RECEIVED
[redacted] 16 2006
FAUQUIER COUNTY
COMMUNITY DEVELOPMENT

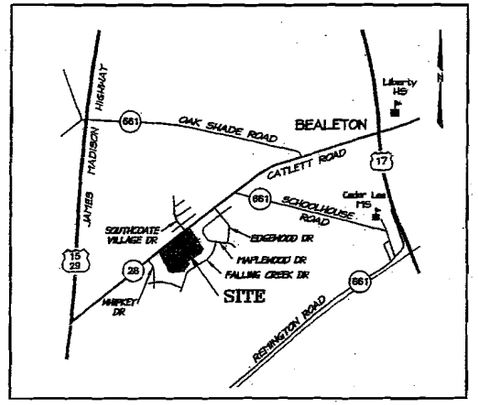
PRELIMINARY SUBDIVISION PLAN

COLONIAL DOWNS

LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

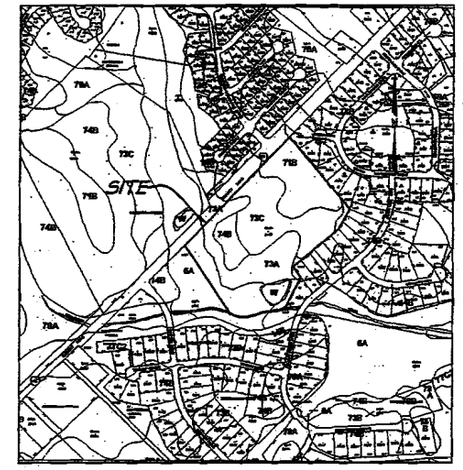
VICINITY MAP

SCALE = 1"=2000'



SOILS MAP

SCALE = 1"=500'



SOILS TYPES

SOIL NAME	MAPPING UNIT	HYDROLOGIC GROUP	EROSION HAZARD	SLOPE RANGE	USE POTENTIAL	SHRINK/SWELL POTENTIAL	BEARING CAPACITY
FREDERICK SILT LOAM	7B	B	MODERATE	2 TO 7 %	GOOD	LOW	LOW
PENN LOAM	7A	C	SLIGHT	0 TO 2 %	GOOD	LOW	MODERATE
PENN LOAM	7C	C	HIGH	7 TO 15 %	GOOD	MODERATE	LOW
ASHEBROOK SILT LOAM	74B	C	MODERATE	2 TO 7 %	POOR	MODERATE	LOW

OWNER:

GERALD B. JR. AND SALLY ANN YECKLEY
6717 CATLETT ROAD
BEALETON, VA 22712

Owner

APPLICANT:

BRADFORD KLINE & ASSOCIATES
1750 TYSONS BOULEVARD, SUITE 530
McLEAN, VA 22102
(703) 734-6600

Hannan Abdel-Jalil Land Acquisition Manager

PREPARED BY

christopher consultants, ltd.
7215 gateway court
manassas, va. 20109
(703) 393-9887

I hereby certify that all requirements as set forth in the Fauquier County Subdivision Ordinance, Section 9 for Preliminary Plats have been met and that the plat meets all State and Local standards to the best of my knowledge.

COMMONWEALTH OF VIRGINIA
BRUCE K. KILBY
No. 35686
PROFESSIONAL ENGINEER
2/14/06

SHEET INDEX

1. COVER SHEET
2. MISCELLANEOUS NOTES & DETAILS
3. PRELIMINARY PLAN
4. PRELIMINARY PLAN DETAILED
5. PRELIMINARY BMP MAP & COMPUTATIONS
6. PRELIMINARY SWM COMPUTATIONS
7. LANDSCAPE PLAN
8. PRELIMINARY SOILS MAP

christopher consultants
engineering · surveying · land planning

SEPTEMBER 16, 2005

PHC-2714

GENERAL NOTES :

1. THE PROPERTY SHOWN HEREON IS LOCATED ON FAUQUIER COUNTY GPIN # 6889-61-2415 AND IS ZONED R1.
2. THE PROJECT CONSISTS OF 17 SINGLE FAMILY DETACHED HOMES.
3. OWNER OF RECORD: GERALD B. TECKLEY
   6717 CATLETT RD.
   BEALETON, VA 22712

