

CONCEPTUAL DEVELOPMENT PLAN / FINAL DEVELOPMENT PLAN

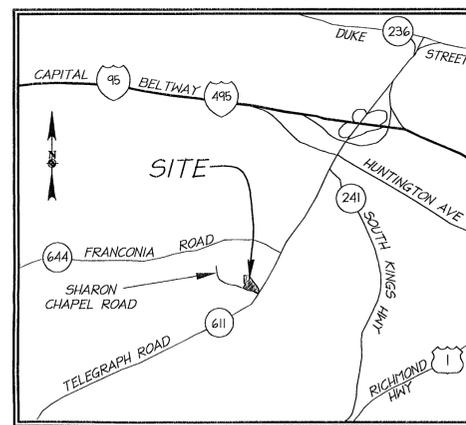
WILTON HILL LEE DISTRICT FAIRFAX COUNTY, VIRGINIA

DATE	REVISION
10-12-05	ADDRESS P & Z COMM.
1-05-06	COUNTY COMMENTS
2-09-06	COUNTY COMMENTS
4-20-06	COUNTY COMMENTS
5-11-06	COUNTY COMMENTS
6-14-06	COUNTY COMMENTS

R2-2005-LE-032
 No. 2005-LE-032 G. Chase
 APPROVED DEVELOPMENT PLAN
 DATE OF (BOS) 6/14/06
 DATE OF (FOP) 7/31/06
 (FOP) PC 6/15/06

