20	0.00	426.37	0.00	0.00
0.17	0.13	0.13	0.00	426.97	0.00	0.00
0.25	0.09	0.09	0.00	427.37	0.00	0.00
0.33	0.07	0.07	0.00	427.65	0.00	0.00
0.42	0.06	0.06	0.00	427.87	0.00	0.00
0.50	0.05	0.05	0.00	428.06	0.00	0.00
0.58	0.05	0.05	0.00	428.23	0.00	0.00
0.67	0.04	0.04	0.00	428.38	0.00	0.00
0.75	0.04	0.04	0.01	428.51	0.00	0.00
0.83	0.03	0.03	0.01	428.63	0.00	0.00
0.92	0.03	0.03	0.01	428.72	0.00	0.00
1.00	0.03	0.03	0.01	428.82	0.00	0.00
1.08	0.02	0.02	0.01	428.89	0.00	0.00
1.17	0.02	0.02	0.01	428.95	0.00	0.00
1.25	0.02	0.02	0.01	429.00	0.00	0.00
1.33	0.02	0.02	0.01	429.06	0.00	0.00
1.42	0.01	0.01	0.01	429.10	0.00	0.00
1.50	0.01	0.01	0.01	429.12	0.00	0.00
1.58	0.01	0.01	0.01	429.14	0.00	0.00
1.67	0.01	0.01	0.01	429.15	0.00	0.00
1.75	0.01	0.01	0.01	429.17	0.00	0.00
1.83	0.00	0.00	0.01	429.17	0.00	0.00
1.92	0.00	0.00	0.01	429.15	0.00	0.00

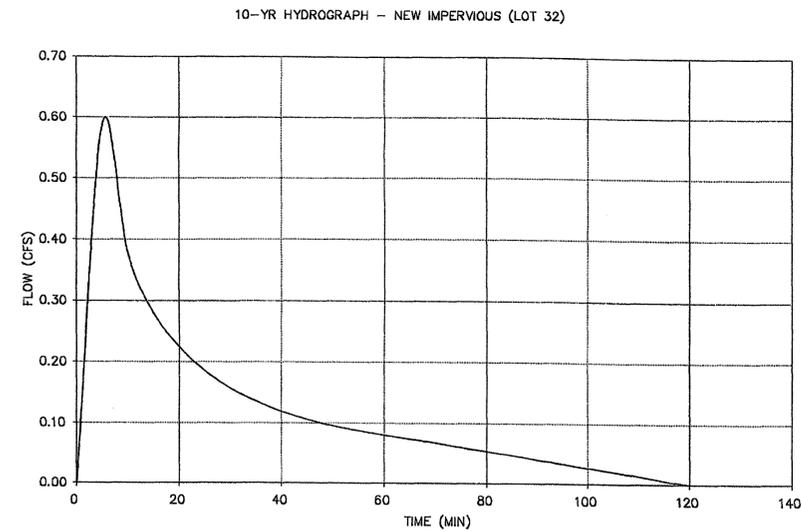


APPROVED SP PLAN  
 DEV CONDS DATED February 21, 2007  
 of (BOS) (BZA) approved February 23, 2007  
 5 8

INFILTRATION/PERCOLATION TRENCH (LOT32)

INFILTRATION TRENCH DESIGN - LOT 32			
1. Given the infiltration rate, calculate the design infiltration rate: $fd = 0.5 * f$			
<b>f =</b>	<b>0.52</b>	in/hr	
<b>fd =</b>	<b>0.022</b>	ft/hr	
2. Calculate the maximum ponding depth for the infiltration trench: $dmax = fd * Tmax / Vr$			
<b>Tmax =</b>	<b>48</b>	hr	
<b>Vr =</b>	<b>0.4</b>		
<b>dmax =</b>	<b>2.6</b>	ft	
3. Calculate the water quality volume requirements for the trench: $VOLwq = ImpArea * first\ flush\ depth$			
<b>Drainage Area =</b>	<b>0.09</b>	Ac	
<b>C-Value =</b>	<b>0.9</b>		
<b>First Flush Depth =</b>	<b>0.6</b>	in	
<b>VOLwq =</b>	<b>163.4</b>	cf	
4. Calculate the minimum surface area for the bottom of the infiltration trench: $S_{Amin} = VOLwq / (fd * Tmax)$			
<b>S<sub>Amin</sub> =</b>	<b>167</b>	sf	
<b>Design Length =</b>	<b>10</b>	ft	
<b>Design Width =</b>	<b>16</b>	ft	
<b>Design SA =</b>	<b>160</b>	sf	
<b>Actual Depth of Trench =</b>	<b>2.6</b>	ft	