   APPLICANT: BRADFORD KLINE & ASSOCIATES
   1750 TYSONS BOULEVARD, SUITE 530
   McLEAN, VA 22102
4. BOUNDARY SURVEY INFORMATION PROVIDED BY christopher consultants, ltd., DATED 7/19/05 WITH A TITLE REPORT.
5. TOPOGRAPHY SHOWN AT 2 FOOT CONTOUR INTERVALS, BY christopher consultants, ltd., DATED 7/19/05.
6. PUBLIC WATER IS AVAILABLE TO THE SITE BY FAUQUIER COUNTY WATER AND SANITATION AUTHORITY (W.S.A.).
7. PUBLIC SEWER WILL BE PROVIDED BY CONNECTION TO EXISTING SANITARY SEWER.
8. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE " VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK " AND AS MODIFIED BY FAUQUIER COUNTY CODE 104 - 1 - 8.
9. SOLID WASTE STORAGE WILL BE PROVIDED BY INDIVIDUAL HOUSEHOLD CONTAINERS.
10. CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL COMMENCE AS SOON AS ALL NECESSARY COUNTY APPROVALS AND PERMITS ARE OBTAINED. HOWEVER, THIS MAY BE SUBJECT TO CHANGE WITH MARKET CONDITIONS.
11. PUBLIC IMPROVEMENTS (STORM, SANITARY, WATER MAIN, AND PRIVATE TRAVEL WAYS AND PARKING) WILL BE CONSTRUCTED IN A TIMELY MANNER AND WILL COINCIDE WITH CONSTRUCTION OF PROPOSED DWELLINGS.
12. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES OR BURIAL SITES LOCATED ON THIS PROPERTY.
13. ALL EXISTING WELLS SHALL BE LOCATED AND CLOSED IN ACCORDANCE WITH FAUQUIER COUNTY HEALTH DEPARTMENT REQUIREMENTS.
14. TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THERE ARE NO HAZARDOUS OR TOXIC SUBSTANCES ON SITE. ANY PETROLEUM PRODUCTS UTILIZED, STORED, TREATED AND/OR DISPOSED SHALL COMPLY WITH FEDERAL AND STATE REGULATIONS.
15. EXCEPT WHERE NOTED, TO THE BEST OF OUR KNOWLEDGE, THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCE, REGULATIONS AND ADOPTED STANDARDS UNLESS NOTED OR OTHERWISE WAIVED.
16. OPEN SPACE IS TO BE CONVEYED TO AND MAINTAINED BY THE HOMEOWNER ASSOCIATION.
17. TITLE III OF THE AMERICANS WITH DISABILITIES ACT REQUIRES THAT ACCESSIBILITY TO PLACES OF PUBLIC ACCOMMODATION AND COMMERCIAL FACILITIES BE PROVIDED. THE BUILDER IS RESPONSIBLE FOR ACCESSIBILITY TO SALES OFFICES WITHIN MODEL HOMES AS REQUIRED UNDER TITLE III.
18. CONTRACTOR SHALL NOTIFY 'MISS UTILITY' NOTIFICATION CENTER OF PROPOSED EXCAVATION, DEMOLITION,OR BLASTING AT LEAST TWO WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION, DEMOLITION, OR BLASTING IN ACCORDANCE WITH THE VIRGINIA UNDERGROUND UTILITY DAMAGE PREVENTION ACT. IN ADDITION, NAME AND TELEPHONE NUMBERS SHALL ALSO BE USED TO SERVE IN AN EMERGENCY CONDITION AS REQUIRED BY SECTION 63-2-2 OF THE FAUQUIER COUNTY CODE. CONTACT 'MISS UTILITY' AT 1-800-552-7001.
19. EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION AND FIELD TOPOGRAPHIC SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITIES AND ENSURE THE CONTINUANCE OF SERVICE.
20. FEATURES SUCH AS SUNROOMS, DECKS, PATIOS, CHIMNEYS, STAIRS, STOOPS AND SIDE ENTRANCES ARE OPTIONS FOR EACH DWELLING AND WILL BE SPECIFIED ON THE SITE PLAN. ANY ADDITIONS MUST COMPLY WITH PROVISIONS OF THE ZONING ORDINANCE.
21. PUBLIC SCHOOLS SERVING THIS SITE:
   ELEMENTARY SCHOOL : GRACE MILLER
   MIDDLE SCHOOL : CEDAR LEE JR. HIGH
   HIGH SCHOOL : LIBERTY HIGH
22. THE ENGINEER SHALL NOT HAVE CONTROL OVER OR CHANGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK SHOWN ON THESE PLANS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULE OR FAILURE TO CARRY OUT THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR ACTS OR OMISSIONS OF CONTRACTOR, SUBCONTRACTOR, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.
23. PRELIMINARY SWM/BMP COMPUTATIONS HAVE BEEN PROVIDED TO MEET FAUQUIER COUNTY CRITERIA AND ARE SUBJECT TO CHANGE AT THE TIME OF FINAL ENGINEERING. NO STORMWATER RUNOFF GENERATED FROM NEW DEVELOPMENT SHALL BE DISCHARGED INTO JURISDICTIONAL WETLAND WITHOUT ADEQUATE TREATMENT.
24. THIS PRELIMINARY PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE AT TIME OF FINAL ENGINEERING.
25. CONSTRUCTION OF BELOW GRADE BASEMENTS WILL BE DETERMINED PER THE GEOTECHNICAL REPORT.
26. AN OVERLOT GRADING PLAN IS TO BE PROVIDED AT TIME OF FINAL CONSTRUCTION PLAN SUBMISSION.
27. A WATERLINE ANALYSIS AND FIRE FLOW TEST WILL BE PERFORMED AT THE TIME OF THE FIRST CONSTRUCTION PLAN SUBMISSION.
28. CURB, GUTTER AND SIDEWALK WILL CONFORM TO VDOT STANDARDS.
29. THE PROPERTY IS LOCATED ON FEMA FLOOD INSURANCE RATE MAP, NUMBER 510055 PANEL 360-A, DATED NOVEMBER 1, 1974. THE PROPERTY IS LOCATED IN ZONE A.
30. THE PLAN SHALL PROVIDE FOR THE PRESERVATION, OR PLANTING AND REPLACEMENT OF TREES ON SITE TO RESULT IN A TREE CANOPY OF AT LEAST 15
31. ANTICIPATED SEWAGE FLOWS: 17 LOTS x 350 = 5950 GPD, CALCULATED AT 20 YEARS MATURITY.
32. EVIDENCE THAT THERE IS ADEQUATE FIRE FLOW, AS OUTLINED BY THE OFFICE OF EMERGENCY SERVICES, WILL BE REQUIRED WITH THE FIRST SUBMISSION OF THE FINAL CONSTRUCTION PLAN. A WATER MODEL SHOWING EXISTING CONDITIONS AND ASSUMPTIONS AS TO BE INCLUDED.
33. THERE IS TO BE NO FILL IN THE FLOODPLAIN ASSOCIATED WITH TRAILS, SWM/BMP FACILITIES OR ANY OTHER USE WITHOUT A SPECIAL EXCEPTION.
34. NO STORMWATER RUNOFF GENERATED FROM NEW DEVELOPMENT SHALL BE DISCHARGED INTO JURISDICTIONAL WETLAND ADEQUATE TREATMENT.
35. ALL APPLICABLE STATE AND FEDERAL PERMITS ARE TO BE FILED WITH THE FIRTS SUBMISSION OF THE FINAL CONSTRUCTION PLANS. THIS INCLUDES THE COE/DEQ WETLANDS PERMITS.
36. THE HOUSE ON LOT 10 IS NOT TO BE LOCATED IN THE NATURAL SWALE.
37. ALL UTILITIES THAT ARE IN CONFLICT WITH THE PROPOSED WORK WILL NEED TO BE RELOCATED PRIOR TO ANY WORK BEING DONE WITHIN THE RIGHT-OF-WAY. ANY EXISTING UTILITIES ALONG ROUTE 28 THAT WILL BE UNDER THE PROPOSED PAVEMENT WILL NEED TO BE RELOCATED, AND SHOULD BE LABELED TO BE RELOCATED, AND SHOULD BE RELOCATED. WE RECOMMEND INITIATING THE RELOCATION PROCESS WITH THE APPROPRIATE UTILITY COMPANIES AS SOON AS POSSIBLE SO IT DOES NOT DELAY CONSTRUCTION.
38. ALL ROAD WAY CROSSINGS WITH UTILITIES SHALL BE MADE AS NEARLY AS POSSIBLE AT RIGHT ANGLES TO THE CENTER OF THE ROAD, SHALL BE A MINIMUM OF 36" BELOW FINISHED GRADE. (LAND USE PERMIT MANUAL SECTION 2.3(d)).

GENERAL NOTES CONTINUED:

39. RECREATIONAL FACILITIES WILL BE DESIGNED IN CONFORMANCE WITH PARKS AND RECREATION REQUIREMENTS AT THE TIME OF FINAL CONSTRUCTION PLAN SUBMISSION.
40. NO BELOW GRADE BASEMENTS WILL BE CONSTRUCTED ON SOILS WITH HIGH WATER TABLE DUE TO WETNESS UNLESS THE FOUNDATION DRAINAGE SYSTEM OF THE STRUCTURE IS DESIGNED BY A LICENSED PROFESSIONAL ENGINEER TO ASSURE A DRY BASEMENT AND PRECLUDED WET YARDS AND RECALCULATION OF PUMPED OR COLLECTED WATER. ALL DISCHARGED WATER (MECHANICAL OR GRAVITY) WILL BE CONVETED TO THE SUBDIVISION STORMWATER COLLECTION SYSTEM AND DISCHARGED THROUGH THE STORMWATER MANAGEMENT FACILITIES. DRAINAGE EASEMENTS, WHERE NECESSARY SHALL BE PLACED ON THE FINAL PLAT.

ROAD CONSTRUCTION NOTES (VDOT NOTES)

1. ALL STORM SEWER DESIGN CRITERIA WILL CONFORM TO VDOT'S DRAINAGE MANUAL SECTION 3.1.3.
2. ALL ROAD DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH VDOT'S CURRENT SUBDIVISION STREET REQUIREMENTS, DRAINAGE MANUAL, AND ROAD AND BRIDGE STANDARDS.
3. TREES WITHIN STREET RIGHTS OF WAY SHALL NOT BE CREDITED TOWARDS SATISFYING FAUQUIER COUNTY'S TREE CANOPY ORDINANCE.
4. UNPAVED PORTIONS OF STREET RIGHTS OF WAY SHALL NOT BE CREDITED TOWARDS OPEN SPACE REQUIREMENTS.
5. THE PAVEMENT DESIGN IS FOR PLANNING PURPOSES ONLY, AND THE FINAL DESIGN WILL BE BASED ON THE FLEXIBLE PAVEMENT DESIGN WORKSHEET PER THE 2000 PAVEMENT DESIGN GUIDE AND ACTUAL CBR VALUES.
6. A VIDEO CAMERA INSPECTION IS REQUIRED FOR ALL STORM SEWERS AND CULVERTS THAT ARE DEEMED INACCESSIBLE TO VDOT INSPECTIONS. THE VIDEO CAMERA INSPECTION SHALL BE MADE WITH A VDOT AND/OR COUNTY INSPECTOR PRESENT.

SITE TABULATIONS

TOTAL SITE AREA:	26.15 Ac
ZONE: R-1, CLUSTER	
1. MINIMUM DISTRICT SIZE:	5 ACRES
2. MINIMUM DEVELOPMENT SIZE:	5 ACRES
3. MINIMUM LOT SIZE:	25,000 SF
4. MINIMUM LOT WIDTH:	
INTERIOR LOT:	90 FT
CORNER LOT:	125 FT

BULK REQUIREMENT:

1. MAXIMUM BUILDING HEIGHT: 35 FT
2. MINIMUM YARD REQUIREMENT:
   - A. FRONT YARD: 50' FROM ℄ ROAD
   - B. SIDE AND REAR YARD: 15 FT
   - C. IN ADDITION OF A AND B, ABOVE, WHEN AN R-1 DEVELOPMENT ADJOINS AN EXISTING OR PLANNED RESIDENTIAL DEVELOPEMENT WHICH IS ZONED TO A LESSER DENSITY, A BUILDING SETBACK SHALL BE PROVIDED THAT IS NOT LESS THAN THE SETBACK REQUIRED IN THE ADJOINING ZONING DISTRICT.