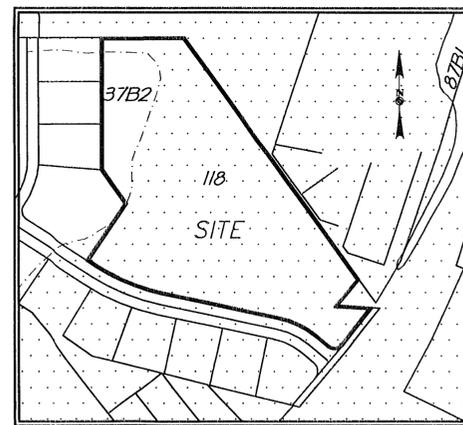
NOTES

- THE SUBJECT PROPERTY DELINEATED HEREON IS IDENTIFIED ON FAIRFAX COUNTY TAX MAP # 82-4-(11) -34 AND IS CURRENTLY ZONED R-2. THE PURPOSE OF THIS PLAN IS TO PROVIDE FOR THE REZONING OF THIS PROPERTY TO AN PDH-2 DISTRICT.
- CONTRACT OWNER/DEVELOPER: SHARON CHAPEL, LLC.
8206 LEESBURG PIKE, SUITE 302
VIENNA, VIRGINIA 22182
(703) 734-1999 FAX: (703) 734-1959
- OWNER OF RECORD: SHARON CHAPEL, LLC. AS RECORDED IN DEED BOOK 17580, AT PAGE 0024, AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA.
- SITE AREA IS 6.1885 ACRES OR 269,573 S.F. PER BOUNDARY SURVEY BY christopher consultants, ltd. DATED 4-4-01.
- TOPOGRAPHIC DATA SHOWN HEREON IS FROM AIR SURVEY BY MCKENZIE-SNYDER, INC., WITH A CONTOUR INTERVAL OF TWO (2) FEET, DATED FEBRUARY 27, 2001
- THIS PROPERTY IS LOCATED WITHIN THE AREA IV R/H5 WILTON WOODS COMMUNITY PLANNING SECTOR. THE COMPREHENSIVE PLAN ALLOWS FOR SINGLE FAMILY DETACHED RESIDENTIAL DEVELOPMENT AT A DENSITY OF 2-3 DU/AC.
- ALL PROPOSED LOTS ARE TO BE SERVED BY PUBLIC SANITARY SEWER BY CONNECTION TO EXISTING LINE WITHIN THE SHARON CHAPEL ROAD RIGHT-OF-WAY. THIS PROPERTY IS LOCATED WITHIN THE CAMERON J-1 SEWER SHED.
- ALL PROPOSED LOTS ARE TO BE SERVED BY PUBLIC WATER SUPPLY BY CONNECTION TO EXISTING FCMA WATERLINE WITHIN THE SHARON CHAPEL ROAD RIGHT-OF-WAY.
- ACCORDING TO THE FAIRFAX COUNTY SOILS MAPS, THIS SITE CONTAINS APPROXIMATELY 87% MARINE CLAYS, THEREFORE PERMITTED DENSITY IS CONTROLLED BY THE REGULATIONS OF SECTION 2-308.2 OF THE FAIRFAX COUNTY ZONING ORDINANCE. SEE DENSITY CALCULATION ON THIS SHEET.
- THE FAIRFAX COUNTY COMPREHENSIVE PLAN TRAILS MAP INDICATES AN 8-FOOT BICYCLE TRAIL ON THE NORTH SIDE OF TELEGRAPH ROAD ALONG THE SUBJECT PROPERTY FRONTAGE
- THE COMPREHENSIVE PLAN RECOMMENDS THAT THE EXISTING HOUSE ON SITE (C. 1940) AND THE PULLMAN/STRUTHER FAMILY CEMETERY BE FURTHER STUDIED FOR POSSIBLE INCLUSION ON THE FAIRFAX COUNTY INVENTORY OF HISTORIC SITES. THE EXISTING HOUSE (C. 1940) IS PROPOSED TO REMAIN AS PART OF THE PROPOSED SUBDIVISION. HOWEVER, THE EXISTING CEMETERY IS NOT PART OF THIS PLAN, BUT A WROUGHT IRON FENCE WILL BE PROVIDED TO PROTECT THE CEMETERY.
- THE REGULATIONS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE APPLY TO DEVELOPMENT OF THE SITE. THE STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES (SWM/BMP) REQUIREMENTS ARE PROPOSED TO BE MET THROUGH THE CONSTRUCTION AND USE OF UNDERGROUND DETENTION AND SAND FILTER. THE PROPOSED LOCATION AND SIZE INDICATED FOR THE PROPOSED SWM/BMP FACILITIES IS APPROXIMATE AND SUBJECT TO MODIFICATION PENDING REVIEW AND APPROVAL BY DPWES. THIS PROPERTY IS LOCATED WITHIN THE CAMERON RUN WATERSHED.
- CONSTRUCTION OF THE PROPOSED DEVELOPMENT IS PLANNED TO COMMENCE AS SOON AS ALL NECESSARY APPROVALS AND PERMITS ARE OBTAINED, SUBJECT TO MARKET CONDITIONS.
- TO THE BEST OF THE ENGINEER'S AND OWNERS KNOWLEDGE, THERE ARE NO EXISTING UTILITY EASEMENTS HAVING A WIDTH OF TWENTY-FIVE (25) FEET OR GREATER.
- PUBLIC STREET DEDICATION AND TRAILS AS REQUIRED BY THE COMPREHENSIVE PLAN AND PUBLIC FACILITIES MANUAL ARE TO BE PROVIDED SIMULTANEOUSLY WITH SUBDIVISION CONSTRUCTION.
- REVIEW OF THE FEMA MAP AND COUNTY RECORDS INDICATE THERE ARE NO FLOODPLAINS AFFECTING THE SITE. NO RESOURCE PROTECTION AREAS OR ENVIRONMENTAL QUALITY CORRIDORS (EQC) AS DEFINED ARE PRESENT ON THIS PROPERTY. THERE ARE NO OUTSTANDING NATURAL FEATURES LOCATED ON-SITE.
- TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THERE ARE NO EXISTING HUMAN GRAVES ON-SITE. THE PULLMAN/STRUTHER FAMILY CEMETERY IS LOCATED ADJACENT TO THE PROPERTY.
- THE FAIRFAX COUNTY TRANSPORTATION PLAN INDICATES TELEGRAPH ROAD IS PLANNED TO BE IMPROVED TO 4 LANES WITH A RIGHT-OF-WAY REQUIREMENT OF 56 FEET FROM CENTERLINE.
- DEVELOPMENT OF THE SUBJECT PROPERTY TO PDH-2 RESIDENTIAL USE IS COMPATIBLE WITH EXISTING ADJACENT LAND USES. BUFFERS AND SCREENING MEASURES ARE NOT REQUIRED. NO ADVERSE EFFECTS TO NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS DEVELOPMENT.
- TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THE PROPOSED DEVELOPMENT DELINEATED ON THIS GENERALIZED DEVELOPMENT PLAN CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS OF FAIRFAX COUNTY, EXCEPT AS REQUESTED HEREIN.
- OPEN SPACE TO BE CONVEYED TO A HOMEOWNERS ASSOCIATION.
- THE CLIENT AGREES TO CONTRIBUTE THE FUNDS NECESSARY TO PROVIDE THE REQUIRED RECREATIONAL FACILITIES AS PER ZONING ORDINANCE ARTICLE 16-404.
- CURRENT USE OF THE SITE IS A RESIDENTIAL HOME WITH OUTBUILDINGS, SWIMMING POOL AND MAINTAINED LAWN AND LANDSCAPED AREAS.
- THIS DEVELOPMENT PROPOSAL IS IN CONFORMANCE WITH THE RECOMMENDATIONS OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN.
- EXISTING WELLS (IF ANY) SHALL BE LOCATED AND ABANDONED IN ACCORDANCE WITH FAIRFAX COUNTY HEALTH DEPARTMENT STANDARDS.
- NOTWITHSTANDING THE IMPROVEMENTS AND TABULATIONS SHOWN ON THIS PLAN, THE APPLICANT RESERVES THE RIGHT TO MAKE MINOR MODIFICATIONS TO THE FINAL DESIGN CONCEPTS, TO COMPLY WITH NEW CRITERIA AND REGULATIONS WHICH MAY BE ADOPTED BY FAIRFAX COUNTY SUBSEQUENT TO THE SUBMISSION OF THIS APPLICATION, PROVIDED THAT SUCH MODIFICATIONS ARE CONSISTENT WITH THE APPROVED GDP.
- BUILDING FOOTPRINTS SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY BE MODIFIED WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN. IT SHOULD BE UNDERSTOOD THAT FINAL BUILDING LOCATIONS AND FOOTPRINTS WILL ADHERE TO THE MINIMUM BUILDING SETBACKS ALONG PERIPHERAL LOT LINES AND LIMITS OF CLEARING AND GRADING AS SHOWN HEREON. FINAL LOT AREAS ARE SUBJECT TO MINOR MODIFICATIONS WITH FINAL ENGINEERING REQUIREMENTS.
- AN ENTRANCE FEATURE WILL BE PROVIDED IN THE GENERAL AREA AS SHOWN ON PARCEL 'B'
- PROPER SIGHT DISTANCE FOR ALL PROPOSED ENTRANCES WILL BE SHOWN WITH THE FINAL SUBDIVISION PLAN.
- AS THESE ARE SINGLE FAMILY DETACHED DWELLINGS, NO ANGLES OF BULK PLANES ARE REQUIRED TO BE SHOWN IN ACCORDANCE WITH ZONING ORDINANCE ARTICLES 16-102 AND 3-307.
- TO THE BEST OF THE ENGINEER'S AND OWNERS'S KNOWLEDGE, THERE ARE NO HAZARDOUS WASTE OR TOXIC SUBSTANCES, OR PETROLEUM PRODUCTS TO BE GENERATED STORED TREATED AND/OR DISPOSED OF ON THIS SITE



VICINITY MAP

SCALE: 1" = 2000'



SOIL NO.	SOIL NAME	PROBLEM CLASS
118	MARINE CLAY	A
37B2	BELTSVILLE SILT LOAM	B

SOILS MAP

SCALE: 1" = 200'

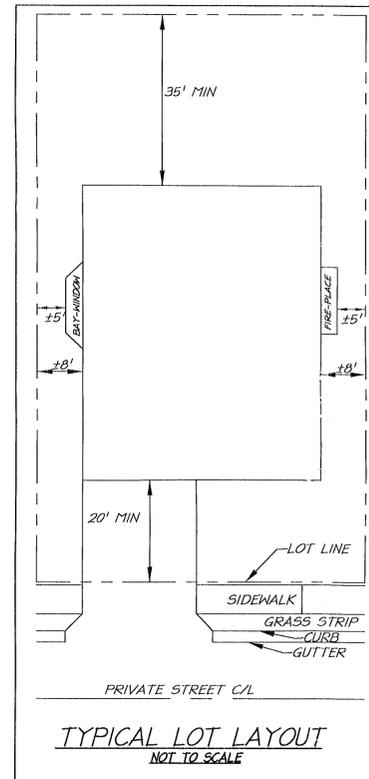
OUTFALL NARRATIVE

THIS PROJECT CONSISTS OF ROAD AND UTILITY CONSTRUCTION FOR THE DEVELOPMENT OF 12 SINGLE FAMILY DETACHED RESIDENTIAL UNITS. THIS SITE LIES WITHIN THE PIKES BRANCH CREEK WATERSHED. THIS SITE IS 6.19 ACRES, AND IS LOCATED IN FAIRFAX COUNTY. APPROXIMATELY 1.29 ACRES WILL BE IMPERVIOUS CONSISTING OF ROOFTOPS, DRIVEWAYS, AND STREETS.