Event Time (hours)	Hydrograph Inflow (cfs)	Basin Inflow (cfs)	Storage Used (acre-ft)	Elevation Above MSL (feet)	Basin Outflow (cfs)	Outflow Total (cfs)
0.00	0.00	0.00	0.00	417.50	0.00	0.00
0.08	0.59	0.59	0.00	417.93	0.01	0.01
0.17	0.38	0.38	0.01	418.64	0.01	0.01
0.25	0.28	0.28	0.01	419.12	0.01	0.01
0.33	0.22	0.22	0.01	419.47	0.01	0.01
0.42	0.19	0.19	0.01	419.76	0.01	0.01
0.50	0.16	0.16	0.01	420.01	0.01	0.01
0.58	0.14	0.14	0.01	420.21	0.01	0.01
0.67	0.12	0.12	0.01	420.39	0.01	0.01
0.75	0.11	0.11	0.01	420.54	0.01	0.01
0.83	0.10	0.10	0.02	420.68	0.01	0.01
0.92	0.09	0.09	0.02	420.81	0.01	0.01
1.00	0.08	0.08	0.02	420.92	0.01	0.01
1.08	0.07	0.07	0.02	421.01	0.01	0.01
1.17	0.07	0.07	0.02	421.10	0.01	0.01
1.25	0.06	0.06	0.02	421.18	0.01	0.01
1.33	0.05	0.05	0.02	421.24	0.01	0.01
1.42	0.05	0.05	0.02	421.30	0.01	0.01
1.50	0.04	0.04	0.02	421.35	0.01	0.01
1.58	0.03	0.03	0.02	421.38	0.01	0.01
1.67	0.03	0.03	0.02	421.41	0.01	0.01
1.75	0.02	0.02	0.02	421.43	0.01	0.01
1.83	0.01	0.01	0.02	421.43	0.01	0.01
1.92	0.01	0.01	0.02	421.43	0.01	0.01



NOTE: THE SIZES OF BOTH TRENCHES TO MEET THE STORAGE REQUIREMENTS OF PFM SECTION 6-1303 (PERCOLATION TRENCHES) IS GREATER THAN THE SIZING CRITERIA FOR INFILTRATION TRENCHES (FOR BMP). SINCE THE STORAGE REQUIREMENT FOR PERCOLATION (QUANTITY CONTROL) EXCEEDS THE REQUIREMENTS FOR INFILTRATION (BMP), THE BMP SIZING REQUIREMENTS HAVE BEEN MET.

NOTE: ALL SIZES, LOCATIONS, AND ROUTING RESULTS SHOWN ON THE SUBJECT SPECIAL EXCEPTION ARE PRELIMINARY, AND BASED UPON AN INFILTRATION RATE OF 0.52IN/HR. ACTUAL INFILTRATION RATES OF 2.33 IN/HR AND GREATER HAVE BEEN MEASURED ON THE SITE, AT THE TIME OF FINAL ENGINEERING, AND FOLLOWING SOIL BORINGS TO DETERMINE THE ACTUAL SOIL INFILTRATION RATES, THE SIZE, LOCATION, AND OTHER ASPECTS OF THE PROPOSED INFILTRATION TRENCH ARE SUBJECT TO CHANGE. THE USE OF 0.52 IN/HR FOR THE DESIGN IS CONSERVATIVE AND RESULTS IN THE MOST CONSERVATIVE INFILTRATION TRENCH DESIGN.