TOTAL SITE AREA:	26.15 Ac
FLOOD PLAIN/WATERBODY AREA:	4.37 Ac
ADJUSTED SITE AREA:	23.97 Ac
MAX. DENSITY ALLOWED:	0.9 DU/AC OR 21 LOTS
DENSITY PROVIDED:	17 LOTS/23.97 AC = 0.71 DU/AC

OPEN SPACE CALCULATIONS

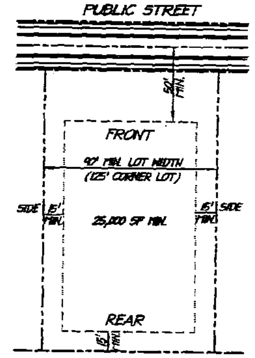
TOTAL SITE AREA:	26.15 Ac
TOTAL AREA OPEN SPACE REQUIRED:	13.08 AC. (50%)
TOTAL AREA OF OPEN SPACE PROVIDED:	13.59 Ac
AREA OF OPEN SPACE OUTSIDE FLOODPLAIN REQUIRED (13.08 x 0.2):	2.62 AC
AREA OF OPEN SPACE OUTSIDE FLOODPLAIN PROVIDED:	10.84 AC
ACTIVE RECREATION AREA REQUIRED:	3.00 Ac
ACTIVE RECREATION AREA PROVIDED:	3.00 Ac

ACTIVE RECREATION AREA TO INCLUDE A TOT LOT AND PICNIC AREA.

EQUIPMENT LIST: 1-SWINGING DEVICE
1-SLIDING DEVICE
1-CLIMBING DEVICE
2- PICNIC TABLES
2- TRASH RECEPTACLES

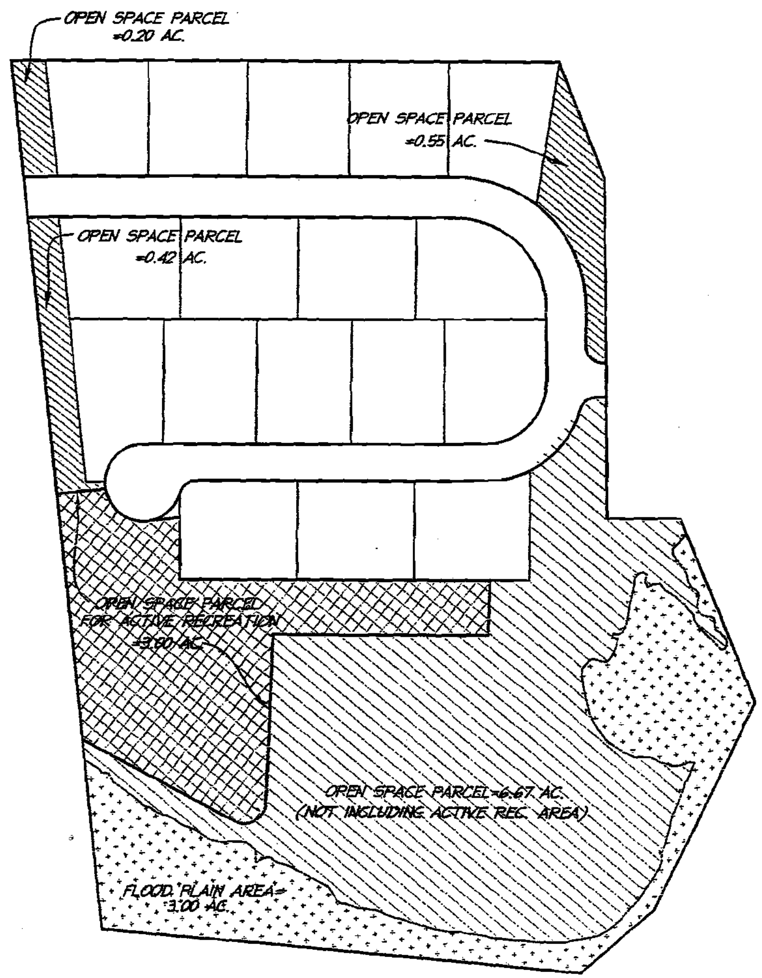
TYPICAL LOT SET-BACK DIAGRAM

NOT TO SCALE



OPEN SPACE MAP

SCALE 1"=100'



DATE	REVISION
02/08/06	CO. COMMENTS

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engineering · surveying · land planning
7218 gateway court·manassas, va. 20109
703.393.8887 · fax 703 393.8073

COMMONWEALTH OF VIRGINIA — LANCE C. KILBY — No. 35486 — 02/14/06 — PROFESSIONAL ENGINEER

MISCELLANEOUS NOTES AND DETAILS

COLONIAL DOWNS
LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

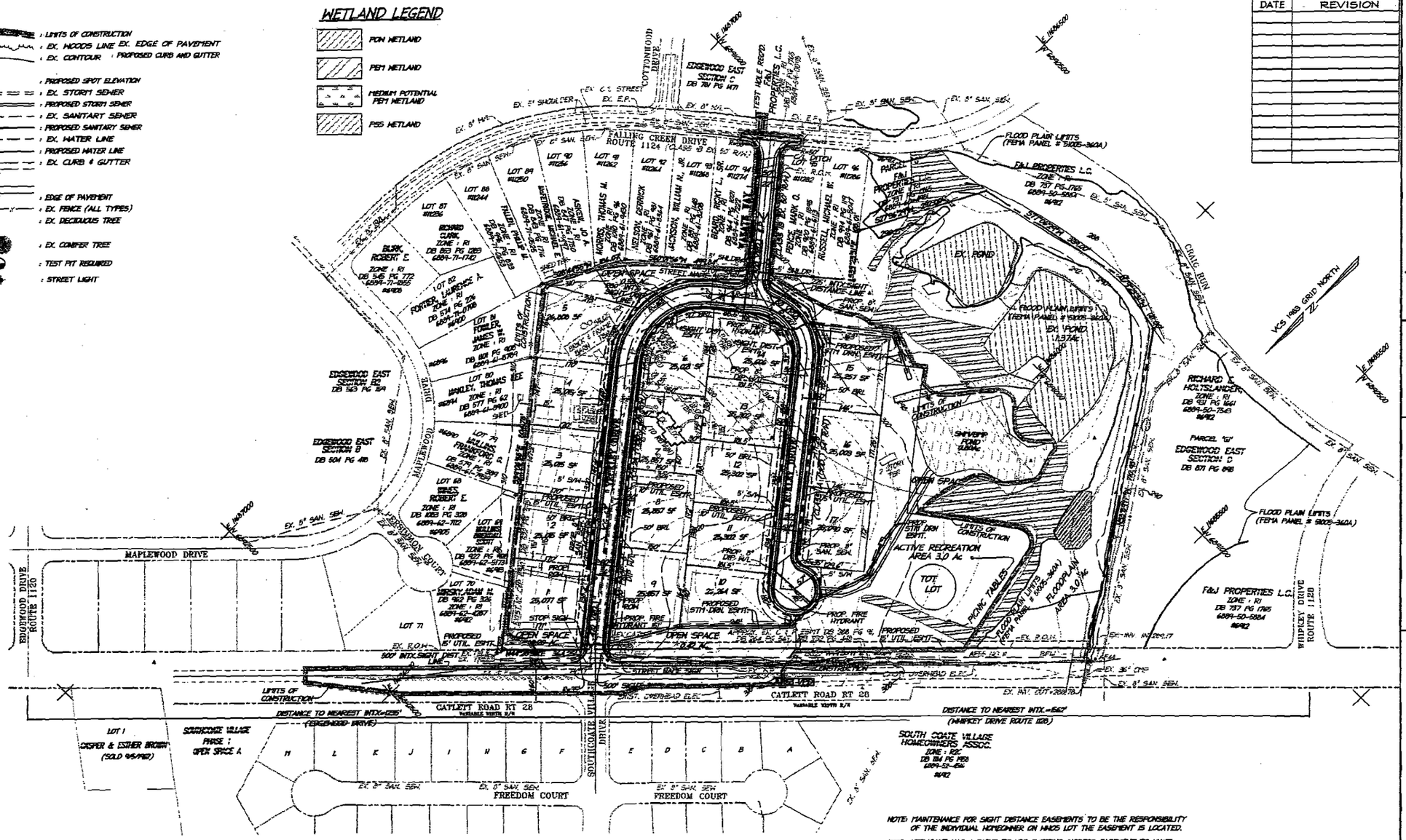
PROJECT NO. 05202.00
SCALE: AS NOTED
DATE: SEPTEMBER, 2005
DESIGN: DLL
DRAWN: DLL
CHECKED:
SHEET No. 2 of 8