THE SITE WILL DRAIN THROUGH STORM PIPES TO A PROPOSED SAND FILTER AND UNDERGROUND DETENTION FACILITY. THE FACILITIES ARE OFFLINE FROM THE STORM PIPE SYSTEM AND THE UNDERGROUND DETENTION WILL BE SIZED TO PROVIDE THE REQUIRED STORAGE VOLUME. BOTH SYSTEMS EMPTY INTO THE STORM PIPE SYSTEM WHICH WILL CONNECT TO THE EXISTING SYSTEM ALONG THE WEST SIDE OF TELEGRAPH ROAD. THE EXISTING STORM PIPE SYSTEM EMPTIES INTO AN EASEMENT IN THE PIKES BRANCH FLOODPLAIN. THE DRAINAGE AREA AT THE POINT OF OUTFALL INTO PIKES BRANCH IS 100 TIMES THE SITE AREA AND IS THEREFORE AN ADEQUATE OUTFALL.

PUBLIC IMPROVEMENTS NARRATIVE

- PUBLIC IMPROVEMENTS TO THE AREA SURROUNDING THE PROPOSED SITE WILL BE IN FORM OF:
- 14' LANE FROM C/L TO FACE OF CURB WILL BE PROVIDED ON THE EXISTING SHARON CHAPEL ROAD.
 - CURB AND GUTTER WITH STORM INLETS WILL REPLACE THE EXISTING DITCH ALONG SHARON CHAPEL ROAD. A 3.5' GRASS STRIP AND A 5' SIDEWALK HAS ALSO BEEN PROPOSED.
 - A 8' BICYCLE TRAIL WILL BE CONSTRUCTED ALONG TELEGRAPH ROAD WHICH WILL TIE INTO THE EXISTING TRAIL. THIS BICYCLE TRAIL WILL ALSO TIE INTO THE PROPOSED 5' SIDEWALK ON SHARON CHAPEL ROAD. A HANDICAP RAMP PROPOSED AT THIS INTERSECTION WILL PROVIDE UNHINDERED CONNECTION TO THE PROPOSED TRAIL.
 - A 100' TAPER LANE WILL ALSO BE PROVIDED ON TELEGRAPH ROAD.



TYPICAL LOT LAYOUT
NOT TO SCALE

ZONING TABULATION:

COUNTY OF FAIRFAX

EXISTING ZONING:	R-2
PROPOSED ZONING:	PDH-2
MINIMUM DISTRICT SIZE:	2.0 AC
MINIMUM LOT AREA:	NO REQUIREMENT
AVERAGE LOT AREA:	NO REQUIREMENT
MINIMUM LOT WIDTH:	NO REQUIREMENT
INTERIOR LOT CORNER:	NO REQUIREMENT
MAXIMUM BUILDING HEIGHT:	40'
PROVIDED BUILDING HEIGHT:	40'
MINIMUM SETBACKS:	FRONT YARD: NO REQUIREMENT SIDE YARD: NO REQUIREMENT REAR YARD: NO REQUIREMENT
PARKING SPACES REQUIRED:	2 SPACES/DU = 24
PARKING SPACES PROVIDED:	GARAGE: 12 x 2 = 24
ALL UNITS 2-CAR GARAGE UNITS	
TREE COVER REQUIRED:	20% (53,915 SF)
EXISTING TREE COVER TO BE PRESERVED (23,394 SF X 1.25):	29,243 SF
TREE COVER PROPOSED:	35,550 SF
TOTAL COVER PROVIDED:	24.0% (64,793 SF)

SITE TABULATION

SITE AREA:	269,571 SF (6.1885 AC)
PROPOSED USE:	SINGLE FAMILY DETACHED DWELLINGS
PROPOSED NUMBER OF DWELLING UNITS:	12
MAXIMUM DENSITY:	2.0 DU/AC
PROPOSED DENSITY:	2.0 DU/AC
TOTAL AREA IN LOTS:	125,502 SF±
AVERAGE LOT AREA:	10,460 SF±
FLOOR AREA RATIO (MAXIMUM):	N/A
FLOOR AREA RATIO (PROVIDED):	N/A
STREET DEDICATION-TELEGRAPH ROAD	2,740 SF±
PROPOSED PRIVATE STREET	24,940 SF±

OPEN SPACE

REQUIRED OPEN SPACE:	20% (53,915 SF)
PROVIDED OPEN SPACE:	11,300 SF 42,300 SF 15,300 SF 68,900 SF (25%)

DENSITY CALCULATION

COMPREHENSIVE PLAN DENSITY IS 2-3 DU/AC., HOWEVER ACCORDING TO THE FAIRFAX COUNTY SOILS MAPS, MARINE CLAYS ARE PRESENT ON APPROXIMATELY 87% OF THE SITE, THEREFORE THE DENSITY CALCULATION IS COMPUTED PER SECTION 2-308.2 OF THE FAIRFAX COUNTY ZONING ORDINANCE AS FOLLOWS:

SOIL TYPE	PROPOSED DENSITY	PROPOSED UNITS
37B2 - BELTSVILLE SILT LOAM ±13% OF SITE	.80 AC. @ 3 DU/AC	2.40
118 - MARINE CLAY ±87% OF SITE	1.85 AC. @ 3 DU/AC	5.55
MARINE CLAY - ±57% OF SITE	3.52 AC. @ 1.5 DU/AC	5.28
TOTAL PERMITTED DENSITY	6.18 AC. (6.1885 AC.)	13.23