VIKA REVISIONS		
REV.	DATE	DESCRIPTION
11-9-2007		
10/22/07		
MAY, 2007		
DES.	SEC	DWN. SEC
SCALE:		N.T.S.
PROJECT/FILE NO.	6933	
SHEET NO.	5 OF 8	



TOTAL AREA TO OUTFALL 278 AC

OUTFALL FLOW PATH

SITE AREA 2 AC

OVERALL DRAINAGE AREA MAP

1"=500'

APPROVED *[Signature]* S.W.  
 DEV CONDS DATED February 21, 2007  
 to of 6 (BZA) approved February 25, 2007  
 by 8

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 (18-303 1E & 1O)  
 FOP 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 4.

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)
INFILTRATION TRENCH(32B)	0.03 AC	N/A	0.03 AC	120 SF	276 CF	N/A
INFILTRATION TRENCH(32)	0.09 AC	N/A	0.09 AC	160	418 CF	N/A
Totals						

- 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet N/A.  
Pond inlet and outlet pipe systems are shown on Sheet N/A.
- 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 4.  
Type of maintenance access road surface noted on the plat is: 4 (asphalt, geoblock, gravel, etc.).
- 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet N/A.
- 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 6.
- 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 6.
- 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.
- 11. A submission waiver is requested for \_\_\_\_\_.
- 12. Stormwater management is not required because \_\_\_\_\_.

REZONING SWM CHECKLIST

BMP NARRATIVE

PER SECTION 6-0402 OF THE PUBLIC FACILITIES MANUAL (PFM), BMP REQUIREMENTS MAY BE MET THROUGH THE USE OF INFILTRATION TRENCHES. THE DEVELOPMENT PROPOSED FOR THE SUBJECT SPECIAL EXCEPTION WILL CREATE AN ADDITIONAL 0.10 ACRES OF IMPERVIOUS AREA THAN ARE PRESENT IN THE EXISTING CONDITION. THEREFORE, TWO INFILTRATION TRENCHES HAVE BEEN DESIGNED FOR THIS SPECIAL EXCEPTION WHICH WILL ALLOW FOR THE FILTERING OF THE REQUIRED WATER QUALITY VOLUME IN ORDER TO MEET BMP REQUIREMENTS. THE WATER QUALITY VOLUME WAS BASED ON THE TREATMENT OF THE FIRST 0.5" OF RUNOFF FOR THE NEW 0.10 ACRES OF IMPERVIOUSNESS. THE COMPUTATIONS IN THIS SPECIAL EXCEPTION DEMONSTRATE THAT THE REQUIRED SURFACE AREA, STORAGE VOLUME, AND INFILTRATION TIME FOR THESE FACILITIES ARE PROVIDED.

SWM NARRATIVE

STORM WATER MANAGEMENT WILL BE PROVIDED FOR THE DEVELOPMENT PROPOSED IN THE SUBJECT APPLICATION THROUGH THE USE OF TWO PERCOLATION TRENCHES (WHICH ALSO PROVIDE BMP THROUGH INFILTRATION). PER THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (PFM), SPECIFICALLY SECTION 6-1304, DETENTION REQUIREMENTS MAY BE MET THROUGH THE USE OF PERCOLATION TRENCHES THAT ALLOW FOR THE INFILTRATION OF THE 10-YR, 24-HR STORM VOLUME. AS IS EVIDENCED BY THE COMPUTATIONS IN THIS SPECIAL EXCEPTION, THE PROPOSED FACILITY WILL ALLOW FOR SUCH INFILTRATION. BASED ON THE SWM MAP SHOWN IN THIS PLAN, AND ADDITIONAL 0.10 ACRES OF IMPERVIOUS AREA WILL BE CREATED BY THE PROPOSED DEVELOPMENT. IN SIZING THE SUBJECT SWM FACILITIES, THE VOLUME FROM 0.10 ACRES WITH A C-FACTOR OF 0.90 AT THE 10-YR RAINFALL INTENSITY OF 7.27 INCHES PER HOUR WAS USED. THE COMPUTATIONS FOR THE PERCOLATION TRENCH INCLUDED IN THIS PLAN DEMONSTRATE THAT THE SURFACE AREA AND DEPTH OF THE STONE STORAGE AREA PROPOSED WILL PROVIDE SUFFICIENT STORAGE FOR THE INFILTRATION OF THE APPROPRIATE STORM EVENT AND DURATION.