LEGEND

- : LIMITS OF CONSTRUCTION
- : EX. WOODS LINE EX. EDGE OF PAVEMENT
- : EX. CONTOUR : PROPOSED CURB AND GUTTER
- : PROPOSED SPOT ELEVATION
- : EX. STORM SEWER
- : PROPOSED STORM SEWER
- : EX. SANITARY SEWER
- : PROPOSED SANITARY SEWER
- : EX. WATER LINE
- : PROPOSED WATER LINE
- : EX. CURB & GUTTER
- : EDGE OF PAVEMENT
- : EX. FENCE (ALL TYPES)
- : EX. DECIDUOUS TREE
- : EX. CONIFER TREE
- : TEST PIT REQUIRED
- : STREET LIGHT

WETLAND LEGEND

- PUN WETLAND
- PEM WETLAND
- MEDIUM POTENTIAL PEM WETLAND
- PSS WETLAND



NOTE: MAINTENANCE FOR SIGHT DISTANCE EASEMENTS TO BE THE RESPONSIBILITY OF THE INDIVIDUAL HOMEOWNER ON WHOS LOT THE EASEMENT IS LOCATED.

NOTE: APPLICANT HAS A RIGHT TO USE EXISTING INGRESS EASEMENT TO MAKE ANY PROPOSED IMPROVEMENTS.

100 75 50 0 100 200
GRAPHIC SCALE
1" = 100'

PROPERY OWNERS DATA

PARCEL	OWNER	RECORD LOCATION DEED BOOK	PAGE #	GPIN	ZONING	ADDRESS
A	WIDHALM, DANIEL	1072	2904	6889 - 51 - 8908	R2C	11224 FREEDOM COURT
B	HUNSUCKER, DAVID E.	977	837	6889 - 52 - 8074	R2C	11227 FREEDOM COURT
C	DANIEL, DENNIS W.	1005	1999	6889 - 52 - 9120	R2C	11225 FREEDOM COURT
D	MELLON, ARTHUR A.	1003	97	6889 - 52 - 9916	R2C	11211 FREEDOM COURT
E	SUDDUTH, DAVID	1000	1724	6889 - 62 - 0241	R2C	11215 FREEDOM COURT
F	SHERNANDEZ, ERIKA M.	996	114	6889 - 62 - 1553	R2C	11209 FREEDOM COURT
G	DETTERS, PAUL J. SUCCESSOR TRUSTEE	222	1442	6889 - 62 - 2317	R2C	11205 FREEDOM COURT
H	CREMS, LAWRENCE R.	1102	1152	6889 - 62 - 2463	R2C	11201 FREEDOM COURT
I	SHEPHARD, DARRIN J	966	327	6889 - 62 - 3419	R2C	11197 FREEDOM COURT
J	LATORRE, RAYON F	985	95	6889 - 62 - 3575	R2C	11193 FREEDOM COURT
K	STRAMER, JAMES A	984	1979	6889 - 62 - 4431	R2C	11189 FREEDOM COURT
L	STUART, DIANA ELIZABETH MACKENZIE	1014	1228	6889 - 62 - 4696	R2C	11185 FREEDOM COURT
M	BROWN, DARREN MOORE	979	1426	6889 - 62 - 5764	R2C	11183 FREEDOM COURT

DATE	REVISION

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engineering · surveying · land planning
7218 Lee Highway · Falls Church, Virginia, 22046
703.533.8887 / fax 703.533.9173

LANCE K. KILBY
No. 35486
02/14/06
PROFESSIONAL ENGINEER

PRELIMINARY PLAN

COLONIAL DOWNS

LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

PROJECT NO. 053202.00
SCALE: 1"=100'
DATE: SEPTEMBER, 2005
DESIGN: YD
DRAWN: DLL
CHECKED:
SHEET No. 3 - 8

SUBDIVISION & COMMERCIAL ENTRANCE WORKSHEET FOR TWO-LANE HIGHWAYS

ENTRANCE LOCATION: Colonial Downs

ENTER / SELECT THESE FOUR KNOWN CRITERIA:

HIGHWAY POSTED SPEED (MPH) †	45	4
HIGHWAY TRAFFIC VOLUME (VPD)	8,753	12
HIGHWAY FUNCTIONAL CLASSIFICATION: PRIMARY COLLECTOR		2
TRAFFIC GENERATED BY SITE (VPD)	470	4

SITE ACCESS CLASSIFICATION: CATEGORY = D

MIN. ENTR. RADIUS = 25'
MIN. CONN. RADIUS = 50'
MIN. INT. SIGHT DIST. = 555'
(Design Speed = Posted Speed plus 5 MPH)

RIGHT TURN LANE*: MIN. TAPER = 150', MIN. DECEL = 200'

LEFT TURN LANE**: MIN. STORAGE (L1) = 200', MIN. TAPER (L2) = 200'

LANE SHIFT TRANSITION TO LTL**: TAPER (T1) LENGTH = 420', TAPER (T2) LENGTH = 200'

Click Here for Traffic Engineering Data

* See "Min. Width of Entr. to State Highways" for additional Entrance requirements.
** See Road Design Manual, Figure C-1-L29 or Illustration in Site Access Guidelines Manual

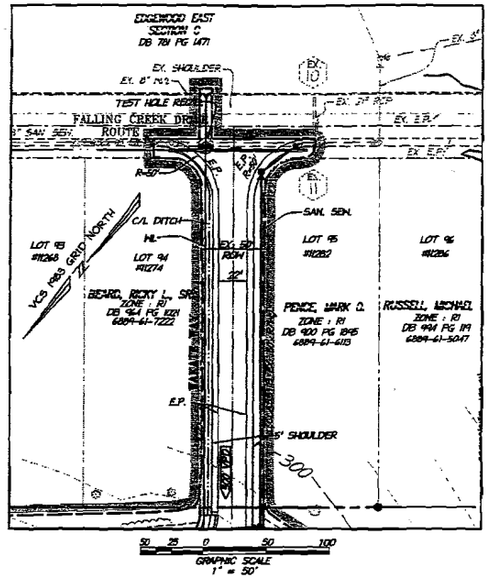
REMARKS (Optional):

FULL FRONTAGE DEVELOPER REQ'D? YES

† For UNPOSTED SECONDARY ROADS, Average Running Speed may be entered, by approval

NOTES:
1. Data MUST be entered in ALL FOUR "KNOWN CRITERIA" Cells ("Yellows")
2. Use "Tab" Key to move to next Cell
3. Select Printer icon to Print