PROPOSED DENSITY: 1.9
 12 UNITS / 6.1885 AC. = 2 DU/AC.
 LOTS RANGE FROM 7,385 TO 15,936 SF

APPLICANT
SHARON CHAPEL, LLC.
 8206 Leesburg Pike, Suite 302
 Vienna, Virginia 22182
 (703) 734-1999 FAX: (703) 734-1959

SHEET INDEX

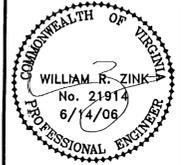
1. COVER SHEET
2. EXISTING CONDITIONS
3. CONCEPTUAL / FINAL DEVELOPMENT PLAN
- 3A. PEDESTRIAN & TRAFFIC ACCESS PLAN
4. EXISTING VEGETATION MAP
5. LANDSCAPE PLAN
6. STORMWATER MANAGEMENT CALCULATIONS
7. BMP COMPUTATIONS



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DATE	REVISION
10-12-05	ADDRESS P 4 Z COMM.
1-5-06	COUNTY COMMENTS
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 703.273.6620 · fax 703.273.7636



EXISTING CONDITIONS

WILTON HILL
 LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1" = 50'
 DATE: 07/21/05
 DESIGN: RB
 DRAWN: RB
 CHECKED:
 SHEET No. 2 OF 7

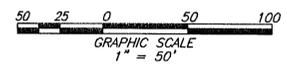


CURVE TABLE

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD LENGTH	CHORD BEARING	TANGENT
C1	25.0000'	39.2699'	90°00'00"	35.3563'	N85°17'14"E	25.0000'
C2	271.9183'	136.5512'	28°46'21"	135.1209'	S60°18'26"E	69.7475'
C3	445.0000'	167.2433'	21°52'00"	166.2607'	S67°26'46"E	84.6200'

- LEGEND**
- - - - - EXISTING CONTOUR
 - - - - - EXISTING HOODS LINE
 - - - - - EXISTING STORM SEWER
 - - - - - EXISTING SANITARY SEWER
 - - - - - EXISTING WATER LINE
 - - - - - EXISTING CURB AND GUTTER
 - - - - - EDGE OF PAVEMENT
 - - - - - FENCE (ALL TYPES)
 - DECIDUOUS TREE
 - CONIFER TREE

RZ/FDP
 Application No. 115-LE-12 Staff D.C.
 APPROVED DEVELOPMENT PLAN
 (DP) (GDP) (CDP) (FDP)
 SEE PROFESSIONALS DATED 7/3/06
 Date of (BOS) (PC) approval 7/3/06
 Sheet 2 of 8



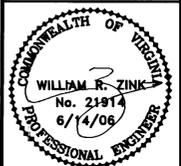
ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

EVM COVER TYPE SUMMARY TABLE

AREA	COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	ACREAGE	CONDITION/DESCRIPTION
A	OLD FIELD	GRASSES, SWEET GUM, RED MAPLE, VA PINE	PIONEER	1.93	FORMER HORSE PASTURE, OVERGROWN MEADOW GRASS WITH PIONEER TREES
B	UPLAND FOREST	OAK, HICKORY, POPLAR, VA PINE	SUB-CLIMAX	0.81	SEVERAL PINES IN POOR CONDITION, ALL OTHER TREES ARE GOOD TO EXCELLENT
C	MAINTAINED GRASSLAND	GRASS, BRADFORD PEAR, OAK, LEYLAND CYPRESS, SHRUBS	N/A	2.91	GRASSED AND LANDSCAPED AREAS INCLUDING SCREENS OF LARGE LEYLAND CYPRESS, ORNAMENTAL TREES, AND MATURE OAK ROW, GENERALLY OVERGROWN AND POORLY MAINTAINED
D	DEVELOPED LAND	N/A	N/A	0.54	BUILDINGS, DRIVEWAYS, POOL AND CONC./STONE PATIO AREAS
				TOTAL: 6.19 AC.	

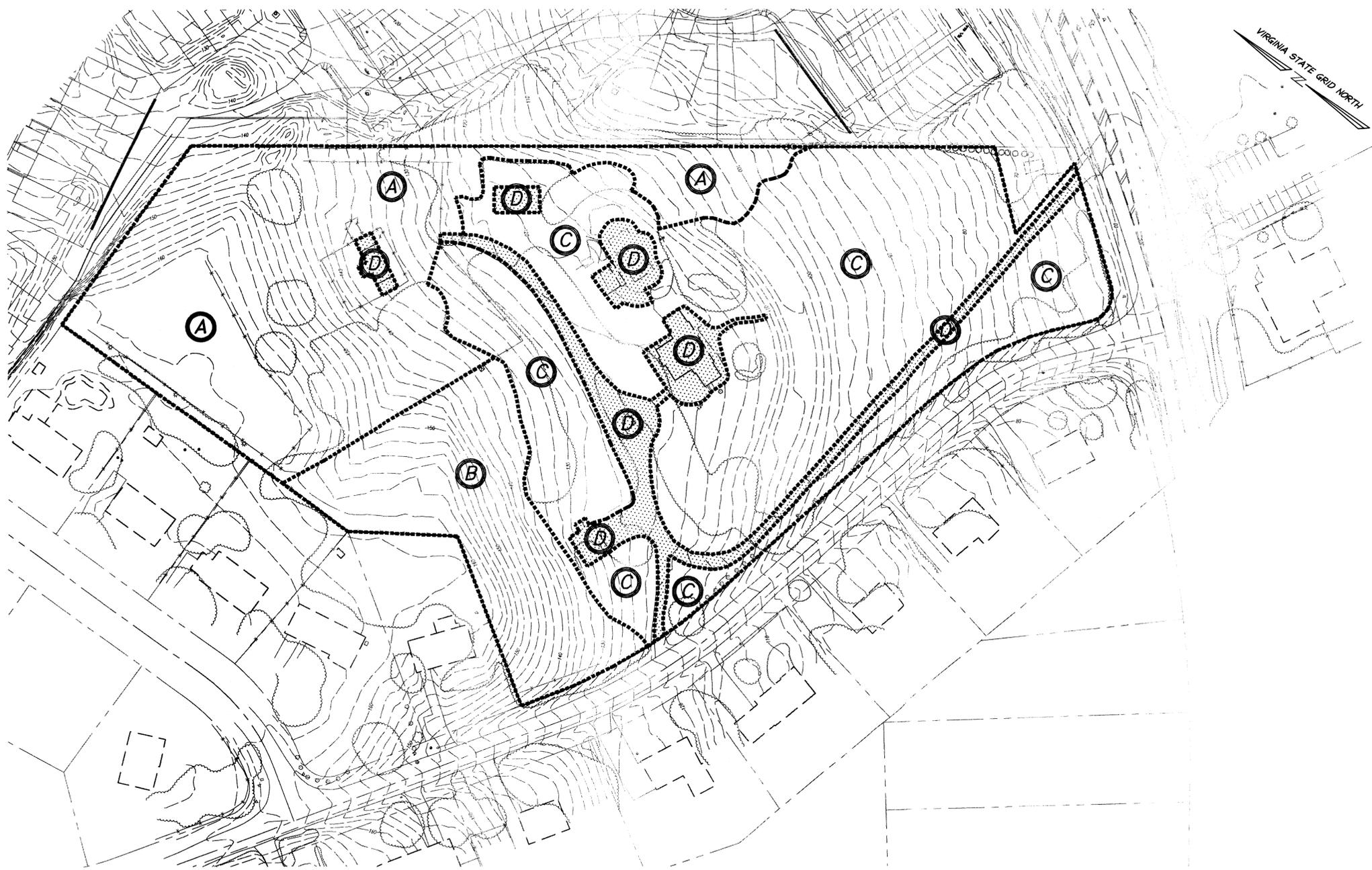
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EXISTING VEGETATION MAP