NOTE: ALL SIZES, LOCATIONS, AND ROUTING RESULTS SHOWN ON THE SUBJECT SPECIAL EXCEPTION ARE PRELIMINARY, AND BASED UPON AN INFILTRATION RATE OF 0.52IN/HR. ACTUAL INFILTRATION RATES OF 2.53 IN/HR AND GREATER HAVE BEEN MEASURED ON THE SITE. AT THE TIME OF FINAL ENGINEERING, AND FOLLOWING SOIL BORINGS TO DETERMINE THE ACTUAL SOIL INFILTRATION RATES, THE SIZE, LOCATION, AND OTHER ASPECTS OF THE PROPOSED INFILTRATION TRENCH ARE SUBJECT TO CHANGE. THE USE OF 0.52 IN/HR FOR THE DESIGN IS CONSERVATIVE AND RESULTS IN THE MOST CONSERVATIVE INFILTRATION TRENCH DESIGN.



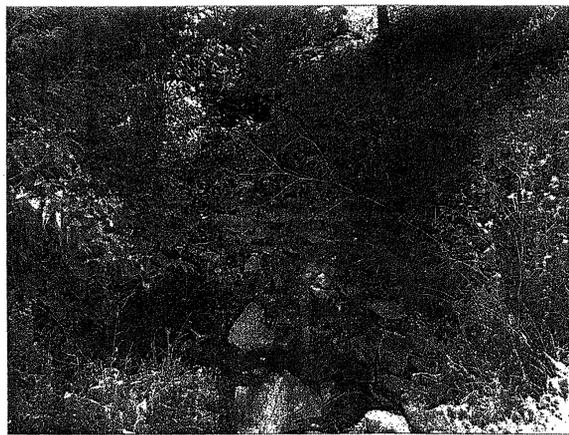
VIA  
 ENGINEERS & PLANNERS LANDSCAPE ARCHITECTS SURVEYORS & GPS SERVICES  
 8180 GREENBERG DRIVE, SUITE 200 # INGLETON, VIRGINIA 22102  
 (703)442-7800 # FAX (703)761-2787  
 INGLETON, VA GERMANTOWN, MD

11928 WAPLES MILL ROAD  
 LOT 32  
 DEED BOOK 15848 PAGE 1501  
 SULLY DISTRICT  
 FAIRFAX COUNTY, VIRGINIA

STORM WATER  
 MANAGEMENT AND  
 OUTFALL ANALYSIS

VIA REVISIONS

REV 11-9-2007	DES.	DWN.	SEC.
REV 10-22-07	SEC.	SEC.	
DATE: MAY, 2007	SCALE: AS SHOWN		
PROJECT/FILE NO. 6933			
SHEET NO. 6 OF 8			