© VDOT SPH, 12/01/04 Release 3.1



LEGEND

- LIMITS OF CONSTRUCTION
- EX. WOODS LINE
- EX. CONTOUR
- PROPOSED SPOT ELEVATION
- EX. STORM SEWER
- PROPOSED STORM SEWER
- EX. SANITARY SEWER
- PROPOSED SANITARY SEWER
- EX. WATER LINE
- PROPOSED WATER LINE
- TBR : TO BE RELOCATED
- EX. CURB & GUTTER
- EX. EDGE OF PAVEMENT
- PROPOSED CURB AND GUTTER
- EDGE OF PAVEMENT
- EX. FENCE (ALL TYPES)
- EX. DECIDUOUS TREE
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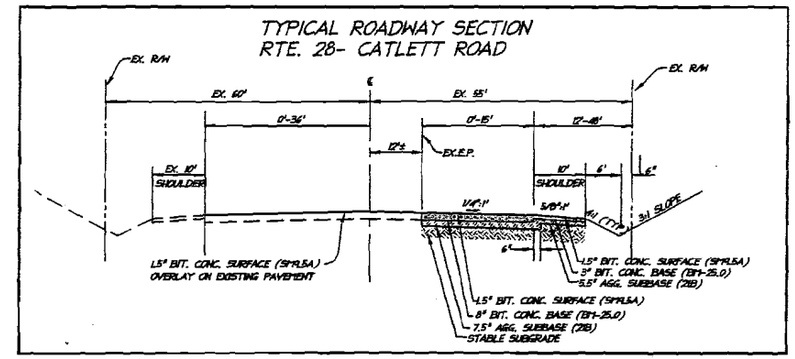
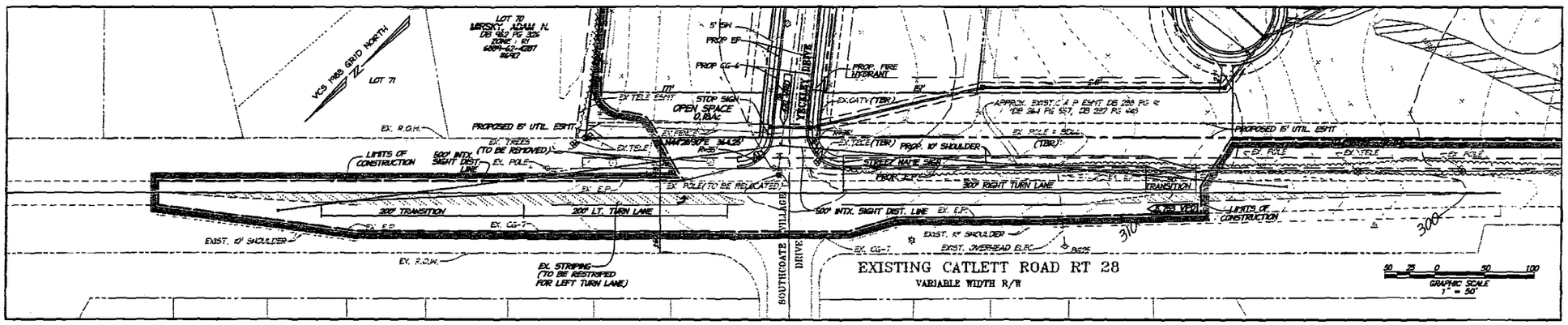
- TEST PIT REQUIRED
- STREET LIGHT

DATE	REVISION
02/08/06	VDOT COMMENTS





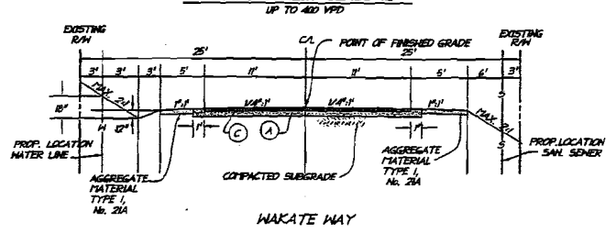
TRAFFIC VOLUME	R.O.W.	DESIGN SPEED	MAX GRADE	MIN. ⊂ RADIUS	MIN. SIGHT DISTANCE	A: TYPE I SUBBASE AGG BASE (21-A)	B: BASE (BM-2) OR (BM-3)	C: SURFACE (SM-2A)
UP TO 400 VPD	54'	20 mph	10 %	120'	225'	6"		2"
401 - 1500 VPD	60'	25 mph	10 %	165'	280'	8"	4"	2"

TYPICAL STREET SECTIONS

SUBBASE DEPTH IS BASED ON A CBR VALUE OF 10. SOILS TESTS OF THE SUBGRADE WILL BE PERFORTED FOR ACTUAL DETERMINATION OF THE REQUIRED THICKNESS PRIOR TO PLACEMENT OF THE SUBBASE.

TYPICAL SECTION LOCAL STREET CLASS IB

UP TO 400 VPD

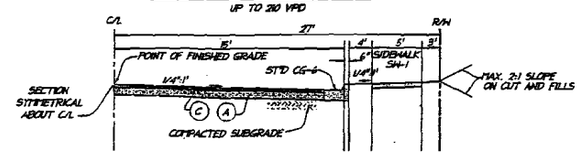


WAKATE WAY

EXISTING R/W DEDICATED IN D.B. 1737 PG. 765

MODIFIED STREET SECTION LOCAL COLLECTOR CLASS IA

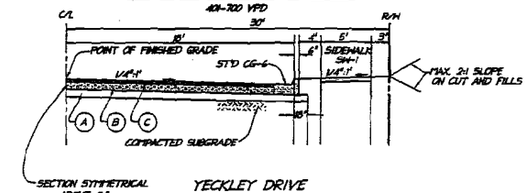
UP TO 200 VPD



YECKLEY DRIVE FROM CUL-DE-SAC TO INTX WAKATE WAY

MODIFIED STREET SECTION LOCAL COLLECTOR CLASS 2A

401-700 VPD



YECKLEY DRIVE FROM ROUTE 28 TO INTX WAKATE WAY

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COMMONWEALTH OF VIRGINIA
LANCE K. KILBY
No. 35486
2/14/06
PROFESSIONAL ENGINEER

PRELIMINARY PLAN

COLONIAL DOWNS

LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

PROJECT NO: 05-32-02.00
SCALE: 1"=50'
DATE: SEPTEMBER, 2005
DESIGN: TD
DRAWN: DLL
CHECKED:
SHEET No. 4 OF 8

BMP Facility Design Calculations

Plan Name: YECKELY PROPERTY Date: 09/11/05

Plan Number: 053202 Engineer: James M. Johnson, EIT

I. **Water Quality Narrative:**

This 28.15 acre northern portion of the Harbor Station site will be served by a dry BMP pond, a filter strip, and required open space. These will provide the necessary storm water management and BMP's (Phosphorous removal) for this site.

II. **Watershed Information**

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

Subarea Designation & Description (1)	"C" (2)	Acres (3)
1-ONSITE CONTROLLED BY POND	.57	14.59
2-ONSITE CONTROLLED BY FILTER STRIP	.40	1.68
3-OPEN SPACE UNCONTROLLED	.35	5.87
4-UNCONTROLLED	.35	4.01

II a. **Phosphorous Removal - "Occoquan Method"**

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

(A) Area of the Site (a) 28.15 acres

B) SUBAREA DESIGNATION (1)	"C" (2)		Acres (3)		Product (4)
A-1)	.57	x	14.59	=	8.32
A-2)	.40	x	1.68	=	0.67
A-3)	.35	x	5.87	=	1.47
A-4)	.35	x	4.01	=	1.40

(b) Total = 11.86

(C) Weighted average "C" factor (b) / (a) = (c) .45

Part 3: Compute the Total Phosphorous Removal for the Site

Subarea Designation (1)	BMP Type (2)	Removal Eff. (%) (3)	Area Ratio (4)	"C" Factor Ratio (5)	Product (6)
1)	Dry Ponds	40	(14.59/28.15) = .56	(.57/.45) =1.27	28.45
2)	Filter Strip	10	(1.68/28.15) = .06	(.40/.45) =.89	.53
3)	Open Space	100	(5.87/28.15) = .22	=1.00	.22
4)	Uncontrolled	0	(4.01/28.15) = .15	(.35/.45) =0.78	Uncontrolled

(a) Total = 50.98 %

Part 4: Determine Compliance with Phosphorous Removal Requirement

(A) Select Requirement (a) 50

X Water Supply Overlay District (Occoquan Watershed) = 50% (Fairfax County and Prince William County)

X Chesapeake Bay Preservation Area (New Development) = 40% (Fairfax County) 50% (Prince William County)

X Chesapeake bay Preservation Area (Redevelopment) = (1-0.6 x (1-pre/1-post)) x 100 = 50 %

(B) If Line 3(a) 50.98 > Line 4(a) 50 the Phosphorous removal requirement is satisfied.

III. **SITE COVERAGE**

Part 5: Determine Compliance with Site Coverage Requirement

Sum all the uncontrolled onsite areas and compute a weighted average "C" factor. Do not include qualifying open space.

Subarea Designation (1)	"C" (2)		Acres (3)		Product (4)
(A-1)	.57	x	14.59	=	8.32
(A-2)	.40	x	1.68	=	0.67
(A-4)	.35	x	4.01	=	1.40

(A) Total equivalent uncontrolled area (a) Total = 20.28

(B) Total uncontrolled area (b) 4.01

(C) Weighted average "C" factor (a)/(b) = (c) 5.06

(D) If line 5(c) < 20% of Line 2(a), then the site coverage requirement is satisfied. Line 2(b) is the equivalent offsite area for which coverage may be required. 100 x Line 5(b) 4.01 / Line 2(a) 28.15 = (d) 15.2%

Part 6: Determine the Offsite Areas for which Coverage is Required

(A) For the offsite areas listed in Part 1 which flow to proposed onsite BMP's compute the equivalent area.