WILTON HILL
 LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA



NOTES

- PROPOSED TREE COVER TO MEET OR EXCEED MINIMUM REQUIREMENTS.
- EXISTING VEGETATION WITHIN LIMITS OF CLEARING AND GRADING TO BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. ANY TREES PLANNED TO BE SAVED WHICH DO NOT SURVIVE SITE CONSTRUCTION WILL BE REPLACED WITH NEW TREES, SUBJECT TO THE APPROVAL OF DPWES AND THE URBAN FORESTER.

LEGEND

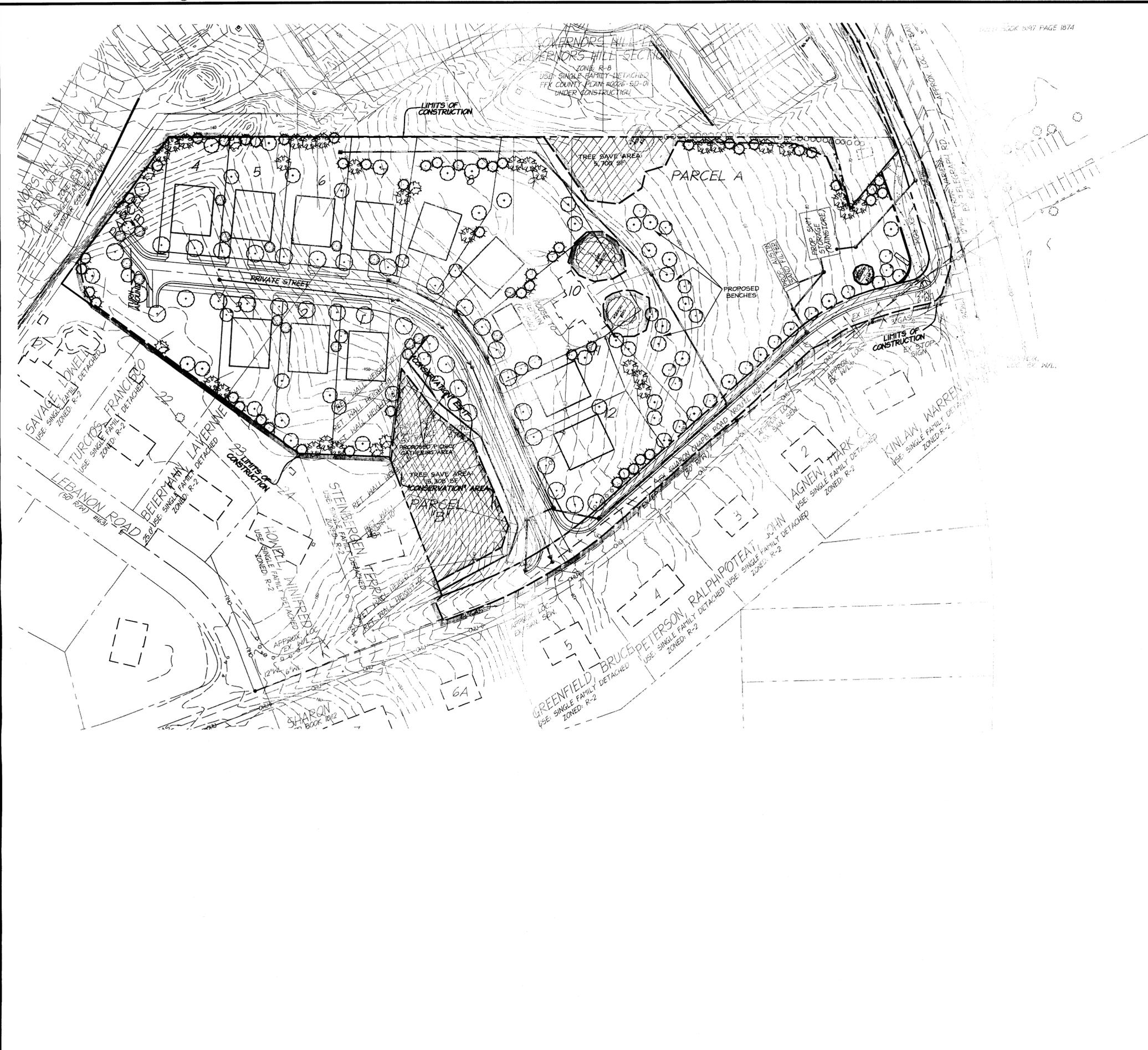
- LIMITS OF CONSTRUCTION
- EXISTING CONTOUR
- EXISTING HOODS LINE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- E.P. EDGE OF PAVEMENT
- EDGE OF PAVEMENT
- FENCE (ALL TYPES)
- EXISTING BLDG/SURFACE
- DECIDUOUS TREE
- CONIFEROUS TREE
- EVM DESIGNATION

Application No. 215-LE-02 Staff J.C.
 APPROVED DEVELOPMENT PLAN
 (DP) (GDP) (CDP) (FDP)
 SEE PROFFERS DATED 11/14/05
 Date of (ECS) (FC) approval 7/31/06
 Sheet 5 of 8
 GRAPHIC SCALE 1" = 50'
 50 25 0 50 100

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

SCALE: 1" = 50'
 DATE: 07/21/05
 DESIGN: RB, CK
 DRAWN: RB, CK
 CHECKED:
 SHEET No.