OUTFALL CHANNEL



OUTFALL CHANNEL



OUTFALL CHANNEL



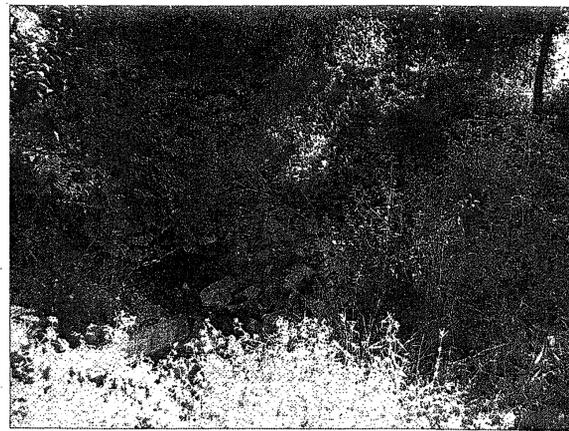
OUTFALL CHANNEL



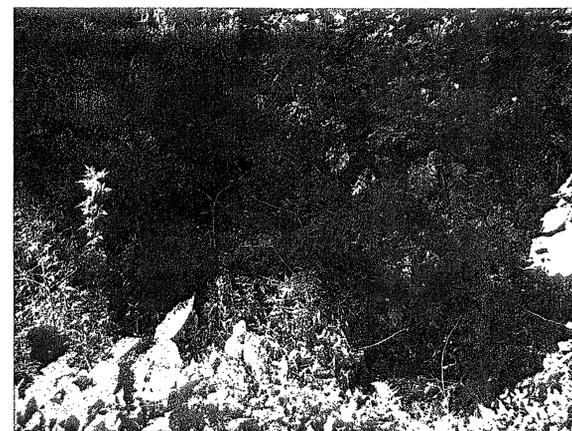
OUTFALL CHANNEL



TYPICAL CHANNEL BOTTOM



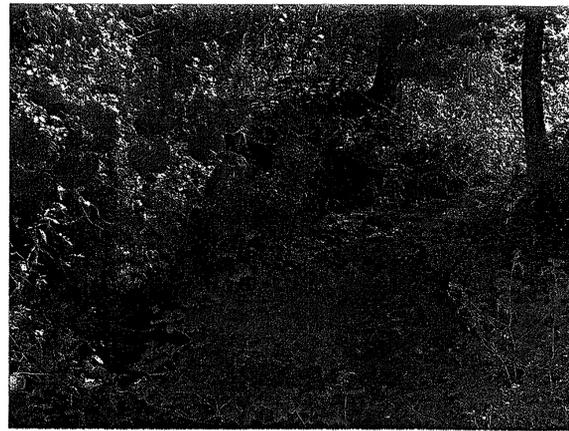
OUTFALL CHANNEL



OUTFALL CHANNEL



OUTFALL CHANNEL



OUTFALL CHANNEL



END WALL

**OUTFALL DESCRIPTION**

THE EXISTING CONDITION OF THE SUBJECT SITE IS A SINGLE FAMILY DETACHED DWELLING WITH ASSOCIATED IMPROVEMENTS AS WELL AS A WOOD SHOP AND SHED. THE WOOD SHOP IS TO REMAIN FOLLOWING THE PROPOSED DEVELOPMENT WHILE THE SHED IS TO BE REMOVED. PROPOSED DEVELOPMENT INCLUDES THE CONSTRUCTION OF AN ADDITIONAL SINGLE FAMILY DETACHED DWELLING AND ASSOCIATED IMPROVEMENTS, ALONG WITH A SUB-DIVISION OF THE PROPERTY. THE SITE IS BOUNDED TO THE SOUTH BY WAPLES MILL ROAD (ROUTE 664), TO THE NORTH, EAST, AND WEST BY EXISTING RESIDENTIAL DEVELOPMENTS.

STORM WATER RUNOFF FROM THE SUBJECT PROPERTY WILL BE CONVEYED VIA SHEET FLOW IN A NORTHERLY DIRECTION IN THE POST-DEVELOPED CONDITION, WHICH MIMICS THE RUNOFF CHARACTERISTICS OF THE SITE IN THE EXISTING CONDITION. THIS FLOW WILL BE CONVEYED INTO AN EXISTING STREAM ON THE PROPERTY TO THE NORTH OF THE SUBJECT PROPERTY, AT WHICH POINT THE STREAM WILL CONVEY THE FLOW IN AN EASTERLY DIRECTION. FLOW WILL CONTINUE IN THIS STREAM FLOWING EASTERLY FOR APPROXIMATELY 1,660 FEET. THE STREAM THEN BEGINS TO CONVEY FLOW IN A SOUTH-EASTERLY DIRECTION FOR APPROXIMATELY 1,340 FEET. AT THIS POINT FLOW WILL ENTER INTO AN EXISTING HEADWALL TO BE CONVEYED UNDER WAPLES MILL ROAD AND CONTINUE IN A SOUTH-EASTERLY DIRECTION. PER THE DRAINAGE AREA MAP ON SHEET 6, THE TOTAL AREA CONTRIBUTING TO FLOW IN THE EXISTING STREAM AT THE EXISTING HEADWALL IS 278 ACRES WHICH EXCEEDS 100 TIMES THE SITE AREA OF 2 ACRES. THUS, THE DESCRIPTION OF THE OUTFALL SHALL CEASE AT THIS POINT.