Subarea Designation (1)	"C" (2)		Acres (3)		Product (4)
		x		=	
		x		=	
		x		=	
		x		=	

(a) Total =

V. **Storage**

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.

Subarea Designation (1)	"C" (2)		Acres (3)		Product (4)
(A-1)	.57	x	14.59	=	8.32

(a) 14.59

(B) (b) 8.32

(C) Weighted average "C" factor .57 (b)/(a) = (c)

Part 8: Determine the Storage Required for Each Proposed Facility

(A) **Extended Detention Dry Pond**

Chart A6-40 values (Appendix 4-3) for BMP storage per acre [(43/5 x "C") - 875] or [31.25 x %imp.] = (a) 2469.75 cf/ac

X Design 1 (48 hour drawdown) Line 7(a) 14.59 x Line 8(a) 2469.75 = 36,383.8 cf

(B) **Wet Pond**

Volume of runoff per acre from mean storm. [1452 x "C"] = 1452 x Line 7(c) = (a) cf/ac

X Design 1 (2.5 x Volume of runoff from mean storm event in wet storage with extended detention above the permanent pool)

Wet Storage

2.5 x Line 7(a) x Line 8(a) = cf

Extended Detention

Line 7(a) x Line 8(b) = cf

X Design 2 (4.0 x Volume of runoff from mean storm) 4.0 x Line 7(a) x Line 8(b) = cf

(C) Infiltration Trench

X	Design 1	(0.50 inch per impervious acre) 0.50 x 28.30 x (%imp)	x Line 7(a)	=	cf
X	Design 2	(1.0 inch per impervious acres) 1.0 x 28.30 x (%imp)	x Line 7(a)	=	cf
X	Design 3	(3-year 2-hour storm) (2.07/12) x 43,560 x "C"	x Line 7(a)	=	cf

VI. **Outlet Computation**

Part 9: Determine the Required Orifice Size for Each Extended Detention Facility

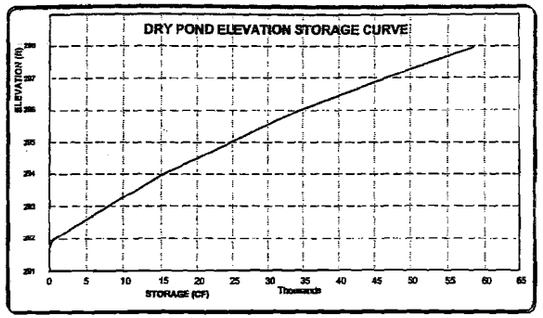
(A) BMP storage requirement (S) from Part 8. (a) 36383.8

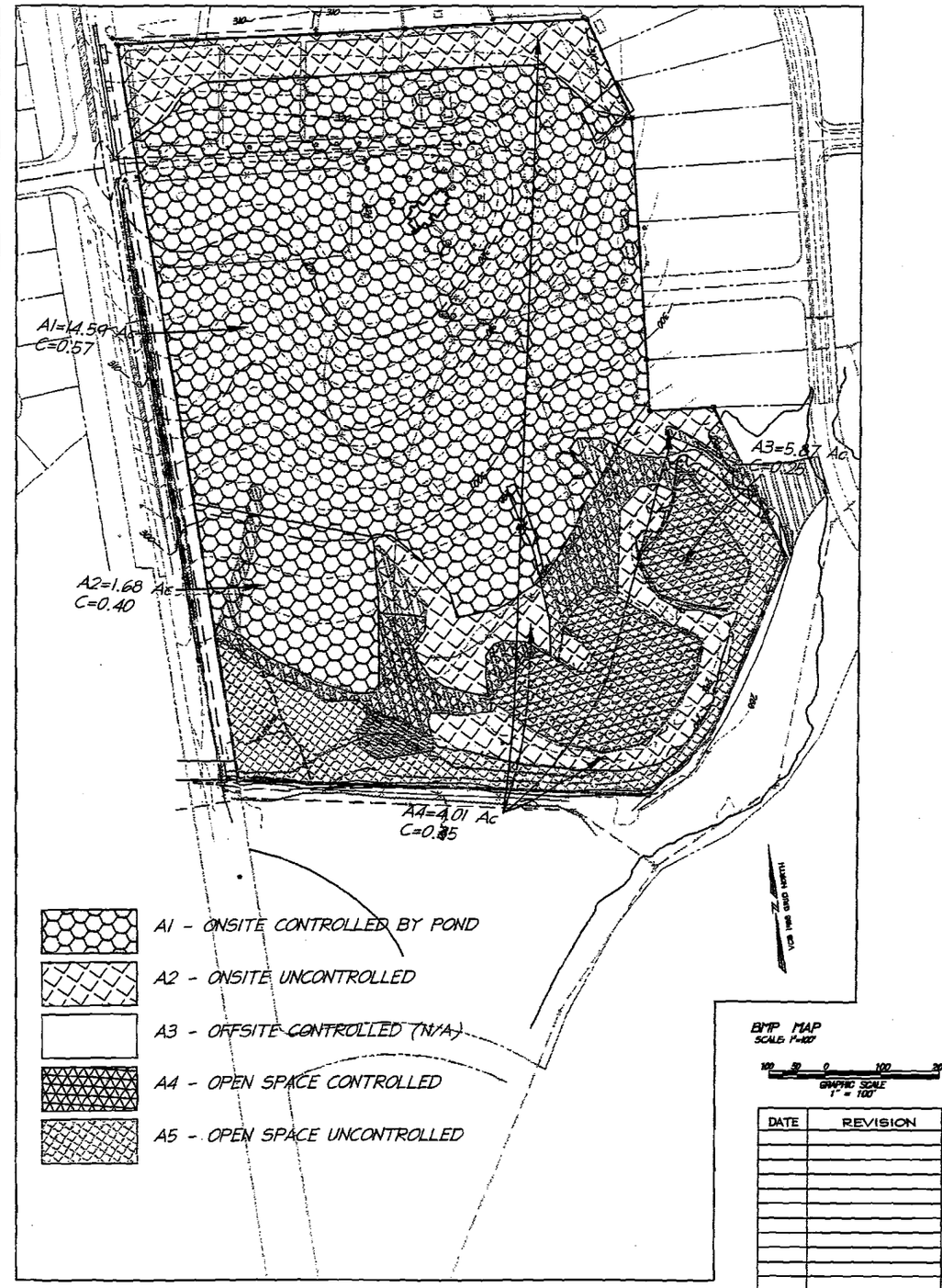
(B) Maximum Head (h) at the required BMP storage from the elevation-storage curve for the facility. (a) 9.3

(C) Peak outflow rate (Q_p) at the maximum head for a drawdown time of 48 hrs [Q_p = S / (0.5 x 3600 x 48)]. 0.0000116 x Line 9(a) 36383.8 = (c) .42

(D) Required orifice area (A) [$A = Q_p/(0.6 \times (64.4 \times h)^{0.5})$] Line 9(c) .42 / (0.6 x (64.4 x Line 9(b) 9.3)$^{0.5}$) =(d) .035

(E) Diameter of a circular orifice. 2.0 (line 9(d) .035 / (3.1415927)$^{0.5}$) = (e) .21 =2.53"





DATE	REVISION

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COMMONWEALTH OF VIRGINIA
YOUNG DAE KIM YECKLEY
No. 35486
02/14/06
PROFESSIONAL ENGINEER

PRELIMINARY BMP
MAP AND COMPUTATIONS

COLONIAL DOWNS
LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

PROJECT No. 053202.00
SCALE: AS NOTED
DATE: SEPTEMBER, 2005
DESIGN: YD
DRAWN: YD
CHECKED:
SHEET No.