4 of 7



DATE	REVISION
10-12-05	ADDRESS P & Z COMM.
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6-14-06	COUNTY COMMENTS

TREE COVER CALCULATIONS

GROSS SITE AREA (6.19 AC.)	= 269,573 SF
TREE COVER REQUIRED (ZONE PDH-2 = 20%)	= 53,915 SF
COVER PROVIDED BY TREE SAVE AREAS (23,394 SF. X 1.25)	= 29,243 SF
CANOPY AREA OF TREES TO BE PLANTED	= 35,550 SF
TOTAL CANOPY AREA PROVIDED	= 64,793 SF (24.0%)

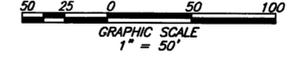
NOTES

- PROPOSED TREE COVER TO MEET OR EXCEED MINIMUM REQUIREMENTS.
- PROPOSED LANDSCAPING SHOWN HEREON IS ILLUSTRATIVE ONLY. THE FINAL LANDSCAPING PLAN IS SUBJECT TO FINAL ENGINEERING DESIGN, AND LOCATION OF PROPOSED PLANT MATERIAL MAY VARY, SUBJECT TO THE APPROVAL OF THE OFFICE OF URBAN FORESTRY.
- EXISTING VEGETATION WITHIN LIMITS OF CLEARING AND GRADING TO BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. ANY TREES PLANNED TO BE SAVED WHICH DO NOT SURVIVE SITE CONSTRUCTION WILL BE REPLACED WITH NEW TREES, SUBJECT TO THE APPROVAL OF DPWES AND THE URBAN FORESTER.

LEGEND

- : LIMITS OF CONSTRUCTION
- : EXISTING CONTOUR
- : EXISTING WOODS LINE
- : EXISTING STORM SEWER
- : EXISTING SANITARY SEWER
- : PROPOSED STORM SEWER
- : PROPOSED SANITARY SEWER
- : EXISTING WATER LINE
- : PROPOSED WATER LINE
- : EXISTING CURB AND GUTTER
- : PROPOSED CURB AND GUTTER
- E.P. : EDGE OF PAVEMENT
- : EDGE OF PAVEMENT
- X-X-X-X-X : FENCE (ALL TYPES)
- : DECIDUOUS TREE
- : CONIFEROUS TREE
- : CATEGORY IV DECIDUOUS STREET TREES (250 SF)
- : CATEGORY IV DECIDUOUS (200 SF)
- : CATEGORY III DECIDUOUS (150 SF)
- : CATEGORY II DECIDUOUS (100 SF)
- : CATEGORY IV EVERGREEN (200 SF)
- : CATEGORY III EVERGREEN (150 SF)
- : CATEGORY II EVERGREEN (100 SF)

RZFOP
Application No. 05-15-02 Staff J.C.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (EDP)
SEE PROFFERS DATED 4/12/06
Date of (RCS) (PC) approval 5/31/06
Sheet 4 of 6



ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

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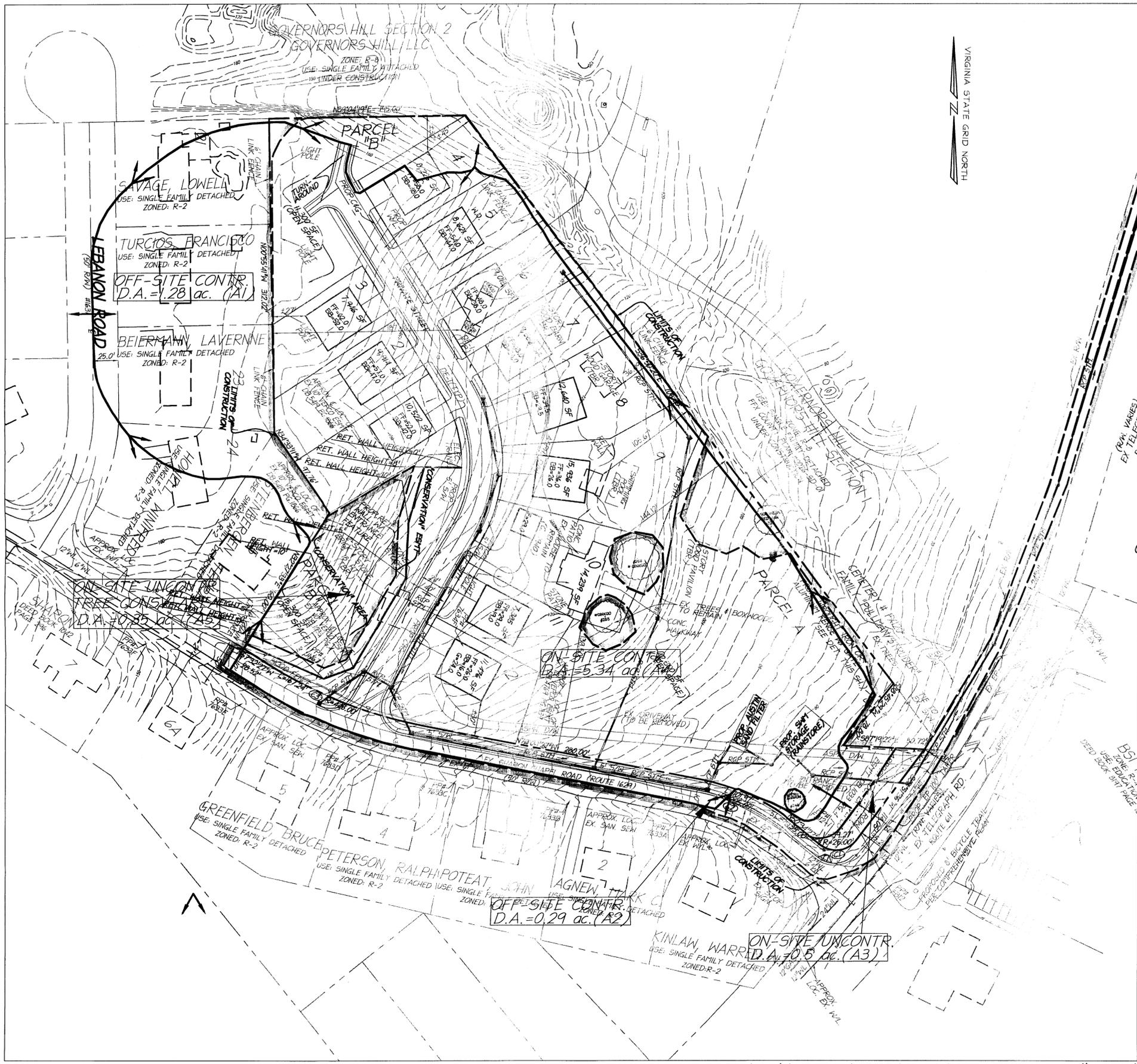