BASED ON A FIELD VISIT, AND AS EVIDENCED BY THE PHOTOGRAPHS ON THIS PAGE THE OUTFALL DESCRIBED ABOVE IS A WELL ESTABLISHED STREAM WITH BED AND BANKS IN GOOD CONDITION. THE STREAM BANKS ARE WELL VEGETATED AND THE STREAM BED IS EARTHEN WITH SIGNIFICANT AMOUNTS OF STONE. NO DISCERNABLE SIGNS OF EROSION ARE PRESENT, WHICH IS IN AGREEMENT WITH STAFF COMMENTS THAT NO DOWNSTREAM EROSION COMPLAINTS FOR THE SUBJECT SITE ARE ON RECORD.

BECAUSE PERCOLATION METHODS ARE TO BE USED TO CONTROL STORMWATER FROM THE POST-DEVELOPED SITE, THE TOTAL POST-DEVELOPED RUNOFF FROM THE SITE WILL NOT EXCEED THE TOTAL PRE-DEVELOPED RUNOFF FROM THE SITE. THE PORTION OF THE SITE SUBJECT TO DEVELOPMENT WITH THIS PLAN WILL HAVE A TOTAL RUNOFF OF 0.01 CFS FOR THE 10-YR STORM, WHILE THE UNDISTURBED PORTION OF THE SITE WILL PRODUCE THE SAME RUNOFF IN THE POST-DEVELOPED CONDITION AS IT PRODUCES IN THE PRE-DEVELOPED CONDITION. THE CHANNEL CAPACITY IS THEREFORE SUFFICIENT TO HANDLE FLOWS FROM THE POST-DEVELOPED SUBJECT SITE.

BASED ON THE ABOVE DESCRIPTION AND AFOREMENTIONED FIELD VISIT, IT IS THE OPINION OF VIKI, INC. THAT THE SUBJECT STREAM CONSTITUTES AN ADEQUATE OUTFALL PER THE ZONING ORDINANCE REZONING REQUIREMENTS. SHOULD ANY FURTHER ANALYSIS BE REQUIRED FOR A DETERMINATION OF THE ADEQUACY OF THE SUBJECT OUTFALL, SUCH ANALYSIS SHALL OCCUR WITH THE FINAL ENGINEERING PLANS PER THE PUBLIC FACILITIES MANUAL.

SE 2007-50-012 S.W.  
APPROVED / SP PLAN  
DEV CONDS DATED February 21, 2008  
to (BOD) (BZA) comment February 21, 2008  
7 8



STORM WATER  
MANAGEMENT AND  
OUTFALL ANALYSIS

11928 WAPLES MILL ROAD  
LOT 32  
DEED BOOK 15848 PAGE 1501  
SULLY DISTRICT  
FAIRFAX COUNTY, VIRGINIA

VIKA REVISIONS

REV 11-9-2007
REV 10/22/07
DATE: MAY, 2007
DES. SEC
DWN. SEC
SCALE: AS SHOWN
PROJECT/FILE NO. 6933
SHEET NO. 7 OF 8

VIKA  
ENGINEERS ■ PLANNERS ■ LANDSCAPE ARCHITECTS ■ SURVEYORS ■ GPS SERVICES  
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