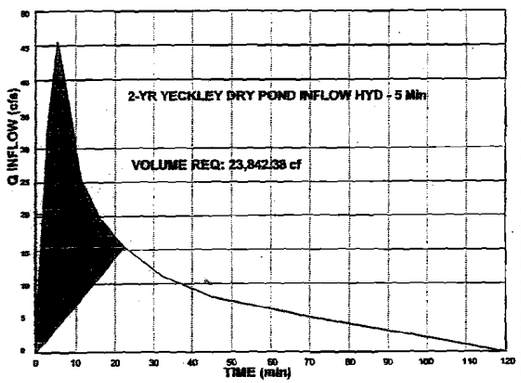
FAUQUIER COUNTY UNIT HYDROGRAPH

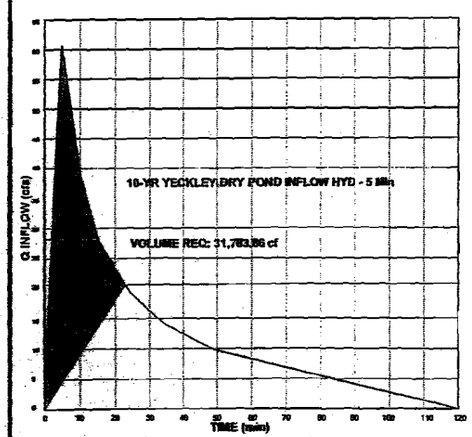
DRY POND HYDROGRAPH

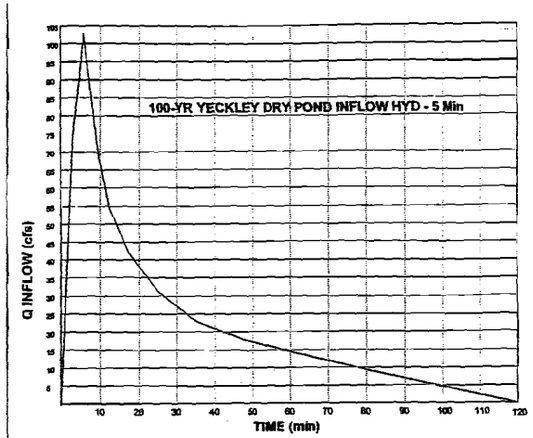
INPUT DATA

TIME OF CONCENTRATION (min)	5	
SITE AREA (Ac)	14.59	
COMPOSITE C	0.57	
CA MULTIPLIER	8.32	

TIME (min)	2 year Q	10 year Q	100 year Q	
0	0.00	0.00	0.00	0.00
5	5.45	45.32	7.27	60.46	9.84	102.29
10	3.51	29.19	4.68	38.92	6.37	66.22
15	2.60	21.62	3.46	28.77	4.73	49.17
20	2.06	17.20	2.77	23.04	3.74	38.88
25	1.72	14.30	2.29	19.04	3.13	32.54
30	1.46	12.14	1.94	16.13	2.65	27.56
35	1.28	10.64	1.68	13.97	2.33	24.22
40	1.10	9.15	1.47	12.22	2.07	21.52
45	1.00	8.32	1.31	10.89	1.88	19.54
50	0.89	7.40	1.18	9.81	1.69	17.57
55	0.82	6.82	1.08	8.98	1.55	16.11
60	0.74	6.15	0.98	8.23	1.42	14.76
65	0.68	5.66	0.91	7.57	1.30	13.51
70	0.62	5.16	0.83	6.90	1.18	12.27
75	0.56	4.66	0.74	6.15	1.07	11.12
80	0.49	4.07	0.66	5.49	0.95	9.86
85	0.43	3.56	0.58	4.82	0.83	8.63
90	0.37	3.08	0.50	4.16	0.71	7.38
95	0.31	2.58	0.41	3.41	0.59	6.13
100	0.25	2.08	0.33	2.74	0.47	4.89
105	0.19	1.58	0.25	2.08	0.36	3.74
110	0.12	1.00	0.17	1.41	0.24	2.49
115	0.06	0.50	0.08	0.67	0.12	1.25
120	0.00	0.00	0.00	0.00	0.00	0.00







STORM WATER DETENTION COMPUTATIONS

TOTAL SITE AREA	A= 26.15 Ac
UNCONTROLLED	A= 5.69 Ac
OPEN SPACE UNCONTROLLED	A= 5.87 Ac
AREA TO THE PROP. DRY POND FACILITY:	A= 14.59 Ac

PRE-DEVELOPMENT RUNOFF

DRAINAGE AREA TO THE POND		A=	11.63 Ac			
TIME OF CONCENTRATION		Tc=	5 min			
RAINFALL INTENSITY		I(2YR)=	5.45 in/hr			
		I(10YR)=	7.27 in/hr			
		I(100YR)=	9.84 in/hr			
RUNOFF COEFFICIENT		C=	0.3			
RUNOFF Q(2YR) =		0.30 *	5.45 *	11.63 =	19.0	cfs
Q(10YR)=		0.30 *	7.27 *	11.63 =	25.4	cfs
Q(100YR)=	1.25 *	0.30 *	9.84 *	11.63 =	42.9	cfs

POST-DEVELOPMENT RUNOFF

UNCONTROLLED	A= 5.69	Ac	C=0.37
ONSITE TO POND	A= 14.59	Ac	C=0.57
OPEN SPACE	A= 5.87	Ac	C=0.25
		Tc= 5 min	
		I(2YR)= 5.45 in/hr	
		I(10YR)= 7.27 in/hr	
		I(100YR)= 9.84 in/hr	

ON-SITE UNCONTROLLED RUNOFF

Q(2YR) =		0.37 *	5.45 *	5.69 =	11.5 cfs
Q(10YR)=		0.37 *	7.27 *	5.69 =	15.3 cfs
Q(100YR)=	1.25 *	0.37 *	9.84 *	5.69 =	25.9 cfs

ONSITE CONTROLLED RUNOFF

Q(2YR) =		0.57 *	5.45 *	14.59 =	45.3 cfs
Q(10YR)=		0.57 *	7.27 *	14.59 =	60.5 cfs
Q(25YR)=	1.10 *	0.57 *	8.27 *	14.59 =	73.7 cfs
Q(100YR)=	1.25 *	0.57 *	9.84 *	14.59 =	102.3 cfs

OFF-SITE DETAINED RUNOFF

Q(2YR) =		0.25 *	5.45 *	5.87 =	8.0 cfs
Q(10YR)=		0.25 *	7.27 *	5.87 =	10.7 cfs
Q(25YR)=	1.10 *	0.25 *	8.27 *	5.87 =	13.3 cfs
Q(100YR)=	1.25 *	0.25 *	9.84 *	5.87 =	18.1 cfs

TOTAL RUNOFF TO POND

Q(2YR) =	59.3 cfs
Q(10YR)=	71.1 cfs
Q(100YR)=	120.3 cfs

ALLOWABLE RUNOFF

Q(ALLOW)=Q(PRE-DEVELOPED)-Q(UNDETAINED)+Q(OFFSITE)

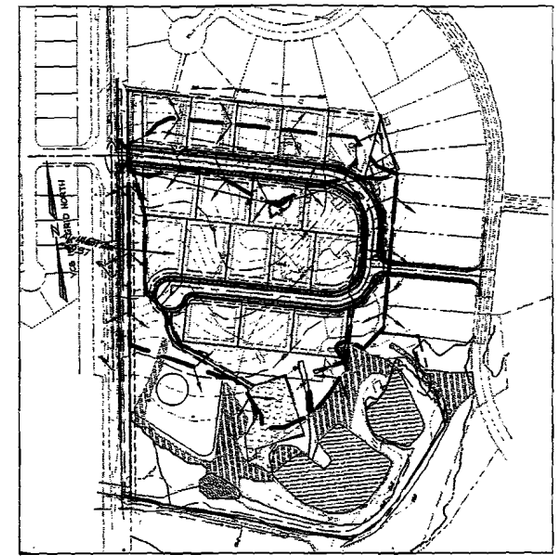
Q(2YR) =	19.0 -	11.5 +	8.0 =	15.5 cfs
Q(10YR)=	25.4 -	15.3 +	10.7 =	20.7 cfs
Q(100YR)=	42.9 -	25.9 +	18.1 =	35.1 cfs

OUTFALL NARRATIVE

STORMWATER RETENTION IS PROVIDED FOR THIS SITE USING DRY POND. THE POST DEVELOPMENT PEAK DISCHARGE FROM THIS SITE EXCEEDS THE REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK MINIMUM STANDARD-19 OF 4 VAC 50-30-40, OF THE EROSION AND SEDIMENT CONTROL REGULATIONS. STORMWATER FROM THE POND WILL BE DISCHARGED INTO AN EXISTING WOODED OPEN CHANNEL, AND THE POST- DEVELOPMENT PEAK DISCHARGE WILL BE LESS THAN THE PRE-DEVELOPMENT PEAK DISCHARGE. RESPONSIBLE PARTY: THE PROPOSED DRY POND WILL BE PRIVATELY OWNED AND MAINTAINED.