LANDSCAPE PLAN

WILTON HILL
LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1" = 50'
DATE: 07/21/05
DESIGN: RB, GK
DRAWN: RB, GK
CHECKED:
SHEET No.

5 of 7
C- 5112



DRAINAGE AREA MAP 1"=50'

DATE	REVISION
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SWM/BMP NARRATIVE
 WILTON HILL WILL MEET BMP REQUIREMENTS WITH A SAND FILTER AND PLACING UNDISTURBED OPEN SPACE INTO CONSERVATION EASEMENTS. THE SAND FILTER WILL BE PLACED OFFLINE FROM THE PROPOSED STORM PIPE SYSTEM AS TO HAVE THE PEAK FLOWS BYPASS THE BMP FACILITY INTO THE UNDERGROUND DETENTION FACILITY. A PHOSPHORUS REMOVAL RATE OF OVER 50% IS PROVIDED BY THE FILTER AND CONSERVATION EASEMENT WITH A PHOSPHORUS REMOVAL REQUIREMENT OF 40%.

STORMWATER MANAGEMENT IS PROVIDED BY AN UNDERGROUND STORAGE FACILITY 'RAINSTORE' LOCATED NEAR THE CORNER OF SHARON CHAPEL ROAD AND TELEGRAPH ROAD. THE UNDERGROUND FACILITY PROVIDES DETENTION FOR THE 2 AND 10-YEAR STORM EVENTS. THE STRUCTURE IS OFFLINE FROM THE STORM PIPE SYSTEM AND WILL USE A FLOW SPLITTER TO DIVERT WATER INTO THE FACILITY. BOTH THE BMP AND SWM FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.

SIZING OF THE RAINSTORE DETENTION UNIT IS PROVIDED BASED ON DETENTION REQUIRED IF OUTFLOW = 80% OF PRE-DEVELOPED CONDITIONS.

2 YR INFLOW HYDROGRAPH

INFLow HYDROGRAPH ...
 HYG file =
 HYG ID = 2 yr inflow
 HYG Tag =
 Peak Discharge = 14.39 cfs
 Time to Peak = .0833 hrs
 HYG Volume = 21163 cu.ft.

Time hrs	Output cfs	Time increment = .0833 hrs
.0000	.00	14.39
.4165	4.56	3.85
.8330	2.35	2.16
1.2495	1.48	1.29
1.6660	.66	.50

10 YR INFLOW HYDROGRAPH

INFLow HYDROGRAPH ...
 HYG file =
 HYG ID = 10 Yr Inflow
 HYG Tag =
 Peak Discharge = 19.19 cfs
 Time to Peak = .0833 hrs
 HYG Volume = 28165 cu.ft.

Time hrs	Output cfs	Time increment = .0833 hrs
.0000	.00	19.19
.4165	6.05	5.12
.8330	3.12	2.85
1.2495	1.95	1.74
1.6660	.87	.66

DETENTION STORAGE ESTIMATES -- Target Peak Outflow Rate

Return Events	Peak In (cfs)	Target (cfs)	Lower (cu.ft)	Linear (cu.ft)	Curvilinear (cu.ft)	Upper (cu.ft)	Total (cu.ft)
2	14.390	9.320	1021	2897	2470	5678	21163
10	19.190	12.430	1360	3861	3292	7570	28165

CALCULATION TIME RANGES

Return Events	Lower (hrs)	From (hrs)	To (hrs)	Linear (hrs)	From (hrs)	To (hrs)	Curvilinear (hrs)	From (hrs)	To (hrs)	Upper (hrs)	From (hrs)	To (hrs)	Total (hrs)
2	.05	.17	.00	.17	.00	.17	.00	.17	.00	.17	.00	.17	2.00
10	.05	.17	.00	.17	.00	.17	.00	.17	.00	.17	.00	.17	2.00

POND PACK B WAS USED TO CALCULATE DETENTION VOLUME BASED ON AN ALLOWABLE RELEASE RATE (TARGET RATE). THE AVERAGE OF VOLUMES OBTAINED FROM LINEAR, CURVILINEAR & UPPER METHODS WAS ADOPTED.

THEREFORE DETENTION TANK VOLUME REQUIRED FOR 10 YR STORM = ±1900 CU. FT. RAINSTORE VOLUME REQUIRED = ±5400 CU. FT. (RAINSTORE VOID RATIO= 0.94) ASSUMING A DEPTH OF ±4', AREA REQUIRED = ± 1350 SQ. FT. ASSUMING LENGTH= ±40', WIDTH= ±34'

PROVIDE RAINSTORE UNITS- ±4' (D) X ±34' (W) X ±40' (L)

Application No. 2005-032 Staff *[Signature]*
 APPROVED DEVELOPMENT PLAN
 (DP) (GDP) (GDP) (EDP)
 SEE PROFFERS DATED 4/4/06
 Date of (RCS) (PC) approval 7/3/06
 Sheet 7 of 8



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STORMWATER MANAGEMENT CALCULATIONS

WILTON HILL
 LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: AS NOTED
 DATE: 07/21/05
 DESIGN: D1/PG
 DRAWN: D1/PG
 CHECKED:
 SHEET No. 6 of 7

BMP COMPUTATIONS

BMP Facility Design Calculations

Plan Name	WILTON HILL
Date	4/20/2006
Plan Number	01-02-02
Engineer	PG

Watershed Information

Part 1: List all of the Subareas and "C" Factors used in the BMP Computations

Subarea Designation & Description	"C"	Acres
A1 OFFSITE, CONTROLLED	0.45	1.280
A2 OFFSITE, CONTROLLED	0.90	0.290
A3 ONSITE, UNCONTROLLED	0.45	0.500
A4 ONSITE, CONTROLLED	0.44	5.340
A5 ONSITE, TREE CONSERVATION AREA	0.20	0.350