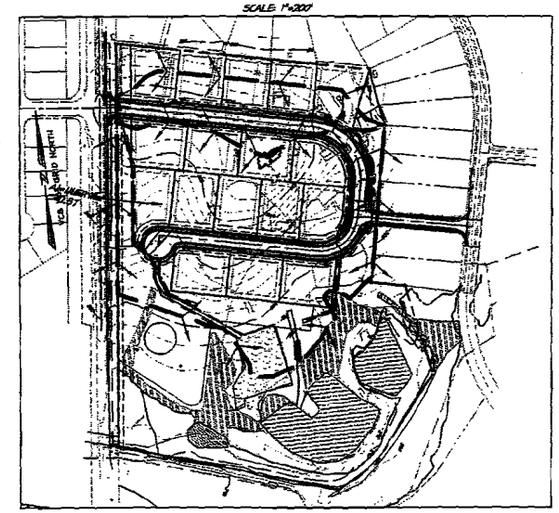
PRE-DEVELOPED MAP

SCALE: 1"=200'



POST-DEVELOPED MAP

SCALE: 1"=200'



A1 - ONSITE CONTROLLED BY POND

A2 - ONSITE UNCONTROLLED

A3 - OFFSITE CONTROLLED (N/A)

A4 - OPEN SPACE CONTROLLED

A5 - OPEN SPACE UNCONTROLLED

DATE	REVISION

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COMMONWEALTH OF VIRGINIA
MONICA K. KILBY
No. 35486
2/14/06
PROFESSIONAL ENGINEER

PRELIMINARY
SWM COMPUTATIONS

COLONIAL DOWNS

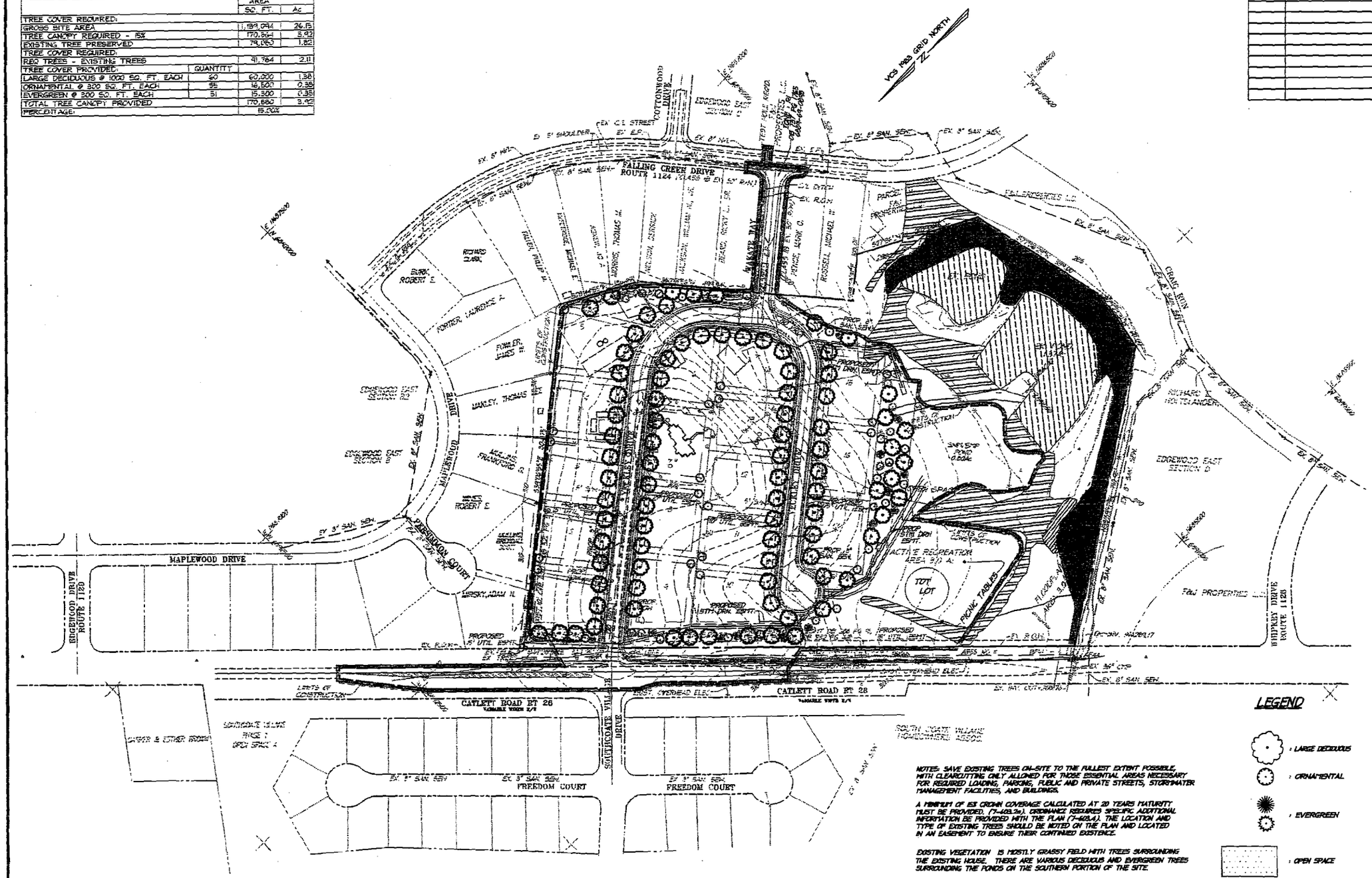
LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

PROJECT NO. 053202.00
SCALE: AS NOTED
DATE: SEPTEMBER, 2005
DESIGN: TD
DRAWN: TD
CHECKED:
SHEET No.

LANDSCAPE REQUIREMENT

TREE CANOPY			
		AREA	
		SQ. FT.	Ac
TREE COVER REQUIRED:			
GROSS SITE AREA		1,139,094	26.15
TREE CANOPY REQUIRED - 15%		170,864	3.92
EXISTING TREE PRESERVED		79,080	1.82
TREE COVER REQUIRED:			
REQ TREES - EXISTING TREES		91,784	2.11
TREE COVER PROVIDED:	QUANTITY		
LARGE DECIDUOUS @ 1000 SQ. FT. EACH	60	60,000	1.38
ORNAMENTAL @ 300 SQ. FT. EACH	55	16,500	0.35
EVERGREEN @ 300 SQ. FT. EACH	51	15,300	0.35
TOTAL TREE CANOPY PROVIDED		170,880	3.92
PERCENTAGE:		15.00%	

DATE	REVISION



NOTES: SAVE EXISTING TREES ON-SITE TO THE FULLEST EXTENT POSSIBLE, WITH CLEARCUTTING ONLY ALLOWED FOR THOSE ESSENTIAL AREAS NECESSARY FOR REQUIRED LOADING, PARKING, PUBLIC AND PRIVATE STREETS, STORMWATER MANAGEMENT FACILITIES, AND BUILDINGS.

A MINIMUM OF 15% CROWN COVERAGE CALCULATED AT 20 YEARS MATURITY MUST BE PROVIDED. (7-603.2a). ORDINANCE REQUIRES SPECIFIC ADDITIONAL INFORMATION BE PROVIDED WITH THE PLAN (7-603.4). THE LOCATION AND TYPE OF EXISTING TREES SHOULD BE NOTED ON THE PLAN AND LOCATED IN AN EASEMENT TO ENSURE THEIR CONTINUED EXISTENCE.

EXISTING VEGETATION IS MOSTLY GRASSY FIELD WITH TREES SURROUNDING THE EXISTING HOUSE. THERE ARE VARIOUS DECIDUOUS AND EVERGREEN TREES SURROUNDING THE PONDS ON THE SOUTHERN PORTION OF THE SITE.

100 75 50 0 100 200
GRAPHIC SCALE
1" = 100'

LEGEND

- : LARGE DECIDUOUS
- : ORNAMENTAL
- : EVERGREEN
- : OPEN SPACE
- : TREE SAVE AREA

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COMMONWEALTH OF VIRGINIA
LANCE K. KILBY
No. 35486
PROFESSIONAL ENGINEER

LANDSCAPE PLAN

COLONIAL DOWNS

LEE MAGISTERIAL DISTRICT
FAUQUIER COUNTY, VIRGINIA

PROJECT NO: 053202.00
SCALE: 1"=100'
DATE: SEPTEMBER, 2005
DESIGN: YD
DRAWN: YD
CHECKED:
SHEET No.