Phosphorus Removal - "Occoquan Method"

Part 2: Compute the Weighted Average "C" Factor for the Site

(A) Area of the Site	(a) acres	6.19
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Subarea Designation	"C"	Acres	Product
A1 OFFSITE, CONTROLLED	0.45	x 1.280	= 0.58
A2 OFFSITE, CONTROLLED	0.90	x 0.290	= 0.26
A3 ONSITE, UNCONTROLLED	0.45	x 0.500	= 0.23
A4 ONSITE, CONTROLLED	0.44	x 5.340	= 2.35
A5 ONSITE, TREE CONSERVATION AREA	0.20	x 0.350	= 0.07
(C) Weighted average "C" factor	(b) Total	=	3.48
			0.56

Part 3: Compute the Total Phosphorus Removal for the Site

Subarea Designation	BMP Type	Rem. Eff %	Offsite Reduction	Area Ratio	"C" Factor Ratio	Product
A1 OFFSITE, CONTROLLED	SAND FILTER	65	x	1.28 / 6.19 = 0.207	x 0.45 / 0.56 = 0.800	2.15
A2 OFFSITE, CONTROLLED	SAND FILTER	65	x	0.29 / 6.19 = 0.047	x 0.90 / 0.56 = 1.600	4.87
A3 ONSITE, UNCONTROLLED		0	x	0.50 / 6.19 = 0.081	x 0.45 / 0.56 = 0.800	0.00
A4 ONSITE, CONTROLLED	SAND FILTER	65	x	5.34 / 6.19 = 0.863	x 0.44 / 0.56 = 0.782	43.87
A5 ONSITE, TREE CONSERVATION AREA	OPEN SPACE	100	x	0.35 / 6.19 = 0.057	x OPENSACE = 1.000	5.65
(a) Total =						56.54%

Part 4: Determine Compliance with Phosphorus Removal Requirement

(A) Select Requirement	(a) 40 %
Water Supply Overlay District (Occoquan Watershed) =	50% (Fairfax County and Prince William County)
Chesapeake Bay Preservation Area (New Development) =	40% (Fairfax County) 50% (Prince William County)
Chesapeake bay Reseration Area (Redevelopment) =	[1-0.0 x (T <pre>pre</pre> "/T <pre>post</pre>)] x 100 = %
(B) If Line 3(a) 56.54 > Line 4(a) 40	the phosphorus removal requirement is satisfied

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

(A) List the areas to be controlled by the proposed BMP.
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Subarea Designation	"C"	Acres	Offsite Reduction	Product
A1 OFFSITE, CONTROLLED	0.45	x 1.28	0.20	= 0.12
A2 OFFSITE, CONTROLLED	0.90	x 0.29	1.00	= 0.26
A4 ONSITE, CONTROLLED	0.44	x 5.34	1.00	= 2.35
(a)		6.91		
(B)			(b) 2.73	
(C) Weighted average "C" factor			(b)/(a) = (c) 0.39	

PRELIMINARY SAND FILTER DESIGN

MINIMUM STANDARD 3.12 CHAPTER 3

Design Procedures

The following design procedure is structured to assure that the desired water quality volume is captured and treated by the Austin Filter. The procedure assumes that a filter shell with a rectangular cross-section is to be used.

Standard Design Logic

Employ the following design logic to design Austin Sand Filters for use in Virginia:

- Determine Governing Site Parameters

Determine the Impervious area on the site (I_a , in acres), the water quality volume to be treated (WQV in $ft^3 = 1816 I_a$).

$$I_a = 1.28 \text{ Ac.} \therefore WQV = 1816 I_a = 2,400 \text{ ft}^3$$

- Select Filter Depth and Determine Maximum Ponding Depth

MAXIMUM PONDING DEPTH = 1.5 (2h); FILTER DEPTH = 2'

Considering the data from Step 1) above, select the Filter Depth (L_f) and determine the maximum achievable ponding depth over the filter ($2h$).

- For Full Sedimentation Systems, size the sedimentation basin (vault) to hold the WQV with a minimum depth of 10 feet. PROVIDE SEDIMENTATION BASIN $10' (D) \times 10' (W) \times 24' (L)$

- Compute the Minimum Area of the Sand Filter (A_m)

For systems with full sediment protection, provide a sediment chamber of sufficient volume to hold the WQV. Make the depth ≤ 10 feet. To compute the area of the filter, use the formula:

$$A_f = 100 I_a = 100 \times 1.28 = 128 \text{ ft}^2$$

Where I_a = the impervious acreage on the drainage shed.

- Select Filter Width and Compute Filter Length and Adjusted Filter Area

Considering site constraints, select the Filter Width (W_f). Then compute the Filter Length (L_f) and the Adjusted Filter Area (A_a) ASSUME $W_f = 10'$

$$L_f = A_m / W_f \quad L_f = 128 / 10' = 12.8'$$

$$A_a = W_f \times L_f$$

Sizing computations are completed at this point for the full sediment protection system.

$$3.12C-20 \therefore \text{SEDIMENTATION BASIN} = 10' (D) \times 10' (W) \times 24' (L)$$

$$\text{FILTER DIMENSIONS} = 2' (D) \times 10' (W) \times 15' (L)$$

DATE	REVISION
10-12-05	ADDRESS P & Z CORR.
1-5-06	COUNTY COMMENTS
2-09-06	COUNTY COMMENTS
4-20-06	COUNTY COMMENTS
5-11-06	COUNTY COMMENTS
6-14-06	COUNTY COMMENTS

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BMP COMPUTATIONS

WILTON HILL
 LEE DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: N/A
DATE: 07/21/05
DESIGN: LDS/PG DRAWN: LDS/PG CHECKED:
SHEET No. 7 of 7

RZ/FDP
 Application No. 01-02-02-032 Staff J.C.
 APPROVED DEVELOPMENT PLAN
 (DP) (GDP) (CDP) (FDP)
 SEE PROFESSIONALS DATED 4/21/06
 Date of (BOS) (PC) approval 7/21/06
 Sheet 7 of 7